NAVFAC
Naval Facilities Engineering Command

Groundwater Sample Results, Level 4 Laboratory Report, and the Sample Location Report, SDG FA55430

Naval Support Activity Mid-South
Millington, Tennessee

July 2019

N00639_002585
MID_SOUTH_NSA
SSIC 5000-33c

LABORATORY DATA PACKAGE FA55430 REVISION 01 MILLINGTON SUPPACT TN

07/24/2018

SGS ACCUTEST, INC.

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

e-Hardcopy 2.0
Automated Report

Technical Report for

Ensafe, Inc

SWMU 15/JM 50; Millington, TN

0888813783

SGS Job Number: FA55430

Sampling Dates: 06/26/18 - 06/27/18

Report to:

Ensafe, Inc.
5724 Summer Trees Dr
Memphis, TN 38134
bbrantley@ensafe.com; tcantwell@ensafe.com

ATTN: Ben Brantley

Total number of pages in report: **1400**

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.

Caitlin Brice, M.S.
General Manager

Client Service contact: Ken Overstreet 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), IL(200063), NC(573), NJ(FL002), NY(12022), SC(96038001) DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), AK, AR, IA, KY, MA, MS, ND, NH, NV, OK, OR, UT, WA, WV

July 23, 2018

Mr. Ben Brantley
Ensafe

5724 Summer Trees Dr
Memphis, TN 38134

RE: SGS North America Inc. - Orlando job FA55430 Reissue

Dear Mr. Brantley,

The final report for job number FA55430 has been edited to reflect requested corrections. These edits have been incorporated into the revised report.

PFC compound list has been revised.

SGS North America Inc. - Orlando apologies for any inconvenience this may have caused. Please feel free to contact us if we can be of further assistance.

Sincerely,

SGS North America Inc. - Orlando

Florida ♦ 4405 Vineland Road ♦ Suite C-15 ♦ Orlando, FL 32811 ♦ tel: 407 425-6700 ♦ fax: 407 425-0707

Sections: 1 2 3 4 5 6 7

Table of Contents

SGS North America Inc.

Sample Summary

Ensafe, Inc

Job No: FA55430

SWMU 15/JM 50; Millington, TN
Project No: 0888813783

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA55430-1	06/26/18	13:24	FOLN	06/28/18	AQ	Ground Water	015G31UF062618
FA55430-1D	06/26/18	13:24	FOLN	06/28/18	AQ	Water Dup/MSD	015G31UF062618
FA55430-1S	06/26/18	13:24	FOLN	06/28/18	AQ	Water Matrix Spike	015G31UF062618
FA55430-2	06/26/18	13:24	FOLN	06/28/18	AQ	Ground Water	015H31UF062618
FA55430-3	06/26/18	13:51	FOLN	06/28/18	AQ	Equipment Blank	EB062618
FA55430-4	06/26/18	14:00	FOLN	06/28/18	AQ	Field Blank Water	FB062618
FA55430-5	06/26/18	13:20	FOLN	06/28/18	AQ	Trip Blank Water	TB062618
FA55430-6	06/26/18	15:30	FOLN	06/28/18	AQ	Ground Water	015G29UF062618
FA55430-7	06/26/18	17:00	FOLN	06/28/18	AQ	Ground Water	015G27UF062618
FA55430-8	06/27/18	11:00	FOLN	06/28/18	AQ	Ground Water	015G33UF062718

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Ensafe, Inc **Job No:** FA55430

Site: SWMU 15/JM 50; Millington, TN **Report Date:** 7/24/2018 3:12:16

6 Sample(s), 1 Trip Blank(s) and 1 Field Blank(s) were collected on/ between 06/26/2018 and 06/27/2018 and were received at SGS North America Inc - Orlando on 06/28/2018 properly preserved, at 2.1 Deg. C and intact. These Samples received an SGS Orlando job number of FA55430. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Semi-volatiles By Method EPA 537M QSM5.1 B-15

Matrix: AQ **Batch ID:** OP70743

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) FA55430-1MS, FA55430-1MSD were used as the QC samples indicated.
Matrix Spike Recovery(s) for Perfluorotridecanoic acid are outside control limits. Probable cause is due to matrix interference.

Matrix Spike Recovery(s) for Perfluorohexanesulfonic acid are outside control limits. Outside control limits due to high level in sample relative to spike amount.

Matrix Spike Duplicate Recovery(s) for Perfluorohexanesulfonic acid, Perfluorooctanesulfonic acid are outside control limits.

Sample(s) FA55430-1, FA55430-7 have surrogates outside control limits.

FA55430-1 for 13C2-PFDoDA: Outside control limits. Insufficient sample for re-extraction.

FA55430-1 for 13C8-FOSA: Outside control limits. Insufficient sample for re-extraction.

FA55430-1 for 13C2-PFTeDA: Outside control limits. Insufficient sample for re-extraction.

FA55430-1 for Perfluorotetradecanoic acid: Associated ID Standard outside control limits due to matrix interference.

FA55430-1 for Perfluorododecanoic acid: Associated ID Standard outside control limits due to matrix interference.

FA55430-7 for 13C2-PFTeDA: Outside control limits due to matrix interference.

FA55430-7 for 13C2-PFDoDA: Outside control limits due to matrix interference.

FA55430-7 for 13C8-FOSA: Outside control limits due to matrix interference.

Matrix: AQ **Batch ID:** OP70805

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) FA55587-5MS, FA55587-5MSD were used as the QC samples indicated.

Matrix Spike Recovery(s) for Perfluorotridecanoic acid are outside control limits. Probable cause is due to matrix interference.

Matrix: AQ **Batch ID:** OP70810

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.

Samples FA55430-7, FA55430-8 have compounds reported with “E” qualifiers indicating estimated value exceeding calibration range.

Blank Spike Recovery(s) for Perfluorododecanoic acid, Perfluorotridecanoic acid are outside control limits.

FA55430-2 for Perfluorododecanoic acid: Associated BS outside DOD QSM control limits high. Sample was ND.

FA55430-2 for Perfluorotridecanoic acid: Associated BS outside DOD QSM control limits high. Sample was ND.

FA55430-5 for Perfluorododecanoic acid: Associated BS outside DOD QSM control limits high. Sample was ND.

FA55430-5 for Perfluorotridecanoic acid: Associated BS outside DOD QSM control limits high. Sample was ND.

FA55430-6 for Perfluorododecanoic acid: Associated BS outside DOD QSM control limits high. Sample was ND.

FA55430-6 for Perfluorotridecanoic acid: Associated BS outside DOD QSM control limits high. Sample was ND.

FA55430-7 for Perfluorododecanoic acid: Associated BS outside DOD QSM control limits high. Sample was ND.

FA55430-7 for Perfluorotridecanoic acid: Associated BS outside DOD QSM control limits high. Sample was ND.

FA55430-7: Confirmation run.

FA55430-8 for Perfluorododecanoic acid: Associated BS outside DOD QSM control limits high. Sample was ND.

FA55430-8 for Perfluorotridecanoic acid: Associated BS outside DOD QSM control limits high. Sample was ND.

SGS Orlando certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS Orlando and as stated on the COC. SGS Orlando certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Orlando Quality Manual except as noted above. This report is to be used in its entirety. SGS Orlando is not responsible for any assumptions of data quality if partial data packages are used.

Narrative Revised July 24, 2018 by:

_____

Kim Benham, Client Services (signature on file)

Summary of Hits

Job Number: FA55430
Account: Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN
Collected: 06/26/18 thru 06/27/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FA55430-1	**015G31UF062618**					
Perfluorohexanoic acid		0.295	0.0077	0.0038	ug/l	EPA 537M QSM5.1 B-15
Perfluoroheptanoic acid		0.106	0.0077	0.0038	ug/l	EPA 537M QSM5.1 B-15
Perfluorooctanoic acid		0.142	0.0077	0.0038	ug/l	EPA 537M QSM5.1 B-15
Perfluorononanoic acid		0.0165	0.0077	0.0038	ug/l	EPA 537M QSM5.1 B-15
Perfluorobutanesulfonic acid		0.167	0.0077	0.0038	ug/l	EPA 537M QSM5.1 B-15
Perfluorohexanesulfonic acid		1.62	0.038	0.019	ug/l	EPA 537M QSM5.1 B-15
Perfluorooctanesulfonic acid		1.73	0.077	0.038	ug/l	EPA 537M QSM5.1 B-15
FA55430-2	**015H31UF062618**					
Perfluorohexanoic acid		0.316	0.0077	0.0038	ug/l	EPA 537M QSM5.1 B-15
Perfluoroheptanoic acid		0.114	0.0077	0.0038	ug/l	EPA 537M QSM5.1 B-15
Perfluorooctanoic acid		0.165	0.0077	0.0038	ug/l	EPA 537M QSM5.1 B-15
Perfluorononanoic acid		0.0197	0.0077	0.0038	ug/l	EPA 537M QSM5.1 B-15
Perfluorobutanesulfonic acid		0.173	0.0077	0.0038	ug/l	EPA 537M QSM5.1 B-15
Perfluorohexanesulfonic acid		2.09	0.038	0.019	ug/l	EPA 537M QSM5.1 B-15
Perfluorooctanesulfonic acid		2.30	0.077	0.038	ug/l	EPA 537M QSM5.1 B-15
FA55430-3	**EB062618**					
No hits reported in this sample.						
FA55430-4	**FB062618**					
No hits reported in this sample.						
FA55430-5	**TB062618**					
No hits reported in this sample.						
FA55430-6	**015G29UF062618**					
Perfluorohexanoic acid		0.281	0.0077	0.0038	ug/l	EPA 537M QSM5.1 B-15
Perfluoroheptanoic acid		0.142	0.0077	0.0038	ug/l	EPA 537M QSM5.1 B-15
Perfluorooctanoic acid		0.233	0.0077	0.0038	ug/l	EPA 537M QSM5.1 B-15
Perfluorononanoic acid		0.0307	0.0077	0.0038	ug/l	EPA 537M QSM5.1 B-15
Perfluorobutanesulfonic acid		0.136	0.0077	0.0038	ug/l	EPA 537M QSM5.1 B-15
Perfluorohexanesulfonic acid		2.29	0.077	0.038	ug/l	EPA 537M QSM5.1 B-15
Perfluorooctanesulfonic acid		3.15	0.15	0.077	ug/l	EPA 537M QSM5.1 B-15
FA55430-7	**015G27UF062618**					
Perfluorohexanoic acid [a]		0.428	0.0077	0.0038	ug/l	EPA 537M QSM5.1 B-15

Summary of Hits

Job Number: FA55430
Account: Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN
Collected: 06/26/18 thru 06/27/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
Perfluoroheptanoic acid [a]		0.160	0.0077	0.0038	ug/l	EPA 537M QSM5.1 B-15
Perfluorooctanoic acid [a]		0.210	0.0077	0.0038	ug/l	EPA 537M QSM5.1 B-15
Perfluorononanoic acid [a]		0.00995	0.0077	0.0038	ug/l	EPA 537M QSM5.1 B-15
Perfluorobutanesulfonic acid [a]		0.230	0.0077	0.0038	ug/l	EPA 537M QSM5.1 B-15
Perfluorohexanesulfonic acid [a]		2.53 E	0.0077	0.0038	ug/l	EPA 537M QSM5.1 B-15
Perfluorohexanesulfonic acid		2.40	0.083	0.042	ug/l	EPA 537M QSM5.1 B-15
Perfluorooctanesulfonic acid [a]		0.555	0.015	0.0077	ug/l	EPA 537M QSM5.1 B-15
FA55430-8	**015G33UF062718**					
Perfluorohexanoic acid		1.13	0.17	0.083	ug/l	EPA 537M QSM5.1 B-15
Perfluorohexanoic acid		1.56 E	0.0083	0.0042	ug/l	EPA 537M QSM5.1 B-15
Perfluoroheptanoic acid		0.742	0.0083	0.0042	ug/l	EPA 537M QSM5.1 B-15
Perfluoroheptanoic acid		0.535	0.17	0.083	ug/l	EPA 537M QSM5.1 B-15
Perfluorooctanoic acid		0.731	0.0083	0.0042	ug/l	EPA 537M QSM5.1 B-15
Perfluorooctanoic acid		0.524	0.17	0.083	ug/l	EPA 537M QSM5.1 B-15
Perfluorononanoic acid		0.0541	0.0083	0.0042	ug/l	EPA 537M QSM5.1 B-15
Perfluorobutanesulfonic acid		0.581	0.17	0.083	ug/l	EPA 537M QSM5.1 B-15
Perfluorobutanesulfonic acid		0.782	0.0083	0.0042	ug/l	EPA 537M QSM5.1 B-15
Perfluorohexanesulfonic acid		9.00 E	0.0083	0.0042	ug/l	EPA 537M QSM5.1 B-15
Perfluorohexanesulfonic acid		5.84	0.17	0.083	ug/l	EPA 537M QSM5.1 B-15
Perfluorooctanesulfonic acid		5.31	0.33	0.17	ug/l	EPA 537M QSM5.1 B-15
Perfluorooctanesulfonic acid		9.64 E	0.017	0.0083	ug/l	EPA 537M QSM5.1 B-15

(a) Confirmation run.

Sample Results

Report of Analysis

SGS North America Inc.

Report of Analysis

Client Sample ID:	015G31UF062618		
Lab Sample ID:	FA55430-1	**Date Sampled:**	06/26/18
Matrix:	AQ - Ground Water	**Date Received:**	06/28/18
Method:	EPA 537M QSM5.1 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 15/JM 50; Millington, TN		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q16587.D	1	07/06/18 00:05	NG	07/03/18 09:30	OP70743	S2Q291
Run #2	2Q16694.D	5	07/07/18 12:03	NG	07/03/18 09:30	OP70743	S2Q292

	Initial Volume	Final Volume
Run #1	130 ml	1.0 ml
Run #2	130 ml	1.0 ml

EPA 537 Method List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
307-24-4	Perfluorohexanoic acid	0.295	0.0077	0.0038	0.0019	ug/l	
375-85-9	Perfluoroheptanoic acid	0.106	0.0077	0.0038	0.0019	ug/l	
335-67-1	Perfluorooctanoic acid	0.142	0.0077	0.0038	0.0019	ug/l	
375-95-1	Perfluorononanoic acid	0.0165	0.0077	0.0038	0.0019	ug/l	
335-76-2	Perfluorodecanoic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
307-55-1	Perfluorododecanoic acid [a]	0.0038 U	0.0077	0.0038	0.0029	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
376-06-7	Perfluorotetradecanoic acid [a]	0.0038 U	0.0077	0.0038	0.0019	ug/l	
PERFLUOROALKYLSULFONATES							
375-73-5	Perfluorobutanesulfonic acid	0.167	0.0077	0.0038	0.0019	ug/l	
355-46-4	Perfluorohexanesulfonic acid	1.62 [b]	0.038	0.019	0.0096	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	1.73 [b]	0.077	0.038	0.019	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.015 U	0.038	0.015	0.0077	ug/l	
2991-50-6	EtFOSAA	0.015 U	0.038	0.015	0.0077	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	75%		50-150%
	13C5-PFPeA	73%		50-150%
	13C5-PFHxA	74%		50-150%
	13C4-PFHpA	69%		50-150%
	13C8-PFOA	71%		50-150%
	13C9-PFNA	71%		50-150%
	13C6-PFDA	66%		50-150%
	13C7-PFUnDA	56%		50-150%
	13C2-PFDoDA	46% [c]		50-150%
	13C2-PFTeDA	47% [c]		50-150%

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:	015G31UF062618		
Lab Sample ID:	FA55430-1	**Date Sampled:**	06/26/18
Matrix:	AQ - Ground Water	**Date Received:**	06/28/18
Method:	EPA 537M QSM5.1 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 15/JM 50; Millington, TN		

EPA 537 Method List

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C3-PFBS	86%		50-150%
	13C3-PFHxS		90%	50-150%
	13C8-PFOS		84%	50-150%
	13C8-FOSA	20% [c]		50-150%
	d3-MeFOSAA	59%		50-150%
	13C2-4:2FTS	85%		50-150%
	13C2-6:2FTS	83%		50-150%
	13C2-8:2FTS	76%		50-150%

(a) Associated ID Standard outside control limits due to matrix interference.
(b) Result is from Run# 2
(c) Outside control limits. Insufficient sample for re-extraction.

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

SGS North America Inc.

Report of Analysis

Client Sample ID:	015H31UF062618		
Lab Sample ID:	FA55430-2	**Date Sampled:**	06/26/18
Matrix:	AQ - Ground Water	**Date Received:**	06/28/18
Method:	EPA 537M QSM5.1 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 15/JM 50; Millington, TN		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q17039.D	1	07/13/18 01:10	NG	07/10/18 09:00	OP70810	S2Q295
Run #2	2Q17113.D	5	07/14/18 03:52	NG	07/10/18 09:00	OP70810	S2Q296

	Initial Volume	Final Volume
Run #1	130 ml	1.0 ml
Run #2	130 ml	1.0 ml

EPA 537 Method List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
307-24-4	Perfluorohexanoic acid	0.316	0.0077	0.0038	0.0019	ug/l	
375-85-9	Perfluoroheptanoic acid	0.114	0.0077	0.0038	0.0019	ug/l	
335-67-1	Perfluorooctanoic acid	0.165	0.0077	0.0038	0.0019	ug/l	
375-95-1	Perfluorononanoic acid	0.0197	0.0077	0.0038	0.0019	ug/l	
335-76-2	Perfluorodecanoic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
307-55-1	Perfluorododecanoic acid [a]	0.0038 U	0.0077	0.0038	0.0029	ug/l	
72629-94-8	Perfluorotridecanoic acid [a]	0.0038 U	0.0077	0.0038	0.0019	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
PERFLUOROALKYLSULFONATES							
375-73-5	Perfluorobutanesulfonic acid	0.173	0.0077	0.0038	0.0019	ug/l	
355-46-4	Perfluorohexanesulfonic acid	2.09 [b]	0.038	0.019	0.0096	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	2.30 [b]	0.077	0.038	0.019	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.015 U	0.038	0.015	0.0077	ug/l	
2991-50-6	EtFOSAA	0.015 U	0.038	0.015	0.0077	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	90%		50-150%
	13C5-PFPeA	86%		50-150%
	13C5-PFHxA	85%		50-150%
	13C4-PFHpA	83%		50-150%
	13C8-PFOA	85%		50-150%
	13C9-PFNA	80%		50-150%
	13C6-PFDA	69%		50-150%
	13C7-PFUnDA	64%		50-150%
	13C2-PFDoDA	64%		50-150%
	13C2-PFTeDA	60%		50-150%

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:	015H31UF062618		
Lab Sample ID:	FA55430-2	**Date Sampled:**	06/26/18
Matrix:	AQ - Ground Water	**Date Received:**	06/28/18
Method:	EPA 537M QSM5.1 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 15/JM 50; Millington, TN		

EPA 537 Method List

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C3-PFBS	82%		50-150%
	13C3-PFHxS		68%	50-150%
	13C8-PFOS		55%	50-150%
	13C8-FOSA	66%		50-150%
	d3-MeFOSAA	60%		50-150%
	13C2-4:2FTS	83%		50-150%
	13C2-6:2FTS	80%		50-150%
	13C2-8:2FTS	59%		50-150%

(a) Associated BS outside DOD QSM control limits high. Sample was ND.
(b) Result is from Run# 2

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

SGS North America Inc.

Report of Analysis

Client Sample ID:	EB062618		
Lab Sample ID:	FA55430-3	**Date Sampled:**	06/26/18
Matrix:	AQ - Equipment Blank	**Date Received:**	06/28/18
Method:	EPA 537M QSM5.1 B-15 IN HOUSE	**Percent Solids:**	n/a
Project:	SWMU 15/JM 50; Millington, TN		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q16973.D	1	07/11/18 21:31	NG	07/09/18 16:00	OP70805	S2Q294
Run #2							

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2		

EPA 537 Method List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
307-24-4	Perfluorohexanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0031	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONATES							
375-73-5	Perfluorobutanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0083 U	0.017	0.0083	0.0042	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.017 U	0.042	0.017	0.0083	ug/l	
2991-50-6	EtFOSAA	0.017 U	0.042	0.017	0.0083	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	98%		50-150%
	13C5-PFPeA	100%		50-150%
	13C5-PFHxA	102%		50-150%
	13C4-PFHpA	109%		50-150%
	13C8-PFOA	115%		50-150%
	13C9-PFNA	100%		50-150%
	13C6-PFDA	99%		50-150%
	13C7-PFUnDA	83%		50-150%
	13C2-PFDoDA	87%		50-150%
	13C2-PFTeDA	106%		50-150%

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:	EB062618		
Lab Sample ID:	FA55430-3	**Date Sampled:**	06/26/18
Matrix:	AQ - Equipment Blank	**Date Received:**	06/28/18
Method:	EPA 537M QSM5.1 B-15 IN HOUSE	**Percent Solids:**	n/a
Project:	SWMU 15/JM 50; Millington, TN		

EPA 537 Method List

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C3-PFBS	99%		50-150%
	13C3-PFHxS	101%		50-150%
	13C8-PFOS	92%		50-150%
	13C8-FOSA	99%		50-150%
	d3-MeFOSAA	90%		50-150%
	13C2-4:2FTS	95%		50-150%
	13C2-6:2FTS	109%		50-150%
	13C2-8:2FTS	83%		50-150%

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

SGS North America Inc.

Report of Analysis

Client Sample ID: FB062618
Lab Sample ID: FA55430-4
Matrix: AQ - Field Blank Water
Method: EPA 537M QSM5.1 B-15 IN HOUSE
Project: SWMU 15/JM 50; Millington, TN

Date Sampled: 06/26/18
Date Received: 06/28/18
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q16974.D	1	07/11/18 21:52	NG	07/09/18 16:00	OP70805	S2Q294
Run #2							

	Initial Volume	Final Volume
Run #1	130 ml	1.0 ml
Run #2		

EPA 537 Method List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
307-24-4	Perfluorohexanoic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
335-67-1	Perfluorooctanoic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
375-95-1	Perfluorononanoic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
335-76-2	Perfluorodecanoic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
307-55-1	Perfluorododecanoic acid	0.0038 U	0.0077	0.0038	0.0029	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
PERFLUOROALKYLSULFONATES							
375-73-5	Perfluorobutanesulfonic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0077 U	0.015	0.0077	0.0038	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.015 U	0.038	0.015	0.0077	ug/l	
2991-50-6	EtFOSAA	0.015 U	0.038	0.015	0.0077	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	95%		50-150%
	13C5-PFPeA	96%		50-150%
	13C5-PFHxA	93%		50-150%
	13C4-PFHpA	98%		50-150%
	13C8-PFOA	101%		50-150%
	13C9-PFNA	83%		50-150%
	13C6-PFDA	76%		50-150%
	13C7-PFUnDA	69%		50-150%
	13C2-PFDoDA	67%		50-150%
	13C2-PFTeDA	58%		50-150%

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:	FB062618		
Lab Sample ID:	FA55430-4	**Date Sampled:**	06/26/18
Matrix:	AQ - Field Blank Water	**Date Received:**	06/28/18
Method:	EPA 537M QSM5.1 B-15 IN HOUSE	**Percent Solids:**	n/a
Project:	SWMU 15/JM 50; Millington, TN		

EPA 537 Method List

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C3-PFBS	88%		50-150%
	13C3-PFHxS	81%		50-150%
	13C8-PFOS	68%		50-150%
	13C8-FOSA	71%		50-150%
	d3-MeFOSAA	71%		50-150%
	13C2-4:2FTS	88%		50-150%
	13C2-6:2FTS	93%		50-150%
	13C2-8:2FTS	60%		50-150%

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

SGS North America Inc.

Report of Analysis

Client Sample ID:	TB062618		
Lab Sample ID:	FA55430-5	**Date Sampled:**	06/26/18
Matrix:	AQ - Trip Blank Water	**Date Received:**	06/28/18
Method:	EPA 537M QSM5.1 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 15/JM 50; Millington, TN		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q16595.D	1	07/06/18 02:43	NG	07/03/18 09:30	OP70743	S2Q291
Run #2	2Q17040.D	1	07/13/18 01:31	NG	07/10/18 09:00	OP70810	S2Q295

	Initial Volume	Final Volume
Run #1	130 ml	1.0 ml
Run #2	120 ml	1.0 ml

EPA 537 Method List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
307-24-4	Perfluorohexanoic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
307-24-4	Perfluorohexanoic acid	0.0042 U [a]	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0042 U [a]	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
335-67-1	Perfluorooctanoic acid	0.0042 U [a]	0.0083	0.0042	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
375-95-1	Perfluorononanoic acid	0.0042 U [a]	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U [a]	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U [a]	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0038 U	0.0077	0.0038	0.0029	ug/l	
307-55-1	Perfluorododecanoic acid [b]	0.0042 U [a]	0.0083	0.0042	0.0031	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
72629-94-8	Perfluorotridecanoic acid [b]	0.0042 U [a]	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U [a]	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONATES							
375-73-5	Perfluorobutanesulfonic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
375-73-5	Perfluorobutanesulfonic acid	0.0042 U [a]	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0042 U [a]	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0077 U	0.015	0.0077	0.0038	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0083 U [a]	0.017	0.0083	0.0042	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.015 U	0.038	0.015	0.0077	ug/l	
2355-31-9	MeFOSAA	0.017 U [a]	0.042	0.017	0.0083	ug/l	
2991-50-6	EtFOSAA	0.015 U	0.038	0.015	0.0077	ug/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:	TB062618		
Lab Sample ID:	FA55430-5	**Date Sampled:**	06/26/18
Matrix:	AQ - Trip Blank Water	**Date Received:**	06/28/18
Method:	EPA 537M QSM5.1 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 15/JM 50; Millington, TN		

EPA 537 Method List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
2991-50-6	EtFOSAA	0.017 U [a]	0.042	0.017	0.0083	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	89%		50-150%
	13C5-PFPeA	87%		50-150%
	13C5-PFHxA	87%		50-150%
	13C4-PFHpA	87%		50-150%
	13C8-PFOA	84%		50-150%
	13C9-PFNA	79%		50-150%
	13C6-PFDA	77%		50-150%
	13C7-PFUnDA	66%		50-150%
	13C2-PFDoDA	51%		50-150%
	13C2-PFTeDA	50%		50-150%
	13C3-PFBS	88%		50-150%
	13C3-PFHxS	86%		50-150%
	13C8-PFOS	82%		50-150%
	13C8-FOSA		55%	50-150%
	d3-MeFOSAA	69%		50-150%
	13C2-4:2FTS	83%		50-150%
	13C2-6:2FTS	79%		50-150%
	13C2-8:2FTS	68%		50-150%

(a) Result is from Run# 2
(b) Associated BS outside DOD QSM control limits high. Sample was ND.

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

SGS North America Inc.

Report of Analysis

Client Sample ID:	015G29UF062618		
Lab Sample ID:	FA55430-6	**Date Sampled:**	06/26/18
Matrix:	AQ - Ground Water	**Date Received:**	06/28/18
Method:	EPA 537M QSM5.1 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 15/JM 50; Millington, TN		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q17041.D	1	07/13/18 01:52	NG	07/10/18 09:00	OP70810	S2Q295
Run #2	2Q17116.D	10	07/14/18 04:54	NG	07/10/18 09:00	OP70810	S2Q296

	Initial Volume	Final Volume
Run #1	130 ml	1.0 ml
Run #2	130 ml	1.0 ml

EPA 537 Method List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
307-24-4	Perfluorohexanoic acid	0.281	0.0077	0.0038	0.0019	ug/l	
375-85-9	Perfluoroheptanoic acid	0.142	0.0077	0.0038	0.0019	ug/l	
335-67-1	Perfluorooctanoic acid	0.233	0.0077	0.0038	0.0019	ug/l	
375-95-1	Perfluorononanoic acid	0.0307	0.0077	0.0038	0.0019	ug/l	
335-76-2	Perfluorodecanoic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
307-55-1	Perfluorododecanoic acid [a]	0.0038 U	0.0077	0.0038	0.0029	ug/l	
72629-94-8	Perfluorotridecanoic acid [a]	0.0038 U	0.0077	0.0038	0.0019	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
PERFLUOROALKYLSULFONATES							
375-73-5	Perfluorobutanesulfonic acid	0.136	0.0077	0.0038	0.0019	ug/l	
355-46-4	Perfluorohexanesulfonic acid	2.29 [b]	0.077	0.038	0.019	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	3.15 [b]	0.15	0.077	0.038	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.015 U	0.038	0.015	0.0077	ug/l	
2991-50-6	EtFOSAA	0.015 U	0.038	0.015	0.0077	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	72%		50-150%
	13C5-PFPeA	76%		50-150%
	13C5-PFHxA	78%		50-150%
	13C4-PFHpA	70%		50-150%
	13C8-PFOA	70%		50-150%
	13C9-PFNA	65%		50-150%
	13C6-PFDA	61%		50-150%
	13C7-PFUnDA	58%		50-150%
	13C2-PFDoDA	57%		50-150%
	13C2-PFTeDA	52%		50-150%

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:	015G29UF062618		
Lab Sample ID:	FA55430-6	**Date Sampled:**	06/26/18
Matrix:	AQ - Ground Water	**Date Received:**	06/28/18
Method:	EPA 537M QSM5.1 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 15/JM 50; Millington, TN		

EPA 537 Method List

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C3-PFBS	69%		50-150%
	13C3-PFHxS		63%	50-150%
	13C8-PFOS		57%	50-150%
	13C8-FOSA	60%		50-150%
	d3-MeFOSAA	50%		50-150%
	13C2-4:2FTS	75%		50-150%
	13C2-6:2FTS	70%		50-150%
	13C2-8:2FTS	53%		50-150%

(a) Associated BS outside DOD QSM control limits high. Sample was ND.
(b) Result is from Run# 2

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

SGS North America Inc.

Report of Analysis

Client Sample ID:	015G27UF062618		
Lab Sample ID:	FA55430-7	**Date Sampled:**	06/26/18
Matrix:	AQ - Ground Water	**Date Received:**	06/28/18
Method:	EPA 537M QSM5.1 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 15/JM 50; Millington, TN		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	2Q17042.D	1	07/13/18 02:12	NG	07/10/18 09:00	OP70810	S2Q295
Run #2	2Q16597.D	1	07/06/18 03:22	NG	07/03/18 09:30	OP70743	S2Q291
Run #3	2Q16699.D	10	07/07/18 13:42	NG	07/03/18 09:30	OP70743	S2Q292

	Initial Volume	Final Volume
Run #1	130 ml	1.0 ml
Run #2	120 ml	1.0 ml
Run #3	120 ml	1.0 ml

EPA 537 Method List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
307-24-4	Perfluorohexanoic acid	0.428	0.0077	0.0038	0.0019	ug/l	
375-85-9	Perfluoroheptanoic acid	0.160	0.0077	0.0038	0.0019	ug/l	
335-67-1	Perfluorooctanoic acid	0.210	0.0077	0.0038	0.0019	ug/l	
375-95-1	Perfluorononanoic acid	0.00995	0.0077	0.0038	0.0019	ug/l	
335-76-2	Perfluorodecanoic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
307-55-1	Perfluorododecanoic acid [b]	0.0038 U	0.0077	0.0038	0.0029	ug/l	
72629-94-8	Perfluorotridecanoic acid [b]	0.0038 U	0.0077	0.0038	0.0019	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
PERFLUOROALKYLSULFONATES							
375-73-5	Perfluorobutanesulfonic acid	0.230	0.0077	0.0038	0.0019	ug/l	
355-46-4	Perfluorohexanesulfonic acid	2.40 [c]	0.083	0.042	0.021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	2.53	0.0077	0.0038	0.0019	ug/l	E
1763-23-1	Perfluorooctanesulfonic acid	0.555	0.015	0.0077	0.0038	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.015 U	0.038	0.015	0.0077	ug/l	
2991-50-6	EtFOSAA	0.015 U	0.038	0.015	0.0077	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Run# 3	Limits
	13C4-PFBA	79%	78%		50-150%
	13C5-PFPeA	80%	78%		50-150%
	13C5-PFHxA	80%	80%		50-150%
	13C4-PFHpA	77%	77%		50-150%
	13C8-PFOA	80%	77%		50-150%
	13C9-PFNA	77%	79%		50-150%
	13C6-PFDA	72%	76%		50-150%

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:	015G27UF062618		
Lab Sample ID:	FA55430-7	**Date Sampled:**	06/26/18
Matrix:	AQ - Ground Water	**Date Received:**	06/28/18
Method:	EPA 537M QSM5.1 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 15/JM 50; Millington, TN		

EPA 537 Method List

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Run# 3	Limits
	13C7-PFUnDA	63%	60%		50-150%
	13C2-PFDoDA	60%	43% d		50-150%
	13C2-PFTeDA	54%	22% d		50-150%
	13C3-PFBS	78%	80%		50-150%
	13C3-PFHxS	71%		84%	50-150%
	13C8-PFOS	69%	71%		50-150%
	13C8-FOSA	46%	48% d		50-150%
	d3-MeFOSAA	60%	60%		50-150%
	13C2-4:2FTS	77%	82%		50-150%
	13C2-6:2FTS	77%	79%		50-150%
	13C2-8:2FTS	66%	90%		50-150%

(a) Confirmation run.
(b) Associated BS outside DOD QSM control limits high. Sample was ND.
(c) Result is from Run# 3
(d) Outside control limits due to matrix interference.

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

SGS North America Inc.

Report of Analysis

Client Sample ID:	015G33UF062718		
Lab Sample ID:	FA55430-8	**Date Sampled:**	06/27/18
Matrix:	AQ - Ground Water	**Date Received:**	06/28/18
Method:	EPA 537M QSM5.1 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 15/JM 50; Millington, TN		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q17043.D	1	07/13/18 02:33	NG	07/10/18 09:00	OP70810	S2Q295
Run #2	2Q17119.D	20	07/14/18 05:56	NG	07/10/18 09:00	OP70810	S2Q296

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2	120 ml	1.0 ml

EPA 537 Method List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
307-24-4	Perfluorohexanoic acid	1.56	0.0083	0.0042	0.0021	ug/l	E
307-24-4	Perfluorohexanoic acid	1.13 [a]	0.17	0.083	0.042	ug/l	
375-85-9	Perfluoroheptanoic acid	0.742	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.535 [a]	0.17	0.083	0.042	ug/l	
335-67-1	Perfluorooctanoic acid	0.731	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.524 [a]	0.17	0.083	0.042	ug/l	
375-95-1	Perfluorononanoic acid	0.0541	0.0083	0.0042	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.083 U [a]	0.17	0.083	0.042	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.083 U [a]	0.17	0.083	0.042	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.083 U [a]	0.17	0.083	0.042	ug/l	
307-55-1	Perfluorododecanoic acid [b]	0.0042 U	0.0083	0.0042	0.0031	ug/l	
307-55-1	Perfluorododecanoic acid	0.083 U [a]	0.17	0.083	0.063	ug/l	
72629-94-8	Perfluorotridecanoic acid [b]	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.083 U [a]	0.17	0.083	0.042	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.083 U [a]	0.17	0.083	0.042	ug/l	
PERFLUOROALKYLSULFONATES							
375-73-5	Perfluorobutanesulfonic acid	0.782	0.0083	0.0042	0.0021	ug/l	
375-73-5	Perfluorobutanesulfonic acid	0.581 [a]	0.17	0.083	0.042	ug/l	
355-46-4	Perfluorohexanesulfonic acid	9.00	0.0083	0.0042	0.0021	ug/l	E
355-46-4	Perfluorohexanesulfonic acid	5.84 [a]	0.17	0.083	0.042	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	9.64	0.017	0.0083	0.0042	ug/l	E
1763-23-1	Perfluorooctanesulfonic acid	5.31 [a]	0.33	0.17	0.083	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.017 U	0.042	0.017	0.0083	ug/l	
2355-31-9	MeFOSAA	0.33 U [a]	0.83	0.33	0.17	ug/l	
2991-50-6	EtFOSAA	0.017 U	0.042	0.017	0.0083	ug/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:	015G33UF062718		
Lab Sample ID:	FA55430-8	**Date Sampled:**	06/27/18
Matrix:	AQ - Ground Water	**Date Received:**	06/28/18
Method:	EPA 537M QSM5.1 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 15/JM 50; Millington, TN		

EPA 537 Method List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
2991-50-6	EtFOSAA	0.33 U [a]	0.83	0.33	0.17	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	78%		50-150%
	13C5-PFPeA		97%	50-150%
	13C5-PFHxA		101%	50-150%
	13C4-PFHpA	66%		50-150%
	13C8-PFOA	82%		50-150%
	13C9-PFNA	77%		50-150%
	13C6-PFDA	71%		50-150%
	13C7-PFUnDA	63%		50-150%
	13C2-PFDoDA	62%		50-150%
	13C2-PFTeDA	59%		50-150%
	13C3-PFBS	73%		50-150%
	13C3-PFHxS		96%	50-150%
	13C8-PFOS		94%	50-150%
	13C8-FOSA	69%		50-150%
	d3-MeFOSAA	53%		50-150%
	13C2-4:2FTS	75%		50-150%
	13C2-6:2FTS	81%		50-150%
	13C2-8:2FTS	67%		50-150%

(a) Result is from Run# 2
(b) Associated BS outside DOD QSM control limits high. Sample was ND.

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 Limits

FA 55430

CHAIN OF CUSTODY AND ANALYTICAL REQUEST RECORD

COC No. LN062618 | Page 1 of 1

ENSAFE
EnSafe Inc.
800-588-7962

Project Name: SWMU 15 - NSA MidSouth | PO No. 25398 | Project No. 08888137B3 Phase SI SI

Site Location: SWMU 15

Send Results To: Ben Brantley, bbrantley@ensafe.com

Sampler/Site Phone# L. Naik, F. O'connell 901-246-9332

Lab Name: SGS Accutest | Turnaround Time(specify): 14 days

Sample Analysis Requested (*Enter number of containers for each test*)

(3)→ | Total No. of Containers | PFAS - EPA 537 Modified | Extra Volume for MS/MSD | HOLD

Lab ID	Sample ID (sys_samp_code)	Location ID (sys_loc_code)	(mm/dd/yy)	Time (Military) (hhmm)	Matrix Code (1)	Sample Type (2)	Field Filtered (Y/N)	Total No. of Containers	PFAS - EPA 537 Modified	Extra Volume for MS/MSD	HOLD
1	015G31UF062618	015G31UF	06/26/18	13:24	WG	N	N	2	✓		
1	015G31UF062618MS	015G31UF		13:24	WQ	N	N	2	✓		
1	015G31UF062618MSD	015G31UF		13:24	WQ	N	N	2	✓		
2	015H31UF062618			13:24	WG	N	N	2	✓		
3	EB062618	—		13:51	WQ	EB	N	2	✓		
4	FB062618	—		14:00	WQ	FB	N	2	✓		
5	TB062618	—		13:20	WQ	TB	N	2	✓		
6	015G29UF062618	015G29UF		15:30	WG	N	N	2	✓		
7	015G27UF062618	015G27UF	↓	17:00	WG	N	N	2	✓		
8	015G33UF062718	015G33UF	06/27/18	11:00	WG	N	N	2	✓		

Field **Comments:**

Lab **Comments:**

Sample Shipment and Delivery Details

Number of coolers in shipment: 1

Samples Iced?(check) Yes ✓ No

Method of Shipment: FedEx

Airbill No:

Date Shipped: 06/27/2018

	Relinquished by (signature)	Date	Time	Received by (signature)	Date	Time
1	[signature] FF	06/27/18	1650	FedEx	06/27/18	1650
2				[signature]	6/28/18	905
3						

(1) Matrix Code: **AA**=Air, **AQ**=Air QC Matrix, **CK**=Caulk, **GS**=Soil Gas, **LF**=Free Product, **LH**=Liquid Waste, **MS**=Mastic, **Oil**=Oil, **PT**=Paint, **SC**=Cement/Concrete, **SE**=Sediment, **SF**=Filter Sandpack, **SL**=Sludge, **SN**=Miscellaneous Solid/Building Materials, **SO**=Soil, **SQ**=Soil/Solid QC Matrix, **ST**=Solid Waste, **SW**=Swab/Wipe, **TA**=Animal Tissue, **TP**=Plant Tissue, **WG**=Ground Water, **WL**=Leachate, **WO**=Ocean Water, **WP**=Drinking Water, **WQ**=Water QC Matrix, **WS**=Surface Water, **SU**=Storm Water, **WW**=Waste Water

(2) Sample Type: **AB**=Ambient Blank, **EB**=Equipment Blank, **FB**=Field Blank, **FD**=Field Duplicate Sample, **FR**=Field Replicate, **MB**=Material Blank, **N**=Normal Environmental Sample, **RB**=Material Rinse Blank, **TB**=Trip Blank

(3) Preservative added: **HA**=Hydrochloric Acid, **NI**=Nitric Acid, **SH**=Sodium Hydroxide, **SA**=Sulfuric Acid, **AA**=Ascorbic Acid, **HX**=Hexane, **ME**=Methanol, **SB**=sodium bisulfate, **ST**=Sodium Thiosulfate, If **NO preservative** added leave blank

Rev. 12/12

2.1

5.1

5

FA55430: Chain of Custody
Page 1 of 2

SGS Sample Receipt Summary

Job Number: FA55430 **Client:** ENSAFE **Project:** SWMV 15 - NSA MIDSOUTH

Date / Time Received: 6/28/2018 9:00:00 AM **Delivery Method:** FX **Airbill #'s:** 1001891714060003281100434321258176

Therm ID: IR 1; **Therm CF:** 0.1; **# of Coolers:** 1

Cooler Temps (Raw Measured) °C: Cooler 1: (2.0);

Cooler Temps (Corrected) °C: Cooler 1: (2.1);

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 preserved properly	☑		☐	
3. Sufficient volume/containers recvd for analysis:	☑		☐	
4. Condition of sample	Intact			
5. Sample recvd 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 5035 Field Kits: _____ Number of Lab Filtered Metals: _____

Test Strip Lot #s: pH 0-3 230315 pH 10-12 219813A Other: (Specify) _____ _____

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: PETERH Date: 6/28/2018 9:00:00 AM Reviewer: _____ Date: _____

QC Evaluation: DOD QSM5 Limits

Job Number: FA55430
Account: Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN
Collected: 06/26/18 thru 06/27/18

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

No Exceptions found.

* Sample used for QC is not from job FA55430

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
- Isotope Dilution Standard Recovery Summaries
- Initial and Continuing Calibration Summaries

Instrument Blank

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S2Q291-IBLK	2Q16572.D	1	07/05/18	NG	n/a	n/a	S2Q291

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.1 B-15

FA55430-1, FA55430-5, FA55430-7

CAS No.	Compound	Result	RL	MDL	Units	Q
307-24-4	Perfluorohexanoic acid	ND	0.0077	0.0019	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0077	0.0019	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0077	0.0019	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0077	0.0019	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0077	0.0019	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0077	0.0019	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0077	0.0029	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0077	0.0019	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0077	0.0019	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0077	0.0019	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0077	0.0019	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.015	0.0038	ug/l	
2355-31-9	MeFOSAA	ND	0.038	0.0077	ug/l	
2991-50-6	EtFOSAA	ND	0.038	0.0077	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	91%	50-150%
	13C5-PFPeA	91%	50-150%
	13C5-PFHxA	92%	50-150%
	13C4-PFHpA	92%	50-150%
	13C8-PFOA	92%	50-150%
	13C9-PFNA	92%	50-150%
	13C6-PFDA	93%	50-150%
	13C7-PFUnDA	92%	50-150%
	13C2-PFDoDA	90%	50-150%
	13C2-PFTeDA	89%	50-150%
	13C3-PFBS	92%	50-150%
	13C3-PFHxS	92%	50-150%
	13C8-PFOS	91%	50-150%
	13C8-FOSA	100%	50-150%
	d3-MeFOSAA	92%	50-150%
	13C2-4:2FTS	85%	50-150%
	13C2-6:2FTS	85%	50-150%
	13C2-8:2FTS	86%	50-150%

Instrument Blank

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S2Q292-IBLK	2Q16692.D	1	07/07/18	NG	n/a	n/a	S2Q292

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.1 B-15

FA55430-1, FA55430-7

CAS No.	Compound	Result	RL	MDL	Units	Q
355-46-4	Perfluorohexanesulfonic acid	ND	0.0077	0.0019	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.015	0.0038	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	93%	50-150%
	13C5-PFPeA	95%	50-150%
	13C5-PFHxA	96%	50-150%
	13C4-PFHpA	95%	50-150%
	13C8-PFOA	96%	50-150%
	13C9-PFNA	92%	50-150%
	13C6-PFDA	97%	50-150%
	13C7-PFUnDA	92%	50-150%
	13C2-PFDoDA	92%	50-150%
	13C2-PFTeDA	92%	50-150%
	13C3-PFBS	94%	50-150%
	13C3-PFHxS	95%	50-150%
	13C8-PFOS	97%	50-150%
	13C8-FOSA	98%	50-150%
	d3-MeFOSAA	93%	50-150%
	13C2-4:2FTS	87%	50-150%
	13C2-6:2FTS	90%	50-150%
	13C2-8:2FTS	88%	50-150%

Instrument Blank

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S2Q294-IBLK	2Q16896.D	1	07/10/18	NG	n/a	n/a	S2Q294

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.1 B-15

FA55430-3, FA55430-4

CAS No.	Compound	Result	RL	MDL	Units	Q
307-24-4	Perfluorohexanoic acid	ND	0.0077	0.0019	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0077	0.0019	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0077	0.0019	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0077	0.0019	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0077	0.0019	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0077	0.0019	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0077	0.0029	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0077	0.0019	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0077	0.0019	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0077	0.0019	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0077	0.0019	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.015	0.0038	ug/l	
2355-31-9	MeFOSAA	ND	0.038	0.0077	ug/l	
2991-50-6	EtFOSAA	ND	0.038	0.0077	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	90%	50-150%
	13C5-PFPeA	90%	50-150%
	13C5-PFHxA	91%	50-150%
	13C4-PFHpA	93%	50-150%
	13C8-PFOA	92%	50-150%
	13C9-PFNA	92%	50-150%
	13C6-PFDA	91%	50-150%
	13C7-PFUnDA	88%	50-150%
	13C2-PFDoDA	88%	50-150%
	13C2-PFTeDA	88%	50-150%
	13C3-PFBS	90%	50-150%
	13C3-PFHxS	90%	50-150%
	13C8-PFOS	92%	50-150%
	13C8-FOSA	97%	50-150%
	d3-MeFOSAA	90%	50-150%
	13C2-4:2FTS	83%	50-150%
	13C2-6:2FTS	86%	50-150%
	13C2-8:2FTS	82%	50-150%

Instrument Blank

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S2Q295-IBLK	2Q17002.D	1	07/12/18	NG	n/a	n/a	S2Q295

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.1 B-15

FA55430-2, FA55430-5, FA55430-6, FA55430-8

CAS No.	Compound	Result	RL	MDL	Units	Q
307-24-4	Perfluorohexanoic acid	ND	0.0080	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0080	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0080	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0080	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0080	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0080	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0080	0.0030	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0080	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0080	0.0020	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0080	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0080	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.016	0.0040	ug/l	
2355-31-9	MeFOSAA	ND	0.040	0.0080	ug/l	
2991-50-6	EtFOSAA	ND	0.040	0.0080	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	101%	50-150%
	13C5-PFPeA	102%	50-150%
	13C5-PFHxA	102%	50-150%
	13C4-PFHpA	103%	50-150%
	13C8-PFOA	105%	50-150%
	13C9-PFNA	109%	50-150%
	13C6-PFDA	103%	50-150%
	13C7-PFUnDA	103%	50-150%
	13C2-PFDoDA	103%	50-150%
	13C2-PFTeDA	103%	50-150%
	13C3-PFBS	101%	50-150%
	13C3-PFHxS	101%	50-150%
	13C8-PFOS	102%	50-150%
	13C8-FOSA	109%	50-150%
	d3-MeFOSAA	104%	50-150%
	13C2-4:2FTS	95%	50-150%
	13C2-6:2FTS	96%	50-150%
	13C2-8:2FTS	94%	50-150%

Method Blank Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP70743-MB	2Q16575.D	1	07/05/18	NG	07/03/18	OP70743	S2Q291

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.1 B-15

FA55430-1, FA55430-5, FA55430-7

CAS No.	Compound	Result	RL	MDL	Units	Q
307-24-4	Perfluorohexanoic acid	ND	0.0077	0.0019	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0077	0.0019	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0077	0.0019	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0077	0.0019	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0077	0.0019	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0077	0.0019	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0077	0.0029	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0077	0.0019	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0077	0.0019	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0077	0.0019	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0077	0.0019	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.015	0.0038	ug/l	
2355-31-9	MeFOSAA	ND	0.038	0.0077	ug/l	
2991-50-6	EtFOSAA	ND	0.038	0.0077	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	80%	50-150%
	13C5-PFPeA	80%	50-150%
	13C5-PFHxA	80%	50-150%
	13C4-PFHpA	80%	50-150%
	13C8-PFOA	80%	50-150%
	13C9-PFNA	82%	50-150%
	13C6-PFDA	85%	50-150%
	13C7-PFUnDA	72%	50-150%
	13C2-PFDoDA	68%	50-150%
	13C2-PFTeDA	67%	50-150%
	13C3-PFBS	80%	50-150%
	13C3-PFHxS	79%	50-150%
	13C8-PFOS	82%	50-150%
	13C8-FOSA	82%	50-150%
	d3-MeFOSAA	74%	50-150%
	13C2-4:2FTS	75%	50-150%
	13C2-6:2FTS	75%	50-150%
	13C2-8:2FTS	74%	50-150%

Method Blank Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP70805-MB	2Q16960.D	1	07/11/18	NG	07/09/18	OP70805	S2Q294

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.1 B-15

FA55430-3, FA55430-4

CAS No.	Compound	Result	RL	MDL	Units	Q
307-24-4	Perfluorohexanoic acid	ND	0.0083	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0083	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0083	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0083	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0083	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0083	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0083	0.0031	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0083	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0083	0.0021	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0083	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0083	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.017	0.0042	ug/l	
2355-31-9	MeFOSAA	ND	0.042	0.0083	ug/l	
2991-50-6	EtFOSAA	ND	0.042	0.0083	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	94%	50-150%
	13C5-PFPeA	95%	50-150%
	13C5-PFHxA	97%	50-150%
	13C4-PFHpA	102%	50-150%
	13C8-PFOA	98%	50-150%
	13C9-PFNA	82%	50-150%
	13C6-PFDA	76%	50-150%
	13C7-PFUnDA	73%	50-150%
	13C2-PFDoDA	72%	50-150%
	13C2-PFTeDA	72%	50-150%
	13C3-PFBS	89%	50-150%
	13C3-PFHxS	81%	50-150%
	13C8-PFOS	67%	50-150%
	13C8-FOSA	81%	50-150%
	d3-MeFOSAA	73%	50-150%
	13C2-4:2FTS	88%	50-150%
	13C2-6:2FTS	90%	50-150%
	13C2-8:2FTS	60%	50-150%

Method Blank Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP70810-MB	2Q17036.D	1	07/13/18	NG	07/10/18	OP70810	S2Q295

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.1 B-15

FA55430-2, FA55430-5, FA55430-6, FA55430-8

CAS No.	Compound	Result	RL	MDL	Units	Q
307-24-4	Perfluorohexanoic acid	ND	0.0077	0.0019	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0077	0.0019	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0077	0.0019	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0077	0.0019	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0077	0.0019	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0077	0.0019	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0077	0.0029	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0077	0.0019	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0077	0.0019	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0077	0.0019	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0077	0.0019	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.015	0.0038	ug/l	
2355-31-9	MeFOSAA	ND	0.038	0.0077	ug/l	
2991-50-6	EtFOSAA	ND	0.038	0.0077	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	86%	50-150%
	13C5-PFPeA	86%	50-150%
	13C5-PFHxA	86%	50-150%
	13C4-PFHpA	88%	50-150%
	13C8-PFOA	88%	50-150%
	13C9-PFNA	86%	50-150%
	13C6-PFDA	81%	50-150%
	13C7-PFUnDA	76%	50-150%
	13C2-PFDoDA	68%	50-150%
	13C2-PFTeDA	62%	50-150%
	13C3-PFBS	84%	50-150%
	13C3-PFHxS	84%	50-150%
	13C8-PFOS	82%	50-150%
	13C8-FOSA	90%	50-150%
	d3-MeFOSAA	73%	50-150%
	13C2-4:2FTS	79%	50-150%
	13C2-6:2FTS	79%	50-150%
	13C2-8:2FTS	74%	50-150%

Blank Spike Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP70743-BS	2Q16574.D	1	07/05/18	NG	07/03/18	OP70743	S2Q291

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.1 B-15

FA55430-1, FA55430-5, FA55430-7

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
307-24-4	Perfluorohexanoic acid	0.154	0.150	97	63-146
375-85-9	Perfluoroheptanoic acid	0.154	0.167	109	71-138
335-67-1	Perfluorooctanoic acid	0.154	0.165	107	74-137
375-95-1	Perfluorononanoic acid	0.154	0.152	99	76-140
335-76-2	Perfluorodecanoic acid	0.154	0.144	94	65-148
2058-94-8	Perfluoroundecanoic acid	0.154	0.173	112	57-138
307-55-1	Perfluorododecanoic acid	0.154	0.174	113	58-123
72629-94-8	Perfluorotridecanoic acid	0.154	0.179	116	52-130
376-06-7	Perfluorotetradecanoic acid	0.154	0.151	98	59-132
375-73-5	Perfluorobutanesulfonic acid	0.136	0.147	108	73-148
355-46-4	Perfluorohexanesulfonic acid	0.14	0.144	103	74-142
1763-23-1	Perfluorooctanesulfonic acid	0.142	0.169	119	70-134
2355-31-9	MeFOSAA	0.154	0.169	110	57-128
2991-50-6	EtFOSAA	0.154	0.151	98	55-135

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	85%	50-150%
	13C5-PFPeA	84%	50-150%
	13C5-PFHxA	85%	50-150%
	13C4-PFHpA	85%	50-150%
	13C8-PFOA	84%	50-150%
	13C9-PFNA	83%	50-150%
	13C6-PFDA	87%	50-150%
	13C7-PFUnDA	63%	50-150%
	13C2-PFDoDA	57%	50-150%
	13C2-PFTeDA	57%	50-150%
	13C3-PFBS	84%	50-150%
	13C3-PFHxS	85%	50-150%
	13C8-PFOS	85%	50-150%
	13C8-FOSA	83%	50-150%
	d3-MeFOSAA	71%	50-150%
	13C2-4:2FTS	84%	50-150%
	13C2-6:2FTS	84%	50-150%
	13C2-8:2FTS	82%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP70805-BS	2Q16959.D	1	07/11/18	NG	07/09/18	OP70805	S2Q294

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.1 B-15

FA55430-3, FA55430-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
307-24-4	Perfluorohexanoic acid	0.167	0.162	97	63-146
375-85-9	Perfluoroheptanoic acid	0.167	0.189	113	71-138
335-67-1	Perfluorooctanoic acid	0.167	0.177	106	74-137
375-95-1	Perfluorononanoic acid	0.167	0.166	100	76-140
335-76-2	Perfluorodecanoic acid	0.167	0.175	105	65-148
2058-94-8	Perfluoroundecanoic acid	0.167	0.189	113	57-138
307-55-1	Perfluorododecanoic acid	0.167	0.195	117	58-123
72629-94-8	Perfluorotridecanoic acid	0.167	0.210	126	52-130
376-06-7	Perfluorotetradecanoic acid	0.167	0.181	109	59-132
375-73-5	Perfluorobutanesulfonic acid	0.147	0.160	108	73-148
355-46-4	Perfluorohexanesulfonic acid	0.152	0.158	104	74-142
1763-23-1	Perfluorooctanesulfonic acid	0.154	0.192	125	70-134
2355-31-9	MeFOSAA	0.167	0.196	118	57-128
2991-50-6	EtFOSAA	0.167	0.174	104	55-135

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	99%	50-150%
	13C5-PFPeA	99%	50-150%
	13C5-PFHxA	102%	50-150%
	13C4-PFHpA	109%	50-150%
	13C8-PFOA	113%	50-150%
	13C9-PFNA	91%	50-150%
	13C6-PFDA	80%	50-150%
	13C7-PFUnDA	72%	50-150%
	13C2-PFDoDA	72%	50-150%
	13C2-PFTeDA	71%	50-150%
	13C3-PFBS	96%	50-150%
	13C3-PFHxS	94%	50-150%
	13C8-PFOS	71%	50-150%
	13C8-FOSA	78%	50-150%
	d3-MeFOSAA	72%	50-150%
	13C2-4:2FTS	98%	50-150%
	13C2-6:2FTS	105%	50-150%
	13C2-8:2FTS	69%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP70810-BS	2Q17035.D	1	07/12/18	NG	07/10/18	OP70810	S2Q295

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.1 B-15

FA55430-2, FA55430-5, FA55430-6, FA55430-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
307-24-4	Perfluorohexanoic acid	0.154	0.155	101	63-146
375-85-9	Perfluoroheptanoic acid	0.154	0.174	113	71-138
335-67-1	Perfluorooctanoic acid	0.154	0.176	114	74-137
375-95-1	Perfluorononanoic acid	0.154	0.152	99	76-140
335-76-2	Perfluorodecanoic acid	0.154	0.161	105	65-148
2058-94-8	Perfluoroundecanoic acid	0.154	0.179	116	57-138
307-55-1	Perfluorododecanoic acid	0.154	0.195	127*	58-123
72629-94-8	Perfluorotridecanoic acid	0.154	0.221	144*	52-130
376-06-7	Perfluorotetradecanoic acid	0.154	0.179	116	59-132
375-73-5	Perfluorobutanesulfonic acid	0.136	0.148	109	73-148
355-46-4	Perfluorohexanesulfonic acid	0.14	0.151	108	74-142
1763-23-1	Perfluorooctanesulfonic acid	0.142	0.181	127	70-134
2355-31-9	MeFOSAA	0.154	0.184	120	57-128
2991-50-6	EtFOSAA	0.154	0.188	122	55-135

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	74%	50-150%
	13C5-PFPeA	74%	50-150%
	13C5-PFHxA	76%	50-150%
	13C4-PFHpA	75%	50-150%
	13C8-PFOA	78%	50-150%
	13C9-PFNA	79%	50-150%
	13C6-PFDA	73%	50-150%
	13C7-PFUnDA	66%	50-150%
	13C2-PFDoDA	59%	50-150%
	13C2-PFTeDA	57%	50-150%
	13C3-PFBS	74%	50-150%
	13C3-PFHxS	75%	50-150%
	13C8-PFOS	72%	50-150%
	13C8-FOSA	75%	50-150%
	d3-MeFOSAA	61%	50-150%
	13C2-4:2FTS	73%	50-150%
	13C2-6:2FTS	75%	50-150%
	13C2-8:2FTS	73%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP70743-MS	2Q16695.D	5	07/07/18	NG	07/03/18	OP70743	S2Q292
OP70743-MSD	2Q16696.D	5	07/07/18	NG	07/03/18	OP70743	S2Q292
FA55430-1	2Q16587.D	1	07/06/18	NG	07/03/18	OP70743	S2Q291
FA55430-1	2Q16694.D	5	07/07/18	NG	07/03/18	OP70743	S2Q292

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.1 B-15

FA55430-1, FA55430-5, FA55430-7

CAS No.	Compound	FA55430-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
307-24-4	Perfluorohexanoic acid	0.295		0.154	0.448	99	0.154	0.463	109	3	63-146/30
375-85-9	Perfluoroheptanoic acid	0.106		0.154	0.273	109	0.154	0.280	113	3	71-138/30
335-67-1	Perfluorooctanoic acid	0.142		0.154	0.309	109	0.154	0.327	120	6	74-137/30
375-95-1	Perfluorononanoic acid	0.0165		0.154	0.171	100	0.154	0.161	94	6	76-140/30
335-76-2	Perfluorodecanoic acid	0.0077 U		0.154	0.169	110	0.154	0.164	107	3	65-148/30
2058-94-8	Perfluoroundecanoic acid	0.0077 U		0.154	0.174	113	0.154	0.179	116	3	57-138/30
307-55-1	Perfluorododecanoic acid	0.0077 U		0.154	0.184	120	0.154	0.182	118	1	58-123/30
72629-94-8	Perfluorotridecanoic acid	0.0077 U		0.154	0.207	135*	0.154	0.187	122	10	52-130/30
376-06-7	Perfluorotetradecanoic acid	0.0077 U		0.154	0.176	114	0.154	0.170	111	3	59-132/30
375-73-5	Perfluorobutanesulfonic acid	0.167		0.136	0.311	106	0.136	0.323	115	4	73-148/30
355-46-4	Perfluorohexanesulfonic acid	1.62 [b]		0.14	1.72	71* [a]	0.14	1.87	179* [a]	8	74-142/30
1763-23-1	Perfluorooctanesulfonic acid	1.73 [b]		0.142	1.86	91	0.142	2.03	211* [a]	9	70-134/30
2355-31-9	MeFOSAA	0.038 U		0.154	0.175	114	0.154	0.158	103	10	57-128/30
2991-50-6	EtFOSAA	0.038 U		0.154	0.200	130	0.154	0.166	108	19	55-135/30

CAS No.	ID Standard Recoveries	MS	MSD	FA55430-1	FA55430-1	Limits
	13C4-PFBA	84%	79%	75%		50-150%
	13C5-PFPeA	84%	79%	73%		50-150%
	13C5-PFHxA	85%	82%	74%		50-150%
	13C4-PFHpA	83%	80%	69%		50-150%
	13C8-PFOA	86%	80%	71%		50-150%
	13C9-PFNA	79%	84%	71%		50-150%
	13C6-PFDA	81%	84%	66%		50-150%
	13C7-PFUnDA	73%	73%	56%		50-150%
	13C2-PFDoDA	69%	71%	46%* [c]		50-150%
	13C2-PFTeDA	68%	71%	47%* [c]		50-150%
	13C3-PFBS	81%	84%	86%		50-150%
	13C3-PFHxS	85%	85%		90%	50-150%
	13C8-PFOS	80%	81%		84%	50-150%
	13C8-FOSA	88%	51%	20%* [c]		50-150%
	d3-MeFOSAA	77%	85%	59%		50-150%
	13C2-4:2FTS	86%	86%	85%		50-150%
	13C2-6:2FTS	83%	88%	83%		50-150%
	13C2-8:2FTS	79%	80%	76%		50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP70743-MS	2Q16695.D	5	07/07/18	NG	07/03/18	OP70743	S2Q292
OP70743-MSD	2Q16696.D	5	07/07/18	NG	07/03/18	OP70743	S2Q292
FA55430-1	2Q16587.D	1	07/06/18	NG	07/03/18	OP70743	S2Q291
FA55430-1	2Q16694.D	5	07/07/18	NG	07/03/18	OP70743	S2Q292

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.1 B-15

FA55430-1, FA55430-5, FA55430-7

(a) Outside control limits due to high level in sample relative to spike amount.
(b) Result is from Run #2.
(c) Outside control limits. Insufficient sample for re-extraction.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP70805-MS	2Q16980.D	1	07/11/18	NG	07/09/18	OP70805	S2Q294
OP70805-MSD	2Q16981.D	1	07/12/18	NG	07/09/18	OP70805	S2Q294
FA55587-5	2Q16979.D	1	07/11/18	NG	07/09/18	OP70805	S2Q294

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.1 B-15

FA55430-3, FA55430-4

CAS No.	Compound	FA55587-5 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
307-24-4	Perfluorohexanoic acid	0.0357		0.167	0.203	100	0.167	0.208	103	2	63-146/30
375-85-9	Perfluoroheptanoic acid	0.0083	U	0.167	0.186	112	0.167	0.191	115	3	71-138/30
335-67-1	Perfluorooctanoic acid	0.00211	J	0.167	0.172	102	0.167	0.179	106	4	74-137/30
375-95-1	Perfluorononanoic acid	0.0083	U	0.167	0.174	104	0.167	0.181	109	4	76-140/30
335-76-2	Perfluorodecanoic acid	0.0083	U	0.167	0.171	103	0.167	0.182	109	6	65-148/30
2058-94-8	Perfluoroundecanoic acid	0.0083	U	0.167	0.193	116	0.167	0.195	117	1	57-138/30
307-55-1	Perfluorododecanoic acid	0.0083	U	0.167	0.201	121	0.167	0.203	122	1	58-123/30
72629-94-8	Perfluorotridecanoic acid	0.0083	U	0.167	0.218	131*	0.167	0.215	129	1	52-130/30
376-06-7	Perfluorotetradecanoic acid	0.0083	U	0.167	0.181	109	0.167	0.183	110	1	59-132/30
375-73-5	Perfluorobutanesulfonic acid	0.00244	J	0.147	0.158	105	0.147	0.164	110	4	73-148/30
355-46-4	Perfluorohexanesulfonic acid	0.0083	U	0.152	0.159	105	0.152	0.160	105	1	74-142/30
1763-23-1	Perfluorooctanesulfonic acid	0.017	U	0.154	0.188	122	0.154	0.191	124	2	70-134/30
2355-31-9	MeFOSAA	0.042	U	0.167	0.197	118	0.167	0.201	121	2	57-128/30
2991-50-6	EtFOSAA	0.042	U	0.167	0.169	101	0.167	0.180	108	6	55-135/30

CAS No.	ID Standard Recoveries	MS	MSD	FA55587-5	Limits
	13C4-PFBA	100%	105%		50-150%
	13C5-PFPeA	99%	104%		50-150%
	13C5-PFHxA	100%	106%	104%	50-150%
	13C4-PFHpA	106%	113%	111%	50-150%
	13C8-PFOA	104%	115%	107%	50-150%
	13C9-PFNA	92%	86%	83%	50-150%
	13C6-PFDA	82%	74%	74%	50-150%
	13C7-PFUnDA	73%	65%	63%	50-150%
	13C2-PFDoDA	69%	63%	64%	50-150%
	13C2-PFTeDA	64%	62%	65%	50-150%
	13C3-PFBS	101%	103%	101%	50-150%
	13C3-PFHxS	99%	97%	90%	50-150%
	13C8-PFOS	82%	67%	71%	50-150%
	13C8-FOSA	89%	84%		50-150%
	d3-MeFOSAA	77%	69%	71%	50-150%
	13C2-4:2FTS	102%	106%		50-150%
	13C2-6:2FTS	102%	110%		50-150%
	13C2-8:2FTS	71%	64%		50-150%

* = Outside of Control Limits.

Injection Standard Area Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Check Std:	S2Q291-ICC291	**Injection Date:**	07/05/18
Lab File ID:	2Q16569.D	**Injection Time:**	18:09
Instrument ID:	GCMS2Q	**Method:**	EPA 537M QSM5.1 B-15

	IS 1 AREA	RT	IS 2 AREA	RT
Initial Cal [a]	20113	6.80	10665	7.40
Check Std [b]	20113	6.80	10665	7.40
Upper Limit [c]	30170	7.80	15998	8.40
Lower Limit [d]	10057	5.80	5333	6.40

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT
S2Q291-IBLK	20494	6.80	10672	7.40
OP70743-BS	19160	6.80	9663	7.41
OP70743-MB	16572	6.81	8811	7.42
ZZZZZZ	19934	6.81	10449	7.42
ZZZZZZ	17382	6.80	9213	7.41
ZZZZZZ	18544	6.80	9679	7.41
ZZZZZZ	18229	6.80	9532	7.41
ZZZZZZ	18853	6.80	9736	7.41
ZZZZZZ	17207	6.75	8995	7.36
ZZZZZZ	19297	6.75	9742	7.36
ZZZZZZ	17232	6.76	9332	7.36

IS 1 = 13C2-PFOA
IS 2 = 13C4-PFOS

(a) Initial Cal is: S2Q291-ICC291 2Q16569.D 07/05/18 18:09
(b) Check Std Limit = -50 to +50% of initial cal area.
(c) Upper Limit = +50% of initial standard area; Retention time +1 minutes of check standard.
(d) Lower Limit = -50% of initial standard area; Retention time -1 minutes of check standard.

Injection Standard Area Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Check Std:	S2Q291-CC291	**Injection Date:**	07/05/18
Lab File ID:	2Q16584.D	**Injection Time:**	23:06
Instrument ID:	GCMS2Q	**Method:**	EPA 537M QSM5.1 B-15

	IS 1 AREA	RT	IS 2 AREA	RT
Initial Cal [a]	20113	6.80	10665	7.40
Check Std [b]	20081	6.76	10799	7.37
Upper Limit [c]	30170	7.76	15998	8.37
Lower Limit [d]	10057	5.76	5333	6.37

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT
ZZZZZZ	19039	6.76	10026	7.36
FA55430-1	19185	6.76	10017	7.36

IS 1 = 13C2-PFOA
IS 2 = 13C4-PFOS

(a) Initial Cal is: S2Q291-ICC291 2Q16569.D 07/05/18 18:09
(b) Check Std Limit = -50 to +50% of initial cal area.
(c) Upper Limit = +50% of initial standard area; Retention time +1 minutes of check standard.
(d) Lower Limit = -50% of initial standard area; Retention time -1 minutes of check standard.

Injection Standard Area Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Check Std:	S2Q291-CC291	**Injection Date:**	07/06/18
Lab File ID:	2Q16592.D	**Injection Time:**	01:44
Instrument ID:	GCMS2Q	**Method:**	EPA 537M QSM5.1 B-15

	IS 1 AREA	RT	IS 2 AREA	RT
Initial Cal [a]	20113	6.80	10665	7.40
Check Std [b]	20028	6.76	10763	7.37
Upper Limit [c]	30170	7.76	15998	8.37
Lower Limit [d]	10057	5.76	5333	6.37

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT
FA55430-5	19011	6.76	9749	7.37
FA55430-7	18118	6.76	9731	7.37

IS 1 = 13C2-PFOA
IS 2 = 13C4-PFOS

(a) Initial Cal is: S2Q291-ICC291 2Q16569.D 07/05/18 18:09
(b) Check Std Limit = -50 to +50% of initial cal area.
(c) Upper Limit = +50% of initial standard area; Retention time +1 minutes of check standard.
(d) Lower Limit = -50% of initial standard area; Retention time -1 minutes of check standard.

Injection Standard Area Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Check Std:	S2Q292-ICC292	**Injection Date:**	07/07/18
Lab File ID:	2Q16689.D	**Injection Time:**	10:24
Instrument ID:	GCMS2Q	**Method:**	EPA 537M QSM5.1 B-15

	IS 1 AREA	RT	IS 2 AREA	RT
Initial Cal [a]	15081	6.80	8894	7.41
Check Std [b]	15081	6.80	8894	7.41
Upper Limit [c]	22622	7.80	13341	8.41
Lower Limit [d]	7541	5.80	4447	6.41

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT
S2Q292-IBLK	14877	6.80	8678	7.41
FA55430-1	14917	6.80	8526	7.42
OP70743-MS	16023	6.80	8740	7.42
OP70743-MSD	16800	6.80	9543	7.42
FA55430-7	16591	6.80	9741	7.42
ZZZZZZ	19486	6.80	10141	7.42

IS 1 = 13C2-PFOA
IS 2 = 13C4-PFOS

(a) Initial Cal is: S2Q292-ICC292 2Q16689.D 07/07/18 10:24
(b) Check Std Limit = -50 to +50% of initial cal area.
(c) Upper Limit = +50% of initial standard area; Retention time +1 minutes of check standard.
(d) Lower Limit = -50% of initial standard area; Retention time -1 minutes of check standard.

Injection Standard Area Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Check Std:	S2Q294-CC294	**Injection Date:**	07/11/18
Lab File ID:	2Q16957.D	**Injection Time:**	16:01
Instrument ID:	GCMS2Q	**Method:**	EPA 537M QSM5.1 B-15

	IS 1 AREA	RT	IS 2 AREA	RT
Initial Cal [a]	18288	6.95	9552	7.60
Check Std [b]	19720	6.97	10738	7.64
Upper Limit [c]	27432	7.97	14328	8.64
Lower Limit [d]	9144	5.97	4776	6.64

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT
OP70805-BS	20371	6.97	9473	7.64
OP70805-MB	18228	6.98	8463	7.65
ZZZZZZ	20005	6.98	9309	7.65
ZZZZZZ	19255	6.98	9636	7.65
ZZZZZZ	19251	6.98	9526	7.65
ZZZZZZ	17208	6.98	8927	7.65
ZZZZZZ	20013	6.98	9821	7.65
ZZZZZZ	19887	6.98	9586	7.65
ZZZZZZ	18527	6.98	8940	7.65
ZZZZZZ	18445	6.98	9171	7.65

IS 1 = 13C2-PFOA
IS 2 = 13C4-PFOS

(a) Initial Cal is: S2Q294-ICC294 2Q16893.D 07/10/18 17:54
(b) Check Std Limit = -50 to +50% of initial cal area.
(c) Upper Limit = +50% of initial standard area; Retention time +1 minutes of check standard.
(d) Lower Limit = -50% of initial standard area; Retention time -1 minutes of check standard.

Injection Standard Area Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Check Std:	S2Q294-CC294	**Injection Date:**	07/11/18
Lab File ID:	2Q16969.D	**Injection Time:**	20:08
Instrument ID:	GCMS2Q	**Method:**	EPA 537M QSM5.1 B-15

	IS 1 AREA	RT	IS 2 AREA	RT
Initial Cal [a]	18288	6.95	9552	7.60
Check Std [b]	18657	6.98	9754	7.65
Upper Limit [c]	27432	7.98	14328	8.65
Lower Limit [d]	9144	5.98	4776	6.65

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT
ZZZZZZ	21060	6.98	10766	7.65
FA55430-3	20324	6.98	9892	7.65
FA55430-4	18808	6.98	9238	7.65
ZZZZZZ	18819	6.98	9172	7.65
ZZZZZZ	16860	6.98	9001	7.65
FA55587-5	20700	6.98	9846	7.65
OP70805-MS	18908	6.98	9634	7.65
OP70805-MSD	20926	6.98	10171	7.65

IS 1 = 13C2-PFOA
IS 2 = 13C4-PFOS

(a) Initial Cal is: S2Q294-ICC294 2Q16893.D 07/10/18 17:54
(b) Check Std Limit = -50 to +50% of initial cal area.
(c) Upper Limit = +50% of initial standard area; Retention time +1 minutes of check standard.
(d) Lower Limit = -50% of initial standard area; Retention time -1 minutes of check standard.

Injection Standard Area Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Check Std:	S2Q295-CC295	**Injection Date:**	07/12/18
Lab File ID:	2Q17032.D	**Injection Time:**	22:44
Instrument ID:	GCMS2Q	**Method:**	EPA 537M QSM5.1 B-15

	IS 1 AREA	RT	IS 2 AREA	RT
Initial Cal [a]	18335	7.01	10496	7.69
Check Std [b]	17410	6.95	9524	7.62
Upper Limit [c]	27503	7.95	15744	8.62
Lower Limit [d]	9168	5.95	5248	6.62

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT
OP70810-BS	15206	6.95	8135	7.62
OP70810-MB	17264	6.95	9237	7.62
ZZZZZZ	16975	6.95	8862	7.62
FA55430-2	18961	6.95	9278	7.62
FA55430-5	19093	6.95	9755	7.62
FA55430-6	17853	6.95	8884	7.61
FA55430-7 [e]	16640	6.95	8870	7.62
FA55430-8	18111	6.95	8156	7.61

IS 1 = 13C2-PFOA
IS 2 = 13C4-PFOS

(a) Initial Cal is: S2Q295-ICC295 2Q16999.D 07/12/18 11:03
(b) Check Std Limit = -50 to +50% of initial cal area.
(c) Upper Limit = +50% of initial standard area; Retention time +1 minutes of check standard.
(d) Lower Limit = -50% of initial standard area; Retention time -1 minutes of check standard.
(e) Confirmation run.

Injection Standard Area Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Check Std:	S2Q296-CC296	**Injection Date:**	07/14/18
Lab File ID:	2Q17111.D	**Injection Time:**	03:10
Instrument ID:	GCMS2Q	**Method:**	EPA 537M QSM5.1 B-15

	IS 1 AREA	RT	IS 2 AREA	RT
Initial Cal [a]	19827	6.92	10551	7.57
Check Std [b]	18717	6.92	9852	7.57
Upper Limit [c]	29741	7.92	15827	8.57
Lower Limit [d]	9914	5.92	5276	6.57

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT
FA55430-2	20239	6.92	10019	7.57
FA55430-6	20497	6.92	10233	7.57
FA55430-8	20768	6.92	10341	7.57

IS 1 = 13C2-PFOA
IS 2 = 13C4-PFOS

(a) Initial Cal is: S2Q296-ICC296 2Q17073.D 07/13/18 13:55
(b) Check Std Limit = -50 to +50% of initial cal area.
(c) Upper Limit = +50% of initial standard area; Retention time +1 minutes of check standard.
(d) Lower Limit = -50% of initial standard area; Retention time -1 minutes of check standard.

Isotope Dilution Standard Recovery Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Method: EPA 537M QSM5.1 B-15 **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
FA55430-1	2Q16694.D								
FA55430-1	2Q16587.D	75	73	74	69	71	71	66	56
FA55430-2	2Q17039.D	90	86	85	83	85	80	69	64
FA55430-2	2Q17113.D								
FA55430-3	2Q16973.D	98	100	102	109	115	100	99	83
FA55430-4	2Q16974.D	95	96	93	98	101	83	76	69
FA55430-5	2Q17040.D								
FA55430-5	2Q16595.D	89	87	87	87	84	79	77	66
FA55430-6	2Q17041.D	72	76	78	70	70	65	61	58
FA55430-6	2Q17116.D								
FA55430-7	2Q16699.D								
FA55430-7	2Q17042.D	79	80	80	77	80	77	72	63
FA55430-7	2Q16597.D	78	78	80	77	77	79	76	60
FA55430-8	2Q17043.D	78			66	82	77	71	63
FA55430-8	2Q17119.D		97	101					
OP70743-BS	2Q16574.D	85	84	85	85	84	83	87	63
OP70743-MB	2Q16575.D	80	80	80	80	80	82	85	72
OP70743-MS	2Q16695.D	84	84	85	83	86	79	81	73
OP70743-MSD	2Q16696.D	79	79	82	80	80	84	84	73
OP70805-BS	2Q16959.D	99	99	102	109	113	91	80	72
OP70805-MB	2Q16960.D	94	95	97	102	98	82	76	73
OP70805-MS	2Q16980.D	100	99	100	106	104	92	82	73
OP70805-MSD	2Q16981.D	105	104	106	113	115	86	74	65
OP70810-BS	2Q17035.D	74	74	76	75	78	79	73	66
OP70810-MB	2Q17036.D	86	86	86	88	88	86	81	76
S2Q291-IBLK	2Q16572.D	91	91	92	92	92	92	93	92
S2Q292-IBLK	2Q16692.D	93	95	96	95	96	92	97	92
S2Q294-IBLK	2Q16896.D	90	90	91	93	92	92	91	88
S2Q295-IBLK	2Q17002.D	101	102	102	103	105	109	103	103

Isotope Dilution Standards	Recovery Limits
S1 = 13C4-PFBA	50-150%
S2 = 13C5-PFPeA	50-150%
S3 = 13C5-PFHxA	50-150%
S4 = 13C4-PFHpA	50-150%
S5 = 13C8-PFOA	50-150%
S6 = 13C9-PFNA	50-150%
S7 = 13C6-PFDA	50-150%

Isotope Dilution Standard Recovery Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Method: EPA 537M QSM5.1 B-15 **Matrix:** AQ

Samples and QC shown here apply to the above method

Isotope Dilution Standards	Recovery Limits
S8 = 13C7-PFUnDA	50-150%

Isotope Dilution Standard Recovery Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Method: EPA 537M QSM5.1 B-15 **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
FA55430-1	2Q16694.D				90	84			
FA55430-1	2Q16587.D	46* [a]	47* [a]	86			20* [a]	59	85
FA55430-2	2Q17039.D	64	60	82			66	60	83
FA55430-2	2Q17113.D				68	55			
FA55430-3	2Q16973.D	87	106	99	101	92	99	90	95
FA55430-4	2Q16974.D	67	58	88	81	68	71	71	88
FA55430-5	2Q17040.D						55		
FA55430-5	2Q16595.D	51	50	88	86	82		69	83
FA55430-6	2Q17041.D	57	52	69			60	50	75
FA55430-6	2Q17116.D				63	57			
FA55430-7	2Q16699.D				84				
FA55430-7	2Q17042.D	60	54	78	71	69	46*	60	77
FA55430-7	2Q16597.D	43* [b]	22* [b]	80		71	48* [b]	60	82
FA55430-8	2Q17043.D	62	59	73			69	53	75
FA55430-8	2Q17119.D				96	94			
OP70743-BS	2Q16574.D	57	57	84	85	85	83	71	84
OP70743-MB	2Q16575.D	68	67	80	79	82	82	74	75
OP70743-MS	2Q16695.D	69	68	81	85	80	88	77	86
OP70743-MSD	2Q16696.D	71	71	84	85	81	51	85	86
OP70805-BS	2Q16959.D	72	71	96	94	71	78	72	98
OP70805-MB	2Q16960.D	72	72	89	81	67	81	73	88
OP70805-MS	2Q16980.D	69	64	101	99	82	89	77	102
OP70805-MSD	2Q16981.D	63	62	103	97	67	84	69	106
OP70810-BS	2Q17035.D	59	57	74	75	72	75	61	73
OP70810-MB	2Q17036.D	68	62	84	84	82	90	73	79
S2Q291-IBLK	2Q16572.D	90	89	92	92	91	100	92	85
S2Q292-IBLK	2Q16692.D	92	92	94	95	97	98	93	87
S2Q294-IBLK	2Q16896.D	88	88	90	90	92	97	90	83
S2Q295-IBLK	2Q17002.D	103	103	101	101	102	109	104	95

Isotope Dilution Standards	Recovery Limits
S9 = 13C2-PFDoDA	50-150%
S10 = 13C2-PFTeDA	50-150%
S11 = 13C3-PFBS	50-150%
S12 = 13C3-PFHxS	50-150%
S13 = 13C8-PFOS	50-150%
S14 = 13C8-FOSA	50-150%
S15 = d3-MeFOSAA	50-150%

Isotope Dilution Standard Recovery Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Method: EPA 537M QSM5.1 B-15 **Matrix:** AQ

Samples and QC shown here apply to the above method

Isotope Dilution Standards	Recovery Limits
S16 = 13C2-4:2FTS	50-150%

(a) Outside control limits. Insufficient sample for re-extraction.
(b) Outside control limits due to matrix interference.

Isotope Dilution Standard Recovery Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Method: EPA 537M QSM5.1 B-15 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S17	S18
FA55430-1	2Q16694.D		
FA55430-1	2Q16587.D	83	76
FA55430-2	2Q17039.D	80	59
FA55430-2	2Q17113.D		
FA55430-3	2Q16973.D	109	83
FA55430-4	2Q16974.D	93	60
FA55430-5	2Q17040.D		
FA55430-5	2Q16595.D	79	68
FA55430-6	2Q17041.D	70	53
FA55430-6	2Q17116.D		
FA55430-7	2Q16699.D		
FA55430-7	2Q17042.D	77	66
FA55430-7	2Q16597.D	79	90
FA55430-8	2Q17043.D	81	67
FA55430-8	2Q17119.D		
OP70743-BS	2Q16574.D	84	82
OP70743-MB	2Q16575.D	75	74
OP70743-MS	2Q16695.D	83	79
OP70743-MSD	2Q16696.D	88	80
OP70805-BS	2Q16959.D	105	69
OP70805-MB	2Q16960.D	90	60
OP70805-MS	2Q16980.D	102	71
OP70805-MSD	2Q16981.D	110	64
OP70810-BS	2Q17035.D	75	73
OP70810-MB	2Q17036.D	79	74
S2Q291-IBLK	2Q16572.D	85	86
S2Q292-IBLK	2Q16692.D	90	88
S2Q294-IBLK	2Q16896.D	86	82
S2Q295-IBLK	2Q17002.D	96	94

Isotope Dilution Standards	Recovery Limits
S17 = 13C2-6:2FTS	50-150%
S18 = 13C2-8:2FTS	50-150%

Initial Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q291-ICC291
Lab FileID: 2Q16569.D

Initial Calibration ReSponse Factors - D:\MassHunter\Data\0705_PFC_ID_S2Q291\s2q291.batch.bin

Level ID : Calibration File
1 : D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16564.d
2 : D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16565.d
3 : D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16566.d
4 : D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16567.d
5 : D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16568.d
6 : D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16569.d
7 : D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16570.d
8 : D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16571.d

Compound	1	2	3	4	5	6	7	8	AvgRF	%RSD	r^2
1) 13C2-4:2FTS	2.84e+3	3.23e+3	3.39e+3	3.45e+3	3.15e+3	2.86e+3	3.48e+3	3.83e+3	3.28e+3	10.192	0.0000
2) 13C2-6:2FTS	2.28e+3	2.61e+3	2.74e+3	2.75e+3	2.57e+3	2.31e+3	2.80e+3	3.09e+3	2.64e+3	10.075	0.0000
3) 13C2-8:2FTS	2.83e+3	3.19e+3	3.32e+3	3.14e+3	3.12e+3	2.88e+3	3.56e+3	3.92e+3	3.25e+3	11.041	0.0000
4) 13C2-PFDoDA	1.33e+3	1.55e+3	1.57e+3	1.49e+3	1.47e+3	1.30e+3	1.52e+3	1.51e+3	1.47e+3	6.861	0.0000
6) 13C2-PFTeDA	5.61e+2	6.40e+2	6.55e+2	6.33e+2	6.25e+2	5.56e+2	6.42e+2	6.51e+2	6.20e+2	6.314	0.0000
7) 13C3-PFBS	9.95e+2	1.15e+3	1.19e+3	1.21e+3	1.11e+3	9.79e+2	1.11e+3	1.10e+3	1.11e+3	7.484	0.0000
8) 13C3-PFHxS	9.14e+2	1.05e+3	1.08e+3	1.11e+3	1.00e+3	8.80e+2	1.00e+3	9.76e+2	1.00e+3	7.789	0.0000
9) 13C4-PFBA	7.01e+3	7.99e+3	8.30e+3	8.40e+3	7.59e+3	6.72e+3	7.62e+3	7.63e+3	7.66e+3	7.603	0.0000
10) 13C4-PFHpA	2.96e+3	3.41e+3	3.50e+3	3.59e+3	3.21e+3	2.84e+3	3.16e+3	3.12e+3	3.22e+3	8.063	0.0000
12) 13C5-PFHxA	3.02e+3	3.47e+3	3.61e+3	3.60e+3	3.31e+3	2.89e+3	3.22e+3	3.10e+3	3.28e+3	8.228	0.0000
13) 13C5-PFPeA	3.35e+3	3.83e+3	3.93e+3	4.00e+3	3.61e+3	3.19e+3	3.63e+3	3.61e+3	3.64e+3	7.573	0.0000
14) 13C6-PFDA	1.68e+3	1.98e+3	2.08e+3	1.91e+3	1.86e+3	1.64e+3	1.87e+3	1.81e+3	1.85e+3	7.771	0.0000
15) 13C7-PFUnDA	1.89e+3	2.14e+3	2.20e+3	2.10e+3	2.06e+3	1.82e+3	2.10e+3	2.05e+3	2.05e+3	6.314	0.0000
16) 13C8-FOSA	1.71e+3	1.94e+3	2.02e+3	1.87e+3	1.82e+3	1.57e+3	1.64e+3	1.49e+3	1.76e+3	10.638	0.0000
17) 13C8-PFOA	1.57e+3	1.83e+3	1.92e+3	1.89e+3	1.73e+3	1.55e+3	1.73e+3	1.72e+3	1.74e+3	7.838	0.0000
18) 13C8-PFOS	4.58e+2	5.20e+2	5.16e+2	4.99e+2	4.99e+2	4.39e+2	5.00e+2	4.88e+2	4.90e+2	5.716	0.0000
19) 13C9-PFNA	1.07e+3	1.28e+3	1.28e+3	1.23e+3	1.19e+3	1.07e+3	1.22e+3	1.19e+3	1.19e+3	7.039	0.0000
23) d3-MeFOSAA	8.19e+2	9.04e+2	9.55e+2	9.11e+2	8.85e+2	7.86e+2	8.80e+2	8.84e+2	8.78e+2	6.041	0.0000
5) 13C2-PFOA	----------ISTD----------										
24) M2-PFOA	1.0001	0.9996	1.0001	0.9993	0.9999	0.9998	1.0004	1.0001	0.9999	0.034	0.0000
11) 13C4-PFOS	----------ISTD----------										
46) M4-PFOS	1.0000	0.9996	0.9990	0.9995	0.9996	0.9989	1.0003	1.0007	0.9997	0.061	0.0000
47) M4-PFBA	----------ISTD----------										
28) PFBA	0.1586	0.1614	0.1632	0.1594	0.1603	0.1801	0.1614	0.1600	0.1630	4.309	0.9993
48) M5-PFPeA	----------ISTD----------										
41) PFPeA	-----	1.1288	1.0484	0.9763	0.9843	1.0958	0.9702	0.9597	1.0234	6.628	0.9990
49) M5-PFHxA	----------ISTD----------										
35) PFHxA	0.3190	0.3452	0.3124	0.3243	0.3220	0.3564	0.3231	0.3240	0.3283	4.486	0.9995
50) M4-PFHpA	----------ISTD----------										
33) PFHpA	0.6796	0.7351	0.6818	0.7004	0.7108	0.8152	0.7128	0.7086	0.7180	6.000	0.9990
51) M8-PFOA	----------ISTD----------										
39) PFOA	0.6463	0.5309	0.5201	0.5192	0.5046	0.5508	0.5041	0.4992	0.5344	9.027	0.9995
52) M9-PFNA	----------ISTD----------										
37) PFNA	0.3863	0.3965	0.4490	0.3831	0.4096	0.4671	0.3931	0.3955	0.4100	7.568	0.9985
53) M6-PFDA	----------ISTD----------										
30) PFDA	0.3939	0.3639	0.3562	0.3570	0.3526	0.4177	0.3618	0.3506	0.3692	6.459	0.9992
54) M7-PFUnDA	----------ISTD----------										
32) PFDS	0.1650	0.1816	0.1748	0.1822	0.1809	0.2052	0.1760	0.1795	0.1807	6.294	0.9989
45) PFUnDA	0.4460	0.4927	0.4822	0.4718	0.4784	0.5333	0.4698	0.4684	0.4803	5.258	0.9991
55) M2-PFDoDA	----------ISTD----------										
31) PFDoDA	0.5591	0.5500	0.5290	0.5089	0.5148	0.5682	0.4838	0.4848	0.5248	6.172	0.9990
56) M2-PFTeDA	----------ISTD----------										
43) PFTeDA	0.6873	0.6730	0.6232	0.6057	0.6074	0.6709	0.5855	0.5549	0.6260	7.505	0.9995
44) PFTrDA	0.8655	0.9470	0.9081	0.8735	0.8625	0.9812	0.8654	0.8309	0.8918	5.621	0.9995
57) M8-FOSA	----------ISTD----------										
26) FOSA	0.3783	0.4957	0.4531	0.4954	0.4699	0.5431	0.4852	0.4827	0.4754	9.894	0.9995

Initial Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q291-ICC291
Lab FileID: 2Q16569.D

58) M3-PFBS	----------ISTD----------										
29) PFBS	1.1991	1.3085	1.3262	1.3188	1.3390	1.5067	1.3279	1.3398	1.3333	6.279	0.9993
42) PFPeS	0.8212	0.8240	0.7771	0.8457	0.7889	0.9055	0.8152	0.8200	0.8247	4.727	0.9995
59) M3-PFHxS	----------ISTD----------										
34) PFHpS	0.5354	0.5364	0.5499	0.5685	0.5632	0.6461	0.5718	0.5790	0.5688	6.178	0.9993
36) PFHxS	1.0343	1.0474	1.0740	1.1050	1.0768	1.2406	1.0870	1.1096	1.0968	5.793	0.9992
60) M8-PFOS	----------ISTD----------										
38) PFNS	0.7922	0.8401	0.9719	0.9342	0.9464	1.0059	0.9053	0.9033	0.9124	7.607	0.9994
40) PFOS	1.3257	1.3412	1.2940	1.2056	1.1961	1.3597	1.1790	1.2095	1.2638	5.833	0.9991
61) M2-4:2FTS	----------ISTD----------										
20) 4:2FTS	0.4842	0.5300	0.5061	0.4951	0.5011	0.5624	0.4582	0.4115	0.4935	9.177	0.
62) M2-6:2FTS	----------ISTD----------										
21) 6:2FTS	0.4641	0.4922	0.5103	0.4899	0.4844	0.5274	0.4464	0.3978	0.4765	8.499	0.9994
63) M2-8:2FTS	----------ISTD----------										
22) 8:2FTS	0.5285	0.5559	0.5790	0.5464	0.5435	0.5807	0.4842	0.4352	0.5317	9.314	0.9992
64) M3-MeFOSAA	----------ISTD----------										
25) EtFOSAA	0.2876	0.3950	0.3163	0.2894	0.3004	0.3313	0.3066	0.2915	0.3148	11.331	0.9998
27) MeFOSAA	0.2851	0.3546	0.3402	0.3489	0.3510	0.4022	0.3675	0.3452	0.3493	9.292	0.9980

*(value) - Average RF below (value)

Initial Calibration Verification

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q291-ICV291
Lab FileID: 2Q16573.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0705_PFC_ID_S2Q291\s2q291.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16564.d
2:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16565.d
3:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16566.d
4:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16567.d
5:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16568.d
6:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16569.d
7:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16570.d
8:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16571.d

Data File: 2q16573
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	17.242	-13.8	86.2
13C2-6:2FTS	20.000	17.053	-14.7	85.3
13C2-8:2FTS	20.000	17.436	-12.8	87.2
13C2-PFDoDA	20.000	17.549	-12.3	87.7
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	17.538	-12.3	87.7
13C3-PFBS	20.000	17.644	-11.8	88.2
13C3-PFHxS	20.000	17.612	-11.9	88.1
13C4-PFBA	20.000	17.404	-13.0	87.0
13C4-PFHpA	20.000	17.508	-12.5	87.5
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	17.666	-11.7	88.3
13C5-PFPeA	20.000	17.321	-13.4	86.6
13C6-PFDA	20.000	18.037	-9.8	90.2
13C7-PFUnDA	20.000	17.862	-10.7	89.3
13C8-FOSA	20.000	17.795	-11.0	89.0
13C8-PFOA	20.000	17.551	-12.2	87.8
13C8-PFOS	20.000	17.869	-10.7	89.3
13C9-PFNA	20.000	18.274	-8.6	91.4
4:2FTS	20.000	19.893	-0.5	99.5
6:2FTS	20.000	20.639	3.2	103.2
8:2FTS	20.000	19.664	-1.7	98.3
d3-MeFOSAA	20.000	18.300	-8.5	91.5
M2-PFOA	20.000	20.002	0.0	100.0
EtFOSAA	20.000	19.610	-1.9	98.1
FOSA	20.000	21.089	5.4	105.4
MeFOSAA	20.000	21.388	6.9	106.9
PFBA	20.000	21.888	9.4	109.4
PFBS	20.000	19.082	-4.6	95.4
PFDA	20.000	19.120	-4.4	95.6
PFDoDA	20.000	22.162	10.8	110.8
PFDS	20.000	20.095	0.5	100.5
PFHpA	20.000	21.948	9.7	109.7
PFHpS	20.000	20.515	2.6	102.6
PFHxA	20.000	19.498	-2.5	97.5
PFHxS	20.000	18.521	-7.4	92.6
PFNA	20.000	19.152	-4.2	95.8

Initial Calibration Verification

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q291-ICV291
Lab FileID: 2Q16573.D

PFNS	20.000	20.913	4.6	104.6
PFOA	20.000	21.836	9.2	109.2
PFOS	20.000	22.064	10.3	110.3
PFPeA	20.000	21.921	9.6	109.6
PFPeS	20.000	20.166	0.8	100.8
PFTeDA	20.000	19.286	-3.6	96.4
PFTrDA	20.000	22.765	13.8	113.8
PFUnDA	20.000	21.746	8.7	108.7
M4-PFOS	20.000	20.026	0.1	100.1
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--		

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q291-CC291
Lab FileID: 2Q16584.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0705_PFC_ID_S2Q291\s2q291.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16564.d
2:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16565.d
3:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16566.d
4:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16567.d
5:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16568.d
6:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16569.d
7:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16570.d
8:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16571.d

Data File: 2q16584
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	17.976	-10.1	89.9
13C2-6:2FTS	20.000	17.686	-11.6	88.4
13C2-8:2FTS	20.000	17.278	-13.6	86.4
13C2-PFDoDA	20.000	17.867	-10.7	89.3
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	17.585	-12.1	87.9
13C3-PFBS	20.000	18.243	-8.8	91.2
13C3-PFHxS	20.000	18.149	-9.3	90.7
13C4-PFBA	20.000	18.111	-9.4	90.6
13C4-PFHpA	20.000	18.223	-8.9	91.1
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	17.957	-10.2	89.8
13C5-PFPeA	20.000	17.982	-10.1	89.9
13C6-PFDA	20.000	17.517	-12.4	87.6
13C7-PFUnDA	20.000	19.046	-4.8	95.2
13C8-FOSA	20.000	17.621	-11.9	88.1
13C8-PFOA	20.000	17.508	-12.5	87.5
13C8-PFOS	20.000	18.640	-6.8	93.2
13C9-PFNA	20.000	17.514	-12.4	87.6
4:2FTS	20.000	21.732	8.7	108.7
6:2FTS	20.000	21.395	7.0	107.0
8:2FTS	20.000	21.977	9.9	109.9
d3-MeFOSAA	20.000	18.200	-9.0	91.0
M2-PFOA	20.000	20.001	0.0	100.0
EtFOSAA	20.000	21.126	5.6	105.6
FOSA	20.000	21.545	7.7	107.7
MeFOSAA	20.000	21.950	9.8	109.8
PFBA	20.000	21.976	9.9	109.9
PFBS	20.000	22.245	11.2	111.2
PFDA	20.000	21.257	6.3	106.3
PFDoDA	20.000	22.230	11.2	111.2
PFDS	20.000	20.983	4.9	104.9
PFHpA	20.000	22.620	13.1	113.1
PFHpS	20.000	22.131	10.7	110.7
PFHxA	20.000	21.590	7.9	107.9
PFHxS	20.000	22.185	10.9	110.9
PFNA	20.000	22.950	14.8	114.8

Continuing Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q291-CC291
Lab FileID: 2Q16584.D

PFNS	20.000	21.795	9.0	109.0
PFOA	20.000	22.896	14.5	114.5
PFOS	20.000	22.268	11.3	111.3
PFPeA	20.000	23.098	15.5	115.5
PFPeS	20.000	22.422	12.1	112.1
PFTeDA	20.000	21.144	5.7	105.7
PFTrDA	20.000	22.044	10.2	110.2
PFUnDA	20.000	22.621	13.1	113.1
M4-PFOS	20.000	20.011	0.1	100.1
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--		

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q291-CC291
Lab FileID: 2Q16592.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0705_PFC_ID_S2Q291\s2q291.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16564.d
2:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16565.d
3:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16566.d
4:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16567.d
5:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16568.d
6:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16569.d
7:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16570.d
8:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16571.d

Data File: 2q16592
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	17.852	-10.7	89.3
13C2-6:2FTS	20.000	17.715	-11.4	88.6
13C2-8:2FTS	20.000	17.091	-14.5	85.5
13C2-PFDoDA	20.000	17.631	-11.8	88.2
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	16.469	-17.7	82.3
13C3-PFBS	20.000	18.217	-8.9	91.1
13C3-PFHxS	20.000	18.109	-9.5	90.5
13C4-PFBA	20.000	18.170	-9.2	90.8
13C4-PFHpA	20.000	18.175	-9.1	90.9
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	18.094	-9.5	90.5
13C5-PFPeA	20.000	18.144	-9.3	90.7
13C6-PFDA	20.000	17.557	-12.2	87.8
13C7-PFUnDA	20.000	18.894	-5.5	94.5
13C8-FOSA	20.000	17.578	-12.1	87.9
13C8-PFOA	20.000	17.826	-10.9	89.1
13C8-PFOS	20.000	18.302	-8.5	91.5
13C9-PFNA	20.000	17.655	-11.7	88.3
4:2FTS	20.000	21.728	8.6	108.6
6:2FTS	20.000	22.226	11.1	111.1
8:2FTS	20.000	22.079	10.4	110.4
d3-MeFOSAA	20.000	18.304	-8.5	91.5
M2-PFOA	20.000	20.004	0.0	100.0
EtFOSAA	20.000	21.237	6.2	106.2
FOSA	20.000	21.124	5.6	105.6
MeFOSAA	20.000	23.305	16.5	116.5
PFBA	20.000	21.754	8.8	108.8
PFBS	20.000	22.392	12.0	112.0
PFDA	20.000	20.594	3.0	103.0
PFDoDA	20.000	21.845	9.2	109.2
PFDS	20.000	20.983	4.9	104.9
PFHpA	20.000	22.517	12.6	112.6
PFHpS	20.000	21.666	8.3	108.3
PFHxA	20.000	21.487	7.4	107.4
PFHxS	20.000	22.230	11.2	111.2
PFNA	20.000	20.974	4.9	104.9

Continuing Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q291-CC291
Lab FileID: 2Q16592.D

PFNS	20.000	21.620	8.1	108.1
PFOA	20.000	22.078	10.4	110.4
PFOS	20.000	22.301	11.5	111.5
PFPeA	20.000	22.767	13.8	113.8
PFPeS	20.000	22.078	10.4	110.4
PFTeDA	20.000	22.547	12.7	112.7
PFTrDA	20.000	23.050	15.2	115.2
PFUnDA	20.000	22.171	10.9	110.9
M4-PFOS	20.000	19.988	-0.1	99.9
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--		

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q291-CC291
Lab FileID: 2Q16599.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0705_PFC_ID_S2Q291\s2q291.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16564.d
2:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16565.d
3:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16566.d
4:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16567.d
5:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16568.d
6:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16569.d
7:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16570.d
8:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16571.d

Data File: 2q16599
Type : QC
Level : 2

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	18.790	-6.1	93.9
13C2-6:2FTS	20.000	18.333	-8.3	91.7
13C2-8:2FTS	20.000	17.729	-11.4	88.6
13C2-PFDoDA	20.000	19.197	-4.0	96.0
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	18.113	-9.4	90.6
13C3-PFBS	20.000	20.320	1.6	101.6
13C3-PFHxS	20.000	20.092	0.5	100.5
13C4-PFBA	20.000	20.131	0.7	100.7
13C4-PFHpA	20.000	20.318	1.6	101.6
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	20.063	0.3	100.3
13C5-PFPeA	20.000	19.716	-1.4	98.6
13C6-PFDA	20.000	19.377	-3.1	96.9
13C7-PFUnDA	20.000	20.455	2.3	102.3
13C8-FOSA	20.000	20.322	1.6	101.6
13C8-PFOA	20.000	19.300	-3.5	96.5
13C8-PFOS	20.000	20.094	0.5	100.5
13C9-PFNA	20.000	19.272	-3.6	96.4
4:2FTS	1.000	0.961	-3.9	96.1
6:2FTS	1.000	0.933	-6.7	93.3
8:2FTS	1.000	1.026	2.6	102.6
d3-MeFOSAA	20.000	20.060	0.3	100.3
M2-PFOA	20.000	20.014	0.1	100.1
EtFOSAA	1.000	1.050	5.0	105.0
FOSA	1.000	0.946	-5.4	94.6
MeFOSAA	1.000	0.970	-3.0	97.0
PFBA	1.000	0.947	-5.3	94.7
PFBS	1.000	0.981	-1.9	98.1
PFDA	1.000	0.948	-5.2	94.8
PFDoDA	1.000	1.115	11.5	111.5
PFDS	1.000	0.937	-6.3	93.7
PFHpA	1.000	1.037	3.7	103.7
PFHpS	1.000	0.965	-3.5	96.5
PFHxA	1.000	0.993	-0.7	99.3
PFHxS	1.000	1.030	3.0	103.0
PFNA	1.000	1.112	11.2	111.2

Continuing Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q291-CC291
Lab FileID: 2Q16599.D

PFNS	1.000	1.020	2.0	102.0
PFOA	1.000	1.056	5.6	105.6
PFOS	1.000	1.040	4.0	104.0
PFPeA	1.000	1.221	22.1	122.1
PFPeS	1.000	0.910	-9.0	91.0
PFTeDA	1.000	1.072	7.2	107.2
PFTrDA	1.000	1.015	1.5	101.5
PFUnDA	1.000	0.943	-5.7	94.3
M4-PFOS	20.000	20.001	0.0	100.0
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--		

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q291-CC291
Lab FileID: 2Q16600.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0705_PFC_ID_S2Q291\s2q291.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16564.d
2:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16565.d
3:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16566.d
4:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16567.d
5:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16568.d
6:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16569.d
7:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16570.d
8:D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16571.d

Data File: 2q16600
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	17.932	-10.3	89.7
13C2-6:2FTS	20.000	17.532	-12.3	87.7
13C2-8:2FTS	20.000	17.190	-14.0	86.0
13C2-PFDoDA	20.000	17.567	-12.2	87.8
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	16.441	-17.8	82.2
13C3-PFBS	20.000	18.348	-8.3	91.7
13C3-PFHxS	20.000	17.997	-10.0	90.0
13C4-PFBA	20.000	18.328	-8.4	91.6
13C4-PFHpA	20.000	17.879	-10.6	89.4
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	18.051	-9.7	90.3
13C5-PFPeA	20.000	17.880	-10.6	89.4
13C6-PFDA	20.000	17.010	-15.0	85.0
13C7-PFUnDA	20.000	18.623	-6.9	93.1
13C8-FOSA	20.000	17.607	-12.0	88.0
13C8-PFOA	20.000	17.683	-11.6	88.4
13C8-PFOS	20.000	18.088	-9.6	90.4
13C9-PFNA	20.000	17.664	-11.7	88.3
4:2FTS	20.000	22.034	10.2	110.2
6:2FTS	20.000	21.710	8.5	108.5
8:2FTS	20.000	22.237	11.2	111.2
d3-MeFOSAA	20.000	18.147	-9.3	90.7
M2-PFOA	20.000	19.996	0.0	100.0
EtFOSAA	20.000	20.993	5.0	105.0
FOSA	20.000	21.568	7.8	107.8
MeFOSAA	20.000	23.445	17.2	117.2
PFBA	20.000	21.577	7.9	107.9
PFBS	20.000	22.338	11.7	111.7
PFDA	20.000	22.035	10.2	110.2
PFDoDA	20.000	21.920	9.6	109.6
PFDS	20.000	20.921	4.6	104.6
PFHpA	20.000	23.170	15.9	115.9
PFHpS	20.000	22.107	10.5	110.5
PFHxA	20.000	21.742	8.7	108.7
PFHxS	20.000	22.202	11.0	111.0
PFNA	20.000	22.236	11.2	111.2

Continuing Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q291-CC291
Lab FileID: 2Q16600.D

PFNS	20.000	22.374	11.9	111.9
PFOA	20.000	22.093	10.5	110.5
PFOS	20.000	21.915	9.6	109.6
PFPeA	20.000	23.144	15.7	115.7
PFPeS	20.000	21.980	9.9	109.9
PFTeDA	20.000	21.946	9.7	109.7
PFTrDA	20.000	23.509	17.5	117.5
PFUnDA	20.000	22.321	11.6	111.6
M4-PFOS	20.000	20.012	0.1	100.1
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--		

CC Criteria: +/- 30%

Initial Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q292-ICC292
Lab FileID: 2Q16689.D

Initial Calibration ReSponse Factors - D:\MassHunter\Data\0707_PFC_ID_S2Q292\s2q292.batch.bin

Level ID : Calibration File
1 : D:\MassHunter\Data\0707_PFC_ID_S2Q292\2q16684.d
2 : D:\MassHunter\Data\0707_PFC_ID_S2Q292\2q16685.d
3 : D:\MassHunter\Data\0707_PFC_ID_S2Q292\2q16686.d
4 : D:\MassHunter\Data\0707_PFC_ID_S2Q292\2q16687.d
5 : D:\MassHunter\Data\0707_PFC_ID_S2Q292\2q16688.d
6 : D:\MassHunter\Data\0707_PFC_ID_S2Q292\2q16689.d
7 : D:\MassHunter\Data\0707_PFC_ID_S2Q292\2q16690.d
8 : D:\MassHunter\Data\0707_PFC_ID_S2Q292\2q16691.d

Compound	1	2	3	4	5	6	7	8	AvgRF	%RSD	r^2
1) 13C2-4:2FTS	2.16e+3	2.49e+3	2.58e+3	2.66e+3	2.63e+3	2.39e+3	2.88e+3	3.17e+3	2.62e+3	11.714	0.0000
2) 13C2-6:2FTS	1.38e+3	1.61e+3	1.67e+3	1.72e+3	1.71e+3	1.56e+3	1.87e+3	2.06e+3	1.70e+3	12.023	0.0000
3) 13C2-8:2FTS	1.84e+3	2.11e+3	2.21e+3	2.25e+3	2.25e+3	2.10e+3	2.54e+3	2.84e+3	2.27e+3	13.308	0.0000
4) 13C2-PFDoDA	8.67e+2	9.93e+2	1.04e+3	1.06e+3	1.06e+3	9.33e+2	1.07e+3	1.09e+3	1.01e+3	7.636	0.0000
6) 13C2-PFTeDA	3.34e+2	3.85e+2	3.98e+2	4.09e+2	3.98e+2	3.65e+2	4.15e+2	4.24e+2	3.91e+2	7.484	0.0000
7) 13C3-PFBS	9.15e+2	1.06e+3	1.09e+3	1.11e+3	1.09e+3	9.58e+2	1.09e+3	1.05e+3	1.05e+3	6.810	0.0000
8) 13C3-PFHxS	7.39e+2	8.64e+2	8.85e+2	9.10e+2	8.92e+2	7.83e+2	8.92e+2	8.56e+2	8.53e+2	7.061	0.0000
9) 13C4-PFBA	5.97e+3	6.95e+3	7.19e+3	7.30e+3	7.17e+3	6.31e+3	7.13e+3	7.06e+3	6.89e+3	6.972	0.0000
10) 13C4-PFHpA	2.33e+3	2.75e+3	2.81e+3	2.88e+3	2.83e+3	2.47e+3	2.77e+3	2.69e+3	2.69e+3	7.198	0.0000
12) 13C5-PFHxA	2.46e+3	2.92e+3	3.00e+3	3.05e+3	2.97e+3	2.58e+3	2.87e+3	2.81e+3	2.83e+3	7.387	0.0000
13) 13C5-PFPeA	2.76e+3	3.19e+3	3.33e+3	3.37e+3	3.31e+3	2.93e+3	3.31e+3	3.27e+3	3.18e+3	6.944	0.0000
14) 13C6-PFDA	1.22e+3	1.41e+3	1.50e+3	1.49e+3	1.52e+3	1.31e+3	1.41e+3	1.40e+3	1.41e+3	7.199	0.0000
15) 13C7-PFUnDA	1.14e+3	1.32e+3	1.39e+3	1.39e+3	1.37e+3	1.24e+3	1.41e+3	1.40e+3	1.33e+3	7.222	0.0000
16) 13C8-FOSA	1.23e+3	1.40e+3	1.47e+3	1.48e+3	1.41e+3	1.22e+3	1.28e+3	1.14e+3	1.33e+3	9.634	0.0000
17) 13C8-PFOA	1.06e+3	1.23e+3	1.28e+3	1.33e+3	1.26e+3	1.16e+3	1.29e+3	1.25e+3	1.23e+3	7.076	0.0000
18) 13C8-PFOS	3.44e+2	4.04e+2	4.09e+2	4.10e+2	4.08e+2	3.58e+2	4.08e+2	4.19e+2	3.95e+2	7.070	0.0000
19) 13C9-PFNA	6.81e+2	7.88e+2	8.16e+2	8.21e+2	8.06e+2	7.39e+2	8.11e+2	8.39e+2	7.88e+2	6.655	0.0000
23) d3-MeFOSAA	5.84e+2	6.65e+2	6.75e+2	7.11e+2	6.81e+2	6.05e+2	7.03e+2	6.60e+2	6.60e+2	6.743	0.0000
5) 13C2-PFOA	----------ISTD----------										
24) M2-PFOA	1.0001	0.9993	0.9985	1.0002	0.9998	1.0002	0.9997	1.0000	0.9997	0.059	0.0000
11) 13C4-PFOS	----------ISTD----------										
46) M4-PFOS	1.0000	1.0007	0.9988	1.0000	0.9991	0.9998	0.9996	1.0006	0.9998	0.066	0.0000
47) M4-PFBA	----------ISTD----------										
28) PFBA	0.1456	0.1554	0.1566	0.1532	0.1550	0.1766	0.1569	0.1568	0.1570	5.567	0.9993
48) M5-PFPeA	----------ISTD----------										
41) PFPeA	-----	1.1278	1.0371	0.9861	0.9758	1.1094	0.9765	0.9703	1.0261	6.551	0.9990
49) M5-PFHxA	----------ISTD----------										
35) PFHxA	0.3187	0.3195	0.3063	0.3241	0.3101	0.3700	0.3204	0.3205	0.3237	6.057	0.9989
50) M4-PFHpA	----------ISTD----------										
33) PFHpA	0.7169	0.7059	0.7223	0.7140	0.7047	0.8084	0.7190	0.7105	0.7252	4.711	0.9991
51) M8-PFOA	----------ISTD----------										
39) PFOA	0.5180	0.5941	0.5123	0.5129	0.5309	0.5865	0.5149	0.4997	0.5337	6.755	0.9985
52) M9-PFNA	----------ISTD----------										
37) PFNA	0.3705	0.3000	0.3929	0.3702	0.3777	0.4206	0.3850	0.3724	0.3736	9.142	0.9991
53) M6-PFDA	----------ISTD----------										
30) PFDA	0.4042	0.4268	0.3584	0.3480	0.3498	0.4049	0.3565	0.3535	0.3753	8.345	0.9990
54) M7-PFUnDA	----------ISTD----------										
32) PFDS	0.1965	0.2210	0.2061	0.2120	0.2150	0.2349	0.2043	0.2024	0.2115	5.758	0.9988
45) PFUnDA	0.4426	0.5023	0.4749	0.4737	0.4812	0.5235	0.4643	0.4619	0.4780	5.246	0.9992
55) M2-PFDoDA	----------ISTD----------										
31) PFDoDA	0.5480	0.5406	0.5390	0.5110	0.4964	0.5522	0.4864	0.4782	0.5190	5.691	0.9989
56) M2-PFTeDA	----------ISTD----------										
43) PFTeDA	0.7113	0.6754	0.6092	0.5773	0.6152	0.6698	0.5770	0.5579	0.6241	8.862	0.9979
44) PFTrDA	0.9412	0.9704	0.9146	0.8874	0.9650	1.0414	0.8975	0.8770	0.9368	5.840	0.9983
57) M8-FOSA	----------ISTD----------										
26) FOSA	0.3760	0.4944	0.4475	0.4494	0.4748	0.5343	0.4690	0.4879	0.4667	9.838	0.9991

Initial Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q292-ICC292
Lab FileID: 2Q16689.D

58) M3-PFBS	----------ISTD----------										
29) PFBS	1.2437	1.3455	1.3175	1.3351	1.3149	1.4837	1.3131	1.3372	1.3363	5.038	0.9993
42) PFPeS	0.6976	0.8219	0.7909	0.7818	0.7885	0.8973	0.7902	0.7942	0.7953	6.876	0.9992
59) M3-PFHxS	----------ISTD----------										
34) PFHpS	0.4901	0.5081	0.5288	0.5258	0.5055	0.5774	0.5003	0.5208	0.5196	5.164	0.9990
36) PFHxS	1.2519	1.1266	1.0993	1.0878	1.0803	1.2266	1.0788	1.1146	1.1332	5.982	0.9992
60) M8-PFOS	----------ISTD----------										
38) PFNS	0.7405	0.9672	0.9348	0.9418	0.9771	1.0850	0.9430	0.9016	0.9364	10.238	0.9978
40) PFOS	1.3546	1.2905	1.1329	1.1833	1.2284	1.3845	1.2276	1.1765	1.2473	7.116	0.9983
61) M2-4:2FTS	----------ISTD----------										
20) 4:2FTS	0.5172	0.5147	0.5312	0.4807	0.5037	0.5532	0.4563	0.4127	0.4962	9.053	0.
62) M2-6:2FTS	----------ISTD----------										
21) 6:2FTS	0.5075	0.5111	0.5365	0.4913	0.4953	0.5370	0.4435	0.4016	0.4905	9.481	0.9991
63) M2-8:2FTS	----------ISTD----------										
22) 8:2FTS	0.5370	0.6139	0.5641	0.5512	0.5404	0.5784	0.4800	0.4277	0.5366	10.860	0.9992
64) M3-MeFOSAA	----------ISTD----------										
25) EtFOSAA	0.2978	0.2778	0.3570	0.3096	0.3096	0.3380	0.2778	0.2854	0.3066	9.333	0.9980
27) MeFOSAA	0.2838	0.3162	0.3737	0.3396	0.3515	0.4040	0.3499	0.3614	0.3475	10.428	0.9990

*(value) - Average RF below (value)

Initial Calibration Verification

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q292-ICV292
Lab FileID: 2Q16693.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0707_PFC_ID_S2Q292\s2q292.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\0707_PFC_ID_S2Q292\2q16684.d
2:D:\MassHunter\Data\0707_PFC_ID_S2Q292\2q16685.d
3:D:\MassHunter\Data\0707_PFC_ID_S2Q292\2q16686.d
4:D:\MassHunter\Data\0707_PFC_ID_S2Q292\2q16687.d
5:D:\MassHunter\Data\0707_PFC_ID_S2Q292\2q16688.d
6:D:\MassHunter\Data\0707_PFC_ID_S2Q292\2q16689.d
7:D:\MassHunter\Data\0707_PFC_ID_S2Q292\2q16690.d
8:D:\MassHunter\Data\0707_PFC_ID_S2Q292\2q16691.d

Data File: 2q16693
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	18.056	-9.7	90.3
13C2-6:2FTS	20.000	18.399	-8.0	92.0
13C2-8:2FTS	20.000	17.922	-10.4	89.6
13C2-PFDoDA	20.000	18.197	-9.0	91.0
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	18.432	-7.8	92.2
13C3-PFBS	20.000	18.182	-9.1	90.9
13C3-PFHxS	20.000	18.095	-9.5	90.5
13C4-PFBA	20.000	17.987	-10.1	89.9
13C4-PFHpA	20.000	18.294	-8.5	91.5
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	18.483	-7.6	92.4
13C5-PFPeA	20.000	18.139	-9.3	90.7
13C6-PFDA	20.000	19.182	-4.1	95.9
13C7-PFUnDA	20.000	17.941	-10.3	89.7
13C8-FOSA	20.000	18.449	-7.8	92.2
13C8-PFOA	20.000	18.134	-9.3	90.7
13C8-PFOS	20.000	18.720	-6.4	93.6
13C9-PFNA	20.000	18.058	-9.7	90.3
4:2FTS	20.000	19.794	-1.0	99.0
6:2FTS	20.000	20.250	1.3	101.3
8:2FTS	20.000	19.854	-0.7	99.3
d3-MeFOSAA	20.000	17.899	-10.5	89.5
M2-PFOA	20.000	20.016	0.1	100.1
EtFOSAA	20.000	23.506	17.5	117.5
FOSA	20.000	21.110	5.6	105.6
MeFOSAA	20.000	21.347	6.7	106.7
PFBA	20.000	21.959	9.8	109.8
PFBS	20.000	18.954	-5.2	94.8
PFDA	20.000	20.228	1.1	101.1
PFDoDA	20.000	23.255	16.3	116.3
PFDS	20.000	20.841	4.2	104.2
PFHpA	20.000	21.695	8.5	108.5
PFHpS	20.000	20.662	3.3	103.3
PFHxA	20.000	19.429	-2.9	97.1
PFHxS	20.000	18.654	-6.7	93.3
PFNA	20.000	22.204	11.0	111.0

Initial Calibration Verification

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q292-ICV292
Lab FileID: 2Q16693.D

PFNS	20.000	20.663	3.3	103.3
PFOA	20.000	21.498	7.5	107.5
PFOS	20.000	21.559	7.8	107.8
PFPeA	20.000	21.662	8.3	108.3
PFPeS	20.000	20.186	0.9	100.9
PFTeDA	20.000	20.814	4.1	104.1
PFTrDA	20.000	24.076	20.4	120.4
PFUnDA	20.000	22.717	13.6	113.6
M4-PFOS	20.000	19.991	0.0	100.0
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--		

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q292-CC292
Lab FileID: 2Q16703.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0707_PFC_ID_S2Q292\s2q292.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\0707_PFC_ID_S2Q292\2q16684.d
2:D:\MassHunter\Data\0707_PFC_ID_S2Q292\2q16685.d
3:D:\MassHunter\Data\0707_PFC_ID_S2Q292\2q16686.d
4:D:\MassHunter\Data\0707_PFC_ID_S2Q292\2q16687.d
5:D:\MassHunter\Data\0707_PFC_ID_S2Q292\2q16688.d
6:D:\MassHunter\Data\0707_PFC_ID_S2Q292\2q16689.d
7:D:\MassHunter\Data\0707_PFC_ID_S2Q292\2q16690.d
8:D:\MassHunter\Data\0707_PFC_ID_S2Q292\2q16691.d

Data File: 2q16703
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	18.499	-7.5	92.5
13C2-6:2FTS	20.000	18.980	-5.1	94.9
13C2-8:2FTS	20.000	18.553	-7.2	92.8
13C2-PFDoDA	20.000	19.156	-4.2	95.8
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	19.216	-3.9	96.1
13C3-PFBS	20.000	18.311	-8.4	91.6
13C3-PFHxS	20.000	18.859	-5.7	94.3
13C4-PFBA	20.000	18.284	-8.6	91.4
13C4-PFHpA	20.000	18.744	-6.3	93.7
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	18.629	-6.9	93.1
13C5-PFPeA	20.000	18.774	-6.1	93.9
13C6-PFDA	20.000	19.345	-3.3	96.7
13C7-PFUnDA	20.000	18.640	-6.8	93.2
13C8-FOSA	20.000	18.650	-6.8	93.2
13C8-PFOA	20.000	19.153	-4.2	95.8
13C8-PFOS	20.000	18.140	-9.3	90.7
13C9-PFNA	20.000	19.790	-1.1	98.9
4:2FTS	20.000	21.743	8.7	108.7
6:2FTS	20.000	21.892	9.5	109.5
8:2FTS	20.000	22.368	11.8	111.8
d3-MeFOSAA	20.000	19.513	-2.4	97.6
M2-PFOA	20.000	20.004	0.0	100.0
EtFOSAA	20.000	23.135	15.7	115.7
FOSA	20.000	21.743	8.7	108.7
MeFOSAA	20.000	21.611	8.1	108.1
PFBA	20.000	22.983	14.9	114.9
PFBS	20.000	22.091	10.5	110.5
PFDA	20.000	22.628	13.1	113.1
PFDoDA	20.000	22.534	12.7	112.7
PFDS	20.000	23.039	15.2	115.2
PFHpA	20.000	22.503	12.5	112.5
PFHpS	20.000	22.023	10.1	110.1
PFHxA	20.000	22.044	10.2	110.2
PFHxS	20.000	21.970	9.9	109.9
PFNA	20.000	22.557	12.8	112.8

Continuing Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q292-CC292
Lab FileID: 2Q16703.D

PFNS	20.000	24.036	20.2	120.2
PFOA	20.000	23.267	16.3	116.3
PFOS	20.000	24.066	20.3	120.3
PFPeA	20.000	22.097	10.5	110.5
PFPeS	20.000	22.842	14.2	114.2
PFTeDA	20.000	23.447	17.2	117.2
PFTrDA	20.000	23.493	17.5	117.5
PFUnDA	20.000	22.961	14.8	114.8
M4-PFOS	20.000	20.005	0.0	100.0
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--		

CC Criteria: +/- 30%

Initial Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q294-ICC294
Lab FileID: 2Q16893.D

Initial Calibration ReSponse Factors - D:\MassHunter\Data\0710_PFC_ID_S2Q294\s2q294.batch.bin

Level ID : Calibration File
1 : D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16888.d
2 : D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16889.d
3 : D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16890.d
4 : D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16891.d
5 : D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16892.d
6 : D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16893.d
7 : D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16894.d
8 : D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16895.d

Compound	1	2	3	4	5	6	7	8	AvgRF	%RSD	r^2
1) 13C2-4:2FTS	2.22e+3	2.52e+3	2.58e+3	2.63e+3	2.71e+3	2.72e+3	2.92e+3	3.15e+3	2.68e+3	10.250	0.0000
2) 13C2-6:2FTS	1.72e+3	2.01e+3	1.95e+3	2.04e+3	2.08e+3	2.06e+3	2.27e+3	2.48e+3	2.08e+3	10.848	0.0000
3) 13C2-8:2FTS	3.59e+3	4.07e+3	4.15e+3	4.27e+3	4.40e+3	4.42e+3	4.89e+3	5.35e+3	4.39e+3	12.098	0.0000
4) 13C2-PFDoDA	1.67e+3	1.80e+3	1.93e+3	1.98e+3	2.02e+3	1.98e+3	2.02e+3	1.99e+3	1.92e+3	6.467	0.0000
6) 13C2-PFTeDA	7.71e+2	8.15e+2	8.90e+2	8.99e+2	9.20e+2	8.97e+2	9.12e+2	9.14e+2	8.77e+2	6.199	0.0000
7) 13C3-PFBS	8.81e+2	9.93e+2	1.01e+3	1.02e+3	1.05e+3	1.01e+3	1.01e+3	9.83e+2	9.95e+2	4.990	0.0000
8) 13C3-PFHxS	7.29e+2	8.60e+2	8.43e+2	8.47e+2	8.59e+2	8.40e+2	8.40e+2	8.22e+2	8.30e+2	5.105	0.0000
9) 13C4-PFBA	5.66e+3	6.46e+3	6.47e+3	6.56e+3	6.67e+3	6.49e+3	6.53e+3	6.41e+3	6.41e+3	4.856	0.0000
10) 13C4-PFHpA	2.44e+3	2.67e+3	2.77e+3	2.81e+3	2.81e+3	2.79e+3	2.78e+3	2.68e+3	2.72e+3	4.580	0.0000
12) 13C5-PFHxA	2.57e+3	2.82e+3	2.91e+3	2.98e+3	2.96e+3	2.88e+3	2.86e+3	2.71e+3	2.84e+3	4.907	0.0000
13) 13C5-PFPeA	2.76e+3	3.10e+3	3.21e+3	3.21e+3	3.27e+3	3.18e+3	3.19e+3	3.11e+3	3.13e+3	5.066	0.0000
14) 13C6-PFDA	2.53e+3	2.81e+3	2.96e+3	3.00e+3	3.09e+3	2.95e+3	2.97e+3	2.85e+3	2.89e+3	5.907	0.0000
15) 13C7-PFUnDA	2.08e+3	2.22e+3	2.41e+3	2.47e+3	2.53e+3	2.42e+3	2.48e+3	2.38e+3	2.38e+3	6.301	0.0000
16) 13C8-FOSA	1.49e+3	1.64e+3	1.66e+3	1.68e+3	1.68e+3	1.56e+3	1.49e+3	1.34e+3	1.57e+3	7.753	0.0000
17) 13C8-PFOA	1.21e+3	1.39e+3	1.41e+3	1.42e+3	1.47e+3	1.38e+3	1.45e+3	1.40e+3	1.39e+3	5.512	0.0000
18) 13C8-PFOS	3.67e+2	4.23e+2	4.36e+2	4.50e+2	4.51e+2	4.40e+2	4.48e+2	4.38e+2	4.32e+2	6.380	0.0000
19) 13C9-PFNA	8.32e+2	9.19e+2	9.49e+2	1.00e+3	1.01e+3	1.00e+3	9.71e+2	1.02e+3	9.63e+2	6.521	0.0000
23) d3-MeFOSAA	6.79e+2	7.50e+2	7.67e+2	7.74e+2	8.03e+2	7.82e+2	7.71e+2	7.27e+2	7.57e+2	5.072	0.0000
5) 13C2-PFOA	----------ISTD----------										
24) M2-PFOA	1.0002	1.0002	1.0000	1.0001	1.0007	1.0001	0.9996	0.9979	0.9998	0.083	0.0000
11) 13C4-PFOS	----------ISTD----------										
46) M4-PFOS	1.0009	1.0016	0.9981	1.0007	1.0002	0.9974	0.9987	1.0005	0.9998	0.150	0.0000
47) M4-PFBA	----------ISTD----------										
28) PFBA	0.1598	0.1612	0.1552	0.1505	0.1442	0.1480	0.1559	0.1566	0.1539	3.817	0.9998
48) M5-PFPeA	----------ISTD----------										
41) PFPeA	-----	1.1025	0.9976	0.9468	0.8943	0.9155	0.9531	0.9582	0.9669	7.053	0.9998
49) M5-PFHxA	----------ISTD----------										
35) PFHxA	0.4034	0.3916	0.3451	0.3306	0.3110	0.3132	0.3349	0.3417	0.3464	9.790	0.9995
50) M4-PFHpA	----------ISTD----------										
33) PFHpA	0.8133	0.7422	0.7229	0.7073	0.7003	0.7076	0.7213	0.7359	0.7314	4.940	0.9998
51) M8-PFOA	----------ISTD----------										
39) PFOA	0.6868	0.5862	0.5690	0.5544	0.5199	0.5325	0.5484	0.5496	0.5684	9.148	0.9999
52) M9-PFNA	----------ISTD----------										
37) PFNA	0.4865	0.4049	0.4273	0.3867	0.3806	0.3847	0.3850	0.3857	0.4052	8.978	1.0000
53) M6-PFDA	----------ISTD----------										
30) PFDA	0.4207	0.4011	0.3544	0.3582	0.3409	0.3553	0.3674	0.3629	0.3701	7.252	0.9999
54) M7-PFUnDA	----------ISTD----------										
32) PFDS	0.1934	0.1860	0.1755	0.1651	0.1595	0.1652	0.1667	0.1701	0.1727	6.716	0.9998
45) PFUnDA	0.5490	0.5028	0.4660	0.4633	0.4555	0.4726	0.4767	0.4874	0.4842	6.211	0.9998
55) M2-PFDoDA	----------ISTD----------										
31) PFDoDA	0.6823	0.5891	0.5469	0.5131	0.4953	0.5050	0.5167	0.5079	0.5445	11.628	0.9999
56) M2-PFTeDA	----------ISTD----------										
43) PFTeDA	0.8000	0.6914	0.6646	0.6034	0.5933	0.6106	0.5979	0.5825	0.6430	11.494	1.0000
44) PFTrDA	0.9705	0.9422	0.8929	0.8786	0.8416	0.8724	0.8725	0.8424	0.8892	5.129	0.9999
57) M8-FOSA	----------ISTD----------										
26) FOSA	0.5403	0.4995	0.4751	0.4767	0.4334	0.4658	0.4855	0.4944	0.4838	6.317	0.9996

Initial Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q294-ICC294
Lab FileID: 2Q16893.D

58) M3-PFBS	----------ISTD----------										
29) PFBS	1.5004	1.3798	1.3285	1.3056	1.2497	1.3136	1.3568	1.3696	1.3505	5.440	0.9998
42) PFPeS	0.8946	0.8447	0.8815	0.8323	0.8038	0.8423	0.8720	0.8801	0.8564	3.580	0.9998
59) M3-PFHxS	----------ISTD----------										
34) PFHpS	0.6970	0.6358	0.6053	0.5997	0.5769	0.5682	0.6152	0.6134	0.6139	6.493	0.9997
36) PFHxS	1.3093	1.2030	1.1575	1.1614	1.1055	1.1227	1.1895	1.2005	1.1812	5.301	0.9997
60) M8-PFOS	----------ISTD----------										
38) PFNS	1.6779	1.6781	1.6426	1.5215	1.4871	1.5370	1.5647	1.5567	1.5832	4.637	1.0000
40) PFOS	1.4041	1.3621	1.2514	1.1222	1.1536	1.1926	1.2119	1.2561	1.2442	7.832	0.9995
61) M2-4:2FTS	----------ISTD----------										
20) 4:2FTS	0.5878	0.5334	0.5168	0.5192	0.4952	0.4913	0.4783	0.4310	0.5066	8.972	0.
62) M2-6:2FTS	----------ISTD----------										
21) 6:2FTS	0.4612	0.5221	0.5457	0.4795	0.4759	0.4840	0.4624	0.4208	0.4815	7.956	1.0000
63) M2-8:2FTS	----------ISTD----------										
22) 8:2FTS	0.6099	0.6017	0.5736	0.5564	0.5222	0.5162	0.4909	0.4446	0.5394	10.510	1.0000
64) M3-MeFOSAA	----------ISTD----------										
25) EtFOSAA	0.3405	0.3324	0.3614	0.3143	0.3209	0.3175	0.3351	0.3389	0.3326	4.600	0.9998
27) MeFOSAA	0.4012	0.3870	0.3514	0.3796	0.3344	0.3237	0.3674	0.3568	0.3627	7.273	0.9993

*(value) - Average RF below (value)

Initial Calibration Verification

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q294-ICV294
Lab FileID: 2Q16897.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0710_PFC_ID_S2Q294\s2q294.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16888.d
2:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16889.d
3:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16890.d
4:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16891.d
5:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16892.d
6:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16893.d
7:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16894.d
8:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16895.d

Data File: 2q16897
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	17.659	-11.7	88.3
13C2-6:2FTS	20.000	18.658	-6.7	93.3
13C2-8:2FTS	20.000	17.847	-10.8	89.2
13C2-PFDoDA	20.000	18.323	-8.4	91.6
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	18.302	-8.5	91.5
13C3-PFBS	20.000	18.443	-7.8	92.2
13C3-PFHxS	20.000	18.195	-9.0	91.0
13C4-PFBA	20.000	18.169	-9.2	90.8
13C4-PFHpA	20.000	18.331	-8.3	91.7
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	18.385	-8.1	91.9
13C5-PFPeA	20.000	18.194	-9.0	91.0
13C6-PFDA	20.000	18.152	-9.2	90.8
13C7-PFUnDA	20.000	18.309	-8.5	91.5
13C8-FOSA	20.000	18.481	-7.6	92.4
13C8-PFOA	20.000	19.176	-4.1	95.9
13C8-PFOS	20.000	18.703	-6.5	93.5
13C9-PFNA	20.000	19.741	-1.3	98.7
4:2FTS	20.000	21.564	7.8	107.8
6:2FTS	20.000	22.274	11.4	111.4
8:2FTS	20.000	21.768	8.8	108.8
d3-MeFOSAA	20.000	18.018	-9.9	90.1
M2-PFOA	20.000	19.999	0.0	100.0
EtFOSAA	20.000	23.655	18.3	118.3
FOSA	20.000	23.632	18.2	118.2
MeFOSAA	20.000	23.287	16.4	116.4
PFBA	20.000	22.709	13.5	113.5
PFBS	20.000	19.612	-1.9	98.1
PFDA	20.000	21.501	7.5	107.5
PFDoDA	20.000	24.087	20.4	120.4
PFDS	20.000	21.223	6.1	106.1
PFHpA	20.000	23.170	15.9	115.9
PFHpS	20.000	21.521	7.6	107.6
PFHxA	20.000	20.818	4.1	104.1
PFHxS	20.000	19.647	-1.8	98.2
PFNA	20.000	21.140	5.7	105.7

Initial Calibration Verification

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q294-ICV294
Lab FileID: 2Q16897.D

PFNS	20.000	21.889	9.4	109.4
PFOA	20.000	22.206	11.0	111.0
PFOS	20.000	22.968	14.8	114.8
PFPeA	20.000	22.697	13.5	113.5
PFPeS	20.000	20.747	3.7	103.7
PFTeDA	20.000	21.497	7.5	107.5
PFTrDA	20.000	25.030	25.2	125.2
PFUnDA	20.000	23.167	15.8	115.8
M4-PFOS	20.000	20.027	0.1	100.1
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--		

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q294-CC294
Lab FileID: 2Q16908.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0710_PFC_ID_S2Q294\s2q294.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16888.d
2:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16889.d
3:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16890.d
4:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16891.d
5:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16892.d
6:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16893.d
7:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16894.d
8:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16895.d

Data File: 2q16908
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.694	3.5	103.5
13C2-6:2FTS	20.000	20.388	1.9	101.9
13C2-8:2FTS	20.000	20.450	2.3	102.3
13C2-PFDoDA	20.000	20.150	0.7	100.7
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	20.055	0.3	100.3
13C3-PFBS	20.000	20.943	4.7	104.7
13C3-PFHxS	20.000	20.730	3.7	103.7
13C4-PFBA	20.000	20.672	3.4	103.4
13C4-PFHpA	20.000	21.083	5.4	105.4
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	20.964	4.8	104.8
13C5-PFPeA	20.000	20.737	3.7	103.7
13C6-PFDA	20.000	20.466	2.3	102.3
13C7-PFUnDA	20.000	20.470	2.4	102.4
13C8-FOSA	20.000	20.737	3.7	103.7
13C8-PFOA	20.000	20.521	2.6	102.6
13C8-PFOS	20.000	20.834	4.2	104.2
13C9-PFNA	20.000	20.940	4.7	104.7
4:2FTS	20.000	19.796	-1.0	99.0
6:2FTS	20.000	19.612	-1.9	98.1
8:2FTS	20.000	19.935	-0.3	99.7
d3-MeFOSAA	20.000	20.645	3.2	103.2
M2-PFOA	20.000	20.000	0.0	100.0
EtFOSAA	20.000	19.810	-1.0	99.0
FOSA	20.000	19.170	-4.2	95.8
MeFOSAA	20.000	18.915	-5.4	94.6
PFBA	20.000	18.605	-7.0	93.0
PFBS	20.000	19.078	-4.6	95.4
PFDA	20.000	19.759	-1.2	98.8
PFDoDA	20.000	19.526	-2.4	97.6
PFDS	20.000	19.813	-0.9	99.1
PFHpA	20.000	19.391	-3.0	97.0
PFHpS	20.000	18.521	-7.4	92.6
PFHxA	20.000	18.758	-6.2	93.8
PFHxS	20.000	18.984	-5.1	94.9
PFNA	20.000	19.484	-2.6	97.4

Continuing Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q294-CC294
Lab FileID: 2Q16908.D

PFNS	20.000	19.268	-3.7	96.3
PFOA	20.000	19.095	-4.5	95.5
PFOS	20.000	18.609	-7.0	93.0
PFPeA	20.000	19.514	-2.4	97.6
PFPeS	20.000	18.696	-6.5	93.5
PFTeDA	20.000	19.639	-1.8	98.2
PFTrDA	20.000	19.446	-2.8	97.2
PFUnDA	20.000	18.936	-5.3	94.7
M4-PFOS	20.000	20.008	0.0	100.0
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--		

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q294-CC294
Lab FileID: 2Q16912.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0710_PFC_ID_S2Q294\s2q294.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16888.d
2:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16889.d
3:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16890.d
4:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16891.d
5:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16892.d
6:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16893.d
7:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16894.d
8:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16895.d

Data File: 2q16912
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.898	4.5	104.5
13C2-6:2FTS	20.000	20.456	2.3	102.3
13C2-8:2FTS	20.000	20.303	1.5	101.5
13C2-PFDoDA	20.000	19.826	-0.9	99.1
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	19.567	-2.2	97.8
13C3-PFBS	20.000	21.112	5.6	105.6
13C3-PFHxS	20.000	20.603	3.0	103.0
13C4-PFBA	20.000	20.724	3.6	103.6
13C4-PFHpA	20.000	20.876	4.4	104.4
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	20.879	4.4	104.4
13C5-PFPeA	20.000	20.596	3.0	103.0
13C6-PFDA	20.000	20.301	1.5	101.5
13C7-PFUnDA	20.000	20.458	2.3	102.3
13C8-FOSA	20.000	20.835	4.2	104.2
13C8-PFOA	20.000	20.057	0.3	100.3
13C8-PFOS	20.000	20.831	4.2	104.2
13C9-PFNA	20.000	20.402	2.0	102.0
4:2FTS	20.000	19.603	-2.0	98.0
6:2FTS	20.000	19.688	-1.6	98.4
8:2FTS	20.000	19.960	-0.2	99.8
d3-MeFOSAA	20.000	20.596	3.0	103.0
M2-PFOA	20.000	20.007	0.0	100.0
EtFOSAA	20.000	19.358	-3.2	96.8
FOSA	20.000	18.612	-6.9	93.1
MeFOSAA	20.000	19.549	-2.3	97.7
PFBA	20.000	18.810	-6.0	94.0
PFBS	20.000	19.037	-4.8	95.2
PFDA	20.000	19.527	-2.4	97.6
PFDoDA	20.000	19.394	-3.0	97.0
PFDS	20.000	19.398	-3.0	97.0
PFHpA	20.000	19.546	-2.3	97.7
PFHpS	20.000	18.701	-6.5	93.5
PFHxA	20.000	19.126	-4.4	95.6
PFHxS	20.000	19.151	-4.2	95.8
PFNA	20.000	20.999	5.0	105.0

Continuing Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q294-CC294
Lab FileID: 2Q16912.D

PFNS	20.000	19.668	-1.7	98.3
PFOA	20.000	18.800	-6.0	94.0
PFOS	20.000	19.159	-4.2	95.8
PFPeA	20.000	19.697	-1.5	98.5
PFPeS	20.000	18.542	-7.3	92.7
PFTeDA	20.000	19.396	-3.0	97.0
PFTrDA	20.000	19.117	-4.4	95.6
PFUnDA	20.000	19.074	-4.6	95.4
M4-PFOS	20.000	20.001	0.0	100.0
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--		

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q294-CC294
Lab FileID: 2Q16957.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0710_PFC_ID_S2Q294\s2q294.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16888.d
2:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16889.d
3:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16890.d
4:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16891.d
5:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16892.d
6:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16893.d
7:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16894.d
8:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16895.d

Data File: 2q16957
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	22.596	13.0	113.0
13C2-6:2FTS	20.000	23.036	15.2	115.2
13C2-8:2FTS	20.000	20.074	0.4	100.4
13C2-PFDoDA	20.000	21.927	9.6	109.6
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	22.243	11.2	111.2
13C3-PFBS	20.000	22.302	11.5	111.5
13C3-PFHxS	20.000	22.335	11.7	111.7
13C4-PFBA	20.000	22.406	12.0	112.0
13C4-PFHpA	20.000	23.061	15.3	115.3
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	22.893	14.5	114.5
13C5-PFPeA	20.000	22.834	14.2	114.2
13C6-PFDA	20.000	22.217	11.1	111.1
13C7-PFUnDA	20.000	22.209	11.0	111.0
13C8-FOSA	20.000	22.761	13.8	113.8
13C8-PFOA	20.000	23.302	16.5	116.5
13C8-PFOS	20.000	22.151	10.8	110.8
13C9-PFNA	20.000	22.385	11.9	111.9
4:2FTS	20.000	19.929	-0.4	99.6
6:2FTS	20.000	19.552	-2.2	97.8
8:2FTS	20.000	19.834	-0.8	99.2
d3-MeFOSAA	20.000	22.791	14.0	114.0
M2-PFOA	20.000	20.003	0.0	100.0
EtFOSAA	20.000	18.055	-9.7	90.3
FOSA	20.000	19.105	-4.5	95.5
MeFOSAA	20.000	20.036	0.2	100.2
PFBA	20.000	19.450	-2.7	97.3
PFBS	20.000	18.927	-5.4	94.6
PFDA	20.000	19.484	-2.6	97.4
PFDoDA	20.000	19.680	-1.6	98.4
PFDS	20.000	19.356	-3.2	96.8
PFHpA	20.000	19.054	-4.7	95.3
PFHpS	20.000	18.444	-7.8	92.2
PFHxA	20.000	19.199	-4.0	96.0
PFHxS	20.000	18.828	-5.9	94.1
PFNA	20.000	19.529	-2.4	97.6

Continuing Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q294-CC294
Lab FileID: 2Q16957.D

PFNS	20.000	21.136	5.7	105.7
PFOA	20.000	19.772	-1.1	98.9
PFOS	20.000	18.586	-7.1	92.9
PFPeA	20.000	18.880	-5.6	94.4
PFPeS	20.000	19.181	-4.1	95.9
PFTeDA	20.000	19.544	-2.3	97.7
PFTrDA	20.000	19.296	-3.5	96.5
PFUnDA	20.000	19.172	-4.1	95.9
M4-PFOS	20.000	19.989	-0.1	99.9
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--		

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q294-CC294
Lab FileID: 2Q16969.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0710_PFC_ID_S2Q294\s2q294.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16888.d
2:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16889.d
3:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16890.d
4:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16891.d
5:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16892.d
6:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16893.d
7:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16894.d
8:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16895.d

Data File: 2q16969
Type : QC
Level : 2

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	19.413	-2.9	97.1
13C2-6:2FTS	20.000	19.290	-3.5	96.5
13C2-8:2FTS	20.000	15.727	-21.4	78.6
13C2-PFDoDA	20.000	19.140	-4.3	95.7
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	19.561	-2.2	97.8
13C3-PFBS	20.000	20.168	0.8	100.8
13C3-PFHxS	20.000	20.349	1.7	101.7
13C4-PFBA	20.000	20.268	1.3	101.3
13C4-PFHpA	20.000	20.941	4.7	104.7
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	21.278	6.4	106.4
13C5-PFPeA	20.000	20.587	2.9	102.9
13C6-PFDA	20.000	19.562	-2.2	97.8
13C7-PFUnDA	20.000	19.657	-1.7	98.3
13C8-FOSA	20.000	21.870	9.3	109.3
13C8-PFOA	20.000	21.582	7.9	107.9
13C8-PFOS	20.000	19.870	-0.7	99.3
13C9-PFNA	20.000	20.611	3.1	103.1
4:2FTS	1.000	1.065	6.5	106.5
6:2FTS	1.000	1.193	19.3	119.3
8:2FTS	1.000	1.133	13.3	113.3
d3-MeFOSAA	20.000	19.887	-0.6	99.4
M2-PFOA	20.000	19.968	-0.2	99.8
EtFOSAA	1.000	1.150	15.0	115.0
FOSA	1.000	1.019	1.9	101.9
MeFOSAA	1.000	1.007	0.7	100.7
PFBA	1.000	1.049	4.9	104.9
PFBS	1.000	1.019	1.9	101.9
PFDA	1.000	1.068	6.8	106.8
PFDoDA	1.000	1.184	18.4	118.4
PFDS	1.000	1.085	8.5	108.5
PFHpA	1.000	1.012	1.2	101.2
PFHpS	1.000	1.045	4.5	104.5
PFHxA	1.000	1.006	0.6	100.6
PFHxS	1.000	1.027	2.7	102.7
PFNA	1.000	1.040	4.0	104.0

Continuing Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q294-CC294
Lab FileID: 2Q16969.D

PFNS	1.000	1.165	16.5	116.5
PFOA	1.000	0.956	-4.4	95.6
PFOS	1.000	1.017	1.7	101.7
PFPeA	1.000	1.175	17.5	117.5
PFPeS	1.000	1.049	4.9	104.9
PFTeDA	1.000	1.143	14.3	114.3
PFTrDA	1.000	0.971	-2.9	97.1
PFUnDA	1.000	1.047	4.7	104.7
M4-PFOS	20.000	19.978	-0.1	99.9
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--		

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q294-CC294
Lab FileID: 2Q16970.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0710_PFC_ID_S2Q294\s2q294.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16888.d
2:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16889.d
3:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16890.d
4:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16891.d
5:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16892.d
6:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16893.d
7:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16894.d
8:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16895.d

Data File: 2q16970
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	22.854	14.3	114.3
13C2-6:2FTS	20.000	22.551	12.8	112.8
13C2-8:2FTS	20.000	19.009	-5.0	95.0
13C2-PFDoDA	20.000	22.094	10.5	110.5
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	22.049	10.2	110.2
13C3-PFBS	20.000	22.791	14.0	114.0
13C3-PFHxS	20.000	22.785	13.9	113.9
13C4-PFBA	20.000	22.892	14.5	114.5
13C4-PFHpA	20.000	23.284	16.4	116.4
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	23.493	17.5	117.5
13C5-PFPeA	20.000	23.298	16.5	116.5
13C6-PFDA	20.000	21.714	8.6	108.6
13C7-PFUnDA	20.000	21.878	9.4	109.4
13C8-FOSA	20.000	22.840	14.2	114.2
13C8-PFOA	20.000	23.116	15.6	115.6
13C8-PFOS	20.000	22.403	12.0	112.0
13C9-PFNA	20.000	22.601	13.0	113.0
4:2FTS	20.000	19.589	-2.1	97.9
6:2FTS	20.000	19.990	-0.1	99.9
8:2FTS	20.000	19.760	-1.2	98.8
d3-MeFOSAA	20.000	22.037	10.2	110.2
M2-PFOA	20.000	20.007	0.0	100.0
EtFOSAA	20.000	19.341	-3.3	96.7
FOSA	20.000	18.732	-6.3	93.7
MeFOSAA	20.000	21.088	5.4	105.4
PFBA	20.000	19.450	-2.8	97.2
PFBS	20.000	18.784	-6.1	93.9
PFDA	20.000	19.701	-1.5	98.5
PFDoDA	20.000	19.355	-3.2	96.8
PFDS	20.000	19.548	-2.3	97.7
PFHpA	20.000	19.078	-4.6	95.4
PFHpS	20.000	19.418	-2.9	97.1
PFHxA	20.000	18.801	-6.0	94.0
PFHxS	20.000	18.902	-5.5	94.5
PFNA	20.000	19.132	-4.3	95.7

Continuing Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q294-CC294
Lab FileID: 2Q16970.D

PFNS	20.000	20.921	4.6	104.6
PFOA	20.000	19.409	-3.0	97.0
PFOS	20.000	19.149	-4.3	95.7
PFPeA	20.000	18.895	-5.5	94.5
PFPeS	20.000	19.278	-3.6	96.4
PFTeDA	20.000	19.457	-2.7	97.3
PFTrDA	20.000	19.215	-3.9	96.1
PFUnDA	20.000	19.398	-3.0	97.0
M4-PFOS	20.000	19.999	0.0	100.0
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--		

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q294-CC294
Lab FileID: 2Q16982.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0710_PFC_ID_S2Q294\s2q294.batch.bin

Level ID:Calibration File
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3:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16890.d
4:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16891.d
5:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16892.d
6:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16893.d
7:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16894.d
8:D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16895.d

Data File: 2q16982
Type : QC
Level : 2

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	19.200	-4.0	96.0
13C2-6:2FTS	20.000	18.570	-7.1	92.9
13C2-8:2FTS	20.000	15.216	-23.9	76.1
13C2-PFDoDA	20.000	17.874	-10.6	89.4
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	17.224	-13.9	86.1
13C3-PFBS	20.000	20.147	0.7	100.7
13C3-PFHxS	20.000	19.657	-1.7	98.3
13C4-PFBA	20.000	20.036	0.2	100.2
13C4-PFHpA	20.000	20.518	2.6	102.6
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	20.417	2.1	102.1
13C5-PFPeA	20.000	20.014	0.1	100.1
13C6-PFDA	20.000	18.532	-7.3	92.7
13C7-PFUnDA	20.000	18.281	-8.6	91.4
13C8-FOSA	20.000	21.063	5.3	105.3
13C8-PFOA	20.000	20.035	0.2	100.2
13C8-PFOS	20.000	18.943	-5.3	94.7
13C9-PFNA	20.000	19.123	-4.4	95.6
4:2FTS	1.000	1.088	8.8	108.8
6:2FTS	1.000	1.058	5.8	105.8
8:2FTS	1.000	1.095	9.5	109.5
d3-MeFOSAA	20.000	19.384	-3.1	96.9
M2-PFOA	20.000	20.007	0.0	100.0
EtFOSAA	1.000	0.889	-11.1	88.9
FOSA	1.000	1.011	1.1	101.1
MeFOSAA	1.000	1.171	17.1	117.1
PFBA	1.000	1.021	2.1	102.1
PFBS	1.000	1.044	4.4	104.4
PFDA	1.000	1.042	4.2	104.2
PFDoDA	1.000	1.214	21.4	121.4
PFDS	1.000	1.085	8.5	108.5
PFHpA	1.000	1.039	3.9	103.9
PFHpS	1.000	1.019	1.9	101.9
PFHxA	1.000	0.994	-0.6	99.4
PFHxS	1.000	1.101	10.1	110.1
PFNA	1.000	1.145	14.5	114.5

Continuing Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q294-CC294
Lab FileID: 2Q16982.D

PFNS	1.000	1.188	18.8	118.8
PFOA	1.000	1.119	11.9	111.9
PFOS	1.000	1.104	10.4	110.4
PFPeA	1.000	1.197	19.7	119.7
PFPeS	1.000	1.040	4.0	104.0
PFTeDA	1.000	1.194	19.4	119.4
PFTrDA	1.000	1.121	12.1	112.1
PFUnDA	1.000	1.093	9.3	109.3
M4-PFOS	20.000	19.996	0.0	100.0
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--		

CC Criteria: +/- 30%

Initial Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q295-ICC295
Lab FileID: 2Q16999.D

Initial Calibration ReSponse Factors - D:\MassHunter\Data\0712_PFC_ID_S2Q295\s2q295.batch.bin

Level ID : Calibration File
1 : D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16994.d
2 : D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16995.d
3 : D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16996.d
4 : D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16997.d
5 : D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16998.d
6 : D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16999.d
7 : D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q17000.d
8 : D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q17001.d

Compound	1	2	3	4	5	6	7	8	AvgRF	%RSD	r^2
1) 13C2-4:2FTS	2.42e+3	2.46e+3	2.70e+3	2.72e+3	2.83e+3	3.11e+3	3.00e+3	3.33e+3	2.82e+3	11.121	0.0000
2) 13C2-6:2FTS	1.71e+3	1.66e+3	1.84e+3	1.85e+3	1.93e+3	2.16e+3	2.10e+3	2.37e+3	1.95e+3	12.311	0.0000
3) 13C2-8:2FTS	3.07e+3	3.14e+3	3.44e+3	3.47e+3	3.62e+3	4.08e+3	4.03e+3	4.58e+3	3.68e+3	14.039	0.0000
4) 13C2-PFDoDA	1.38e+3	1.55e+3	1.69e+3	1.70e+3	1.74e+3	1.89e+3	1.74e+3	1.77e+3	1.68e+3	9.212	0.0000
6) 13C2-PFTeDA	5.97e+2	6.46e+2	7.27e+2	7.30e+2	7.47e+2	8.24e+2	7.63e+2	7.78e+2	7.27e+2	10.029	0.0000
7) 13C3-PFBS	9.61e+2	9.68e+2	1.07e+3	1.05e+3	1.07e+3	1.16e+3	1.04e+3	1.01e+3	1.04e+3	6.119	0.0000
8) 13C3-PFHxS	7.82e+2	7.65e+2	8.40e+2	8.41e+2	8.48e+2	9.29e+2	8.42e+2	8.31e+2	8.35e+2	5.855	0.0000
9) 13C4-PFBA	6.20e+3	6.14e+3	6.72e+3	6.65e+3	6.82e+3	7.38e+3	6.68e+3	6.59e+3	6.65e+3	5.758	0.0000
10) 13C4-PFHpA	2.54e+3	2.63e+3	2.90e+3	2.92e+3	2.93e+3	3.15e+3	2.84e+3	2.73e+3	2.83e+3	6.841	0.0000
12) 13C5-PFHxA	2.63e+3	2.76e+3	3.05e+3	3.05e+3	3.08e+3	3.33e+3	2.96e+3	2.86e+3	2.97e+3	7.218	0.0000
13) 13C5-PFPeA	2.96e+3	3.04e+3	3.33e+3	3.29e+3	3.39e+3	3.66e+3	3.32e+3	3.26e+3	3.28e+3	6.533	0.0000
14) 13C6-PFDA	2.39e+3	2.54e+3	2.81e+3	2.79e+3	2.87e+3	3.16e+3	2.81e+3	2.81e+3	2.77e+3	8.235	0.0000
15) 13C7-PFUnDA	1.72e+3	1.90e+3	2.08e+3	2.10e+3	2.13e+3	2.34e+3	2.09e+3	2.13e+3	2.06e+3	8.862	0.0000
16) 13C8-FOSA	1.50e+3	1.54e+3	1.74e+3	1.67e+3	1.72e+3	1.79e+3	1.54e+3	1.39e+3	1.61e+3	8.679	0.0000
17) 13C8-PFOA	1.19e+3	1.18e+3	1.34e+3	1.30e+3	1.36e+3	1.49e+3	1.33e+3	1.31e+3	1.31e+3	7.412	0.0000
18) 13C8-PFOS	3.78e+2	3.89e+2	4.17e+2	4.12e+2	4.24e+2	4.69e+2	4.24e+2	4.05e+2	4.15e+2	6.544	0.0000
19) 13C9-PFNA	7.58e+2	7.87e+2	8.91e+2	8.74e+2	9.42e+2	1.00e+3	8.98e+2	8.99e+2	8.82e+2	8.976	0.0000
23) d3-MeFOSAA	6.93e+2	7.38e+2	7.85e+2	7.97e+2	8.05e+2	8.89e+2	7.60e+2	7.48e+2	7.77e+2	7.450	0.0000
5) 13C2-PFOA	----------ISTD----------										
24) M2-PFOA	0.9997	0.9996	1.0006	1.0002	0.9994	1.0001	1.0003	1.0002	1.0000	0.040	0.0000
11) 13C4-PFOS	----------ISTD----------										
46) M4-PFOS	1.0003	0.9993	1.0001	0.9991	0.9990	1.0002	0.9995	1.0002	0.9997	0.054	0.0000
47) M4-PFBA	----------ISTD----------										
28) PFBA	0.1669	0.1608	0.1568	0.1520	0.1447	0.1508	0.1567	0.1596	0.1560	4.370	0.9997
48) M5-PFPeA	----------ISTD----------										
41) PFPeA	-----	1.0979	1.0323	0.9225	0.8858	0.9141	0.9358	0.9345	0.9604	7.893	0.9999
49) M5-PFHxA	----------ISTD----------										
35) PFHxA	0.4082	0.3361	0.3262	0.3132	0.3086	0.3320	0.3417	0.3367	0.3378	9.087	0.9998
50) M4-PFHpA	----------ISTD----------										
33) PFHpA	0.7898	0.7475	0.7399	0.6983	0.7019	0.7192	0.7384	0.7480	0.7354	3.999	0.9999
51) M8-PFOA	----------ISTD----------										
39) PFOA	0.6320	0.5246	0.4807	0.5394	0.5011	0.5200	0.5354	0.5332	0.5333	8.338	0.9999
52) M9-PFNA	----------ISTD----------										
37) PFNA	0.4682	0.3649	0.4194	0.3908	0.3534	0.3778	0.3922	0.3961	0.3954	9.024	0.9998
53) M6-PFDA	----------ISTD----------										
30) PFDA	0.4115	0.3857	0.3494	0.3596	0.3497	0.3531	0.3737	0.3737	0.3695	5.808	0.9998
54) M7-PFUnDA	----------ISTD----------										
32) PFDS	0.1768	0.1885	0.1773	0.1682	0.1636	0.1641	0.1722	0.1714	0.1728	4.723	0.9999
45) PFUnDA	0.5462	0.5255	0.4920	0.4589	0.4580	0.4625	0.4937	0.4931	0.4912	6.522	0.9998
55) M2-PFDoDA	----------ISTD----------										
31) PFDoDA	0.6084	0.5865	0.5431	0.5193	0.4893	0.5034	0.5140	0.5095	0.5342	7.919	0.9999
56) M2-PFTeDA	----------ISTD----------										
43) PFTeDA	0.7173	0.7071	0.6502	0.6272	0.5666	0.5832	0.6016	0.5939	0.6309	8.946	0.9999
44) PFTrDA	1.0068	1.0116	0.9138	0.8864	0.8343	0.8817	0.8881	0.8694	0.9115	7.048	0.9999
57) M8-FOSA	----------ISTD----------										
26) FOSA	0.4686	0.4870	0.4730	0.4811	0.4579	0.4727	0.4801	0.4943	0.4768	2.377	0.9997

Initial Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q295-ICC295
Lab FileID: 2Q16999.D

58) M3-PFBS	----------ISTD----------										
29) PFBS	1.3946	1.4204	1.3006	1.2988	1.2651	1.3073	1.3626	1.3786	1.3410	4.121	0.9998
42) PFPeS	0.8786	0.9142	0.9030	0.8374	0.8037	0.8254	0.8662	0.8754	0.8630	4.428	0.9998
59) M3-PFHxS	----------ISTD----------										
34) PFHpS	0.6099	0.5353	0.5488	0.5253	0.5214	0.5368	0.5594	0.5651	0.5502	5.199	0.9998
36) PFHxS	1.2442	1.2334	1.1856	1.1373	1.1004	1.1490	1.1891	1.1865	1.1782	4.087	0.9999
60) M8-PFOS	----------ISTD----------										
38) PFNS	1.7997	1.7373	1.8977	1.7814	1.7149	1.7347	1.7791	1.8647	1.7887	3.594	0.9993
40) PFOS	1.5913	1.1962	1.2174	1.2132	1.1560	1.2269	1.2064	1.2663	1.2592	10.934	0.9994
61) M2-4:2FTS	----------ISTD----------										
20) 4:2FTS	0.5183	0.5726	0.5568	0.5102	0.4891	0.4893	0.4819	0.4289	0.5059	8.926	0.
62) M2-6:2FTS	----------ISTD----------										
21) 6:2FTS	0.5892	0.5521	0.5593	0.5000	0.4901	0.4743	0.4662	0.4190	0.5063	11.157	0.9999
63) M2-8:2FTS	----------ISTD----------										
22) 8:2FTS	0.6504	0.6214	0.5769	0.5623	0.5159	0.5120	0.4926	0.4441	0.5470	12.569	1.0000
64) M3-MeFOSAA	----------ISTD----------										
25) EtFOSAA	0.2684	0.3444	0.3540	0.3229	0.3087	0.3098	0.3316	0.3217	0.3202	8.167	0.9997
27) MeFOSAA	0.4019	0.4069	0.4250	0.3606	0.3620	0.3521	0.3694	0.3693	0.3809	6.966	0.9999

(value) - Average RF below (value)

Initial Calibration Verification

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q295-ICV295
Lab FileID: 2Q17003.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0712_PFC_ID_S2Q295\s2q295.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16994.d
2:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16995.d
3:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16996.d
4:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16997.d
5:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16998.d
6:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16999.d
7:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q17000.d
8:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q17001.d

Data File: 2q17003
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	18.684	-6.6	93.4
13C2-6:2FTS	20.000	19.259	-3.7	96.3
13C2-8:2FTS	20.000	18.798	-6.0	94.0
13C2-PFDoDA	20.000	18.471	-7.6	92.4
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	18.748	-6.3	93.7
13C3-PFBS	20.000	18.472	-7.6	92.4
13C3-PFHxS	20.000	19.044	-4.8	95.2
13C4-PFBA	20.000	18.822	-5.9	94.1
13C4-PFHpA	20.000	18.539	-7.3	92.7
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	18.609	-7.0	93.0
13C5-PFPeA	20.000	18.559	-7.2	92.8
13C6-PFDA	20.000	19.170	-4.1	95.9
13C7-PFUnDA	20.000	18.333	-8.3	91.7
13C8-FOSA	20.000	19.239	-3.8	96.2
13C8-PFOA	20.000	19.109	-4.5	95.5
13C8-PFOS	20.000	18.880	-5.6	94.4
13C9-PFNA	20.000	19.893	-0.5	99.5
4:2FTS	20.000	21.495	7.5	107.5
6:2FTS	20.000	22.829	14.1	114.1
8:2FTS	20.000	21.675	8.4	108.4
d3-MeFOSAA	20.000	18.887	-5.6	94.4
M2-PFOA	20.000	20.005	0.0	100.0
EtFOSAA	20.000	21.868	9.3	109.3
FOSA	20.000	23.300	16.5	116.5
MeFOSAA	20.000	22.643	13.2	113.2
PFBA	20.000	23.439	17.2	117.2
PFBS	20.000	19.734	-1.3	98.7
PFDA	20.000	21.230	6.1	106.1
PFDoDA	20.000	24.433	22.2	122.2
PFDS	20.000	21.748	8.7	108.7
PFHpA	20.000	22.515	12.6	112.6
PFHpS	20.000	21.605	8.0	108.0
PFHxA	20.000	20.477	2.4	102.4
PFHxS	20.000	19.757	-1.2	98.8
PFNA	20.000	19.790	-1.0	99.0

Initial Calibration Verification

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q295-ICV295
Lab FileID: 2Q17003.D

PFNS	20.000	21.231	6.2	106.2
PFOA	20.000	23.262	16.3	116.3
PFOS	20.000	22.496	12.5	112.5
PFPeA	20.000	22.573	12.9	112.9
PFPeS	20.000	20.620	3.1	103.1
PFTeDA	20.000	21.377	6.9	106.9
PFTrDA	20.000	24.979	24.9	124.9
PFUnDA	20.000	23.017	15.1	115.1
M4-PFOS	20.000	19.975	-0.1	99.9
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--		

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q295-CC295
Lab FileID: 2Q17014.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0712_PFC_ID_S2Q295\s2q295.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16994.d
2:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16995.d
3:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16996.d
4:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16997.d
5:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16998.d
6:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16999.d
7:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q17000.d
8:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q17001.d

Data File: 2q17014
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	23.701	18.5	118.5
13C2-6:2FTS	20.000	22.984	14.9	114.9
13C2-8:2FTS	20.000	22.372	11.9	111.9
13C2-PFDoDA	20.000	26.299	# 31.5	131.5
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	29.544	# 47.7	147.7
13C3-PFBS	20.000	23.644	18.2	118.2
13C3-PFHxS	20.000	24.202	21.0	121.0
13C4-PFBA	20.000	24.170	20.9	120.9
13C4-PFHpA	20.000	24.594	23.0	123.0
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	24.902	24.5	124.5
13C5-PFPeA	20.000	24.671	23.4	123.4
13C6-PFDA	20.000	25.219	26.1	126.1
13C7-PFUnDA	20.000	25.804	29.0	129.0
13C8-FOSA	20.000	22.587	12.9	112.9
13C8-PFOA	20.000	25.152	25.8	125.8
13C8-PFOS	20.000	22.901	14.5	114.5
13C9-PFNA	20.000	23.298	16.5	116.5
4:2FTS	20.000	19.837	-0.8	99.2
6:2FTS	20.000	19.351	-3.2	96.8
8:2FTS	20.000	19.759	-1.2	98.8
d3-MeFOSAA	20.000	19.686	-1.6	98.4
M2-PFOA	20.000	20.009	0.0	100.0
EtFOSAA	20.000	18.148	-9.3	90.7
FOSA	20.000	19.359	-3.2	96.8
MeFOSAA	20.000	19.596	-2.0	98.0
PFBA	20.000	19.525	-2.4	97.6
PFBS	20.000	19.032	-4.8	95.2
PFDA	20.000	19.397	-3.0	97.0
PFDoDA	20.000	19.830	-0.8	99.2
PFDS	20.000	19.111	-4.4	95.6
PFHpA	20.000	18.698	-6.5	93.5
PFHpS	20.000	19.242	-3.8	96.2
PFHxA	20.000	18.972	-5.1	94.9
PFHxS	20.000	19.369	-3.2	96.8
PFNA	20.000	18.233	-8.8	91.2

Continuing Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q295-CC295
Lab FileID: 2Q17014.D

PFNS	20.000	20.074	0.4	100.4
PFOA	20.000	18.796	-6.0	94.0
PFOS	20.000	19.836	-0.8	99.2
PFPeA	20.000	18.887	-5.6	94.4
PFPeS	20.000	19.453	-2.7	97.3
PFTeDA	20.000	19.455	-2.7	97.3
PFTrDA	20.000	18.733	-6.3	93.7
PFUnDA	20.000	19.288	-3.6	96.4
M4-PFOS	20.000	20.009	0.0	100.0
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--		

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q295-CC295
Lab FileID: 2Q17032.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0712_PFC_ID_S2Q295\s2q295.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16994.d
2:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16995.d
3:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16996.d
4:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16997.d
5:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16998.d
6:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16999.d
7:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q17000.d
8:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q17001.d

Data File: 2q17032
Type : QC
Level : 2

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	18.359	-8.2	91.8
13C2-6:2FTS	20.000	18.161	-9.2	90.8
13C2-8:2FTS	20.000	17.370	-13.1	86.9
13C2-PFDoDA	20.000	19.090	-4.6	95.4
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	18.754	-6.2	93.8
13C3-PFBS	20.000	19.387	-3.1	96.9
13C3-PFHxS	20.000	19.856	-0.7	99.3
13C4-PFBA	20.000	19.638	-1.8	98.2
13C4-PFHpA	20.000	19.977	-0.1	99.9
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	20.170	0.8	100.8
13C5-PFPeA	20.000	19.828	-0.9	99.1
13C6-PFDA	20.000	18.960	-5.2	94.8
13C7-PFUnDA	20.000	19.541	-2.3	97.7
13C8-FOSA	20.000	21.566	7.8	107.8
13C8-PFOA	20.000	20.248	1.2	101.2
13C8-PFOS	20.000	19.088	-4.6	95.4
13C9-PFNA	20.000	21.170	5.9	105.9
4:2FTS	1.000	1.013	1.3	101.3
6:2FTS	1.000	1.153	15.3	115.3
8:2FTS	1.000	1.162	16.2	116.2
d3-MeFOSAA	20.000	18.268	-8.7	91.3
M2-PFOA	20.000	20.002	0.0	100.0
EtFOSAA	1.000	1.068	6.8	106.8
FOSA	1.000	1.039	3.9	103.9
MeFOSAA	1.000	0.968	-3.2	96.8
PFBA	1.000	1.017	1.7	101.7
PFBS	1.000	1.006	0.6	100.6
PFDA	1.000	1.073	7.3	107.3
PFDoDA	1.000	1.201	20.1	120.1
PFDS	1.000	1.073	7.3	107.3
PFHpA	1.000	1.009	0.9	100.9
PFHpS	1.000	1.068	6.8	106.8
PFHxA	1.000	1.016	1.6	101.6
PFHxS	1.000	1.007	0.7	100.7
PFNA	1.000	0.915	-8.5	91.5

Continuing Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q295-CC295
Lab FileID: 2Q17032.D

PFNS	1.000	0.975	-2.5	97.5
PFOA	1.000	1.153	15.3	115.3
PFOS	1.000	1.083	8.3	108.3
PFPeA	1.000	1.213	21.3	121.3
PFPeS	1.000	1.034	3.4	103.4
PFTeDA	1.000	1.231	23.1	123.1
PFTrDA	1.000	1.100	10.0	110.0
PFUnDA	1.000	1.057	5.7	105.7
M4-PFOS	20.000	20.024	0.1	100.1
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--		

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q295-CC295
Lab FileID: 2Q17033.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0712_PFC_ID_S2Q295\s2q295.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16994.d
2:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16995.d
3:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16996.d
4:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16997.d
5:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16998.d
6:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16999.d
7:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q17000.d
8:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q17001.d

Data File: 2q17033
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	23.447	17.2	117.2
13C2-6:2FTS	20.000	23.253	16.3	116.3
13C2-8:2FTS	20.000	23.255	16.3	116.3
13C2-PFDoDA	20.000	23.649	18.2	118.2
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	23.550	17.7	117.7
13C3-PFBS	20.000	23.757	18.8	118.8
13C3-PFHxS	20.000	24.273	21.4	121.4
13C4-PFBA	20.000	24.053	20.3	120.3
13C4-PFHpA	20.000	24.190	20.9	120.9
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	24.094	20.5	120.5
13C5-PFPeA	20.000	24.340	21.7	121.7
13C6-PFDA	20.000	23.255	16.3	116.3
13C7-PFUnDA	20.000	24.151	20.8	120.8
13C8-FOSA	20.000	24.255	21.3	121.3
13C8-PFOA	20.000	24.246	21.2	121.2
13C8-PFOS	20.000	23.707	18.5	118.5
13C9-PFNA	20.000	25.008	25.0	125.0
4:2FTS	20.000	19.708	-1.5	98.5
6:2FTS	20.000	19.786	-1.1	98.9
8:2FTS	20.000	19.782	-1.1	98.9
d3-MeFOSAA	20.000	21.077	5.4	105.4
M2-PFOA	20.000	20.002	0.0	100.0
EtFOSAA	20.000	21.362	6.8	106.8
FOSA	20.000	19.521	-2.4	97.6
MeFOSAA	20.000	20.518	2.6	102.6
PFBA	20.000	19.195	-4.0	96.0
PFBS	20.000	18.991	-5.0	95.0
PFDA	20.000	19.044	-4.8	95.2
PFDoDA	20.000	19.585	-2.1	97.9
PFDS	20.000	19.920	-0.4	99.6
PFHpA	20.000	19.490	-2.6	97.4
PFHpS	20.000	19.801	-1.0	99.0
PFHxA	20.000	19.209	-4.0	96.0
PFHxS	20.000	19.357	-3.2	96.8
PFNA	20.000	19.403	-3.0	97.0

Continuing Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q295-CC295
Lab FileID: 2Q17033.D

PFNS	20.000	18.123	-9.4	90.6
PFOA	20.000	20.204	1.0	101.0
PFOS	20.000	18.997	-5.0	95.0
PFPeA	20.000	19.372	-3.1	96.9
PFPeS	20.000	19.114	-4.4	95.6
PFTeDA	20.000	19.959	-0.2	99.8
PFTrDA	20.000	20.102	0.5	100.5
PFUnDA	20.000	18.997	-5.0	95.0
M4-PFOS	20.000	19.984	-0.1	99.9
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--		

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q295-CC295
Lab FileID: 2Q17044.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0712_PFC_ID_S2Q295\s2q295.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16994.d
2:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16995.d
3:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16996.d
4:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16997.d
5:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16998.d
6:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16999.d
7:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q17000.d
8:D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q17001.d

Data File: 2q17044
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	23.748	18.7	118.7
13C2-6:2FTS	20.000	23.917	19.6	119.6
13C2-8:2FTS	20.000	23.217	16.1	116.1
13C2-PFDoDA	20.000	22.950	14.7	114.7
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	21.627	8.1	108.1
13C3-PFBS	20.000	23.928	19.6	119.6
13C3-PFHxS	20.000	24.084	20.4	120.4
13C4-PFBA	20.000	23.847	19.2	119.2
13C4-PFHpA	20.000	24.271	21.4	121.4
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	24.396	22.0	122.0
13C5-PFPeA	20.000	23.999	20.0	120.0
13C6-PFDA	20.000	23.530	17.6	117.6
13C7-PFUnDA	20.000	23.578	17.9	117.9
13C8-FOSA	20.000	24.666	23.3	123.3
13C8-PFOA	20.000	24.407	22.0	122.0
13C8-PFOS	20.000	22.956	14.8	114.8
13C9-PFNA	20.000	25.477	27.4	127.4
4:2FTS	20.000	19.307	-3.5	96.5
6:2FTS	20.000	19.292	-3.5	96.5
8:2FTS	20.000	19.745	-1.3	98.7
d3-MeFOSAA	20.000	22.555	12.8	112.8
M2-PFOA	20.000	19.994	0.0	100.0
EtFOSAA	20.000	20.329	1.6	101.6
FOSA	20.000	19.476	-2.6	97.4
MeFOSAA	20.000	19.014	-4.9	95.1
PFBA	20.000	18.786	-6.1	93.9
PFBS	20.000	18.947	-5.3	94.7
PFDA	20.000	18.527	-7.4	92.6
PFDoDA	20.000	19.459	-2.7	97.3
PFDS	20.000	19.406	-3.0	97.0
PFHpA	20.000	19.460	-2.7	97.3
PFHpS	20.000	19.348	-3.3	96.7
PFHxA	20.000	18.460	-7.7	92.3
PFHxS	20.000	19.259	-3.7	96.3
PFNA	20.000	18.592	-7.0	93.0

Continuing Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q295-CC295
Lab FileID: 2Q17044.D

PFNS	20.000	18.576	-7.1	92.9
PFOA	20.000	20.047	0.2	100.2
PFOS	20.000	20.056	0.3	100.3
PFPeA	20.000	19.731	-1.3	98.7
PFPeS	20.000	19.111	-4.4	95.6
PFTeDA	20.000	20.151	0.8	100.8
PFTrDA	20.000	20.756	3.8	103.8
PFUnDA	20.000	18.865	-5.7	94.3
M4-PFOS	20.000	20.003	0.0	100.0
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--		

CC Criteria: +/- 30%

Initial Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q296-ICC296
Lab FileID: 2Q17073.D

Initial Calibration ReSponse Factors - D:\MassHunter\Data\0713_PFC_ID_S2Q296\s2q296.batch.bin

Level ID : Calibration File
1 : D:\MassHunter\Data\0713_PFC_ID_S2Q296\2q17072.d
2 : D:\MassHunter\Data\0713_PFC_ID_S2Q296\2q17068.d
3 : D:\MassHunter\Data\0713_PFC_ID_S2Q296\2q17069.d
4 : D:\MassHunter\Data\0713_PFC_ID_S2Q296\2q17070.d
5 : D:\MassHunter\Data\0713_PFC_ID_S2Q296\2q17071.d
6 : D:\MassHunter\Data\0713_PFC_ID_S2Q296\2q17073.d
7 : D:\MassHunter\Data\0713_PFC_ID_S2Q296\2q17074.d
8 : D:\MassHunter\Data\0713_PFC_ID_S2Q296\2q17075.d

Compound	1	2	3	4	5	6	7	8	AvgRF	%RSD	r^2
1) 13C2-4:2FTS	3.44e+3	3.28e+3	3.27e+3	3.32e+3	3.35e+3	3.29e+3	3.64e+3	4.20e+3	3.47e+3	9.166	0.0000
2) 13C2-6:2FTS	2.71e+3	2.46e+3	2.48e+3	2.49e+3	2.54e+3	2.49e+3	2.78e+3	3.14e+3	2.64e+3	8.905	0.0000
3) 13C2-8:2FTS	3.10e+3	3.09e+3	3.00e+3	3.04e+3	3.10e+3	2.97e+3	3.33e+3	3.86e+3	3.18e+3	9.195	0.0000
4) 13C2-PFDoDA	1.43e+3	1.39e+3	1.41e+3	1.41e+3	1.39e+3	1.36e+3	1.41e+3	1.51e+3	1.42e+3	3.133	0.0000
6) 13C2-PFTeDA	6.06e+2	5.99e+2	6.08e+2	6.13e+2	6.09e+2	5.94e+2	6.21e+2	6.43e+2	6.12e+2	2.500	0.0000
7) 13C3-PFBS	1.15e+3	1.10e+3	1.10e+3	1.11e+3	1.10e+3	1.06e+3	1.10e+3	1.12e+3	1.10e+3	2.479	0.0000
8) 13C3-PFHxS	1.02e+3	9.41e+2	9.57e+2	9.47e+2	9.54e+2	9.13e+2	9.40e+2	9.71e+2	9.55e+2	3.204	0.0000
9) 13C4-PFBA	7.97e+3	7.45e+3	7.44e+3	7.45e+3	7.43e+3	7.14e+3	7.42e+3	7.70e+3	7.50e+3	3.232	0.0000
10) 13C4-PFHpA	3.38e+3	3.15e+3	3.18e+3	3.20e+3	3.16e+3	3.04e+3	3.14e+3	3.17e+3	3.18e+3	2.988	0.0000
12) 13C5-PFHxA	3.56e+3	3.33e+3	3.36e+3	3.40e+3	3.34e+3	3.21e+3	3.25e+3	3.30e+3	3.34e+3	3.140	0.0000
13) 13C5-PFPeA	3.85e+3	3.69e+3	3.67e+3	3.71e+3	3.67e+3	3.57e+3	3.65e+3	3.80e+3	3.70e+3	2.407	0.0000
14) 13C6-PFDA	2.33e+3	2.23e+3	2.24e+3	2.21e+3	2.21e+3	2.13e+3	2.17e+3	2.23e+3	2.22e+3	2.555	0.0000
15) 13C7-PFUnDA	1.84e+3	1.78e+3	1.80e+3	1.80e+3	1.77e+3	1.72e+3	1.79e+3	1.84e+3	1.79e+3	2.107	0.0000
16) 13C8-FOSA	1.99e+3	1.86e+3	1.90e+3	1.85e+3	1.85e+3	1.72e+3	1.61e+3	1.54e+3	1.79e+3	8.545	0.0000
17) 13C8-PFOA	1.76e+3	1.65e+3	1.60e+3	1.66e+3	1.66e+3	1.57e+3	1.64e+3	1.67e+3	1.65e+3	3.455	0.0000
18) 13C8-PFOS	5.10e+2	4.71e+2	4.66e+2	4.63e+2	4.59e+2	4.51e+2	4.55e+2	4.72e+2	4.68e+2	3.937	0.0000
19) 13C9-PFNA	1.08e+3	9.77e+2	1.03e+3	1.01e+3	1.02e+3	9.75e+2	1.02e+3	1.03e+3	1.02e+3	3.211	0.0000
23) d3-MeFOSAA	8.46e+2	8.25e+2	8.43e+2	8.42e+2	8.23e+2	7.77e+2	7.79e+2	7.57e+2	8.12e+2	4.329	0.0000
5) 13C2-PFOA	----------ISTD----------										
24) M2-PFOA	0.9996	0.9993	1.0004	0.9994	1.0001	0.9993	1.0005	1.0002	0.9999	0.049	0.0000
11) 13C4-PFOS	----------ISTD----------										
46) M4-PFOS	1.0001	0.9999	0.9991	1.0004	1.0000	1.0006	0.9993	1.0005	1.0000	0.054	0.0000
47) M4-PFBA	----------ISTD----------										
28) PFBA	0.1727	0.1637	0.1660	0.1550	0.1589	0.1647	0.1639	0.1563	0.1626	3.538	0.9994
48) M5-PFPeA	----------ISTD----------										
41) PFPeA	-----	1.1119	1.0140	0.9139	0.9246	0.9372	0.9271	0.8765	0.9579	8.299	0.9990
49) M5-PFHxA	----------ISTD----------										
35) PFHxA	0.3790	0.3597	0.3405	0.3249	0.3387	0.3290	0.3358	0.3201	0.3410	5.723	0.9994
50) M4-PFHpA	----------ISTD----------										
33) PFHpA	0.7234	0.7947	0.7345	0.6972	0.7223	0.7436	0.7256	0.7090	0.7313	4.006	0.9998
51) M8-PFOA	----------ISTD----------										
39) PFOA	0.5537	0.5699	0.5816	0.4962	0.5054	0.5462	0.5199	0.5080	0.5351	5.995	0.9996
52) M9-PFNA	----------ISTD----------										
37) PFNA	0.4106	0.4100	0.3578	0.3917	0.4037	0.3828	0.3811	0.3751	0.3891	4.752	0.9999
53) M6-PFDA	----------ISTD----------										
30) PFDA	0.3877	0.3731	0.3565	0.3700	0.3623	0.3812	0.3709	0.3519	0.3692	3.256	0.9991
54) M7-PFUnDA	----------ISTD----------										
32) PFDS	0.2194	0.2041	0.1994	0.1891	0.2053	0.2065	0.1970	0.1865	0.2009	5.202	0.9988
45) PFUnDA	0.5550	0.5234	0.4881	0.4808	0.4773	0.4956	0.4699	0.4696	0.4950	6.033	0.9999
55) M2-PFDoDA	----------ISTD----------										
31) PFDoDA	0.6023	0.5959	0.5501	0.5277	0.5330	0.5276	0.5172	0.4811	0.5419	7.457	0.9983
56) M2-PFTeDA	----------ISTD----------										
43) PFTeDA	0.7377	0.6725	0.6515	0.5897	0.6184	0.6117	0.5775	0.5628	0.6277	9.170	0.9999
44) PFTrDA	0.9105	0.9757	0.9527	0.8761	0.8990	0.9061	0.8875	0.8377	0.9057	4.760	0.9989
57) M8-FOSA	----------ISTD----------										
26) FOSA	0.5315	0.5189	0.4594	0.4898	0.4791	0.4976	0.5032	0.4784	0.4947	4.710	0.9993

Initial Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q296-ICC296
Lab FileID: 2Q17073.D

58) M3-PFBS	----------ISTD----------										
29) PFBS	1.3400	1.4045	1.3826	1.2867	1.3506	1.3703	1.3443	1.2870	1.3457	3.130	0.9994
42) PFPeS	0.9152	0.8574	0.9066	0.8490	0.9029	0.9189	0.8900	0.8533	0.8867	3.277	0.9993
59) M3-PFHxS	----------ISTD----------										
34) PFHpS	0.6003	0.6229	0.5979	0.6090	0.6147	0.6185	0.6276	0.5893	0.6100	2.182	0.9990
36) PFHxS	1.2850	1.2724	1.2299	1.1518	1.1782	1.2045	1.1998	1.1401	1.2077	4.346	0.9993
60) M8-PFOS	----------ISTD----------										
38) PFNS	1.3913	1.4025	1.3914	1.3082	1.3456	1.3648	1.3567	1.2755	1.3545	3.252	0.9989
40) PFOS	1.2558	1.2675	1.2543	1.2380	1.2558	1.2378	1.2738	1.2349	1.2522	1.144	0.9998
61) M2-4:2FTS	----------ISTD----------										
20) 4:2FTS	0.5669	0.5710	0.5465	0.5135	0.5170	0.5246	0.4784	0.4111	0.5161	10.103	1.
62) M2-6:2FTS	----------ISTD----------										
21) 6:2FTS	0.5449	0.5122	0.5228	0.4902	0.4991	0.5079	0.4658	0.4017	0.4931	8.837	1.0000
63) M2-8:2FTS	----------ISTD----------										
22) 8:2FTS	0.6005	0.5955	0.5857	0.5640	0.5462	0.5440	0.4931	0.4268	0.5445	10.824	1.0000
64) M3-MeFOSAA	----------ISTD----------										
25) EtFOSAA	0.3367	0.3977	0.3305	0.3022	0.3269	0.3276	0.3165	0.3059	0.3305	8.986	0.9995
27) MeFOSAA	0.3825	0.3492	0.3745	0.3622	0.3721	0.3720	0.3630	0.3619	0.3672	2.781	1.0000

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*(value) - Average RF below (value)

Initial Calibration Verification

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q296-ICV296
Lab FileID: 2Q17077.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0713_PFC_ID_S2Q296\s2q296.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\0713_PFC_ID_S2Q296\2q17072.d
2:D:\MassHunter\Data\0713_PFC_ID_S2Q296\2q17068.d
3:D:\MassHunter\Data\0713_PFC_ID_S2Q296\2q17069.d
4:D:\MassHunter\Data\0713_PFC_ID_S2Q296\2q17070.d
5:D:\MassHunter\Data\0713_PFC_ID_S2Q296\2q17071.d
6:D:\MassHunter\Data\0713_PFC_ID_S2Q296\2q17073.d
7:D:\MassHunter\Data\0713_PFC_ID_S2Q296\2q17074.d
8:D:\MassHunter\Data\0713_PFC_ID_S2Q296\2q17075.d

Data File: 2q17077
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	19.569	-2.2	97.8
13C2-6:2FTS	20.000	19.190	-4.1	95.9
13C2-8:2FTS	20.000	18.457	-7.7	92.3
13C2-PFDoDA	20.000	19.259	-3.7	96.3
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	19.130	-4.3	95.7
13C3-PFBS	20.000	19.717	-1.4	98.6
13C3-PFHxS	20.000	19.435	-2.8	97.2
13C4-PFBA	20.000	19.500	-2.5	97.5
13C4-PFHpA	20.000	19.620	-1.9	98.1
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	19.668	-1.7	98.3
13C5-PFPeA	20.000	19.693	-1.5	98.5
13C6-PFDA	20.000	19.748	-1.3	98.7
13C7-PFUnDA	20.000	19.241	-3.8	96.2
13C8-FOSA	20.000	19.370	-3.2	96.8
13C8-PFOA	20.000	19.444	-2.8	97.2
13C8-PFOS	20.000	19.669	-1.7	98.3
13C9-PFNA	20.000	19.384	-3.1	96.9
4:2FTS	20.000	20.698	3.5	103.5
6:2FTS	20.000	20.944	4.7	104.7
8:2FTS	20.000	20.743	3.7	103.7
d3-MeFOSAA	20.000	19.583	-2.1	97.9
M2-PFOA	20.000	20.010	0.0	100.0
EtFOSAA	20.000	23.465	17.3	117.3
FOSA	20.000	23.129	15.6	115.6
MeFOSAA	20.000	22.472	12.4	112.4
PFBA	20.000	23.043	15.2	115.2
PFBS	20.000	19.974	-0.1	99.9
PFDA	20.000	21.212	6.1	106.1
PFDoDA	20.000	24.269	21.3	121.3
PFDS	20.000	21.677	8.4	108.4
PFHpA	20.000	22.888	14.4	114.4
PFHpS	20.000	21.666	8.3	108.3
PFHxA	20.000	20.255	1.3	101.3
PFHxS	20.000	19.944	-0.3	99.7
PFNA	20.000	21.495	7.5	107.5

Initial Calibration Verification

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q296-ICV296
Lab FileID: 2Q17077.D

PFNS	20.000	21.548	7.7	107.7
PFOA	20.000	23.807	19.0	119.0
PFOS	20.000	21.694	8.5	108.5
PFPeA	20.000	22.957	14.8	114.8
PFPeS	20.000	21.286	6.4	106.4
PFTeDA	20.000	21.074	5.4	105.4
PFTrDA	20.000	25.241	26.2	126.2
PFUnDA	20.000	23.356	16.8	116.8
M4-PFOS	20.000	19.999	0.0	100.0
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--		

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q296-CC296
Lab FileID: 2Q17111.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0713_PFC_ID_S2Q296\s2q296.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\0713_PFC_ID_S2Q296\2q17072.d
2:D:\MassHunter\Data\0713_PFC_ID_S2Q296\2q17068.d
3:D:\MassHunter\Data\0713_PFC_ID_S2Q296\2q17069.d
4:D:\MassHunter\Data\0713_PFC_ID_S2Q296\2q17070.d
5:D:\MassHunter\Data\0713_PFC_ID_S2Q296\2q17071.d
6:D:\MassHunter\Data\0713_PFC_ID_S2Q296\2q17073.d
7:D:\MassHunter\Data\0713_PFC_ID_S2Q296\2q17074.d
8:D:\MassHunter\Data\0713_PFC_ID_S2Q296\2q17075.d

Data File: 2q17111
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	18.889	-5.6	94.4
13C2-6:2FTS	20.000	18.304	-8.5	91.5
13C2-8:2FTS	20.000	17.558	-12.2	87.8
13C2-PFDoDA	20.000	17.277	-13.6	86.4
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	16.706	-16.5	83.5
13C3-PFBS	20.000	19.180	-4.1	95.9
13C3-PFHxS	20.000	18.567	-7.2	92.8
13C4-PFBA	20.000	18.666	-6.7	93.3
13C4-PFHpA	20.000	18.954	-5.2	94.8
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	18.935	-5.3	94.7
13C5-PFPeA	20.000	18.619	-6.9	93.1
13C6-PFDA	20.000	17.568	-12.2	87.8
13C7-PFUnDA	20.000	17.487	-12.6	87.4
13C8-FOSA	20.000	18.176	-9.1	90.9
13C8-PFOA	20.000	18.007	-10.0	90.0
13C8-PFOS	20.000	18.740	-6.3	93.7
13C9-PFNA	20.000	17.759	-11.2	88.8
4:2FTS	20.000	19.911	-0.4	99.6
6:2FTS	20.000	20.161	0.8	100.8
8:2FTS	20.000	20.201	1.0	101.0
d3-MeFOSAA	20.000	19.104	-4.5	95.5
M2-PFOA	20.000	20.004	0.0	100.0
EtFOSAA	20.000	20.985	4.9	104.9
FOSA	20.000	20.440	2.2	102.2
MeFOSAA	20.000	20.886	4.4	104.4
PFBA	20.000	20.000	0.0	100.0
PFBS	20.000	20.790	3.9	103.9
PFDA	20.000	20.786	3.9	103.9
PFDoDA	20.000	21.489	7.4	107.4
PFDS	20.000	21.319	6.6	106.6
PFHpA	20.000	20.987	4.9	104.9
PFHpS	20.000	20.173	0.9	100.9
PFHxA	20.000	20.792	4.0	104.0
PFHxS	20.000	20.945	4.7	104.7
PFNA	20.000	22.010	10.0	110.0

Continuing Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q296-CC296
Lab FileID: 2Q17111.D

PFNS	20.000	20.292	1.5	101.5
PFOA	20.000	21.615	8.1	108.1
PFOS	20.000	20.196	1.0	101.0
PFPeA	20.000	21.903	9.5	109.5
PFPeS	20.000	20.903	4.5	104.5
PFTeDA	20.000	20.595	3.0	103.0
PFTrDA	20.000	22.108	10.5	110.5
PFUnDA	20.000	20.844	4.2	104.2
M4-PFOS	20.000	20.028	0.1	100.1
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--		

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q296-CC296
Lab FileID: 2Q17120.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0713_PFC_ID_S2Q296\s2q296.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\0713_PFC_ID_S2Q296\2q17072.d
2:D:\MassHunter\Data\0713_PFC_ID_S2Q296\2q17068.d
3:D:\MassHunter\Data\0713_PFC_ID_S2Q296\2q17069.d
4:D:\MassHunter\Data\0713_PFC_ID_S2Q296\2q17070.d
5:D:\MassHunter\Data\0713_PFC_ID_S2Q296\2q17071.d
6:D:\MassHunter\Data\0713_PFC_ID_S2Q296\2q17073.d
7:D:\MassHunter\Data\0713_PFC_ID_S2Q296\2q17074.d
8:D:\MassHunter\Data\0713_PFC_ID_S2Q296\2q17075.d

Data File: 2q17120
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	18.607	-7.0	93.0
13C2-6:2FTS	20.000	18.012	-9.9	90.1
13C2-8:2FTS	20.000	17.077	-14.6	85.4
13C2-PFDoDA	20.000	16.849	-15.8	84.2
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	15.928	-20.4	79.6
13C3-PFBS	20.000	18.954	-5.2	94.8
13C3-PFHxS	20.000	18.149	-9.3	90.7
13C4-PFBA	20.000	18.460	-7.7	92.3
13C4-PFHpA	20.000	18.565	-7.2	92.8
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	18.601	-7.0	93.0
13C5-PFPeA	20.000	18.243	-8.8	91.2
13C6-PFDA	20.000	17.425	-12.9	87.1
13C7-PFUnDA	20.000	17.311	-13.4	86.6
13C8-FOSA	20.000	17.996	-10.0	90.0
13C8-PFOA	20.000	17.745	-11.3	88.7
13C8-PFOS	20.000	17.636	-11.8	88.2
13C9-PFNA	20.000	17.076	-14.6	85.4
4:2FTS	20.000	19.944	-0.3	99.7
6:2FTS	20.000	19.660	-1.7	98.3
8:2FTS	20.000	20.268	1.3	101.3
d3-MeFOSAA	20.000	18.412	-7.9	92.1
M2-PFOA	20.000	19.998	0.0	100.0
EtFOSAA	20.000	21.548	7.7	107.7
FOSA	20.000	20.467	2.3	102.3
MeFOSAA	20.000	20.578	2.9	102.9
PFBA	20.000	20.092	0.5	100.5
PFBS	20.000	21.260	6.3	106.3
PFDA	20.000	20.742	3.7	103.7
PFDoDA	20.000	21.337	6.7	106.7
PFDS	20.000	20.798	4.0	104.0
PFHpA	20.000	21.416	7.1	107.1
PFHpS	20.000	20.386	1.9	101.9
PFHxA	20.000	20.542	2.7	102.7
PFHxS	20.000	20.884	4.4	104.4
PFNA	20.000	22.595	13.0	113.0

Continuing Calibration Summary

Job Number: FA55430
Account: ENSAFETN Ensafe, Inc
Project: SWMU 15/JM 50; Millington, TN

Sample: S2Q296-CC296
Lab FileID: 2Q17120.D

PFNS	20.000	21.059	5.3	105.3
PFOA	20.000	20.663	3.3	103.3
PFOS	20.000	20.526	2.6	102.6
PFPeA	20.000	22.177	10.9	110.9
PFPeS	20.000	20.896	4.5	104.5
PFTeDA	20.000	20.507	2.5	102.5
PFTrDA	20.000	22.641	13.2	113.2
PFUnDA	20.000	20.469	2.3	102.3
M4-PFOS	20.000	20.012	0.1	100.1
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--		

CC Criteria: +/- 30%

MS Semi-volatiles

Raw Data

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/10/18 17:10

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16587.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/6/2018 12:05:20 AM
Sample Name : fa55430-1
Vial : Vial 22
DA Method File : PFC_ID_070518_S2Q291.quantmethod.xml
Batch Name : s2q291.batch.bin
Sample Information : op70743,S2Q291,130,,,1.0,1,water

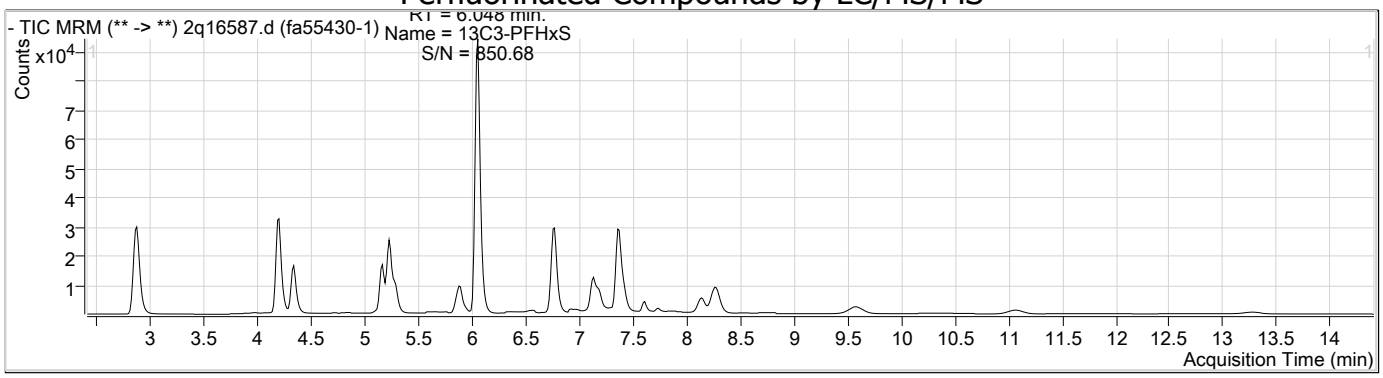
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.760	415.0 -> 370.0	19185	20.00	µg/L	-0.038
13C4-PFOS	7.359	503.0 -> 80.0	10017	20.00	µg/L	-0.038
M4-PFBA	2.866	217.0 -> 172.0	115468	20.00	µg/L	-0.038
M5-PFPeA	4.200	268.0 -> 223.0	53388	20.00	µg/L	-0.038
M5-PFHxA	5.228	318.0 -> 273.0	48199	20.00	µg/L	-0.038
M4-PFHpA	6.054	367.0 -> 322.0	44492	20.00	µg/L	-0.038
M8-PFOA	6.758	421.0 -> 376.0	24568	20.00	µg/L	-0.038
M9-PFNA	7.425	472.0 -> 427.0	16920	20.00	µg/L	-0.026
M6-PFDA	8.142	519.0 -> 474.0	24512	20.00	µg/L	-0.038
M7-PFUnDA	9.578	570.0 -> 525.0	22967	20.00	µg/L	-0.100
M2-PFDoDA	11.064	615.0 -> 570.0	13466	20.00	µg/L	-0.105
M2-PFTeDA	13.268	715.0 -> 670.0	5870	20.00	µg/L	-0.113
M8-FOSA	7.130	506.0 -> 78.0	7130	20.00	µg/L	-0.013
M3-PFBS	4.330	302.0 -> 99.0	18925	20.00	µg/L	-0.038
M3-PFHxS	6.048	402.0 -> 99.0	16244	20.00	µg/L	-0.038
M8-PFOS	7.357	507.0 -> 99.0	7906	20.00	µg/L	-0.038
M2-4:2FTS	5.160	329.0 -> 309.0	55607	20.00	µg/L	-0.038
M2-6:2FTS	6.768	429.0 -> 409.0	43828	20.00	µg/L	-0.040
M2-8:2FTS	8.262	529.0 -> 509.0	49018	20.00	µg/L	-0.063
M3-MeFOSAA	7.607	573.0 -> 419.0	10307	20.00	µg/L	-0.013
System Monitoring Compounds						
13C2-4:2FTS	5.160	329.0 -> 309.0	55614	16.96	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.8%		
13C2-6:2FTS	6.768	429.0 -> 409.0	43838	16.59	µg/L	-0.040
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.9%		
13C2-8:2FTS	8.262	529.0 -> 509.0	49015	15.10	µg/L	-0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.5%		
13C2-PFDoDA	11.064	615.0 -> 570.0	13471	9.19	µg/L	-0.105
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 46.0%		
13C2-PFTeDA	13.268	715.0 -> 670.0	5862	9.45	µg/L	-0.113
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 47.2%		
13C3-PFBS	4.330	302.0 -> 99.0	18912	17.11	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.6%		
13C3-PFHxS	6.048	402.0 -> 99.0	16239	16.21	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.1%		
13C4-PFBA	2.866	217.0 -> 172.0	115460	15.08	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.4%		
13C4-PFHpA	6.054	367.0 -> 322.0	44496	13.81	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.0%		
13C5-PFHxA	5.228	318.0 -> 273.0	48202	14.71	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.6%		
13C5-PFPeA	4.200	268.0 -> 223.0	53384	14.65	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.3%		
13C6-PFDA	8.142	519.0 -> 474.0	24515	13.24	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.2%		

Perfluorinated Compounds by LC/MS/MS

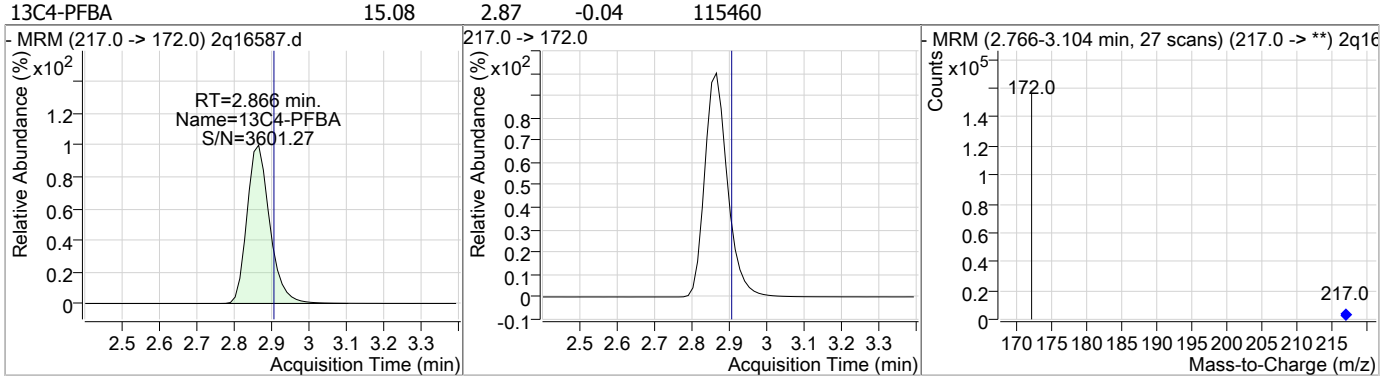
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	9.578	570.0 -> 525.0	22970	11.23	µg/L		-0.100
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 56.2%			
13C8-FOSA	7.130	506.0 -> 78.0	7145	4.06	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 20.3%			
13C8-PFOA	6.758	421.0 -> 376.0	24568	14.11	µg/L		-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.5%			
13C8-PFOS	7.357	507.0 -> 99.0	7905	16.13	µg/L		-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.7%			
13C9-PFNA	7.425	472.0 -> 427.0	16946	14.24	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.2%			
d3-MeFOSAA	7.607	573.0 -> 419.0	10300	11.73	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 58.7%			
M2-PFOA	6.760	415.0 -> 370.0	19185	20.00	ng/ml		-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.359	503.0 -> 80.0	10003	19.98	ng/ml		-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%			
Target Compounds							**QValue**
4:2FTS	5.162	327.0 -> 307.0	298	0.20	µg/L	#	28
6:2FTS	6.769	427.0 -> 407.0	5725	5.16	µg/L		87
8:2FTS	8.265	527.0 -> 507.0	902	0.66	µg/L		71
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	2.862	213.0 -> 169.0	10995	11.84	µg/L		100
PFBS	4.334	299.0 -> 80.0	27638	21.75	µg/L	m	97
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	6.057	363.0 -> 319.0	21761	13.73	µg/L	m	94
PFHpS	6.728	449.0 -> 80.0	3665	7.79	µg/L	m	93
PFHxA	5.230	313.0 -> 269.0	29980	38.30	µg/L		98
PFHxS	6.051	399.0 -> 80.0	194632	216.08	µg/L	m	97
PFNA	7.426	463.0 -> 419.0	720	2.14	µg/L		86
PFNS	7.747	549.0 -> 80.0	0	0.00	µg/L	m	1
PFOA	6.761	413.0 -> 369.0	11387	18.47	µg/L	m	88
PFOS	7.360	499.0 -> 80.0	103389	216.49	µg/L	m	71
PFPeA	4.191	263.0 -> 219.0	66037	25.61	µg/L		100
PFPeS	5.283	349.0 -> 80.0	19218	24.72	µg/L	m	95
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			

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

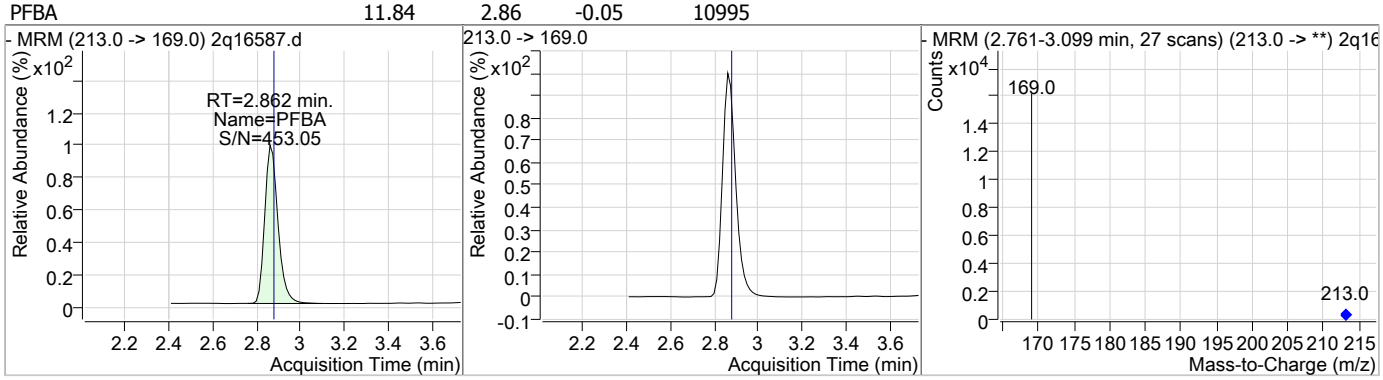
Perfluorinated Compounds by LC/MS/MS



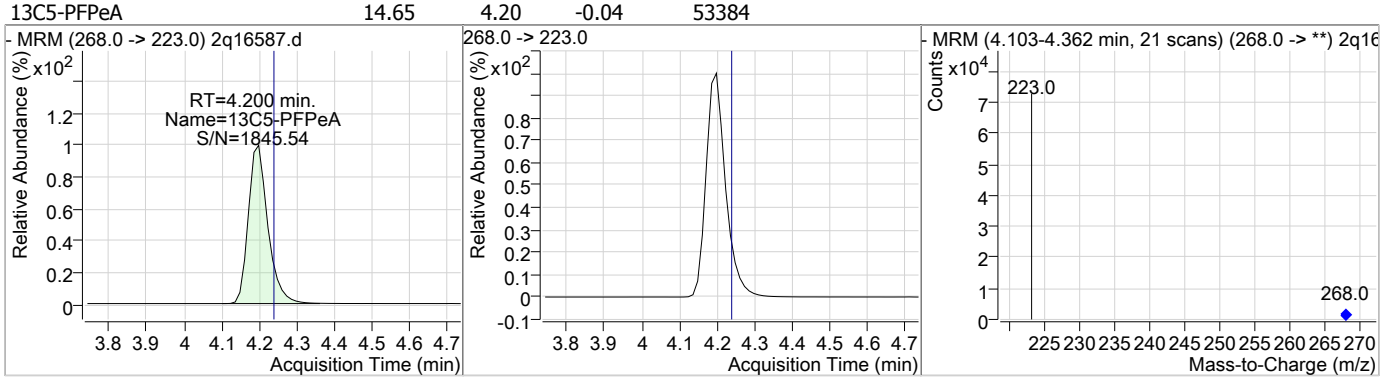
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	15.08	2.87	-0.04	115460				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	11.84	2.86	-0.05	10995				

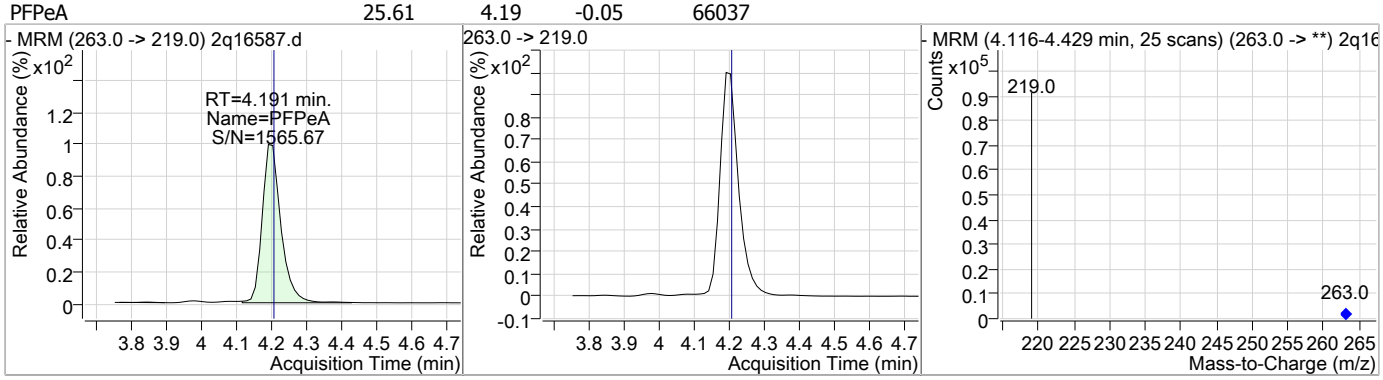


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	14.65	4.20	-0.04	53384				

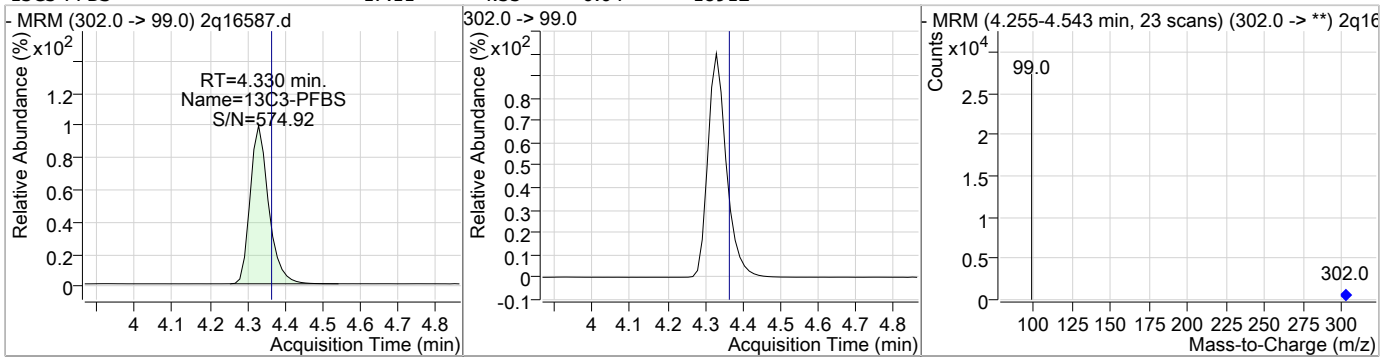


Perfluorinated Compounds by LC/MS/MS

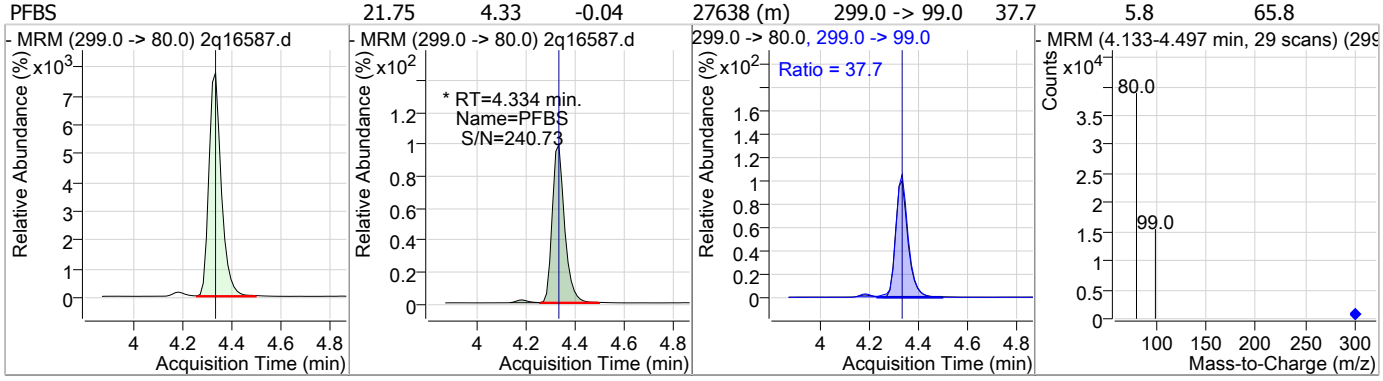
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	25.61	4.19	-0.05	66037				



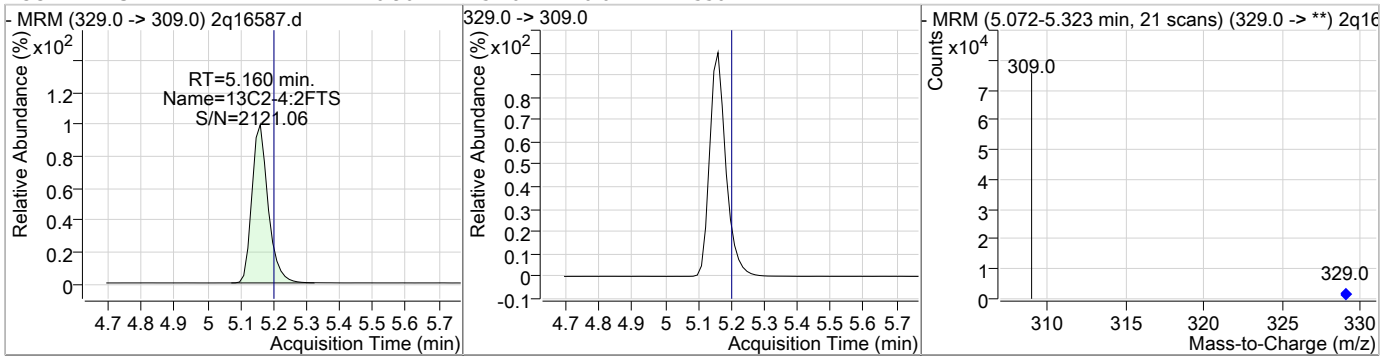
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	17.11	4.33	-0.04	18912				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	21.75	4.33	-0.04	27638 (m)	299.0 -> 99.0	37.7	5.8	65.8

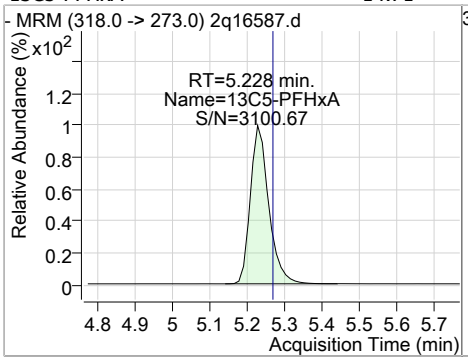


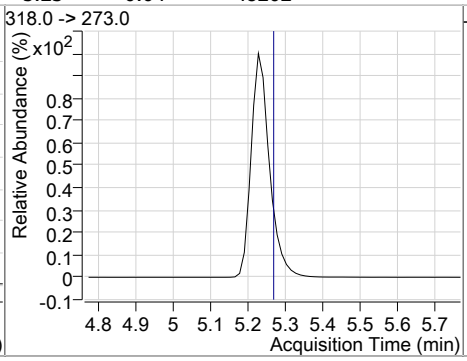
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	16.96	5.16	-0.04	55614				

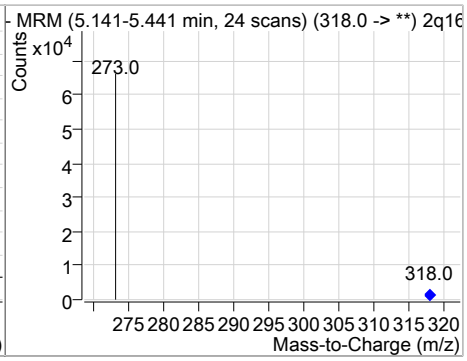


Perfluorinated Compounds by LC/MS/MS

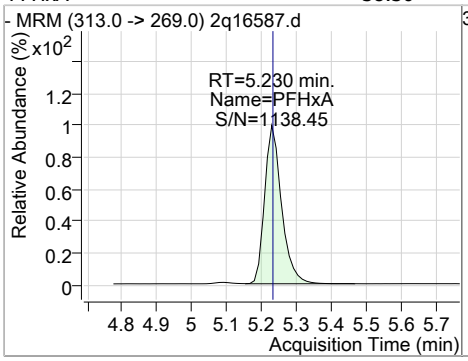
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	14.71	5.23	-0.04	48202				

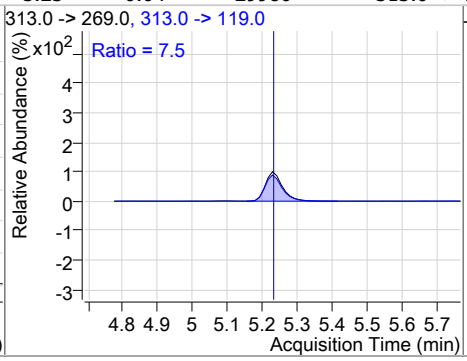


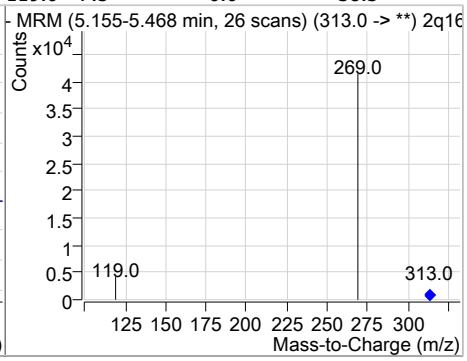




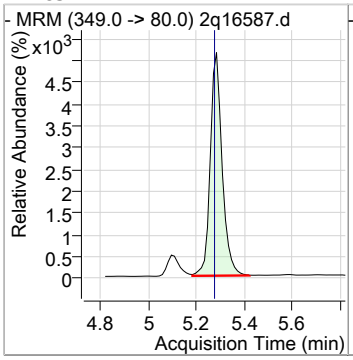
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	38.30	5.23	-0.04	29980	313.0 -> 119.0	7.5	0.0	38.3

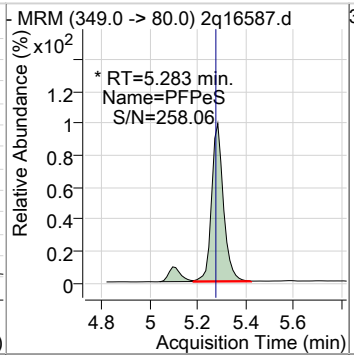


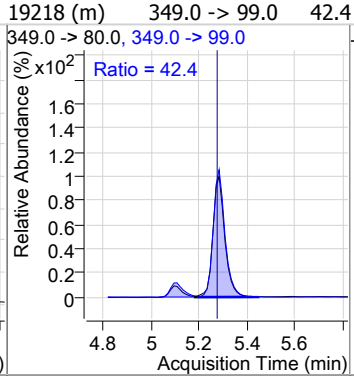


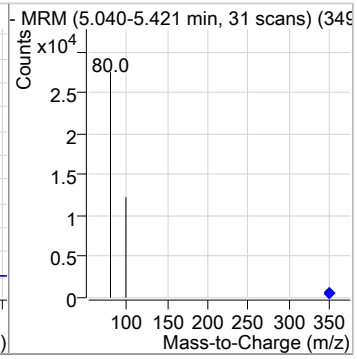


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	24.72	5.28	-0.04	19218 (m)	349.0 -> 99.0	42.4	9.3	69.3

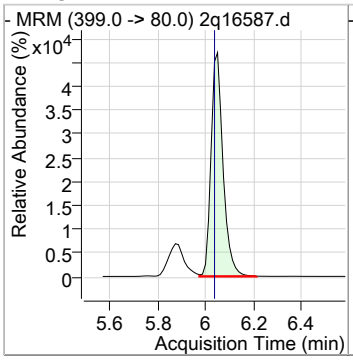


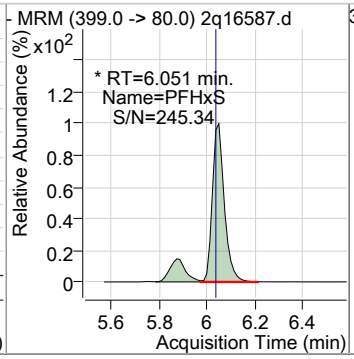


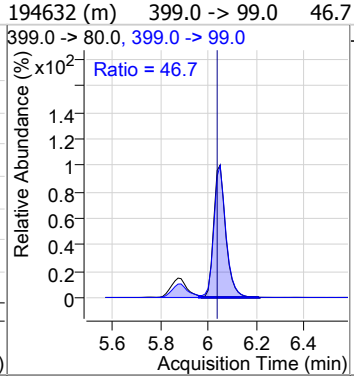


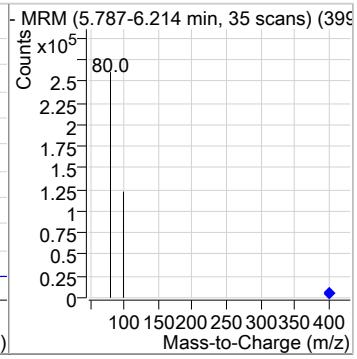


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	216.08	6.05	-0.03	194632 (m)	399.0 -> 99.0	46.7	19.0	79.0



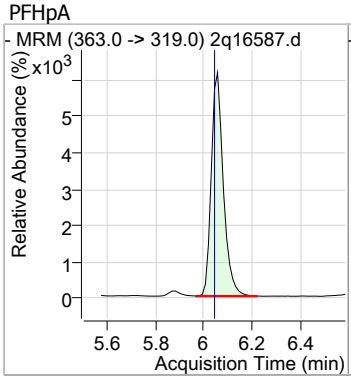


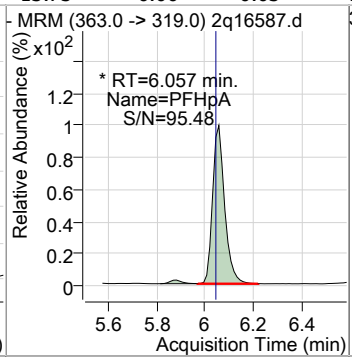


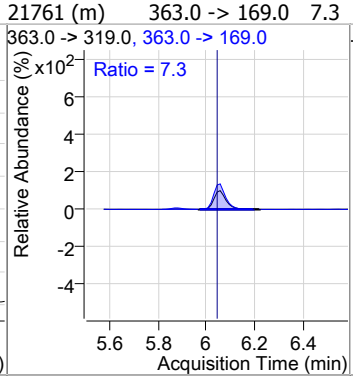


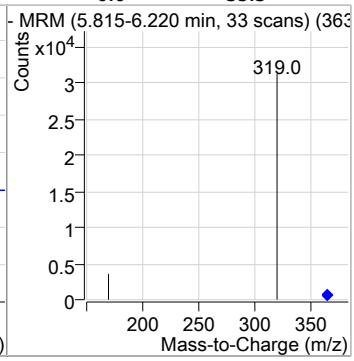
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	13.73	6.06	-0.03	21761 (m)	363.0 -> 169.0	7.3	0.0	35.3

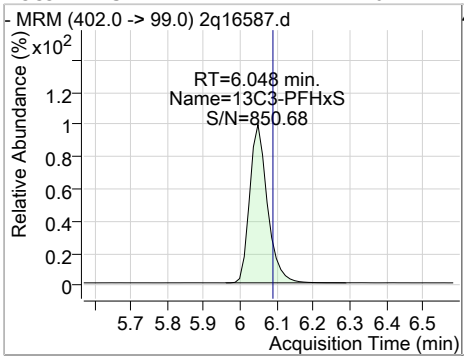


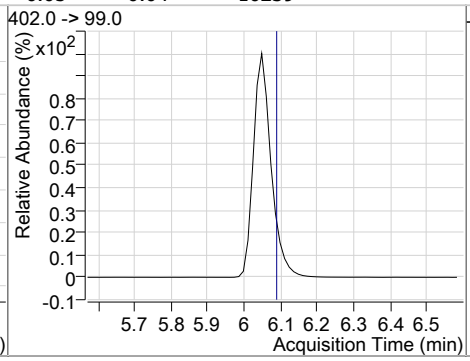


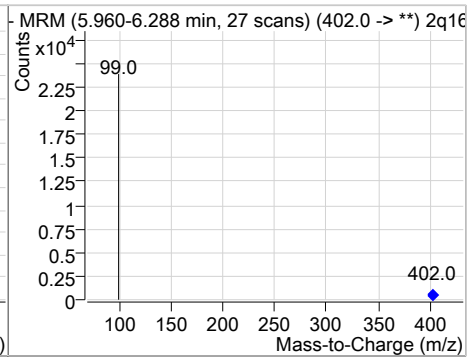




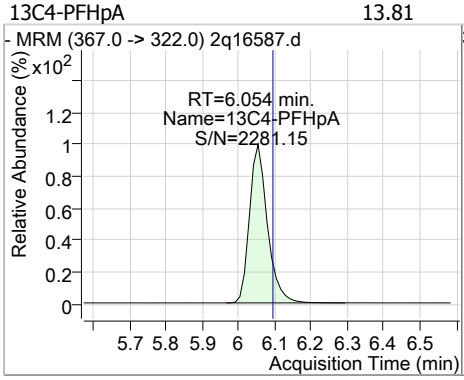
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	16.21	6.05	-0.04	16239				

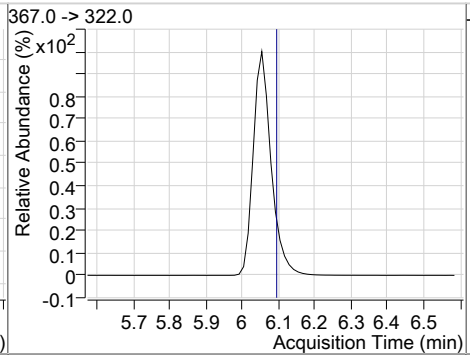


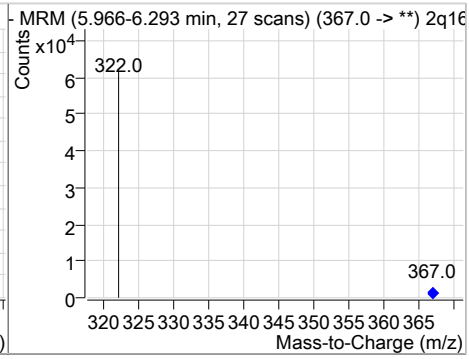




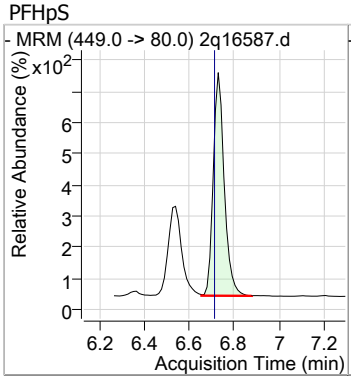
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	13.81	6.05	-0.04	44496				

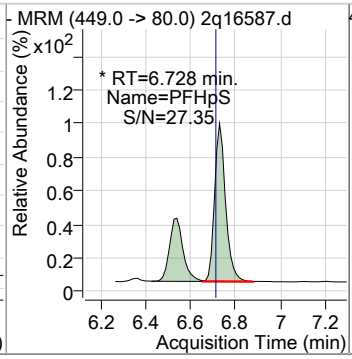


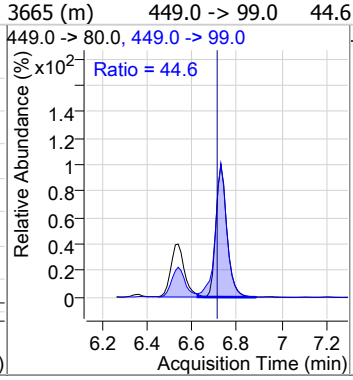


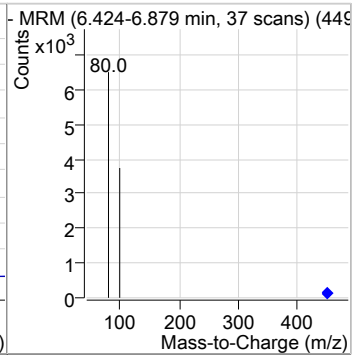


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	7.79	6.73	-0.03	3665 (m)	449.0 -> 99.0	44.6	19.2	79.2



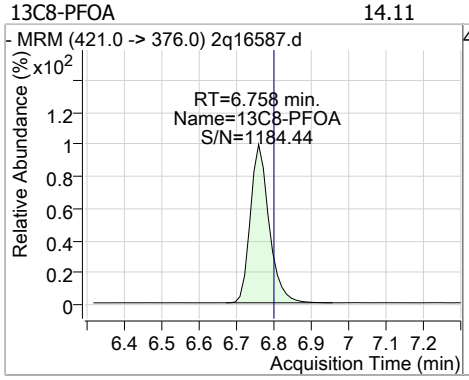


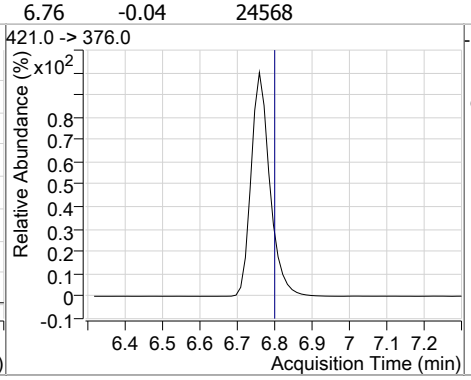


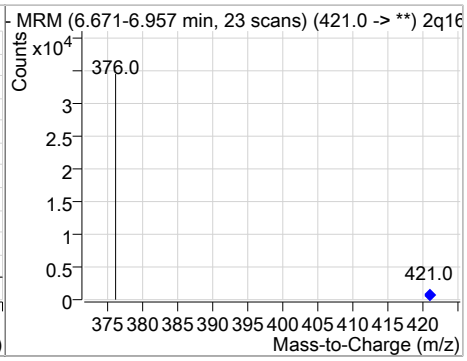


Perfluorinated Compounds by LC/MS/MS

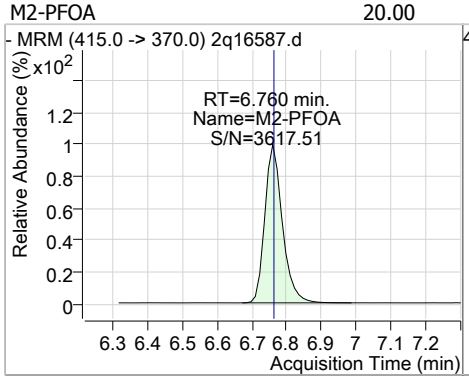
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	14.11	6.76	-0.04	24568				

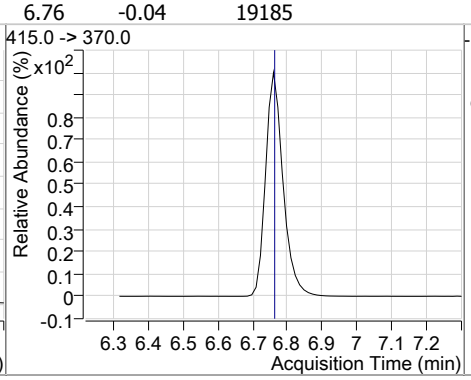


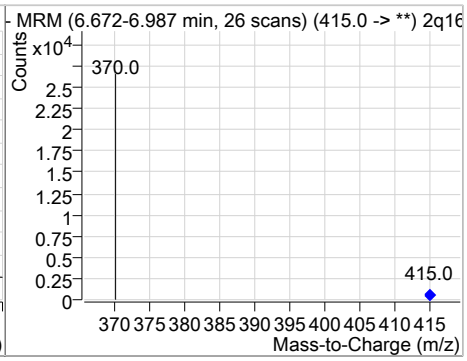




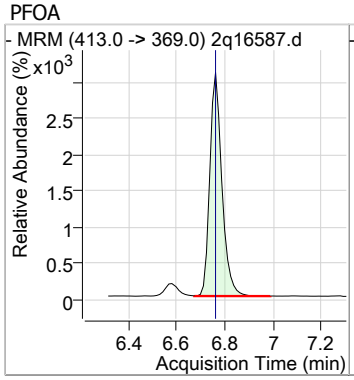
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.76	-0.04	19185				

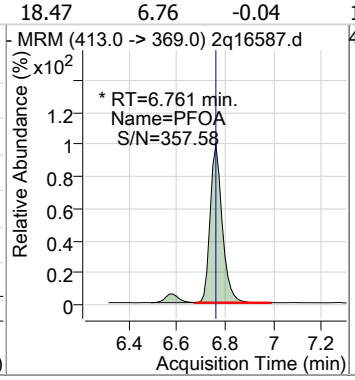


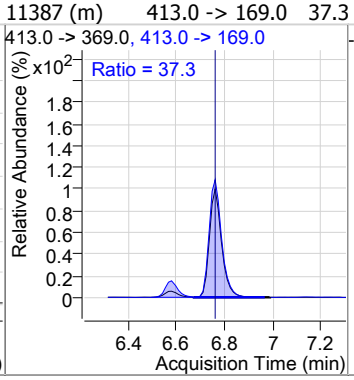


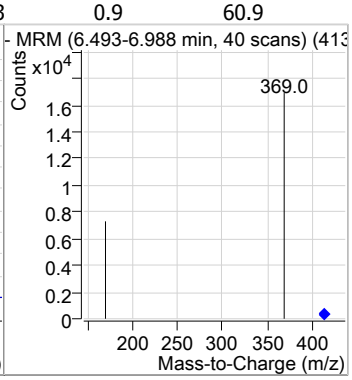


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	18.47	6.76	-0.04	11387 (m)	413.0 -> 169.0	37.3	0.9	60.9

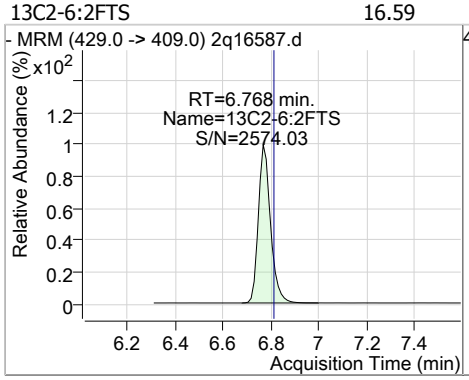


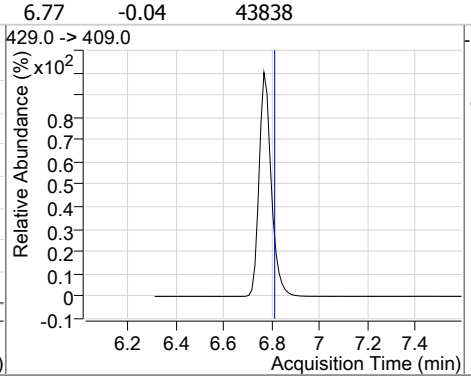


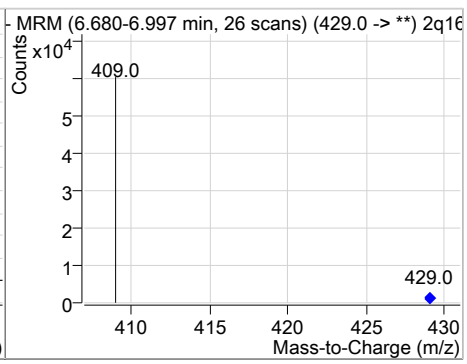




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	16.59	6.77	-0.04	43838				

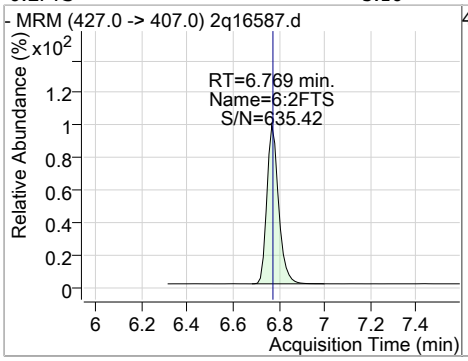


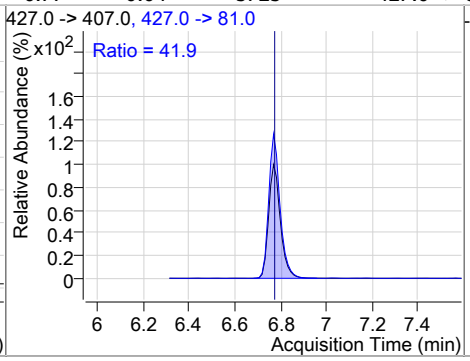


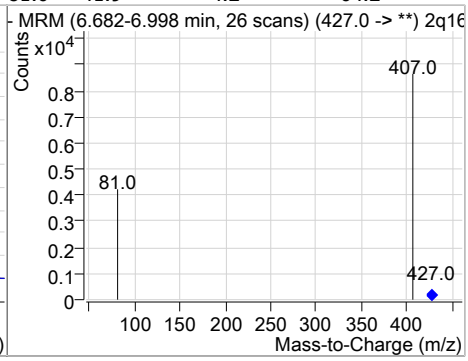


Perfluorinated Compounds by LC/MS/MS

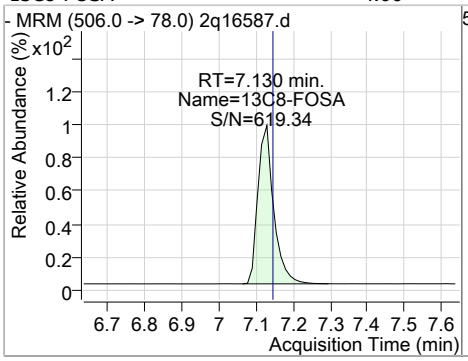
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	5.16	6.77	-0.04	5725	427.0 -> 81.0	41.9	4.2	64.2

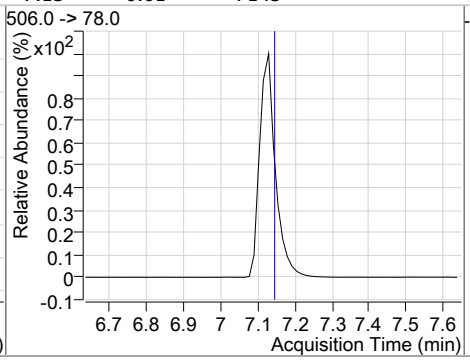


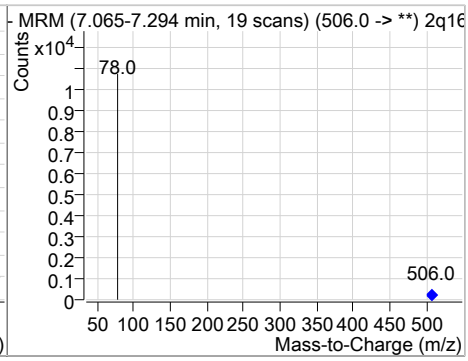




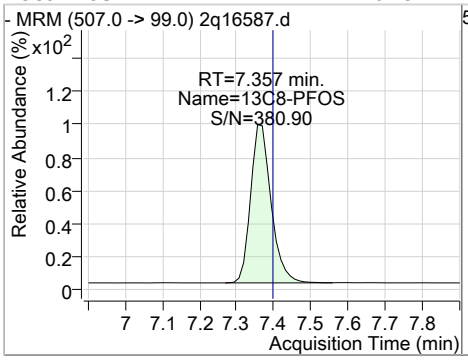
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	4.06	7.13	-0.01	7145				

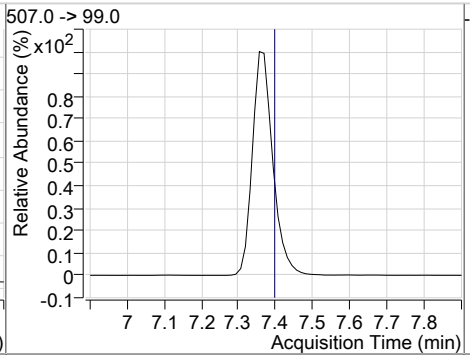


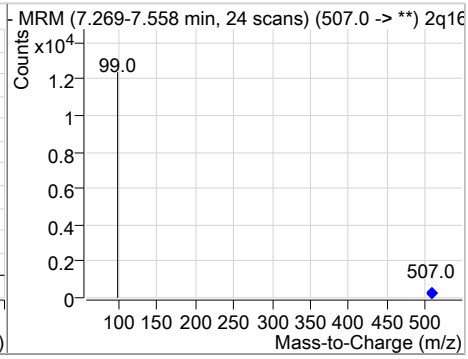




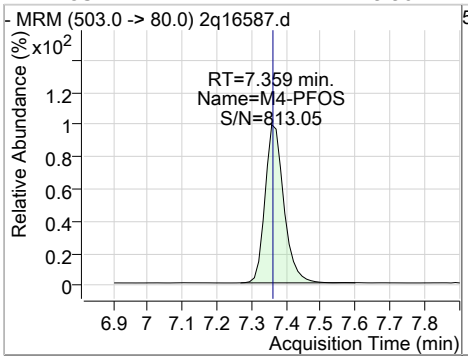
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	16.13	7.36	-0.04	7905				

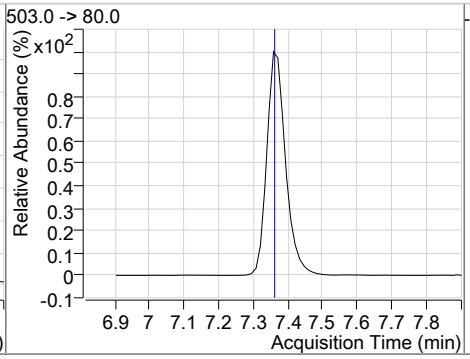


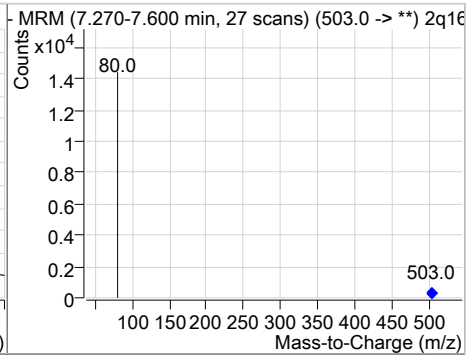




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	19.98	7.36	-0.04	10003				

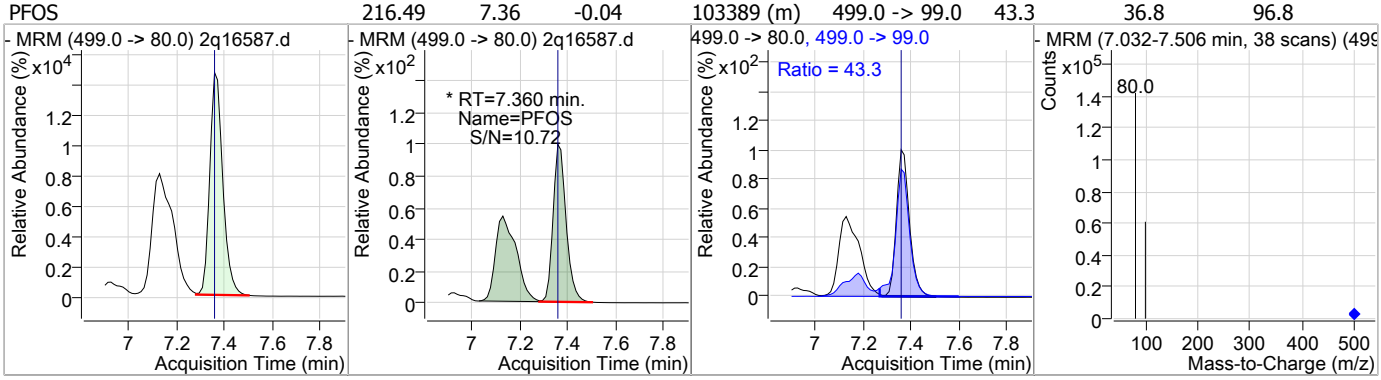




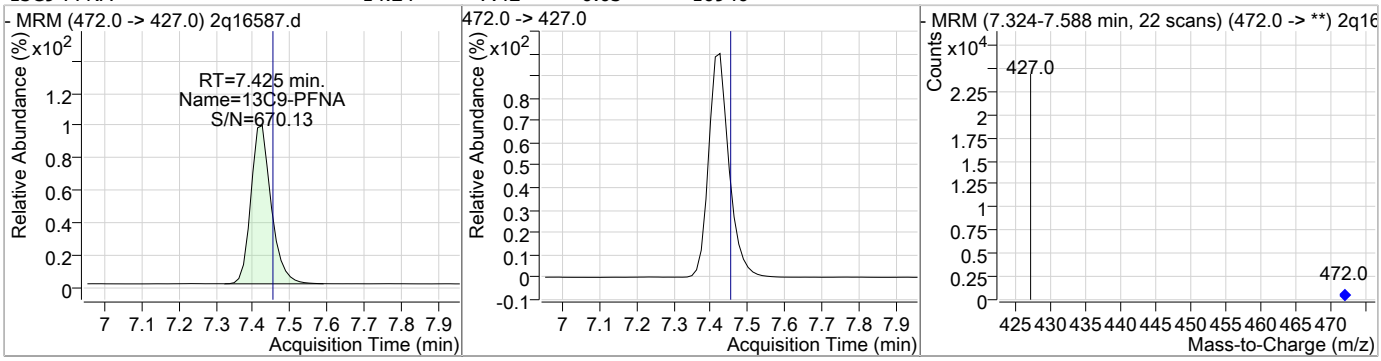


Perfluorinated Compounds by LC/MS/MS

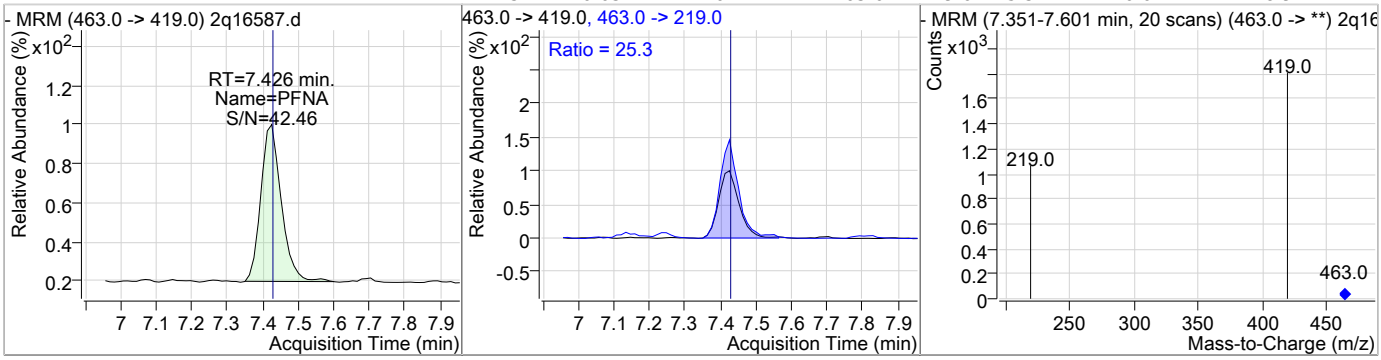
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	216.49	7.36	-0.04	103389 (m)	499.0 -> 99.0	43.3	36.8	96.8



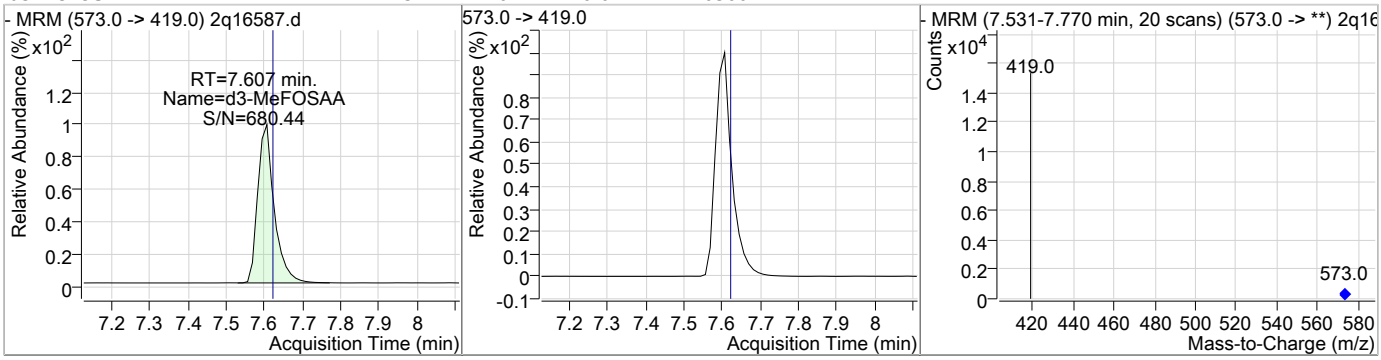
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	14.24	7.42	-0.03	16946				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.14	7.43	-0.03	720	463.0 -> 219.0	25.3	0.0	48.9

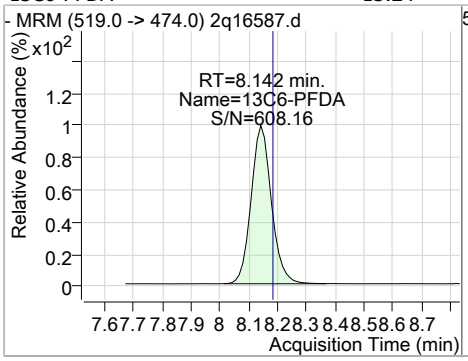


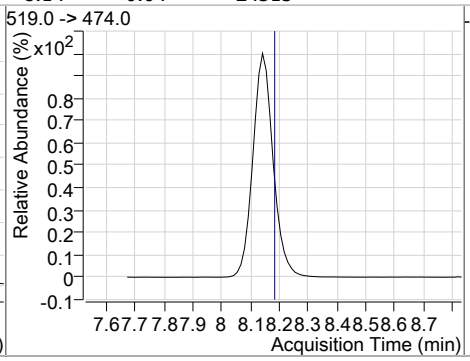
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	11.73	7.61	-0.01	10300				

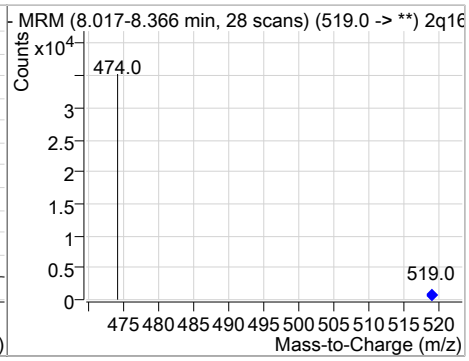


Perfluorinated Compounds by LC/MS/MS

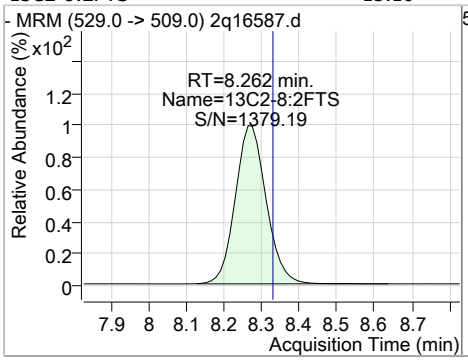
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	13.24	8.14	-0.04	24515				

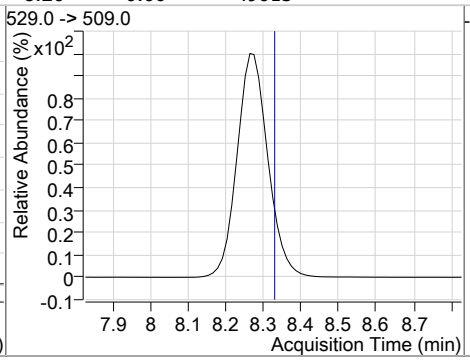


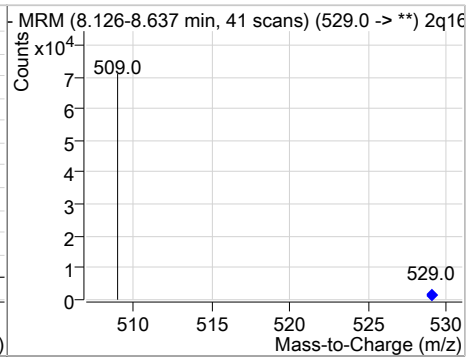




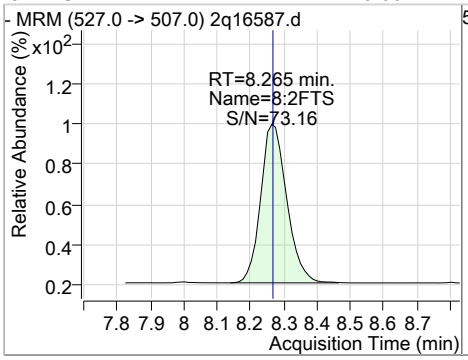
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	15.10	8.26	-0.06	49015				

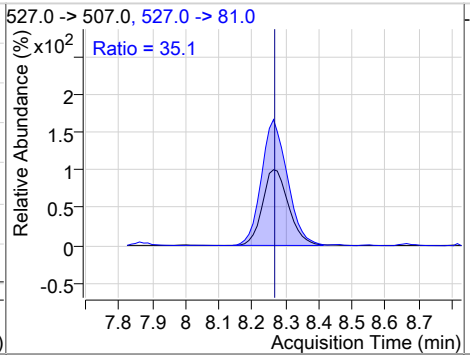


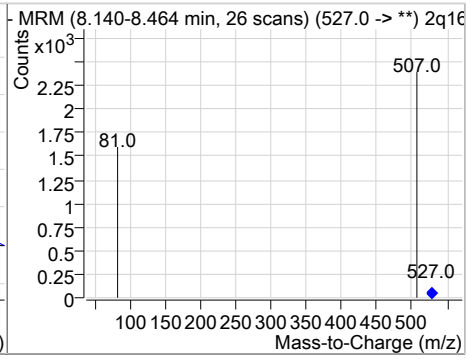




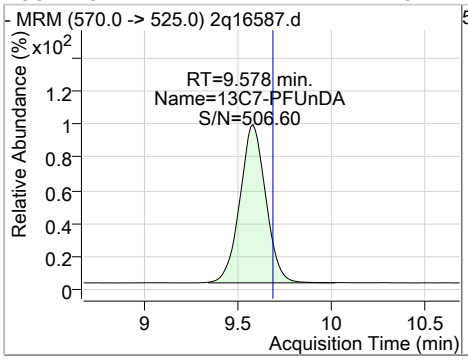
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.66	8.26	-0.06	902	527.0 -> 81.0	35.1	0.0	51.3

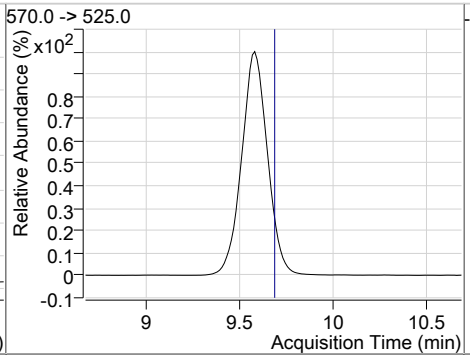


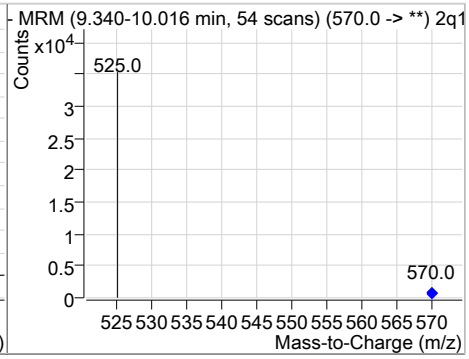




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	11.23	9.58	-0.10	22970				

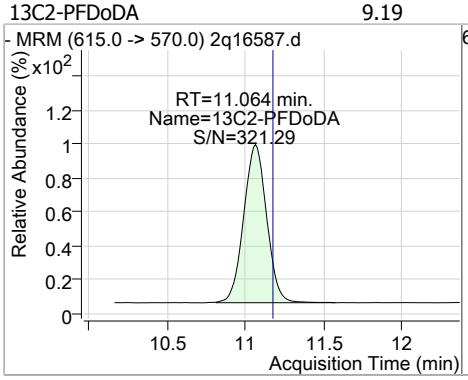


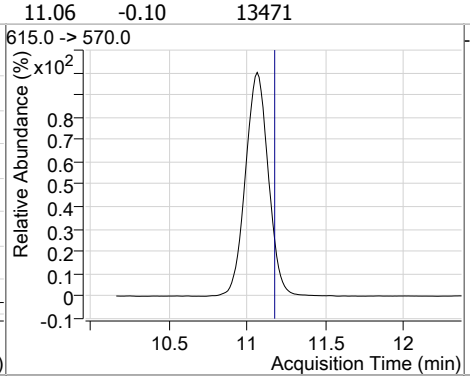


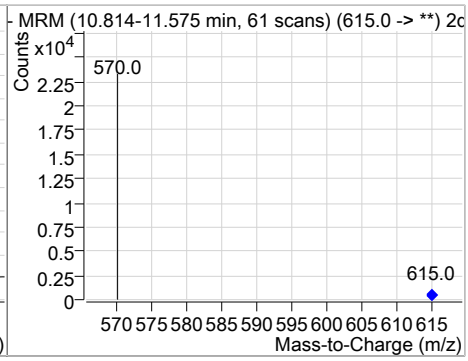


Perfluorinated Compounds by LC/MS/MS

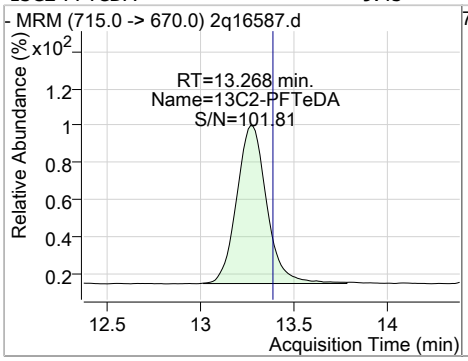
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	9.19	11.06	-0.10	13471				

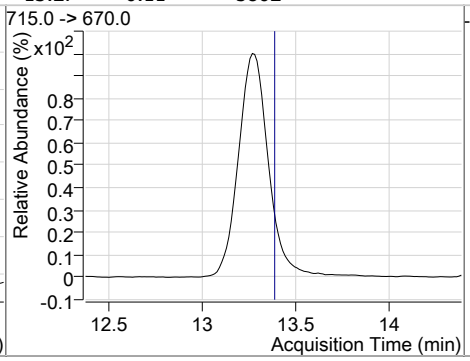


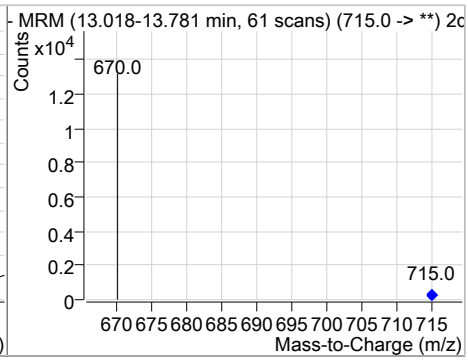




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	9.45	13.27	-0.11	5862				







Manual Integration Approval Summary

Sample Number: FA55430-1
Lab FileID: 2Q16587.D
Injection Time: 07/06/18 00:05
Method: EPA 537M QSM5.1 B-15
Analyst approved: 07/09/18 15:12 Natasha Gumtie
Supervisor approved: 07/10/18 17:10 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorobutanesulfonic acid	375-73-5		4.33	Split peak
Perfluoropentanesulfonic acid	2706-91-4		5.28	Split peak
Perfluorohexanesulfonic acid	355-46-4		6.05	Split peak
Perfluoroheptanoic acid	375-85-9		6.06	Split peak
Perfluoroheptanesulfonic acid	375-92-8		6.73	Split peak
Perfluorooctanoic acid	335-67-1		6.76	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.36	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/10/18 17:09

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16694.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/7/2018 12:03:41 PM
Sample Name : fa55430-1
Vial : Vial 78
DA Method File : PFC_ID_070718_S2Q292.quantmethod.xml
Batch Name : s2q292.batch.bin
Sample Information : op70743,S2Q292,130,,,1.0,5,water

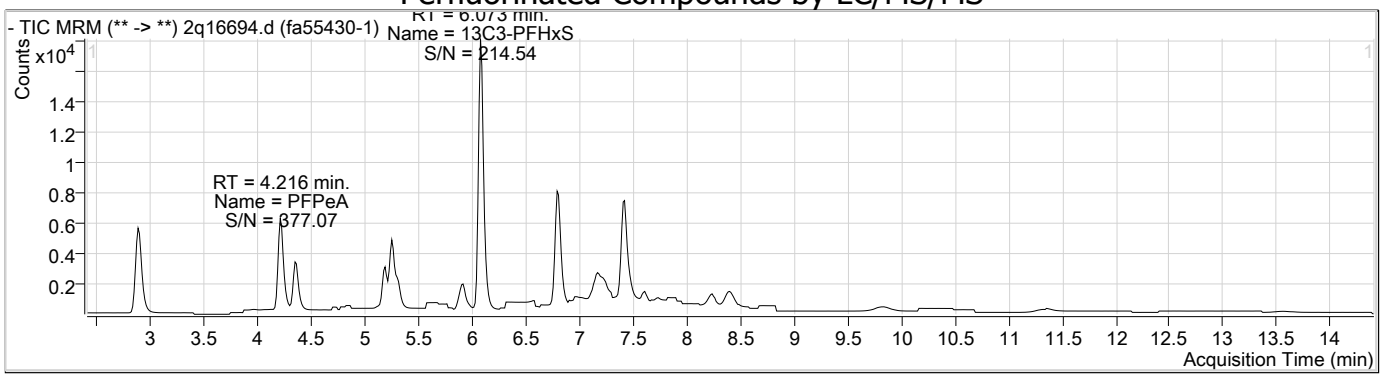
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.798	415.0 -> 370.0	14917	20.00	µg/L	0.000
13C4-PFOS	7.422	503.0 -> 80.0	8526	20.00	µg/L	0.013
M4-PFBA	2.878	217.0 -> 172.0	20949	20.00	µg/L	-0.013
M5-PFPeA	4.212	268.0 -> 223.0	9863	20.00	µg/L	0.000
M5-PFHxA	5.253	318.0 -> 273.0	8715	20.00	µg/L	0.000
M4-PFHpA	6.079	367.0 -> 322.0	8155	20.00	µg/L	0.000
M8-PFOA	6.796	421.0 -> 376.0	3840	20.00	µg/L	0.000
M9-PFNA	7.475	472.0 -> 427.0	2220	20.00	µg/L	0.013
M6-PFDA	8.242	519.0 -> 474.0	4015	20.00	µg/L	0.013
M7-PFUnDA	9.841	570.0 -> 525.0	2950	20.00	µg/L	0.038
M2-PFDoDA	11.327	615.0 -> 570.0	1998	20.00	µg/L	0.013
M2-PFTeDA	13.556	715.0 -> 670.0	785	20.00	µg/L	0.013
M8-FOSA	7.115	506.0 -> 78.0	1186	20.00	µg/L	0.000
M3-PFBS	4.355	302.0 -> 99.0	3710	20.00	µg/L	0.000
M3-PFHxS	6.073	402.0 -> 99.0	3073	20.00	µg/L	0.000
M8-PFOS	7.420	507.0 -> 99.0	1326	20.00	µg/L	0.013
M2-4:2FTS	5.185	329.0 -> 309.0	9050	20.00	µg/L	0.013
M2-6:2FTS	6.805	429.0 -> 409.0	6099	20.00	µg/L	0.000
M2-8:2FTS	8.399	529.0 -> 509.0	7161	20.00	µg/L	0.025
M3-MeFOSAA	7.607	573.0 -> 419.0	1750	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.185	329.0 -> 309.0	9053	3.45	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 17.3%		
13C2-6:2FTS	6.805	429.0 -> 409.0	6097	3.59	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 18.0%		
13C2-8:2FTS	8.399	529.0 -> 509.0	7175	3.17	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.8%		
13C2-PFDoDA	11.327	615.0 -> 570.0	2000	1.97	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 9.9%		
13C2-PFTeDA	13.556	715.0 -> 670.0	797	2.04	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.2%		
13C3-PFBS	4.355	302.0 -> 99.0	3710	3.54	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 17.7%		
13C3-PFHxS	6.073	402.0 -> 99.0	3071	3.60	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 18.0%		
13C4-PFBA	2.878	217.0 -> 172.0	20957	3.04	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.2%		
13C4-PFHpA	6.079	367.0 -> 322.0	8158	3.03	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.1%		
13C5-PFHxA	5.253	318.0 -> 273.0	8721	3.08	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.4%		
13C5-PFPeA	4.212	268.0 -> 223.0	9865	3.10	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.5%		
13C6-PFDA	8.242	519.0 -> 474.0	4004	2.84	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.2%		

Perfluorinated Compounds by LC/MS/MS

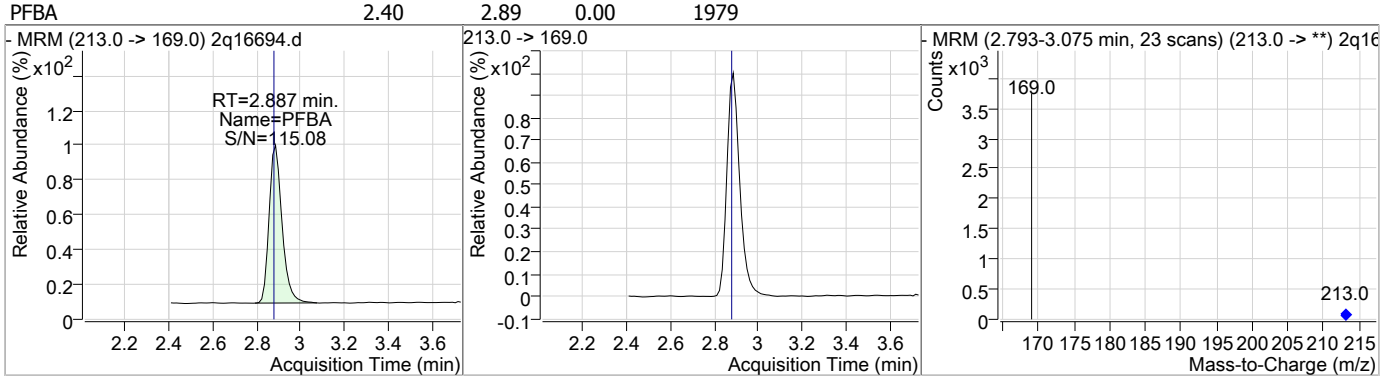
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	9.841	570.0 -> 525.0	2963	2.23	µg/L		0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.1%			
13C8-FOSA	7.115	506.0 -> 78.0	1187	0.89	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 4.5%			
13C8-PFOA	6.796	421.0 -> 376.0	3840	3.11	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.6%			
13C8-PFOS	7.420	507.0 -> 99.0	1326	3.36	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.8%			
13C9-PFNA	7.475	472.0 -> 427.0	2214	2.81	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.1%			
d3-MeFOSAA	7.607	573.0 -> 419.0	1749	2.65	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.2%			
M2-PFOA	6.798	415.0 -> 370.0	14906	4.00	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 20.0%			
M4-PFOS	7.422	503.0 -> 80.0	8529	4.00	ng/ml		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 20.0%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	6.807	427.0 -> 407.0	887	1.15	µg/L		99
8:2FTS	8.414	527.0 -> 507.0	144	0.14	µg/L		88
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	2.887	213.0 -> 169.0	1979	2.40	µg/L		100
PFBS	4.346	299.0 -> 80.0	5286	4.26	µg/L		97
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	6.082	363.0 -> 319.0	4203	2.88	µg/L	m	99
PFHpS	6.766	449.0 -> 80.0	598	1.50	µg/L	m	98
PFHxA	5.255	313.0 -> 269.0	5374	7.66	µg/L		99
PFHxS	6.076	399.0 -> 80.0	35858	42.02	µg/L	m	98
PFNA	7.463	463.0 -> 419.0	131	0.63	µg/L		82
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	6.799	413.0 -> 369.0	1822	3.75	µg/L	m	93
PFOS	7.423	499.0 -> 80.0	17839	45.11	µg/L	m	97
PFPeA	4.216	263.0 -> 219.0	11753	4.88	µg/L		100
PFPeS	5.308	349.0 -> 80.0	3585	4.85	µg/L	m	98
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			

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

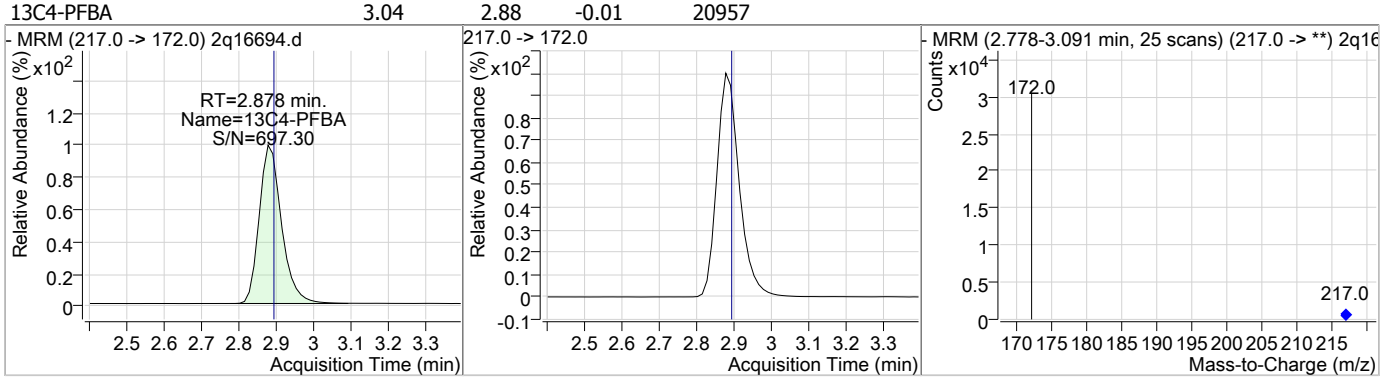
Perfluorinated Compounds by LC/MS/MS



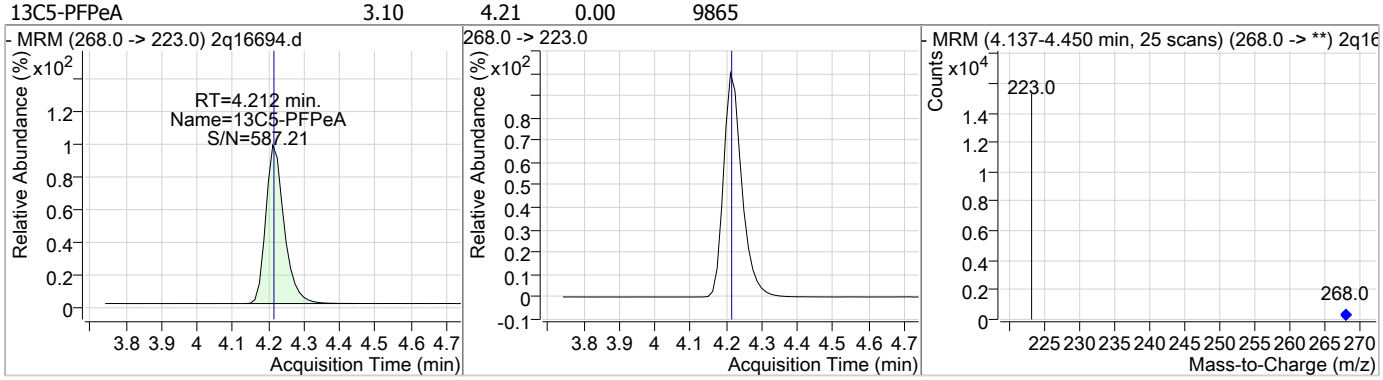
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	2.40	2.89	0.00	1979				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	3.04	2.88	-0.01	20957				

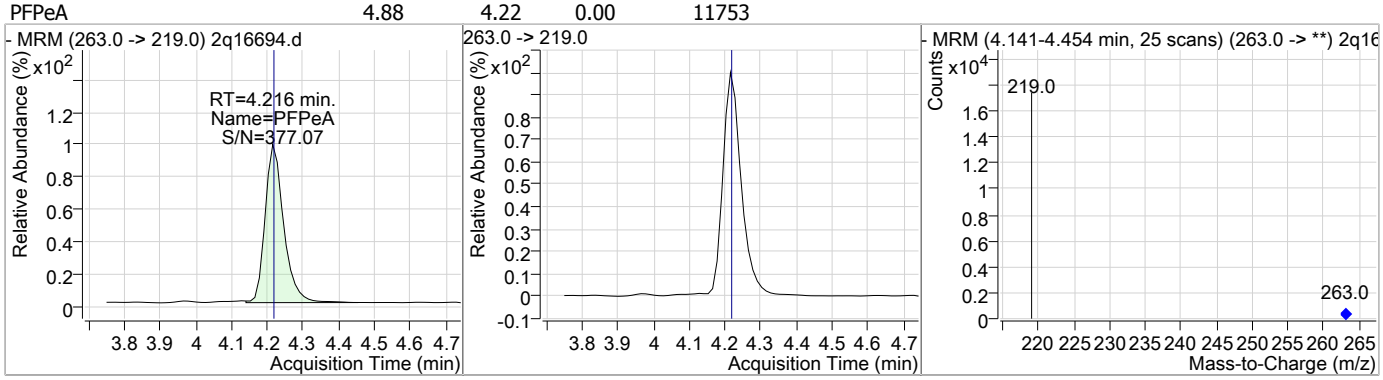


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	3.10	4.21	0.00	9865				

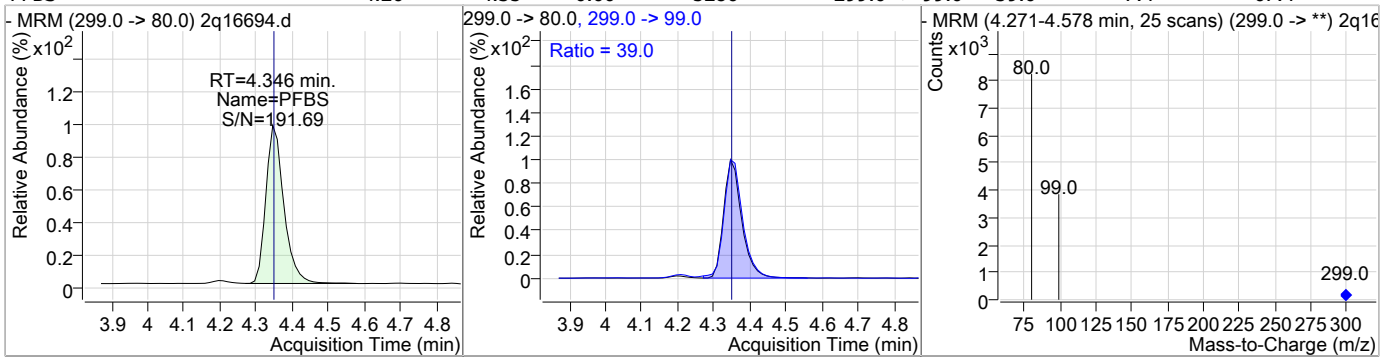


Perfluorinated Compounds by LC/MS/MS

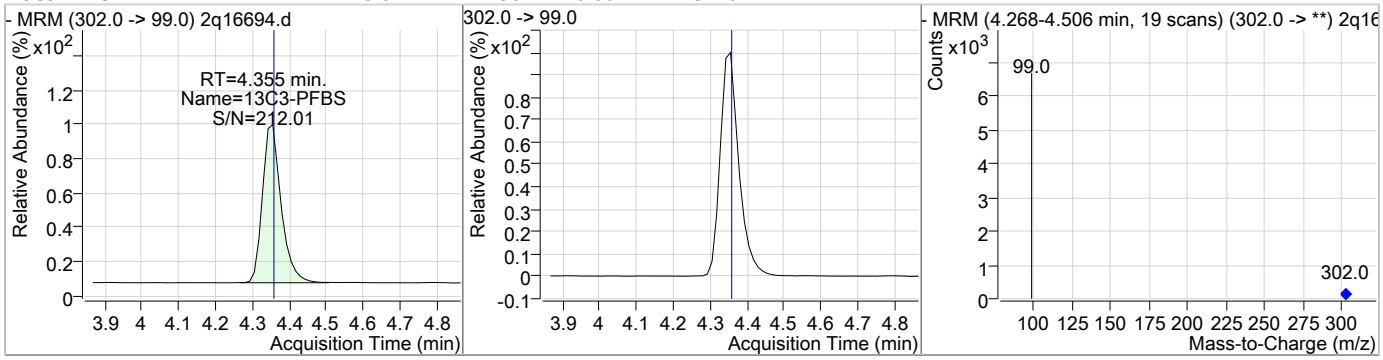
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.88	4.22	0.00	11753				



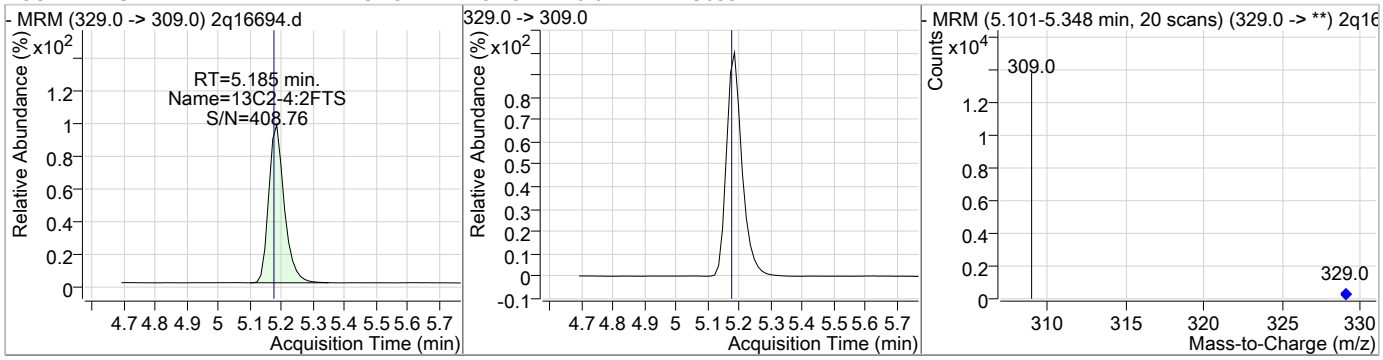
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	4.26	4.35	0.00	5286	299.0 -> 99.0	39.0	7.4	67.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	3.54	4.36	0.00	3710				

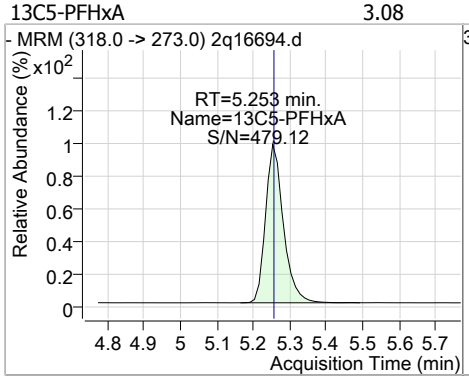


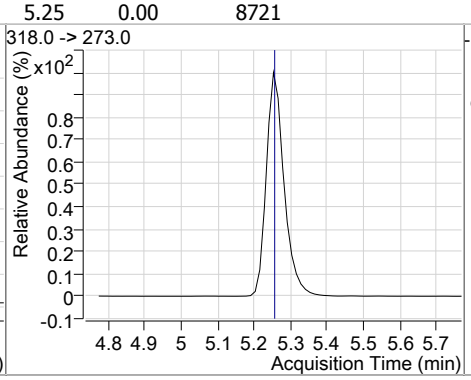
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	3.45	5.18	0.01	9053				

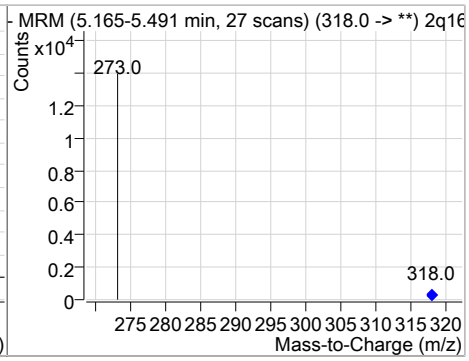


Perfluorinated Compounds by LC/MS/MS

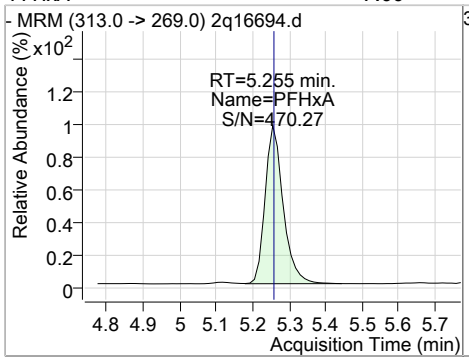
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	3.08	5.25	0.00	8721				

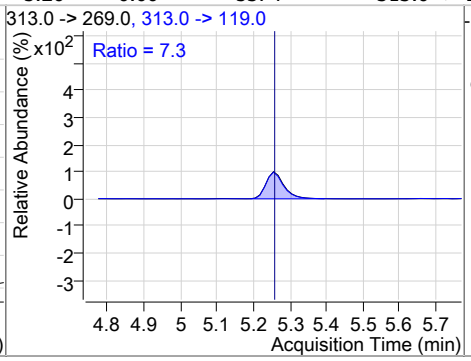


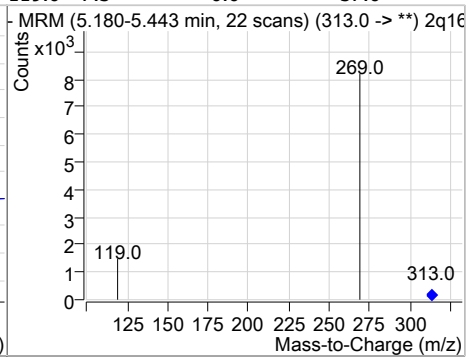




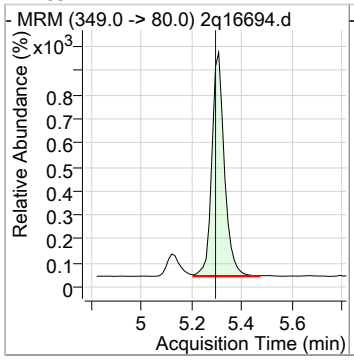
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	7.66	5.26	0.00	5374	313.0 -> 119.0	7.3	0.0	37.6

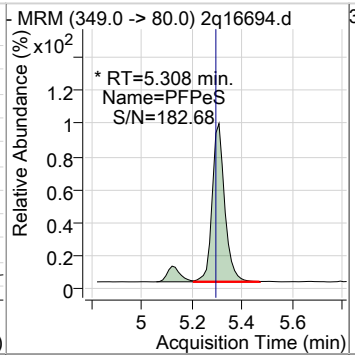


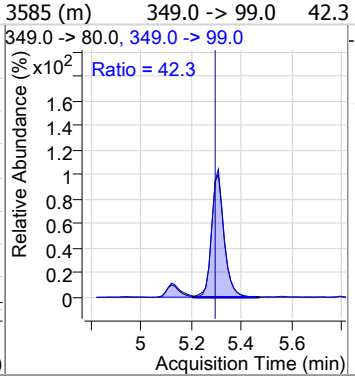


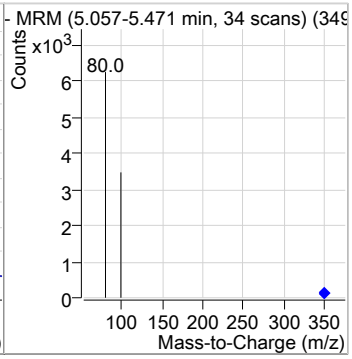


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	4.85	5.31	0.01	3585 (m)	349.0 -> 99.0	42.3	10.8	70.8

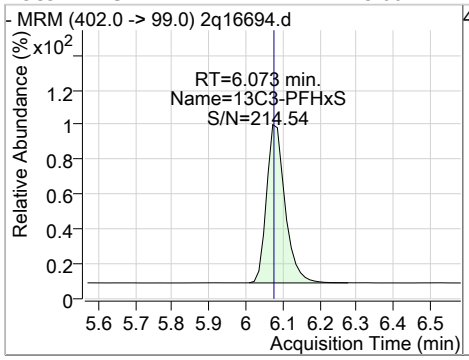


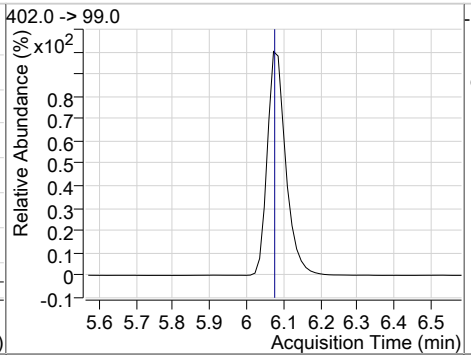


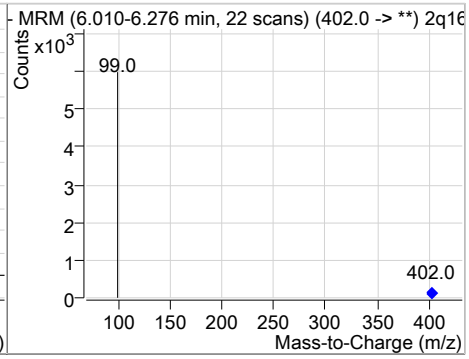




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	3.60	6.07	0.00	3071				

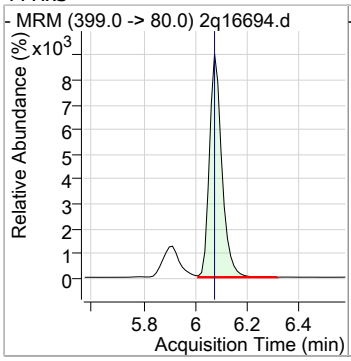


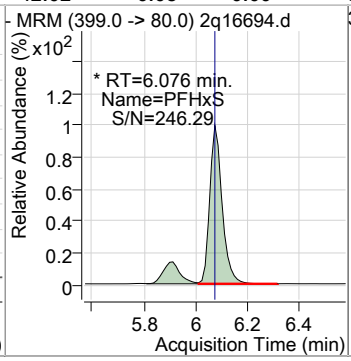


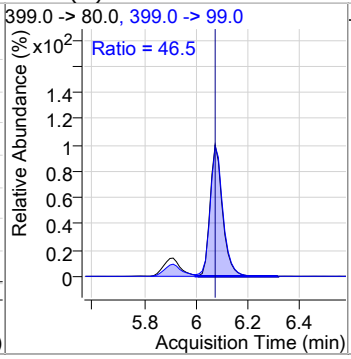


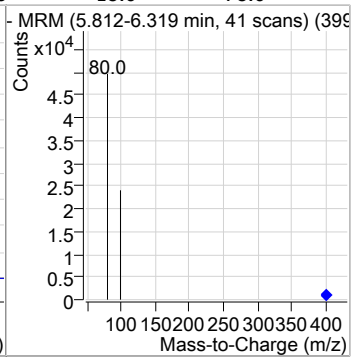
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	42.02	6.08	0.00	35858 (m)	399.0 -> 99.0	46.5	18.0	78.0

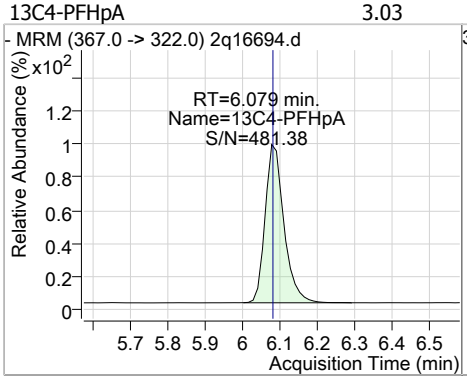


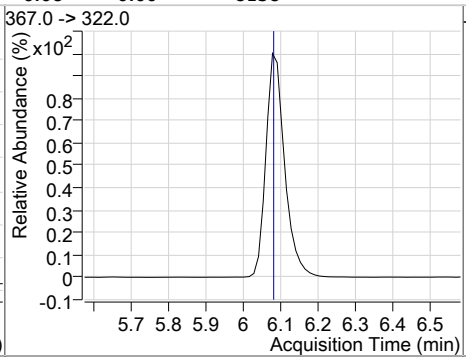


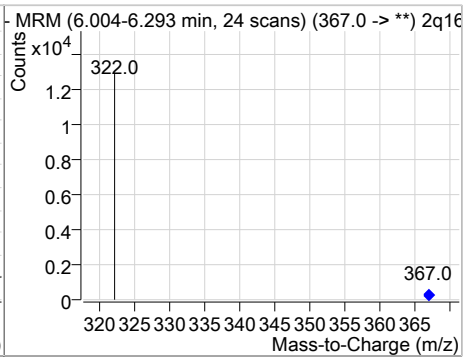




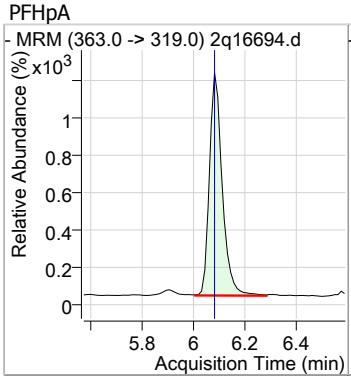
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	3.03	6.08	0.00	8158				

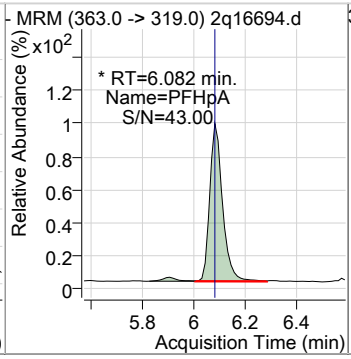


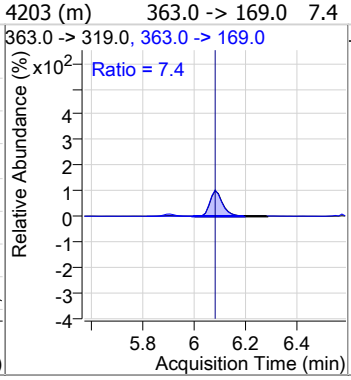


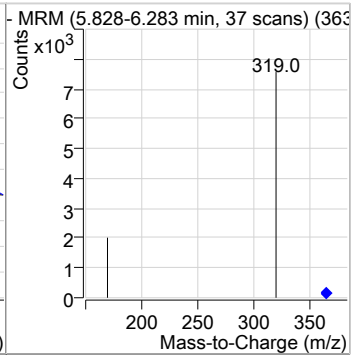


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.88	6.08	0.00	4203 (m)	363.0 -> 169.0	7.4	0.0	37.2

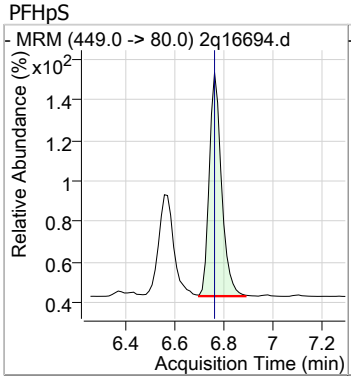


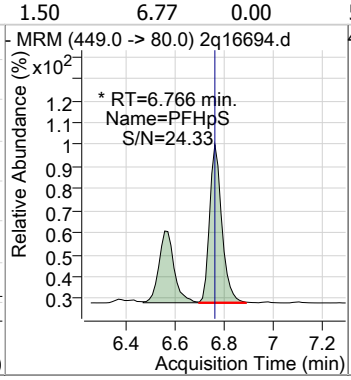


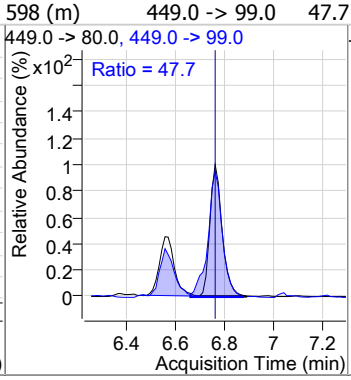


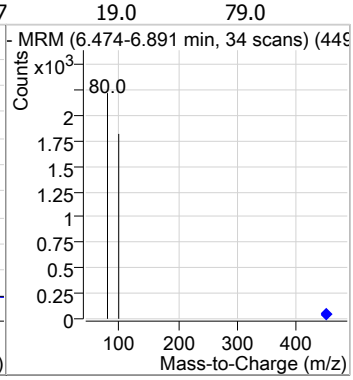


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.50	6.77	0.00	598 (m)	449.0 -> 99.0	47.7	19.0	79.0



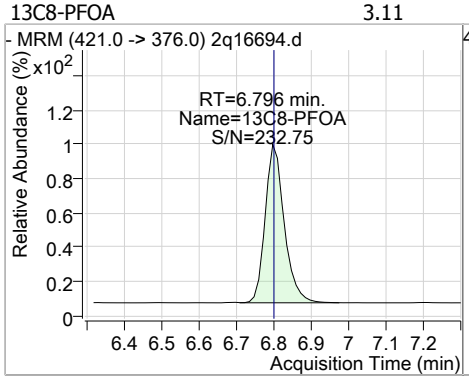


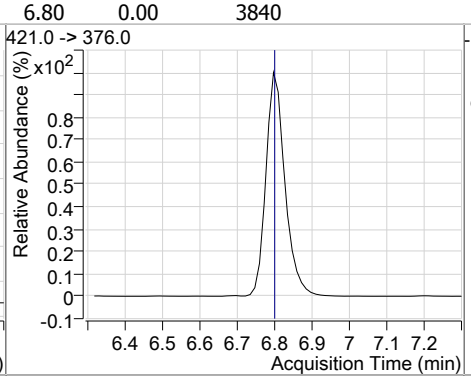


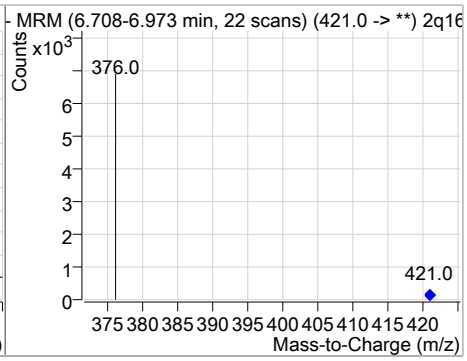


Perfluorinated Compounds by LC/MS/MS

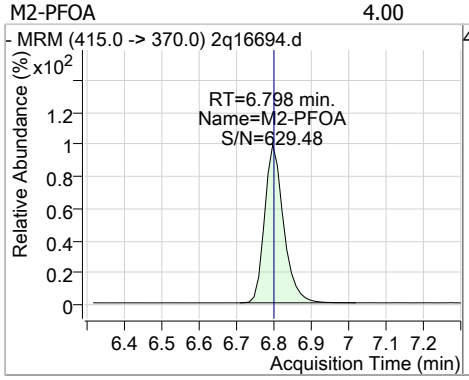
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	3.11	6.80	0.00	3840				

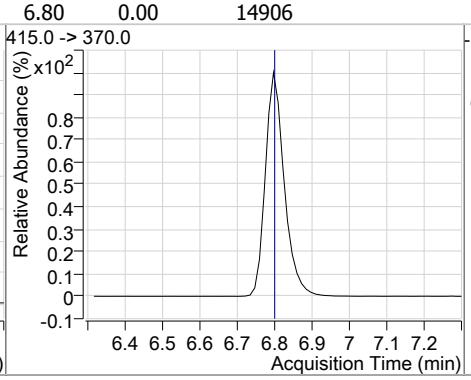


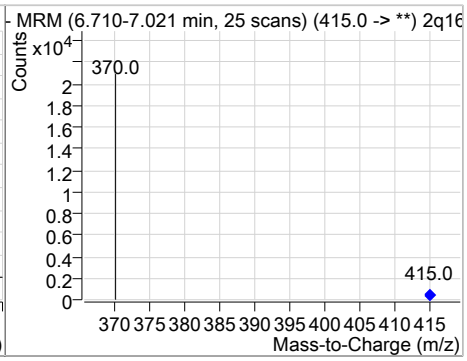




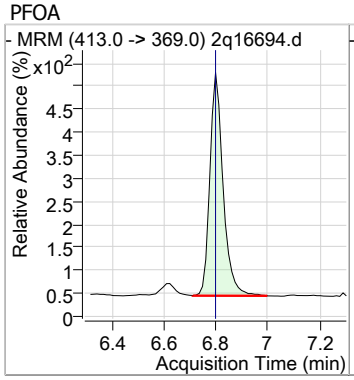
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	4.00	6.80	0.00	14906				

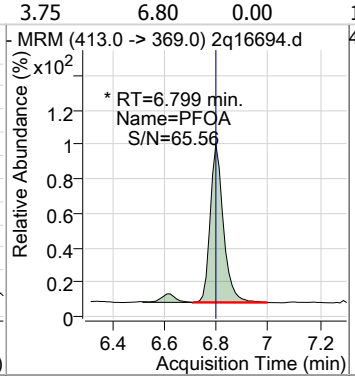


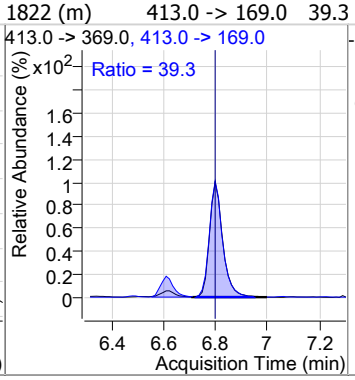


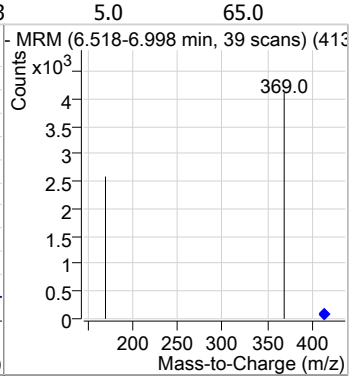


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	3.75	6.80	0.00	1822 (m)	413.0 -> 169.0	39.3	5.0	65.0

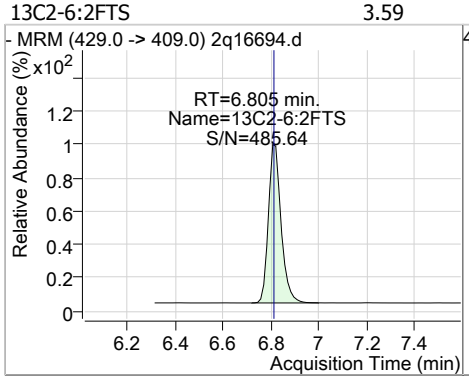


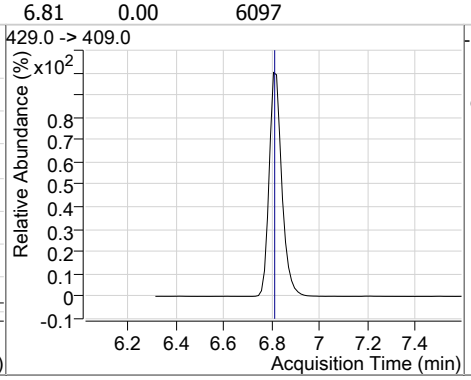


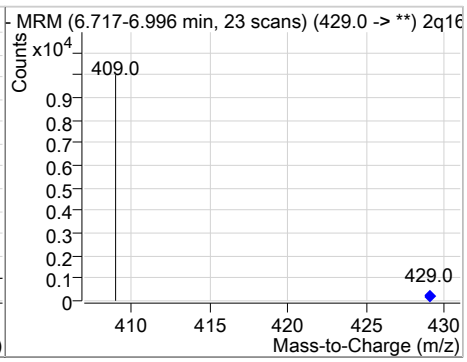




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	3.59	6.81	0.00	6097				

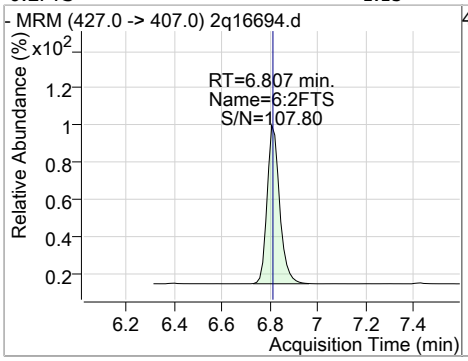


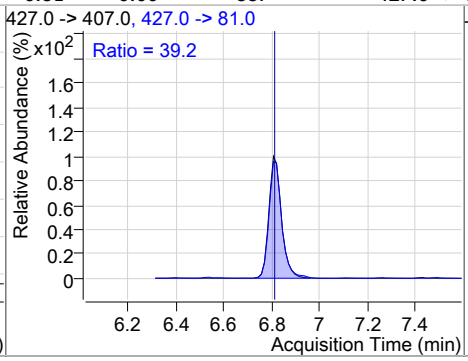


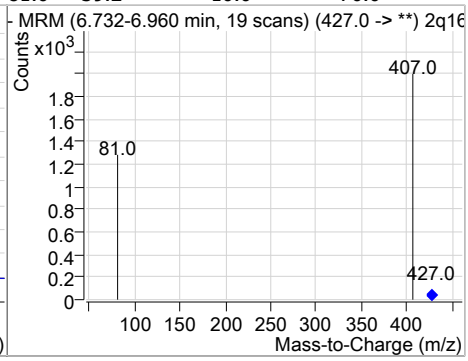


Perfluorinated Compounds by LC/MS/MS

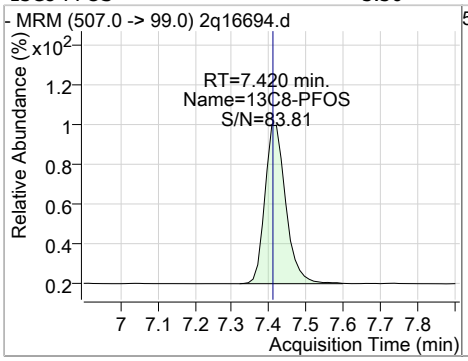
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.15	6.81	0.00	887	427.0 -> 81.0	39.2	10.0	70.0

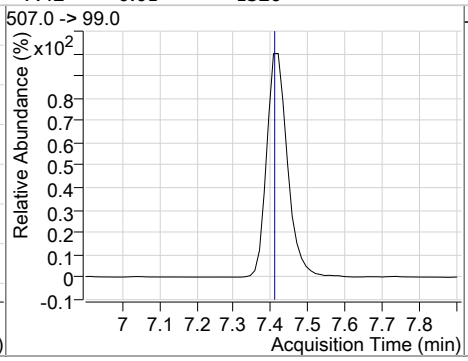


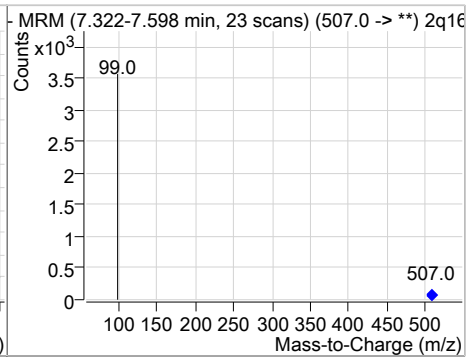




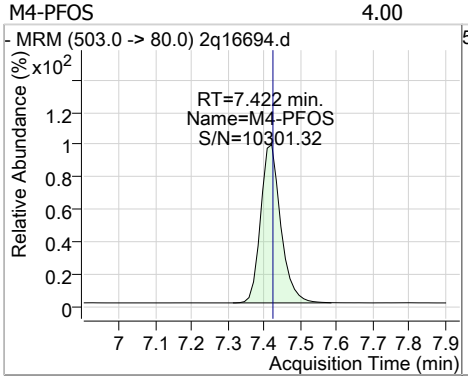
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	3.36	7.42	0.01	1326				

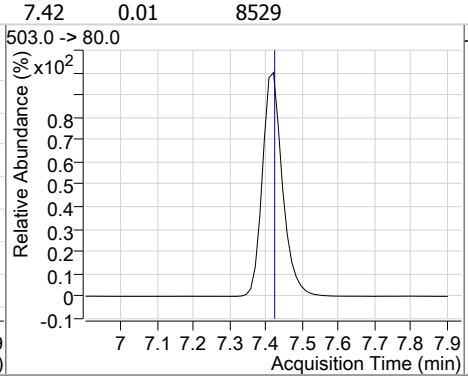


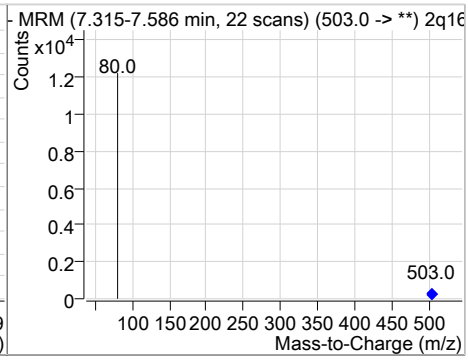




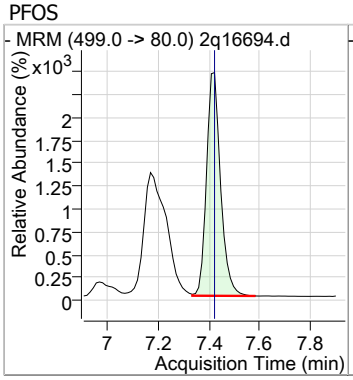
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	4.00	7.42	0.01	8529				

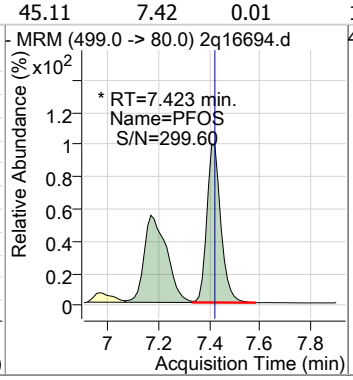


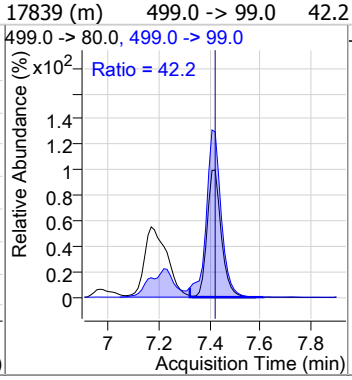


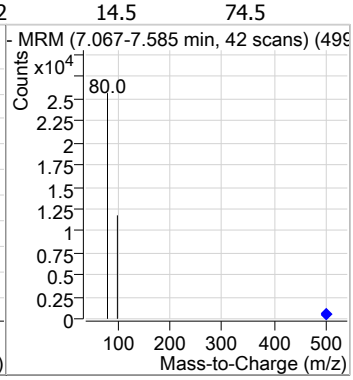


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	45.11	7.42	0.01	17839 (m)	499.0 -> 99.0	42.2	14.5	74.5



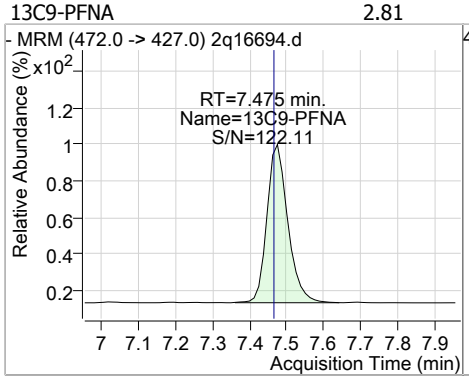


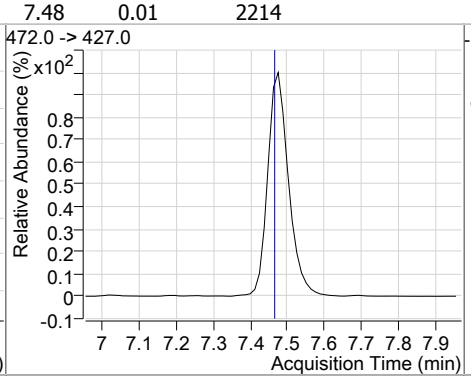


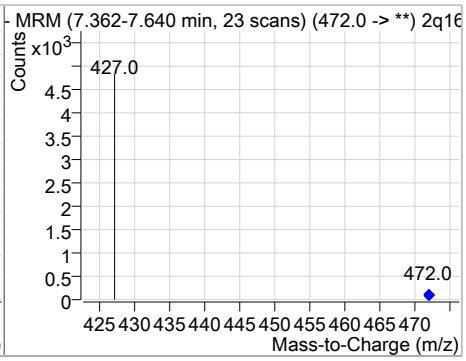


Perfluorinated Compounds by LC/MS/MS

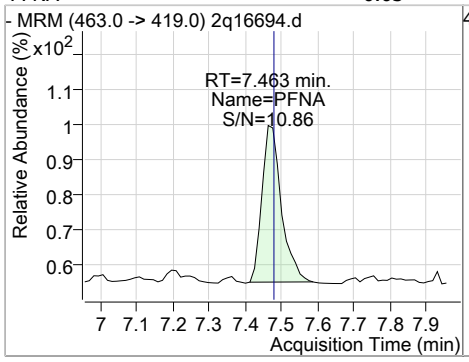
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	2.81	7.48	0.01	2214				

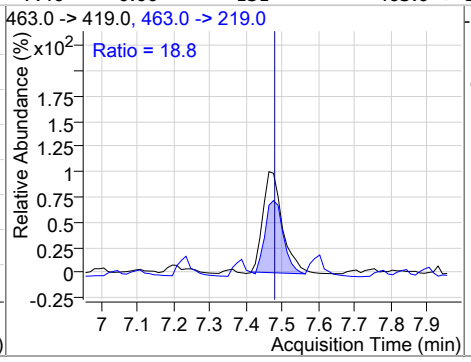


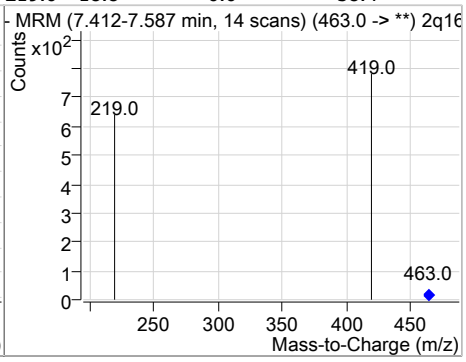




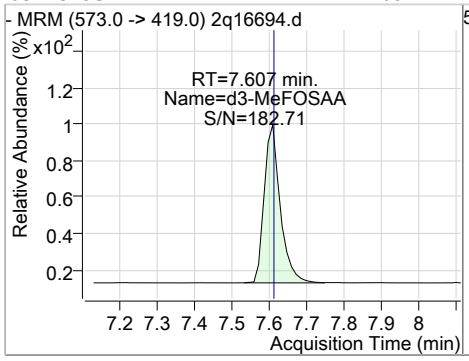
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.63	7.46	0.00	131	463.0 -> 219.0	18.8	0.0	58.4

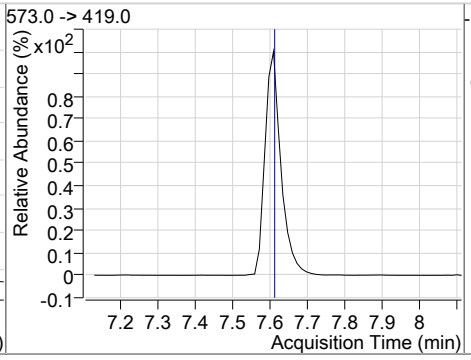


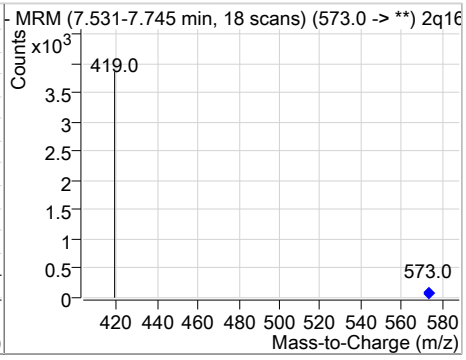




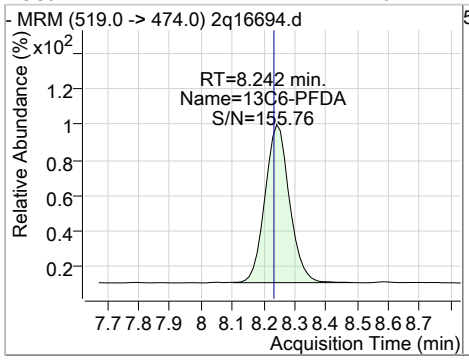
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	2.65	7.61	0.00	1749				

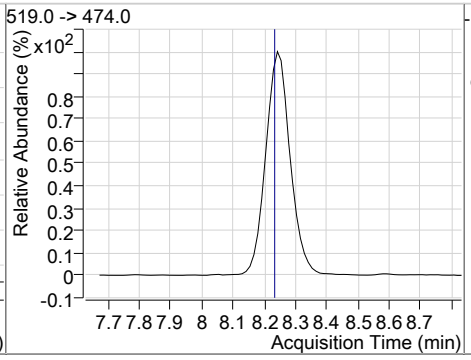


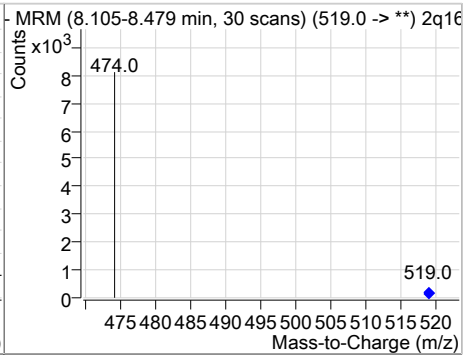




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	2.84	8.24	0.01	4004				

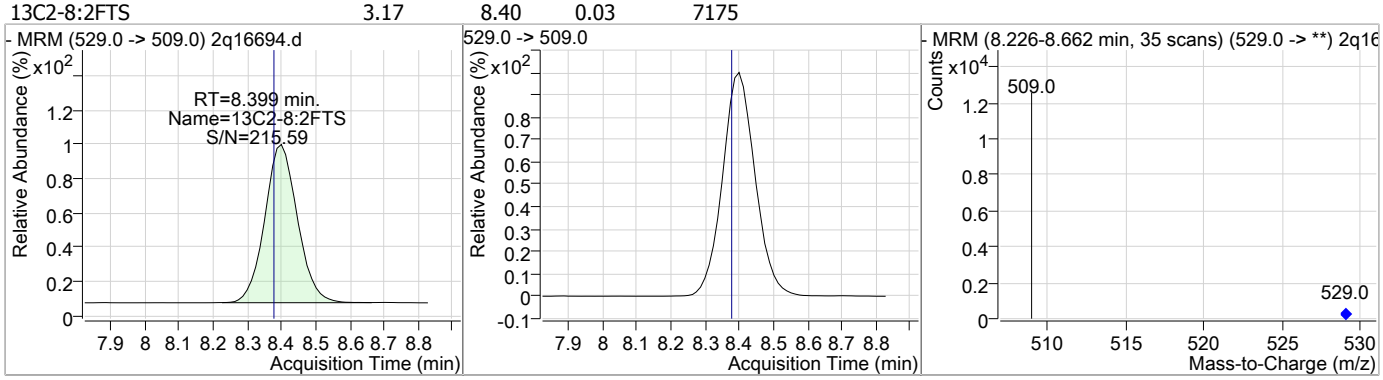




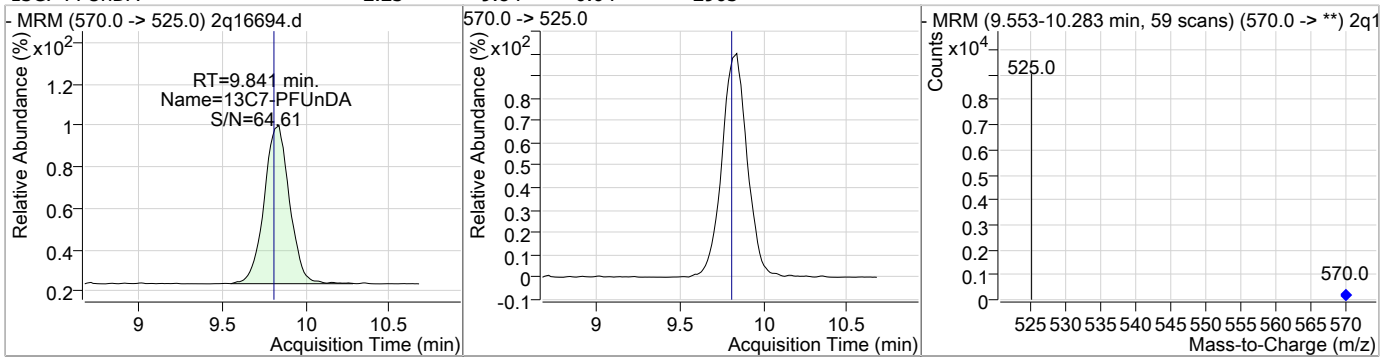


Perfluorinated Compounds by LC/MS/MS

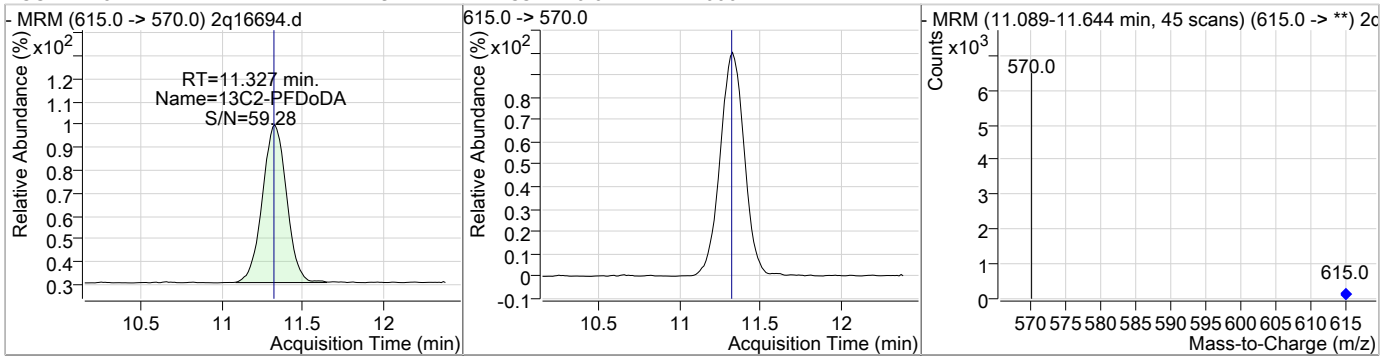
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	3.17	8.40	0.03	7175				



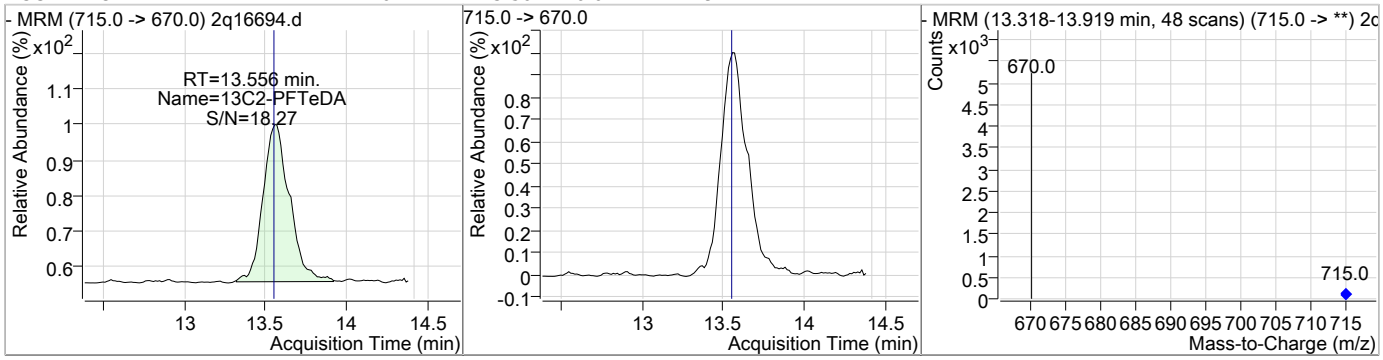
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	2.23	9.84	0.04	2963				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.97	11.33	0.01	2000				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	2.04	13.56	0.01	797				



Manual Integration Approval Summary

Sample Number: FA55430-1
Lab FileID: 2Q16694.D
Injection Time: 07/07/18 12:03
Method: EPA 537M QSM5.1 B-15
Analyst approved: 07/09/18 15:12 Natasha Gumtie
Supervisor approved: 07/10/18 17:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanesulfonic acid	2706-91-4		5.31	Split peak
Perfluorohexanesulfonic acid	355-46-4		6.08	Split peak
Perfluoroheptanoic acid	375-85-9		6.08	Split peak
Perfluoroheptanesulfonic acid	375-92-8		6.77	Split peak
Perfluorooctanoic acid	335-67-1		6.80	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.42	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/17/18 11:23

Perfluorinated Compounds by LC/MS/MS

Data File : 2q17039.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/13/2018 1:10:39 AM
Sample Name : fa55430-2
Vial : Vial 83
DA Method File : PFC_ID_071218_S2Q295.quantmethod.xml
Batch Name : s2q295.batch.bin
Sample Information : op70810,S2Q295,130,,,1.0,1,water

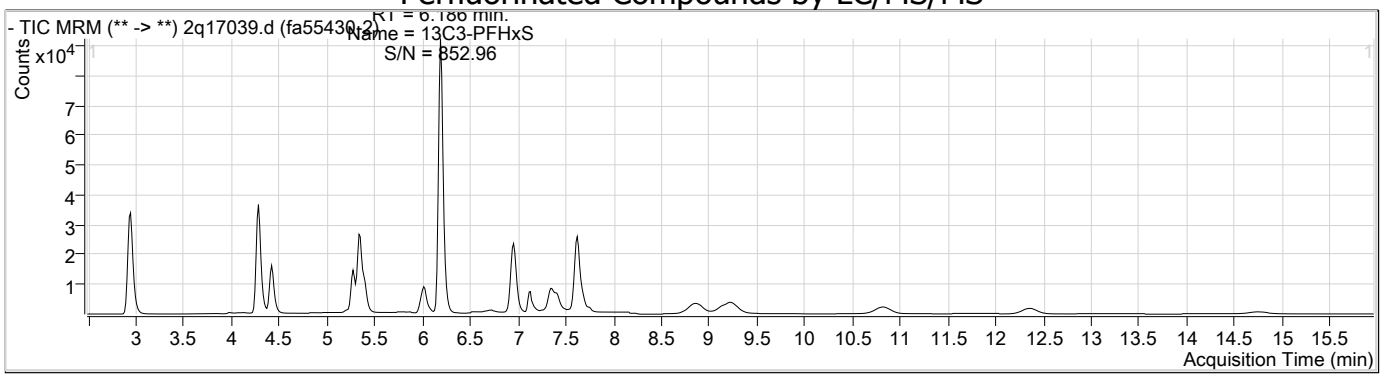
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.948	415.0 -> 370.0	18961	20.00	µg/L	-0.049
13C4-PFOS	7.624	503.0 -> 80.0	9278	20.00	µg/L	-0.051
M4-PFBA	2.941	217.0 -> 172.0	120261	20.00	µg/L	-0.050
M5-PFPeA	4.287	268.0 -> 223.0	56226	20.00	µg/L	-0.050
M5-PFHxA	5.339	318.0 -> 273.0	50279	20.00	µg/L	-0.052
M4-PFHpA	6.192	367.0 -> 322.0	46871	20.00	µg/L	-0.062
M8-PFOA	6.946	421.0 -> 376.0	22238	20.00	µg/L	-0.049
M9-PFNA	7.690	472.0 -> 427.0	14016	20.00	µg/L	-0.062
M6-PFDA	8.863	519.0 -> 474.0	38270	20.00	µg/L	-0.154
M7-PFUnDA	10.817	570.0 -> 525.0	26143	20.00	µg/L	-0.212
M2-PFDoDA	12.353	615.0 -> 570.0	21421	20.00	µg/L	-0.212
M2-PFTeDA	14.744	715.0 -> 670.0	8295	20.00	µg/L	-0.225
M8-FOSA	7.127	506.0 -> 78.0	21324	20.00	µg/L	-0.015
M3-PFBS	4.418	302.0 -> 99.0	17171	20.00	µg/L	-0.050
M3-PFHxS	6.186	402.0 -> 99.0	12081	20.00	µg/L	-0.050
M8-PFOS	7.621	507.0 -> 99.0	5272	20.00	µg/L	-0.052
M2-4:2FTS	5.272	329.0 -> 309.0	46977	20.00	µg/L	-0.051
M2-6:2FTS	6.968	429.0 -> 409.0	31216	20.00	µg/L	-0.049
M2-8:2FTS	9.225	529.0 -> 509.0	44296	20.00	µg/L	-0.173
M3-MeFOSAA	7.632	573.0 -> 419.0	9350	20.00	µg/L	-0.026
System Monitoring Compounds						
13C2-4:2FTS	5.272	329.0 -> 309.0	46976	16.65	µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.2%		
13C2-6:2FTS	6.968	429.0 -> 409.0	31233	16.00	µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.0%		
13C2-8:2FTS	9.225	529.0 -> 509.0	43257	11.76	µg/L	-0.173
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 58.8%		
13C2-PFDoDA	12.353	615.0 -> 570.0	21529	12.79	µg/L	-0.212
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 63.9%		
13C2-PFTeDA	14.744	715.0 -> 670.0	8677	11.94	µg/L	-0.225
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.7%		
13C3-PFBS	4.418	302.0 -> 99.0	17186	16.48	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.4%		
13C3-PFHxS	6.186	402.0 -> 99.0	12083	14.48	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.4%		
13C4-PFBA	2.941	217.0 -> 172.0	120278	18.10	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.5%		
13C4-PFHpA	6.192	367.0 -> 322.0	46869	16.57	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.8%		
13C5-PFHxA	5.339	318.0 -> 273.0	50298	16.96	µg/L	-0.052
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.8%		
13C5-PFPeA	4.287	268.0 -> 223.0	56223	17.14	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.7%		
13C6-PFDA	8.863	519.0 -> 474.0	38000	13.71	µg/L	-0.154
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.5%		

Perfluorinated Compounds by LC/MS/MS

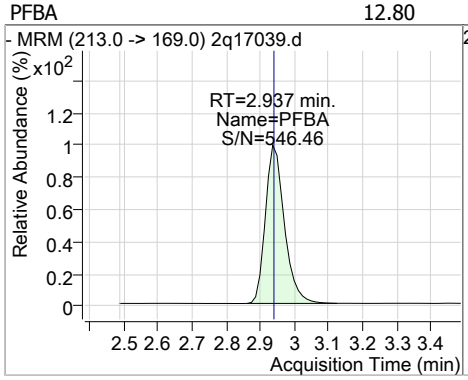
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.817	570.0 -> 525.0	26242	12.73	µg/L		-0.212
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 63.7%			
13C8-FOSA	7.127	506.0 -> 78.0	21323	13.26	µg/L		-0.015
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.3%			
13C8-PFOA	6.946	421.0 -> 376.0	22253	16.94	µg/L		-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.7%			
13C8-PFOS	7.621	507.0 -> 99.0	5270	12.70	µg/L		-0.052
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 63.5%			
13C9-PFNA	7.690	472.0 -> 427.0	14023	15.90	µg/L		-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.5%			
d3-MeFOSAA	7.632	573.0 -> 419.0	9351	12.04	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.2%			
M2-PFOA	6.948	415.0 -> 370.0	18964	20.00	ng/ml		-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.624	503.0 -> 80.0	9281	20.01	ng/ml		-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
Target Compounds							**QValue**
4:2FTS	5.274	327.0 -> 307.0	293	0.24	µg/L	#	44
6:2FTS	6.970	427.0 -> 407.0	5115	6.56	µg/L		98
8:2FTS	9.240	527.0 -> 507.0	942	0.79	µg/L		100
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	2.937	213.0 -> 169.0	12207	12.80	µg/L		100
PFBS	4.422	299.0 -> 80.0	26490	22.48	µg/L		99
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	6.195	363.0 -> 319.0	25861	14.82	µg/L	m	100
PFHpS	6.917	449.0 -> 80.0	3261	9.59	µg/L	m	93
PFHxA	5.340	313.0 -> 269.0	34833	41.08	µg/L		99
PFHxS	6.189	399.0 -> 80.0	188157	262.84	µg/L	m	98
PFNA	7.692	463.0 -> 419.0	710	2.57	µg/L		97
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	6.948	413.0 -> 369.0	12702	21.43	µg/L	m	100
PFOS	7.624	499.0 -> 80.0	90502	274.07	µg/L	m	98
PFPeA	4.291	263.0 -> 219.0	71225	27.13	µg/L		100
PFPeS	5.396	349.0 -> 80.0	19797	26.46	µg/L	m	99
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			

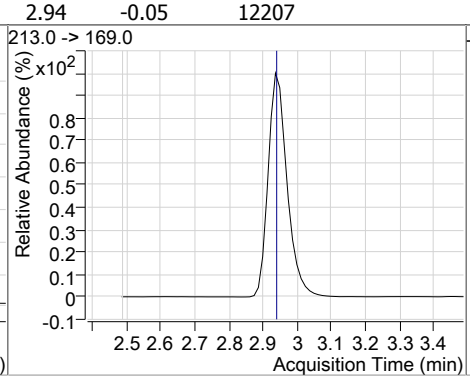
 # = Qualifier out of range, m = manually integrated, + = Area summed

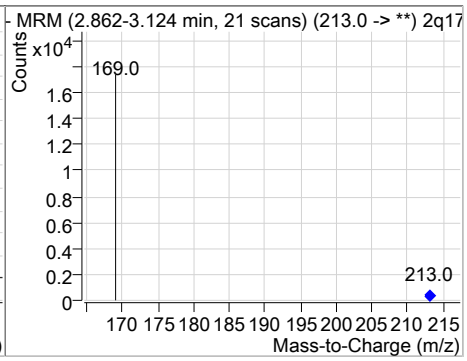
Perfluorinated Compounds by LC/MS/MS



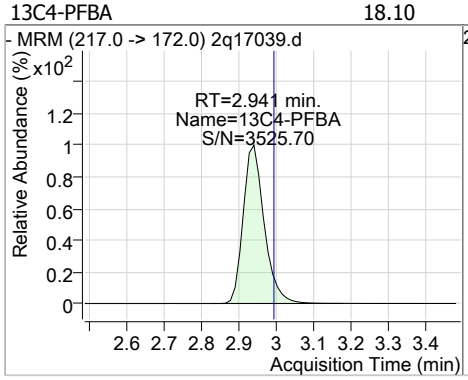
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	12.80	2.94	-0.05	12207				

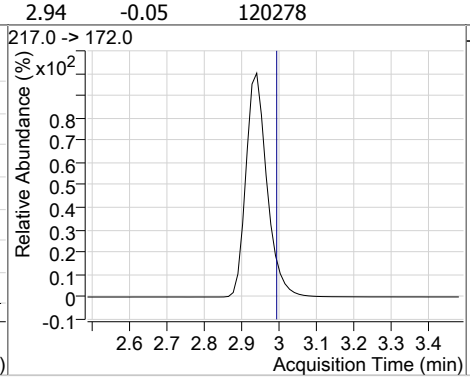


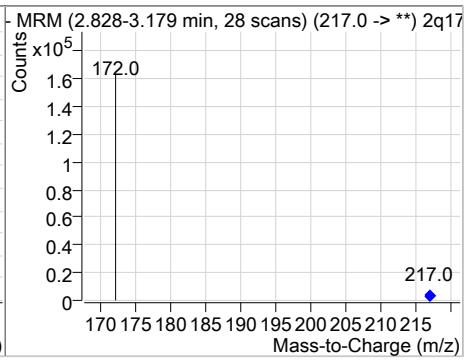




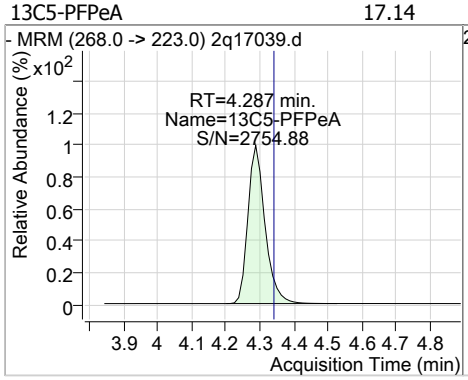
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.10	2.94	-0.05	120278				

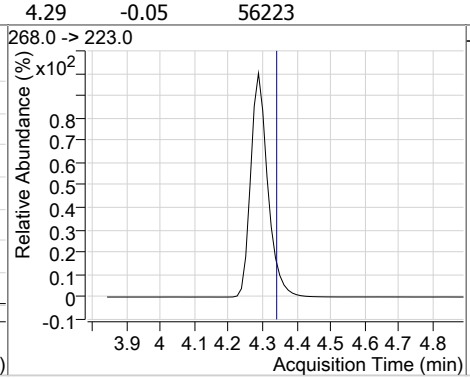


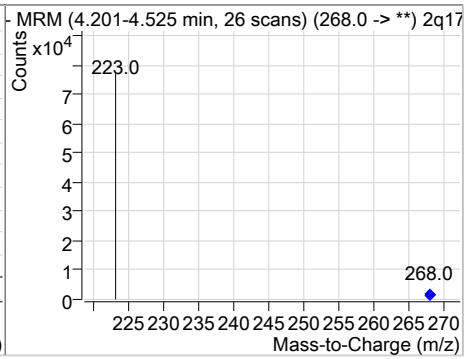




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	17.14	4.29	-0.05	56223				

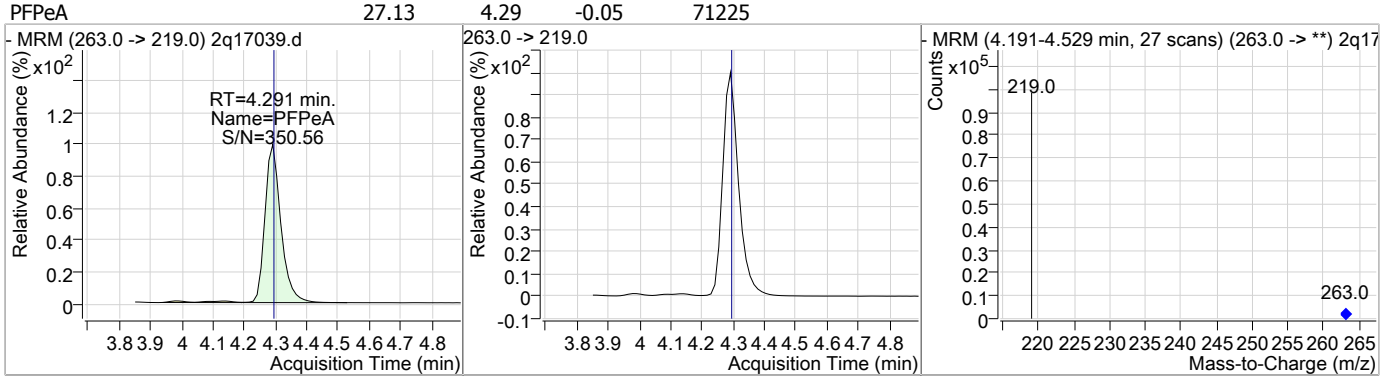




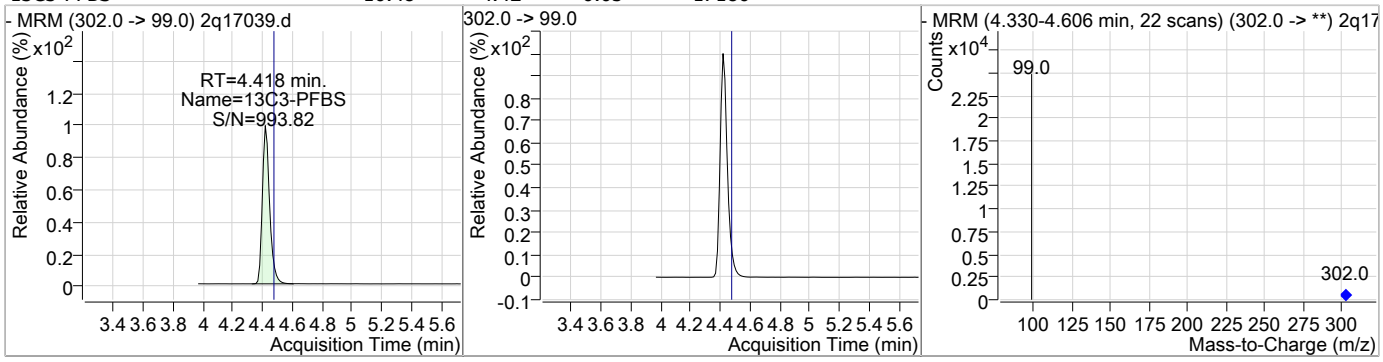


Perfluorinated Compounds by LC/MS/MS

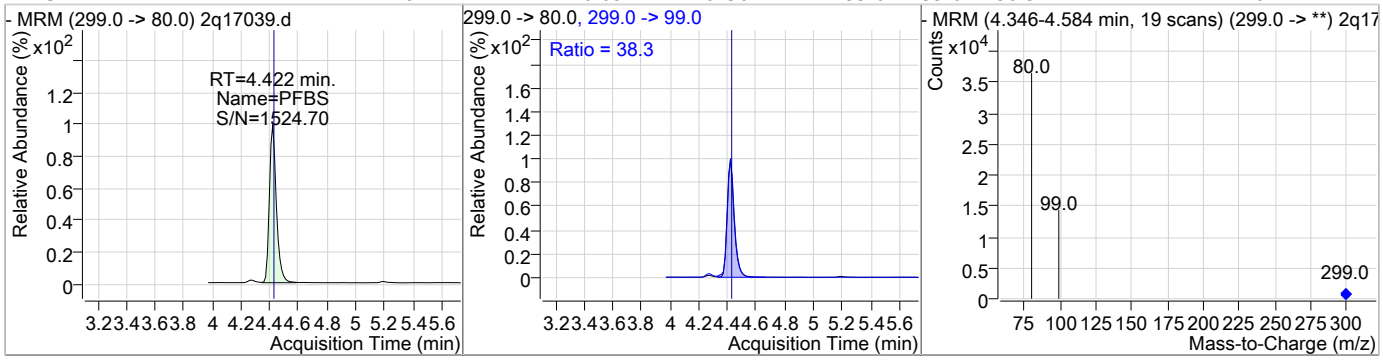
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	27.13	4.29	-0.05	71225				



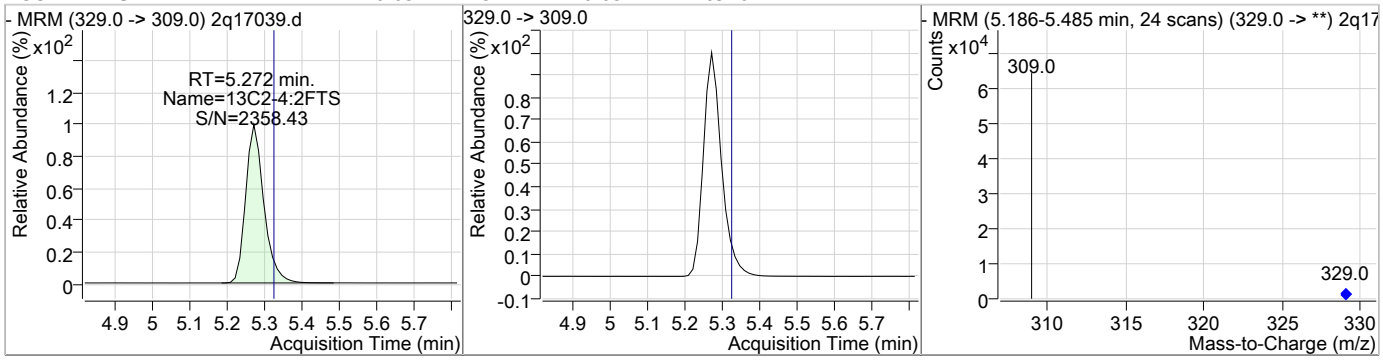
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	16.48	4.42	-0.05	17186				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	22.48	4.42	-0.05	26490	299.0 -> 99.0	38.3	7.4	67.4

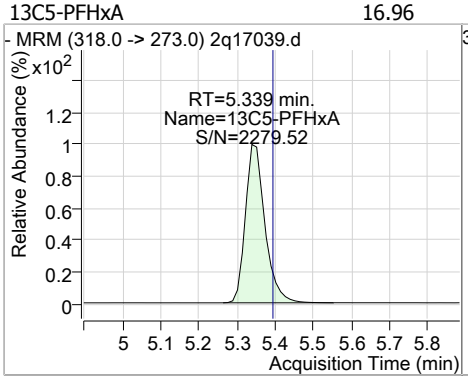


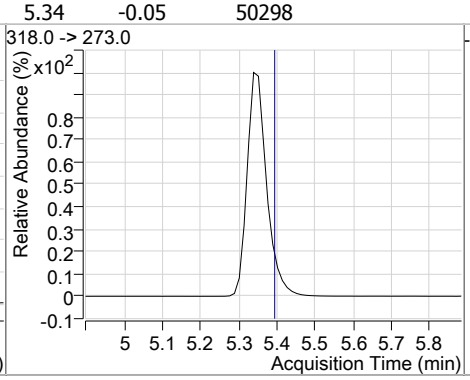
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	16.65	5.27	-0.05	46976				

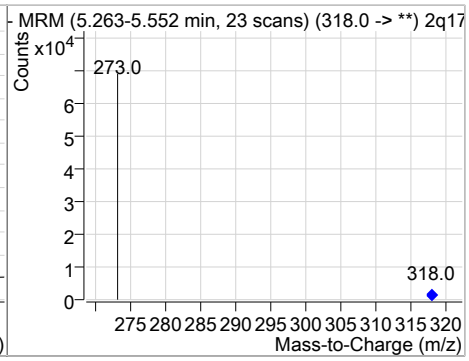


Perfluorinated Compounds by LC/MS/MS

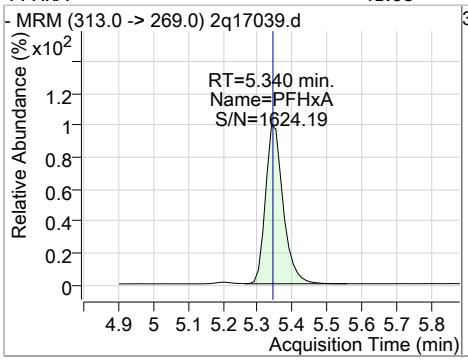
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	16.96	5.34	-0.05	50298				

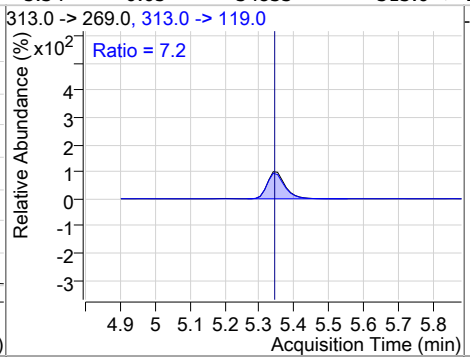


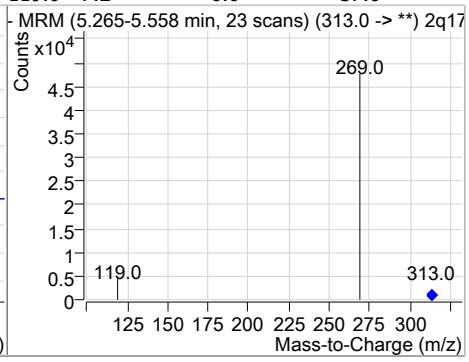




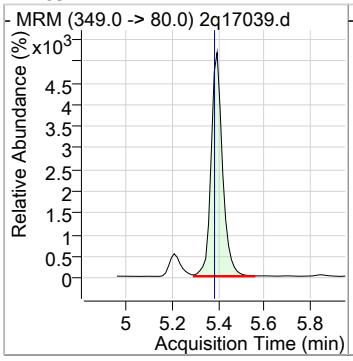
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	41.08	5.34	-0.05	34833	313.0 -> 119.0	7.2	0.0	37.6

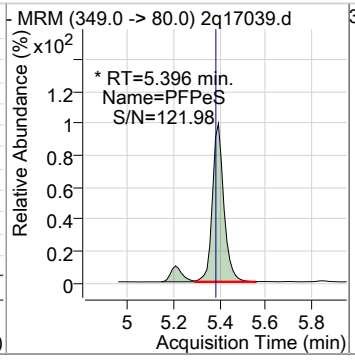


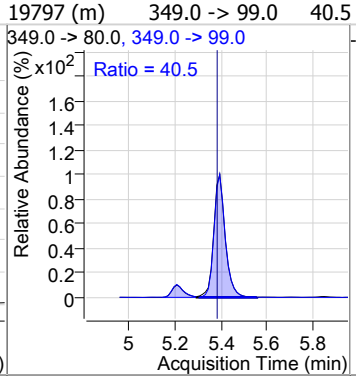


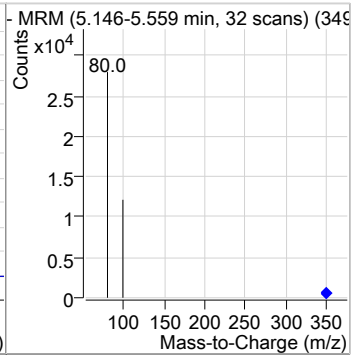


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	26.46	5.40	-0.05	19797 (m)	349.0 -> 99.0	40.5	10.8	70.8

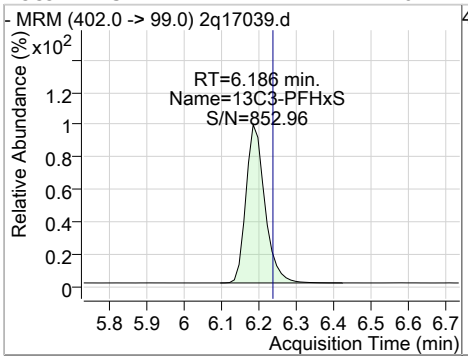


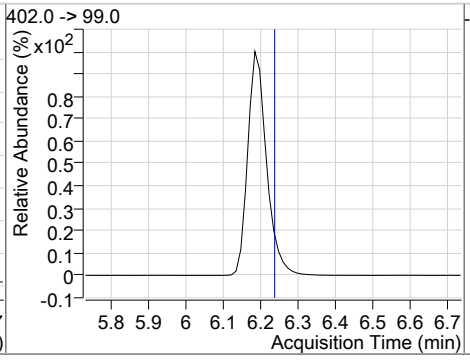


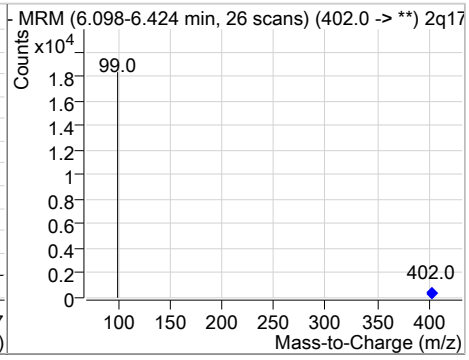




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	14.48	6.19	-0.05	12083				

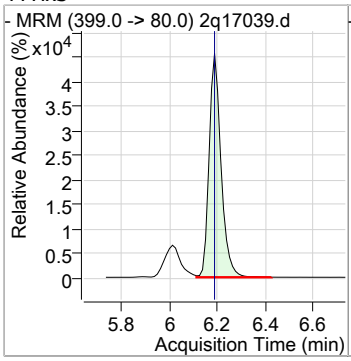


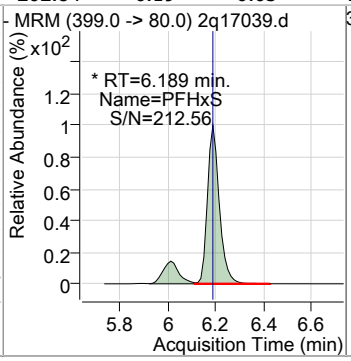


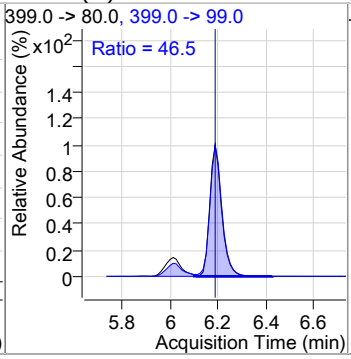


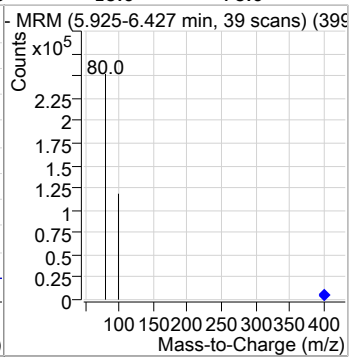
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	262.84	6.19	-0.05	188157 (m)	399.0 -> 99.0	46.5	18.0	78.0

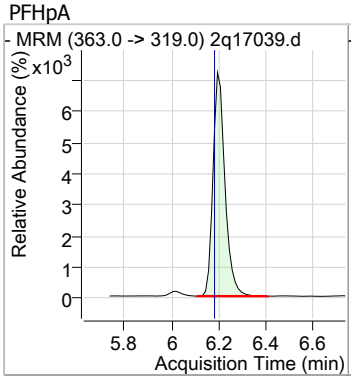


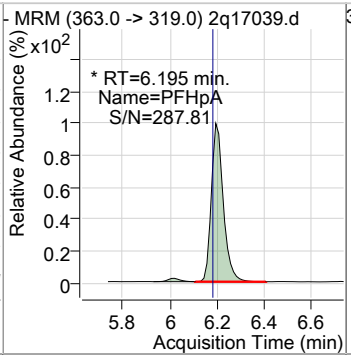


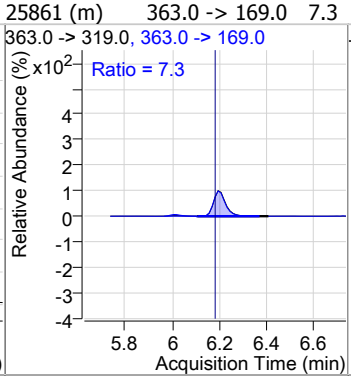


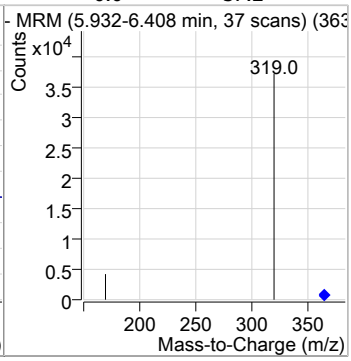


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	14.82	6.20	-0.05	25861 (m)	363.0 -> 169.0	7.3	0.0	37.2

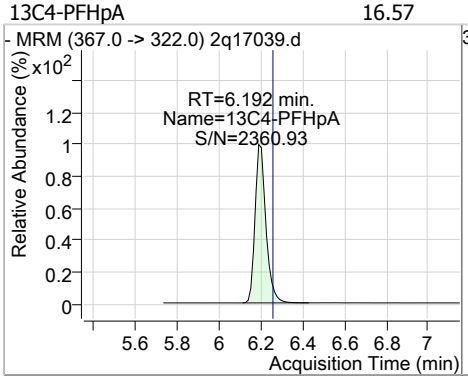


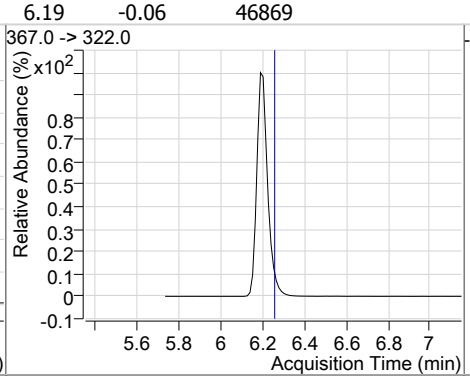


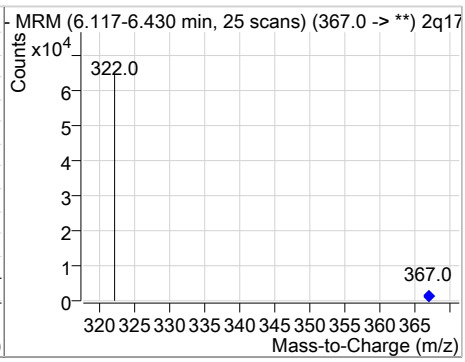




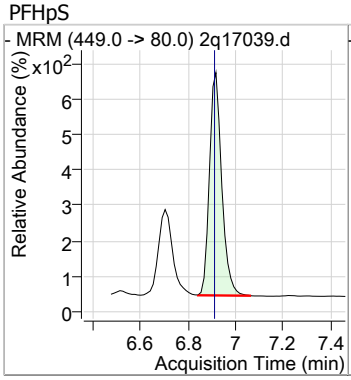
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	16.57	6.19	-0.06	46869				

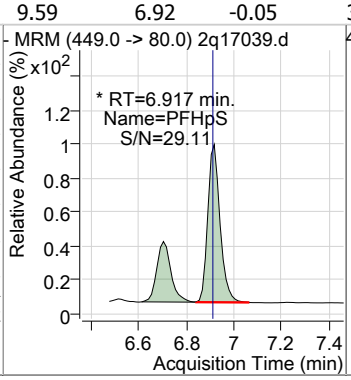


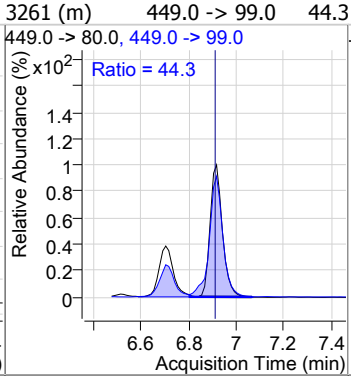


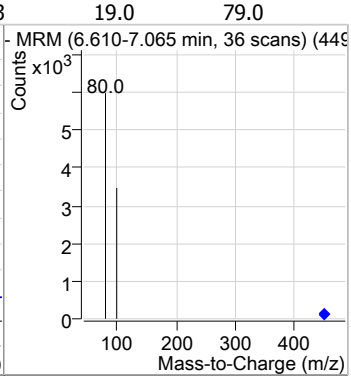


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	9.59	6.92	-0.05	3261 (m)	449.0 -> 99.0	44.3	19.0	79.0



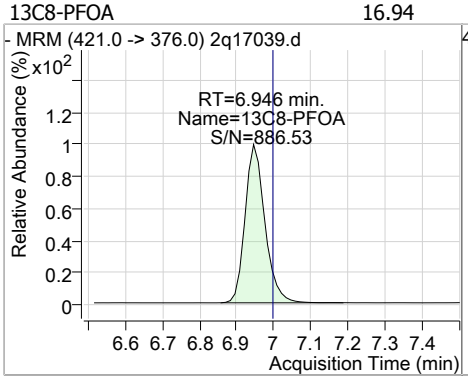


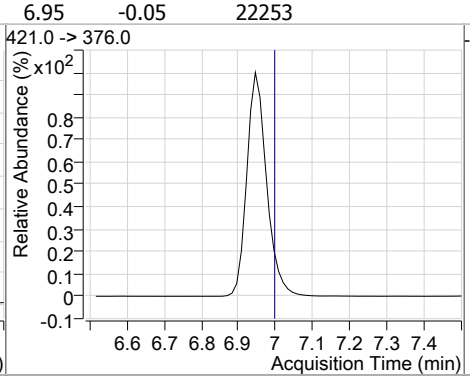


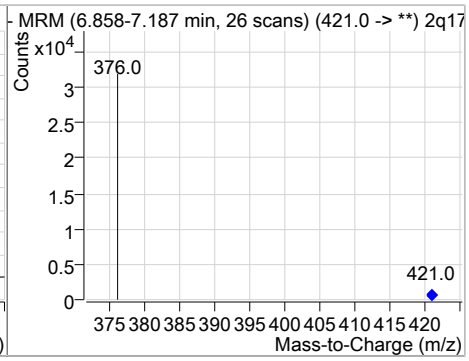


Perfluorinated Compounds by LC/MS/MS

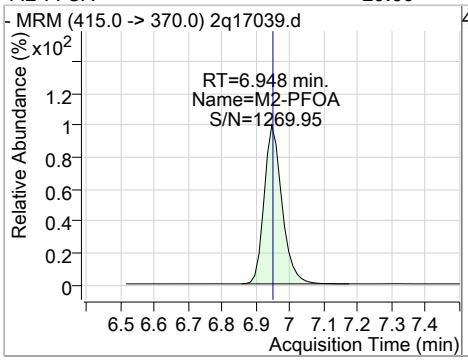
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	16.94	6.95	-0.05	22253				

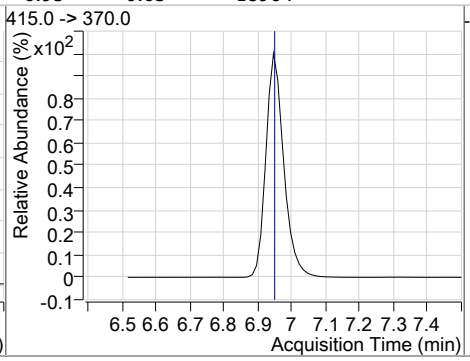


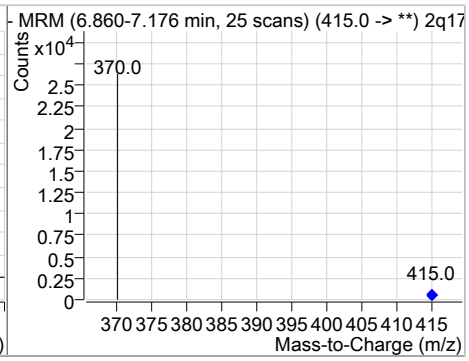




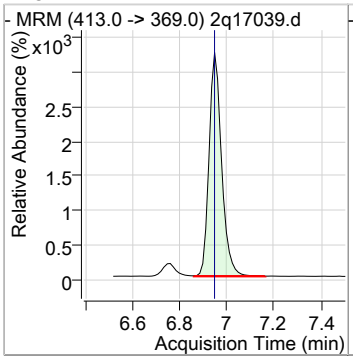
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.95	-0.05	18964				

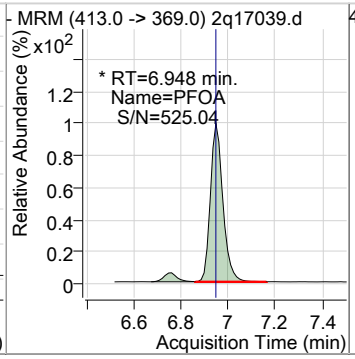


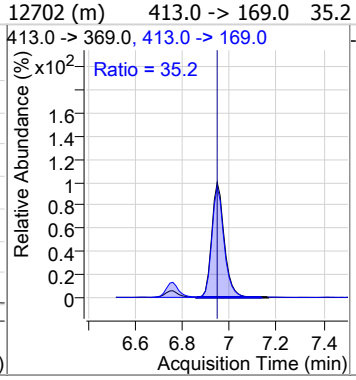


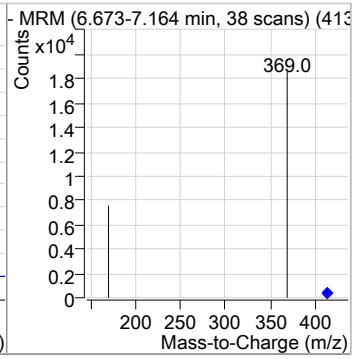


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	21.43	6.95	-0.05	12702 (m)	413.0 -> 169.0	35.2	5.0	65.0

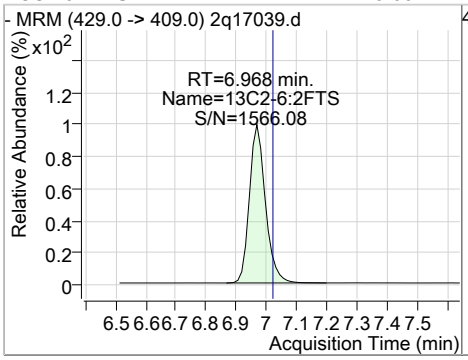


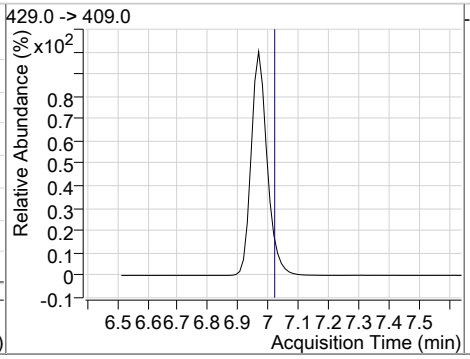


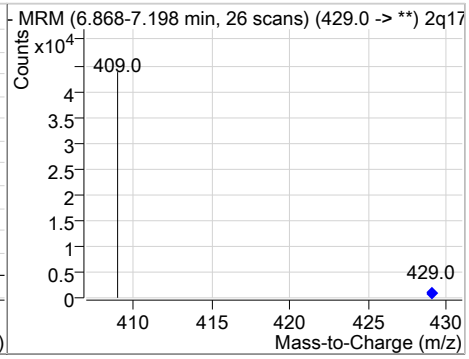




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	16.00	6.97	-0.05	31233				

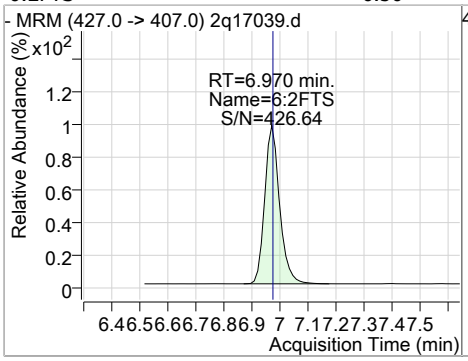


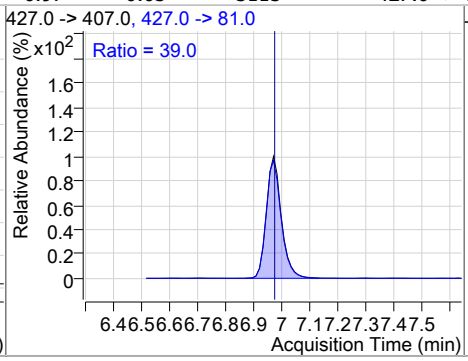


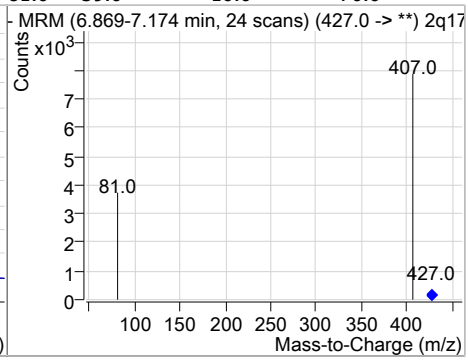


Perfluorinated Compounds by LC/MS/MS

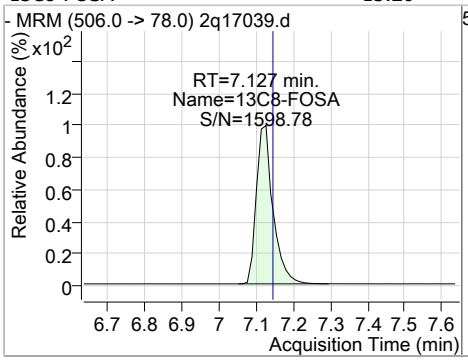
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	6.56	6.97	-0.05	5115	427.0 -> 81.0	39.0	10.0	70.0

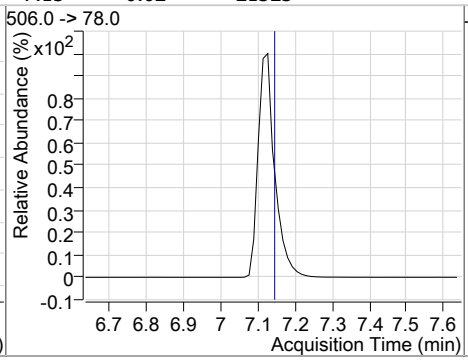


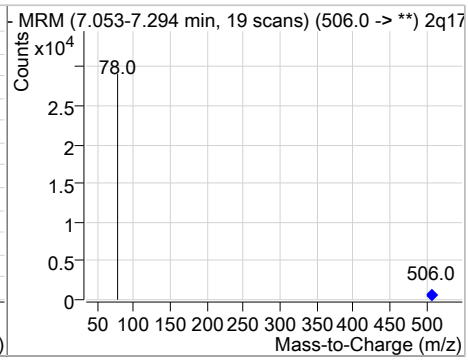




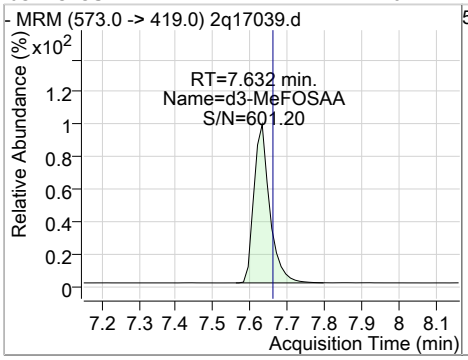
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	13.26	7.13	-0.02	21323				

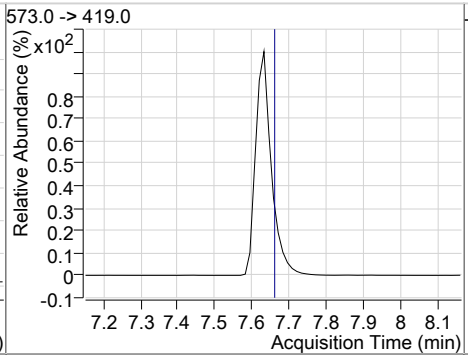


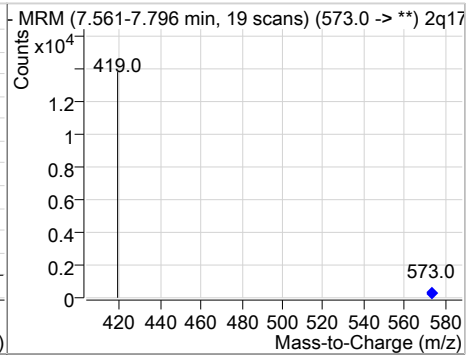




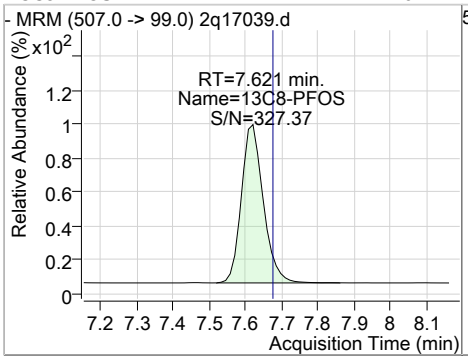
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	12.04	7.63	-0.03	9351				

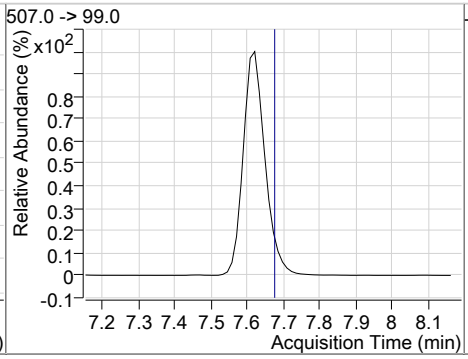


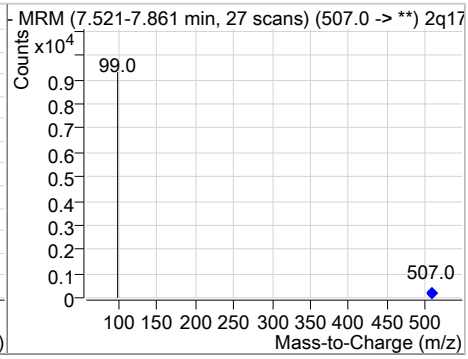




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	12.70	7.62	-0.05	5270				

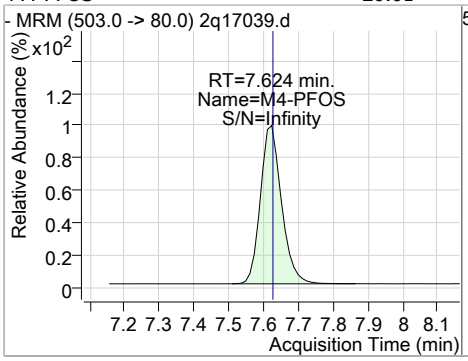


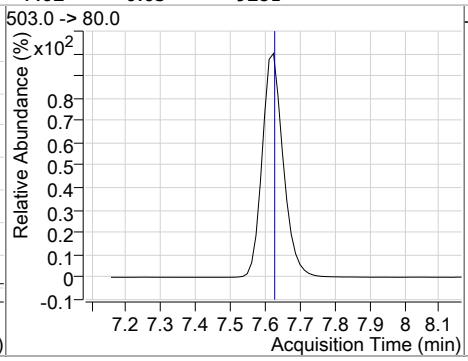


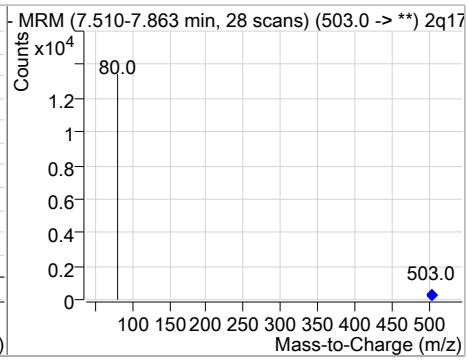


Perfluorinated Compounds by LC/MS/MS

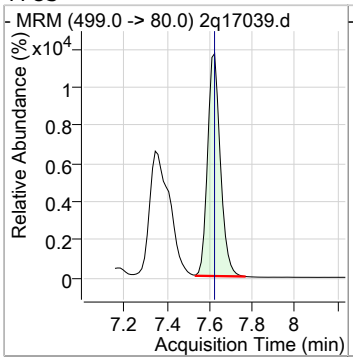
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.01	7.62	-0.05	9281				

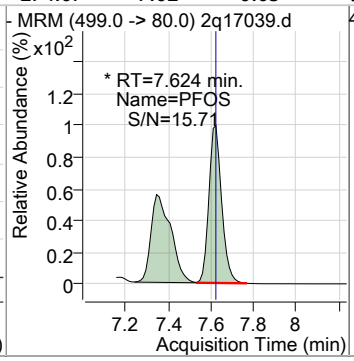


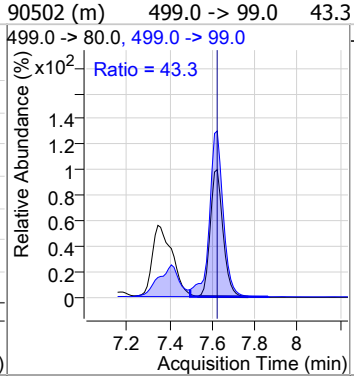


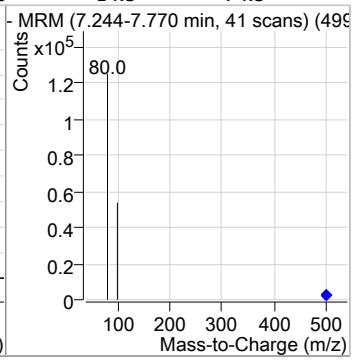


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	274.07	7.62	-0.05	90502 (m)	499.0 -> 99.0	43.3	14.5	74.5

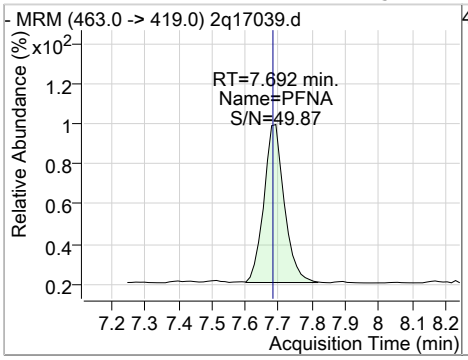


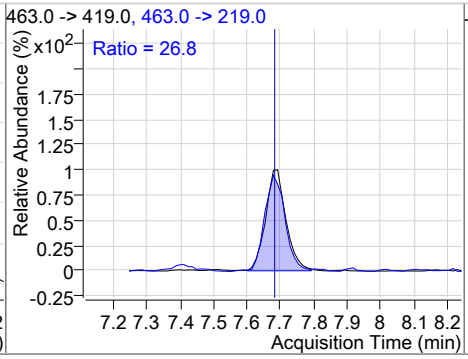


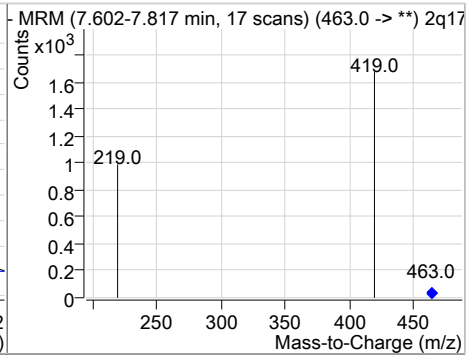




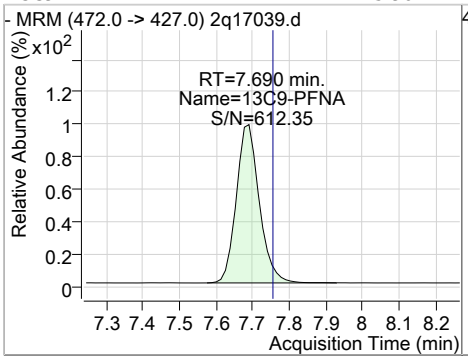
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.57	7.69	-0.05	710	463.0 -> 219.0	26.8	0.0	58.4

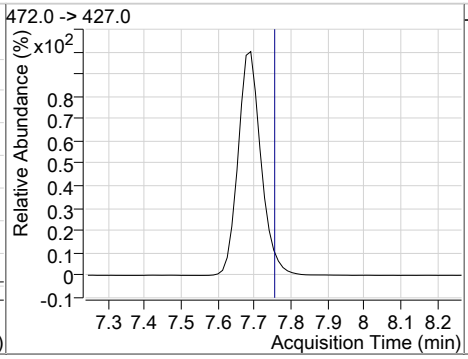


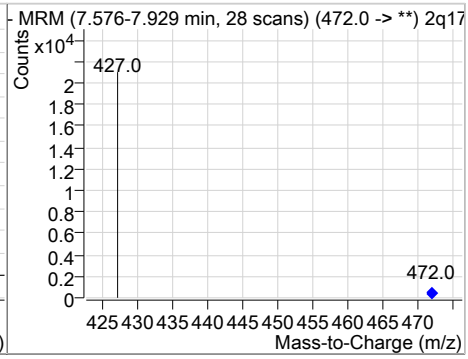




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	15.90	7.69	-0.06	14023				

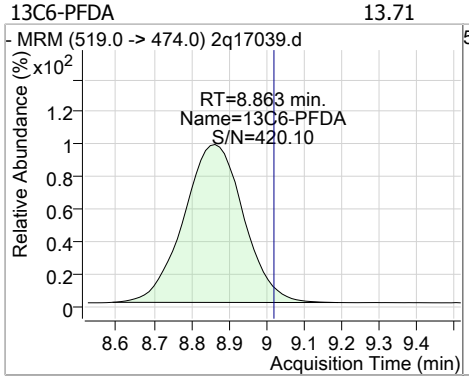


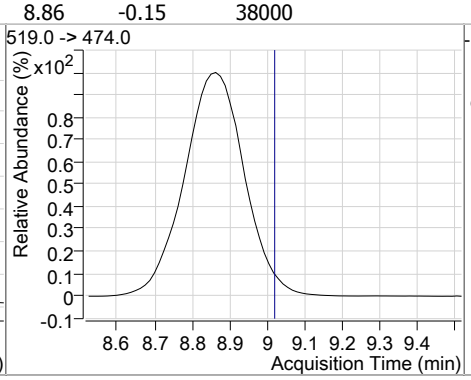


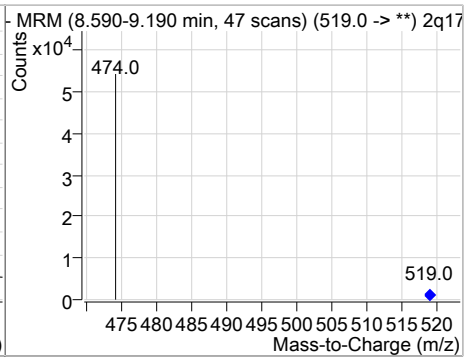


Perfluorinated Compounds by LC/MS/MS

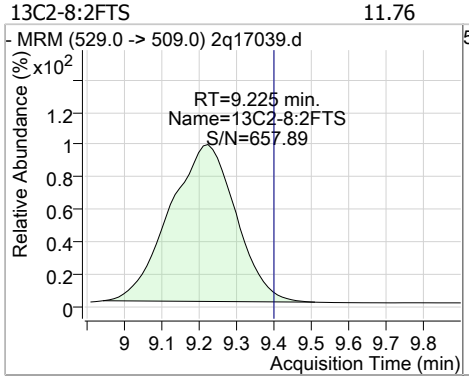
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	13.71	8.86	-0.15	38000				

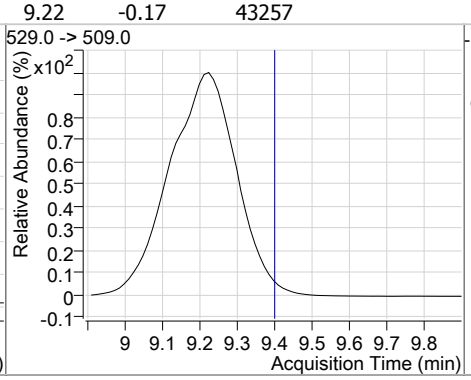


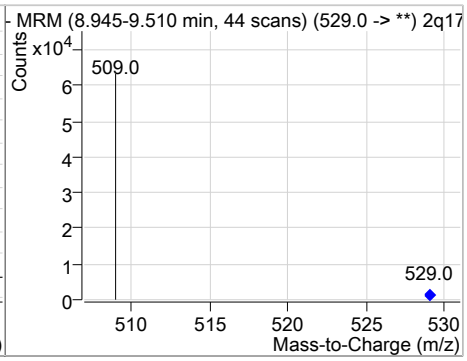




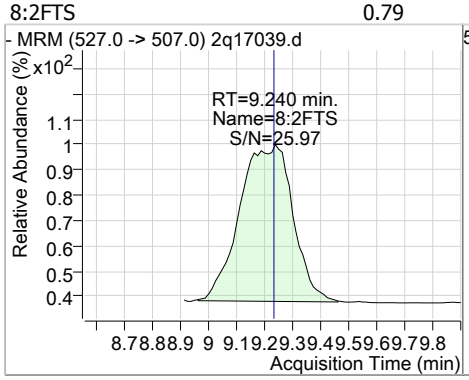
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	11.76	9.22	-0.17	43257				

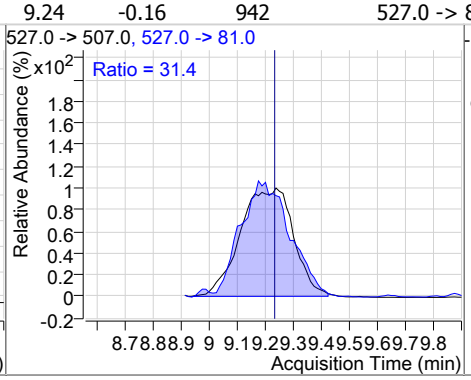


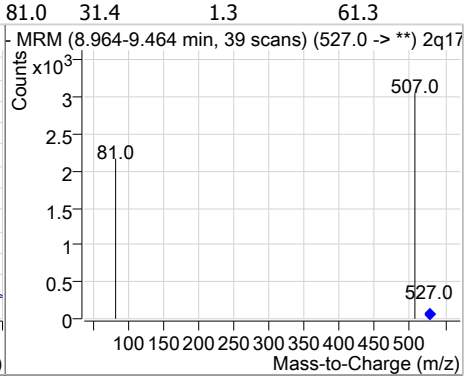




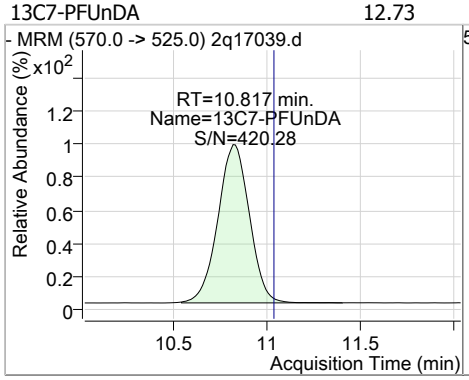
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.79	9.24	-0.16	942	527.0 -> 81.0	31.4	1.3	61.3

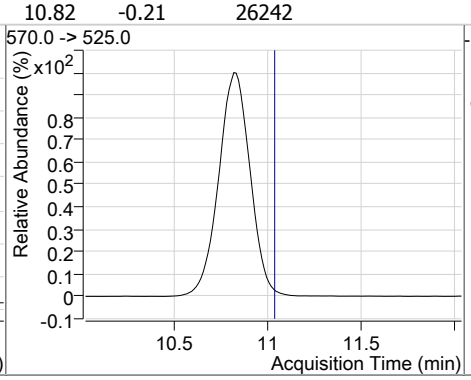


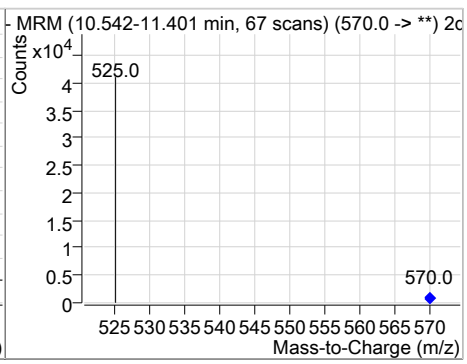




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	12.73	10.82	-0.21	26242				

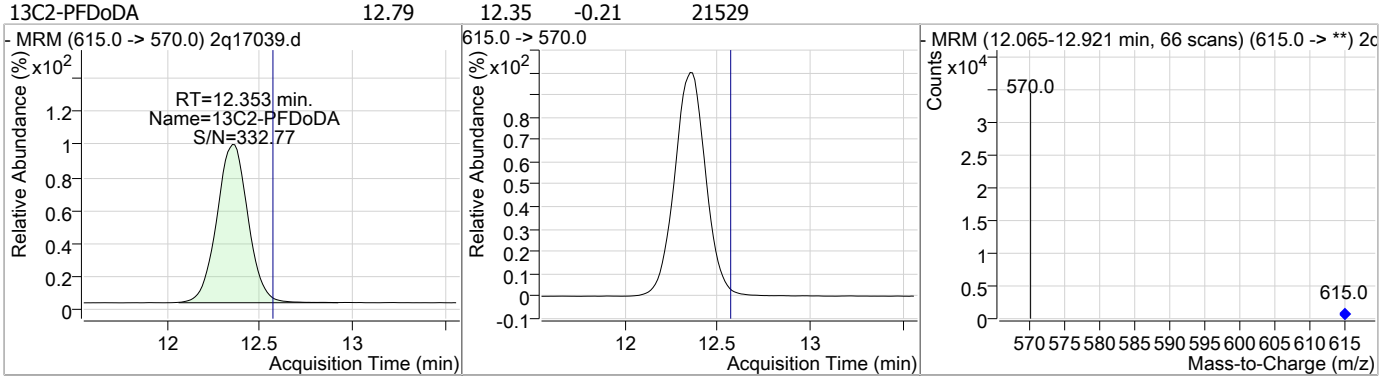




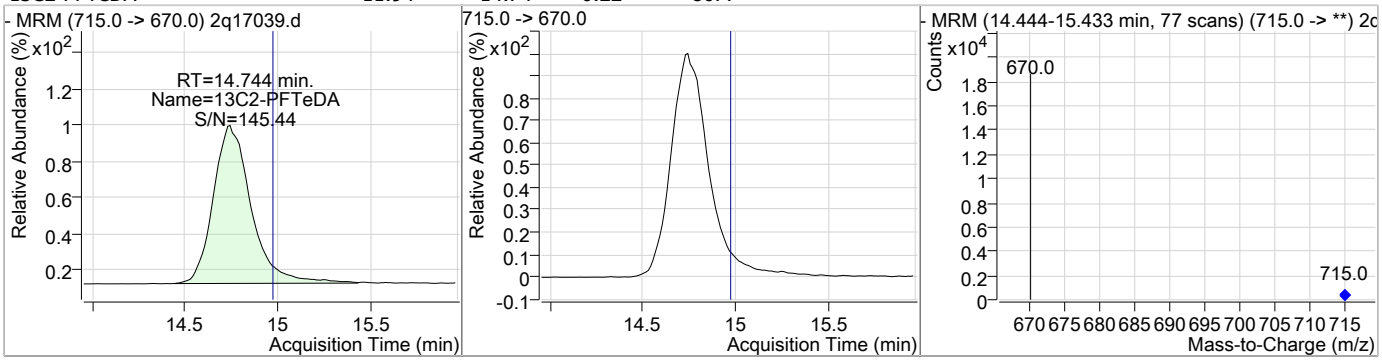


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	12.79	12.35	-0.21	21529				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	11.94	14.74	-0.22	8677				



Manual Integration Approval Summary

Sample Number: FA55430-2
Lab FileID: 2Q17039.D
Injection Time: 07/13/18 01:10
Method: EPA 537M QSM5.1 B-15
Analyst approved: 07/16/18 14:58 Natasha Gumtie
Supervisor approved: 07/17/18 11:23 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanesulfonic acid	2706-91-4		5.40	Split peak
Perfluorohexanesulfonic acid	355-46-4		6.19	Split peak
Perfluoroheptanoic acid	375-85-9		6.20	Split peak
Perfluoroheptanesulfonic acid	375-92-8		6.92	Split peak
Perfluorooctanoic acid	335-67-1		6.95	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.62	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/17/18 11:23

Perfluorinated Compounds by LC/MS/MS

Data File : 2q17113.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/14/2018 3:52:15 AM
Sample Name : FA55430-2
Vial : Vial 41
DA Method File : PFC_ID_071318_S2Q296.quantmethod.xml
Batch Name : s2q296.batch.bin
Sample Information : op70810,S2Q296,130,,,1.0,5,water

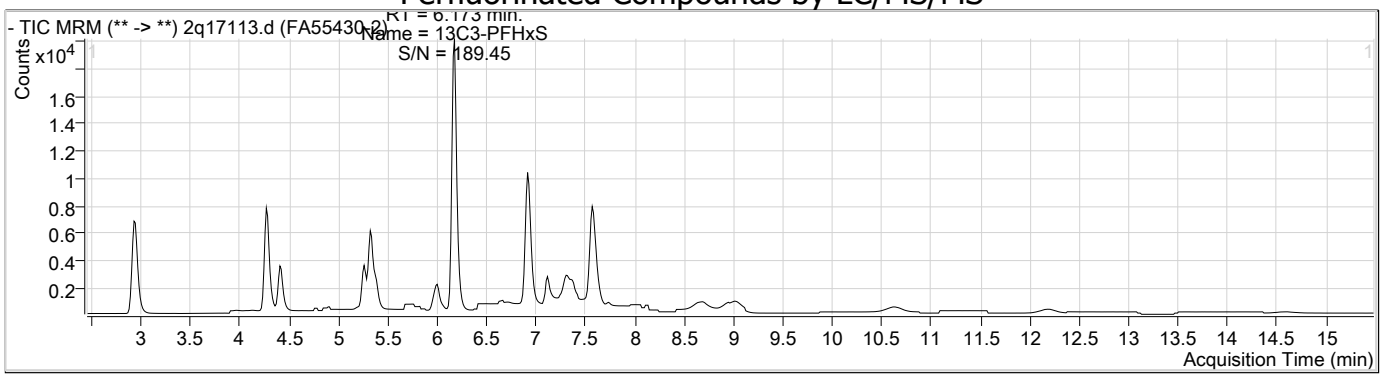
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.921	415.0 -> 370.0	20239	20.00	µg/L	0.000
13C4-PFOS	7.573	503.0 -> 80.0	10019	20.00	µg/L	0.000
M4-PFBA	2.928	217.0 -> 172.0	24952	20.00	µg/L	-0.013
M5-PFPeA	4.275	268.0 -> 223.0	11801	20.00	µg/L	-0.013
M5-PFHxA	5.328	318.0 -> 273.0	10778	20.00	µg/L	-0.013
M4-PFHpA	6.179	367.0 -> 322.0	9980	20.00	µg/L	0.000
M8-PFOA	6.920	421.0 -> 376.0	4702	20.00	µg/L	0.000
M9-PFNA	7.640	472.0 -> 427.0	2687	20.00	µg/L	0.013
M6-PFDA	8.691	519.0 -> 474.0	5573	20.00	µg/L	0.063
M7-PFUnDA	10.629	570.0 -> 525.0	4166	20.00	µg/L	0.025
M2-PFDoDA	12.177	615.0 -> 570.0	3219	20.00	µg/L	0.013
M2-PFTeDA	14.606	715.0 -> 670.0	1266	20.00	µg/L	0.038
M8-FOSA	7.117	506.0 -> 78.0	4333	20.00	µg/L	0.000
M3-PFBS	4.406	302.0 -> 99.0	3618	20.00	µg/L	-0.013
M3-PFHxS	6.173	402.0 -> 99.0	2581	20.00	µg/L	0.000
M8-PFOS	7.571	507.0 -> 99.0	1034	20.00	µg/L	0.000
M2-4:2FTS	5.260	329.0 -> 309.0	10659	20.00	µg/L	0.000
M2-6:2FTS	6.942	429.0 -> 409.0	7445	20.00	µg/L	0.013
M2-8:2FTS	9.010	529.0 -> 509.0	7606	20.00	µg/L	0.038
M3-MeFOSAA	7.620	573.0 -> 419.0	2167	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.260	329.0 -> 309.0	10660	3.07	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.3%		
13C2-6:2FTS	6.942	429.0 -> 409.0	7445	2.82	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.1%		
13C2-8:2FTS	9.010	529.0 -> 509.0	7546	2.37	µg/L	0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.9%		
13C2-PFDoDA	12.177	615.0 -> 570.0	3246	2.29	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.5%		
13C2-PFTeDA	14.606	715.0 -> 670.0	1264	2.07	µg/L	0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.3%		
13C3-PFBS	4.406	302.0 -> 99.0	3620	3.28	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.4%		
13C3-PFHxS	6.173	402.0 -> 99.0	2585	2.71	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.5%		
13C4-PFBA	2.928	217.0 -> 172.0	24950	3.33	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.6%		
13C4-PFHpA	6.179	367.0 -> 322.0	9998	3.15	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.7%		
13C5-PFHxA	5.328	318.0 -> 273.0	10776	3.22	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.1%		
13C5-PFPeA	4.275	268.0 -> 223.0	11799	3.19	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.9%		
13C6-PFDA	8.691	519.0 -> 474.0	5571	2.51	µg/L	0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.5%		

Perfluorinated Compounds by LC/MS/MS

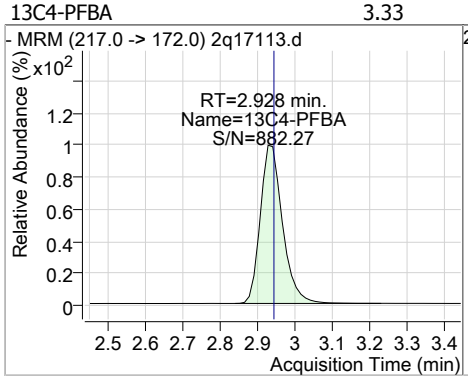
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.629	570.0 -> 525.0	4157	2.32	µg/L		0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.6%			
13C8-FOSA	7.117	506.0 -> 78.0	4331	2.42	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.1%			
13C8-PFOA	6.920	421.0 -> 376.0	4706	2.85	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.3%			
13C8-PFOS	7.571	507.0 -> 99.0	1032	2.20	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.0%			
13C9-PFNA	7.640	472.0 -> 427.0	2687	2.64	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.2%			
d3-MeFOSAA	7.620	573.0 -> 419.0	2163	2.66	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.3%			
M2-PFOA	6.921	415.0 -> 370.0	20245	4.00	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 20.0%			
M4-PFOS	7.573	503.0 -> 80.0	10019	4.00	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 20.0%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	6.944	427.0 -> 407.0	1249	1.29	µg/L		95
8:2FTS	9.038	527.0 -> 507.0	198	0.19	µg/L		43
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	2.937	213.0 -> 169.0	2603	2.64	µg/L		100
PFBS	4.409	299.0 -> 80.0	5506	4.68	µg/L		97
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	6.182	363.0 -> 319.0	5807	3.26	µg/L	m	99
PFHpS	6.878	449.0 -> 80.0	667	1.73	µg/L	m	85
PFHxA	5.330	313.0 -> 269.0	7541	8.65	µg/L		98
PFHxS	6.176	399.0 -> 80.0	40483	54.37	µg/L	m	99
PFNA	7.641	463.0 -> 419.0	187	0.74	µg/L		83
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	6.922	413.0 -> 369.0	2684	4.46	µg/L	m	98
PFOS	7.574	499.0 -> 80.0	19195	59.76	µg/L	m	98
PFPeA	4.278	263.0 -> 219.0	14945	5.70	µg/L		100
PFPeS	5.383	349.0 -> 80.0	4206	5.39	µg/L	m	97
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			

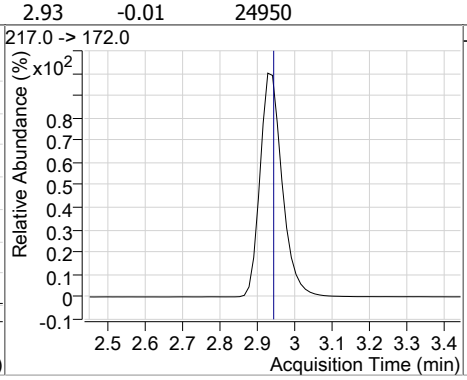
 # = Qualifier out of range, m = manually integrated, + = Area summed

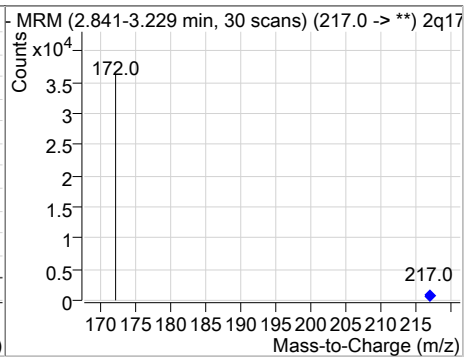
Perfluorinated Compounds by LC/MS/MS



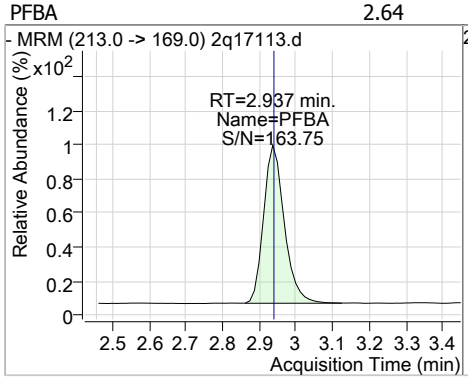
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	3.33	2.93	-0.01	24950				

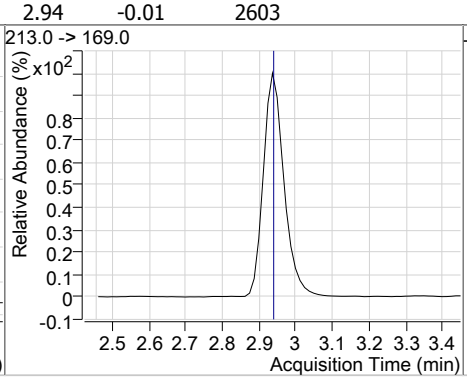


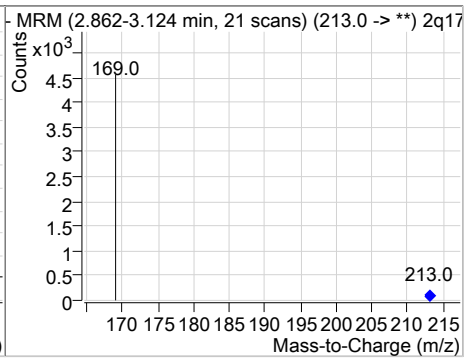




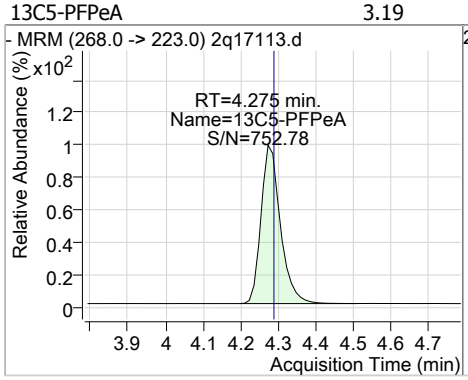
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	2.64	2.94	-0.01	2603				

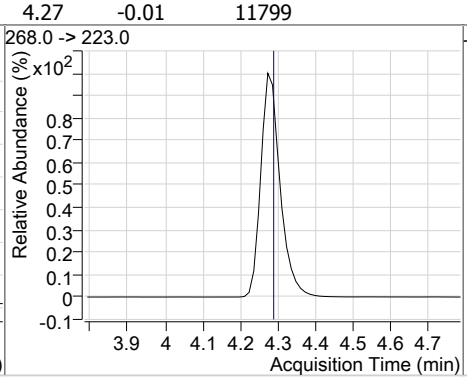


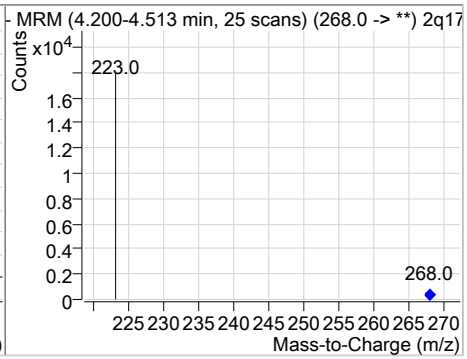




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	3.19	4.27	-0.01	11799				

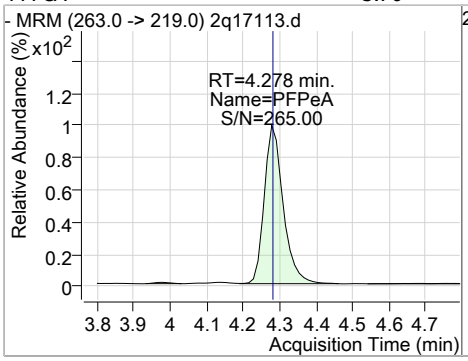


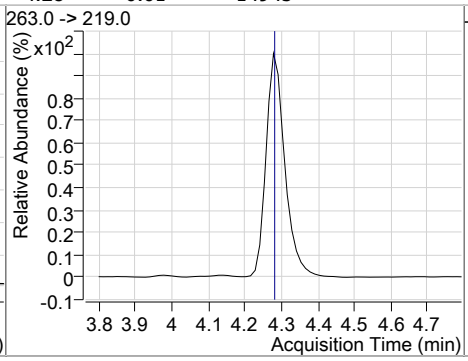


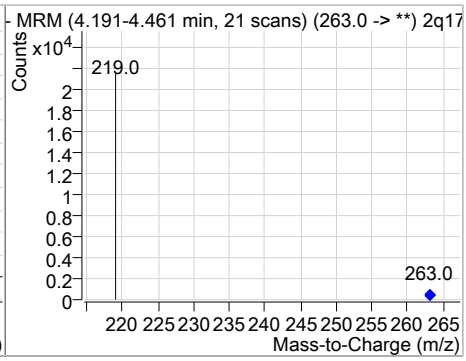


Perfluorinated Compounds by LC/MS/MS

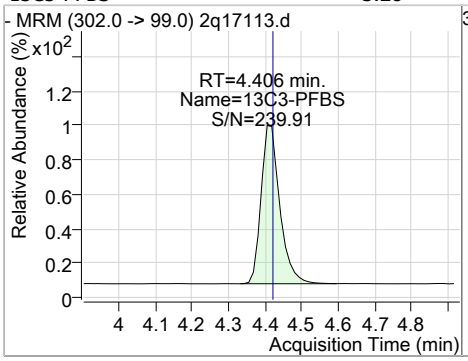
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	5.70	4.28	-0.01	14945				

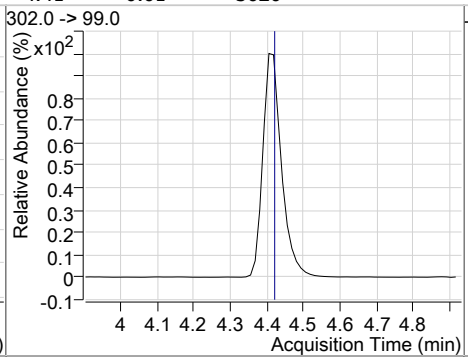


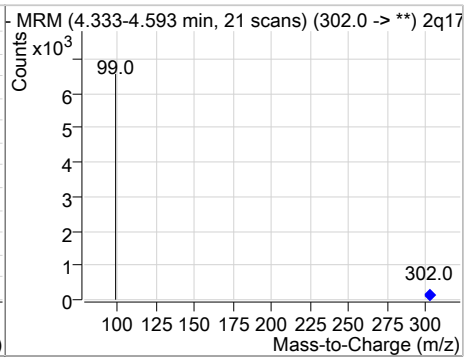




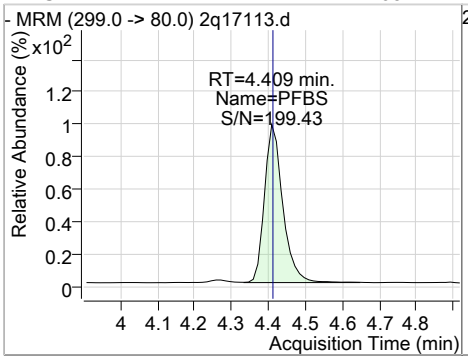
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	3.28	4.41	-0.01	3620				

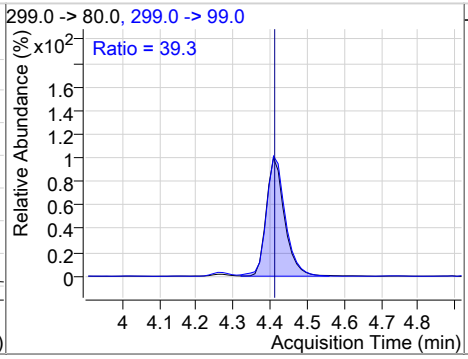


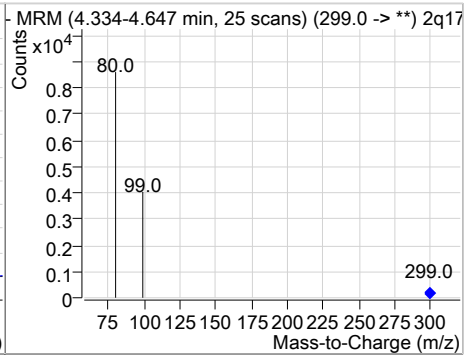




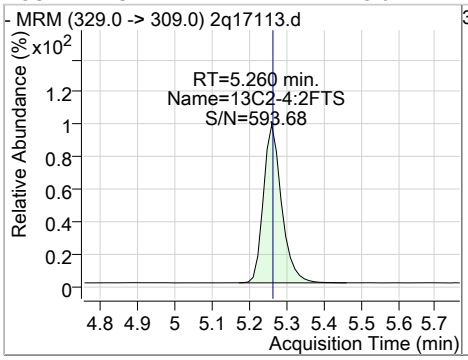
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	4.68	4.41	-0.01	5506	299.0 -> 99.0	39.3	7.4	67.4

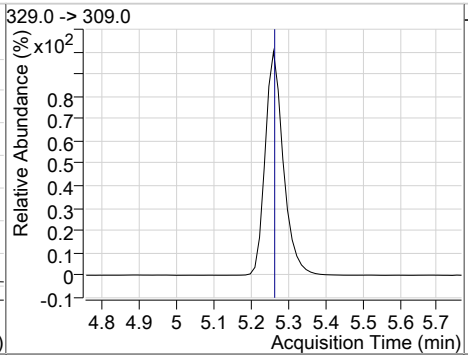


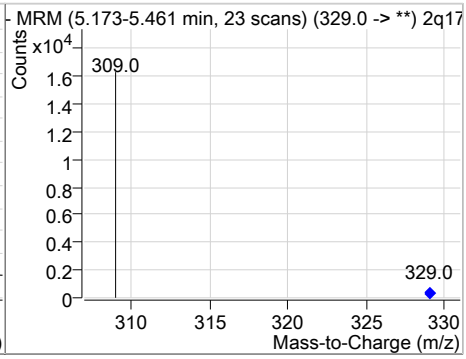




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	3.07	5.26	0.00	10660				

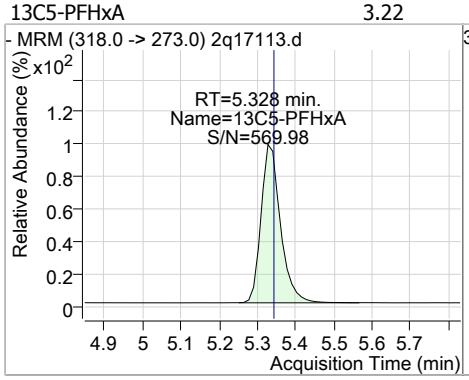


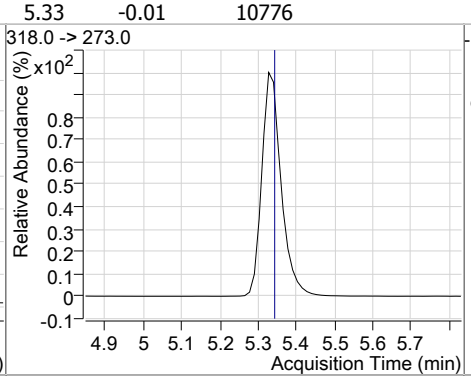


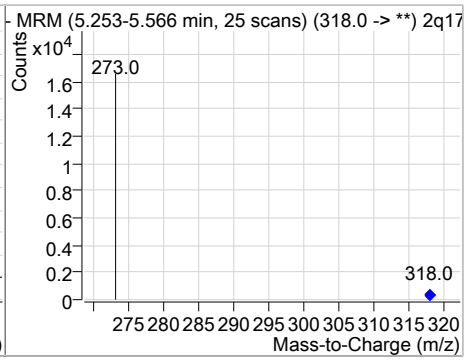


Perfluorinated Compounds by LC/MS/MS

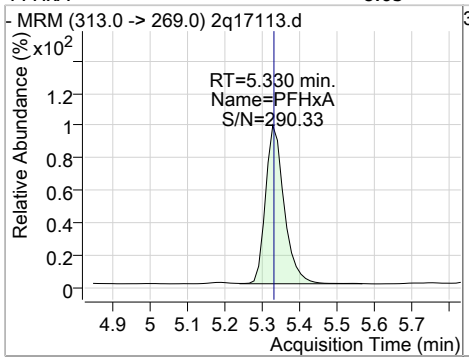
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	3.22	5.33	-0.01	10776				

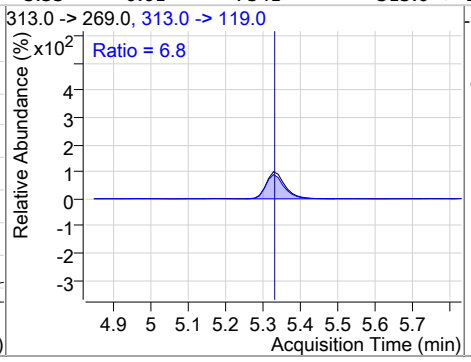


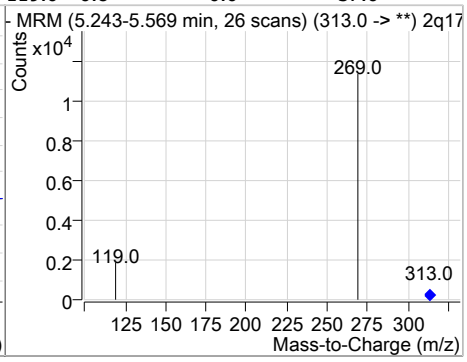




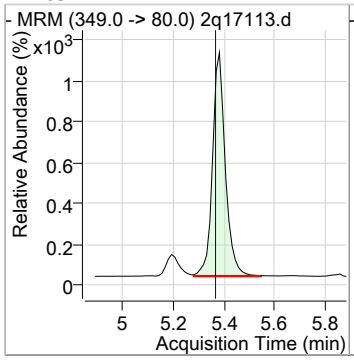
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	8.65	5.33	-0.01	7541	313.0 -> 119.0	6.8	0.0	37.6

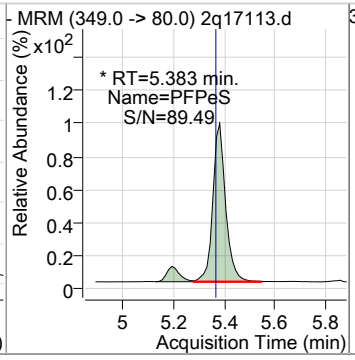


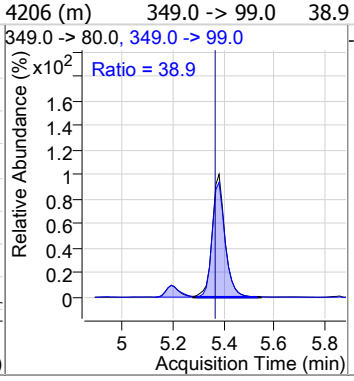


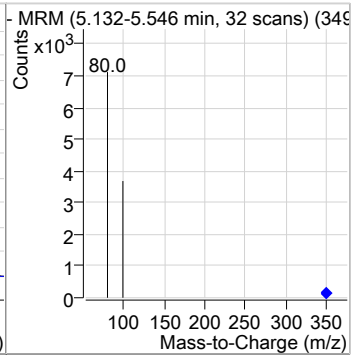


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	5.39	5.38	0.00	4206 (m)	349.0 -> 99.0	38.9	10.8	70.8

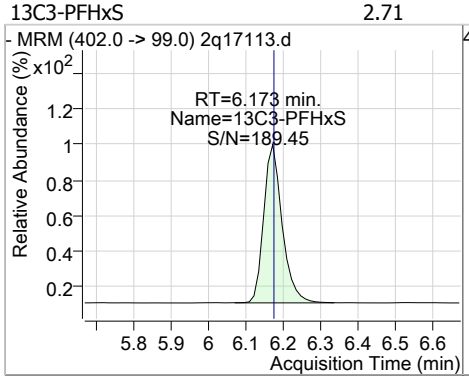


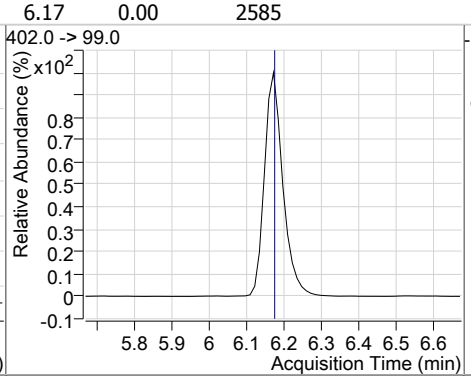


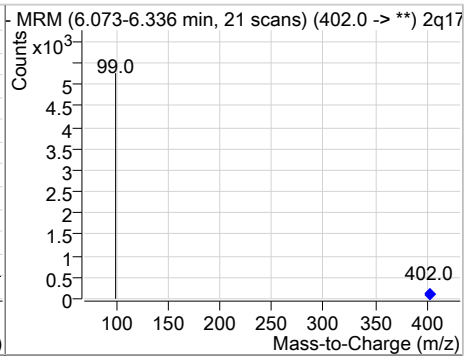




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.71	6.17	0.00	2585				

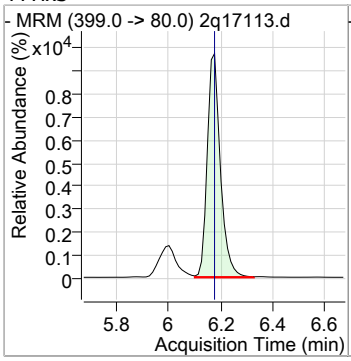


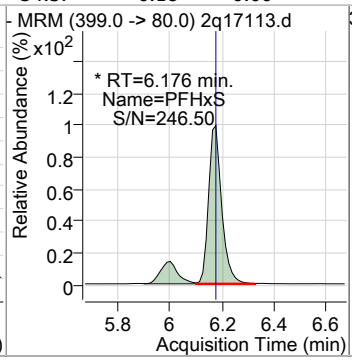


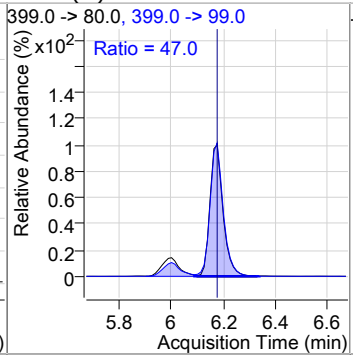


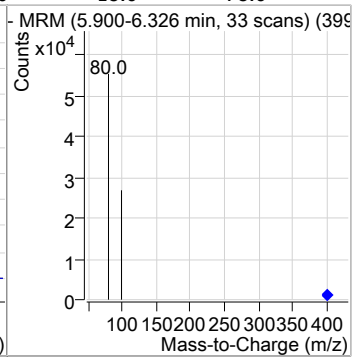
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	54.37	6.18	0.00	40483 (m)	399.0 -> 99.0	47.0	18.0	78.0

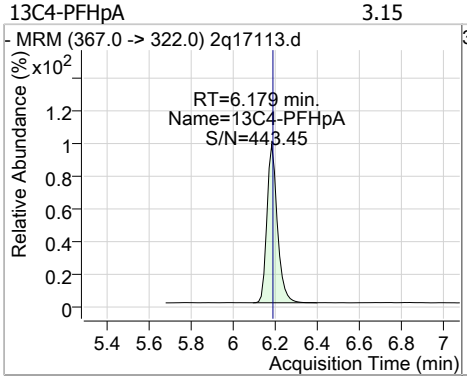


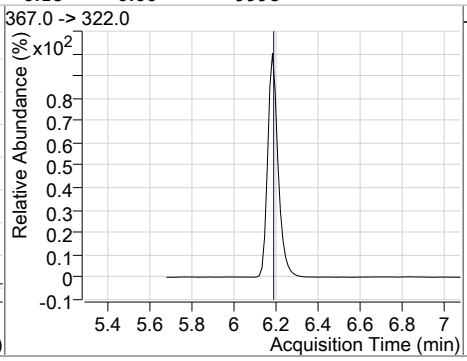


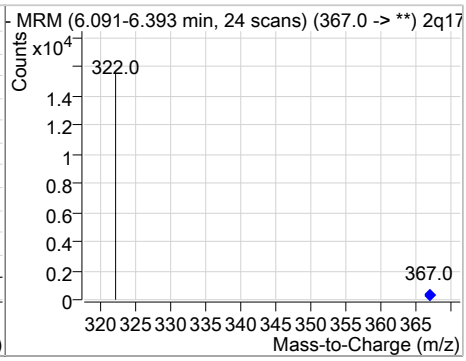




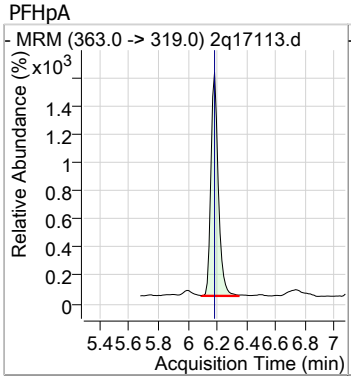
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	3.15	6.18	0.00	9998				

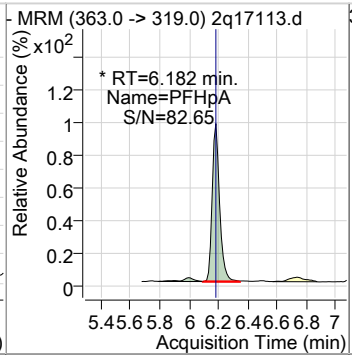


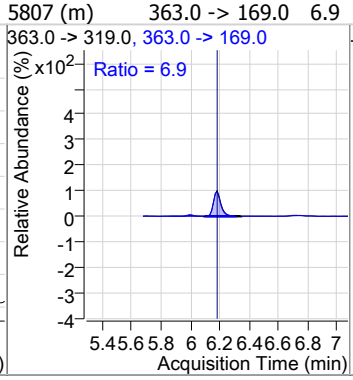


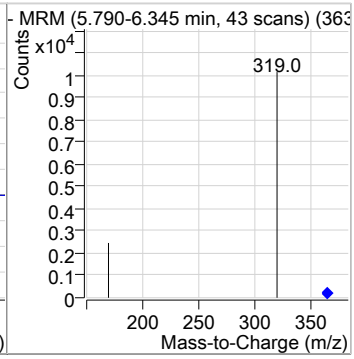


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	3.26	6.18	0.00	5807 (m)	363.0 -> 169.0	6.9	0.0	37.2

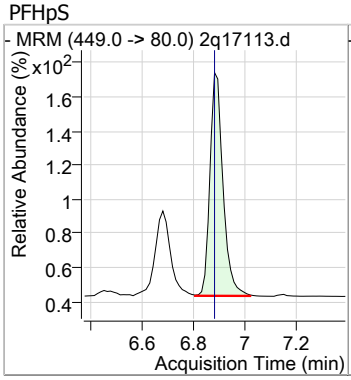


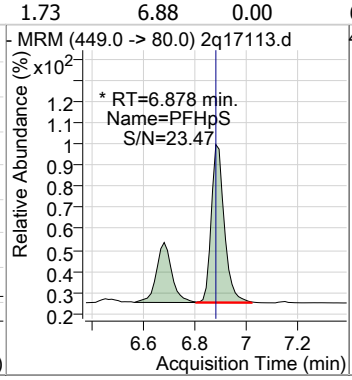


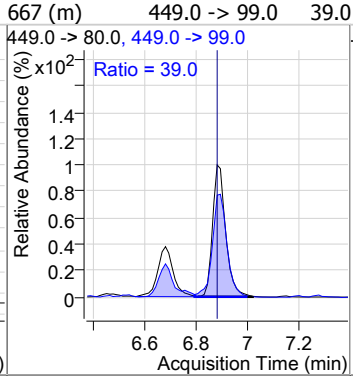


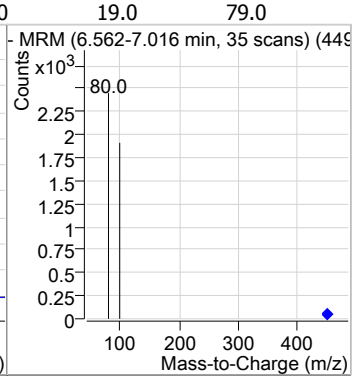


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.73	6.88	0.00	667 (m)	449.0 -> 99.0	39.0	19.0	79.0



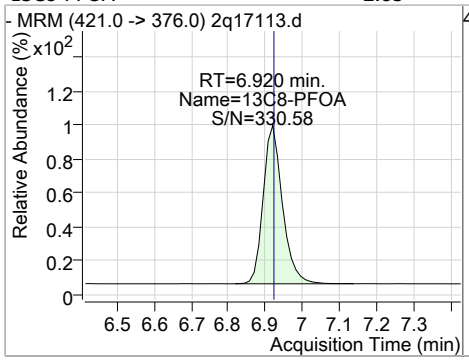


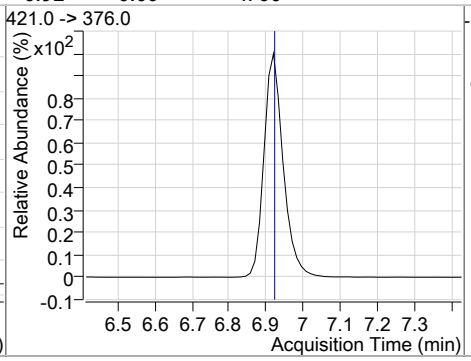


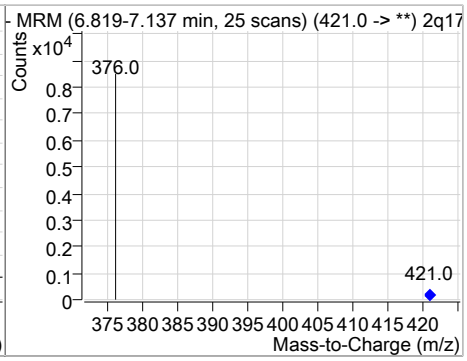


Perfluorinated Compounds by LC/MS/MS

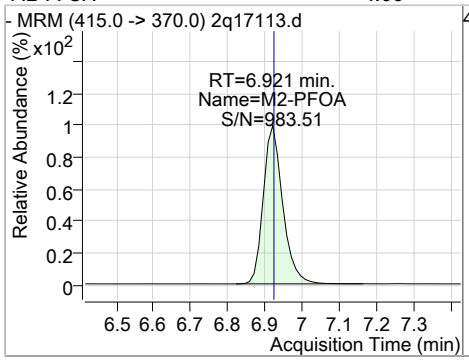
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.85	6.92	0.00	4706				

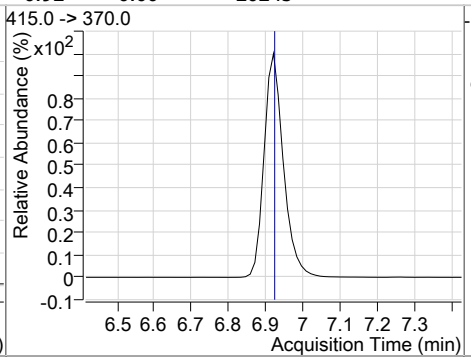


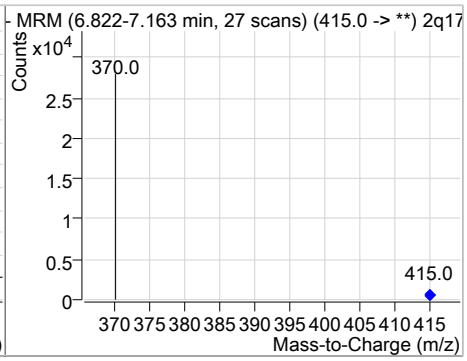




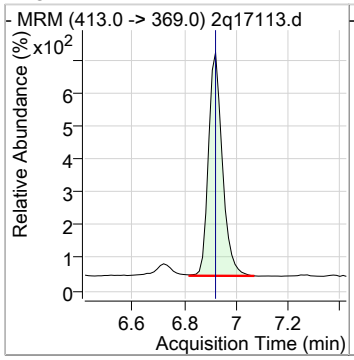
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	4.00	6.92	0.00	20245				

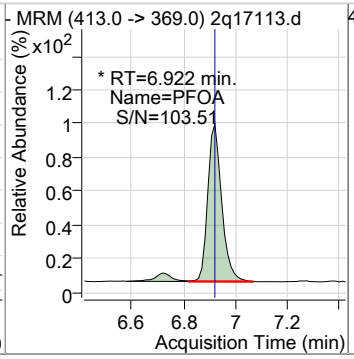


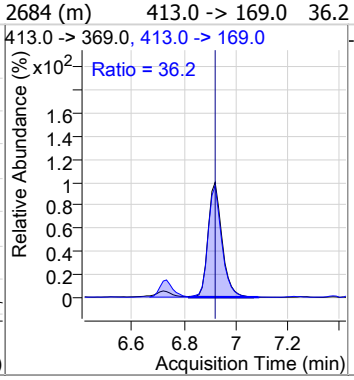


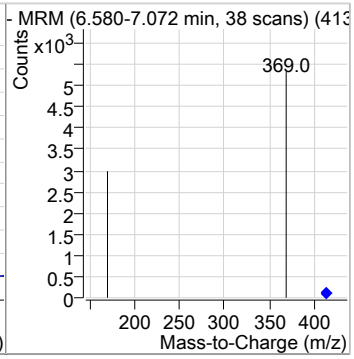


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	4.46	6.92	0.00	2684 (m)	413.0 -> 169.0	36.2	5.0	65.0

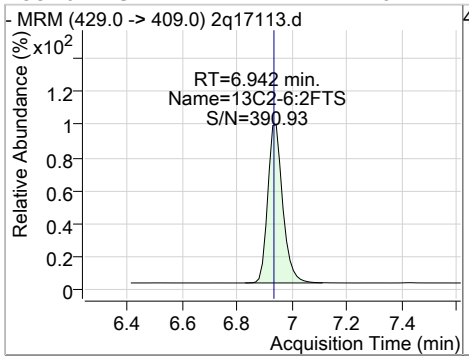


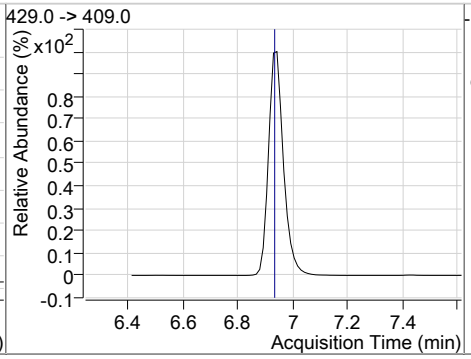


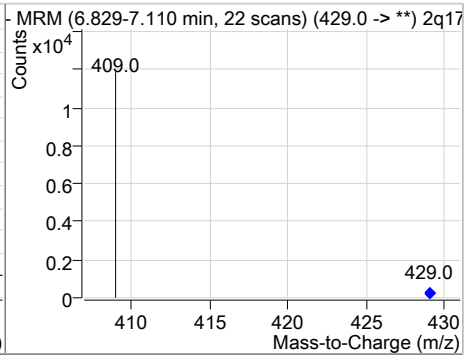




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	2.82	6.94	0.01	7445				

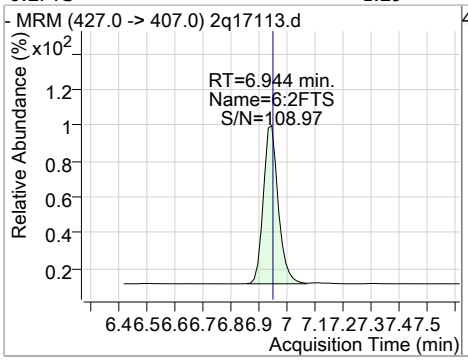


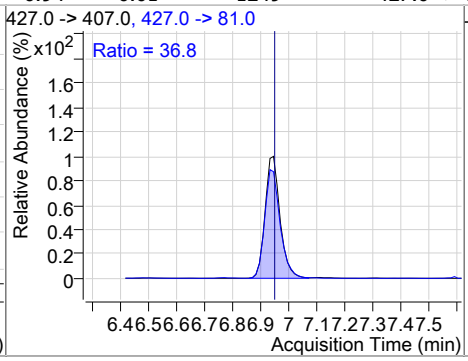


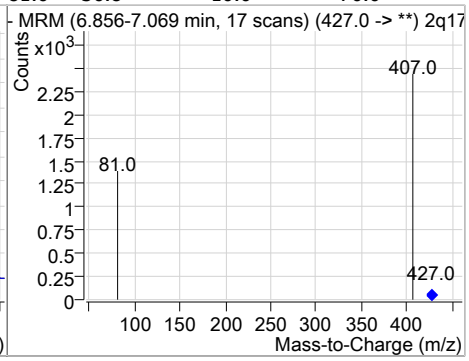


Perfluorinated Compounds by LC/MS/MS

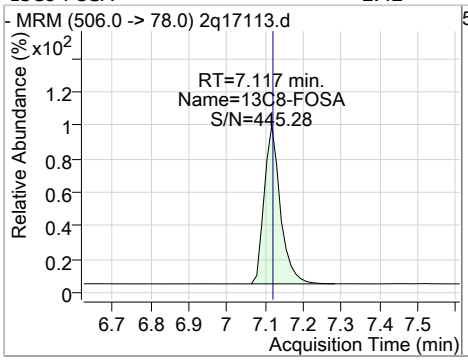
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.29	6.94	0.01	1249	427.0 -> 81.0	36.8	10.0	70.0

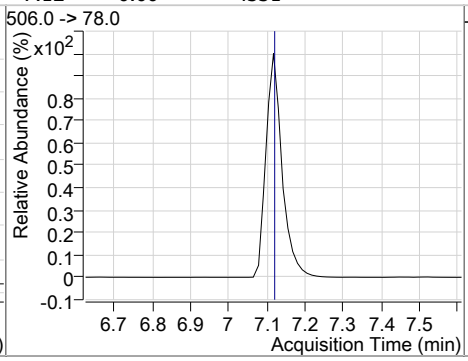


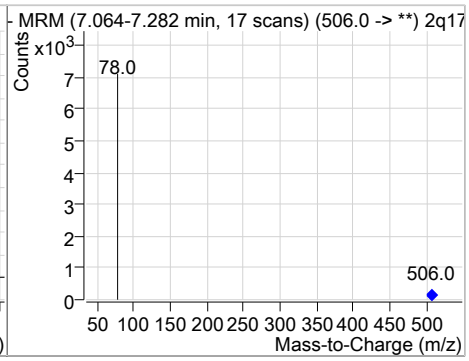




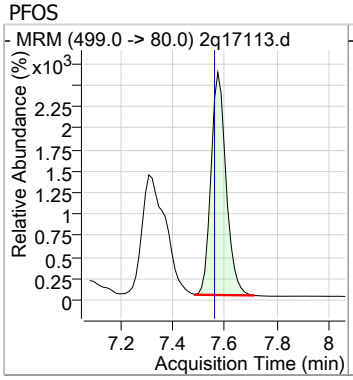
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.42	7.12	0.00	4331				

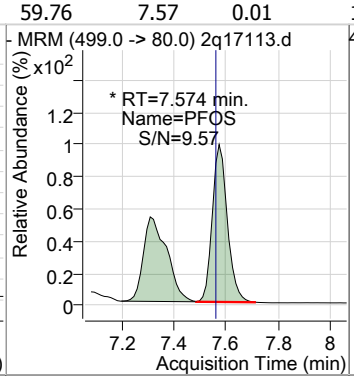


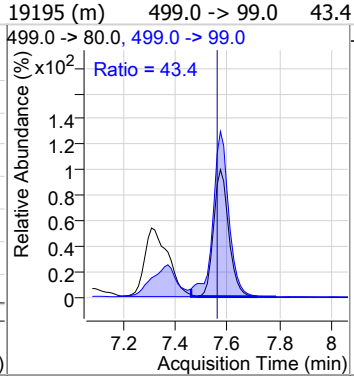


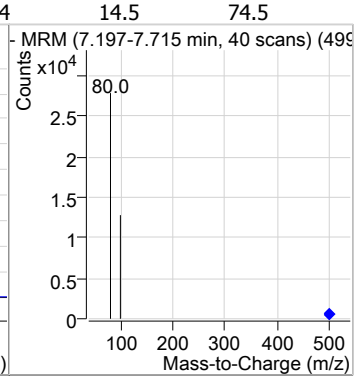


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	59.76	7.57	0.01	19195 (m)	499.0 -> 99.0	43.4	14.5	74.5

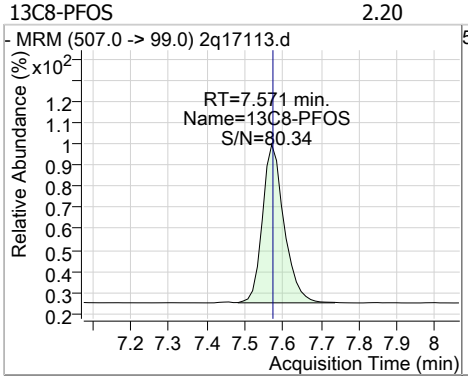


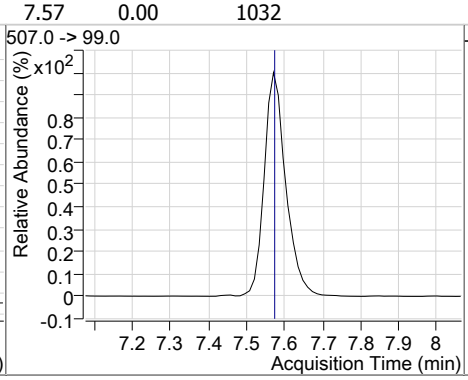


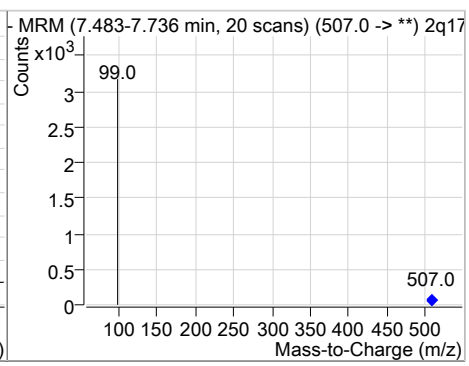




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.20	7.57	0.00	1032				

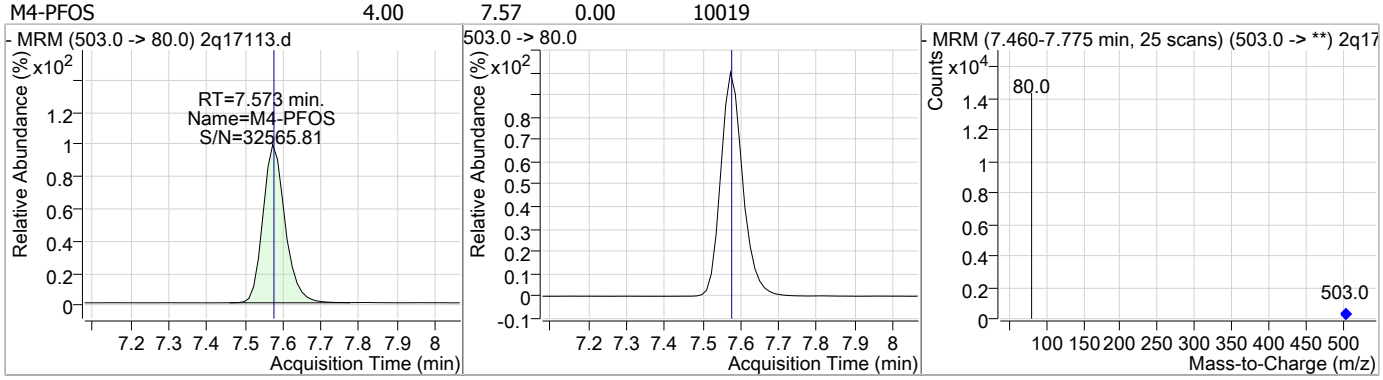




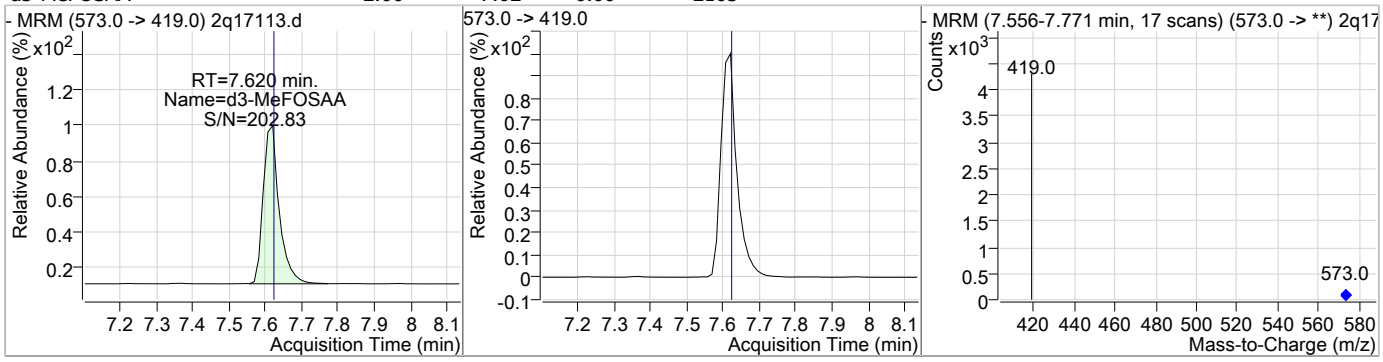


Perfluorinated Compounds by LC/MS/MS

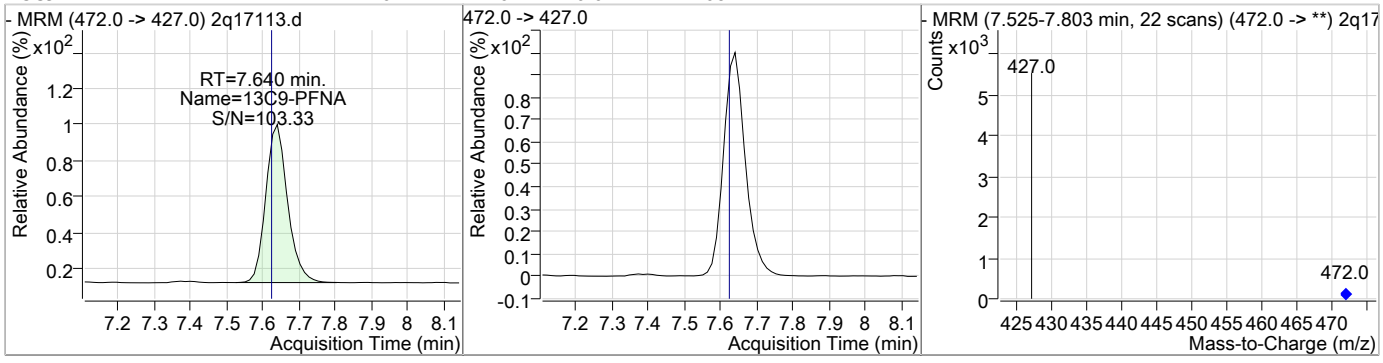
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	4.00	7.57	0.00	10019				



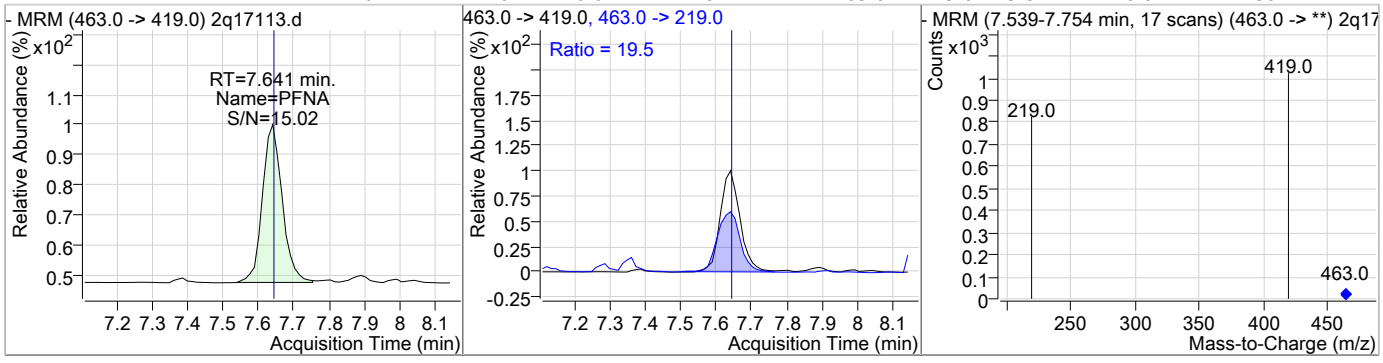
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	2.66	7.62	0.00	2163				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	2.64	7.64	0.01	2687				

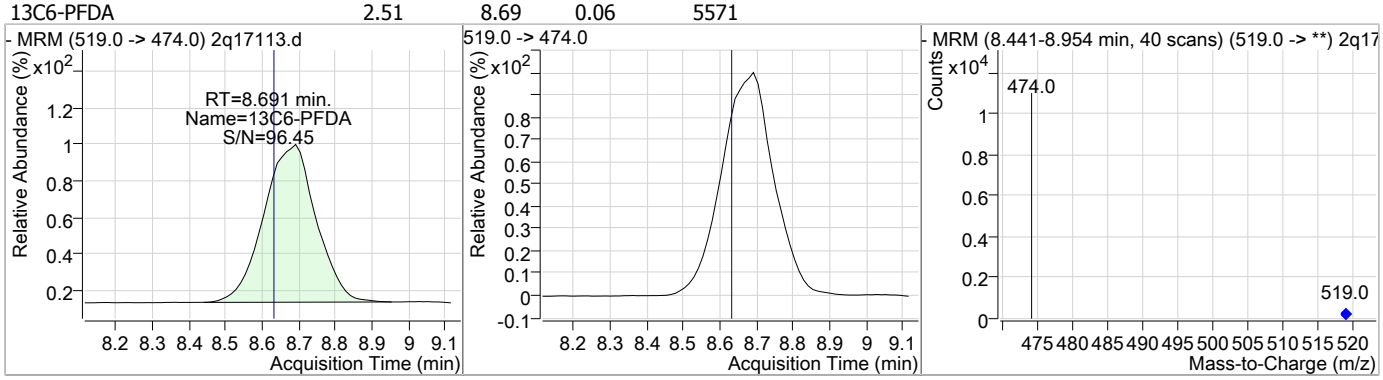


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.74	7.64	0.01	187	463.0 -> 219.0	19.5	0.0	58.4

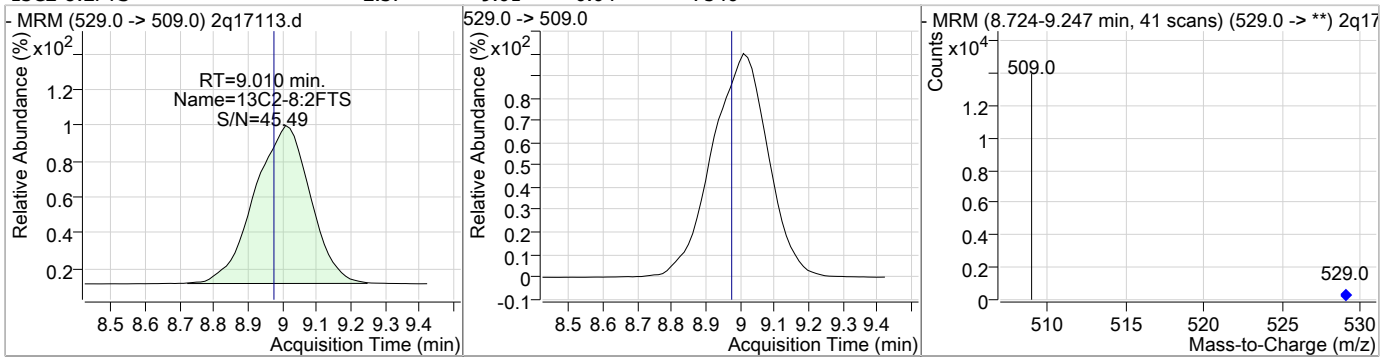


Perfluorinated Compounds by LC/MS/MS

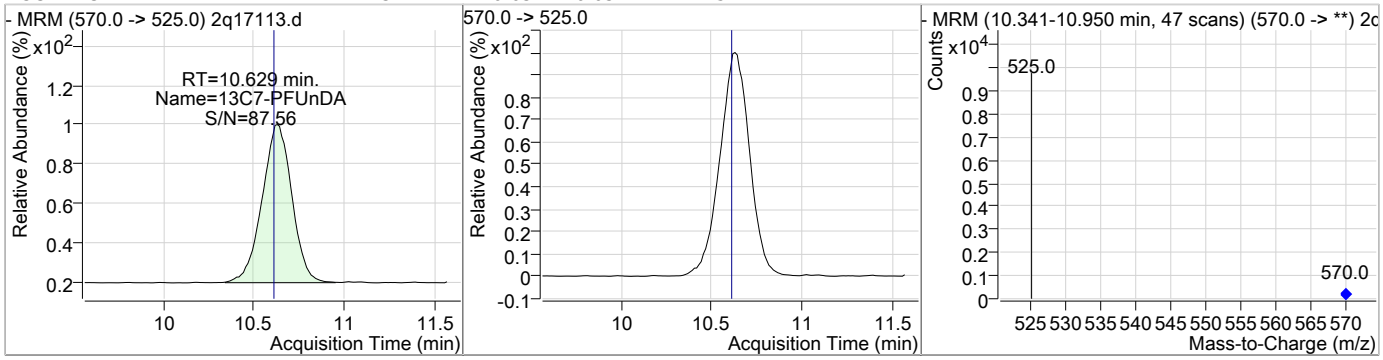
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	2.51	8.69	0.06	5571				



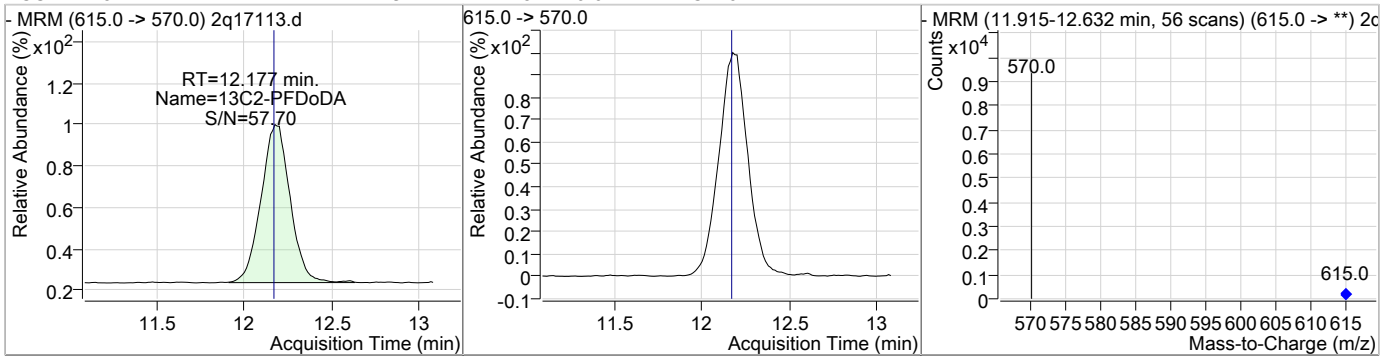
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	2.37	9.01	0.04	7546				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	2.32	10.63	0.03	4157				

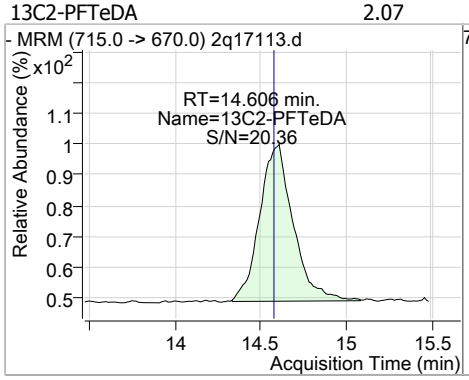


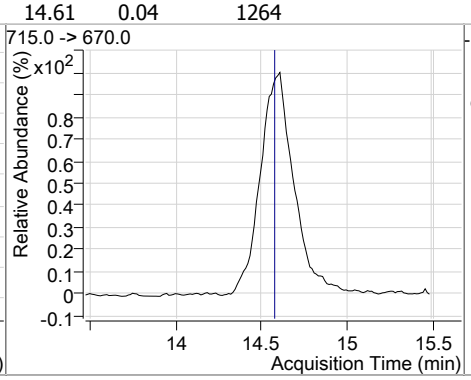
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	2.29	12.18	0.01	3246				

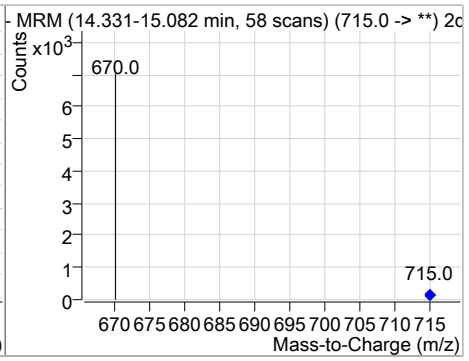


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	2.07	14.61	0.04	1264				







7.1.14

7

Manual Integration Approval Summary

Sample Number: FA55430-2
Lab FileID: 2Q17113.D
Injection Time: 07/14/18 03:52
Method: EPA 537M QSM5.1 B-15
Analyst approved: 07/16/18 14:58 Natasha Gumtie
Supervisor approved: 07/17/18 11:23 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanesulfonic acid	2706-91-4		5.38	Split peak
Perfluorohexanesulfonic acid	355-46-4		6.18	Split peak
Perfluoroheptanoic acid	375-85-9		6.18	Split peak
Perfluoroheptanesulfonic acid	375-92-8		6.88	Split peak
Perfluorooctanoic acid	335-67-1		6.92	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.57	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File	:	2q16973.d
Operator	:	NATASHAG
Acq. Method	:	dMRM_ID_PFC.m
Acq. Date-Time	:	7/11/2018 9:31:37 PM
Sample Name	:	fa55430-3
Vial	:	Vial 17
DA Method File	:	PFC_ID_071018_S2Q294.quantmethod.xml
Batch Name	:	s2q294.batch.bin
Sample Information	:	op70805,S2Q294,120,,,1.0,1,water

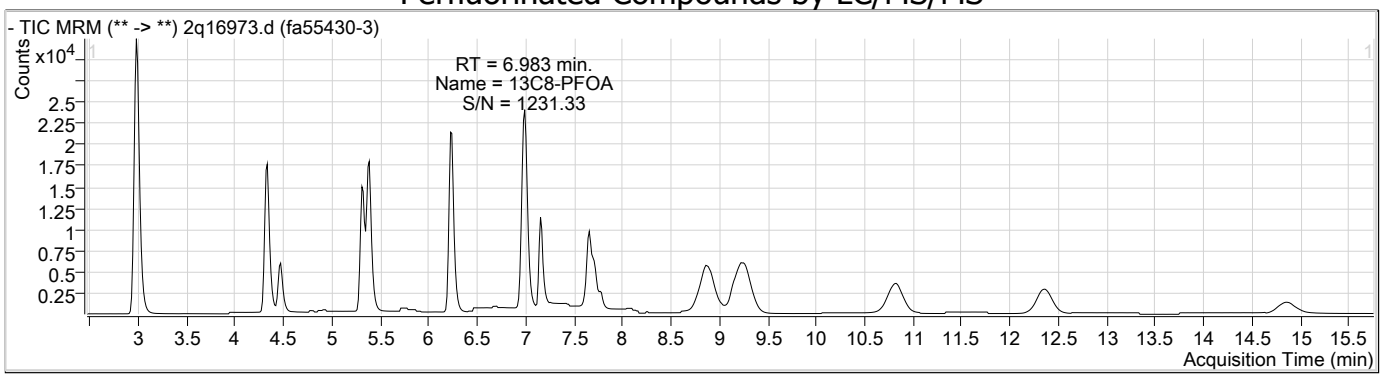
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.984	415.0 -> 370.0	20324	20.00	µg/L	0.038
13C4-PFOS	7.648	503.0 -> 80.0	9892	20.00	µg/L	0.046
M4-PFBA	2.978	217.0 -> 172.0	126072	20.00	µg/L	0.012
M5-PFPeA	4.338	268.0 -> 223.0	62364	20.00	µg/L	0.025
M5-PFHxA	5.391	318.0 -> 273.0	57680	20.00	µg/L	0.030
M4-PFHpA	6.242	367.0 -> 322.0	59024	20.00	µg/L	0.032
M8-PFOA	6.983	421.0 -> 376.0	32096	20.00	µg/L	0.037
M9-PFNA	7.715	472.0 -> 427.0	19222	20.00	µg/L	0.048
M6-PFDA	8.866	519.0 -> 474.0	57901	20.00	µg/L	0.124
M7-PFUnDA	10.829	570.0 -> 525.0	39252	20.00	µg/L	0.068
M2-PFDoDA	12.353	615.0 -> 570.0	33265	20.00	µg/L	0.014
M2-PFTeDA	14.857	715.0 -> 670.0	18653	20.00	µg/L	0.082
M8-FOSA	7.155	506.0 -> 78.0	31006	20.00	µg/L	0.010
M3-PFBS	4.468	302.0 -> 99.0	19747	20.00	µg/L	0.031
M3-PFHxS	6.223	402.0 -> 99.0	16763	20.00	µg/L	0.027
M8-PFOS	7.646	507.0 -> 99.0	7917	20.00	µg/L	0.045
M2-4:2FTS	5.310	329.0 -> 309.0	50800	20.00	µg/L	0.027
M2-6:2FTS	7.005	429.0 -> 409.0	45283	20.00	µg/L	0.047
M2-8:2FTS	9.247	529.0 -> 509.0	74364	20.00	µg/L	0.152
M3-MeFOSAA	7.658	573.0 -> 419.0	13672	20.00	µg/L	0.021
System Monitoring Compounds						
13C2-4:2FTS	5.310	329.0 -> 309.0	50796	18.95	µg/L	0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.8%		
13C2-6:2FTS	7.005	429.0 -> 409.0	45281	21.81	µg/L	0.047
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.1%		
13C2-8:2FTS	9.247	529.0 -> 509.0	73222	16.67	µg/L	0.152
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.3%		
13C2-PFDoDA	12.353	615.0 -> 570.0	33314	17.32	µg/L	0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.6%		
13C2-PFTeDA	14.857	715.0 -> 670.0	18527	21.12	µg/L	0.082
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.6%		
13C3-PFBS	4.468	302.0 -> 99.0	19754	19.86	µg/L	0.031
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.3%		
13C3-PFHxS	6.223	402.0 -> 99.0	16761	20.20	µg/L	0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%		
13C4-PFBA	2.978	217.0 -> 172.0	126066	19.68	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.4%		
13C4-PFHpA	6.242	367.0 -> 322.0	59043	21.71	µg/L	0.032
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.6%		
13C5-PFHxA	5.391	318.0 -> 273.0	57674	20.34	µg/L	0.030
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.7%		
13C5-PFPeA	4.338	268.0 -> 223.0	62351	19.93	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C6-PFDA	8.866	519.0 -> 474.0	57422	19.84	µg/L	0.124
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.2%		

Perfluorinated Compounds by LC/MS/MS

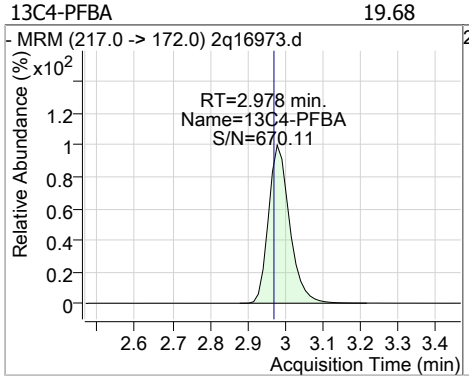
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.829	570.0 -> 525.0	39304	16.55	µg/L		0.068
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.7%			
13C8-FOSA	7.155	506.0 -> 78.0	31009	19.78	µg/L		0.010
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.9%			
13C8-PFOA	6.983	421.0 -> 376.0	32092	23.08	µg/L		0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.4%			
13C8-PFOS	7.646	507.0 -> 99.0	7912	18.33	µg/L		0.045
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.7%			
13C9-PFNA	7.715	472.0 -> 427.0	19204	19.94	µg/L		0.048
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%			
d3-MeFOSAA	7.658	573.0 -> 419.0	13667	18.06	µg/L		0.021
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.3%			
M2-PFOA	6.984	415.0 -> 370.0	20330	20.01	ng/ml		0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.648	503.0 -> 80.0	9894	20.01	ng/ml		0.046
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	4.497	299.0 -> 80.0	217	0.16	µg/L		38
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	12.346	613.0 -> 569.0	127	0.15	µg/L		73
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	6.736	363.0 -> 319.0	0	0.00	µg/L	m	1
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	4.329	263.0 -> 219.0	513	0.17	µg/L		100
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			

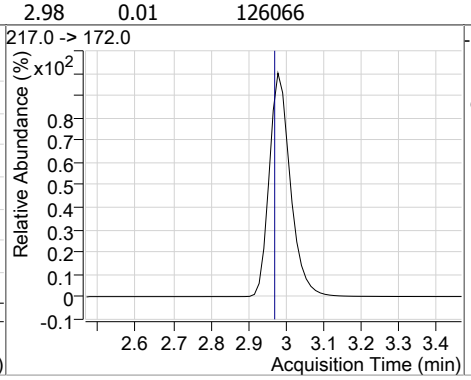
 # = Qualifier out of range, m = manually integrated, + = Area summed

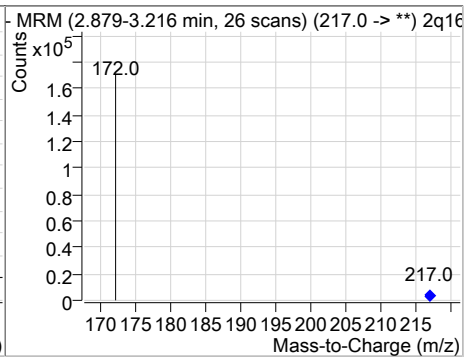
Perfluorinated Compounds by LC/MS/MS



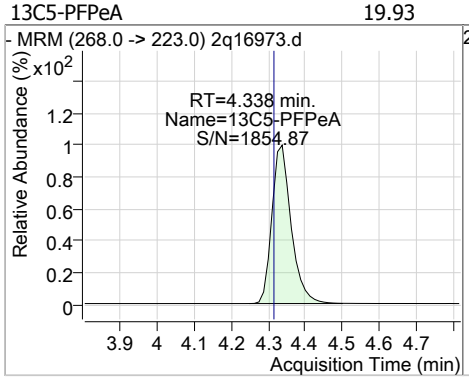
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.68	2.98	0.01	126066				

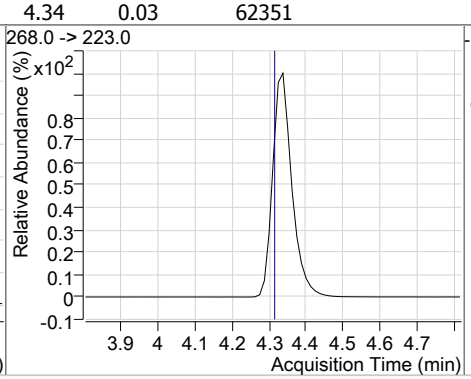


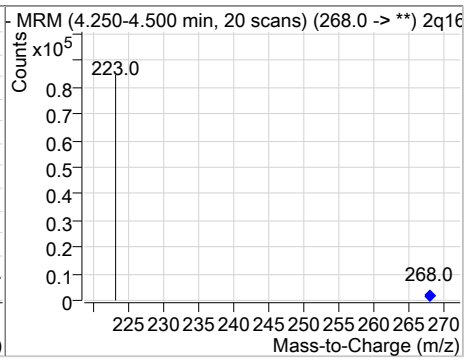




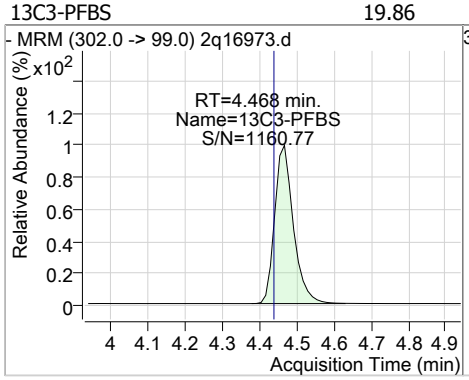
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.93	4.34	0.03	62351				

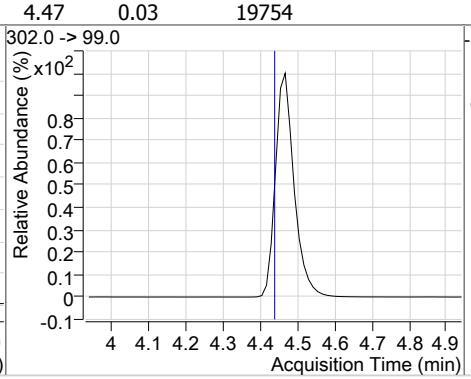


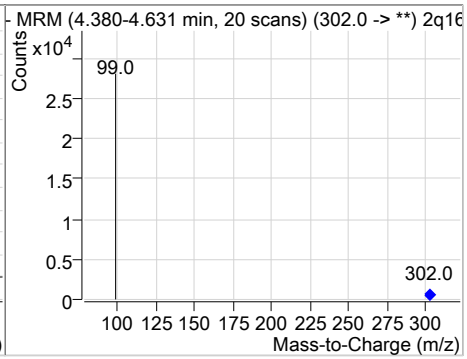




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.86	4.47	0.03	19754				

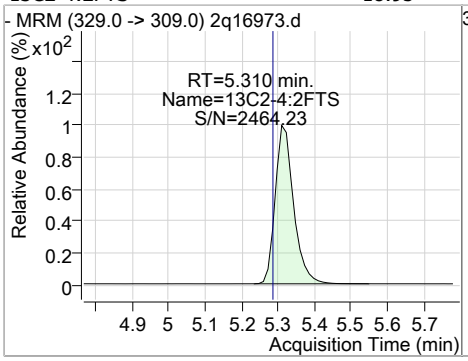


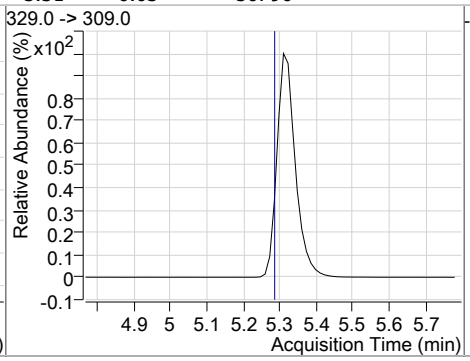


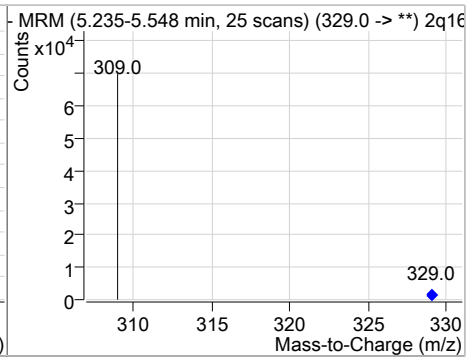


Perfluorinated Compounds by LC/MS/MS

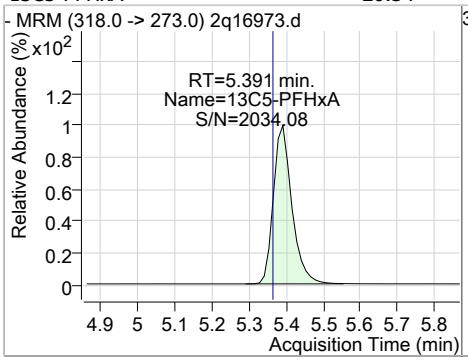
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.95	5.31	0.03	50796				

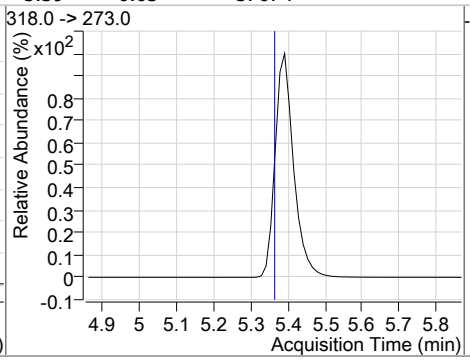


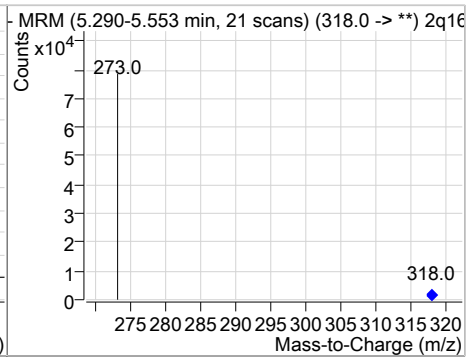




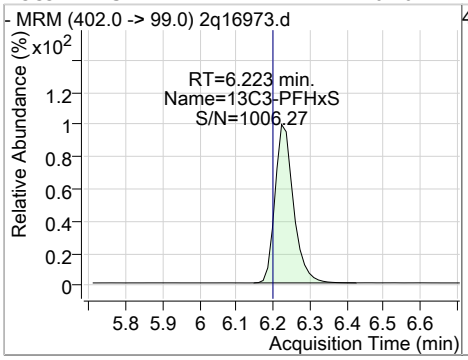
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.34	5.39	0.03	57674				

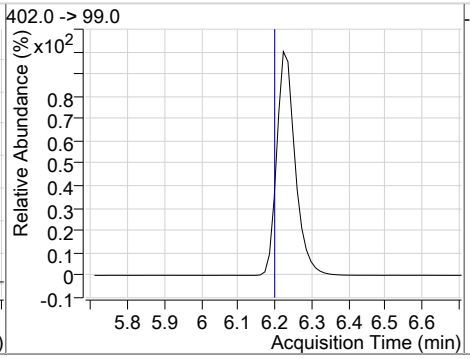


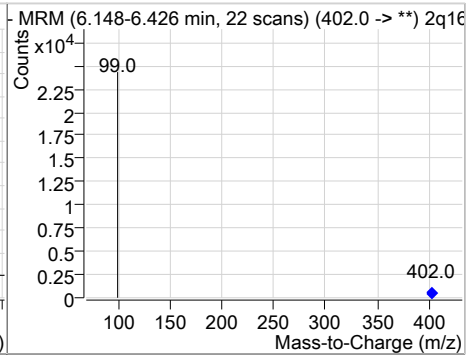




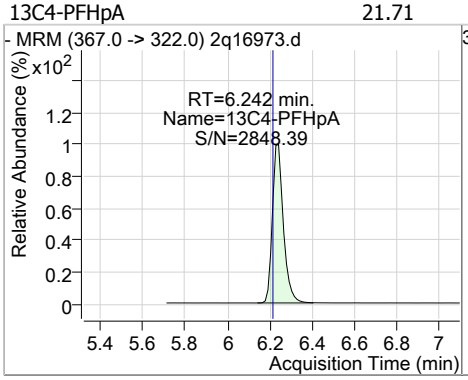
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.20	6.22	0.03	16761				

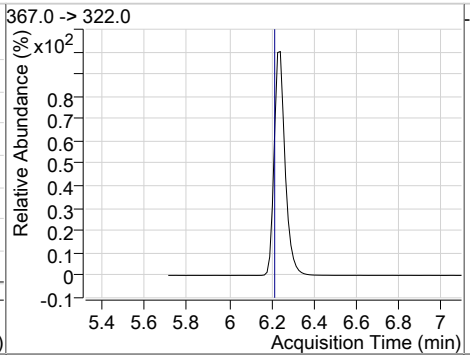


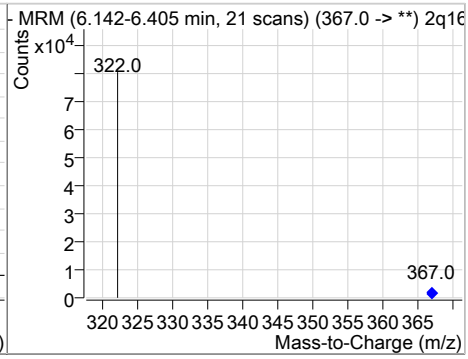




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.71	6.24	0.03	59043				

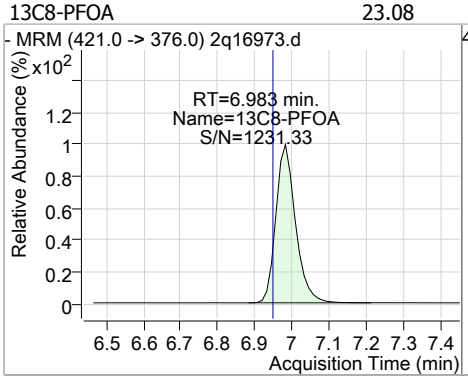


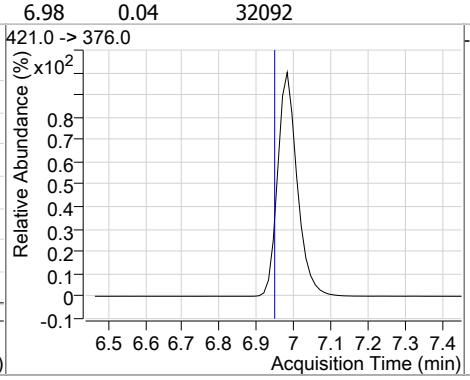


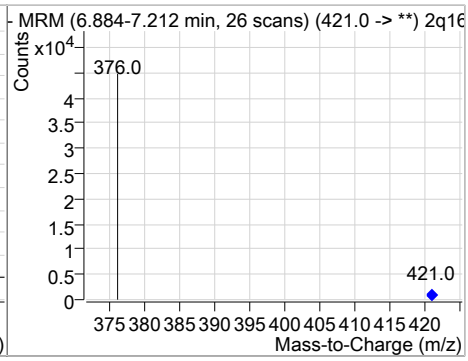


Perfluorinated Compounds by LC/MS/MS

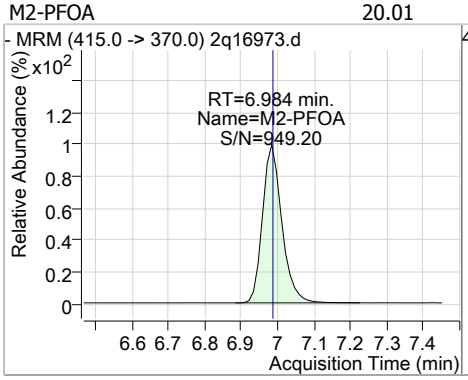
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	23.08	6.98	0.04	32092				

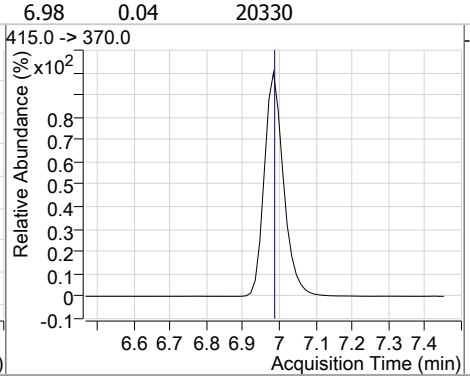


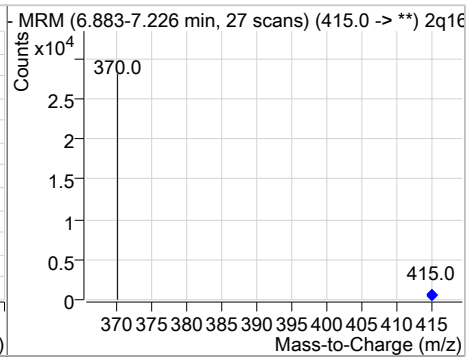




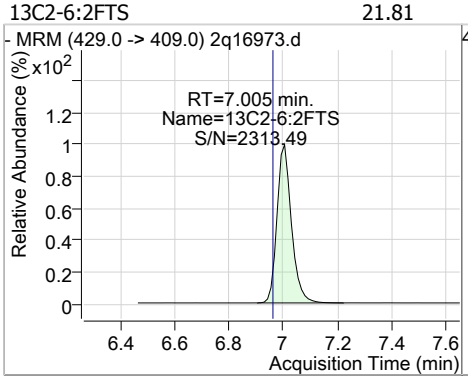
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.01	6.98	0.04	20330				

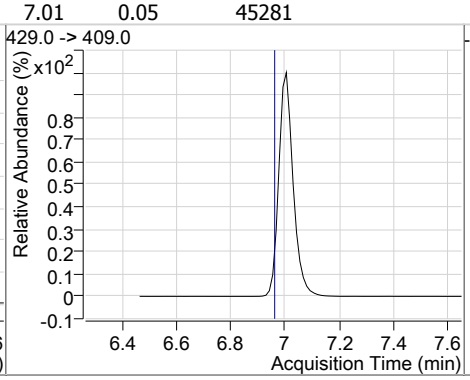


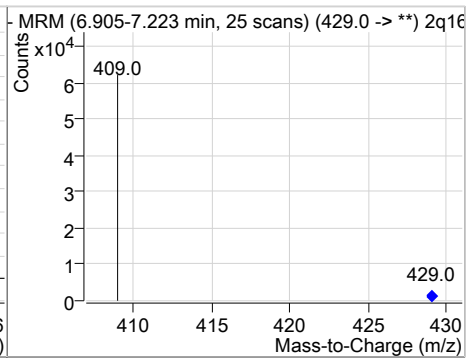




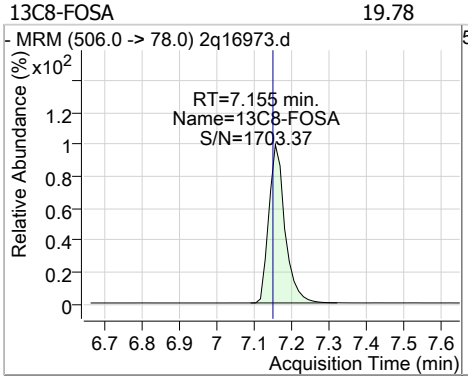
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	21.81	7.01	0.05	45281				

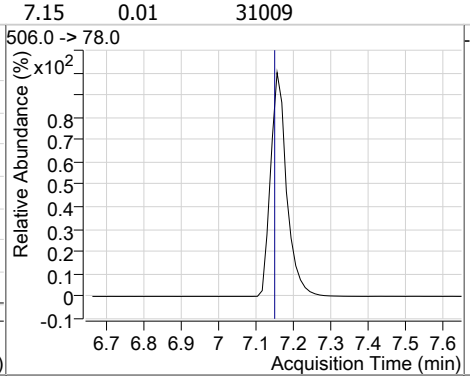


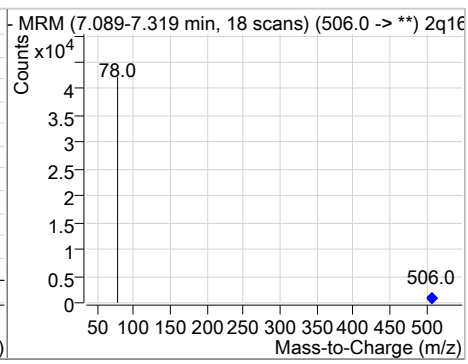




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.78	7.15	0.01	31009				

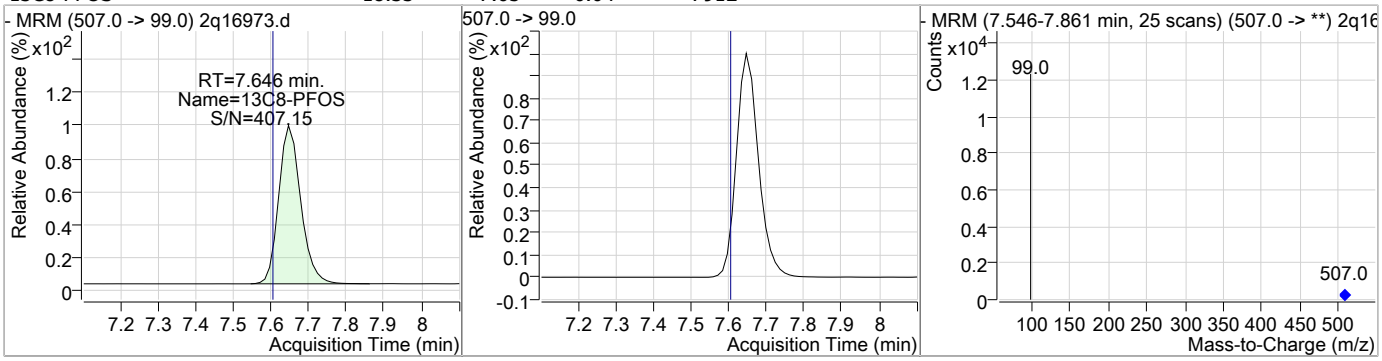




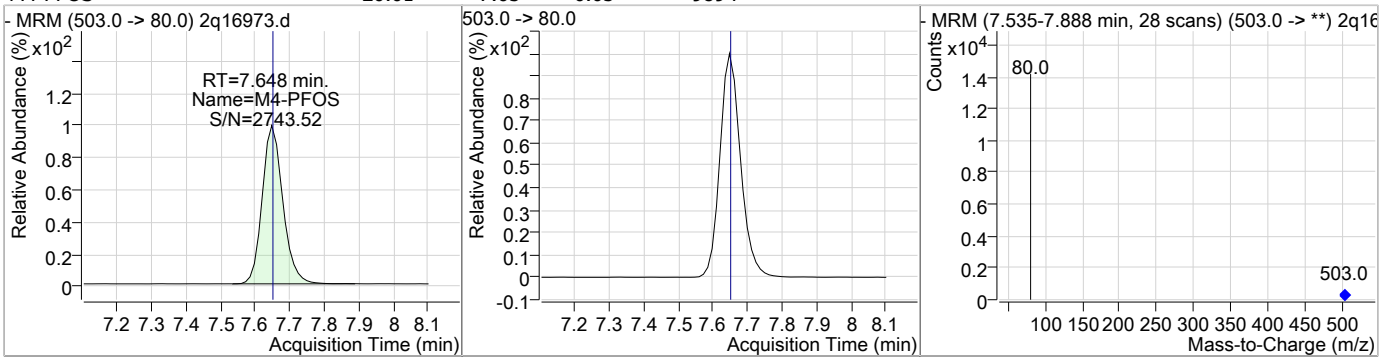


Perfluorinated Compounds by LC/MS/MS

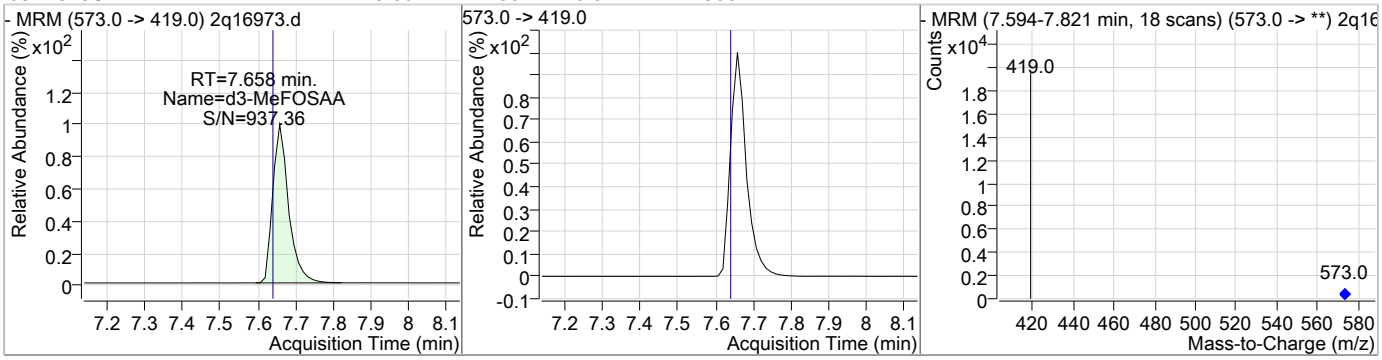
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.33	7.65	0.04	7912				



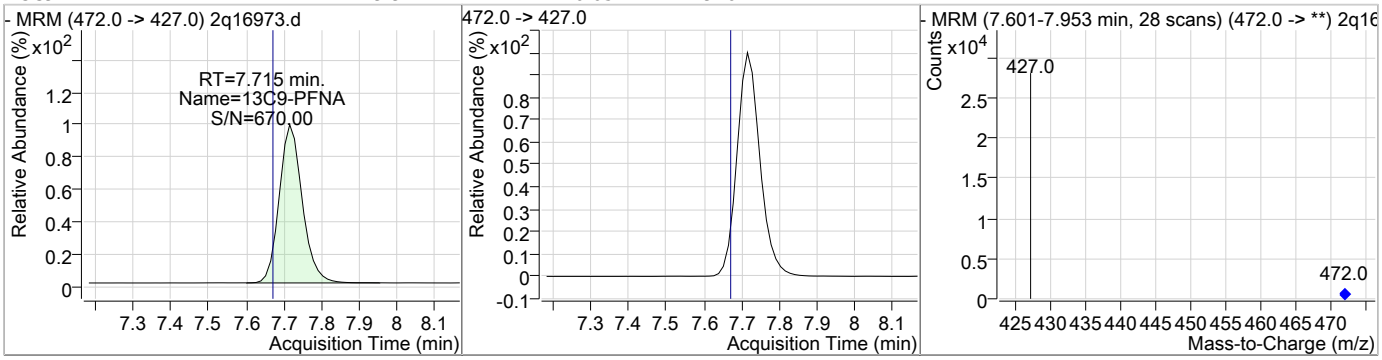
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.01	7.65	0.05	9894				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.06	7.66	0.02	13667				

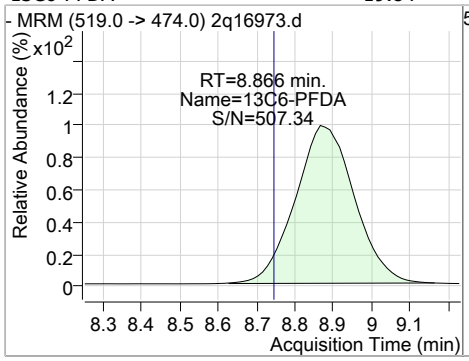


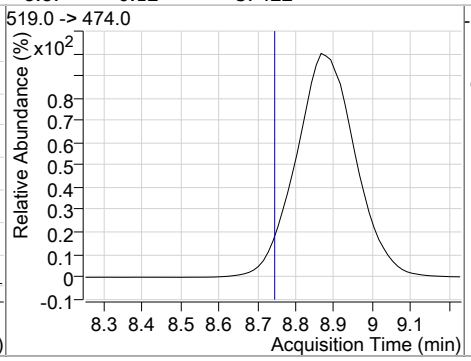
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.94	7.71	0.05	19204				

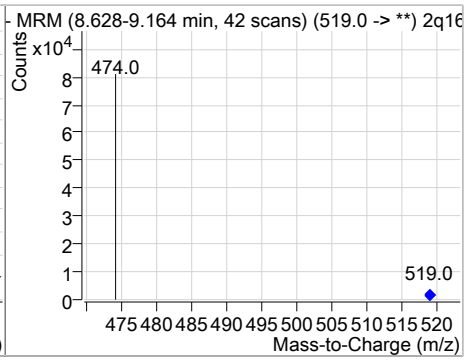


Perfluorinated Compounds by LC/MS/MS

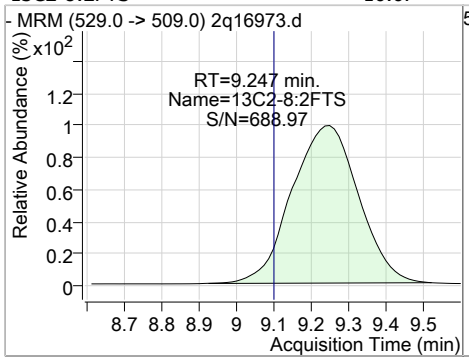
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.84	8.87	0.12	57422				

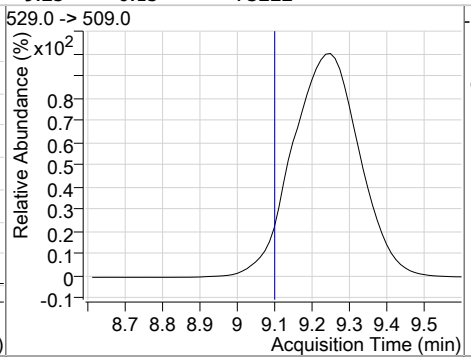


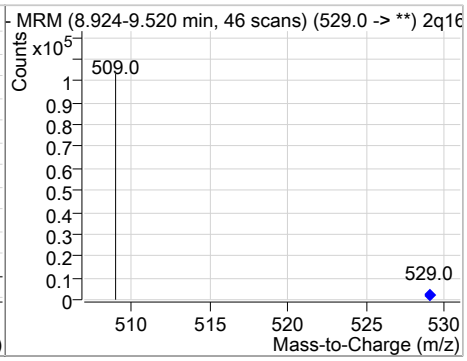




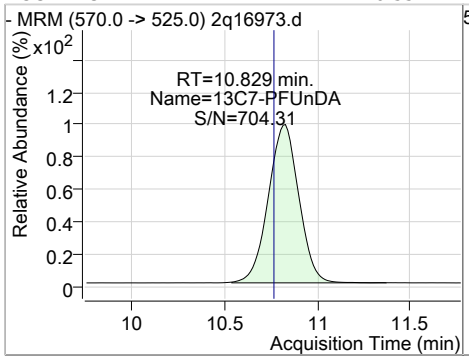
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	16.67	9.25	0.15	73222				

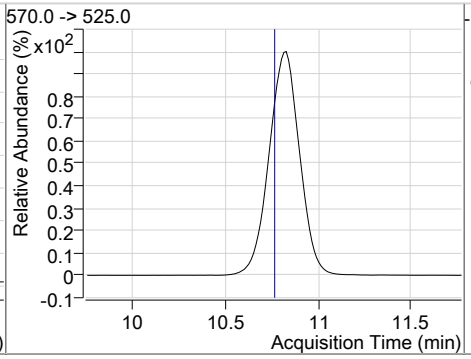


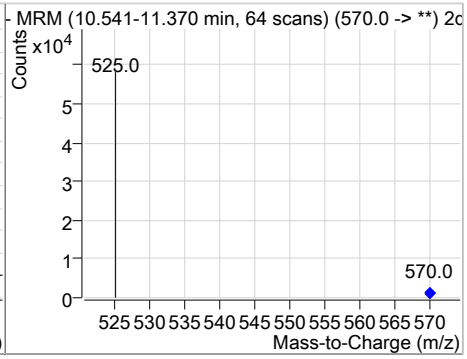




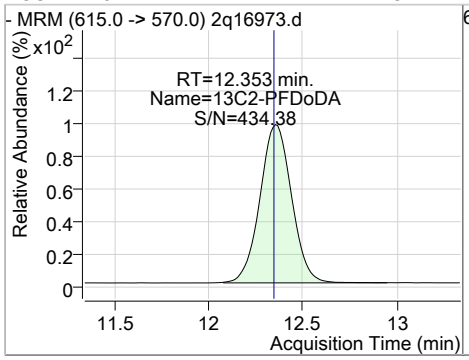
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	16.55	10.83	0.07	39304				

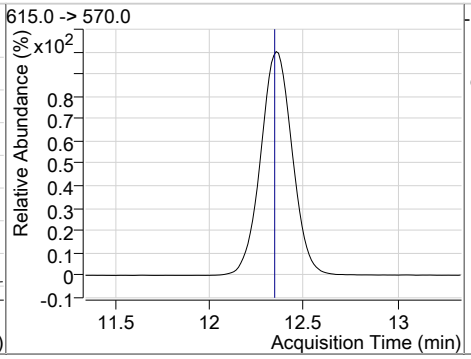


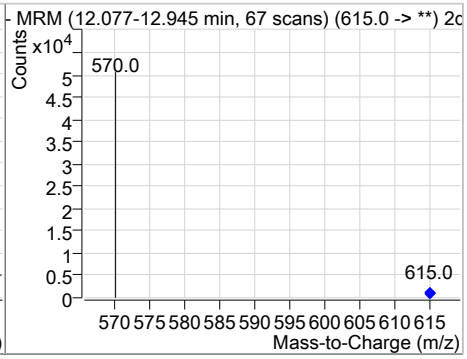




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	17.32	12.35	0.01	33314				

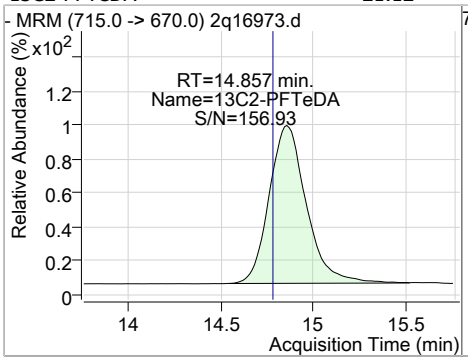


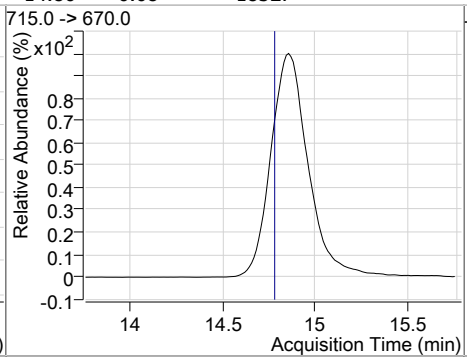


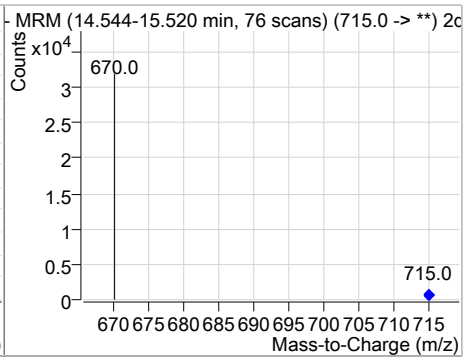


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.12	14.86	0.08	18527				







Perfluorinated Compounds by LC/MS/MS

Data File	:	2q16974.d
Operator	:	NATASHAG
Acq. Method	:	dMRM_ID_PFC.m
Acq. Date-Time	:	7/11/2018 9:52:21 PM
Sample Name	:	fa55430-4
Vial	:	Vial 18
DA Method File	:	PFC_ID_071018_S2Q294.quantmethod.xml
Batch Name	:	s2q294.batch.bin
Sample Information	:	op70805,S2Q294,130,,,1.0,1,water

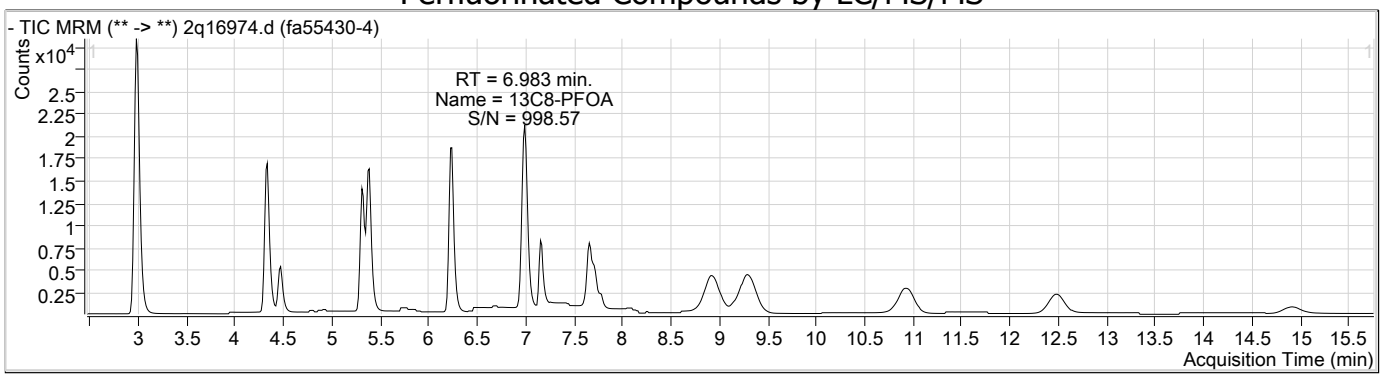
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.984	415.0 -> 370.0	18808	20.00	µg/L	0.038
13C4-PFOS	7.648	503.0 -> 80.0	9238	20.00	µg/L	0.046
M4-PFBA	2.978	217.0 -> 172.0	121662	20.00	µg/L	0.012
M5-PFPeA	4.338	268.0 -> 223.0	59817	20.00	µg/L	0.025
M5-PFHxA	5.391	318.0 -> 273.0	53011	20.00	µg/L	0.030
M4-PFHpA	6.242	367.0 -> 322.0	53139	20.00	µg/L	0.032
M8-PFOA	6.983	421.0 -> 376.0	27972	20.00	µg/L	0.037
M9-PFNA	7.715	472.0 -> 427.0	16023	20.00	µg/L	0.048
M6-PFDA	8.929	519.0 -> 474.0	44681	20.00	µg/L	0.187
M7-PFUnDA	10.929	570.0 -> 525.0	32792	20.00	µg/L	0.168
M2-PFDoDA	12.478	615.0 -> 570.0	25745	20.00	µg/L	0.139
M2-PFTeDA	14.919	715.0 -> 670.0	10109	20.00	µg/L	0.144
M8-FOSA	7.155	506.0 -> 78.0	22201	20.00	µg/L	0.010
M3-PFBS	4.468	302.0 -> 99.0	17441	20.00	µg/L	0.031
M3-PFHxS	6.223	402.0 -> 99.0	13382	20.00	µg/L	0.027
M8-PFOS	7.646	507.0 -> 99.0	5833	20.00	µg/L	0.045
M2-4:2FTS	5.310	329.0 -> 309.0	47432	20.00	µg/L	0.027
M2-6:2FTS	7.005	429.0 -> 409.0	38698	20.00	µg/L	0.047
M2-8:2FTS	9.285	529.0 -> 509.0	53879	20.00	µg/L	0.190
M3-MeFOSAA	7.658	573.0 -> 419.0	10702	20.00	µg/L	0.021
System Monitoring Compounds						
13C2-4:2FTS	5.310	329.0 -> 309.0	47406	17.69	µg/L	0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.4%		
13C2-6:2FTS	7.005	429.0 -> 409.0	38693	18.64	µg/L	0.047
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.2%		
13C2-8:2FTS	9.285	529.0 -> 509.0	52565	11.97	µg/L	0.190
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.8%		
13C2-PFDoDA	12.478	615.0 -> 570.0	25798	13.42	µg/L	0.139
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.1%		
13C2-PFTeDA	14.919	715.0 -> 670.0	10122	11.54	µg/L	0.144
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 57.7%		
13C3-PFBS	4.468	302.0 -> 99.0	17434	17.53	µg/L	0.031
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.6%		
13C3-PFHxS	6.223	402.0 -> 99.0	13378	16.12	µg/L	0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.6%		
13C4-PFBA	2.978	217.0 -> 172.0	121633	18.98	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.9%		
13C4-PFHpA	6.242	367.0 -> 322.0	53133	19.54	µg/L	0.032
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.7%		
13C5-PFHxA	5.391	318.0 -> 273.0	53022	18.70	µg/L	0.030
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.5%		
13C5-PFPeA	4.338	268.0 -> 223.0	59808	19.12	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.6%		
13C6-PFDA	8.929	519.0 -> 474.0	43920	15.17	µg/L	0.187
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.9%		

Perfluorinated Compounds by LC/MS/MS

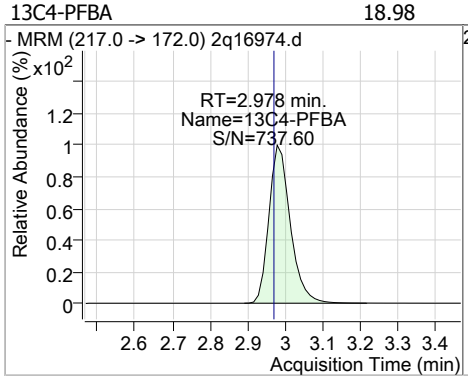
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.929	570.0 -> 525.0	32780	13.80	µg/L		0.168
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.0%			
13C8-FOSA	7.155	506.0 -> 78.0	22211	14.17	µg/L		0.010
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.8%			
13C8-PFOA	6.983	421.0 -> 376.0	27990	20.13	µg/L		0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%			
13C8-PFOS	7.646	507.0 -> 99.0	5837	13.53	µg/L		0.045
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.6%			
13C9-PFNA	7.715	472.0 -> 427.0	16022	16.63	µg/L		0.048
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.2%			
d3-MeFOSAA	7.658	573.0 -> 419.0	10709	14.15	µg/L		0.021
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.8%			
M2-PFOA	6.984	415.0 -> 370.0	18807	20.00	ng/ml		0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.648	503.0 -> 80.0	9237	20.00	ng/ml		0.046
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	6.749	363.0 -> 319.0	0	0.00	µg/L	m	1
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	4.329	263.0 -> 219.0	526	0.18	µg/L		100
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			

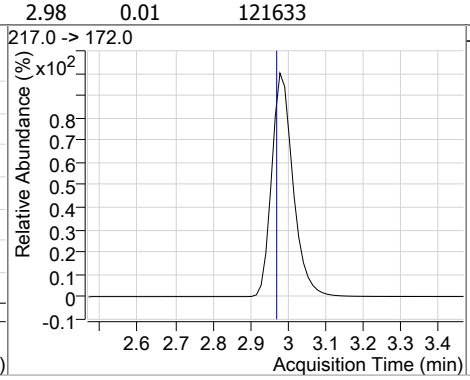
 # = Qualifier out of range, m = manually integrated, + = Area summed

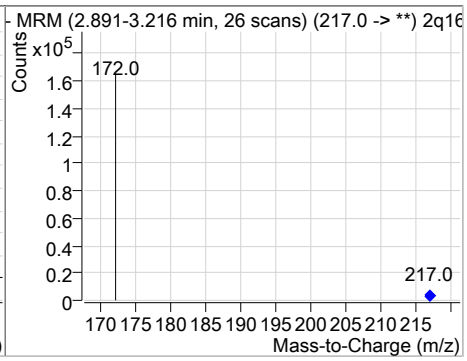
Perfluorinated Compounds by LC/MS/MS



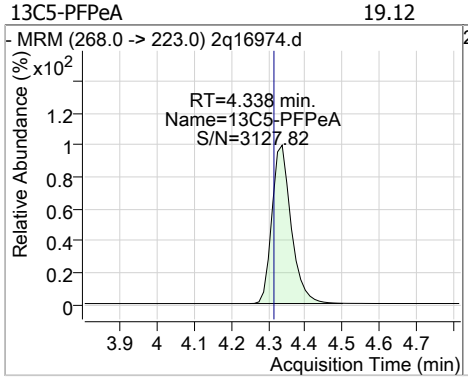
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.98	2.98	0.01	121633				

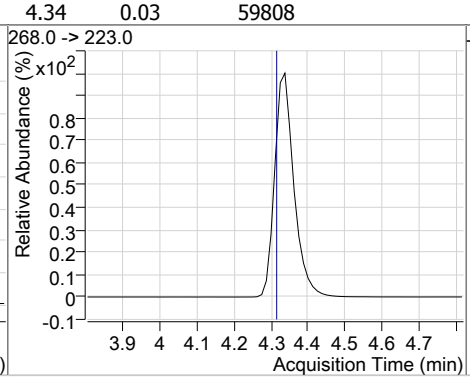


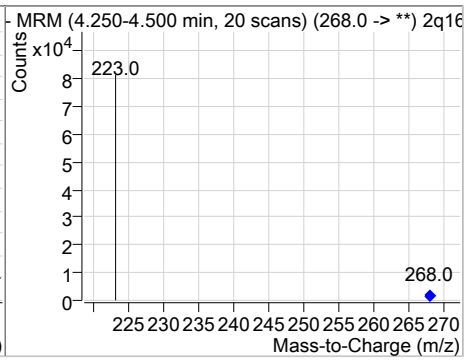




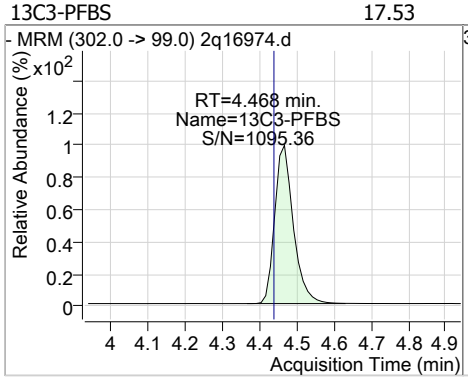
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.12	4.34	0.03	59808				

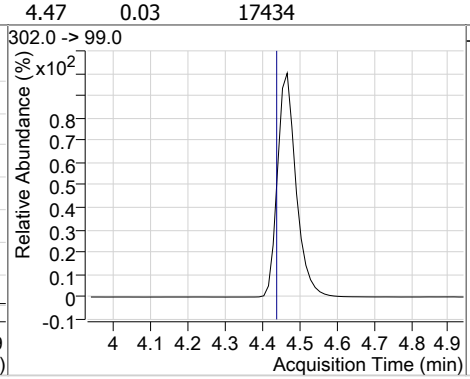


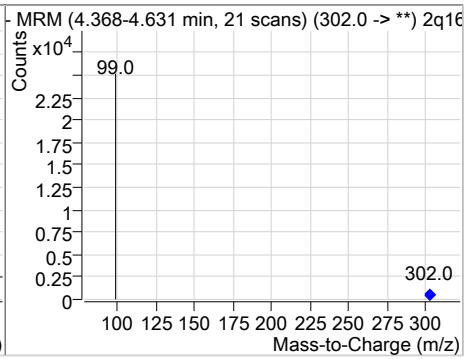




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	17.53	4.47	0.03	17434				

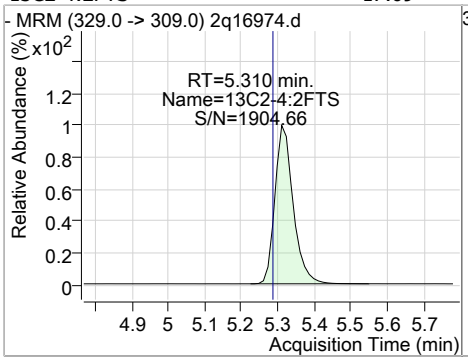


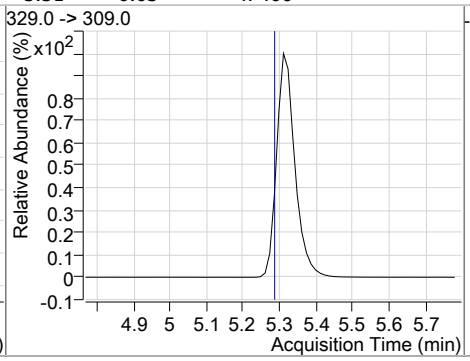


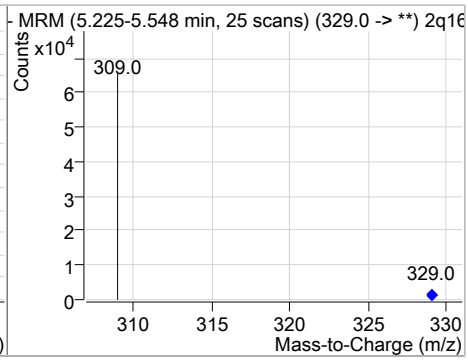


Perfluorinated Compounds by LC/MS/MS

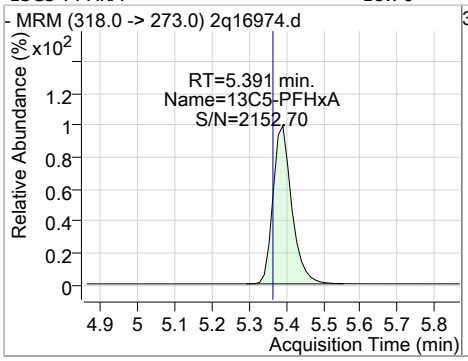
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	17.69	5.31	0.03	47406				

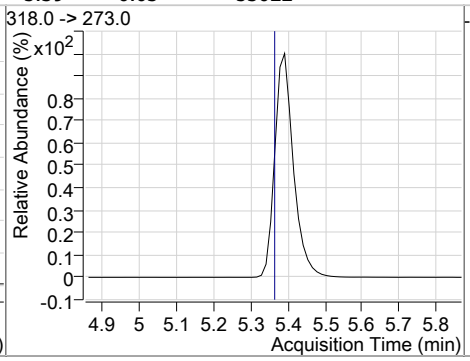


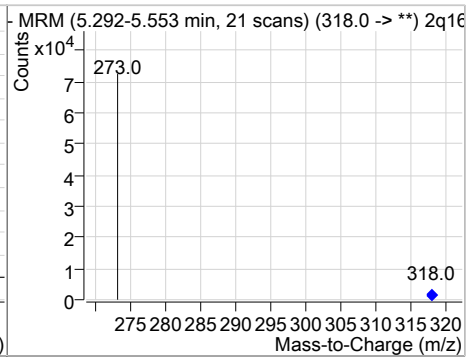




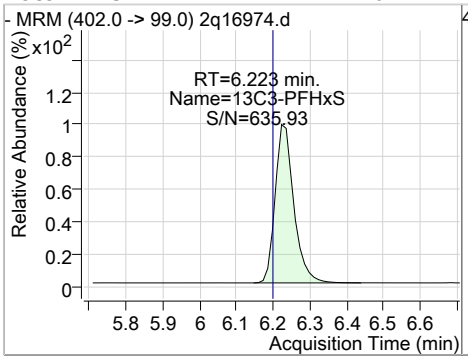
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.70	5.39	0.03	53022				

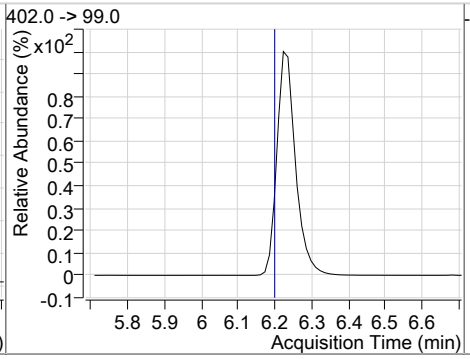


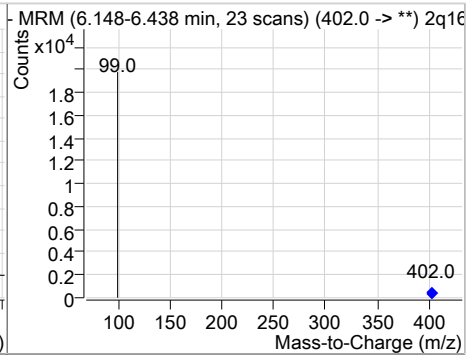




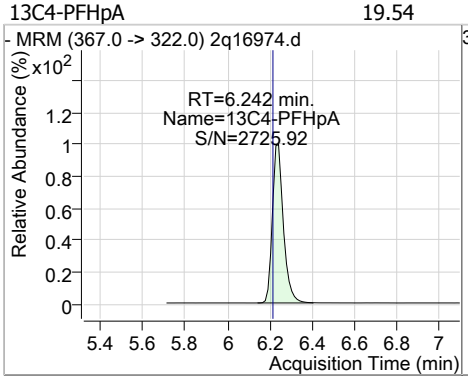
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	16.12	6.22	0.03	13378				

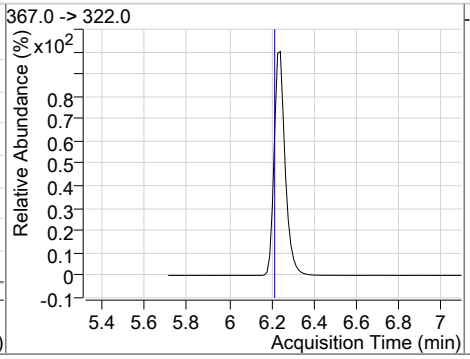


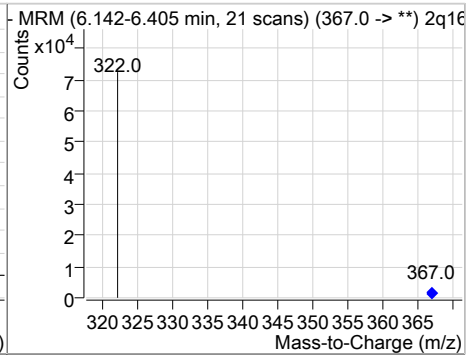




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.54	6.24	0.03	53133				

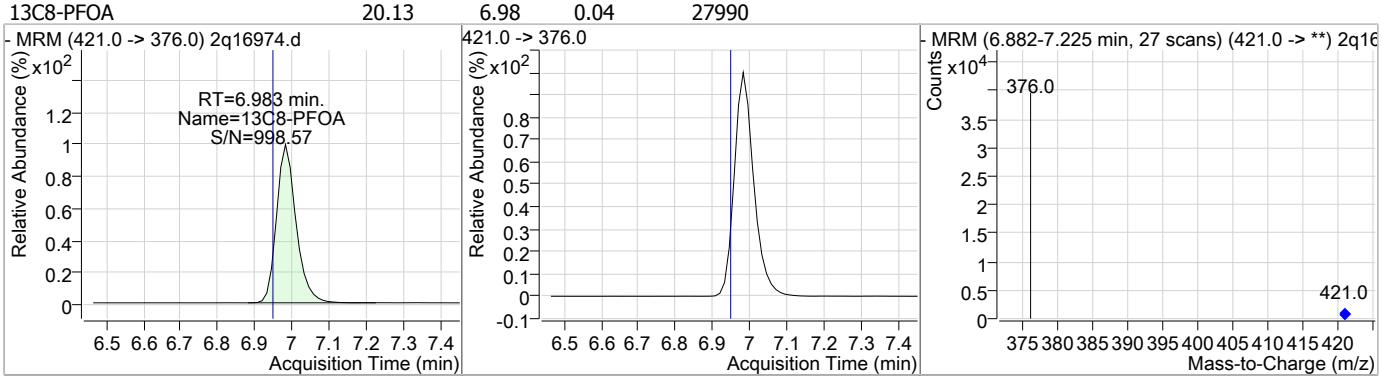




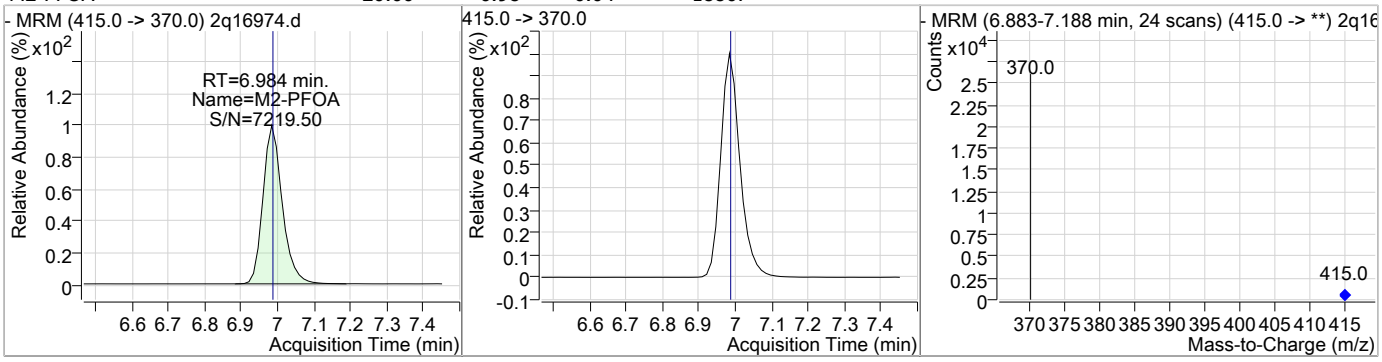


Perfluorinated Compounds by LC/MS/MS

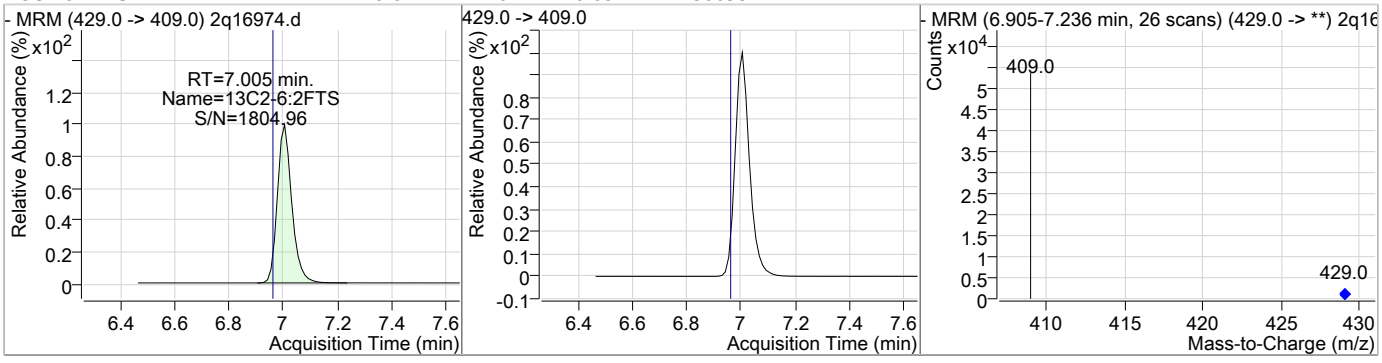
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.13	6.98	0.04	27990				



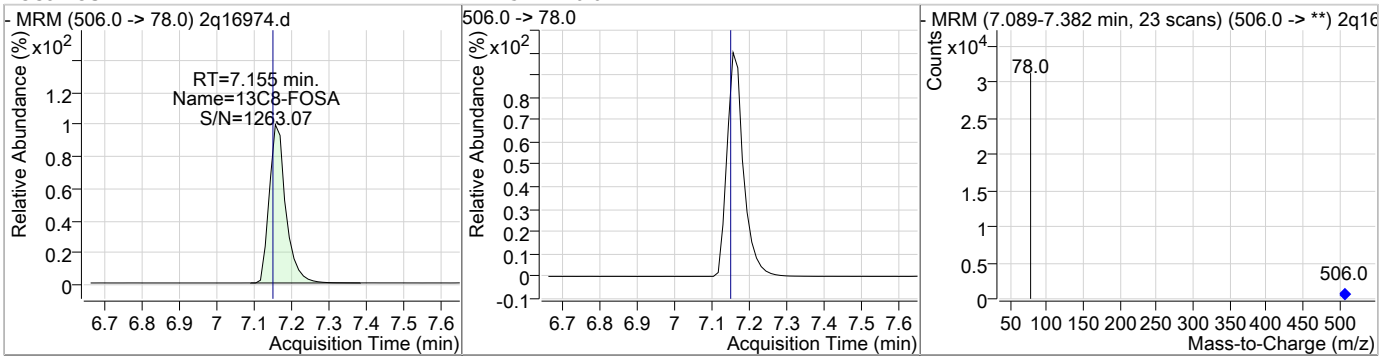
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.98	0.04	18807				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.64	7.01	0.05	38693				

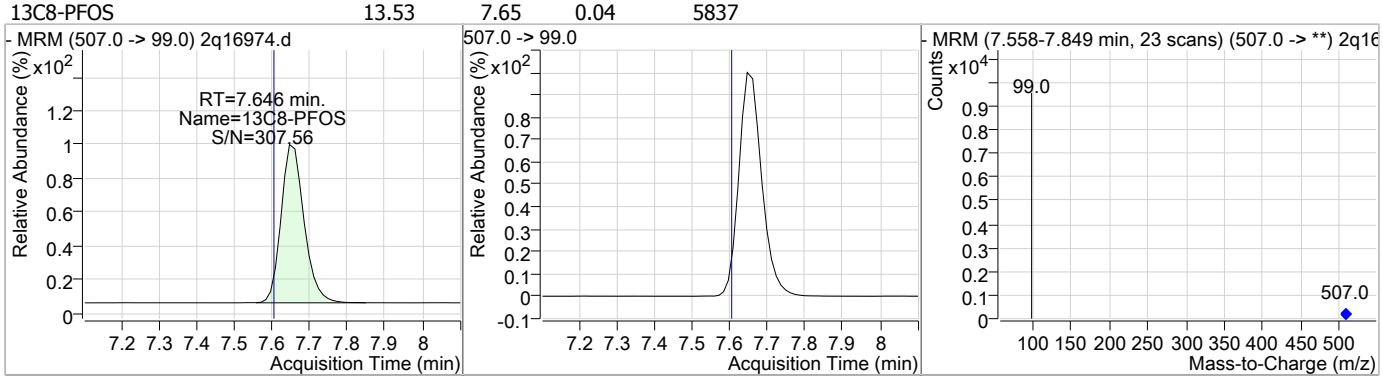


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	14.17	7.15	0.01	22211				

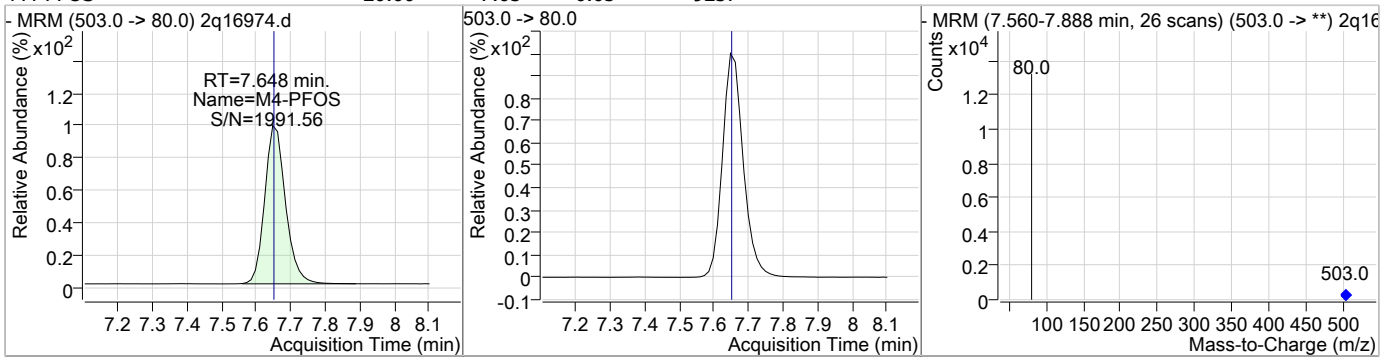


Perfluorinated Compounds by LC/MS/MS

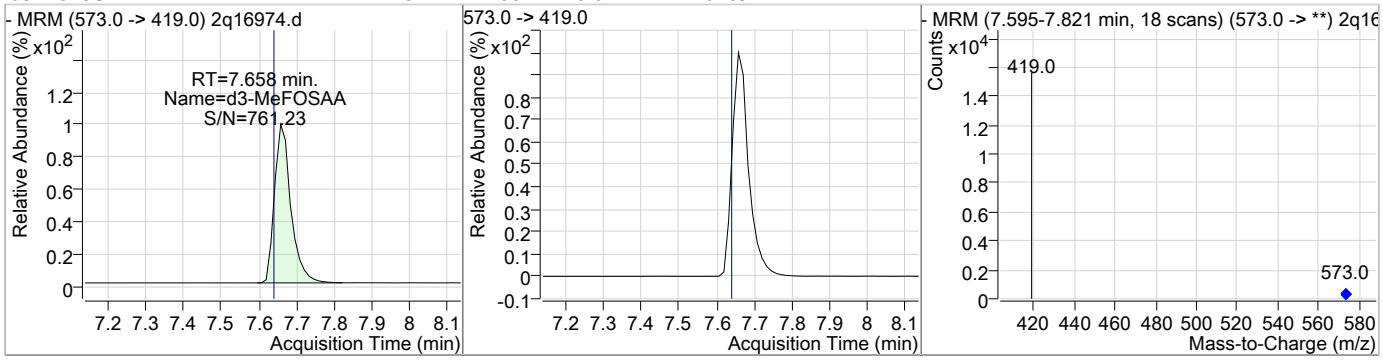
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	13.53	7.65	0.04	5837				



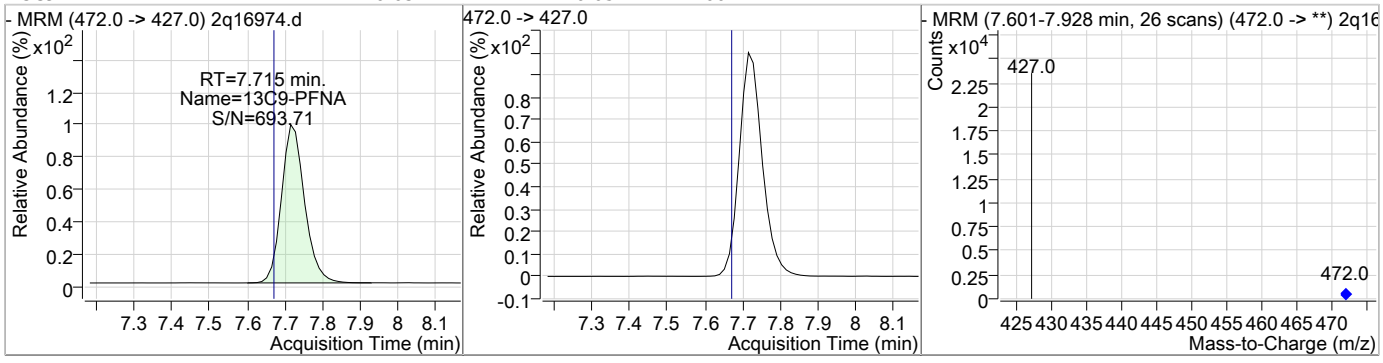
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.00	7.65	0.05	9237				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	14.15	7.66	0.02	10709				

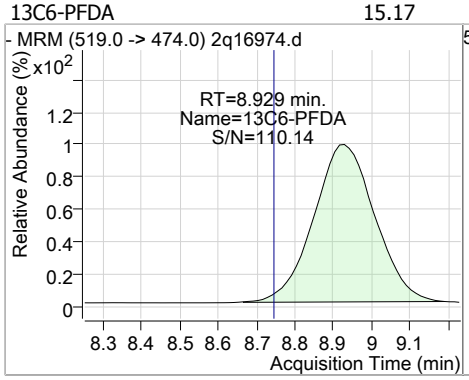


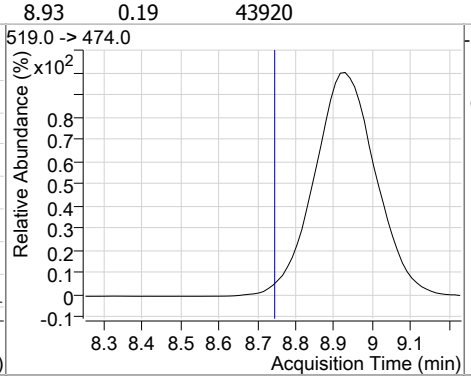
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	16.63	7.71	0.05	16022				

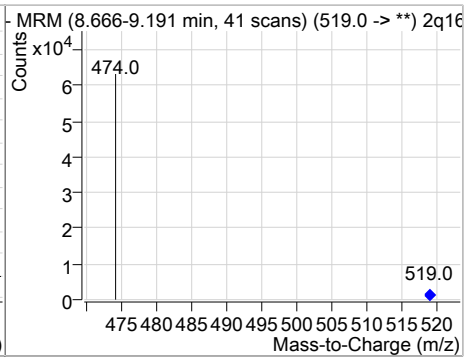


Perfluorinated Compounds by LC/MS/MS

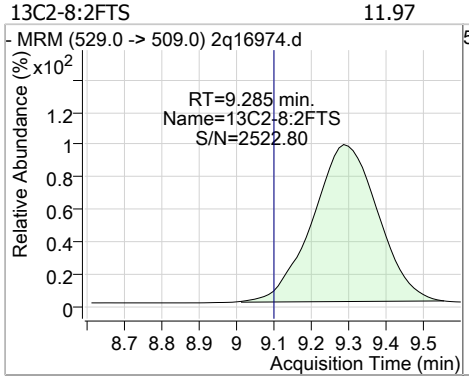
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	15.17	8.93	0.19	43920				

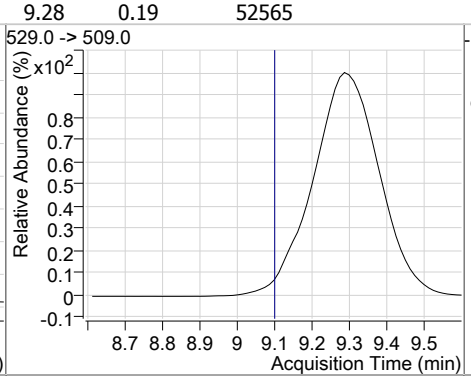


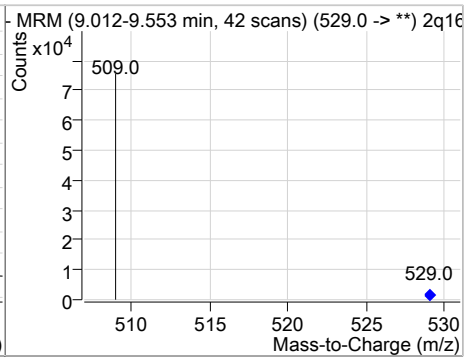




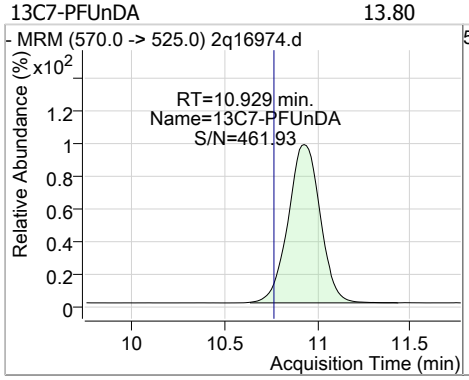
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	11.97	9.28	0.19	52565				

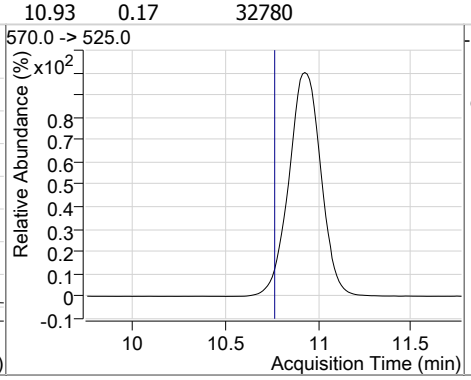


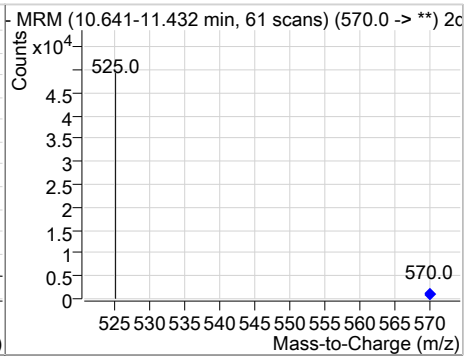




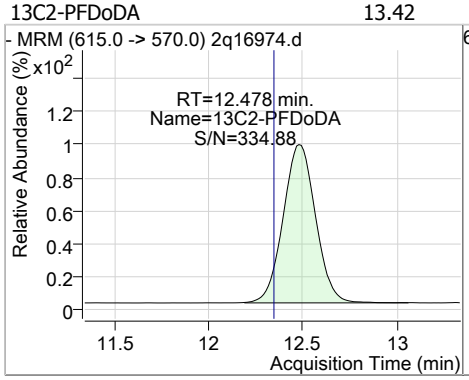
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	13.80	10.93	0.17	32780				

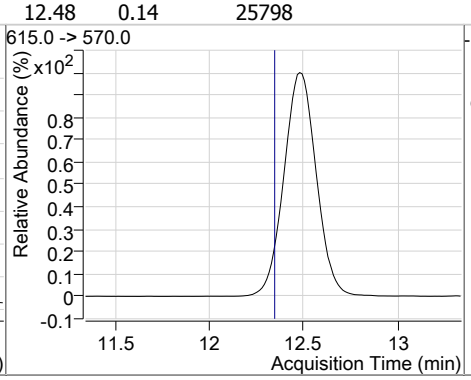


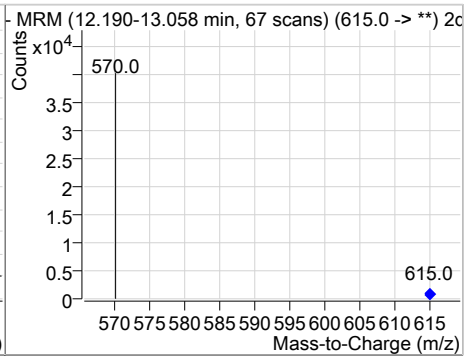




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	13.42	12.48	0.14	25798				

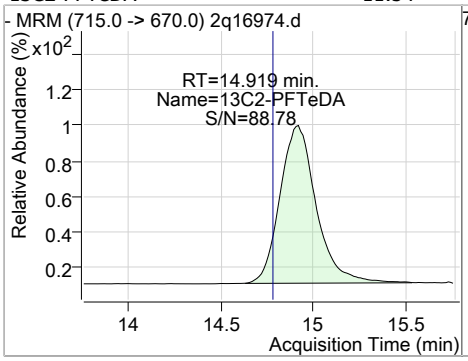


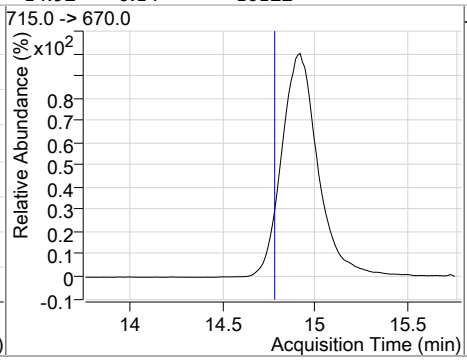


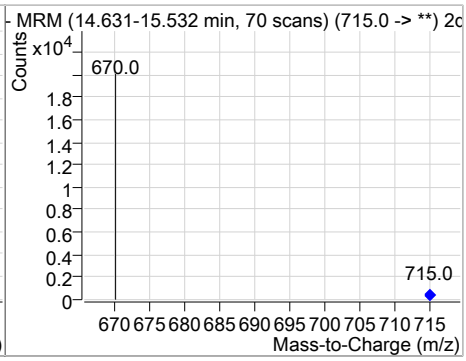


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	11.54	14.92	0.14	10122				







Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/17/18 11:23

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16595.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/6/2018 2:43:16 AM
Sample Name : fa55430-5
Vial : Vial 28
DA Method File : PFC_ID_070518_S2Q291.quantmethod.xml
Batch Name : s2q291.batch.bin
Sample Information : op70743,S2Q291,130,,,1.0,1,water

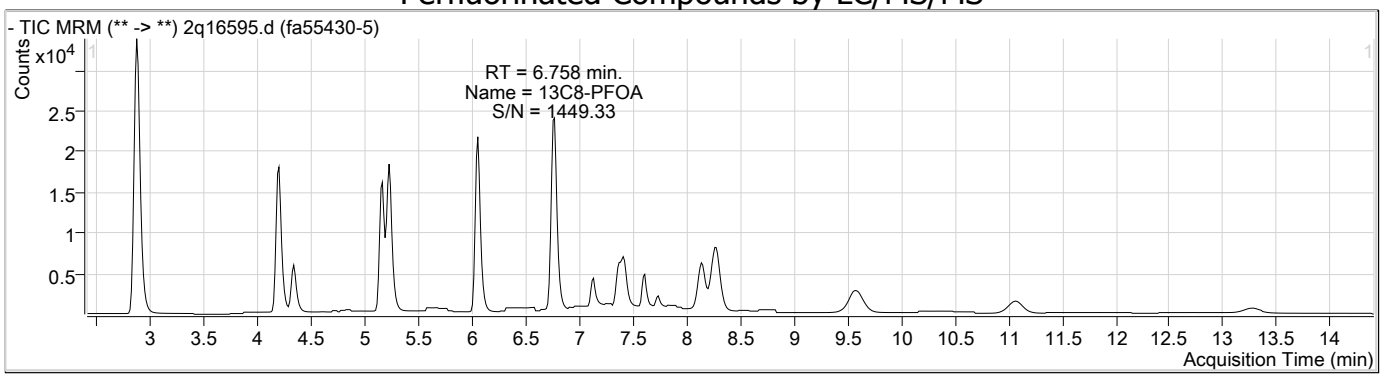
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.760	415.0 -> 370.0	19011	20.00	µg/L	-0.038
13C4-PFOS	7.372	503.0 -> 80.0	9749	20.00	µg/L	-0.026
M4-PFBA	2.866	217.0 -> 172.0	135755	20.00	µg/L	-0.038
M5-PFPeA	4.200	268.0 -> 223.0	63549	20.00	µg/L	-0.038
M5-PFHxA	5.228	318.0 -> 273.0	57335	20.00	µg/L	-0.038
M4-PFHpA	6.054	367.0 -> 322.0	55857	20.00	µg/L	-0.038
M8-PFOA	6.758	421.0 -> 376.0	29290	20.00	µg/L	-0.038
M9-PFNA	7.425	472.0 -> 427.0	18806	20.00	µg/L	-0.026
M6-PFDA	8.142	519.0 -> 474.0	28563	20.00	µg/L	-0.038
M7-PFUnDA	9.578	570.0 -> 525.0	26756	20.00	µg/L	-0.100
M2-PFDoDA	11.064	615.0 -> 570.0	15006	20.00	µg/L	-0.105
M2-PFTeDA	13.281	715.0 -> 670.0	6176	20.00	µg/L	-0.100
M8-FOSA	7.130	506.0 -> 78.0	10354	20.00	µg/L	-0.013
M3-PFBS	4.330	302.0 -> 99.0	19474	20.00	µg/L	-0.038
M3-PFHxS	6.048	402.0 -> 99.0	17328	20.00	µg/L	-0.038
M8-PFOS	7.370	507.0 -> 99.0	8015	20.00	µg/L	-0.026
M2-4:2FTS	5.160	329.0 -> 309.0	54446	20.00	µg/L	-0.038
M2-6:2FTS	6.768	429.0 -> 409.0	41800	20.00	µg/L	-0.040
M2-8:2FTS	8.273	529.0 -> 509.0	44395	20.00	µg/L	-0.052
M3-MeFOSAA	7.607	573.0 -> 419.0	12193	20.00	µg/L	-0.013
System Monitoring Compounds						
13C2-4:2FTS	5.160	329.0 -> 309.0	54450	16.60	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.0%		
13C2-6:2FTS	6.768	429.0 -> 409.0	41796	15.81	µg/L	-0.040
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.1%		
13C2-8:2FTS	8.273	529.0 -> 509.0	44354	13.67	µg/L	-0.052
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.3%		
13C2-PFDoDA	11.064	615.0 -> 570.0	15009	10.24	µg/L	-0.105
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 51.2%		
13C2-PFTeDA	13.281	715.0 -> 670.0	6224	10.03	µg/L	-0.100
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 50.2%		
13C3-PFBS	4.330	302.0 -> 99.0	19479	17.62	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.1%		
13C3-PFHxS	6.048	402.0 -> 99.0	17323	17.30	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.5%		
13C4-PFBA	2.866	217.0 -> 172.0	135733	17.73	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.6%		
13C4-PFHpA	6.054	367.0 -> 322.0	55854	17.33	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.7%		
13C5-PFHxA	5.228	318.0 -> 273.0	57340	17.50	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.5%		
13C5-PFPeA	4.200	268.0 -> 223.0	63532	17.44	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.2%		
13C6-PFDA	8.142	519.0 -> 474.0	28560	15.42	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.1%		

Perfluorinated Compounds by LC/MS/MS

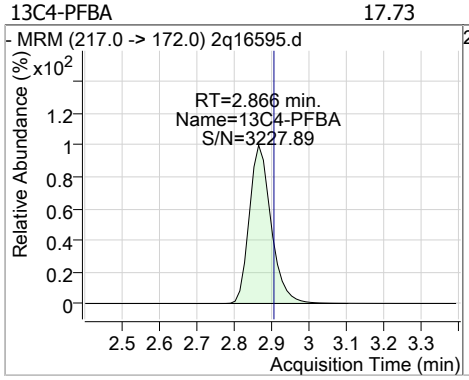
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	9.578	570.0 -> 525.0	26807	13.11	µg/L		-0.100
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.5%			
13C8-FOSA	7.130	506.0 -> 78.0	10354	5.88	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 29.4%			
13C8-PFOA	6.758	421.0 -> 376.0	29289	16.82	µg/L		-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.1%			
13C8-PFOS	7.370	507.0 -> 99.0	8011	16.35	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.8%			
13C9-PFNA	7.425	472.0 -> 427.0	18829	15.83	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.1%			
d3-MeFOSAA	7.607	573.0 -> 419.0	12191	13.88	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.4%			
M2-PFOA	6.760	415.0 -> 370.0	19012	20.00	ng/ml		-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.372	503.0 -> 80.0	9747	20.00	ng/ml		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	2.874	213.0 -> 169.0	173	0.16	µg/L		100
PFBS	4.371	299.0 -> 80.0	0	0.00	µg/L	m	1
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	4.203	263.0 -> 219.0	650	0.21	µg/L	m	100
PFPeS	5.740	349.0 -> 80.0	0	0.00	µg/L	m	1
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			

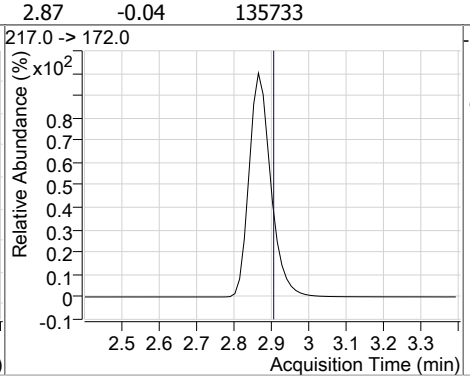
 # = Qualifier out of range, m = manually integrated, + = Area summed

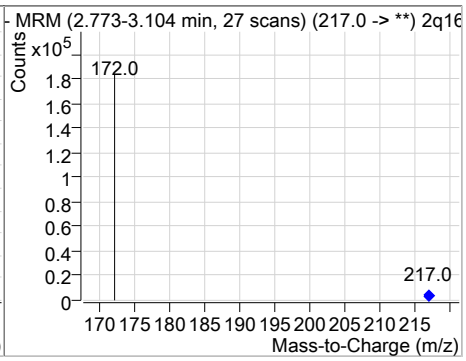
Perfluorinated Compounds by LC/MS/MS



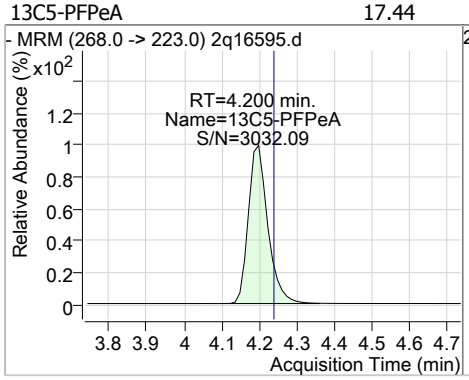
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	17.73	2.87	-0.04	135733				

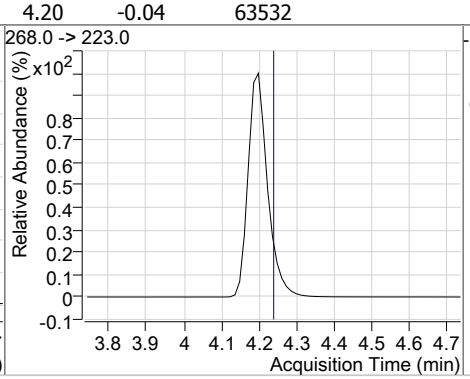


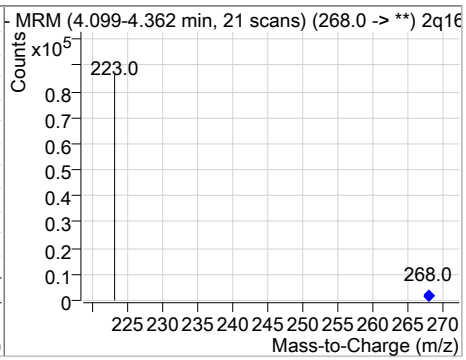




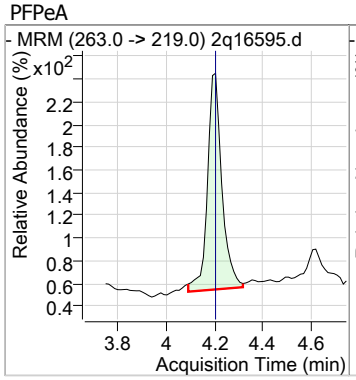
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	17.44	4.20	-0.04	63532				

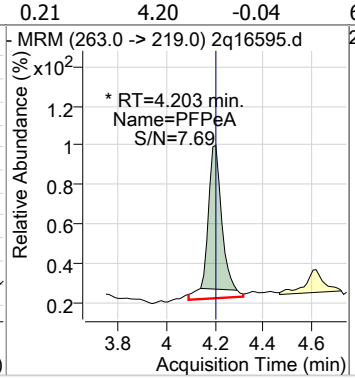


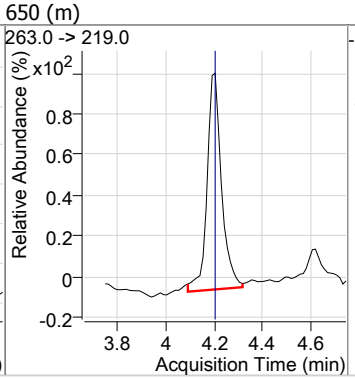


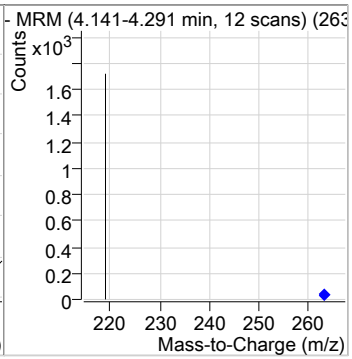


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.21	4.20	-0.04	650 (m)				



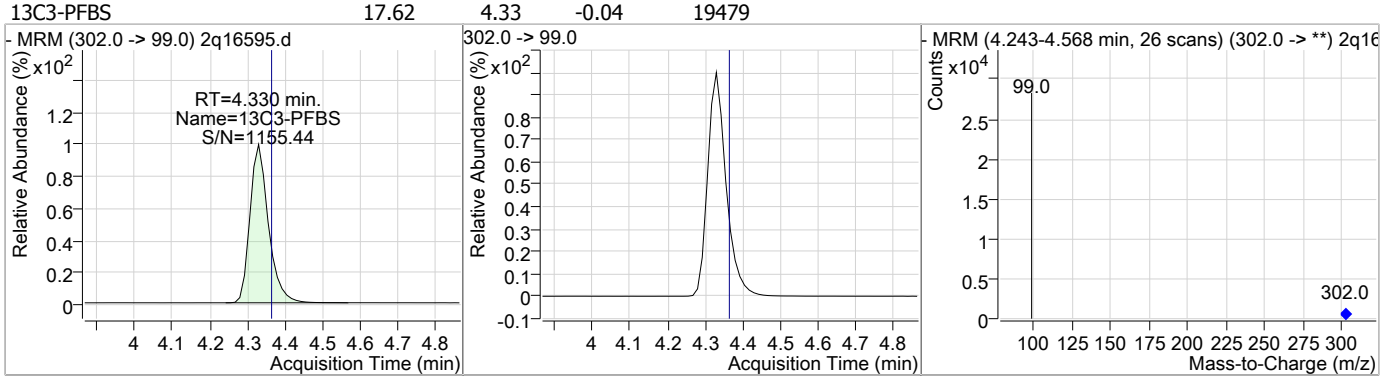




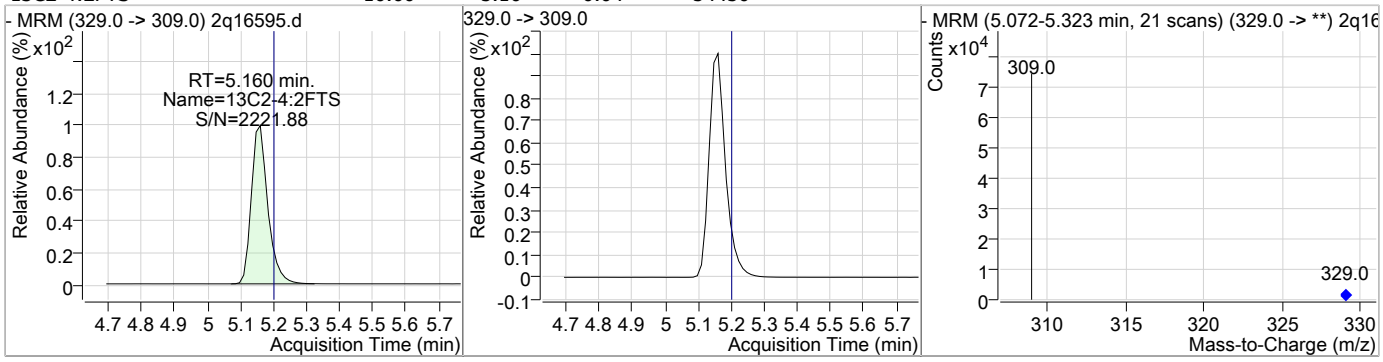


Perfluorinated Compounds by LC/MS/MS

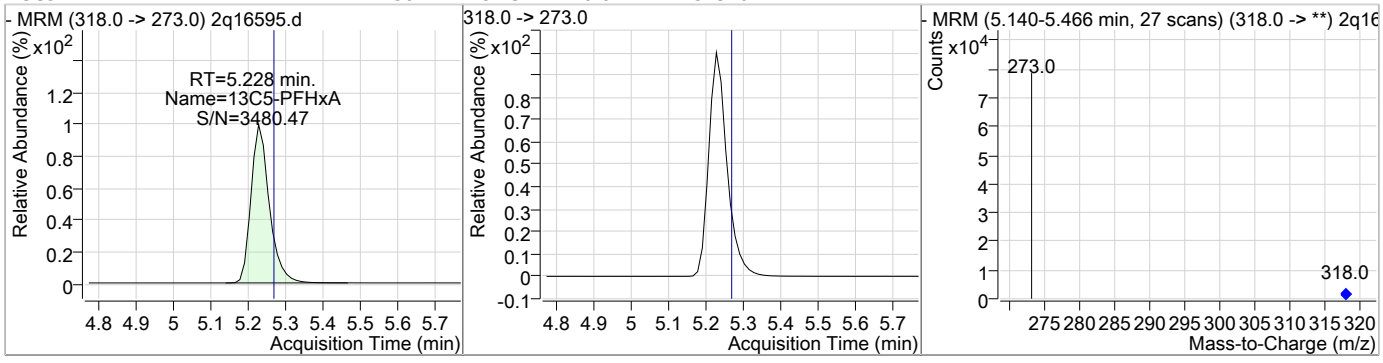
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	17.62	4.33	-0.04	19479				



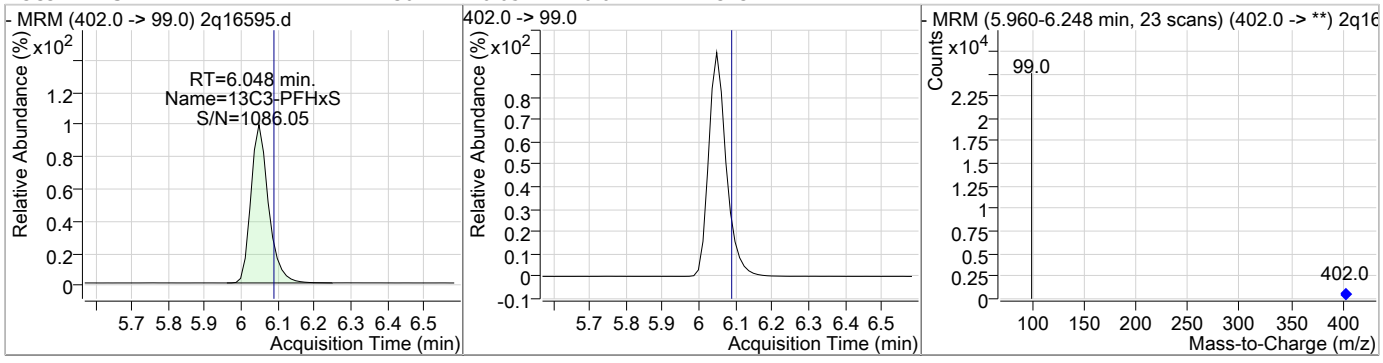
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	16.60	5.16	-0.04	54450				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	17.50	5.23	-0.04	57340				

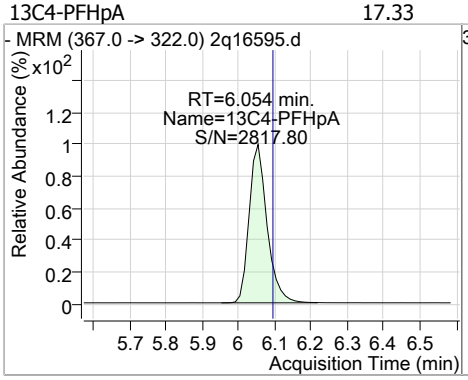


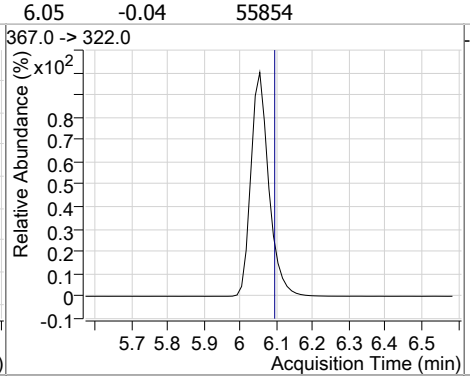
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	17.30	6.05	-0.04	17323				

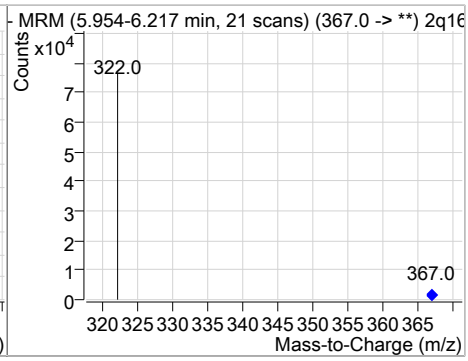


Perfluorinated Compounds by LC/MS/MS

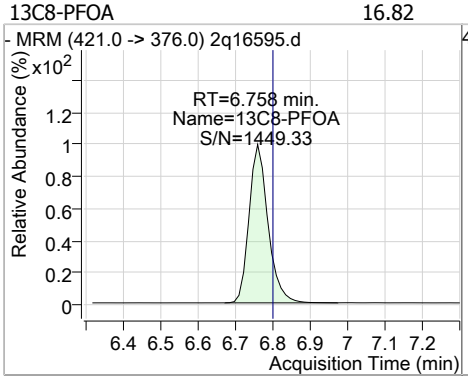
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	17.33	6.05	-0.04	55854				

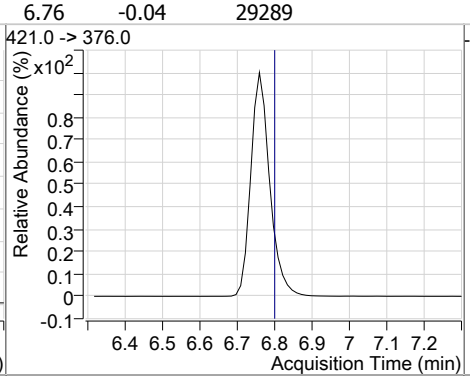


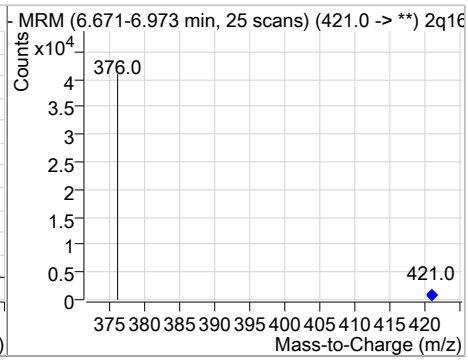




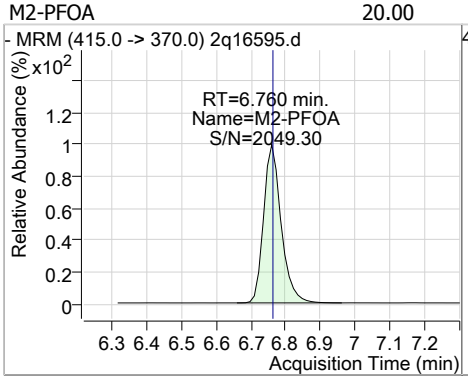
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	16.82	6.76	-0.04	29289				

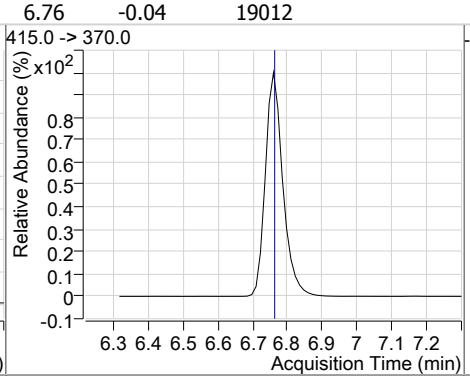


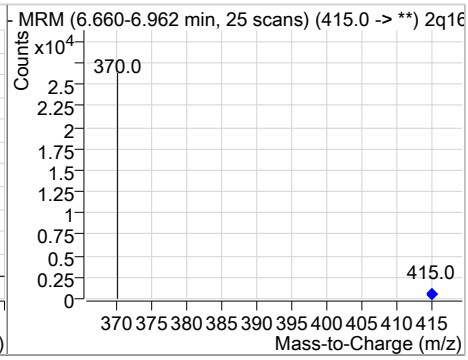




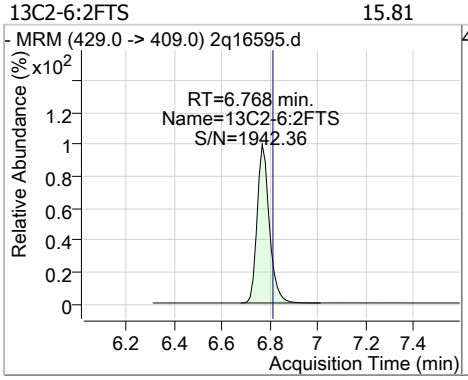
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.76	-0.04	19012				

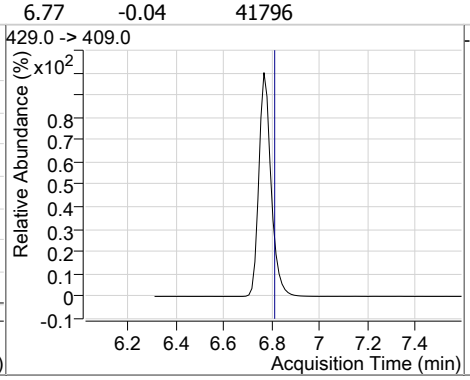


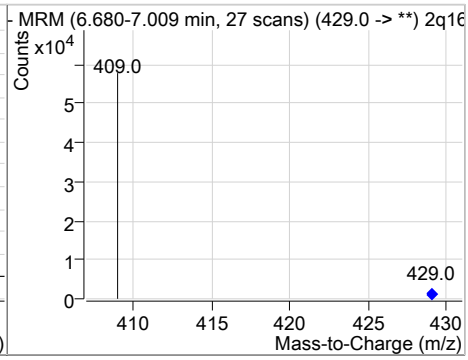




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	15.81	6.77	-0.04	41796				

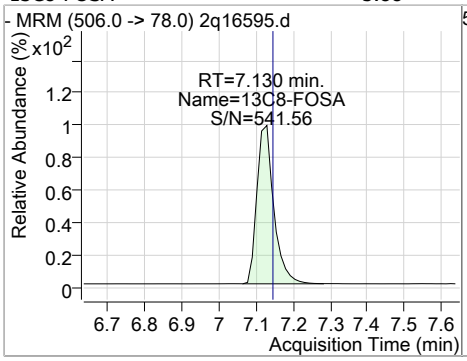


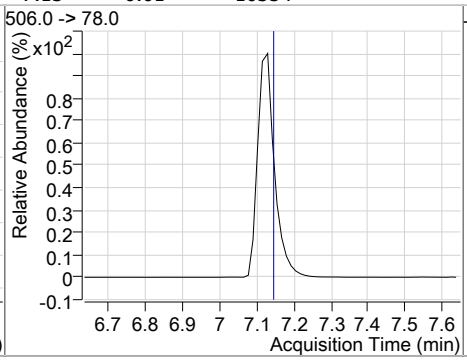


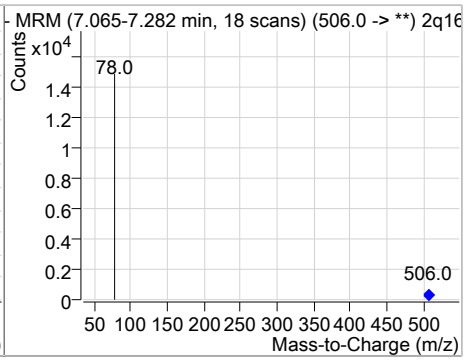


Perfluorinated Compounds by LC/MS/MS

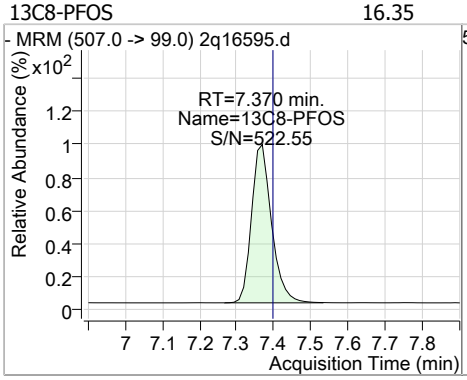
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	5.88	7.13	-0.01	10354				

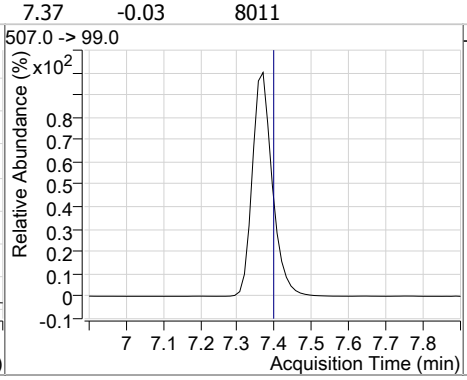


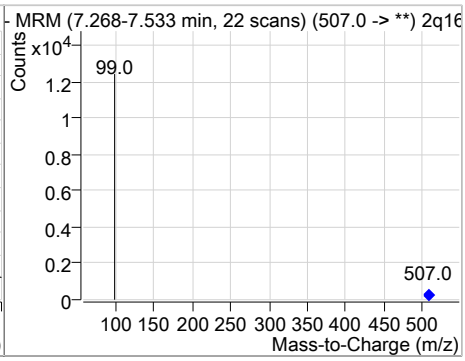




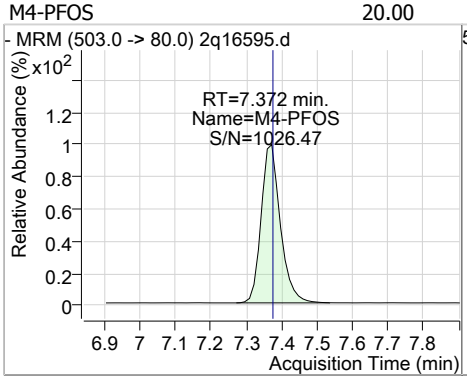
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	16.35	7.37	-0.03	8011				

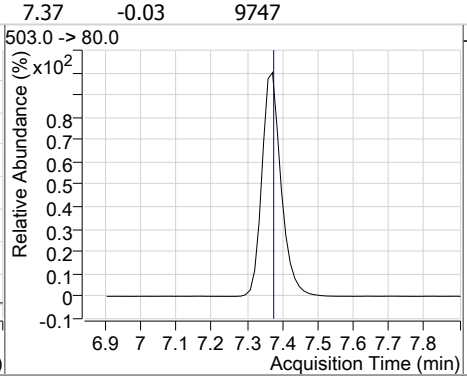


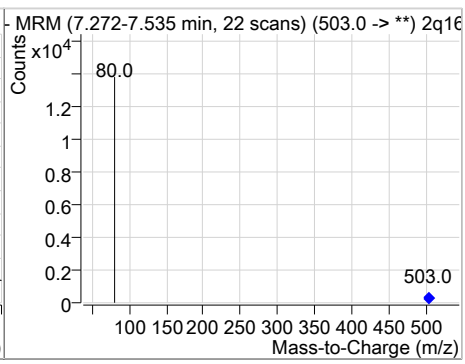




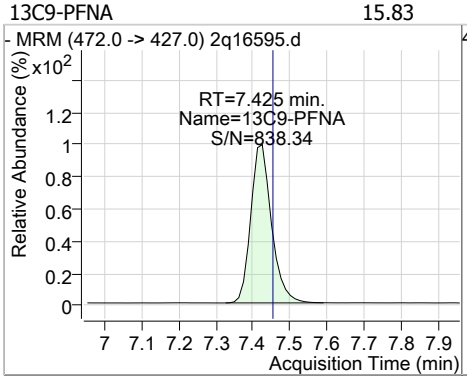
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.00	7.37	-0.03	9747				

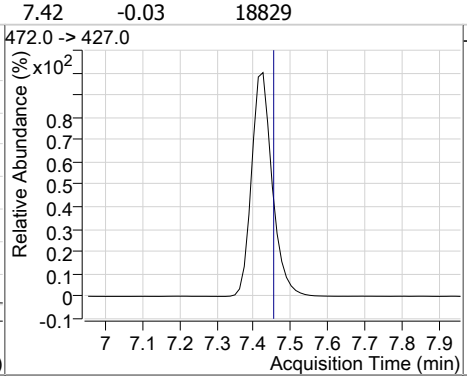


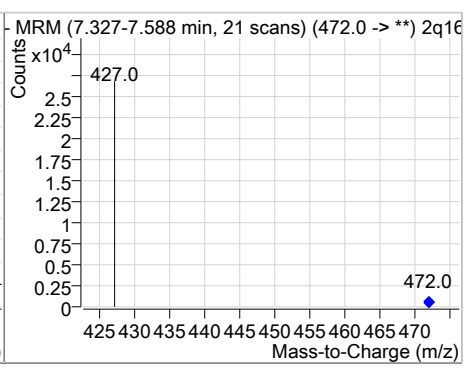




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	15.83	7.42	-0.03	18829				

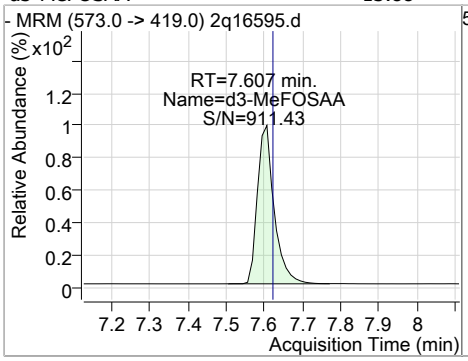


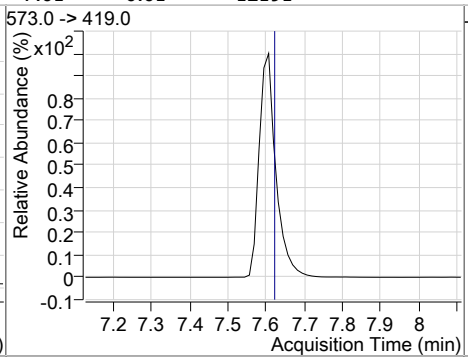


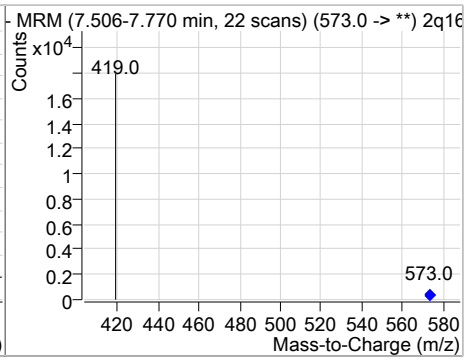


Perfluorinated Compounds by LC/MS/MS

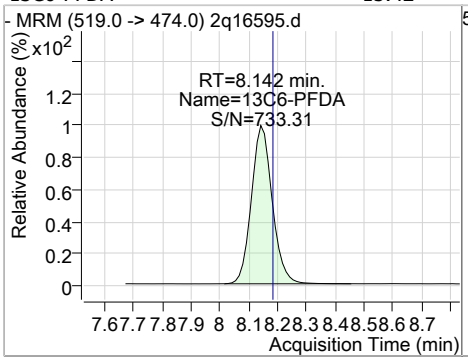
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	13.88	7.61	-0.01	12191				

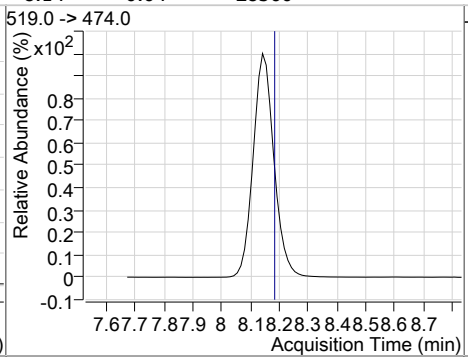


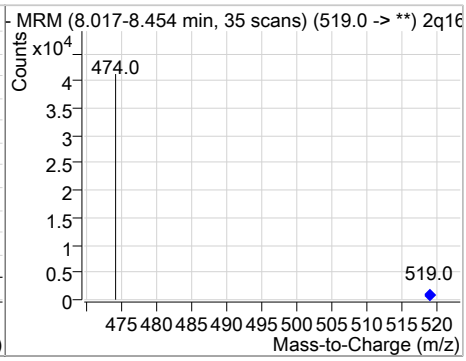




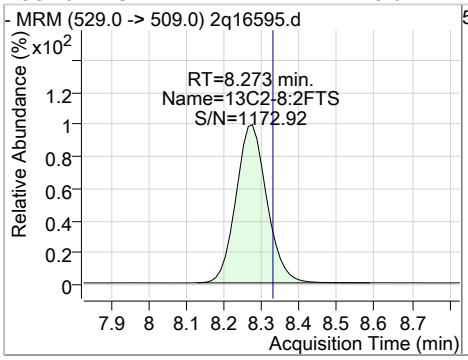
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	15.42	8.14	-0.04	28560				

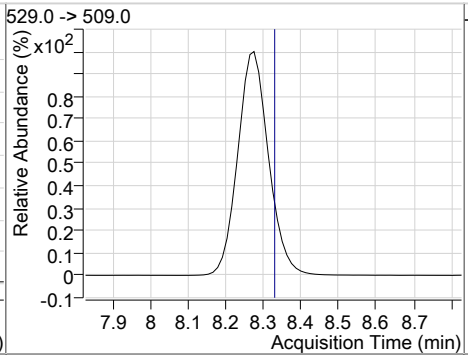


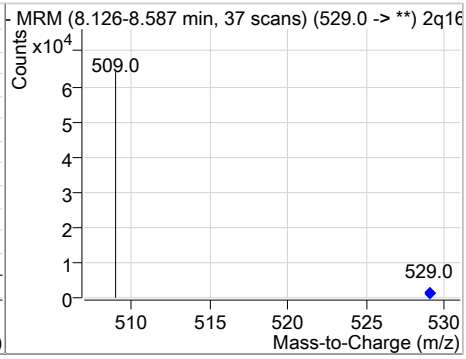




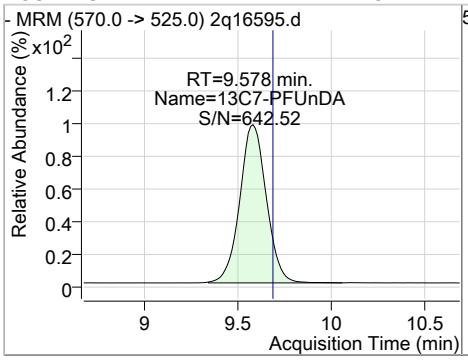
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	13.67	8.27	-0.05	44354				

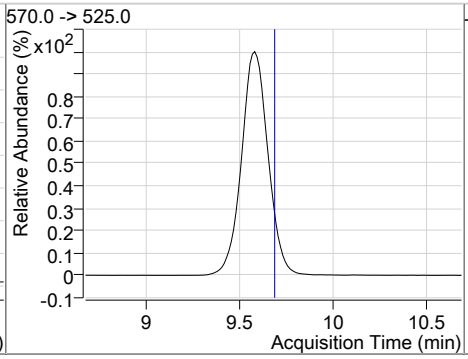


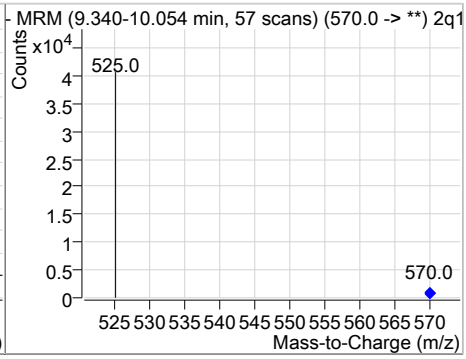




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	13.11	9.58	-0.10	26807				

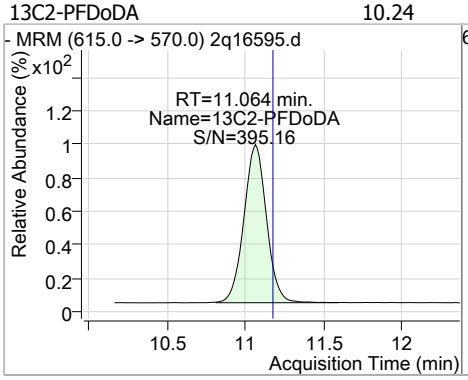


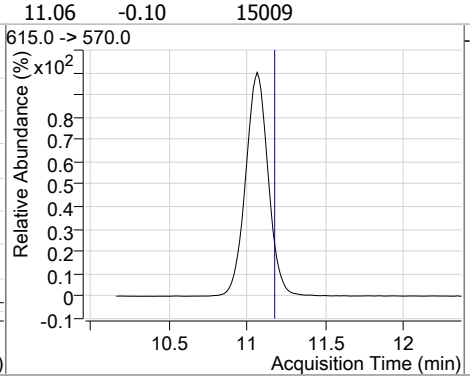


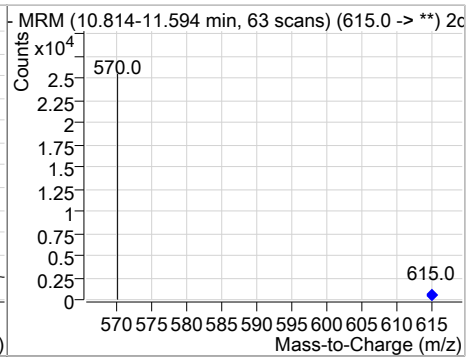


Perfluorinated Compounds by LC/MS/MS

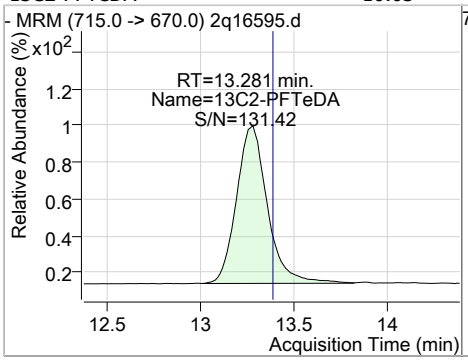
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	10.24	11.06	-0.10	15009				

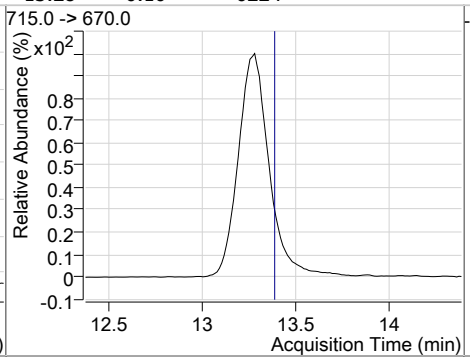


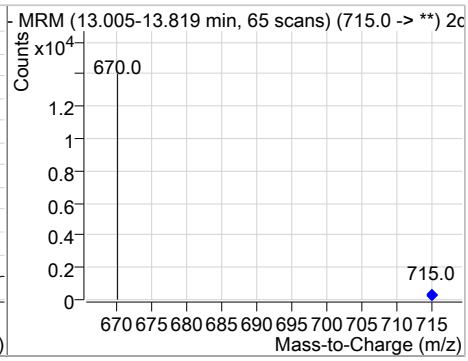




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.03	13.28	-0.10	6224				







Manual Integration Approval Summary

Sample Number:	FA55430-5	**Method:**	EPA 537M QSM5.1 B-15
Lab FileID:	2Q16595.D	**Analyst approved:**	07/16/18 15:01 Natasha Gumtie
Injection Time:	07/06/18 02:43	**Supervisor approved:**	07/17/18 11:23 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanoic acid	2706-90-3		4.20	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File : 2q17040.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/13/2018 1:31:22 AM
Sample Name : fa55430-5
Vial : Vial 84
DA Method File : PFC_ID_071218_S2Q295.quantmethod.xml
Batch Name : s2q295.batch.bin
Sample Information : op70810,S2Q295,120,,,1.0,1,water

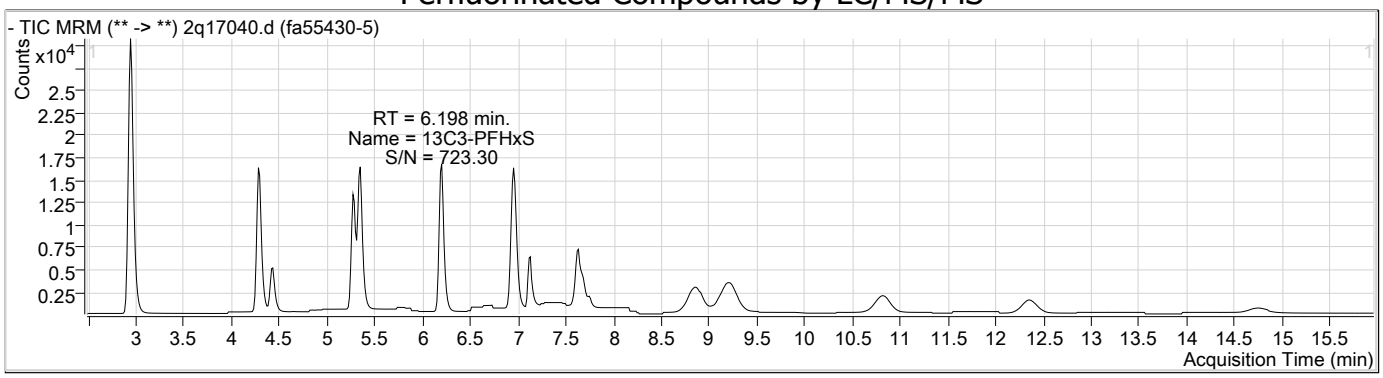
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-PFOA	6.948	415.0 -> 370.0	19093	20.00 µg/L	-0.049
13C4-PFOS	7.624	503.0 -> 80.0	9755	20.00 µg/L	-0.051
M4-PFBA	2.941	217.0 -> 172.0	115117	20.00 µg/L	-0.050
M5-PFPeA	4.287	268.0 -> 223.0	56585	20.00 µg/L	-0.050
M5-PFHxA	5.351	318.0 -> 273.0	51999	20.00 µg/L	-0.040
M4-PFHpA	6.205	367.0 -> 322.0	47146	20.00 µg/L	-0.050
M8-PFOA	6.946	421.0 -> 376.0	19450	20.00 µg/L	-0.049
M9-PFNA	7.690	472.0 -> 427.0	11339	20.00 µg/L	-0.062
M6-PFDA	8.863	519.0 -> 474.0	31034	20.00 µg/L	-0.154
M7-PFUnDA	10.817	570.0 -> 525.0	21616	20.00 µg/L	-0.212
M2-PFDoDA	12.353	615.0 -> 570.0	17167	20.00 µg/L	-0.212
M2-PFTeDA	14.744	715.0 -> 670.0	7028	20.00 µg/L	-0.225
M8-FOSA	7.127	506.0 -> 78.0	17619	20.00 µg/L	-0.015
M3-PFBS	4.431	302.0 -> 99.0	17006	20.00 µg/L	-0.038
M3-PFHxS	6.198	402.0 -> 99.0	10963	20.00 µg/L	-0.037
M8-PFOS	7.621	507.0 -> 99.0	4417	20.00 µg/L	-0.052
M2-4:2FTS	5.272	329.0 -> 309.0	43914	20.00 µg/L	-0.051
M2-6:2FTS	6.968	429.0 -> 409.0	26476	20.00 µg/L	-0.049
M2-8:2FTS	9.200	529.0 -> 509.0	38265	20.00 µg/L	-0.198
M3-MeFOSAA	7.632	573.0 -> 419.0	8412	20.00 µg/L	-0.026
System Monitoring Compounds					
13C2-4:2FTS	5.272	329.0 -> 309.0	43936	15.57 µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.9%	
13C2-6:2FTS	6.968	429.0 -> 409.0	26484	13.57 µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.9%	
13C2-8:2FTS	9.200	529.0 -> 509.0	37758	10.26 µg/L	-0.198
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 51.3%	
13C2-PFDoDA	12.353	615.0 -> 570.0	17175	10.20 µg/L	-0.212
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 51.0%	
13C2-PFTeDA	14.744	715.0 -> 670.0	7155	9.85 µg/L	-0.225
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 49.2%	
13C3-PFBS	4.431	302.0 -> 99.0	17008	16.31 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.6%	
13C3-PFHxS	6.198	402.0 -> 99.0	10971	13.14 µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.7%	
13C4-PFBA	2.941	217.0 -> 172.0	115097	17.32 µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.6%	
13C4-PFHpA	6.205	367.0 -> 322.0	47148	16.66 µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.3%	
13C5-PFHxA	5.351	318.0 -> 273.0	51994	17.53 µg/L	-0.040
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.7%	
13C5-PFPeA	4.287	268.0 -> 223.0	56571	17.24 µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.2%	
13C6-PFDA	8.863	519.0 -> 474.0	30851	11.13 µg/L	-0.154
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 55.6%	

Perfluorinated Compounds by LC/MS/MS

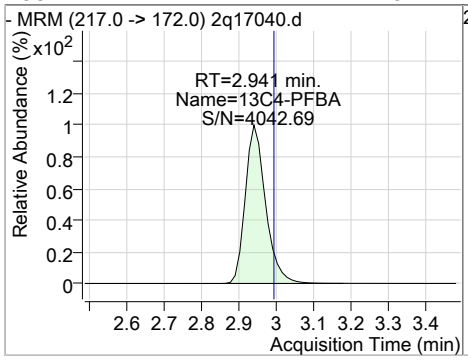
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.817	570.0 -> 525.0	21637	10.50	µg/L		-0.212
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 52.5%			
13C8-FOSA	7.127	506.0 -> 78.0	17638	10.97	µg/L		-0.015
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 54.8%			
13C8-PFOA	6.946	421.0 -> 376.0	19457	14.81	µg/L		-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.1%			
13C8-PFOS	7.621	507.0 -> 99.0	4415	10.64	µg/L		-0.052
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 53.2%			
13C9-PFNA	7.690	472.0 -> 427.0	11356	12.88	µg/L		-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.4%			
d3-MeFOSAA	7.632	573.0 -> 419.0	8406	10.82	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 54.1%			
M2-PFOA	6.948	415.0 -> 370.0	19083	19.99	ng/ml		-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%			
M4-PFOS	7.624	503.0 -> 80.0	9753	20.00	ng/ml		-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	2.949	213.0 -> 169.0	106	0.12	µg/L		100
PFBS	4.472	299.0 -> 80.0	123	0.11	µg/L		38
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	5.808	313.0 -> 269.0	0	0.00	µg/L	m	1
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	4.291	263.0 -> 219.0	515	0.20	µg/L		100
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			

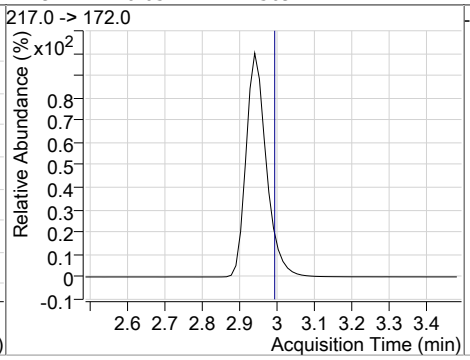
 # = Qualifier out of range, m = manually integrated, + = Area summed

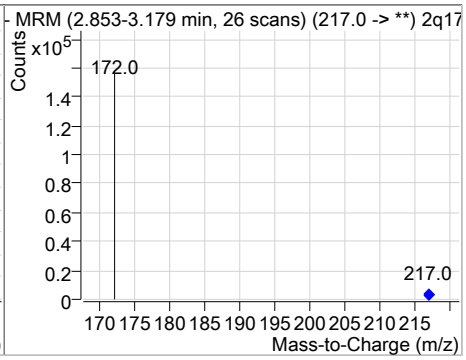
Perfluorinated Compounds by LC/MS/MS



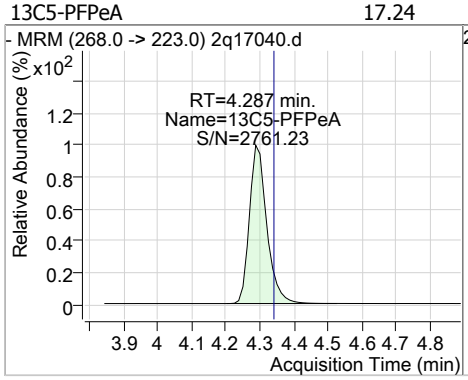
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	17.32	2.94	-0.05	115097				

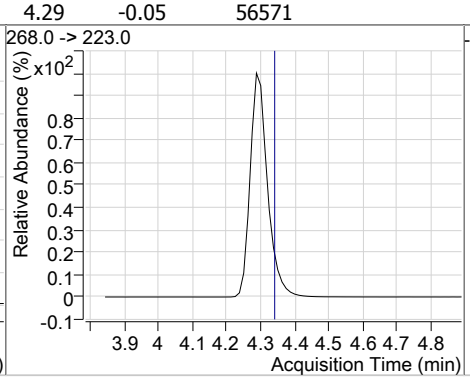


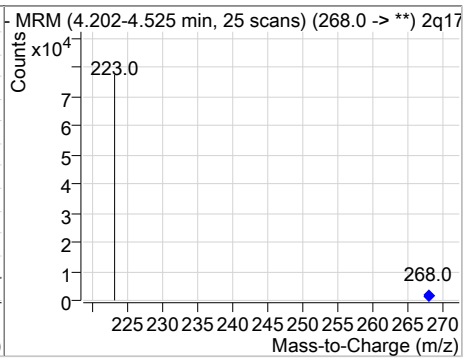




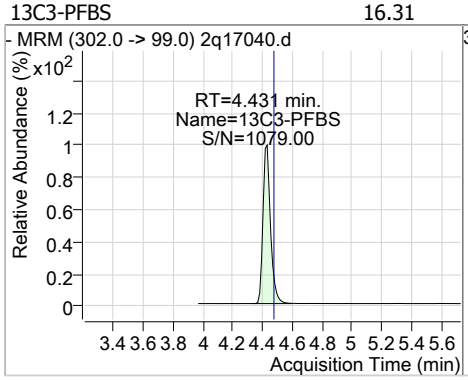
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	17.24	4.29	-0.05	56571				

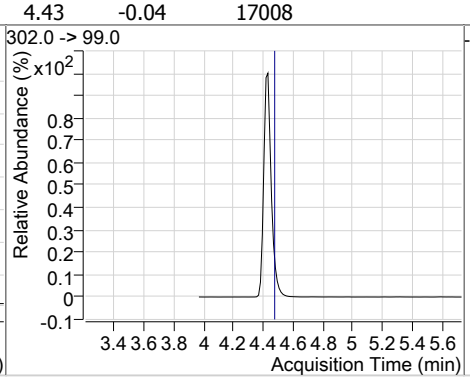


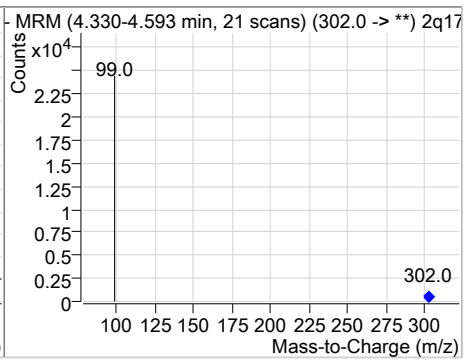




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	16.31	4.43	-0.04	17008				

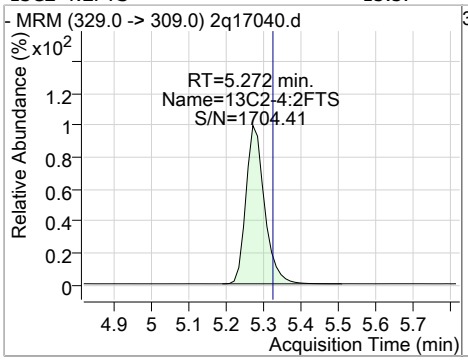


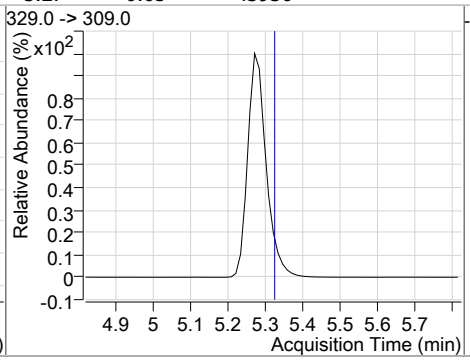


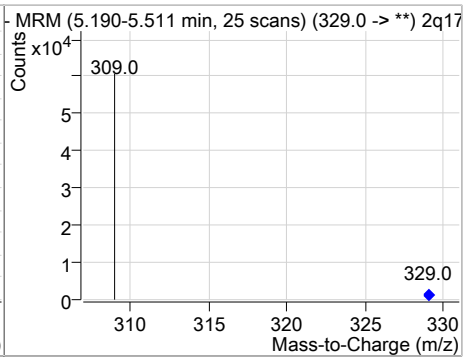


Perfluorinated Compounds by LC/MS/MS

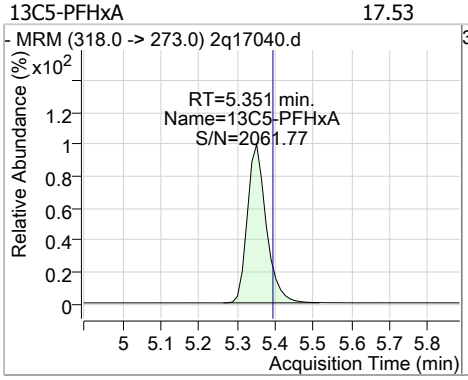
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	15.57	5.27	-0.05	43936				

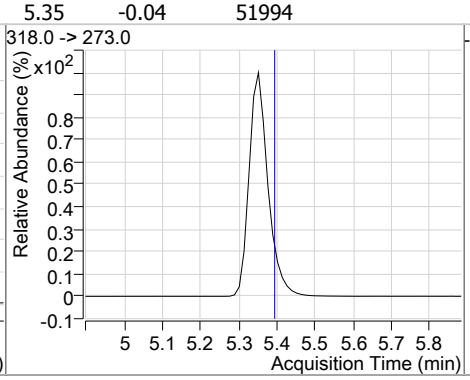


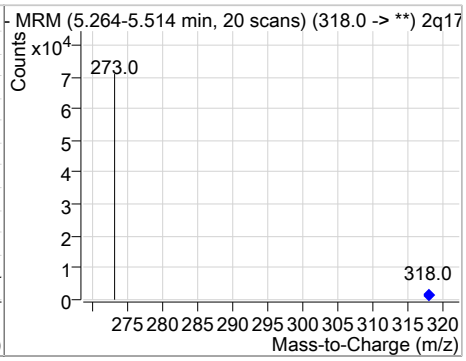




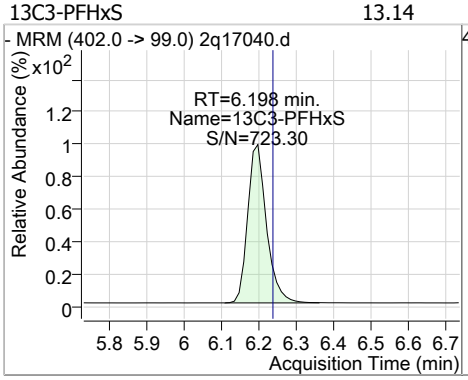
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	17.53	5.35	-0.04	51994				

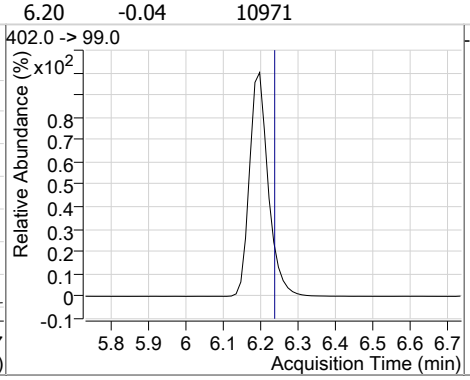


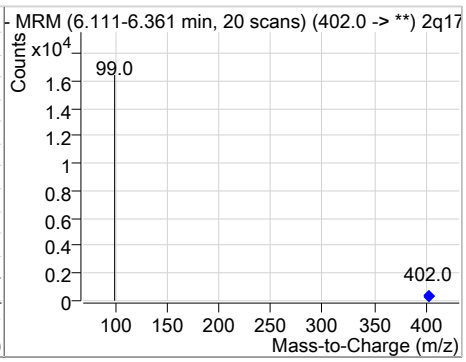




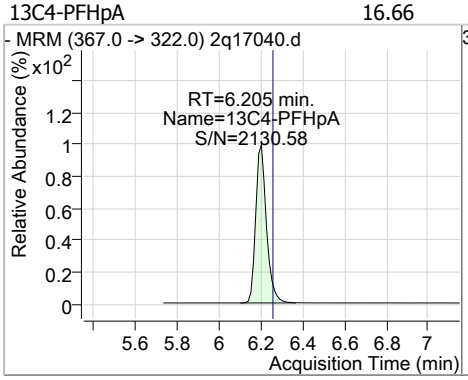
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	13.14	6.20	-0.04	10971				

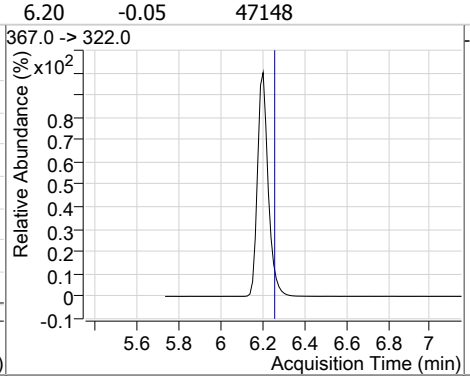


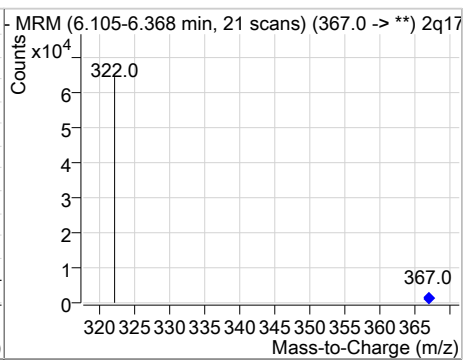




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	16.66	6.20	-0.05	47148				

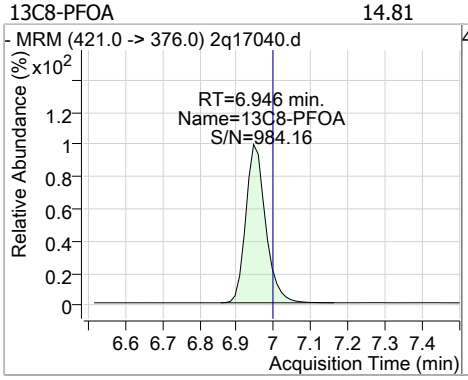


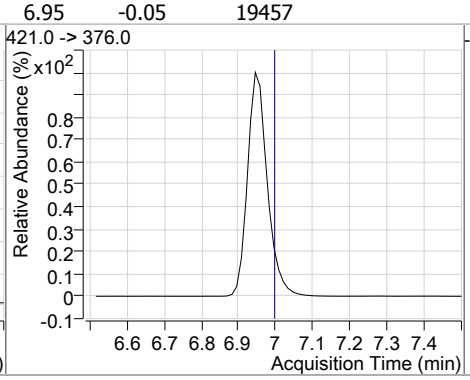


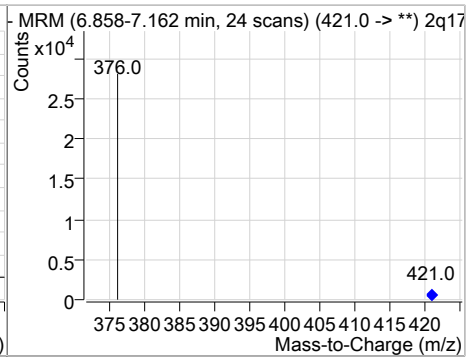


Perfluorinated Compounds by LC/MS/MS

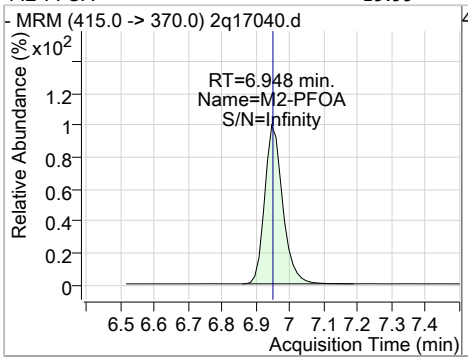
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	14.81	6.95	-0.05	19457				

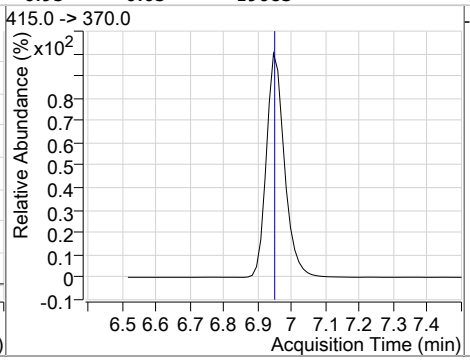


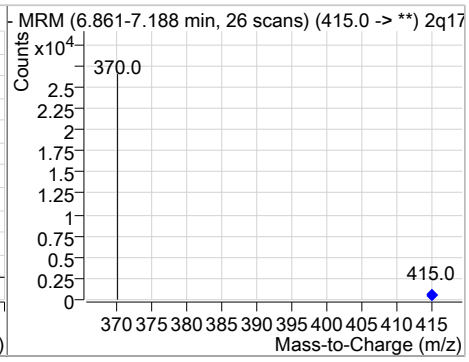




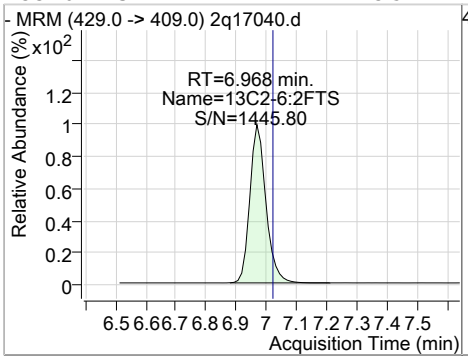
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	19.99	6.95	-0.05	19083				

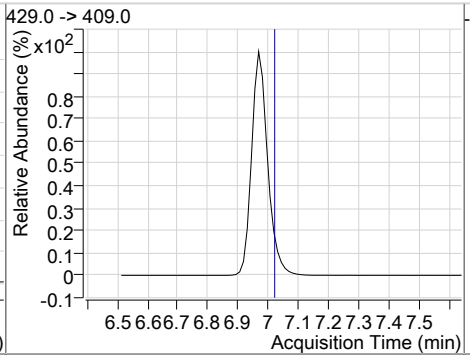


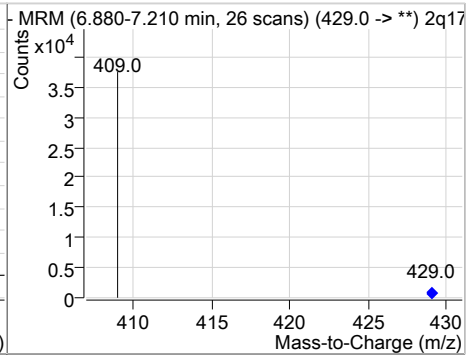




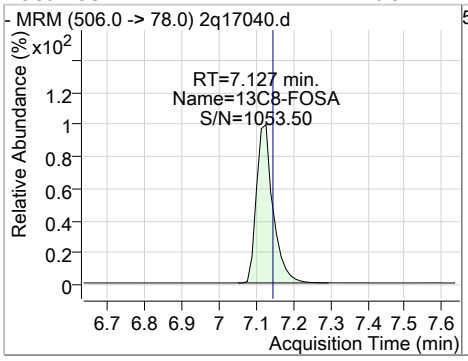
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	13.57	6.97	-0.05	26484				

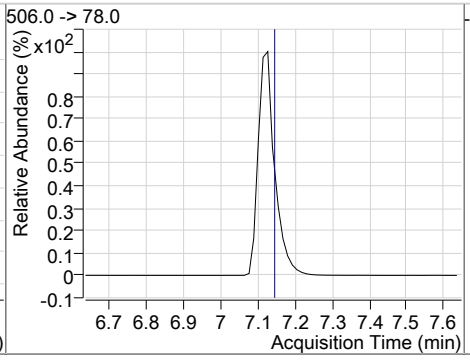


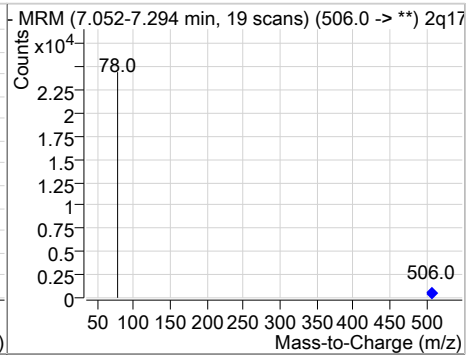




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	10.97	7.13	-0.02	17638				

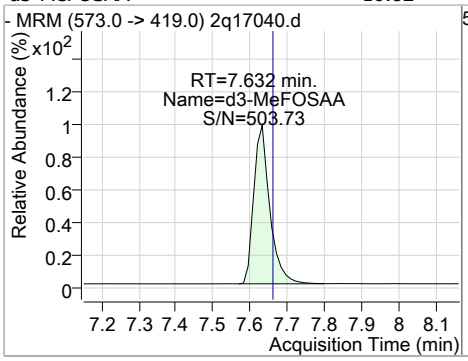


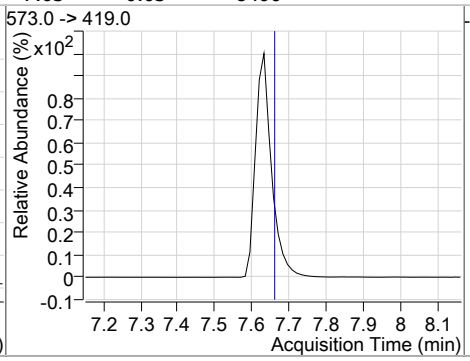


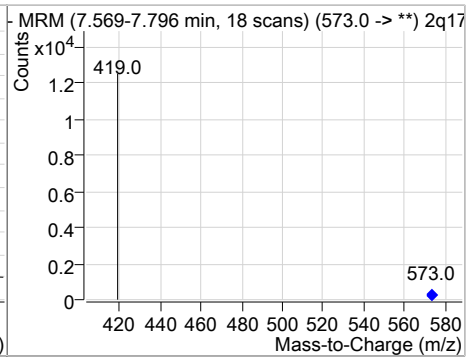


Perfluorinated Compounds by LC/MS/MS

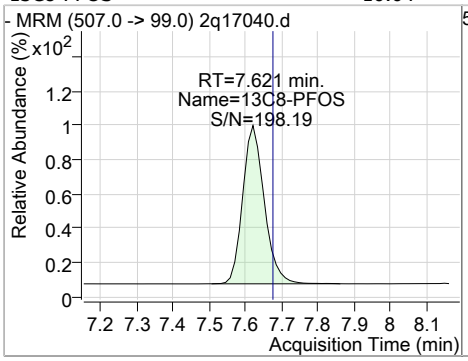
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	10.82	7.63	-0.03	8406				

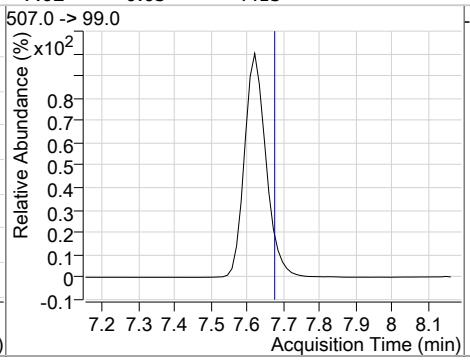


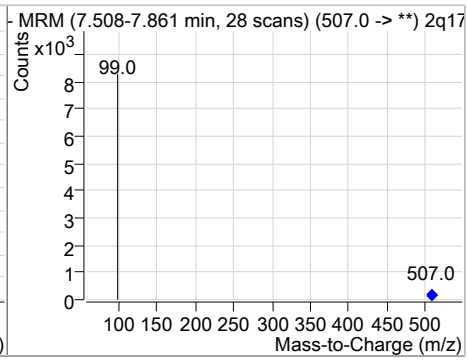




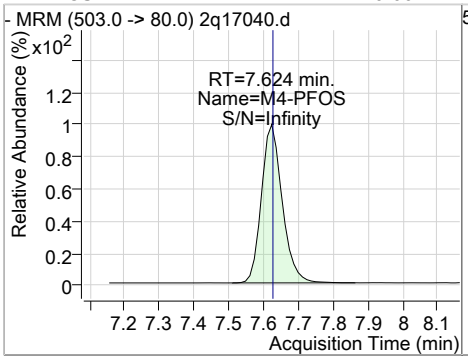
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	10.64	7.62	-0.05	4415				

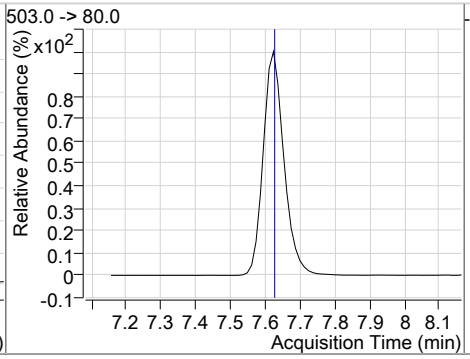


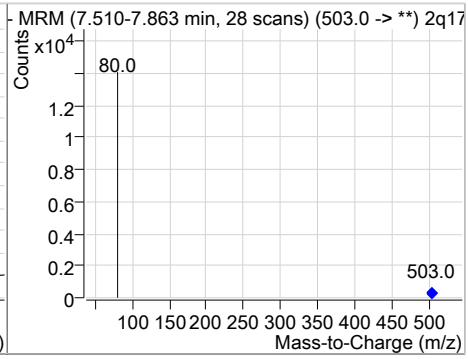




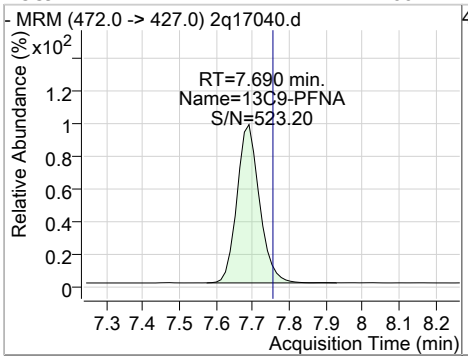
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.00	7.62	-0.05	9753				

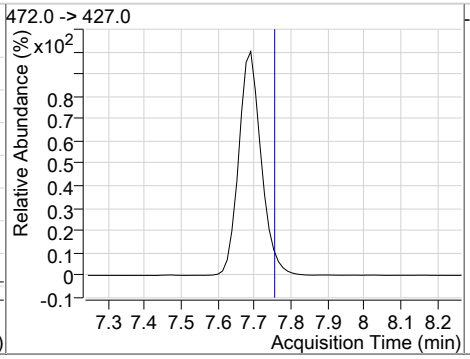


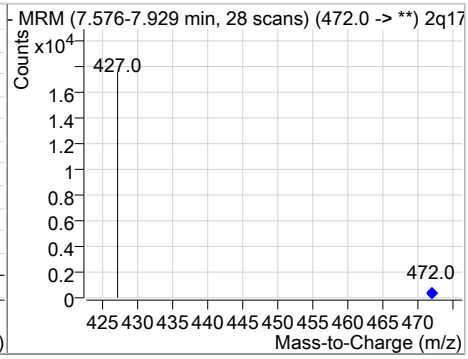




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	12.88	7.69	-0.06	11356				

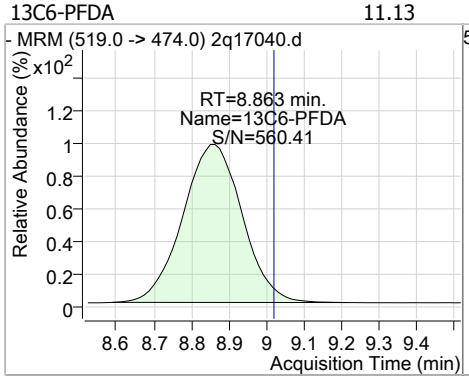


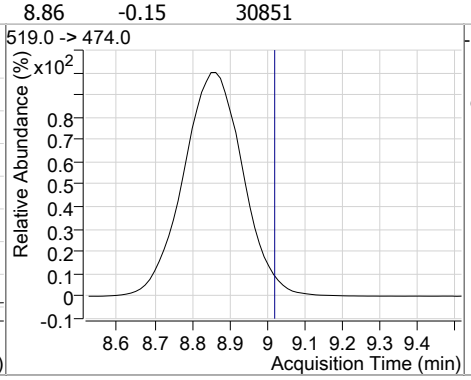


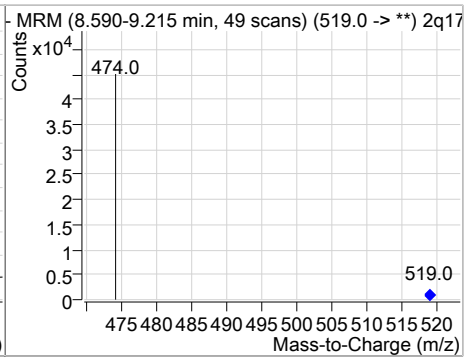


Perfluorinated Compounds by LC/MS/MS

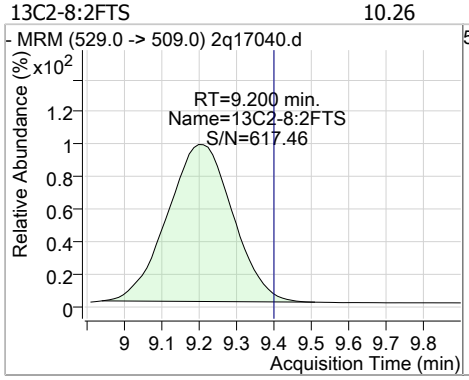
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	11.13	8.86	-0.15	30851				

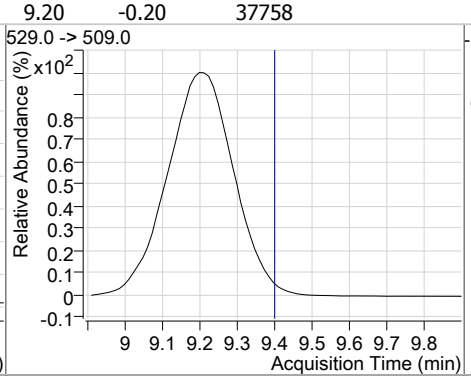


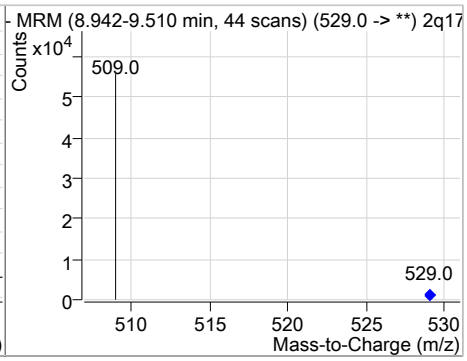




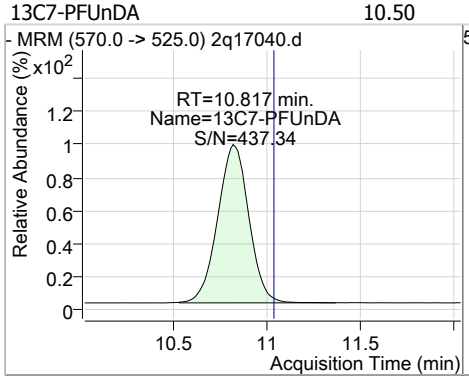
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	10.26	9.20	-0.20	37758				

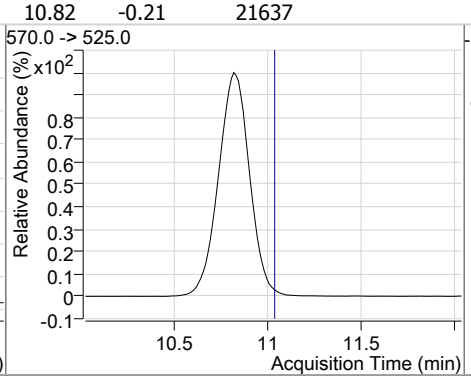


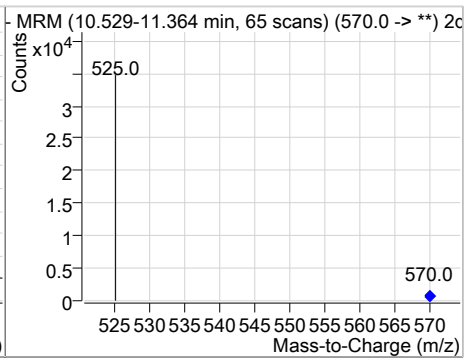




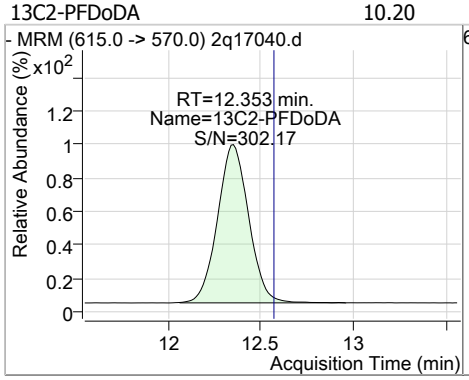
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	10.50	10.82	-0.21	21637				

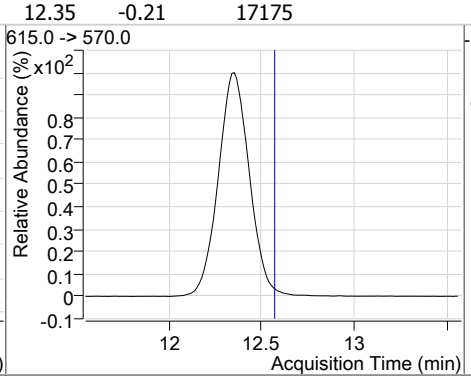


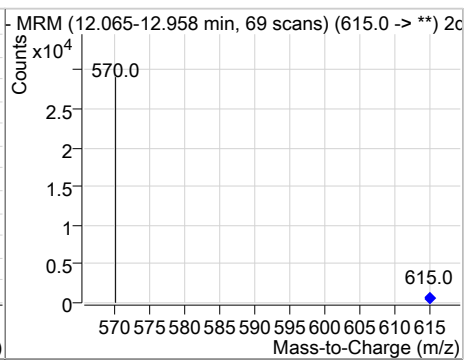




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	10.20	12.35	-0.21	17175				

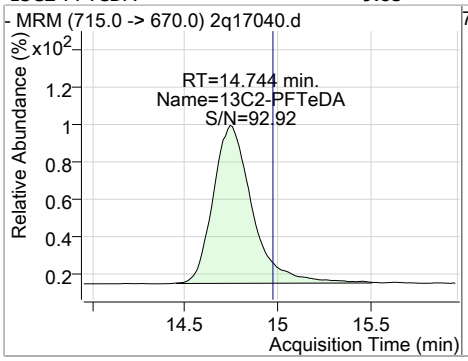


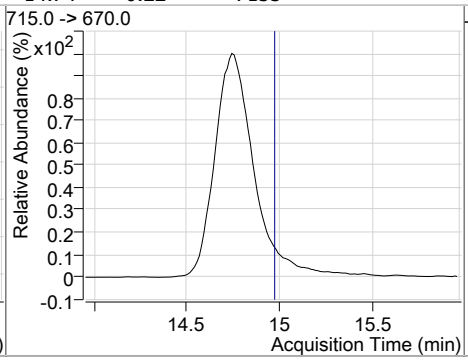


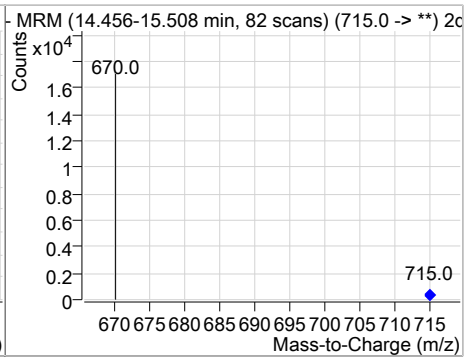


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	9.85	14.74	-0.22	7155				







Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/17/18 11:23

Perfluorinated Compounds by LC/MS/MS

Data File : 2q17041.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/13/2018 1:52:05 AM
Sample Name : fa55430-6
Vial : Vial 85
DA Method File : PFC_ID_071218_S2Q295.quantmethod.xml
Batch Name : s2q295.batch.bin
Sample Information : op70810,S2Q295,130,,,1.0,1,water

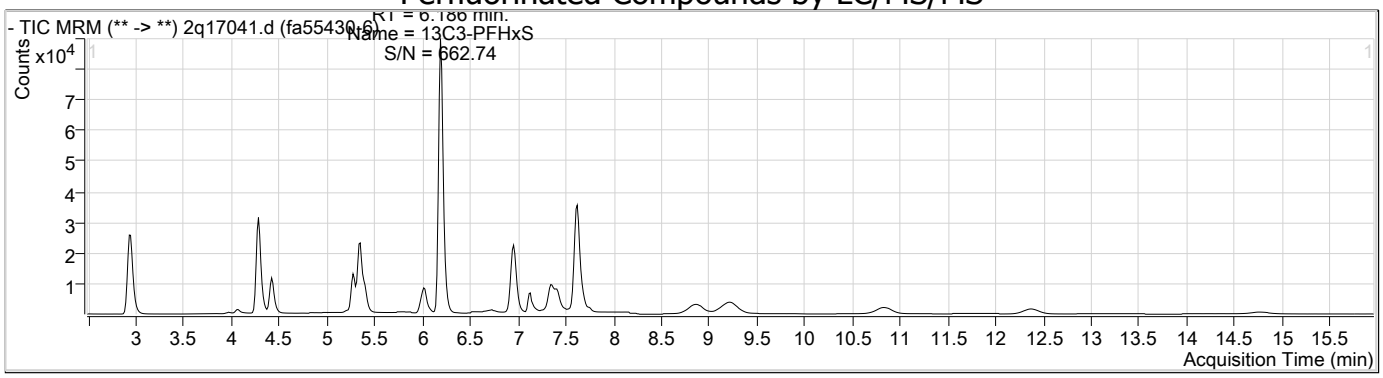
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.948	415.0 -> 370.0	17853	20.00	µg/L	-0.049
13C4-PFOS	7.611	503.0 -> 80.0	8884	20.00	µg/L	-0.064
M4-PFBA	2.941	217.0 -> 172.0	95204	20.00	µg/L	-0.050
M5-PFPeA	4.287	268.0 -> 223.0	49970	20.00	µg/L	-0.050
M5-PFHxA	5.351	318.0 -> 273.0	46202	20.00	µg/L	-0.040
M4-PFHpA	6.205	367.0 -> 322.0	39593	20.00	µg/L	-0.050
M8-PFOA	6.946	421.0 -> 376.0	18447	20.00	µg/L	-0.049
M9-PFNA	7.690	472.0 -> 427.0	11479	20.00	µg/L	-0.062
M6-PFDA	8.863	519.0 -> 474.0	33943	20.00	µg/L	-0.154
M7-PFUnDA	10.830	570.0 -> 525.0	23736	20.00	µg/L	-0.200
M2-PFDoDA	12.366	615.0 -> 570.0	19155	20.00	µg/L	-0.200
M2-PFTeDA	14.757	715.0 -> 670.0	7253	20.00	µg/L	-0.212
M8-FOSA	7.127	506.0 -> 78.0	19282	20.00	µg/L	-0.015
M3-PFBS	4.418	302.0 -> 99.0	14482	20.00	µg/L	-0.050
M3-PFHxS	6.186	402.0 -> 99.0	10118	20.00	µg/L	-0.050
M8-PFOS	7.621	507.0 -> 99.0	4352	20.00	µg/L	-0.052
M2-4:2FTS	5.272	329.0 -> 309.0	42184	20.00	µg/L	-0.051
M2-6:2FTS	6.968	429.0 -> 409.0	27397	20.00	µg/L	-0.049
M2-8:2FTS	9.212	529.0 -> 509.0	39229	20.00	µg/L	-0.185
M3-MeFOSAA	7.632	573.0 -> 419.0	7742	20.00	µg/L	-0.026
System Monitoring Compounds						
13C2-4:2FTS	5.272	329.0 -> 309.0	42185	14.95	µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.8%		
13C2-6:2FTS	6.968	429.0 -> 409.0	27391	14.04	µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.2%		
13C2-8:2FTS	9.212	529.0 -> 509.0	38737	10.53	µg/L	-0.185
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 52.7%		
13C2-PFDoDA	12.366	615.0 -> 570.0	19149	11.38	µg/L	-0.200
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 56.9%		
13C2-PFTeDA	14.757	715.0 -> 670.0	7546	10.38	µg/L	-0.212
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 51.9%		
13C3-PFBS	4.418	302.0 -> 99.0	14489	13.90	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.5%		
13C3-PFHxS	6.186	402.0 -> 99.0	10122	12.13	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.6%		
13C4-PFBA	2.941	217.0 -> 172.0	95152	14.32	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.6%		
13C4-PFHpA	6.205	367.0 -> 322.0	39590	13.99	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.0%		
13C5-PFHxA	5.351	318.0 -> 273.0	46212	15.58	µg/L	-0.040
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.9%		
13C5-PFPeA	4.287	268.0 -> 223.0	49946	15.23	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.1%		
13C6-PFDA	8.863	519.0 -> 474.0	33636	12.13	µg/L	-0.154
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.7%		

Perfluorinated Compounds by LC/MS/MS

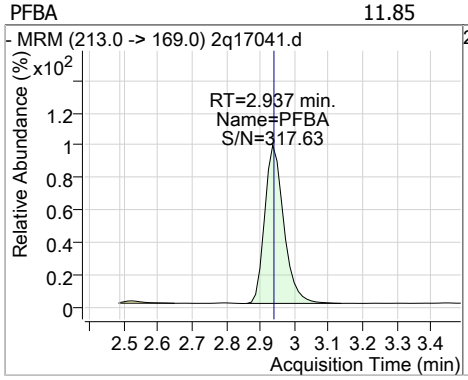
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.830	570.0 -> 525.0	23895	11.59	µg/L		-0.200
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 58.0%			
13C8-FOSA	7.127	506.0 -> 78.0	19289	11.99	µg/L		-0.015
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.0%			
13C8-PFOA	6.946	421.0 -> 376.0	18451	14.04	µg/L		-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.2%			
13C8-PFOS	7.621	507.0 -> 99.0	4363	10.52	µg/L		-0.052
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 52.6%			
13C9-PFNA	7.690	472.0 -> 427.0	11486	13.03	µg/L		-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.1%			
d3-MeFOSAA	7.632	573.0 -> 419.0	7735	9.96	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 49.8%			
M2-PFOA	6.948	415.0 -> 370.0	17854	20.00	ng/ml		-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.611	503.0 -> 80.0	8873	19.98	ng/ml		-0.064
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%			
Target Compounds							QValue
4:2FTS	5.274	327.0 -> 307.0	182	0.16	µg/L	#	10
6:2FTS	6.970	427.0 -> 407.0	5664	8.30	µg/L		97
8:2FTS	9.215	527.0 -> 507.0	3199	3.05	µg/L		93
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	2.937	213.0 -> 169.0	8946	11.85	µg/L		100
PFBS	4.422	299.0 -> 80.0	17559	17.67	µg/L		99
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	6.195	363.0 -> 319.0	27162	18.42	µg/L		100
PFHpS	6.917	449.0 -> 80.0	3052	10.72	µg/L	m	91
PFHxA	5.353	313.0 -> 269.0	28478	36.55	µg/L		99
PFHxS	6.189	399.0 -> 80.0	186650	311.30	µg/L	m	97
PFNA	7.692	463.0 -> 419.0	904	3.99	µg/L		93
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	6.948	413.0 -> 369.0	14915	30.34	µg/L	m	97
PFOS	7.611	499.0 -> 80.0	125103	458.99	µg/L	m	97
PFPeA	4.291	263.0 -> 219.0	59626	25.56	µg/L		100
PFPeS	5.396	349.0 -> 80.0	15373	24.36	µg/L	m	97
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			

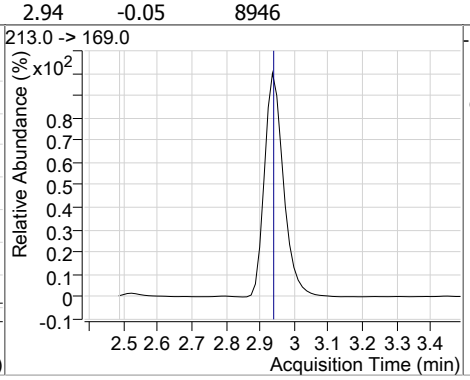
 # = Qualifier out of range, m = manually integrated, + = Area summed

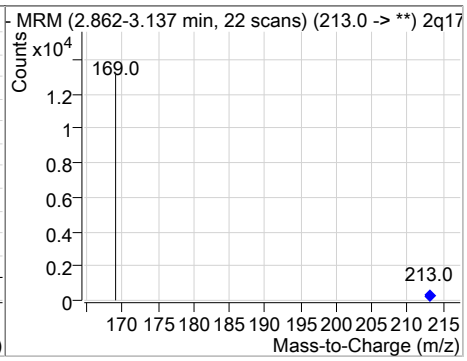
Perfluorinated Compounds by LC/MS/MS



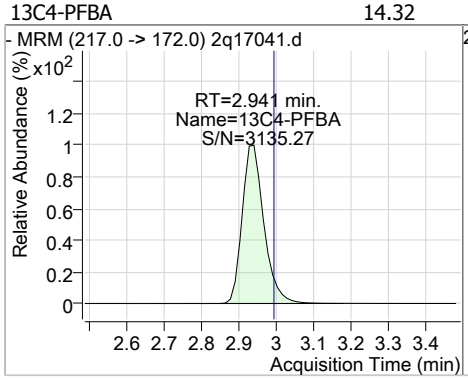
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	11.85	2.94	-0.05	8946				

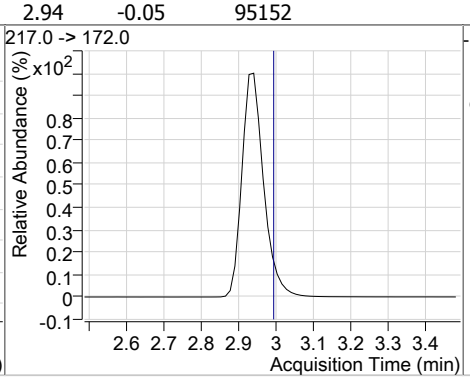


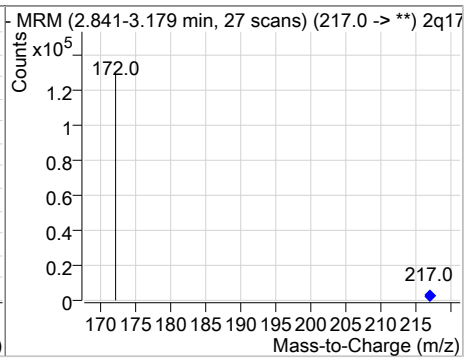




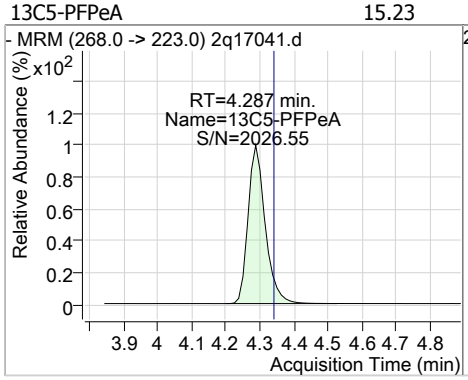
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	14.32	2.94	-0.05	95152				

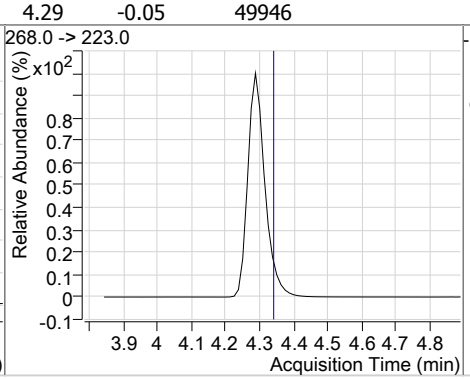


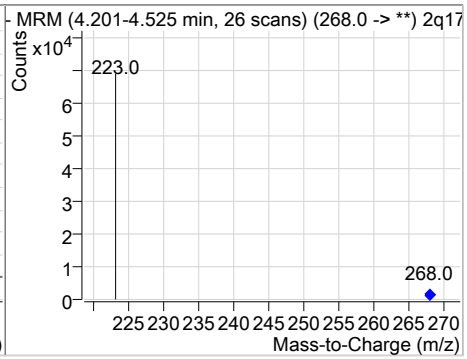




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	15.23	4.29	-0.05	49946				

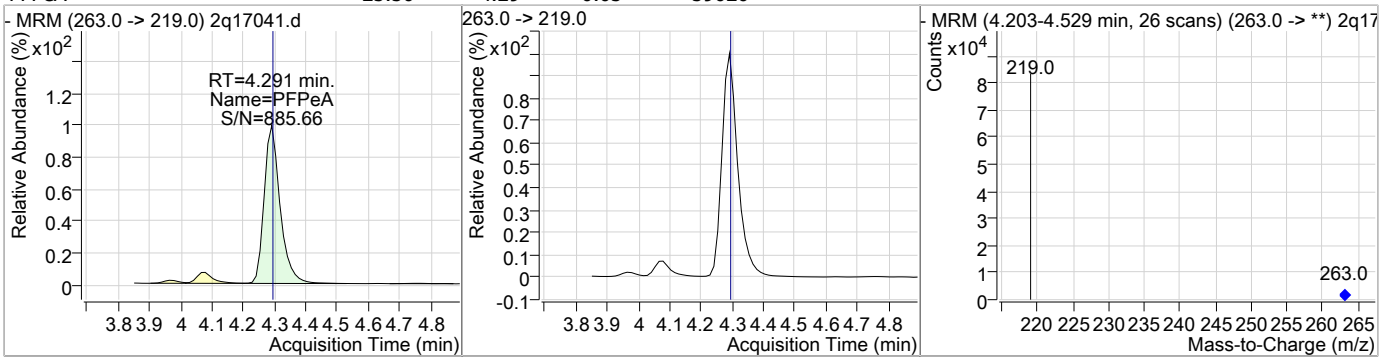




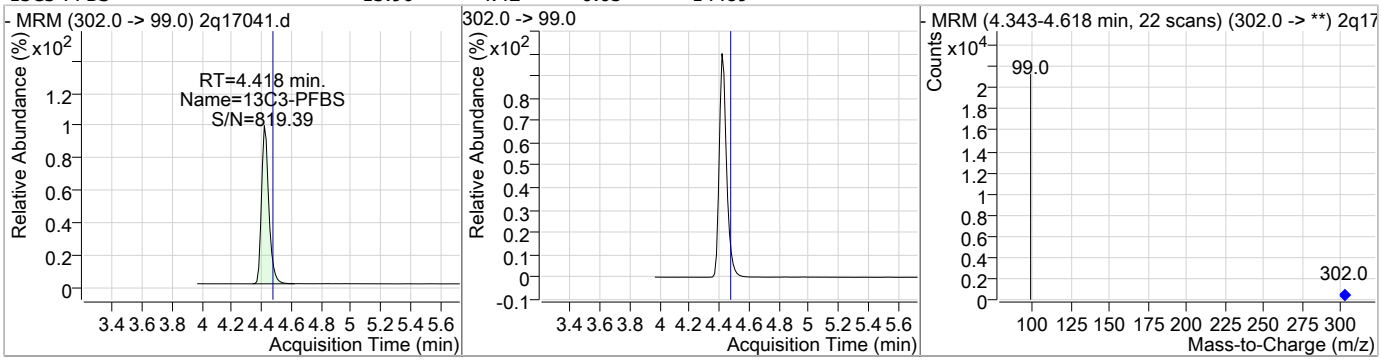


Perfluorinated Compounds by LC/MS/MS

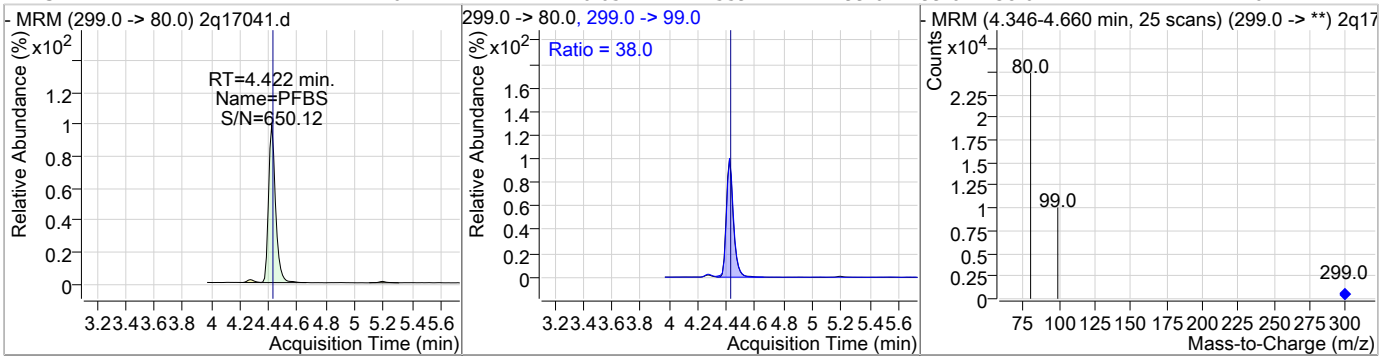
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	25.56	4.29	-0.05	59626				



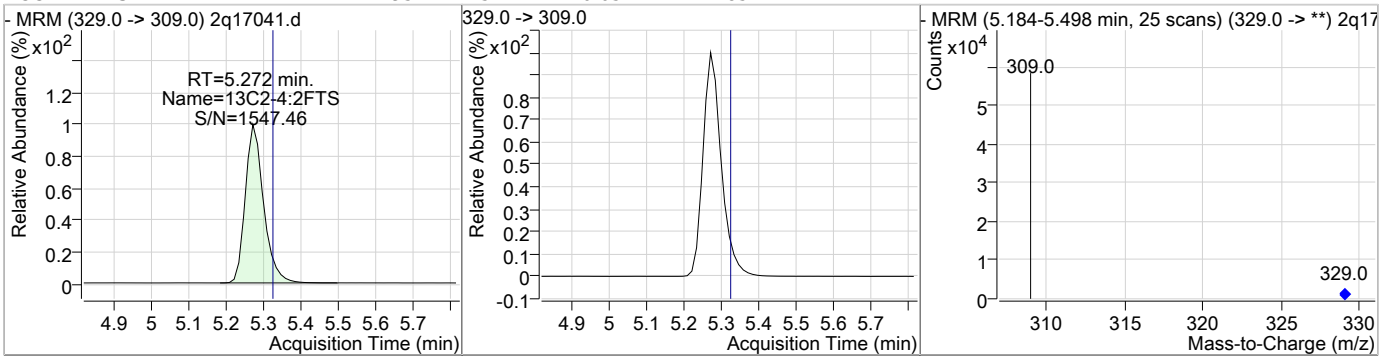
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	13.90	4.42	-0.05	14489				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	17.67	4.42	-0.05	17559	299.0 -> 99.0	38.0	7.4	67.4

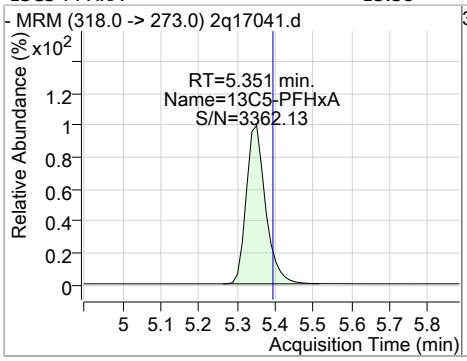


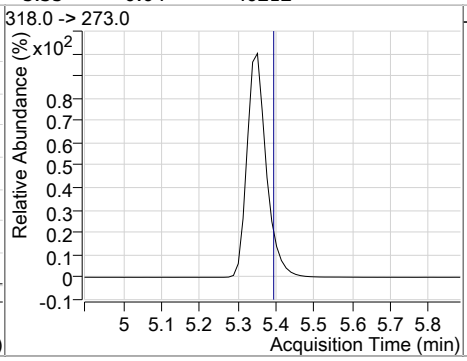
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	14.95	5.27	-0.05	42185				

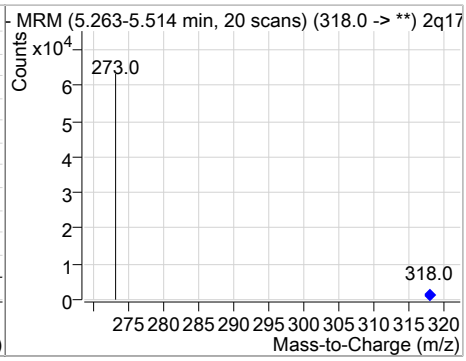


Perfluorinated Compounds by LC/MS/MS

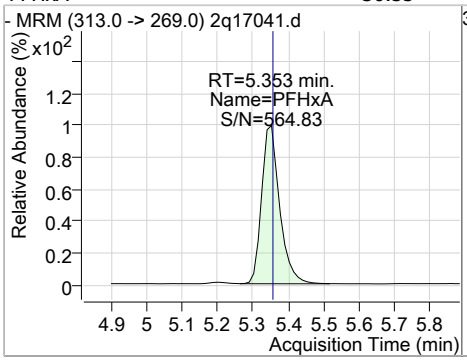
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	15.58	5.35	-0.04	46212				

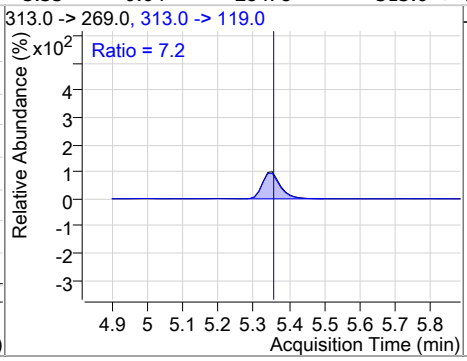


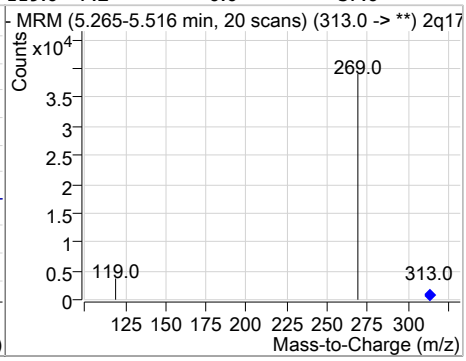




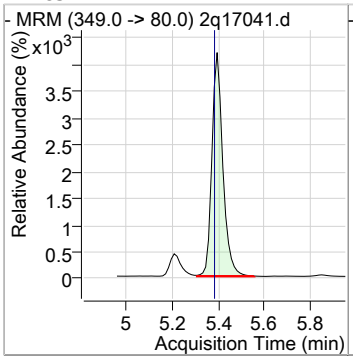
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	36.55	5.35	-0.04	28478	313.0 -> 119.0	7.2	0.0	37.6

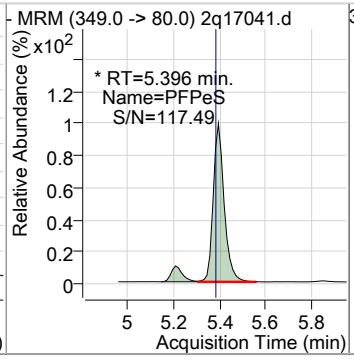


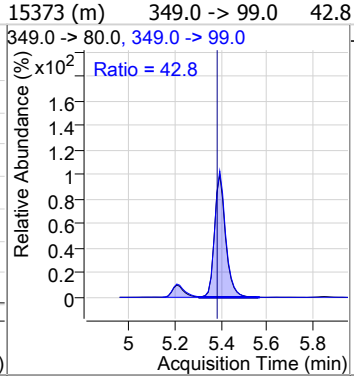


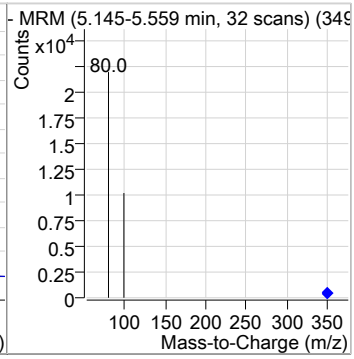


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	24.36	5.40	-0.05	15373 (m)	349.0 -> 99.0	42.8	10.8	70.8

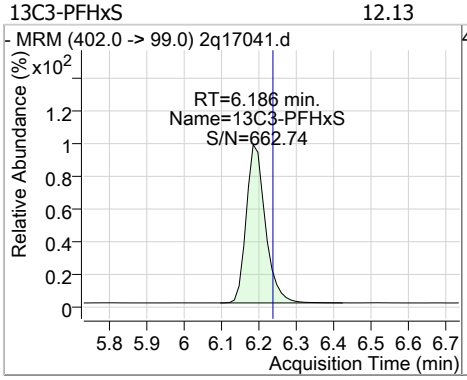


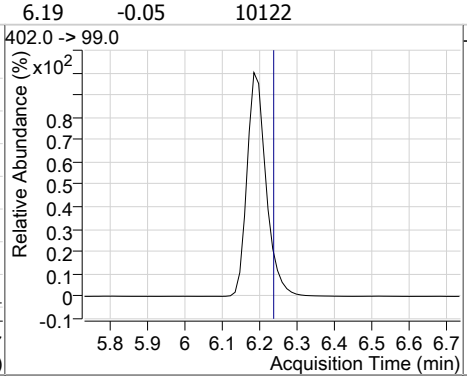


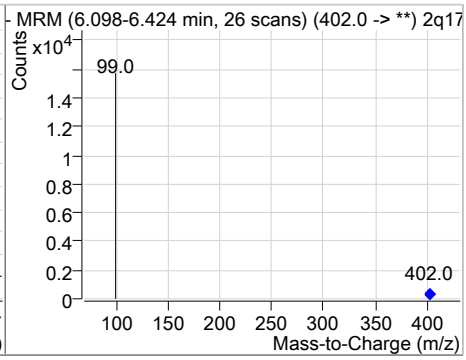




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	12.13	6.19	-0.05	10122				

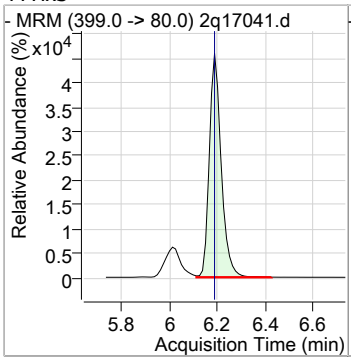


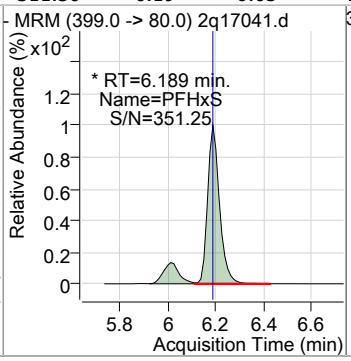


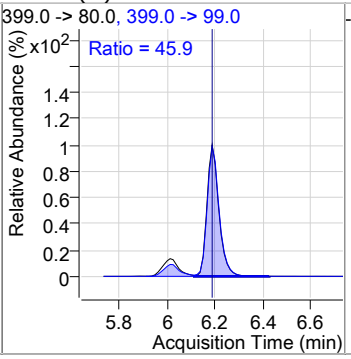


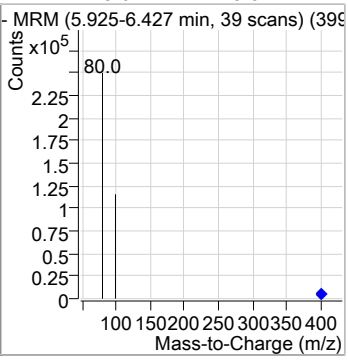
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	311.30	6.19	-0.05	186650 (m)	399.0 -> 99.0	45.9	18.0	78.0

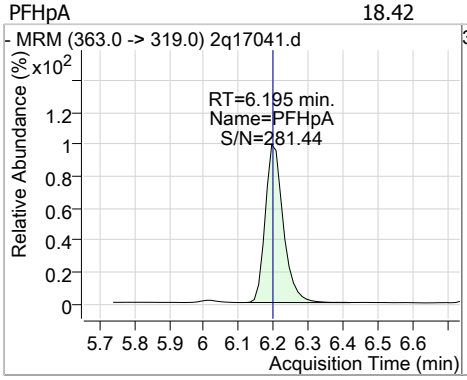


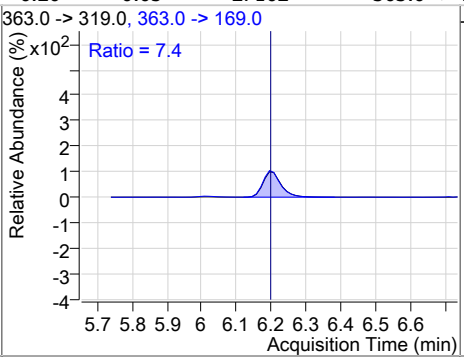


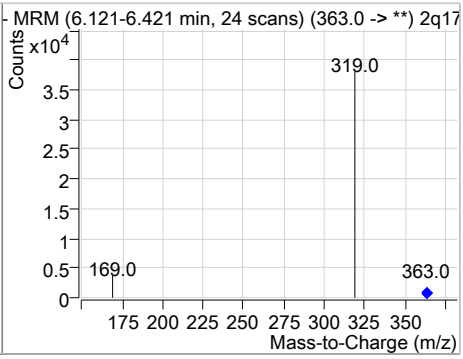




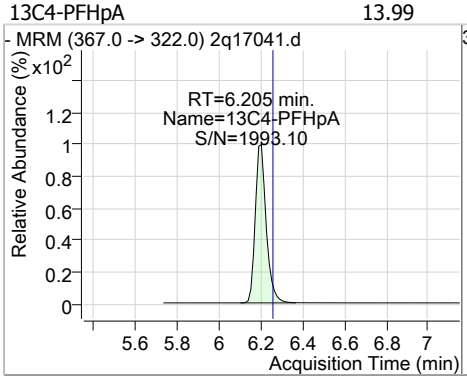
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	18.42	6.20	-0.05	27162	363.0 -> 169.0	7.4	0.0	37.2

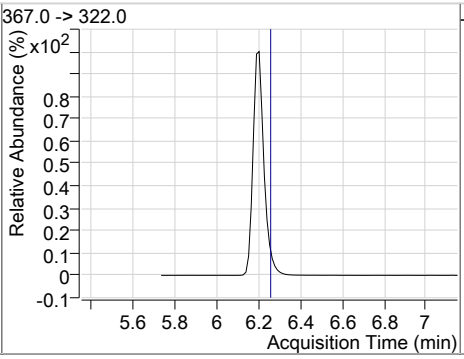


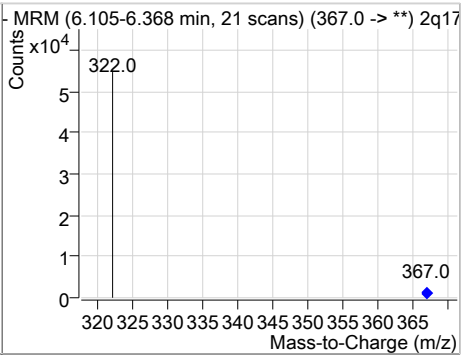




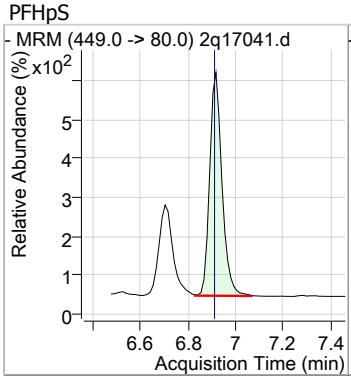
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	13.99	6.20	-0.05	39590				

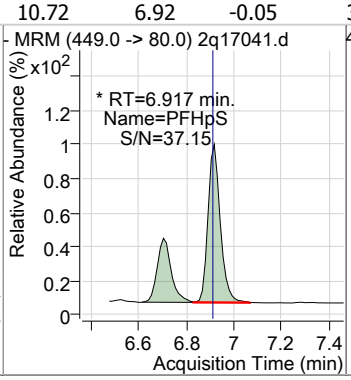


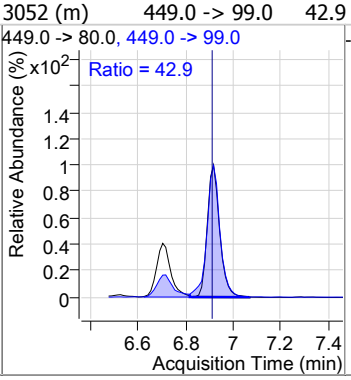


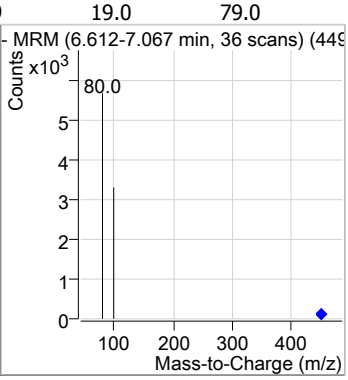


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	10.72	6.92	-0.05	3052 (m)	449.0 -> 99.0	42.9	19.0	79.0



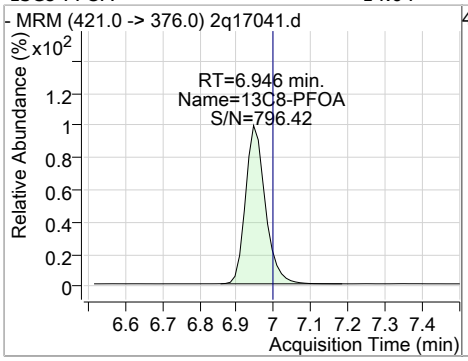


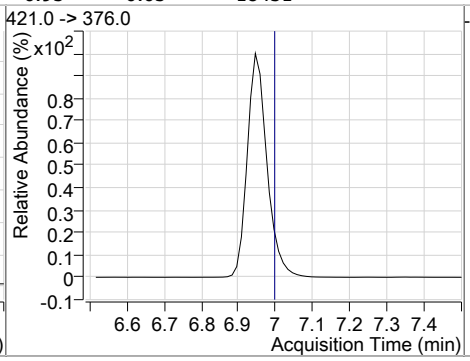


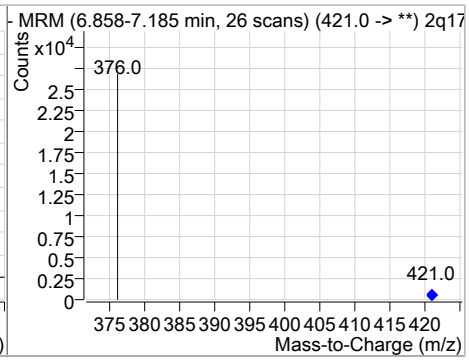


Perfluorinated Compounds by LC/MS/MS

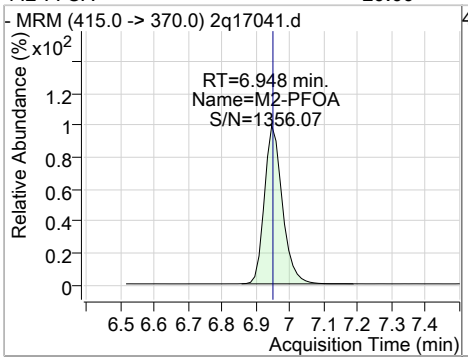
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	14.04	6.95	-0.05	18451				

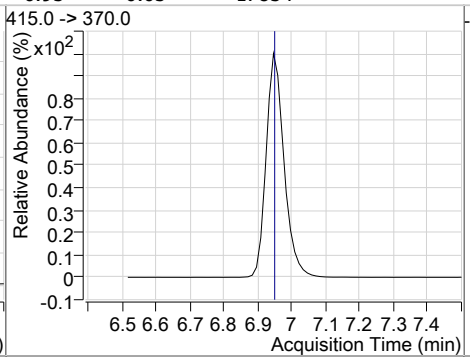


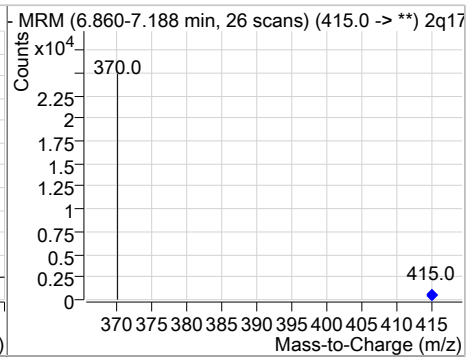




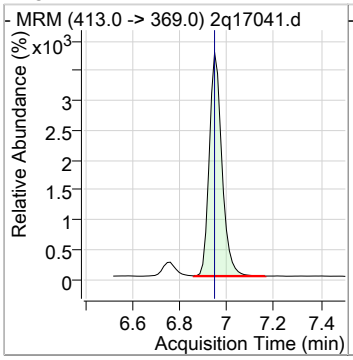
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.95	-0.05	17854				

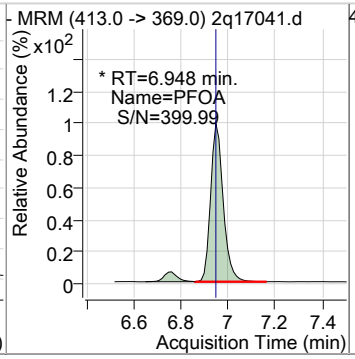


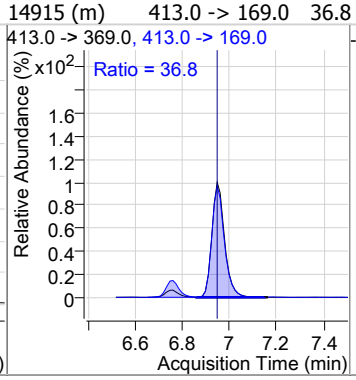


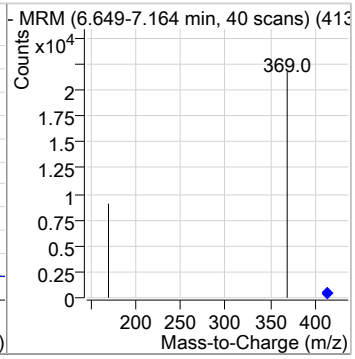


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	30.34	6.95	-0.05	14915 (m)	413.0 -> 169.0	36.8	5.0	65.0

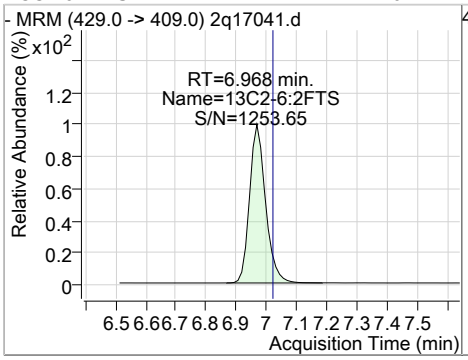


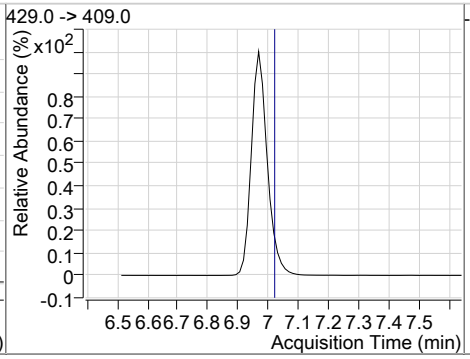


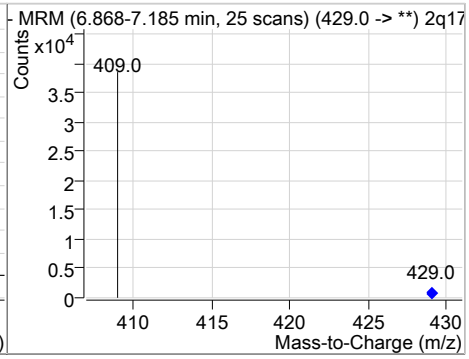




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	14.04	6.97	-0.05	27391				

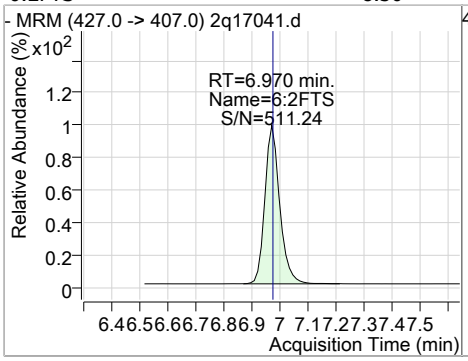


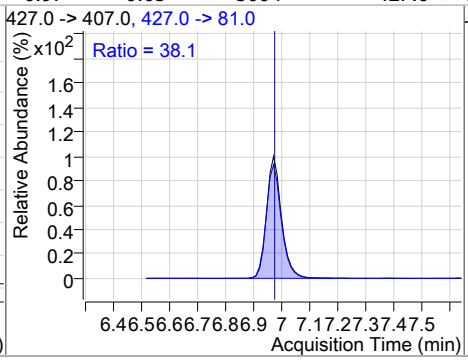


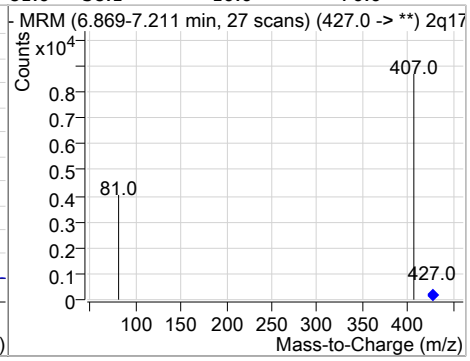


Perfluorinated Compounds by LC/MS/MS

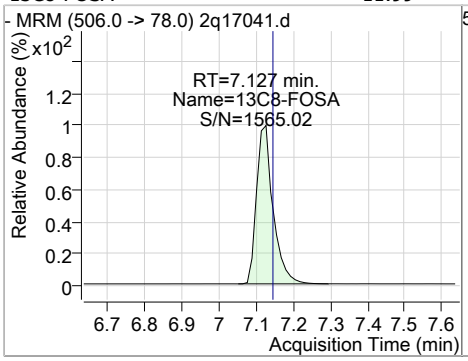
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	8.30	6.97	-0.05	5664	427.0 -> 81.0	38.1	10.0	70.0

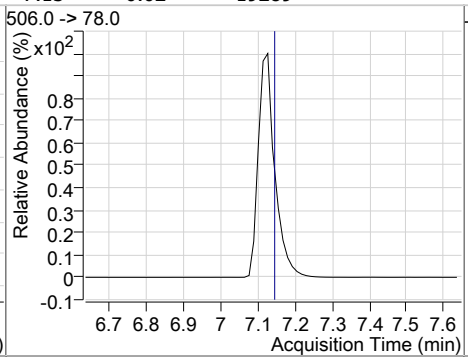


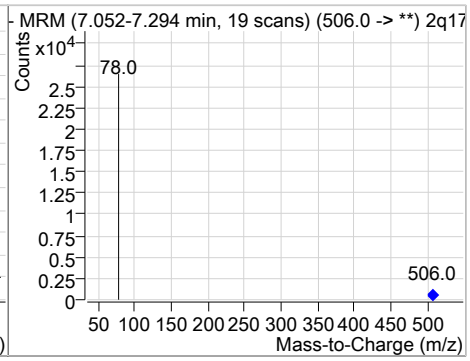




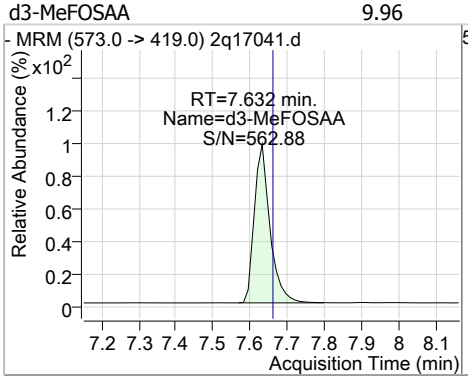
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	11.99	7.13	-0.02	19289				

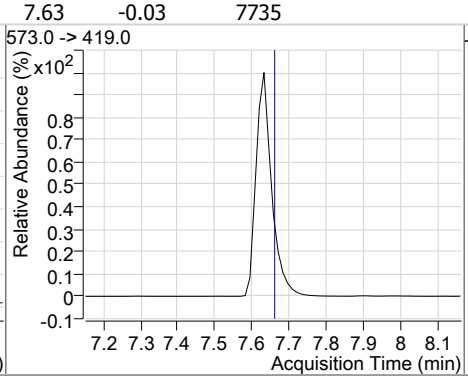


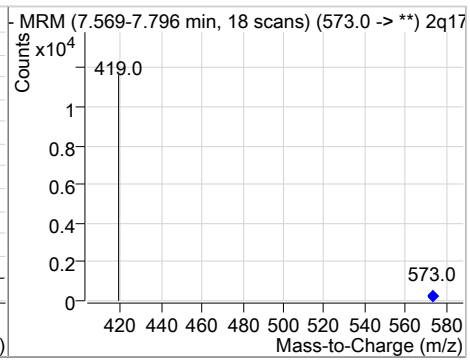




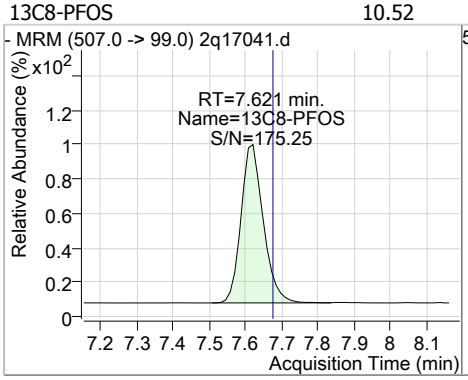
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	9.96	7.63	-0.03	7735				

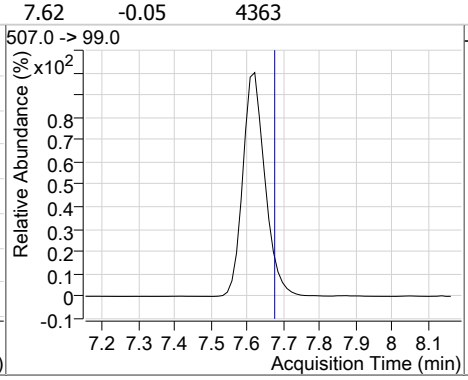


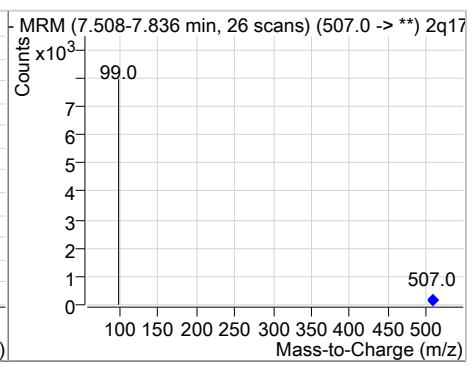




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	10.52	7.62	-0.05	4363				

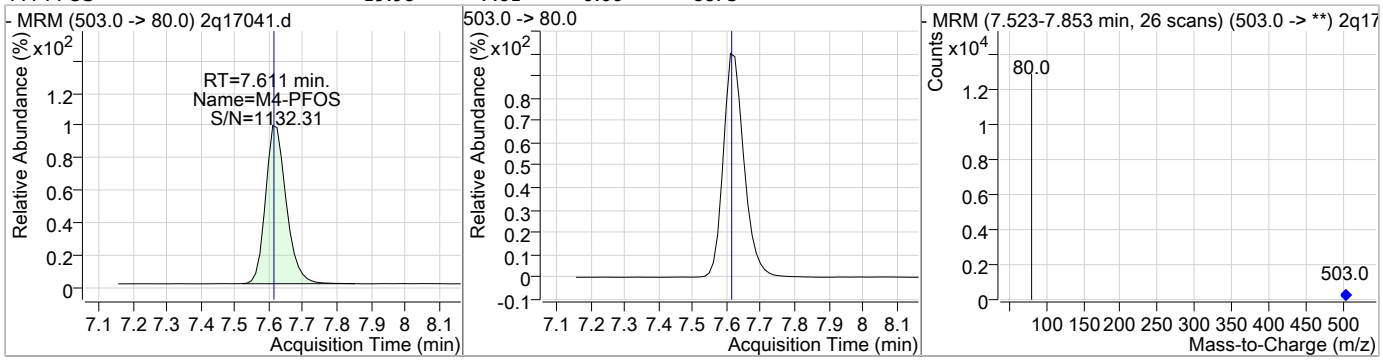




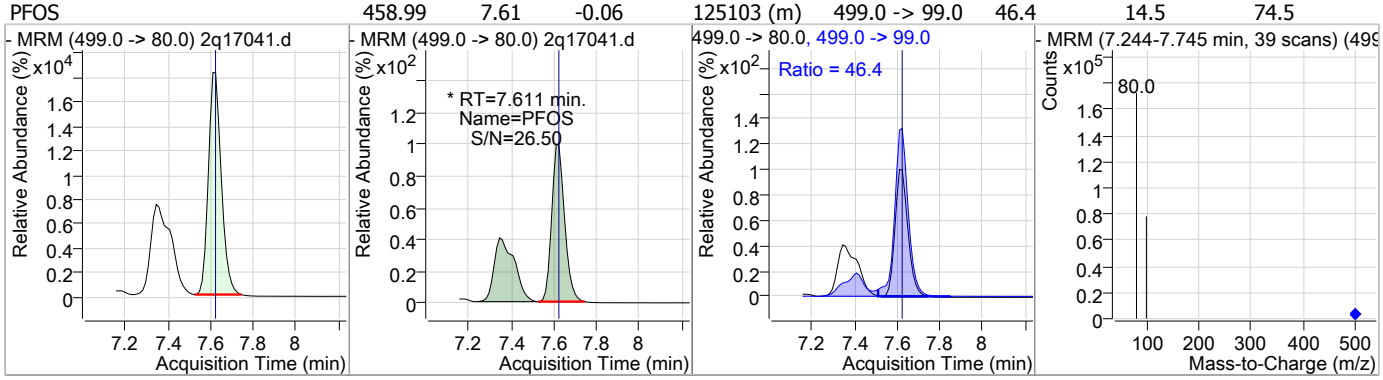


Perfluorinated Compounds by LC/MS/MS

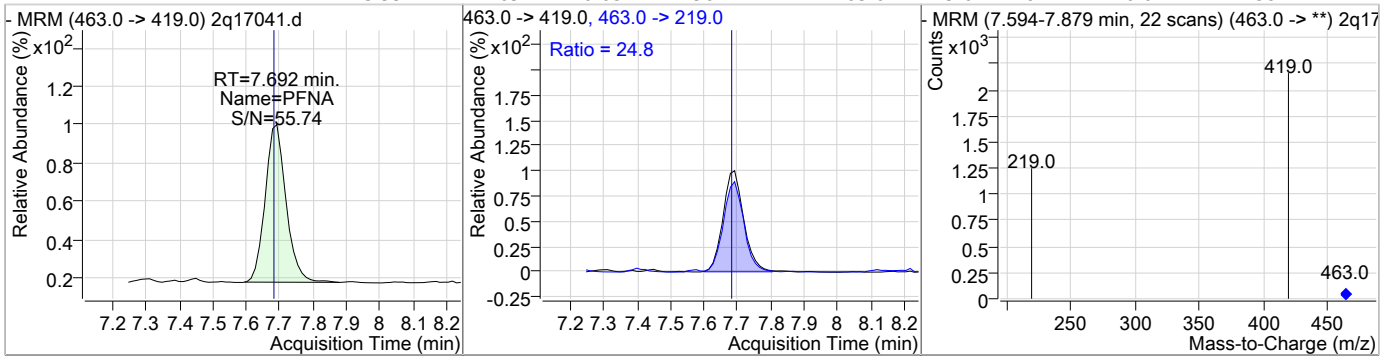
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	19.98	7.61	-0.06	8873				



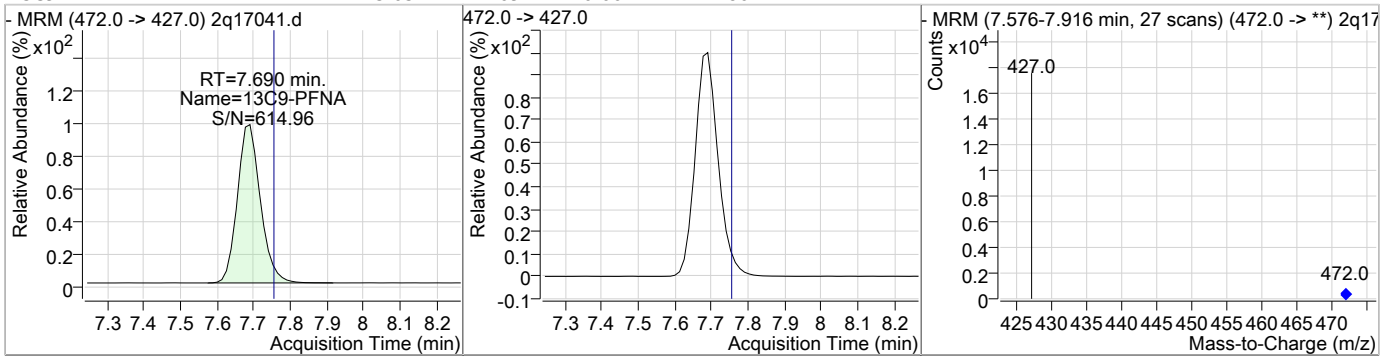
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	458.99	7.61	-0.06	125103 (m)	499.0 -> 99.0	46.4	14.5	74.5



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	3.99	7.69	-0.05	904	463.0 -> 219.0	24.8	0.0	58.4

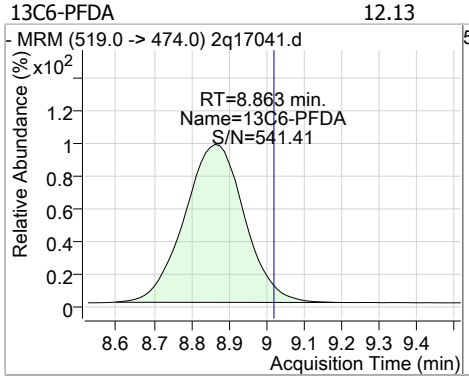


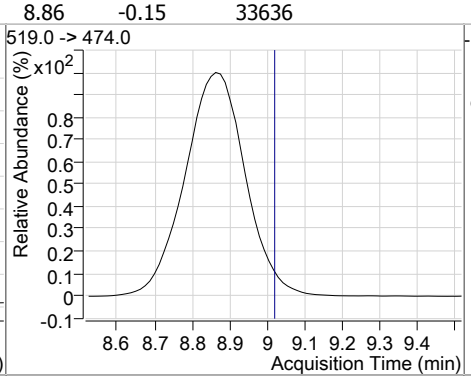
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	13.03	7.69	-0.06	11486				

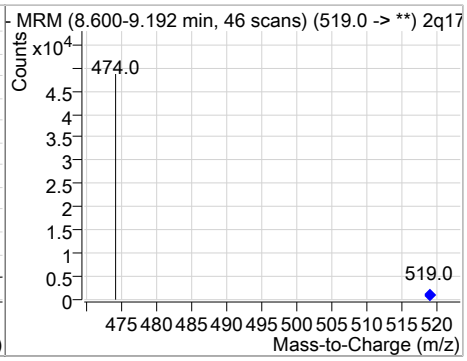


Perfluorinated Compounds by LC/MS/MS

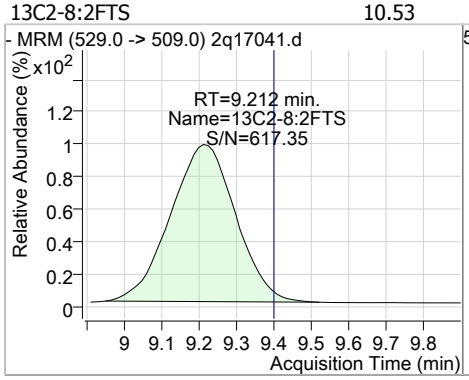
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	12.13	8.86	-0.15	33636				

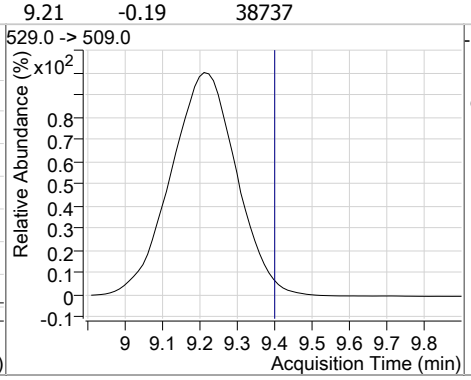


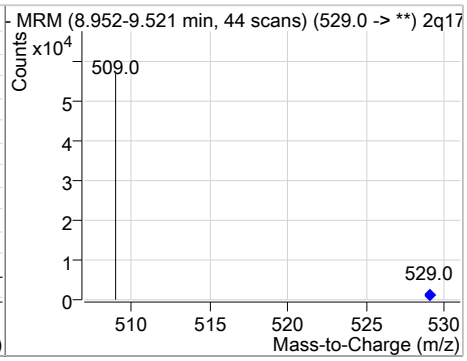




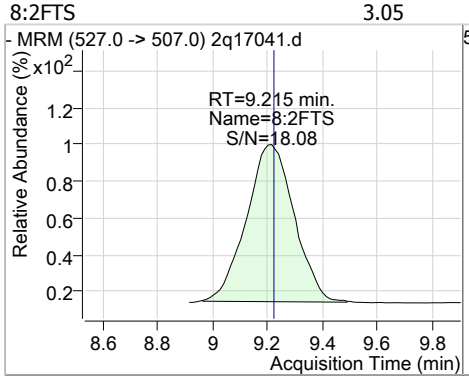
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	10.53	9.21	-0.19	38737				

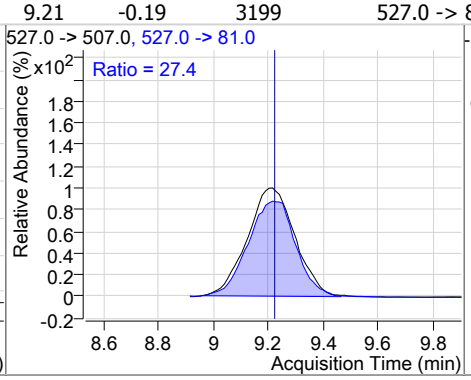


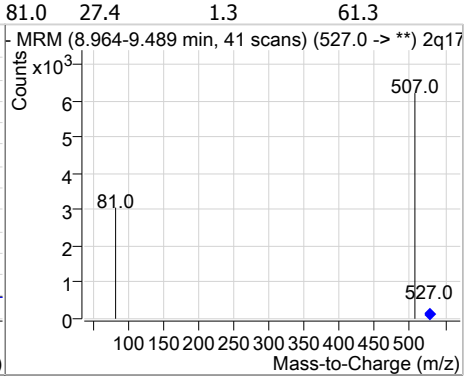




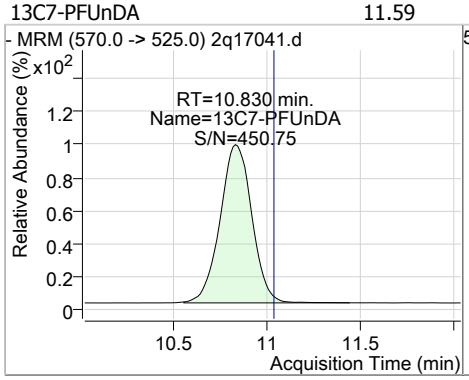
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	3.05	9.21	-0.19	3199	527.0 -> 81.0	27.4	1.3	61.3

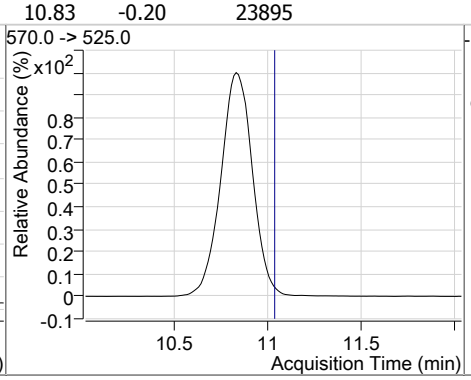


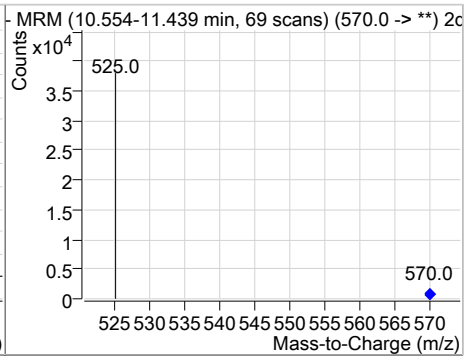




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	11.59	10.83	-0.20	23895				

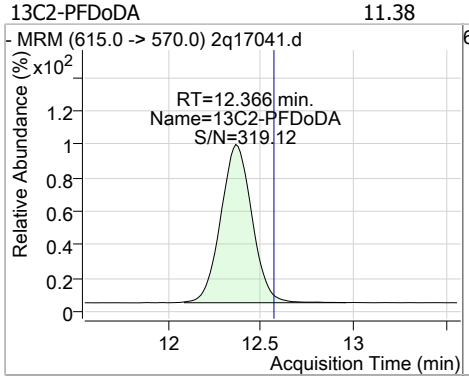


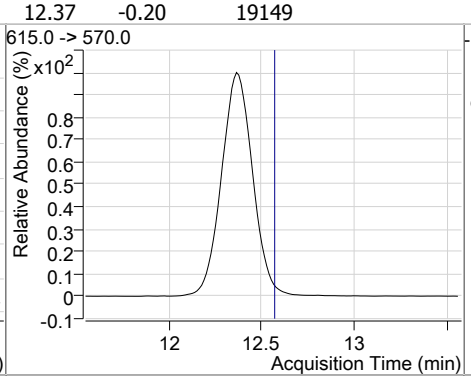


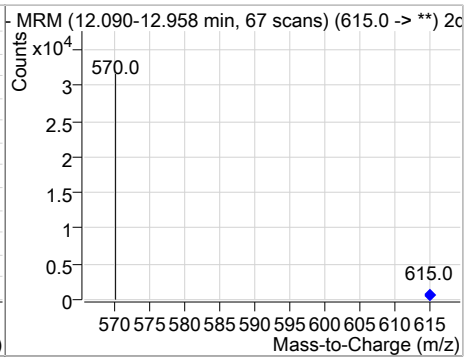


Perfluorinated Compounds by LC/MS/MS

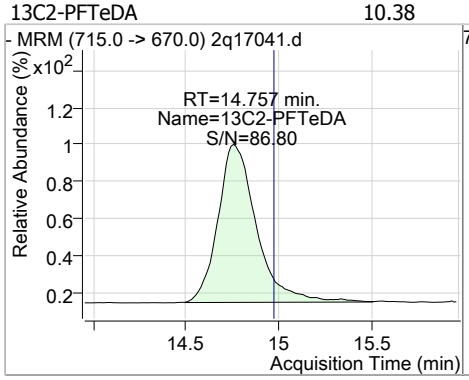
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	11.38	12.37	-0.20	19149				

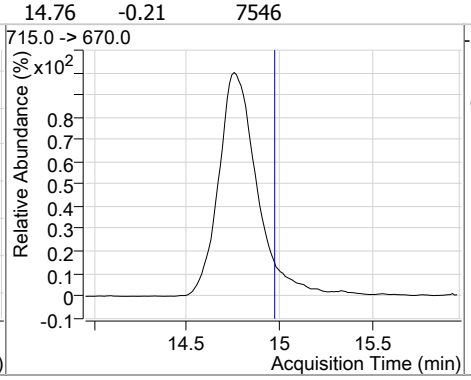


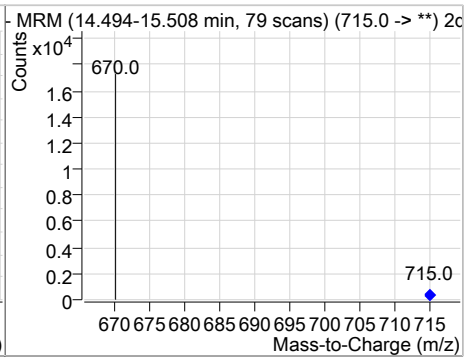




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.38	14.76	-0.21	7546				







Manual Integration Approval Summary

Sample Number: FA55430-6
Lab FileID: 2Q17041.D
Injection Time: 07/13/18 01:52
Method: EPA 537M QSM5.1 B-15
Analyst approved: 07/16/18 15:04 Natasha Gumtie
Supervisor approved: 07/17/18 11:23 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanesulfonic acid	2706-91-4		5.40	Split peak
Perfluorohexanesulfonic acid	355-46-4		6.19	Split peak
Perfluoroheptanesulfonic acid	375-92-8		6.92	Split peak
Perfluorooctanoic acid	335-67-1		6.95	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.61	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/17/18 11:23

Perfluorinated Compounds by LC/MS/MS

Data File : 2q17116.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/14/2018 4:54:27 AM
Sample Name : FA55430-6
Vial : Vial 44
DA Method File : PFC_ID_071318_S2Q296.quantmethod.xml
Batch Name : s2q296.batch.bin
Sample Information : op70810,S2Q296,130,,,1.0,10,water

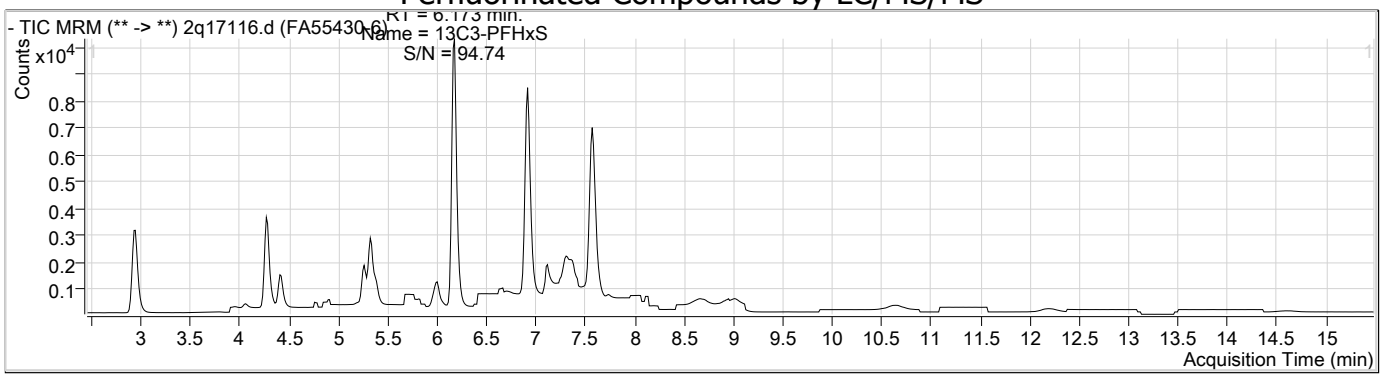
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.921	415.0 -> 370.0	20497	20.00	µg/L	0.000
13C4-PFOS	7.573	503.0 -> 80.0	10233	20.00	µg/L	0.000
M4-PFBA	2.941	217.0 -> 172.0	11390	20.00	µg/L	0.000
M5-PFPeA	4.275	268.0 -> 223.0	5385	20.00	µg/L	-0.013
M5-PFHxA	5.328	318.0 -> 273.0	4814	20.00	µg/L	-0.013
M4-PFHpA	6.179	367.0 -> 322.0	4641	20.00	µg/L	0.000
M8-PFOA	6.920	421.0 -> 376.0	2152	20.00	µg/L	0.000
M9-PFNA	7.640	472.0 -> 427.0	1228	20.00	µg/L	0.013
M6-PFDA	8.666	519.0 -> 474.0	2265	20.00	µg/L	0.038
M7-PFUnDA	10.641	570.0 -> 525.0	1866	20.00	µg/L	0.038
M2-PFDoDA	12.190	615.0 -> 570.0	1423	20.00	µg/L	0.025
M2-PFTeDA	14.581	715.0 -> 670.0	567	20.00	µg/L	0.013
M8-FOSA	7.117	506.0 -> 78.0	1902	20.00	µg/L	0.000
M3-PFBS	4.418	302.0 -> 99.0	1650	20.00	µg/L	0.000
M3-PFHxS	6.173	402.0 -> 99.0	1213	20.00	µg/L	0.000
M8-PFOS	7.571	507.0 -> 99.0	533	20.00	µg/L	0.000
M2-4:2FTS	5.260	329.0 -> 309.0	4932	20.00	µg/L	0.000
M2-6:2FTS	6.930	429.0 -> 409.0	3469	20.00	µg/L	0.000
M2-8:2FTS	9.010	529.0 -> 509.0	3139	20.00	µg/L	0.038
M3-MeFOSAA	7.607	573.0 -> 419.0	929	20.00	µg/L	-0.013
System Monitoring Compounds						
13C2-4:2FTS	5.260	329.0 -> 309.0	4933	1.42	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 7.1%		
13C2-6:2FTS	6.930	429.0 -> 409.0	3468	1.32	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 6.6%		
13C2-8:2FTS	9.010	529.0 -> 509.0	3126	0.98	µg/L	0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 4.9%		
13C2-PFDoDA	12.190	615.0 -> 570.0	1435	1.01	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 5.1%		
13C2-PFTeDA	14.581	715.0 -> 670.0	569	0.93	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 4.7%		
13C3-PFBS	4.418	302.0 -> 99.0	1652	1.50	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 7.5%		
13C3-PFHxS	6.173	402.0 -> 99.0	1211	1.27	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 6.3%		
13C4-PFBA	2.941	217.0 -> 172.0	11364	1.52	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 7.6%		
13C4-PFHpA	6.179	367.0 -> 322.0	4652	1.46	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 7.3%		
13C5-PFHxA	5.328	318.0 -> 273.0	4822	1.44	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 7.2%		
13C5-PFPeA	4.275	268.0 -> 223.0	5388	1.46	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 7.3%		
13C6-PFDA	8.666	519.0 -> 474.0	2270	1.02	µg/L	0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 5.1%		

Perfluorinated Compounds by LC/MS/MS

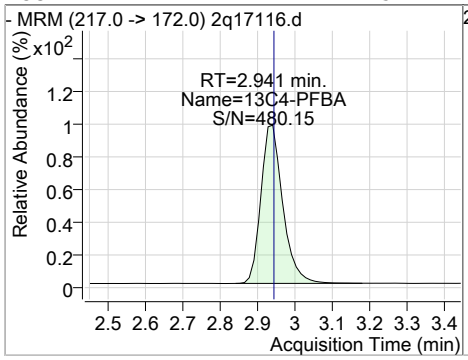
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.641	570.0 -> 525.0	1872	1.05	µg/L		0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 5.2%			
13C8-FOSA	7.117	506.0 -> 78.0	1901	1.06	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 5.3%			
13C8-PFOA	6.920	421.0 -> 376.0	2148	1.30	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 6.5%			
13C8-PFOS	7.571	507.0 -> 99.0	532	1.14	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 5.7%			
13C9-PFNA	7.640	472.0 -> 427.0	1229	1.21	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 6.0%			
d3-MeFOSAA	7.607	573.0 -> 419.0	930	1.15	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 5.7%			
M2-PFOA	6.921	415.0 -> 370.0	20496	2.00	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.0%			
M4-PFOS	7.573	503.0 -> 80.0	10254	2.00	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.0%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	6.944	427.0 -> 407.0	707	0.79	µg/L		100
8:2FTS	9.025	527.0 -> 507.0	267	0.30	µg/L		43
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	2.937	213.0 -> 169.0	1076	1.20	µg/L		100
PFBS	4.409	299.0 -> 80.0	1935	1.80	µg/L		99
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	6.182	363.0 -> 319.0	3172	1.92	µg/L	m	99
PFHpS	6.878	449.0 -> 80.0	366	1.01	µg/L	m	100
PFHxA	5.330	313.0 -> 269.0	3049	3.92	µg/L		99
PFHxS	6.176	399.0 -> 80.0	20801	29.73	µg/L	m	97
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	6.922	413.0 -> 369.0	1588	2.88	µg/L	m	95
PFOS	7.574	499.0 -> 80.0	13545	40.93	µg/L	m	98
PFPeA	4.278	263.0 -> 219.0	7025	2.94	µg/L	m	100
PFPeS	5.383	349.0 -> 80.0	1599	2.25	µg/L	m	95
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			

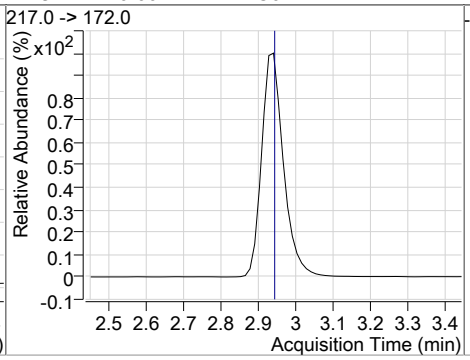
 # = Qualifier out of range, m = manually integrated, + = Area summed

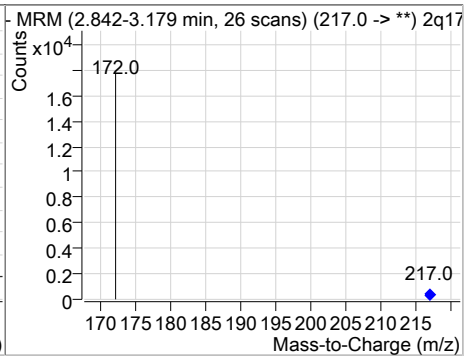
Perfluorinated Compounds by LC/MS/MS



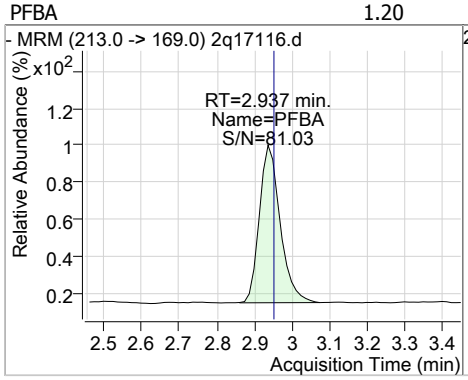
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	1.52	2.94	0.00	11364				

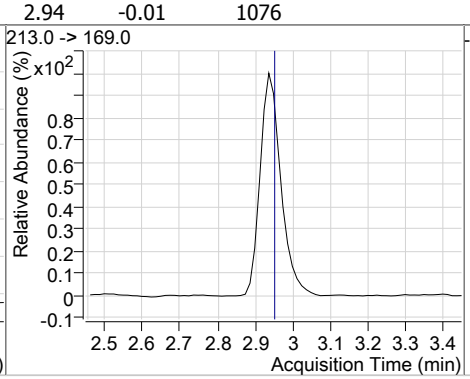


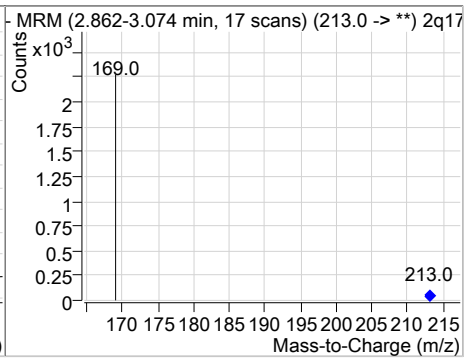




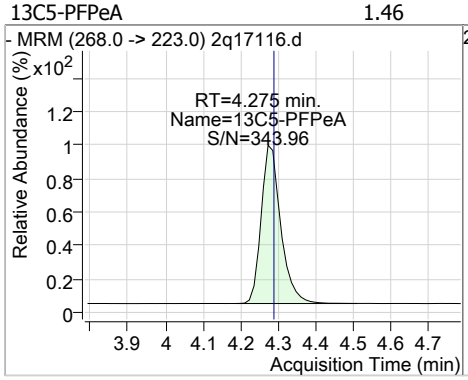
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.20	2.94	-0.01	1076				

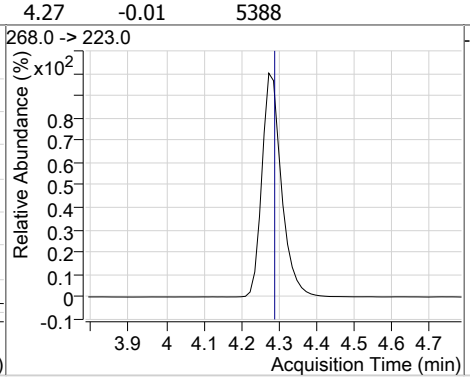


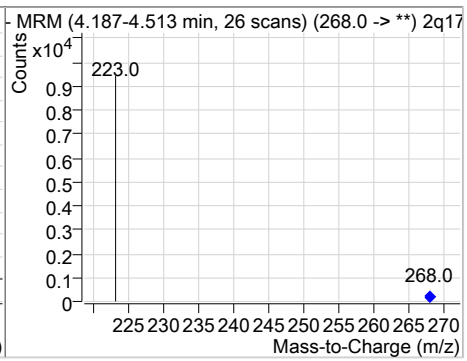




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	1.46	4.27	-0.01	5388				

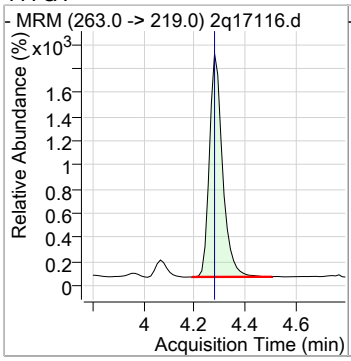


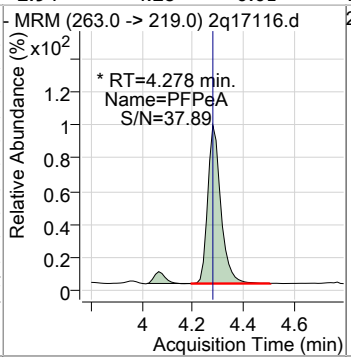


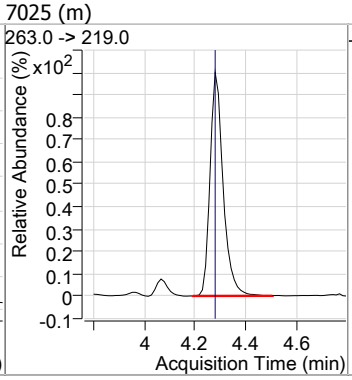


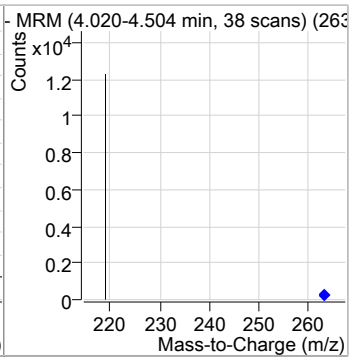
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	2.94	4.28	-0.01	7025 (m)				

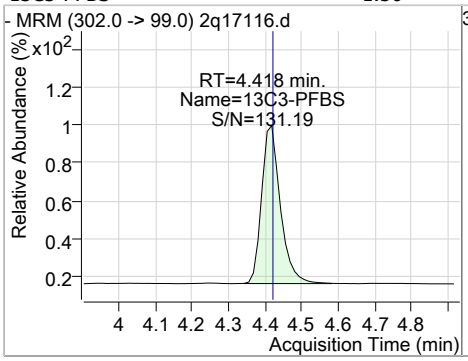


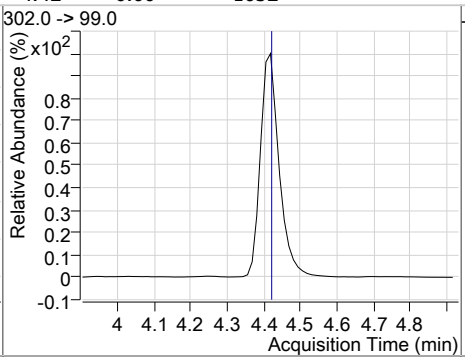


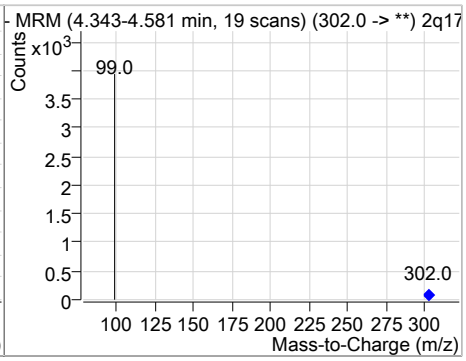




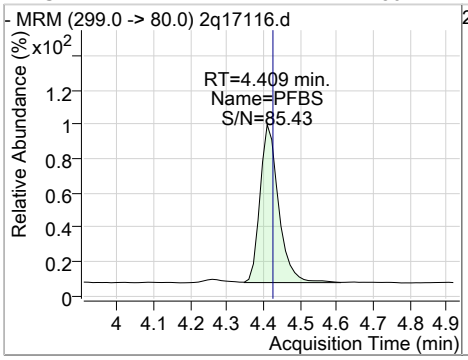
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	1.50	4.42	0.00	1652				

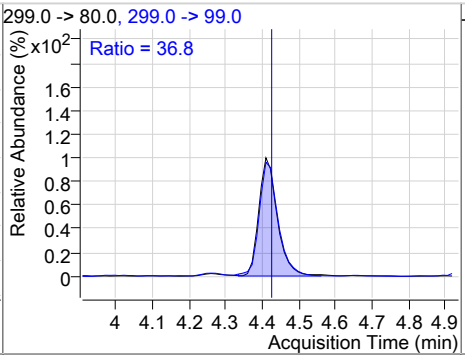


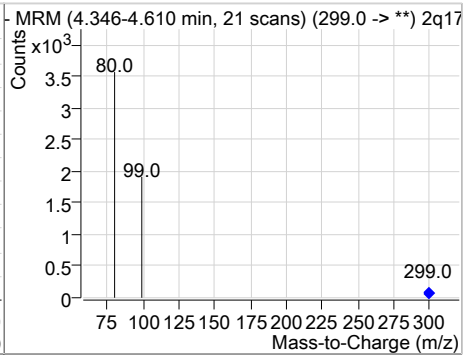




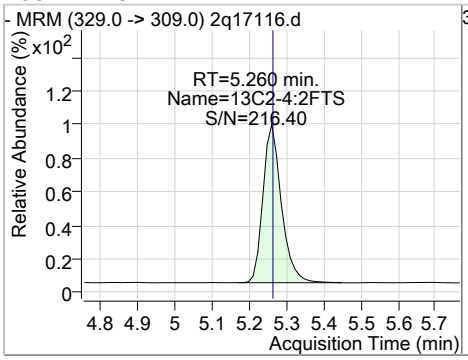
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.80	4.41	-0.01	1935	299.0 -> 99.0	36.8	7.4	67.4

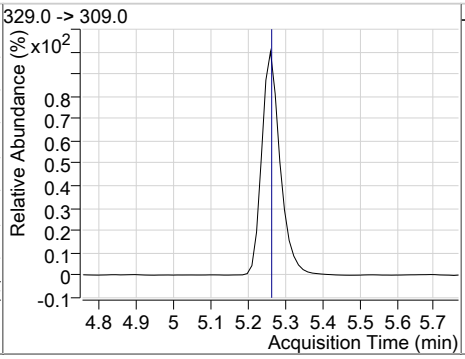


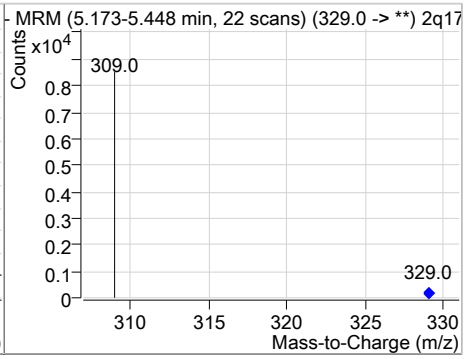




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	1.42	5.26	0.00	4933				

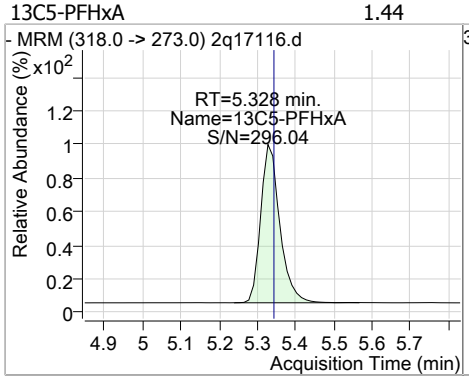


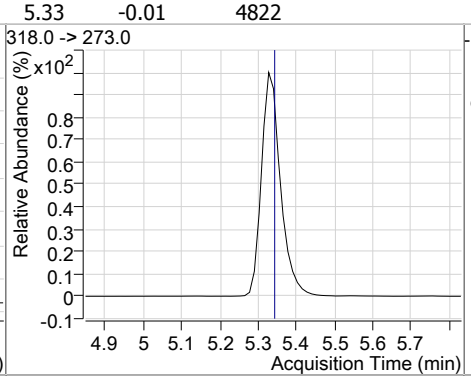


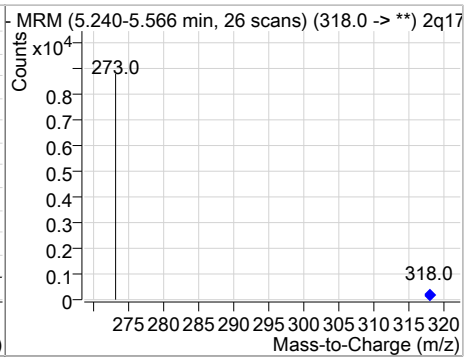


Perfluorinated Compounds by LC/MS/MS

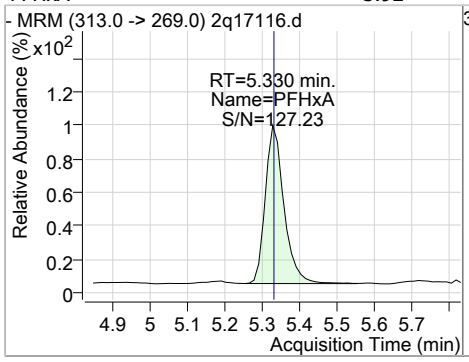
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	1.44	5.33	-0.01	4822				

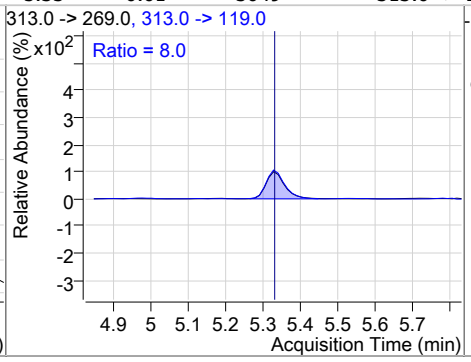


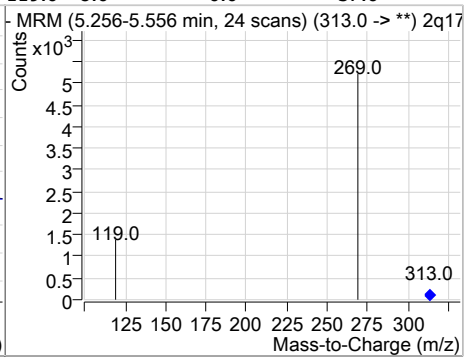




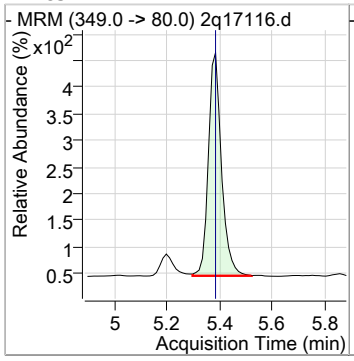
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	3.92	5.33	-0.01	3049	313.0 -> 119.0	8.0	0.0	37.6

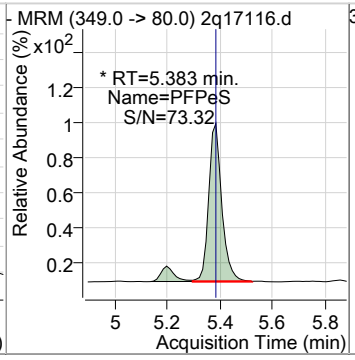


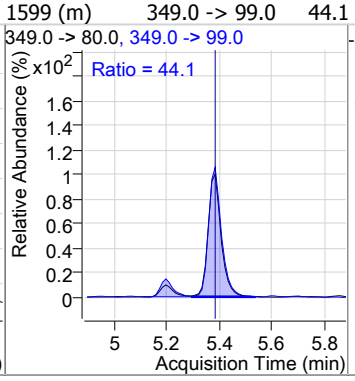


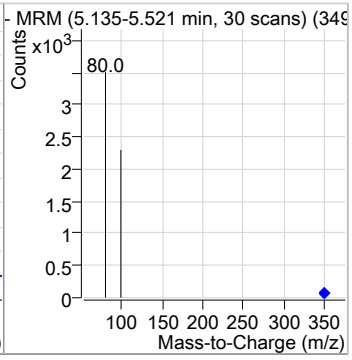


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.25	5.38	0.00	1599 (m)	349.0 -> 99.0	44.1	10.8	70.8

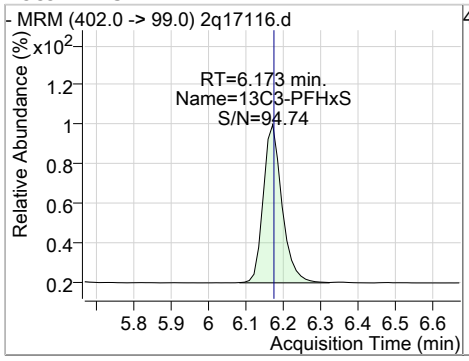


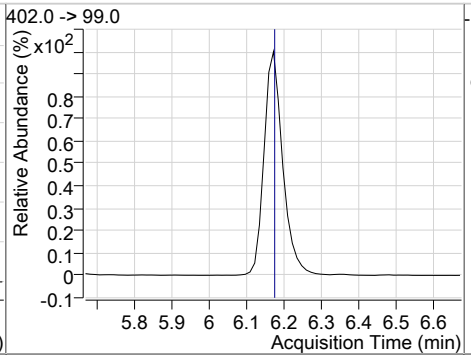


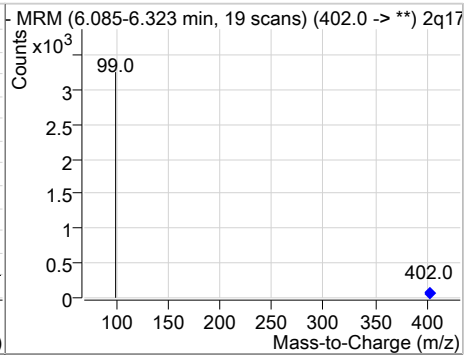




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	1.27	6.17	0.00	1211				

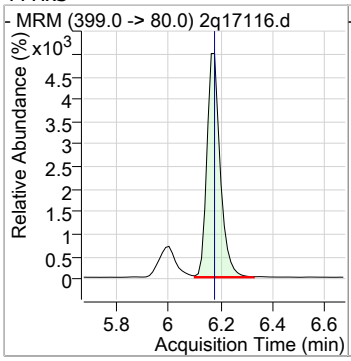


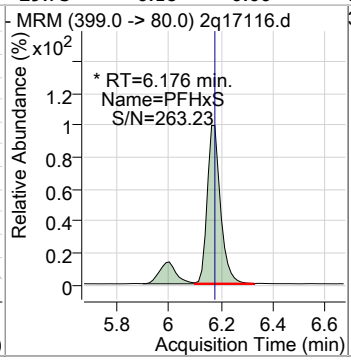


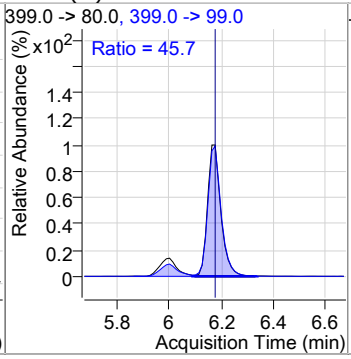


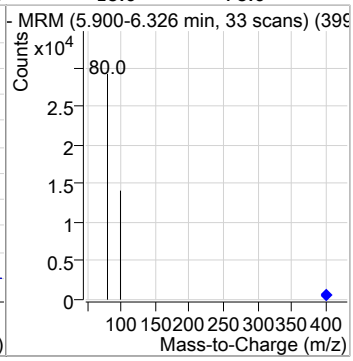
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	29.73	6.18	0.00	20801 (m)	399.0 -> 99.0	45.7	18.0	78.0

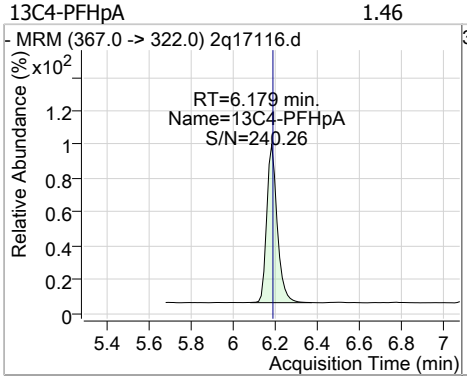


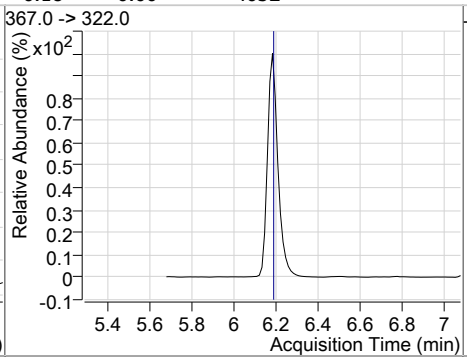


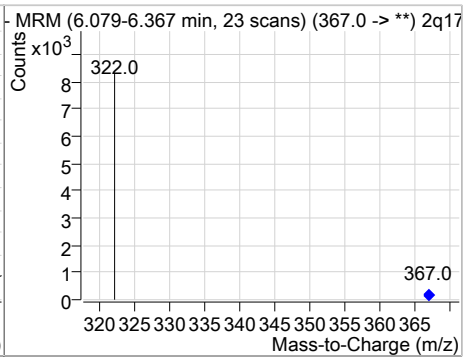




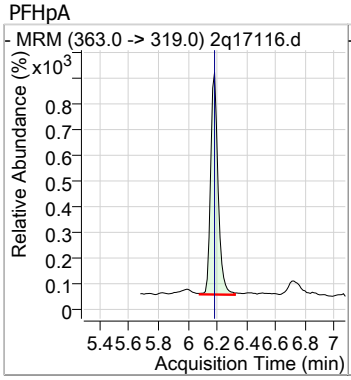
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	1.46	6.18	0.00	4652				

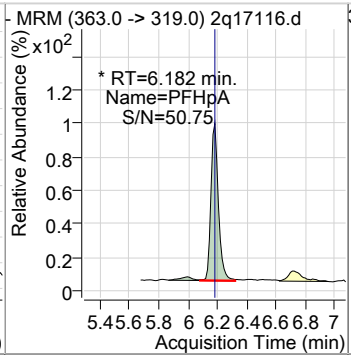


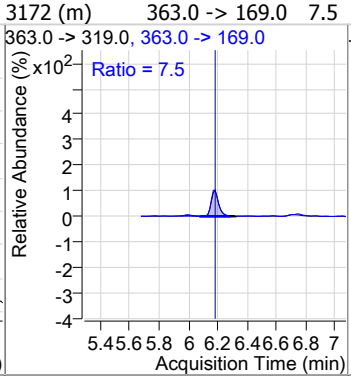


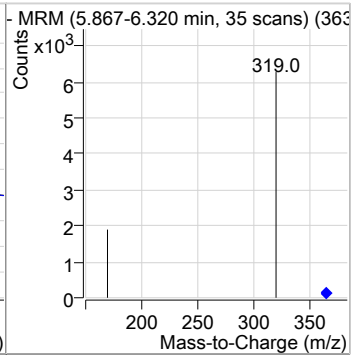


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.92	6.18	0.00	3172 (m)	363.0 -> 169.0	7.5	0.0	37.2

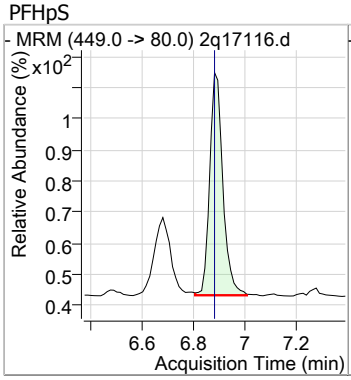


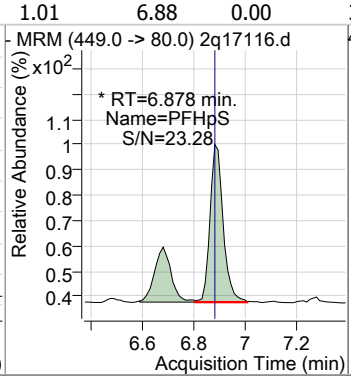


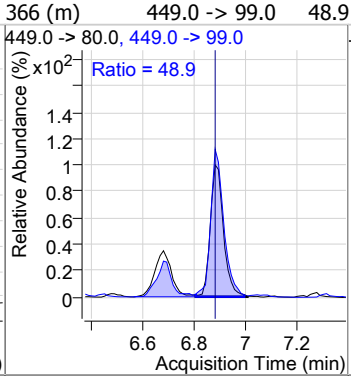


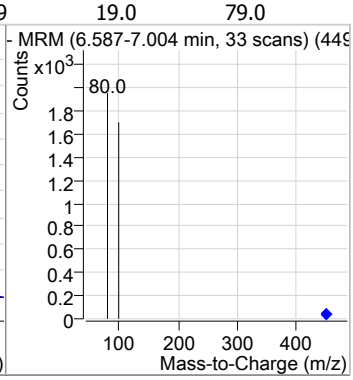


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.01	6.88	0.00	366 (m)	449.0 -> 99.0	48.9	19.0	79.0



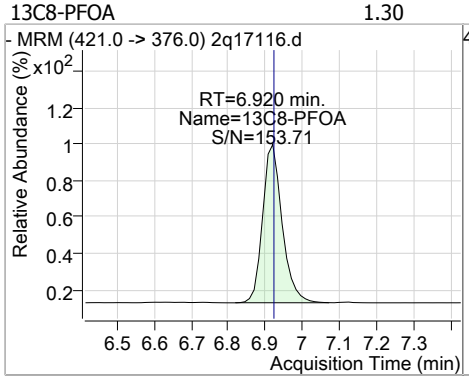


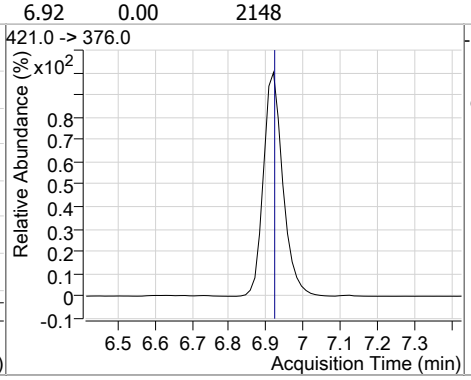


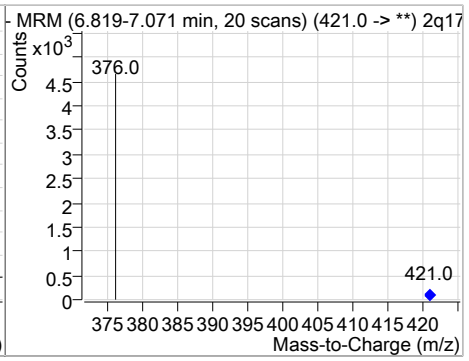


Perfluorinated Compounds by LC/MS/MS

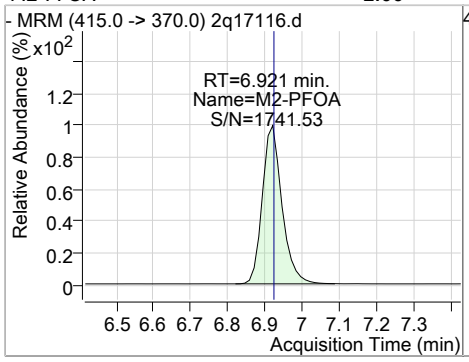
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	1.30	6.92	0.00	2148				

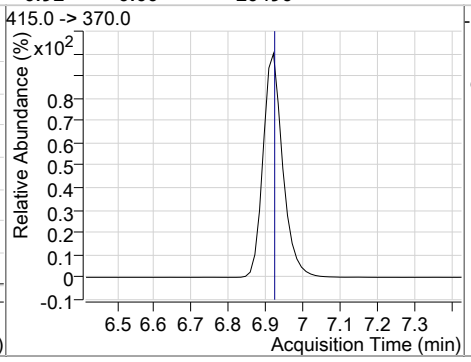


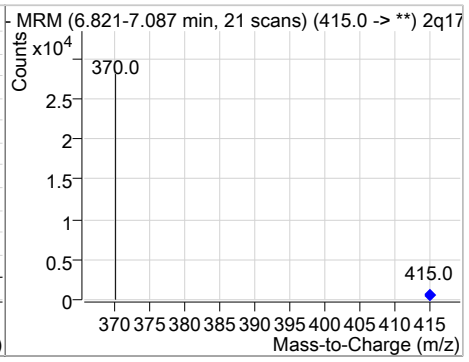




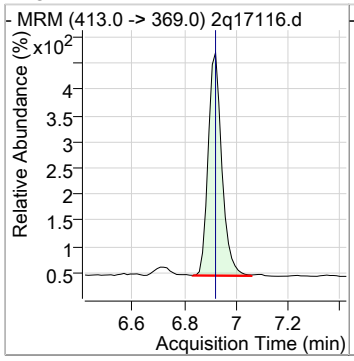
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	2.00	6.92	0.00	20496				

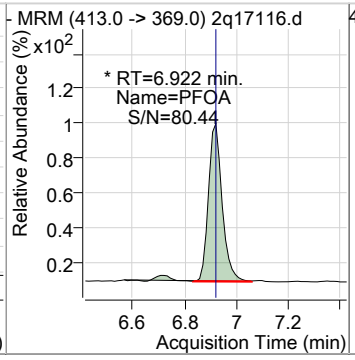


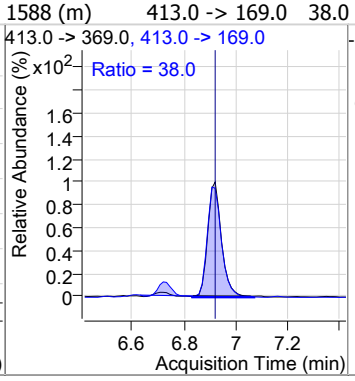


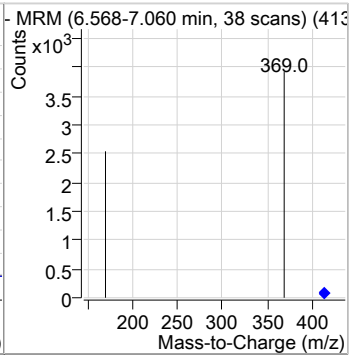


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.88	6.92	0.00	1588 (m)	413.0 -> 169.0	38.0	5.0	65.0

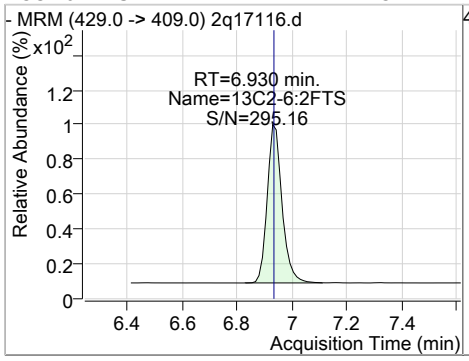


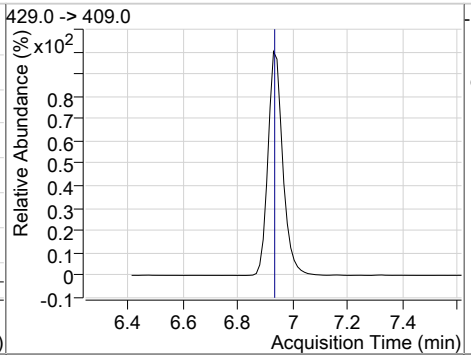


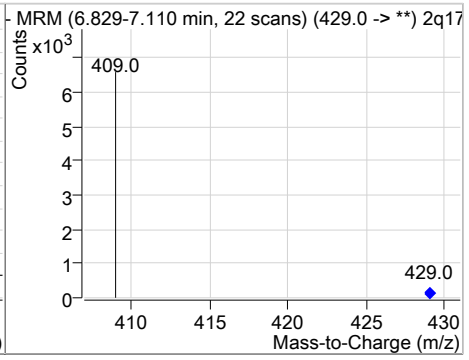




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	1.32	6.93	0.00	3468				

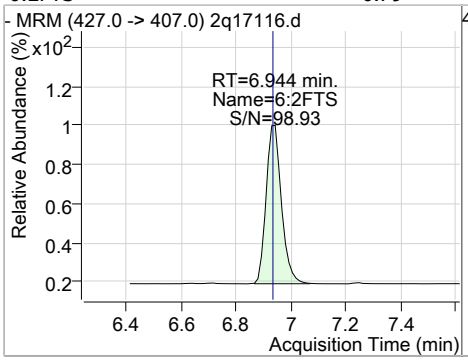


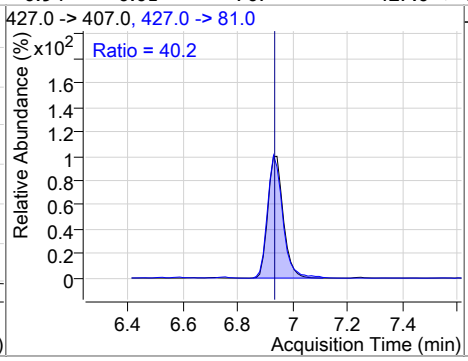


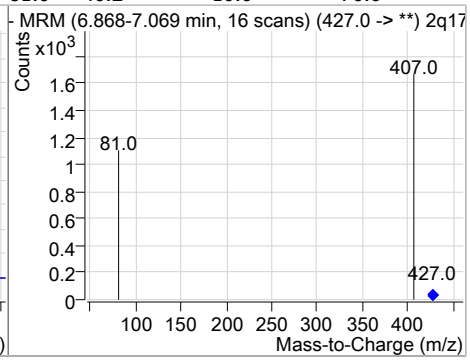


Perfluorinated Compounds by LC/MS/MS

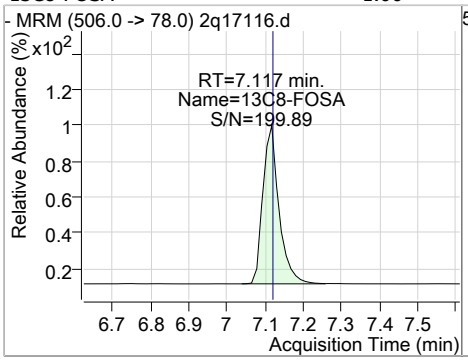
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.79	6.94	0.01	707	427.0 -> 81.0	40.2	10.0	70.0

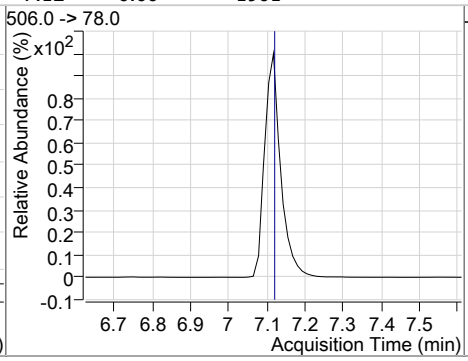


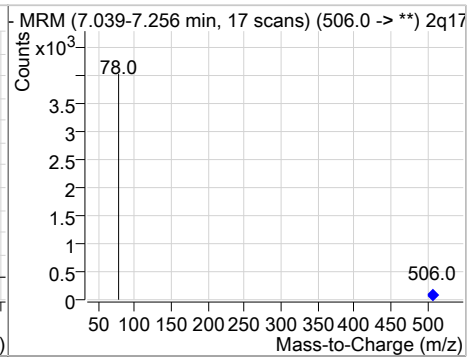




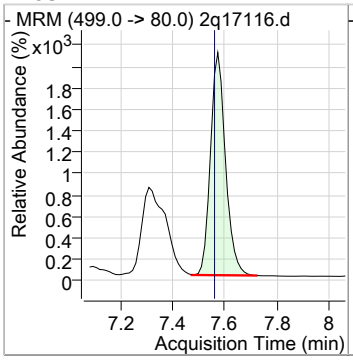
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	1.06	7.12	0.00	1901				

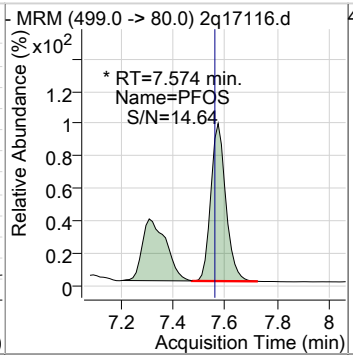


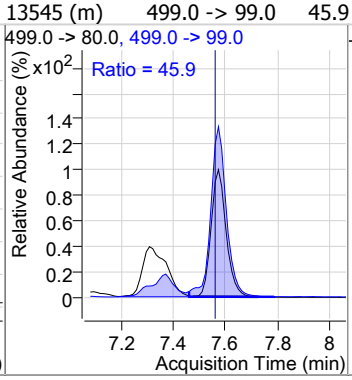


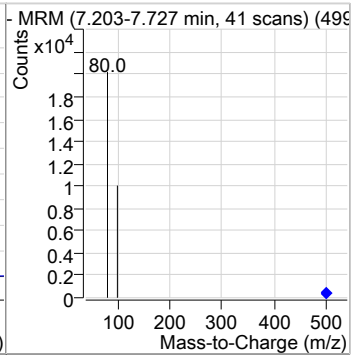


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	40.93	7.57	0.01	13545 (m)	499.0 -> 99.0	45.9	14.5	74.5

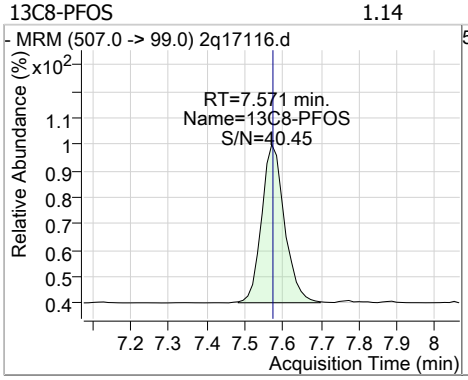


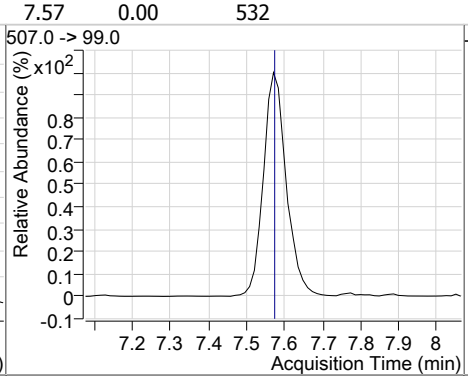


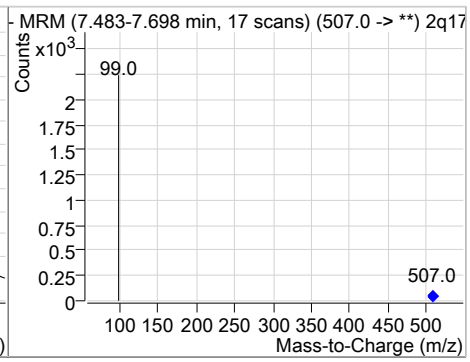




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	1.14	7.57	0.00	532				

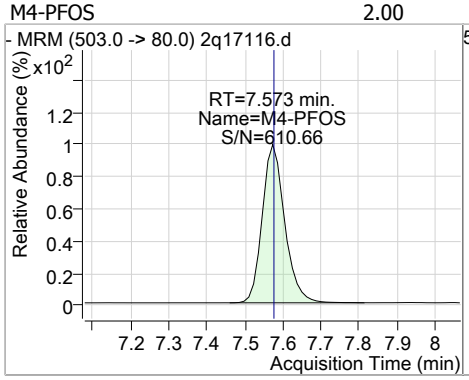


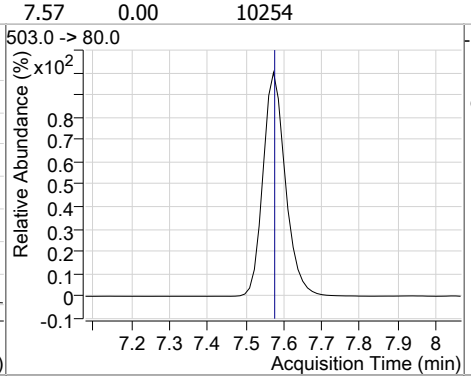


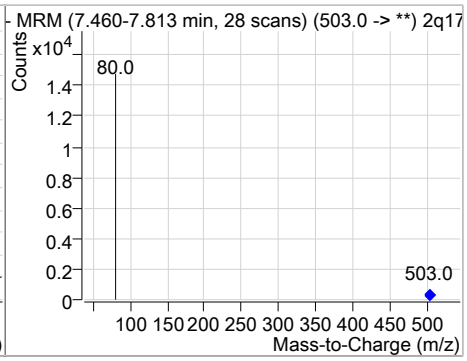


Perfluorinated Compounds by LC/MS/MS

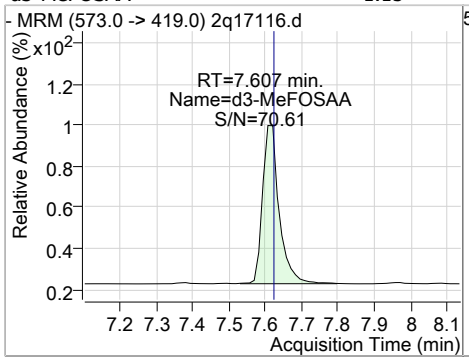
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	2.00	7.57	0.00	10254				

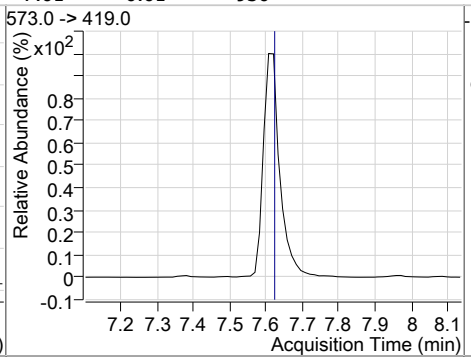


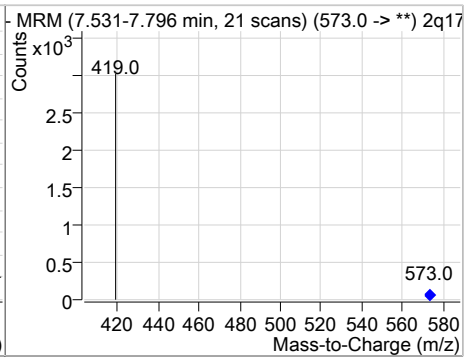




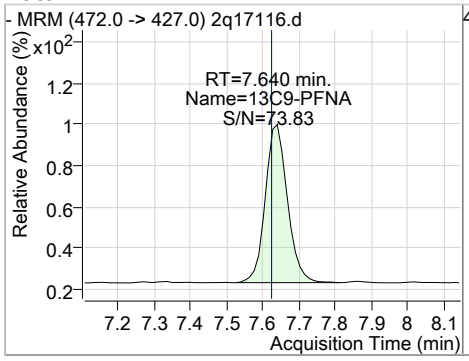
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	1.15	7.61	-0.01	930				

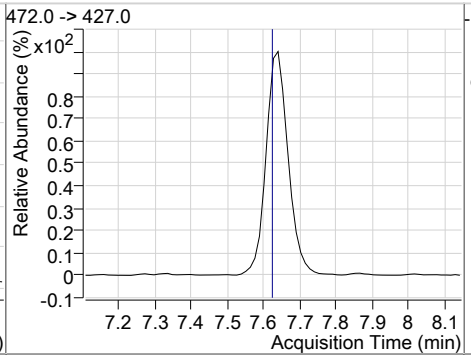


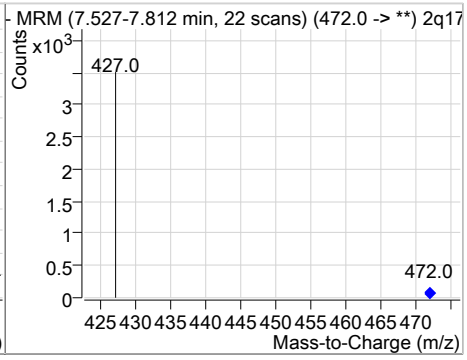




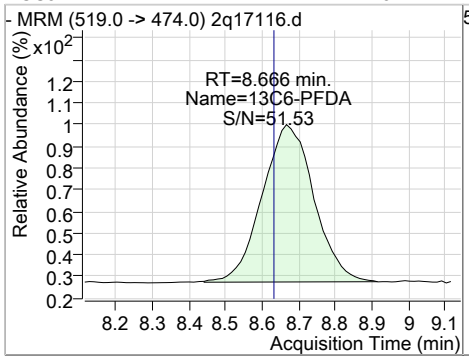
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.21	7.64	0.01	1229				

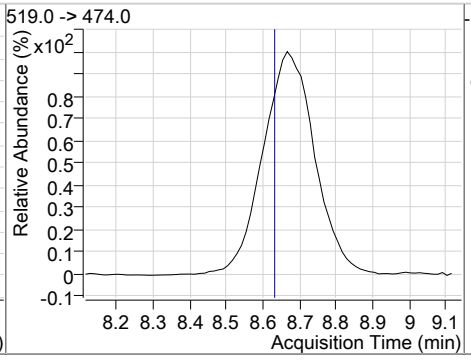


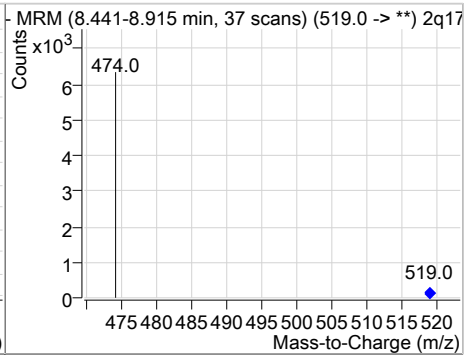




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.02	8.67	0.04	2270				

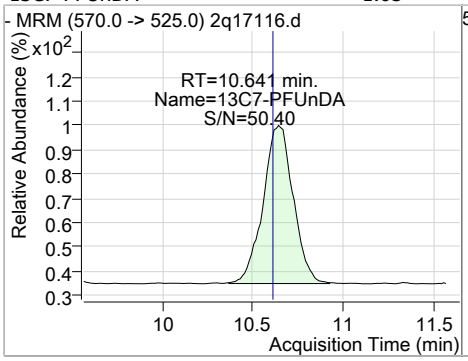


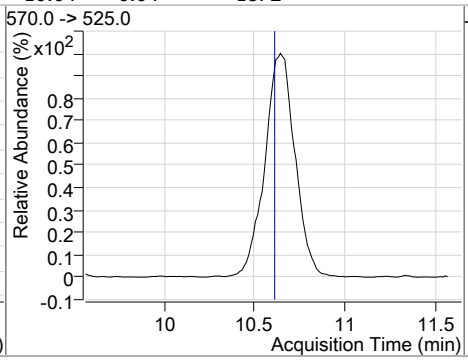


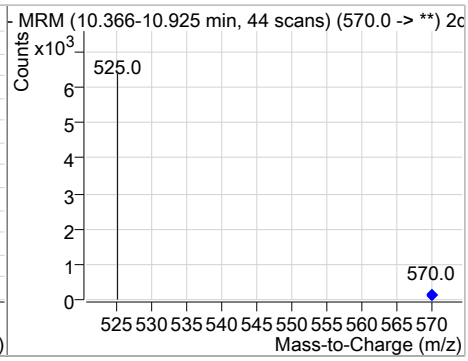


Perfluorinated Compounds by LC/MS/MS

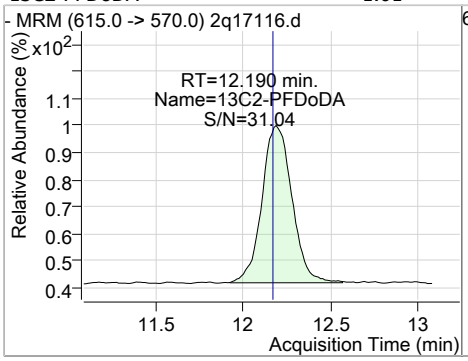
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.05	10.64	0.04	1872				

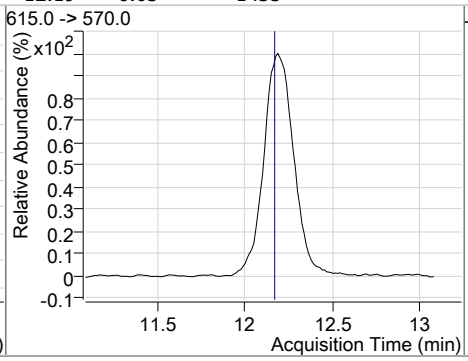


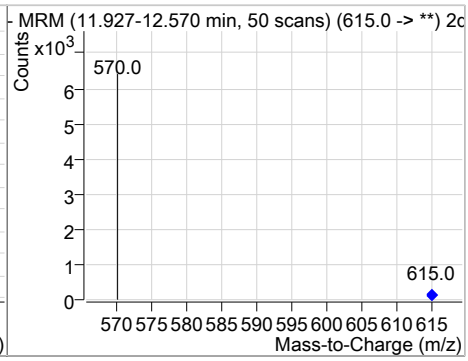




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.01	12.19	0.03	1435				







Manual Integration Approval Summary

Sample Number: FA55430-6
Lab FileID: 2Q17116.D
Injection Time: 07/14/18 04:54
Method: EPA 537M QSM5.1 B-15
Analyst approved: 07/16/18 15:04 Natasha Gumtie
Supervisor approved: 07/17/18 11:23 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanoic acid	2706-90-3		4.28	Split peak
Perfluoropentanesulfonic acid	2706-91-4		5.38	Split peak
Perfluorohexanesulfonic acid	355-46-4		6.18	Split peak
Perfluoroheptanoic acid	375-85-9		6.18	Split peak
Perfluoroheptanesulfonic acid	375-92-8		6.88	Split peak
Perfluorooctanoic acid	335-67-1		6.92	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.57	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/17/18 11:23

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16597.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/6/2018 3:22:48 AM
Sample Name : fa55430-7
Vial : Vial 30
DA Method File : PFC_ID_070518_S2Q291.quantmethod.xml
Batch Name : s2q291.batch.bin
Sample Information : op70743,S2Q291,120,,,1.0,1,water

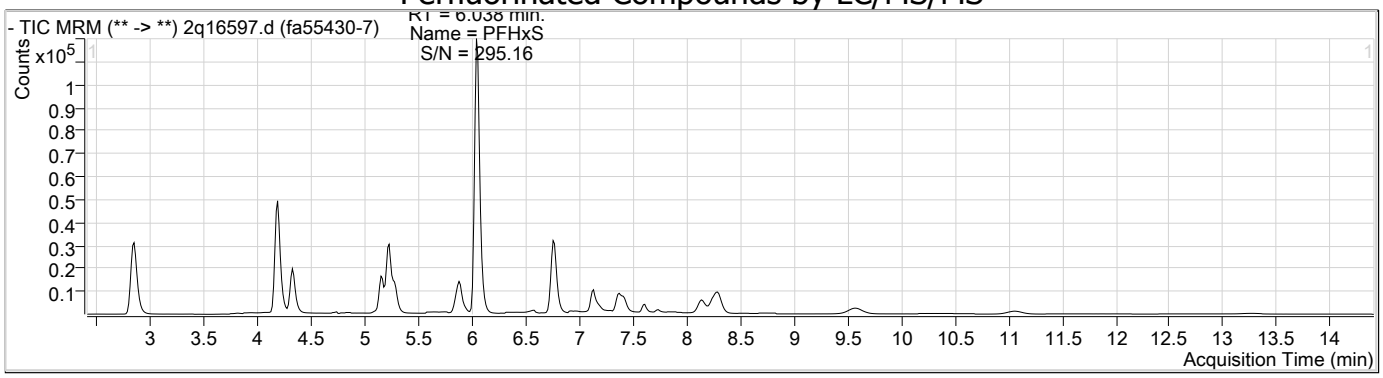
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.760	415.0 -> 370.0	18118	20.00	µg/L	-0.038
13C4-PFOS	7.372	503.0 -> 80.0	9731	20.00	µg/L	-0.026
M4-PFBA	2.841	217.0 -> 172.0	119531	20.00	µg/L	-0.063
M5-PFPeA	4.187	268.0 -> 223.0	56556	20.00	µg/L	-0.050
M5-PFHxA	5.228	318.0 -> 273.0	52244	20.00	µg/L	-0.038
M4-PFHpA	6.054	367.0 -> 322.0	49647	20.00	µg/L	-0.038
M8-PFOA	6.758	421.0 -> 376.0	26791	20.00	µg/L	-0.038
M9-PFNA	7.425	472.0 -> 427.0	18712	20.00	µg/L	-0.026
M6-PFDA	8.142	519.0 -> 474.0	27993	20.00	µg/L	-0.038
M7-PFUnDA	9.566	570.0 -> 525.0	24346	20.00	µg/L	-0.113
M2-PFDoDA	11.052	615.0 -> 570.0	12734	20.00	µg/L	-0.117
M2-PFTeDA	13.268	715.0 -> 670.0	2738	20.00	µg/L	-0.113
M8-FOSA	7.130	506.0 -> 78.0	17049	20.00	µg/L	-0.013
M3-PFBS	4.318	302.0 -> 99.0	17625	20.00	µg/L	-0.050
M3-PFHxS	6.048	402.0 -> 99.0	15118	20.00	µg/L	-0.038
M8-PFOS	7.370	507.0 -> 99.0	6900	20.00	µg/L	-0.026
M2-4:2FTS	5.147	329.0 -> 309.0	53692	20.00	µg/L	-0.050
M2-6:2FTS	6.768	429.0 -> 409.0	41776	20.00	µg/L	-0.040
M2-8:2FTS	8.286	529.0 -> 509.0	58453	20.00	µg/L	-0.040
M3-MeFOSAA	7.607	573.0 -> 419.0	10534	20.00	µg/L	-0.013
System Monitoring Compounds						
13C2-4:2FTS	5.147	329.0 -> 309.0	53733	16.38	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.9%		
13C2-6:2FTS	6.768	429.0 -> 409.0	41782	15.81	µg/L	-0.040
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.0%		
13C2-8:2FTS	8.286	529.0 -> 509.0	58434	18.01	µg/L	-0.040
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.0%		
13C2-PFDoDA	11.052	615.0 -> 570.0	12735	8.69	µg/L	-0.117
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 43.5%		
13C2-PFTeDA	13.268	715.0 -> 670.0	2773	4.47	µg/L	-0.113
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 22.3%		
13C3-PFBS	4.318	302.0 -> 99.0	17626	15.95	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.7%		
13C3-PFHxS	6.048	402.0 -> 99.0	15118	15.09	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.5%		
13C4-PFBA	2.841	217.0 -> 172.0	119460	15.60	µg/L	-0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.0%		
13C4-PFHpA	6.054	367.0 -> 322.0	49645	15.41	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.0%		
13C5-PFHxA	5.228	318.0 -> 273.0	52268	15.95	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.8%		
13C5-PFPeA	4.187	268.0 -> 223.0	56554	15.52	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.6%		
13C6-PFDA	8.142	519.0 -> 474.0	28029	15.14	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.7%		

Perfluorinated Compounds by LC/MS/MS

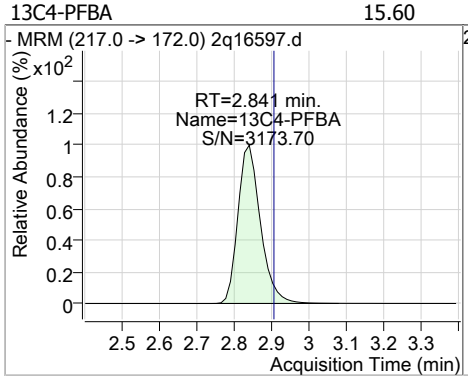
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	9.566	570.0 -> 525.0	24357	11.91	µg/L		-0.113
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.5%			
13C8-FOSA	7.130	506.0 -> 78.0	17056	9.69	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 48.4%			
13C8-PFOA	6.758	421.0 -> 376.0	26811	15.39	µg/L		-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.0%			
13C8-PFOS	7.370	507.0 -> 99.0	6911	14.11	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.5%			
13C9-PFNA	7.425	472.0 -> 427.0	18723	15.74	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.7%			
d3-MeFOSAA	7.607	573.0 -> 419.0	10533	12.00	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.0%			
M2-PFOA	6.760	415.0 -> 370.0	18125	20.01	ng/ml		-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.372	503.0 -> 80.0	9733	20.01	ng/ml		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
Target Compounds							**QValue**
4:2FTS	5.150	327.0 -> 307.0	244	0.17	µg/L	#	23
6:2FTS	6.769	427.0 -> 407.0	7756	7.37	µg/L		90
8:2FTS	8.288	527.0 -> 507.0	421	0.26	µg/L		46
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	2.837	213.0 -> 169.0	10691	11.12	µg/L		100
PFBS	4.321	299.0 -> 80.0	34738	29.36	µg/L		97
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	6.044	363.0 -> 319.0	34489	19.49	µg/L		94
PFHpS	6.728	449.0 -> 80.0	2431	5.55	µg/L	m	94
PFHxA	5.230	313.0 -> 269.0	44064	51.93	µg/L		98
PFHxS	6.038	399.0 -> 80.0	254937	304.13	µg/L	m	96
PFNA	7.413	463.0 -> 419.0	424	1.14	µg/L		94
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	6.761	413.0 -> 369.0	17039	25.35	µg/L	m	84
PFOS	7.131	499.0 -> 80.0	25953	62.26	µg/L	#m	61
PFPeA	4.191	263.0 -> 219.0	118762	43.47	µg/L		100
PFPeS	5.270	349.0 -> 80.0	24926	34.43	µg/L	m	96
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			

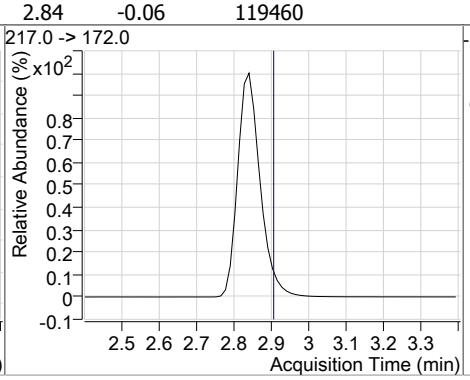
 # = Qualifier out of range, m = manually integrated, + = Area summed

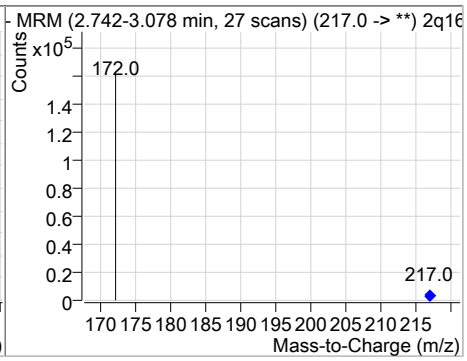
Perfluorinated Compounds by LC/MS/MS



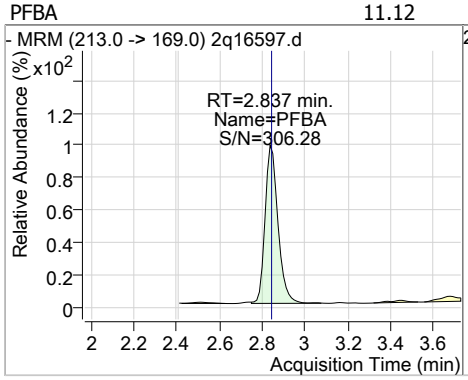
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	15.60	2.84	-0.06	119460				

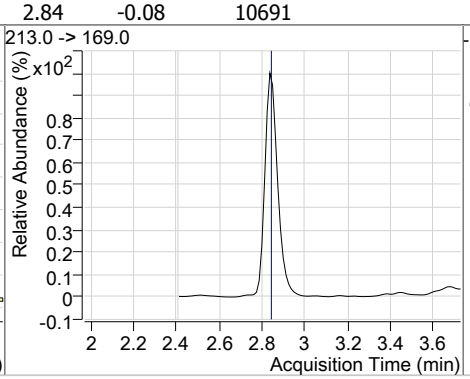


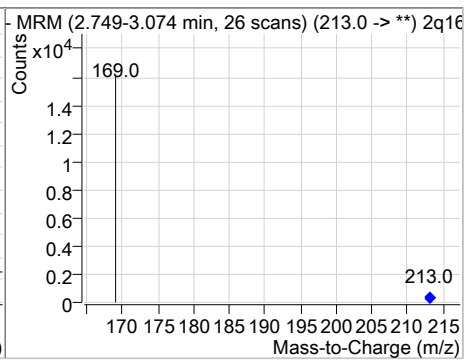




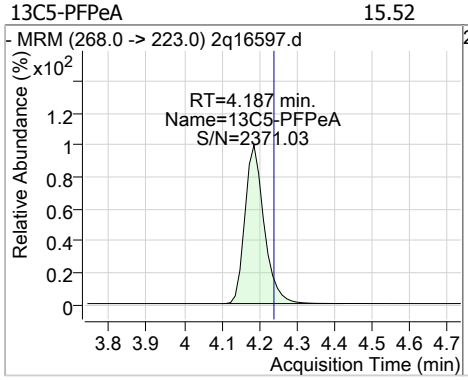
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	11.12	2.84	-0.08	10691				

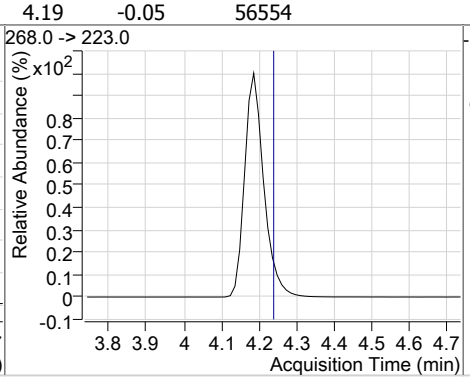


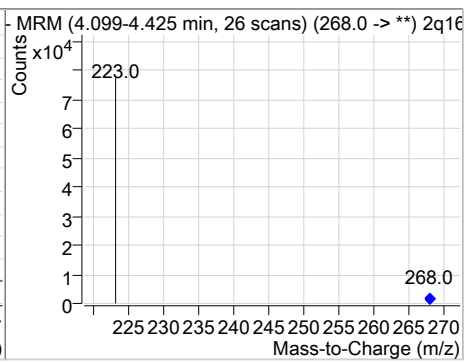




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	15.52	4.19	-0.05	56554				

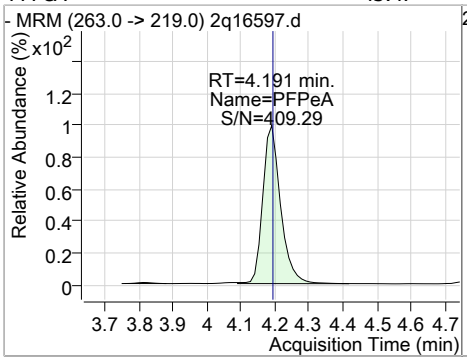


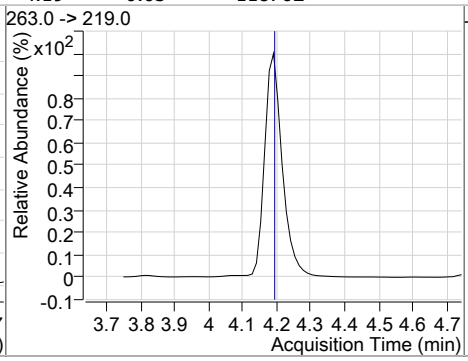


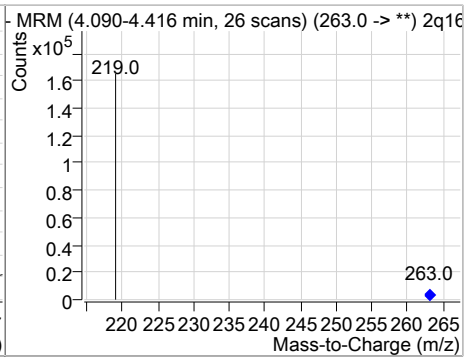


Perfluorinated Compounds by LC/MS/MS

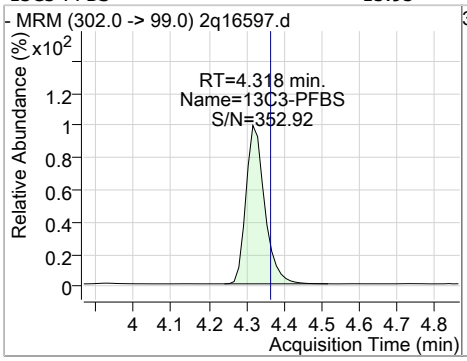
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	43.47	4.19	-0.05	118762				

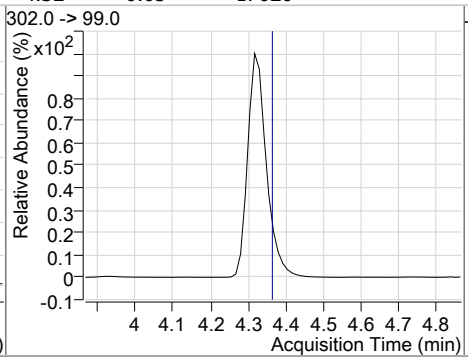


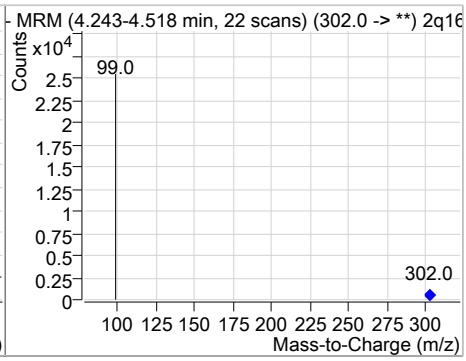




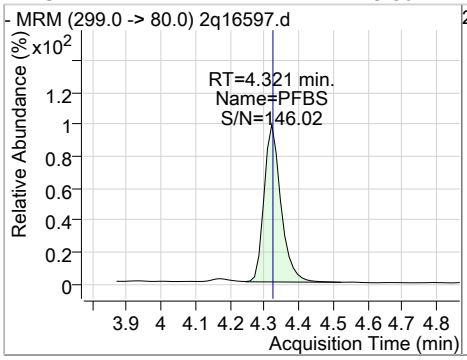
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	15.95	4.32	-0.05	17626				

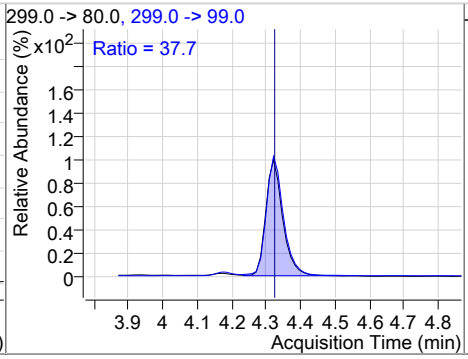


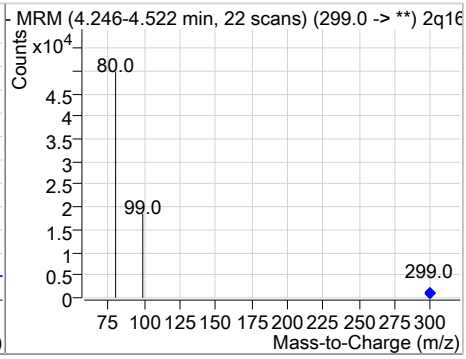




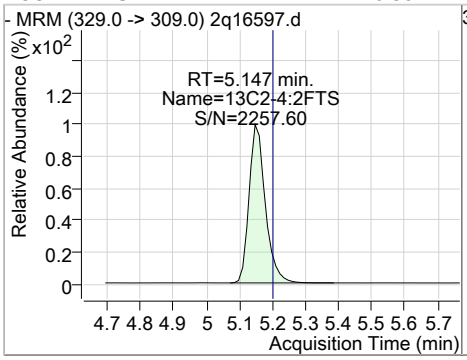
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	29.36	4.32	-0.05	34738	299.0 -> 99.0	37.7	5.8	65.8

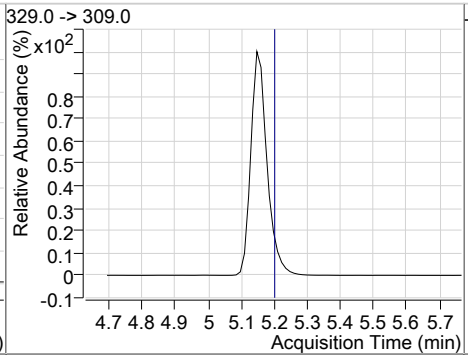


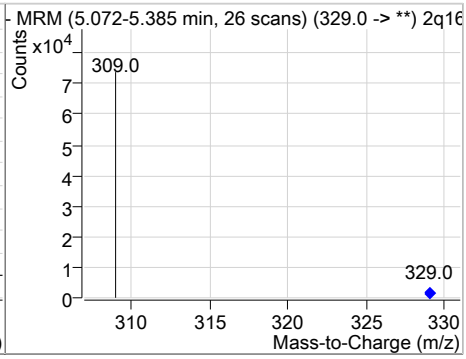




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	16.38	5.15	-0.05	53733				

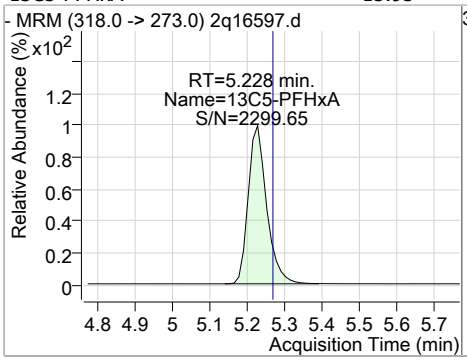


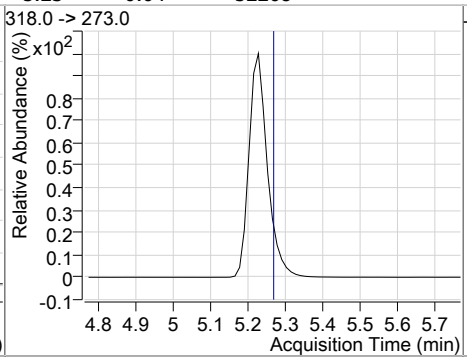


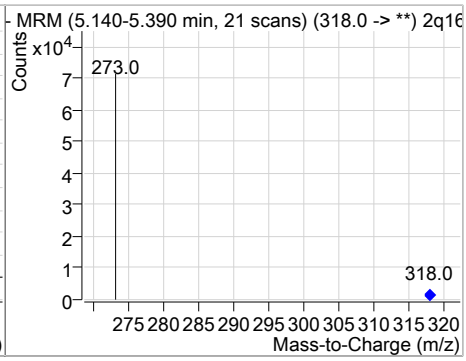


Perfluorinated Compounds by LC/MS/MS

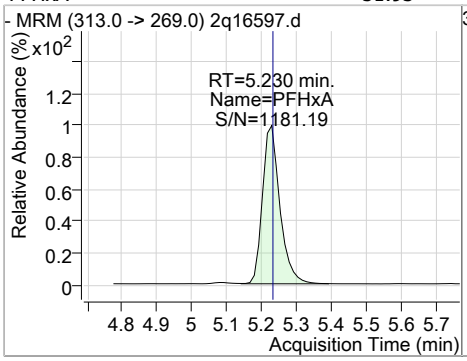
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	15.95	5.23	-0.04	52268				

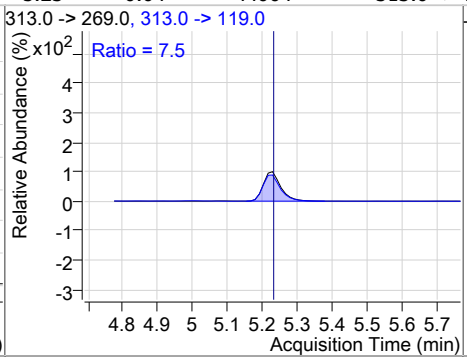


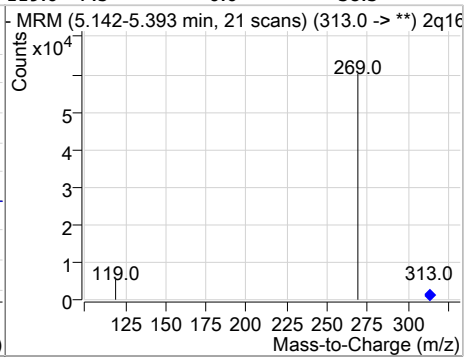




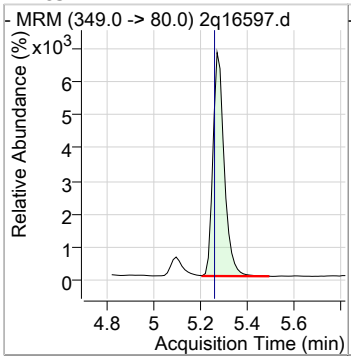
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	51.93	5.23	-0.04	44064	313.0 -> 119.0	7.5	0.0	38.3

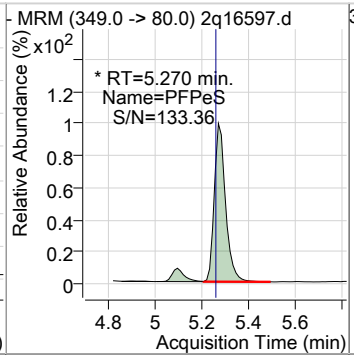


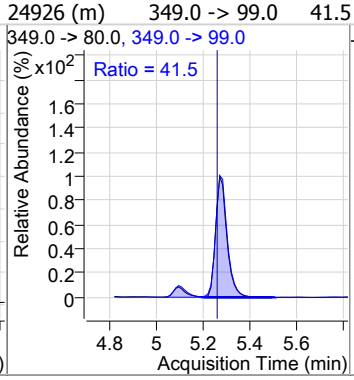


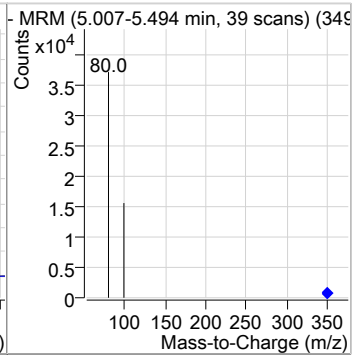


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	34.43	5.27	-0.05	24926 (m)	349.0 -> 99.0	41.5	9.3	69.3

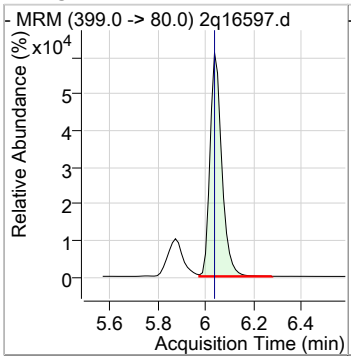


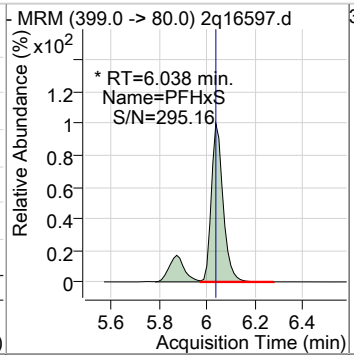


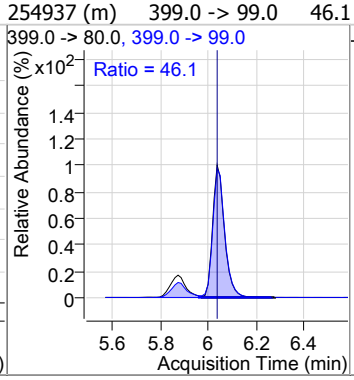


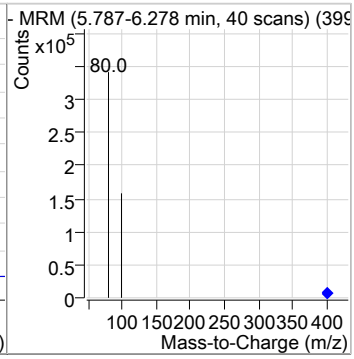


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	304.13	6.04	-0.04	254937 (m)	399.0 -> 99.0	46.1	19.0	79.0



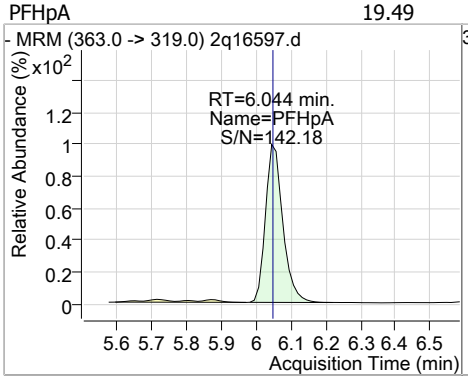


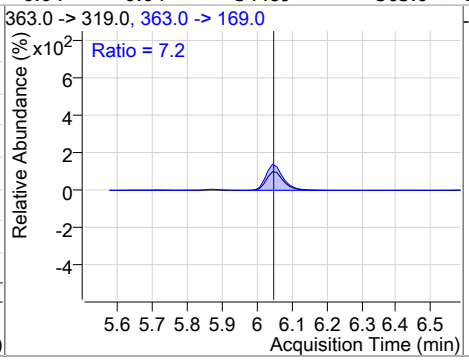


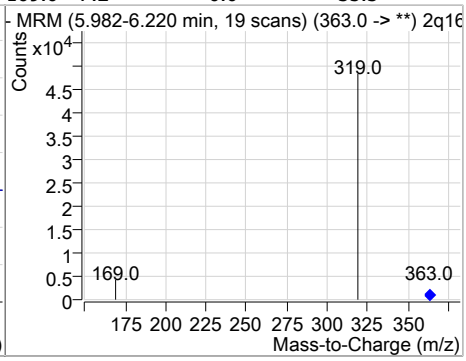


Perfluorinated Compounds by LC/MS/MS

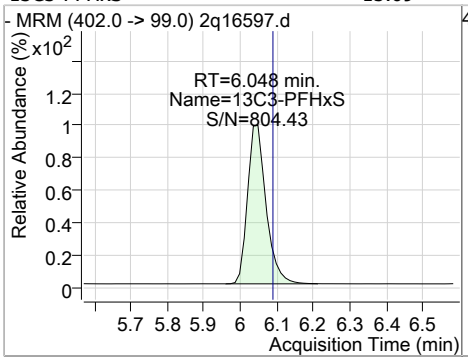
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.49	6.04	-0.04	34489	363.0 -> 169.0	7.2	0.0	35.3

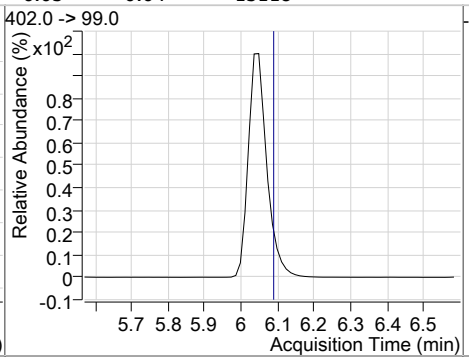


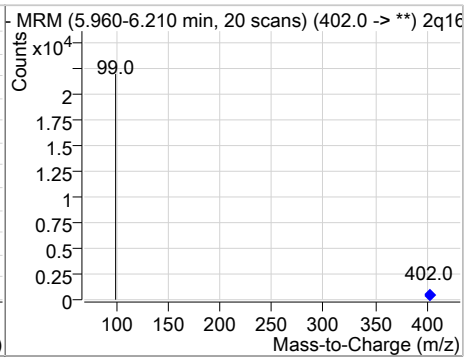




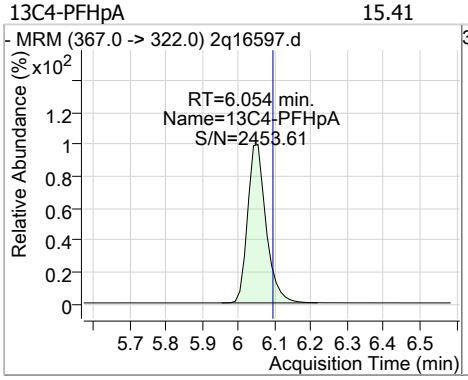
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	15.09	6.05	-0.04	15118				

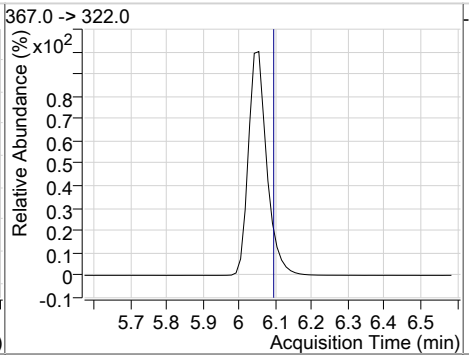


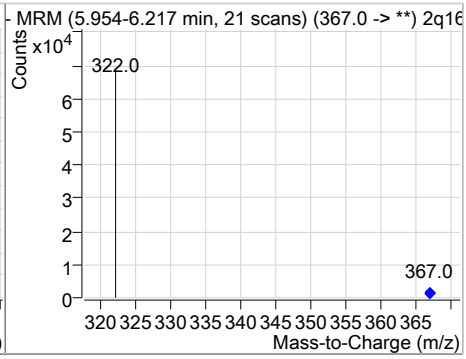




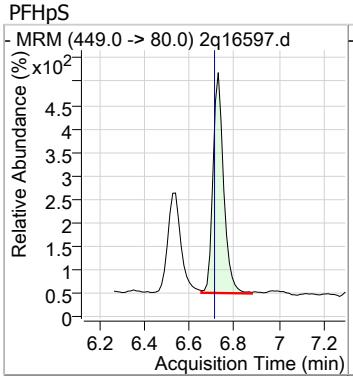
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	15.41	6.05	-0.04	49645				

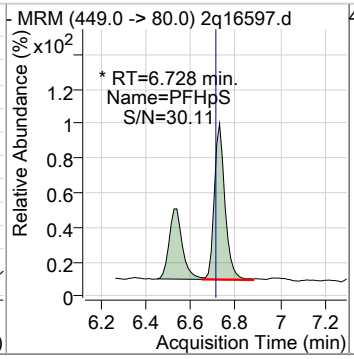


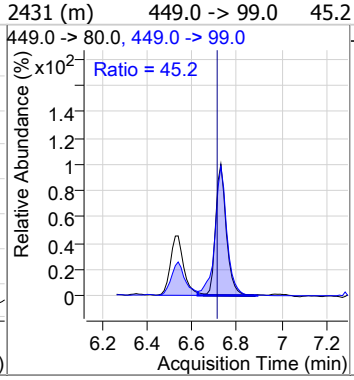


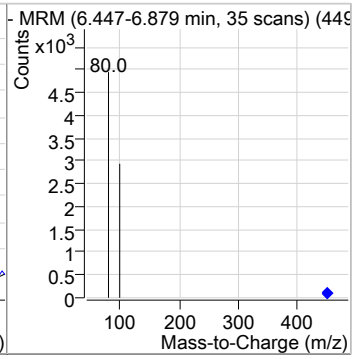


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	5.55	6.73	-0.03	2431 (m)	449.0 -> 99.0	45.2	19.2	79.2



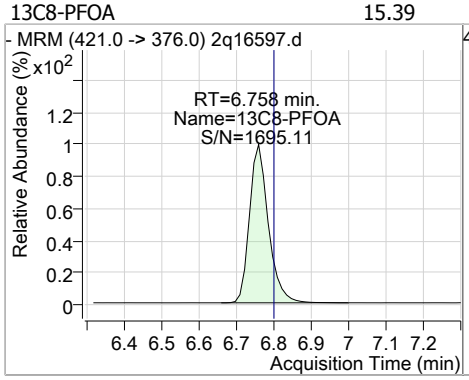


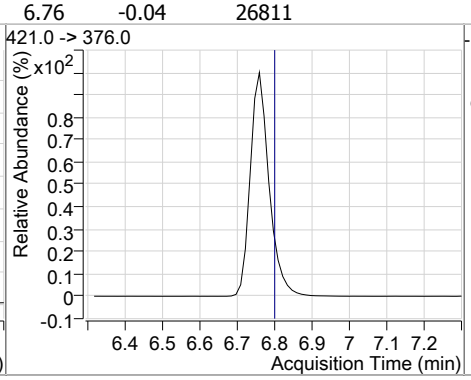


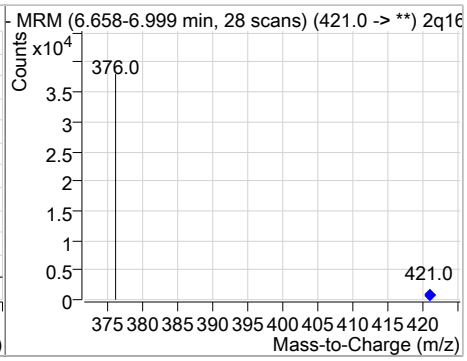


Perfluorinated Compounds by LC/MS/MS

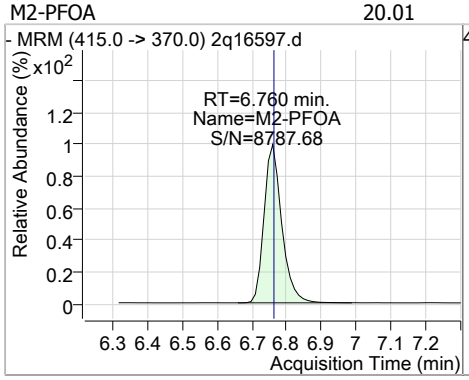
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	15.39	6.76	-0.04	26811				

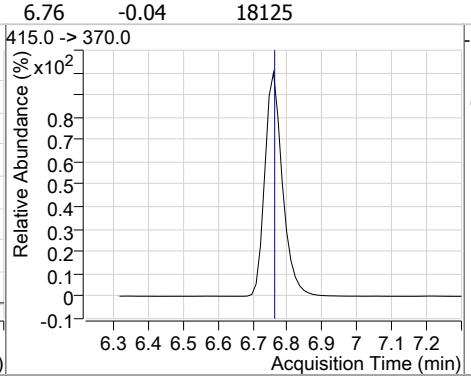


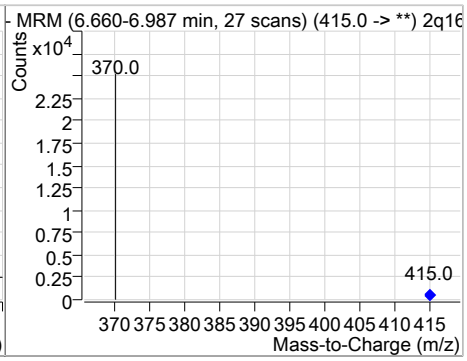




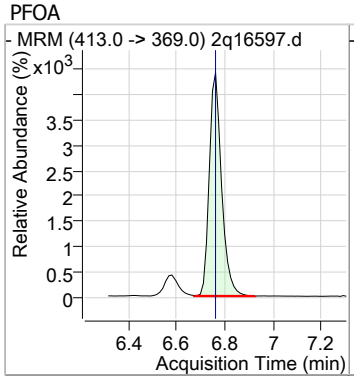
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.01	6.76	-0.04	18125				

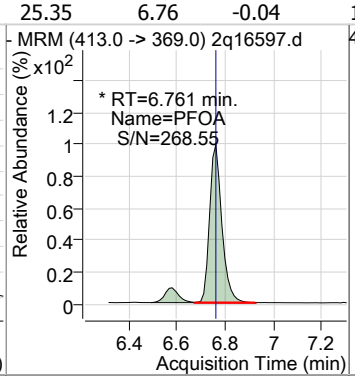


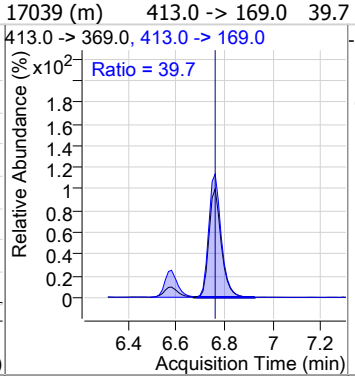


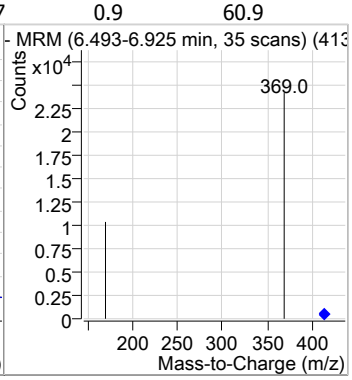


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	25.35	6.76	-0.04	17039 (m)	413.0 -> 169.0	39.7	0.9	60.9

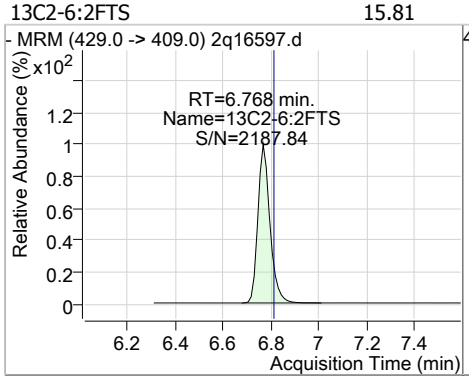


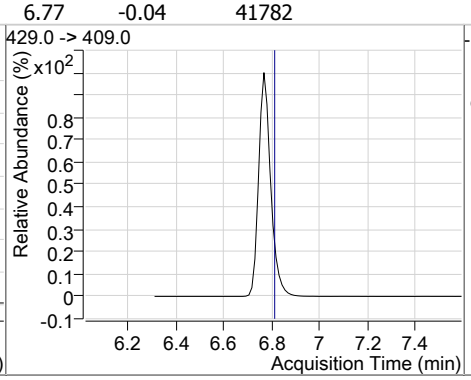


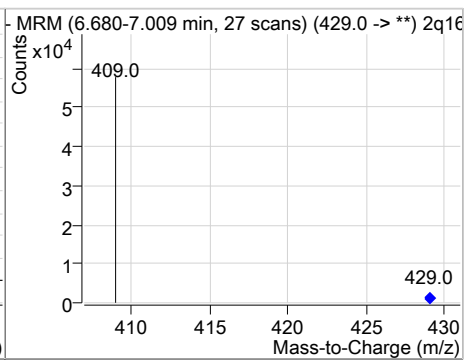




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	15.81	6.77	-0.04	41782				

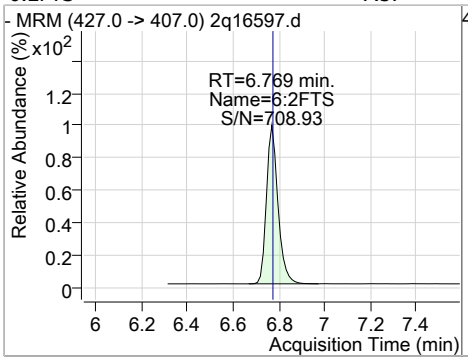


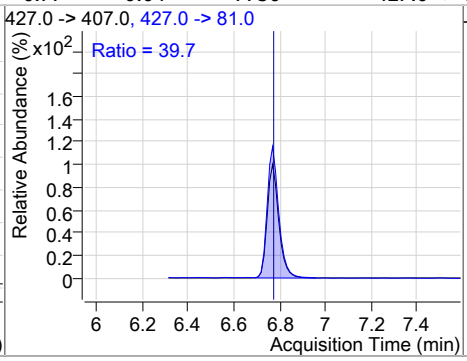


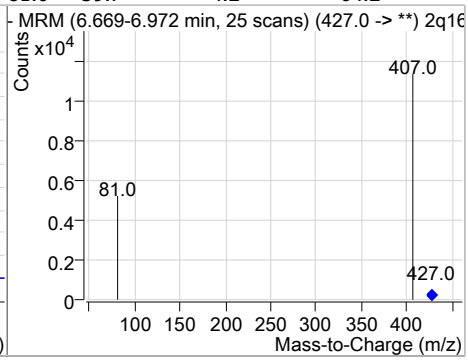


Perfluorinated Compounds by LC/MS/MS

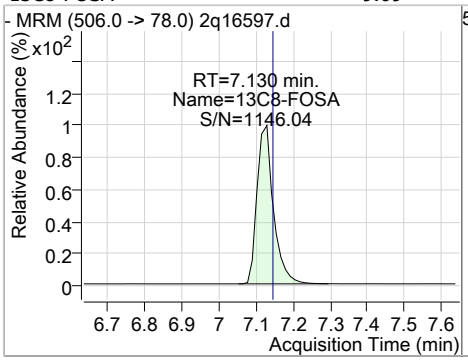
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	7.37	6.77	-0.04	7756	427.0 -> 81.0	39.7	4.2	64.2

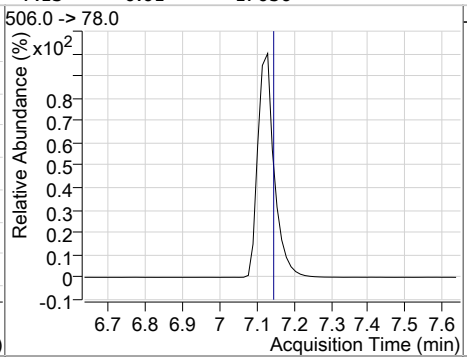


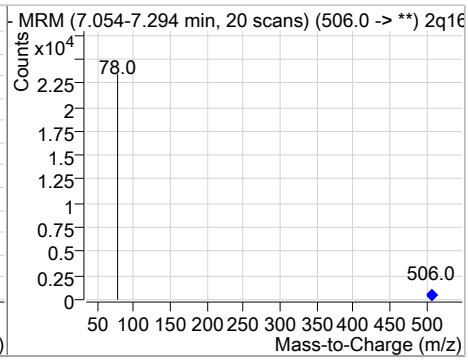




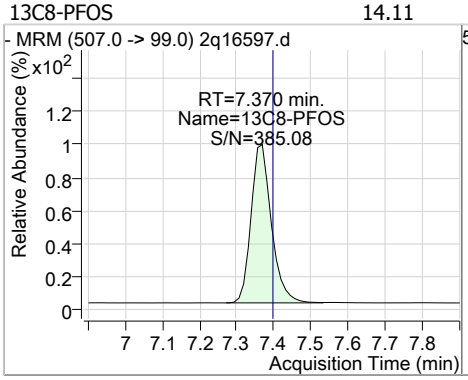
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	9.69	7.13	-0.01	17056				

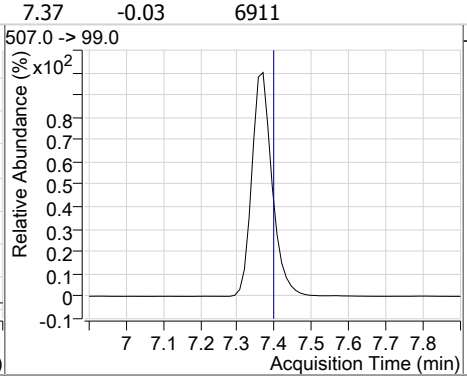


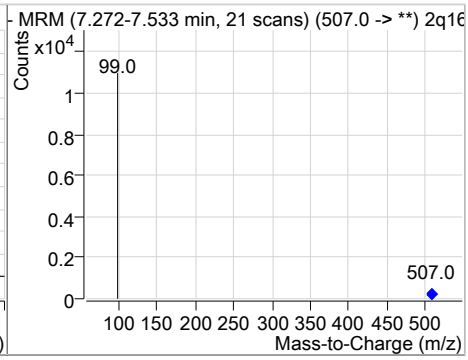




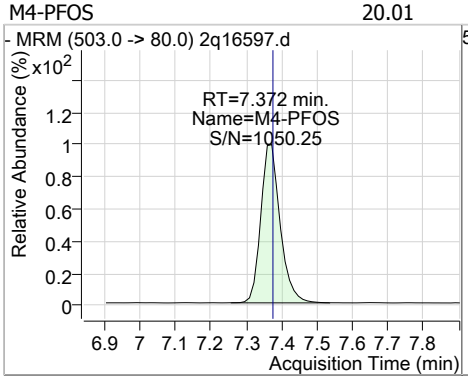
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	14.11	7.37	-0.03	6911				

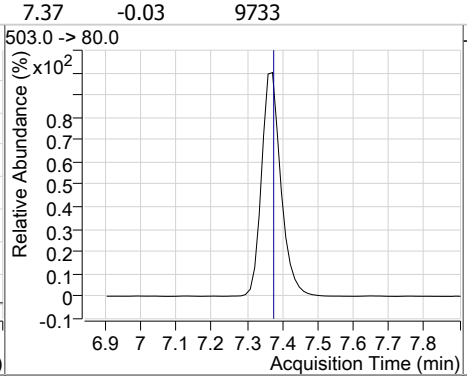


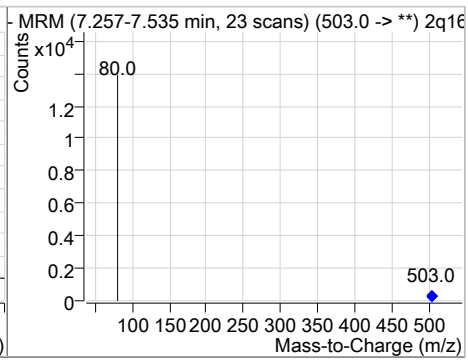




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.01	7.37	-0.03	9733				

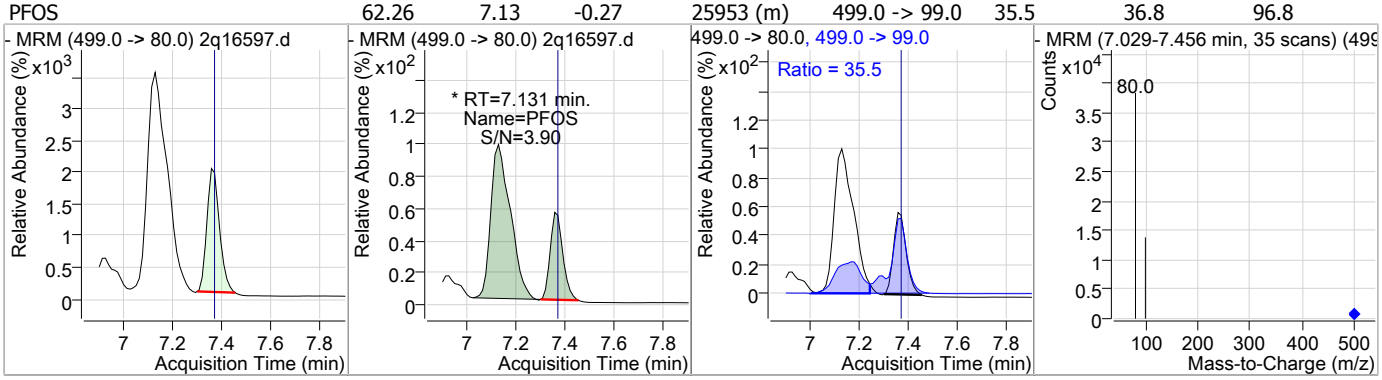




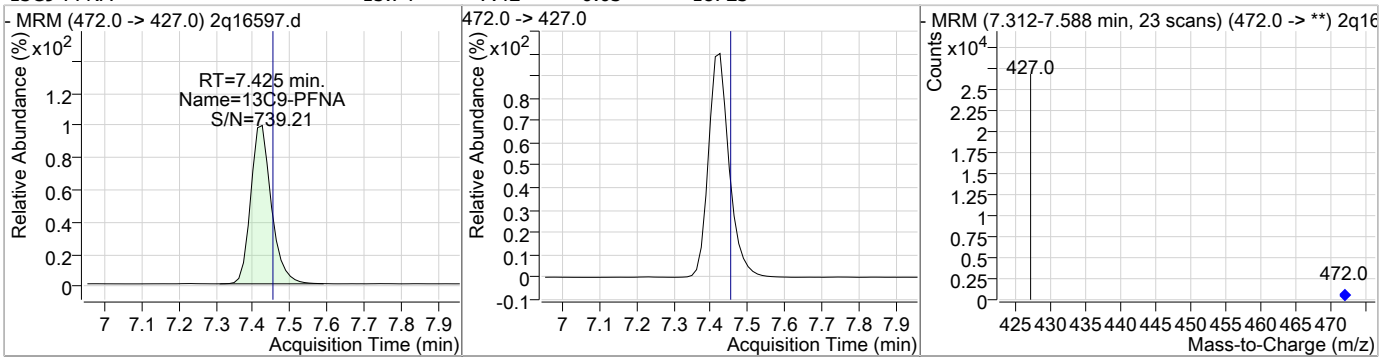


Perfluorinated Compounds by LC/MS/MS

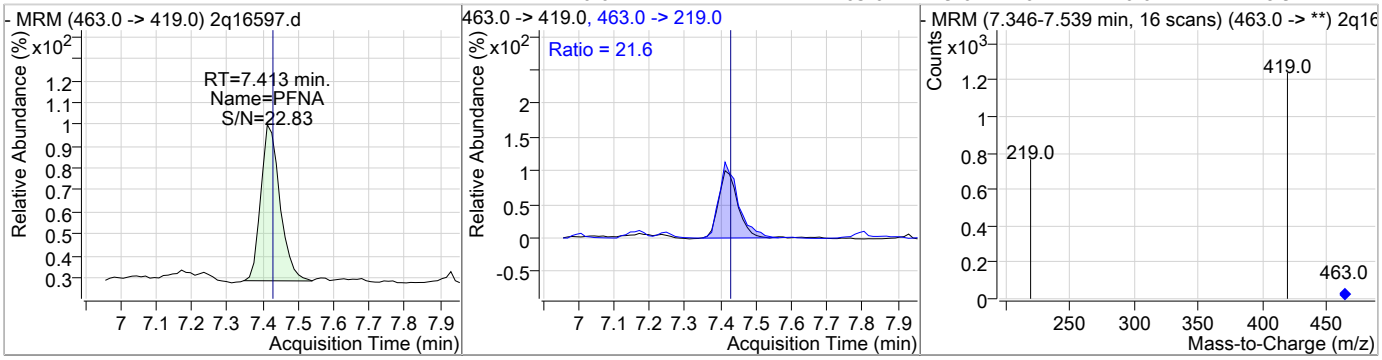
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	62.26	7.13	-0.27	25953 (m)	499.0 -> 99.0	35.5	36.8	96.8



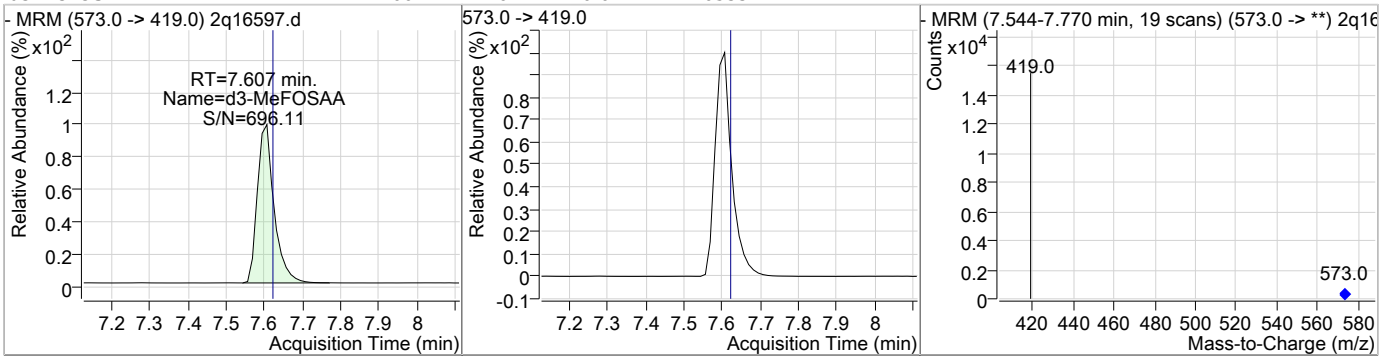
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	15.74	7.42	-0.03	18723				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.14	7.41	-0.04	424	463.0 -> 219.0	21.6	0.0	48.9

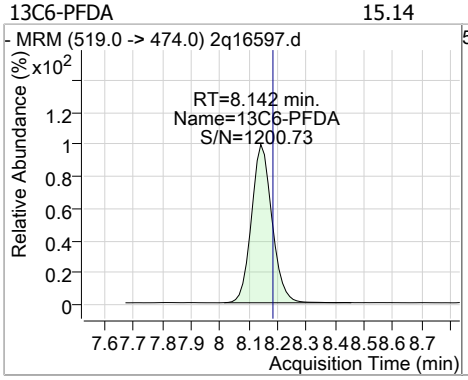


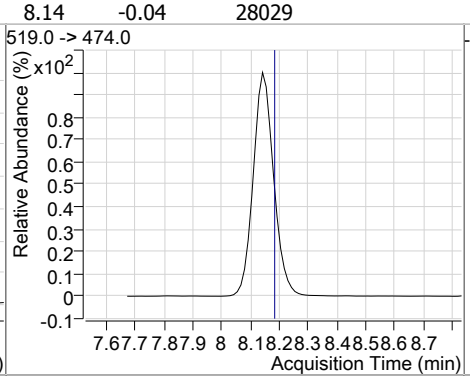
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	12.00	7.61	-0.01	10533				

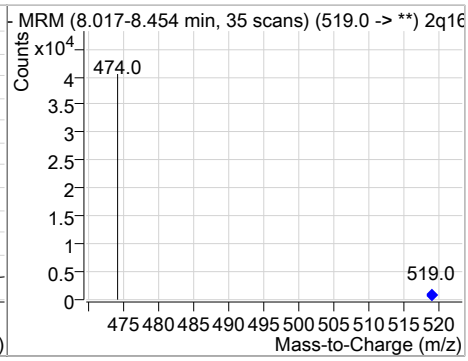


Perfluorinated Compounds by LC/MS/MS

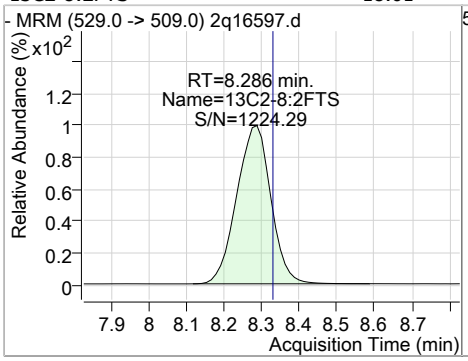
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	15.14	8.14	-0.04	28029				

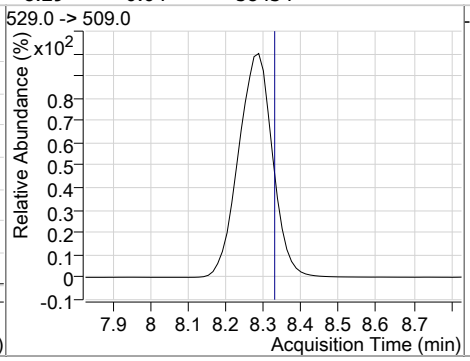


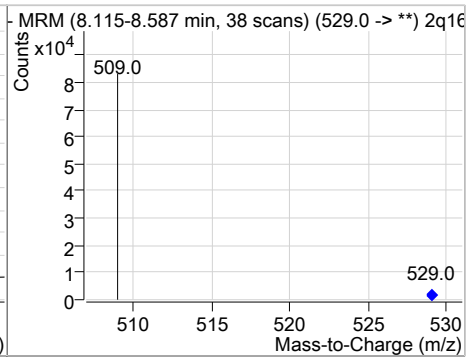




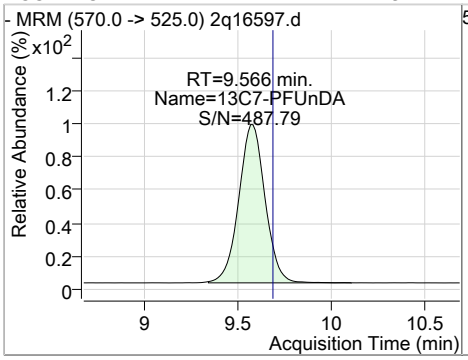
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.01	8.29	-0.04	58434				

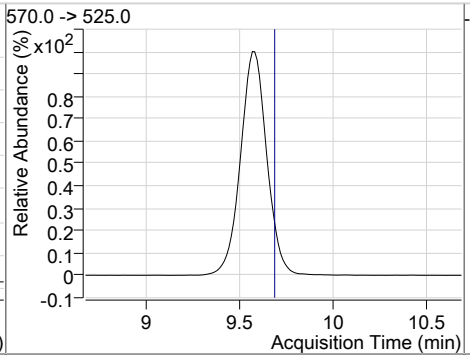


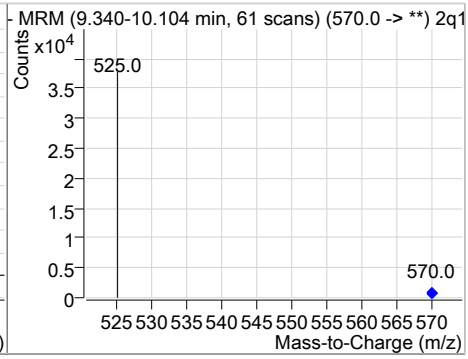




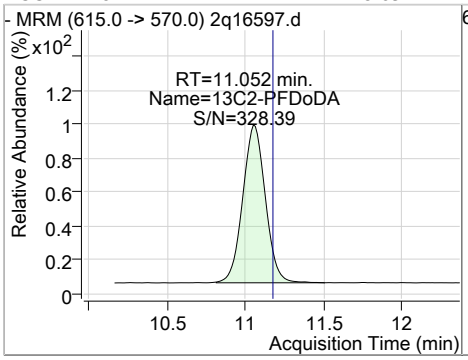
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	11.91	9.57	-0.11	24357				

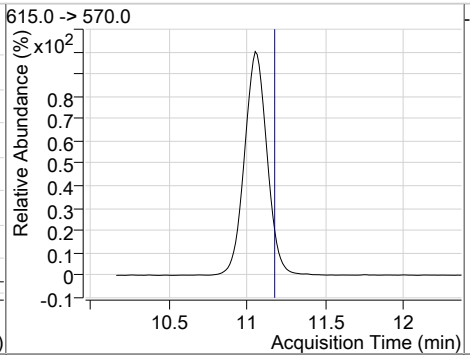


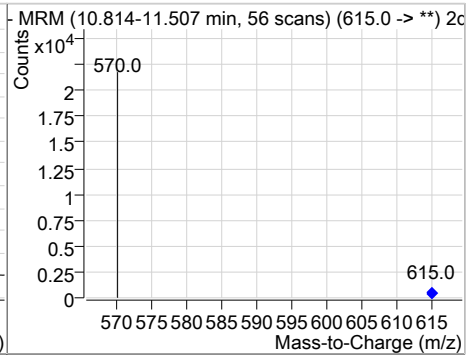




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	8.69	11.05	-0.12	12735				

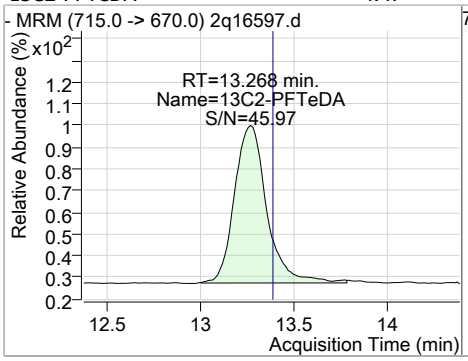


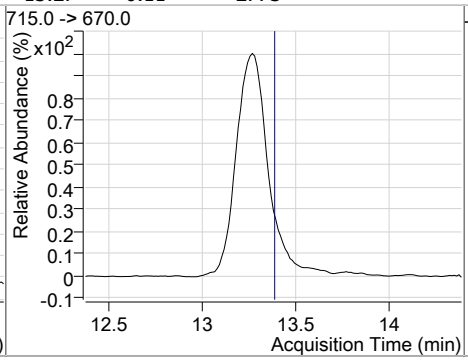


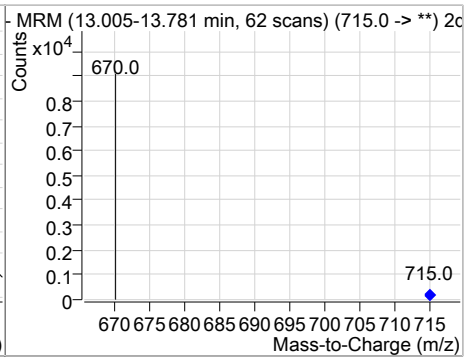


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	4.47	13.27	-0.11	2773				







Manual Integration Approval Summary

Sample Number: FA55430-7
Lab FileID: 2Q16597.D
Injection Time: 07/06/18 03:22
Method: EPA 537M QSM5.1 B-15
Analyst approved: 07/16/18 15:08 Natasha Gumtie
Supervisor approved: 07/17/18 11:23 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanesulfonic acid	2706-91-4		5.27	Split peak
Perfluorohexanesulfonic acid	355-46-4		6.04	Split peak
Perfluoroheptanesulfonic acid	375-92-8		6.73	Split peak
Perfluorooctanoic acid	335-67-1		6.76	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.13	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/17/18 10:47

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16699.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/7/2018 1:42:19 PM
Sample Name : fa55430-7
Vial : Vial 83
DA Method File : PFC_ID_070718_S2Q292.quantmethod.xml
Batch Name : s2q292.batch.bin
Sample Information : op70743,S2Q292,120,,,1.0,10,water

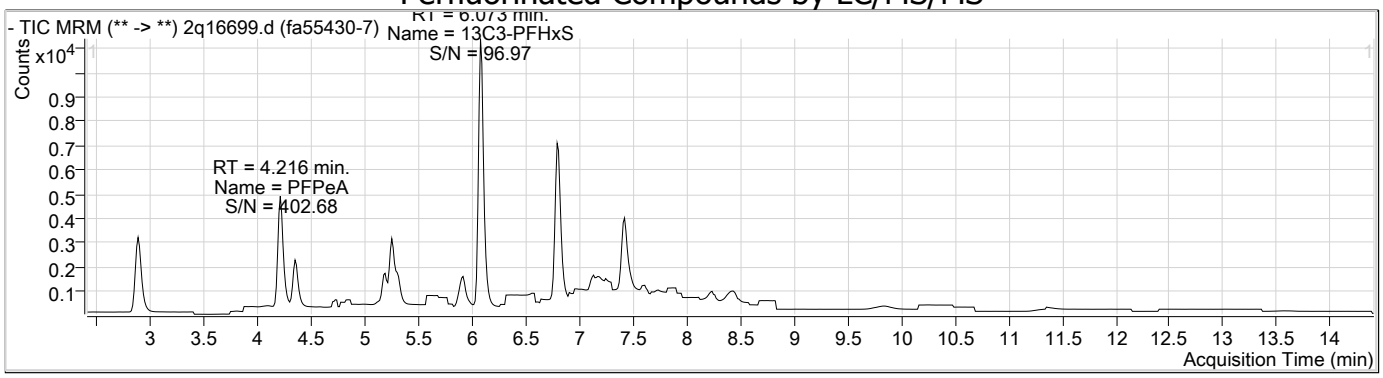
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.798	415.0 -> 370.0	16591	20.00	µg/L	0.000
13C4-PFOS	7.422	503.0 -> 80.0	9741	20.00	µg/L	0.013
M4-PFBA	2.878	217.0 -> 172.0	11344	20.00	µg/L	-0.013
M5-PFPeA	4.212	268.0 -> 223.0	5391	20.00	µg/L	0.000
M5-PFHxA	5.253	318.0 -> 273.0	4740	20.00	µg/L	0.000
M4-PFHpA	6.079	367.0 -> 322.0	4527	20.00	µg/L	0.000
M8-PFOA	6.796	421.0 -> 376.0	2099	20.00	µg/L	0.000
M9-PFNA	7.475	472.0 -> 427.0	1175	20.00	µg/L	0.013
M6-PFDA	8.254	519.0 -> 474.0	2052	20.00	µg/L	0.024
M7-PFUnDA	9.841	570.0 -> 525.0	1395	20.00	µg/L	0.038
M2-PFDoDA	11.340	615.0 -> 570.0	911	20.00	µg/L	0.025
M2-PFTeDA	13.569	715.0 -> 670.0	204	20.00	µg/L	0.025
M8-FOSA	7.115	506.0 -> 78.0	1466	20.00	µg/L	0.000
M3-PFBS	4.343	302.0 -> 99.0	1777	20.00	µg/L	-0.013
M3-PFHxS	6.073	402.0 -> 99.0	1441	20.00	µg/L	0.000
M8-PFOS	7.420	507.0 -> 99.0	514	20.00	µg/L	0.013
M2-4:2FTS	5.185	329.0 -> 309.0	4294	20.00	µg/L	0.013
M2-6:2FTS	6.818	429.0 -> 409.0	2786	20.00	µg/L	0.013
M2-8:2FTS	8.424	529.0 -> 509.0	4186	20.00	µg/L	0.050
M3-MeFOSAA	7.607	573.0 -> 419.0	893	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.185	329.0 -> 309.0	4303	1.64	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 8.2%		
13C2-6:2FTS	6.818	429.0 -> 409.0	2784	1.64	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 8.2%		
13C2-8:2FTS	8.424	529.0 -> 509.0	4178	1.84	µg/L	0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 9.2%		
13C2-PFDoDA	11.340	615.0 -> 570.0	912	0.90	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 4.5%		
13C2-PFTeDA	13.569	715.0 -> 670.0	211	0.54	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.7%		
13C3-PFBS	4.343	302.0 -> 99.0	1767	1.69	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 8.4%		
13C3-PFHxS	6.073	402.0 -> 99.0	1439	1.69	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 8.4%		
13C4-PFBA	2.878	217.0 -> 172.0	11339	1.65	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 8.2%		
13C4-PFHpA	6.079	367.0 -> 322.0	4537	1.68	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 8.4%		
13C5-PFHxA	5.253	318.0 -> 273.0	4738	1.67	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 8.4%		
13C5-PFPeA	4.212	268.0 -> 223.0	5397	1.70	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 8.5%		
13C6-PFDA	8.254	519.0 -> 474.0	2076	1.47	µg/L	0.024
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 7.4%		

Perfluorinated Compounds by LC/MS/MS

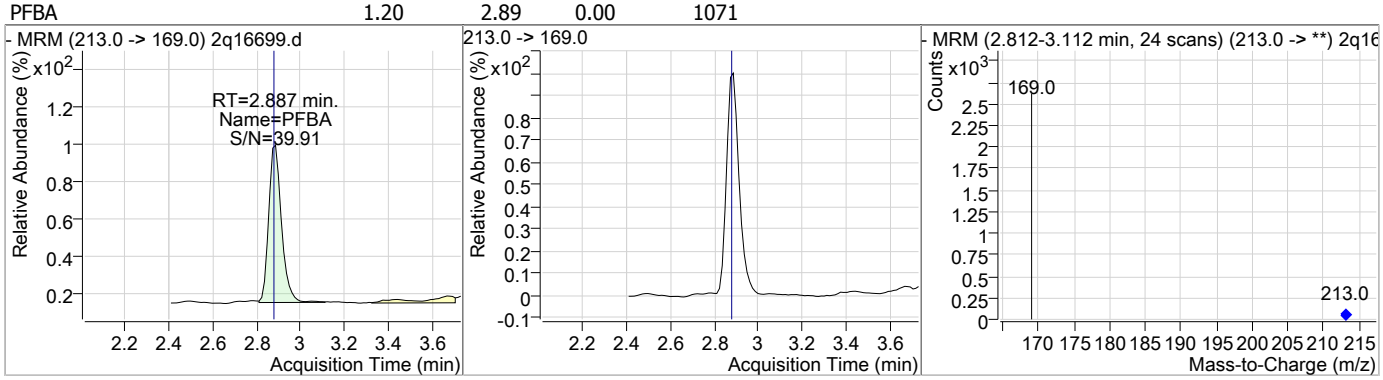
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	9.841	570.0 -> 525.0	1398	1.05	µg/L		0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 5.3%			
13C8-FOSA	7.115	506.0 -> 78.0	1465	1.10	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 5.5%			
13C8-PFOA	6.796	421.0 -> 376.0	2095	1.70	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 8.5%			
13C8-PFOS	7.420	507.0 -> 99.0	515	1.30	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 6.5%			
13C9-PFNA	7.475	472.0 -> 427.0	1177	1.49	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 7.5%			
d3-MeFOSAA	7.607	573.0 -> 419.0	893	1.35	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 6.8%			
M2-PFOA	6.798	415.0 -> 370.0	16579	2.00	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.0%			
M4-PFOS	7.422	503.0 -> 80.0	9741	2.00	ng/ml		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.0%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	6.807	427.0 -> 407.0	545	0.78	µg/L		99
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	2.887	213.0 -> 169.0	1071	1.20	µg/L		100
PFBS	4.346	299.0 -> 80.0	3512	2.96	µg/L		97
PFDA	8.281	513.0 -> 469.0	0	0.00	µg/L	m	1
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	6.082	363.0 -> 319.0	3223	1.99	µg/L		99
PFHpS	6.766	449.0 -> 80.0	213	0.57	µg/L	m	93
PFHxA	5.255	313.0 -> 269.0	3936	5.16	µg/L		98
PFHxS	6.076	399.0 -> 80.0	23081	28.84	µg/L	m	97
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	6.799	413.0 -> 369.0	1381	2.60	µg/L	m	88
PFOS	7.181	499.0 -> 80.0	2268	7.39	µg/L	m	84
PFPeA	4.216	263.0 -> 219.0	10776	4.10	µg/L		100
PFPeS	5.308	349.0 -> 80.0	2416	3.41	µg/L	m	99
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			

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

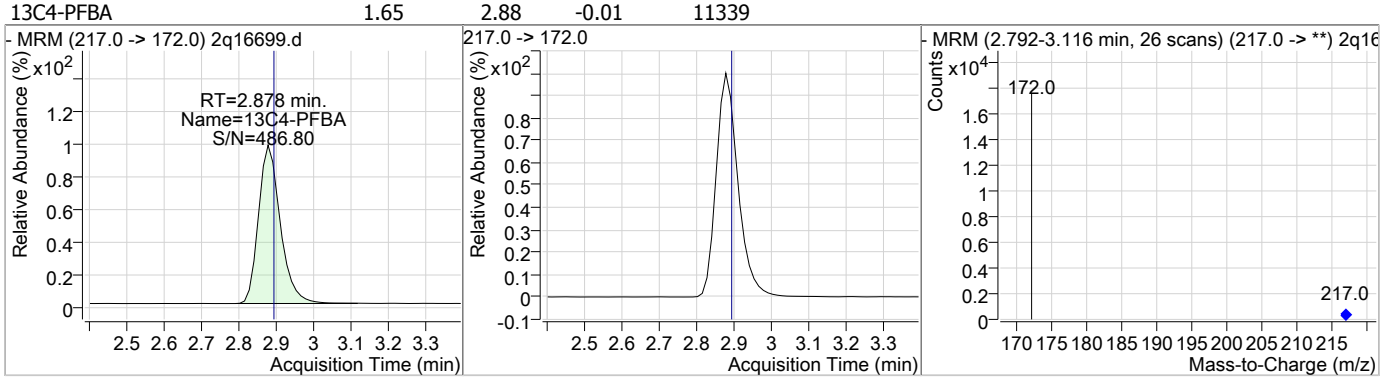
Perfluorinated Compounds by LC/MS/MS



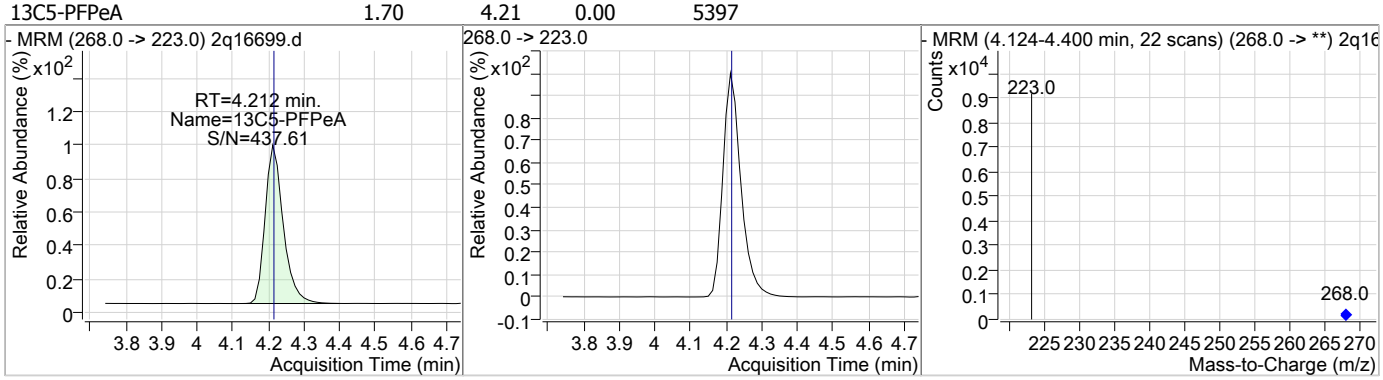
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.20	2.89	0.00	1071				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	1.65	2.88	-0.01	11339				

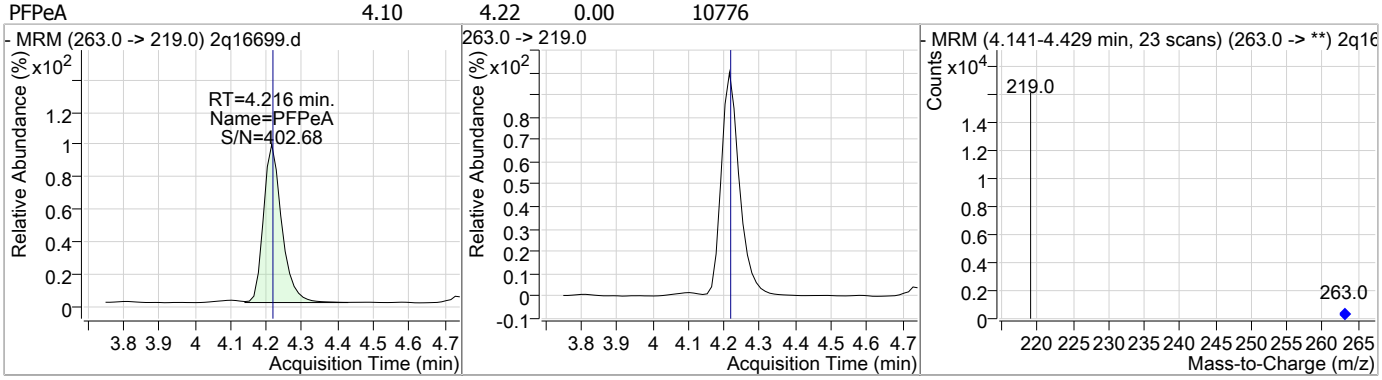


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	1.70	4.21	0.00	5397				

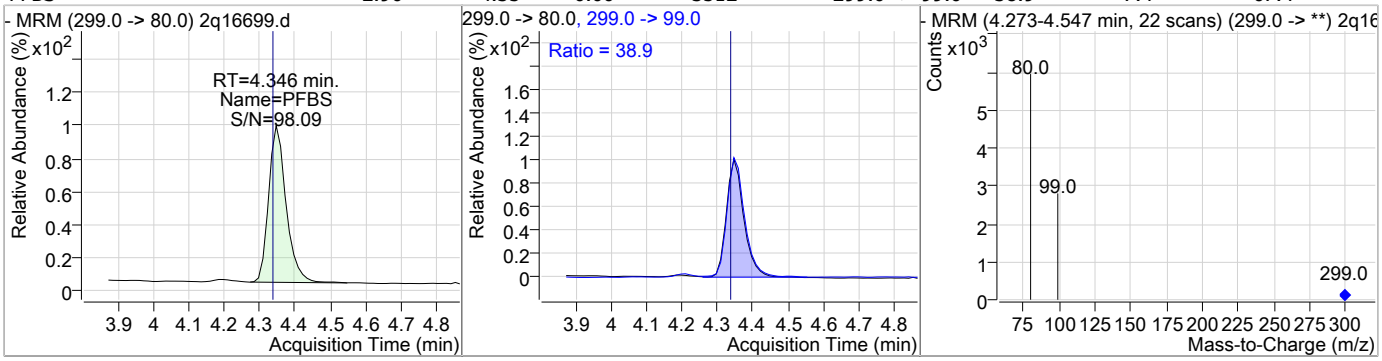


Perfluorinated Compounds by LC/MS/MS

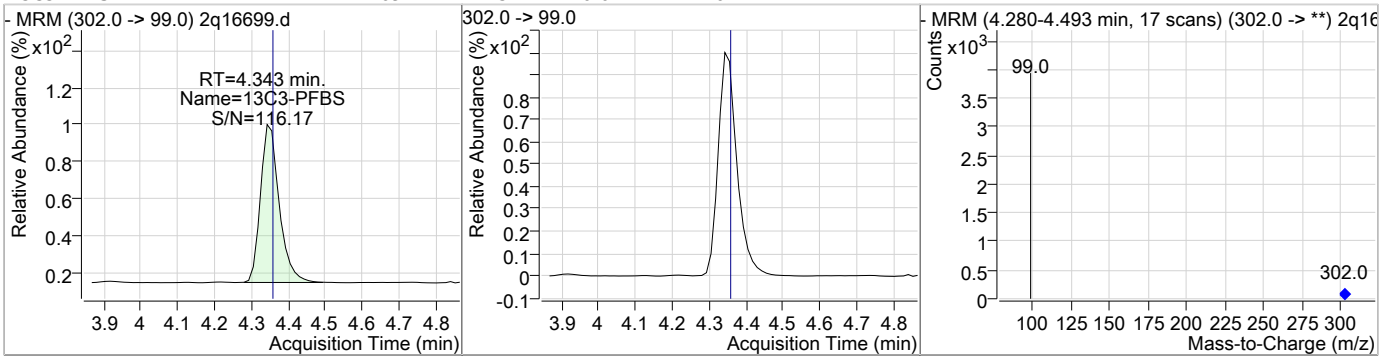
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.10	4.22	0.00	10776				



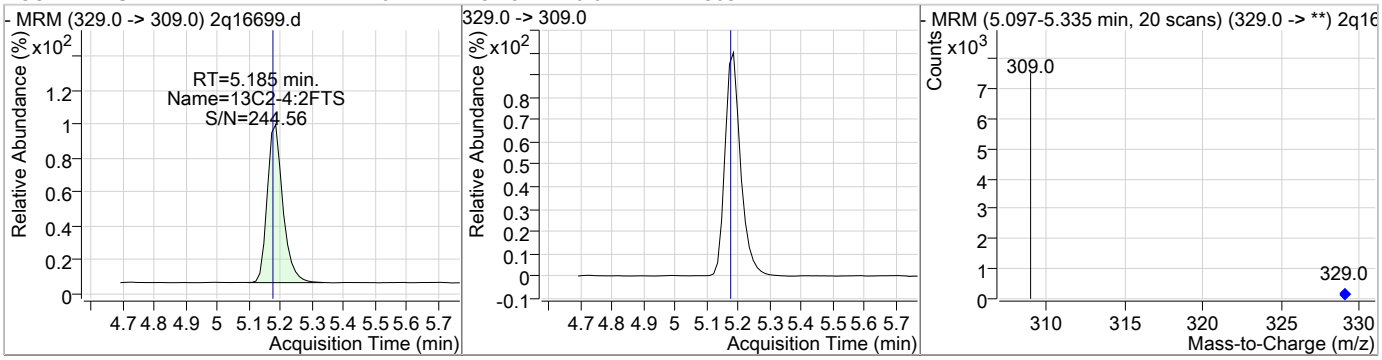
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.96	4.35	0.00	3512	299.0 -> 99.0	38.9	7.4	67.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	1.69	4.34	-0.01	1767				

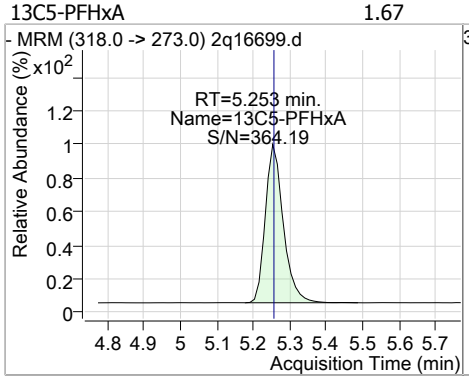


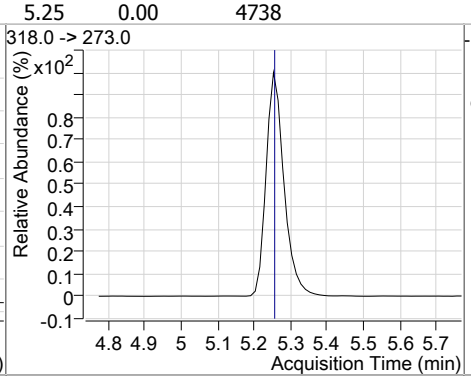
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	1.64	5.18	0.01	4303				

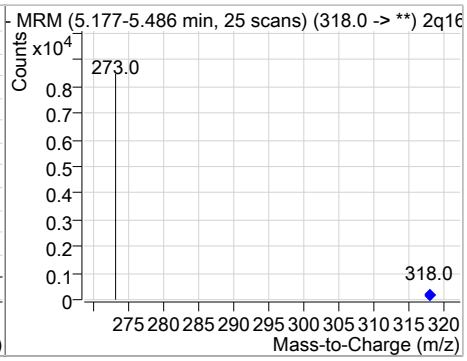


Perfluorinated Compounds by LC/MS/MS

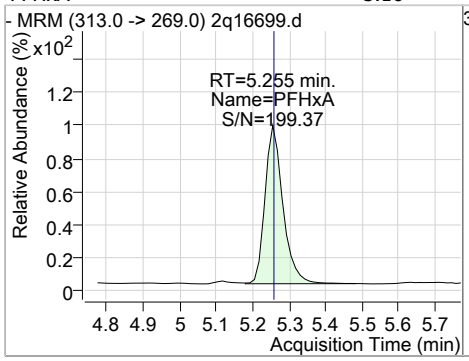
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	1.67	5.25	0.00	4738				

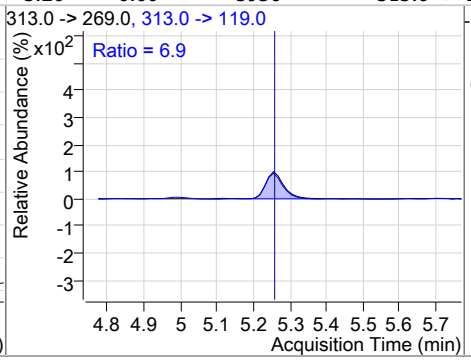


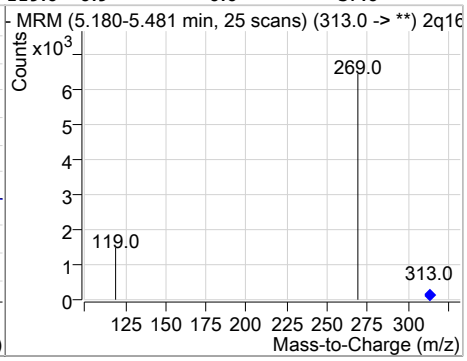




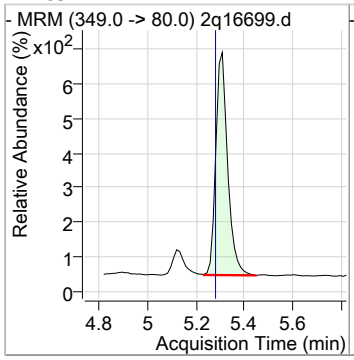
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	5.16	5.26	0.00	3936	313.0 -> 119.0	6.9	0.0	37.6

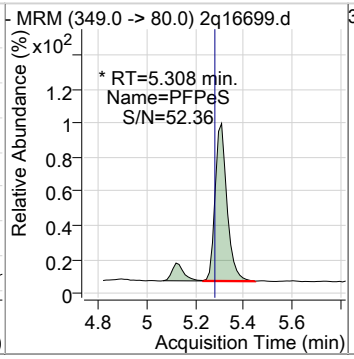


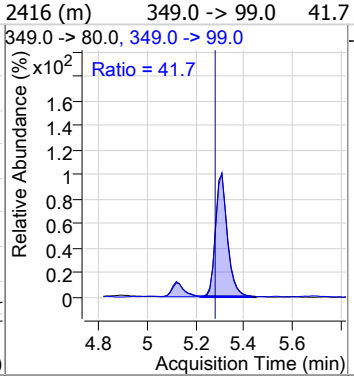


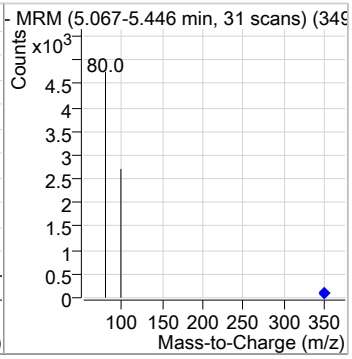


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	3.41	5.31	0.01	2416 (m)	349.0 -> 99.0	41.7	10.8	70.8

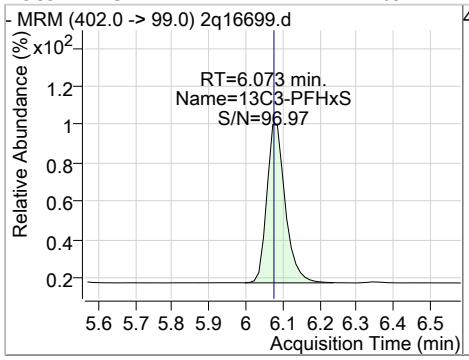


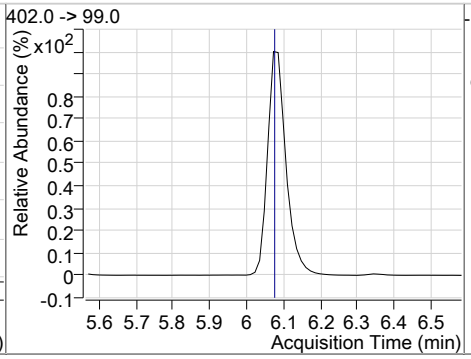


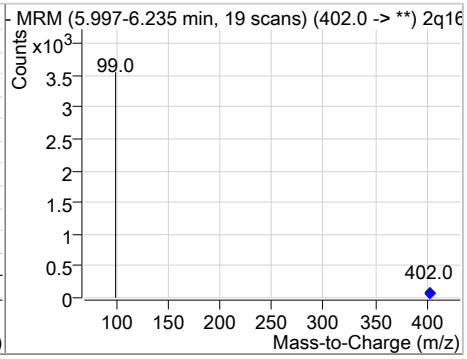




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	1.69	6.07	0.00	1439				

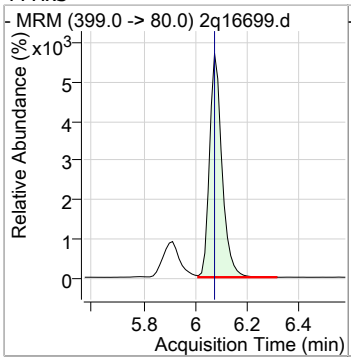


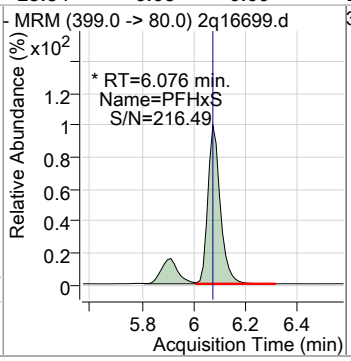


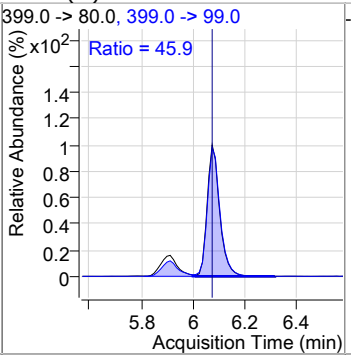


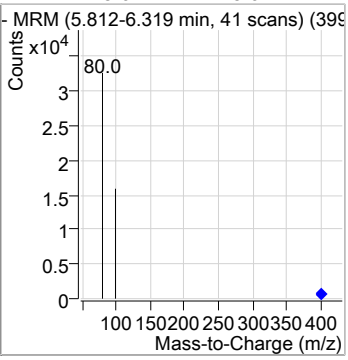
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	28.84	6.08	0.00	23081 (m)	399.0 -> 99.0	45.9	18.0	78.0

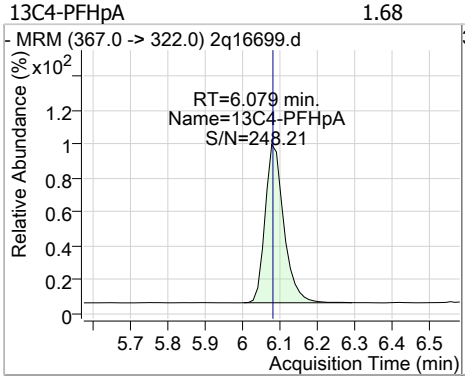


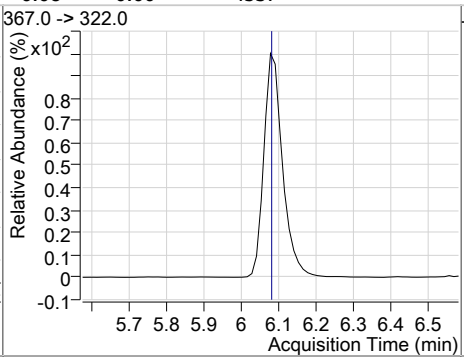


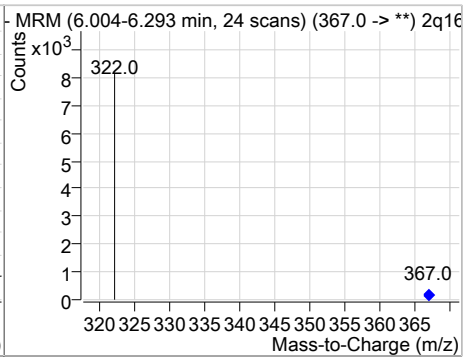




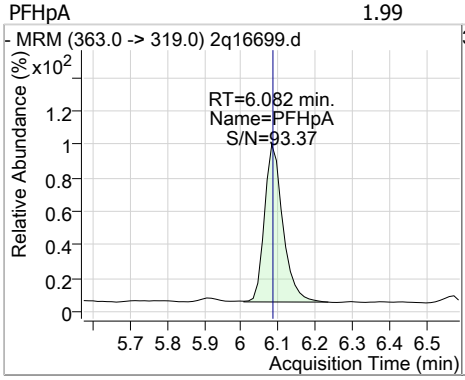
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	1.68	6.08	0.00	4537				

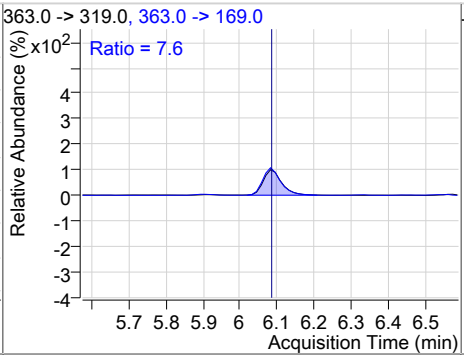


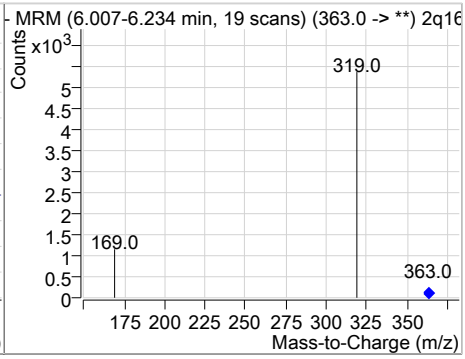




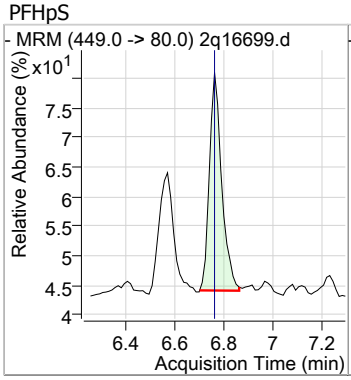
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.99	6.08	0.00	3223	363.0 -> 169.0	7.6	0.0	37.2

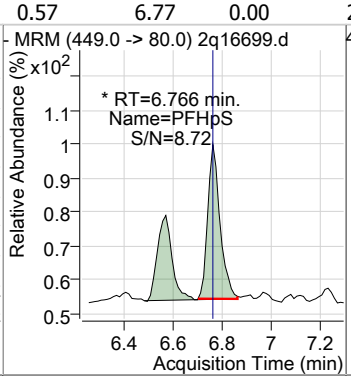


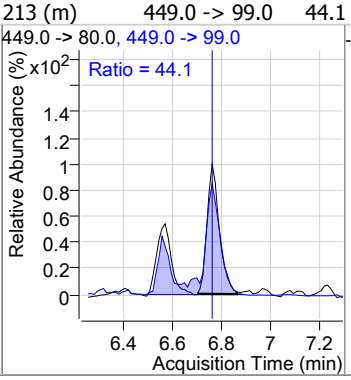


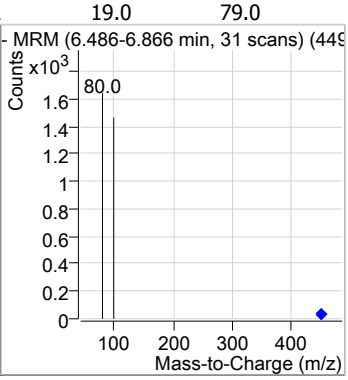


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.57	6.77	0.00	213 (m)	449.0 -> 99.0	44.1	19.0	79.0



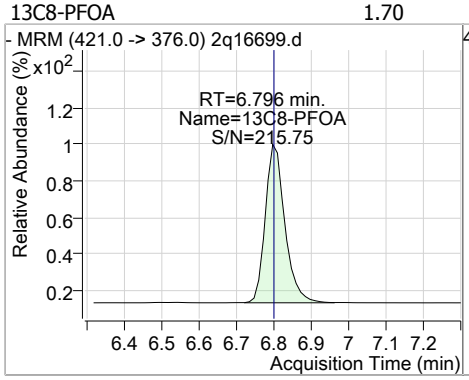


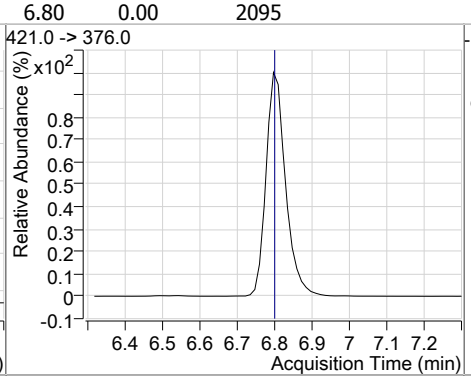


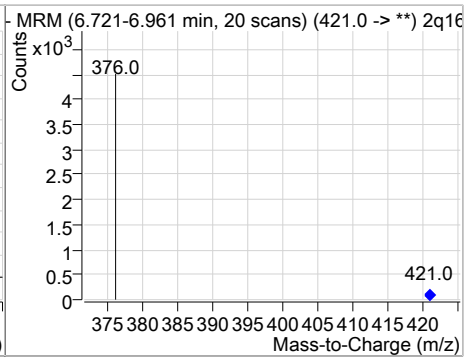


Perfluorinated Compounds by LC/MS/MS

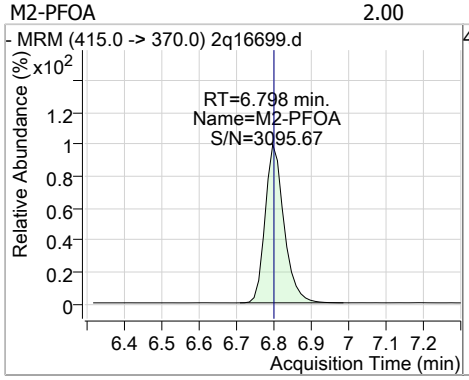
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	1.70	6.80	0.00	2095				

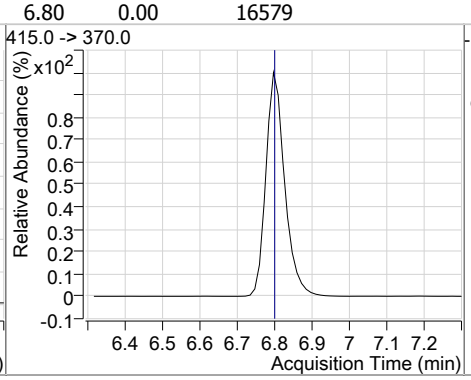


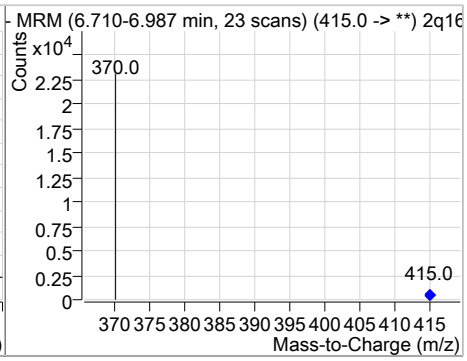




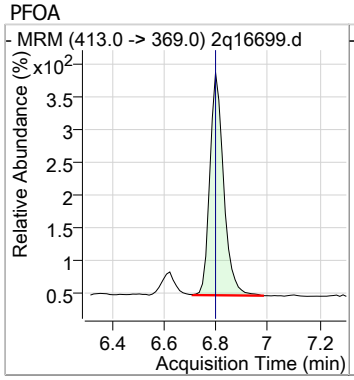
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	2.00	6.80	0.00	16579				

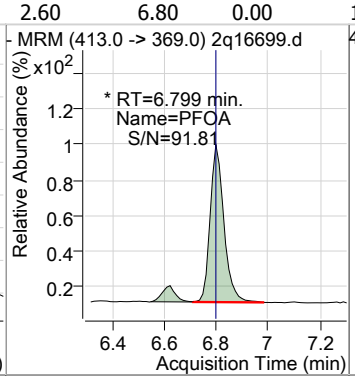


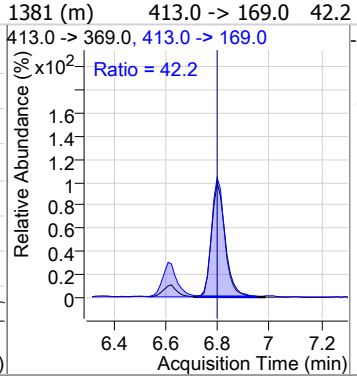


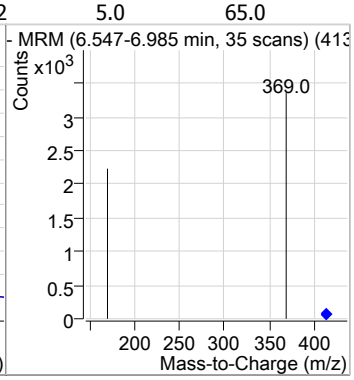


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.60	6.80	0.00	1381 (m)	413.0 -> 169.0	42.2	5.0	65.0

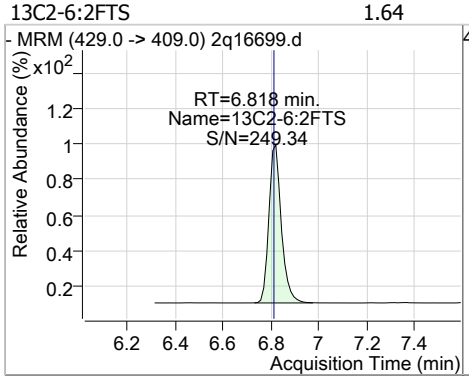


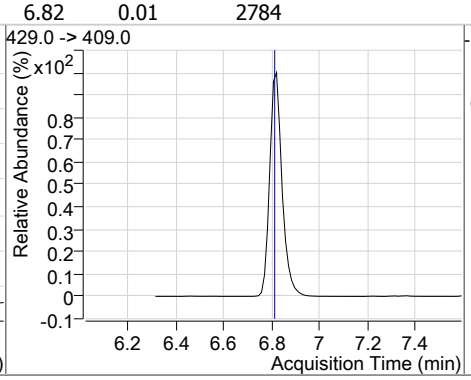


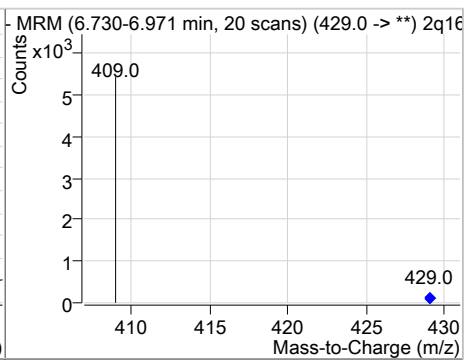




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	1.64	6.82	0.01	2784				

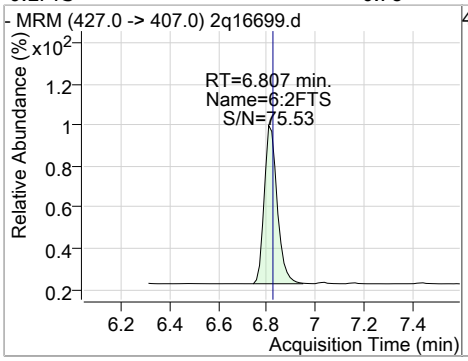


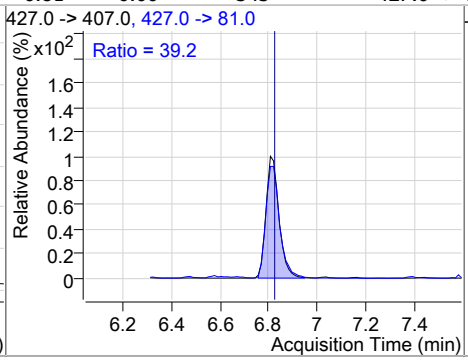


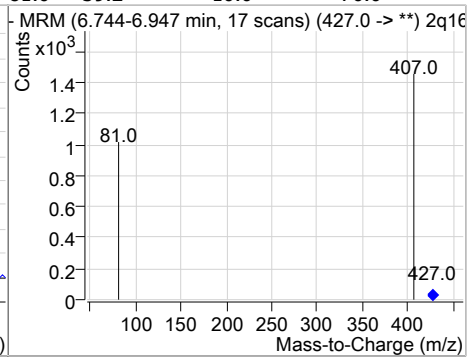


Perfluorinated Compounds by LC/MS/MS

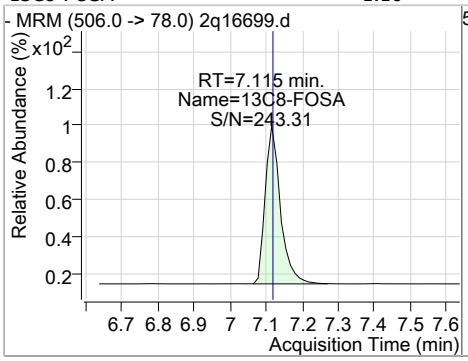
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.78	6.81	0.00	545	427.0 -> 81.0	39.2	10.0	70.0

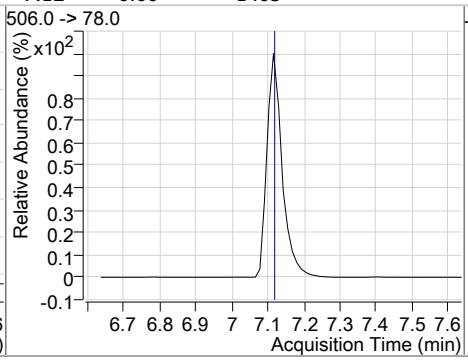


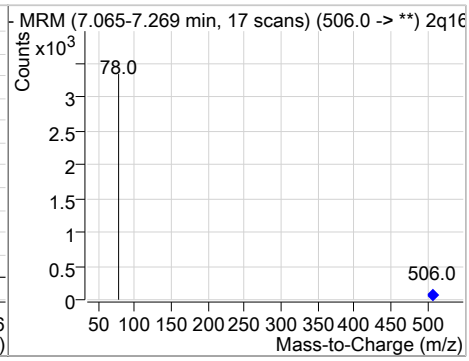




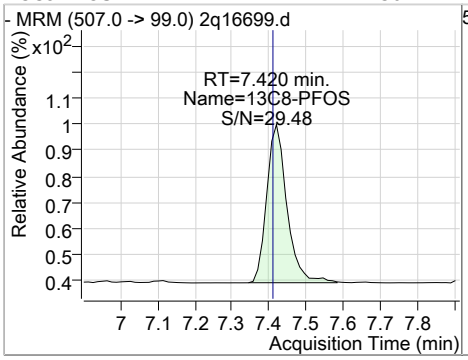
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	1.10	7.12	0.00	1465				

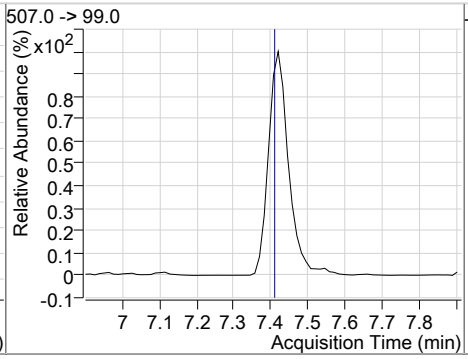


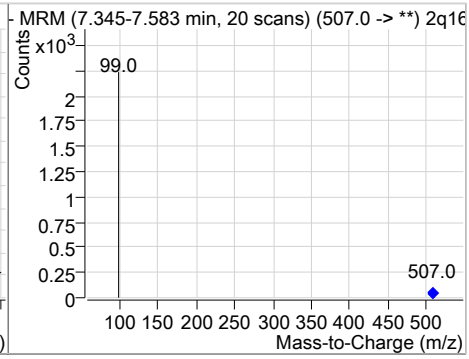




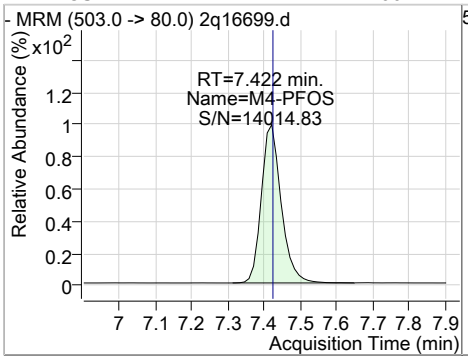
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	1.30	7.42	0.01	515				

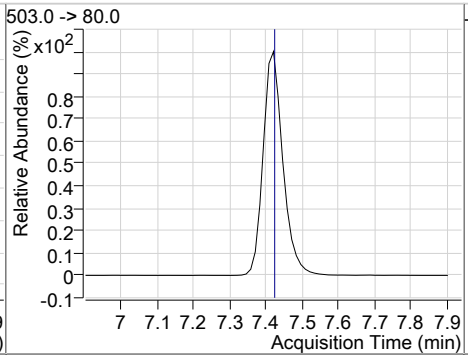


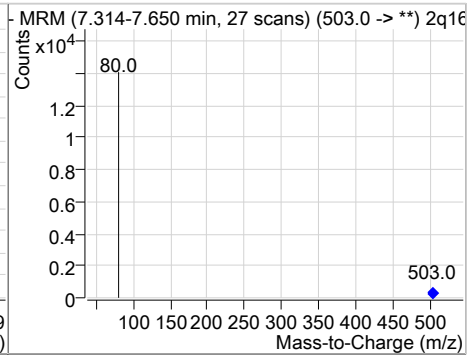




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	2.00	7.42	0.01	9741				

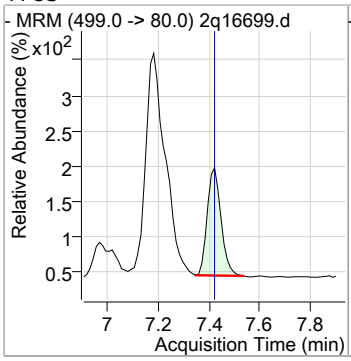


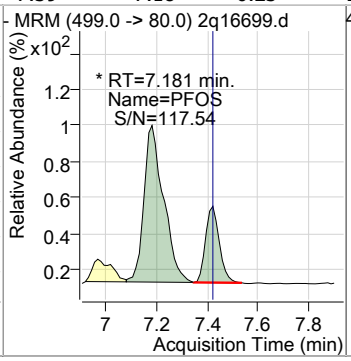


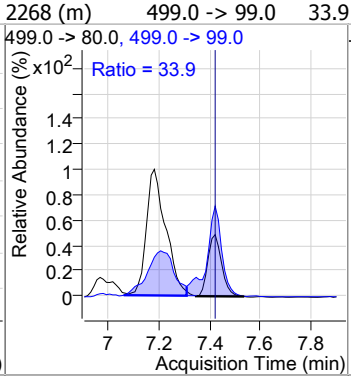


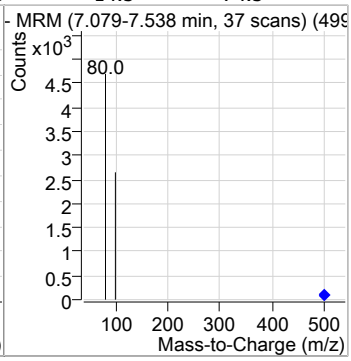
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	7.39	7.18	-0.23	2268 (m)	499.0 -> 99.0	33.9	14.5	74.5

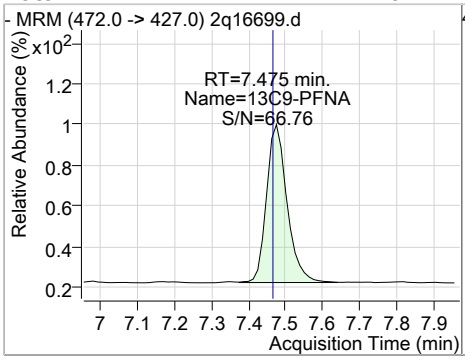


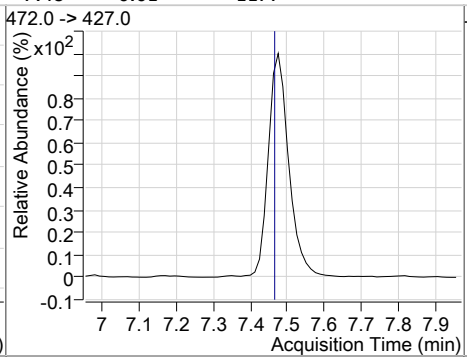


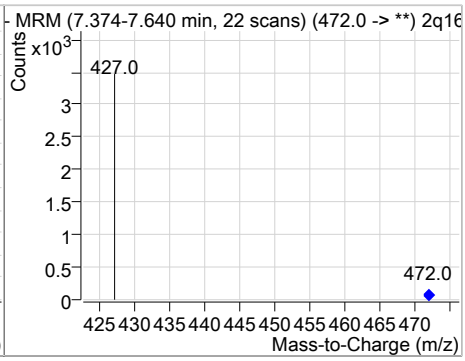




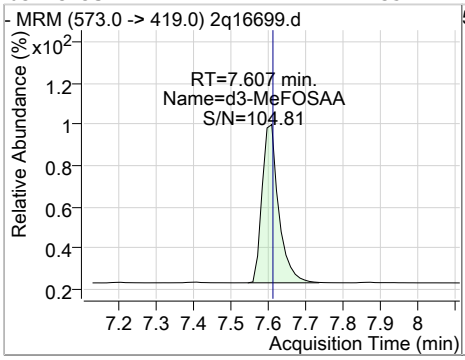
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.49	7.48	0.01	1177				

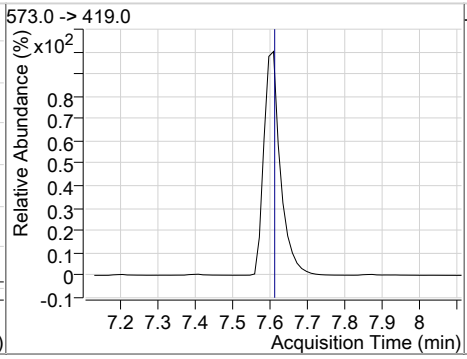


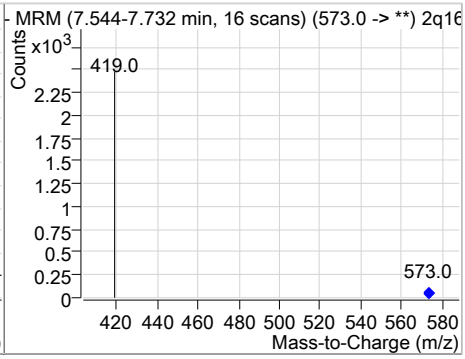




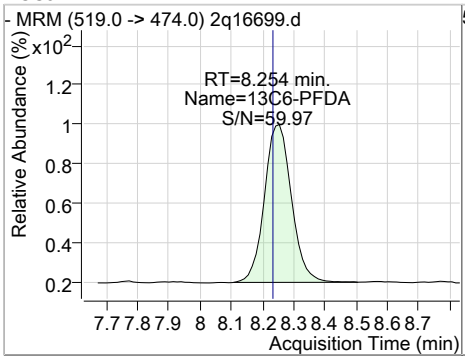
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	1.35	7.61	0.00	893				

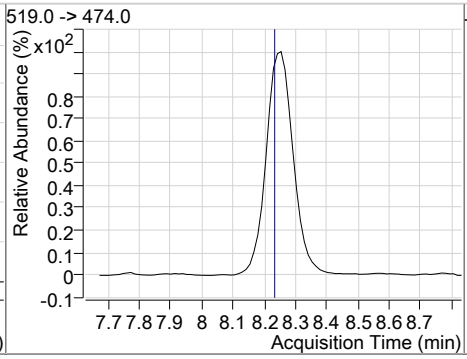


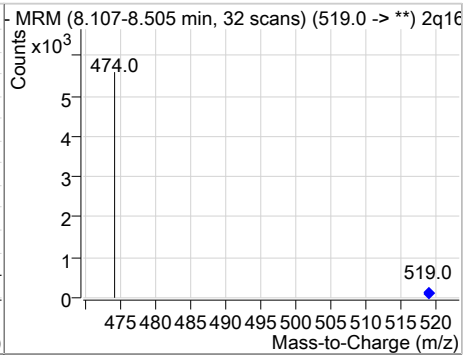




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.47	8.25	0.02	2076				

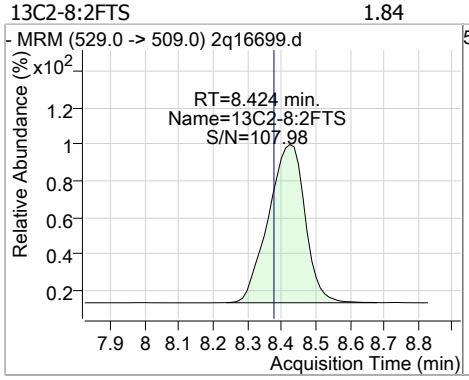


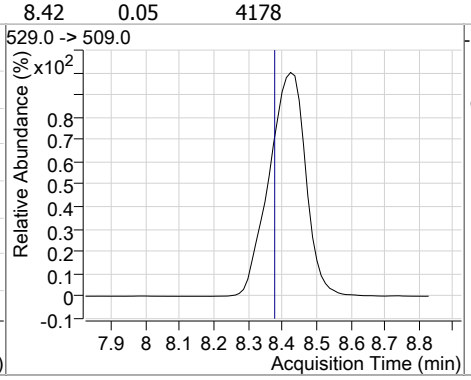


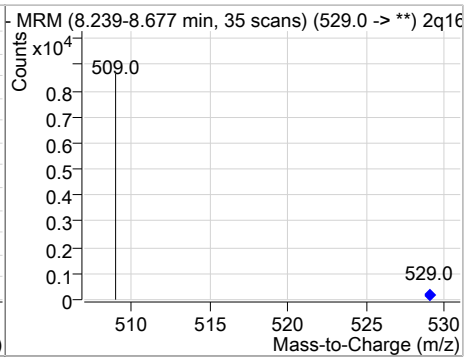


Perfluorinated Compounds by LC/MS/MS

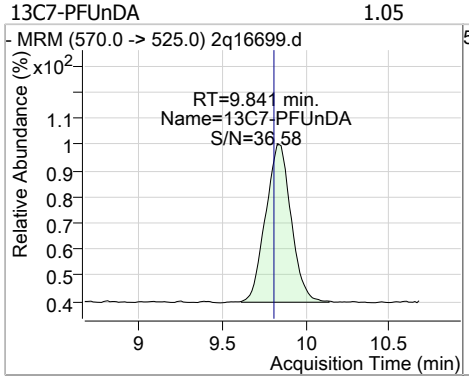
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	1.84	8.42	0.05	4178				

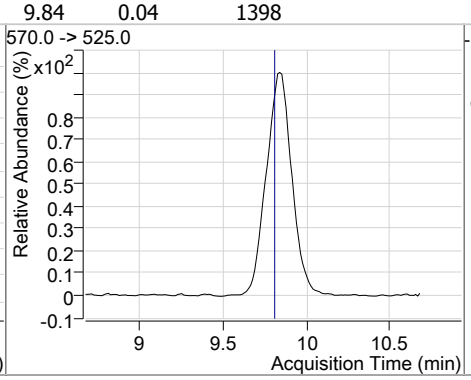


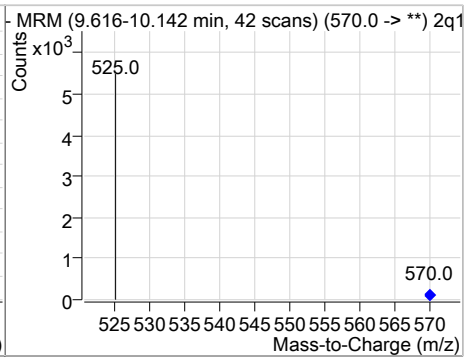




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.05	9.84	0.04	1398				







Manual Integration Approval Summary

Sample Number:	FA55430-7	**Method:**	EPA 537M QSM5.1 B-15
Lab FileID:	2Q16699.D	**Analyst approved:**	07/16/18 15:08 Natasha Gumtie
Injection Time:	07/07/18 13:42	**Supervisor approved:**	07/17/18 10:47 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanesulfonic acid	2706-91-4		5.31	Split peak
Perfluorohexanesulfonic acid	355-46-4		6.08	Split peak
Perfluoroheptanesulfonic acid	375-92-8		6.77	Split peak
Perfluorooctanoic acid	335-67-1		6.80	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.18	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/17/18 10:47

Perfluorinated Compounds by LC/MS/MS

Data File : 2q17042.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/13/2018 2:12:49 AM
Sample Name : fa55430-7
Vial : Vial 86
DA Method File : PFC_ID_071218_S2Q295.quantmethod.xml
Batch Name : s2q295.batch.bin
Sample Information : op70810,S2Q295,130,,,1.0,1,water

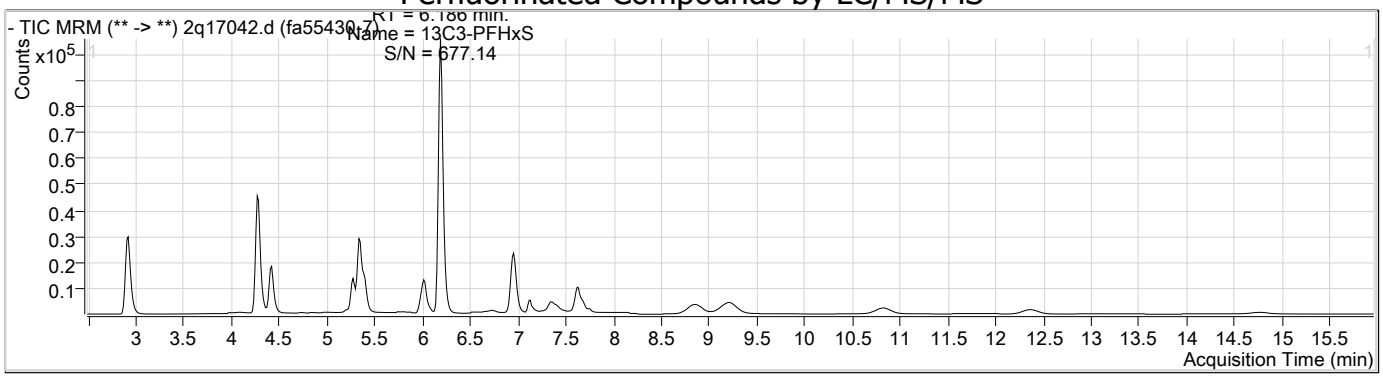
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.948	415.0 -> 370.0	16640	20.00	µg/L	-0.049
13C4-PFOS	7.624	503.0 -> 80.0	8870	20.00	µg/L	-0.051
M4-PFBA	2.916	217.0 -> 172.0	105520	20.00	µg/L	-0.075
M5-PFPeA	4.275	268.0 -> 223.0	52579	20.00	µg/L	-0.063
M5-PFHxA	5.339	318.0 -> 273.0	47616	20.00	µg/L	-0.052
M4-PFHpA	6.192	367.0 -> 322.0	43371	20.00	µg/L	-0.062
M8-PFOA	6.946	421.0 -> 376.0	21053	20.00	µg/L	-0.049
M9-PFNA	7.690	472.0 -> 427.0	13524	20.00	µg/L	-0.062
M6-PFDA	8.851	519.0 -> 474.0	40364	20.00	µg/L	-0.166
M7-PFUnDA	10.830	570.0 -> 525.0	26075	20.00	µg/L	-0.200
M2-PFDoDA	12.353	615.0 -> 570.0	20109	20.00	µg/L	-0.212
M2-PFTeDA	14.757	715.0 -> 670.0	7856	20.00	µg/L	-0.212
M8-FOSA	7.127	506.0 -> 78.0	14682	20.00	µg/L	-0.015
M3-PFBS	4.418	302.0 -> 99.0	16185	20.00	µg/L	-0.050
M3-PFHxS	6.186	402.0 -> 99.0	11791	20.00	µg/L	-0.050
M8-PFOS	7.621	507.0 -> 99.0	5719	20.00	µg/L	-0.052
M2-4:2FTS	5.272	329.0 -> 309.0	43380	20.00	µg/L	-0.051
M2-6:2FTS	6.968	429.0 -> 409.0	30021	20.00	µg/L	-0.049
M2-8:2FTS	9.212	529.0 -> 509.0	49621	20.00	µg/L	-0.185
M3-MeFOSAA	7.632	573.0 -> 419.0	9373	20.00	µg/L	-0.026
System Monitoring Compounds						
13C2-4:2FTS	5.272	329.0 -> 309.0	43351	15.36	µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.8%		
13C2-6:2FTS	6.968	429.0 -> 409.0	30006	15.38	µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.9%		
13C2-8:2FTS	9.212	529.0 -> 509.0	48699	13.24	µg/L	-0.185
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.2%		
13C2-PFDoDA	12.353	615.0 -> 570.0	20156	11.97	µg/L	-0.212
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.9%		
13C2-PFTeDA	14.757	715.0 -> 670.0	7847	10.80	µg/L	-0.212
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 54.0%		
13C3-PFBS	4.418	302.0 -> 99.0	16183	15.52	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.6%		
13C3-PFHxS	6.186	402.0 -> 99.0	11796	14.13	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.7%		
13C4-PFBA	2.916	217.0 -> 172.0	105518	15.88	µg/L	-0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.4%		
13C4-PFHpA	6.192	367.0 -> 322.0	43362	15.33	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.6%		
13C5-PFHxA	5.339	318.0 -> 273.0	47610	16.05	µg/L	-0.052
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.3%		
13C5-PFPeA	4.275	268.0 -> 223.0	52574	16.03	µg/L	-0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.1%		
13C6-PFDA	8.851	519.0 -> 474.0	39990	14.43	µg/L	-0.166
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.1%		

Perfluorinated Compounds by LC/MS/MS

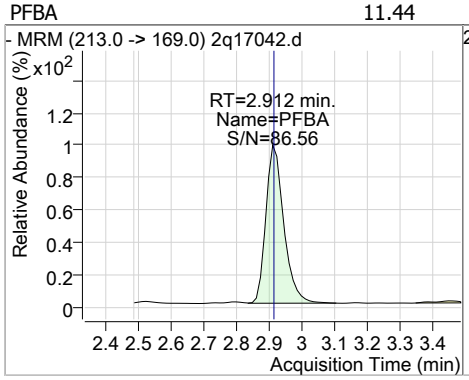
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.830	570.0 -> 525.0	26146	12.69	µg/L		-0.200
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 63.4%			
13C8-FOSA	7.127	506.0 -> 78.0	14691	9.13	µg/L		-0.015
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 45.7%			
13C8-PFOA	6.946	421.0 -> 376.0	21051	16.02	µg/L		-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.1%			
13C8-PFOS	7.621	507.0 -> 99.0	5718	13.78	µg/L		-0.052
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.9%			
13C9-PFNA	7.690	472.0 -> 427.0	13522	15.34	µg/L		-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.7%			
d3-MeFOSAA	7.632	573.0 -> 419.0	9374	12.07	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.3%			
M2-PFOA	6.948	415.0 -> 370.0	16627	19.98	ng/ml		-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%			
M4-PFOS	7.624	503.0 -> 80.0	8883	20.03	ng/ml		-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.2%			
Target Compounds							**QValue**
4:2FTS	5.274	327.0 -> 307.0	210	0.18	µg/L	#	30
6:2FTS	6.970	427.0 -> 407.0	5988	8.00	µg/L		97
8:2FTS	9.190	527.0 -> 507.0	382	0.29	µg/L		93
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	2.912	213.0 -> 169.0	9576	11.44	µg/L		100
PFBS	4.422	299.0 -> 80.0	33214	29.91	µg/L		99
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	6.195	363.0 -> 319.0	33553	20.77	µg/L	m	100
PFHpS	6.917	449.0 -> 80.0	2222	6.70	µg/L	m	92
PFHxA	5.340	313.0 -> 269.0	44643	55.60	µg/L		98
PFHxS	6.189	399.0 -> 80.0	229382	328.30	µg/L	m	97
PFNA	7.692	463.0 -> 419.0	345	1.29	µg/L		93
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	6.948	413.0 -> 369.0	15346	27.35	µg/L	m	96
PFOS	7.346	499.0 -> 80.0	25824	72.09	µg/L	m	84
PFPeA	4.278	263.0 -> 219.0	109205	44.49	µg/L		100
PFPeS	5.396	349.0 -> 80.0	25223	35.76	µg/L	m	96
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			

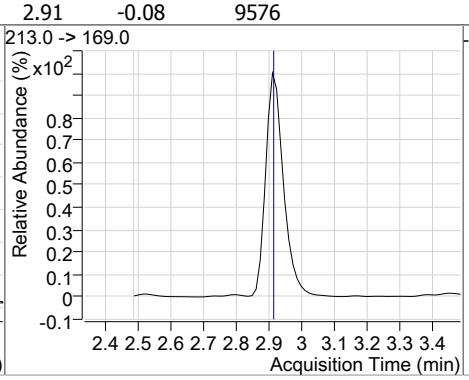
 # = Qualifier out of range, m = manually integrated, + = Area summed

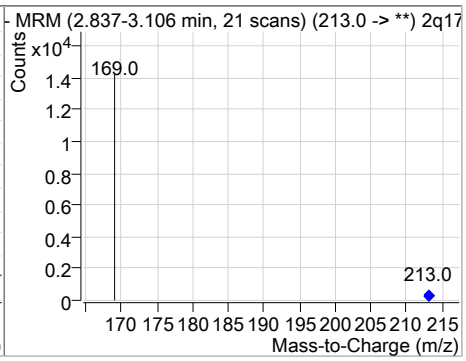
Perfluorinated Compounds by LC/MS/MS



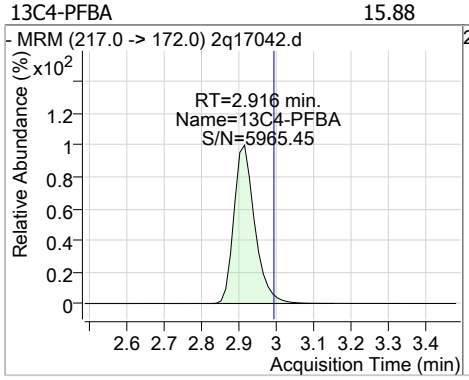
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	11.44	2.91	-0.08	9576				

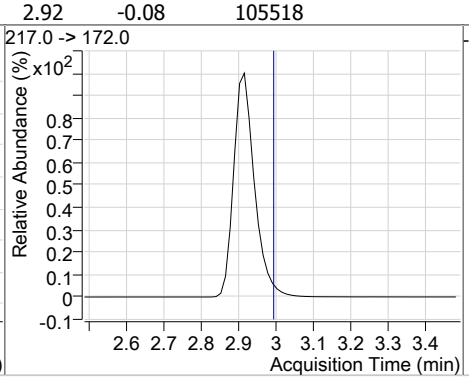


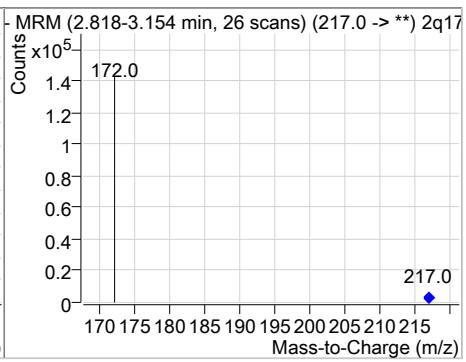




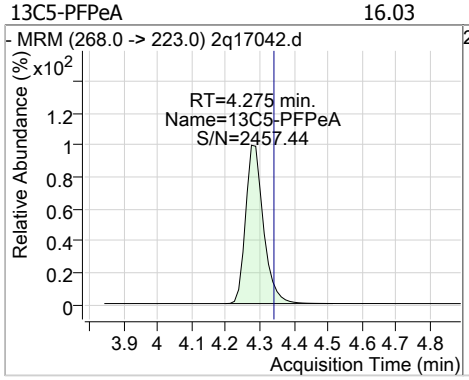
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	15.88	2.92	-0.08	105518				

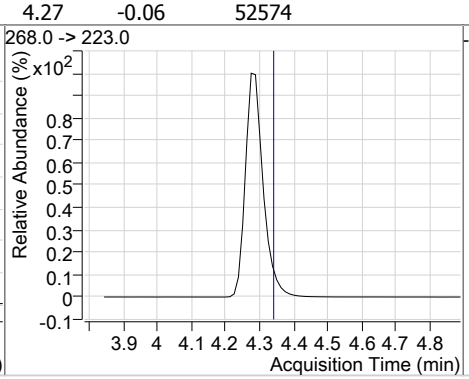


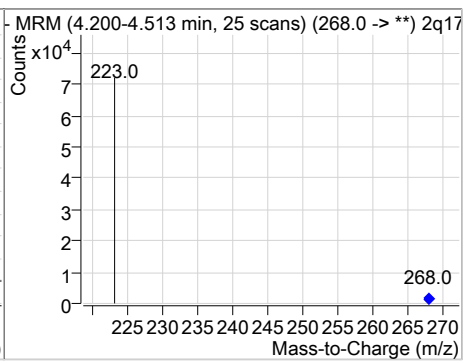




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	16.03	4.27	-0.06	52574				

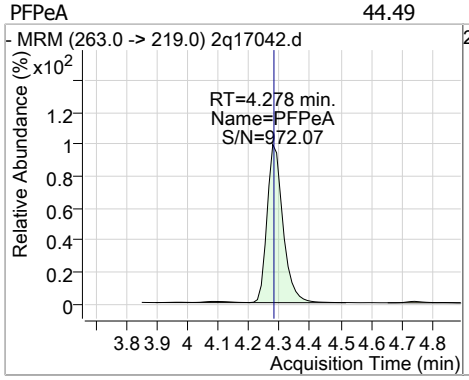


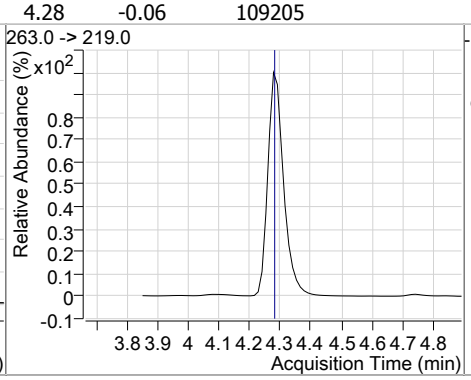


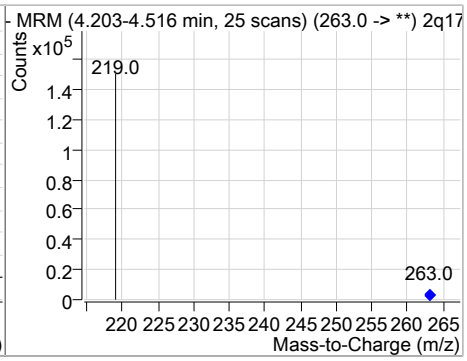


Perfluorinated Compounds by LC/MS/MS

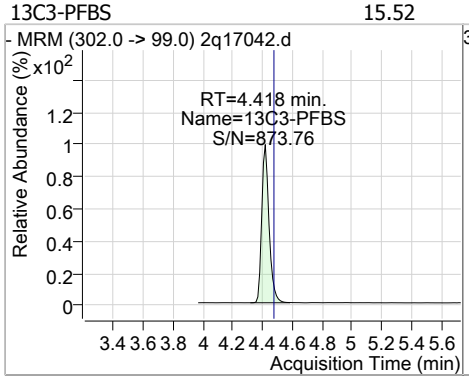
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	44.49	4.28	-0.06	109205				

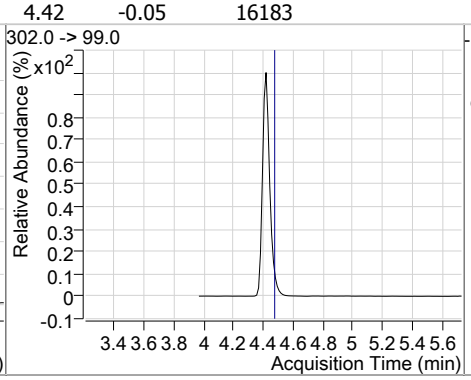


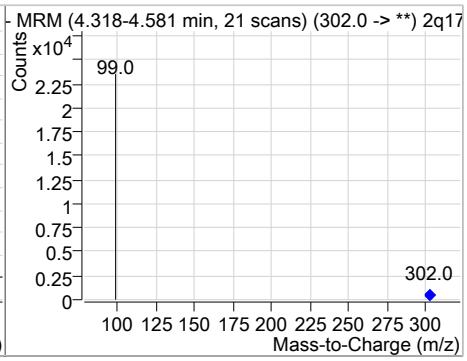




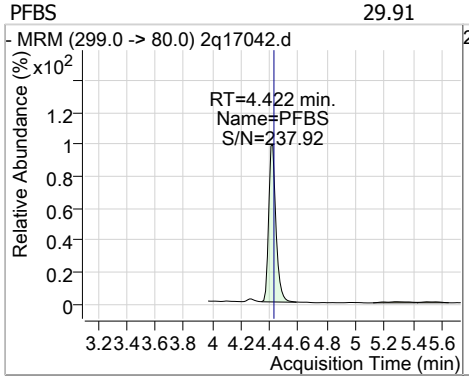
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	15.52	4.42	-0.05	16183				

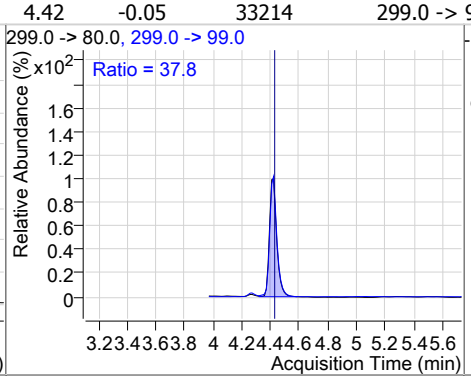


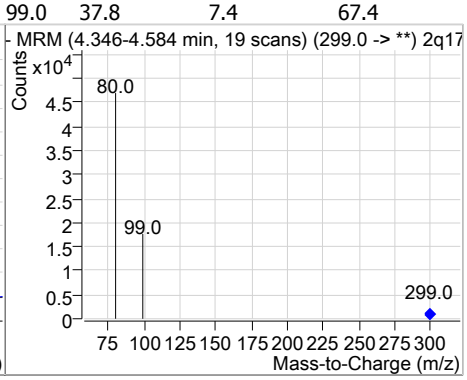




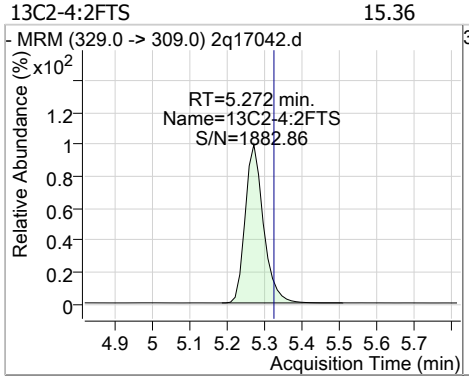
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	29.91	4.42	-0.05	33214	299.0 -> 99.0	37.8	7.4	67.4

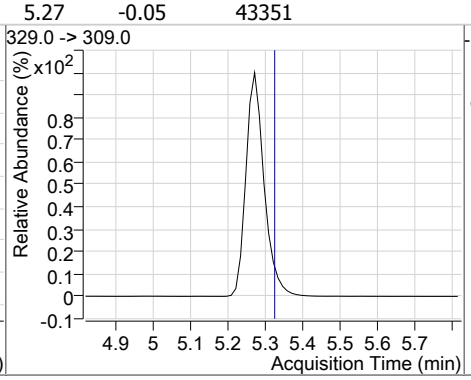


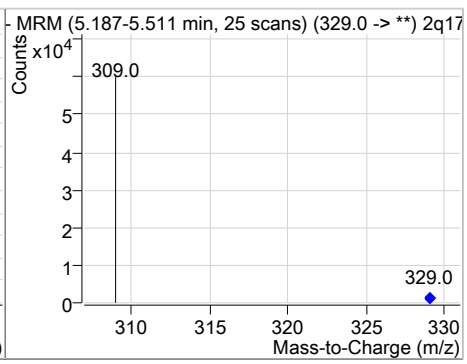




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	15.36	5.27	-0.05	43351				

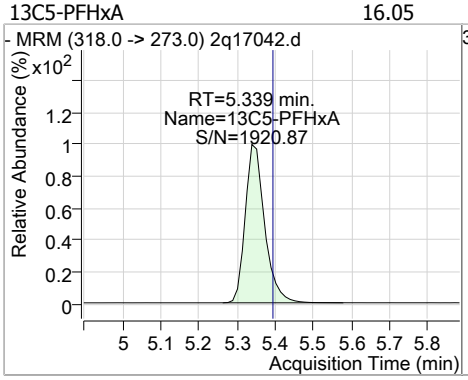


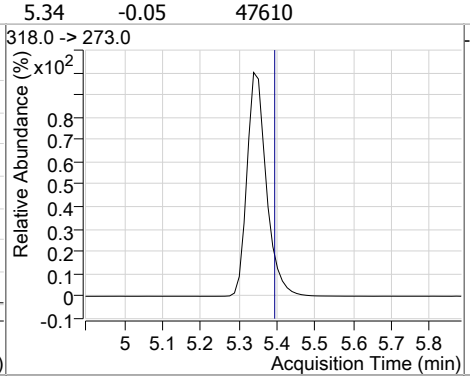


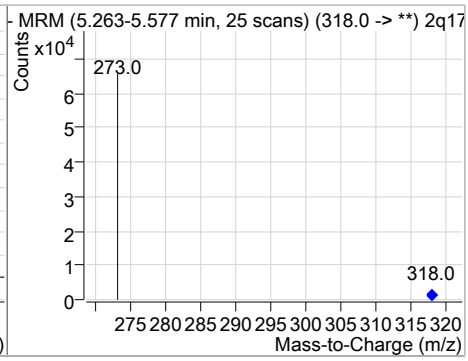


Perfluorinated Compounds by LC/MS/MS

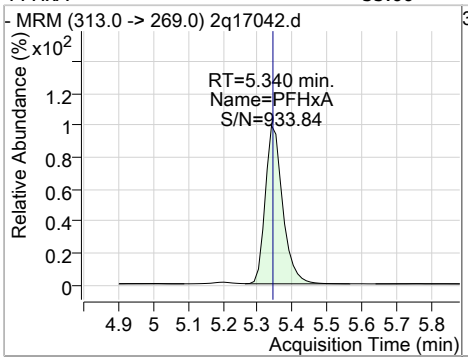
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	16.05	5.34	-0.05	47610				

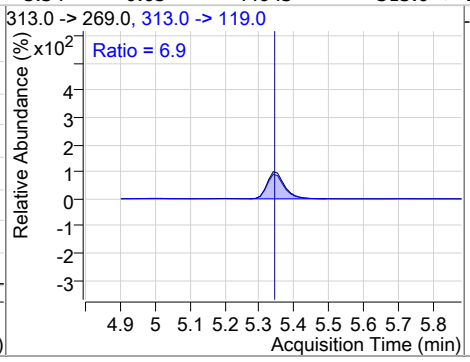


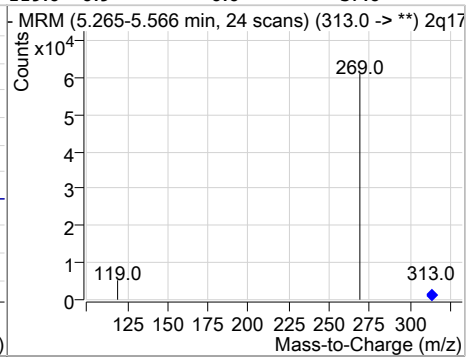




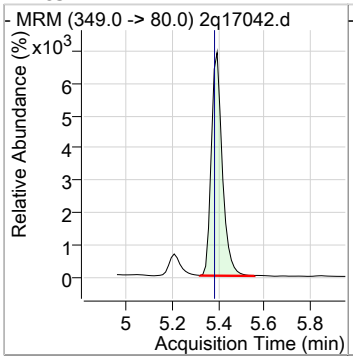
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	55.60	5.34	-0.05	44643	313.0 -> 119.0	6.9	0.0	37.6

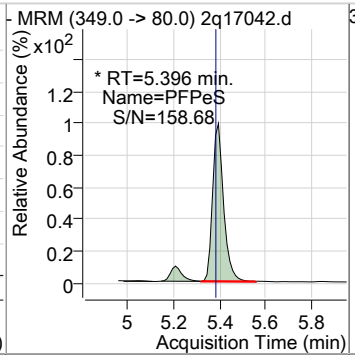


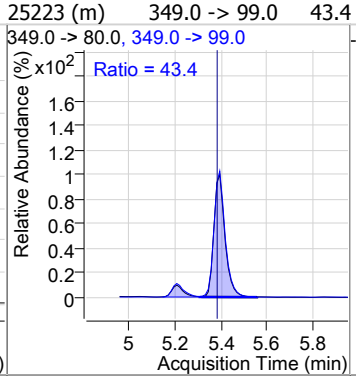


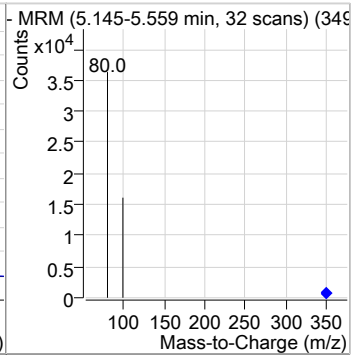


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	35.76	5.40	-0.05	25223 (m)	349.0 -> 99.0	43.4	10.8	70.8

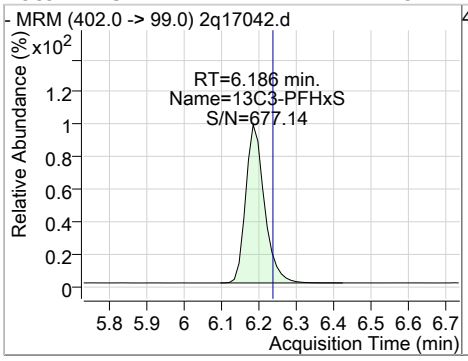


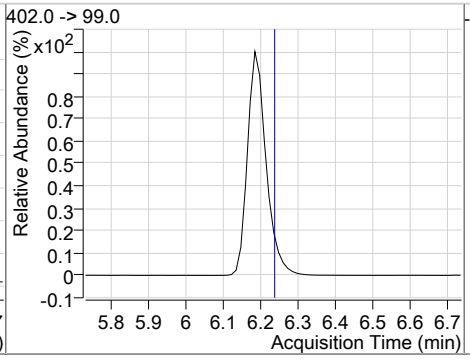


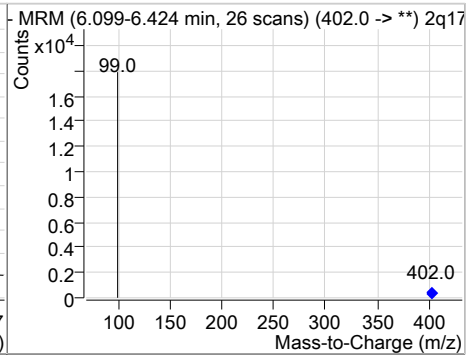




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	14.13	6.19	-0.05	11796				

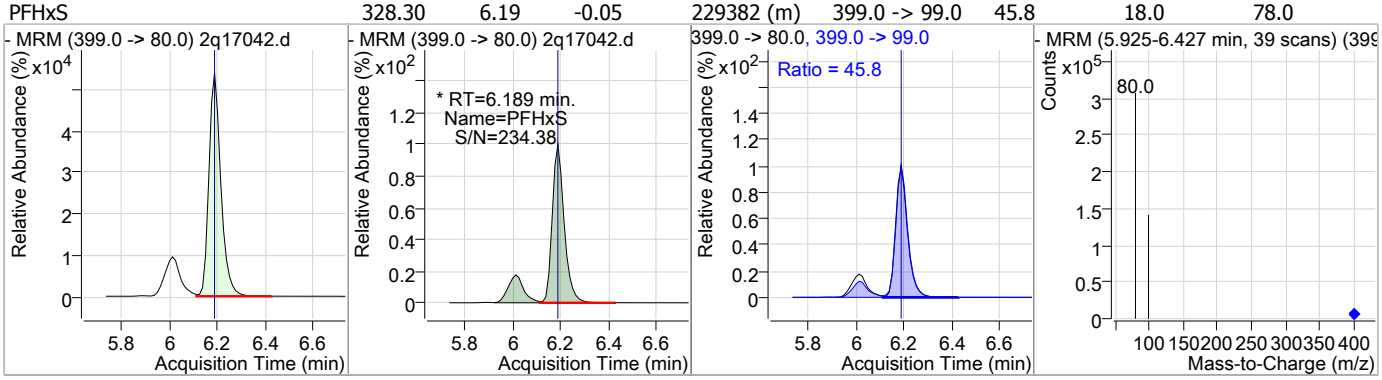




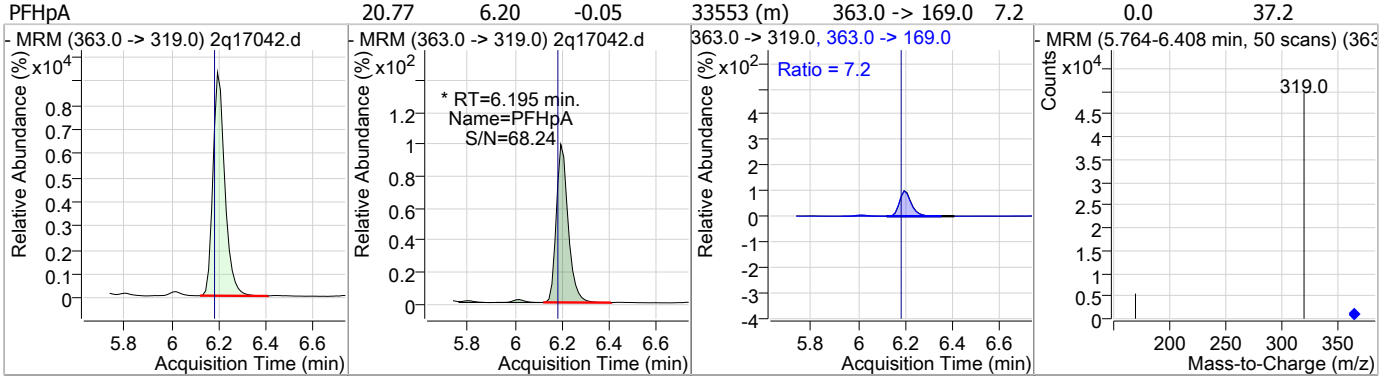


Perfluorinated Compounds by LC/MS/MS

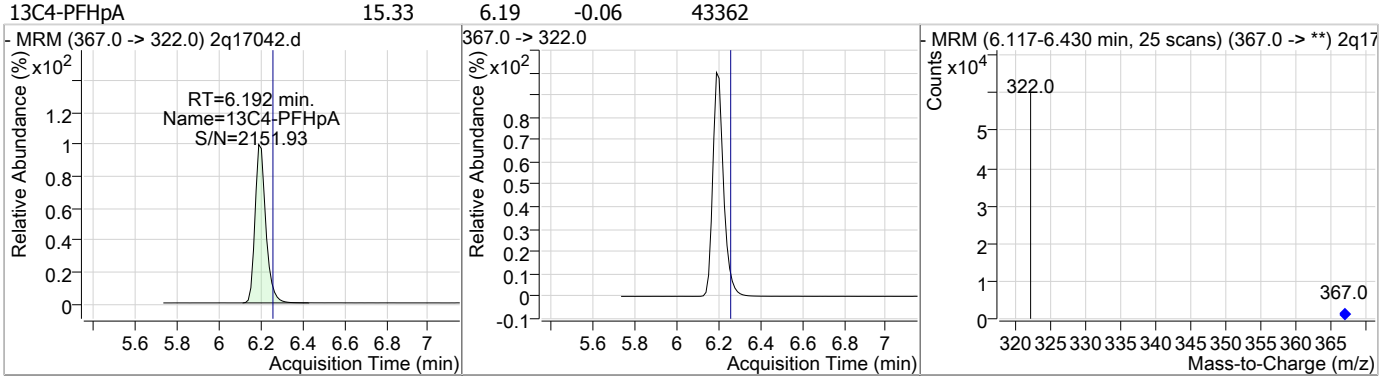
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	328.30	6.19	-0.05	229382 (m)	399.0 -> 99.0	45.8	18.0	78.0



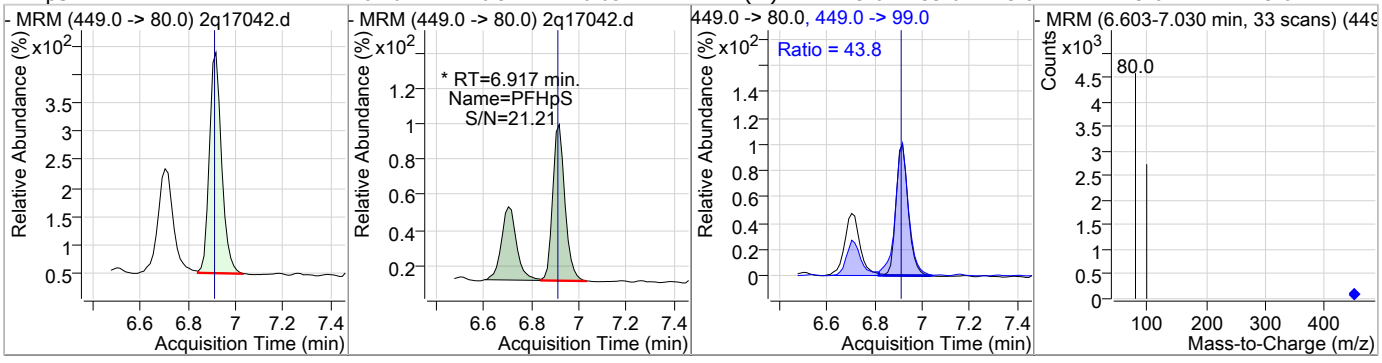
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.77	6.20	-0.05	33553 (m)	363.0 -> 169.0	7.2	0.0	37.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	15.33	6.19	-0.06	43362				

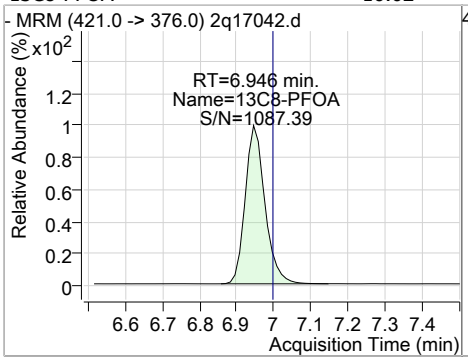


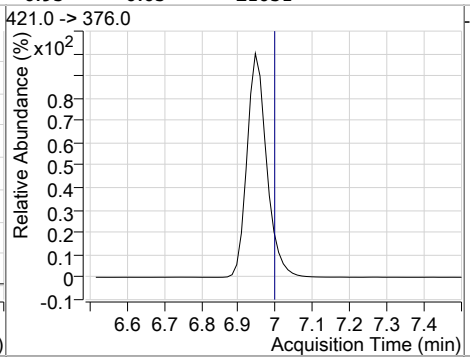
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	6.70	6.92	-0.05	2222 (m)	449.0 -> 99.0	43.8	19.0	79.0

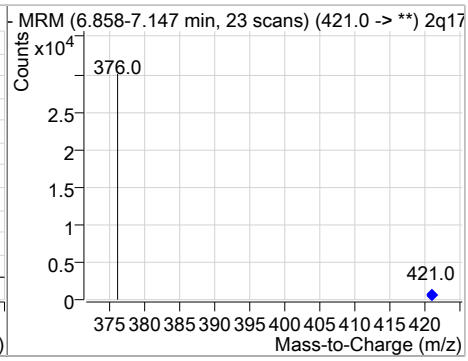


Perfluorinated Compounds by LC/MS/MS

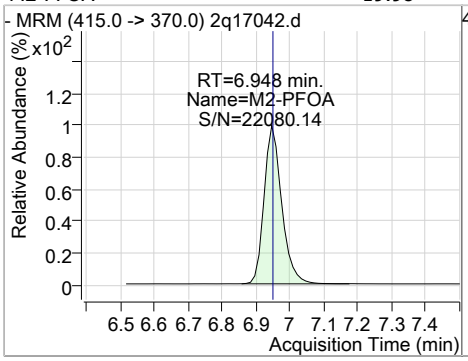
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	16.02	6.95	-0.05	21051				

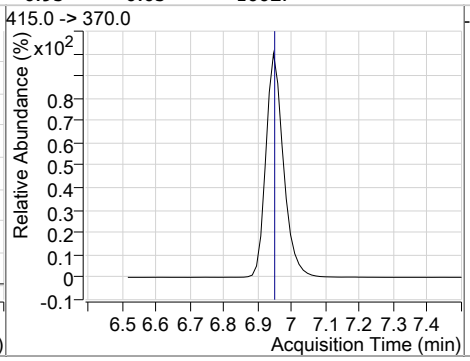


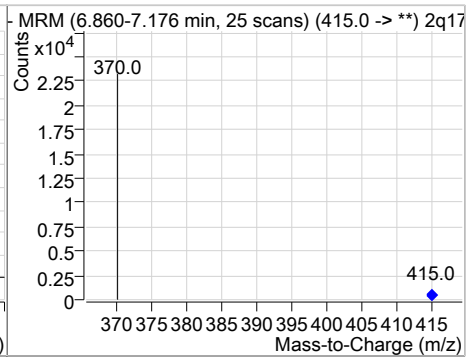




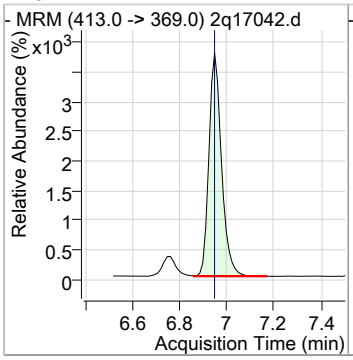
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	19.98	6.95	-0.05	16627				

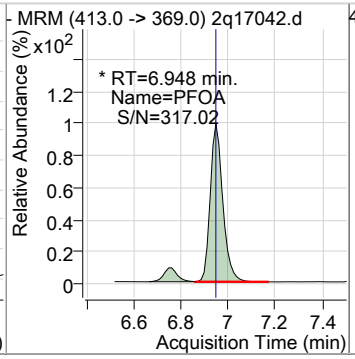


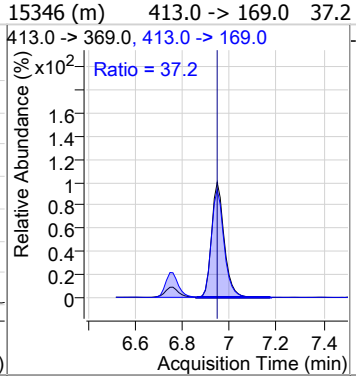


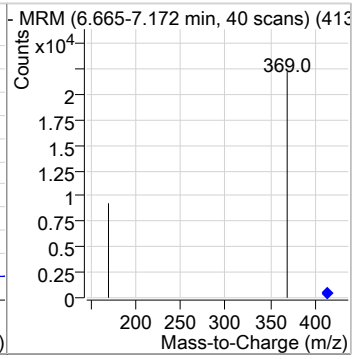


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	27.35	6.95	-0.05	15346 (m)	413.0 -> 169.0	37.2	5.0	65.0

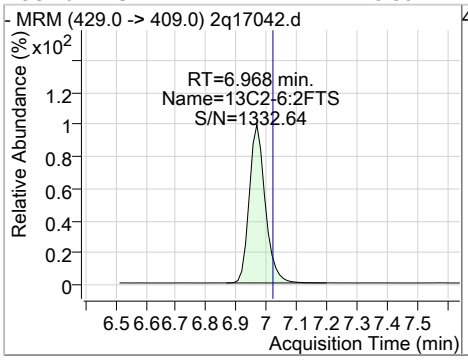


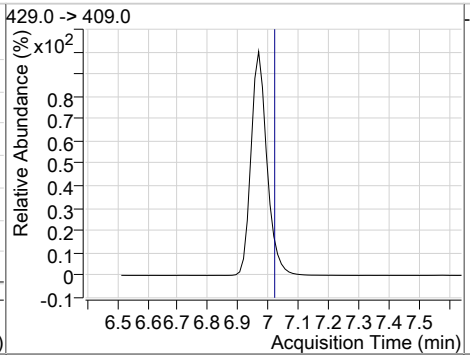


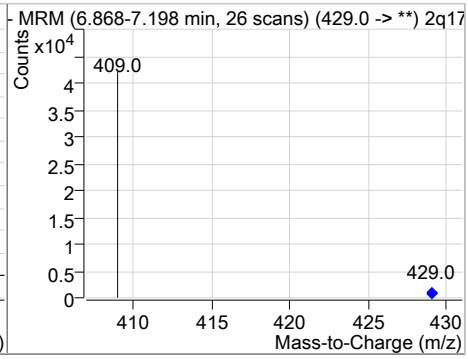




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	15.38	6.97	-0.05	30006				

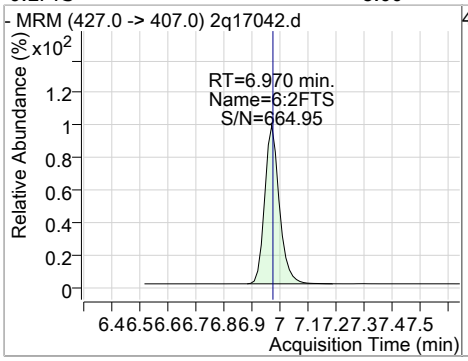


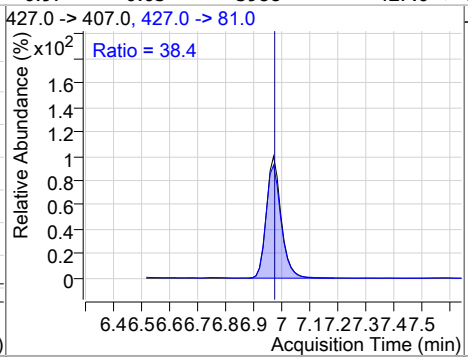


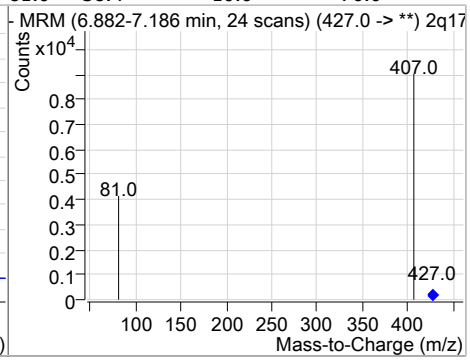


Perfluorinated Compounds by LC/MS/MS

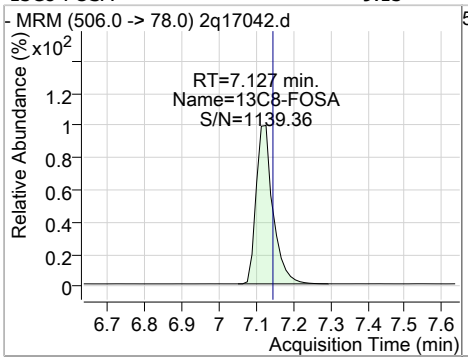
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	8.00	6.97	-0.05	5988	427.0 -> 81.0	38.4	10.0	70.0

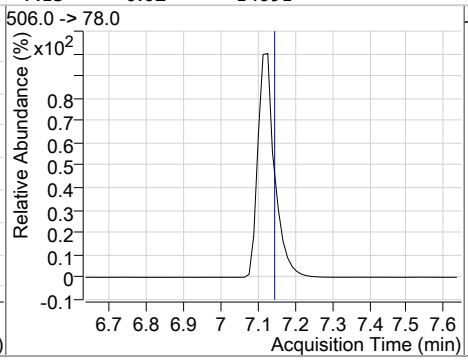


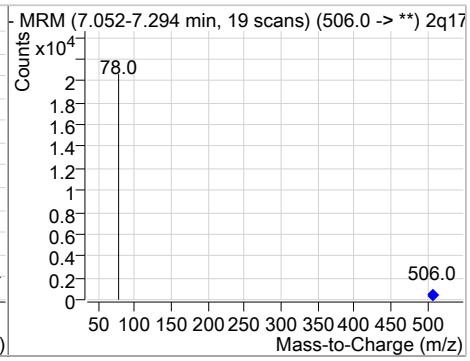




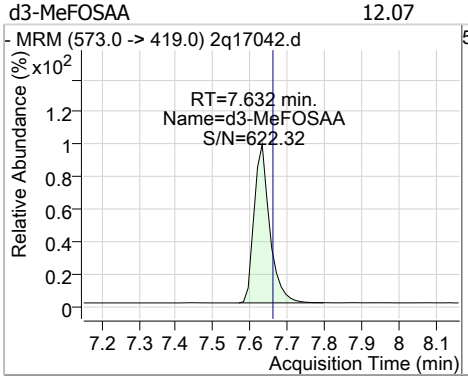
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	9.13	7.13	-0.02	14691				

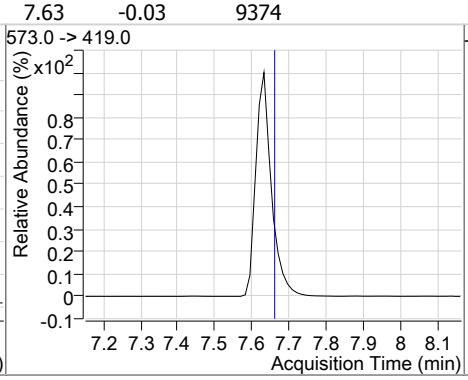


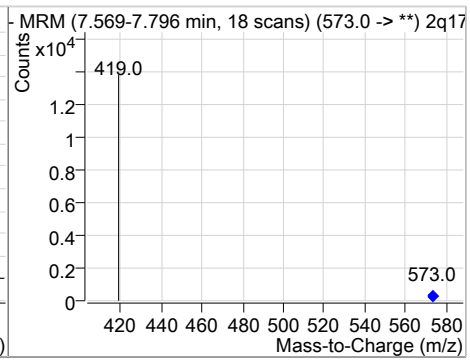




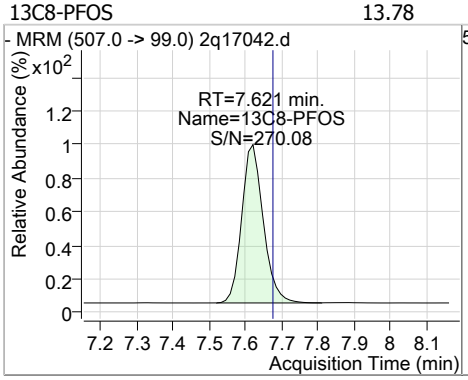
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	12.07	7.63	-0.03	9374				

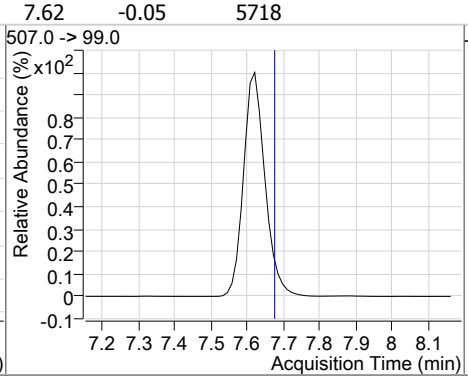


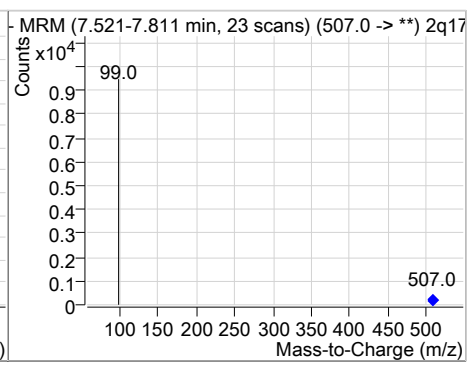




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	13.78	7.62	-0.05	5718				

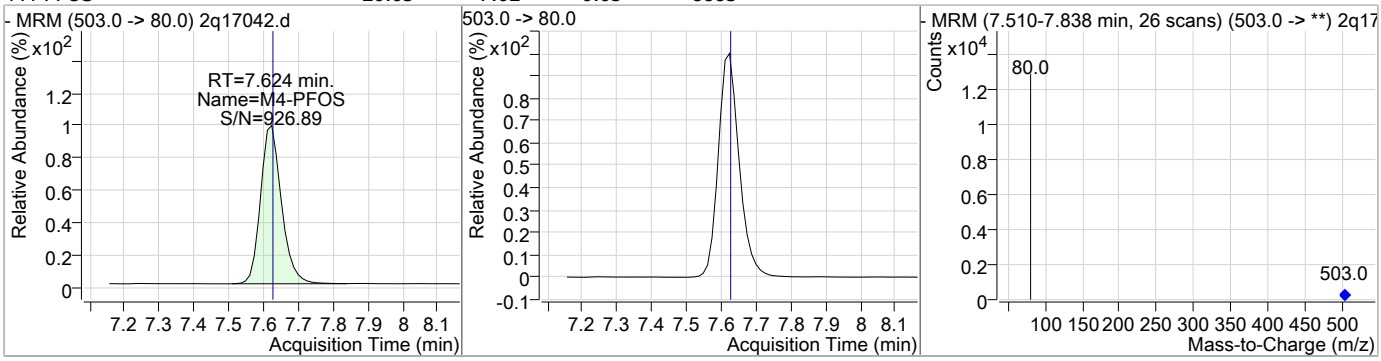




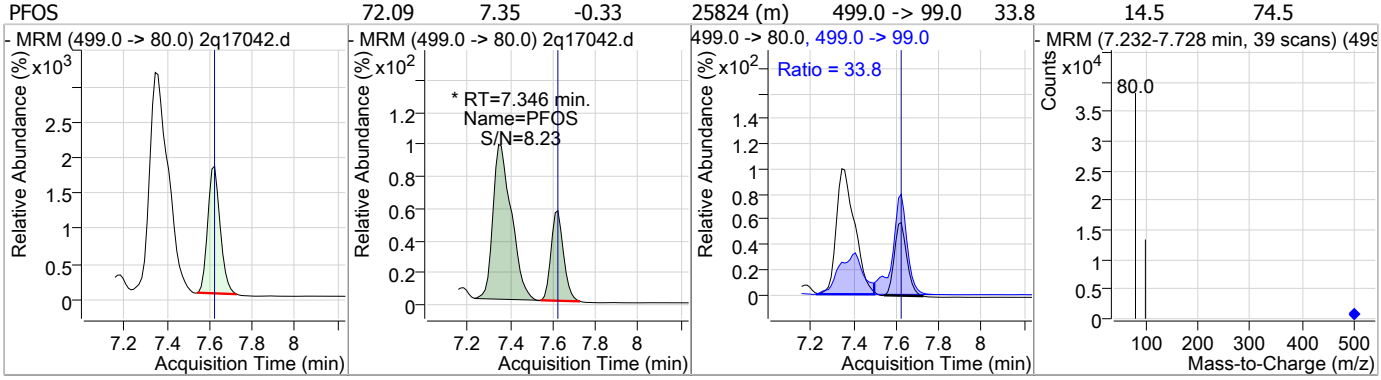


Perfluorinated Compounds by LC/MS/MS

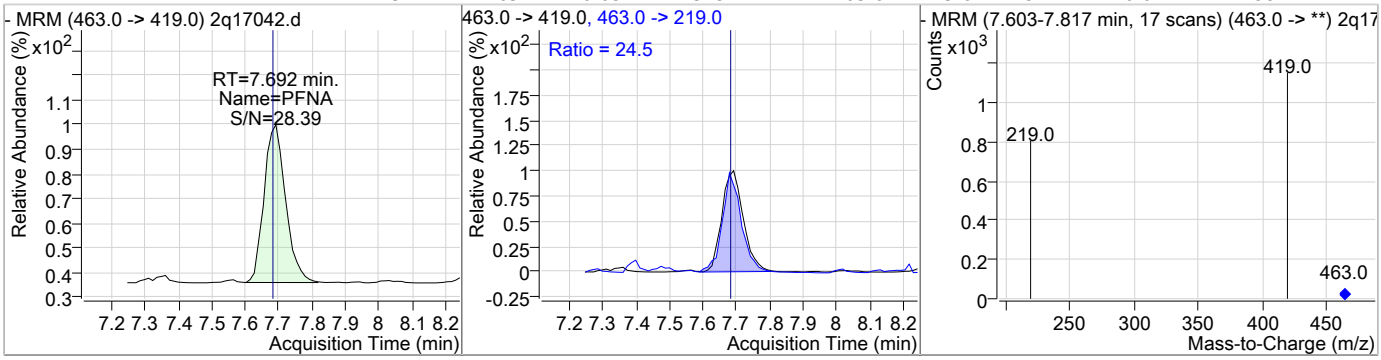
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.03	7.62	-0.05	8883				



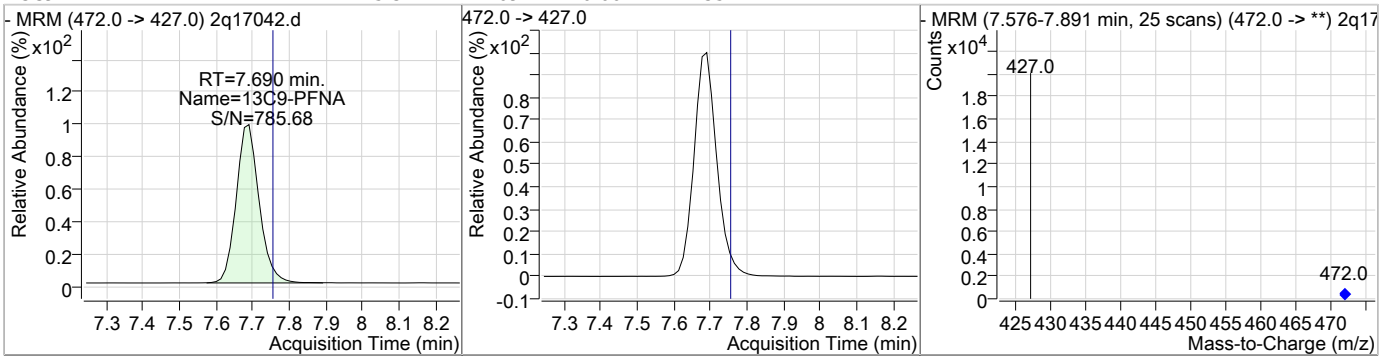
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	72.09	7.35	-0.33	25824 (m)	499.0 -> 99.0	33.8	14.5	74.5



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.29	7.69	-0.05	345	463.0 -> 219.0	24.5	0.0	58.4

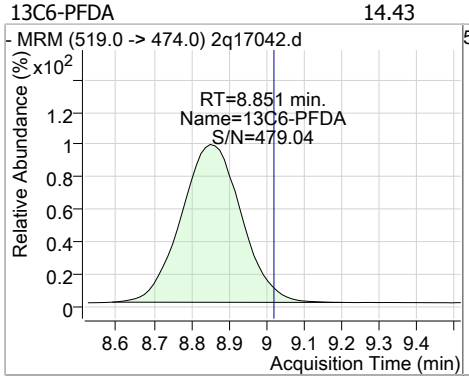


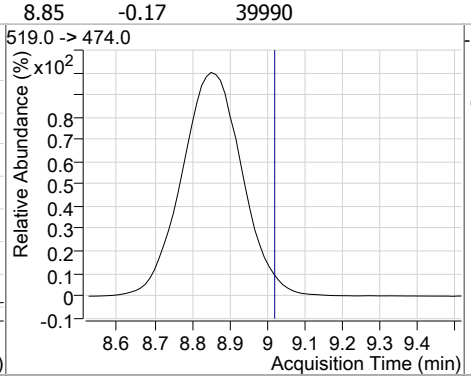
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	15.34	7.69	-0.06	13522				

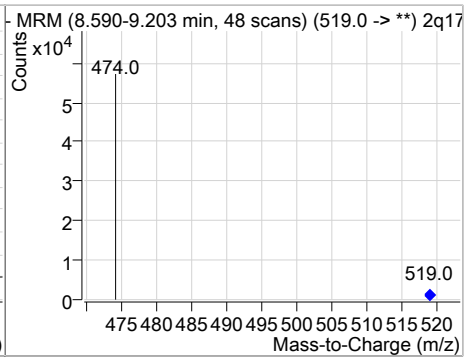


Perfluorinated Compounds by LC/MS/MS

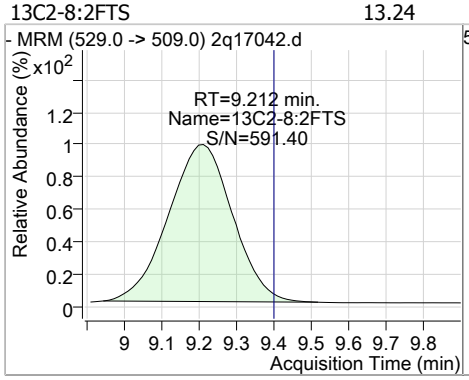
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	14.43	8.85	-0.17	39990				

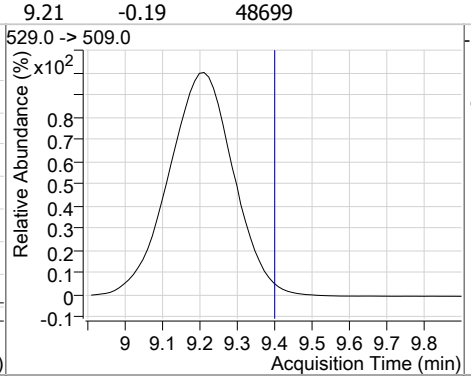


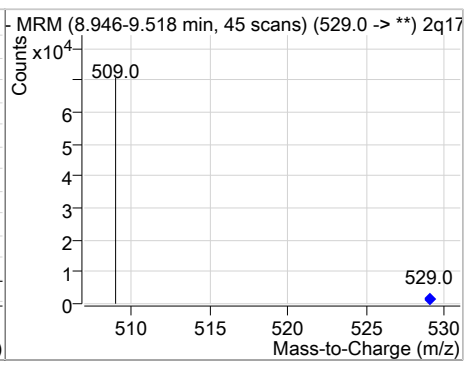




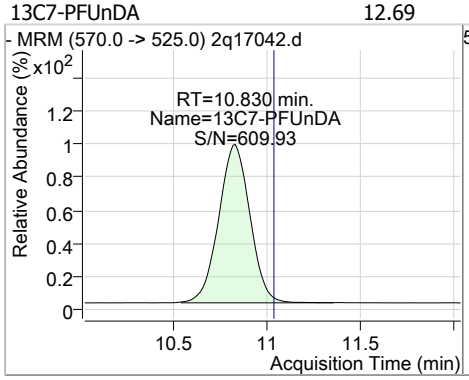
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	13.24	9.21	-0.19	48699				

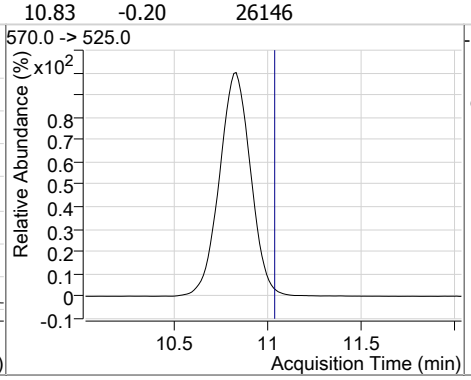


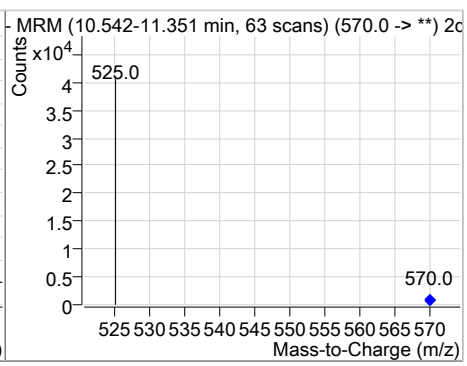




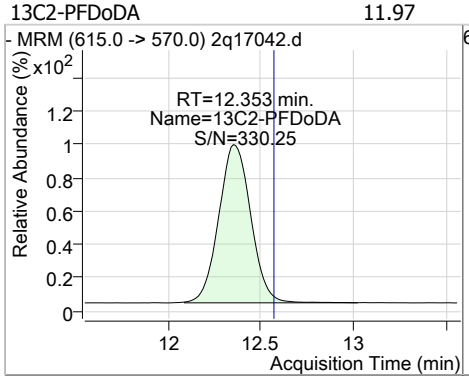
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	12.69	10.83	-0.20	26146				

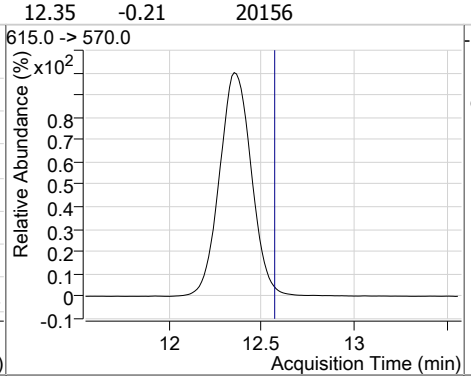


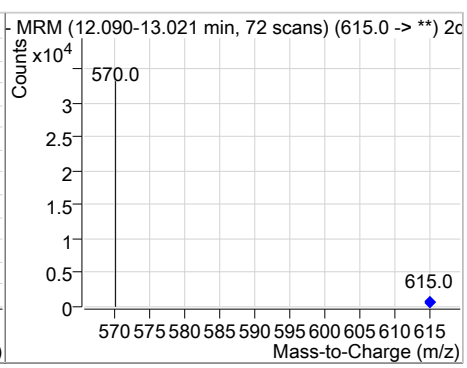




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	11.97	12.35	-0.21	20156				

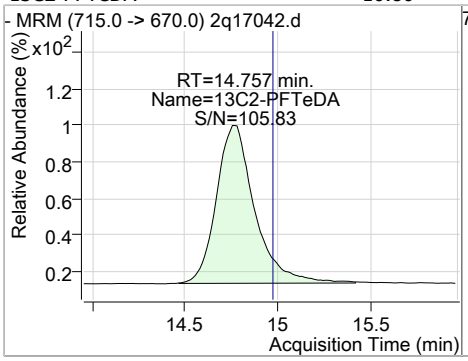


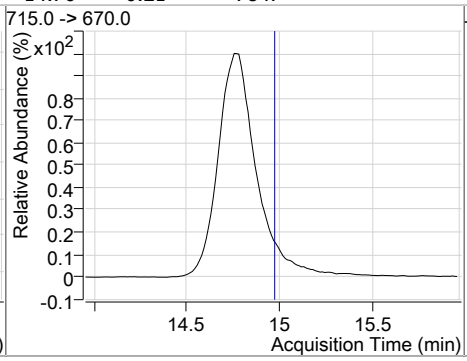


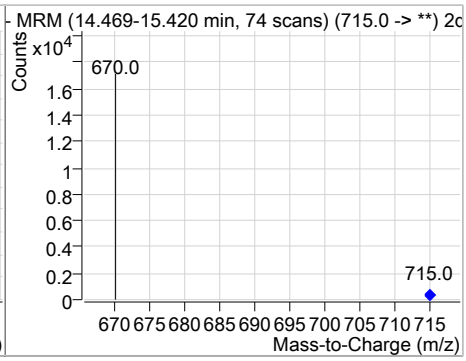


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.80	14.76	-0.21	7847				







7.1.13

7

Manual Integration Approval Summary

Sample Number: FA55430-7
Lab FileID: 2Q17042.D
Injection Time: 07/13/18 02:12
Method: EPA 537M QSM5.1 B-15
Analyst approved: 07/16/18 15:08 Natasha Gumtie
Supervisor approved: 07/17/18 10:47 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanesulfonic acid	2706-91-4		5.40	Split peak
Perfluorohexanesulfonic acid	355-46-4		6.19	Split peak
Perfluoroheptanoic acid	375-85-9		6.20	Split peak
Perfluoroheptanesulfonic acid	375-92-8		6.92	Split peak
Perfluorooctanoic acid	335-67-1		6.95	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.35	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/17/18 11:23

Perfluorinated Compounds by LC/MS/MS

Data File : 2q17043.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/13/2018 2:33:32 AM
Sample Name : fa55430-8
Vial : Vial 87
DA Method File : PFC_ID_071218_S2Q295.quantmethod.xml
Batch Name : s2q295.batch.bin
Sample Information : op70810,S2Q295,120,,,1.0,1,water

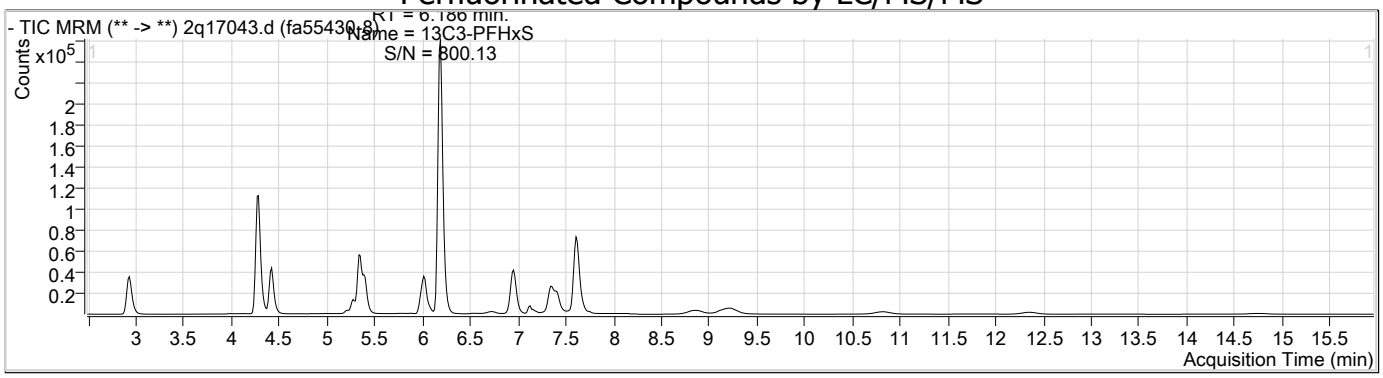
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.948	415.0 -> 370.0	18111	20.00	µg/L	-0.049
13C4-PFOS	7.611	503.0 -> 80.0	8156	20.00	µg/L	-0.064
M4-PFBA	2.928	217.0 -> 172.0	103237	20.00	µg/L	-0.063
M5-PFPeA	4.287	268.0 -> 223.0	48524	20.00	µg/L	-0.050
M5-PFHxA	5.339	318.0 -> 273.0	44313	20.00	µg/L	-0.052
M4-PFHpA	6.192	367.0 -> 322.0	37511	20.00	µg/L	-0.062
M8-PFOA	6.946	421.0 -> 376.0	21667	20.00	µg/L	-0.049
M9-PFNA	7.678	472.0 -> 427.0	13609	20.00	µg/L	-0.075
M6-PFDA	8.863	519.0 -> 474.0	39779	20.00	µg/L	-0.154
M7-PFUnDA	10.830	570.0 -> 525.0	25930	20.00	µg/L	-0.200
M2-PFDoDA	12.353	615.0 -> 570.0	20884	20.00	µg/L	-0.212
M2-PFTeDA	14.732	715.0 -> 670.0	8632	20.00	µg/L	-0.237
M8-FOSA	7.127	506.0 -> 78.0	22057	20.00	µg/L	-0.015
M3-PFBS	4.418	302.0 -> 99.0	15170	20.00	µg/L	-0.050
M3-PFHxS	6.186	402.0 -> 99.0	10191	20.00	µg/L	-0.050
M8-PFOS	7.609	507.0 -> 99.0	4679	20.00	µg/L	-0.064
M2-4:2FTS	5.272	329.0 -> 309.0	42534	20.00	µg/L	-0.051
M2-6:2FTS	6.968	429.0 -> 409.0	31756	20.00	µg/L	-0.049
M2-8:2FTS	9.212	529.0 -> 509.0	50348	20.00	µg/L	-0.185
M3-MeFOSAA	7.632	573.0 -> 419.0	8235	20.00	µg/L	-0.026
System Monitoring Compounds						
13C2-4:2FTS	5.272	329.0 -> 309.0	42531	15.07	µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.4%		
13C2-6:2FTS	6.968	429.0 -> 409.0	31757	16.27	µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.4%		
13C2-8:2FTS	9.212	529.0 -> 509.0	49284	13.40	µg/L	-0.185
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.0%		
13C2-PFDoDA	12.353	615.0 -> 570.0	20890	12.41	µg/L	-0.212
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 62.1%		
13C2-PFTeDA	14.732	715.0 -> 670.0	8569	11.79	µg/L	-0.237
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.0%		
13C3-PFBS	4.418	302.0 -> 99.0	15176	14.56	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.8%		
13C3-PFHxS	6.186	402.0 -> 99.0	10198	12.22	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 61.1%		
13C4-PFBA	2.928	217.0 -> 172.0	103203	15.53	µg/L	-0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.6%		
13C4-PFHpA	6.192	367.0 -> 322.0	37514	13.26	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.3%		
13C5-PFHxA	5.339	318.0 -> 273.0	44315	14.94	µg/L	-0.052
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.7%		
13C5-PFPeA	4.287	268.0 -> 223.0	48524	14.79	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.0%		
13C6-PFDA	8.863	519.0 -> 474.0	39481	14.24	µg/L	-0.154
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.2%		

Perfluorinated Compounds by LC/MS/MS

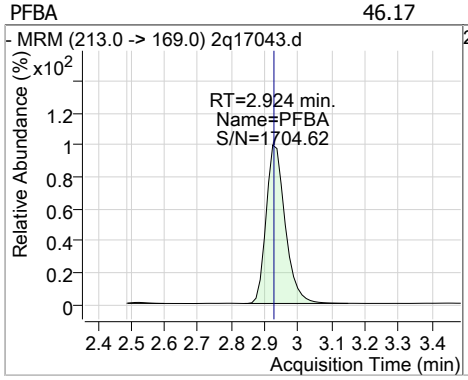
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.830	570.0 -> 525.0	26100	12.66	µg/L		-0.200
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 63.3%			
13C8-FOSA	7.127	506.0 -> 78.0	22056	13.71	µg/L		-0.015
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.6%			
13C8-PFOA	6.946	421.0 -> 376.0	21671	16.50	µg/L		-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.5%			
13C8-PFOS	7.609	507.0 -> 99.0	4675	11.27	µg/L		-0.064
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 56.3%			
13C9-PFNA	7.678	472.0 -> 427.0	13621	15.45	µg/L		-0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.2%			
d3-MeFOSAA	7.632	573.0 -> 419.0	8232	10.60	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 53.0%			
M2-PFOA	6.948	415.0 -> 370.0	18065	19.95	ng/ml		-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%			
M4-PFOS	7.611	503.0 -> 80.0	8153	20.00	ng/ml		-0.064
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
Target Compounds							QValue
4:2FTS	5.274	327.0 -> 307.0	985	0.89	µg/L		83
6:2FTS	6.970	427.0 -> 407.0	25076	33.12	µg/L		96
8:2FTS	9.215	527.0 -> 507.0	14017	10.55	µg/L		95
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	6.978	498.0 -> 78.0	173	0.32	µg/L		88
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	2.924	213.0 -> 169.0	37805	46.17	µg/L		100
PFBS	4.422	299.0 -> 80.0	97739	93.90	µg/L		99
PFDA	8.880	513.0 -> 469.0	158	0.21	µg/L		63
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	6.195	363.0 -> 319.0	124436	89.08	µg/L		99
PFHpS	6.917	449.0 -> 80.0	12321	42.97	µg/L	m	93
PFHxA	5.340	313.0 -> 269.0	139666	186.90	µg/L		98
PFHxS	6.177	399.0 -> 80.0	652223	1080.06	µg/L	m	97
PFNA	7.679	463.0 -> 419.0	1741	6.49	µg/L		94
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	6.948	413.0 -> 369.0	50648	87.72	µg/L	m	99
PFOS	7.611	499.0 -> 80.0	338896	1156.45	µg/L	m	96
PFPeA	4.291	263.0 -> 219.0	363644	160.51	µg/L		100
PFPeS	5.396	349.0 -> 80.0	73308	110.90	µg/L	m	97
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			

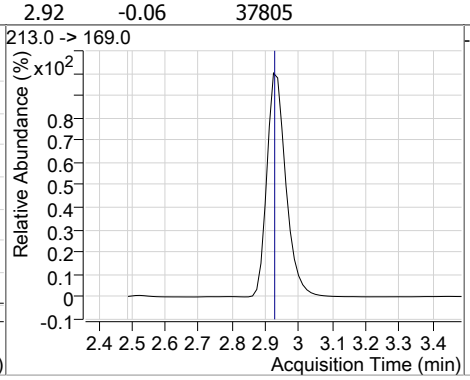
 # = Qualifier out of range, m = manually integrated, + = Area summed

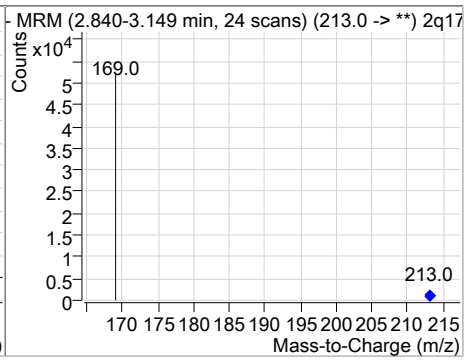
Perfluorinated Compounds by LC/MS/MS



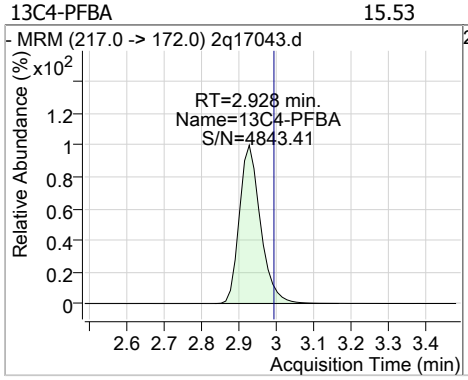
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	46.17	2.92	-0.06	37805				

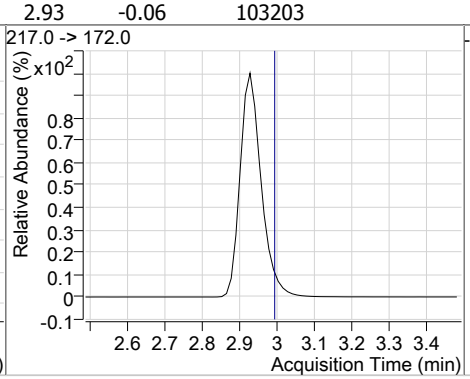


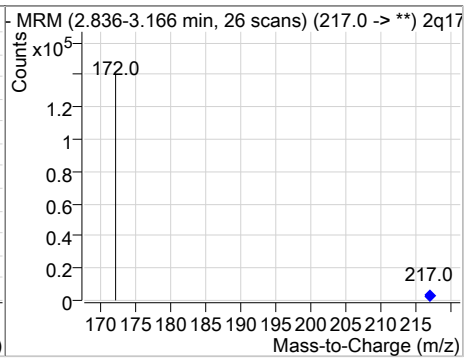




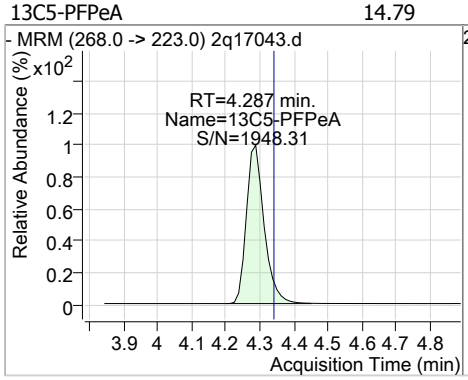
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	15.53	2.93	-0.06	103203				

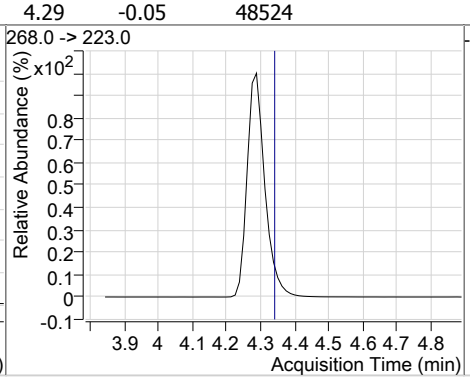


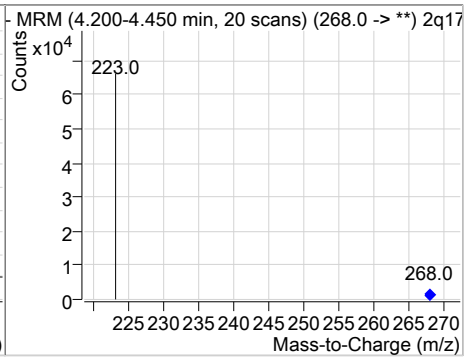




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	14.79	4.29	-0.05	48524				

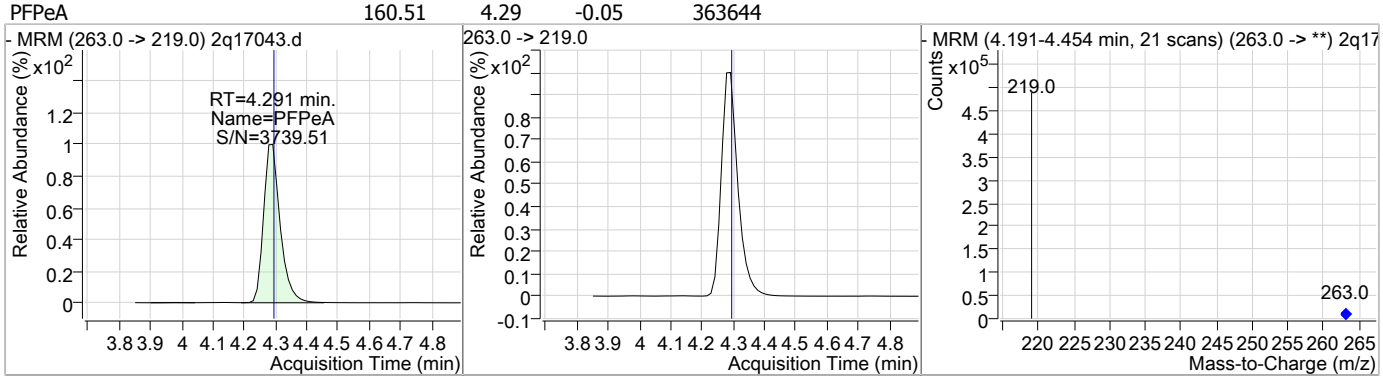




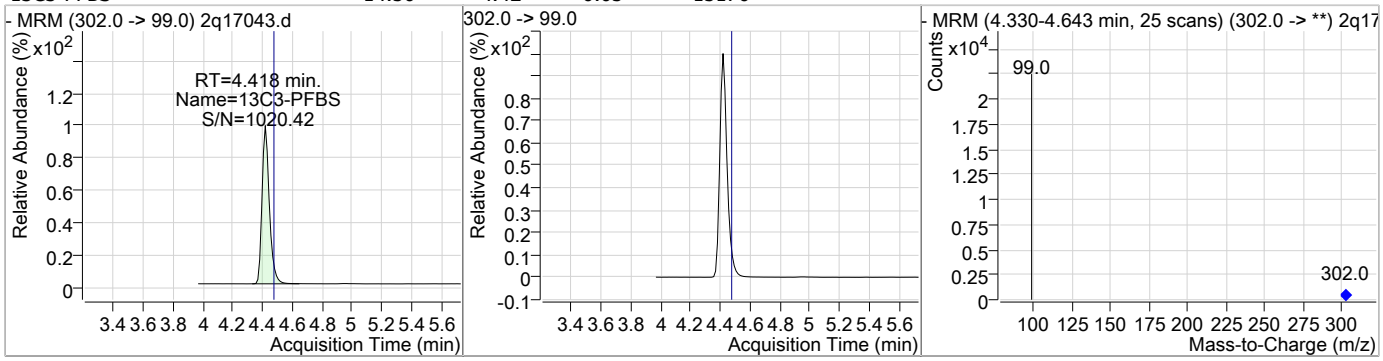


Perfluorinated Compounds by LC/MS/MS

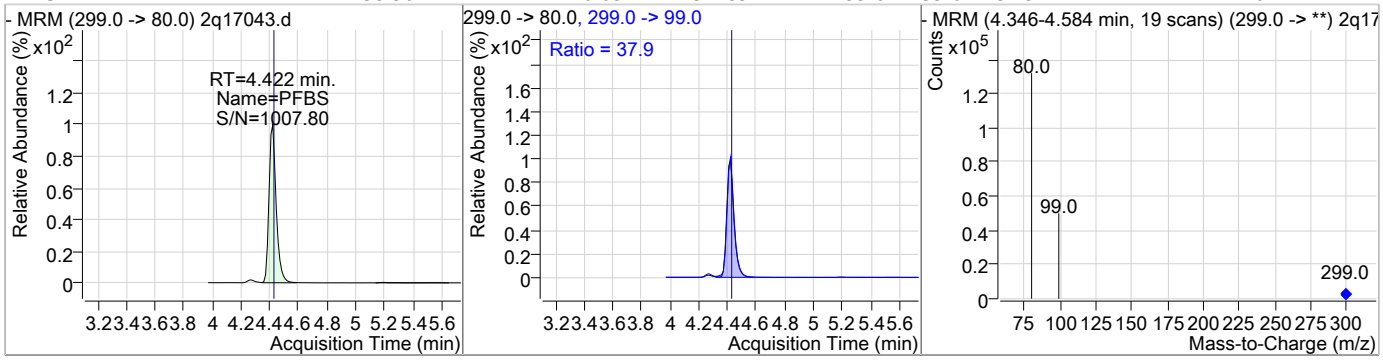
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	160.51	4.29	-0.05	363644				



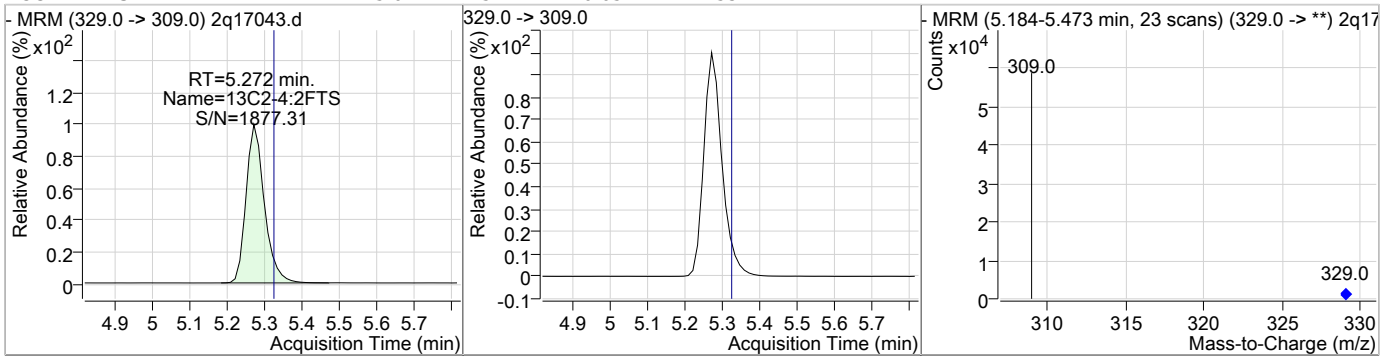
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	14.56	4.42	-0.05	15176				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	93.90	4.42	-0.05	97739	299.0 -> 99.0	37.9	7.4	67.4

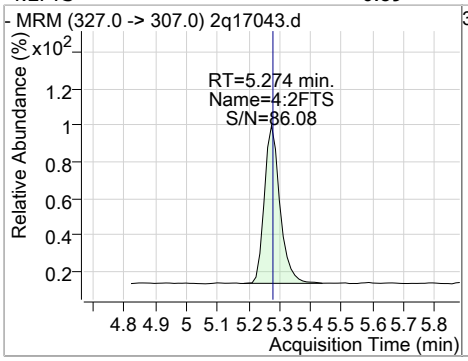


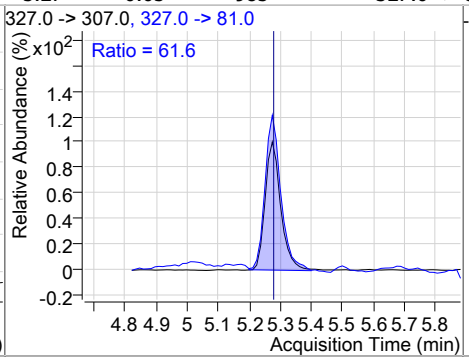
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	15.07	5.27	-0.05	42531				

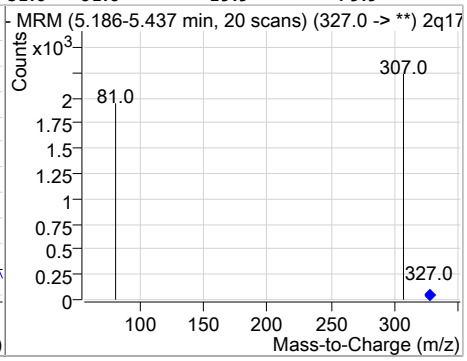


Perfluorinated Compounds by LC/MS/MS

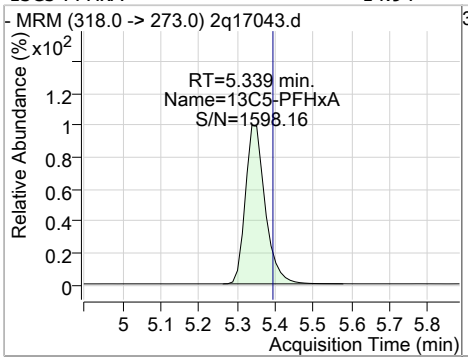
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.89	5.27	-0.05	985	327.0 -> 81.0	61.6	19.9	79.9

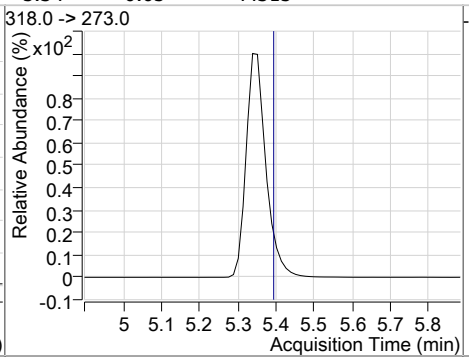


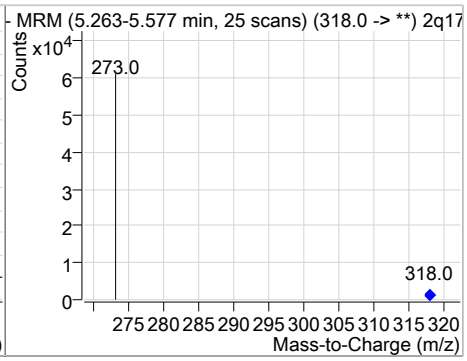




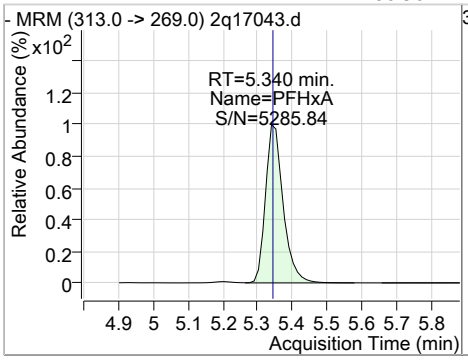
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	14.94	5.34	-0.05	44315				

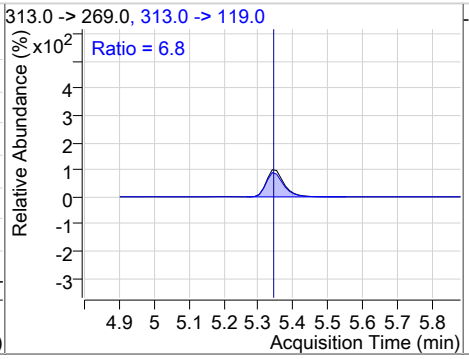


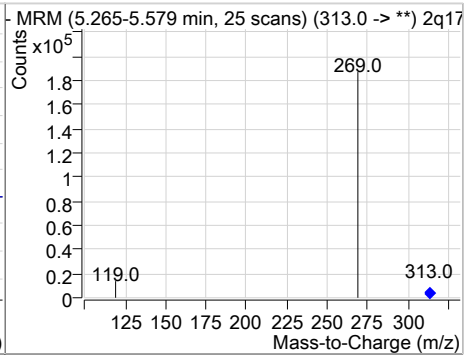




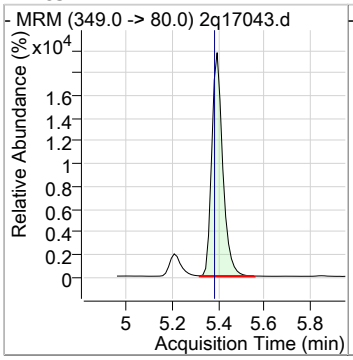
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	186.90	5.34	-0.05	139666	313.0 -> 119.0	6.8	0.0	37.6

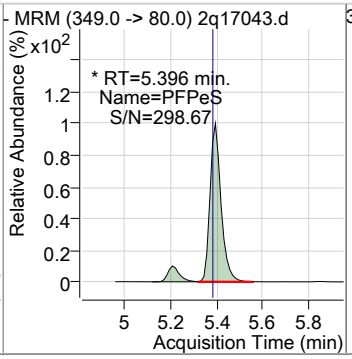


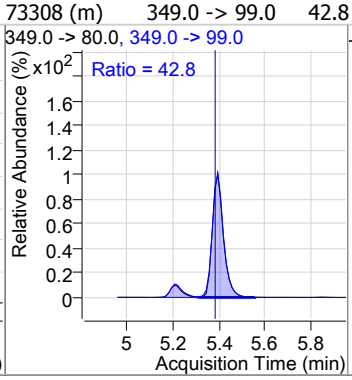


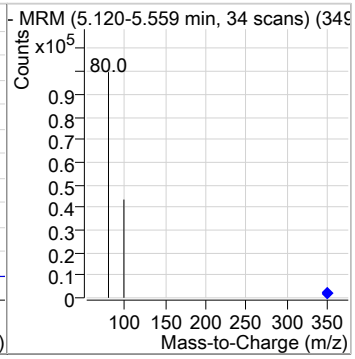


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	110.90	5.40	-0.05	73308 (m)	349.0 -> 99.0	42.8	10.8	70.8



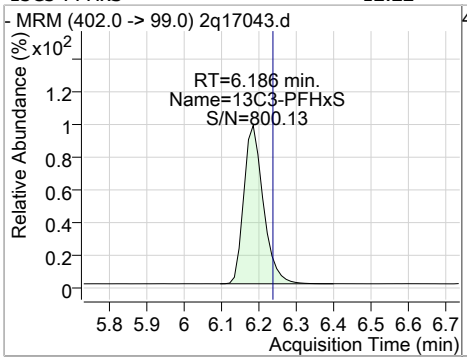


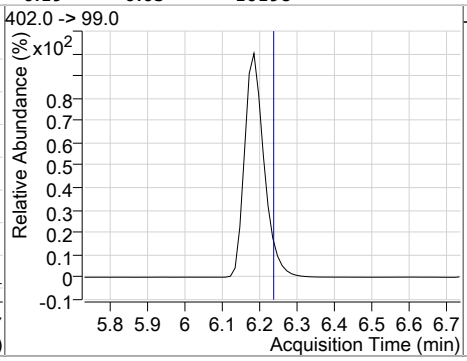


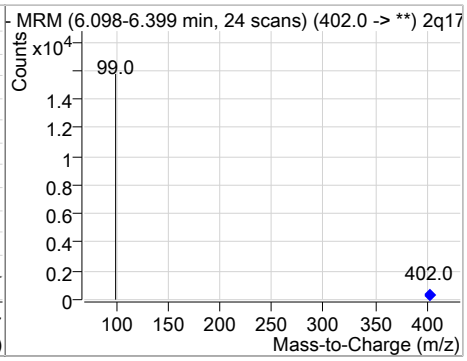


Perfluorinated Compounds by LC/MS/MS

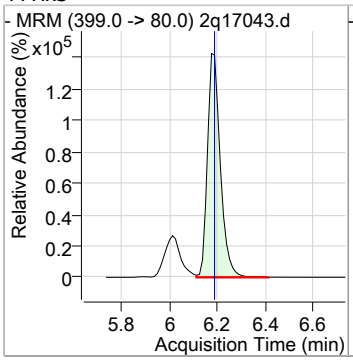
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	12.22	6.19	-0.05	10198				

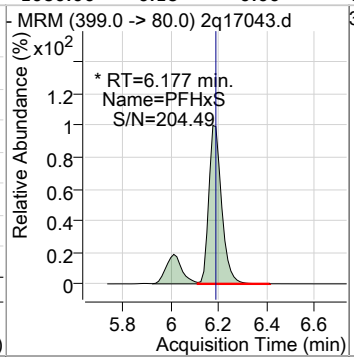


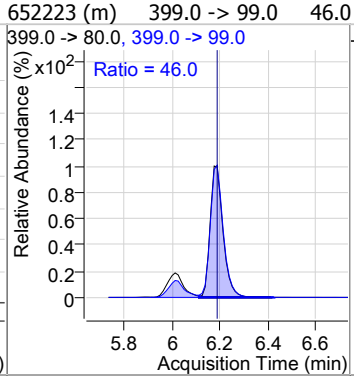


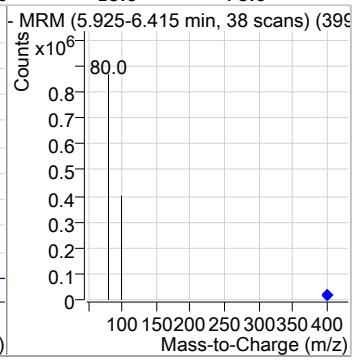


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1080.06	6.18	-0.06	652223 (m)	399.0 -> 99.0	46.0	18.0	78.0

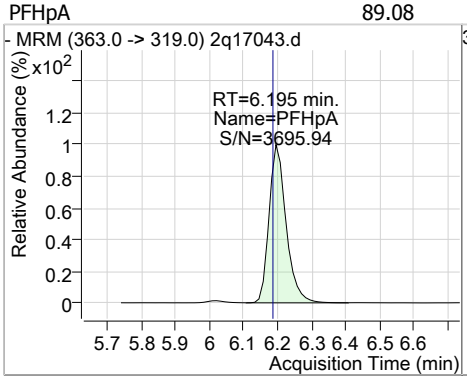


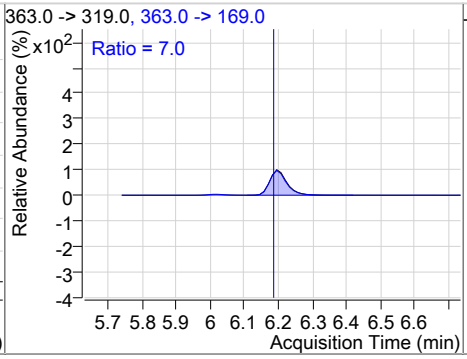


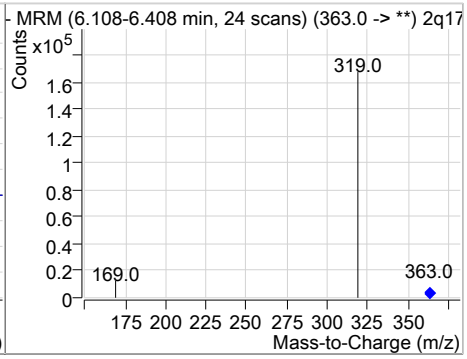




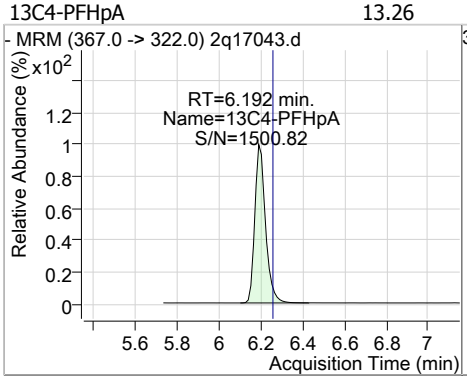
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	89.08	6.20	-0.05	124436	363.0 -> 169.0	7.0	0.0	37.2

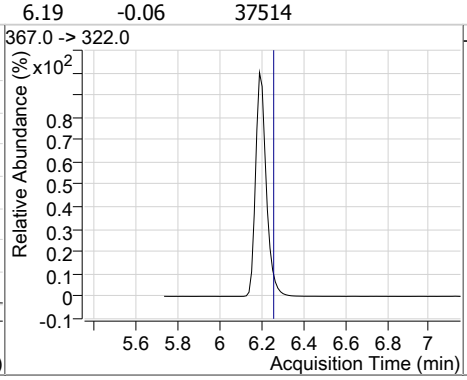


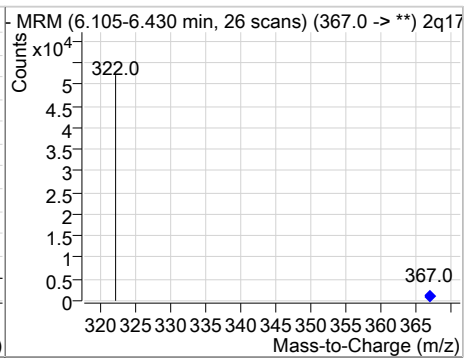




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	13.26	6.19	-0.06	37514				

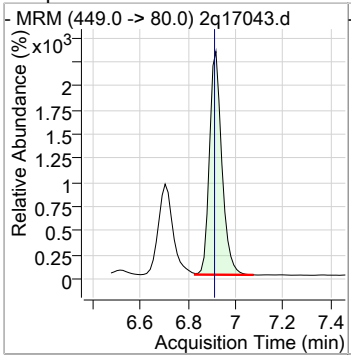


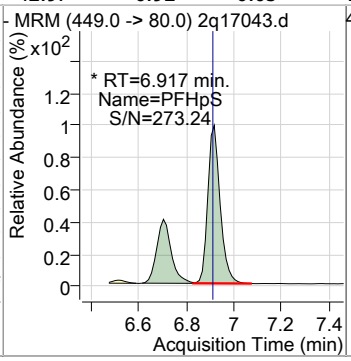


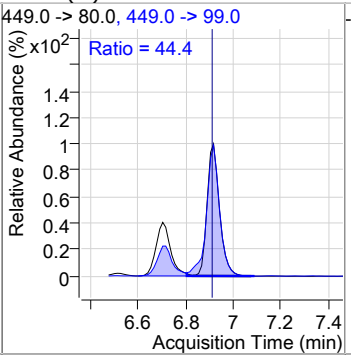


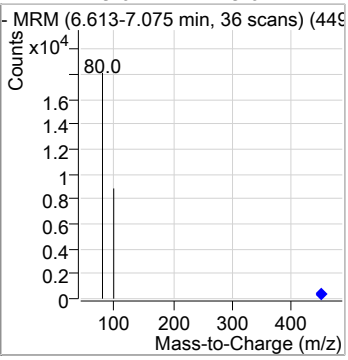
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	42.97	6.92	-0.05	12321 (m)	449.0 -> 99.0	44.4	19.0	79.0

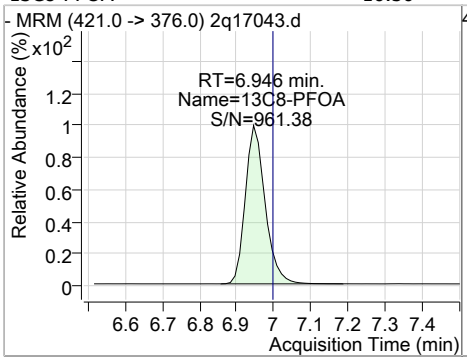


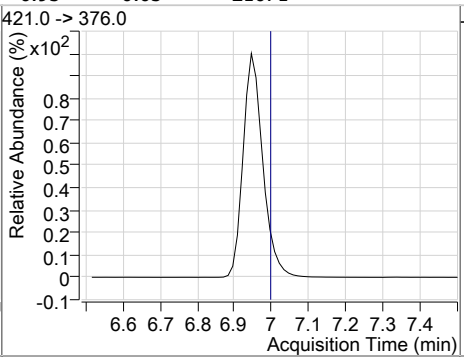


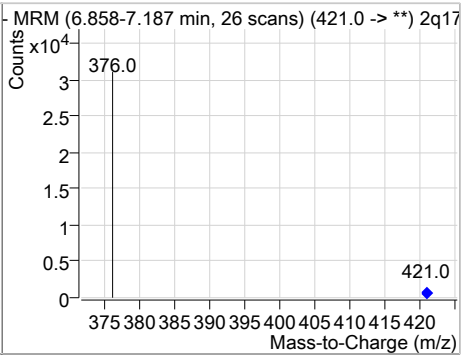




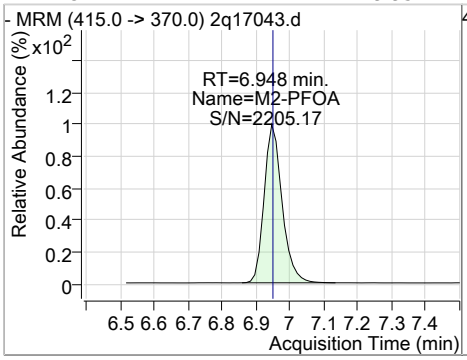
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	16.50	6.95	-0.05	21671				

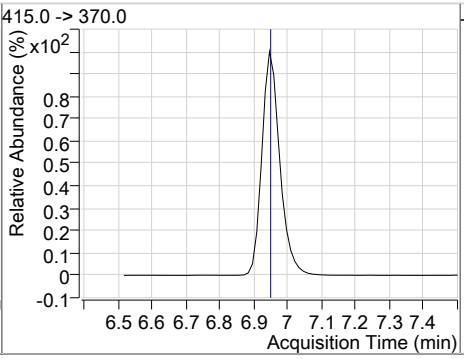


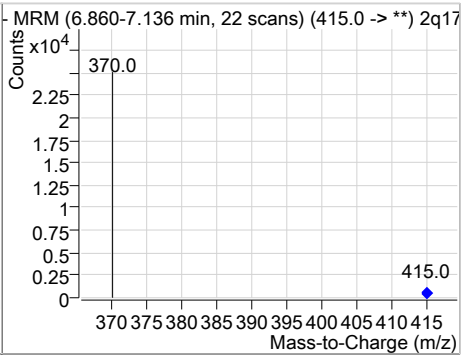




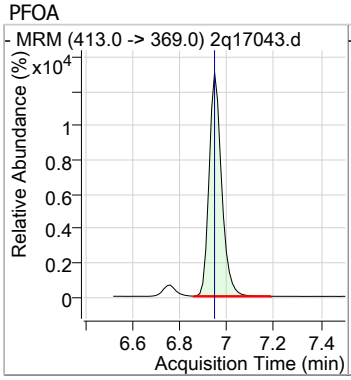
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	19.95	6.95	-0.05	18065				

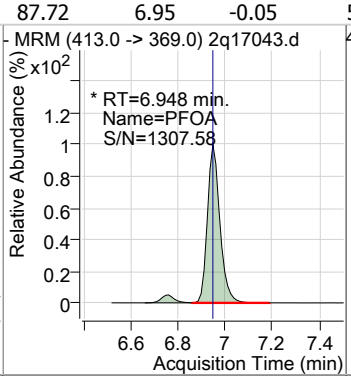


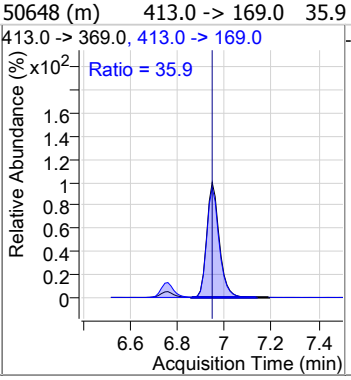


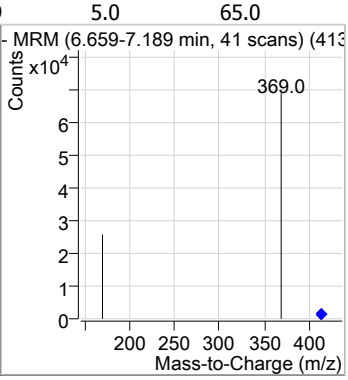


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	87.72	6.95	-0.05	50648 (m)	413.0 -> 169.0	35.9	5.0	65.0



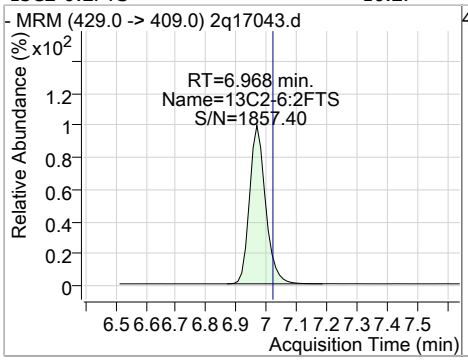


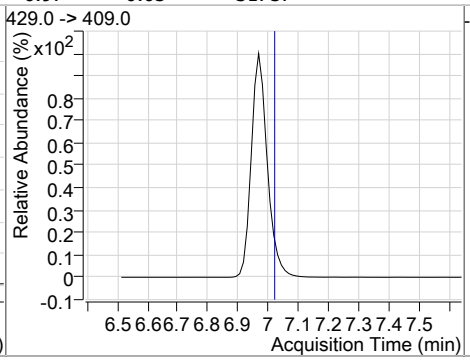


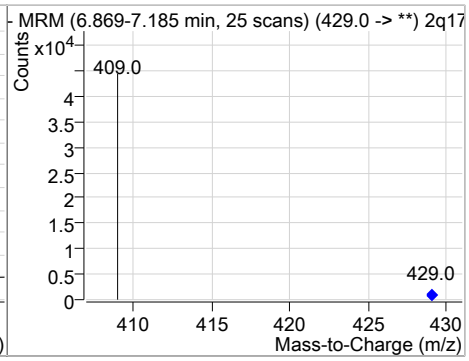


Perfluorinated Compounds by LC/MS/MS

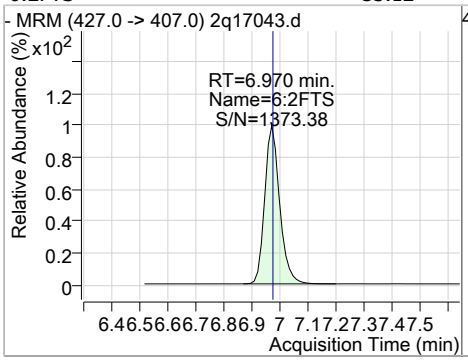
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	16.27	6.97	-0.05	31757				

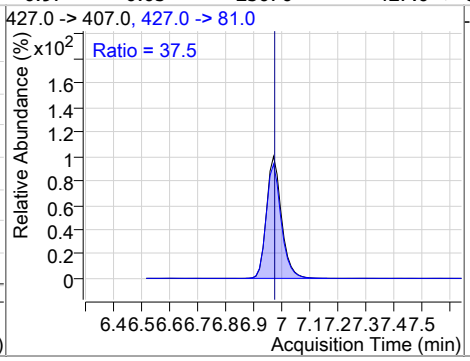


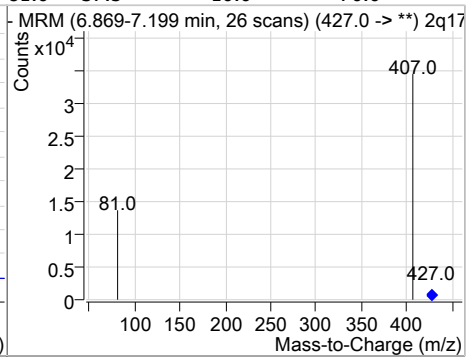




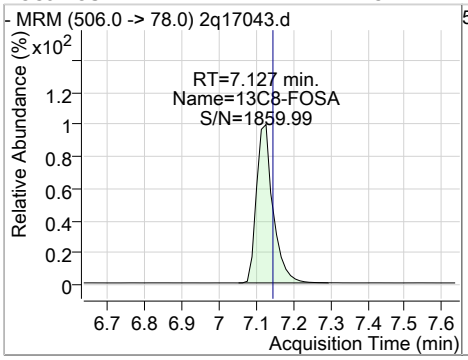
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	33.12	6.97	-0.05	25076	427.0 -> 81.0	37.5	10.0	70.0

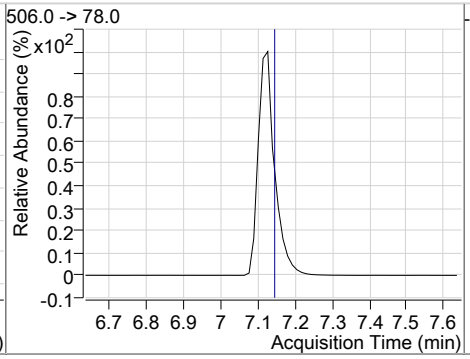


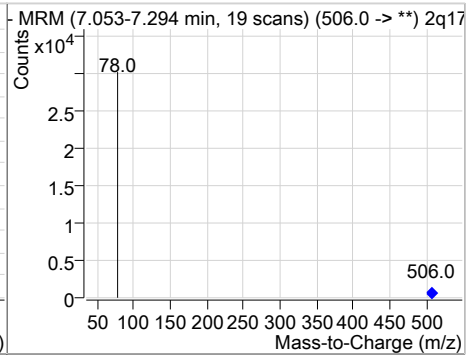




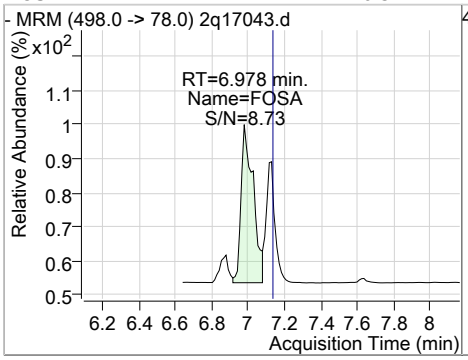
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	13.71	7.13	-0.02	22056				

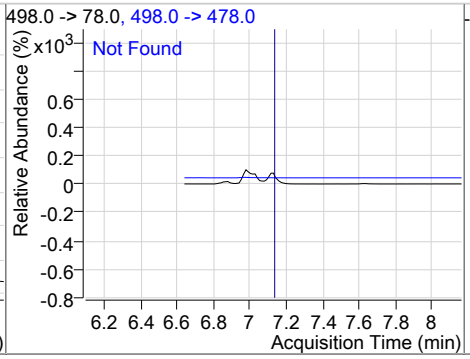


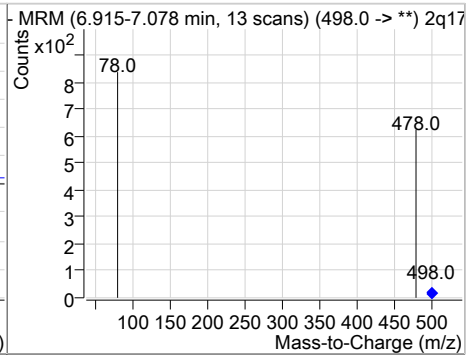




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.32	6.98	-0.17	173	498.0 -> 478.0		0.0	34.0

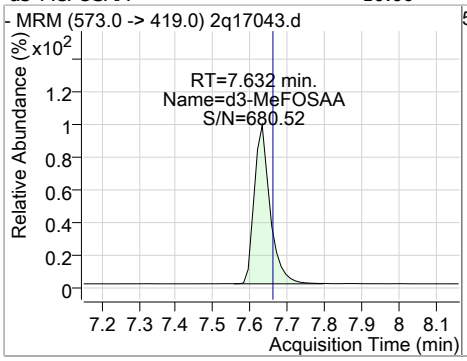


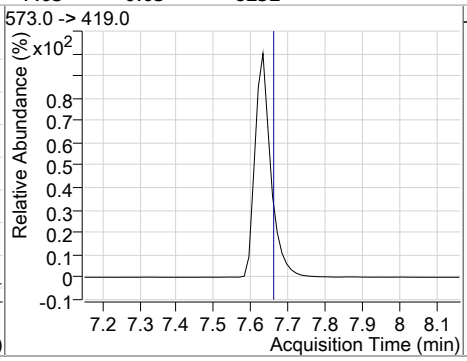


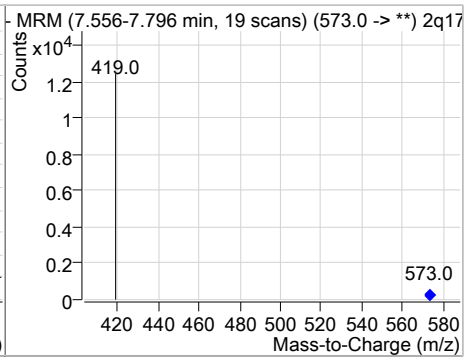


Perfluorinated Compounds by LC/MS/MS

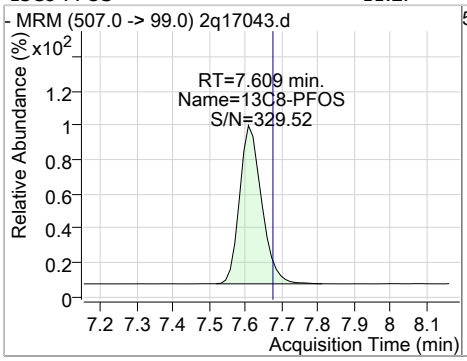
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	10.60	7.63	-0.03	8232				

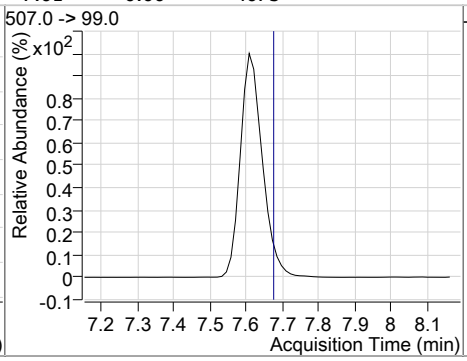


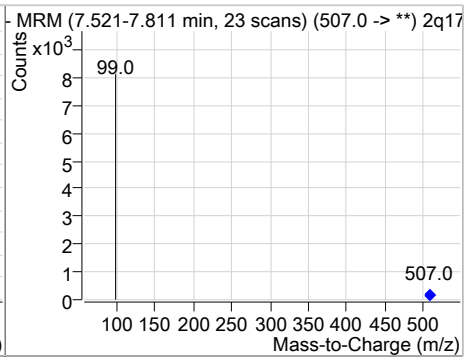




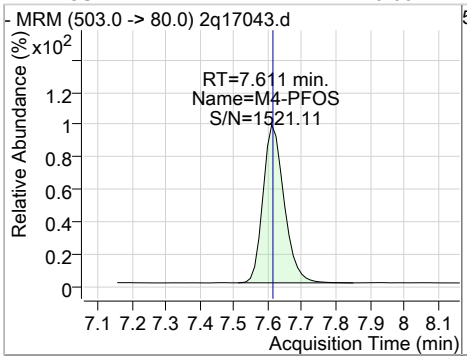
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	11.27	7.61	-0.06	4675				

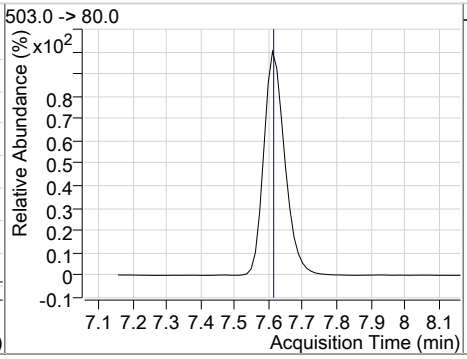


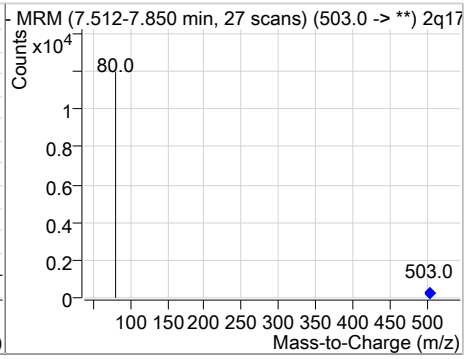




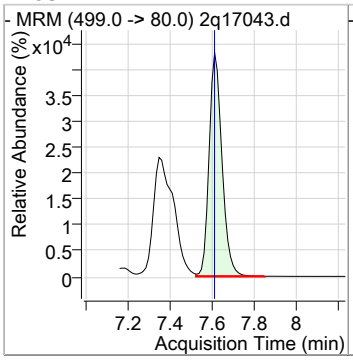
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.00	7.61	-0.06	8153				

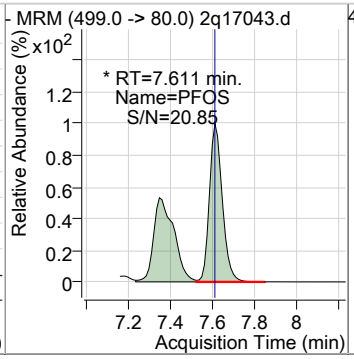


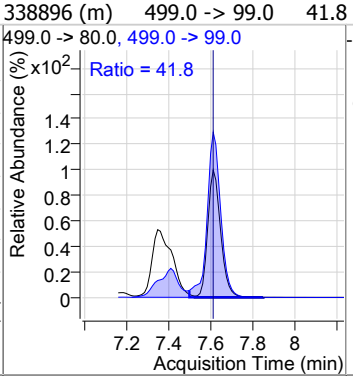


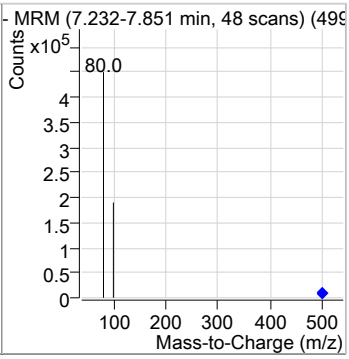


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1156.45	7.61	-0.06	338896 (m)	499.0 -> 99.0	41.8	14.5	74.5



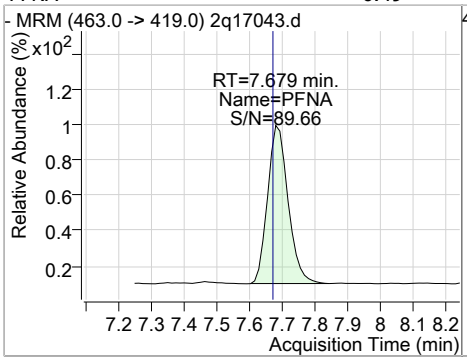


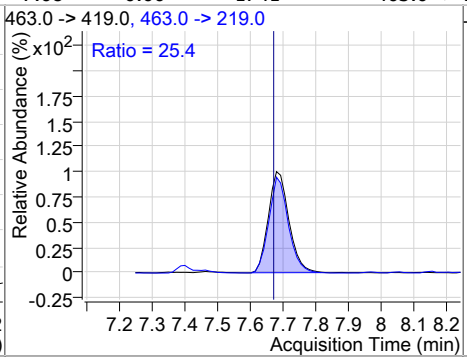


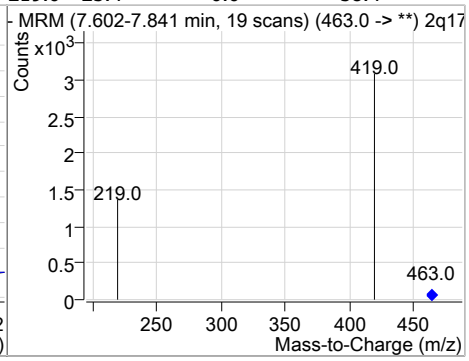


Perfluorinated Compounds by LC/MS/MS

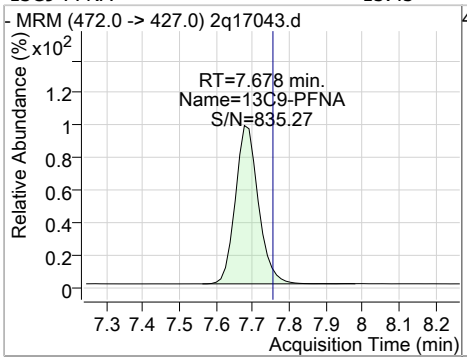
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	6.49	7.68	-0.06	1741	463.0 -> 219.0	25.4	0.0	58.4

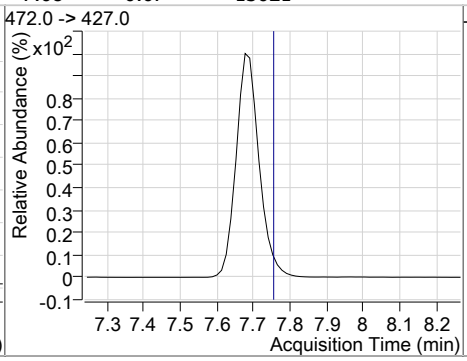


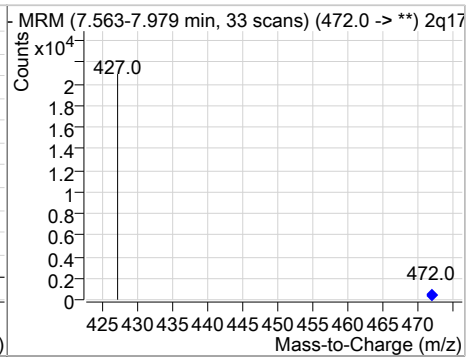




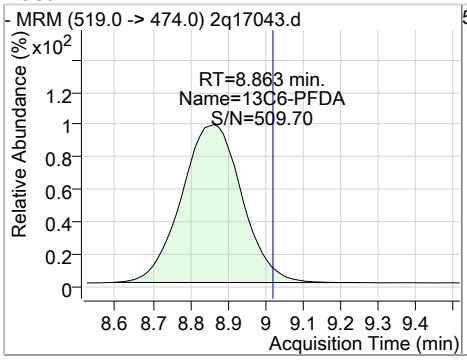
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	15.45	7.68	-0.07	13621				

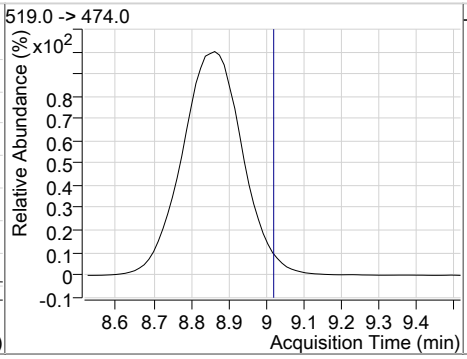


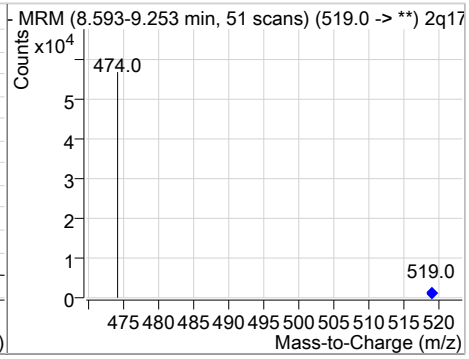




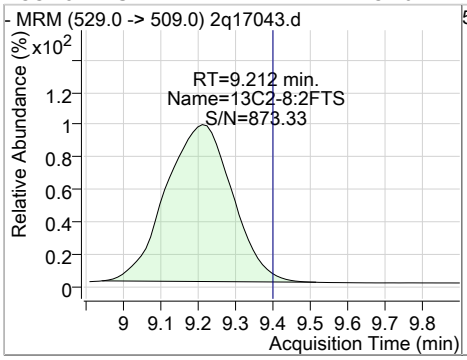
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	14.24	8.86	-0.15	39481				

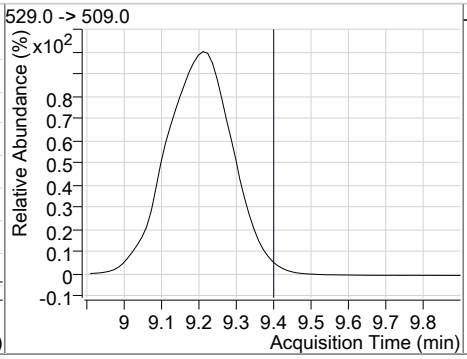


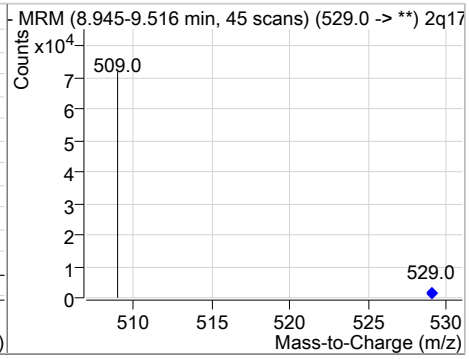




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	13.40	9.21	-0.19	49284				

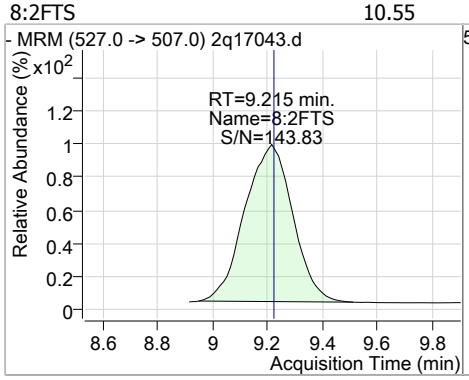


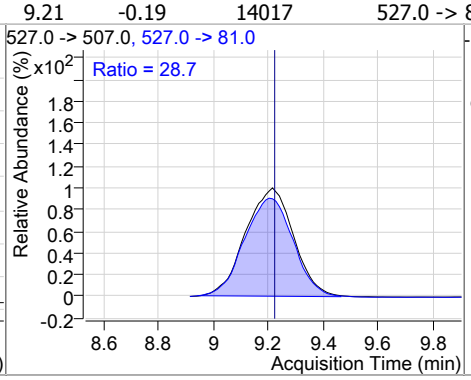


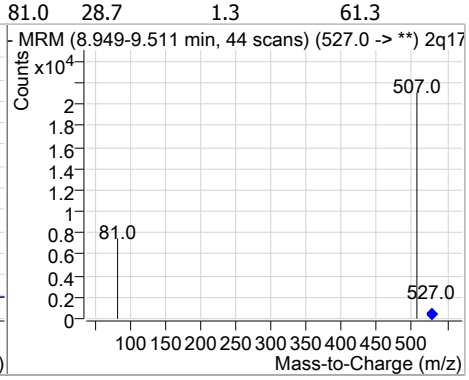


Perfluorinated Compounds by LC/MS/MS

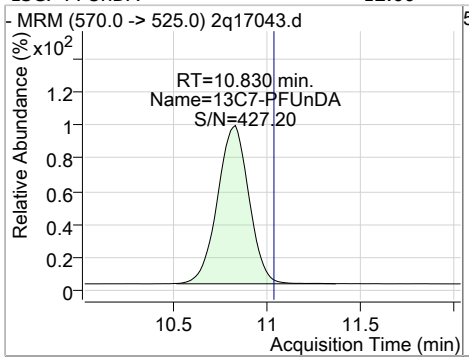
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	10.55	9.21	-0.19	14017	527.0 -> 81.0	28.7	1.3	61.3

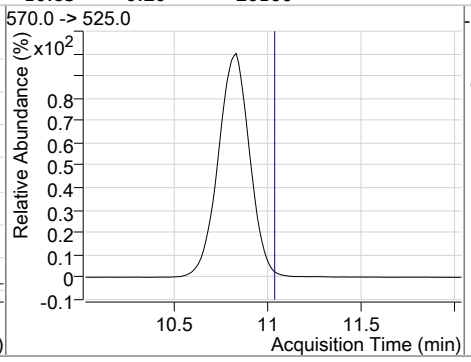


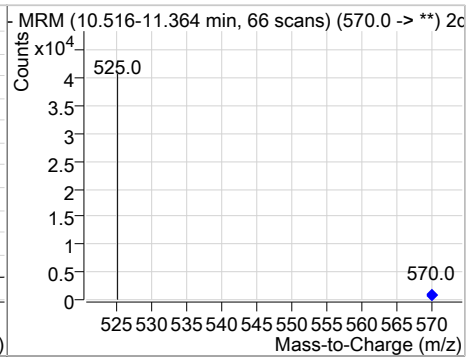




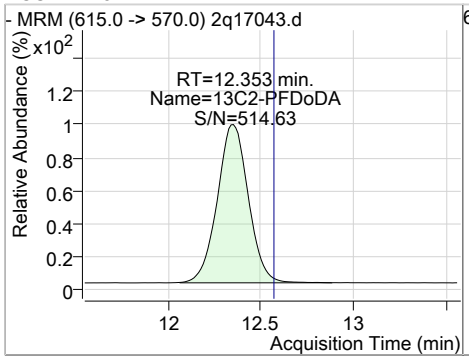
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	12.66	10.83	-0.20	26100				

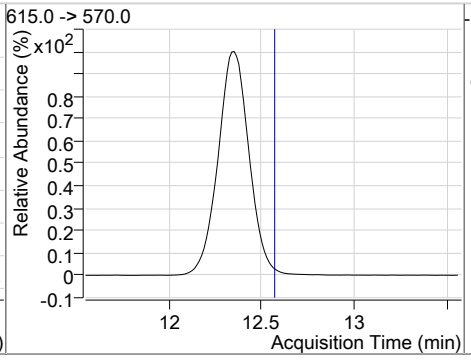


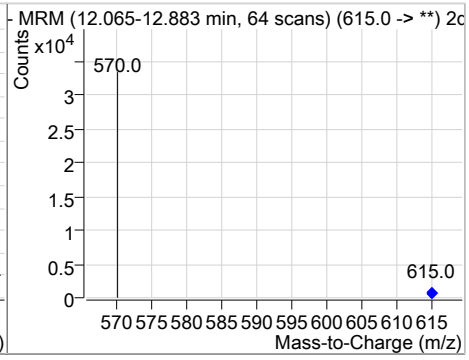




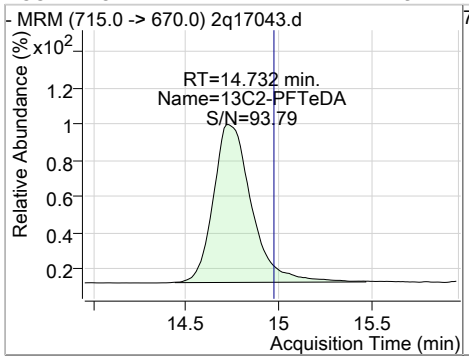
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	12.41	12.35	-0.21	20890				

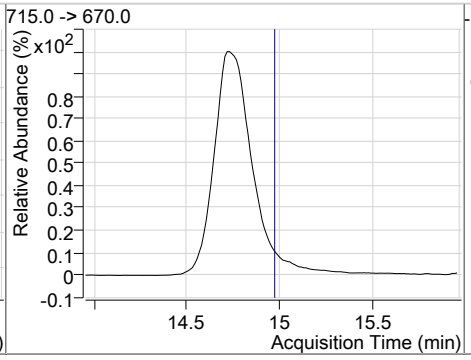


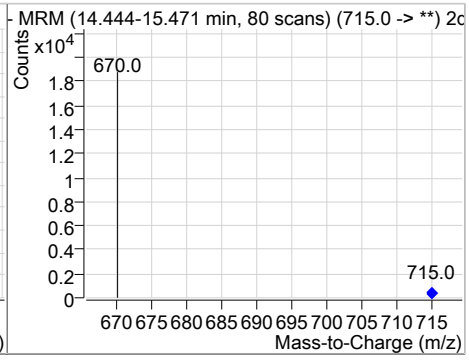




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	11.79	14.73	-0.24	8569				







Manual Integration Approval Summary

Sample Number: FA55430-8
Lab FileID: 2Q17043.D
Injection Time: 07/13/18 02:33
Method: EPA 537M QSM5.1 B-15
Analyst approved: 07/16/18 15:10 Natasha Gumtie
Supervisor approved: 07/17/18 11:23 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanesulfonic acid	2706-91-4		5.40	Split peak
Perfluorohexanesulfonic acid	355-46-4		6.18	Split peak
Perfluoroheptanesulfonic acid	375-92-8		6.92	Split peak
Perfluorooctanoic acid	335-67-1		6.95	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.61	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/17/18 11:23

Perfluorinated Compounds by LC/MS/MS

Data File : 2q17119.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/14/2018 5:56:41 AM
Sample Name : FA55430-8
Vial : Vial 47
DA Method File : PFC_ID_071318_S2Q296.quantmethod.xml
Batch Name : s2q296.batch.bin
Sample Information : op70810,S2Q296,120,,,1.0,20,water

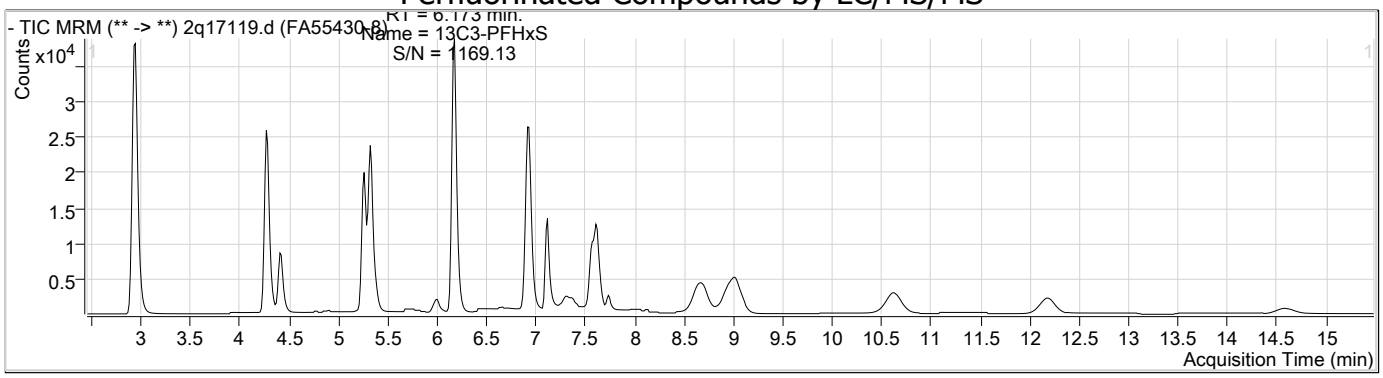
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.921	415.0 -> 370.0	20768	20.00	µg/L	0.000
13C4-PFOS	7.573	503.0 -> 80.0	10341	20.00	µg/L	0.000
M4-PFBA	2.941	217.0 -> 172.0	152117	20.00	µg/L	0.000
M5-PFPeA	4.275	268.0 -> 223.0	72141	20.00	µg/L	-0.013
M5-PFHxA	5.328	318.0 -> 273.0	67429	20.00	µg/L	-0.013
M4-PFHpA	6.179	367.0 -> 322.0	63817	20.00	µg/L	0.000
M8-PFOA	6.920	421.0 -> 376.0	32092	20.00	µg/L	0.000
M9-PFNA	7.640	472.0 -> 427.0	19320	20.00	µg/L	0.013
M6-PFDA	8.679	519.0 -> 474.0	41524	20.00	µg/L	0.050
M7-PFUnDA	10.616	570.0 -> 525.0	32996	20.00	µg/L	0.013
M2-PFDoDA	12.178	615.0 -> 570.0	24888	20.00	µg/L	0.013
M2-PFTeDA	14.581	715.0 -> 670.0	9959	20.00	µg/L	0.013
M8-FOSA	7.117	506.0 -> 78.0	36231	20.00	µg/L	0.000
M3-PFBS	4.406	302.0 -> 99.0	22301	20.00	µg/L	-0.013
M3-PFHxS	6.173	402.0 -> 99.0	18397	20.00	µg/L	0.000
M8-PFOS	7.571	507.0 -> 99.0	8805	20.00	µg/L	0.000
M2-4:2FTS	5.260	329.0 -> 309.0	66555	20.00	µg/L	0.000
M2-6:2FTS	6.930	429.0 -> 409.0	49071	20.00	µg/L	0.000
M2-8:2FTS	9.010	529.0 -> 509.0	55820	20.00	µg/L	0.038
M3-MeFOSAA	7.607	573.0 -> 419.0	16156	20.00	µg/L	-0.013
System Monitoring Compounds						
13C2-4:2FTS	5.260	329.0 -> 309.0	66574	19.16	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.8%		
13C2-6:2FTS	6.930	429.0 -> 409.0	49069	18.62	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.1%		
13C2-8:2FTS	9.010	529.0 -> 509.0	55362	17.39	µg/L	0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.9%		
13C2-PFDoDA	12.178	615.0 -> 570.0	24881	17.58	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.9%		
13C2-PFTeDA	14.581	715.0 -> 670.0	10044	16.42	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.1%		
13C3-PFBS	4.406	302.0 -> 99.0	22313	20.22	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%		
13C3-PFHxS	6.173	402.0 -> 99.0	18399	19.26	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.3%		
13C4-PFBA	2.941	217.0 -> 172.0	152040	20.28	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.4%		
13C4-PFHpA	6.179	367.0 -> 322.0	63842	20.10	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.5%		
13C5-PFHxA	5.328	318.0 -> 273.0	67427	20.16	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.8%		
13C5-PFPeA	4.275	268.0 -> 223.0	72123	19.48	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.4%		
13C6-PFDA	8.679	519.0 -> 474.0	41186	18.56	µg/L	0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.8%		

Perfluorinated Compounds by LC/MS/MS

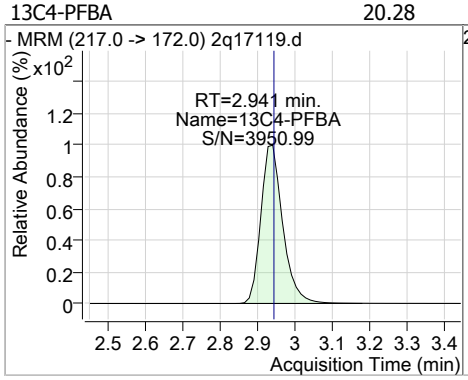
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.616	570.0 -> 525.0	32937	18.39	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.0%			
13C8-FOSA	7.117	506.0 -> 78.0	36233	20.23	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%			
13C8-PFOA	6.920	421.0 -> 376.0	32086	19.43	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.2%			
13C8-PFOS	7.571	507.0 -> 99.0	8803	18.80	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.0%			
13C9-PFNA	7.640	472.0 -> 427.0	19357	19.04	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.2%			
d3-MeFOSAA	7.607	573.0 -> 419.0	16159	19.91	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%			
M2-PFOA	6.921	415.0 -> 370.0	20753	19.99	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%			
M4-PFOS	7.573	503.0 -> 80.0	10327	19.97	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%			
Target Compounds							**QValue**
4:2FTS	5.263	327.0 -> 307.0	117	0.06	µg/L	#	1
6:2FTS	6.931	427.0 -> 407.0	1420	1.10	µg/L		99
8:2FTS	9.013	527.0 -> 507.0	553	0.35	µg/L		84
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	2.937	213.0 -> 169.0	2063	1.72	µg/L		100
PFBS	4.409	299.0 -> 80.0	5058	3.49	µg/L		99
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	6.182	363.0 -> 319.0	7312	3.21	µg/L		100
PFHpS	6.878	449.0 -> 80.0	653	1.19	µg/L	m	95
PFHxA	5.330	313.0 -> 269.0	7373	6.76	µg/L		97
PFHxS	6.163	399.0 -> 80.0	37208	35.06	µg/L	m	98
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	6.922	413.0 -> 369.0	2579	3.14	µg/L	m	99
PFOS	7.574	499.0 -> 80.0	17434	31.87	µg/L	m	98
PFPeA	4.278	263.0 -> 219.0	19877	6.20	µg/L		100
PFPeS	5.383	349.0 -> 80.0	3813	3.96	µg/L	m	97
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			

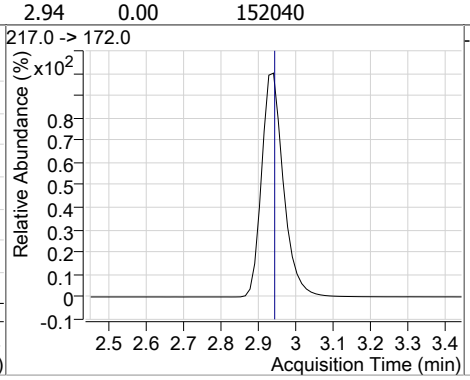
 # = Qualifier out of range, m = manually integrated, + = Area summed

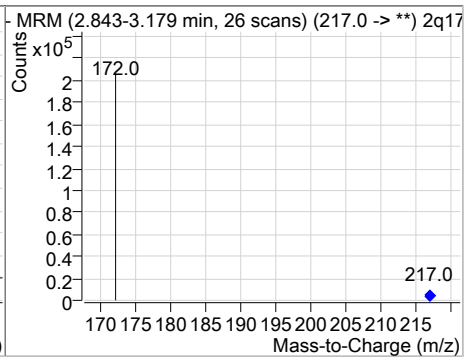
Perfluorinated Compounds by LC/MS/MS



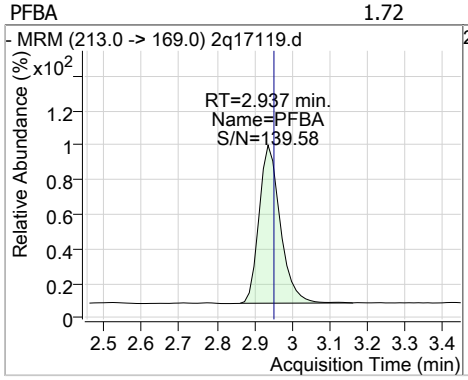
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.28	2.94	0.00	152040				

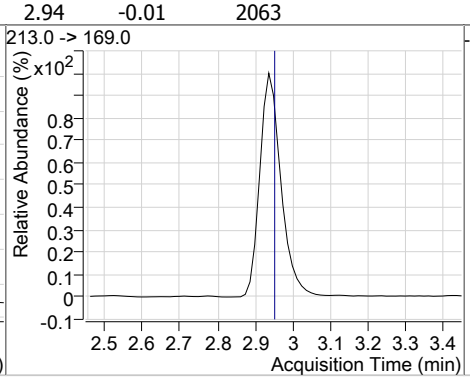


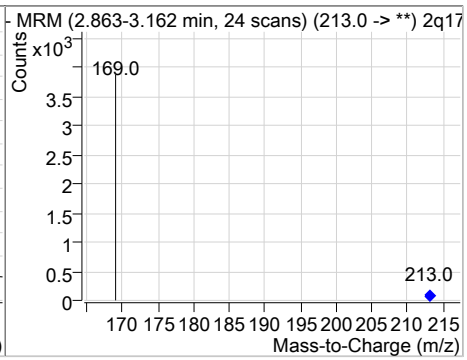




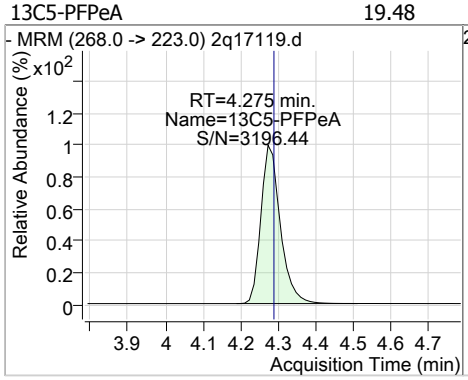
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.72	2.94	-0.01	2063				

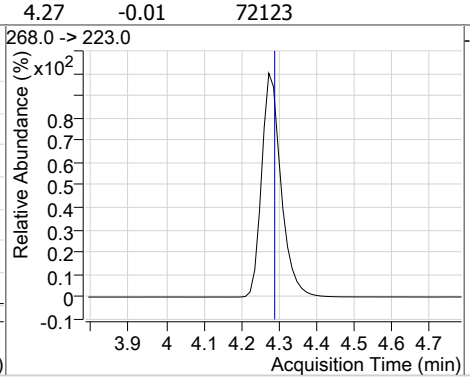


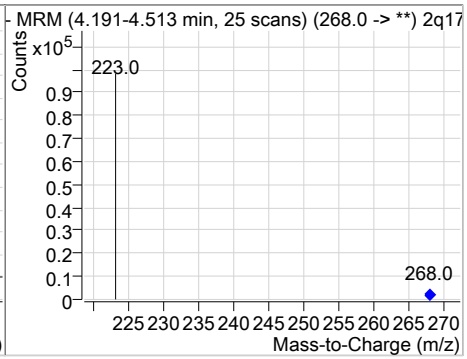




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.48	4.27	-0.01	72123				

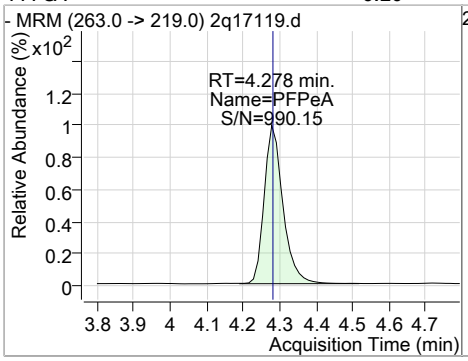


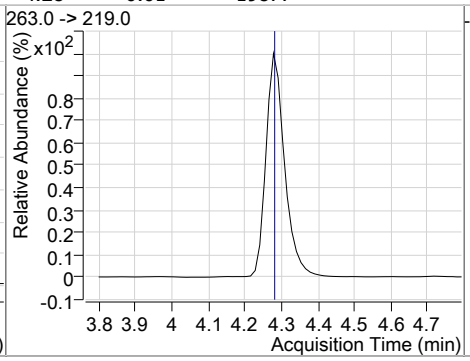


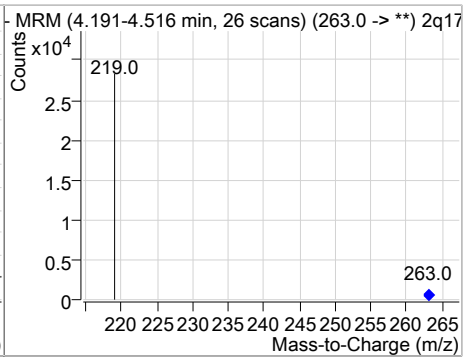


Perfluorinated Compounds by LC/MS/MS

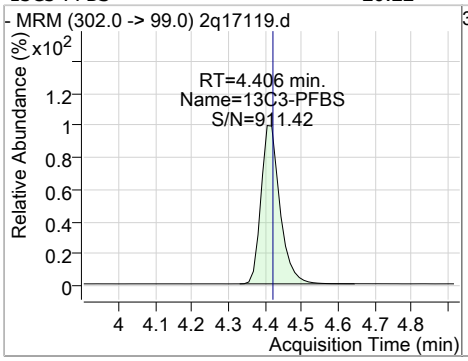
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	6.20	4.28	-0.01	19877				

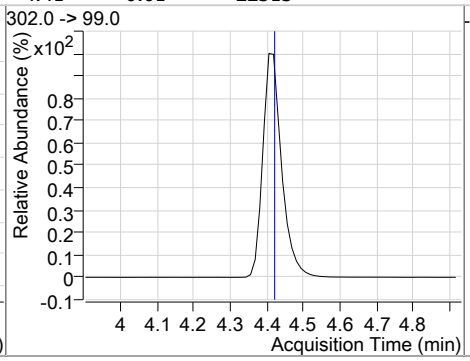


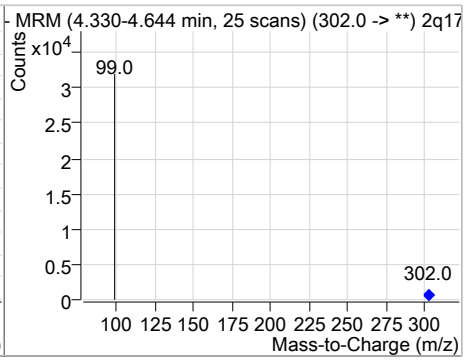




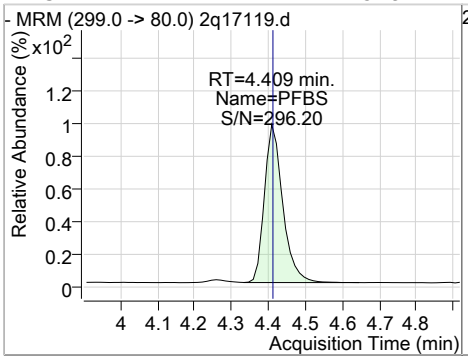
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.22	4.41	-0.01	22313				

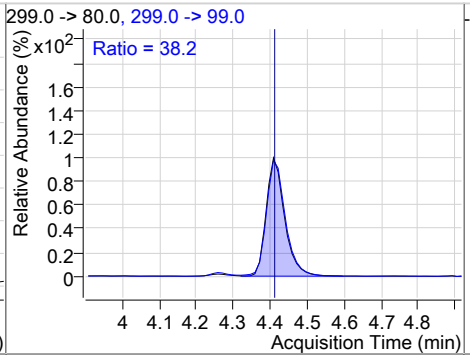


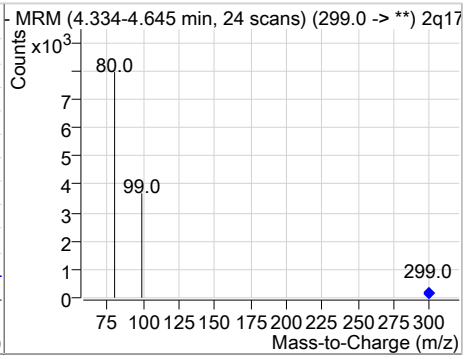




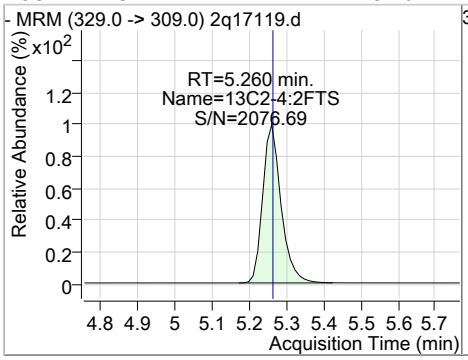
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	3.49	4.41	-0.01	5058	299.0 -> 99.0	38.2	7.4	67.4

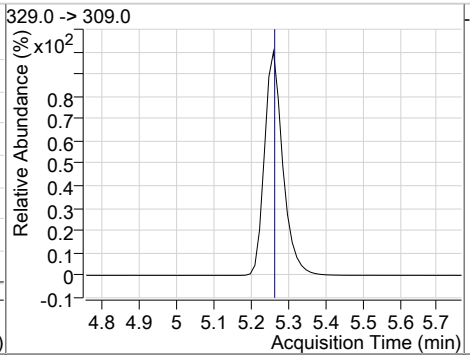


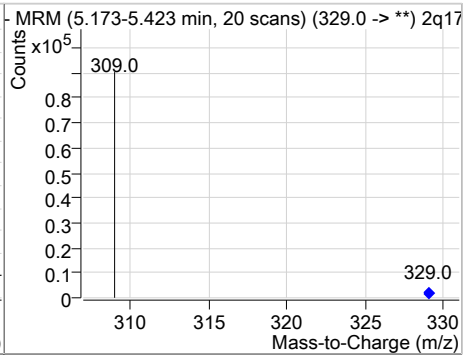




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.16	5.26	0.00	66574				

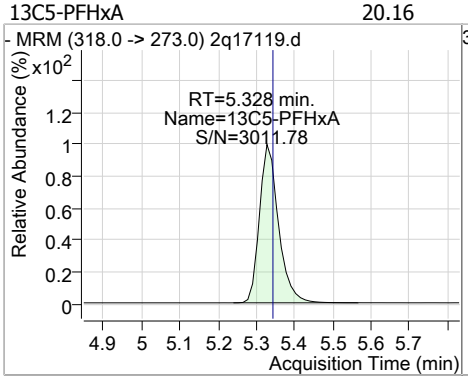


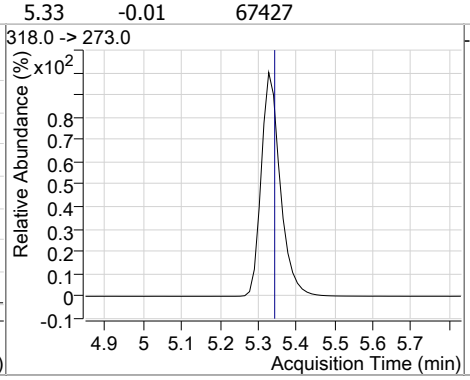


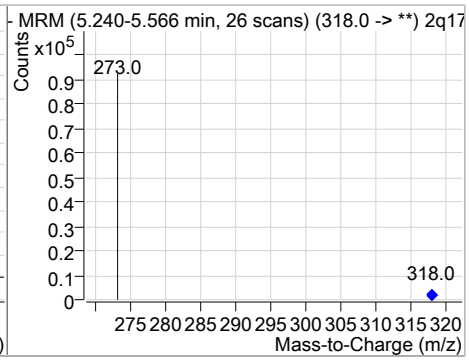


Perfluorinated Compounds by LC/MS/MS

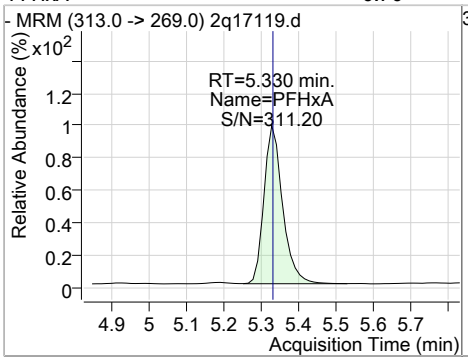
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.16	5.33	-0.01	67427				

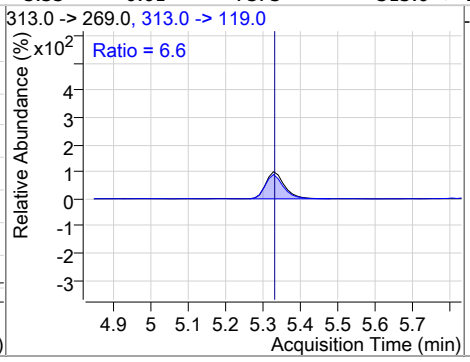


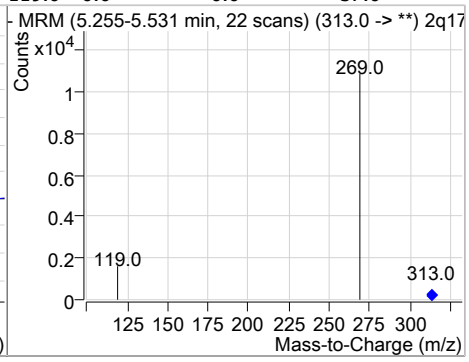




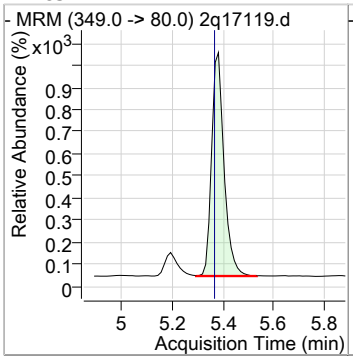
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	6.76	5.33	-0.01	7373	313.0 -> 119.0	6.6	0.0	37.6

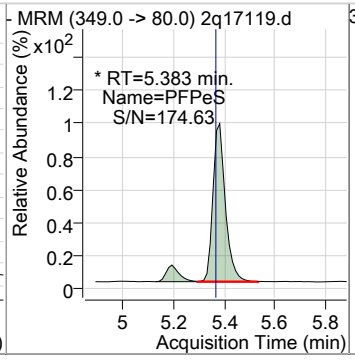


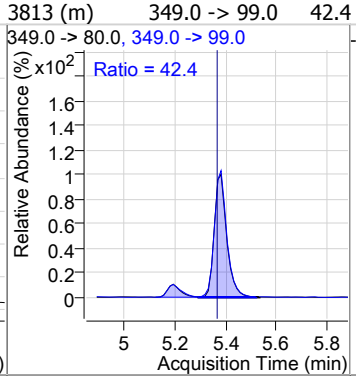


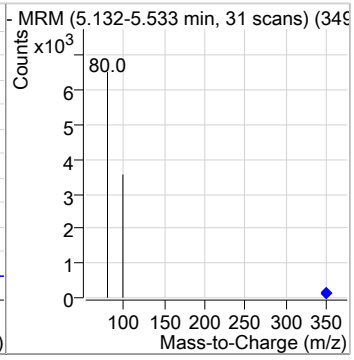


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	3.96	5.38	0.00	3813 (m)	349.0 -> 99.0	42.4	10.8	70.8

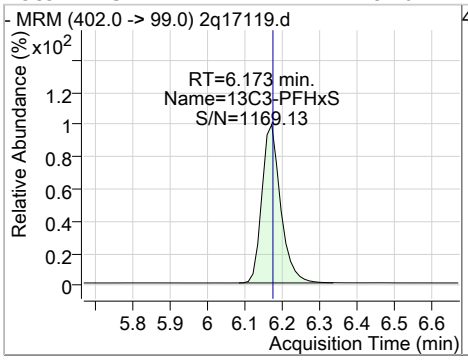


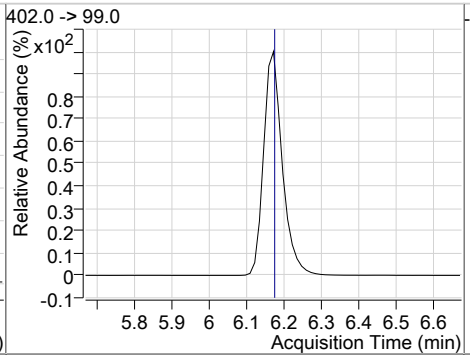


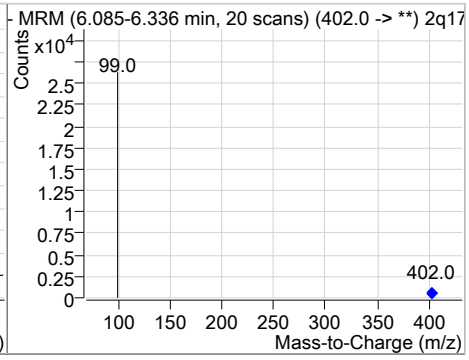




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.26	6.17	0.00	18399				

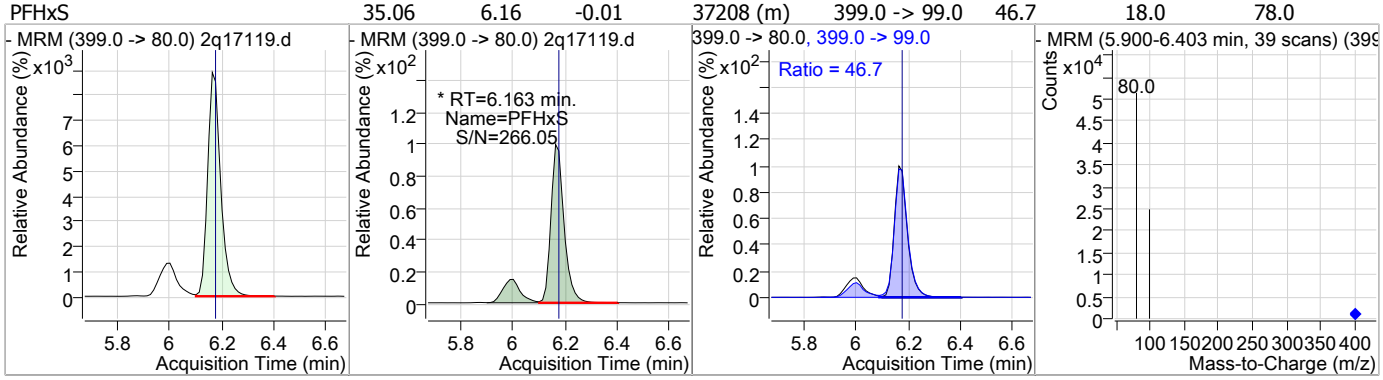




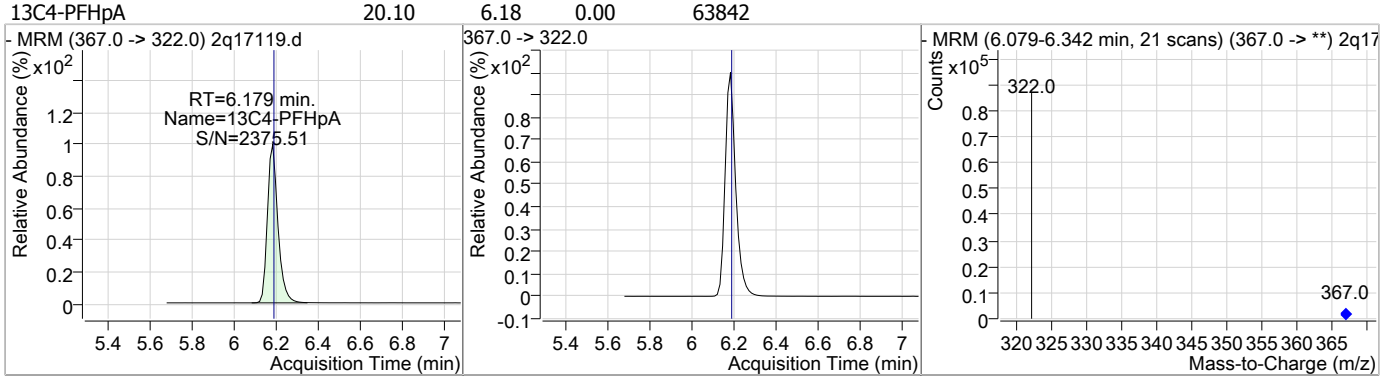


Perfluorinated Compounds by LC/MS/MS

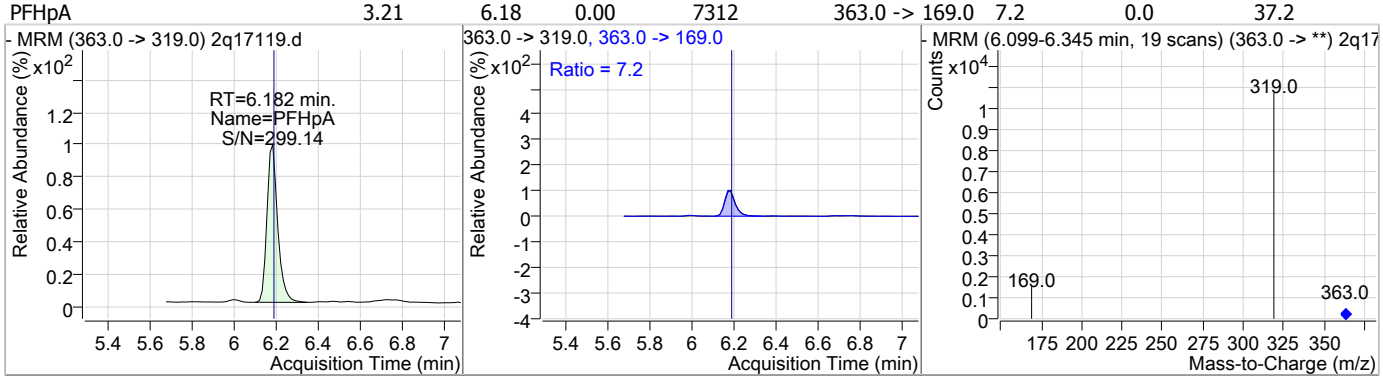
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	35.06	6.16	-0.01	37208 (m)	399.0 -> 99.0	46.7	18.0	78.0



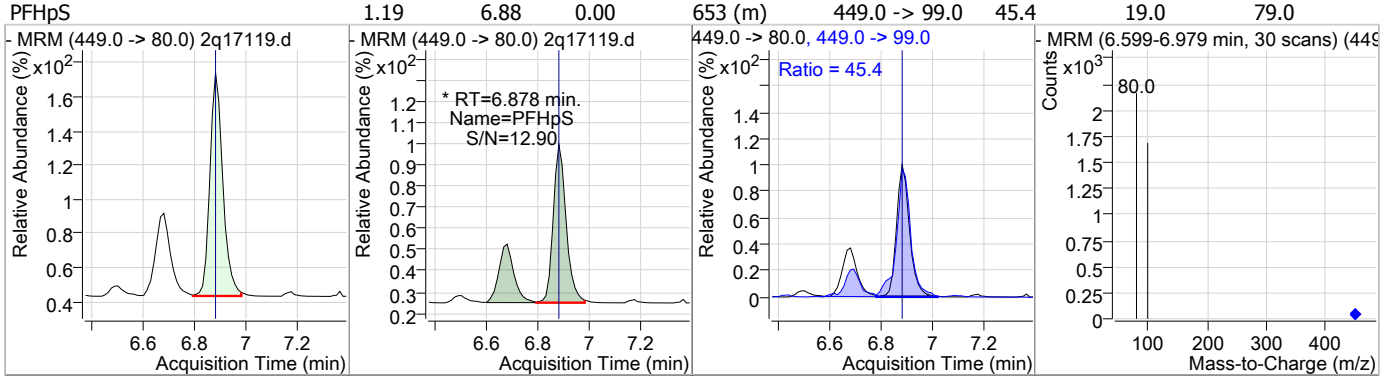
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.10	6.18	0.00	63842				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	3.21	6.18	0.00	7312	363.0 -> 169.0	7.2	0.0	37.2

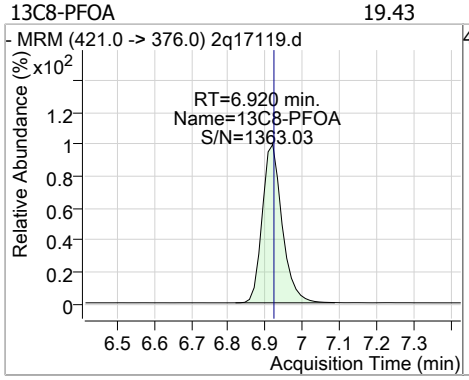


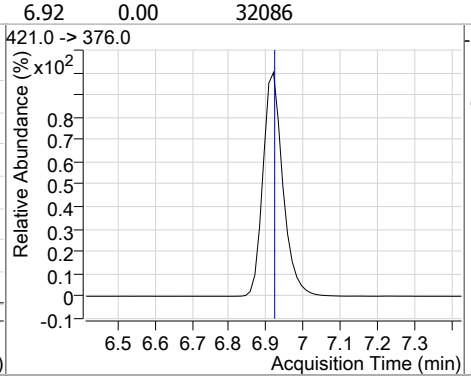
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.19	6.88	0.00	653 (m)	449.0 -> 99.0	45.4	19.0	79.0

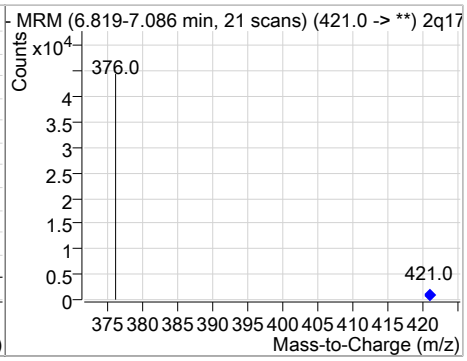


Perfluorinated Compounds by LC/MS/MS

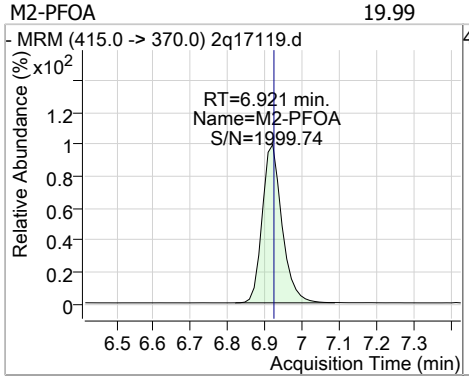
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.43	6.92	0.00	32086				

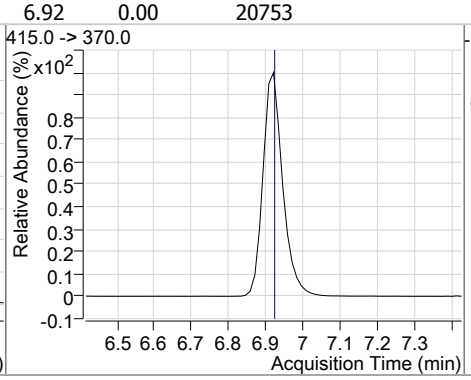


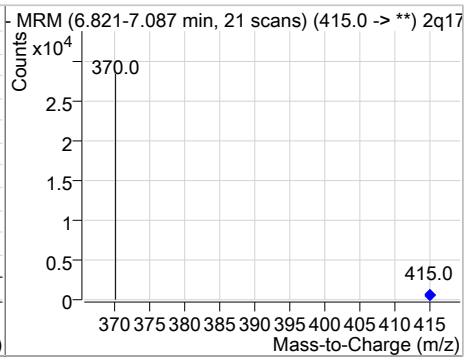




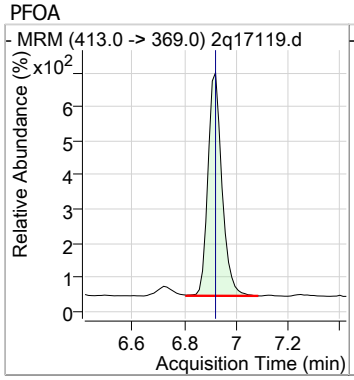
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	19.99	6.92	0.00	20753				

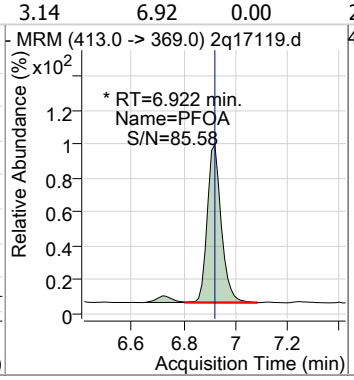


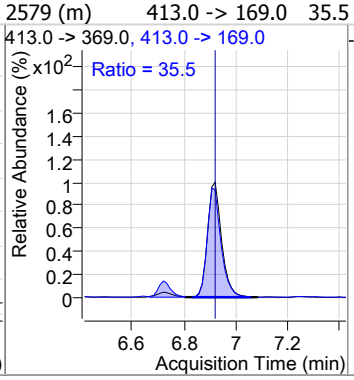


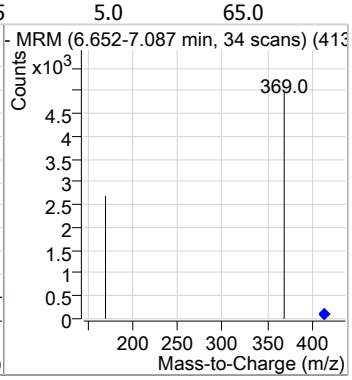


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	3.14	6.92	0.00	2579 (m)	413.0 -> 169.0	35.5	5.0	65.0

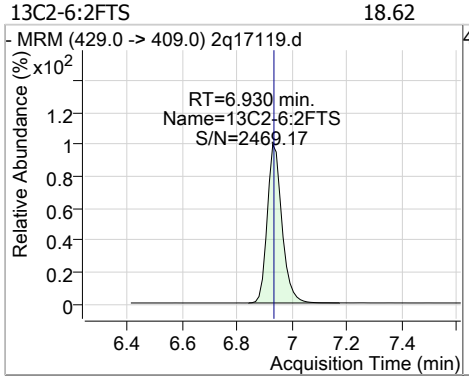


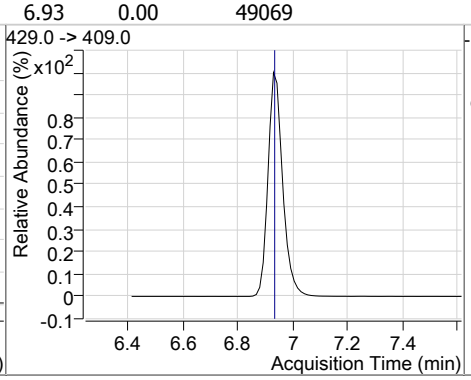


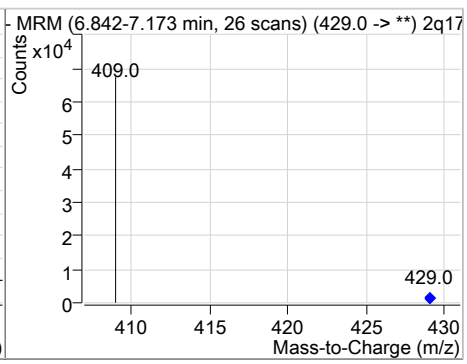




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.62	6.93	0.00	49069				

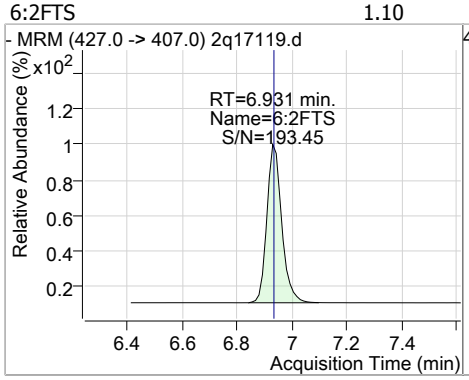


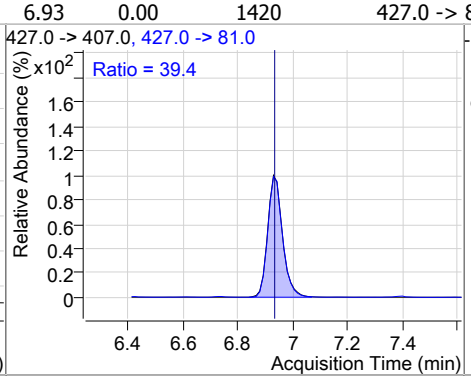


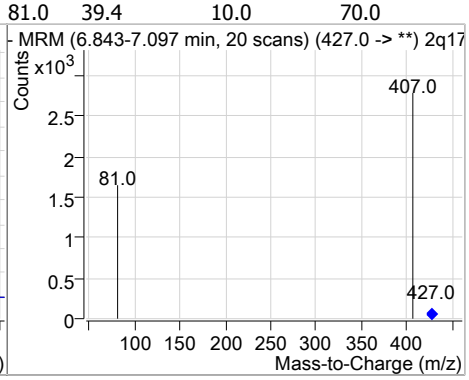


Perfluorinated Compounds by LC/MS/MS

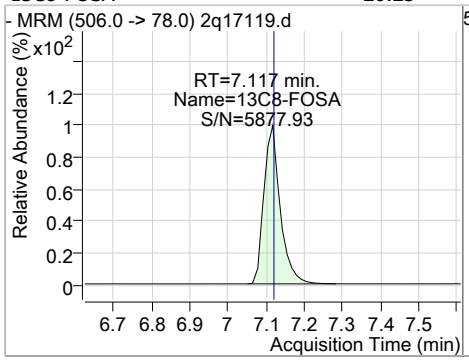
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.10	6.93	0.00	1420	427.0 -> 81.0	39.4	10.0	70.0

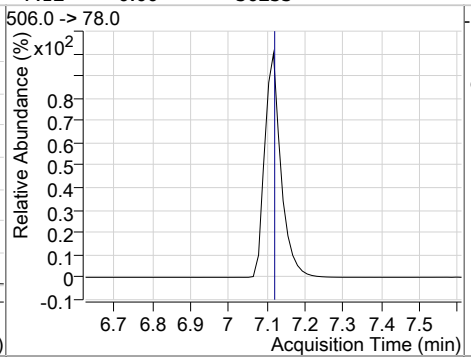


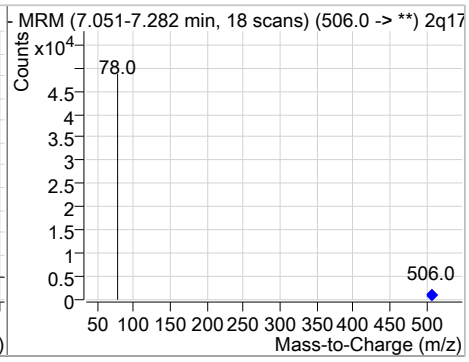




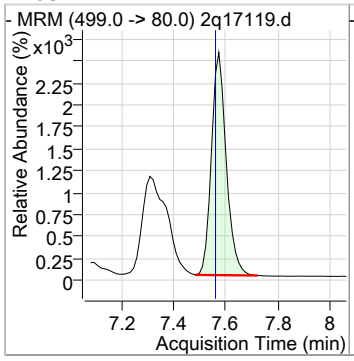
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.23	7.12	0.00	36233				

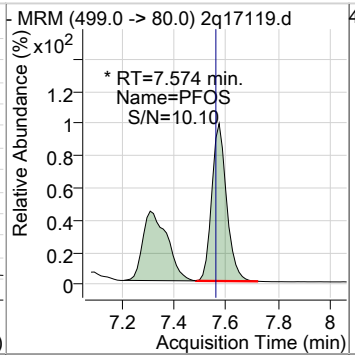


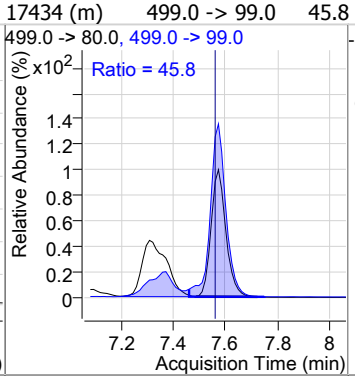


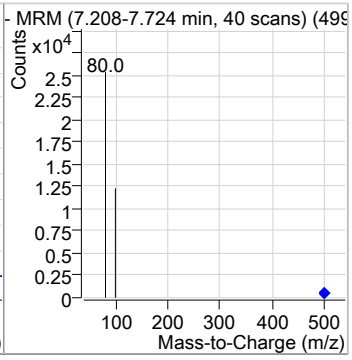


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	31.87	7.57	0.01	17434 (m)	499.0 -> 99.0	45.8	14.5	74.5

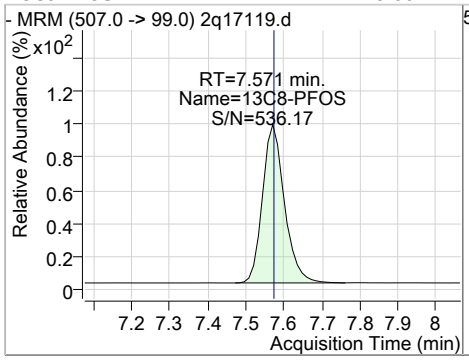


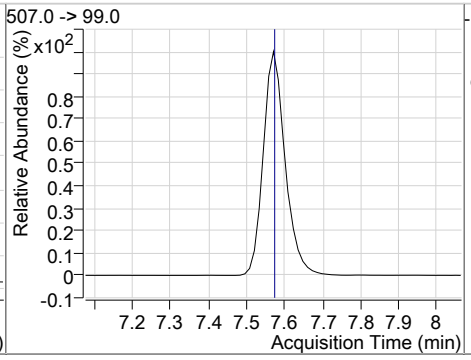


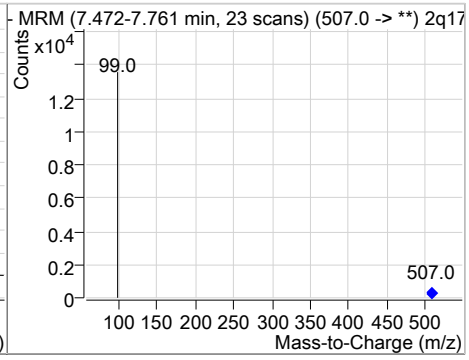




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.80	7.57	0.00	8803				

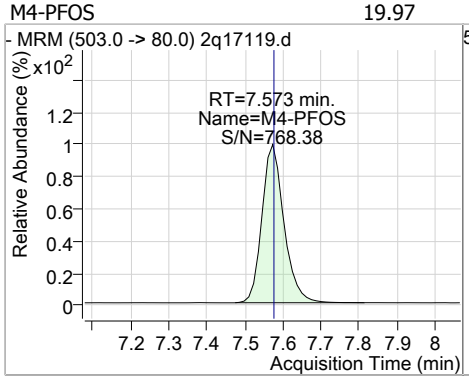


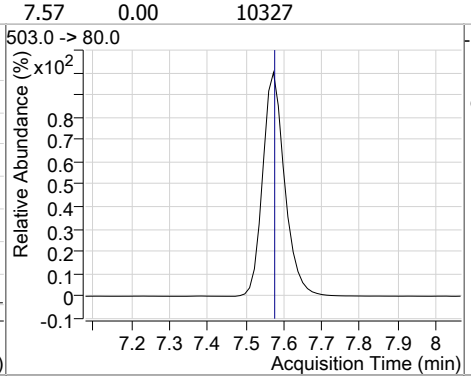


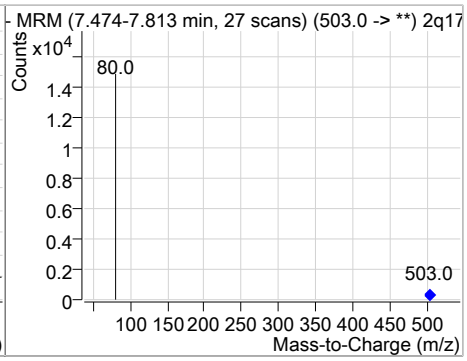


Perfluorinated Compounds by LC/MS/MS

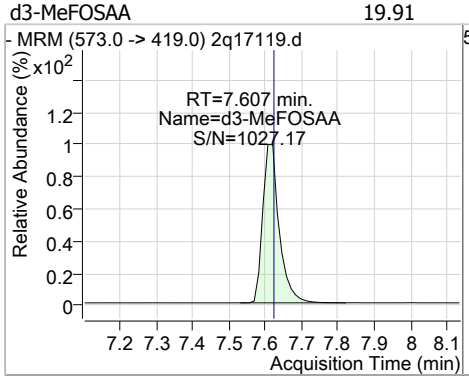
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	19.97	7.57	0.00	10327				

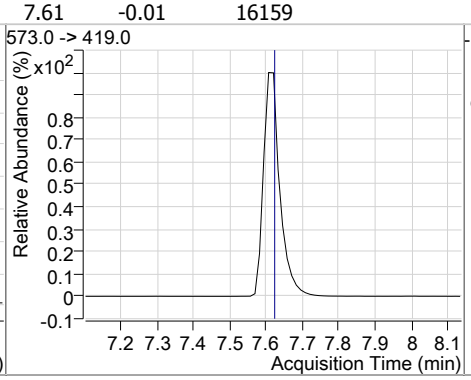


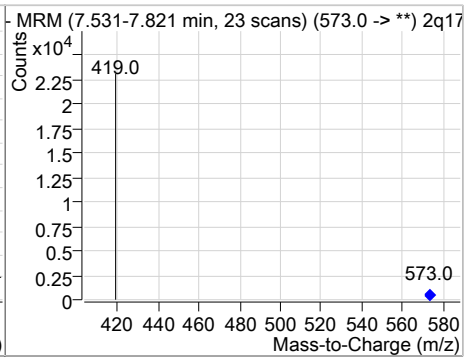




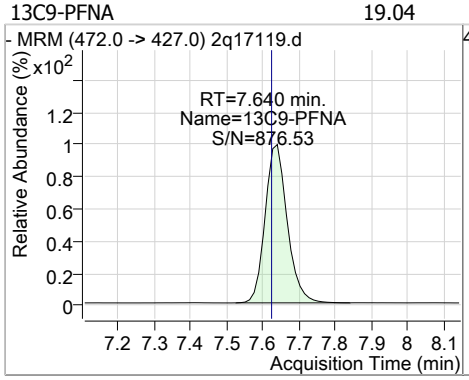
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.91	7.61	-0.01	16159				

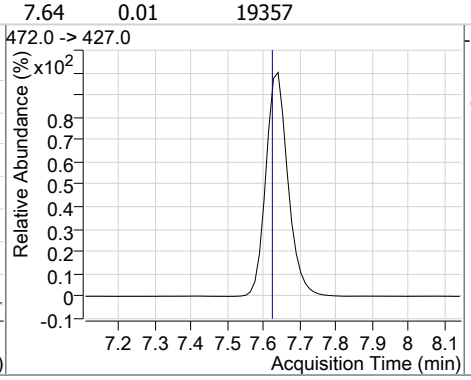


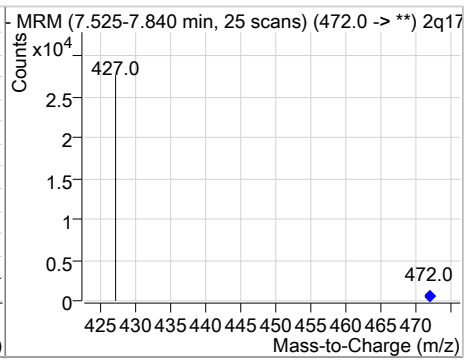




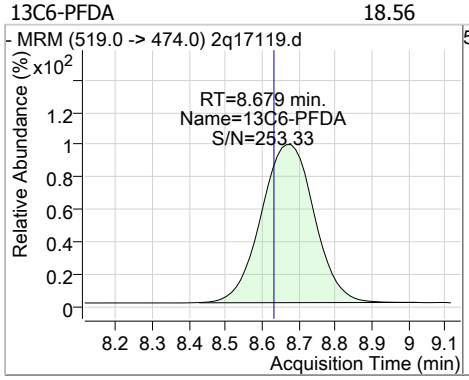
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.04	7.64	0.01	19357				

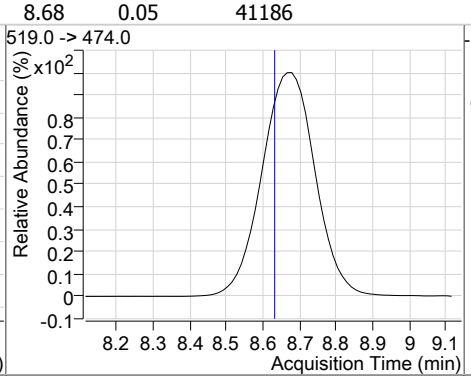


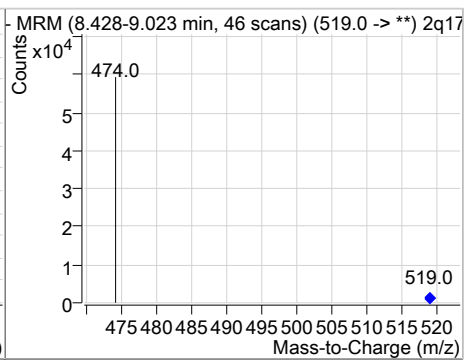




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	18.56	8.68	0.05	41186				

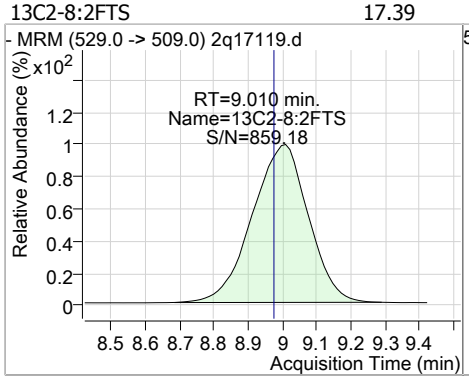


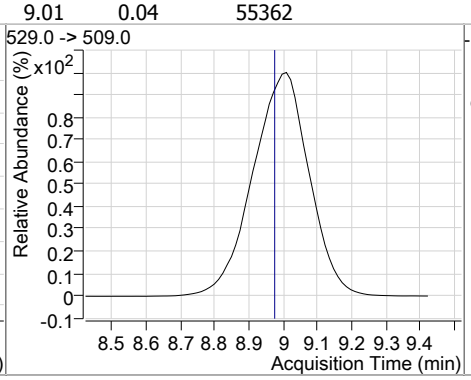


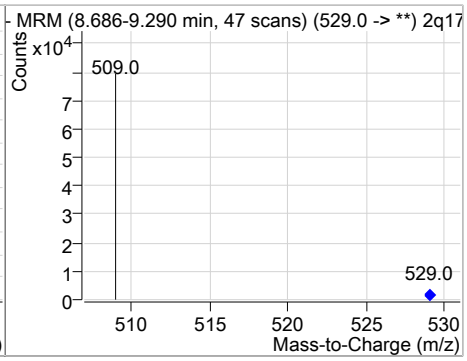


Perfluorinated Compounds by LC/MS/MS

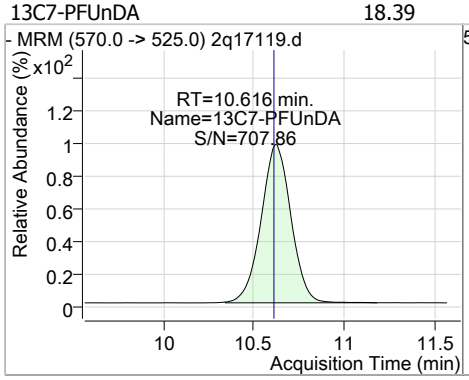
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	17.39	9.01	0.04	55362				

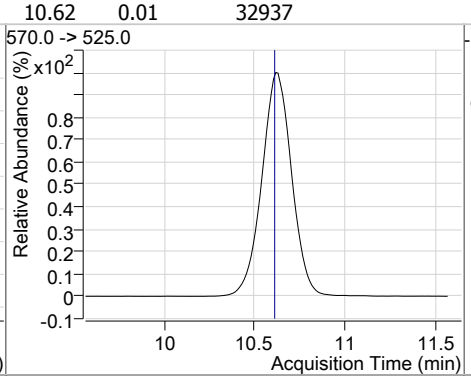


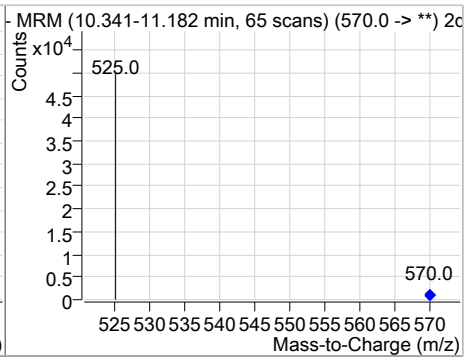




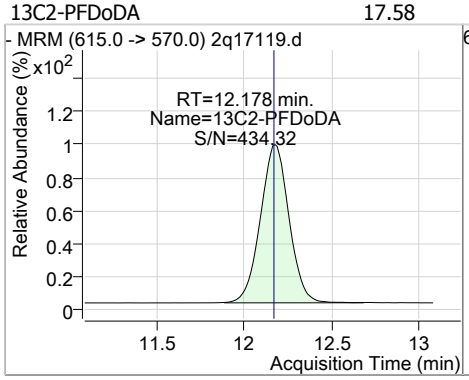
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.39	10.62	0.01	32937				

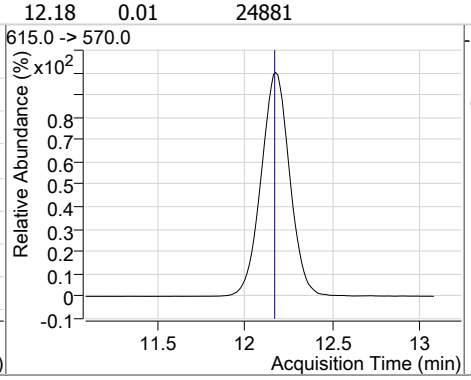


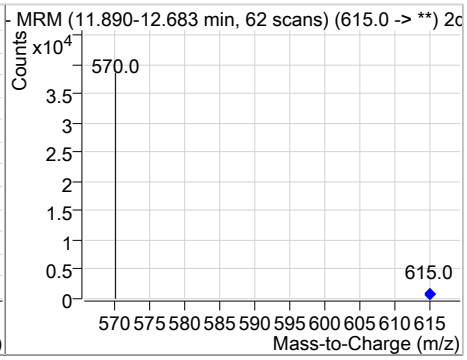




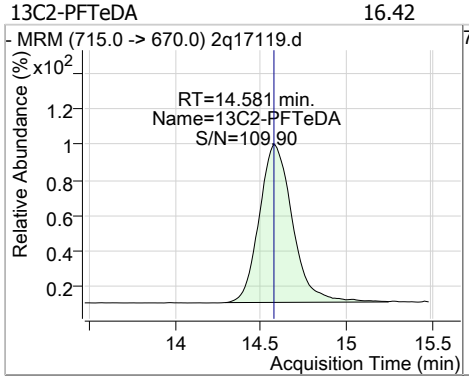
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	17.58	12.18	0.01	24881				

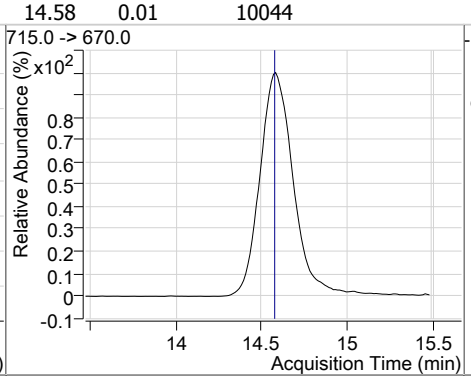


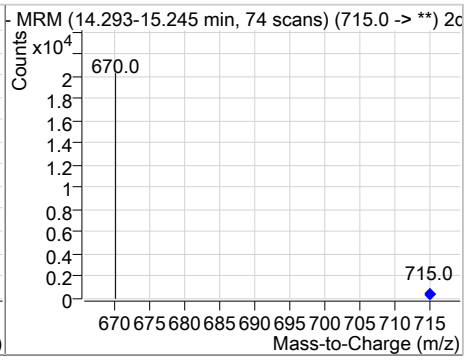




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	16.42	14.58	0.01	10044				







Manual Integration Approval Summary

Sample Number: FA55430-8
Lab FileID: 2Q17119.D
Injection Time: 07/14/18 05:56
Method: EPA 537M QSM5.1 B-15
Analyst approved: 07/16/18 15:10 Natasha Gumtie
Supervisor approved: 07/17/18 11:23 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanesulfonic acid	2706-91-4		5.38	Split peak
Perfluorohexanesulfonic acid	355-46-4		6.16	Split peak
Perfluoroheptanesulfonic acid	375-92-8		6.88	Split peak
Perfluorooctanoic acid	335-67-1		6.92	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.57	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
07/06/18 17:16

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16575.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/5/2018 8:08:24 PM
Sample Name : op70743-mb
Vial : Vial 12
DA Method File : PFC_ID_070518_S2Q291.quantmethod.xml
Batch Name : s2q291.batch.bin
Sample Information : op70743,S2Q291,130,,,1.0,1,water

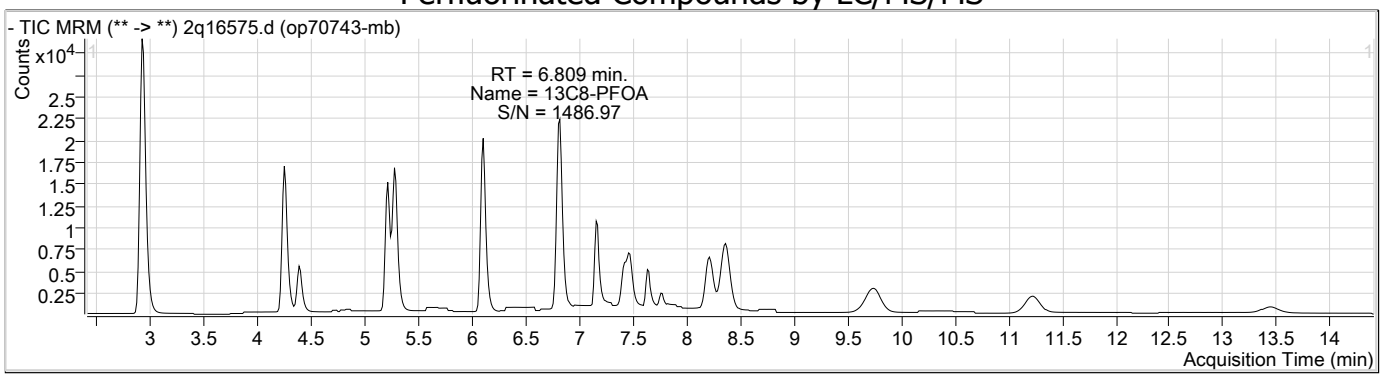
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.810	415.0 -> 370.0	16572	20.00	µg/L	0.012
13C4-PFOS	7.422	503.0 -> 80.0	8811	20.00	µg/L	0.025
M4-PFBA	2.916	217.0 -> 172.0	122857	20.00	µg/L	0.013
M5-PFPeA	4.250	268.0 -> 223.0	57984	20.00	µg/L	0.012
M5-PFHxA	5.278	318.0 -> 273.0	52587	20.00	µg/L	0.012
M4-PFHpA	6.104	367.0 -> 322.0	51826	20.00	µg/L	0.012
M8-PFOA	6.809	421.0 -> 376.0	27943	20.00	µg/L	0.012
M9-PFNA	7.475	472.0 -> 427.0	19564	20.00	µg/L	0.025
M6-PFDA	8.217	519.0 -> 474.0	31506	20.00	µg/L	0.037
M7-PFUnDA	9.741	570.0 -> 525.0	29316	20.00	µg/L	0.062
M2-PFDoDA	11.227	615.0 -> 570.0	19911	20.00	µg/L	0.058
M2-PFTeDA	13.443	715.0 -> 670.0	8261	20.00	µg/L	0.062
M8-FOSA	7.155	506.0 -> 78.0	29021	20.00	µg/L	0.012
M3-PFBS	4.380	302.0 -> 99.0	17609	20.00	µg/L	0.012
M3-PFHxS	6.098	402.0 -> 99.0	15799	20.00	µg/L	0.012
M8-PFOS	7.420	507.0 -> 99.0	8079	20.00	µg/L	0.025
M2-4:2FTS	5.210	329.0 -> 309.0	49306	20.00	µg/L	0.012
M2-6:2FTS	6.818	429.0 -> 409.0	39646	20.00	µg/L	0.010
M2-8:2FTS	8.361	529.0 -> 509.0	47952	20.00	µg/L	0.036
M3-MeFOSAA	7.632	573.0 -> 419.0	13027	20.00	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	5.210	329.0 -> 309.0	49315	15.04	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.2%		
13C2-6:2FTS	6.818	429.0 -> 409.0	39653	15.00	µg/L	0.010
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.0%		
13C2-8:2FTS	8.361	529.0 -> 509.0	48026	14.80	µg/L	0.036
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.0%		
13C2-PFDoDA	11.227	615.0 -> 570.0	19922	13.59	µg/L	0.058
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.0%		
13C2-PFTeDA	13.443	715.0 -> 670.0	8292	13.36	µg/L	0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.8%		
13C3-PFBS	4.380	302.0 -> 99.0	17611	15.93	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.7%		
13C3-PFHxS	6.098	402.0 -> 99.0	15803	15.78	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.9%		
13C4-PFBA	2.916	217.0 -> 172.0	122814	16.04	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.2%		
13C4-PFHpA	6.104	367.0 -> 322.0	51798	16.07	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.4%		
13C5-PFHxA	5.278	318.0 -> 273.0	52575	16.05	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.2%		
13C5-PFPeA	4.250	268.0 -> 223.0	57989	15.91	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.6%		
13C6-PFDA	8.217	519.0 -> 474.0	31535	17.03	µg/L	0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.2%		

Perfluorinated Compounds by LC/MS/MS

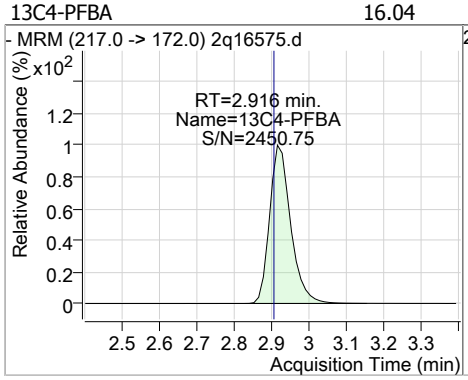
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	9.741	570.0 -> 525.0	29285	14.32	µg/L		0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.6%			
13C8-FOSA	7.155	506.0 -> 78.0	29019	16.48	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.4%			
13C8-PFOA	6.809	421.0 -> 376.0	27939	16.04	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.2%			
13C8-PFOS	7.420	507.0 -> 99.0	8079	16.49	µg/L		0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.4%			
13C9-PFNA	7.475	472.0 -> 427.0	19604	16.48	µg/L		0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.4%			
d3-MeFOSAA	7.632	573.0 -> 419.0	13025	14.83	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.2%			
M2-PFOA	6.810	415.0 -> 370.0	16570	20.00	ng/ml		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.422	503.0 -> 80.0	8818	20.02	ng/ml		0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	4.253	263.0 -> 219.0	486	0.17	µg/L	m	100
PFPeS	5.766	349.0 -> 80.0	0	0.00	µg/L	m	1
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			

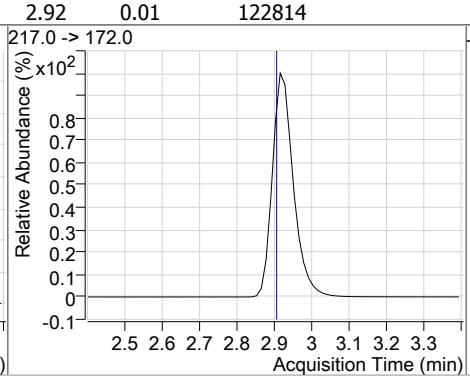
 # = Qualifier out of range, m = manually integrated, + = Area summed

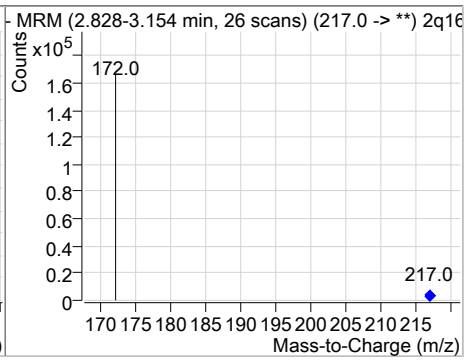
Perfluorinated Compounds by LC/MS/MS



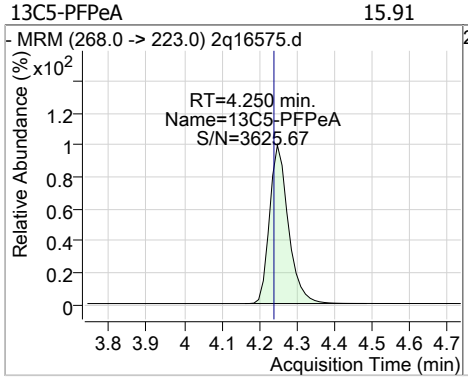
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	16.04	2.92	0.01	122814				

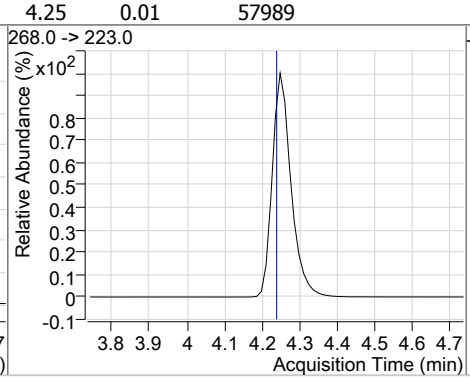


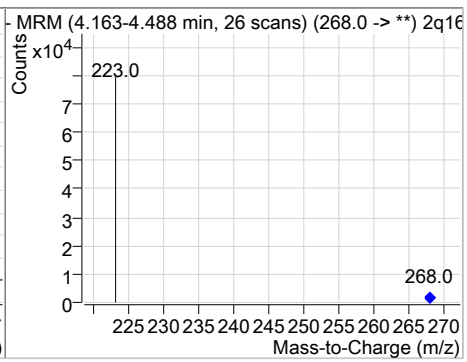




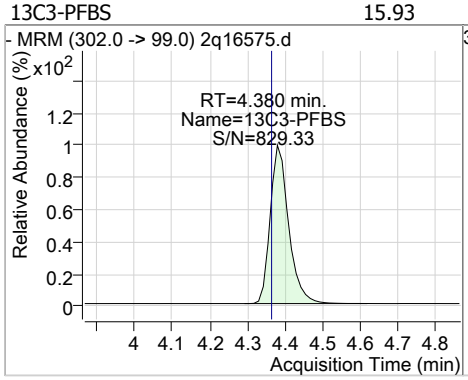
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	15.91	4.25	0.01	57989				

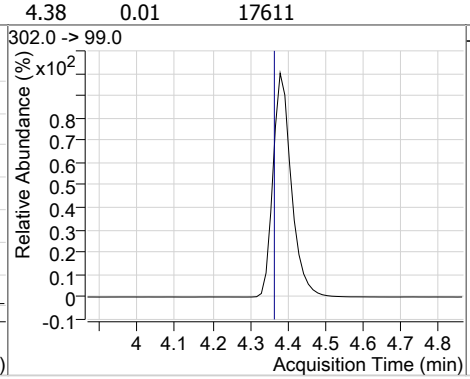


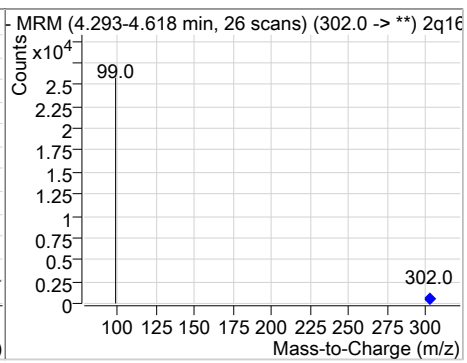




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	15.93	4.38	0.01	17611				

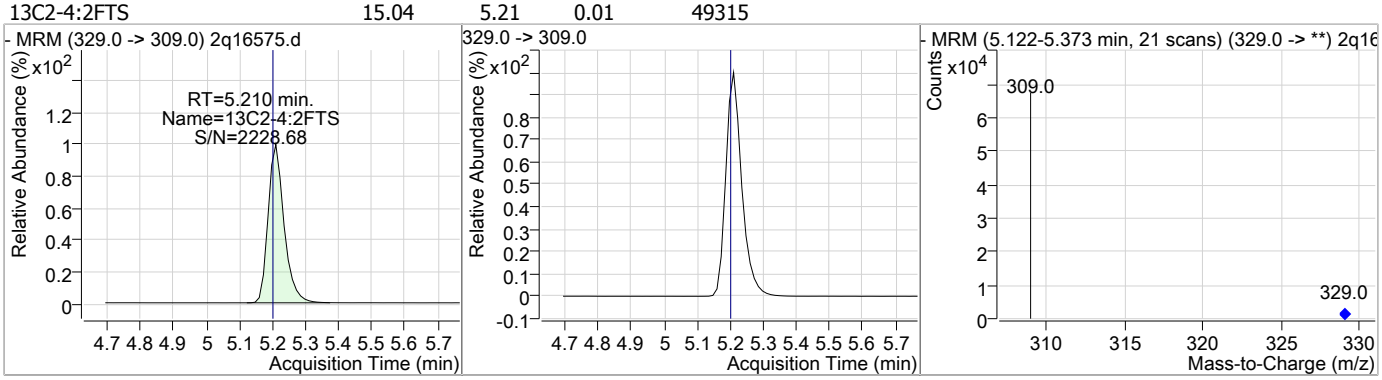




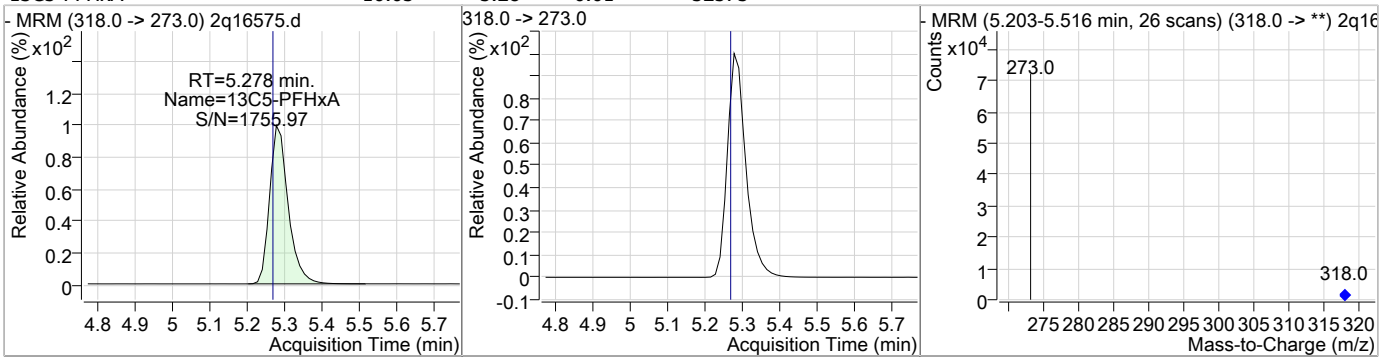


Perfluorinated Compounds by LC/MS/MS

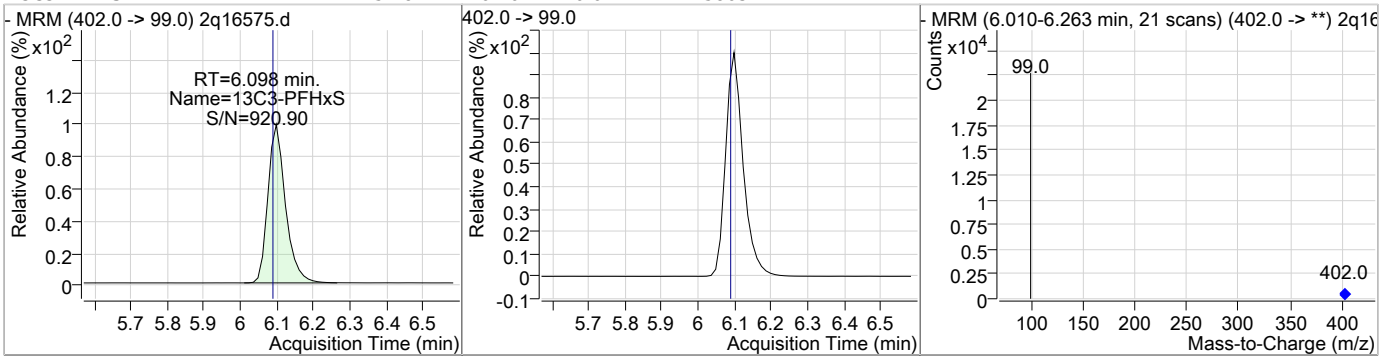
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	15.04	5.21	0.01	49315				



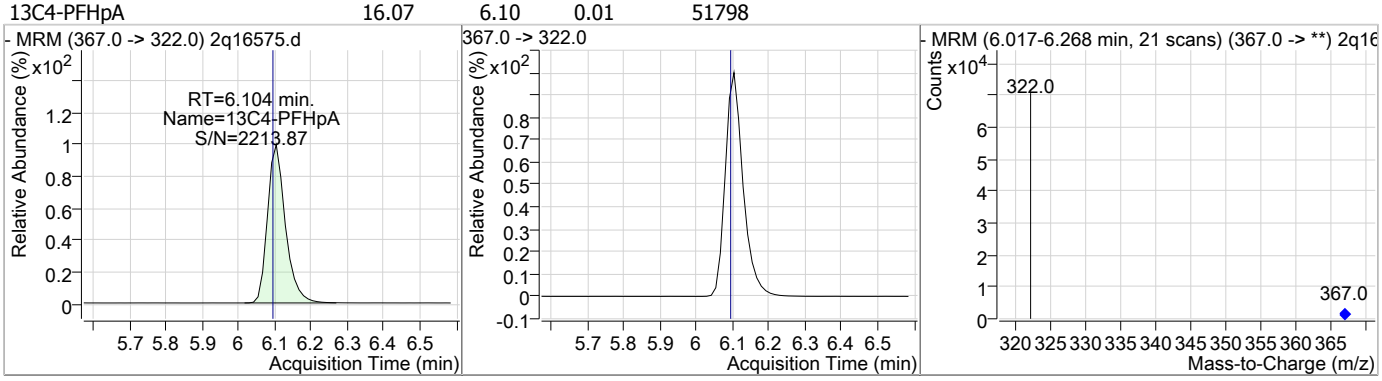
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	16.05	5.28	0.01	52575				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	15.78	6.10	0.01	15803				

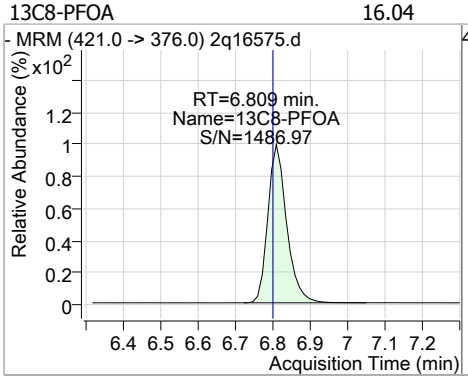


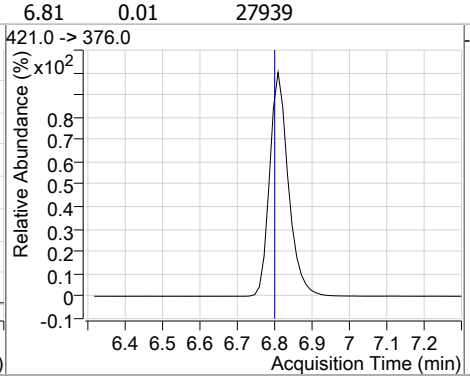
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	16.07	6.10	0.01	51798				

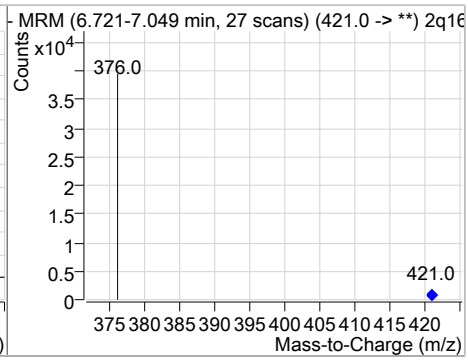


Perfluorinated Compounds by LC/MS/MS

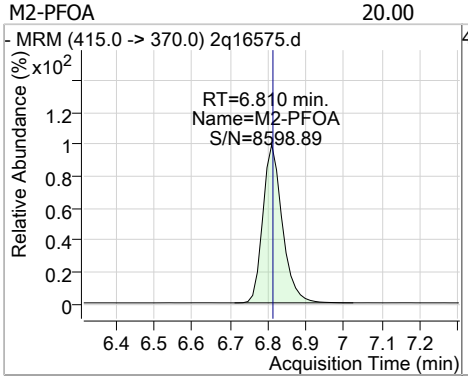
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	16.04	6.81	0.01	27939				

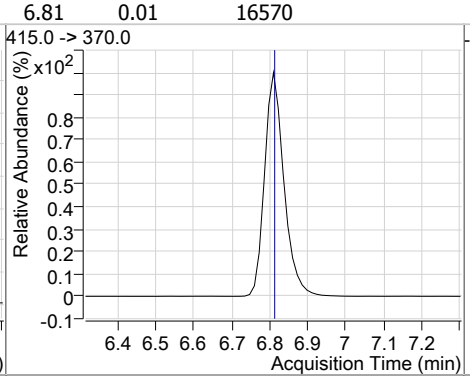


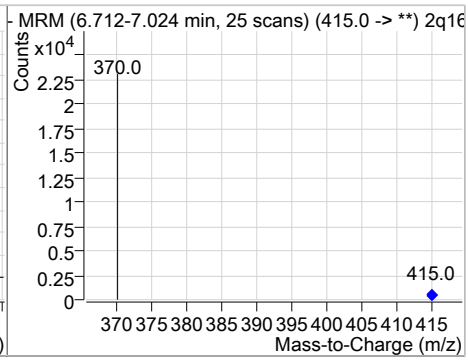




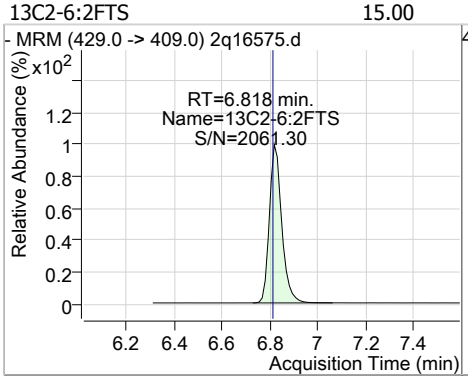
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.81	0.01	16570				

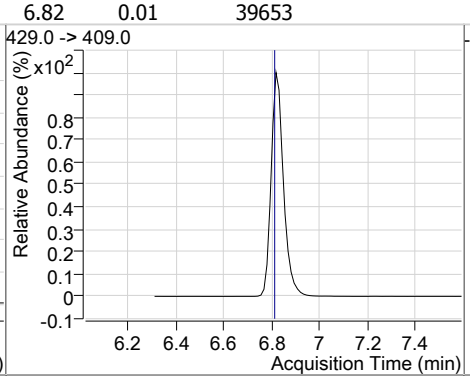


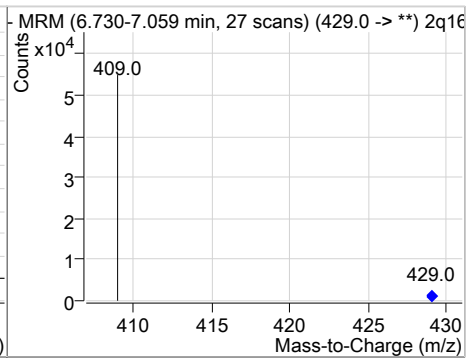




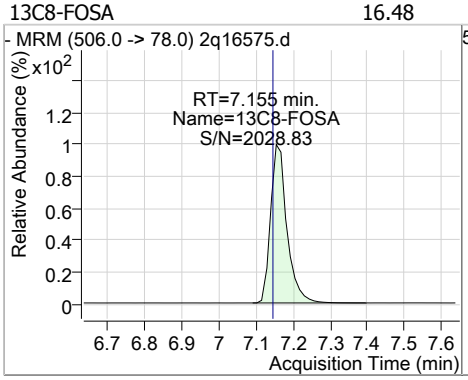
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	15.00	6.82	0.01	39653				

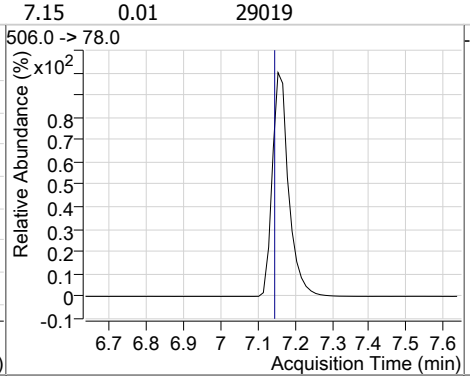


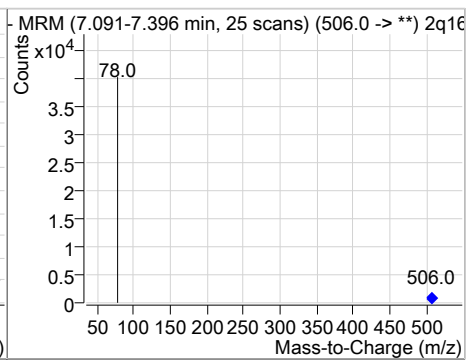




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	16.48	7.15	0.01	29019				

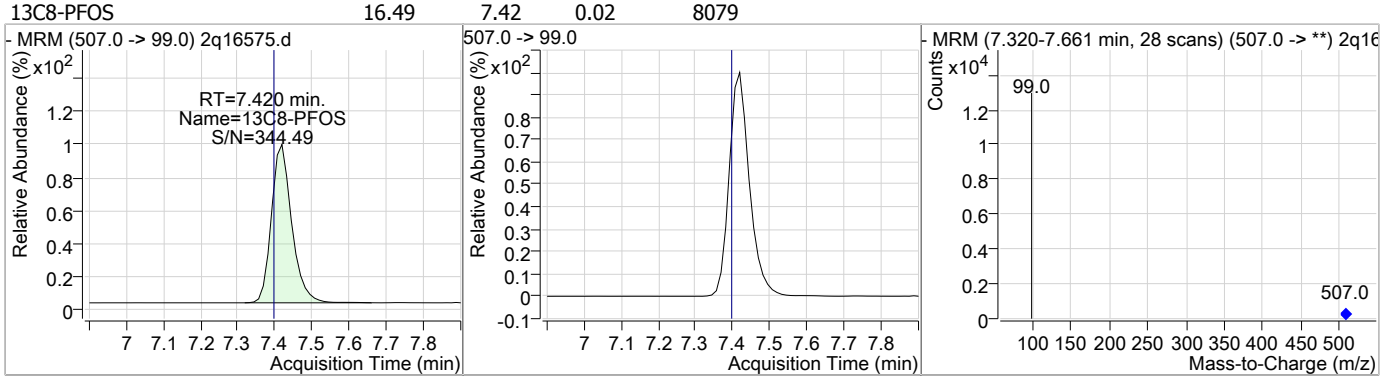




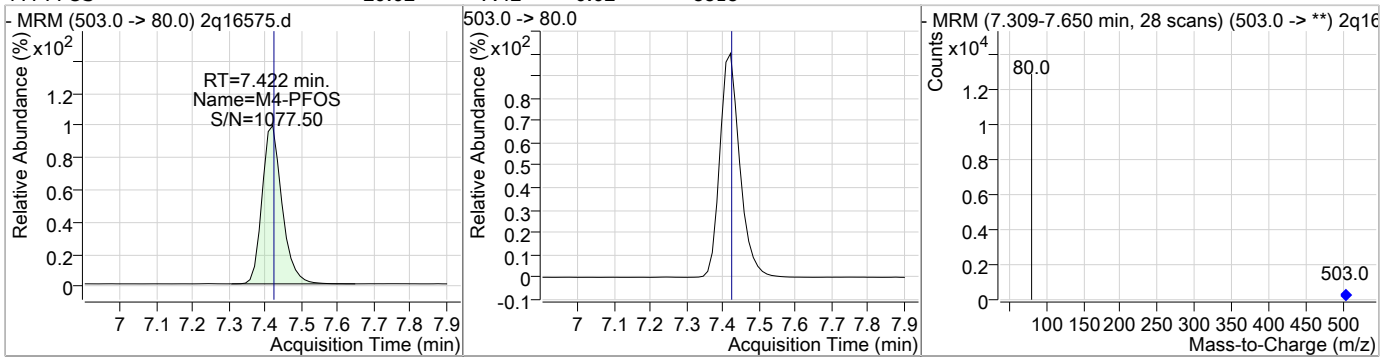


Perfluorinated Compounds by LC/MS/MS

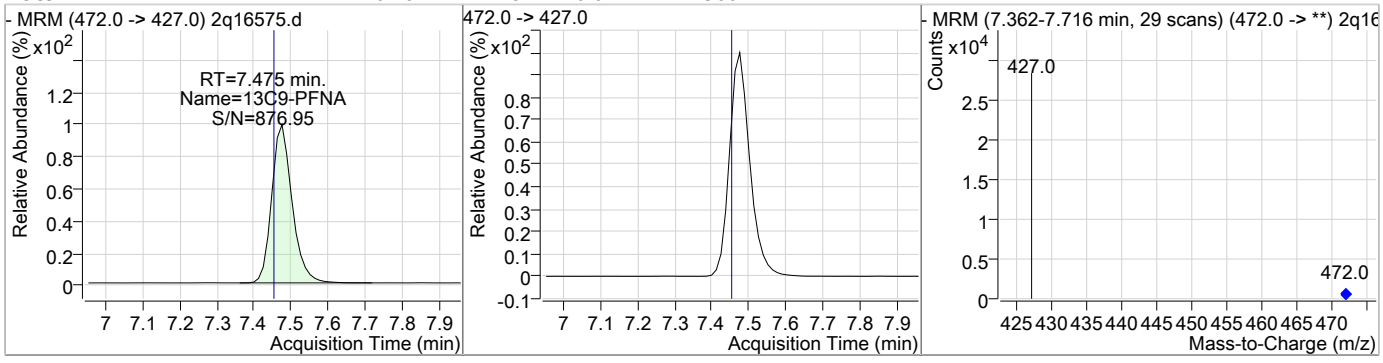
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	16.49	7.42	0.02	8079				



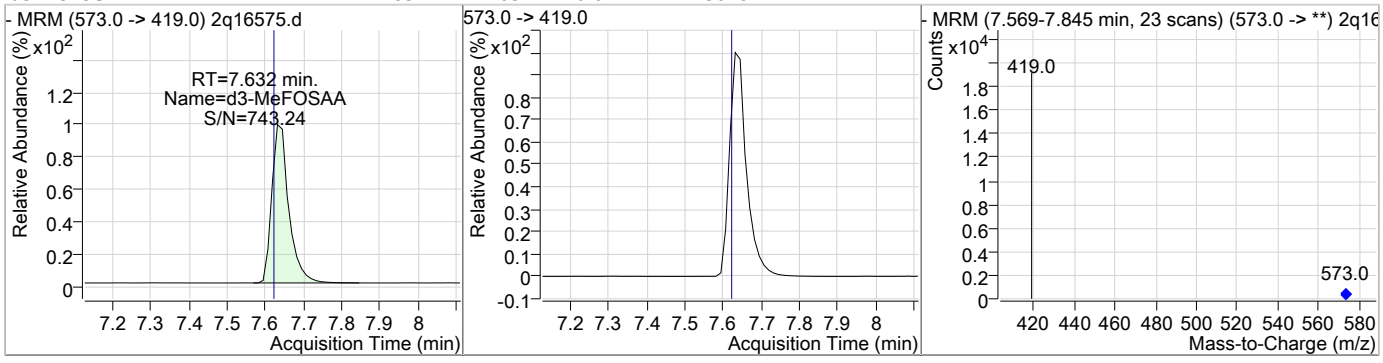
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.02	7.42	0.02	8818				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	16.48	7.48	0.02	19604				

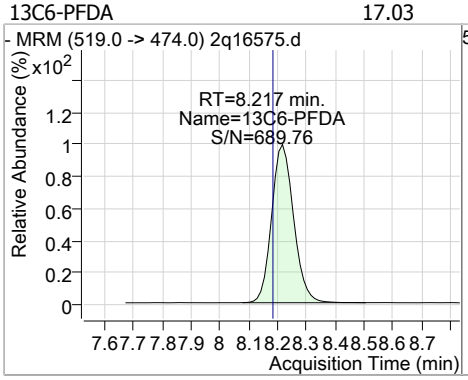


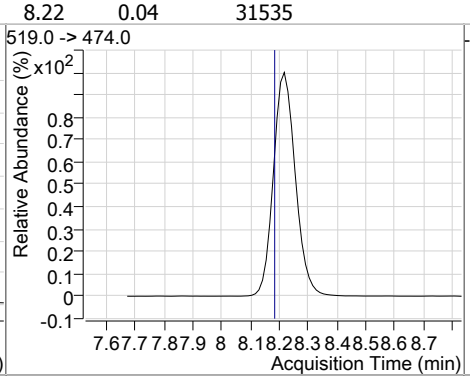
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	14.83	7.63	0.01	13025				

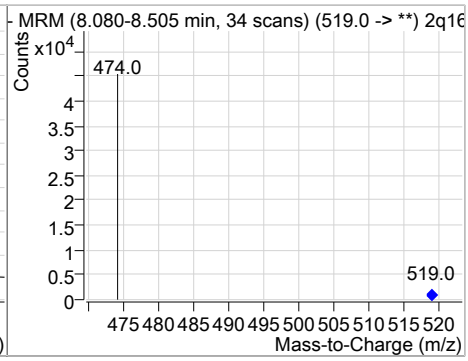


Perfluorinated Compounds by LC/MS/MS

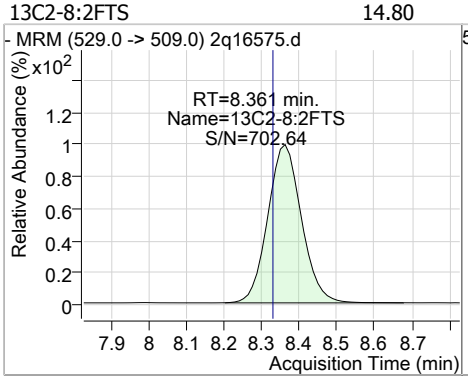
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	17.03	8.22	0.04	31535				

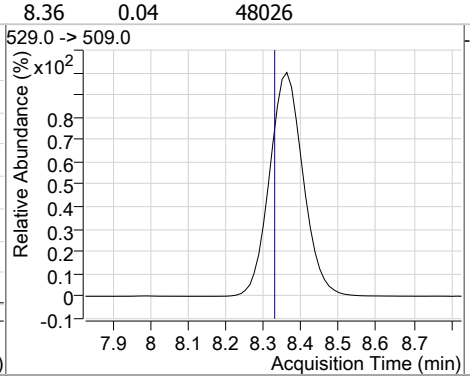


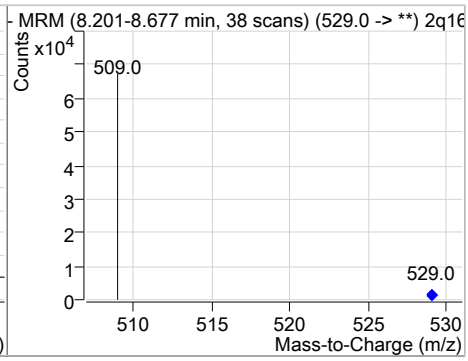




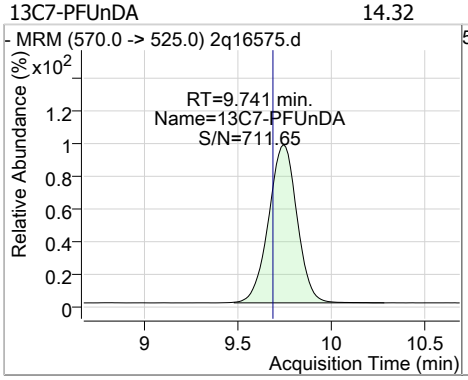
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	14.80	8.36	0.04	48026				

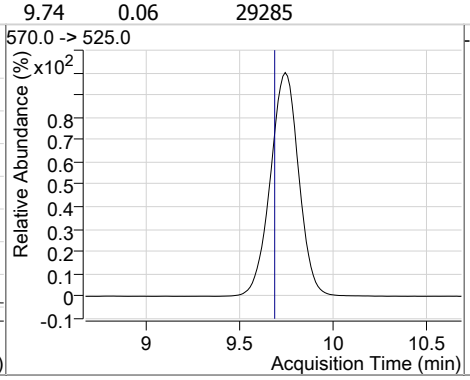


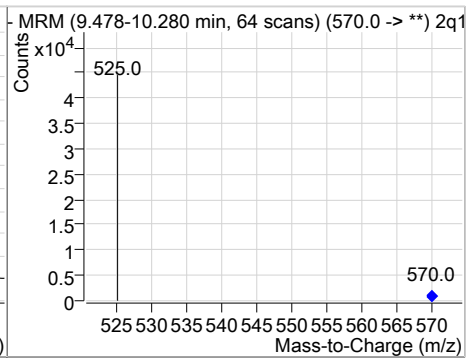




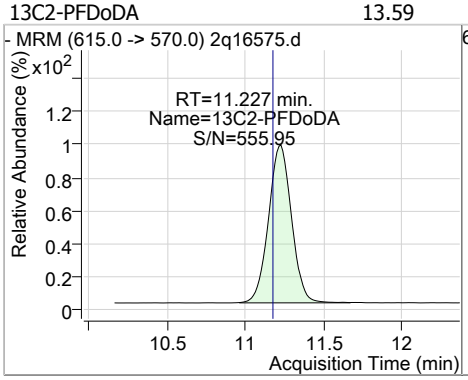
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	14.32	9.74	0.06	29285				

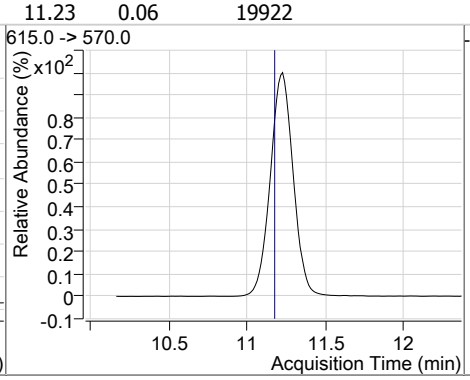


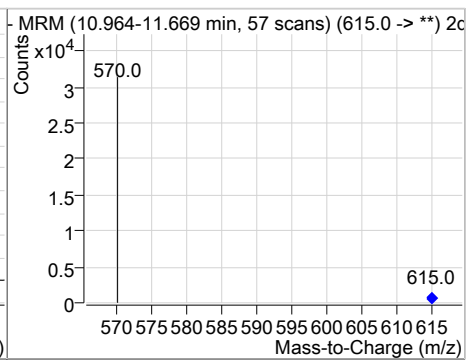




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	13.59	11.23	0.06	19922				

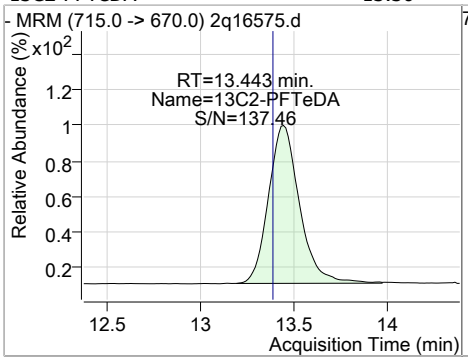


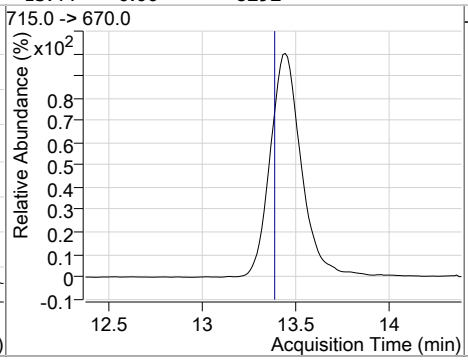


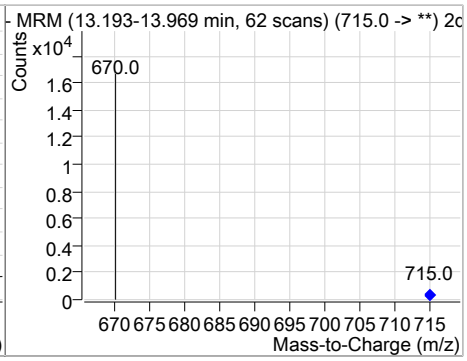


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	13.36	13.44	0.06	8292				







Manual Integration Approval Summary

Sample Number:	OP70743-MB	**Method:**	EPA 537M QSM5.1 B-15
Lab FileID:	2Q16575.D	**Analyst approved:**	07/06/18 10:39 Natasha Gumtie
Injection Time:	07/05/18 20:08	**Supervisor approved:**	07/06/18 17:16 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanoic acid	2706-90-3		4.25	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File	:	2q16960.d
Operator	:	NATASHAG
Acq. Method	:	dMRM_ID_PFC.m
Acq. Date-Time	:	7/11/2018 5:04:04 PM
Sample Name	:	op70805-mb
Vial	:	Vial 97
DA Method File	:	PFC_ID_071018_S2Q294.quantmethod.xml
Batch Name	:	s2q294.batch.bin
Sample Information	:	op70805,S2Q294,120,,,1.0,1,water

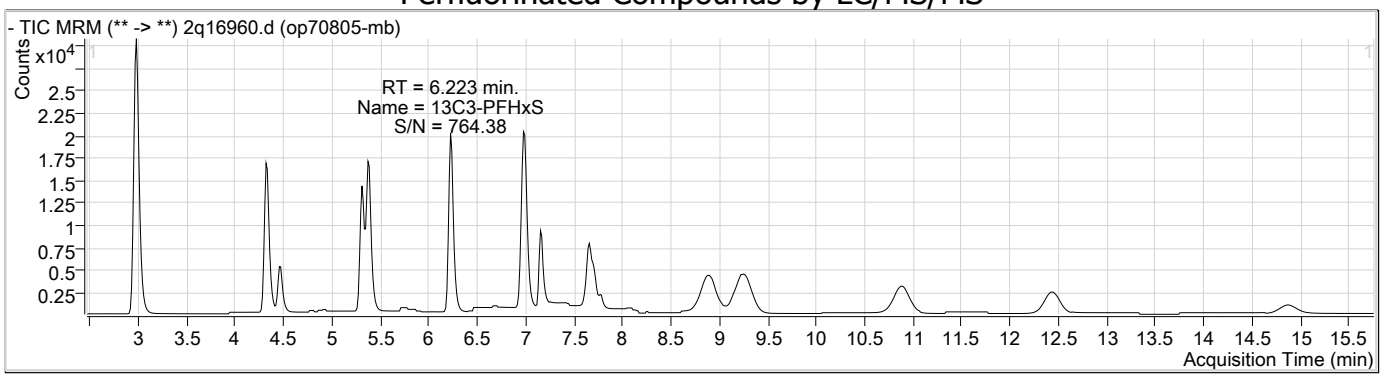
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.984	415.0 -> 370.0	18228	20.00	µg/L	0.038
13C4-PFOS	7.648	503.0 -> 80.0	8463	20.00	µg/L	0.046
M4-PFBA	2.978	217.0 -> 172.0	119928	20.00	µg/L	0.012
M5-PFPeA	4.325	268.0 -> 223.0	59440	20.00	µg/L	0.013
M5-PFHxA	5.391	318.0 -> 273.0	54887	20.00	µg/L	0.030
M4-PFHpA	6.229	367.0 -> 322.0	55609	20.00	µg/L	0.020
M8-PFOA	6.983	421.0 -> 376.0	27232	20.00	µg/L	0.037
M9-PFNA	7.715	472.0 -> 427.0	15714	20.00	µg/L	0.048
M6-PFDA	8.891	519.0 -> 474.0	44596	20.00	µg/L	0.149
M7-PFUnDA	10.892	570.0 -> 525.0	34633	20.00	µg/L	0.131
M2-PFDoDA	12.440	615.0 -> 570.0	27848	20.00	µg/L	0.102
M2-PFTeDA	14.869	715.0 -> 670.0	12523	20.00	µg/L	0.094
M8-FOSA	7.155	506.0 -> 78.0	25343	20.00	µg/L	0.010
M3-PFBS	4.468	302.0 -> 99.0	17718	20.00	µg/L	0.031
M3-PFHxS	6.223	402.0 -> 99.0	13400	20.00	µg/L	0.027
M8-PFOS	7.646	507.0 -> 99.0	5814	20.00	µg/L	0.045
M2-4:2FTS	5.310	329.0 -> 309.0	47432	20.00	µg/L	0.027
M2-6:2FTS	6.992	429.0 -> 409.0	37471	20.00	µg/L	0.035
M2-8:2FTS	9.247	529.0 -> 509.0	53472	20.00	µg/L	0.152
M3-MeFOSAA	7.658	573.0 -> 419.0	10989	20.00	µg/L	0.021
System Monitoring Compounds						
13C2-4:2FTS	5.310	329.0 -> 309.0	47437	17.70	µg/L	0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.5%		
13C2-6:2FTS	6.992	429.0 -> 409.0	37495	18.06	µg/L	0.035
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.3%		
13C2-8:2FTS	9.247	529.0 -> 509.0	52917	12.05	µg/L	0.152
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.2%		
13C2-PFDoDA	12.440	615.0 -> 570.0	27844	14.48	µg/L	0.102
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.4%		
13C2-PFTeDA	14.869	715.0 -> 670.0	12606	14.37	µg/L	0.094
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.9%		
13C3-PFBS	4.468	302.0 -> 99.0	17726	17.82	µg/L	0.031
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.1%		
13C3-PFHxS	6.223	402.0 -> 99.0	13399	16.14	µg/L	0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.7%		
13C4-PFBA	2.978	217.0 -> 172.0	119857	18.71	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.5%		
13C4-PFHpA	6.229	367.0 -> 322.0	55620	20.46	µg/L	0.020
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%		
13C5-PFHxA	5.391	318.0 -> 273.0	54899	19.36	µg/L	0.030
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.8%		
13C5-PFPeA	4.325	268.0 -> 223.0	59416	18.99	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.0%		
13C6-PFDA	8.891	519.0 -> 474.0	44043	15.22	µg/L	0.149
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.1%		

Perfluorinated Compounds by LC/MS/MS

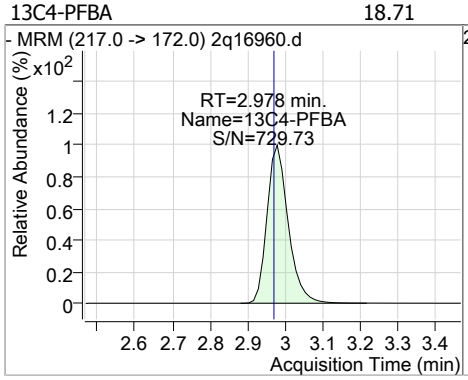
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.892	570.0 -> 525.0	34663	14.59	µg/L		0.131
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.0%			
13C8-FOSA	7.155	506.0 -> 78.0	25356	16.17	µg/L		0.010
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.9%			
13C8-PFOA	6.983	421.0 -> 376.0	27239	19.59	µg/L		0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.0%			
13C8-PFOS	7.646	507.0 -> 99.0	5810	13.46	µg/L		0.045
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.3%			
13C9-PFNA	7.715	472.0 -> 427.0	15719	16.32	µg/L		0.048
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.6%			
d3-MeFOSAA	7.658	573.0 -> 419.0	10987	14.52	µg/L		0.021
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.6%			
M2-PFOA	6.984	415.0 -> 370.0	18230	20.00	ng/ml		0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.648	503.0 -> 80.0	8465	20.01	ng/ml		0.046
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	6.736	363.0 -> 319.0	0	0.00	µg/L	m	1
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	4.329	263.0 -> 219.0	427	0.15	µg/L		100
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			

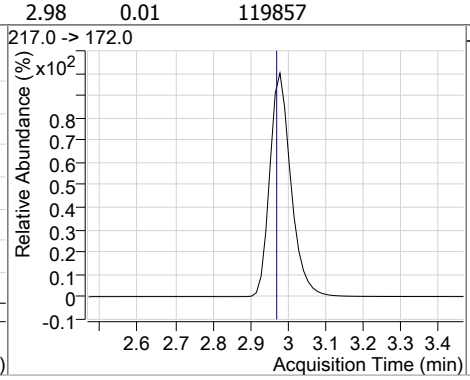
 # = Qualifier out of range, m = manually integrated, + = Area summed

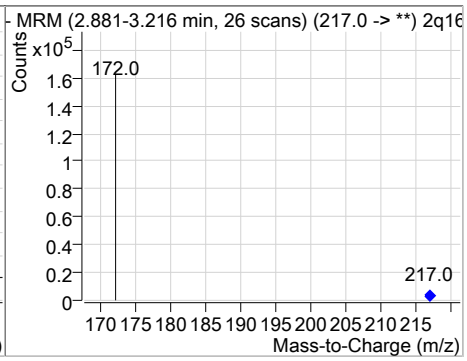
Perfluorinated Compounds by LC/MS/MS



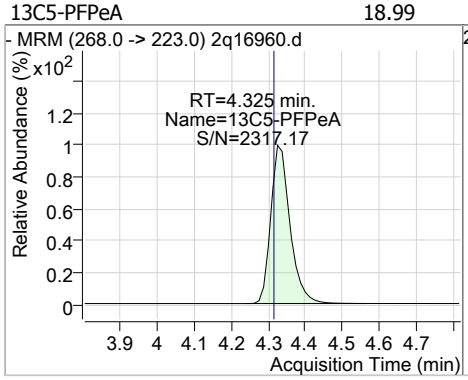
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.71	2.98	0.01	119857				

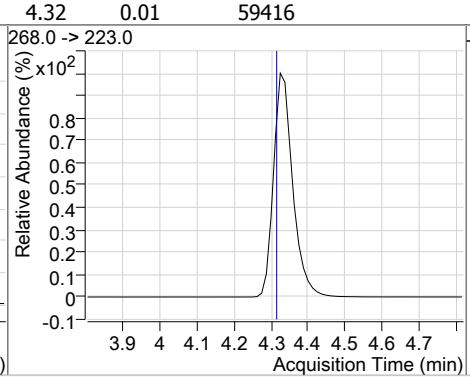


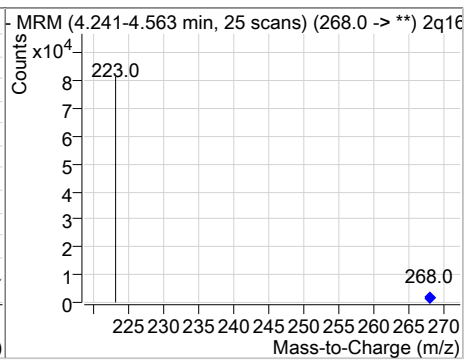




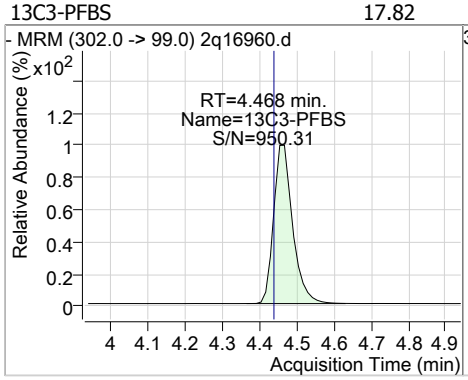
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.99	4.32	0.01	59416				

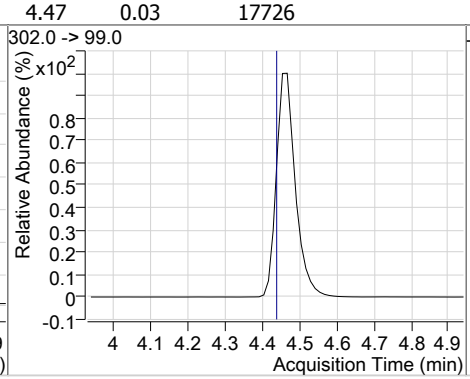


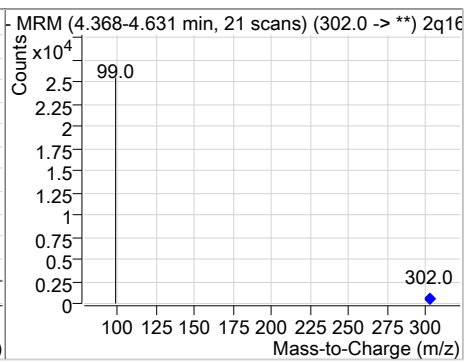




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	17.82	4.47	0.03	17726				

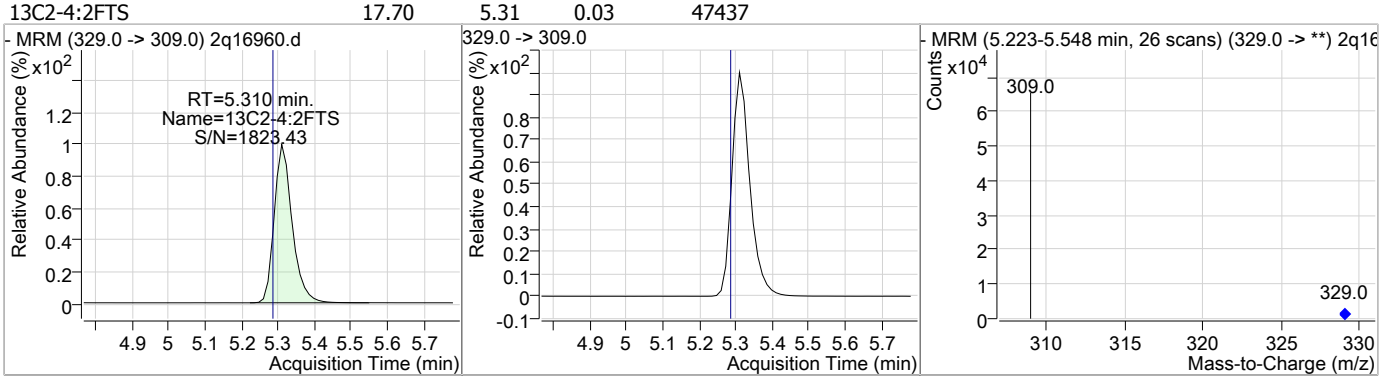




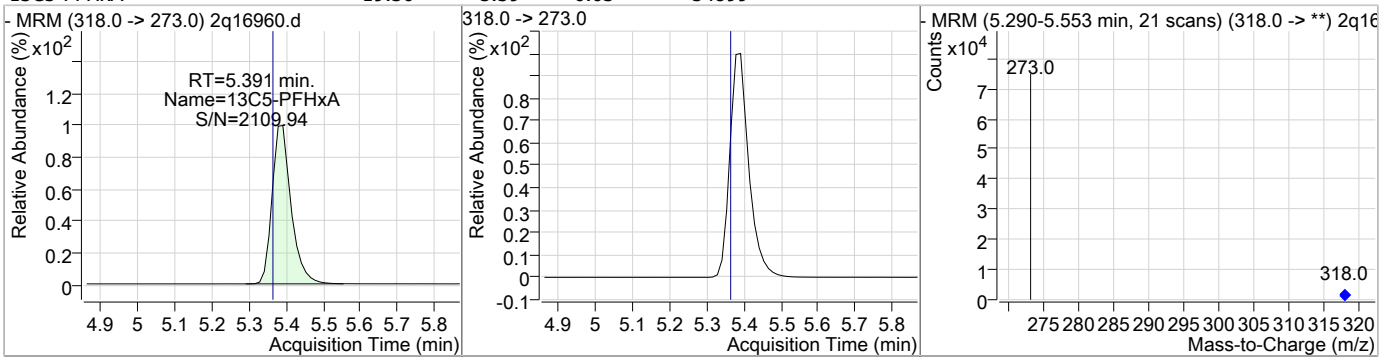


Perfluorinated Compounds by LC/MS/MS

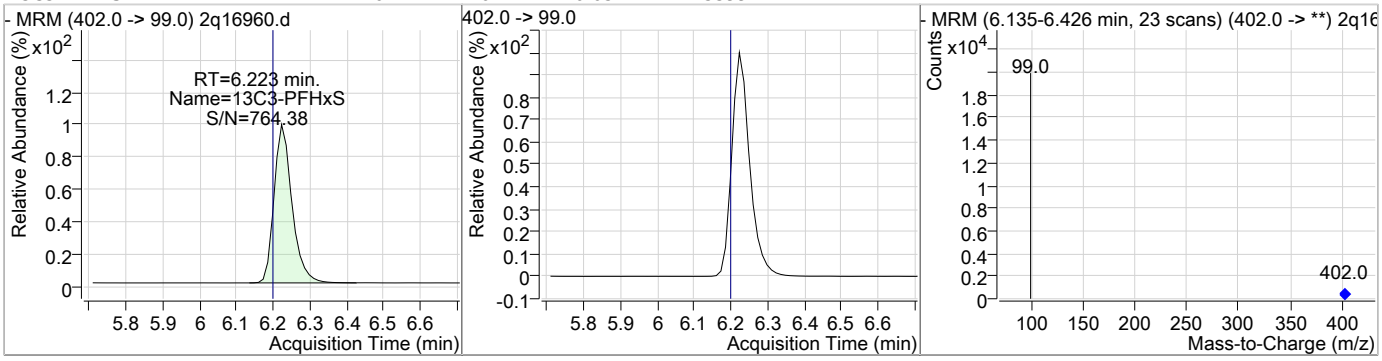
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	17.70	5.31	0.03	47437				



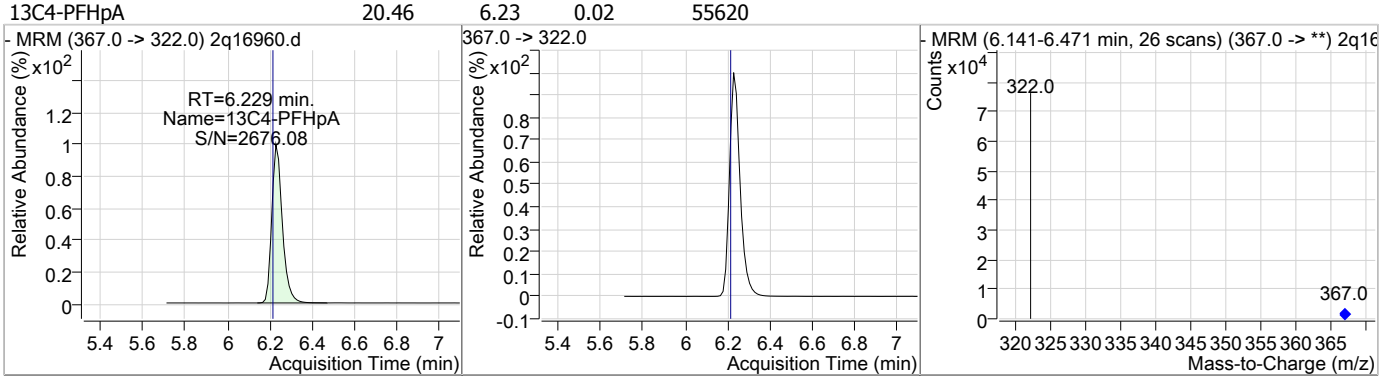
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.36	5.39	0.03	54899				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	16.14	6.22	0.03	13399				

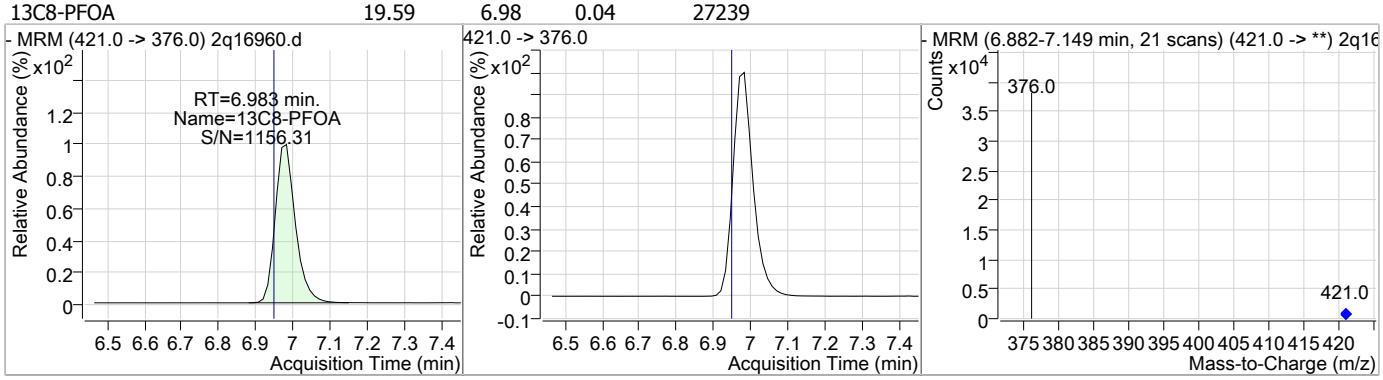


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.46	6.23	0.02	55620				

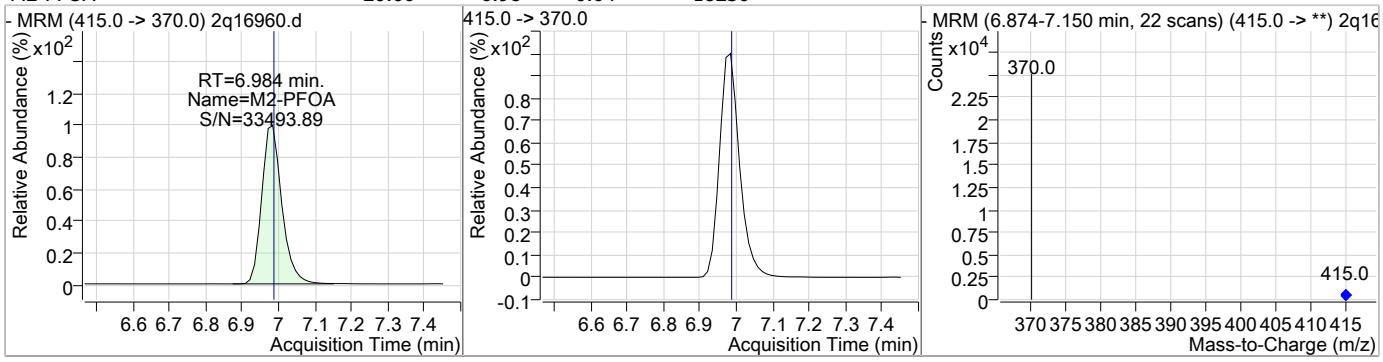


Perfluorinated Compounds by LC/MS/MS

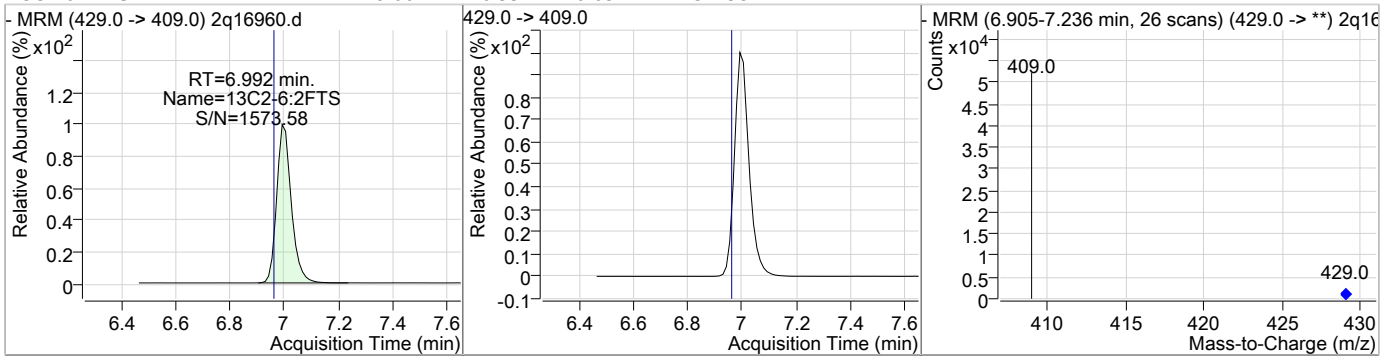
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.59	6.98	0.04	27239				



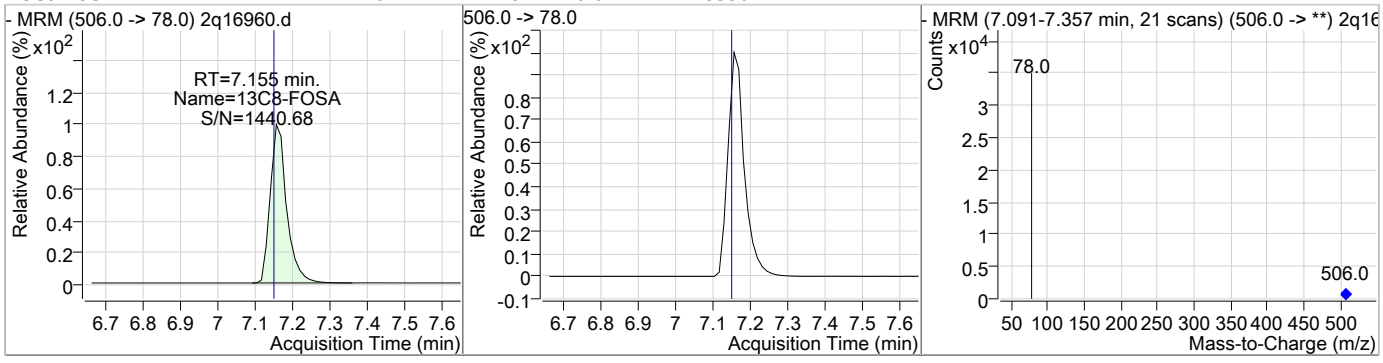
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.98	0.04	18230				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.06	6.99	0.03	37495				

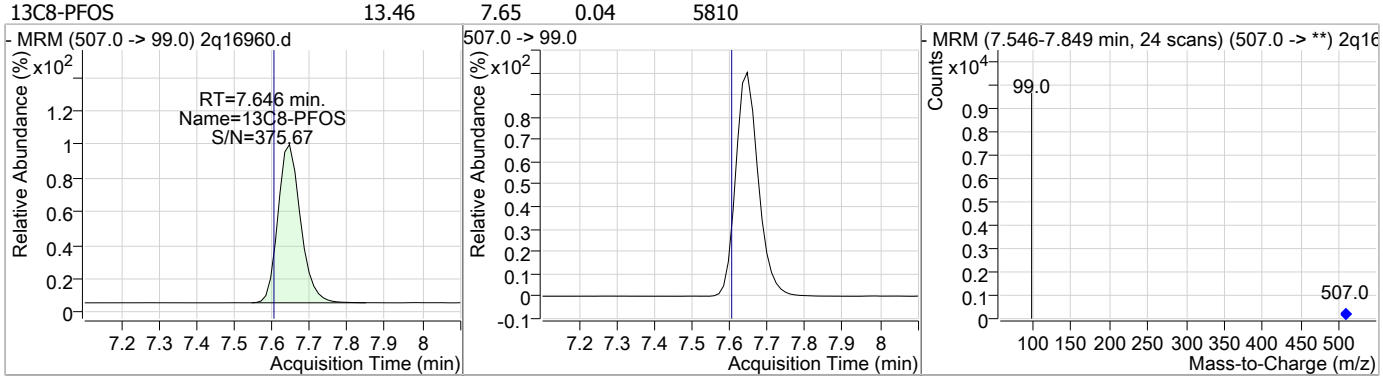


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	16.17	7.15	0.01	25356				

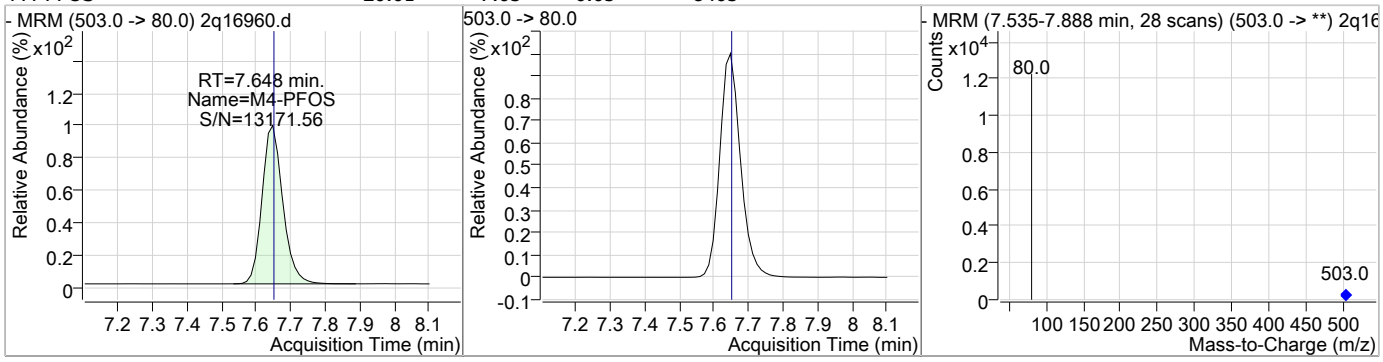


Perfluorinated Compounds by LC/MS/MS

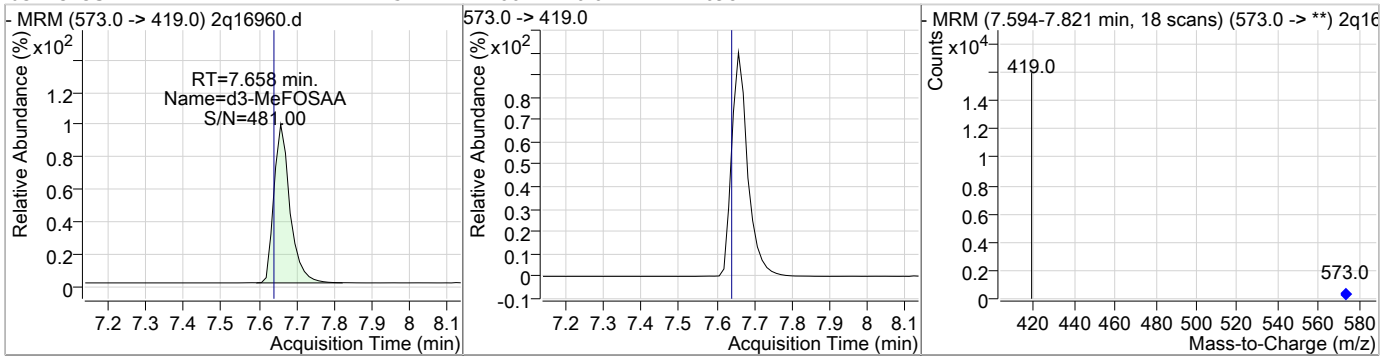
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	13.46	7.65	0.04	5810				



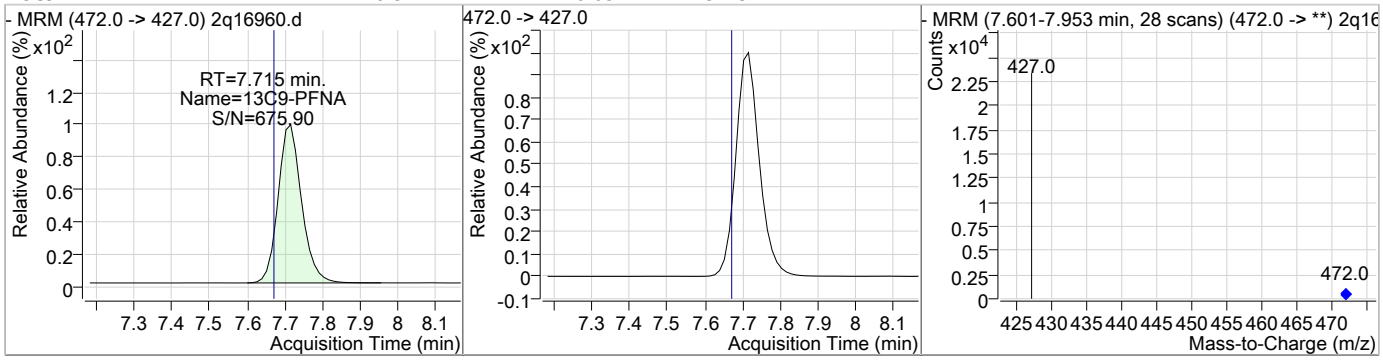
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.01	7.65	0.05	8465				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	14.52	7.66	0.02	10987				

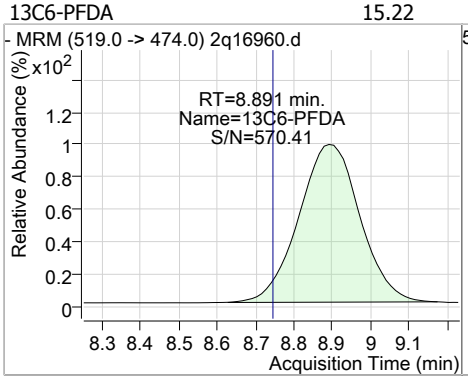


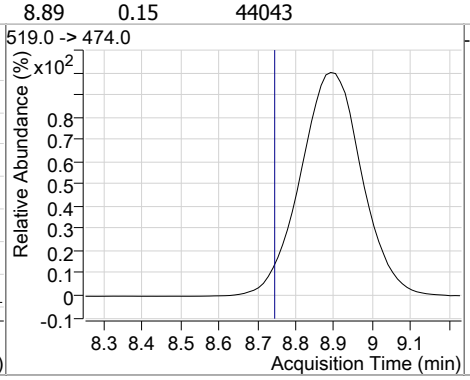
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	16.32	7.71	0.05	15719				

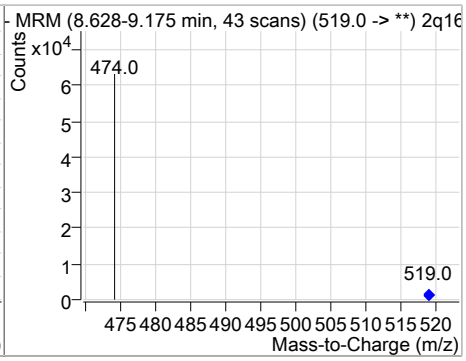


Perfluorinated Compounds by LC/MS/MS

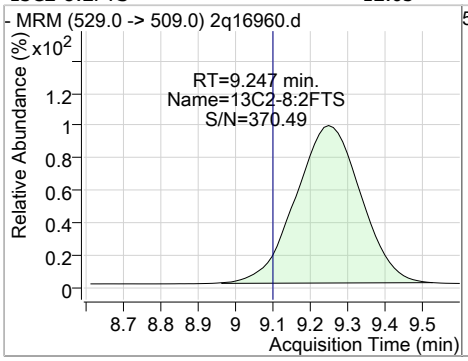
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	15.22	8.89	0.15	44043				

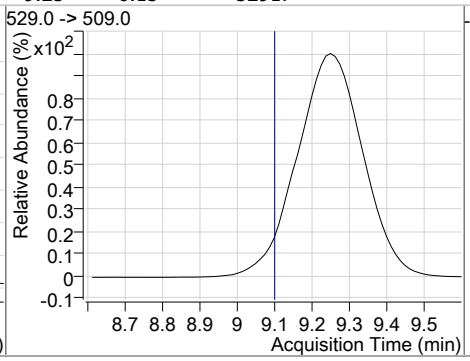


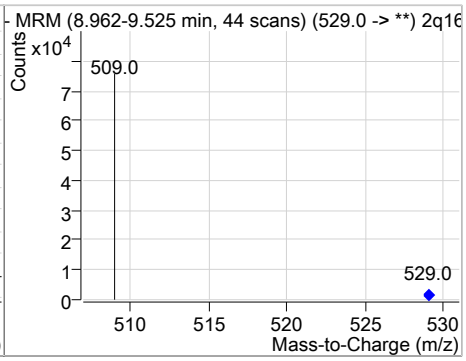




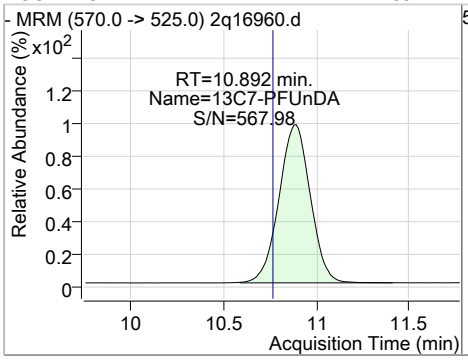
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	12.05	9.25	0.15	52917				

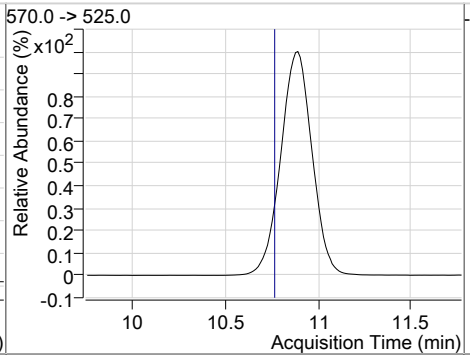


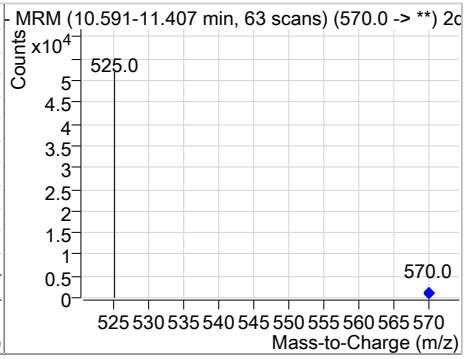




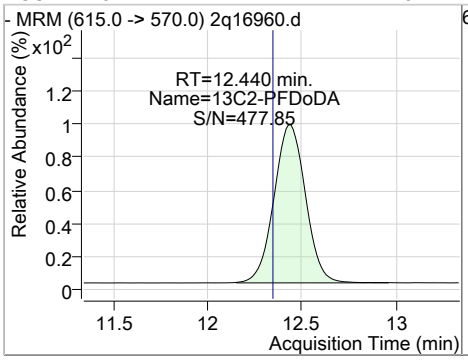
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	14.59	10.89	0.13	34663				

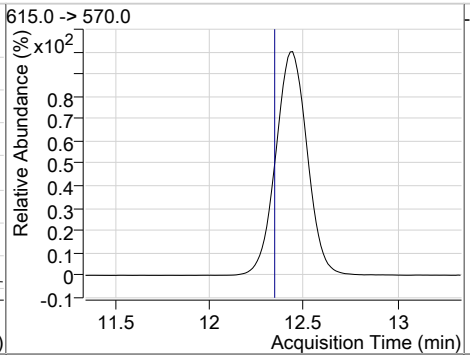


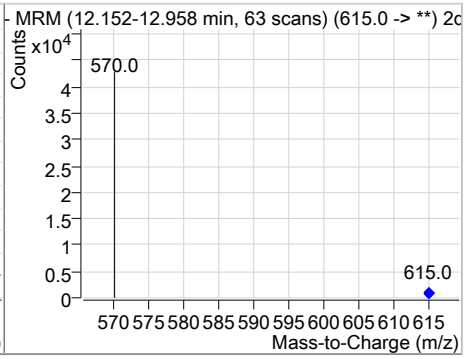




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	14.48	12.44	0.10	27844				

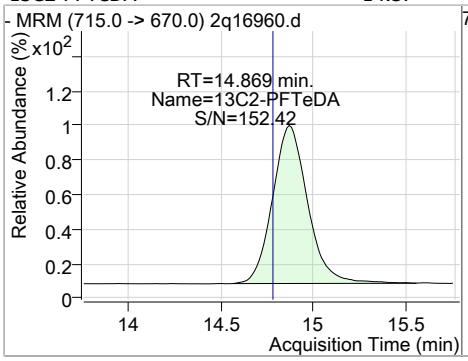


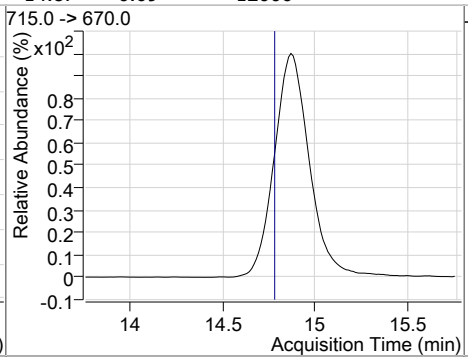


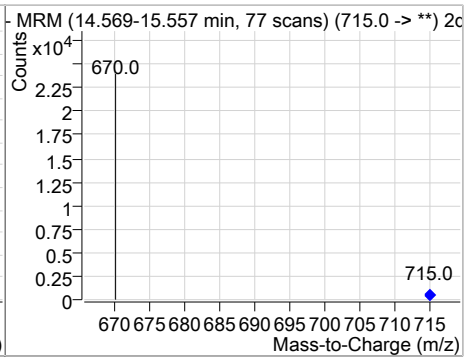


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	14.37	14.87	0.09	12606				







7.2.2

7

Perfluorinated Compounds by LC/MS/MS

Data File	:	2q17036.d
Operator	:	NATASHAG
Acq. Method	:	dMRM_ID_PFC.m
Acq. Date-Time	:	7/13/2018 12:08:30 AM
Sample Name	:	op70810-mb
Vial	:	Vial 80
DA Method File	:	PFC_ID_071218_S2Q295.quantmethod.xml
Batch Name	:	s2q295.batch.bin
Sample Information	:	op70810,S2Q295,130,,,1.0,1,water

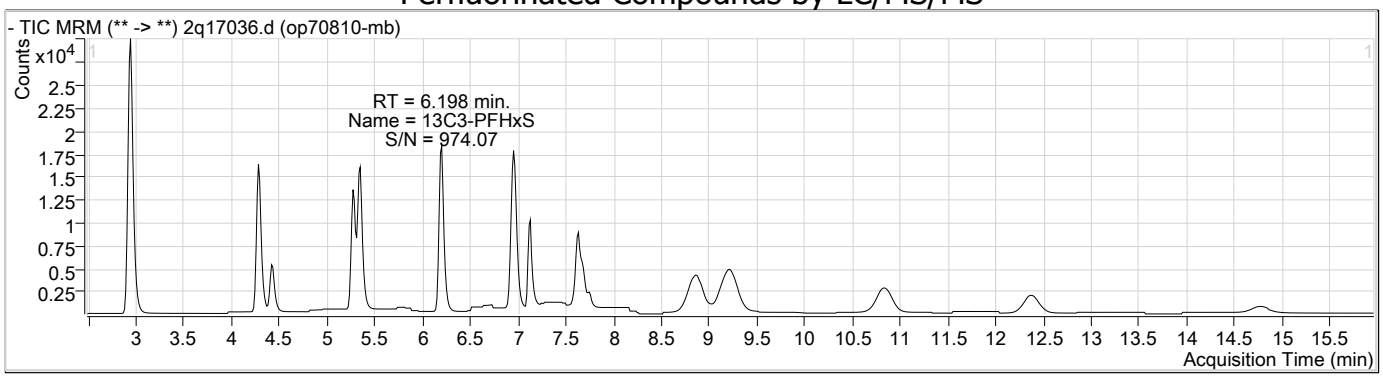
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-PFOA	6.948	415.0 -> 370.0	17264	20.00 µg/L	-0.049
13C4-PFOS	7.624	503.0 -> 80.0	9237	20.00 µg/L	-0.051
M4-PFBA	2.941	217.0 -> 172.0	114568	20.00 µg/L	-0.050
M5-PFPeA	4.287	268.0 -> 223.0	56200	20.00 µg/L	-0.050
M5-PFHxA	5.351	318.0 -> 273.0	51193	20.00 µg/L	-0.040
M4-PFHpA	6.205	367.0 -> 322.0	49996	20.00 µg/L	-0.050
M8-PFOA	6.946	421.0 -> 376.0	23234	20.00 µg/L	-0.049
M9-PFNA	7.690	472.0 -> 427.0	15207	20.00 µg/L	-0.062
M6-PFDA	8.863	519.0 -> 474.0	45458	20.00 µg/L	-0.154
M7-PFUnDA	10.830	570.0 -> 525.0	31419	20.00 µg/L	-0.200
M2-PFDoDA	12.366	615.0 -> 570.0	22724	20.00 µg/L	-0.200
M2-PFTeDA	14.770	715.0 -> 670.0	9079	20.00 µg/L	-0.200
M8-FOSA	7.127	506.0 -> 78.0	29037	20.00 µg/L	-0.015
M3-PFBS	4.418	302.0 -> 99.0	17566	20.00 µg/L	-0.050
M3-PFHxS	6.198	402.0 -> 99.0	13988	20.00 µg/L	-0.037
M8-PFOS	7.621	507.0 -> 99.0	6816	20.00 µg/L	-0.052
M2-4:2FTS	5.272	329.0 -> 309.0	44300	20.00 µg/L	-0.051
M2-6:2FTS	6.968	429.0 -> 409.0	30851	20.00 µg/L	-0.049
M2-8:2FTS	9.212	529.0 -> 509.0	55325	20.00 µg/L	-0.185
M3-MeFOSAA	7.632	573.0 -> 419.0	11413	20.00 µg/L	-0.026
System Monitoring Compounds					
13C2-4:2FTS	5.272	329.0 -> 309.0	44321	15.71 µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.5%	
13C2-6:2FTS	6.968	429.0 -> 409.0	30848	15.81 µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.0%	
13C2-8:2FTS	9.212	529.0 -> 509.0	54240	14.74 µg/L	-0.185
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.7%	
13C2-PFDoDA	12.366	615.0 -> 570.0	22818	13.56 µg/L	-0.200
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.8%	
13C2-PFTeDA	14.770	715.0 -> 670.0	9034	12.43 µg/L	-0.200
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 62.2%	
13C3-PFBS	4.418	302.0 -> 99.0	17559	16.84 µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.2%	
13C3-PFHxS	6.198	402.0 -> 99.0	13989	16.76 µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.8%	
13C4-PFBA	2.941	217.0 -> 172.0	114556	17.24 µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.2%	
13C4-PFHpA	6.205	367.0 -> 322.0	49997	17.67 µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.4%	
13C5-PFHxA	5.351	318.0 -> 273.0	51214	17.27 µg/L	-0.040
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.3%	
13C5-PFPeA	4.287	268.0 -> 223.0	56191	17.13 µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.6%	
13C6-PFDA	8.863	519.0 -> 474.0	45068	16.26 µg/L	-0.154
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.3%	

Perfluorinated Compounds by LC/MS/MS

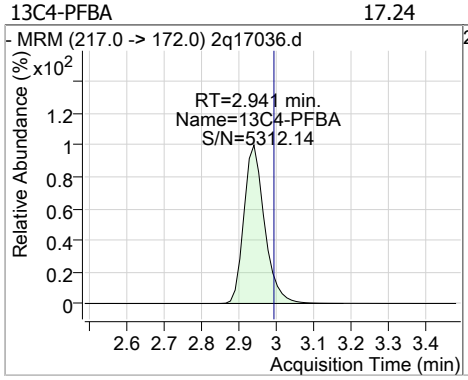
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.830	570.0 -> 525.0	31432	15.25	µg/L		-0.200
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.3%			
13C8-FOSA	7.127	506.0 -> 78.0	29034	18.05	µg/L		-0.015
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.3%			
13C8-PFOA	6.946	421.0 -> 376.0	23245	17.69	µg/L		-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.5%			
13C8-PFOS	7.621	507.0 -> 99.0	6820	16.44	µg/L		-0.052
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.2%			
13C9-PFNA	7.690	472.0 -> 427.0	15209	17.25	µg/L		-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.2%			
d3-MeFOSAA	7.632	573.0 -> 419.0	11412	14.69	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.5%			
M2-PFOA	6.948	415.0 -> 370.0	17271	20.01	ng/ml		-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.624	503.0 -> 80.0	9244	20.02	ng/ml		-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	5.821	313.0 -> 269.0	0	0.00	µg/L	m	1
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	4.291	263.0 -> 219.0	524	0.20	µg/L		100
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			

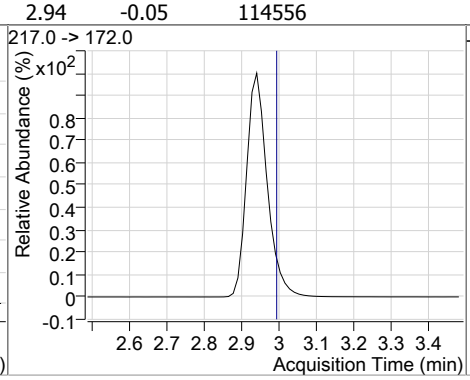
 # = Qualifier out of range, m = manually integrated, + = Area summed

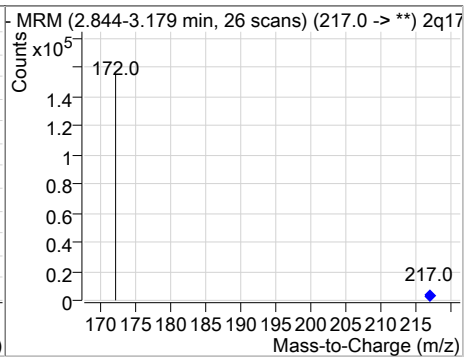
Perfluorinated Compounds by LC/MS/MS



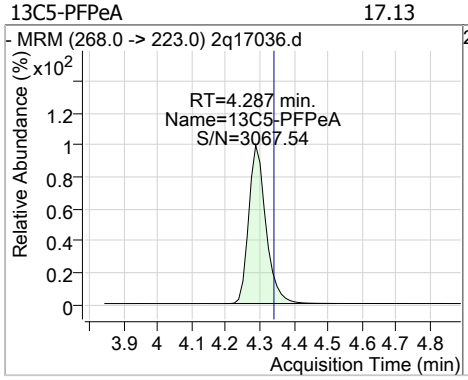
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	17.24	2.94	-0.05	114556				

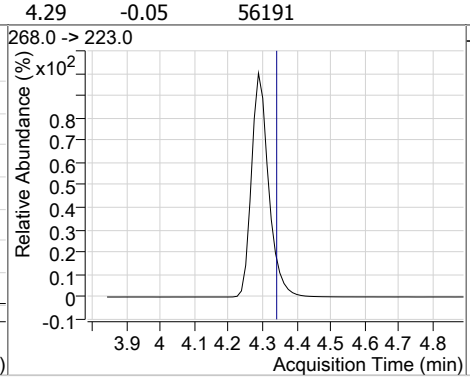


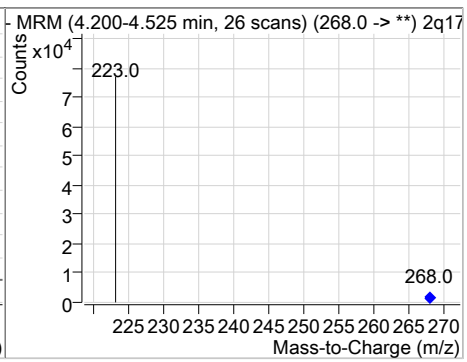




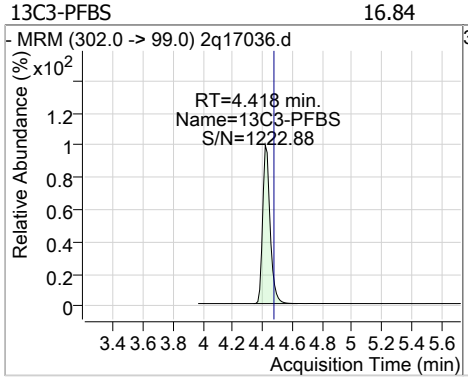
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	17.13	4.29	-0.05	56191				

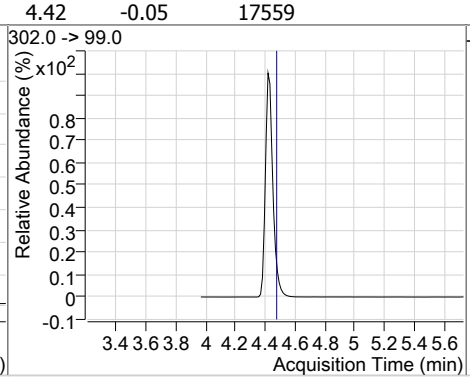


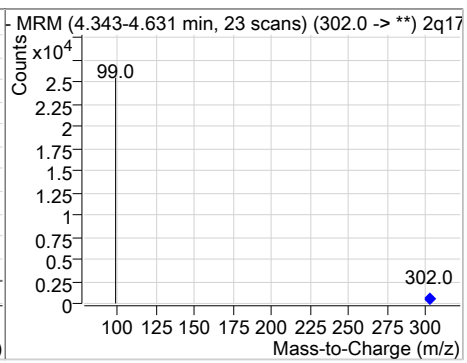




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	16.84	4.42	-0.05	17559				

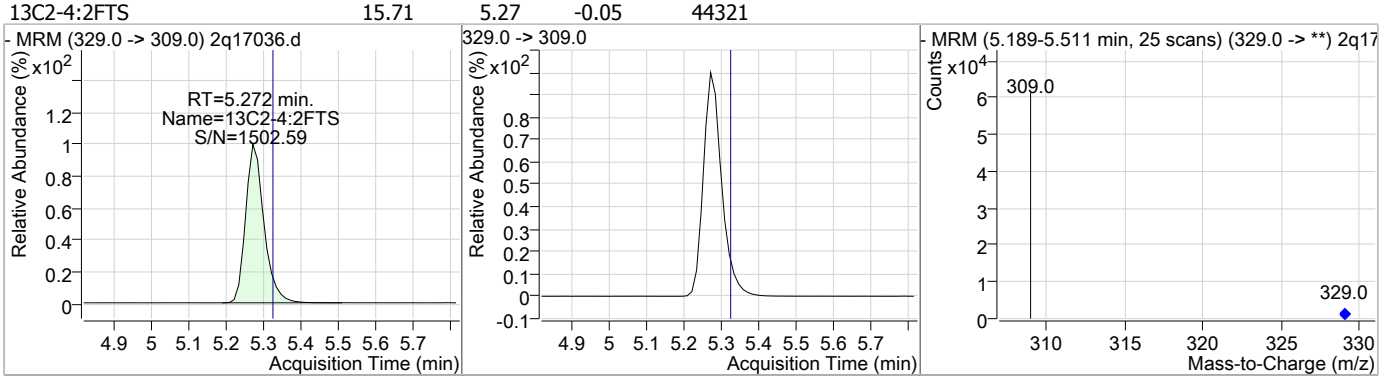




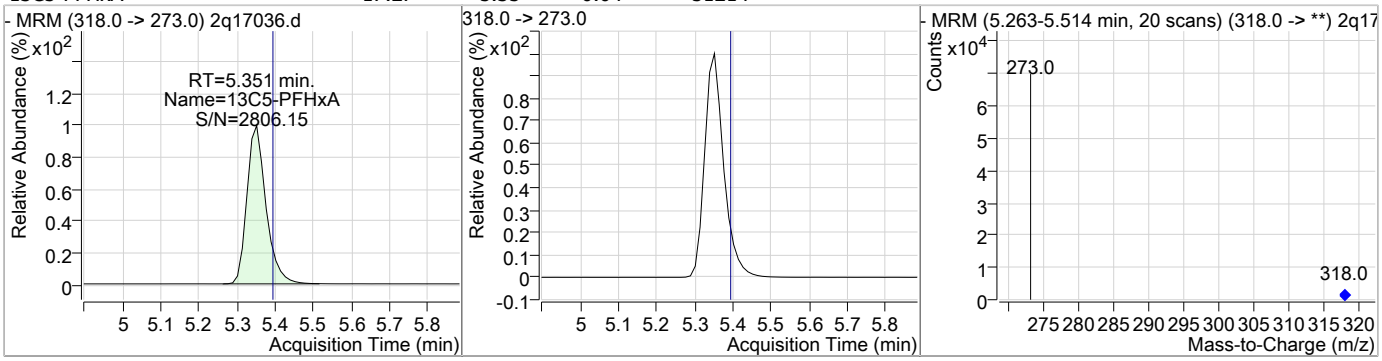


Perfluorinated Compounds by LC/MS/MS

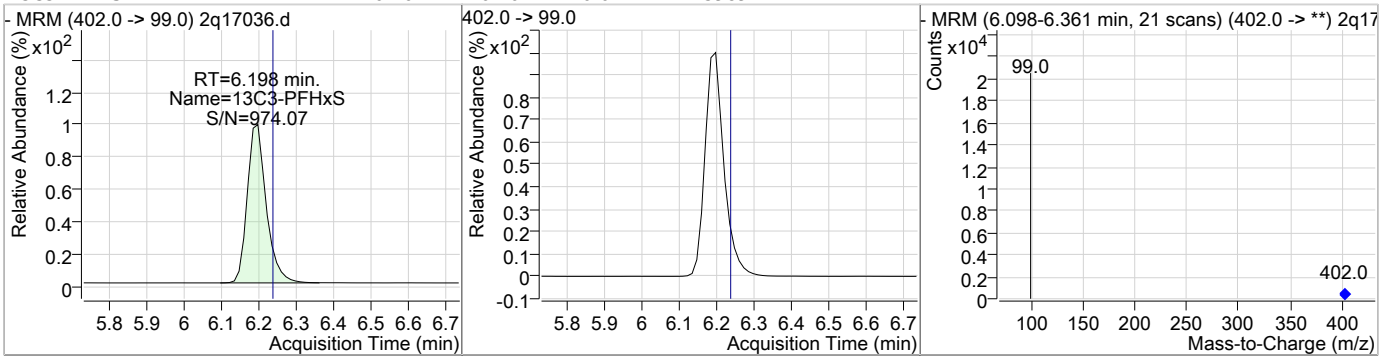
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	15.71	5.27	-0.05	44321				



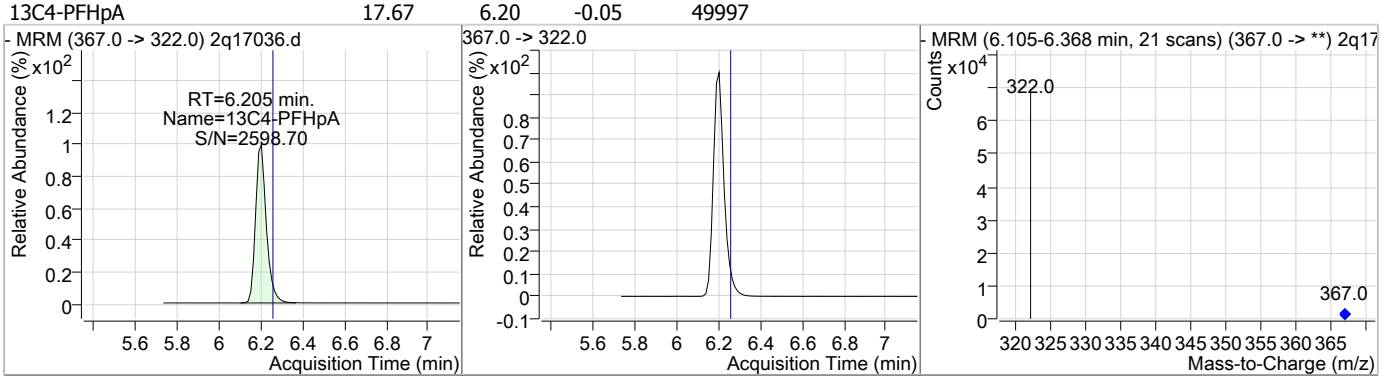
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	17.27	5.35	-0.04	51214				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	16.76	6.20	-0.04	13989				

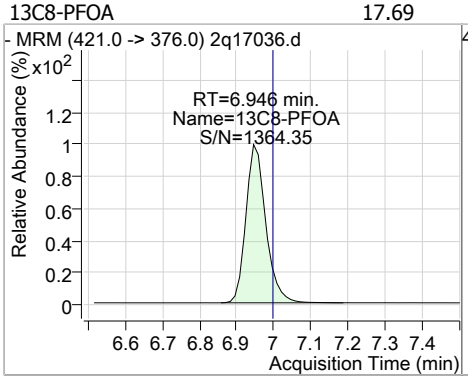


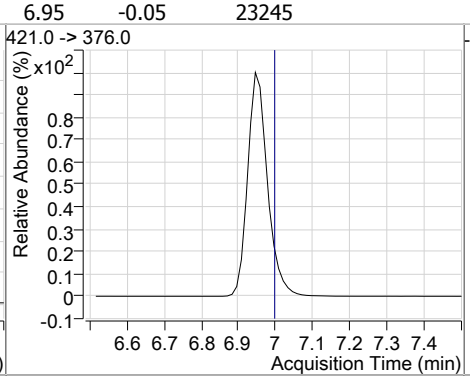
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	17.67	6.20	-0.05	49997				

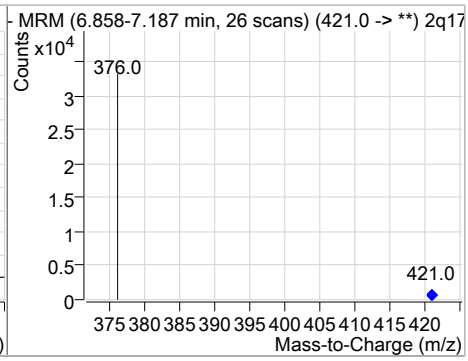


Perfluorinated Compounds by LC/MS/MS

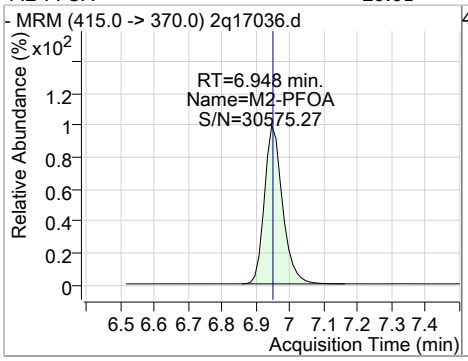
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	17.69	6.95	-0.05	23245				

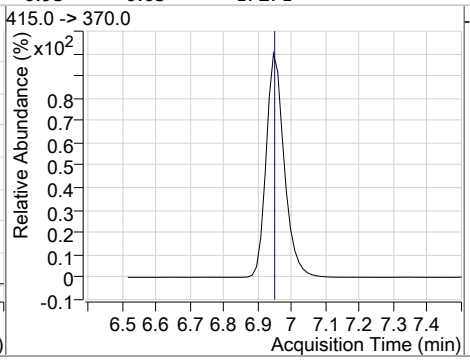


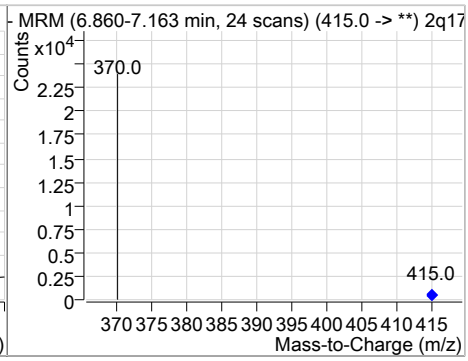




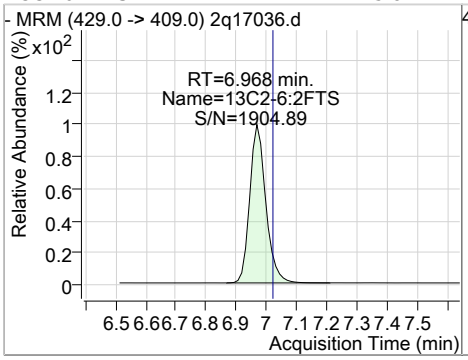
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.01	6.95	-0.05	17271				

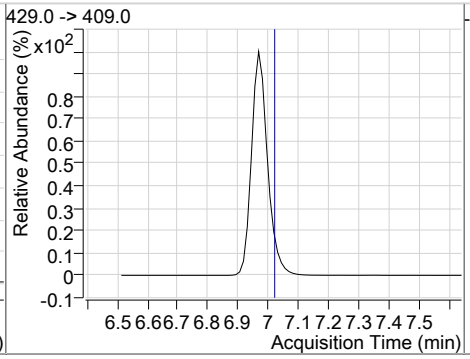


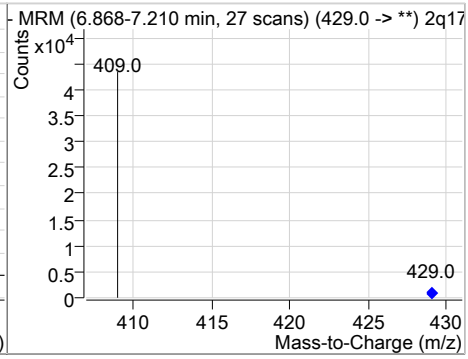




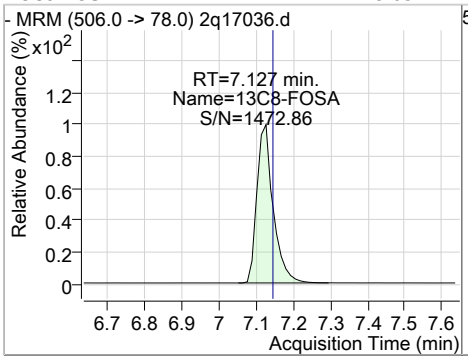
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	15.81	6.97	-0.05	30848				

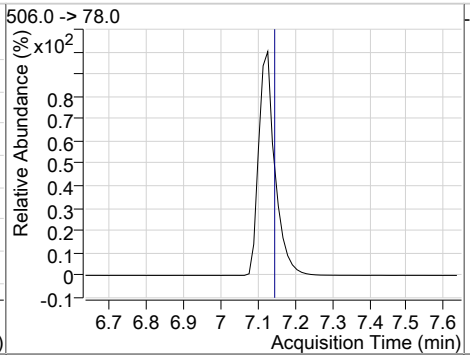


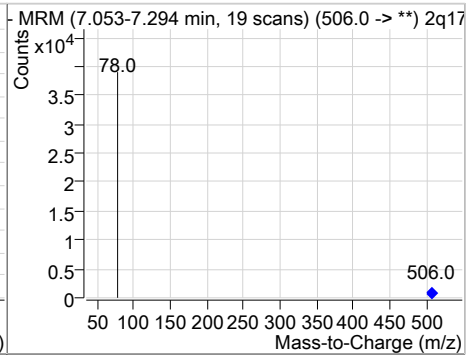




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.05	7.13	-0.02	29034				

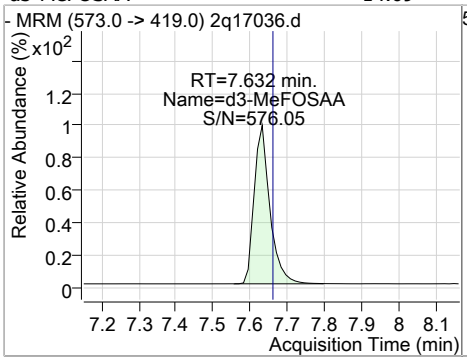


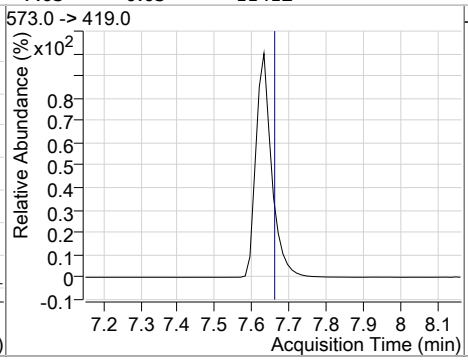


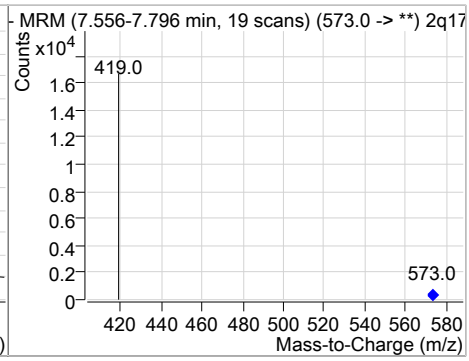


Perfluorinated Compounds by LC/MS/MS

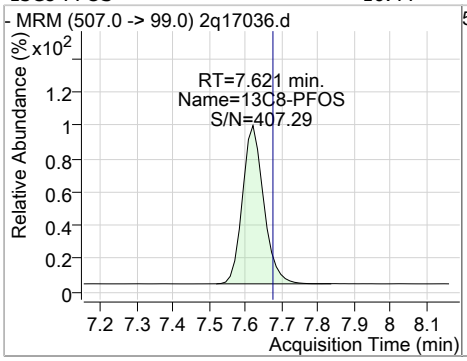
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	14.69	7.63	-0.03	11412				

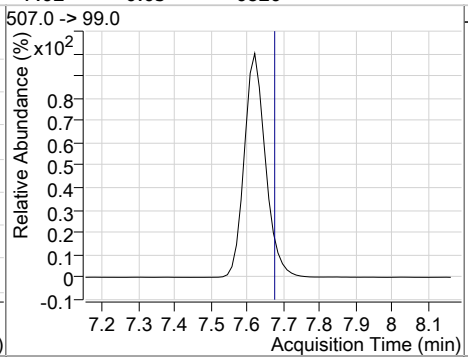


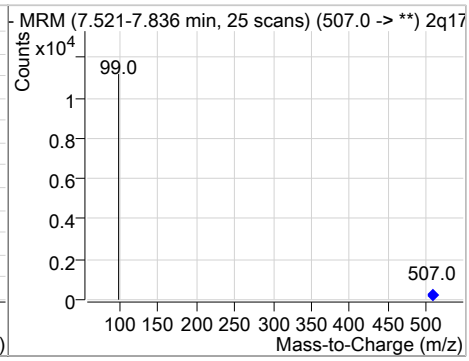




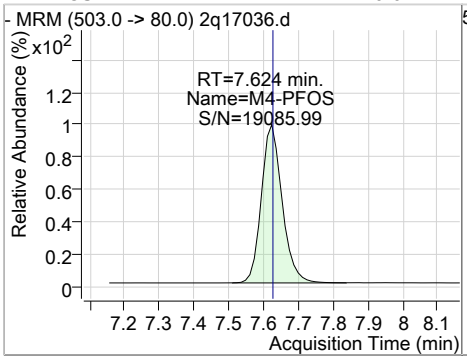
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	16.44	7.62	-0.05	6820				

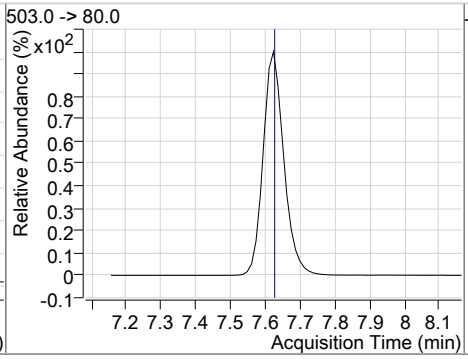


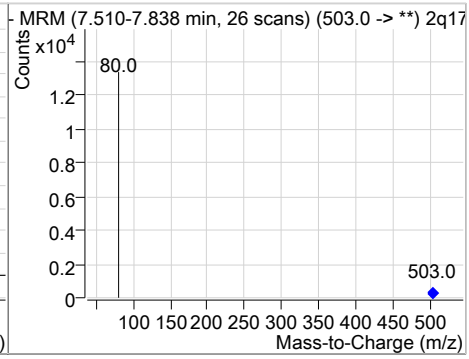




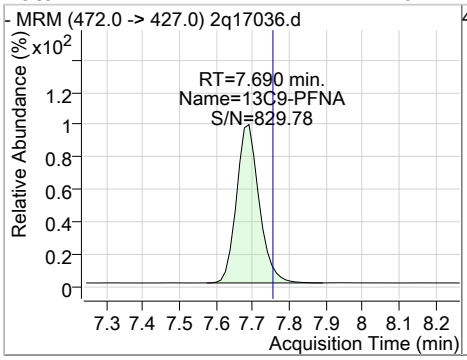
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.02	7.62	-0.05	9244				

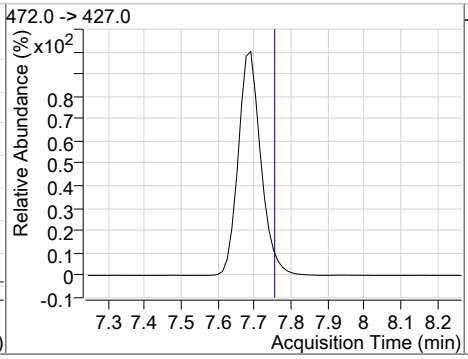


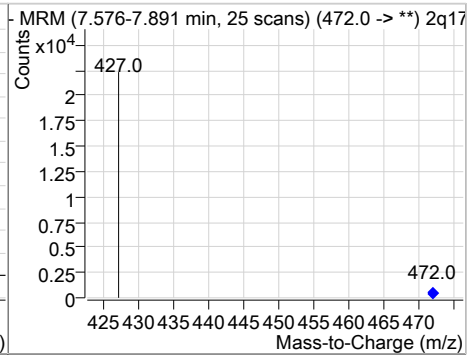




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	17.25	7.69	-0.06	15209				

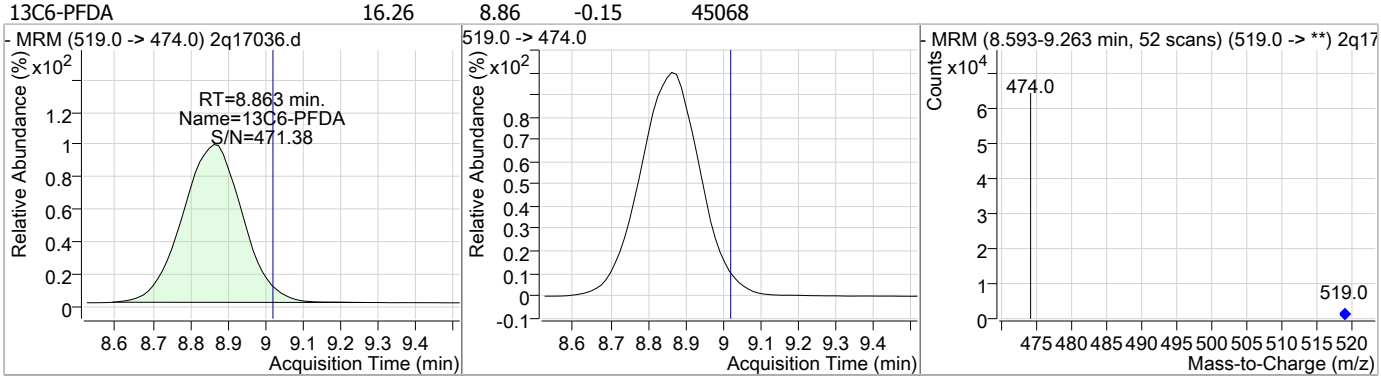




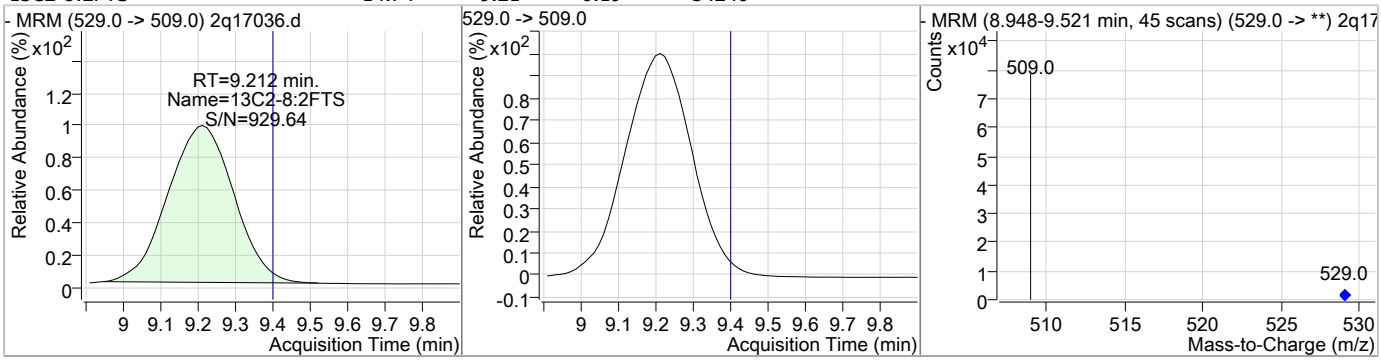


Perfluorinated Compounds by LC/MS/MS

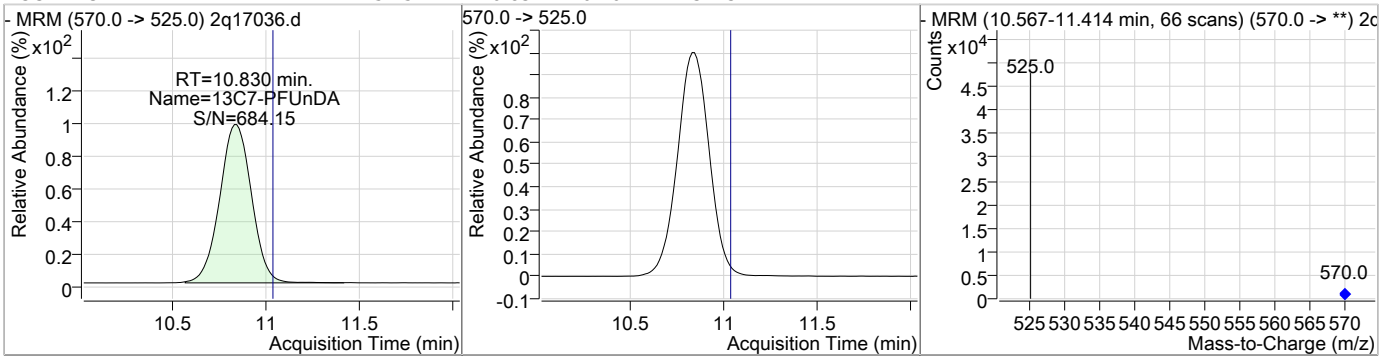
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	16.26	8.86	-0.15	45068				



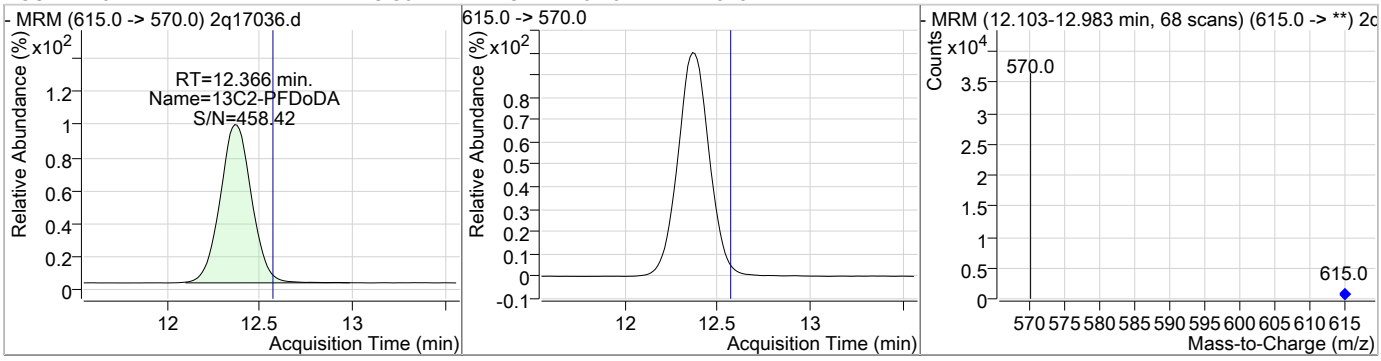
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	14.74	9.21	-0.19	54240				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	15.25	10.83	-0.20	31432				

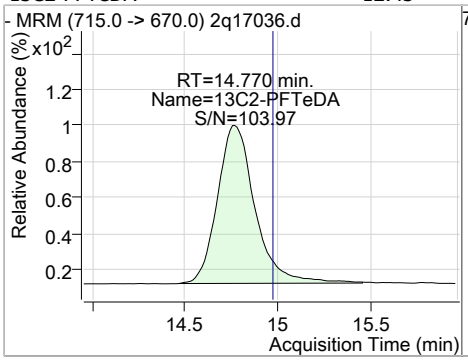


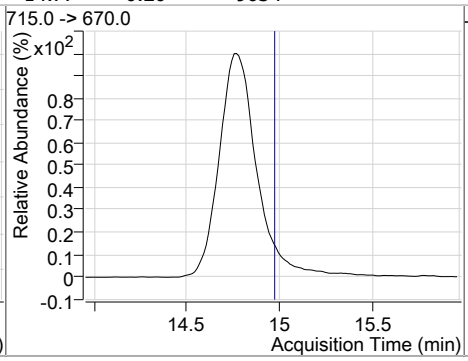
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	13.56	12.37	-0.20	22818				

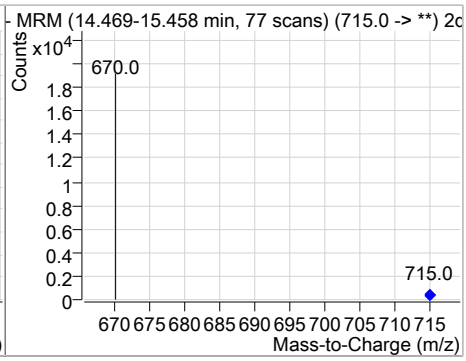


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	12.43	14.77	-0.20	9034				







Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
07/06/18 17:13

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16572.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/5/2018 7:09:05 PM
Sample Name : IBLK
Vial : Vial 1
DA Method File : PFC_ID_070518_S2Q291.quantmethod.xml
Batch Name : s2q291.batch.bin
Sample Information : op70743,S2Q291,130,,,1.0,1,water

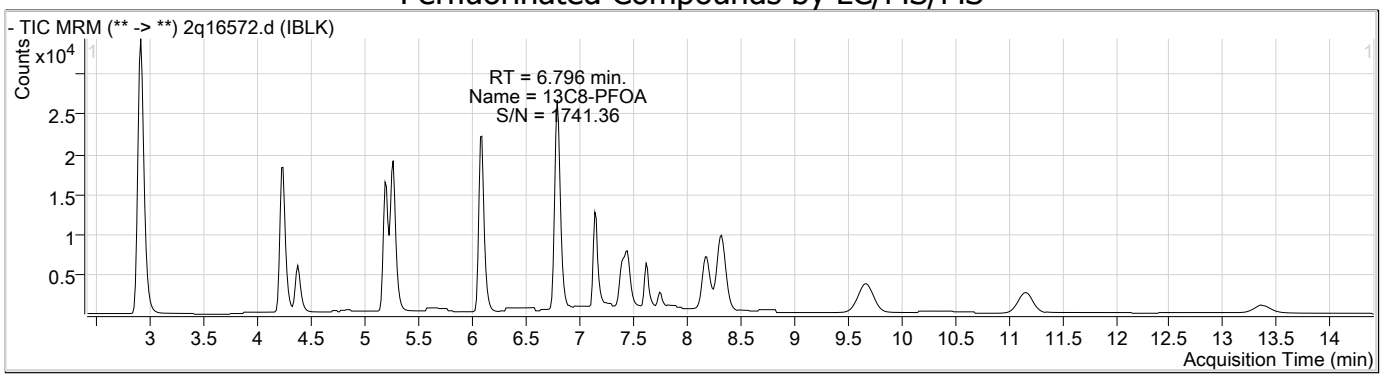
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.798	415.0 -> 370.0	20494	20.00	µg/L	0.000
13C4-PFOS	7.397	503.0 -> 80.0	10672	20.00	µg/L	0.000
M4-PFBA	2.903	217.0 -> 172.0	140129	20.00	µg/L	0.000
M5-PFPeA	4.237	268.0 -> 223.0	66159	20.00	µg/L	0.000
M5-PFHxA	5.265	318.0 -> 273.0	60567	20.00	µg/L	0.000
M4-PFHpA	6.079	367.0 -> 322.0	59421	20.00	µg/L	-0.013
M8-PFOA	6.796	421.0 -> 376.0	32164	20.00	µg/L	0.000
M9-PFNA	7.450	472.0 -> 427.0	21902	20.00	µg/L	0.000
M6-PFDA	8.180	519.0 -> 474.0	34515	20.00	µg/L	0.000
M7-PFUnDA	9.666	570.0 -> 525.0	37631	20.00	µg/L	-0.013
M2-PFDoDA	11.164	615.0 -> 570.0	26271	20.00	µg/L	-0.005
M2-PFTeDA	13.368	715.0 -> 670.0	11069	20.00	µg/L	-0.013
M8-FOSA	7.142	506.0 -> 78.0	35138	20.00	µg/L	0.000
M3-PFBS	4.368	302.0 -> 99.0	20394	20.00	µg/L	0.000
M3-PFHxS	6.085	402.0 -> 99.0	18398	20.00	µg/L	0.000
M8-PFOS	7.395	507.0 -> 99.0	8963	20.00	µg/L	0.000
M2-4:2FTS	5.185	329.0 -> 309.0	55660	20.00	µg/L	-0.013
M2-6:2FTS	6.805	429.0 -> 409.0	44978	20.00	µg/L	-0.002
M2-8:2FTS	8.323	529.0 -> 509.0	55855	20.00	µg/L	-0.002
M3-MeFOSAA	7.619	573.0 -> 419.0	16148	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.185	329.0 -> 309.0	55670	16.97	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.9%		
13C2-6:2FTS	6.805	429.0 -> 409.0	44989	17.02	µg/L	-0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.1%		
13C2-8:2FTS	8.323	529.0 -> 509.0	55844	17.21	µg/L	-0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.0%		
13C2-PFDoDA	11.164	615.0 -> 570.0	26289	17.94	µg/L	-0.005
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.7%		
13C2-PFTeDA	13.368	715.0 -> 670.0	11082	17.86	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.3%		
13C3-PFBS	4.368	302.0 -> 99.0	20398	18.45	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.3%		
13C3-PFHxS	6.085	402.0 -> 99.0	18399	18.37	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.8%		
13C4-PFBA	2.903	217.0 -> 172.0	140031	18.29	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.5%		
13C4-PFHpA	6.079	367.0 -> 322.0	59412	18.44	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.2%		
13C5-PFHxA	5.265	318.0 -> 273.0	60562	18.48	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.4%		
13C5-PFPeA	4.237	268.0 -> 223.0	66148	18.15	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.8%		
13C6-PFDA	8.180	519.0 -> 474.0	34552	18.66	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.3%		

Perfluorinated Compounds by LC/MS/MS

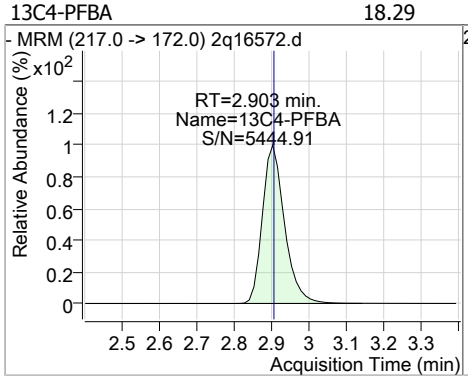
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	9.666	570.0 -> 525.0	37614	18.39	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.0%			
13C8-FOSA	7.142	506.0 -> 78.0	35124	19.95	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%			
13C8-PFOA	6.796	421.0 -> 376.0	32162	18.47	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.3%			
13C8-PFOS	7.395	507.0 -> 99.0	8963	18.30	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.5%			
13C9-PFNA	7.450	472.0 -> 427.0	21905	18.41	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.1%			
d3-MeFOSAA	7.619	573.0 -> 419.0	16145	18.39	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.9%			
M2-PFOA	6.798	415.0 -> 370.0	20490	20.00	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.397	503.0 -> 80.0	10673	20.01	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	8.313	527.0 -> 507.0	105	0.07	µg/L	#	1
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	11.133	613.0 -> 569.0	0	0.00	µg/L	m	1
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	6.082	363.0 -> 319.0	0	0.00	µg/L	m	1
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	4.228	263.0 -> 219.0	564	0.18	µg/L	m	100
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			

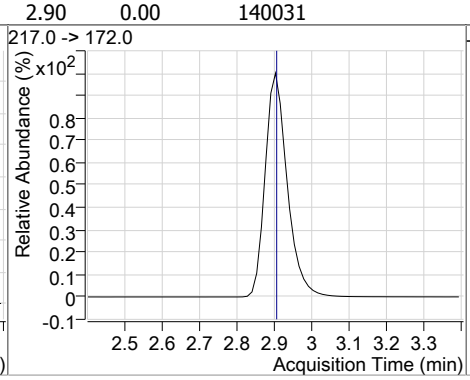
 # = Qualifier out of range, m = manually integrated, + = Area summed

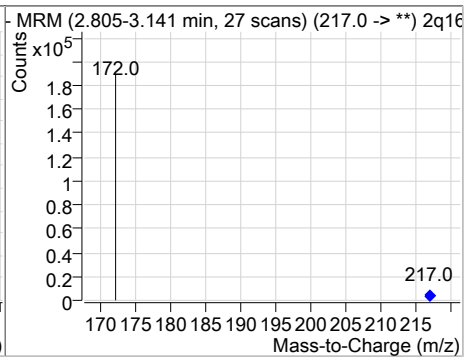
Perfluorinated Compounds by LC/MS/MS



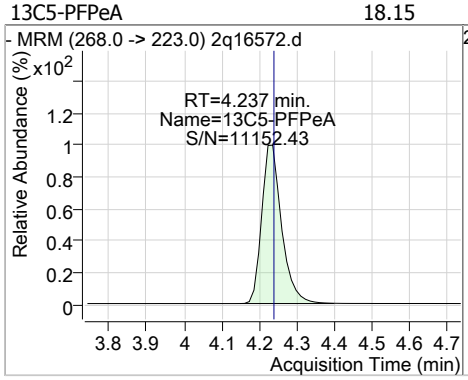
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.29	2.90	0.00	140031				

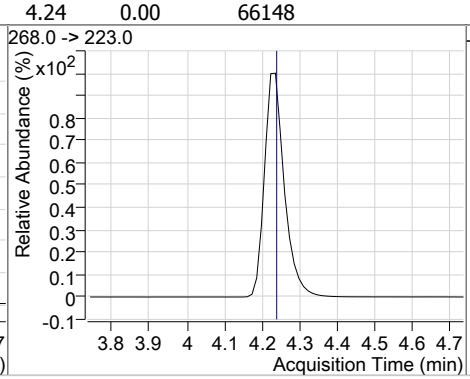


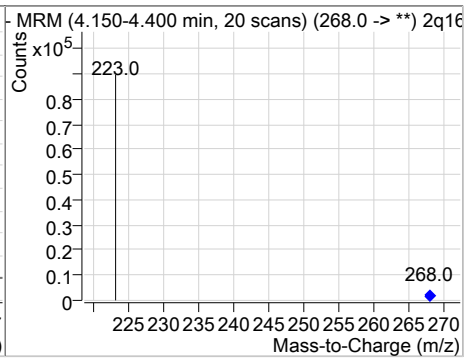




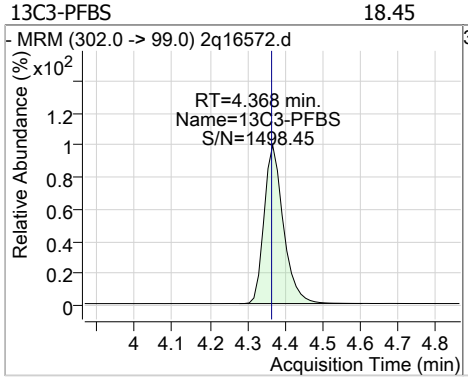
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.15	4.24	0.00	66148				

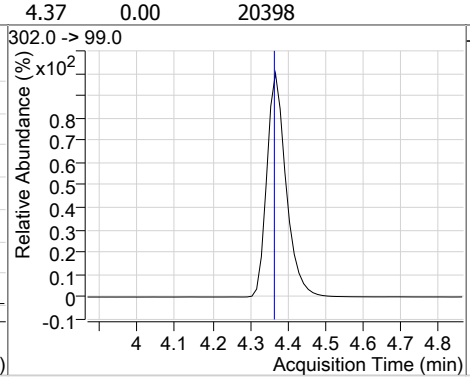


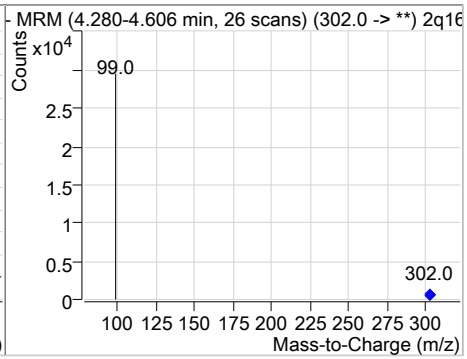




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.45	4.37	0.00	20398				

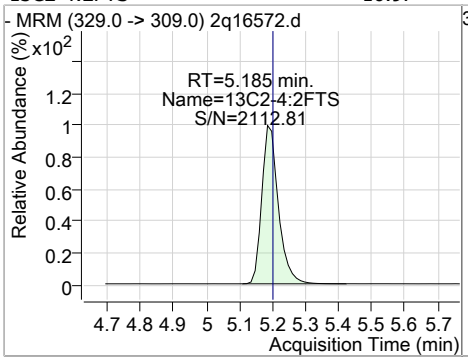


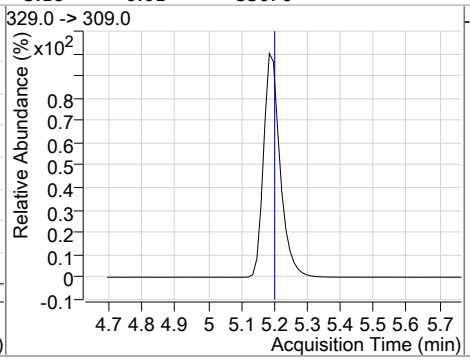


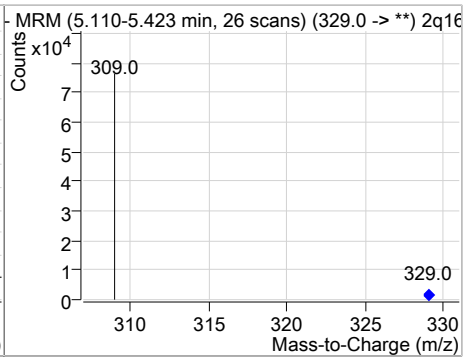


Perfluorinated Compounds by LC/MS/MS

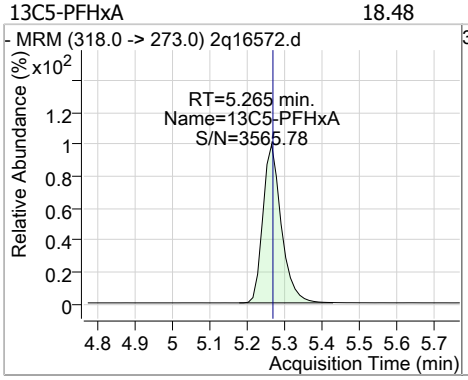
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	16.97	5.18	-0.01	55670				

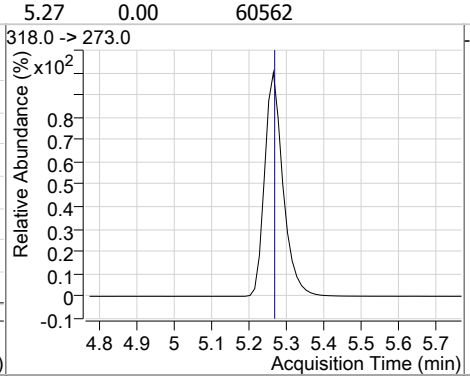


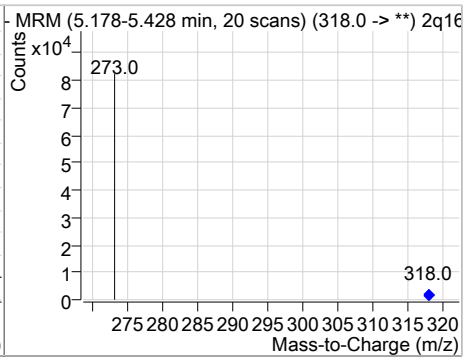




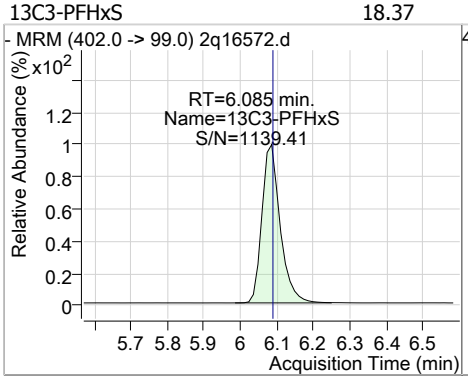
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.48	5.27	0.00	60562				

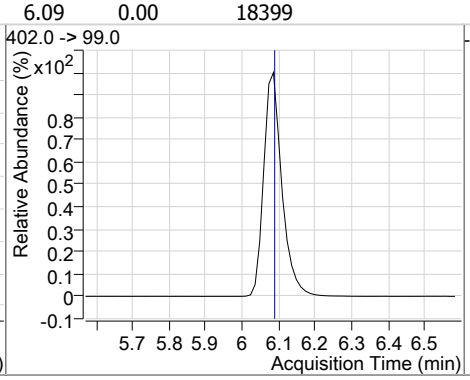


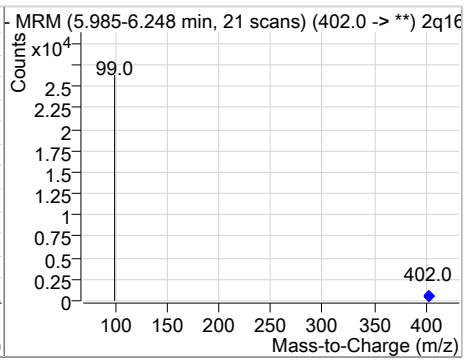




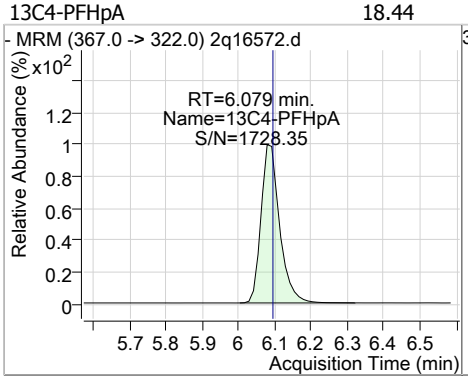
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.37	6.09	0.00	18399				

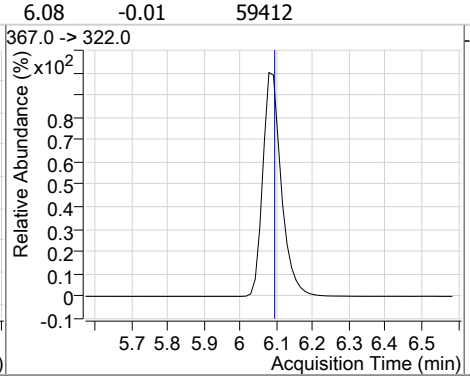


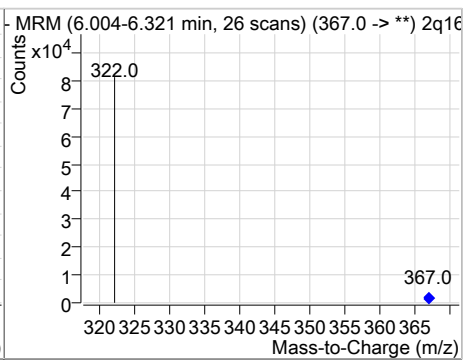




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.44	6.08	-0.01	59412				

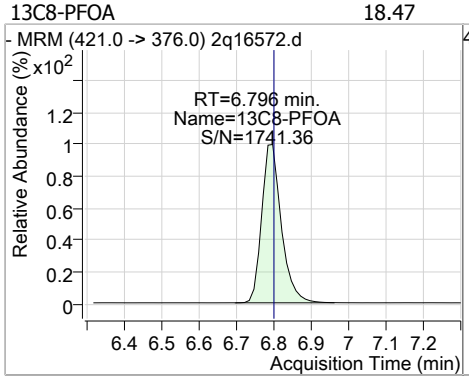


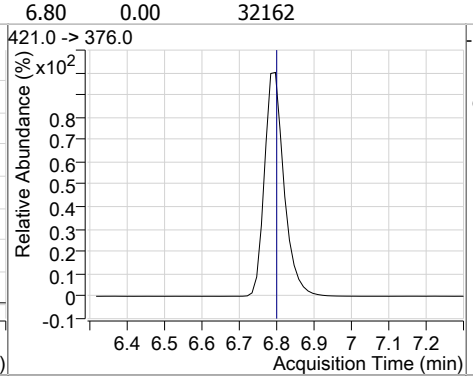


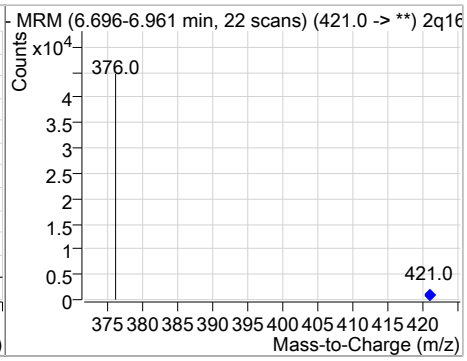


Perfluorinated Compounds by LC/MS/MS

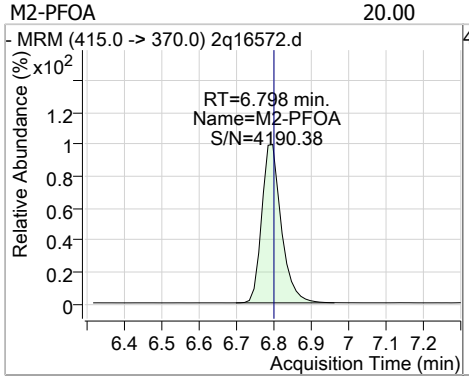
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	18.47	6.80	0.00	32162				

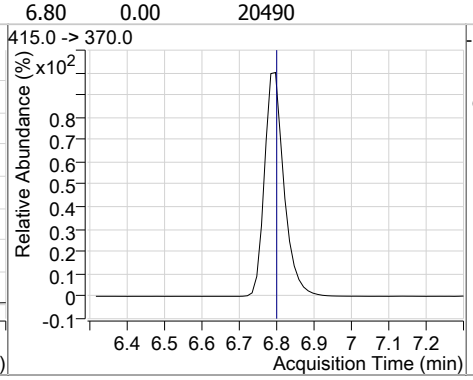


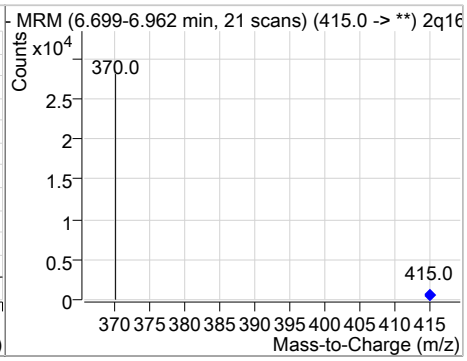




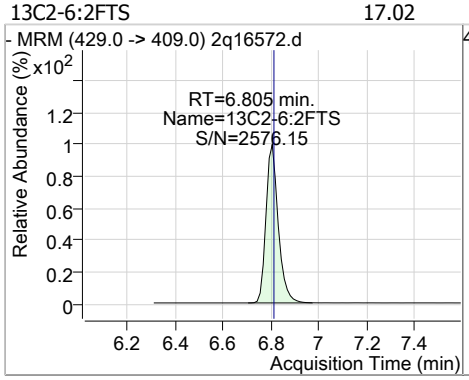
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.80	0.00	20490				

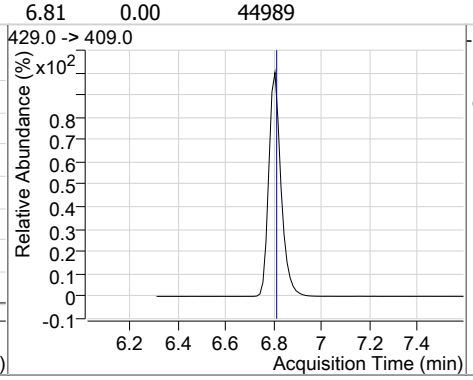


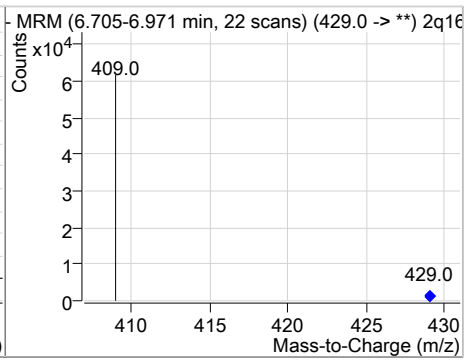




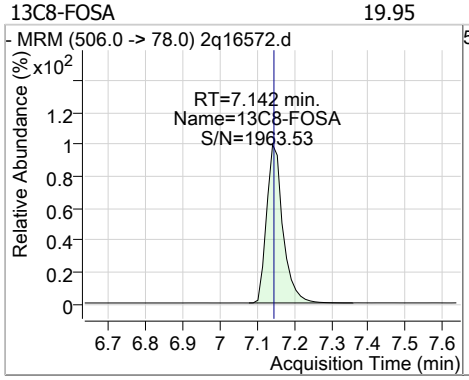
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	17.02	6.81	0.00	44989				

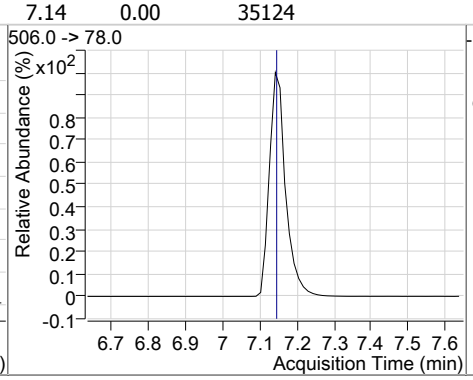


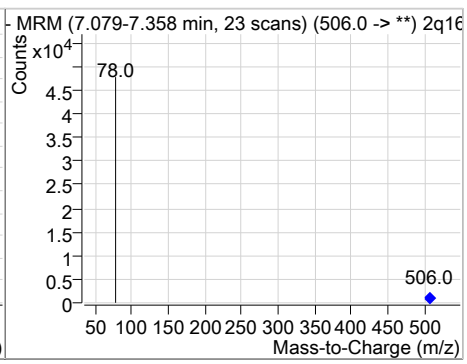




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.95	7.14	0.00	35124				

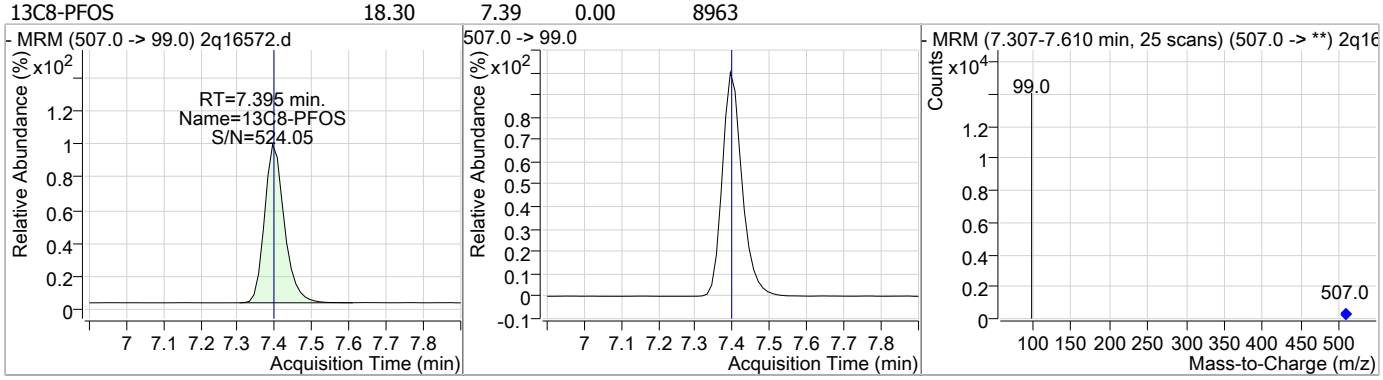




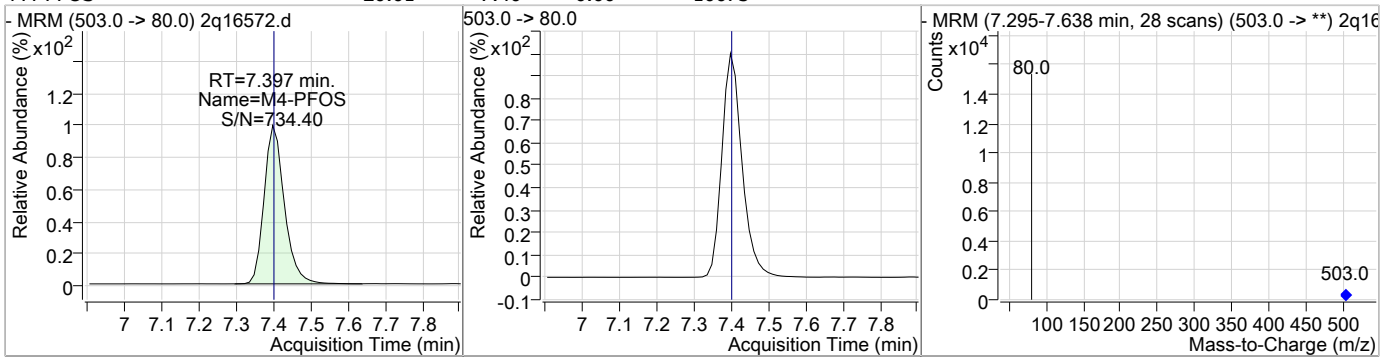


Perfluorinated Compounds by LC/MS/MS

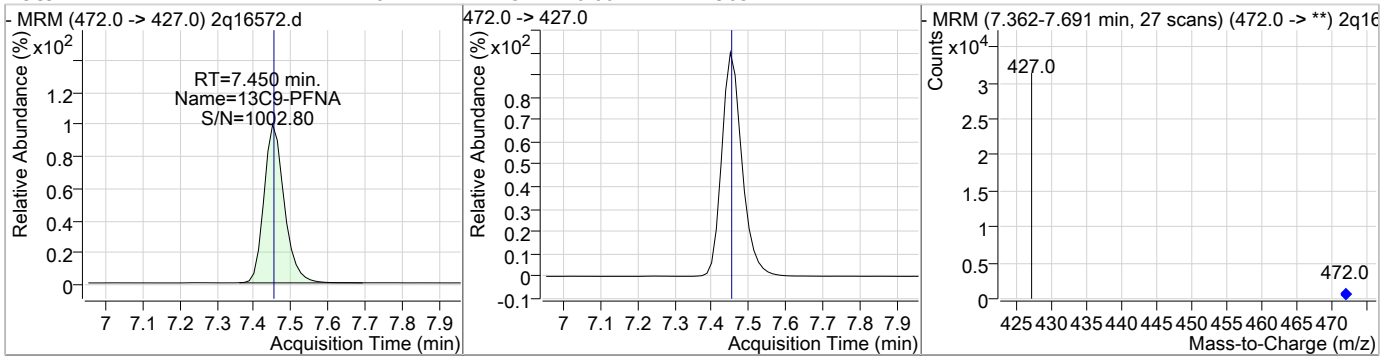
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.30	7.39	0.00	8963				



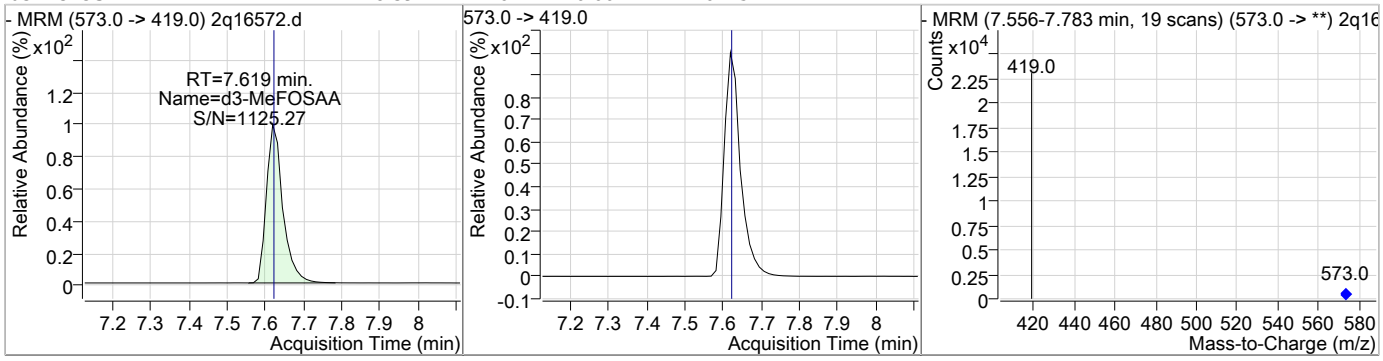
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.01	7.40	0.00	10673				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.41	7.45	0.00	21905				

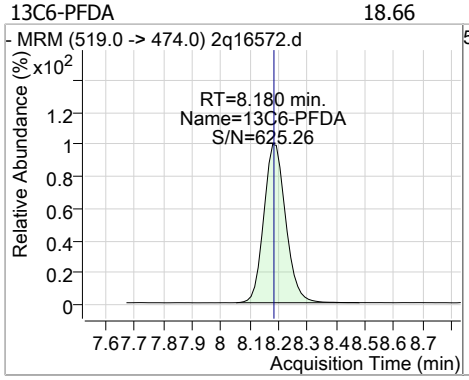


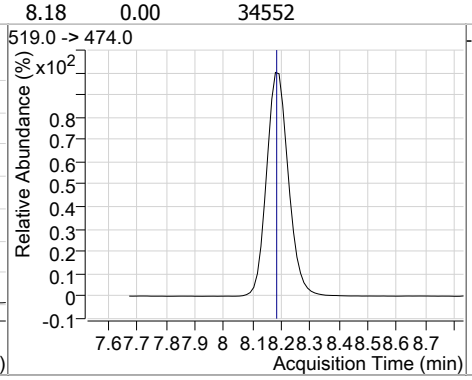
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.39	7.62	0.00	16145				

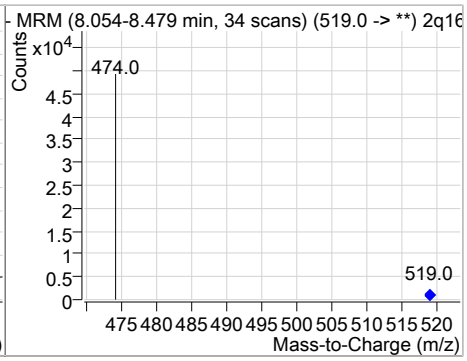


Perfluorinated Compounds by LC/MS/MS

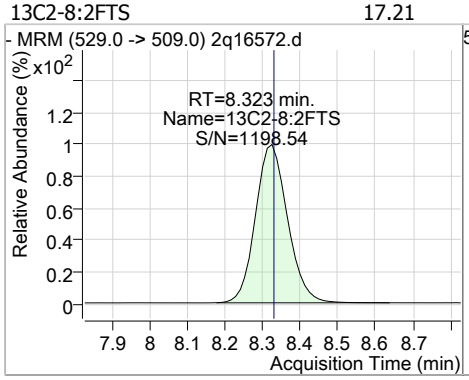
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	18.66	8.18	0.00	34552				

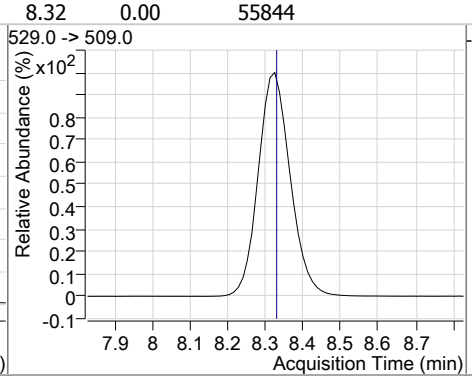


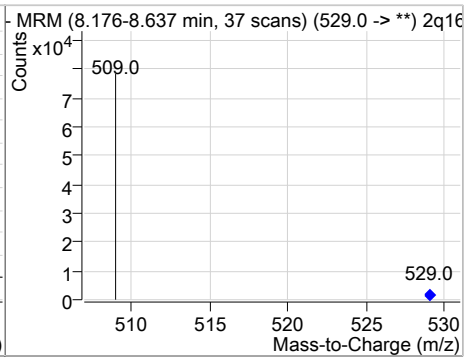




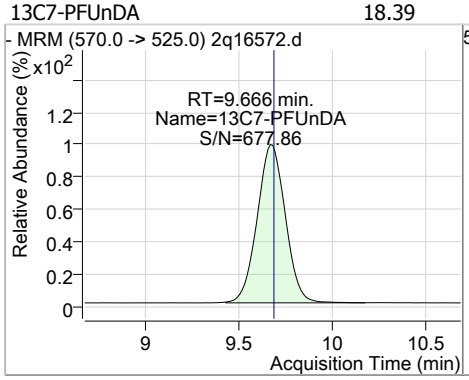
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	17.21	8.32	0.00	55844				

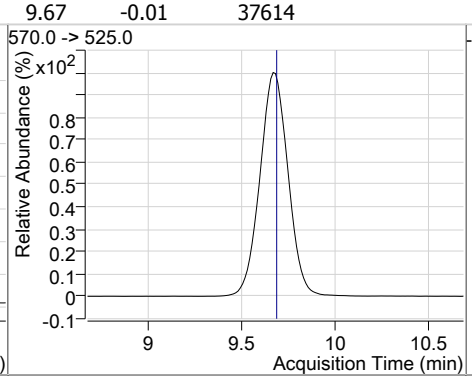


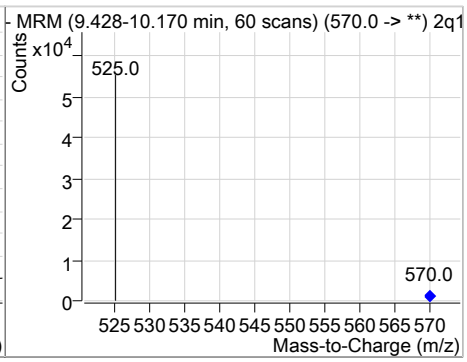




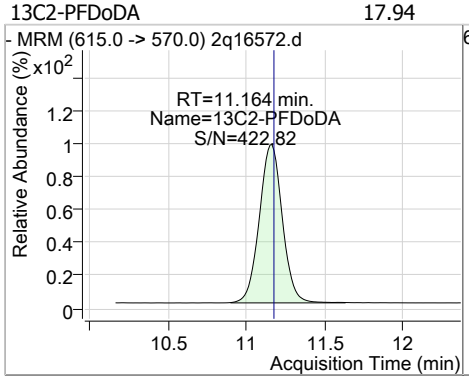
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.39	9.67	-0.01	37614				

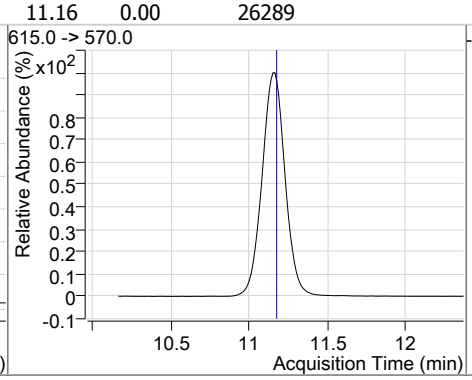


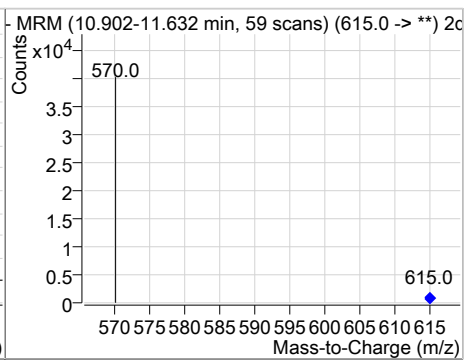




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	17.94	11.16	0.00	26289				

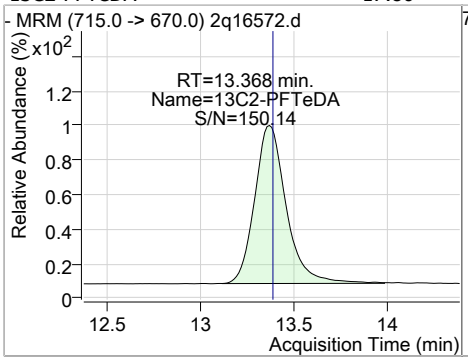


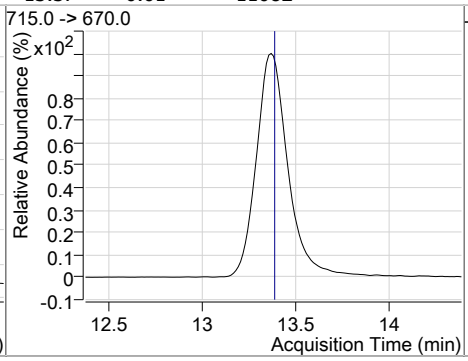


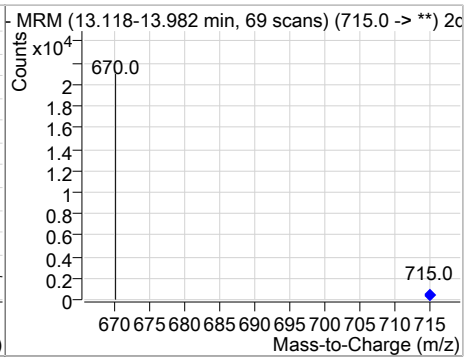


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	17.86	13.37	-0.01	11082				







Manual Integration Approval Summary

Sample Number:	S2Q291-IBLK	**Method:**	EPA 537M QSM5.1 B-15
Lab FileID:	2Q16572.D	**Analyst approved:**	07/06/18 10:17 Natasha Gumtie
Injection Time:	07/05/18 19:09	**Supervisor approved:**	07/06/18 17:13 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanoic acid	2706-90-3		4.23	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
07/10/18 17:09

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16692.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/7/2018 11:24:08 AM
Sample Name : IBLK
Vial : Vial 1
DA Method File : PFC_ID_070718_S2Q292.quantmethod.xml
Batch Name : s2q292.batch.bin
Sample Information : op70610,S2Q292,130,,,1.0,1,water

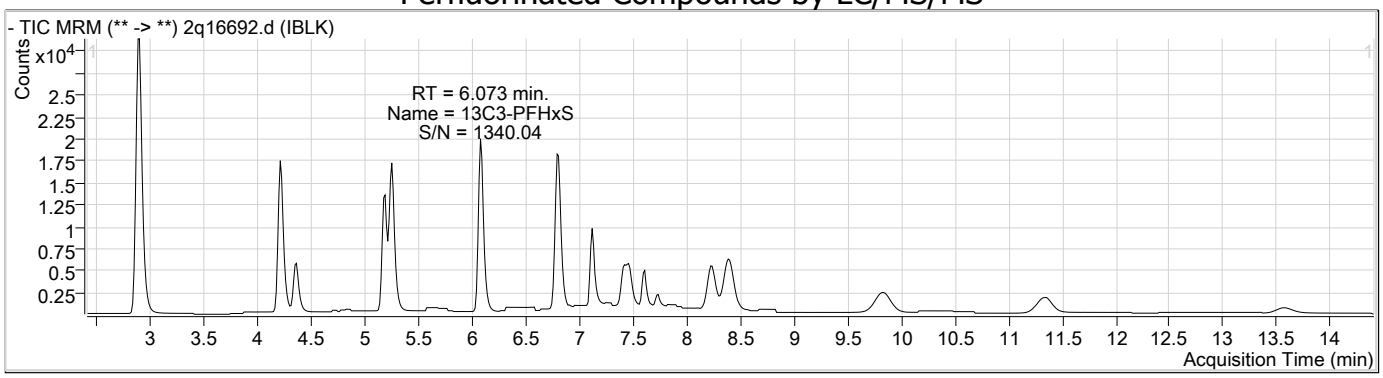
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.798	415.0 -> 370.0	14877	20.00	µg/L	0.000
13C4-PFOS	7.410	503.0 -> 80.0	8678	20.00	µg/L	0.000
M4-PFBA	2.891	217.0 -> 172.0	128650	20.00	µg/L	0.000
M5-PFPeA	4.212	268.0 -> 223.0	60294	20.00	µg/L	0.000
M5-PFHxA	5.253	318.0 -> 273.0	54150	20.00	µg/L	0.000
M4-PFHpA	6.079	367.0 -> 322.0	51204	20.00	µg/L	0.000
M8-PFOA	6.796	421.0 -> 376.0	23659	20.00	µg/L	0.000
M9-PFNA	7.462	472.0 -> 427.0	14449	20.00	µg/L	0.000
M6-PFDA	8.230	519.0 -> 474.0	27509	20.00	µg/L	0.000
M7-PFUnDA	9.829	570.0 -> 525.0	24458	20.00	µg/L	0.025
M2-PFDoDA	11.340	615.0 -> 570.0	18686	20.00	µg/L	0.025
M2-PFTeDA	13.569	715.0 -> 670.0	7077	20.00	µg/L	0.025
M8-FOSA	7.115	506.0 -> 78.0	25976	20.00	µg/L	0.000
M3-PFBS	4.355	302.0 -> 99.0	19631	20.00	µg/L	0.000
M3-PFHxS	6.073	402.0 -> 99.0	16123	20.00	µg/L	0.000
M8-PFOS	7.407	507.0 -> 99.0	7647	20.00	µg/L	0.000
M2-4:2FTS	5.185	329.0 -> 309.0	45612	20.00	µg/L	0.013
M2-6:2FTS	6.805	429.0 -> 409.0	30476	20.00	µg/L	0.000
M2-8:2FTS	8.386	529.0 -> 509.0	39960	20.00	µg/L	0.013
M3-MeFOSAA	7.607	573.0 -> 419.0	12302	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.185	329.0 -> 309.0	45630	17.41	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.1%		
13C2-6:2FTS	6.805	429.0 -> 409.0	30479	17.96	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.8%		
13C2-8:2FTS	8.386	529.0 -> 509.0	39935	17.62	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.1%		
13C2-PFDoDA	11.340	615.0 -> 570.0	18697	18.45	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.2%		
13C2-PFTeDA	13.569	715.0 -> 670.0	7166	18.32	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.6%		
13C3-PFBS	4.355	302.0 -> 99.0	19623	18.75	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.7%		
13C3-PFHxS	6.073	402.0 -> 99.0	16126	18.91	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.5%		
13C4-PFBA	2.891	217.0 -> 172.0	128624	18.68	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.4%		
13C4-PFHpA	6.079	367.0 -> 322.0	51208	19.01	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.0%		
13C5-PFHxA	5.253	318.0 -> 273.0	54151	19.11	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.6%		
13C5-PFPeA	4.212	268.0 -> 223.0	60286	18.94	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.7%		
13C6-PFDA	8.230	519.0 -> 474.0	27479	19.50	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.5%		

Perfluorinated Compounds by LC/MS/MS

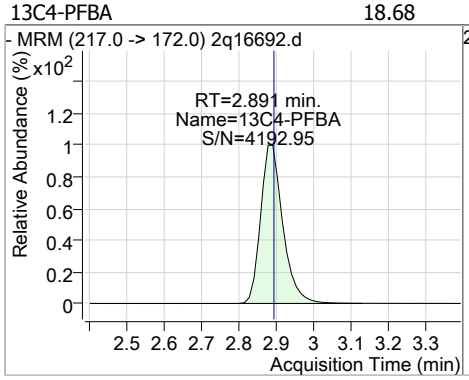
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	9.829	570.0 -> 525.0	24471	18.39	µg/L		0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.0%			
13C8-FOSA	7.115	506.0 -> 78.0	25974	19.58	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%			
13C8-PFOA	6.796	421.0 -> 376.0	23658	19.19	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.9%			
13C8-PFOS	7.407	507.0 -> 99.0	7640	19.35	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.7%			
13C9-PFNA	7.462	472.0 -> 427.0	14457	18.36	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.8%			
d3-MeFOSAA	7.607	573.0 -> 419.0	12300	18.62	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.1%			
M2-PFOA	6.798	415.0 -> 370.0	14862	19.99	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%			
M4-PFOS	7.410	503.0 -> 80.0	8681	20.01	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	4.216	263.0 -> 219.0	550	0.19	µg/L	m	100
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			

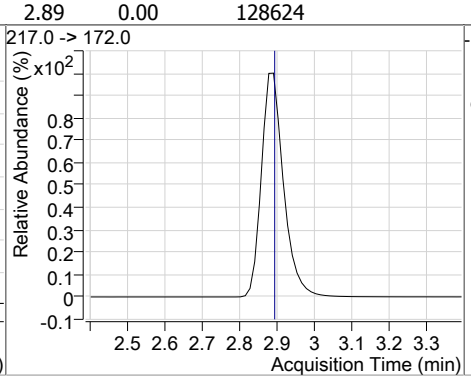
 # = Qualifier out of range, m = manually integrated, + = Area summed

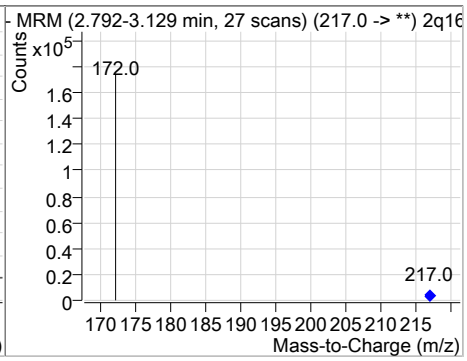
Perfluorinated Compounds by LC/MS/MS



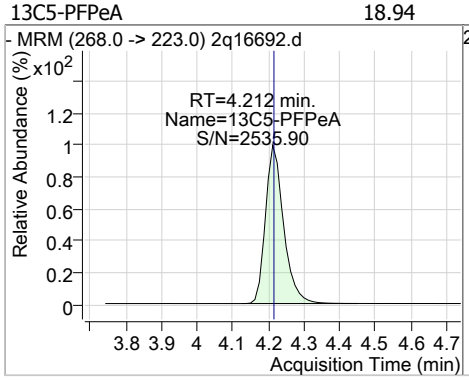
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.68	2.89	0.00	128624				

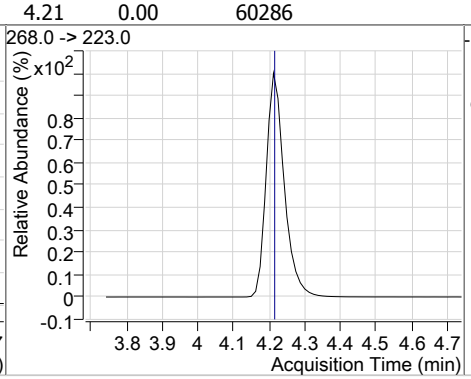


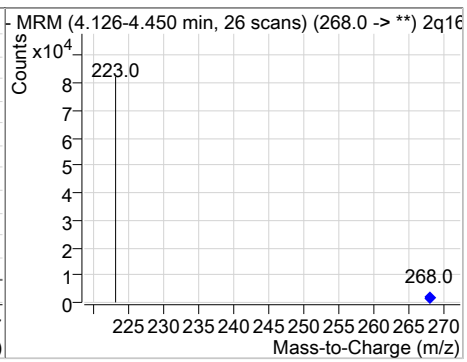




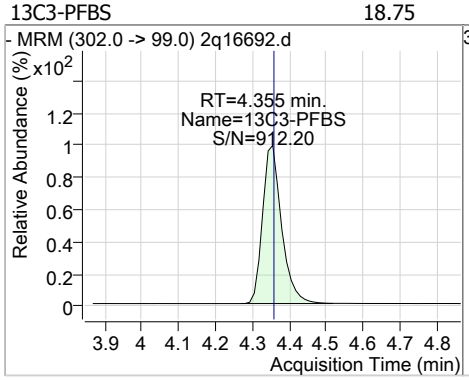
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.94	4.21	0.00	60286				

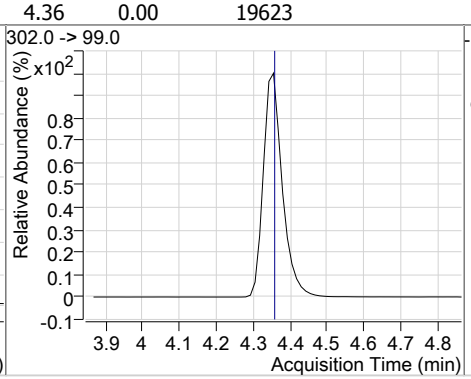


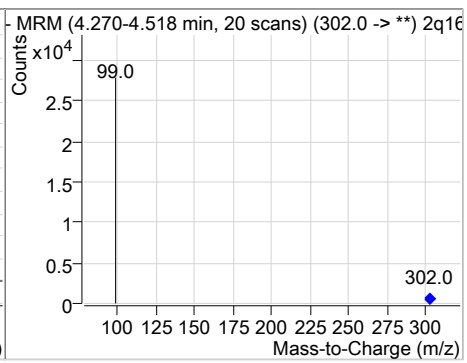




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.75	4.36	0.00	19623				

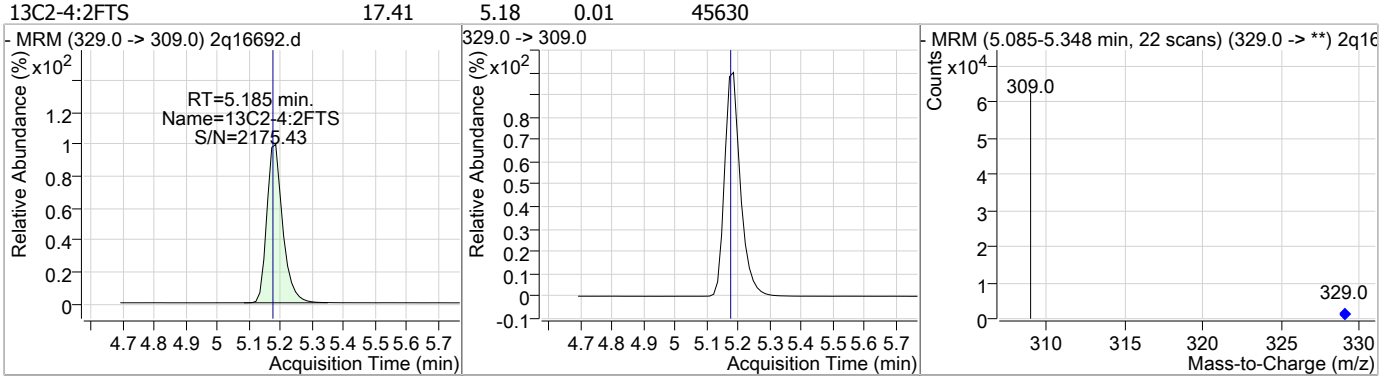




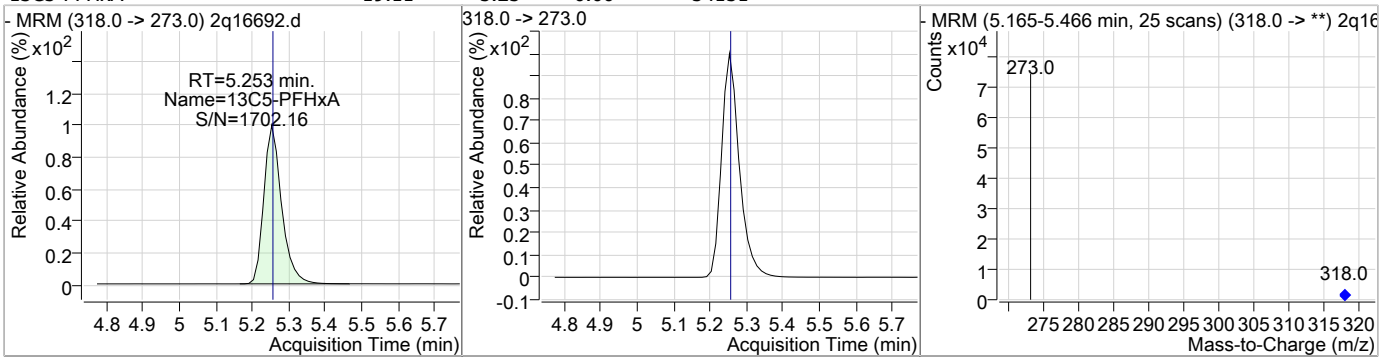


Perfluorinated Compounds by LC/MS/MS

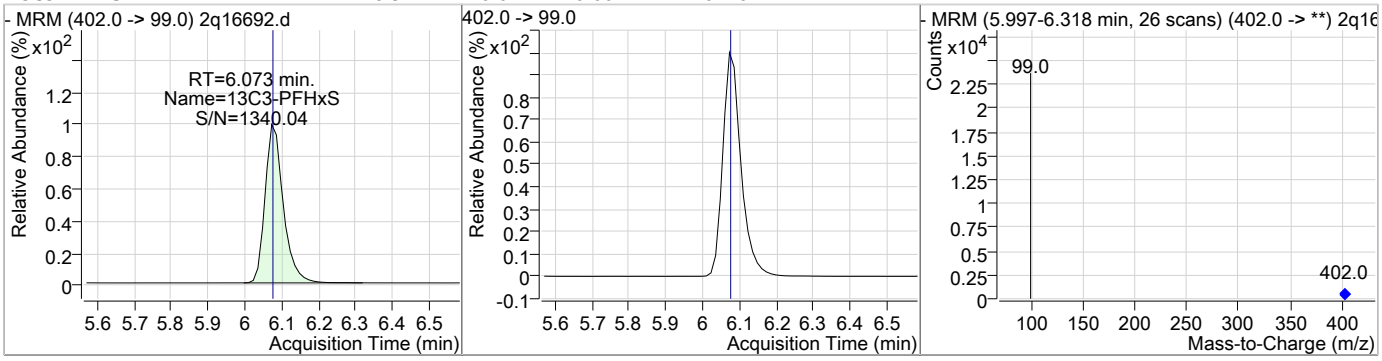
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	17.41	5.18	0.01	45630				



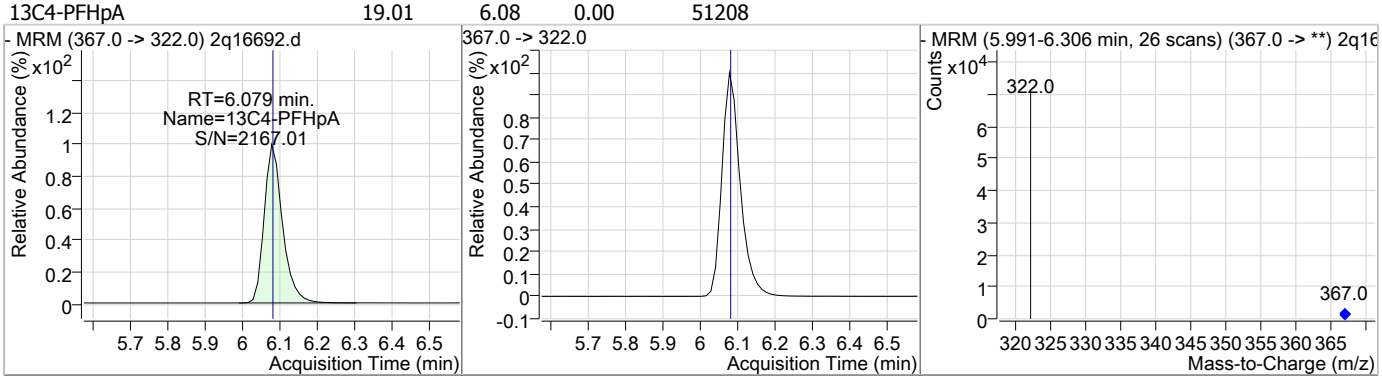
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.11	5.25	0.00	54151				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.91	6.07	0.00	16126				

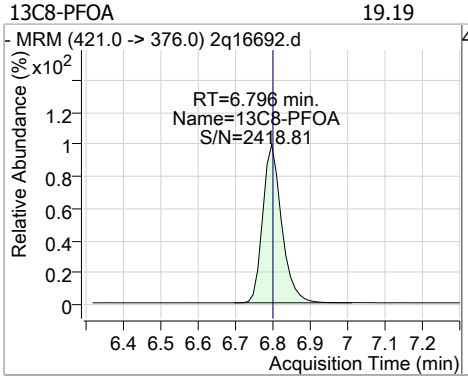


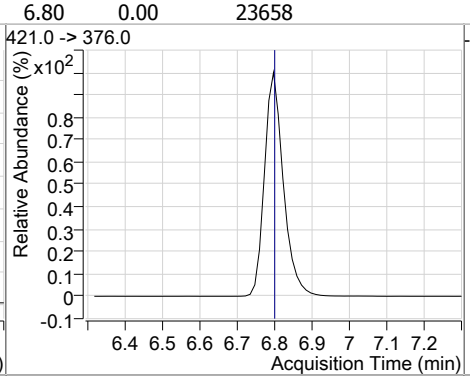
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.01	6.08	0.00	51208				

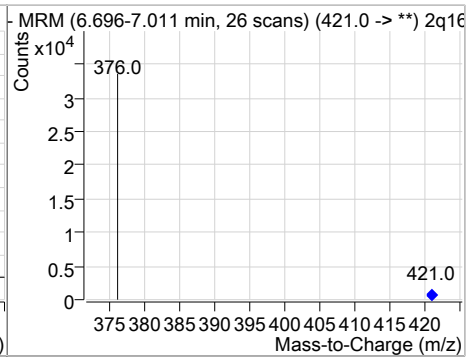


Perfluorinated Compounds by LC/MS/MS

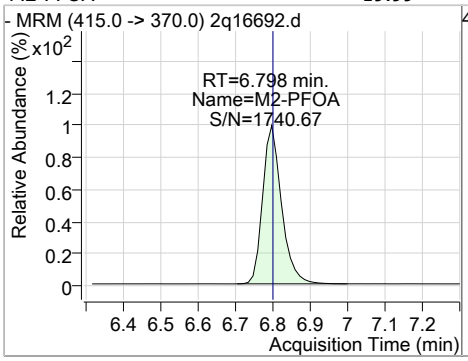
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.19	6.80	0.00	23658				

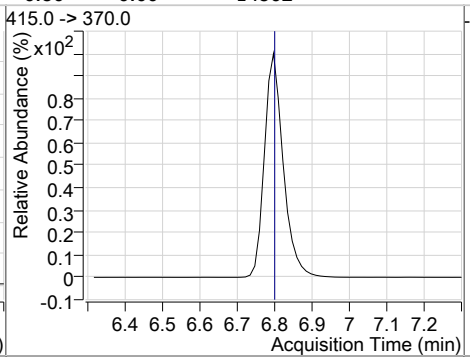


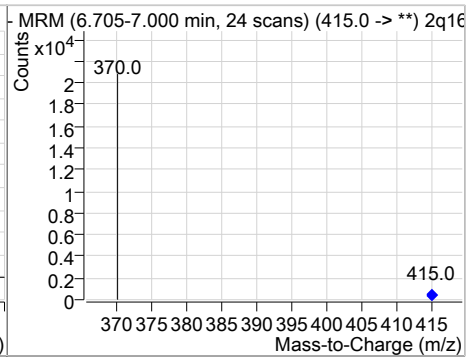




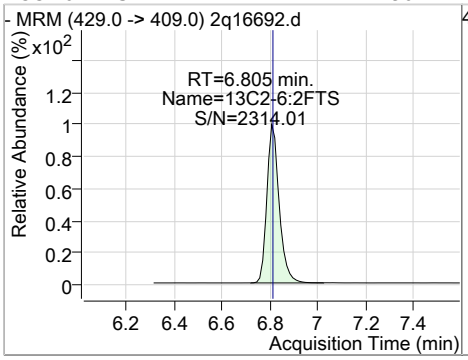
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	19.99	6.80	0.00	14862				

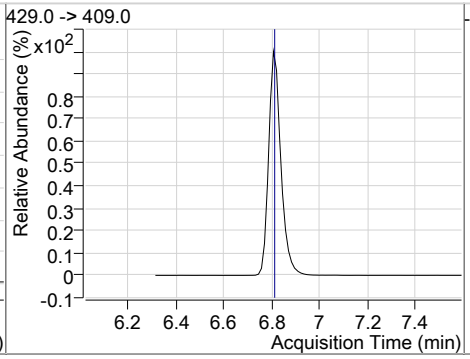


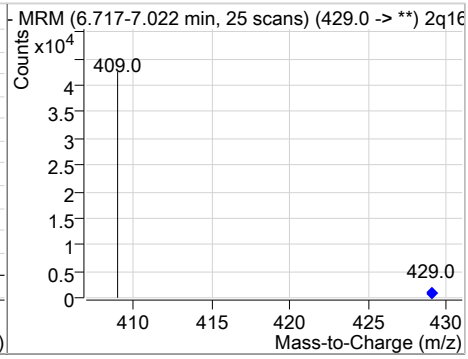




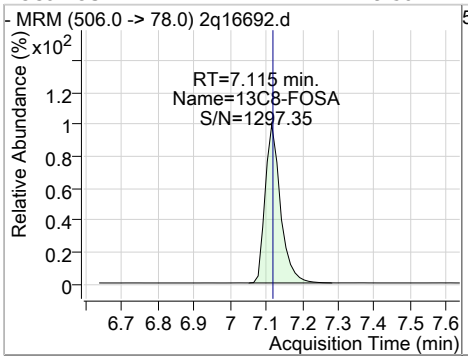
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	17.96	6.81	0.00	30479				

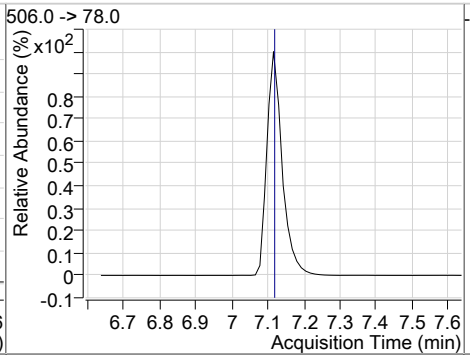


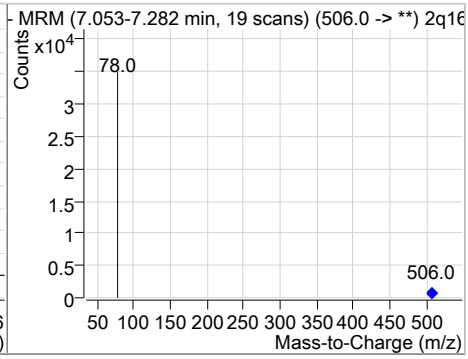




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.58	7.12	0.00	25974				

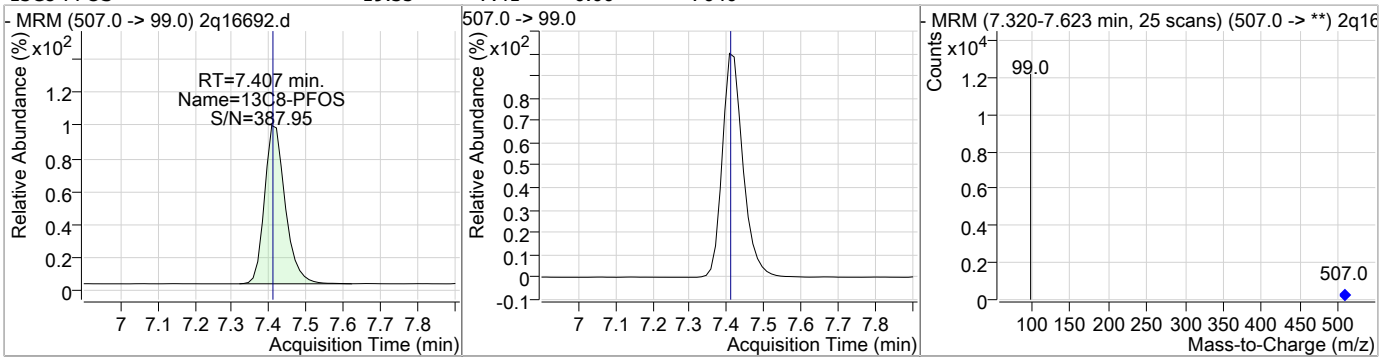




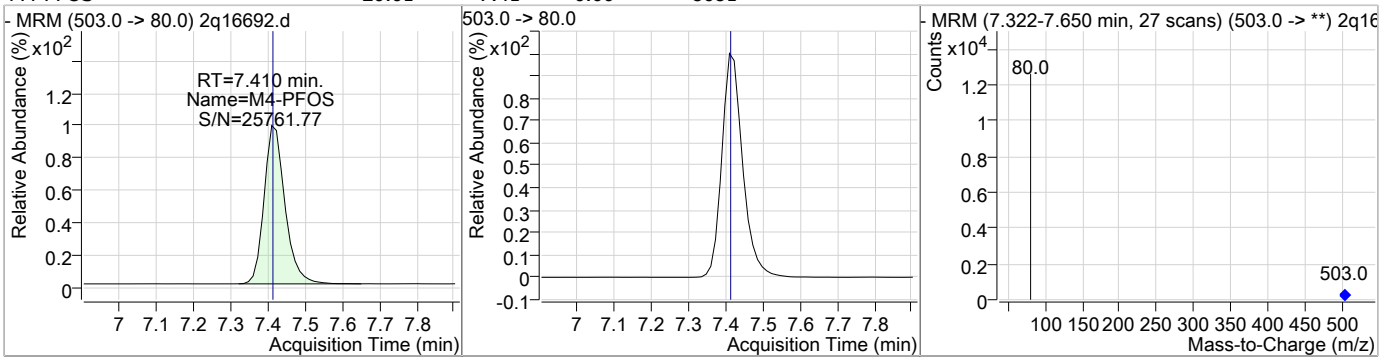


Perfluorinated Compounds by LC/MS/MS

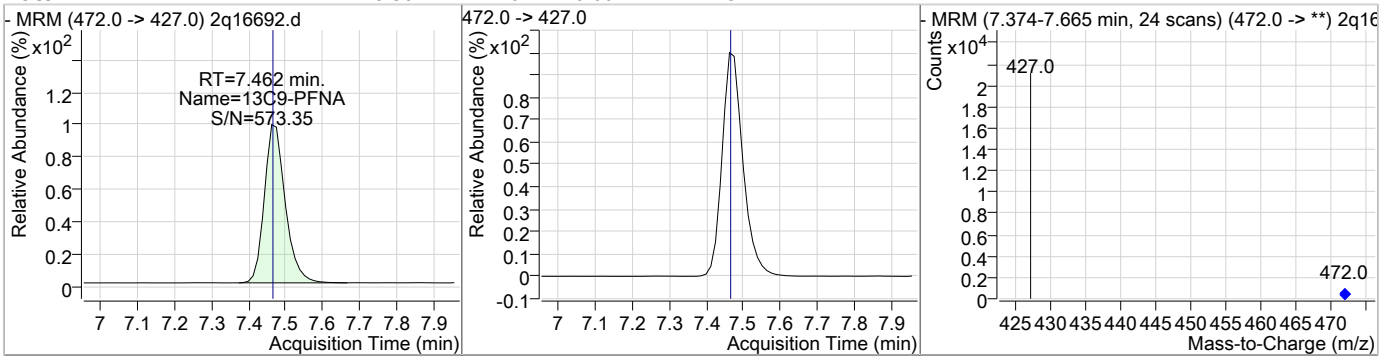
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.35	7.41	0.00	7640				



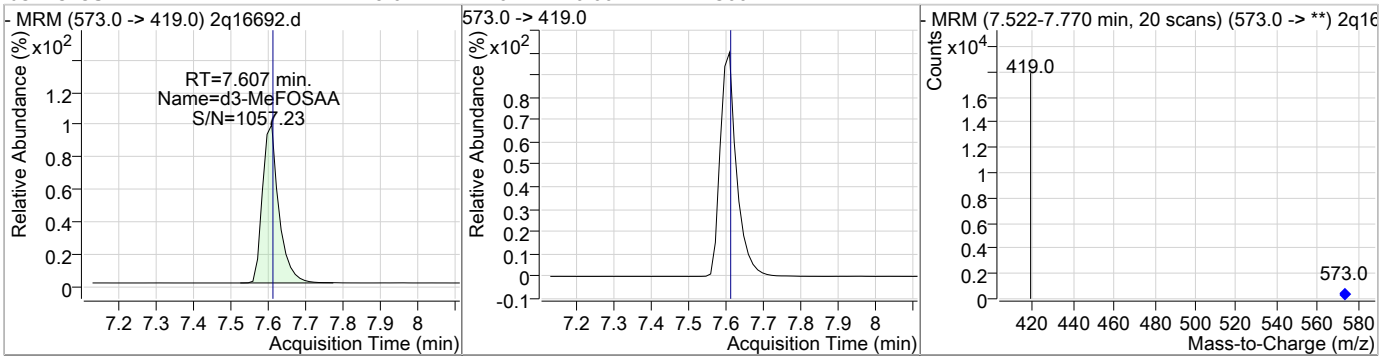
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.01	7.41	0.00	8681				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.36	7.46	0.00	14457				

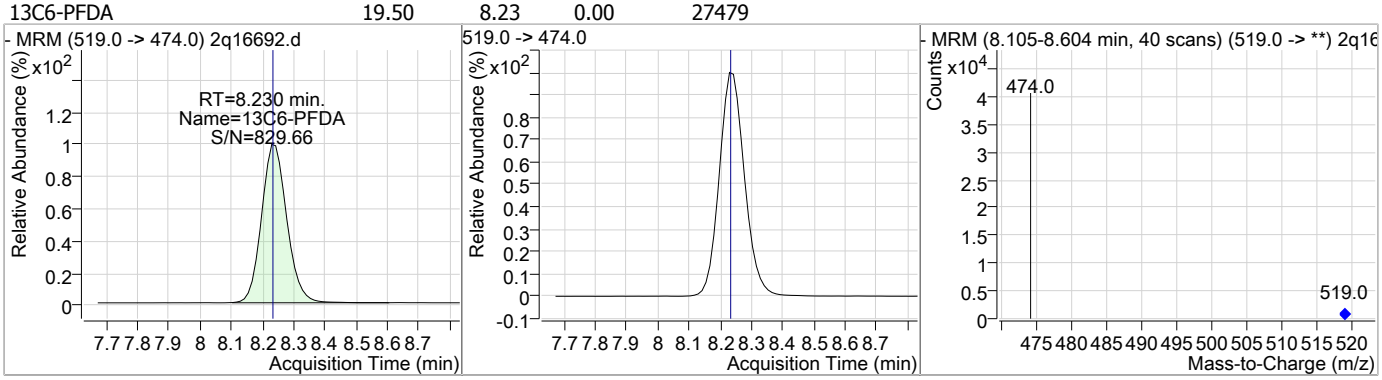


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.62	7.61	0.00	12300				

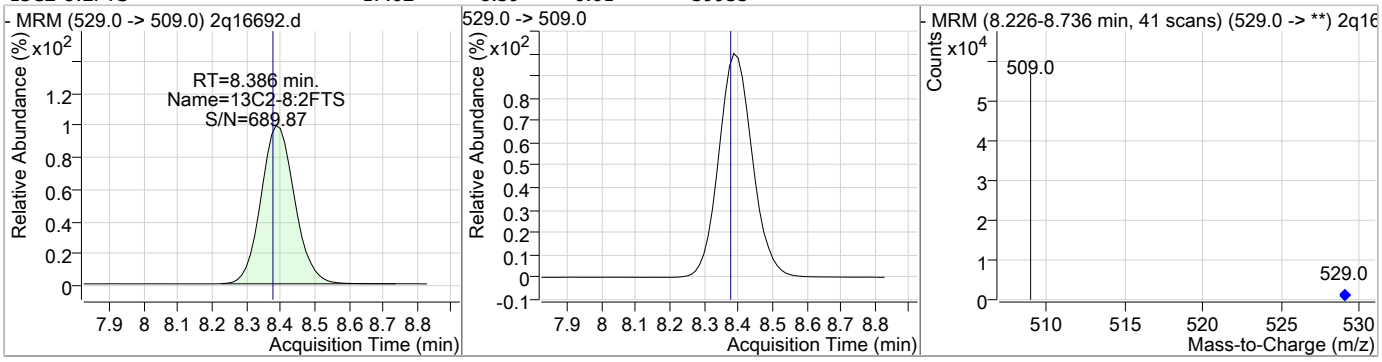


Perfluorinated Compounds by LC/MS/MS

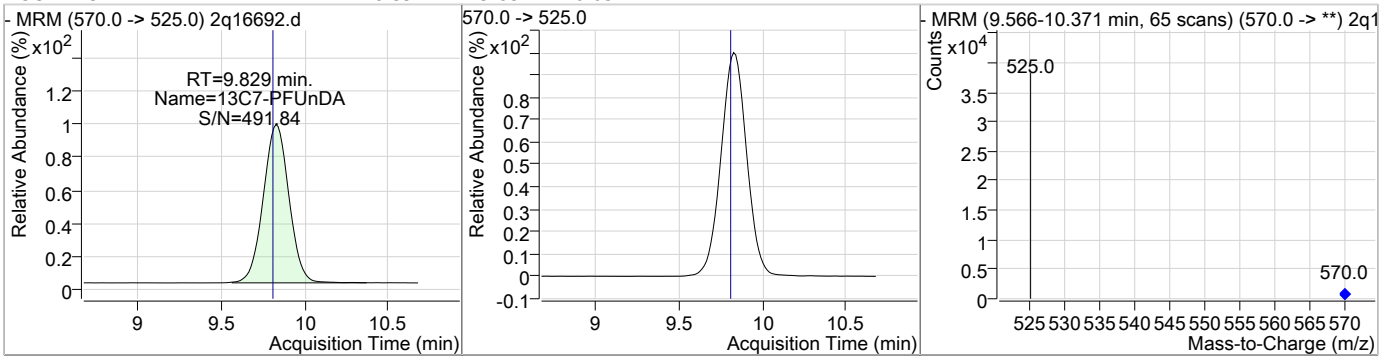
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.50	8.23	0.00	27479				



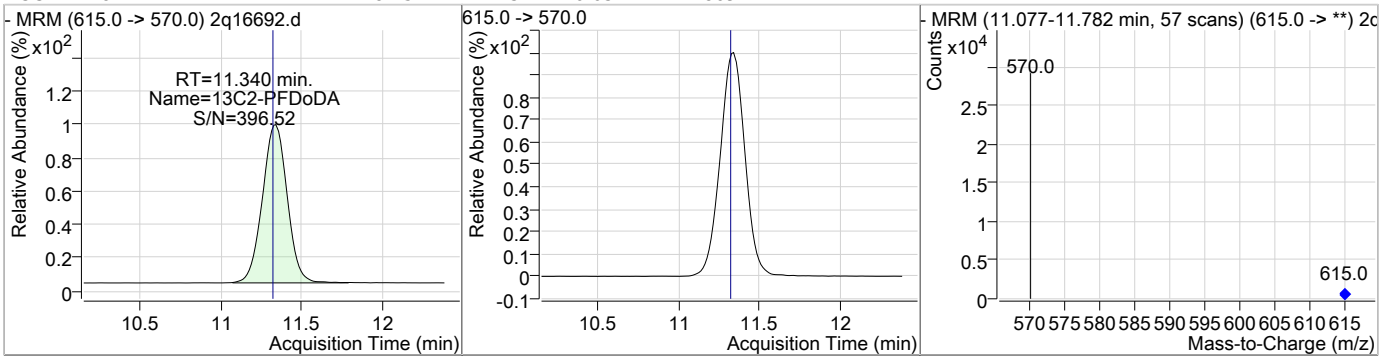
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	17.62	8.39	0.01	39935				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.39	9.83	0.03	24471				

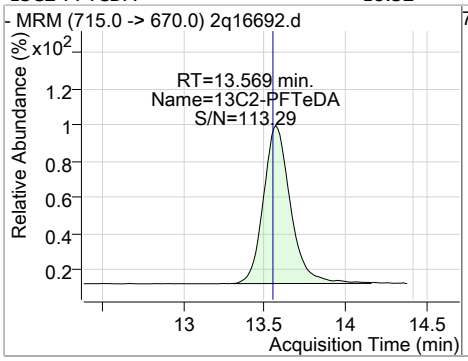


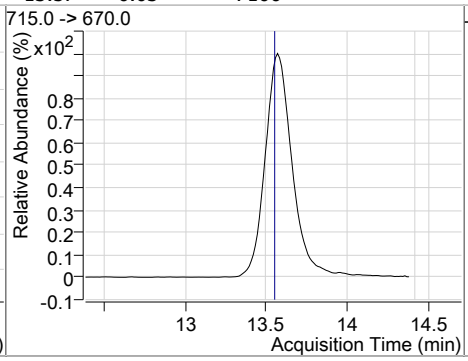
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.45	11.34	0.03	18697				

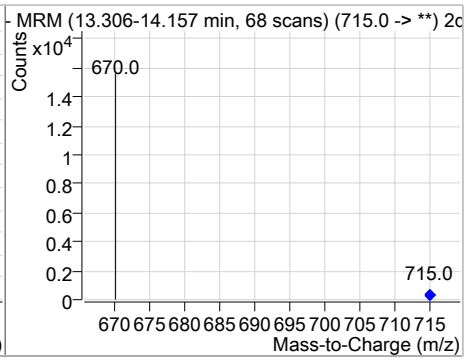


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	18.32	13.57	0.03	7166				







7.2.5

7

Manual Integration Approval Summary

Sample Number:	S2Q292-IBLK	**Method:**	EPA 537M QSM5.1 B-15
Lab FileID:	2Q16692.D	**Analyst approved:**	07/09/18 13:31 Natasha Gumtie
Injection Time:	07/07/18 11:24	**Supervisor approved:**	07/10/18 17:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanoic acid	2706-90-3		4.22	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16896.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/10/2018 6:56:34 PM
Sample Name : IBLK
Vial : Vial 1
DA Method File : PFC_ID_071018_S2Q294.quantmethod.xml
Batch Name : s2q294.batch.bin
Sample Information : op70743,S2Q294,130,,,1.0,1,water

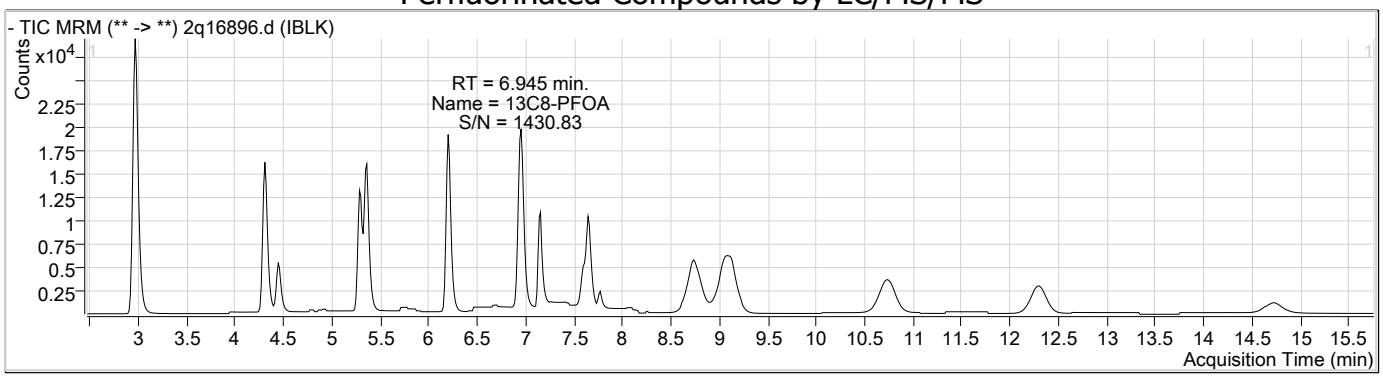
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.946	415.0 -> 370.0	16302	20.00	µg/L	0.000
13C4-PFOS	7.598	503.0 -> 80.0	8676	20.00	µg/L	-0.004
M4-PFBA	2.966	217.0 -> 172.0	115311	20.00	µg/L	-0.001
M5-PFPeA	4.312	268.0 -> 223.0	56303	20.00	µg/L	0.000
M5-PFHxA	5.365	318.0 -> 273.0	51637	20.00	µg/L	0.005
M4-PFHpA	6.204	367.0 -> 322.0	50363	20.00	µg/L	-0.005
M8-PFOA	6.945	421.0 -> 376.0	25613	20.00	µg/L	-0.001
M9-PFNA	7.665	472.0 -> 427.0	17656	20.00	µg/L	-0.003
M6-PFDA	8.741	519.0 -> 474.0	53475	20.00	µg/L	-0.001
M7-PFUnDA	10.741	570.0 -> 525.0	41865	20.00	µg/L	-0.019
M2-PFDoDA	12.302	615.0 -> 570.0	33979	20.00	µg/L	-0.036
M2-PFTeDA	14.731	715.0 -> 670.0	15410	20.00	µg/L	-0.043
M8-FOSA	7.155	506.0 -> 78.0	30446	20.00	µg/L	0.010
M3-PFBS	4.443	302.0 -> 99.0	17799	20.00	µg/L	0.006
M3-PFHxS	6.198	402.0 -> 99.0	14908	20.00	µg/L	0.002
M8-PFOS	7.596	507.0 -> 99.0	7934	20.00	µg/L	-0.006
M2-4:2FTS	5.285	329.0 -> 309.0	44479	20.00	µg/L	0.002
M2-6:2FTS	6.967	429.0 -> 409.0	35700	20.00	µg/L	0.010
M2-8:2FTS	9.072	529.0 -> 509.0	72793	20.00	µg/L	-0.023
M3-MeFOSAA	7.644	573.0 -> 419.0	13640	20.00	µg/L	0.008
System Monitoring Compounds						
13C2-4:2FTS	5.285	329.0 -> 309.0	44455	16.58	µg/L	0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.9%		
13C2-6:2FTS	6.967	429.0 -> 409.0	35700	17.20	µg/L	0.010
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.0%		
13C2-8:2FTS	9.072	529.0 -> 509.0	72233	16.44	µg/L	-0.023
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.2%		
13C2-PFDoDA	12.302	615.0 -> 570.0	33995	17.68	µg/L	-0.036
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.4%		
13C2-PFTeDA	14.731	715.0 -> 670.0	15394	17.55	µg/L	-0.043
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.7%		
13C3-PFBS	4.443	302.0 -> 99.0	17809	17.90	µg/L	0.006
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.5%		
13C3-PFHxS	6.198	402.0 -> 99.0	14928	17.99	µg/L	0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.9%		
13C4-PFBA	2.966	217.0 -> 172.0	115216	17.98	µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.9%		
13C4-PFHpA	6.204	367.0 -> 322.0	50359	18.52	µg/L	-0.005
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.6%		
13C5-PFHxA	5.365	318.0 -> 273.0	51643	18.21	µg/L	0.005
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.1%		
13C5-PFPeA	4.312	268.0 -> 223.0	56254	17.98	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.9%		
13C6-PFDA	8.741	519.0 -> 474.0	52954	18.30	µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.5%		

Perfluorinated Compounds by LC/MS/MS

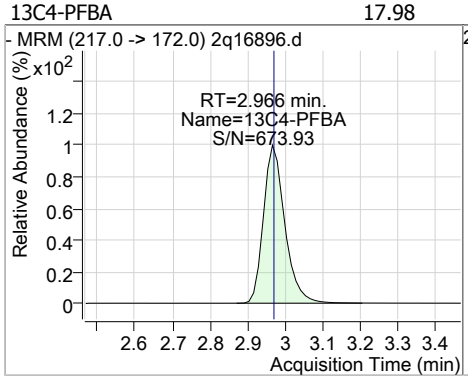
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.741	570.0 -> 525.0	41872	17.63	µg/L		-0.019
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.1%			
13C8-FOSA	7.155	506.0 -> 78.0	30447	19.42	µg/L		0.010
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.1%			
13C8-PFOA	6.945	421.0 -> 376.0	25626	18.43	µg/L		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.2%			
13C8-PFOS	7.596	507.0 -> 99.0	7932	18.38	µg/L		-0.006
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.9%			
13C9-PFNA	7.665	472.0 -> 427.0	17637	18.31	µg/L		-0.003
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.6%			
d3-MeFOSAA	7.644	573.0 -> 419.0	13650	18.04	µg/L		0.008
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.2%			
M2-PFOA	6.946	415.0 -> 370.0	16300	20.00	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.598	503.0 -> 80.0	8680	20.01	ng/ml		-0.004
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	12.296	613.0 -> 569.0	0	0.00	µg/L	m	1
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	6.723	363.0 -> 319.0	0	0.00	µg/L	m	1
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	5.820	313.0 -> 269.0	0	0.00	µg/L	m	1
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	4.316	263.0 -> 219.0	440	0.16	µg/L		100
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			

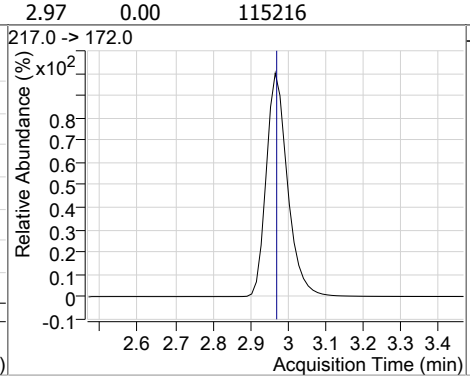
 # = Qualifier out of range, m = manually integrated, + = Area summed

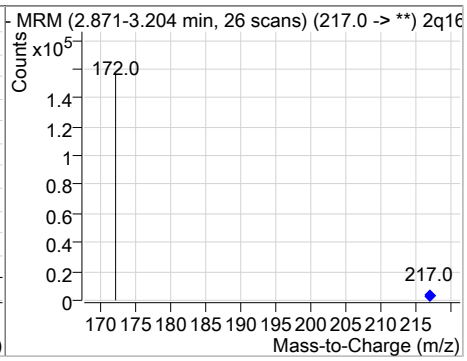
Perfluorinated Compounds by LC/MS/MS



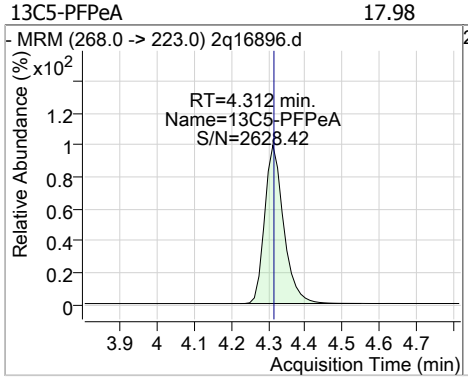
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	17.98	2.97	0.00	115216				

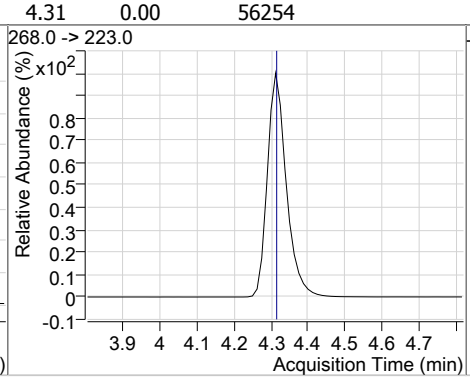


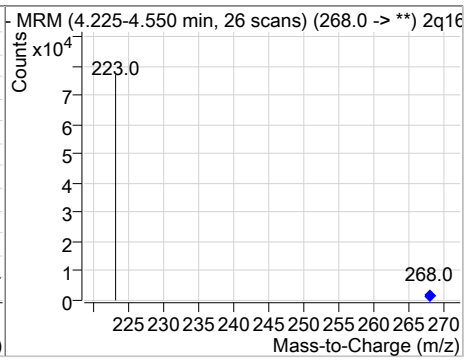




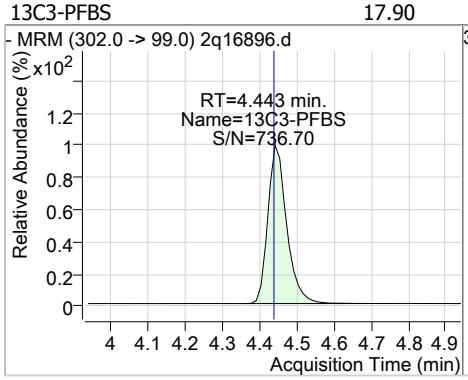
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	17.98	4.31	0.00	56254				

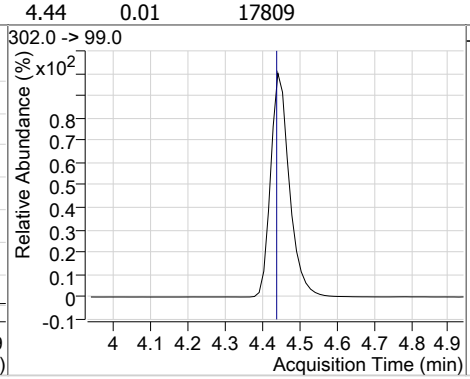


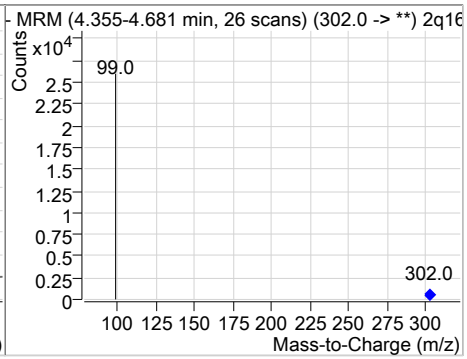




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	17.90	4.44	0.01	17809				

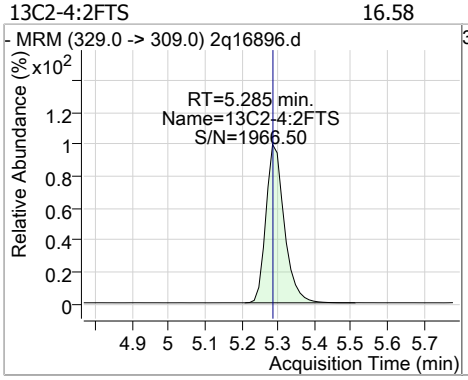


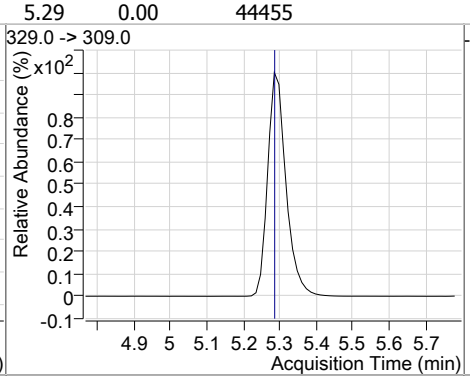


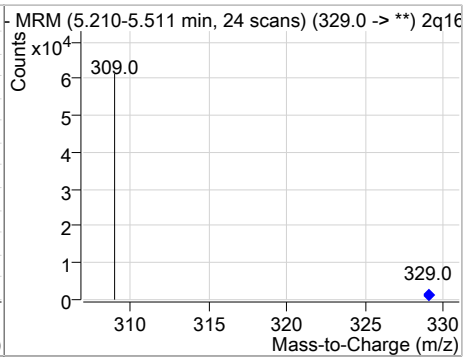


Perfluorinated Compounds by LC/MS/MS

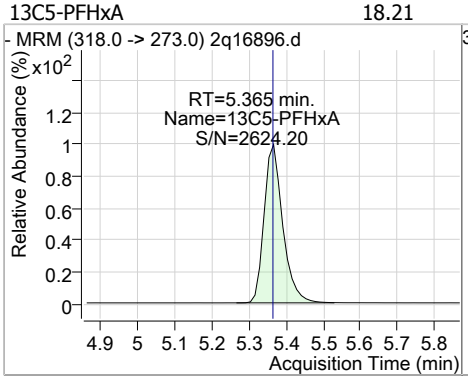
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	16.58	5.29	0.00	44455				

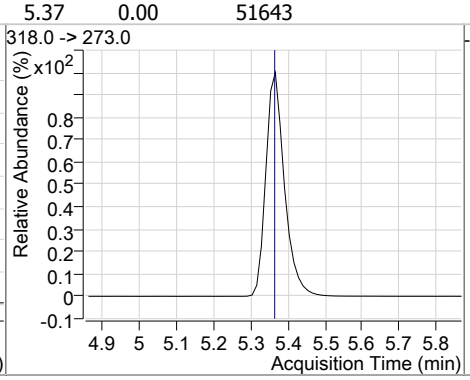


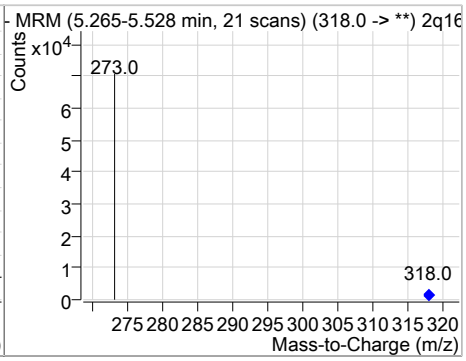




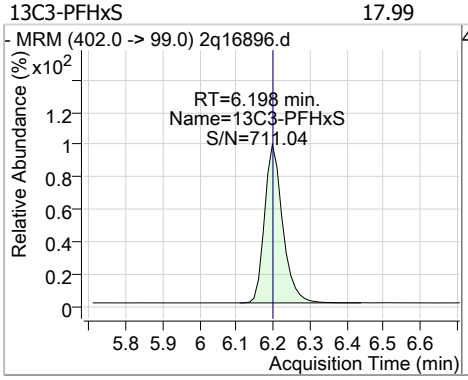
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.21	5.37	0.00	51643				

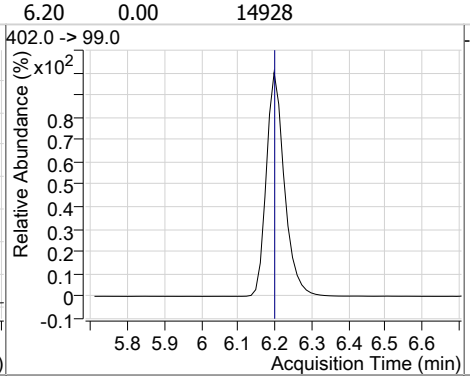


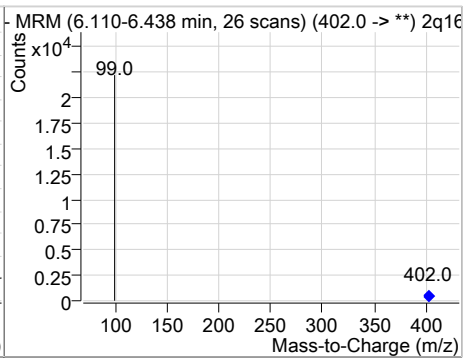




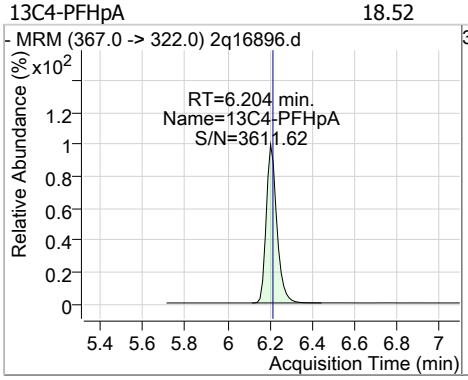
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	17.99	6.20	0.00	14928				

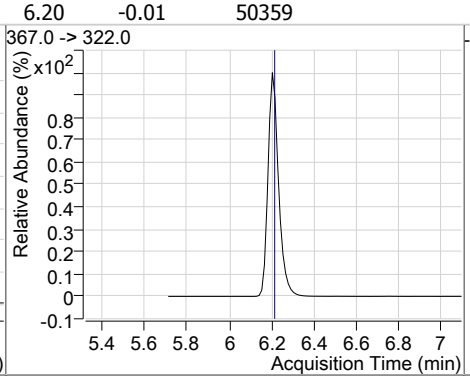


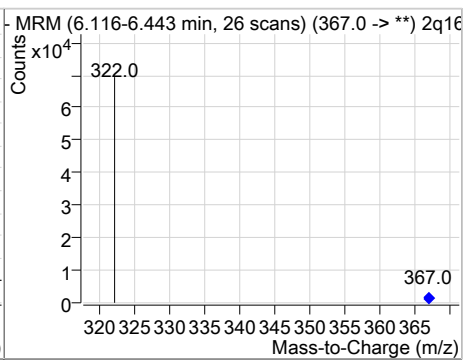




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.52	6.20	-0.01	50359				

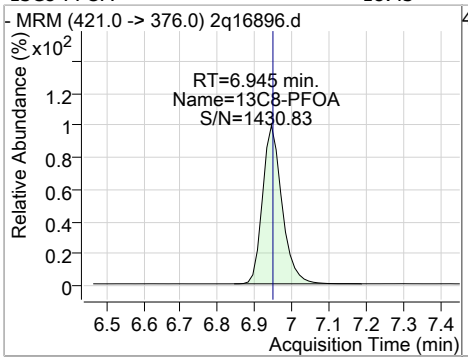


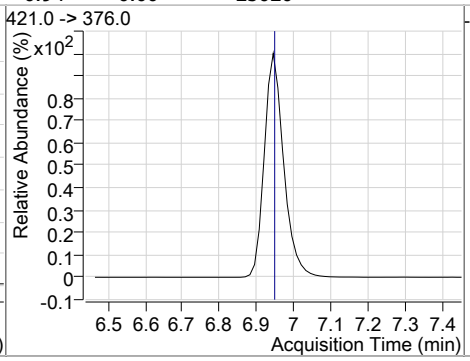


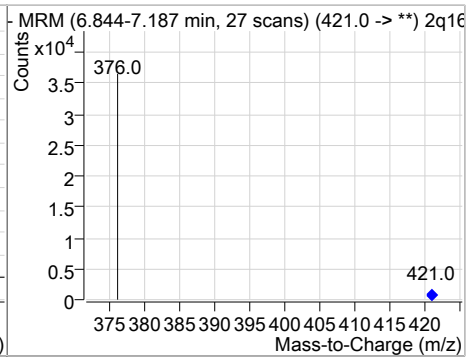


Perfluorinated Compounds by LC/MS/MS

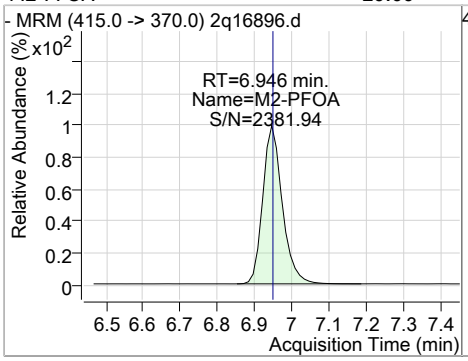
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	18.43	6.94	0.00	25626				

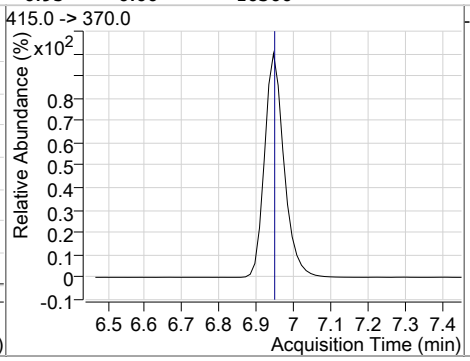


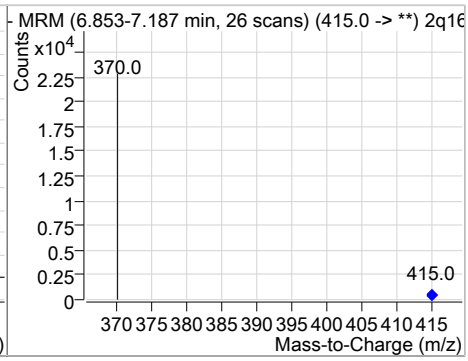




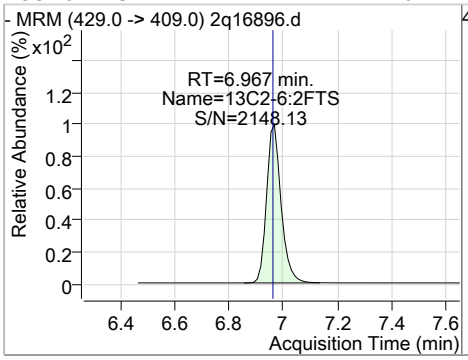
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.95	0.00	16300				

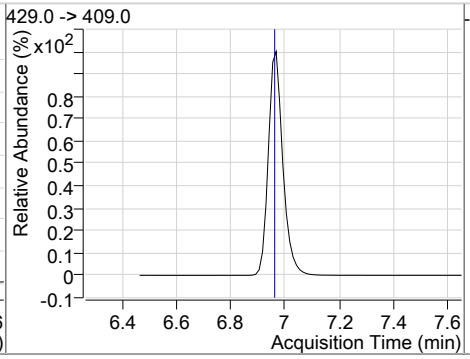


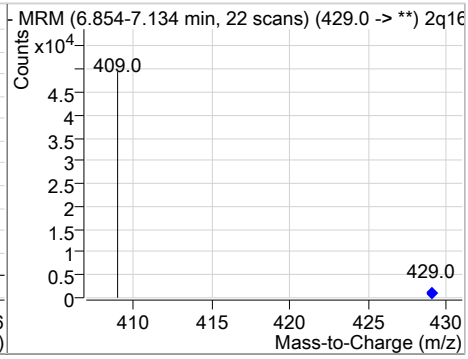




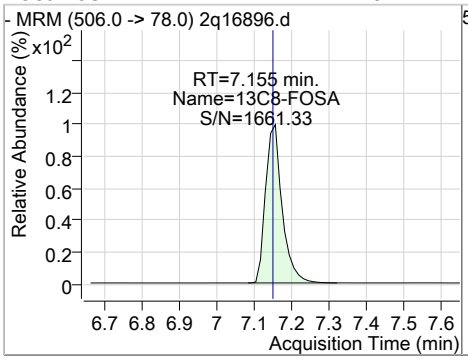
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	17.20	6.97	0.01	35700				

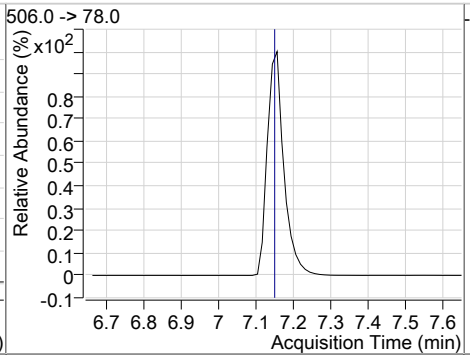


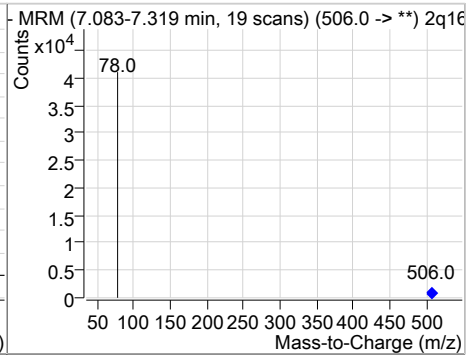




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.42	7.15	0.01	30447				

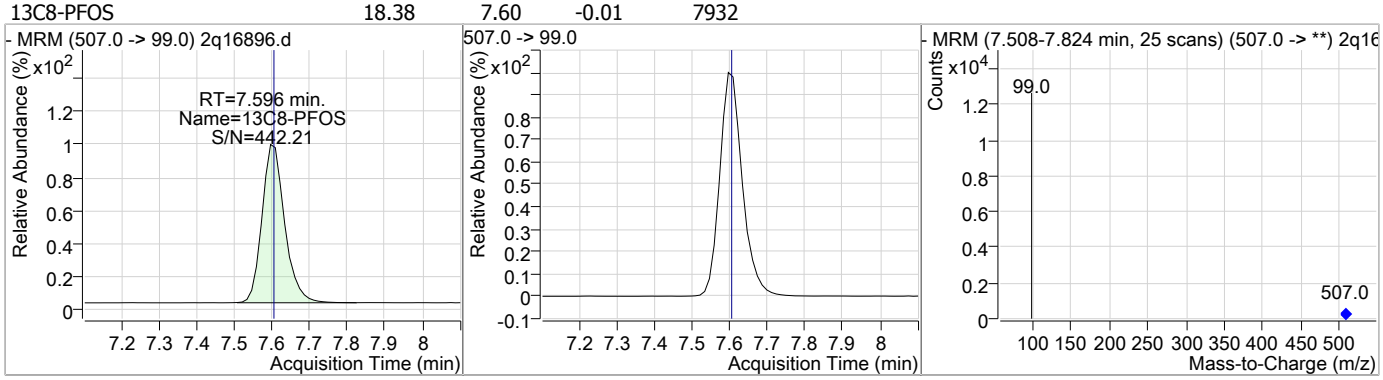




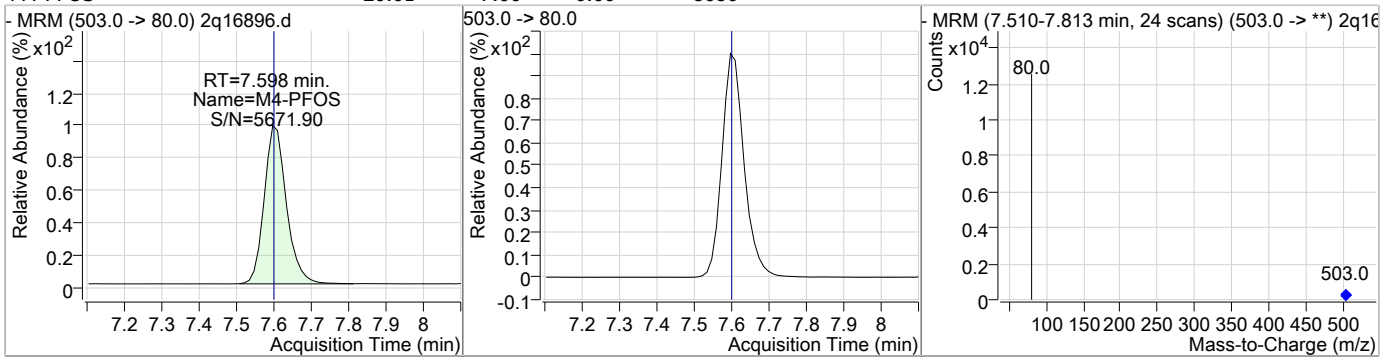


Perfluorinated Compounds by LC/MS/MS

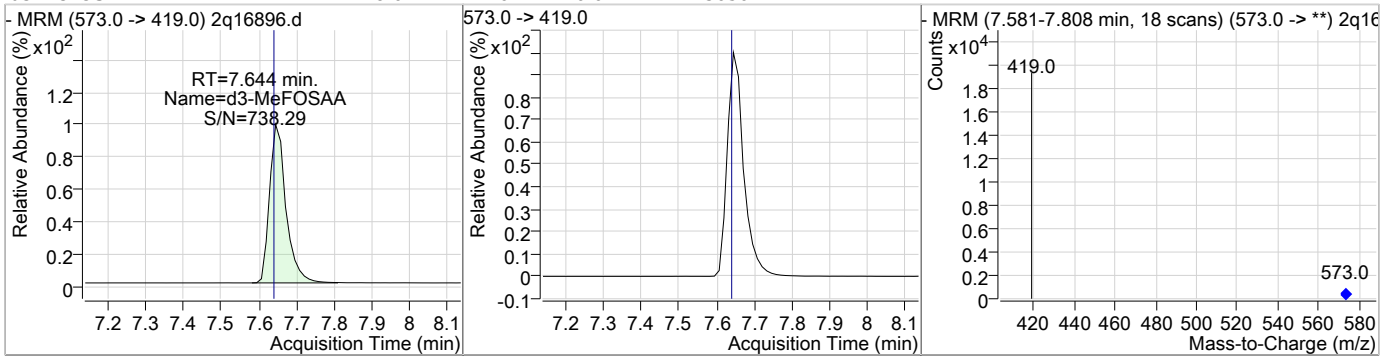
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.38	7.60	-0.01	7932				



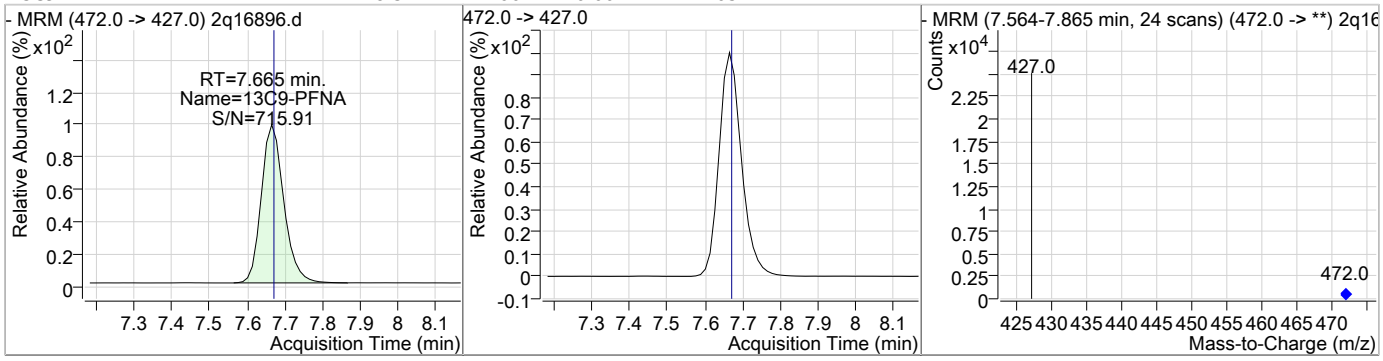
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.01	7.60	0.00	8680				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.04	7.64	0.01	13650				

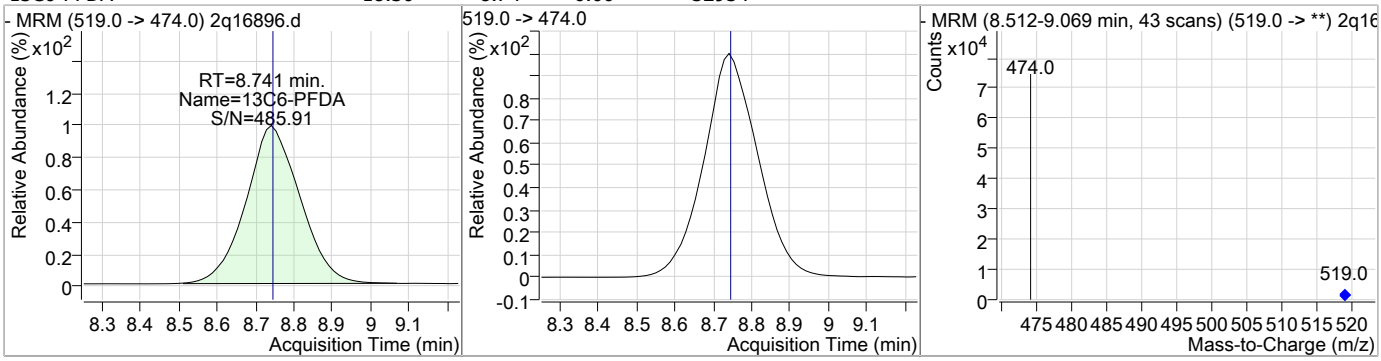


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.31	7.66	0.00	17637				

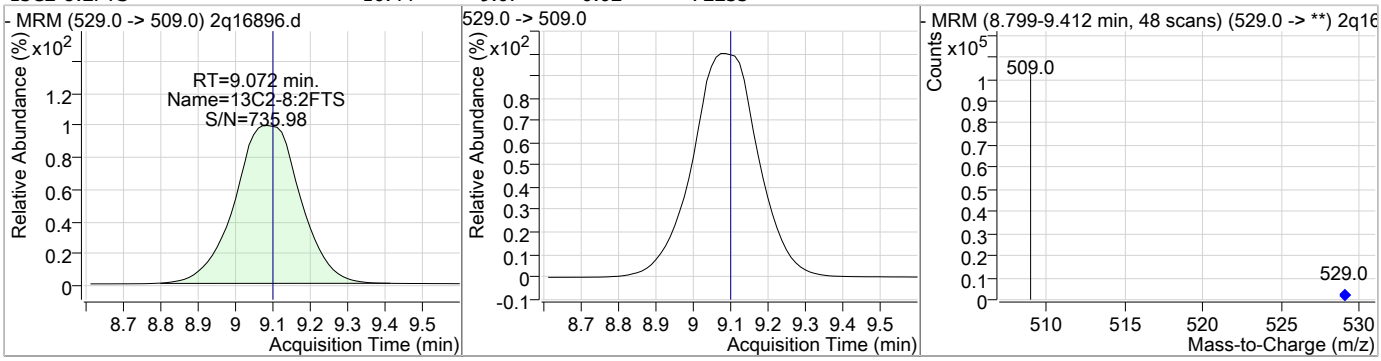


Perfluorinated Compounds by LC/MS/MS

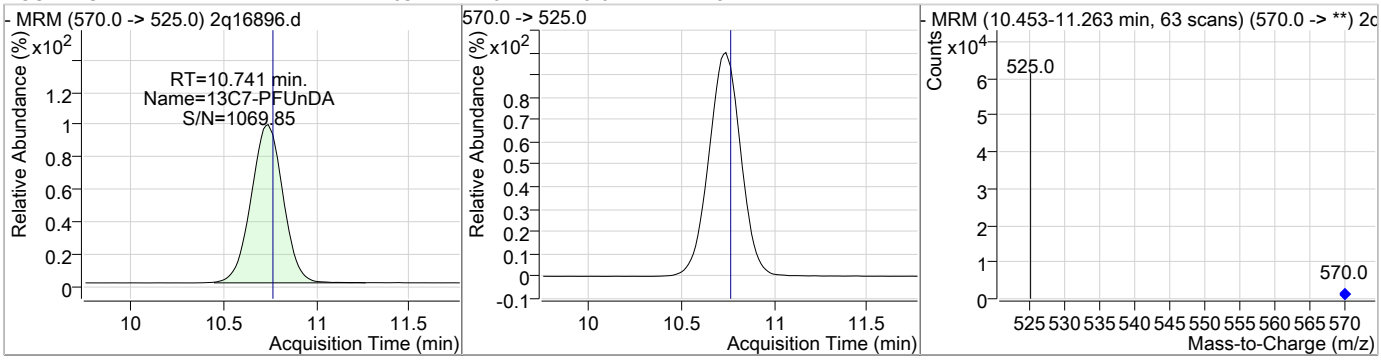
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	18.30	8.74	0.00	52954				



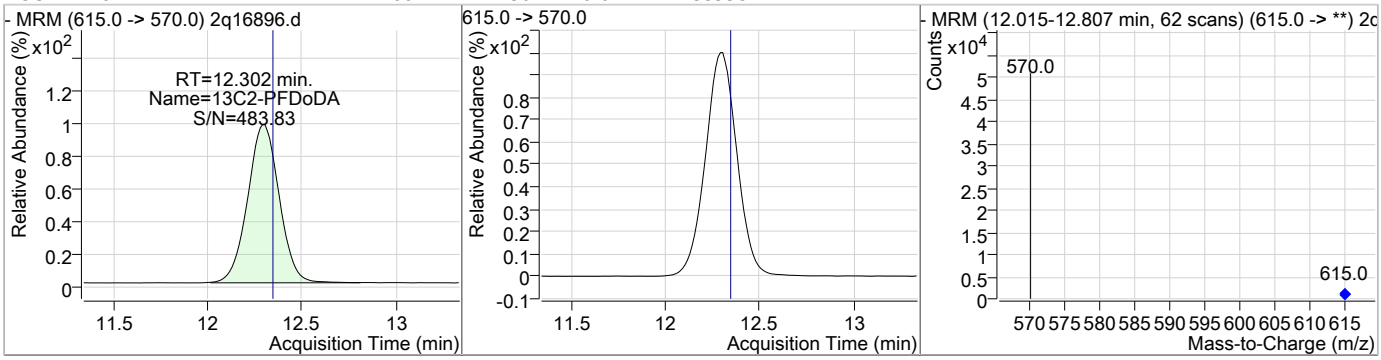
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	16.44	9.07	-0.02	72233				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	17.63	10.74	-0.02	41872				

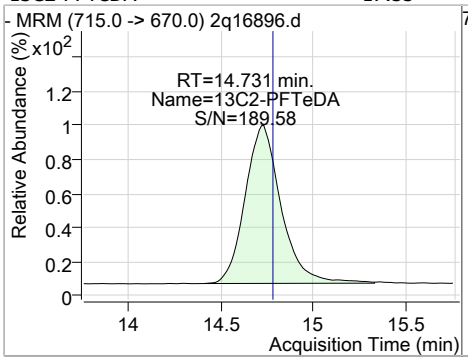


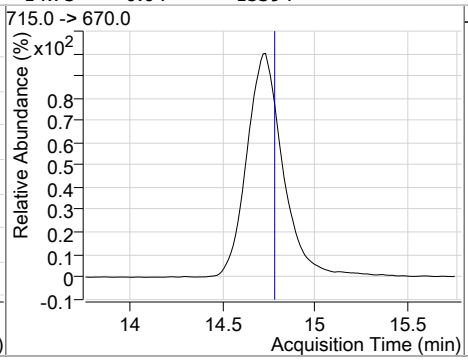
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	17.68	12.30	-0.04	33995				

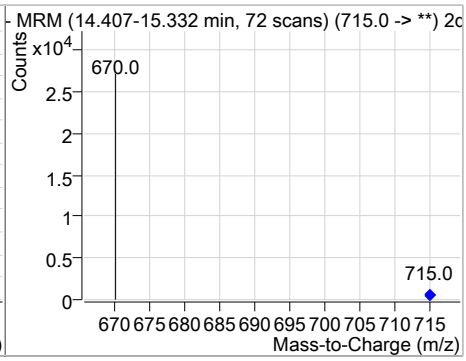


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	17.55	14.73	-0.04	15394				







Perfluorinated Compounds by LC/MS/MS

Data File : 2q17002.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/12/2018 12:06:28 PM
Sample Name : iblk
Vial : Vial 1
DA Method File : PFC_ID_071218_S2Q295.quantmethod.xml
Batch Name : s2q295.batch.bin
Sample Information : op70790,S2Q295,1.99,,,1.0,1,soil

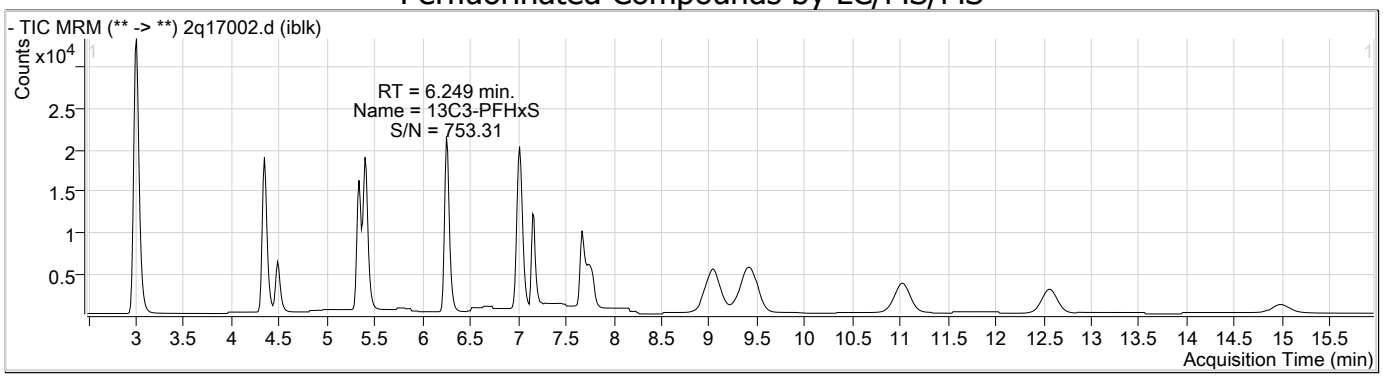
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	7.010	415.0 -> 370.0	18459	20.00	µg/L	0.014
13C4-PFOS	7.687	503.0 -> 80.0	10648	20.00	µg/L	0.012
M4-PFBA	3.003	217.0 -> 172.0	134014	20.00	µg/L	0.013
M5-PFPeA	4.350	268.0 -> 223.0	66662	20.00	µg/L	0.012
M5-PFHxA	5.401	318.0 -> 273.0	60778	20.00	µg/L	0.011
M4-PFHpA	6.255	367.0 -> 322.0	58481	20.00	µg/L	0.001
M8-PFOA	7.009	421.0 -> 376.0	27636	20.00	µg/L	0.014
M9-PFNA	7.753	472.0 -> 427.0	19276	20.00	µg/L	0.001
M6-PFDA	9.042	519.0 -> 474.0	57804	20.00	µg/L	0.025
M7-PFUnDA	11.030	570.0 -> 525.0	42169	20.00	µg/L	0.001
M2-PFDoDA	12.566	615.0 -> 570.0	34469	20.00	µg/L	0.001
M2-PFTeDA	14.982	715.0 -> 670.0	14911	20.00	µg/L	0.013
M8-FOSA	7.155	506.0 -> 78.0	35208	20.00	µg/L	0.013
M3-PFBS	4.481	302.0 -> 99.0	21053	20.00	µg/L	0.013
M3-PFHxS	6.249	402.0 -> 99.0	16905	20.00	µg/L	0.013
M8-PFOS	7.685	507.0 -> 99.0	8504	20.00	µg/L	0.012
M2-4:2FTS	5.335	329.0 -> 309.0	53693	20.00	µg/L	0.012
M2-6:2FTS	7.031	429.0 -> 409.0	37360	20.00	µg/L	0.013
M2-8:2FTS	9.410	529.0 -> 509.0	69950	20.00	µg/L	0.013
M3-MeFOSAA	7.670	573.0 -> 419.0	16079	20.00	µg/L	0.013
System Monitoring Compounds						
13C2-4:2FTS	5.335	329.0 -> 309.0	53697	19.03	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.2%		
13C2-6:2FTS	7.031	429.0 -> 409.0	37382	19.16	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.8%		
13C2-8:2FTS	9.410	529.0 -> 509.0	69187	18.81	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.0%		
13C2-PFDoDA	12.566	615.0 -> 570.0	34533	20.52	µg/L	0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.6%		
13C2-PFTeDA	14.982	715.0 -> 670.0	14948	20.57	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.9%		
13C3-PFBS	4.481	302.0 -> 99.0	21062	20.20	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%		
13C3-PFHxS	6.249	402.0 -> 99.0	16903	20.25	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.2%		
13C4-PFBA	3.003	217.0 -> 172.0	133986	20.16	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.8%		
13C4-PFHpA	6.255	367.0 -> 322.0	58475	20.67	µg/L	0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%		
13C5-PFHxA	5.401	318.0 -> 273.0	60754	20.48	µg/L	0.011
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.4%		
13C5-PFPeA	4.350	268.0 -> 223.0	66686	20.33	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
13C6-PFDA	9.042	519.0 -> 474.0	57169	20.62	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.1%		

Perfluorinated Compounds by LC/MS/MS

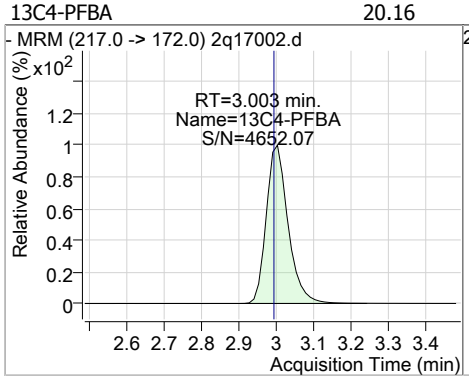
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
13C7-PFUnDA	11.030	570.0 -> 525.0	42264	20.51	µg/L	0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%		
13C8-FOSA	7.155	506.0 -> 78.0	35222	21.90	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.5%		
13C8-PFOA	7.009	421.0 -> 376.0	27647	21.05	µg/L	0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.2%		
13C8-PFOS	7.685	507.0 -> 99.0	8497	20.48	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.4%		
13C9-PFNA	7.753	472.0 -> 427.0	19285	21.87	µg/L	0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.4%		
d3-MeFOSAA	7.670	573.0 -> 419.0	16081	20.70	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
M2-PFOA	7.010	415.0 -> 370.0	18464	20.01	ng/ml	0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
M4-PFOS	7.687	503.0 -> 80.0	10662	20.03	ng/ml	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.2%		
Target Compounds						**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.		
6:2FTS	-	427.0 -> 407.0	-	N.D.		
8:2FTS	-	527.0 -> 507.0	-	N.D.		
EtFOSAA	-	584.0 -> 419.0	-	N.D.		
FOSA	-	498.0 -> 78.0	-	N.D.		
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
PFBA	-	213.0 -> 169.0	-	N.D.		
PFBS	-	299.0 -> 80.0	-	N.D.		
PFDA	-	513.0 -> 469.0	-	N.D.		
PFDoDA	12.547	613.0 -> 569.0	108	0.12	µg/L	73
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	-	363.0 -> 319.0	-	N.D.		
PFHpS	-	449.0 -> 80.0	-	N.D.		
PFHxA	-	313.0 -> 269.0	-	N.D.		
PFHxS	-	399.0 -> 80.0	-	N.D.		
PFNA	-	463.0 -> 419.0	-	N.D.		
PFNS	-	549.0 -> 80.0	-	N.D.		
PFOA	-	413.0 -> 369.0	-	N.D.		
PFOS	-	499.0 -> 80.0	-	N.D.		
PFPeA	4.354	263.0 -> 219.0	547	0.18	µg/L	100
PFPeS	-	349.0 -> 80.0	-	N.D.		
PFTeDA	-	713.0 -> 669.0	-	N.D.		
PFTrDA	-	663.0 -> 619.0	-	N.D.		
PFUnDA	-	563.0 -> 519.0	-	N.D.		

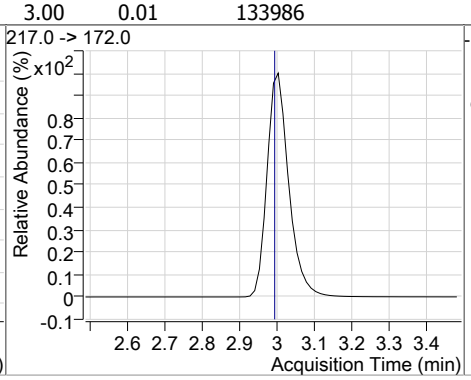
 # = Qualifier out of range, m = manually integrated, + = Area summed

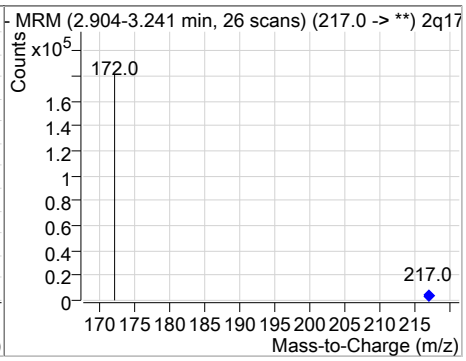
Perfluorinated Compounds by LC/MS/MS



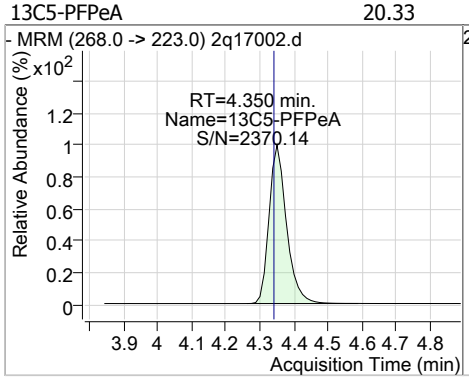
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.16	3.00	0.01	133986				

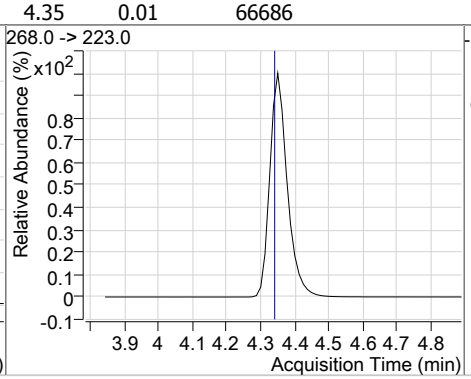


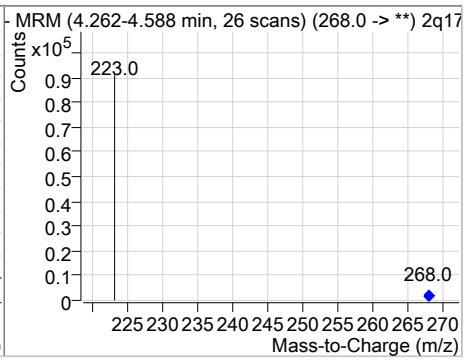




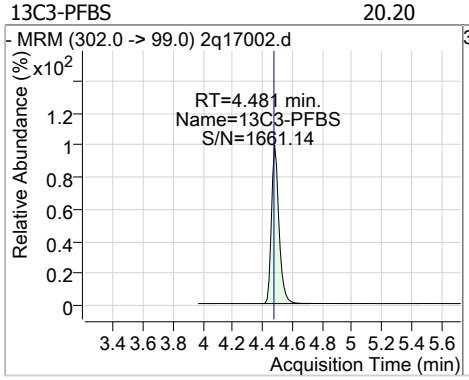
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.33	4.35	0.01	66686				

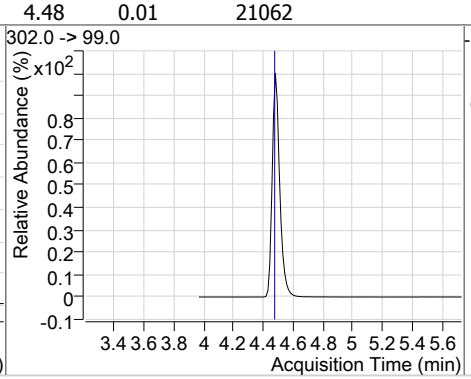


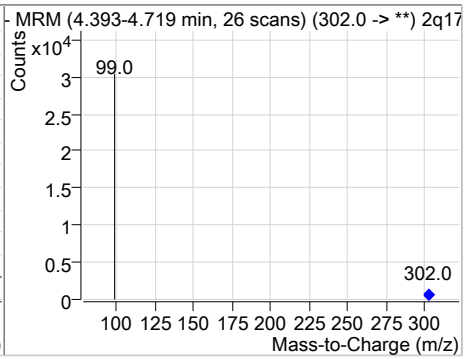




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.20	4.48	0.01	21062				

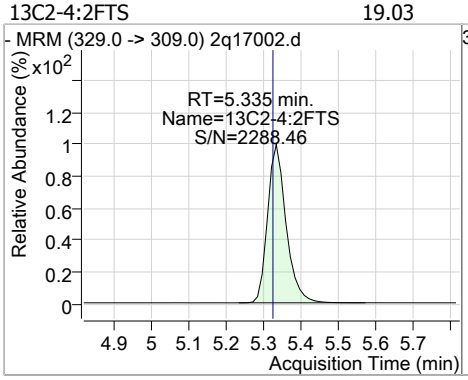


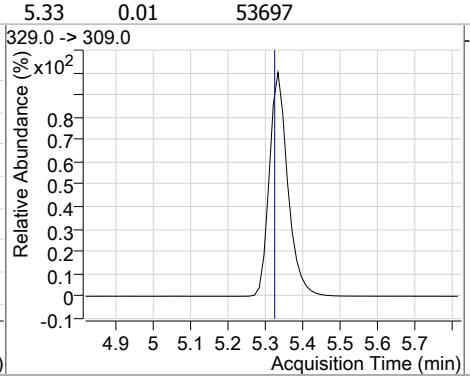


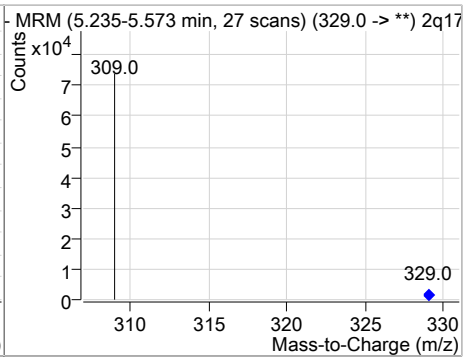


Perfluorinated Compounds by LC/MS/MS

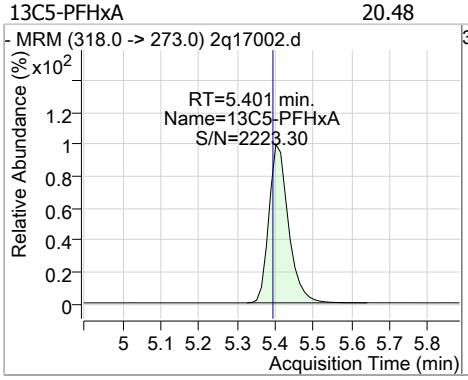
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.03	5.33	0.01	53697				

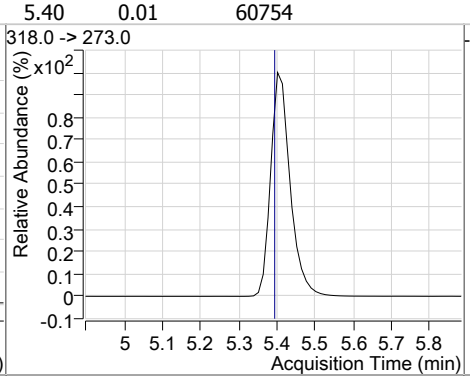


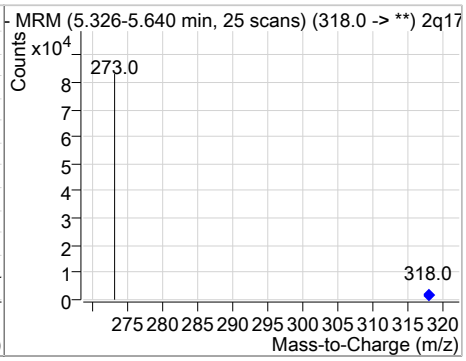




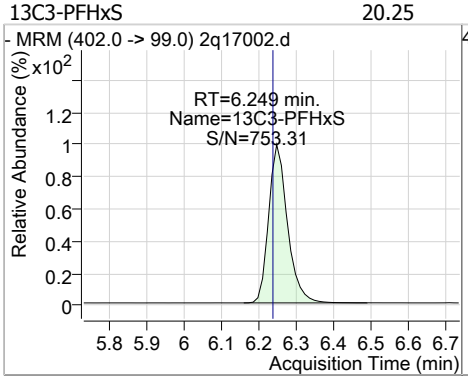
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.48	5.40	0.01	60754				

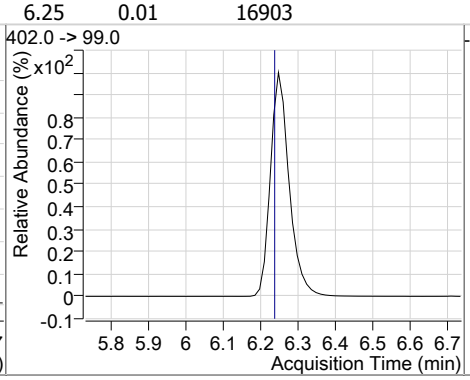


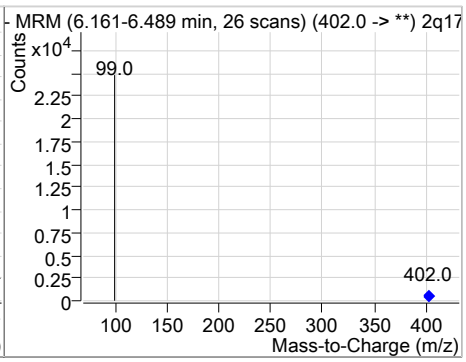




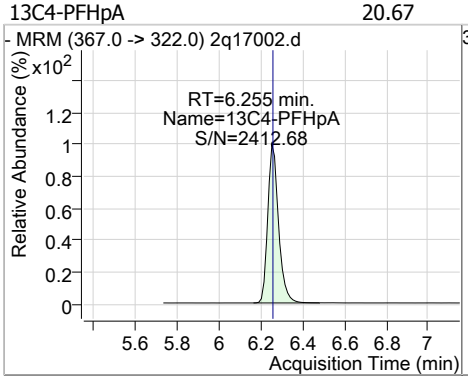
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.25	6.25	0.01	16903				

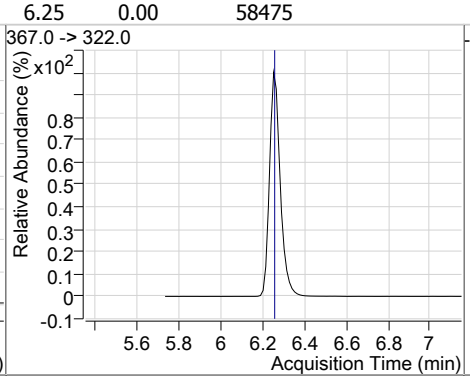


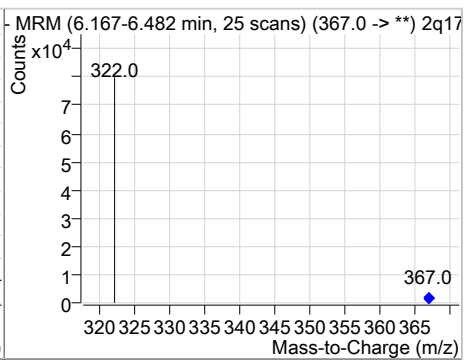




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.67	6.25	0.00	58475				

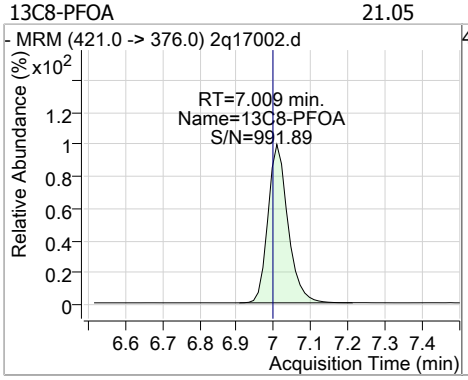


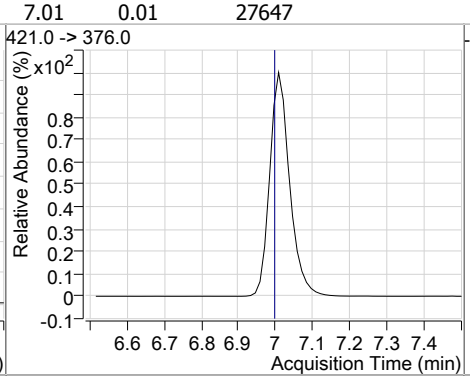


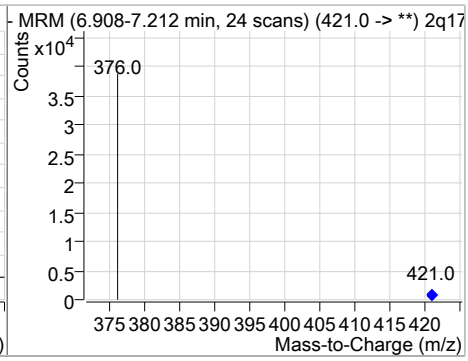


Perfluorinated Compounds by LC/MS/MS

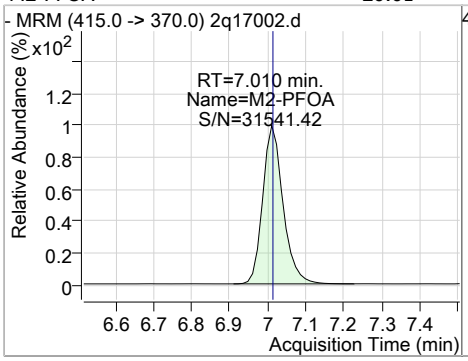
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.05	7.01	0.01	27647				

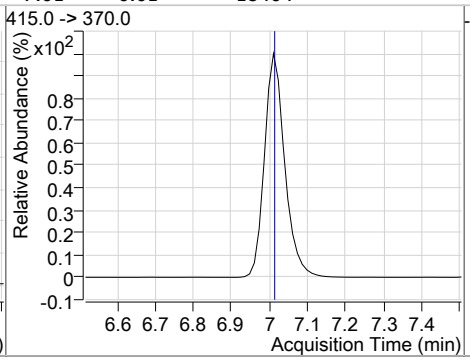


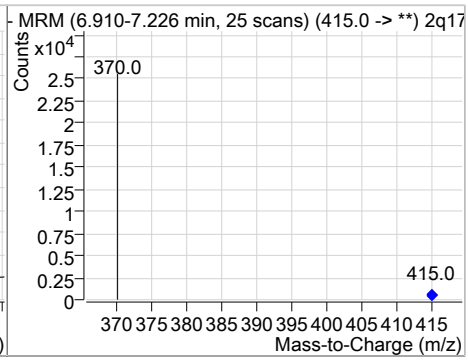




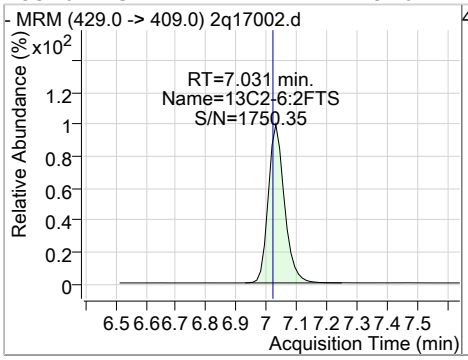
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.01	7.01	0.01	18464				

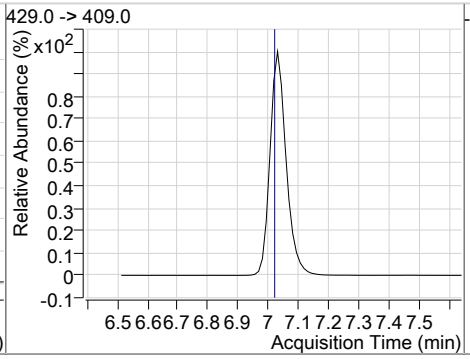


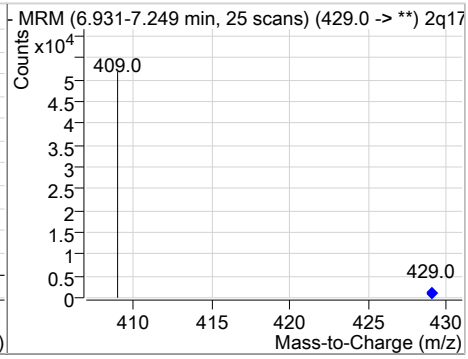




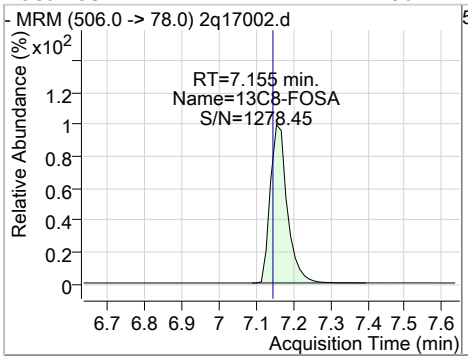
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.16	7.03	0.01	37382				

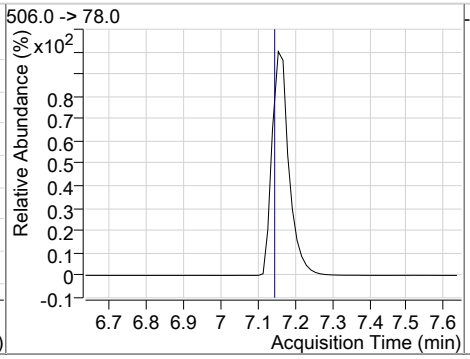


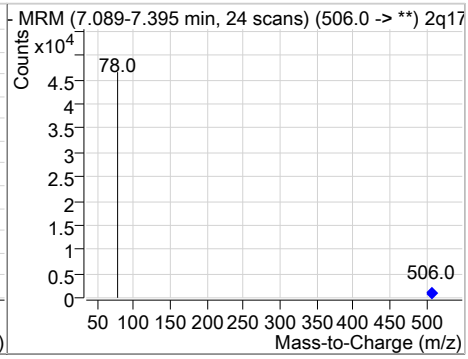




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.90	7.16	0.01	35222				

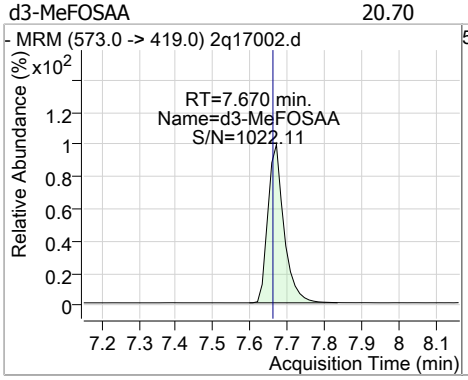


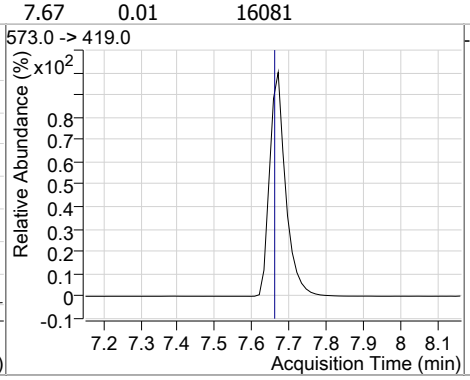


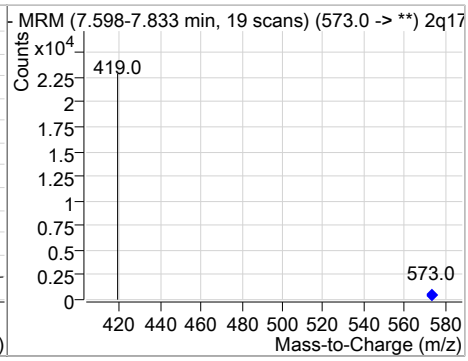


Perfluorinated Compounds by LC/MS/MS

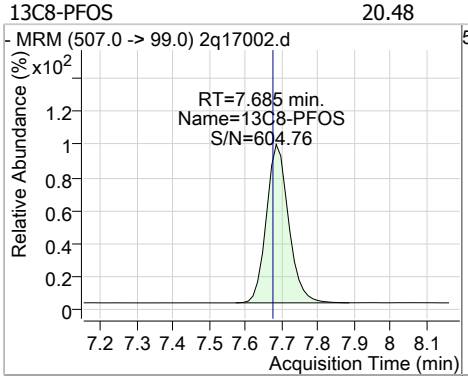
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.70	7.67	0.01	16081				

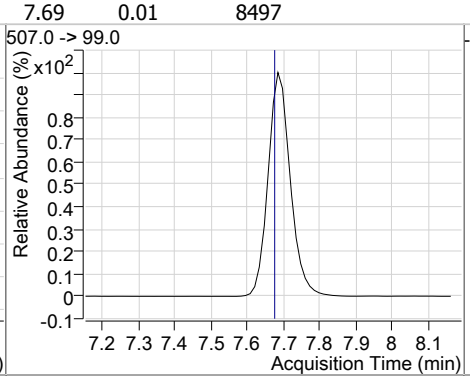


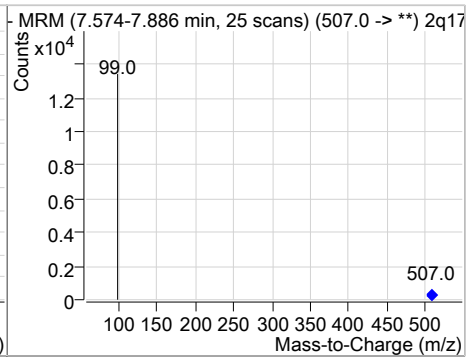




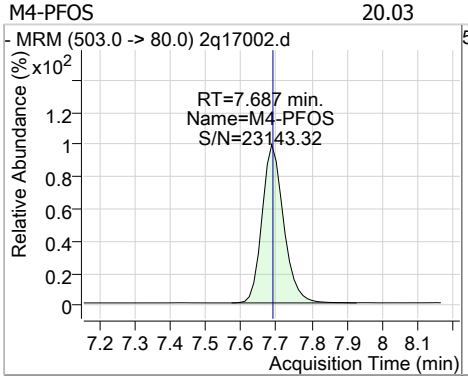
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.48	7.69	0.01	8497				

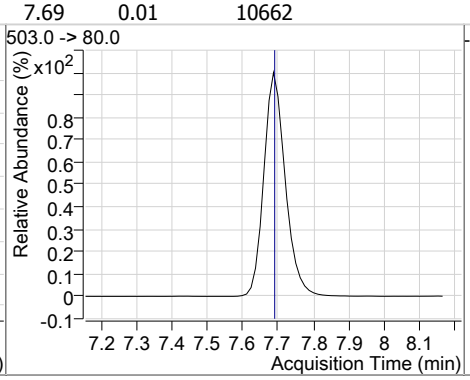


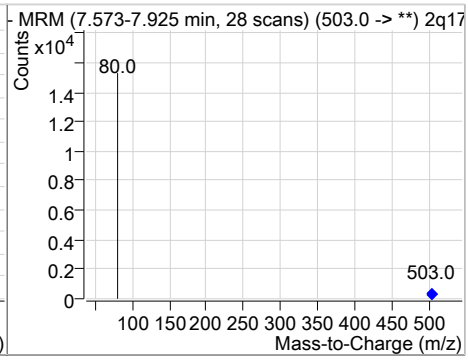




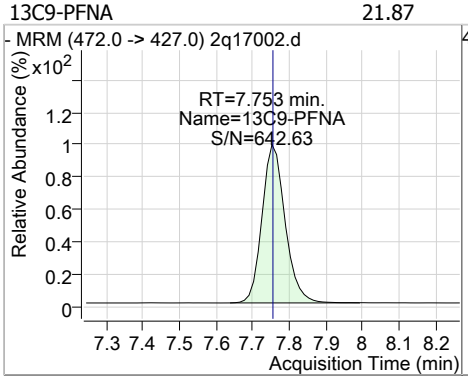
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.03	7.69	0.01	10662				

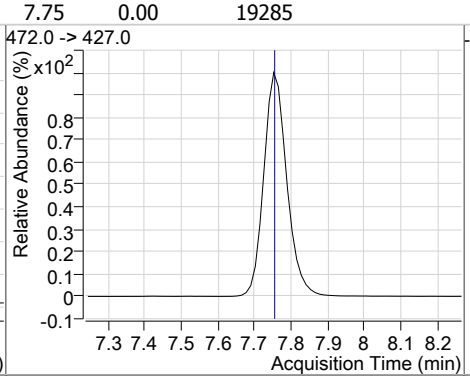


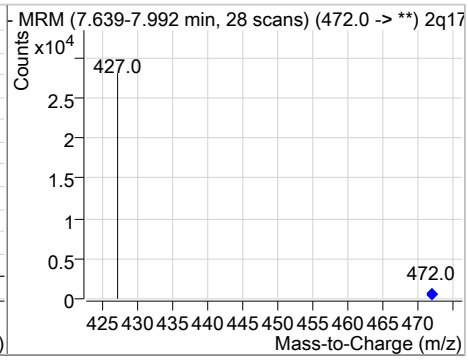




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.87	7.75	0.00	19285				

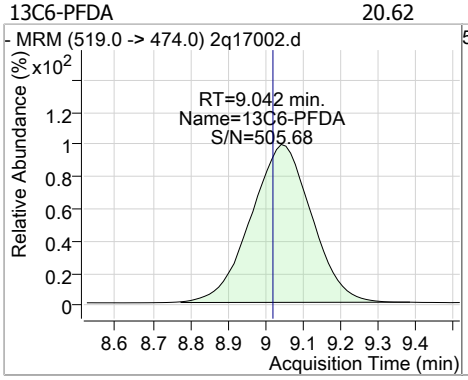


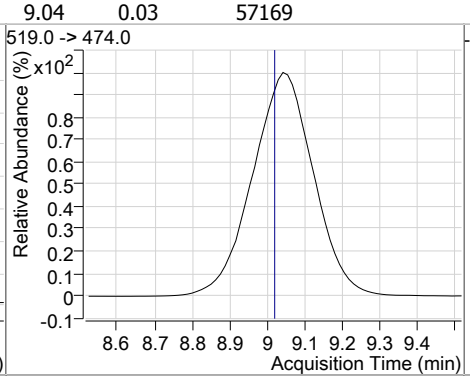


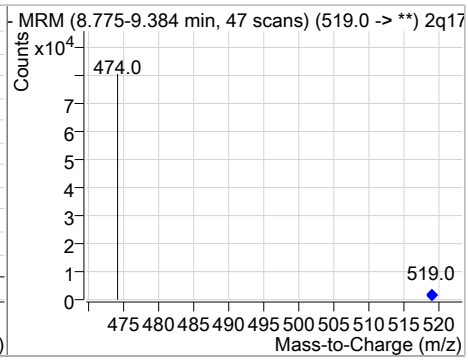


Perfluorinated Compounds by LC/MS/MS

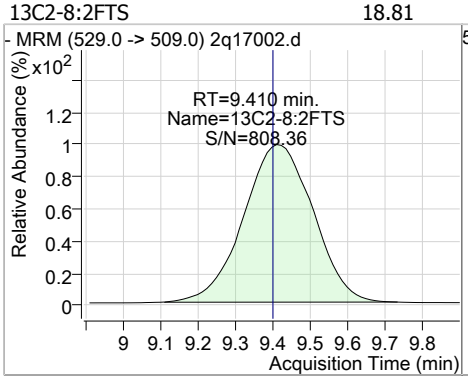
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.62	9.04	0.03	57169				

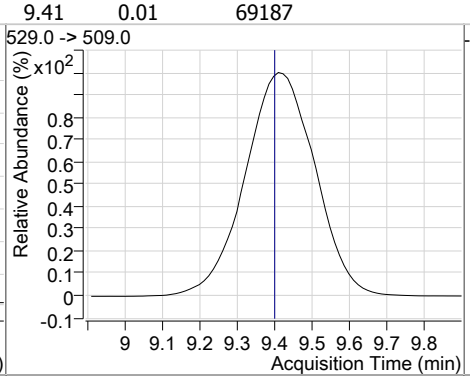


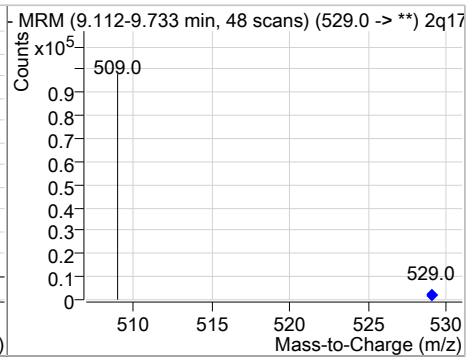




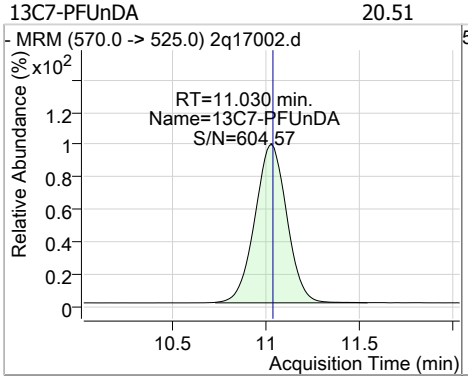
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.81	9.41	0.01	69187				

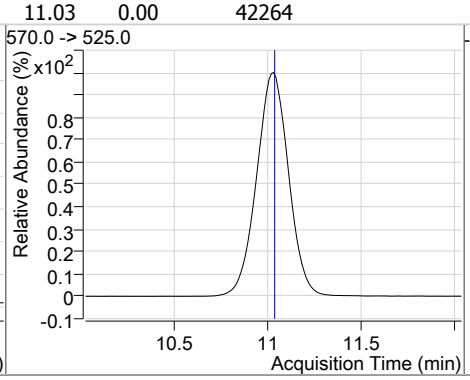


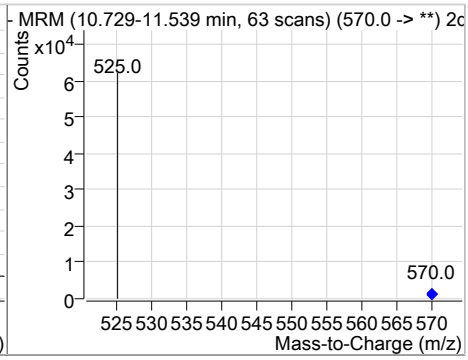




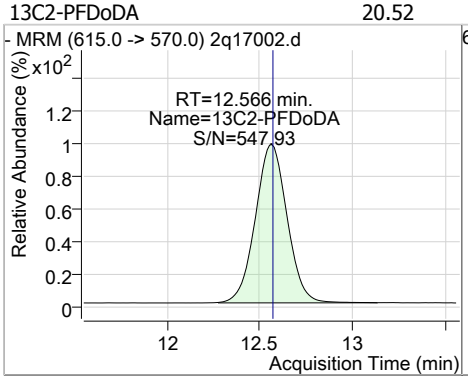
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.51	11.03	0.00	42264				

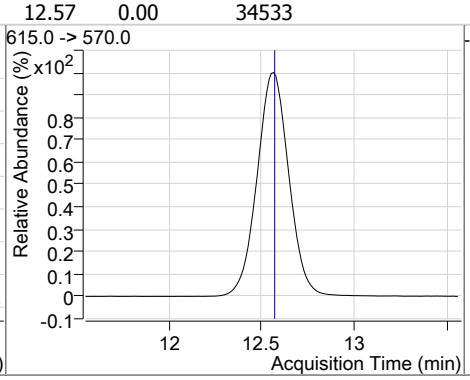


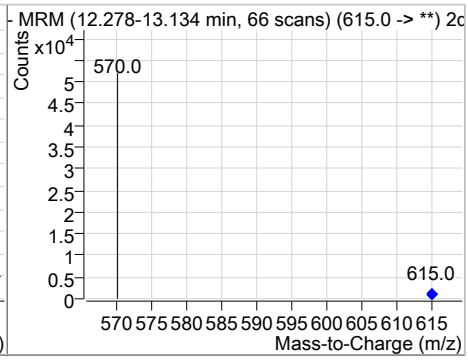




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.52	12.57	0.00	34533				

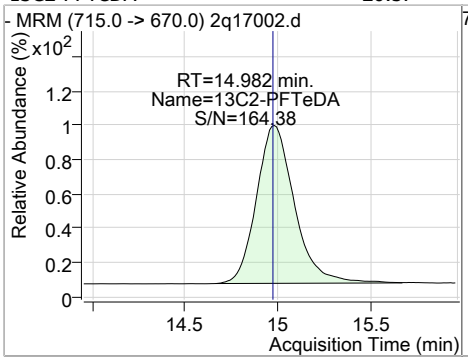


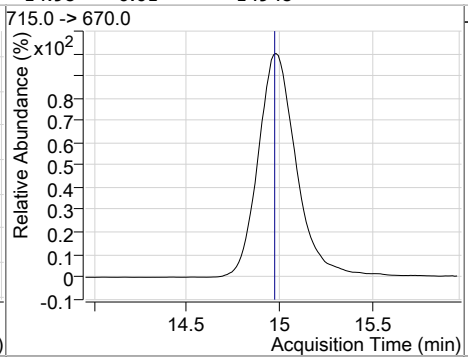


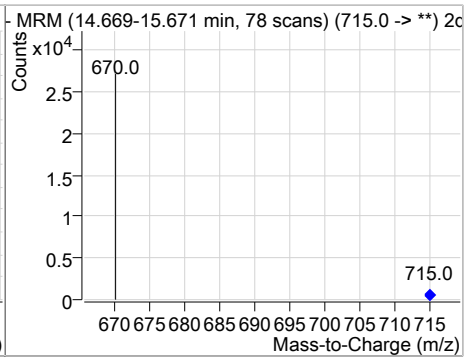


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.57	14.98	0.01	14948				







Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
07/06/18 17:16

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16574.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/5/2018 7:48:34 PM
Sample Name : op70743-bs
Vial : Vial 11
DA Method File : PFC_ID_070518_S2Q291.quantmethod.xml
Batch Name : s2q291.batch.bin
Sample Information : op70743,S2Q291,130,,,1.0,1,water

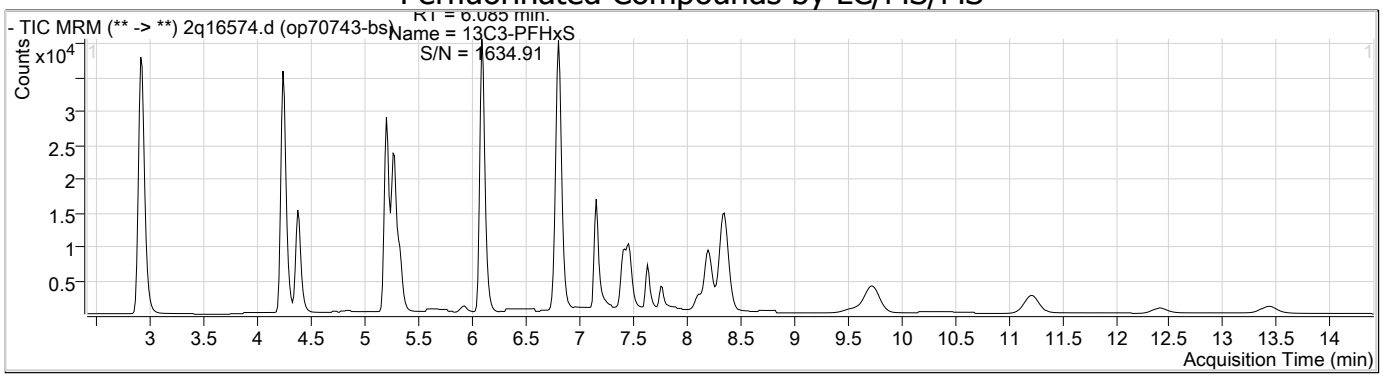
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.798	415.0 -> 370.0	19160	20.00	µg/L	0.000
13C4-PFOS	7.410	503.0 -> 80.0	9663	20.00	µg/L	0.012
M4-PFBA	2.903	217.0 -> 172.0	130522	20.00	µg/L	0.000
M5-PFPeA	4.237	268.0 -> 223.0	61488	20.00	µg/L	0.000
M5-PFHxA	5.278	318.0 -> 273.0	55772	20.00	µg/L	0.012
M4-PFHpA	6.091	367.0 -> 322.0	54481	20.00	µg/L	0.000
M8-PFOA	6.796	421.0 -> 376.0	29323	20.00	µg/L	0.000
M9-PFNA	7.462	472.0 -> 427.0	19728	20.00	µg/L	0.012
M6-PFDA	8.205	519.0 -> 474.0	32175	20.00	µg/L	0.025
M7-PFUnDA	9.728	570.0 -> 525.0	25787	20.00	µg/L	0.050
M2-PFDoDA	11.215	615.0 -> 570.0	16613	20.00	µg/L	0.045
M2-PFTeDA	13.431	715.0 -> 670.0	7057	20.00	µg/L	0.050
M8-FOSA	7.155	506.0 -> 78.0	29247	20.00	µg/L	0.012
M3-PFBS	4.368	302.0 -> 99.0	18573	20.00	µg/L	0.000
M3-PFHxS	6.085	402.0 -> 99.0	16959	20.00	µg/L	0.000
M8-PFOS	7.407	507.0 -> 99.0	8291	20.00	µg/L	0.012
M2-4:2FTS	5.198	329.0 -> 309.0	54965	20.00	µg/L	0.000
M2-6:2FTS	6.818	429.0 -> 409.0	44248	20.00	µg/L	0.010
M2-8:2FTS	8.349	529.0 -> 509.0	53310	20.00	µg/L	0.023
M3-MeFOSAA	7.632	573.0 -> 419.0	12467	20.00	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	5.198	329.0 -> 309.0	54963	16.76	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.8%		
13C2-6:2FTS	6.818	429.0 -> 409.0	44260	16.75	µg/L	0.010
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.7%		
13C2-8:2FTS	8.349	529.0 -> 509.0	53275	16.42	µg/L	0.023
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.1%		
13C2-PFDoDA	11.215	615.0 -> 570.0	16622	11.34	µg/L	0.045
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 56.7%		
13C2-PFTeDA	13.431	715.0 -> 670.0	7096	11.44	µg/L	0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 57.2%		
13C3-PFBS	4.368	302.0 -> 99.0	18583	16.81	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.1%		
13C3-PFHxS	6.085	402.0 -> 99.0	16969	16.94	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.7%		
13C4-PFBA	2.903	217.0 -> 172.0	130481	17.04	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.2%		
13C4-PFHpA	6.091	367.0 -> 322.0	54470	16.90	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.5%		
13C5-PFHxA	5.278	318.0 -> 273.0	55773	17.02	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.1%		
13C5-PFPeA	4.237	268.0 -> 223.0	61495	16.88	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.4%		
13C6-PFDA	8.205	519.0 -> 474.0	32195	17.39	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.9%		

Perfluorinated Compounds by LC/MS/MS

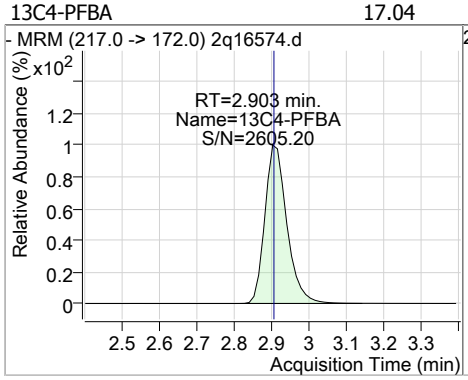
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	9.728	570.0 -> 525.0	25828	12.63	µg/L		0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 63.1%			
13C8-FOSA	7.155	506.0 -> 78.0	29238	16.61	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.0%			
13C8-PFOA	6.796	421.0 -> 376.0	29320	16.84	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.2%			
13C8-PFOS	7.407	507.0 -> 99.0	8293	16.93	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.6%			
13C9-PFNA	7.462	472.0 -> 427.0	19733	16.59	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.9%			
d3-MeFOSAA	7.632	573.0 -> 419.0	12468	14.20	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.0%			
M2-PFOA	6.798	415.0 -> 370.0	19168	20.01	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
M4-PFOS	7.410	503.0 -> 80.0	9663	20.00	ng/ml		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
Target Compounds							**QValue**
4:2FTS	5.200	327.0 -> 307.0	27785	19.95	µg/L		98
6:2FTS	6.819	427.0 -> 407.0	21710	20.06	µg/L		92
8:2FTS	8.351	527.0 -> 507.0	27417	19.25	µg/L		81
EtFOSAA	7.769	584.0 -> 419.0	3890	19.63	µg/L		86
FOSA	7.157	498.0 -> 78.0	14934	20.42	µg/L		96
MeFOSAA	7.633	570.0 -> 419.0	4814	21.98	µg/L		96
PFBA	2.912	213.0 -> 169.0	23025	21.93	µg/L		100
PFBS	4.371	299.0 -> 80.0	23901	19.17	µg/L		97
PFDA	8.206	513.0 -> 469.0	11421	18.67	µg/L		97
PFDoDA	11.221	613.0 -> 569.0	9538	22.61	µg/L		98
PFDS	9.524	599.0 -> 80.0	4255	18.37	µg/L		90
PFHpA	6.095	363.0 -> 319.0	42097	21.68	µg/L		94
PFHpS	6.766	449.0 -> 80.0	9660	19.66	µg/L		100
PFHxA	5.280	313.0 -> 269.0	17638	19.47	µg/L		97
PFHxS	6.088	399.0 -> 80.0	17606	18.72	µg/L	m	97
PFNA	7.463	463.0 -> 419.0	7754	19.78	µg/L		86
PFNS	8.113	549.0 -> 80.0	6409	17.04	µg/L		96
PFOA	6.799	413.0 -> 369.0	15747	21.40	µg/L		91
PFOS	7.410	499.0 -> 80.0	11010	21.98	µg/L	m	77
PFPeA	4.241	263.0 -> 219.0	64696	21.78	µg/L		100
PFPeS	5.320	349.0 -> 80.0	15184	19.90	µg/L		98
PFTeDA	13.437	713.0 -> 669.0	4301	19.61	µg/L		91
PFTrDA	12.412	663.0 -> 619.0	7426	23.25	µg/L		96
PFUnDA	9.733	563.0 -> 519.0	13620	22.44	µg/L		99

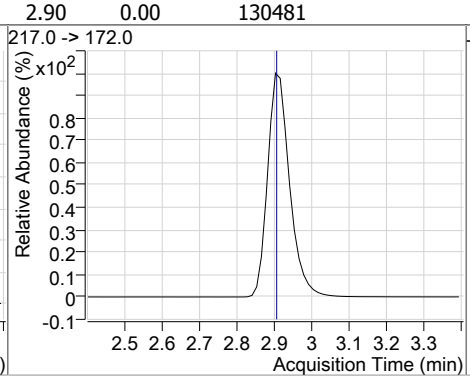
 # = Qualifier out of range, m = manually integrated, + = Area summed

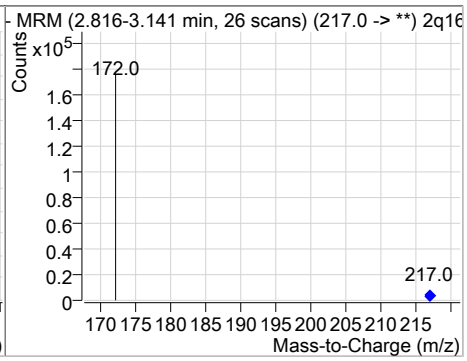
Perfluorinated Compounds by LC/MS/MS



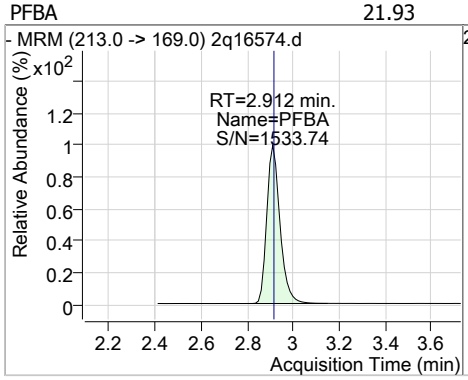
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	17.04	2.90	0.00	130481				

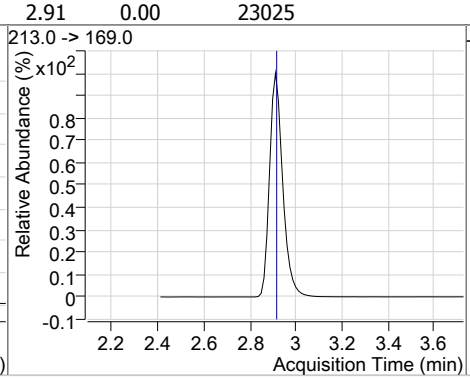


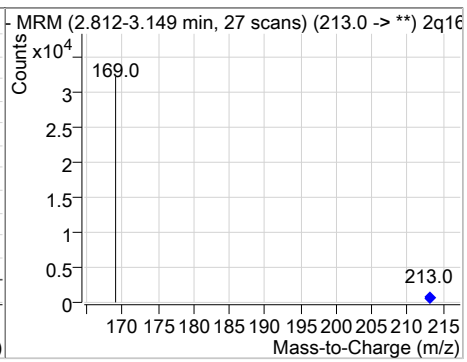




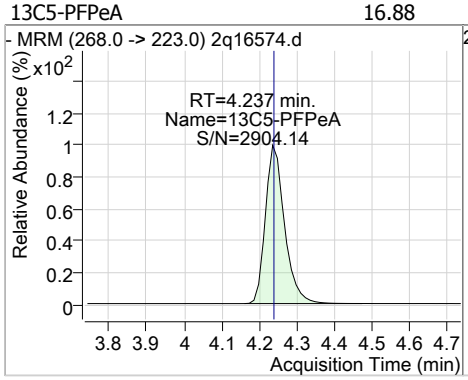
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	21.93	2.91	0.00	23025				

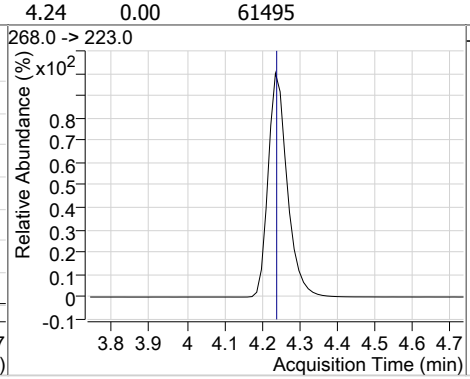


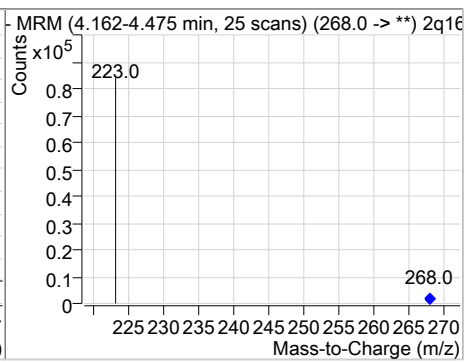




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	16.88	4.24	0.00	61495				

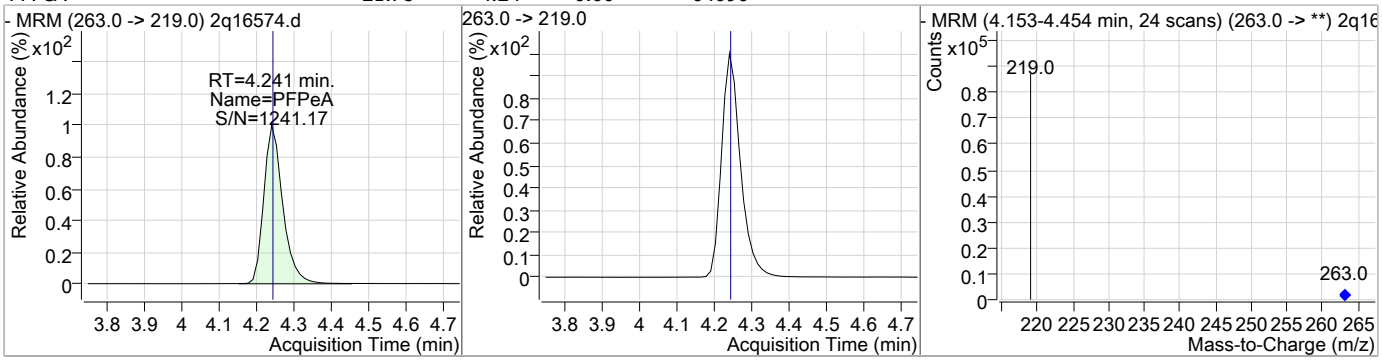




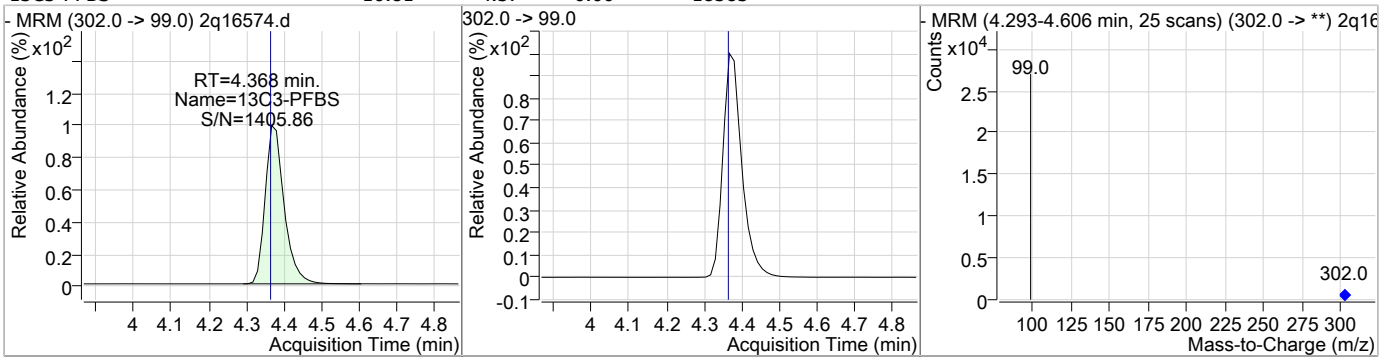


Perfluorinated Compounds by LC/MS/MS

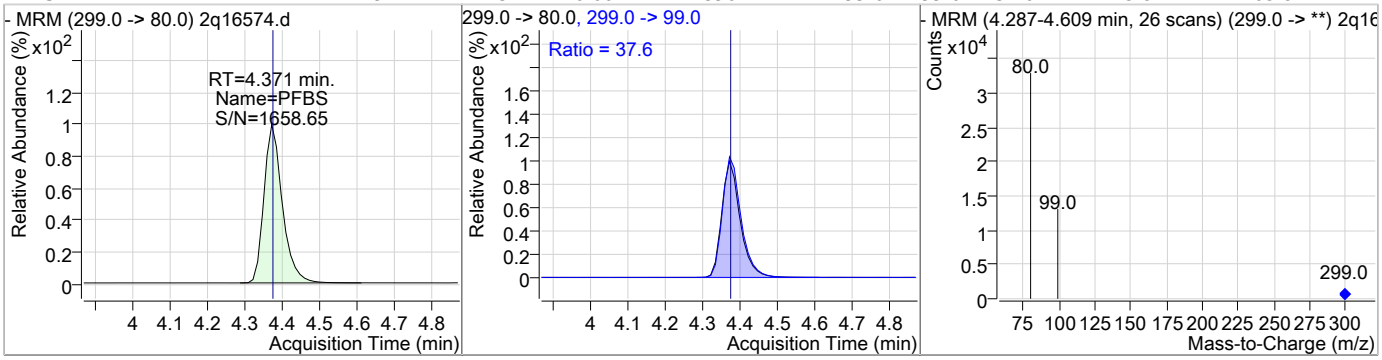
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	21.78	4.24	0.00	64696				



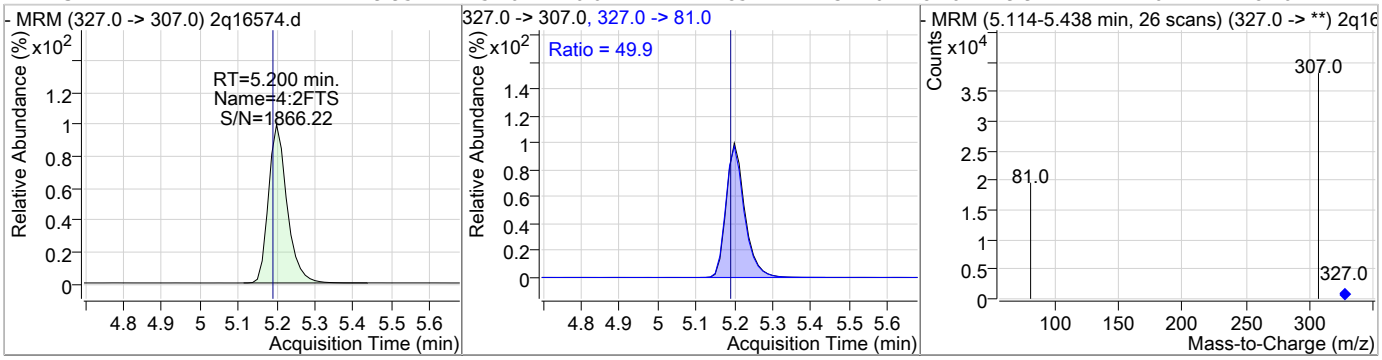
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	16.81	4.37	0.00	18583				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.17	4.37	0.00	23901	299.0 -> 99.0	37.6	5.8	65.8

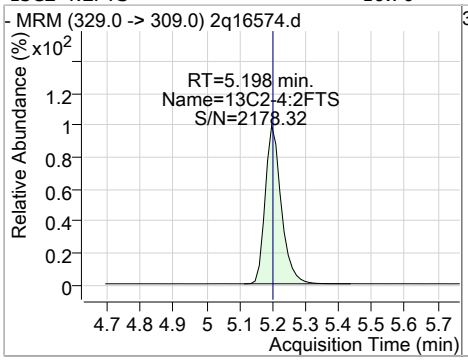


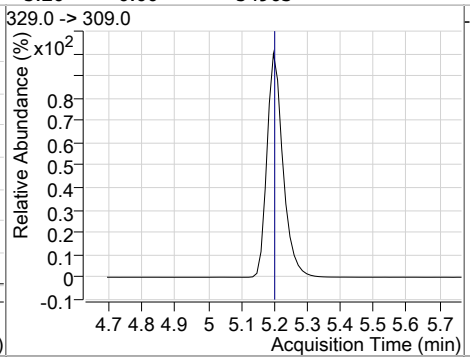
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.95	5.20	0.01	27785	327.0 -> 81.0	49.9	21.0	81.0

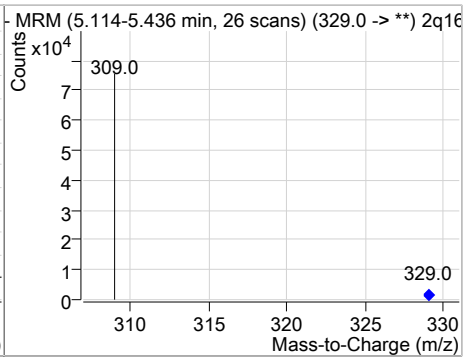


Perfluorinated Compounds by LC/MS/MS

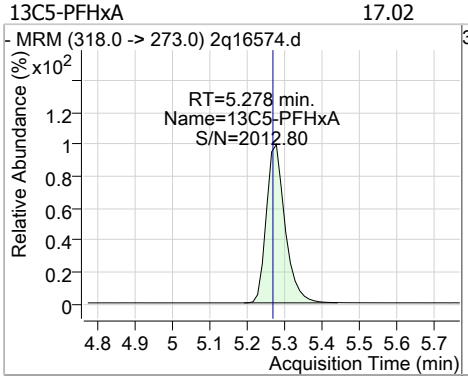
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	16.76	5.20	0.00	54963				

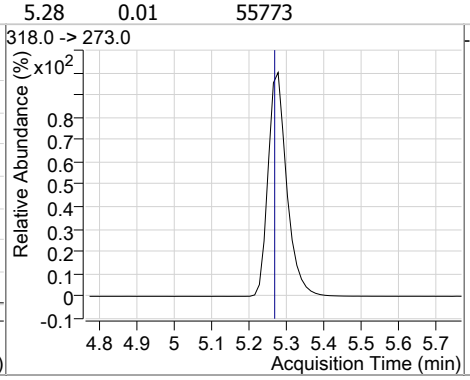


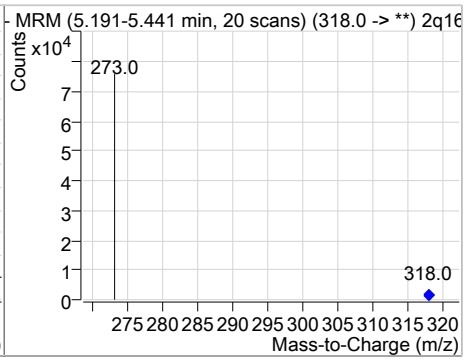




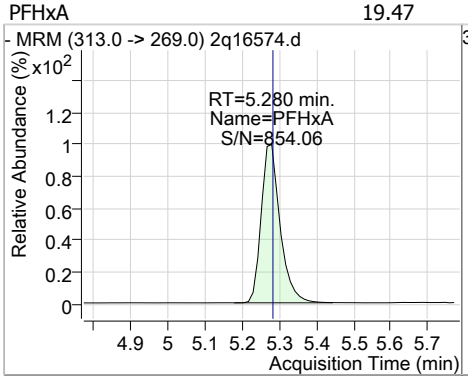
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	17.02	5.28	0.01	55773				

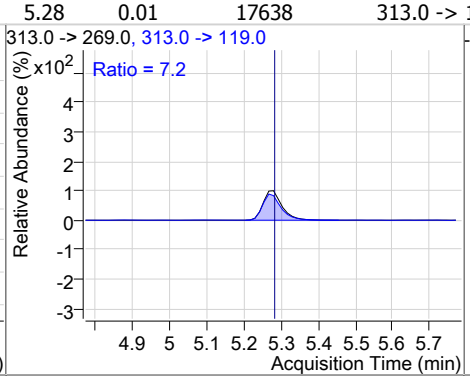


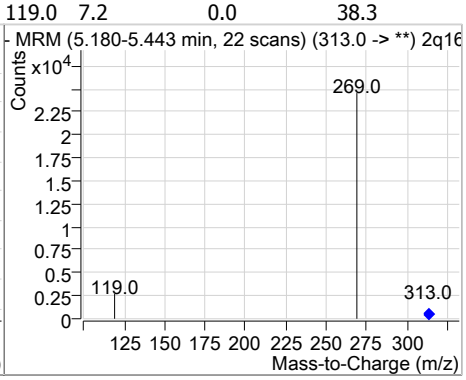




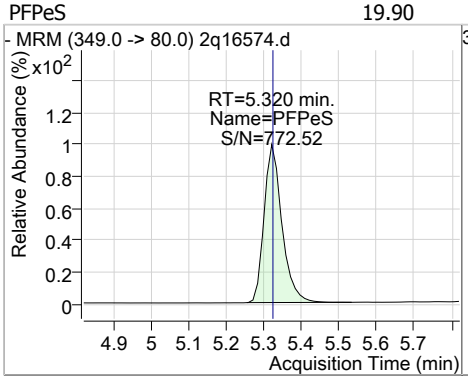
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.47	5.28	0.01	17638	313.0 -> 119.0	7.2	0.0	38.3

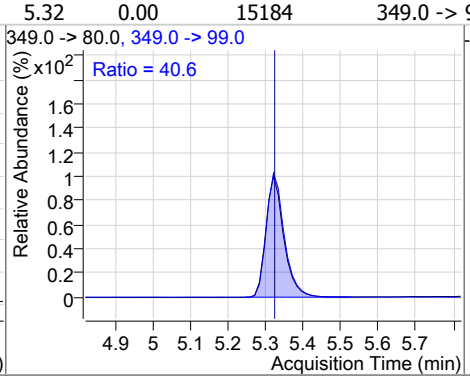


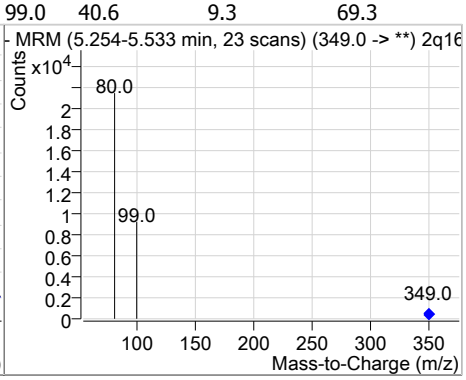




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.90	5.32	0.00	15184	349.0 -> 99.0	40.6	9.3	69.3

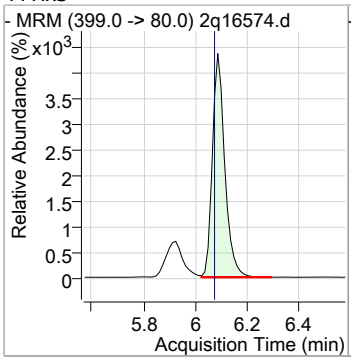


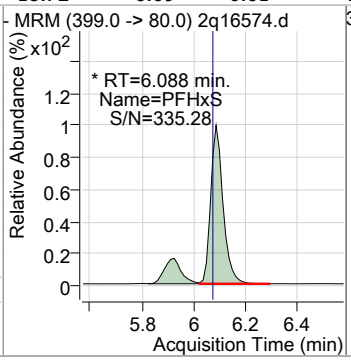


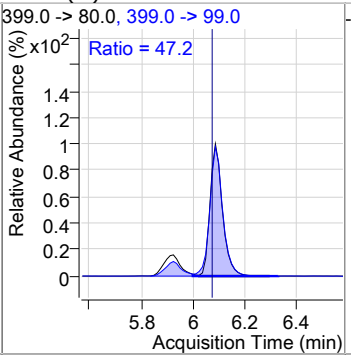


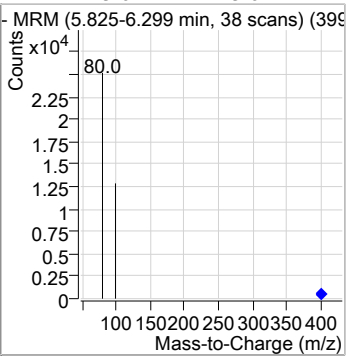
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	18.72	6.09	0.01	17606 (m)	399.0 -> 99.0	47.2	19.0	79.0

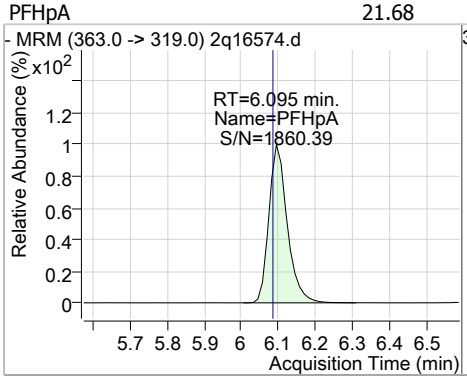


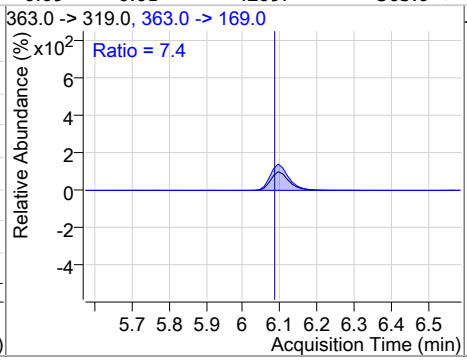


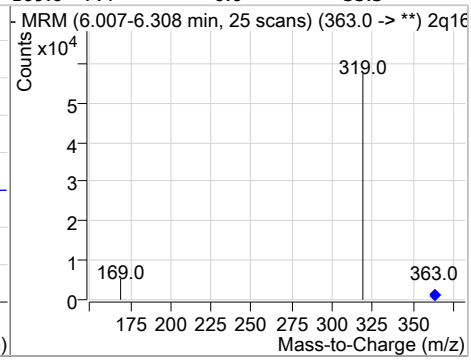




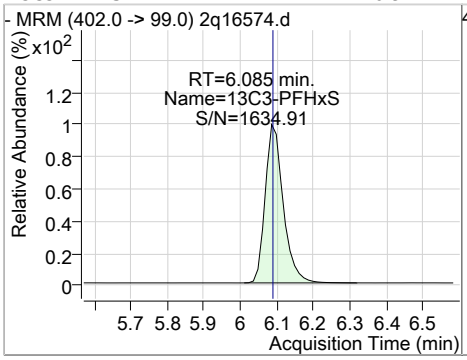
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	21.68	6.09	0.01	42097	363.0 -> 169.0	7.4	0.0	35.3

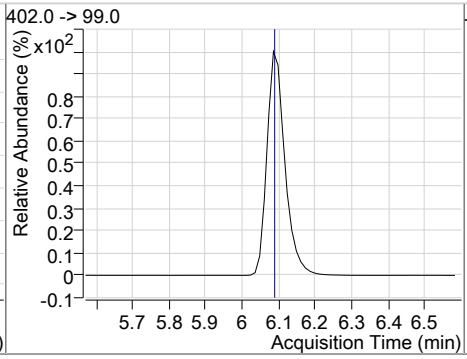


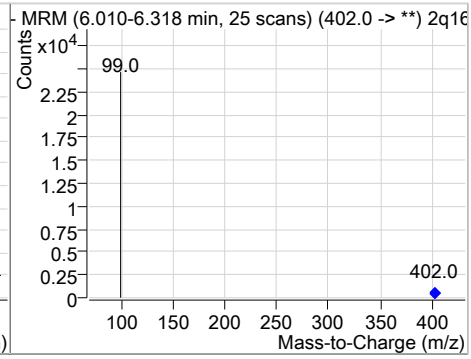




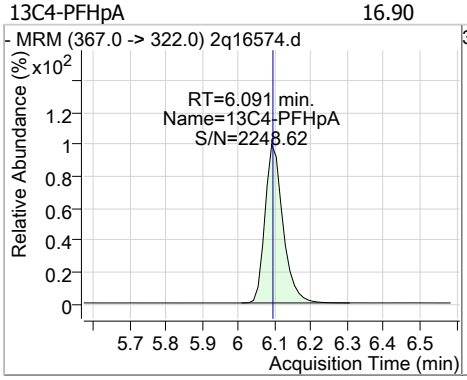
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	16.94	6.09	0.00	16969				

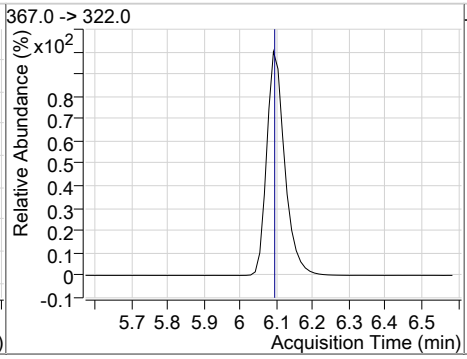


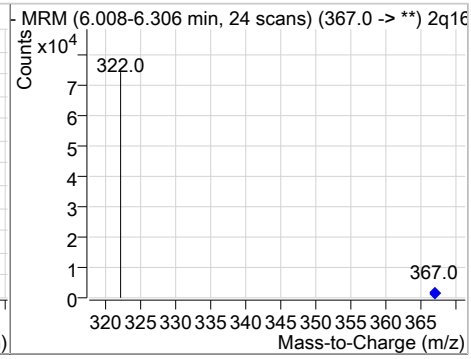




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	16.90	6.09	0.00	54470				

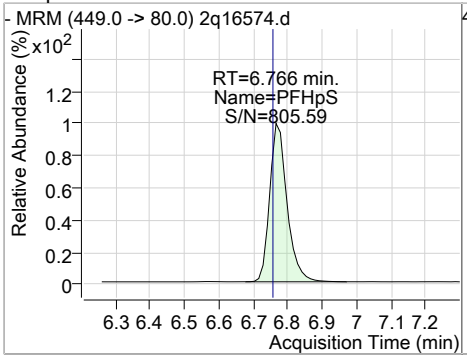


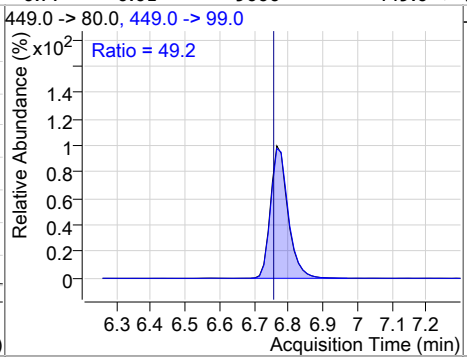


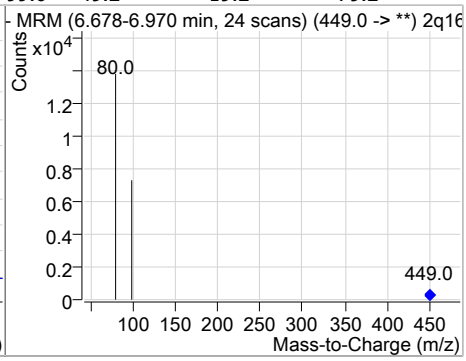


Perfluorinated Compounds by LC/MS/MS

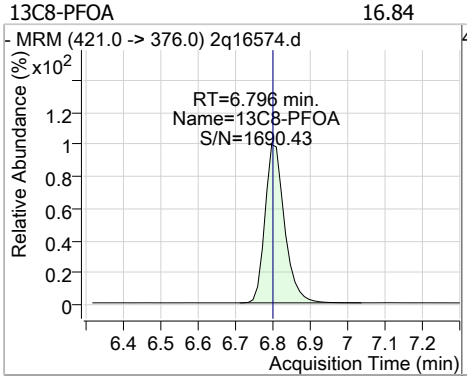
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	19.66	6.77	0.01	9660	449.0 -> 99.0	49.2	19.2	79.2

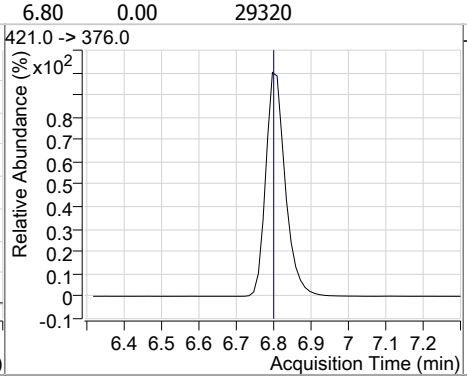


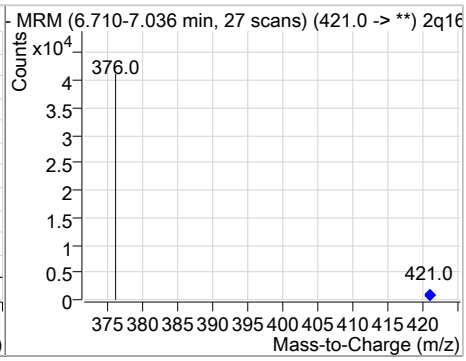




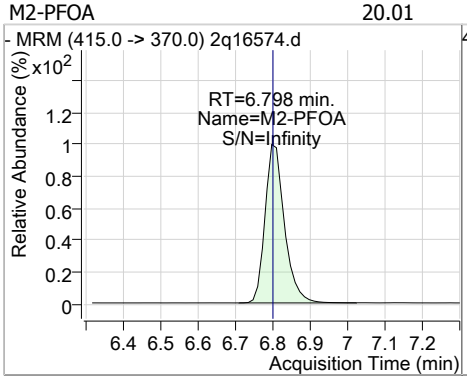
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	16.84	6.80	0.00	29320				

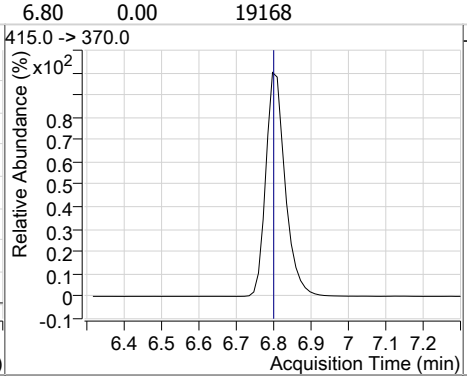


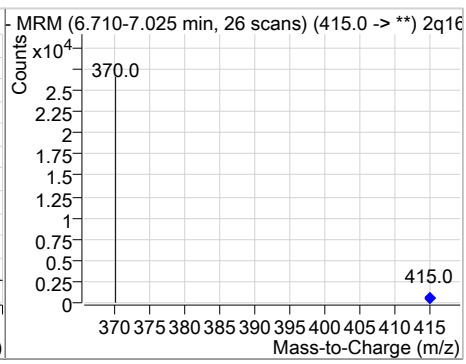




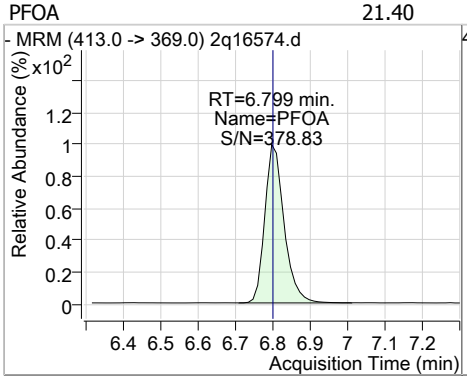
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.01	6.80	0.00	19168				

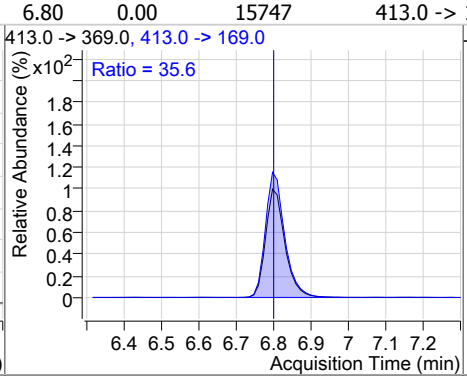


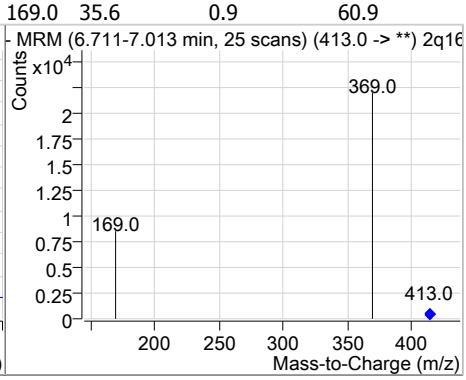




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	21.40	6.80	0.00	15747	413.0 -> 169.0	35.6	0.9	60.9

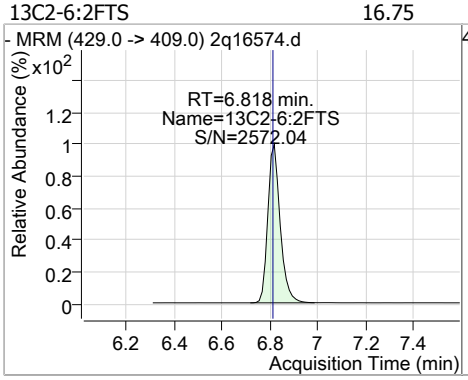


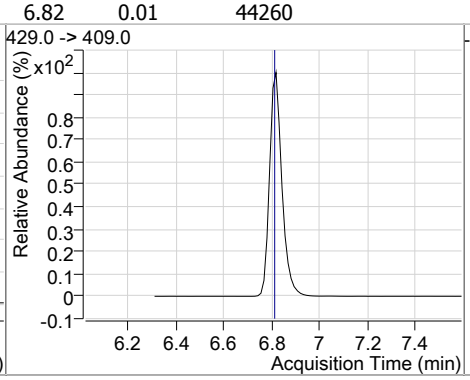


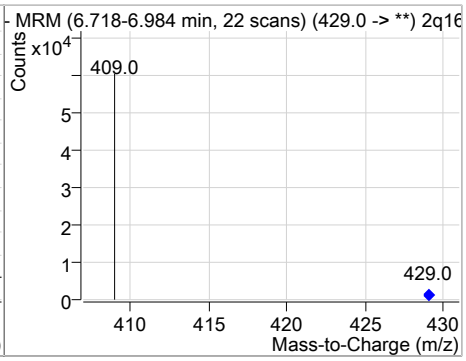


Perfluorinated Compounds by LC/MS/MS

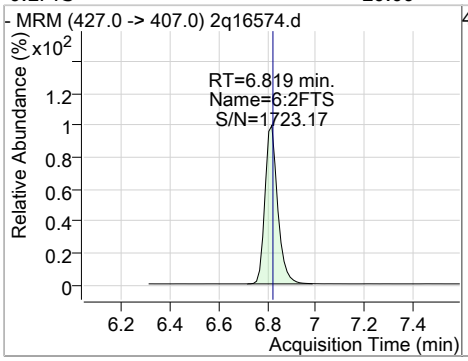
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	16.75	6.82	0.01	44260				

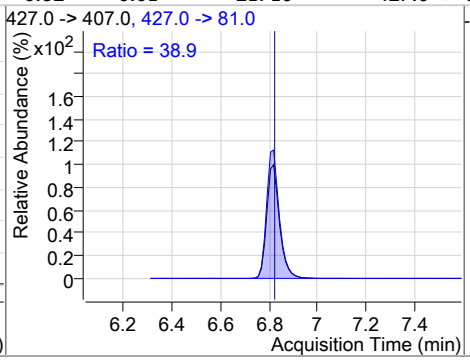


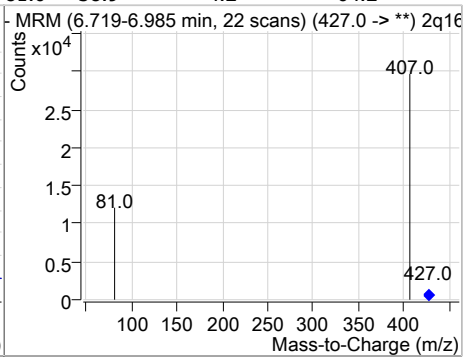




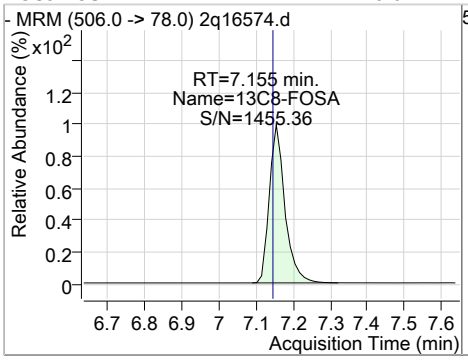
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.06	6.82	0.01	21710	427.0 -> 81.0	38.9	4.2	64.2

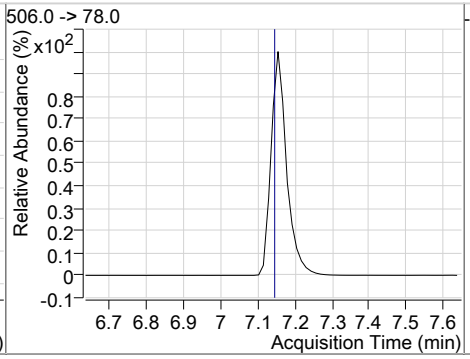


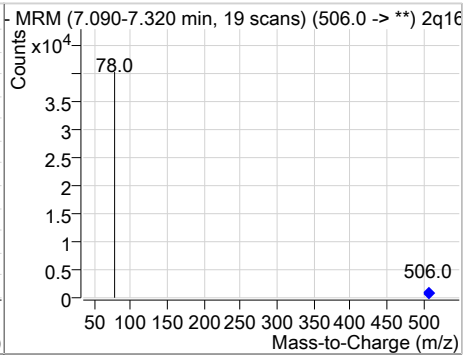




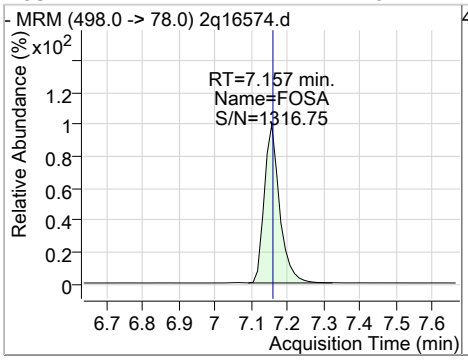
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	16.61	7.15	0.01	29238				

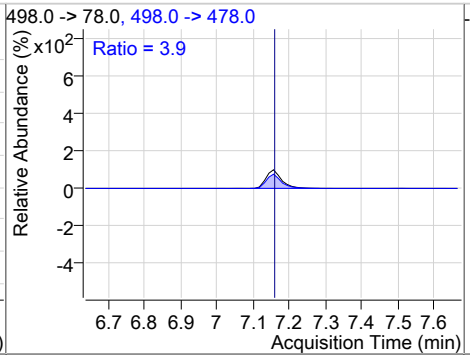


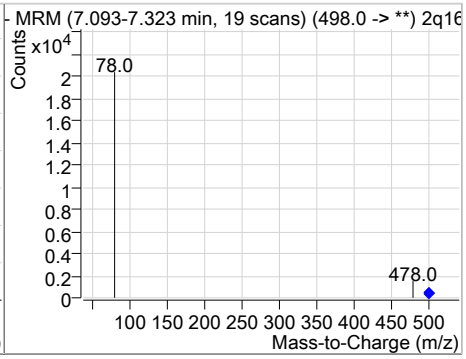




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.42	7.16	0.01	14934	498.0 -> 478.0	3.9	0.0	35.2

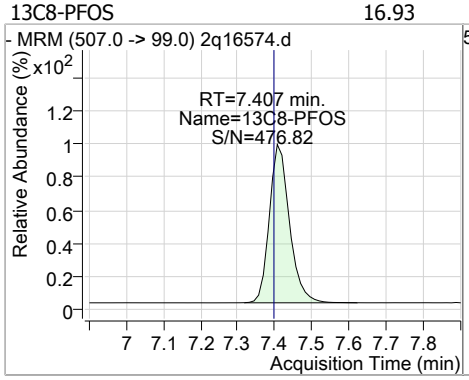


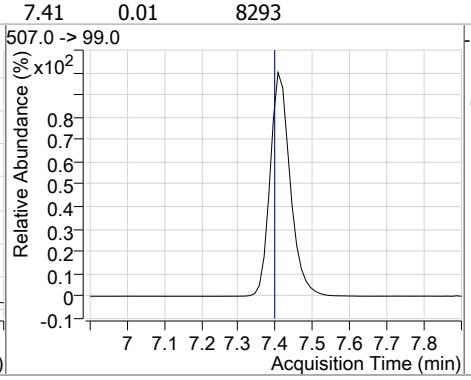


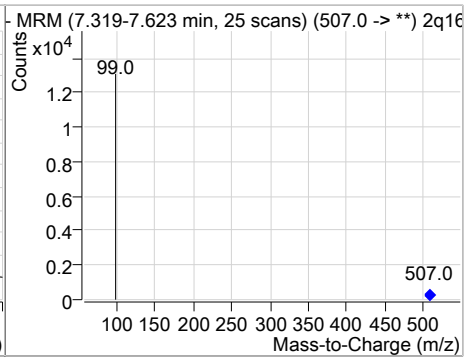


Perfluorinated Compounds by LC/MS/MS

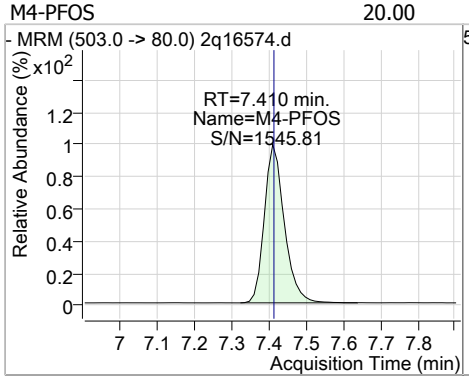
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	16.93	7.41	0.01	8293				

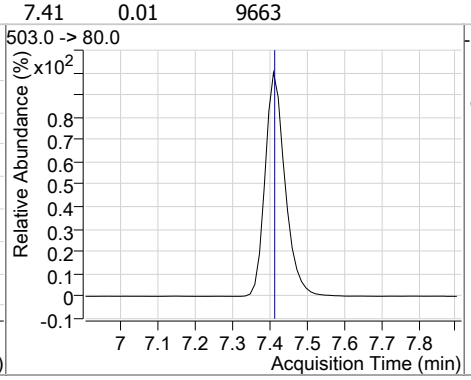


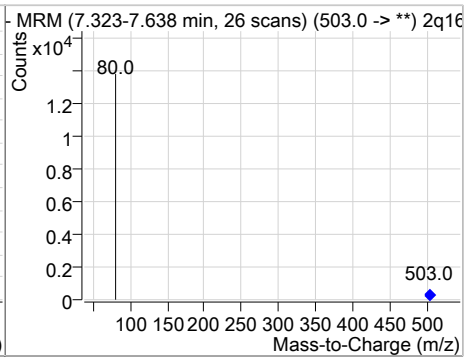




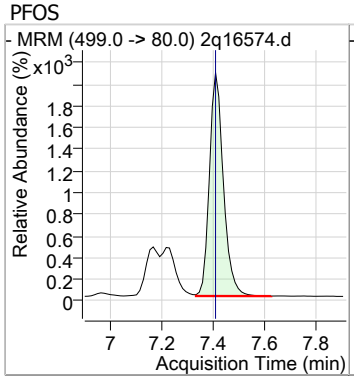
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.00	7.41	0.01	9663				

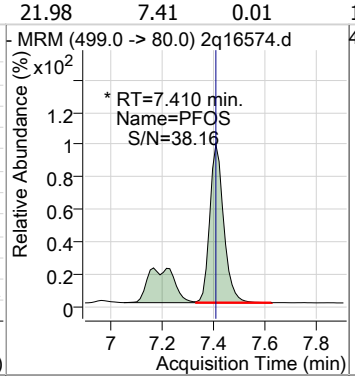


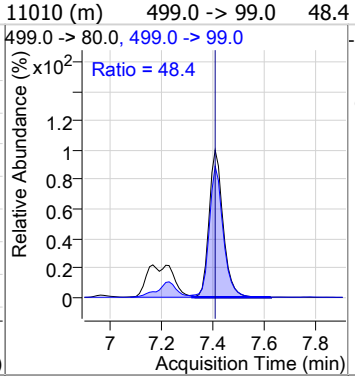


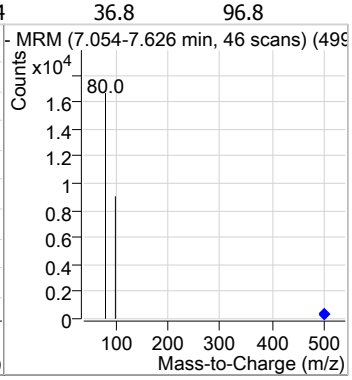


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	21.98	7.41	0.01	11010 (m)	499.0 -> 99.0	48.4	36.8	96.8

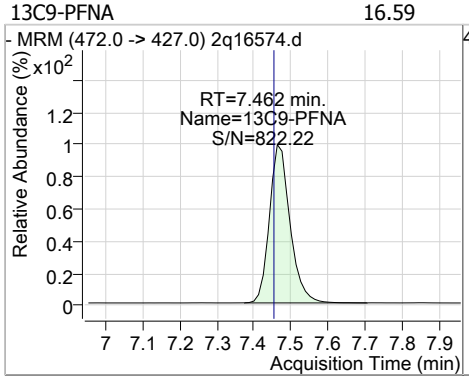


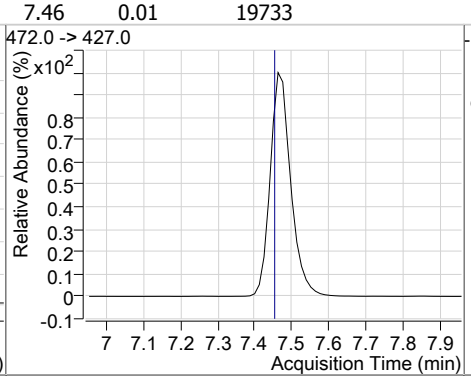


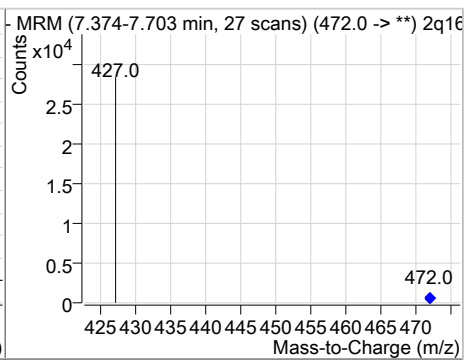




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	16.59	7.46	0.01	19733				

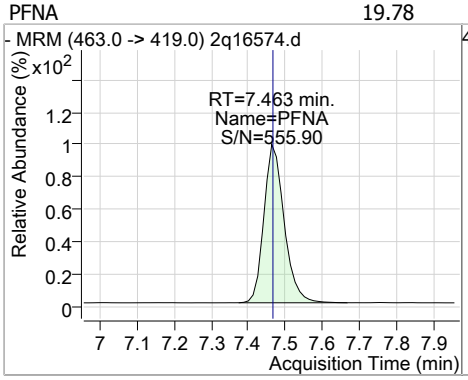


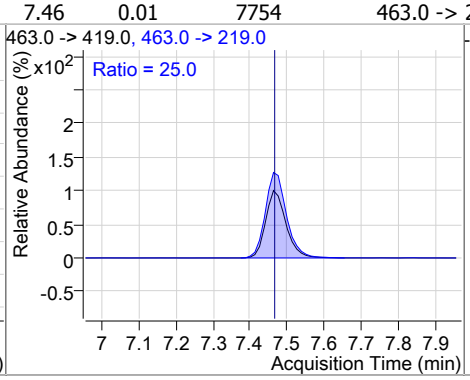


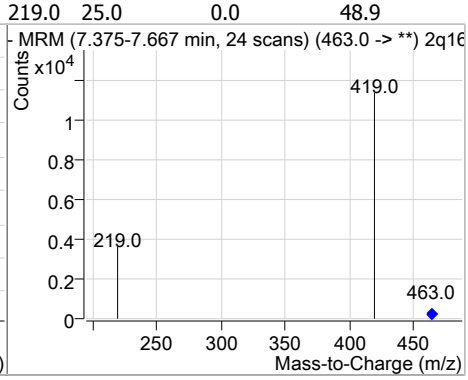


Perfluorinated Compounds by LC/MS/MS

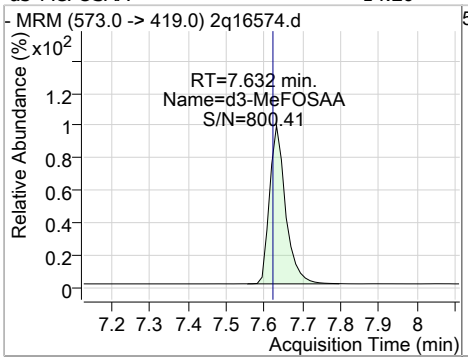
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.78	7.46	0.01	7754	463.0 -> 219.0	25.0	0.0	48.9

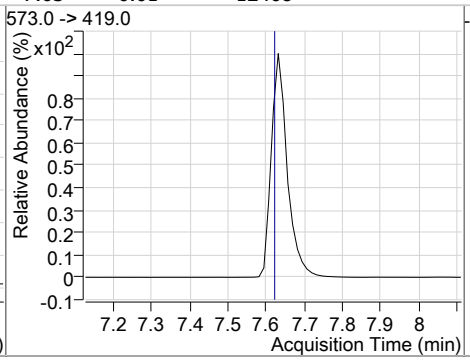


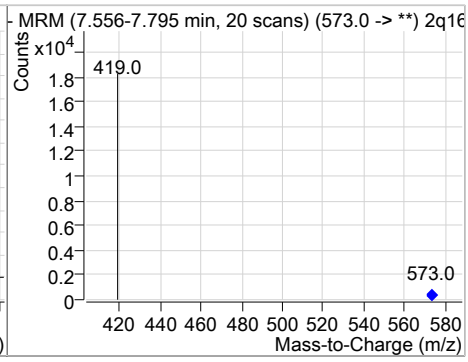




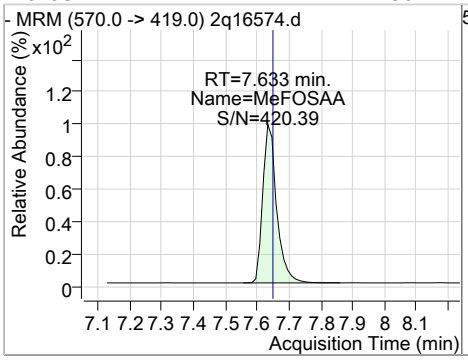
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	14.20	7.63	0.01	12468				

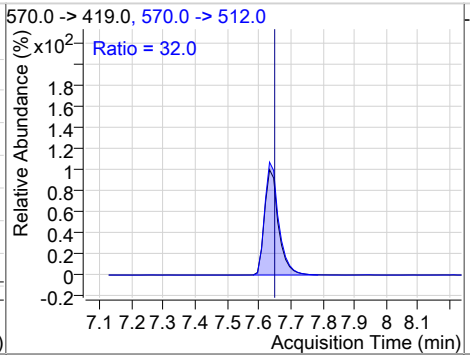


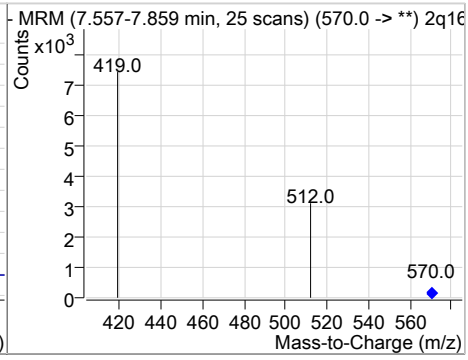




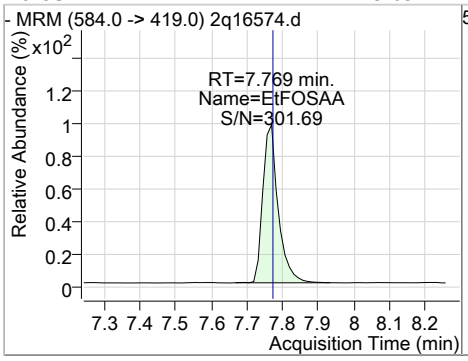
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	21.98	7.63	0.00	4814	570.0 -> 512.0	32.0	0.0	59.6

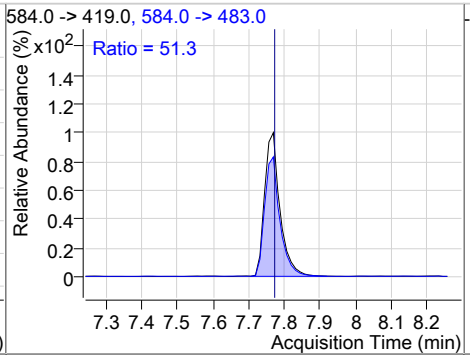


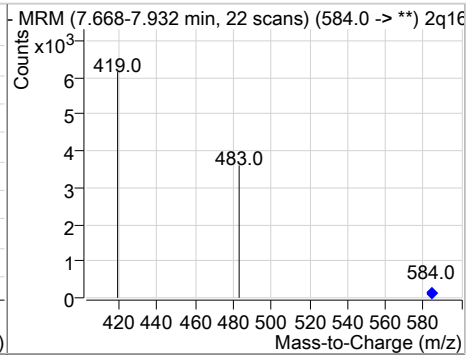




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.63	7.77	0.01	3890	584.0 -> 483.0	51.3	31.9	91.9

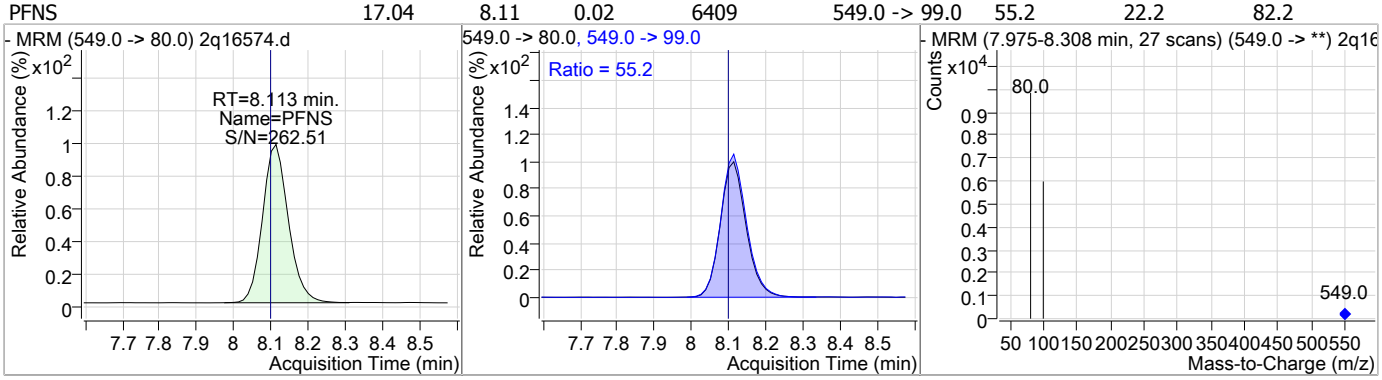




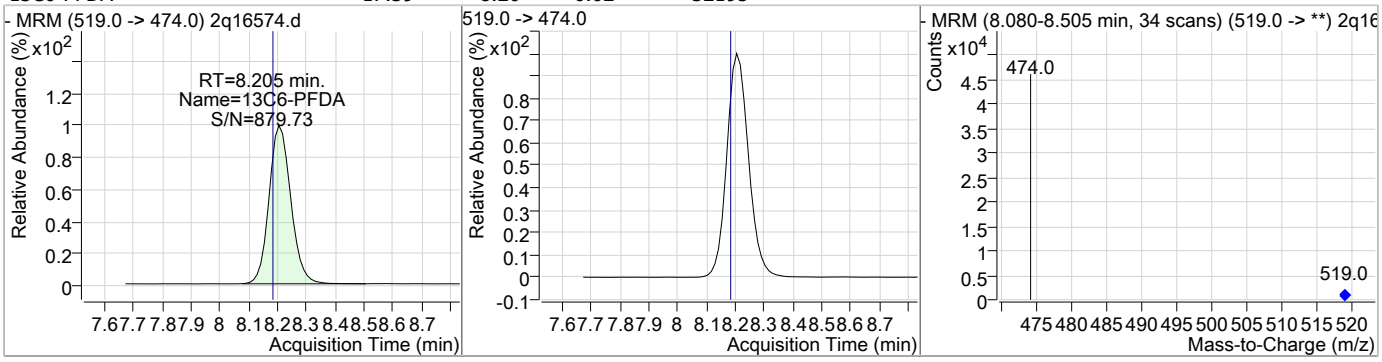


Perfluorinated Compounds by LC/MS/MS

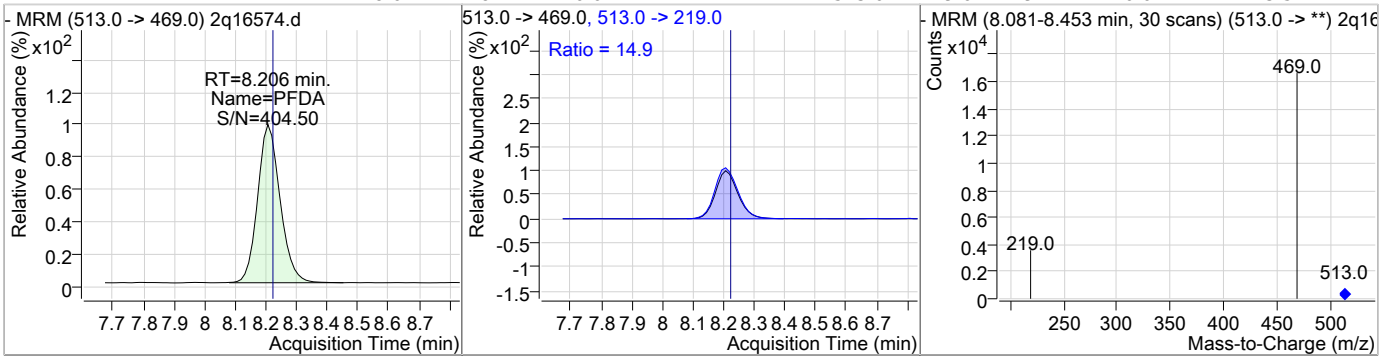
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	17.04	8.11	0.02	6409	549.0 -> 99.0	55.2	22.2	82.2



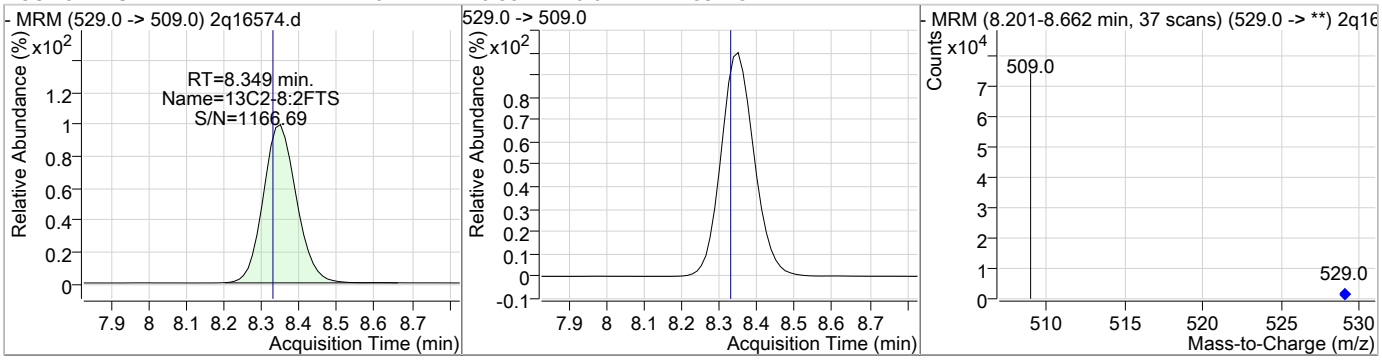
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	17.39	8.20	0.02	32195				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	18.67	8.21	0.01	11421	513.0 -> 219.0	14.9	0.0	43.5

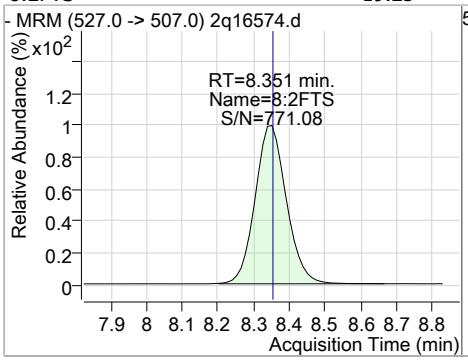


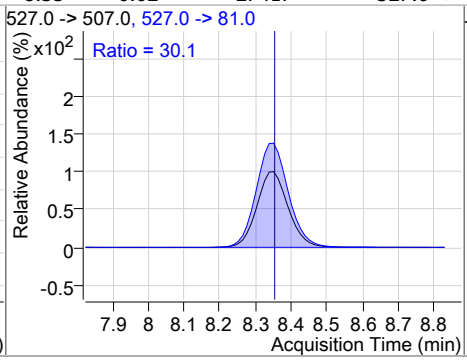
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	16.42	8.35	0.02	53275				

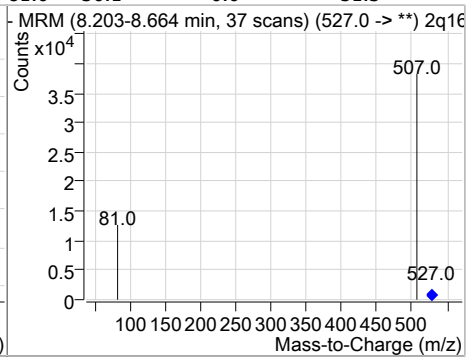


Perfluorinated Compounds by LC/MS/MS

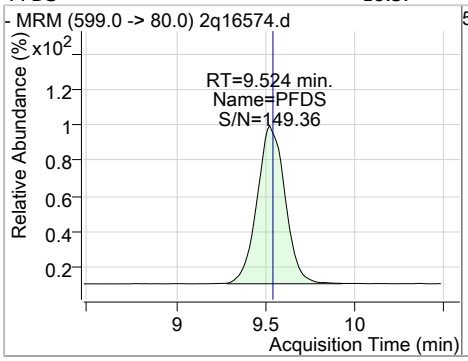
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.25	8.35	0.02	27417	527.0 -> 81.0	30.1	0.0	51.3

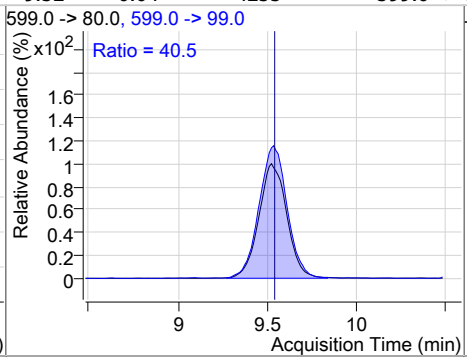


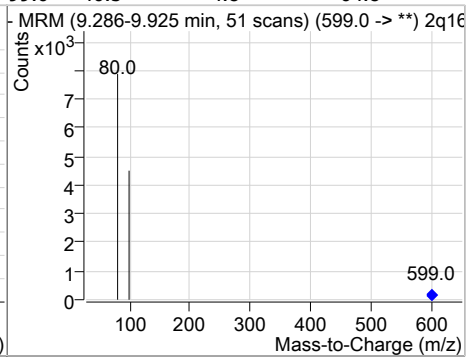




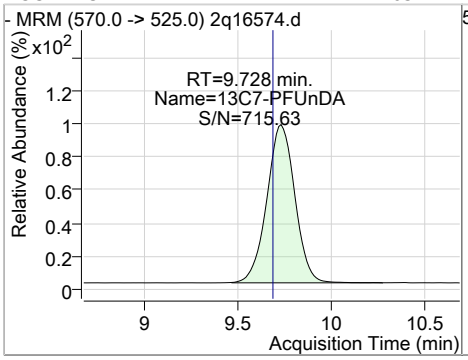
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.37	9.52	0.04	4255	599.0 -> 99.0	40.5	4.8	64.8

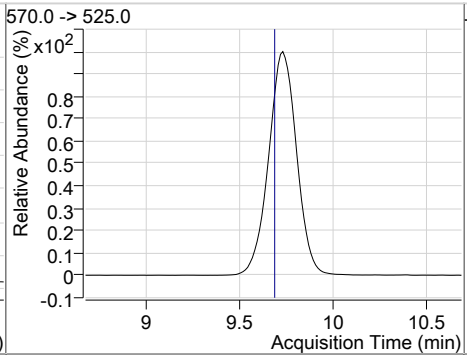


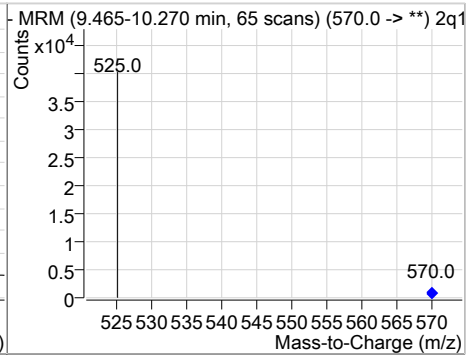




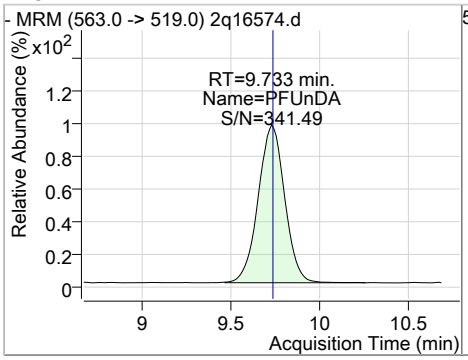
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	12.63	9.73	0.05	25828				

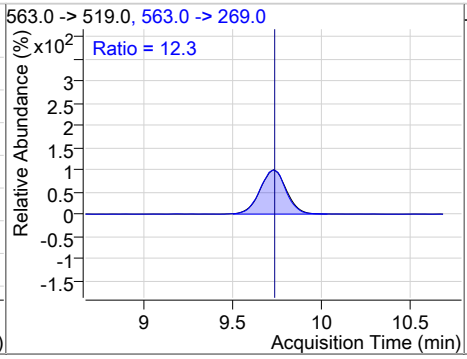


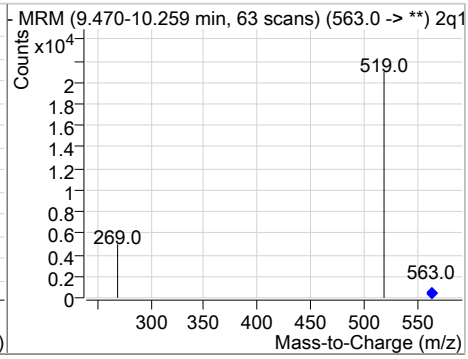




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	22.44	9.73	0.05	13620	563.0 -> 269.0	12.3	0.0	42.5

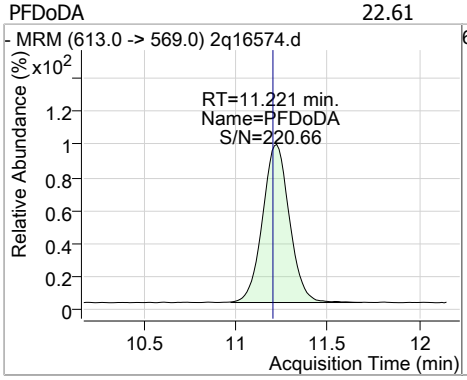


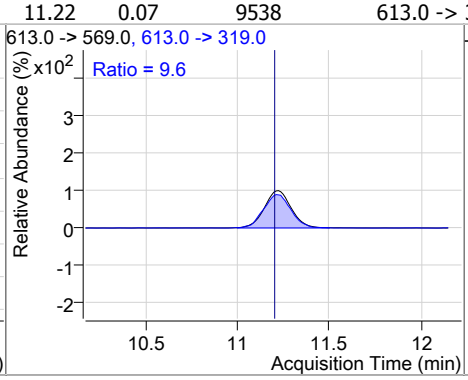


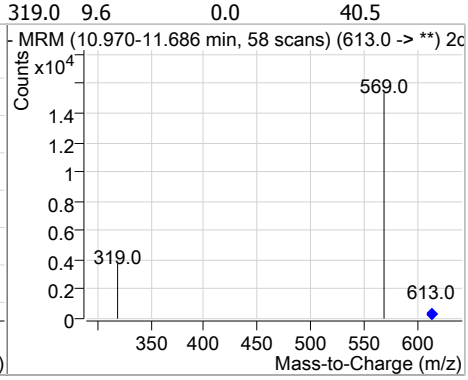


Perfluorinated Compounds by LC/MS/MS

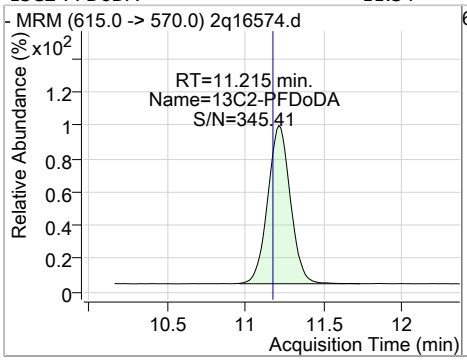
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	22.61	11.22	0.07	9538	613.0 -> 319.0	9.6	0.0	40.5

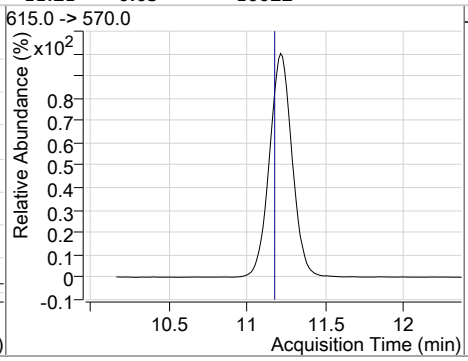


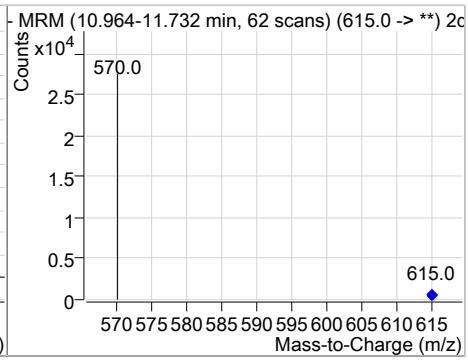




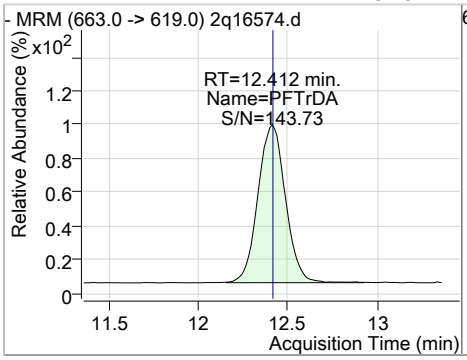
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	11.34	11.21	0.05	16622				

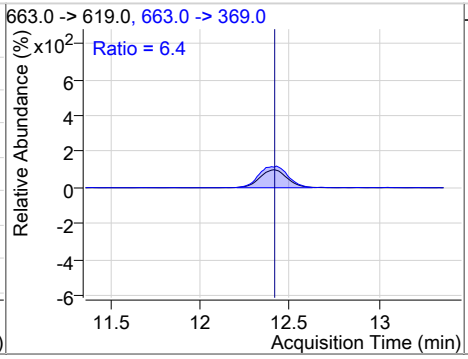


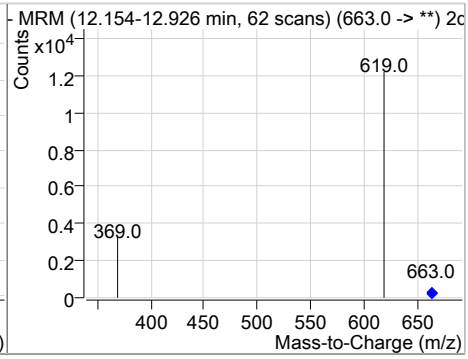




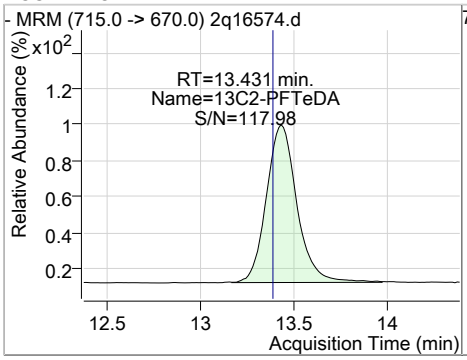
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	23.25	12.41	0.05	7426	663.0 -> 369.0	6.4	0.0	35.1

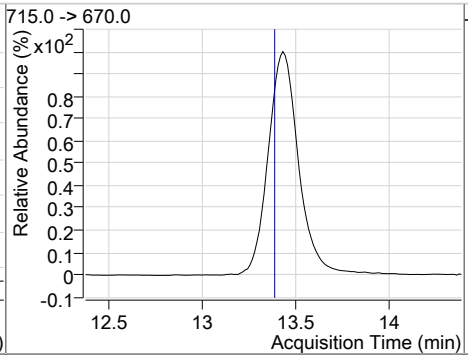


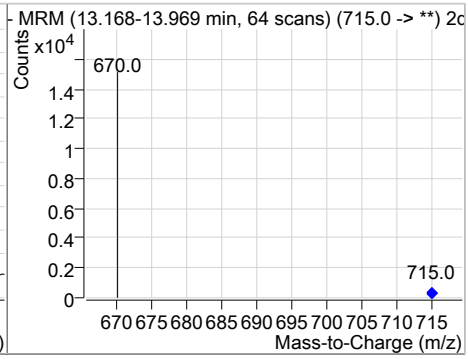




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	11.44	13.43	0.05	7096				

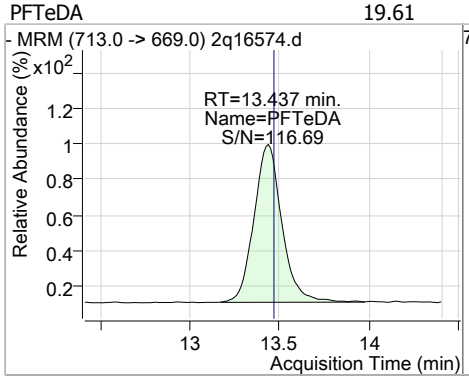


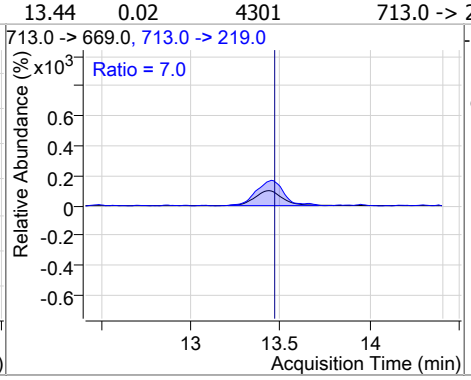


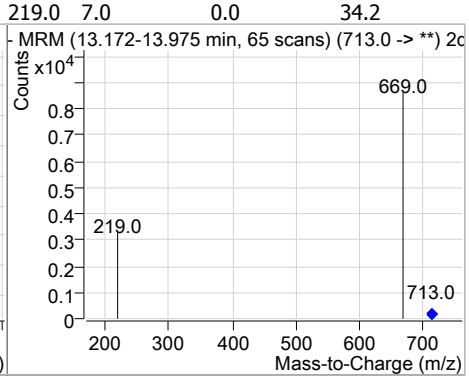


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.61	13.44	0.02	4301	713.0 -> 219.0	7.0	0.0	34.2







Manual Integration Approval Summary

Sample Number:	OP70743-BS	**Method:**	EPA 537M QSM5.1 B-15
Lab FileID:	2Q16574.D	**Analyst approved:**	07/06/18 10:18 Natasha Gumtie
Injection Time:	07/05/18 19:48	**Supervisor approved:**	07/06/18 17:16 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.09	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.41	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 07/12/18 14:31

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16959.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/11/2018 4:43:21 PM
Sample Name : op70805-bs
Vial : Vial 96
DA Method File : PFC_ID_071018_S2Q294.quantmethod.xml
Batch Name : s2q294.batch.bin
Sample Information : op70805,S2Q294,120,,,1.0,1,water

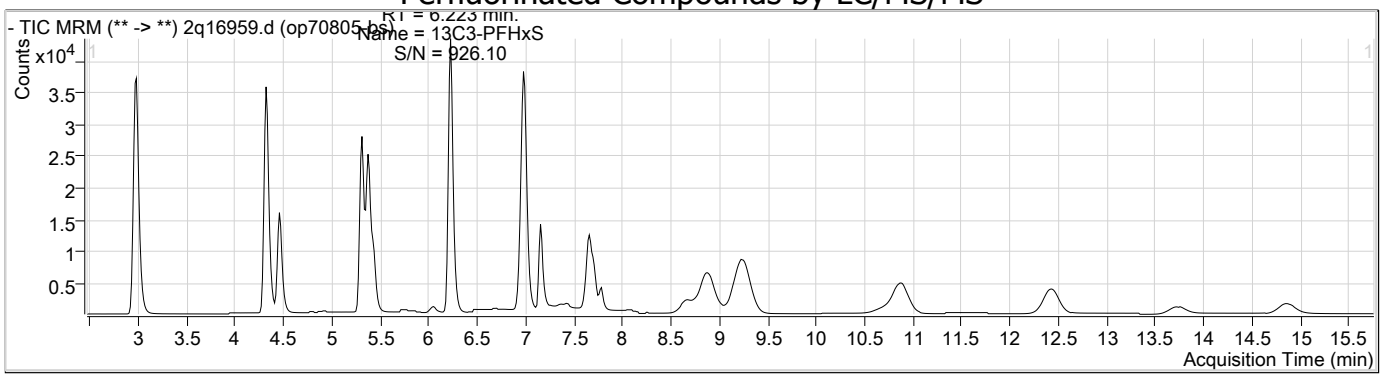
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.971	415.0 -> 370.0	20371	20.00	µg/L	0.025
13C4-PFOS	7.636	503.0 -> 80.0	9473	20.00	µg/L	0.033
M4-PFBA	2.978	217.0 -> 172.0	126492	20.00	µg/L	0.012
M5-PFPeA	4.325	268.0 -> 223.0	61889	20.00	µg/L	0.013
M5-PFHxA	5.378	318.0 -> 273.0	58106	20.00	µg/L	0.017
M4-PFHpA	6.229	367.0 -> 322.0	59190	20.00	µg/L	0.020
M8-PFOA	6.970	421.0 -> 376.0	31501	20.00	µg/L	0.024
M9-PFNA	7.702	472.0 -> 427.0	17529	20.00	µg/L	0.035
M6-PFDA	8.879	519.0 -> 474.0	46862	20.00	µg/L	0.137
M7-PFUnDA	10.879	570.0 -> 525.0	34340	20.00	µg/L	0.118
M2-PFDoDA	12.428	615.0 -> 570.0	27702	20.00	µg/L	0.089
M2-PFTeDA	14.857	715.0 -> 670.0	12298	20.00	µg/L	0.082
M8-FOSA	7.155	506.0 -> 78.0	24609	20.00	µg/L	0.010
M3-PFBS	4.456	302.0 -> 99.0	19064	20.00	µg/L	0.019
M3-PFHxS	6.223	402.0 -> 99.0	15554	20.00	µg/L	0.027
M8-PFOS	7.646	507.0 -> 99.0	6163	20.00	µg/L	0.045
M2-4:2FTS	5.310	329.0 -> 309.0	52606	20.00	µg/L	0.027
M2-6:2FTS	6.992	429.0 -> 409.0	43698	20.00	µg/L	0.035
M2-8:2FTS	9.235	529.0 -> 509.0	60952	20.00	µg/L	0.140
M3-MeFOSAA	7.658	573.0 -> 419.0	10909	20.00	µg/L	0.021
System Monitoring Compounds						
13C2-4:2FTS	5.310	329.0 -> 309.0	52617	19.63	µg/L	0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.1%		
13C2-6:2FTS	6.992	429.0 -> 409.0	43728	21.07	µg/L	0.035
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.3%		
13C2-8:2FTS	9.235	529.0 -> 509.0	60229	13.71	µg/L	0.140
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.6%		
13C2-PFDoDA	12.428	615.0 -> 570.0	27672	14.39	µg/L	0.089
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.0%		
13C2-PFTeDA	14.857	715.0 -> 670.0	12407	14.14	µg/L	0.082
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.7%		
13C3-PFBS	4.456	302.0 -> 99.0	19070	19.17	µg/L	0.019
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.8%		
13C3-PFHxS	6.223	402.0 -> 99.0	15559	18.75	µg/L	0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.7%		
13C4-PFBA	2.978	217.0 -> 172.0	126475	19.74	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.7%		
13C4-PFHpA	6.229	367.0 -> 322.0	59185	21.77	µg/L	0.020
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.8%		
13C5-PFHxA	5.378	318.0 -> 273.0	58093	20.49	µg/L	0.017
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.4%		
13C5-PFPeA	4.325	268.0 -> 223.0	61908	19.79	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%		
13C6-PFDA	8.879	519.0 -> 474.0	46546	16.08	µg/L	0.137
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.4%		

Perfluorinated Compounds by LC/MS/MS

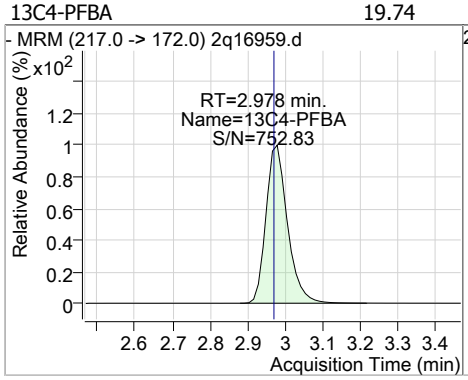
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.879	570.0 -> 525.0	34371	14.47	µg/L		0.118
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.4%			
13C8-FOSA	7.155	506.0 -> 78.0	24608	15.70	µg/L		0.010
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.5%			
13C8-PFOA	6.970	421.0 -> 376.0	31513	22.67	µg/L		0.024
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.3%			
13C8-PFOS	7.646	507.0 -> 99.0	6163	14.28	µg/L		0.045
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.4%			
13C9-PFNA	7.702	472.0 -> 427.0	17533	18.20	µg/L		0.035
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.0%			
d3-MeFOSAA	7.658	573.0 -> 419.0	10919	14.43	µg/L		0.021
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.2%			
M2-PFOA	6.971	415.0 -> 370.0	20373	20.00	ng/ml		0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.636	503.0 -> 80.0	9469	20.00	ng/ml		0.033
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
Target Compounds							**QValue**
4:2FTS	5.313	327.0 -> 307.0	28045	21.33	µg/L		100
6:2FTS	6.994	427.0 -> 407.0	23039	21.82	µg/L		98
8:2FTS	9.241	527.0 -> 507.0	33645	21.35	µg/L		94
EtFOSAA	7.782	584.0 -> 419.0	3835	20.84	µg/L		95
FOSA	7.158	498.0 -> 78.0	13941	23.06	µg/L		100
MeFOSAA	7.659	570.0 -> 419.0	4591	23.53	µg/L		100
PFBA	2.974	213.0 -> 169.0	22429	22.71	µg/L		100
PFBS	4.459	299.0 -> 80.0	24999	19.22	µg/L		99
PFDA	8.881	513.0 -> 469.0	17827	20.94	µg/L		100
PFDoDA	12.434	613.0 -> 569.0	16676	23.38	µg/L		98
PFDS	10.687	599.0 -> 80.0	5805	19.98	µg/L		98
PFHpA	6.232	363.0 -> 319.0	49058	22.65	µg/L		100
PFHpS	6.941	449.0 -> 80.0	9464	19.88	µg/L		100
PFHxA	5.381	313.0 -> 269.0	19191	19.47	µg/L		98
PFHxS	6.226	399.0 -> 80.0	17581	18.91	µg/L	m	99
PFNA	7.704	463.0 -> 419.0	6729	19.92	µg/L		96
PFNS	8.658	549.0 -> 80.0	11469	23.90	µg/L		98
PFOA	6.972	413.0 -> 369.0	18361	21.25	µg/L		98
PFOS	7.636	499.0 -> 80.0	8851	23.08	µg/L	m	97
PFPeA	4.329	263.0 -> 219.0	64141	21.69	µg/L		100
PFPeS	5.433	349.0 -> 80.0	17043	20.39	µg/L		98
PFTeDA	14.850	713.0 -> 669.0	8090	21.70	µg/L		98
PFTrDA	13.717	663.0 -> 619.0	13592	25.15	µg/L		99
PFUnDA	10.883	563.0 -> 519.0	18864	22.67	µg/L		99

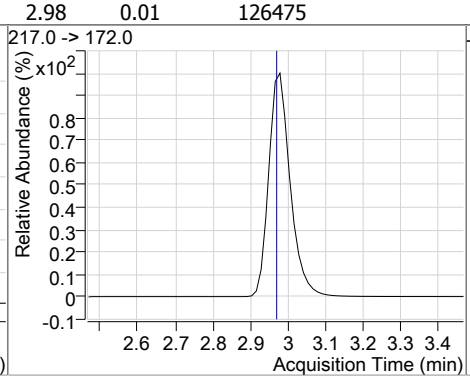
 # = Qualifier out of range, m = manually integrated, + = Area summed

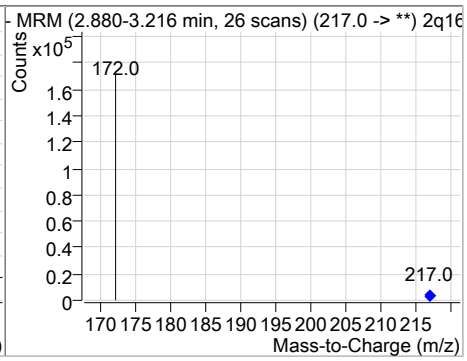
Perfluorinated Compounds by LC/MS/MS



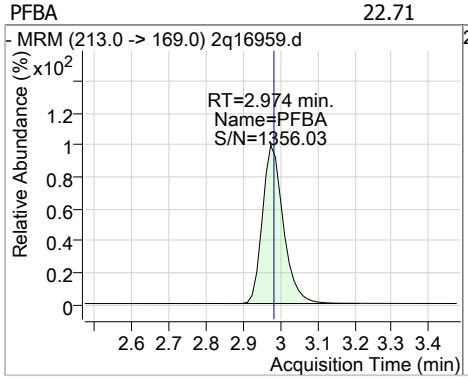
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.74	2.98	0.01	126475				

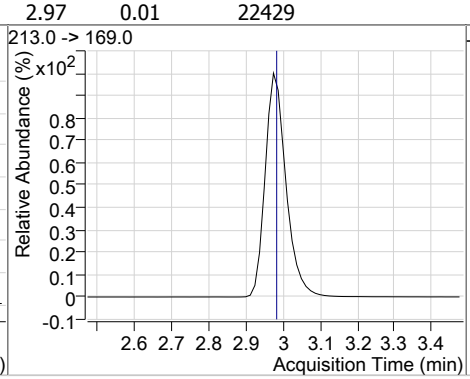


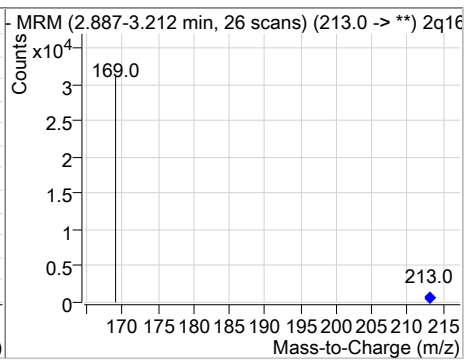




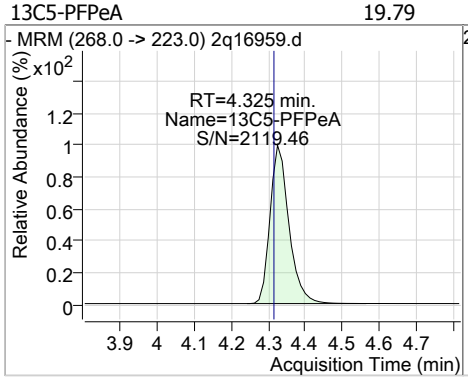
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	22.71	2.97	0.01	22429				

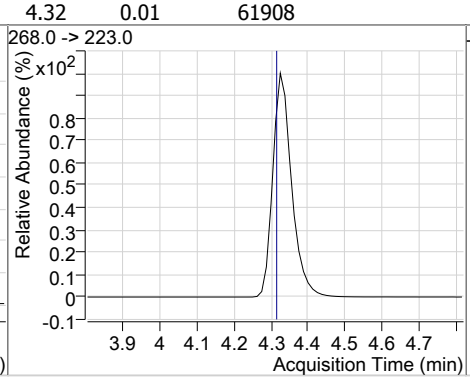


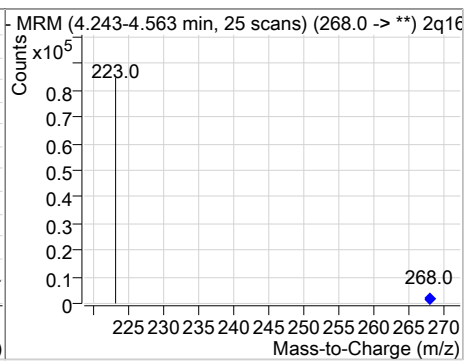




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.79	4.32	0.01	61908				

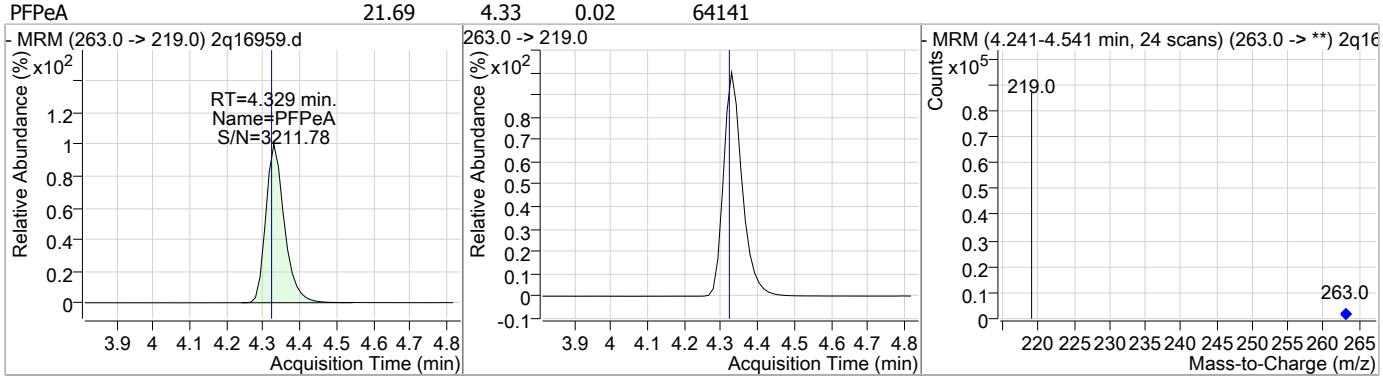




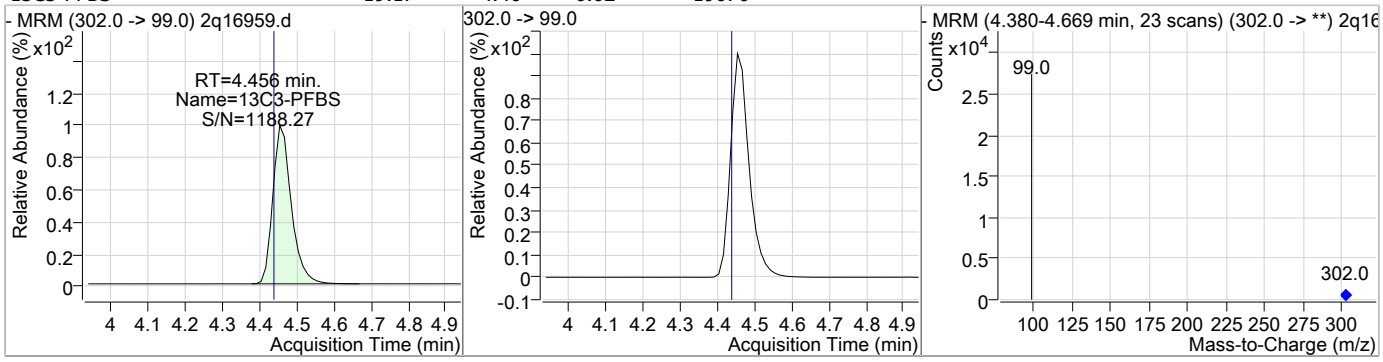


Perfluorinated Compounds by LC/MS/MS

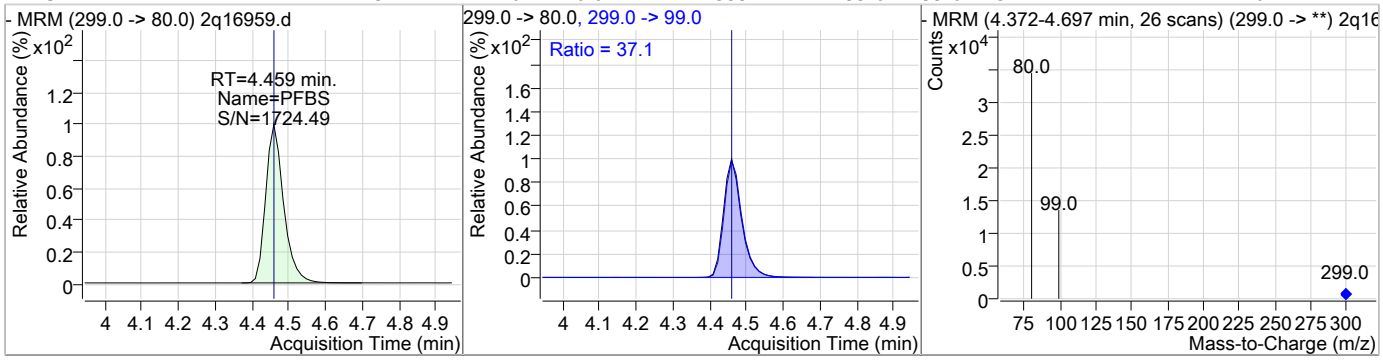
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	21.69	4.33	0.02	64141				



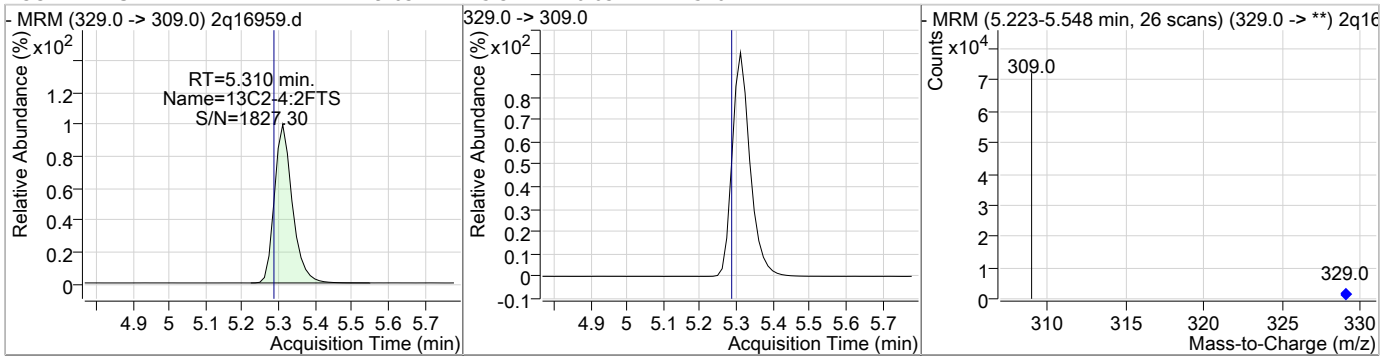
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.17	4.46	0.02	19070				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.22	4.46	0.02	24999	299.0 -> 99.0	37.1	7.4	67.4

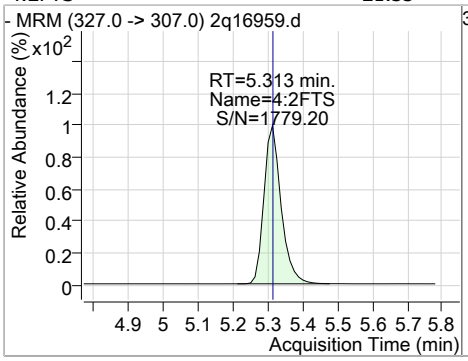


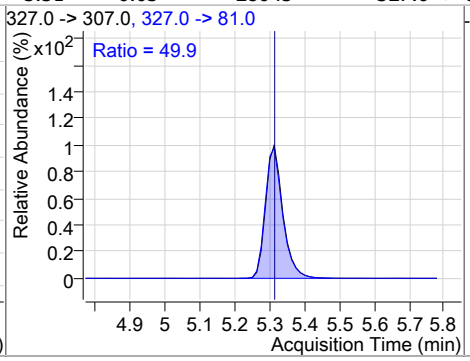
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.63	5.31	0.03	52617				

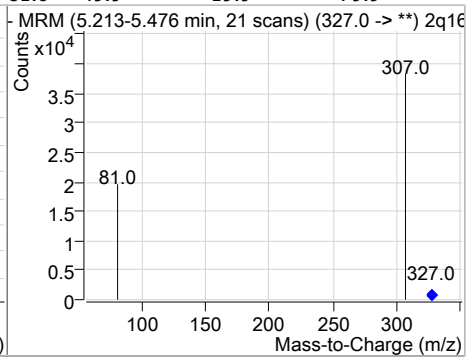


Perfluorinated Compounds by LC/MS/MS

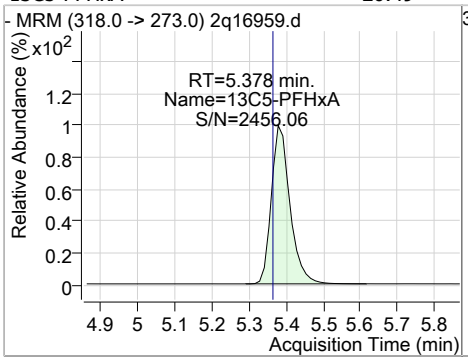
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	21.33	5.31	0.03	28045	327.0 -> 81.0	49.9	19.9	79.9

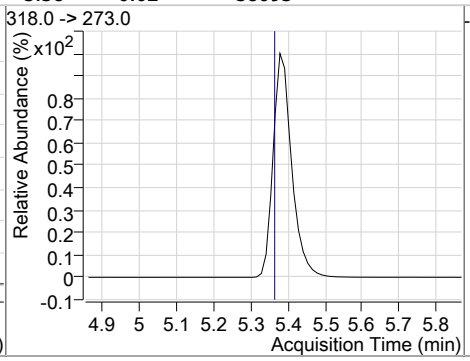


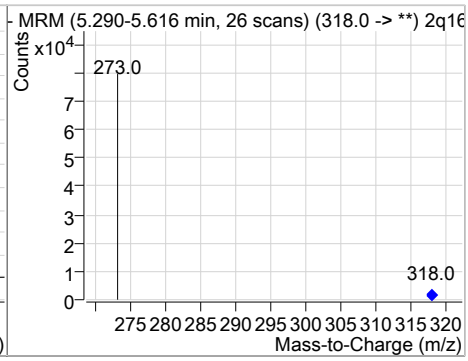




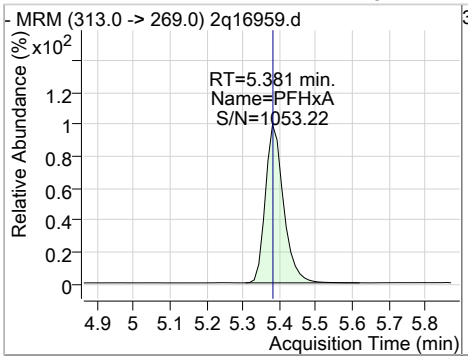
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.49	5.38	0.02	58093				

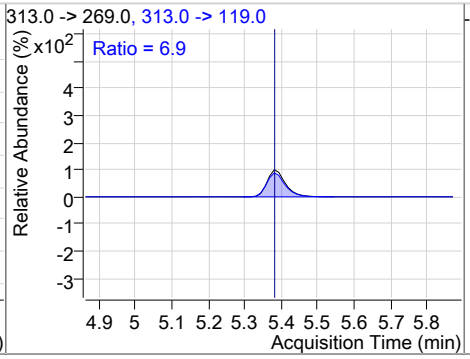


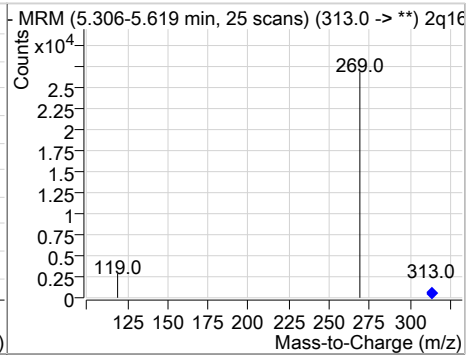




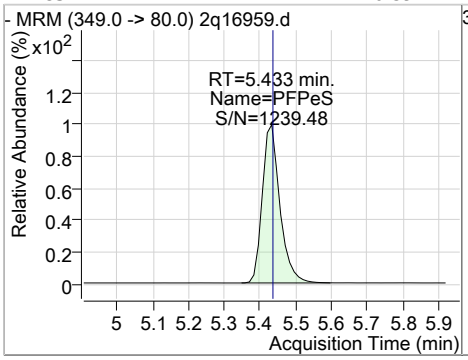
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.47	5.38	0.02	19191	313.0 -> 119.0	6.9	0.0	37.6

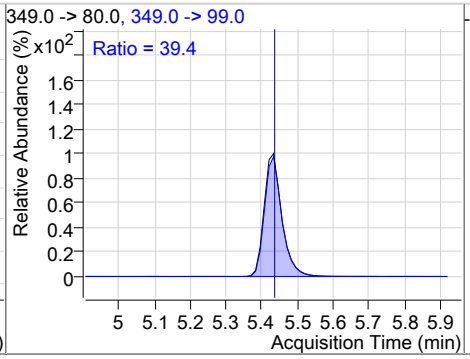


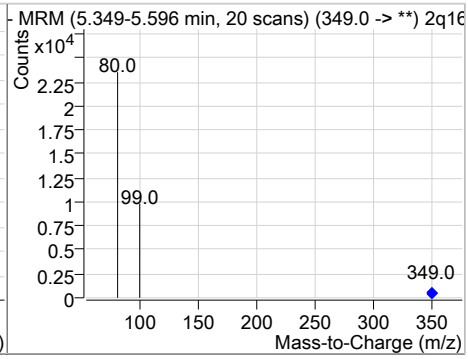




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	20.39	5.43	0.02	17043	349.0 -> 99.0	39.4	10.8	70.8

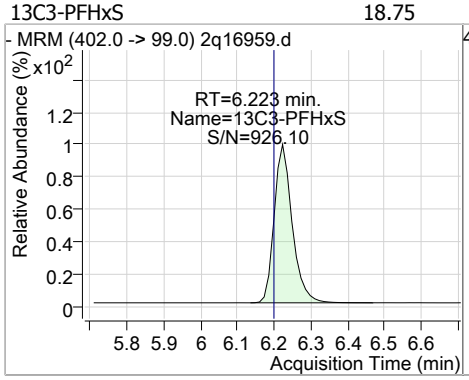


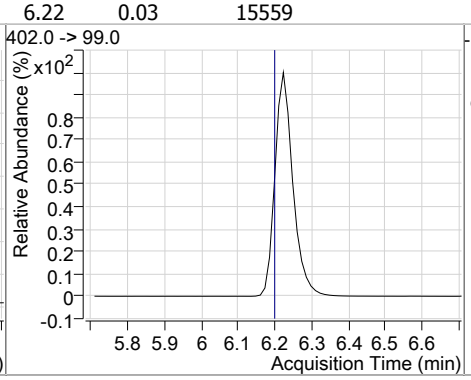


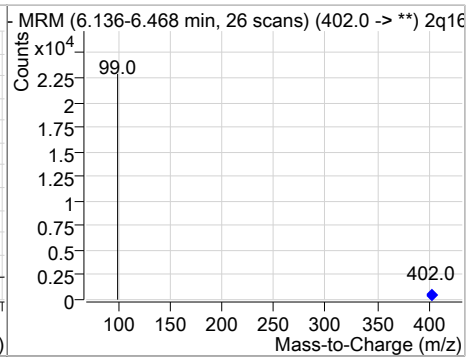


Perfluorinated Compounds by LC/MS/MS

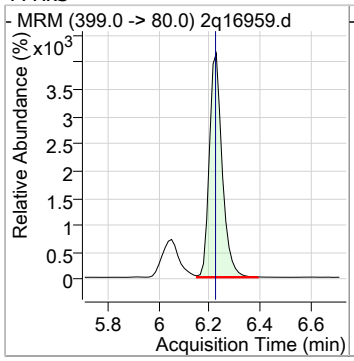
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.75	6.22	0.03	15559				

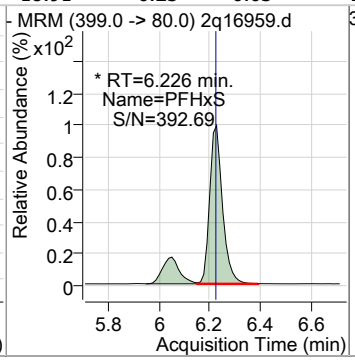


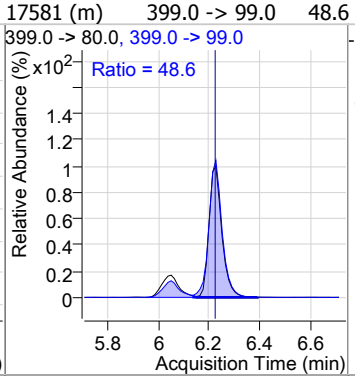


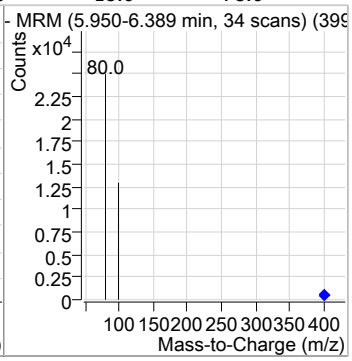


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	18.91	6.23	0.03	17581 (m)	399.0 -> 99.0	48.6	18.0	78.0

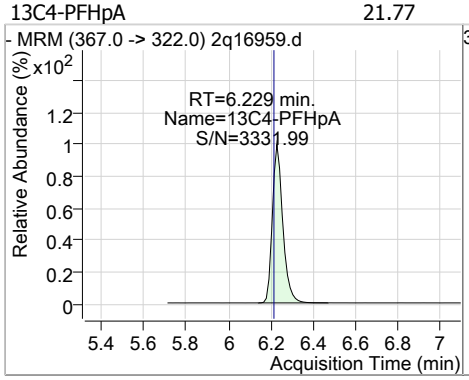


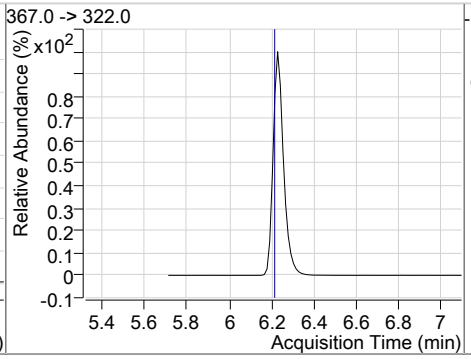


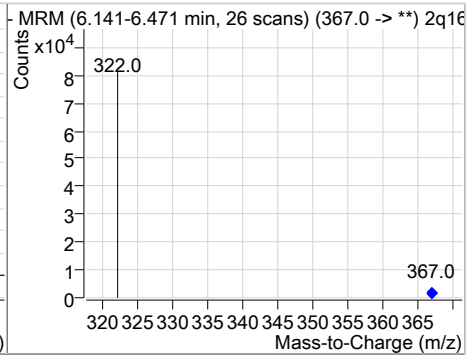




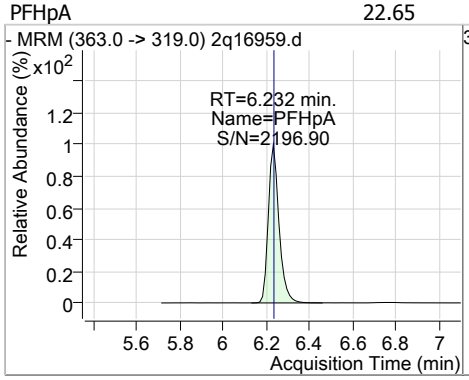
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.77	6.23	0.02	59185				

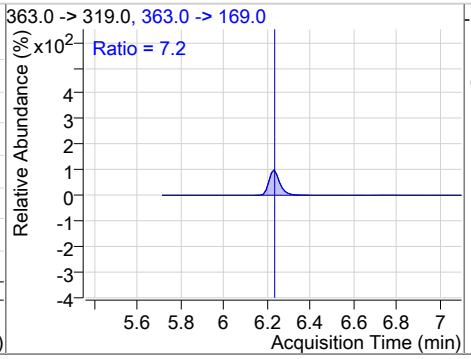


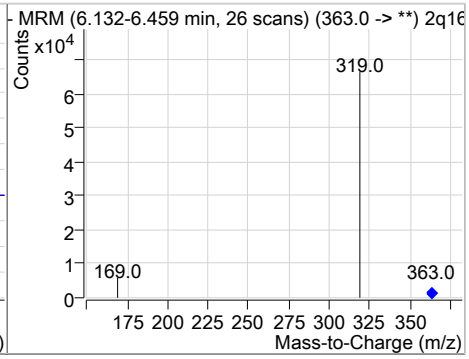




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	22.65	6.23	0.02	49058	363.0 -> 169.0	7.2	0.0	37.2

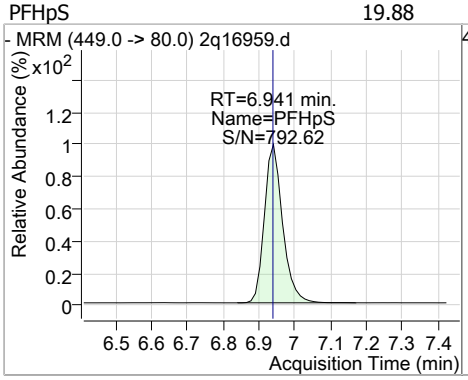


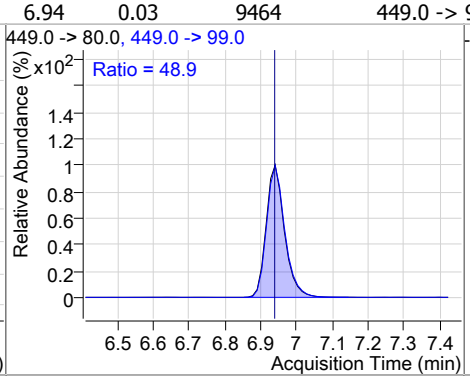


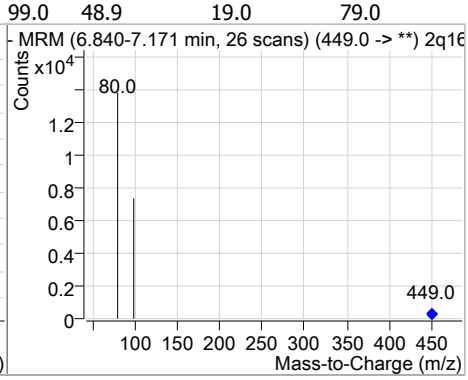


Perfluorinated Compounds by LC/MS/MS

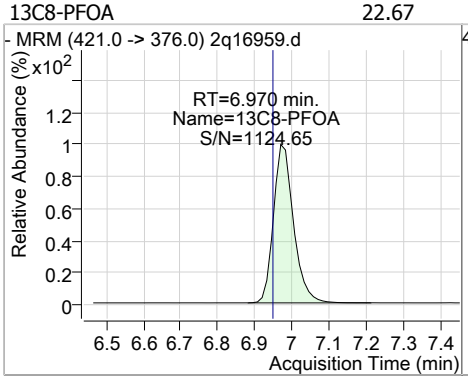
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	19.88	6.94	0.03	9464	449.0 -> 99.0	48.9	19.0	79.0

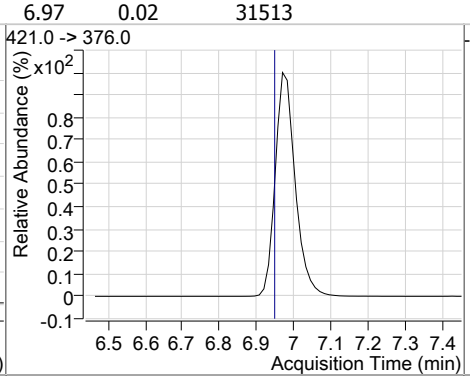


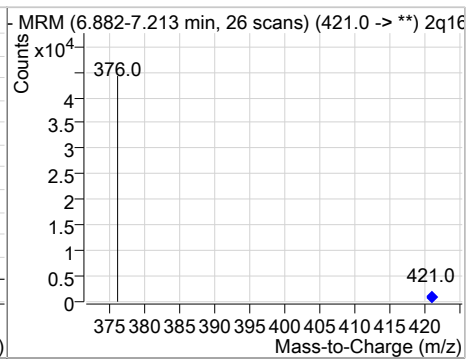




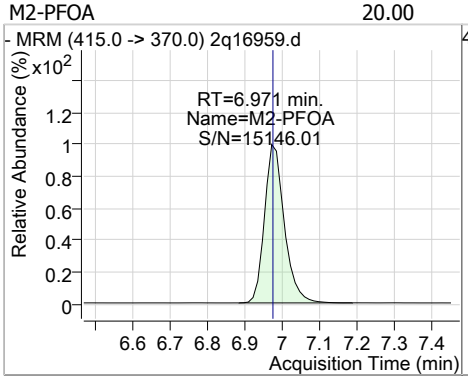
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	22.67	6.97	0.02	31513				

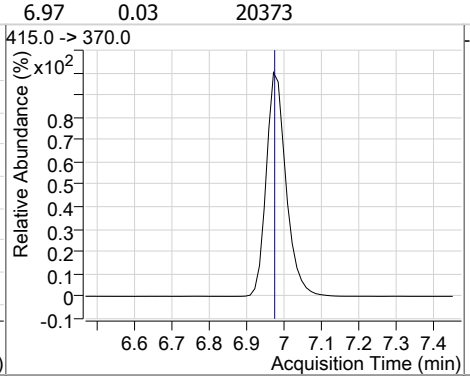


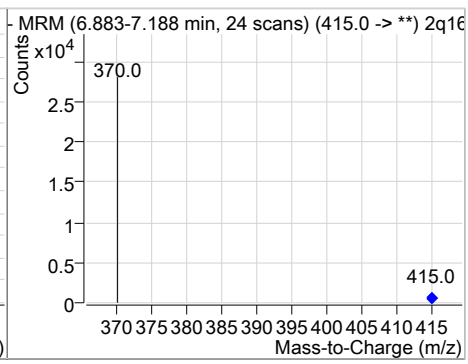




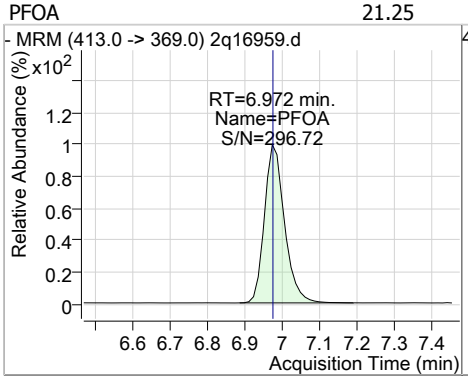
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.97	0.03	20373				

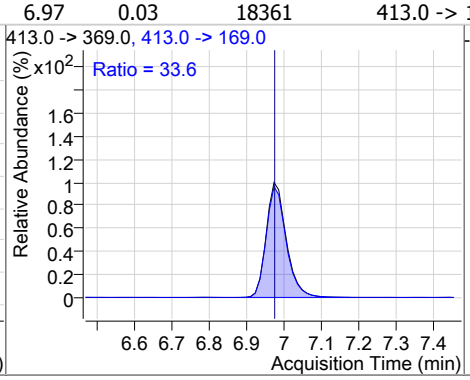


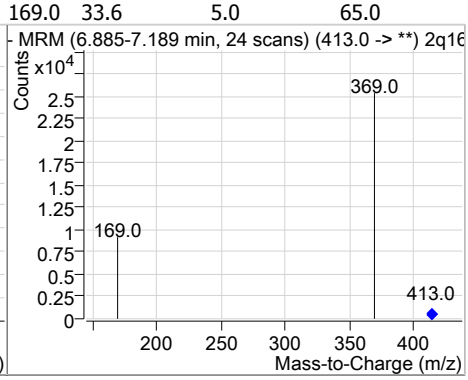




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	21.25	6.97	0.03	18361	413.0 -> 169.0	33.6	5.0	65.0

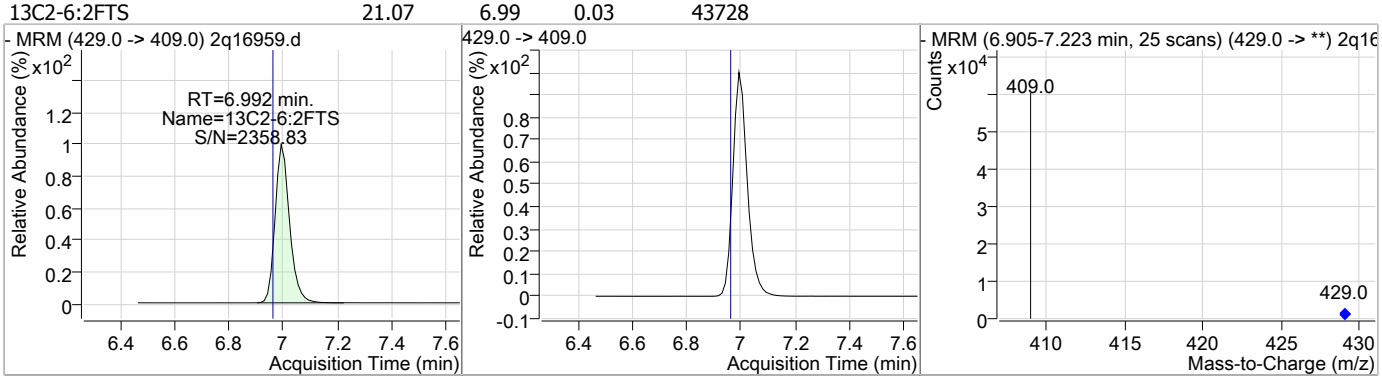




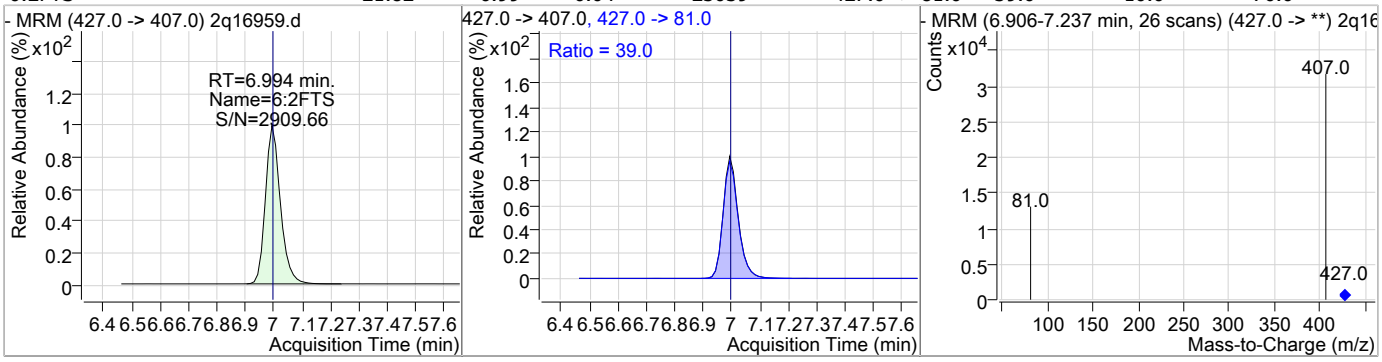


Perfluorinated Compounds by LC/MS/MS

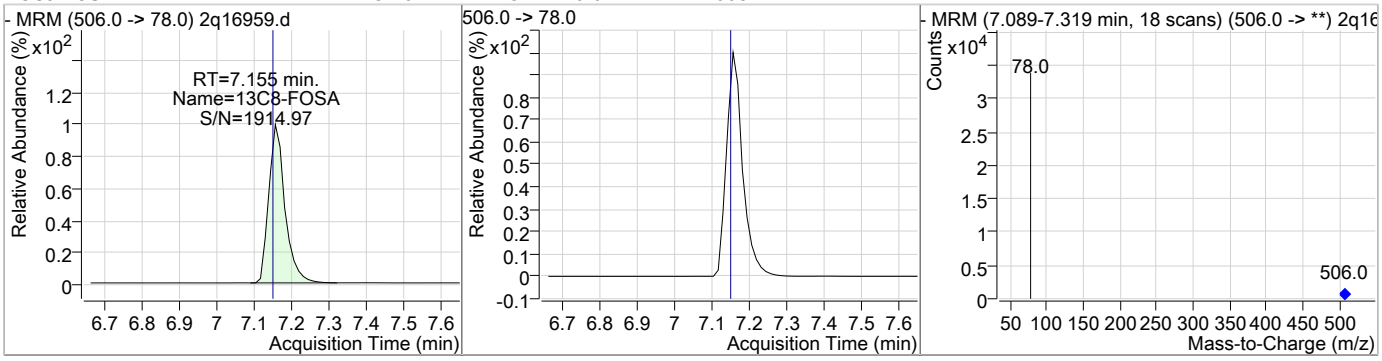
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	21.07	6.99	0.03	43728				



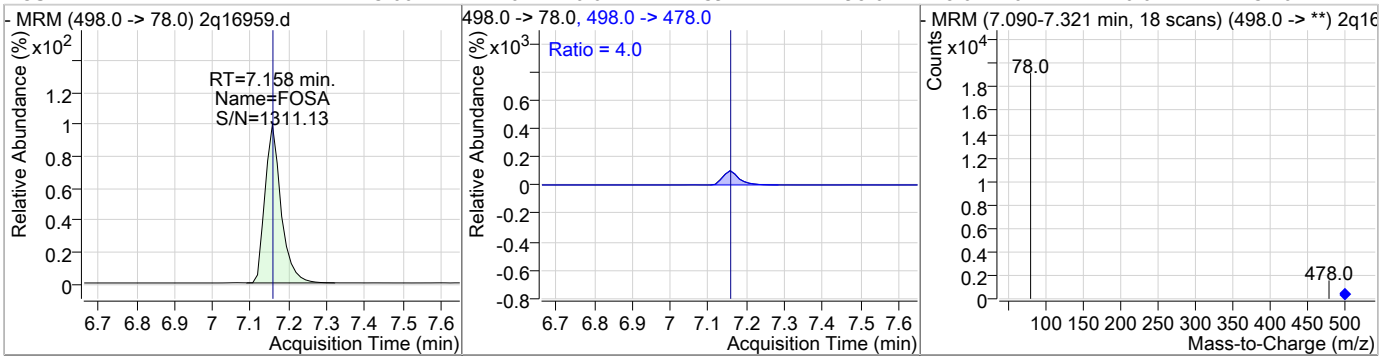
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	21.82	6.99	0.04	23039	427.0 -> 81.0	39.0	10.0	70.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	15.70	7.15	0.01	24608				

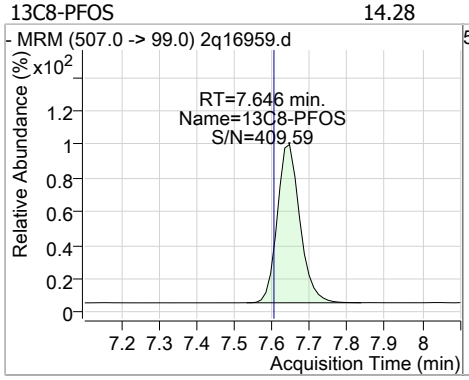


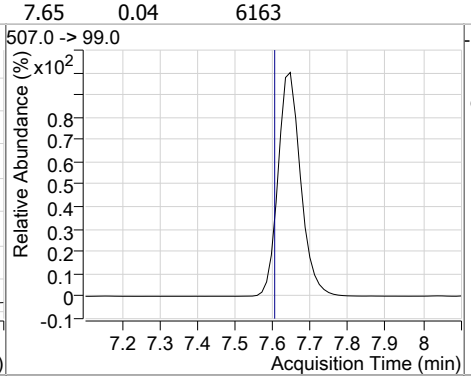
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	23.06	7.16	0.01	13941	498.0 -> 478.0	4.0	0.0	34.0

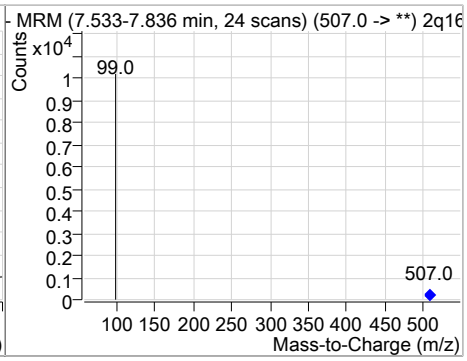


Perfluorinated Compounds by LC/MS/MS

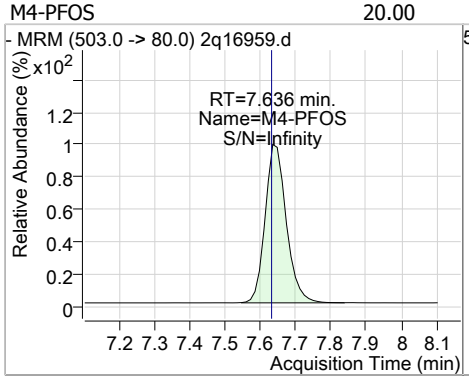
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	14.28	7.65	0.04	6163				

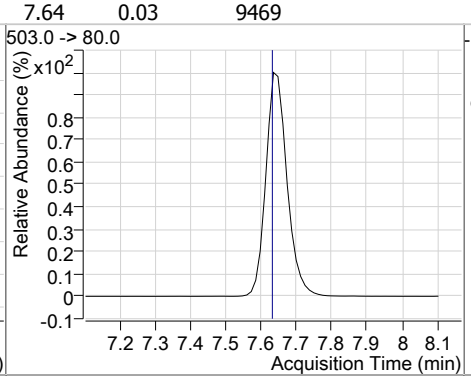


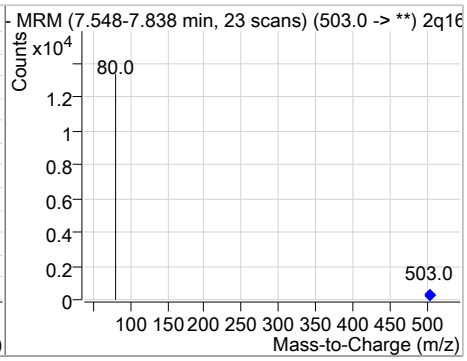




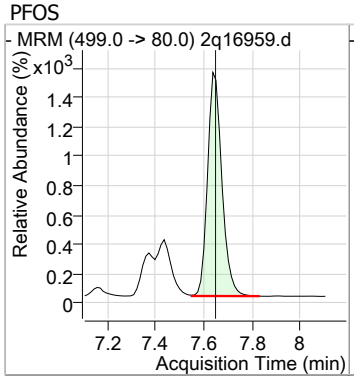
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.00	7.64	0.03	9469				

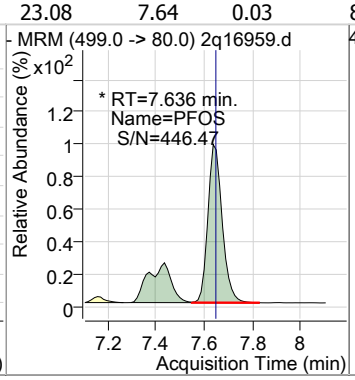


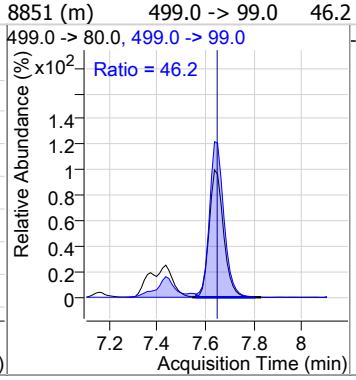


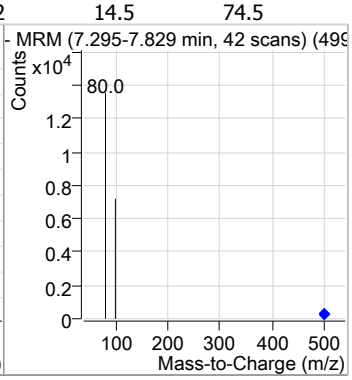


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	23.08	7.64	0.03	8851 (m)	499.0 -> 99.0	46.2	14.5	74.5

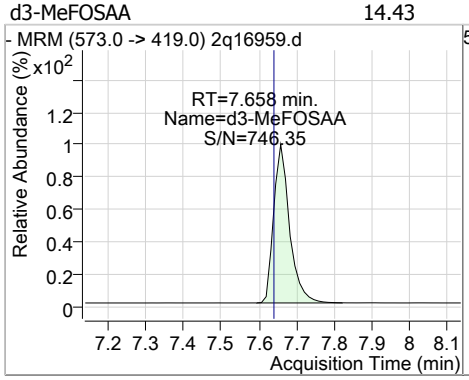


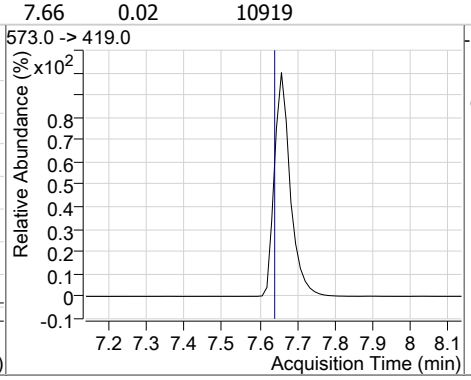


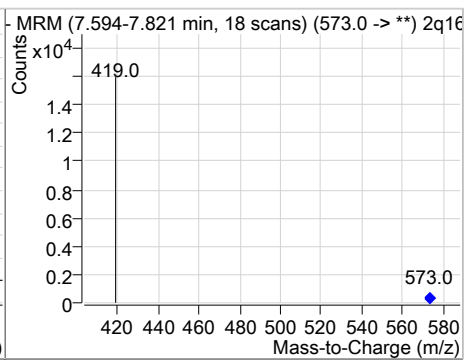




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	14.43	7.66	0.02	10919				

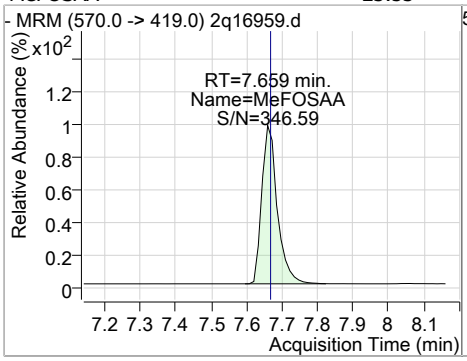


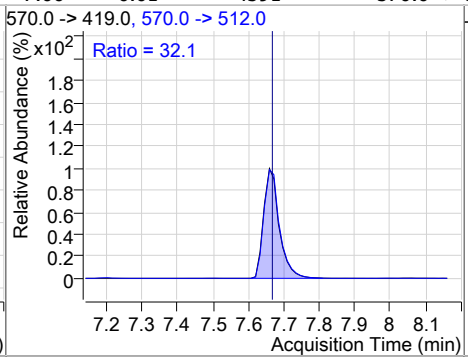


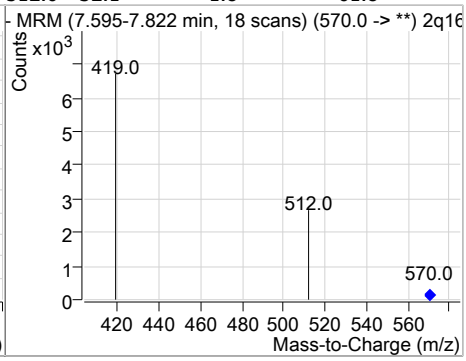


Perfluorinated Compounds by LC/MS/MS

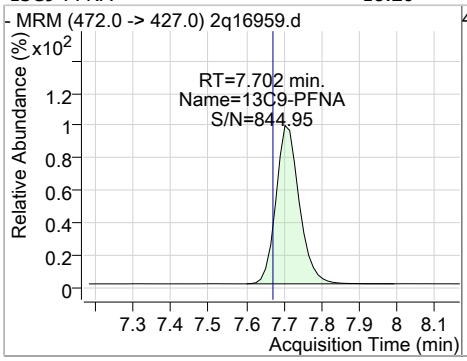
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	23.53	7.66	0.01	4591	570.0 -> 512.0	32.1	1.8	61.8

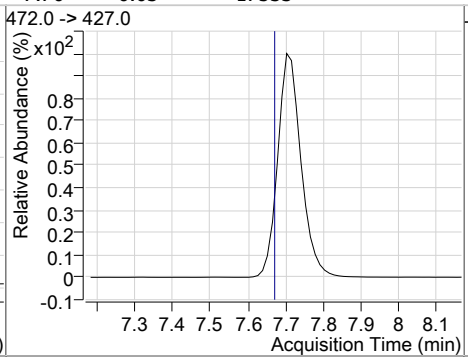


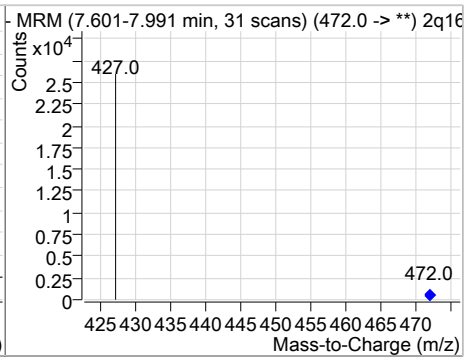




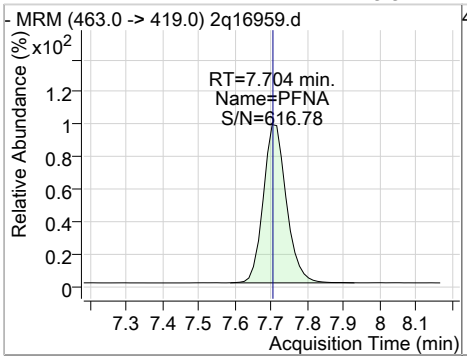
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.20	7.70	0.03	17533				

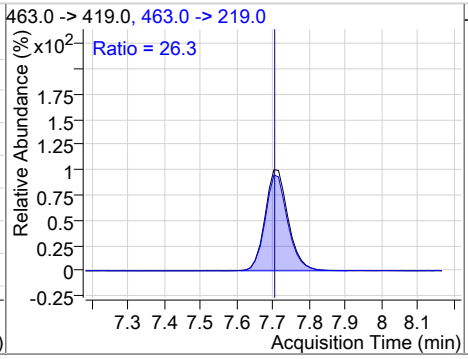


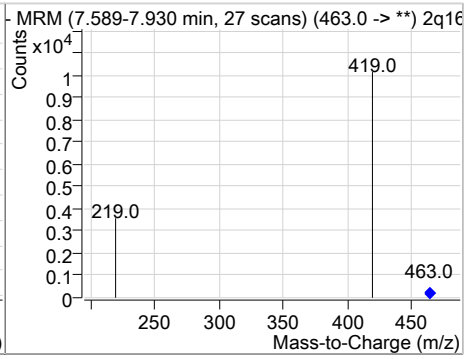




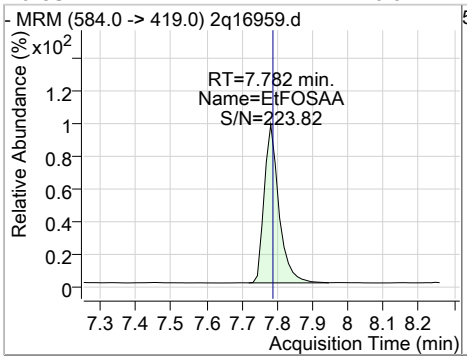
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.92	7.70	0.04	6729	463.0 -> 219.0	26.3	0.0	58.4

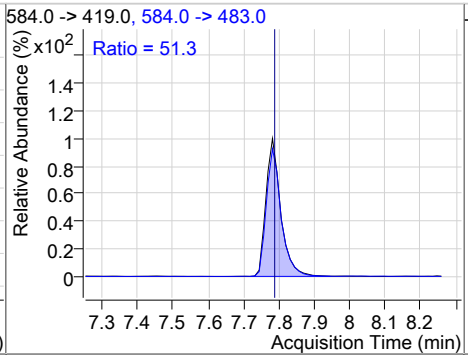


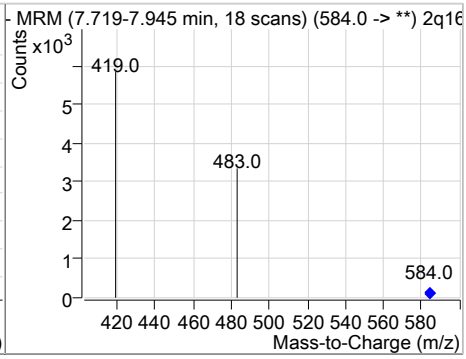




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.84	7.78	0.02	3835	584.0 -> 483.0	51.3	24.8	84.8

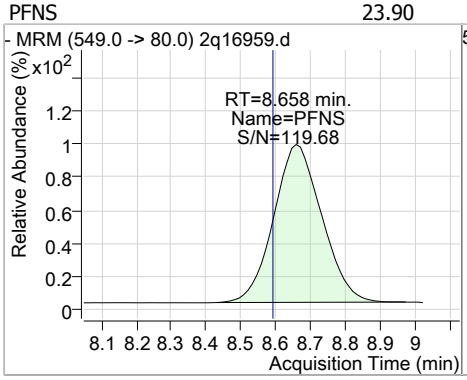


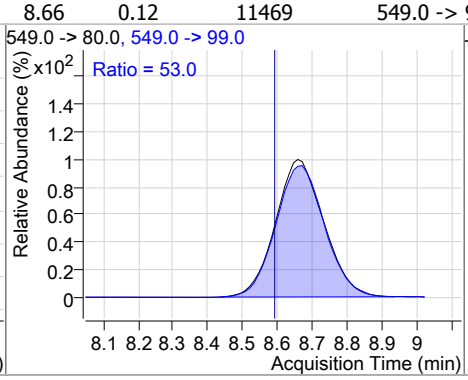


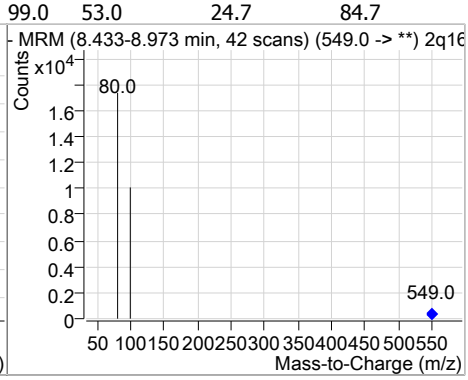


Perfluorinated Compounds by LC/MS/MS

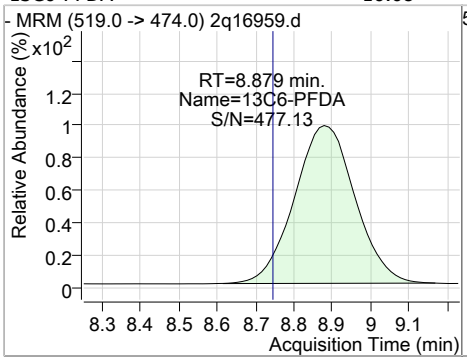
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	23.90	8.66	0.12	11469	549.0 -> 99.0	53.0	24.7	84.7

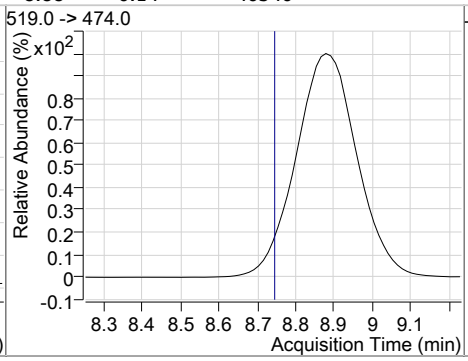


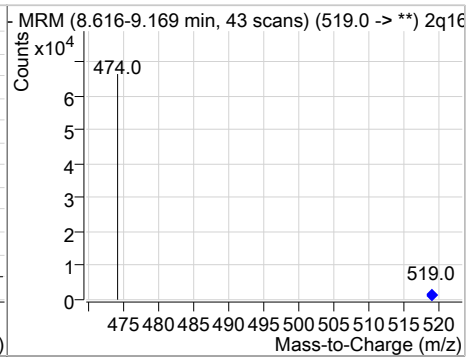




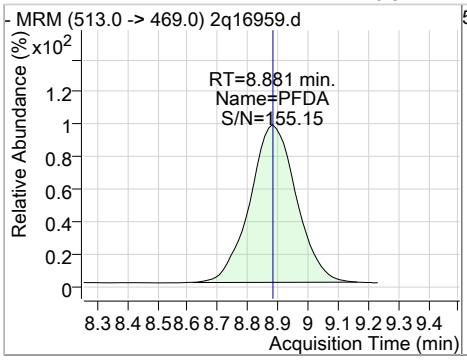
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	16.08	8.88	0.14	46546				

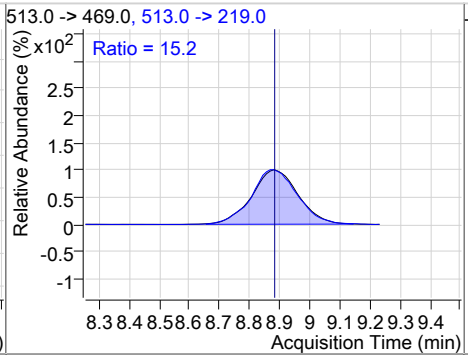


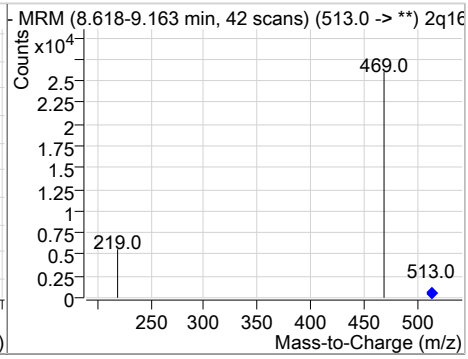




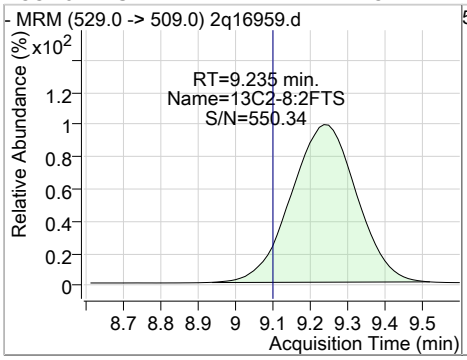
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.94	8.88	0.14	17827	513.0 -> 219.0	15.2	0.0	45.3

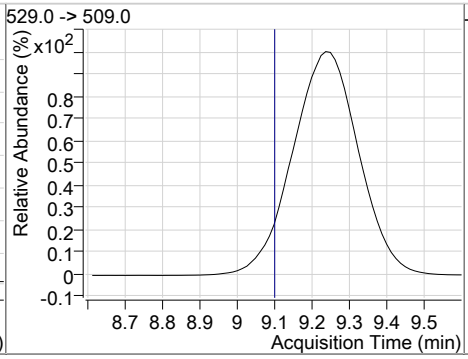


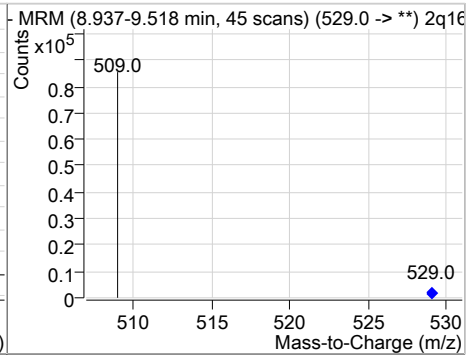




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	13.71	9.23	0.14	60229				

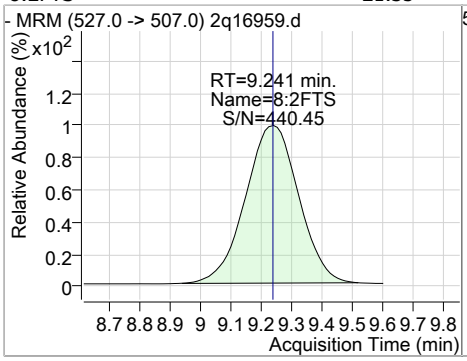


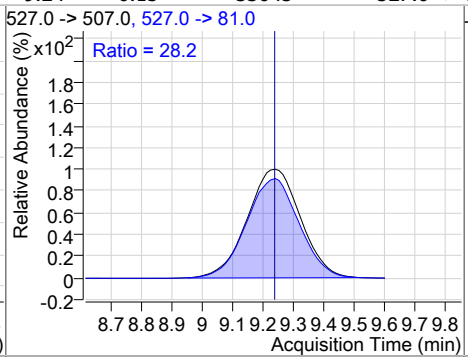


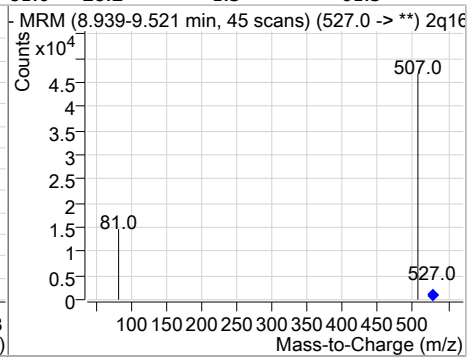


Perfluorinated Compounds by LC/MS/MS

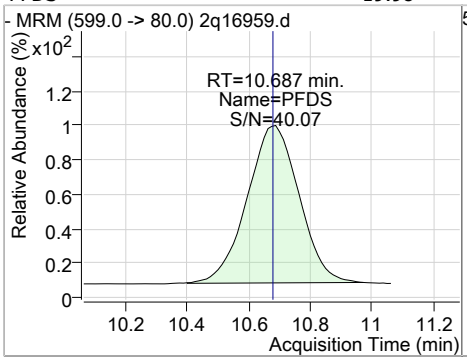
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	21.35	9.24	0.15	33645	527.0 -> 81.0	28.2	1.3	61.3

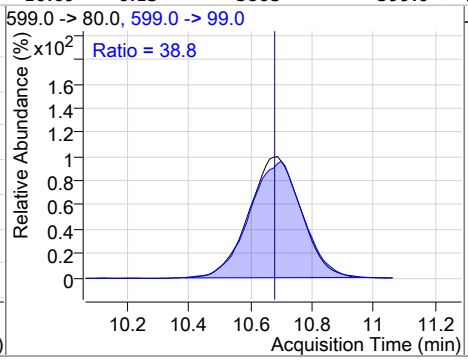


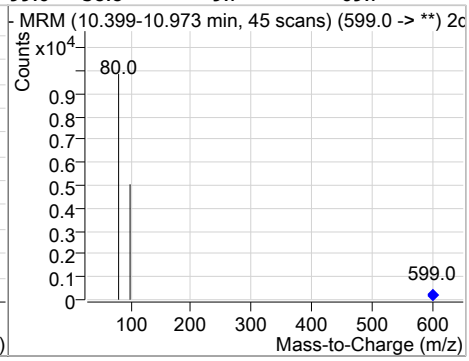




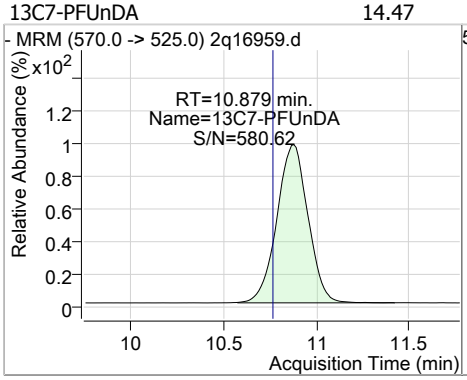
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.98	10.69	0.13	5805	599.0 -> 99.0	38.8	9.7	69.7

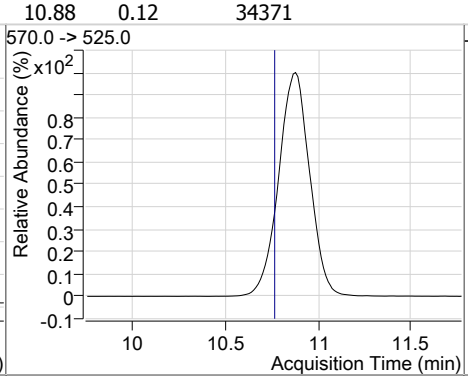


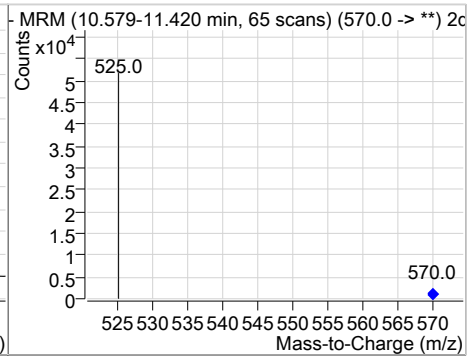




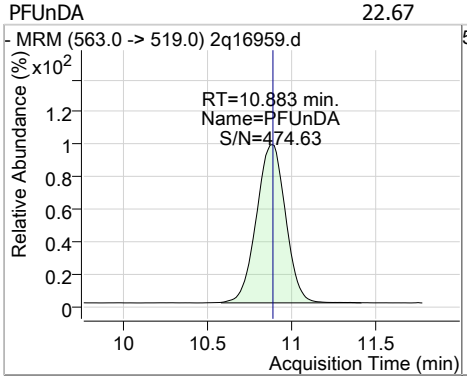
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	14.47	10.88	0.12	34371				

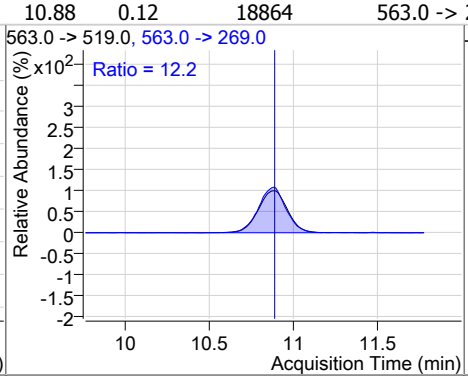


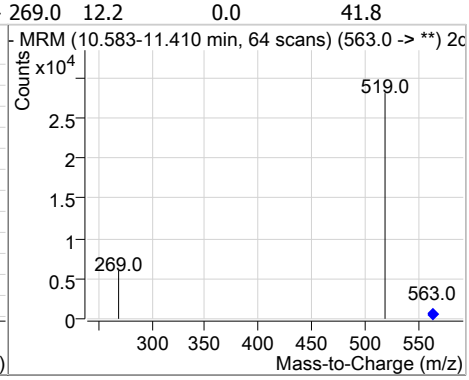




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	22.67	10.88	0.12	18864	563.0 -> 269.0	12.2	0.0	41.8

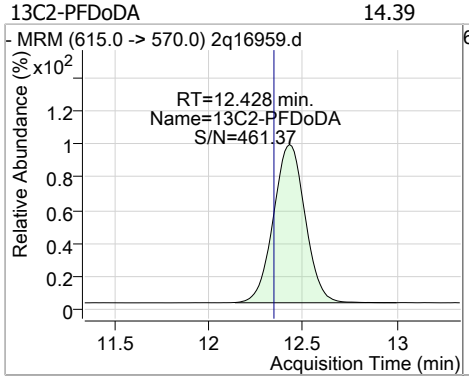


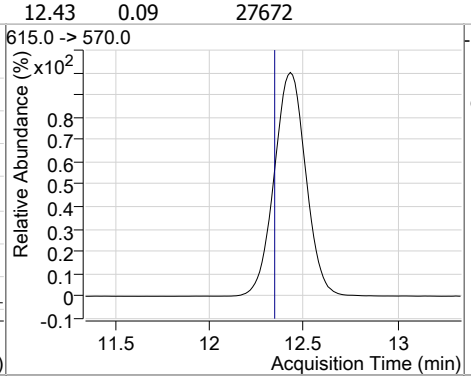


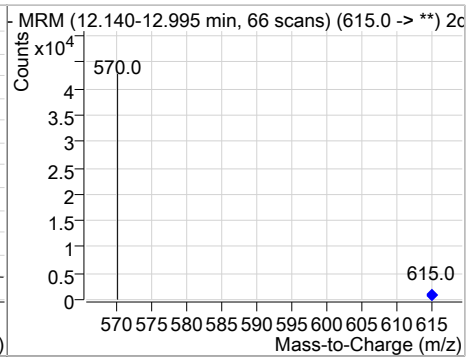


Perfluorinated Compounds by LC/MS/MS

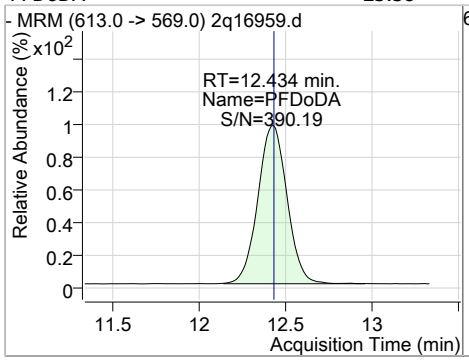
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	14.39	12.43	0.09	27672				

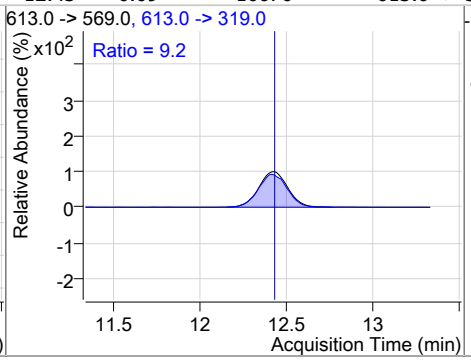


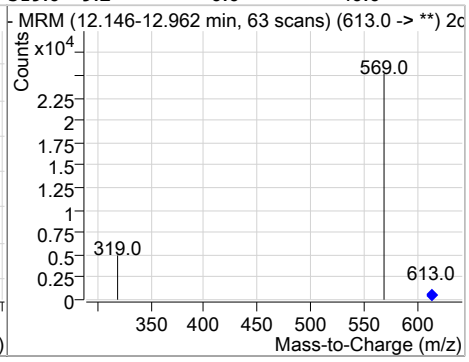




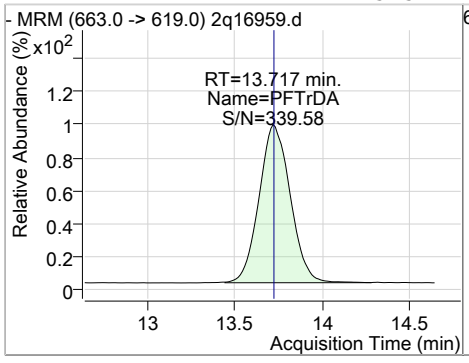
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	23.38	12.43	0.09	16676	613.0 -> 319.0	9.2	0.0	40.0

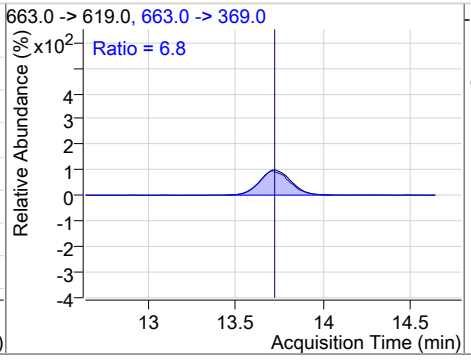


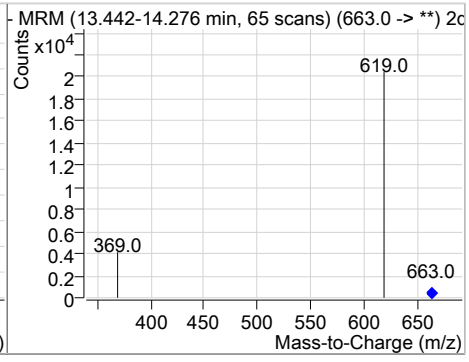




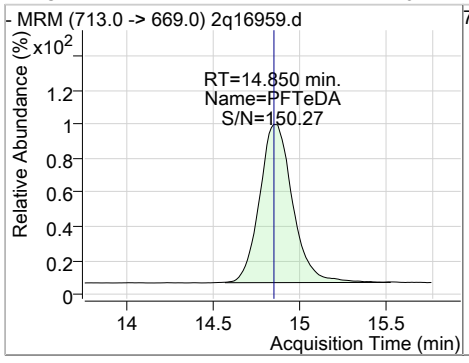
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	25.15	13.72	0.08	13592	663.0 -> 369.0	6.8	0.0	37.1

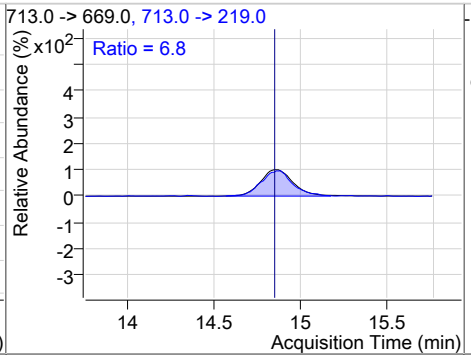


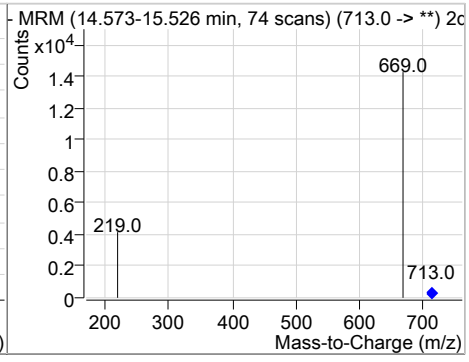




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	21.70	14.85	0.09	8090	713.0 -> 219.0	6.8	0.0	37.4

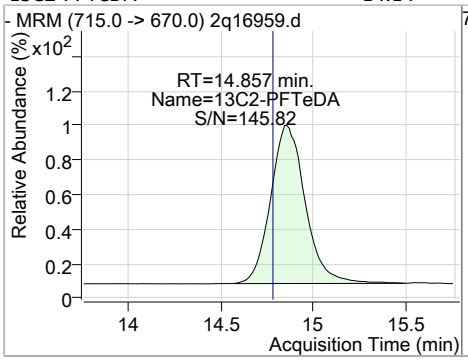


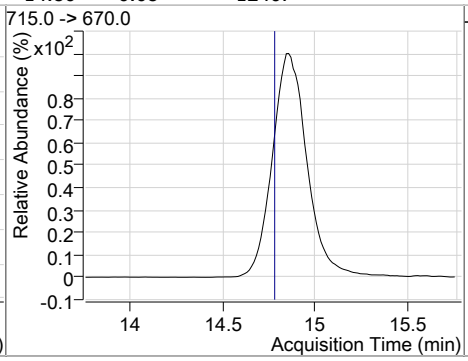


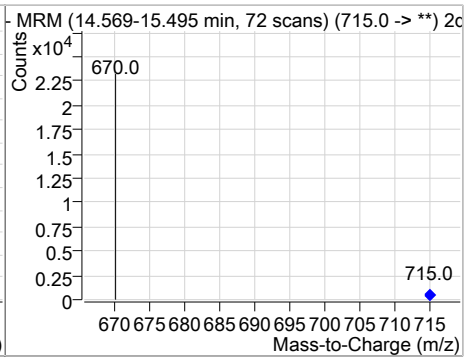


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	14.14	14.86	0.08	12407				







Manual Integration Approval Summary

Sample Number:	OP70805-BS	**Method:**	EPA 537M QSM5.1 B-15
Lab FileID:	2Q16959.D	**Analyst approved:**	07/12/18 09:45 Nancy Saunders
Injection Time:	07/11/18 16:43	**Supervisor approved:**	07/12/18 14:31 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.23	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.64	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
07/16/18 14:50

Perfluorinated Compounds by LC/MS/MS

Data File : 2q17035.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/12/2018 11:47:46 PM
Sample Name : op70810-bs
Vial : Vial 79
DA Method File : PFC_ID_071218_S2Q295.quantmethod.xml
Batch Name : s2q295.batch.bin
Sample Information : op70810,S2Q295,130,,,1.0,1,water

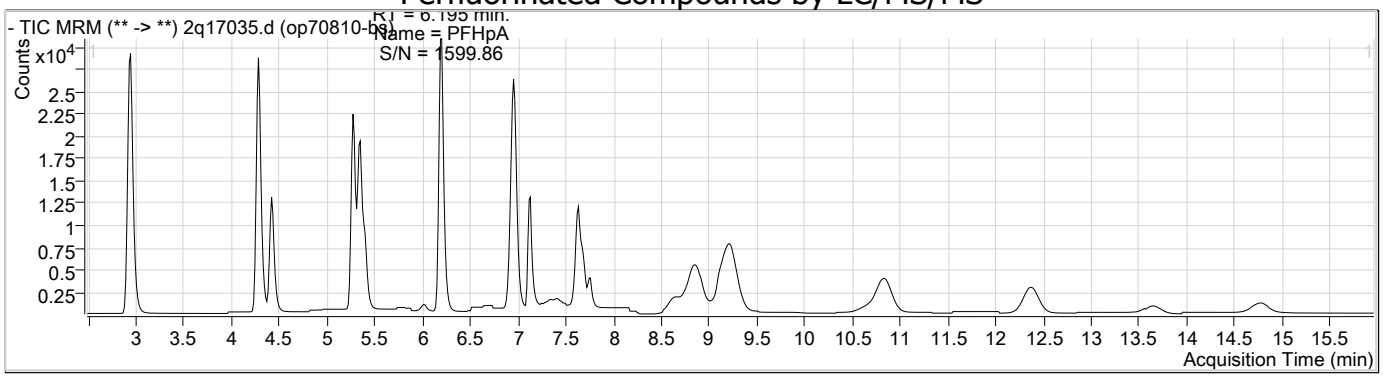
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.948	415.0 -> 370.0	15206	20.00	µg/L	-0.049
13C4-PFOS	7.624	503.0 -> 80.0	8135	20.00	µg/L	-0.051
M4-PFBA	2.941	217.0 -> 172.0	98811	20.00	µg/L	-0.050
M5-PFPeA	4.287	268.0 -> 223.0	48627	20.00	µg/L	-0.050
M5-PFHxA	5.351	318.0 -> 273.0	44904	20.00	µg/L	-0.040
M4-PFHpA	6.205	367.0 -> 322.0	42206	20.00	µg/L	-0.050
M8-PFOA	6.946	421.0 -> 376.0	20478	20.00	µg/L	-0.049
M9-PFNA	7.690	472.0 -> 427.0	13994	20.00	µg/L	-0.062
M6-PFDA	8.851	519.0 -> 474.0	40966	20.00	µg/L	-0.166
M7-PFUnDA	10.830	570.0 -> 525.0	27147	20.00	µg/L	-0.200
M2-PFDoDA	12.366	615.0 -> 570.0	20007	20.00	µg/L	-0.200
M2-PFTeDA	14.782	715.0 -> 670.0	8149	20.00	µg/L	-0.187
M8-FOSA	7.127	506.0 -> 78.0	24258	20.00	µg/L	-0.015
M3-PFBS	4.418	302.0 -> 99.0	15413	20.00	µg/L	-0.050
M3-PFHxS	6.198	402.0 -> 99.0	12593	20.00	µg/L	-0.037
M8-PFOS	7.621	507.0 -> 99.0	6013	20.00	µg/L	-0.052
M2-4:2FTS	5.272	329.0 -> 309.0	41251	20.00	µg/L	-0.051
M2-6:2FTS	6.968	429.0 -> 409.0	29314	20.00	µg/L	-0.049
M2-8:2FTS	9.212	529.0 -> 509.0	54860	20.00	µg/L	-0.185
M3-MeFOSAA	7.632	573.0 -> 419.0	9507	20.00	µg/L	-0.026
System Monitoring Compounds						
13C2-4:2FTS	5.272	329.0 -> 309.0	41257	14.62	µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.1%		
13C2-6:2FTS	6.968	429.0 -> 409.0	29314	15.02	µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.1%		
13C2-8:2FTS	9.212	529.0 -> 509.0	53448	14.53	µg/L	-0.185
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.6%		
13C2-PFDoDA	12.366	615.0 -> 570.0	19990	11.88	µg/L	-0.200
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.4%		
13C2-PFTeDA	14.782	715.0 -> 670.0	8271	11.38	µg/L	-0.187
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 56.9%		
13C3-PFBS	4.418	302.0 -> 99.0	15422	14.79	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.0%		
13C3-PFHxS	6.198	402.0 -> 99.0	12590	15.08	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.4%		
13C4-PFBA	2.941	217.0 -> 172.0	98784	14.86	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.3%		
13C4-PFHpA	6.205	367.0 -> 322.0	42210	14.92	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.6%		
13C5-PFHxA	5.351	318.0 -> 273.0	44905	15.14	µg/L	-0.040
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.7%		
13C5-PFPeA	4.287	268.0 -> 223.0	48640	14.83	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.1%		
13C6-PFDA	8.851	519.0 -> 474.0	40652	14.66	µg/L	-0.166
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.3%		

Perfluorinated Compounds by LC/MS/MS

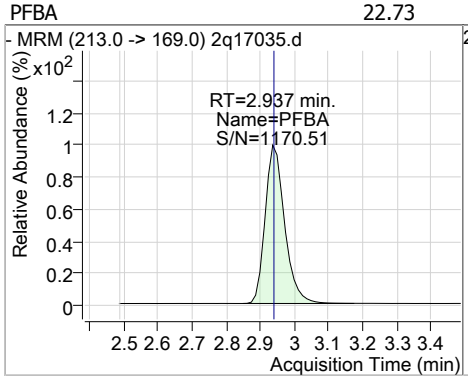
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.830	570.0 -> 525.0	27195	13.20	µg/L		-0.200
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.0%			
13C8-FOSA	7.127	506.0 -> 78.0	24268	15.09	µg/L		-0.015
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.4%			
13C8-PFOA	6.946	421.0 -> 376.0	20488	15.60	µg/L		-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.0%			
13C8-PFOS	7.621	507.0 -> 99.0	6011	14.49	µg/L		-0.052
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.4%			
13C9-PFNA	7.690	472.0 -> 427.0	14015	15.89	µg/L		-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.5%			
d3-MeFOSAA	7.632	573.0 -> 419.0	9505	12.24	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 61.2%			
M2-PFOA	6.948	415.0 -> 370.0	15210	20.01	ng/ml		-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.624	503.0 -> 80.0	8138	20.01	ng/ml		-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
Target Compounds							**QValue**
4:2FTS	5.274	327.0 -> 307.0	22408	21.60	µg/L		98
6:2FTS	6.970	427.0 -> 407.0	15948	22.38	µg/L		96
8:2FTS	9.215	527.0 -> 507.0	30573	21.55	µg/L		93
EtFOSAA	7.757	584.0 -> 419.0	3753	24.44	µg/L		96
FOSA	7.116	498.0 -> 78.0	13952	23.44	µg/L		99
MeFOSAA	7.633	570.0 -> 419.0	4199	23.96	µg/L		97
PFBA	2.937	213.0 -> 169.0	17814	22.73	µg/L		100
PFBS	4.422	299.0 -> 80.0	20364	19.26	µg/L		100
PFDA	8.867	513.0 -> 469.0	16030	20.99	µg/L		99
PFDoDA	12.359	613.0 -> 569.0	12904	25.29	µg/L		100
PFDS	10.650	599.0 -> 80.0	4685	20.15	µg/L		99
PFHpA	6.195	363.0 -> 319.0	35625	22.67	µg/L		100
PFHpS	6.917	449.0 -> 80.0	7419	20.94	µg/L		99
PFHxA	5.353	313.0 -> 269.0	15235	20.12	µg/L		98
PFHxS	6.189	399.0 -> 80.0	14631	19.61	µg/L	m	99
PFNA	7.692	463.0 -> 419.0	5442	19.72	µg/L		93
PFNS	8.634	549.0 -> 80.0	10560	19.06	µg/L		99
PFOA	6.948	413.0 -> 369.0	12510	22.92	µg/L		97
PFOS	7.624	499.0 -> 80.0	8872	23.56	µg/L	m	95
PFPeA	4.291	263.0 -> 219.0	51761	22.80	µg/L		100
PFPeS	5.396	349.0 -> 80.0	13948	20.77	µg/L		100
PFTeDA	14.761	713.0 -> 669.0	5636	23.25	µg/L		98
PFTrDA	13.643	663.0 -> 619.0	10205	28.69	µg/L		98
PFUnDA	10.834	563.0 -> 519.0	15562	23.30	µg/L		99

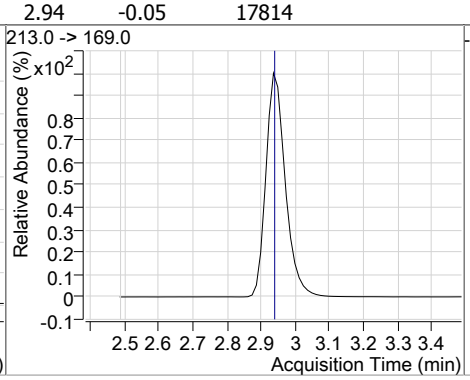
 # = Qualifier out of range, m = manually integrated, + = Area summed

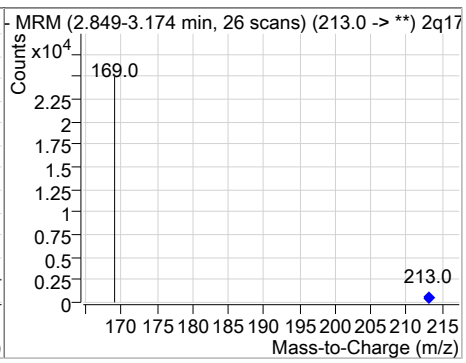
Perfluorinated Compounds by LC/MS/MS



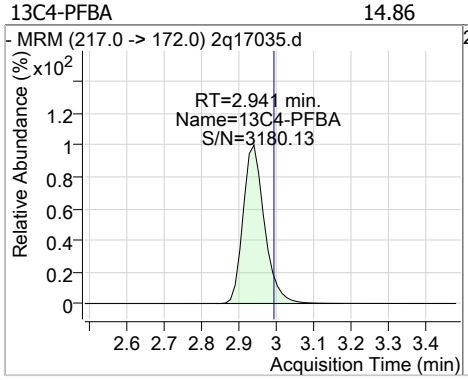
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	22.73	2.94	-0.05	17814				

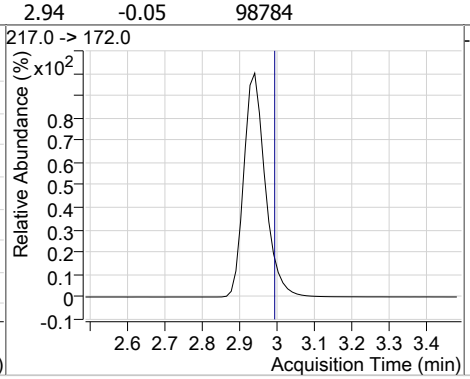


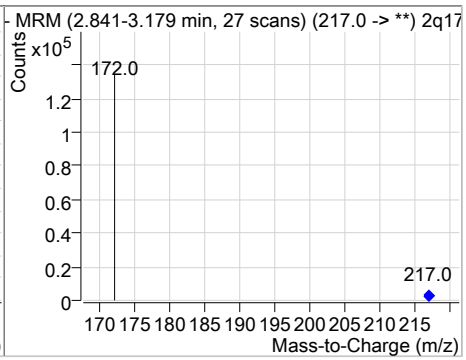




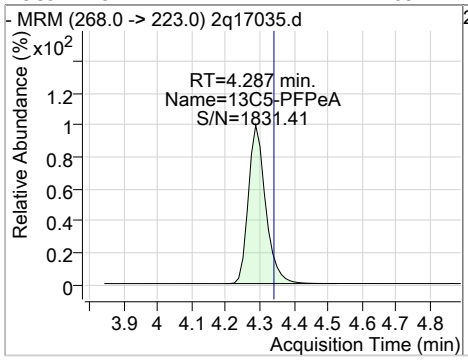
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	14.86	2.94	-0.05	98784				

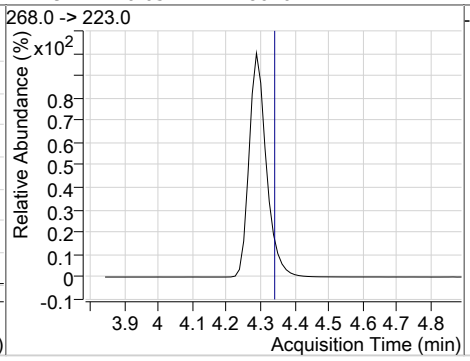


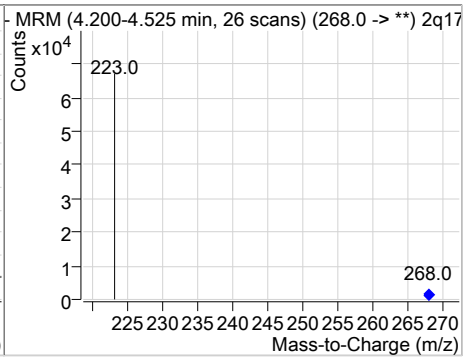




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	14.83	4.29	-0.05	48640				

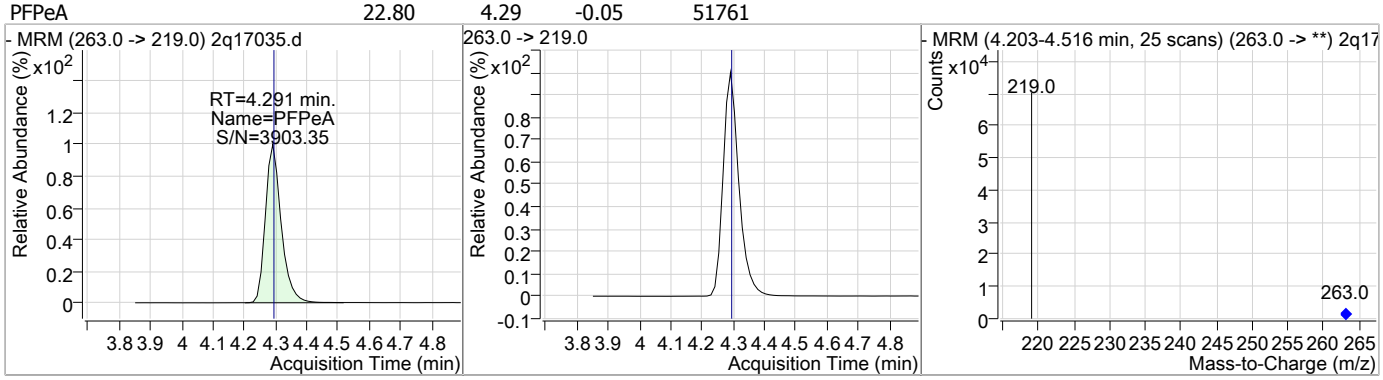




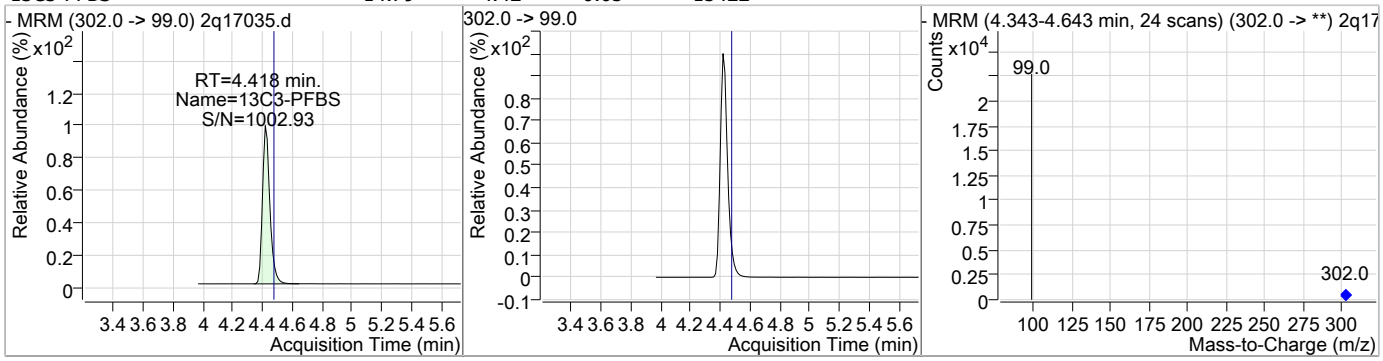


Perfluorinated Compounds by LC/MS/MS

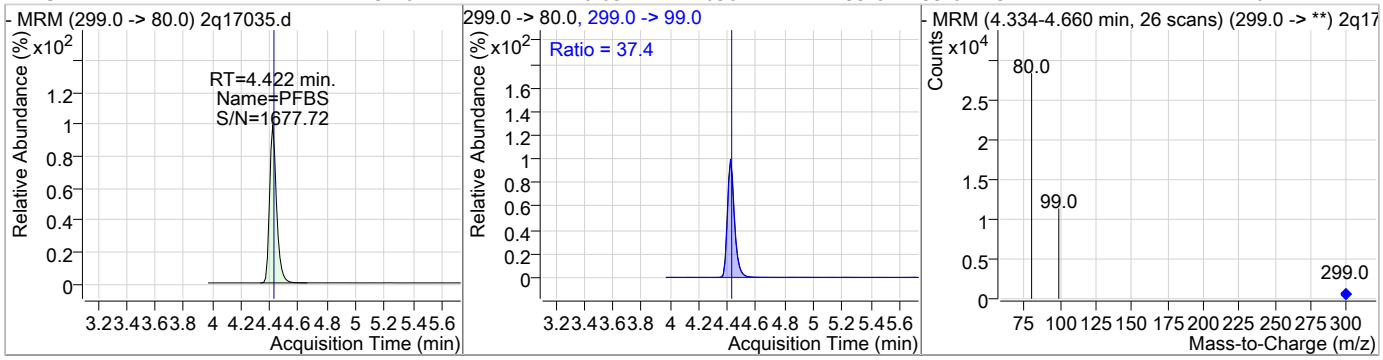
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	22.80	4.29	-0.05	51761				



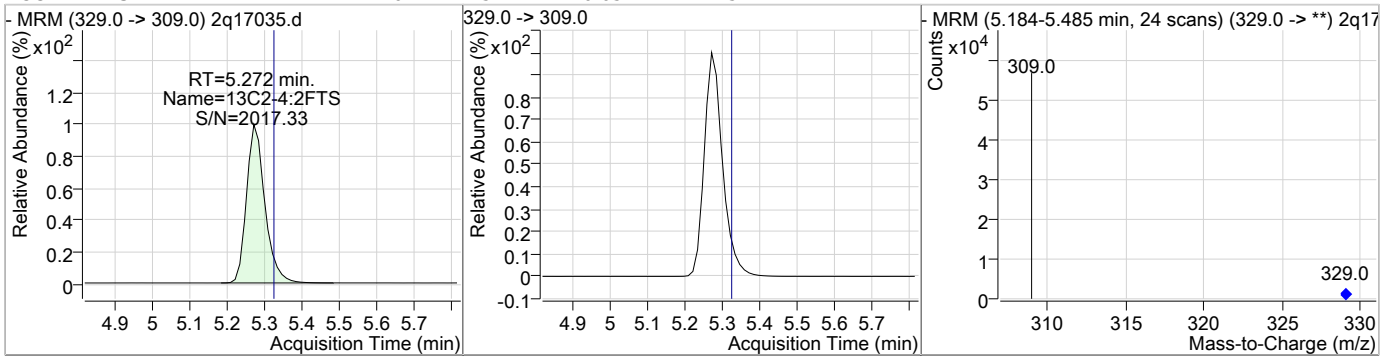
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	14.79	4.42	-0.05	15422				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.26	4.42	-0.05	20364	299.0 -> 99.0	37.4	7.4	67.4

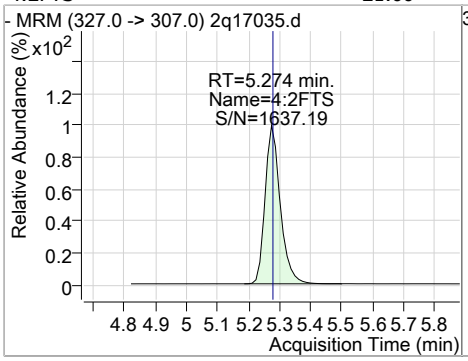


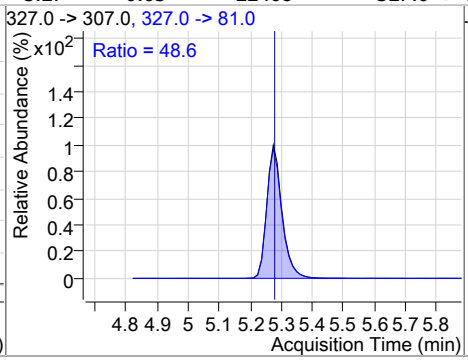
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	14.62	5.27	-0.05	41257				

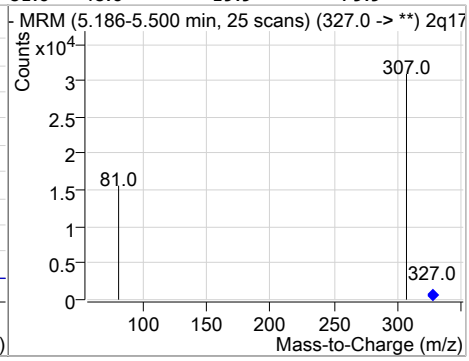


Perfluorinated Compounds by LC/MS/MS

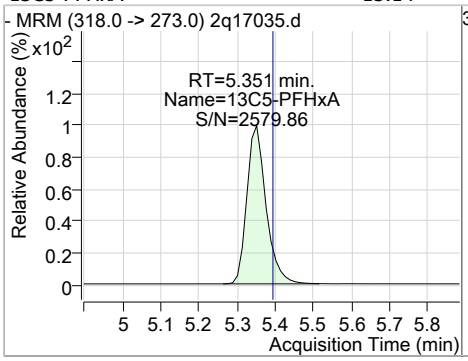
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	21.60	5.27	-0.05	22408	327.0 -> 81.0	48.6	19.9	79.9

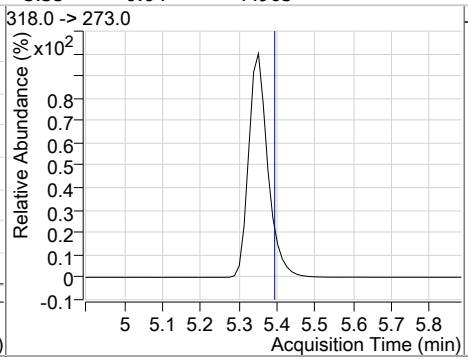


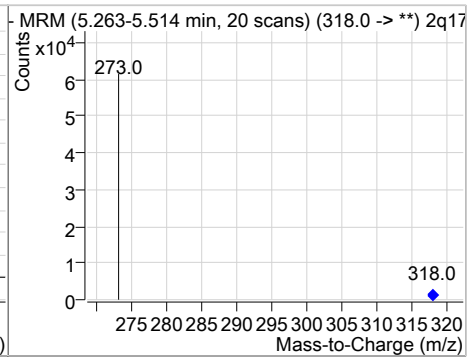




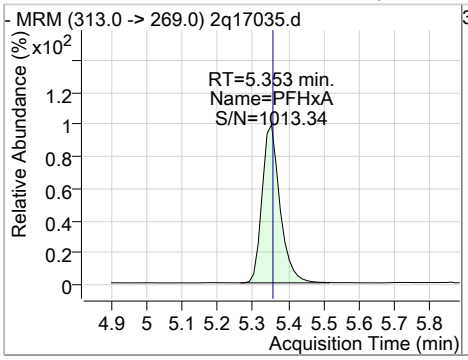
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	15.14	5.35	-0.04	44905				

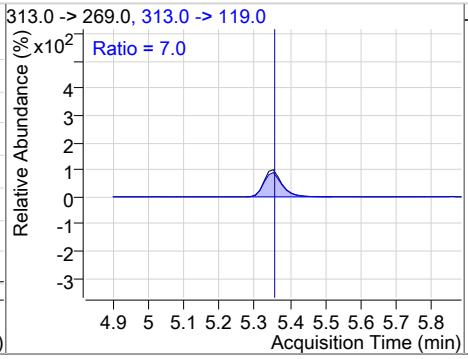


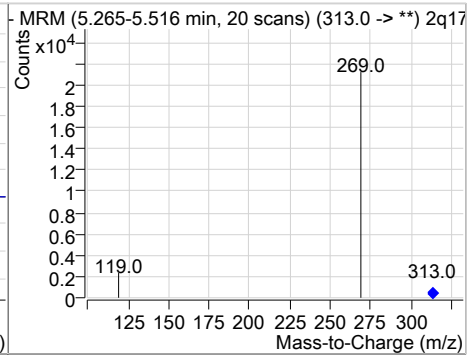




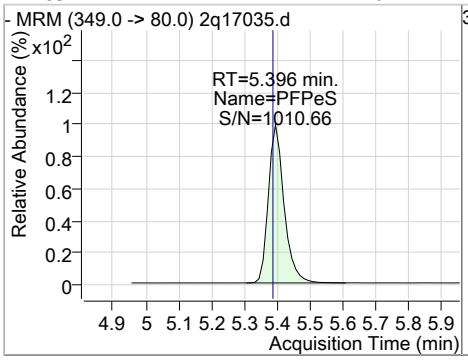
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.12	5.35	-0.04	15235	313.0 -> 119.0	7.0	0.0	37.6

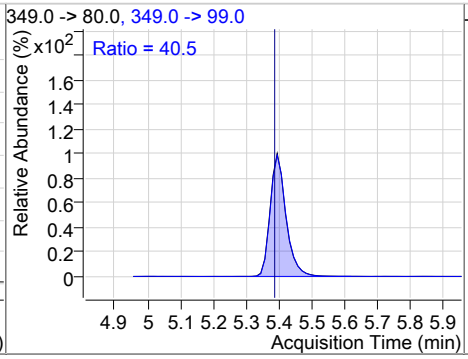


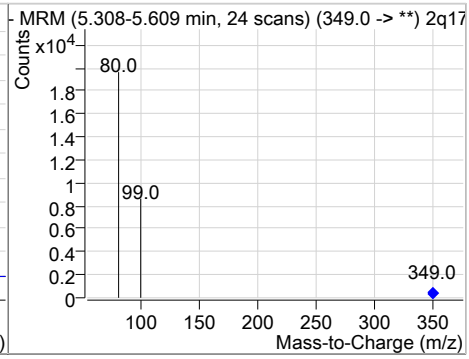




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	20.77	5.40	-0.05	13948	349.0 -> 99.0	40.5	10.8	70.8

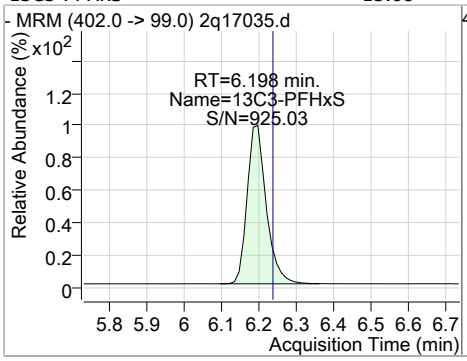


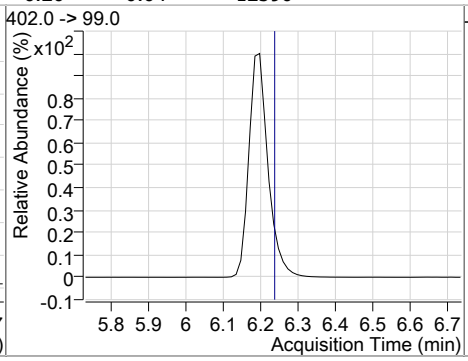


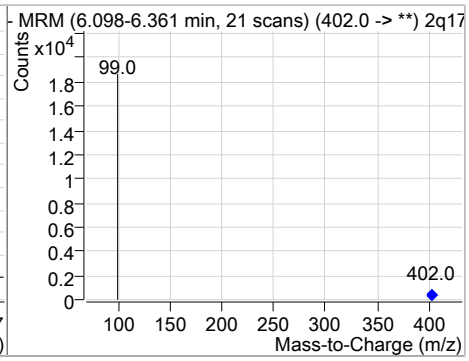


Perfluorinated Compounds by LC/MS/MS

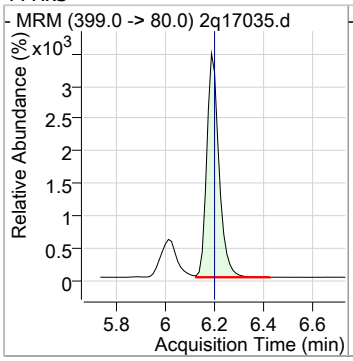
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	15.08	6.20	-0.04	12590				

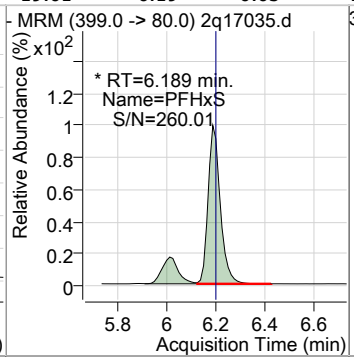


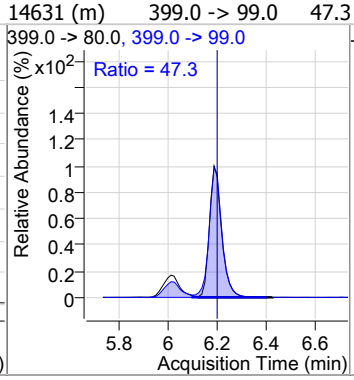


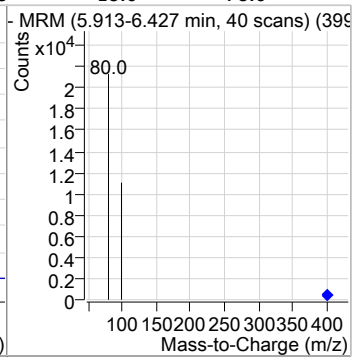


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.61	6.19	-0.05	14631 (m)	399.0 -> 99.0	47.3	18.0	78.0

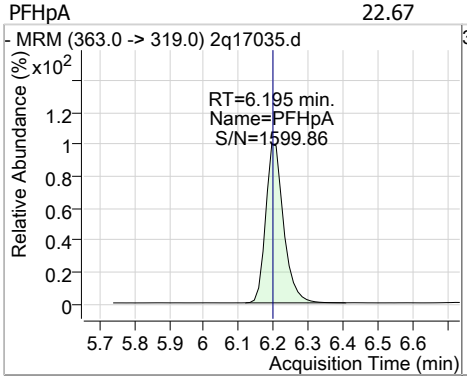


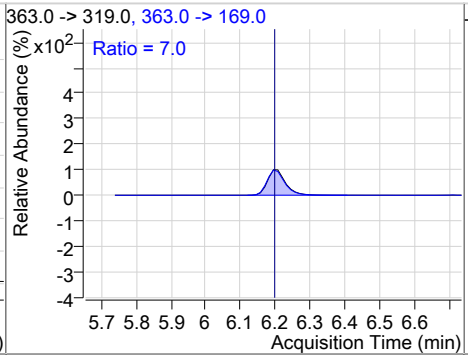


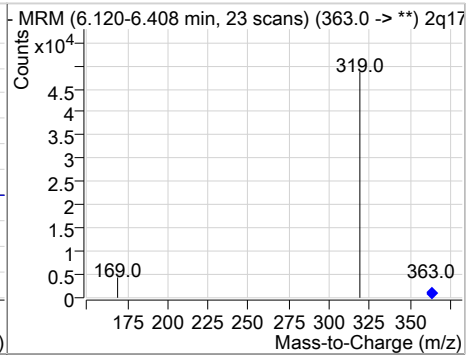




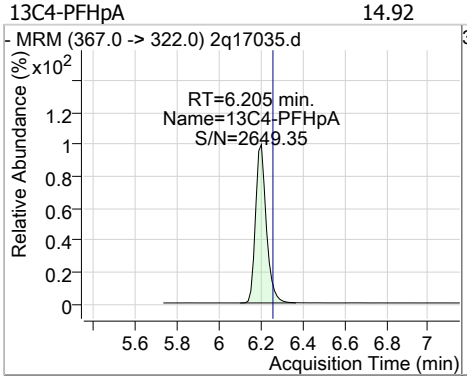
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	22.67	6.20	-0.05	35625	363.0 -> 169.0	7.0	0.0	37.2

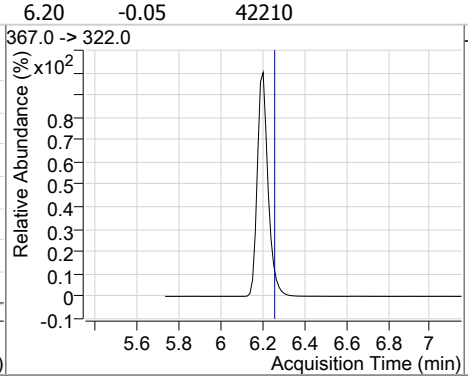


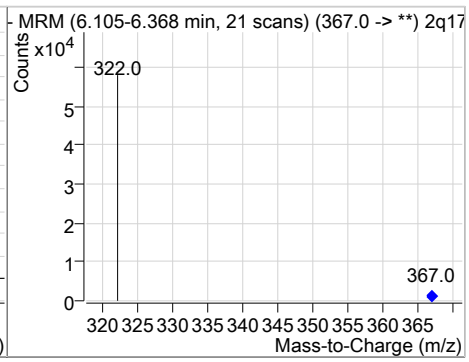




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	14.92	6.20	-0.05	42210				

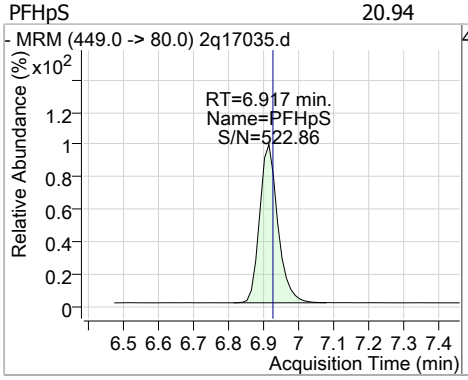


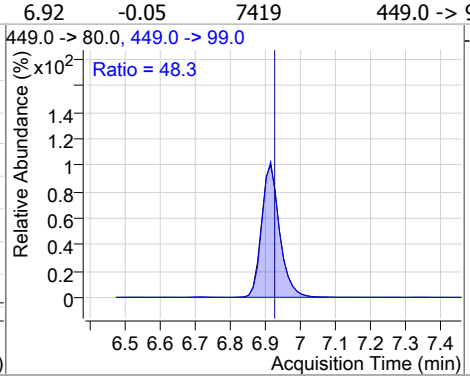


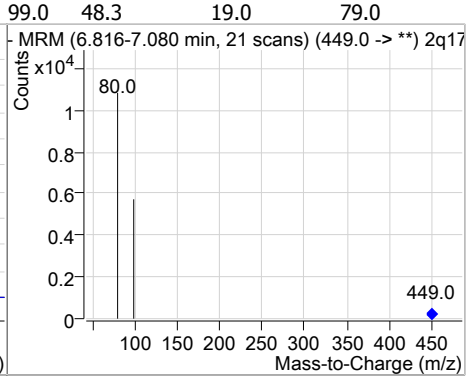


Perfluorinated Compounds by LC/MS/MS

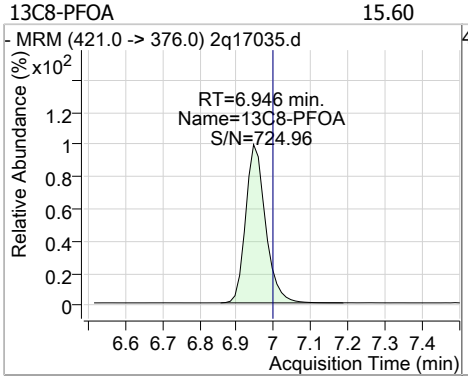
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.94	6.92	-0.05	7419	449.0 -> 99.0	48.3	19.0	79.0

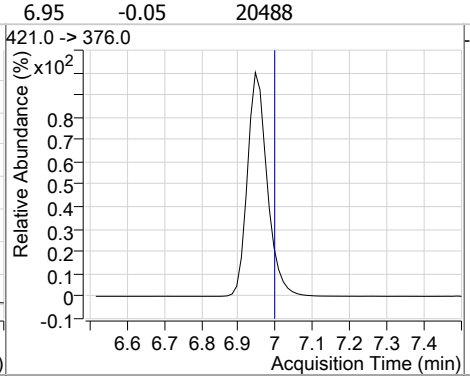


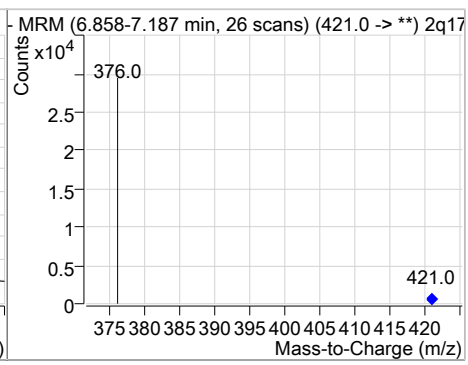




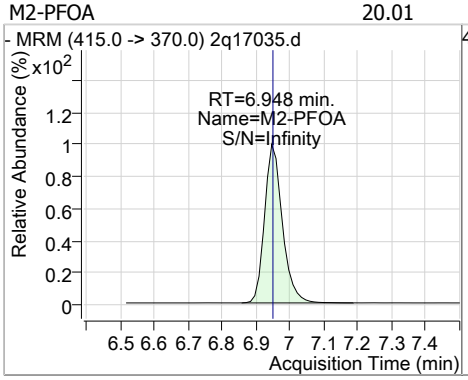
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	15.60	6.95	-0.05	20488				

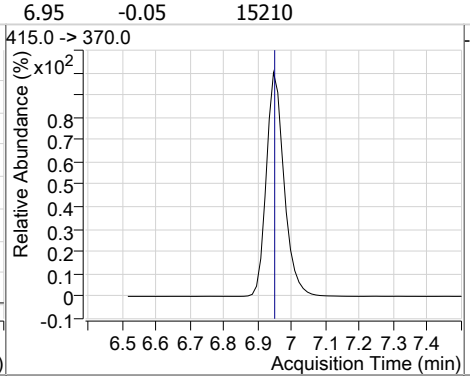


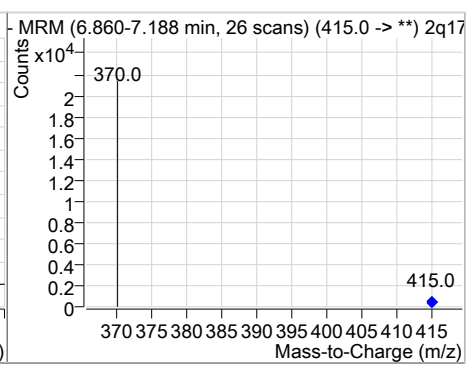




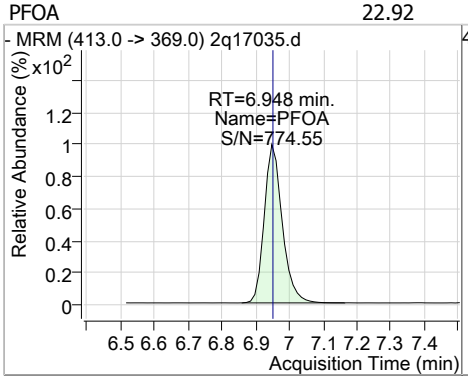
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.01	6.95	-0.05	15210				

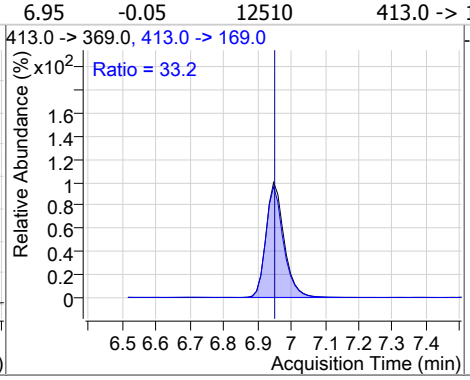


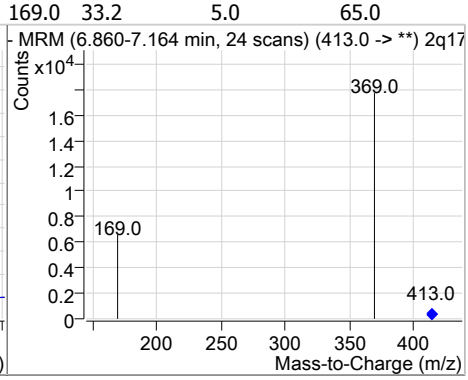




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	22.92	6.95	-0.05	12510	413.0 -> 169.0	33.2	5.0	65.0

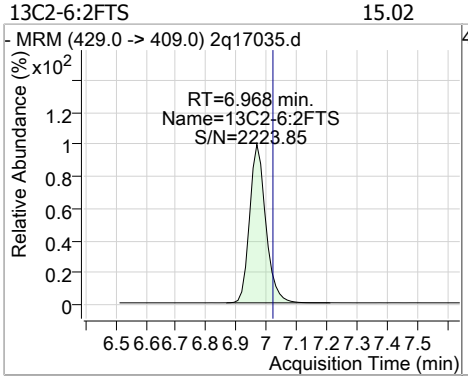


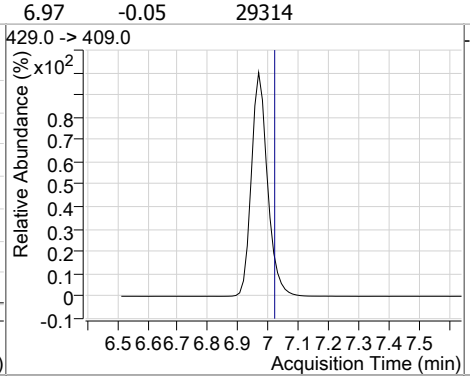


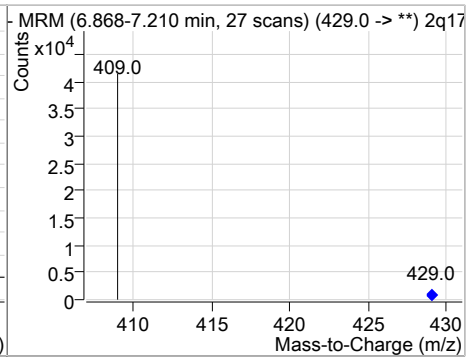


Perfluorinated Compounds by LC/MS/MS

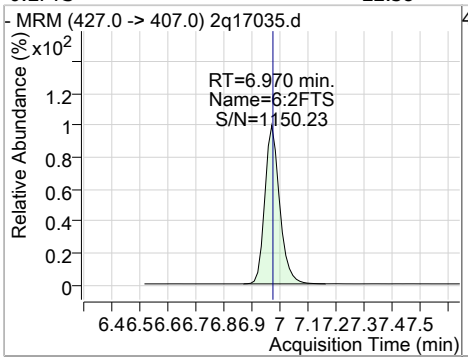
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	15.02	6.97	-0.05	29314				

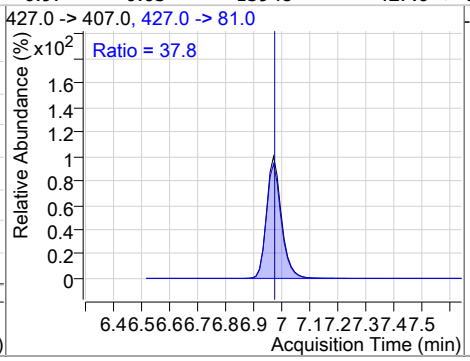


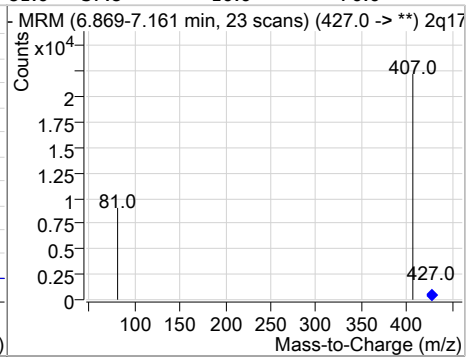




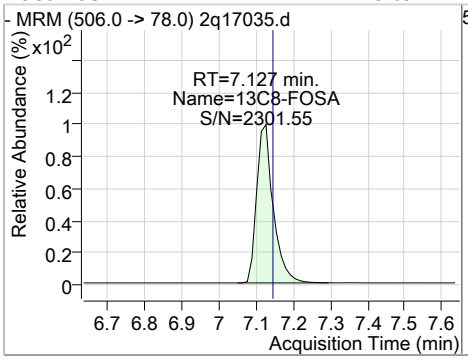
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	22.38	6.97	-0.05	15948	427.0 -> 81.0	37.8	10.0	70.0

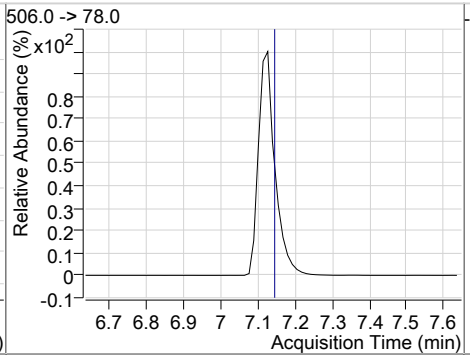


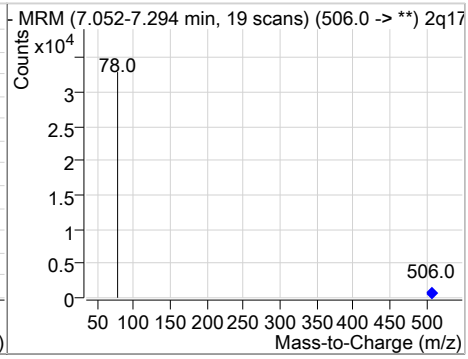




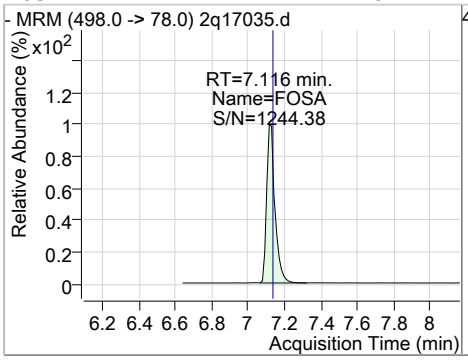
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	15.09	7.13	-0.02	24268				

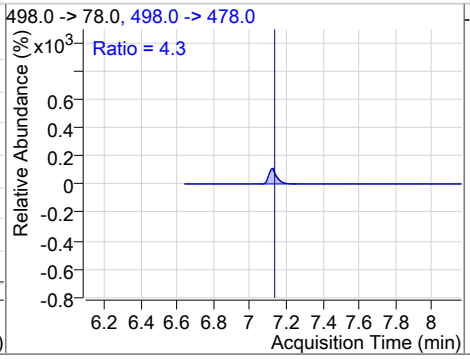


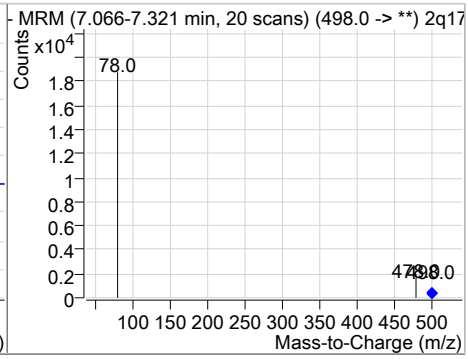




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	23.44	7.12	-0.03	13952	498.0 -> 478.0	4.3	0.0	34.0

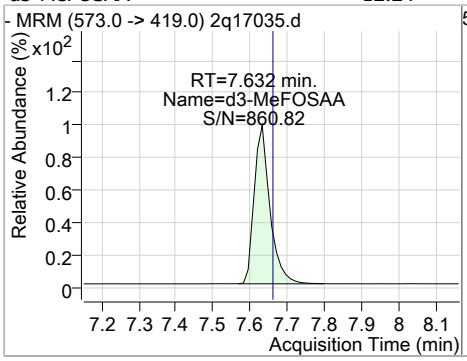


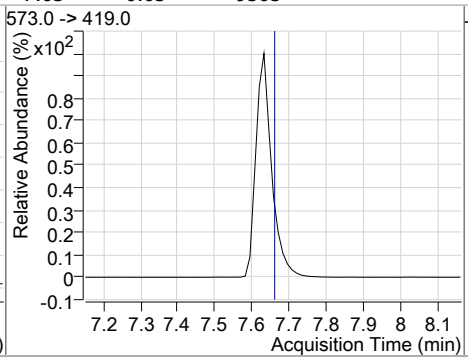


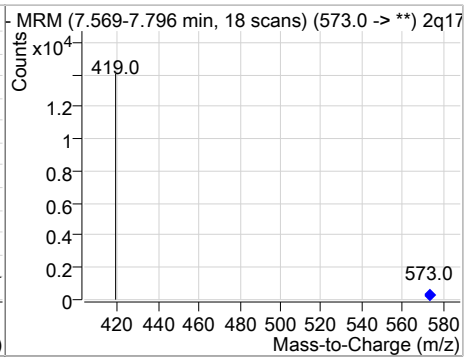


Perfluorinated Compounds by LC/MS/MS

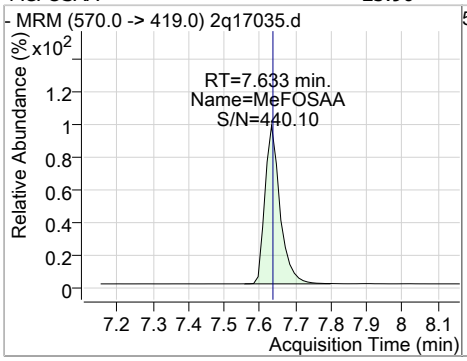
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	12.24	7.63	-0.03	9505				

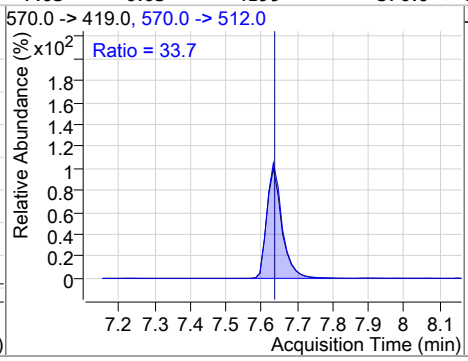


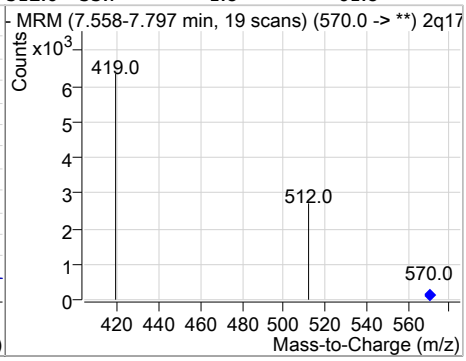




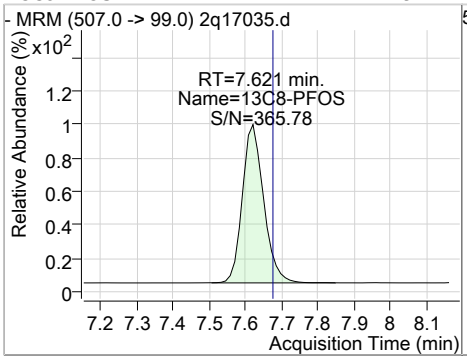
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	23.96	7.63	-0.03	4199	570.0 -> 512.0	33.7	1.8	61.8

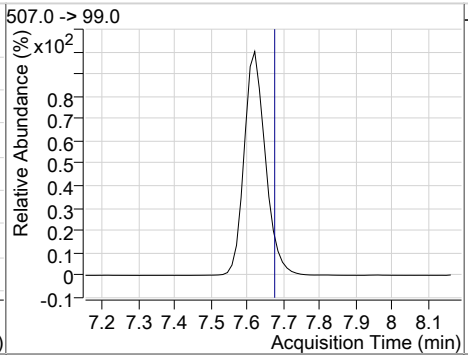


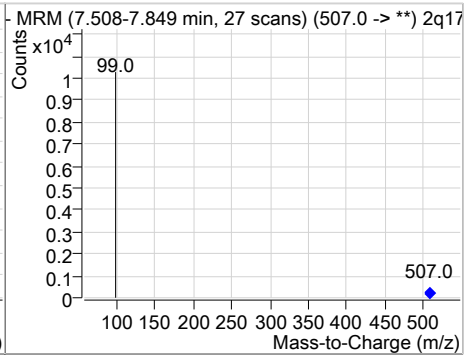




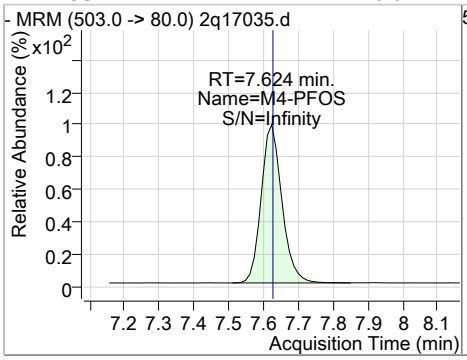
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	14.49	7.62	-0.05	6011				

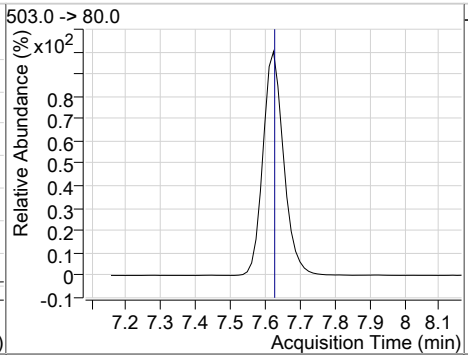


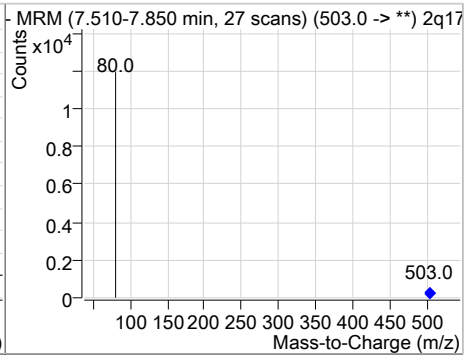




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.01	7.62	-0.05	8138				

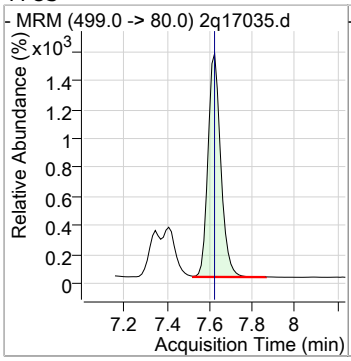


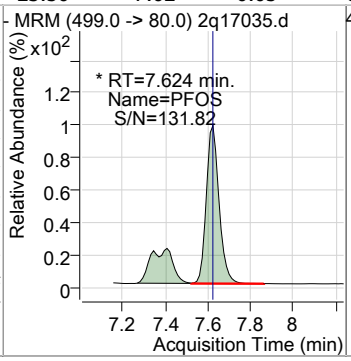


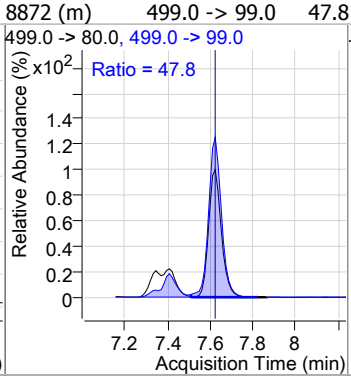


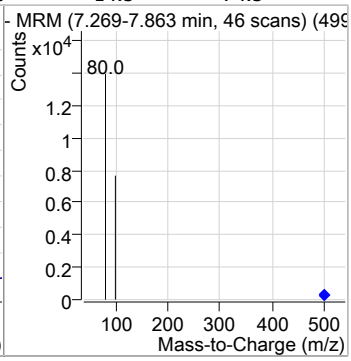
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	23.56	7.62	-0.05	8872 (m)	499.0 -> 99.0	47.8	14.5	74.5

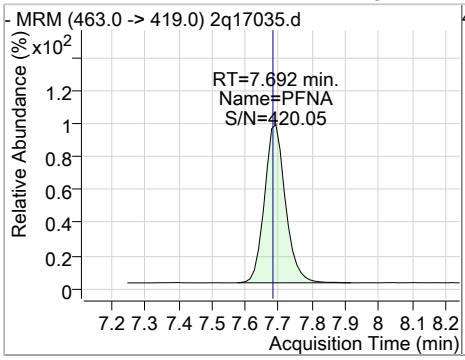


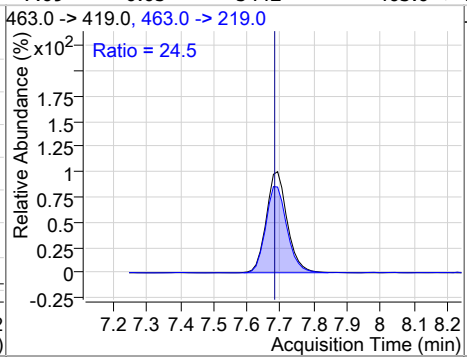


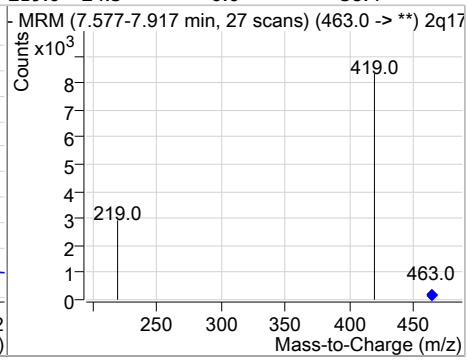




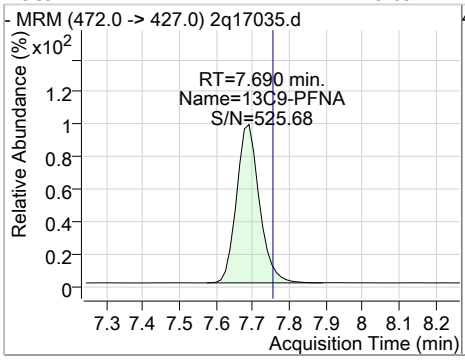
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.72	7.69	-0.05	5442	463.0 -> 219.0	24.5	0.0	58.4

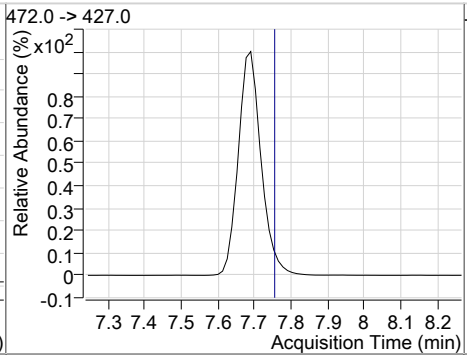


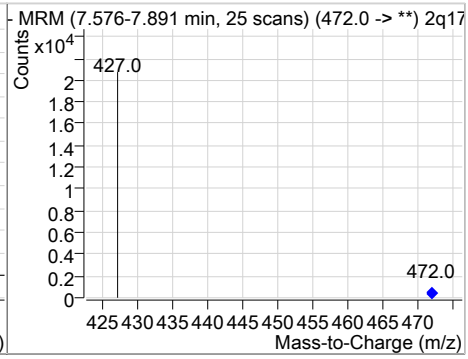




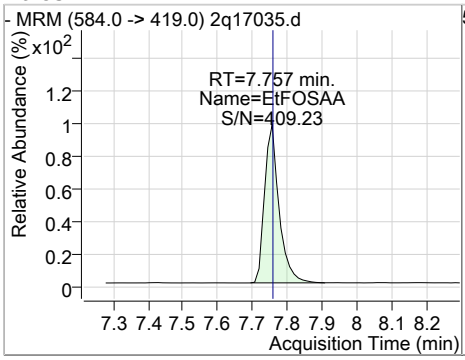
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	15.89	7.69	-0.06	14015				

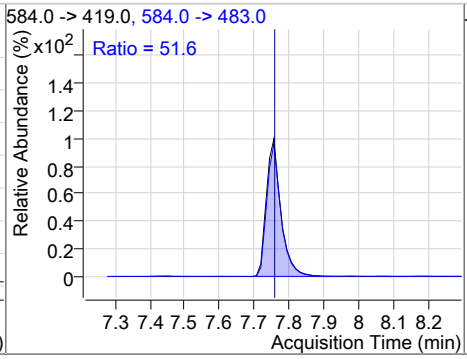


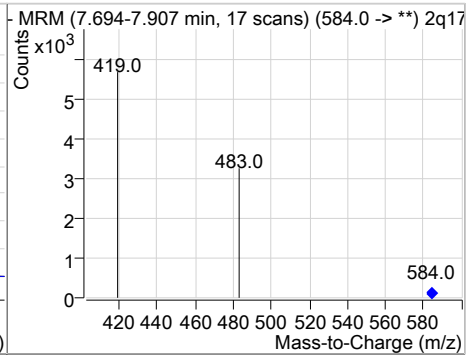




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	24.44	7.76	-0.02	3753	584.0 -> 483.0	51.6	24.8	84.8

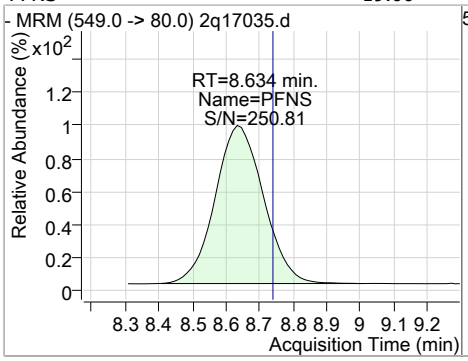


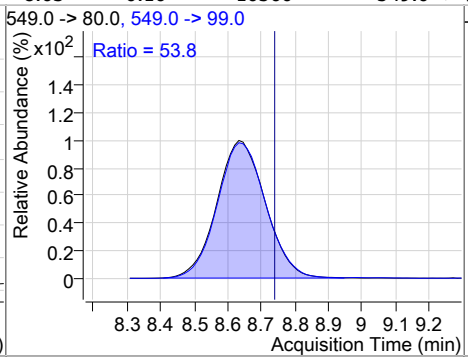


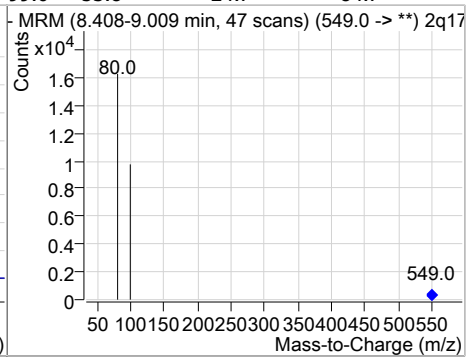


Perfluorinated Compounds by LC/MS/MS

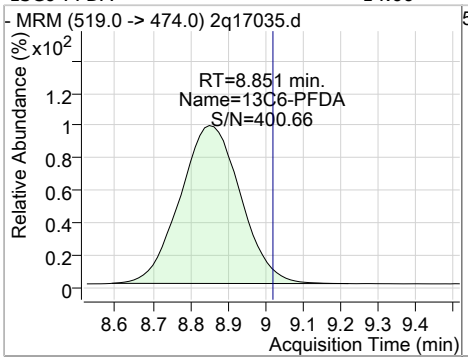
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.06	8.63	-0.16	10560	549.0 -> 99.0	53.8	24.7	84.7

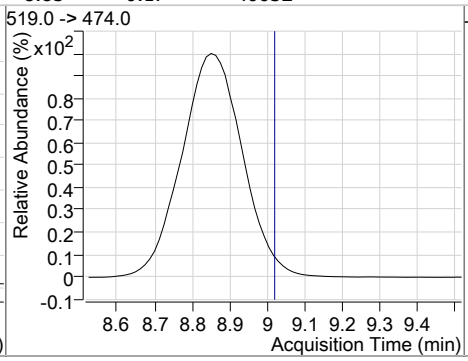


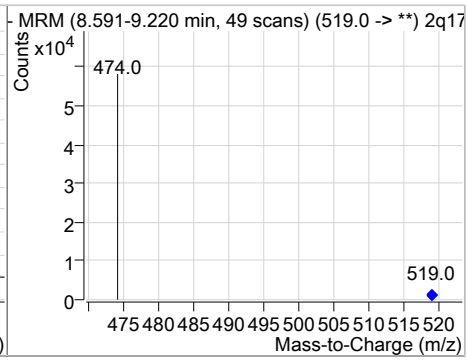




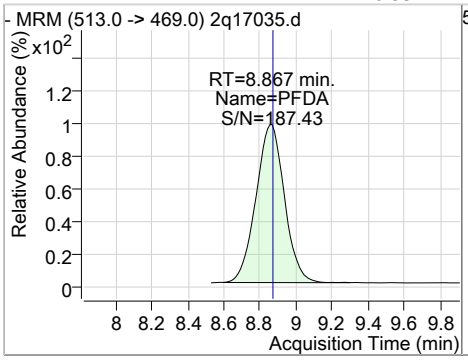
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	14.66	8.85	-0.17	40652				

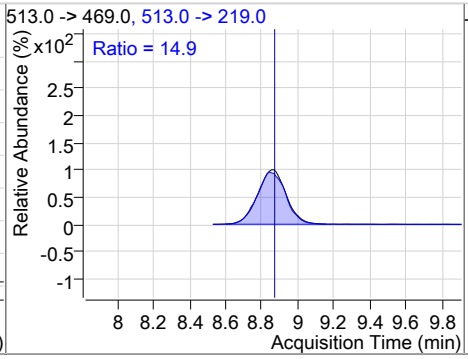


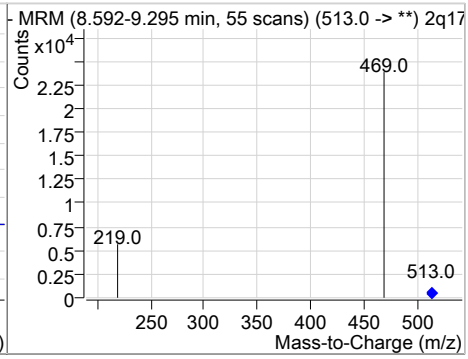




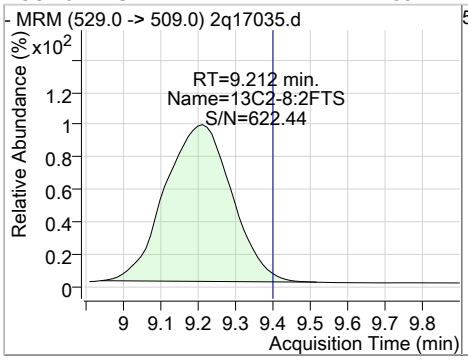
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.99	8.87	-0.16	16030	513.0 -> 219.0	14.9	0.0	45.3

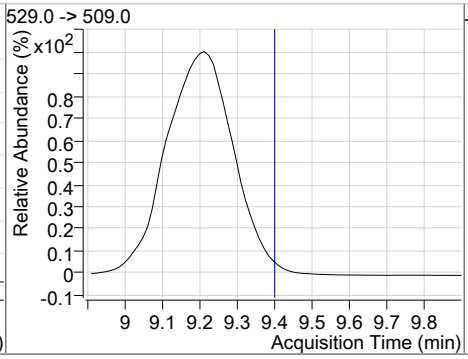


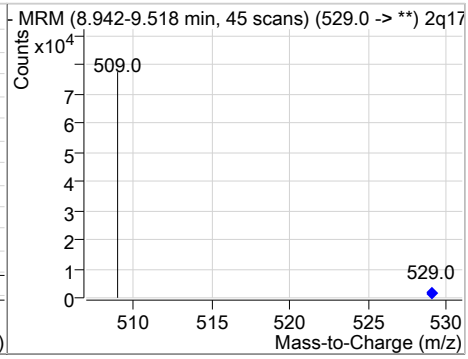




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	14.53	9.21	-0.19	53448				

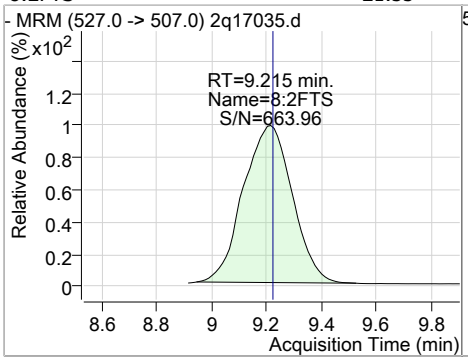


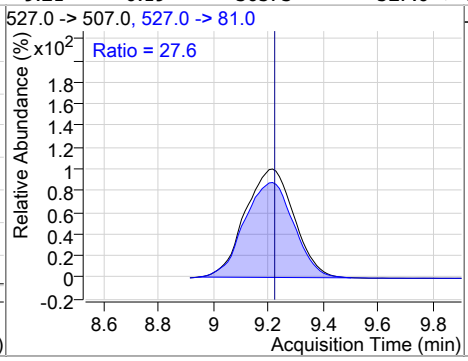


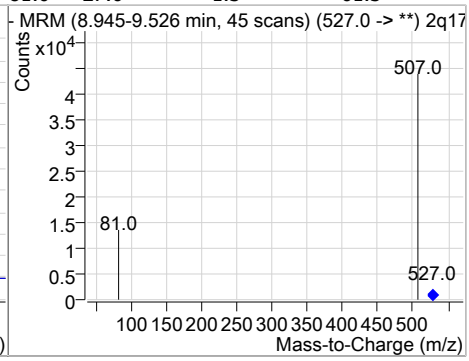


Perfluorinated Compounds by LC/MS/MS

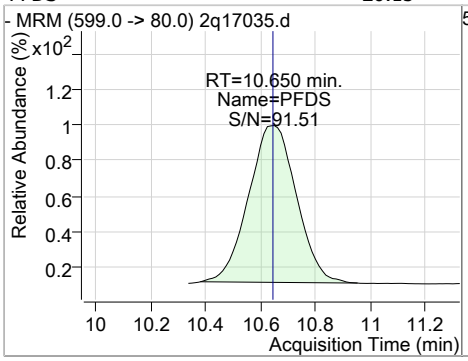
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	21.55	9.21	-0.19	30573	527.0 -> 81.0	27.6	1.3	61.3

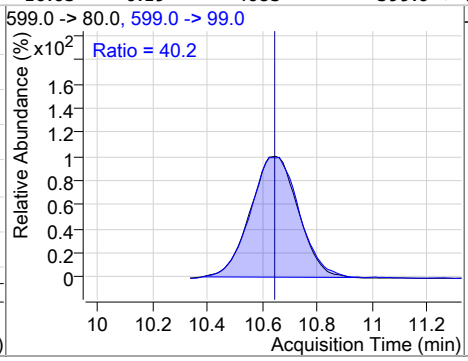


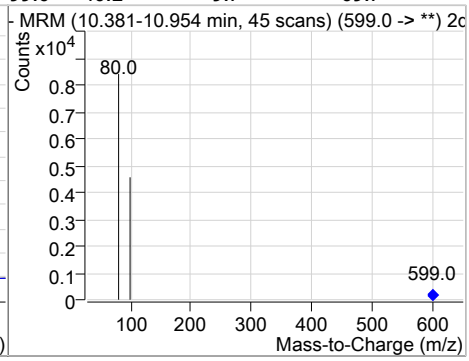




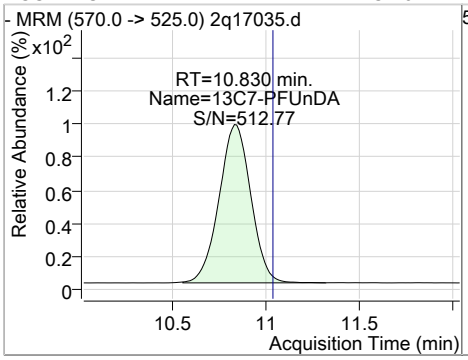
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	20.15	10.65	-0.19	4685	599.0 -> 99.0	40.2	9.7	69.7

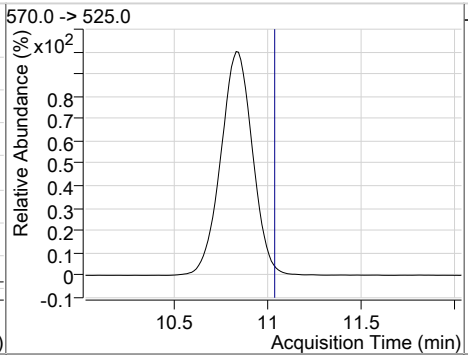


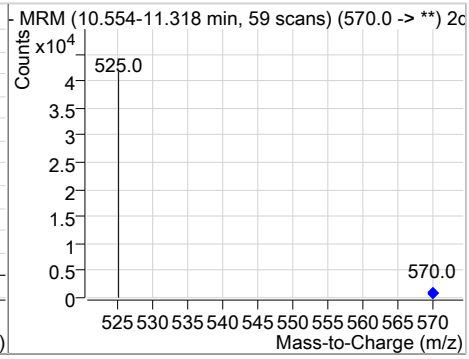




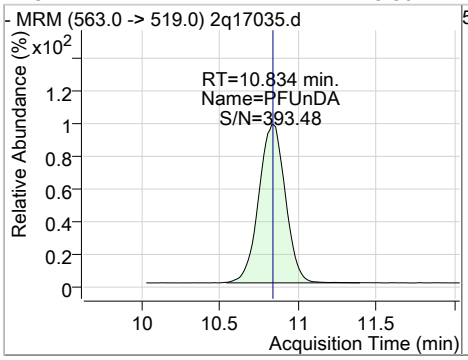
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	13.20	10.83	-0.20	27195				

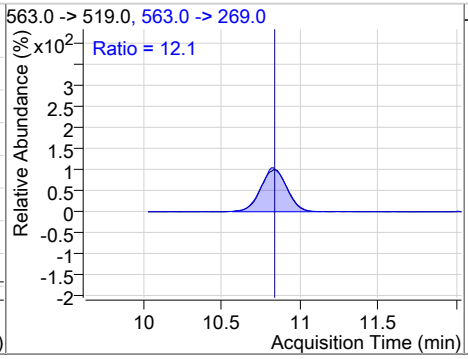


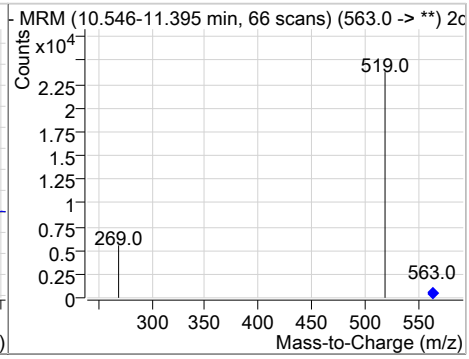




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	23.30	10.83	-0.20	15562	563.0 -> 269.0	12.1	0.0	41.8

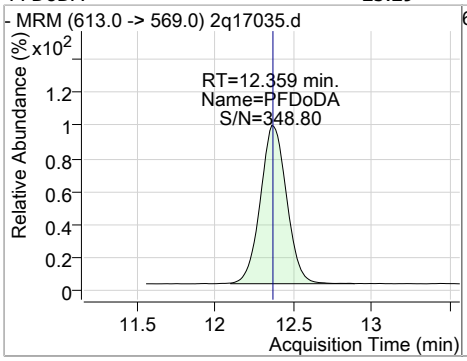


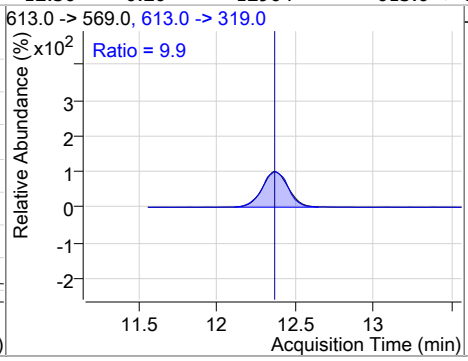


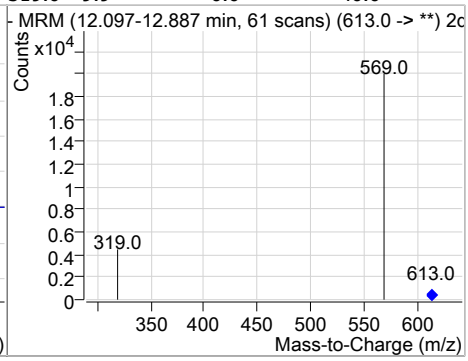


Perfluorinated Compounds by LC/MS/MS

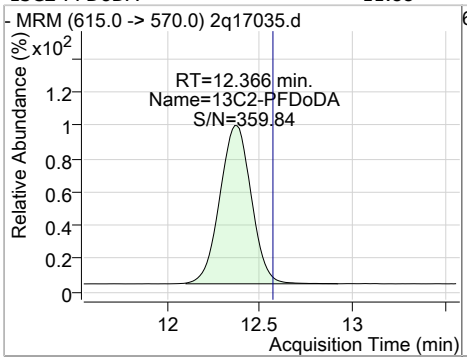
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	25.29	12.36	-0.20	12904	613.0 -> 319.0	9.9	0.0	40.0

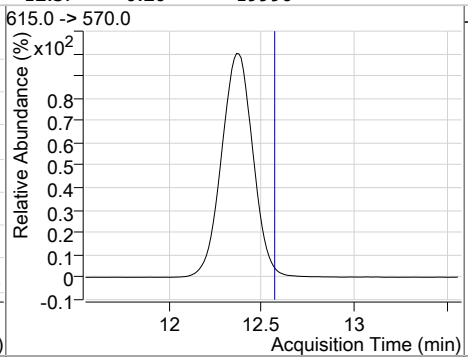


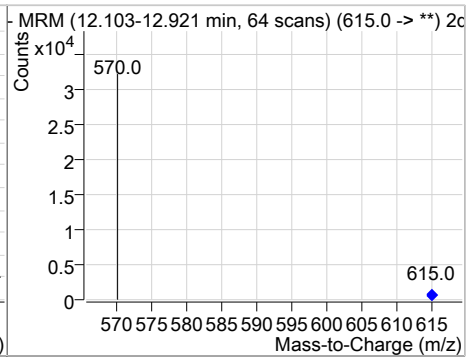




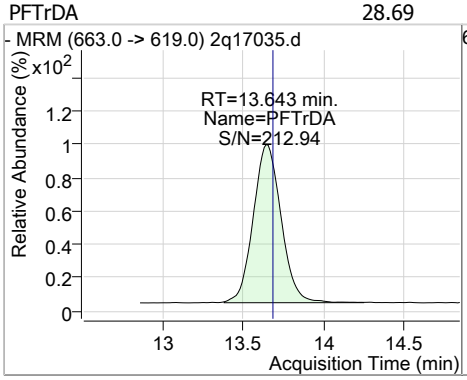
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	11.88	12.37	-0.20	19990				

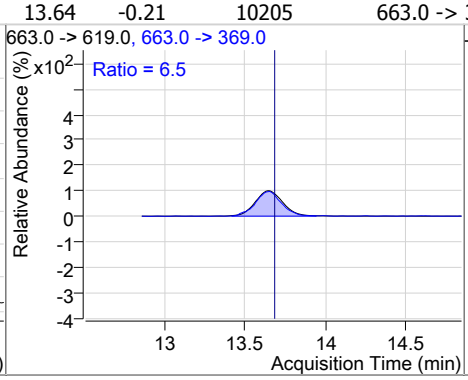


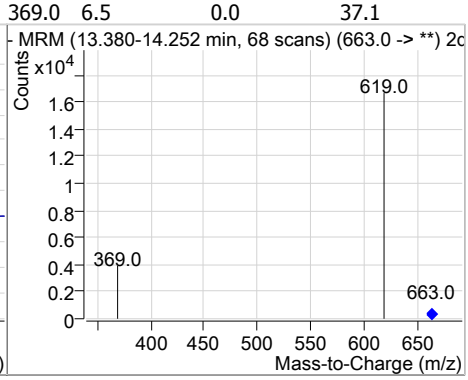




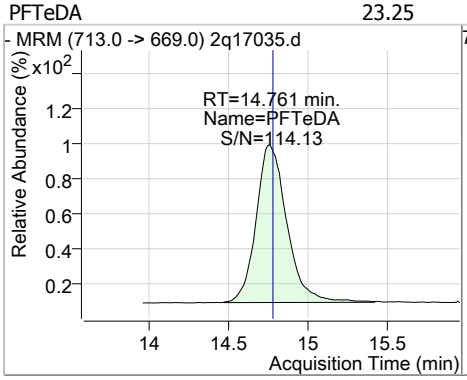
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	28.69	13.64	-0.21	10205	663.0 -> 369.0	6.5	0.0	37.1

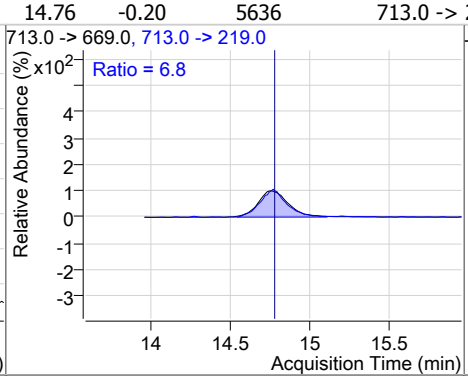


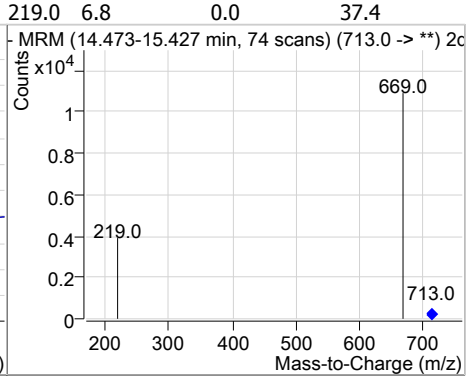




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	23.25	14.76	-0.20	5636	713.0 -> 219.0	6.8	0.0	37.4

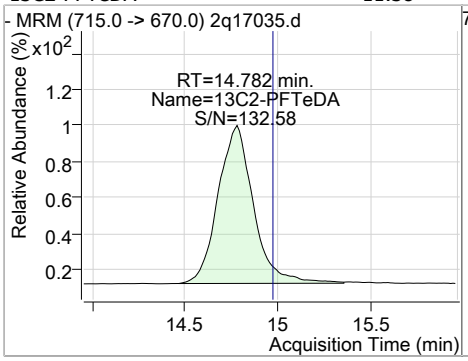


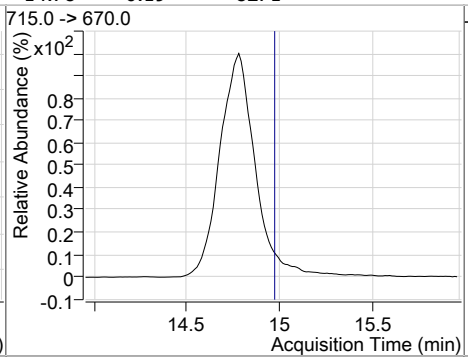


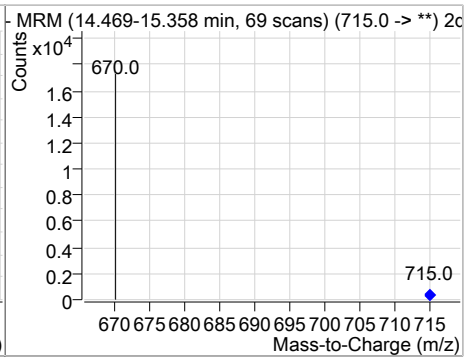


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	11.38	14.78	-0.19	8271				







Manual Integration Approval Summary

Sample Number:	OP70810-BS	**Method:**	EPA 537M QSM5.1 B-15
Lab FileID:	2Q17035.D	**Analyst approved:**	07/13/18 12:58 Nancy Saunders
Injection Time:	07/12/18 23:47	**Supervisor approved:**	07/16/18 14:50 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.19	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.62	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
07/10/18 17:09

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16695.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/7/2018 12:23:25 PM
Sample Name : op70743-ms
Vial : Vial 79
DA Method File : PFC_ID_070718_S2Q292.quantmethod.xml
Batch Name : s2q292.batch.bin
Sample Information : op70743,S2Q292,130,,,1.0,5,water

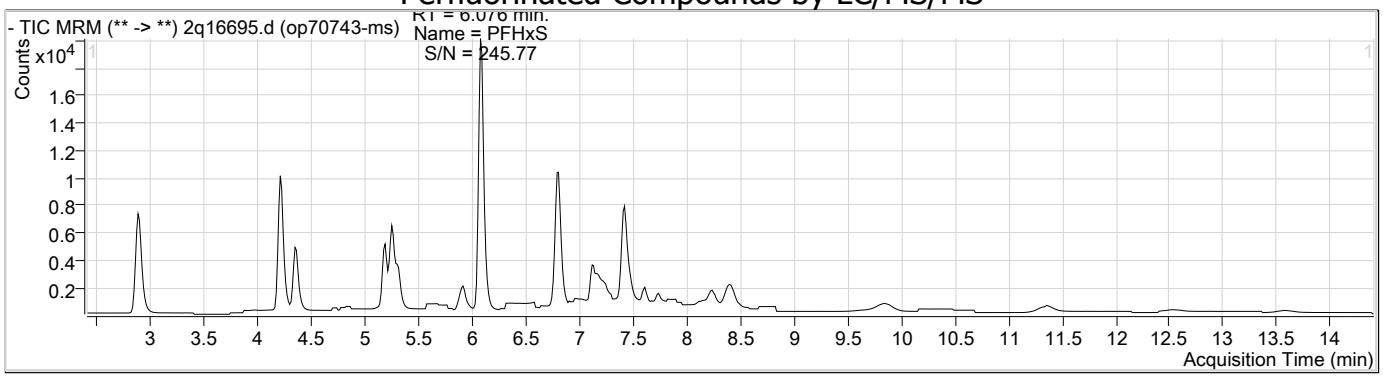
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.798	415.0 -> 370.0	16023	20.00	µg/L	0.000
13C4-PFOS	7.422	503.0 -> 80.0	8740	20.00	µg/L	0.013
M4-PFBA	2.878	217.0 -> 172.0	23076	20.00	µg/L	-0.013
M5-PFPeA	4.212	268.0 -> 223.0	10736	20.00	µg/L	0.000
M5-PFHxA	5.253	318.0 -> 273.0	9561	20.00	µg/L	0.000
M4-PFHpA	6.091	367.0 -> 322.0	8872	20.00	µg/L	0.013
M8-PFOA	6.796	421.0 -> 376.0	4216	20.00	µg/L	0.000
M9-PFNA	7.475	472.0 -> 427.0	2485	20.00	µg/L	0.013
M6-PFDA	8.242	519.0 -> 474.0	4556	20.00	µg/L	0.013
M7-PFUnDA	9.841	570.0 -> 525.0	3886	20.00	µg/L	0.038
M2-PFDoDA	11.340	615.0 -> 570.0	2813	20.00	µg/L	0.025
M2-PFTeDA	13.569	715.0 -> 670.0	1011	20.00	µg/L	0.025
M8-FOSA	7.115	506.0 -> 78.0	4645	20.00	µg/L	0.000
M3-PFBS	4.355	302.0 -> 99.0	3408	20.00	µg/L	0.000
M3-PFHxS	6.085	402.0 -> 99.0	2883	20.00	µg/L	0.013
M8-PFOS	7.420	507.0 -> 99.0	1267	20.00	µg/L	0.013
M2-4:2FTS	5.185	329.0 -> 309.0	9057	20.00	µg/L	0.013
M2-6:2FTS	6.818	429.0 -> 409.0	5603	20.00	µg/L	0.013
M2-8:2FTS	8.399	529.0 -> 509.0	7191	20.00	µg/L	0.025
M3-MeFOSAA	7.607	573.0 -> 419.0	2025	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.185	329.0 -> 309.0	9066	3.46	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 17.3%		
13C2-6:2FTS	6.818	429.0 -> 409.0	5603	3.30	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.5%		
13C2-8:2FTS	8.399	529.0 -> 509.0	7177	3.17	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.8%		
13C2-PFDoDA	11.340	615.0 -> 570.0	2796	2.76	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.8%		
13C2-PFTeDA	13.569	715.0 -> 670.0	1060	2.71	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.6%		
13C3-PFBS	4.355	302.0 -> 99.0	3406	3.25	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.3%		
13C3-PFHxS	6.085	402.0 -> 99.0	2890	3.39	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.9%		
13C4-PFBA	2.878	217.0 -> 172.0	23052	3.35	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.7%		
13C4-PFHpA	6.091	367.0 -> 322.0	8892	3.30	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.5%		
13C5-PFHxA	5.253	318.0 -> 273.0	9579	3.38	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.9%		
13C5-PFPeA	4.212	268.0 -> 223.0	10736	3.37	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.9%		
13C6-PFDA	8.242	519.0 -> 474.0	4549	3.23	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.1%		

Perfluorinated Compounds by LC/MS/MS

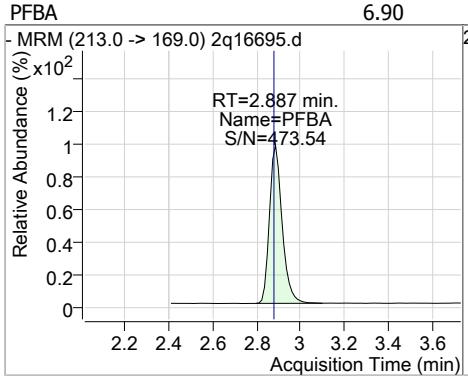
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	9.841	570.0 -> 525.0	3885	2.92	µg/L		0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.6%			
13C8-FOSA	7.115	506.0 -> 78.0	4645	3.50	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 17.5%			
13C8-PFOA	6.796	421.0 -> 376.0	4217	3.42	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 17.1%			
13C8-PFOS	7.420	507.0 -> 99.0	1267	3.21	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.0%			
13C9-PFNA	7.475	472.0 -> 427.0	2488	3.16	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.8%			
d3-MeFOSAA	7.607	573.0 -> 419.0	2024	3.06	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.3%			
M2-PFOA	6.798	415.0 -> 370.0	16025	4.00	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 20.0%			
M4-PFOS	7.422	503.0 -> 80.0	8743	4.00	ng/ml		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 20.0%			
Target Compounds							**QValue**
4:2FTS	5.187	327.0 -> 307.0	4674	4.12	µg/L		98
6:2FTS	6.819	427.0 -> 407.0	3532	5.24	µg/L		98
8:2FTS	8.401	527.0 -> 507.0	3941	4.13	µg/L		98
EtFOSAA	7.731	584.0 -> 419.0	754	5.21	µg/L		84
FOSA	7.118	498.0 -> 78.0	2485	4.41	µg/L		99
MeFOSAA	7.608	570.0 -> 419.0	832	4.56	µg/L		100
PFBA	2.887	213.0 -> 169.0	6265	6.90	µg/L		100
PFBS	4.346	299.0 -> 80.0	9202	8.08	µg/L		99
PFDA	8.244	513.0 -> 469.0	1781	4.40	µg/L		92
PFDoDA	11.361	613.0 -> 569.0	1622	4.78	µg/L		100
PFDS	9.637	599.0 -> 80.0	742	3.75	µg/L		99
PFHpA	6.082	363.0 -> 319.0	11271	7.11	µg/L		97
PFHpS	6.766	449.0 -> 80.0	2020	5.41	µg/L	m	98
PFHxA	5.255	313.0 -> 269.0	8961	11.64	µg/L		99
PFHxS	6.076	399.0 -> 80.0	35744	44.65	µg/L	m	99
PFNA	7.476	463.0 -> 419.0	1038	4.44	µg/L		100
PFNS	8.137	549.0 -> 80.0	1139	3.93	µg/L		94
PFOA	6.799	413.0 -> 369.0	4287	8.05	µg/L	m	98
PFOS	7.423	499.0 -> 80.0	18264	48.33	µg/L	m	99
PFPeA	4.216	263.0 -> 219.0	24212	9.24	µg/L		100
PFPeS	5.308	349.0 -> 80.0	6287	9.26	µg/L	m	98
PFTeDA	13.587	713.0 -> 669.0	654	4.57	µg/L		100
PFTrDA	12.550	663.0 -> 619.0	1207	5.38	µg/L		99
PFUnDA	9.858	563.0 -> 519.0	2045	4.53	µg/L		99

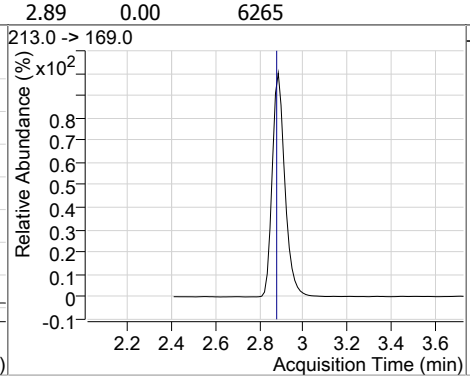
 # = Qualifier out of range, m = manually integrated, + = Area summed

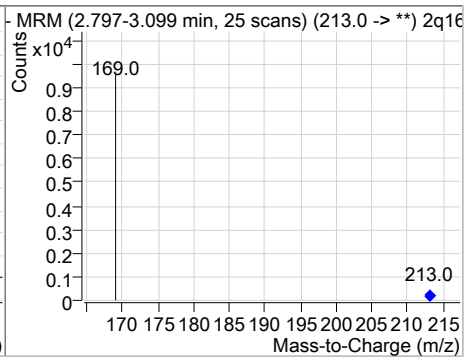
Perfluorinated Compounds by LC/MS/MS



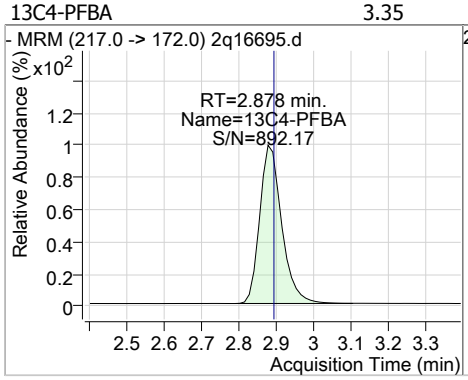
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	6.90	2.89	0.00	6265				

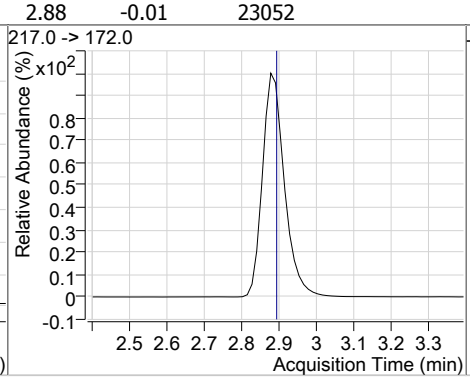


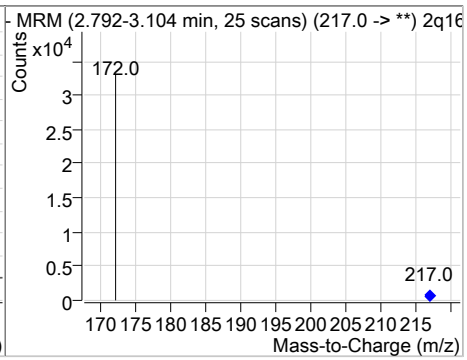




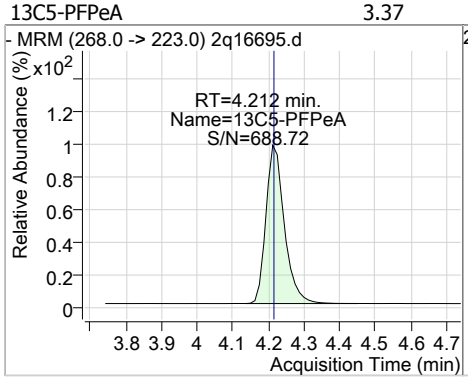
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	3.35	2.88	-0.01	23052				

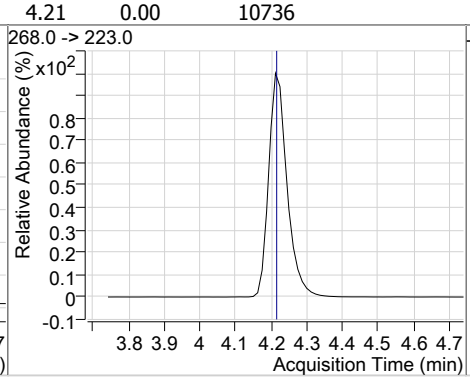


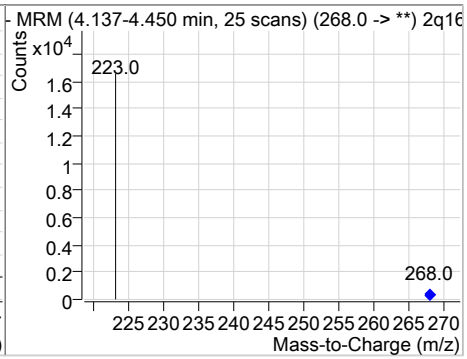




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	3.37	4.21	0.00	10736				

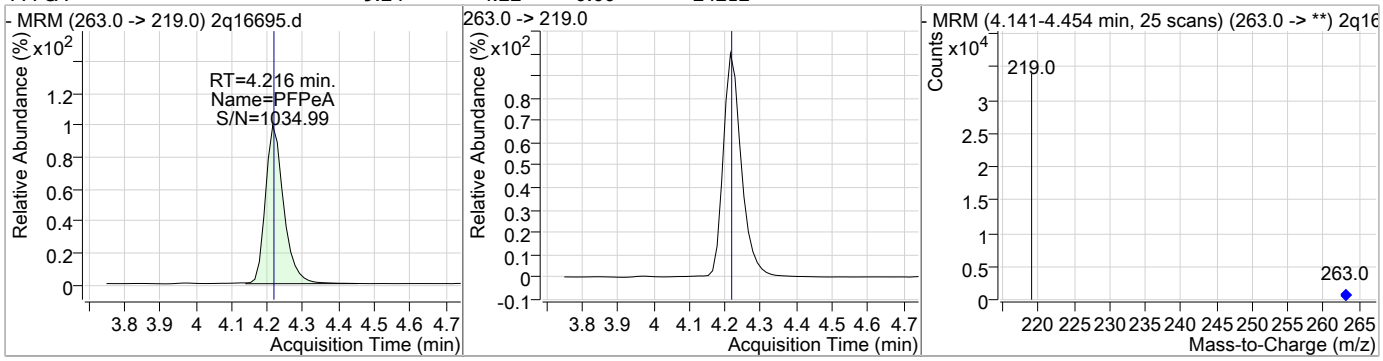




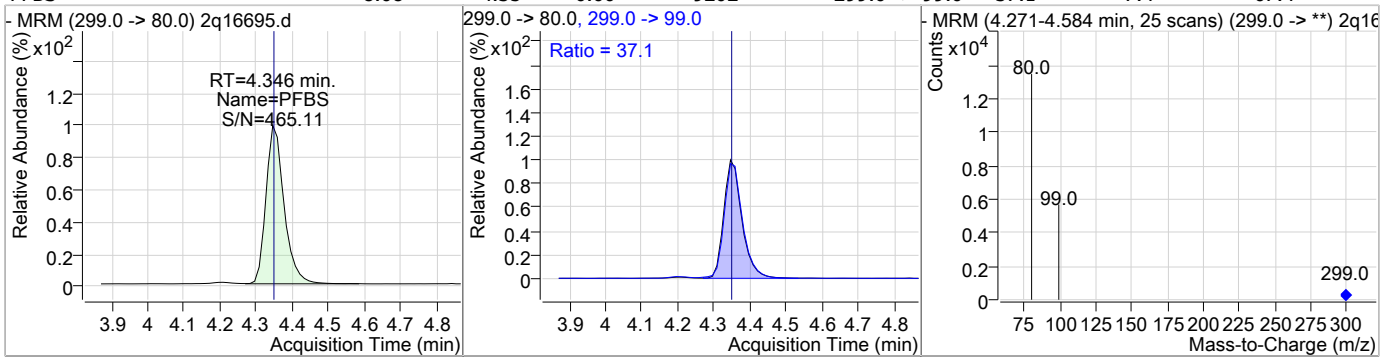


Perfluorinated Compounds by LC/MS/MS

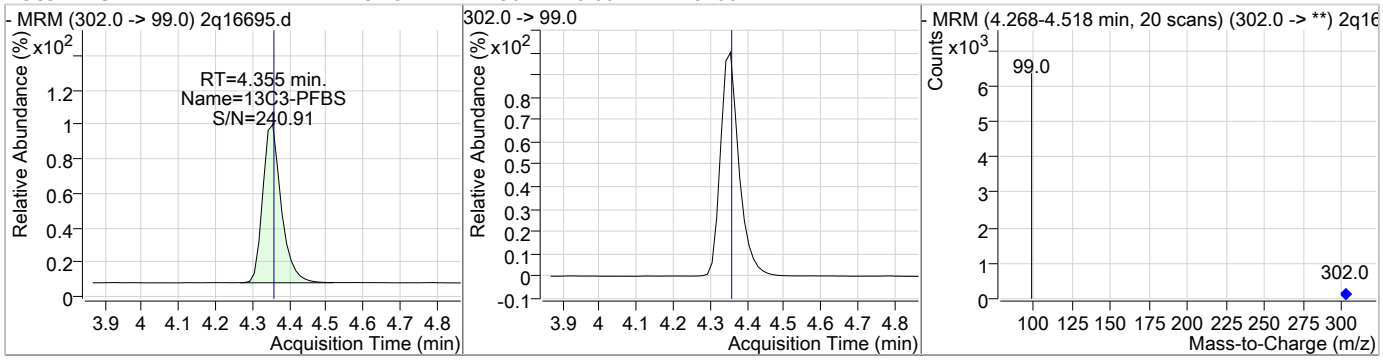
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	9.24	4.22	0.00	24212				



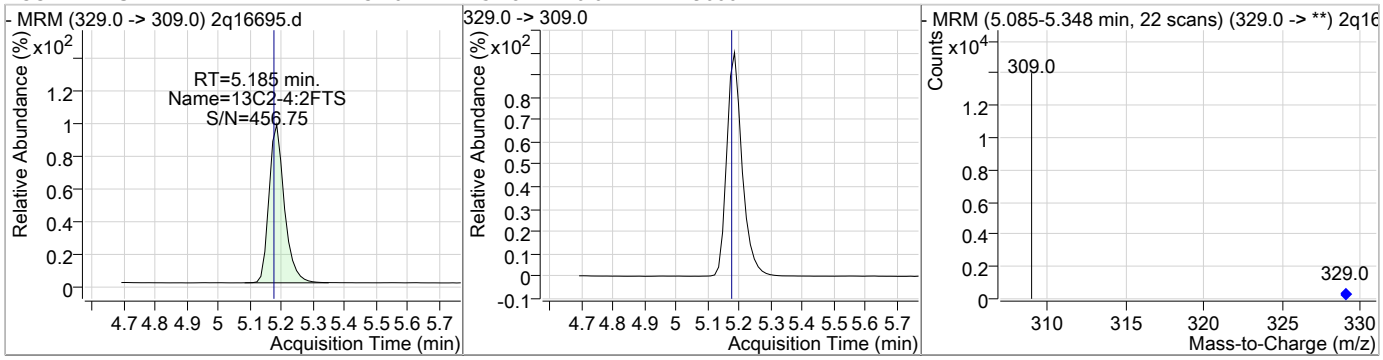
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	8.08	4.35	0.00	9202	299.0 -> 99.0	37.1	7.4	67.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	3.25	4.36	0.00	3406				

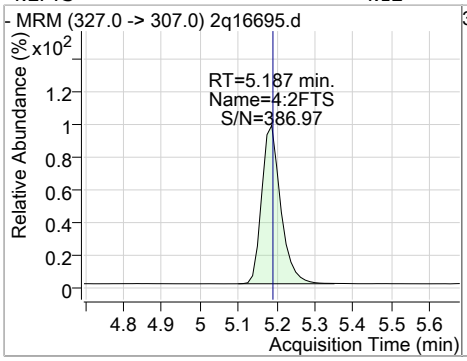


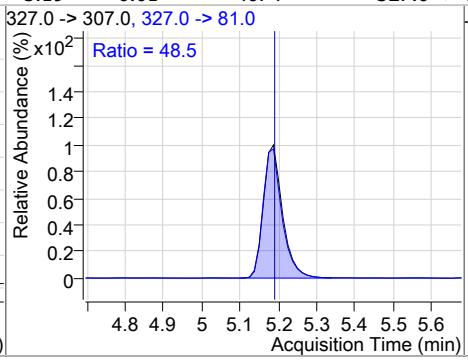
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	3.46	5.18	0.01	9066				

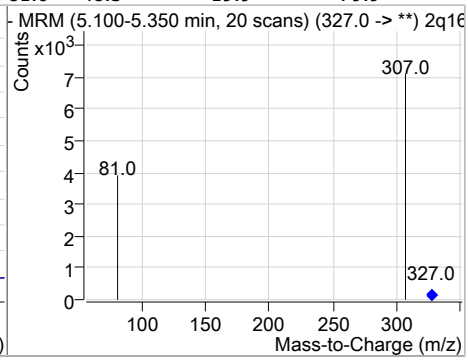


Perfluorinated Compounds by LC/MS/MS

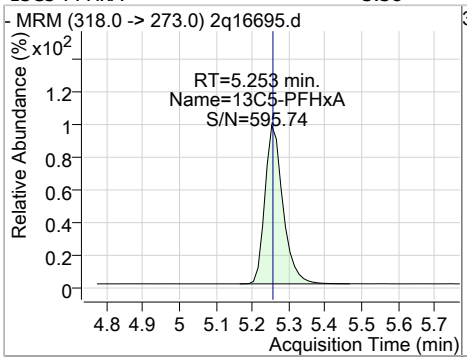
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	4.12	5.19	0.01	4674	327.0 -> 81.0	48.5	19.9	79.9

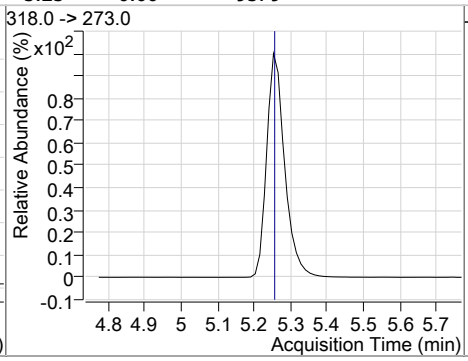


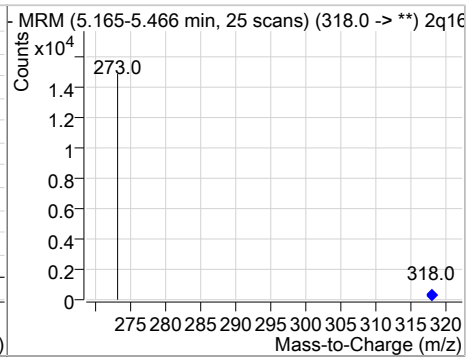




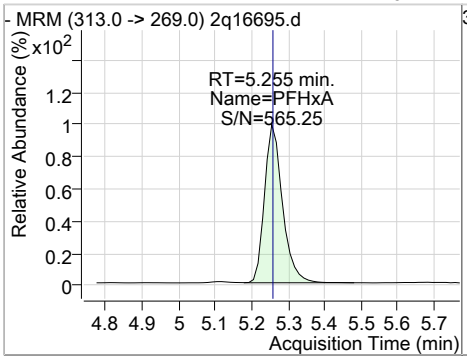
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	3.38	5.25	0.00	9579				

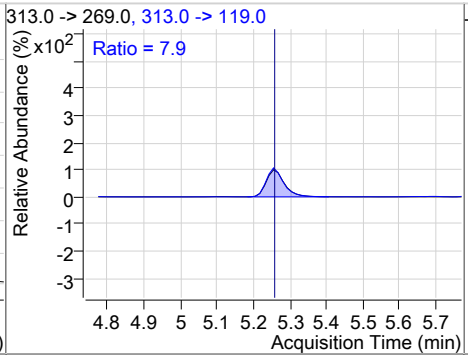


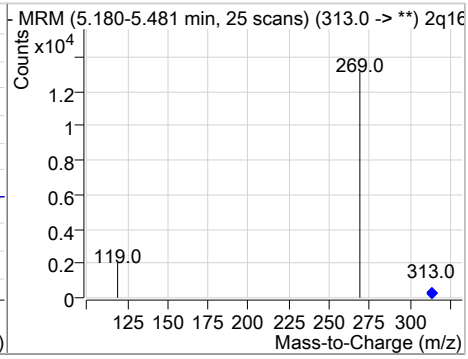




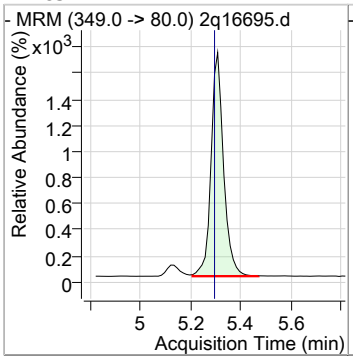
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	11.64	5.26	0.00	8961	313.0 -> 119.0	7.9	0.0	37.6

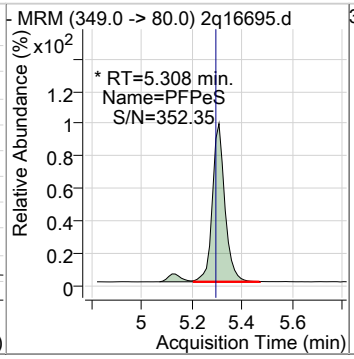


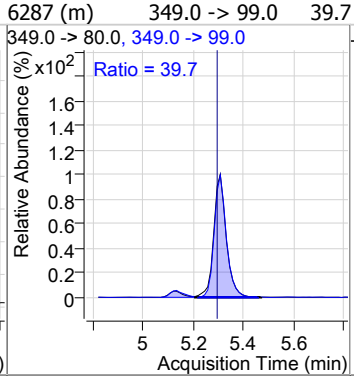


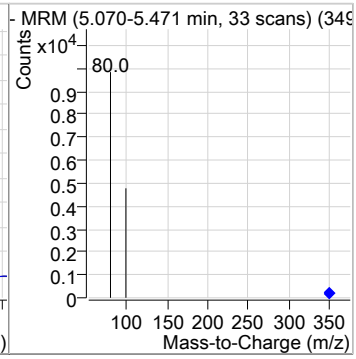


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	9.26	5.31	0.01	6287 (m)	349.0 -> 99.0	39.7	10.8	70.8



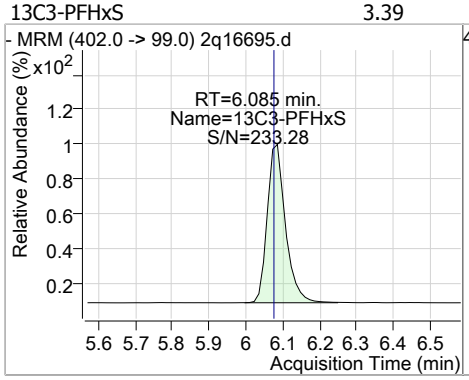


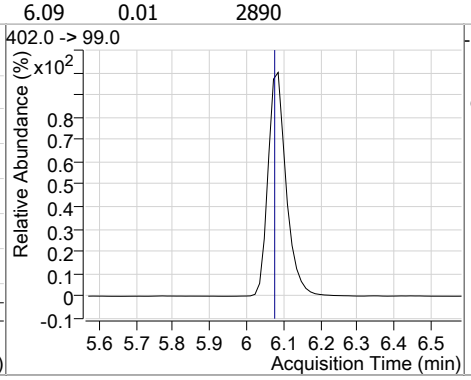


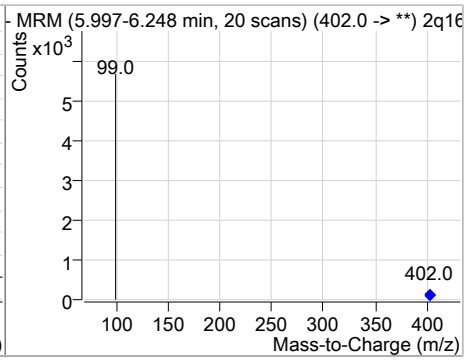


Perfluorinated Compounds by LC/MS/MS

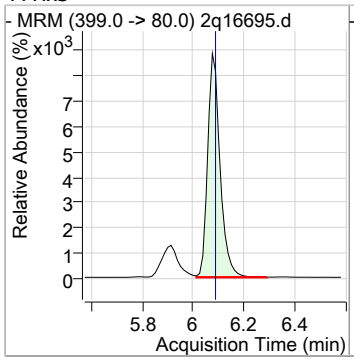
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	3.39	6.09	0.01	2890				

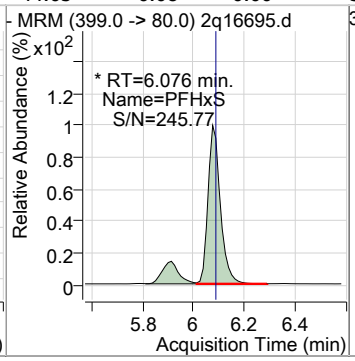


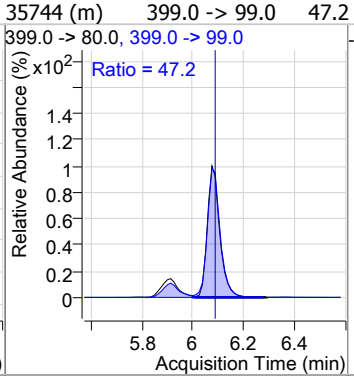


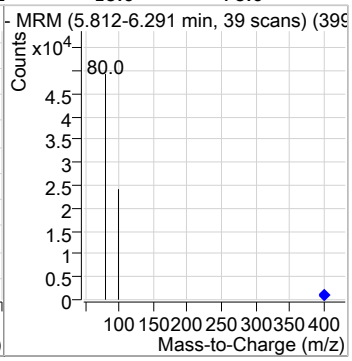


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	44.65	6.08	0.00	35744 (m)	399.0 -> 99.0	47.2	18.0	78.0

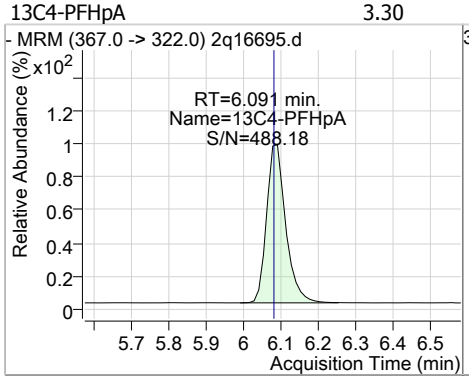


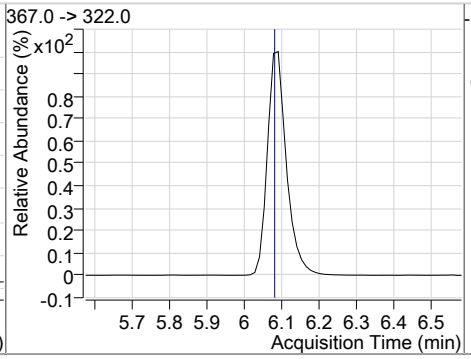


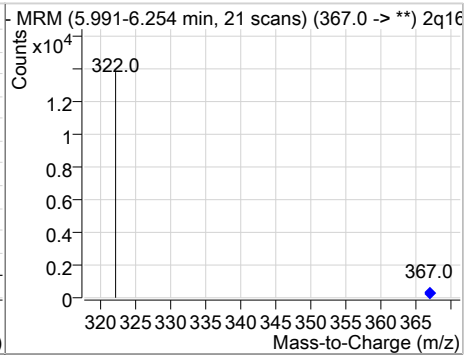




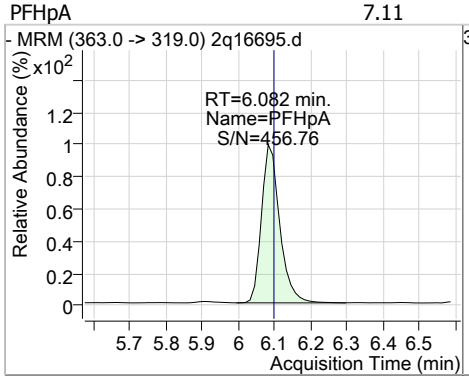
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	3.30	6.09	0.01	8892				

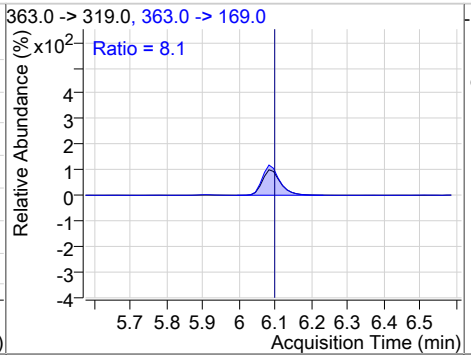


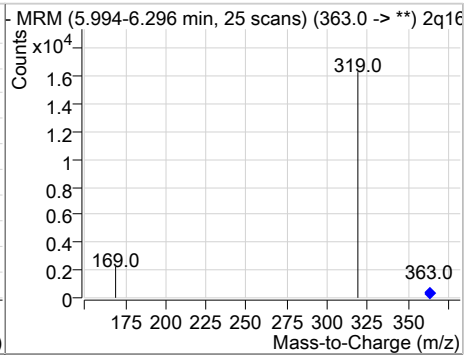




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	7.11	6.08	0.00	11271	363.0 -> 169.0	8.1	0.0	37.2

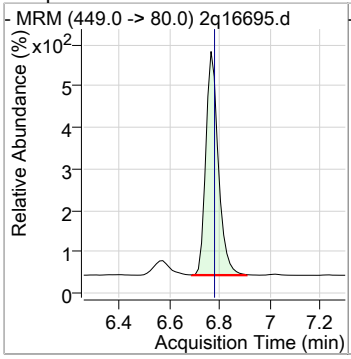


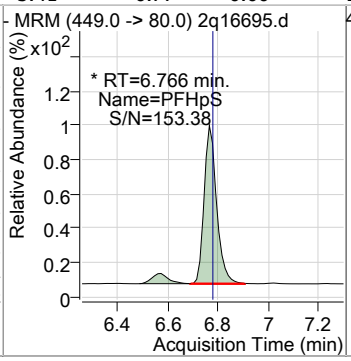


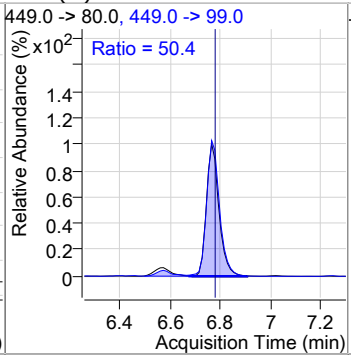


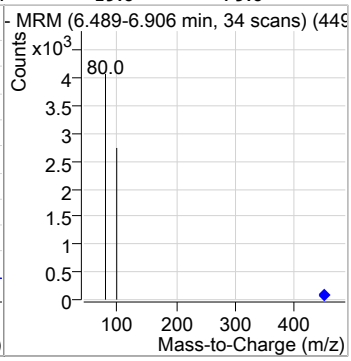
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	5.41	6.77	0.00	2020 (m)	449.0 -> 99.0	50.4	19.0	79.0

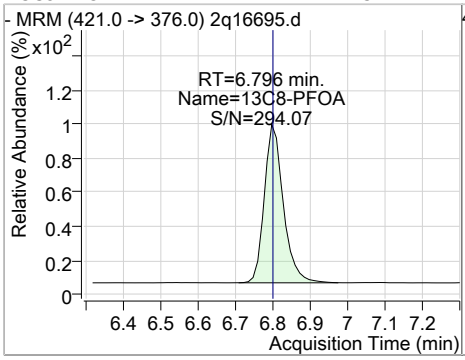


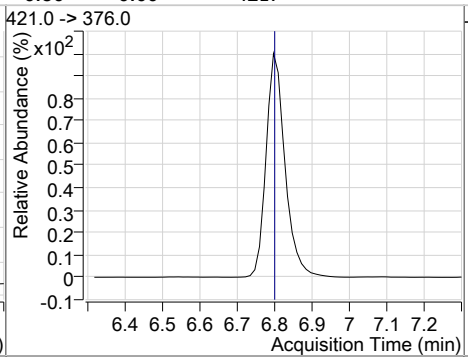


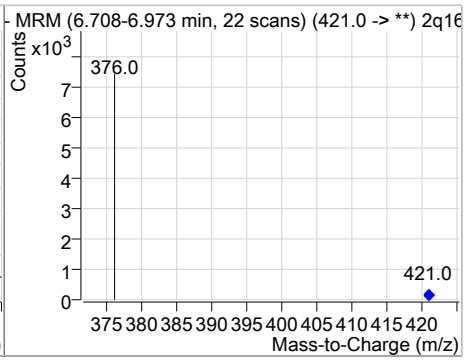




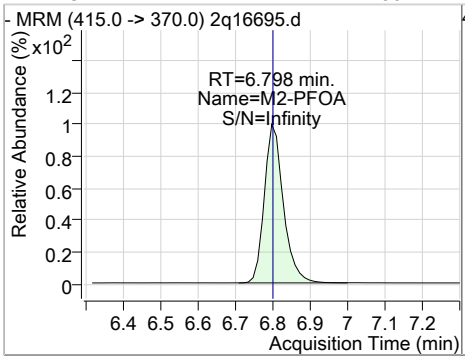
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	3.42	6.80	0.00	4217				

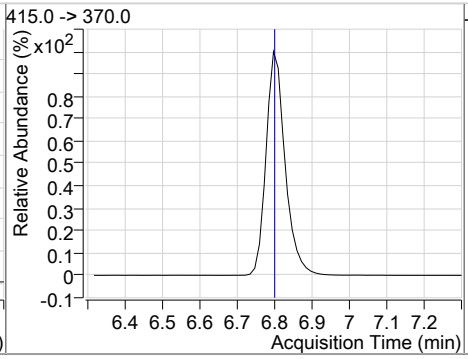


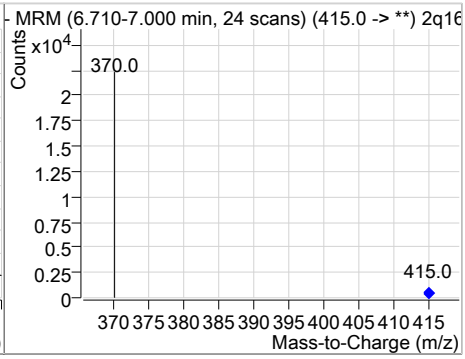




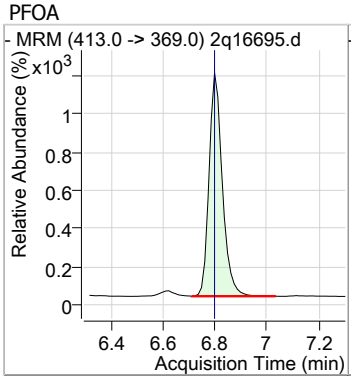
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	4.00	6.80	0.00	16025				

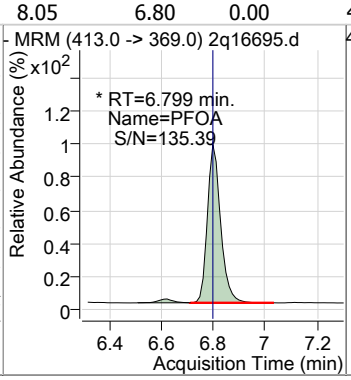


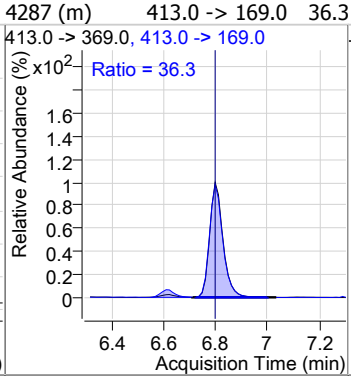


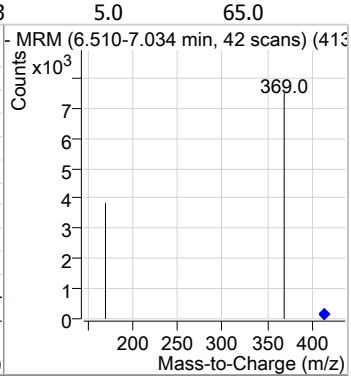


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	8.05	6.80	0.00	4287 (m)	413.0 -> 169.0	36.3	5.0	65.0



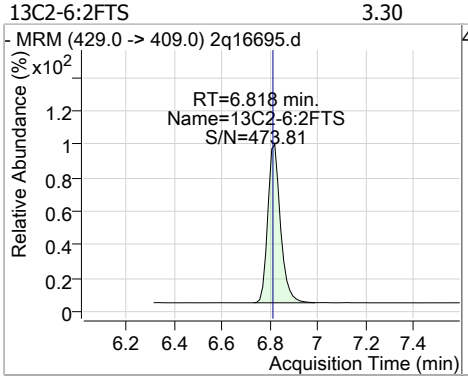


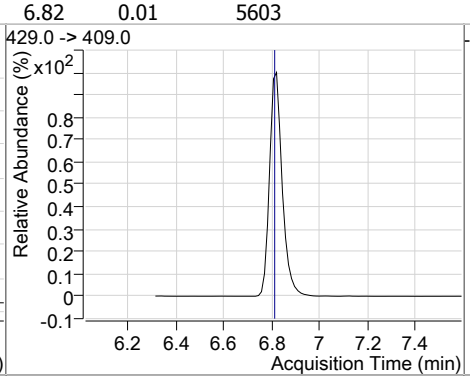


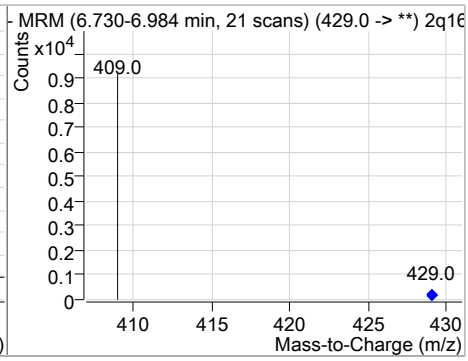


Perfluorinated Compounds by LC/MS/MS

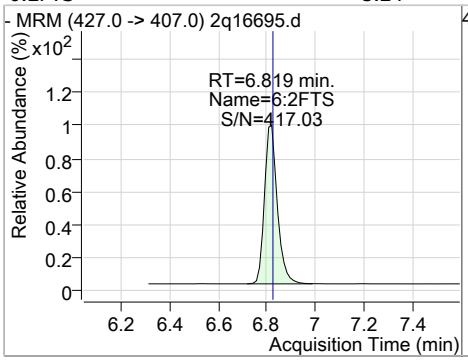
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	3.30	6.82	0.01	5603				

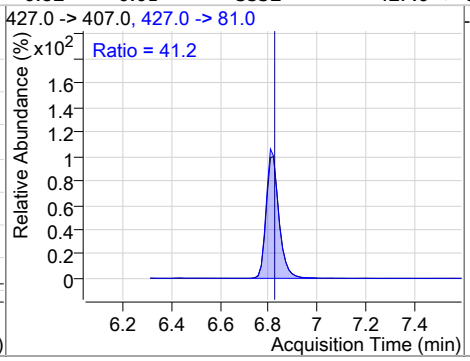


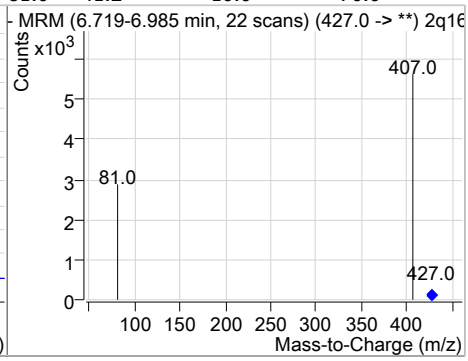




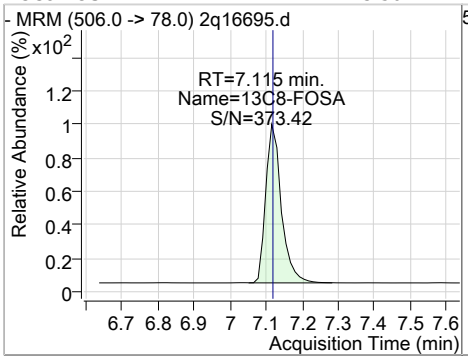
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	5.24	6.82	0.01	3532	427.0 -> 81.0	41.2	10.0	70.0

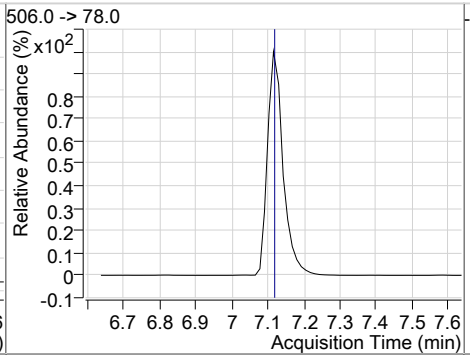


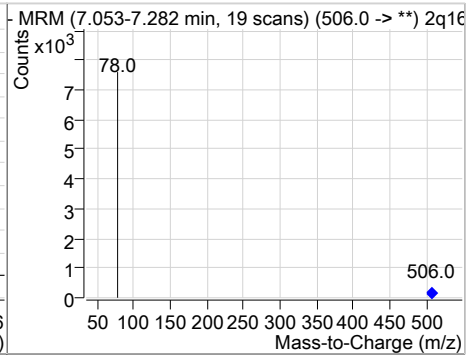




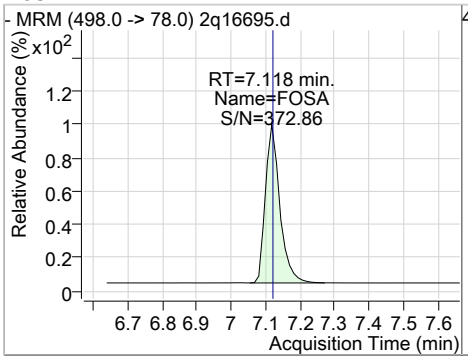
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	3.50	7.12	0.00	4645				

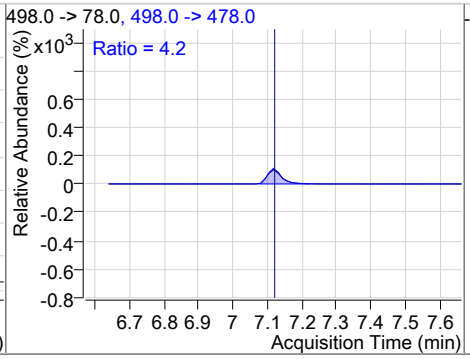


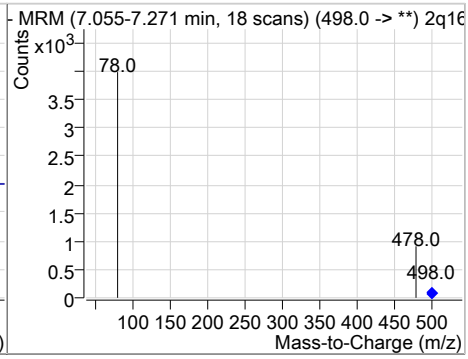




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	4.41	7.12	0.00	2485	498.0 -> 478.0	4.2	0.0	34.0

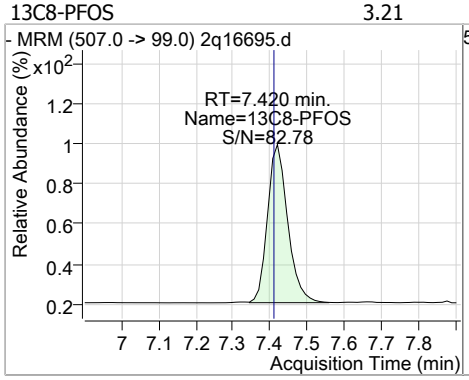


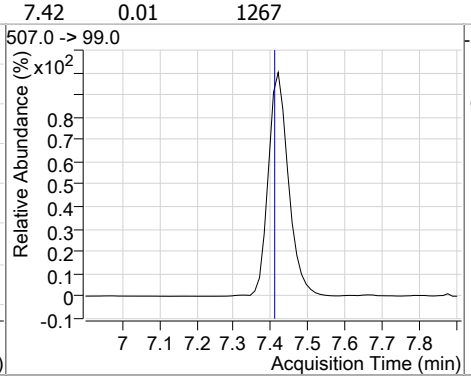


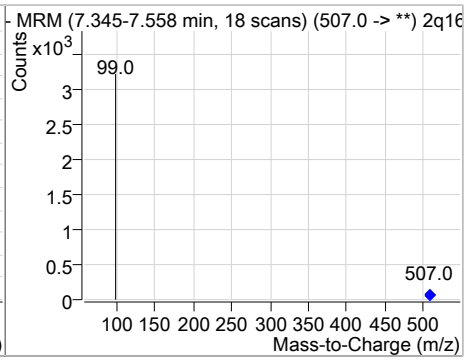


Perfluorinated Compounds by LC/MS/MS

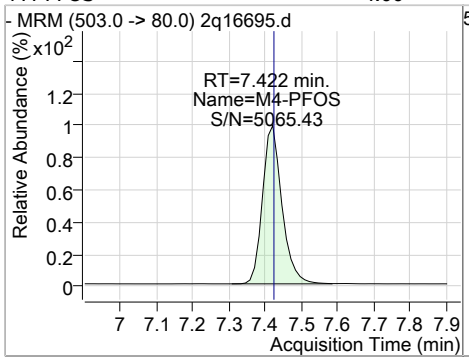
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	3.21	7.42	0.01	1267				

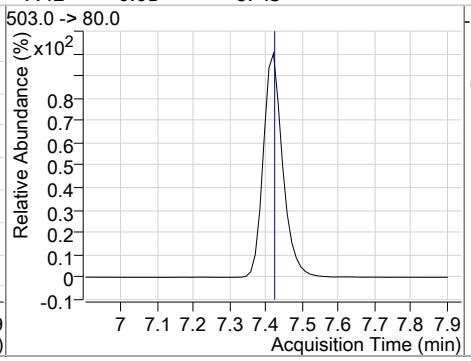


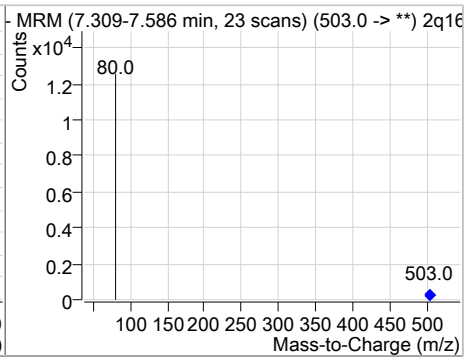




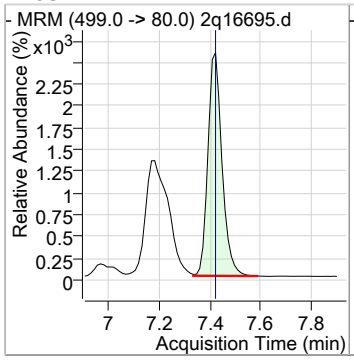
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	4.00	7.42	0.01	8743				

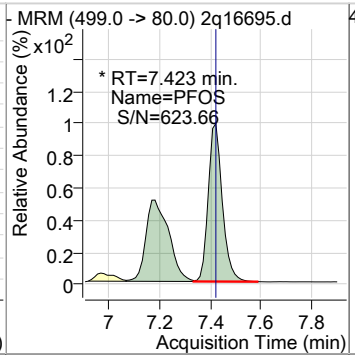


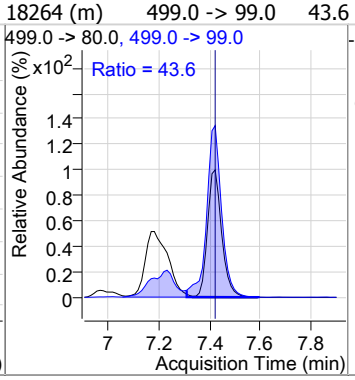


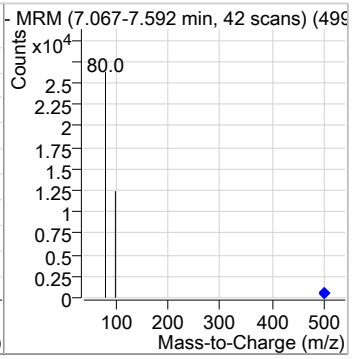


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	48.33	7.42	0.01	18264 (m)	499.0 -> 99.0	43.6	14.5	74.5

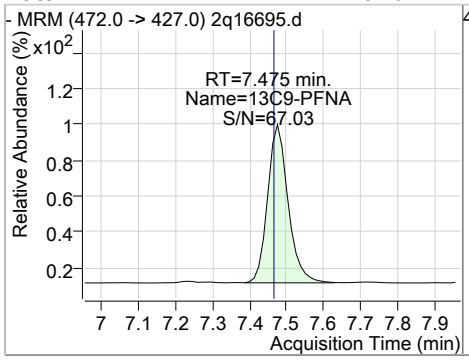


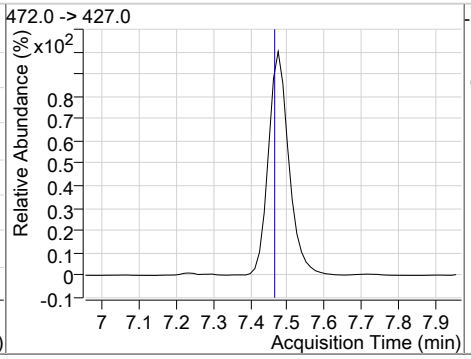


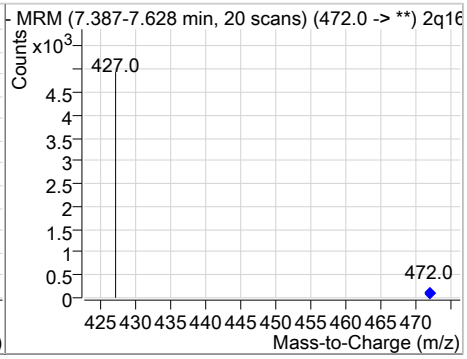




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	3.16	7.48	0.01	2488				

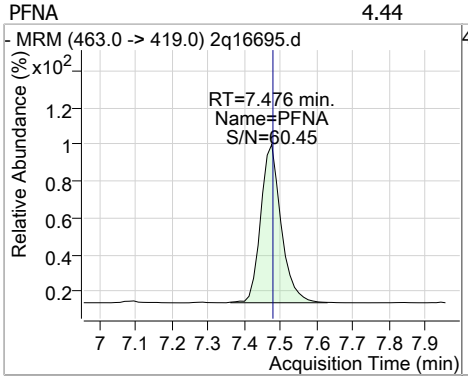


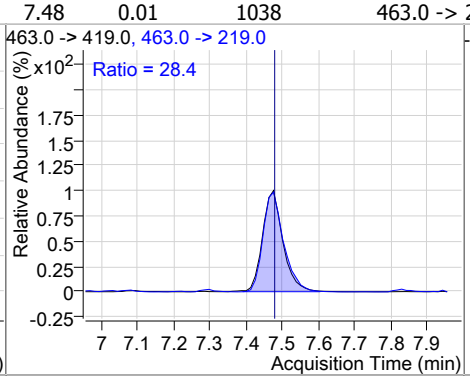


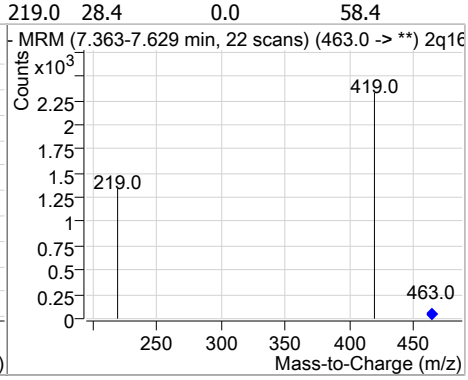


Perfluorinated Compounds by LC/MS/MS

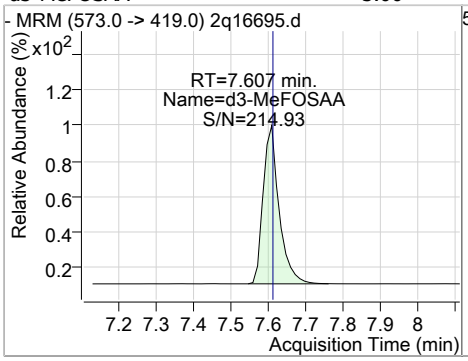
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	4.44	7.48	0.01	1038	463.0 -> 219.0	28.4	0.0	58.4

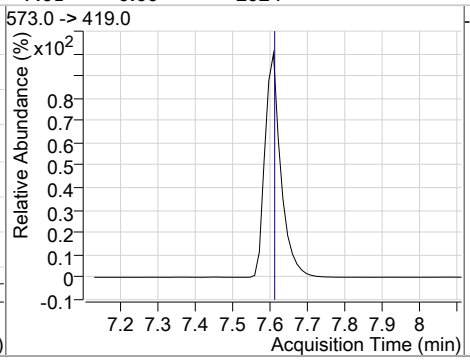


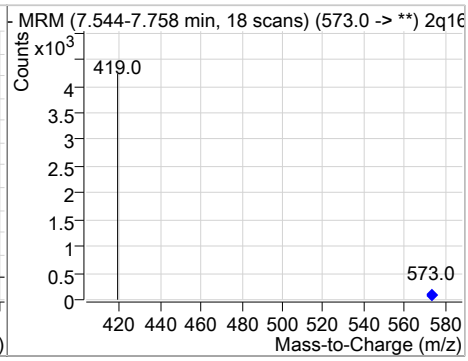




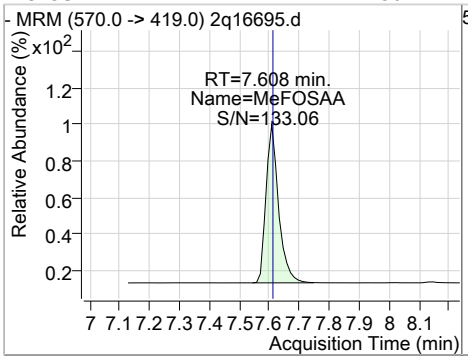
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	3.06	7.61	0.00	2024				

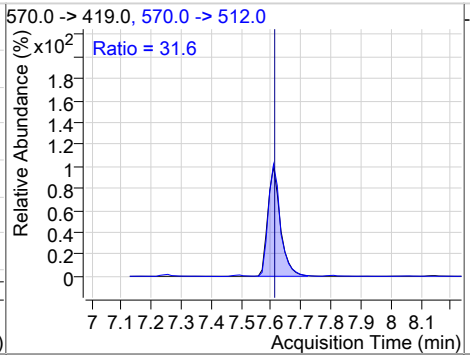


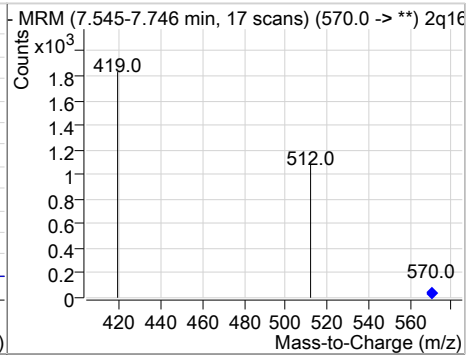




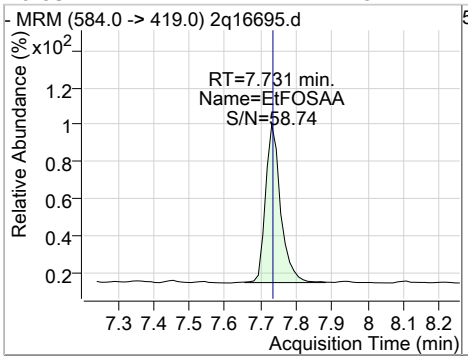
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	4.56	7.61	0.00	832	570.0 -> 512.0	31.6	1.8	61.8

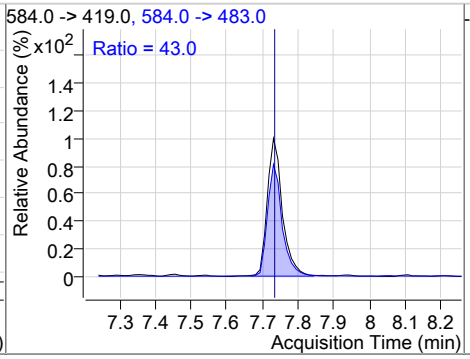


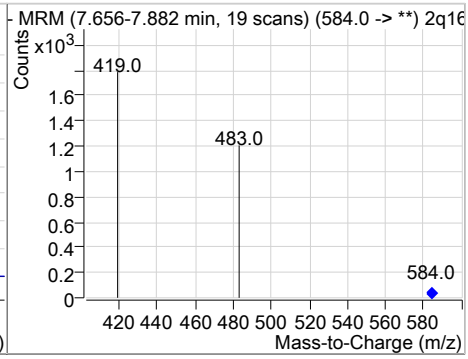




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	5.21	7.73	0.00	754	584.0 -> 483.0	43.0	24.8	84.8

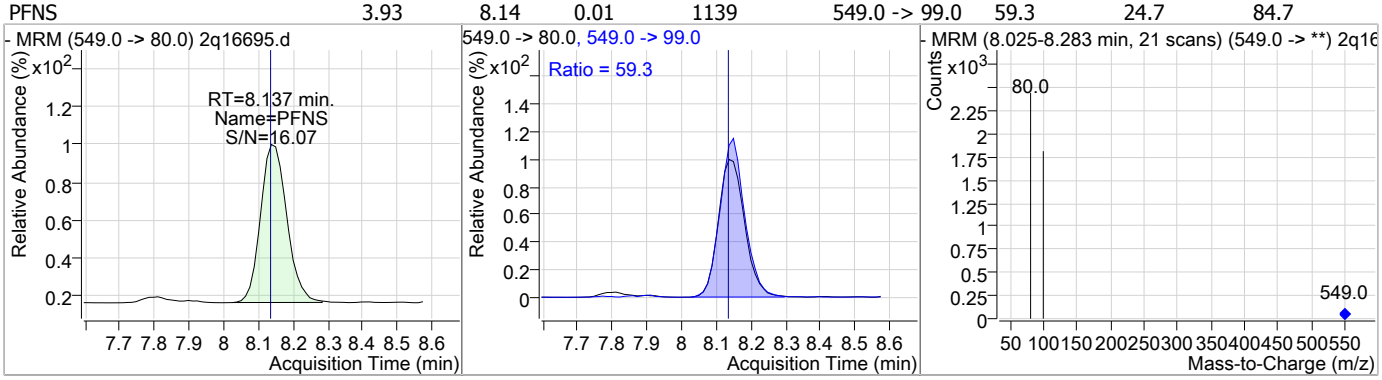




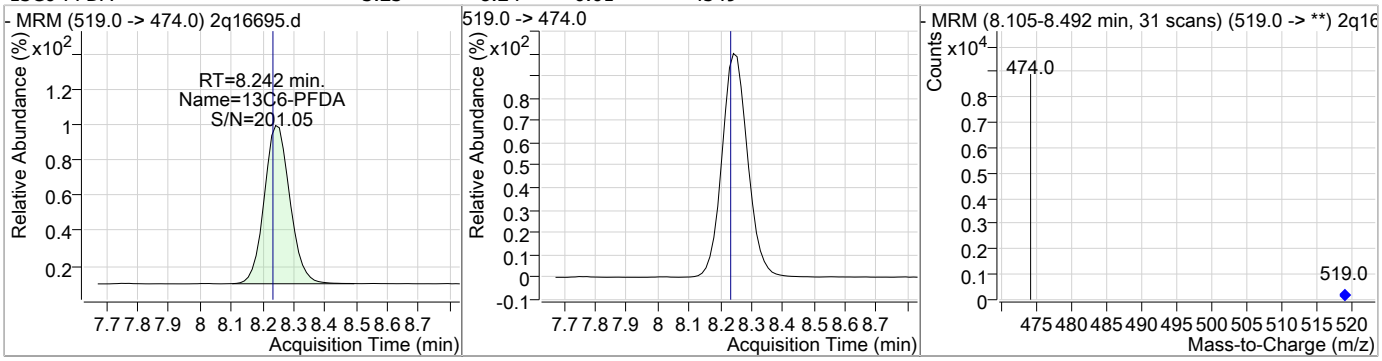


Perfluorinated Compounds by LC/MS/MS

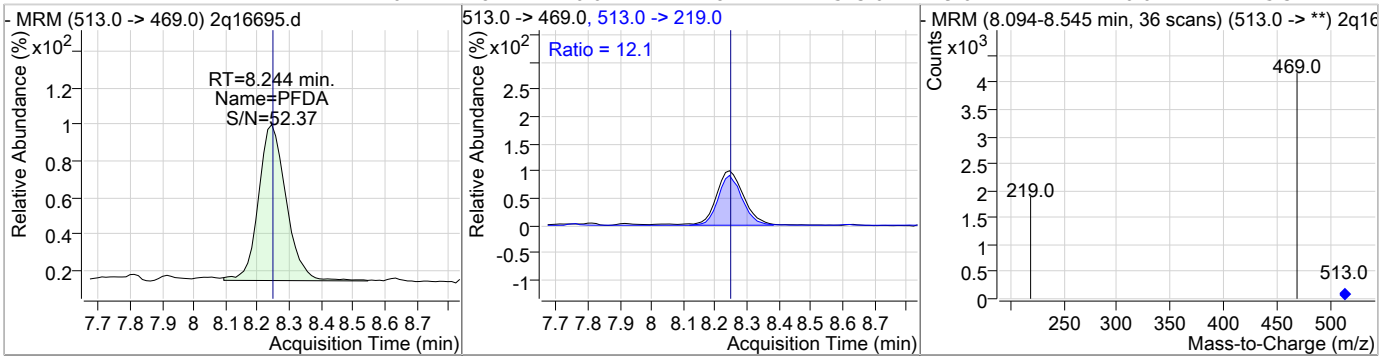
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	3.93	8.14	0.01	1139	549.0 -> 99.0	59.3	24.7	84.7



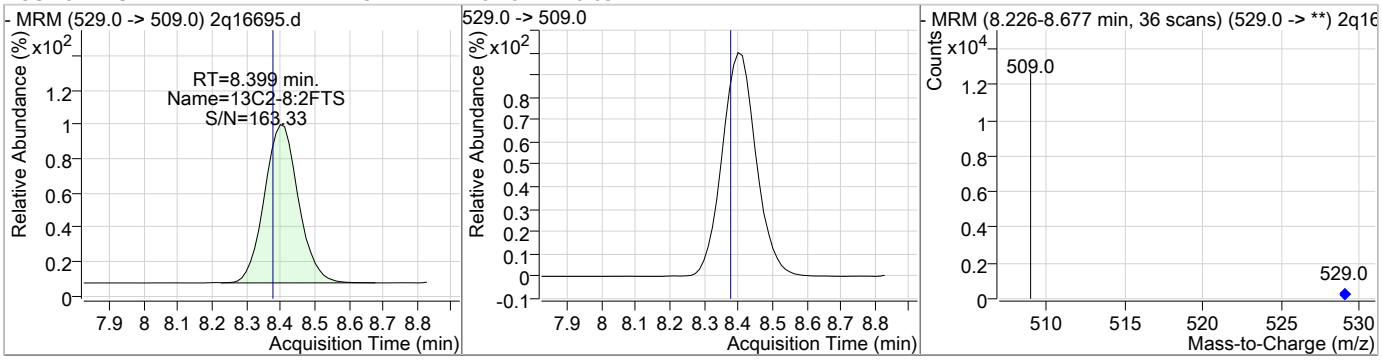
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	3.23	8.24	0.01	4549				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	4.40	8.24	0.01	1781	513.0 -> 219.0	12.1	0.0	45.3

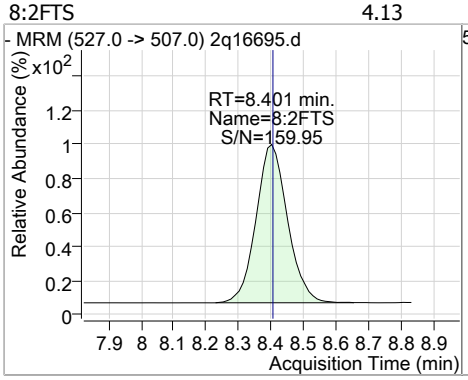


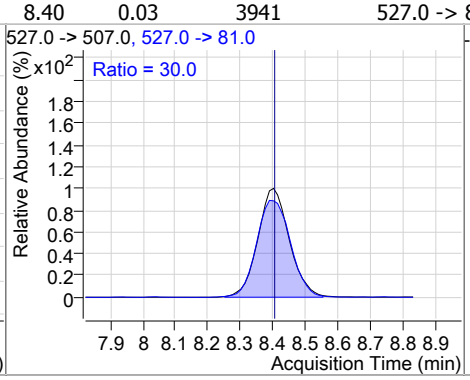
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	3.17	8.40	0.03	7177				

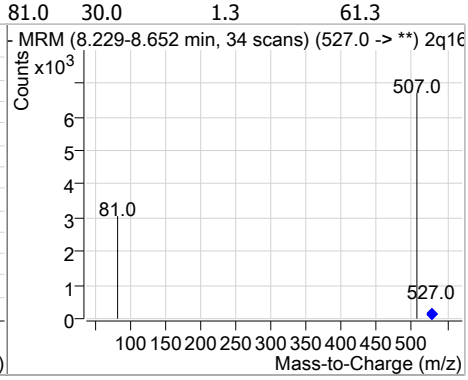


Perfluorinated Compounds by LC/MS/MS

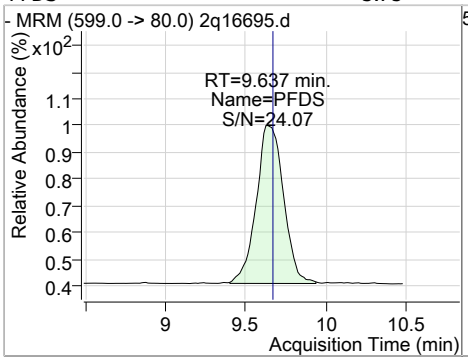
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	4.13	8.40	0.03	3941	527.0 -> 81.0	30.0	1.3	61.3

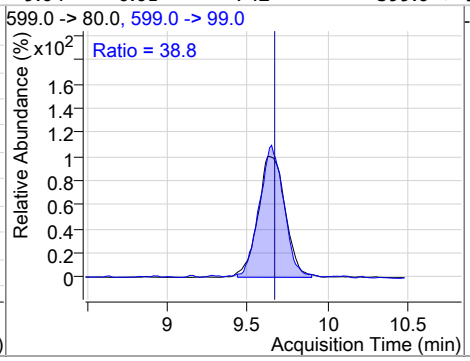


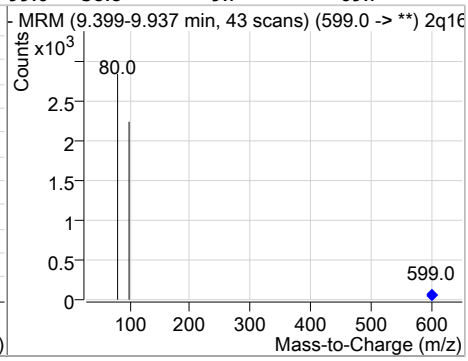




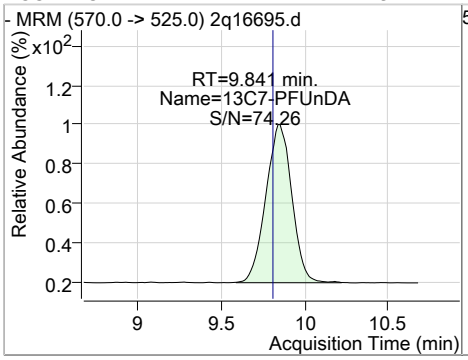
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	3.75	9.64	0.01	742	599.0 -> 99.0	38.8	9.7	69.7

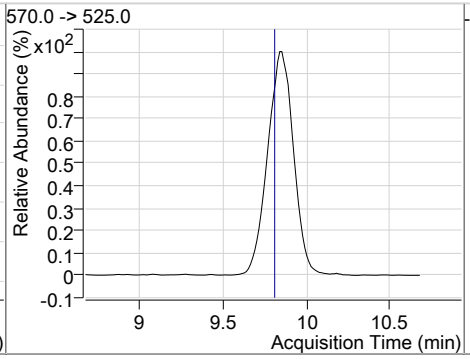


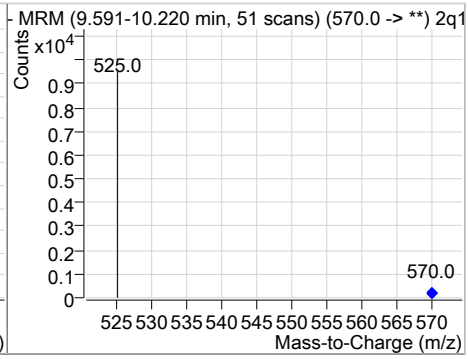




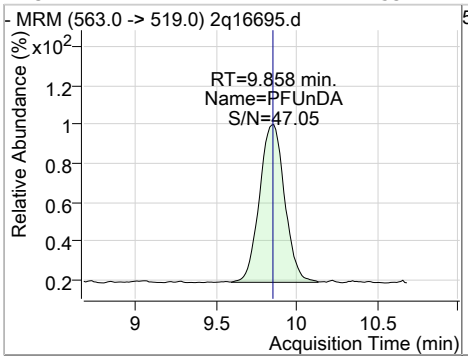
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	2.92	9.84	0.04	3885				

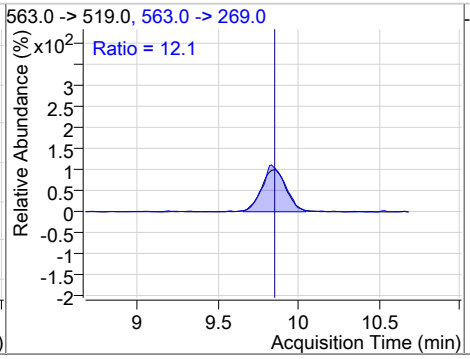


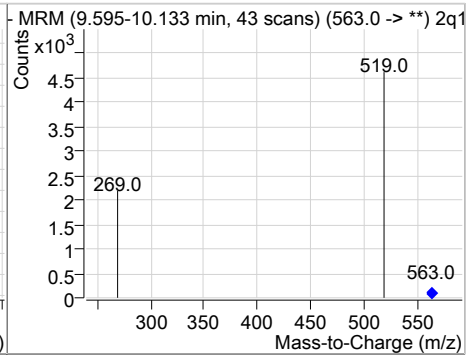




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	4.53	9.86	0.05	2045	563.0 -> 269.0	12.1	0.0	41.8

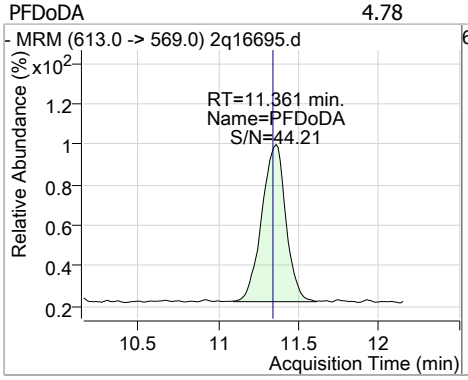


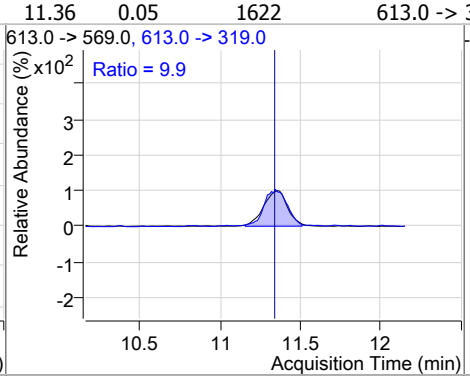


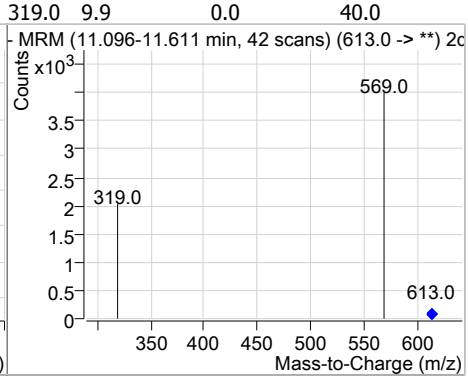


Perfluorinated Compounds by LC/MS/MS

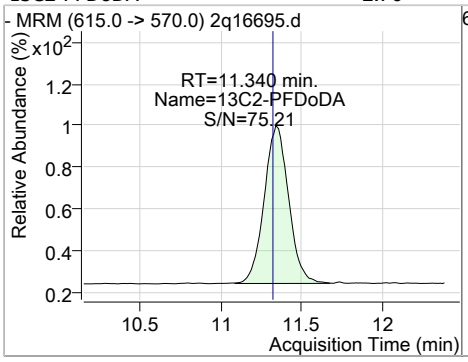
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	4.78	11.36	0.05	1622	613.0 -> 319.0	9.9	0.0	40.0

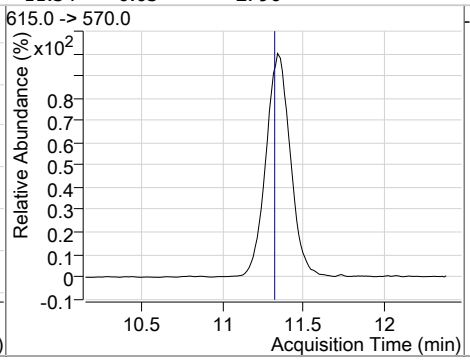


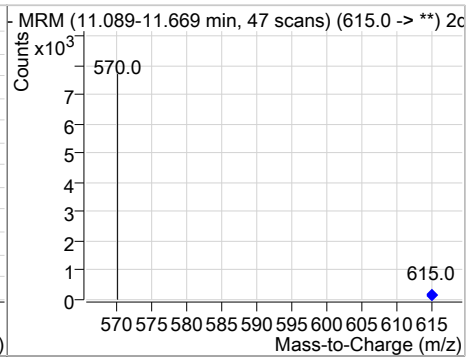




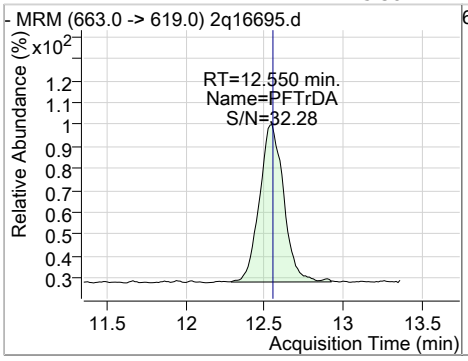
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	2.76	11.34	0.03	2796				

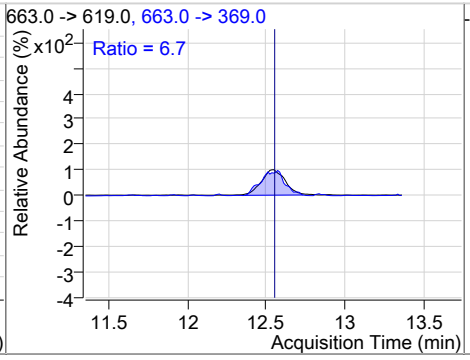


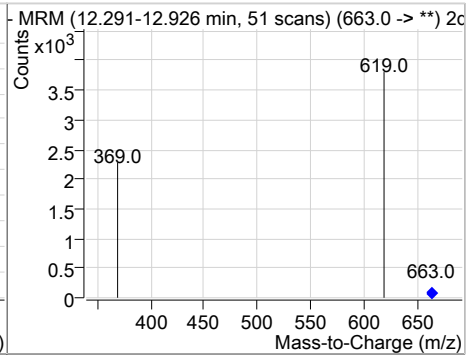




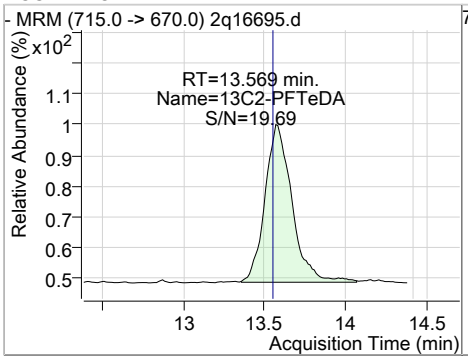
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	5.38	12.55	0.03	1207	663.0 -> 369.0	6.7	0.0	37.1

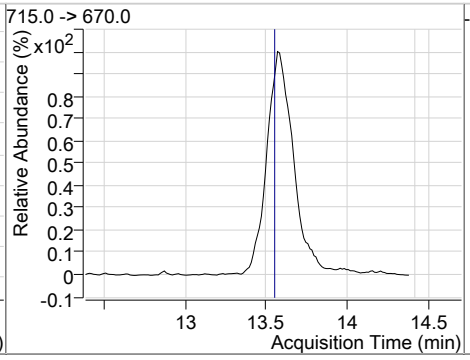


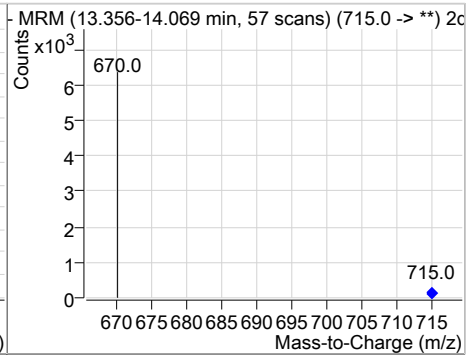




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	2.71	13.57	0.03	1060				

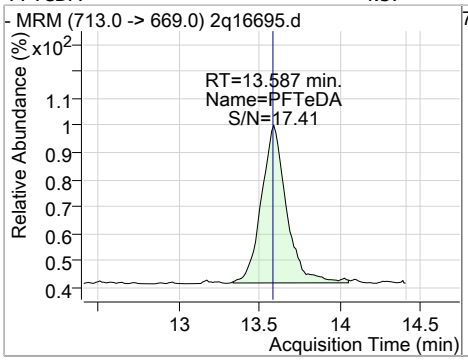


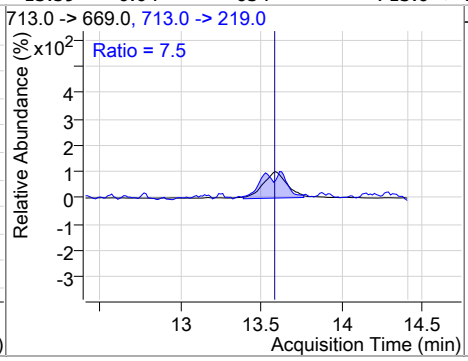


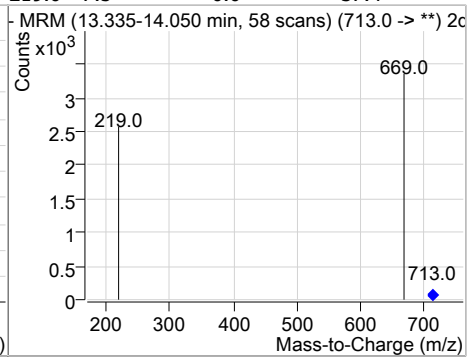


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	4.57	13.59	0.04	654	713.0 -> 219.0	7.5	0.0	37.4







Manual Integration Approval Summary

Sample Number: OP70743-MS
Lab FileID: 2Q16695.D
Injection Time: 07/07/18 12:23
Method: EPA 537M QSM5.1 B-15
Analyst approved: 07/09/18 15:30 Natasha Gumtie
Supervisor approved: 07/10/18 17:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanesulfonic acid	2706-91-4		5.31	Split peak
Perfluorohexanesulfonic acid	355-46-4		6.08	Split peak
Perfluoroheptanesulfonic acid	375-92-8		6.77	Split peak
Perfluorooctanoic acid	335-67-1		6.80	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.42	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/10/18 17:09

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16696.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/7/2018 12:43:09 PM
Sample Name : op70743-msd
Vial : Vial 80
DA Method File : PFC_ID_070718_S2Q292.quantmethod.xml
Batch Name : s2q292.batch.bin
Sample Information : op70743,S2Q292,130,,,1.0,5,water

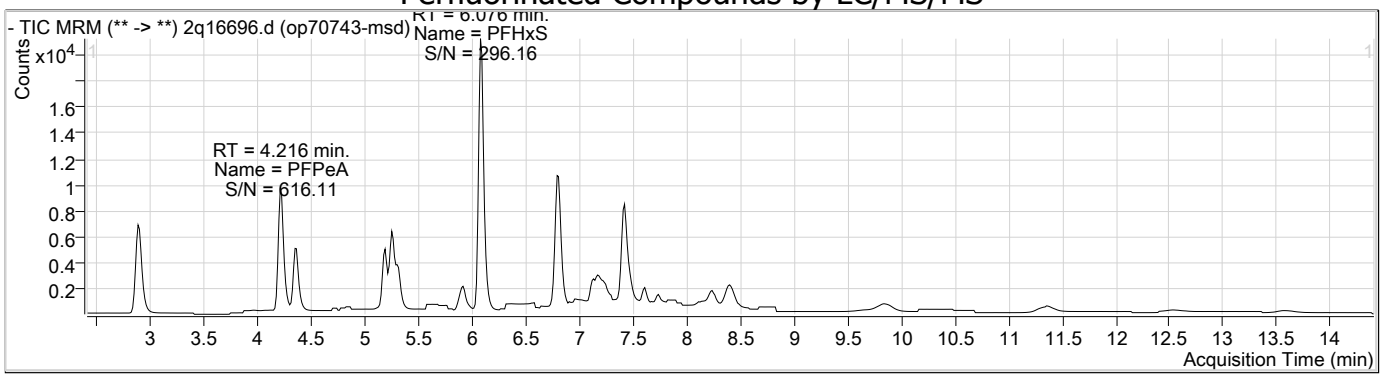
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.798	415.0 -> 370.0	16800	20.00	µg/L	0.000
13C4-PFOS	7.422	503.0 -> 80.0	9543	20.00	µg/L	0.013
M4-PFBA	2.878	217.0 -> 172.0	21827	20.00	µg/L	-0.013
M5-PFPeA	4.212	268.0 -> 223.0	10093	20.00	µg/L	0.000
M5-PFHxA	5.253	318.0 -> 273.0	9261	20.00	µg/L	0.000
M4-PFHpA	6.079	367.0 -> 322.0	8633	20.00	µg/L	0.000
M8-PFOA	6.796	421.0 -> 376.0	3972	20.00	µg/L	0.000
M9-PFNA	7.475	472.0 -> 427.0	2637	20.00	µg/L	0.013
M6-PFDA	8.242	519.0 -> 474.0	4747	20.00	µg/L	0.013
M7-PFUnDA	9.841	570.0 -> 525.0	3863	20.00	µg/L	0.038
M2-PFDoDA	11.356	615.0 -> 570.0	2890	20.00	µg/L	0.042
M2-PFTeDA	13.594	715.0 -> 670.0	1114	20.00	µg/L	0.050
M8-FOSA	7.115	506.0 -> 78.0	2720	20.00	µg/L	0.000
M3-PFBS	4.355	302.0 -> 99.0	3503	20.00	µg/L	0.000
M3-PFHxS	6.085	402.0 -> 99.0	2887	20.00	µg/L	0.013
M8-PFOS	7.420	507.0 -> 99.0	1286	20.00	µg/L	0.013
M2-4:2FTS	5.185	329.0 -> 309.0	8969	20.00	µg/L	0.013
M2-6:2FTS	6.818	429.0 -> 409.0	5954	20.00	µg/L	0.013
M2-8:2FTS	8.399	529.0 -> 509.0	7212	20.00	µg/L	0.025
M3-MeFOSAA	7.607	573.0 -> 419.0	2245	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.185	329.0 -> 309.0	8970	3.42	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 17.1%		
13C2-6:2FTS	6.818	429.0 -> 409.0	5954	3.51	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 17.5%		
13C2-8:2FTS	8.399	529.0 -> 509.0	7211	3.18	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.9%		
13C2-PFDoDA	11.356	615.0 -> 570.0	2891	2.85	µg/L	0.042
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.3%		
13C2-PFTeDA	13.594	715.0 -> 670.0	1118	2.86	µg/L	0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.3%		
13C3-PFBS	4.355	302.0 -> 99.0	3502	3.35	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.7%		
13C3-PFHxS	6.085	402.0 -> 99.0	2888	3.39	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.9%		
13C4-PFBA	2.878	217.0 -> 172.0	21809	3.17	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.8%		
13C4-PFHpA	6.079	367.0 -> 322.0	8612	3.20	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.0%		
13C5-PFHxA	5.253	318.0 -> 273.0	9268	3.27	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.4%		
13C5-PFPeA	4.212	268.0 -> 223.0	10088	3.17	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.8%		
13C6-PFDA	8.242	519.0 -> 474.0	4739	3.36	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.8%		

Perfluorinated Compounds by LC/MS/MS

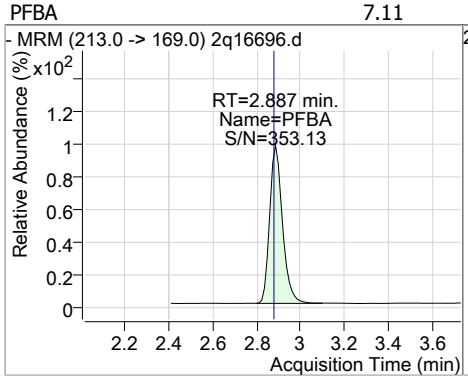
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	9.841	570.0 -> 525.0	3864	2.90	µg/L		0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.5%			
13C8-FOSA	7.115	506.0 -> 78.0	2719	2.05	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.2%			
13C8-PFOA	6.796	421.0 -> 376.0	3970	3.22	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.1%			
13C8-PFOS	7.420	507.0 -> 99.0	1285	3.25	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.3%			
13C9-PFNA	7.475	472.0 -> 427.0	2644	3.36	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.8%			
d3-MeFOSAA	7.607	573.0 -> 419.0	2245	3.40	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 17.0%			
M2-PFOA	6.798	415.0 -> 370.0	16805	4.00	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 20.0%			
M4-PFOS	7.422	503.0 -> 80.0	9538	4.00	ng/ml		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 20.0%			
Target Compounds							**QValue**
4:2FTS	5.187	327.0 -> 307.0	4527	4.02	µg/L		99
6:2FTS	6.819	427.0 -> 407.0	4006	5.61	µg/L		94
8:2FTS	8.401	527.0 -> 507.0	3927	4.11	µg/L		100
EtFOSAA	7.731	584.0 -> 419.0	690	4.31	µg/L		89
FOSA	7.118	498.0 -> 78.0	1464	4.44	µg/L		97
MeFOSAA	7.608	570.0 -> 419.0	828	4.10	µg/L		94
PFBA	2.887	213.0 -> 169.0	6106	7.11	µg/L		100
PFBS	4.346	299.0 -> 80.0	9828	8.39	µg/L		99
PFDA	8.244	513.0 -> 469.0	1802	4.27	µg/L		100
PFDoDA	11.346	613.0 -> 569.0	1647	4.72	µg/L		99
PFDS	9.649	599.0 -> 80.0	818	4.16	µg/L		96
PFHpA	6.082	363.0 -> 319.0	11248	7.29	µg/L		100
PFHpS	6.766	449.0 -> 80.0	2179	5.82	µg/L	m	94
PFHxA	5.255	313.0 -> 269.0	8966	12.03	µg/L		99
PFHxS	6.076	399.0 -> 80.0	38961	48.59	µg/L	m	98
PFNA	7.476	463.0 -> 419.0	1036	4.18	µg/L		97
PFNS	8.137	549.0 -> 80.0	1248	4.24	µg/L		96
PFOA	6.799	413.0 -> 369.0	4269	8.50	µg/L	m	94
PFOS	7.423	499.0 -> 80.0	20211	52.69	µg/L	m	97
PFPeA	4.216	263.0 -> 219.0	23758	9.65	µg/L		100
PFPeS	5.308	349.0 -> 80.0	6650	9.53	µg/L	m	99
PFTeDA	13.562	713.0 -> 669.0	695	4.42	µg/L		98
PFTrDA	12.538	663.0 -> 619.0	1202	4.87	µg/L		100
PFUnDA	9.845	563.0 -> 519.0	2088	4.66	µg/L		99

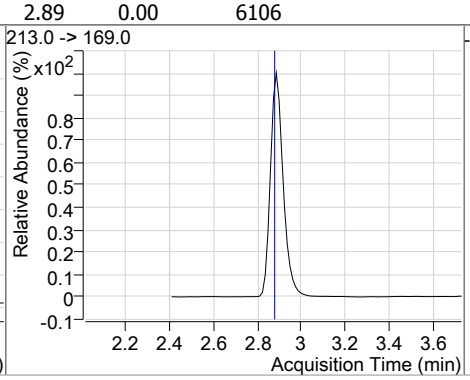
 # = Qualifier out of range, m = manually integrated, + = Area summed

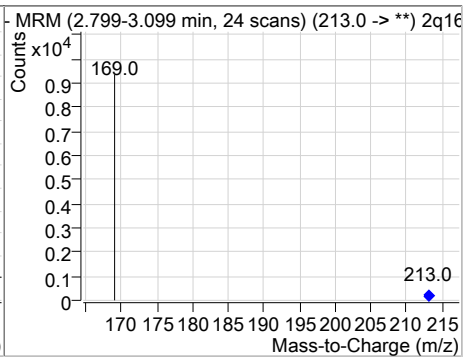
Perfluorinated Compounds by LC/MS/MS



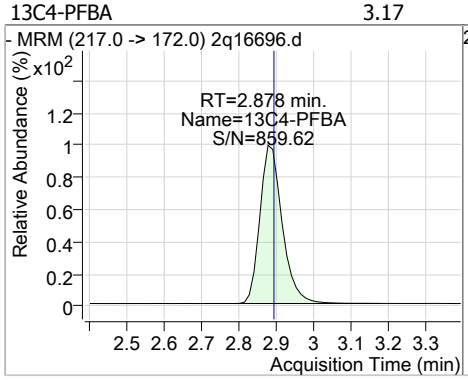
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	7.11	2.89	0.00	6106				

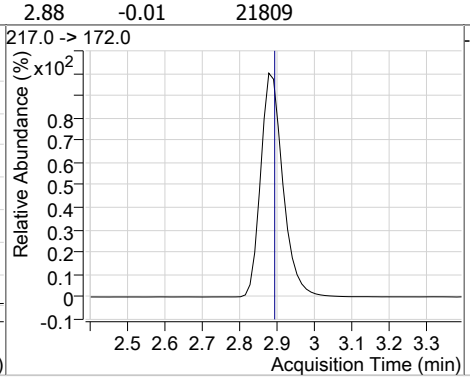


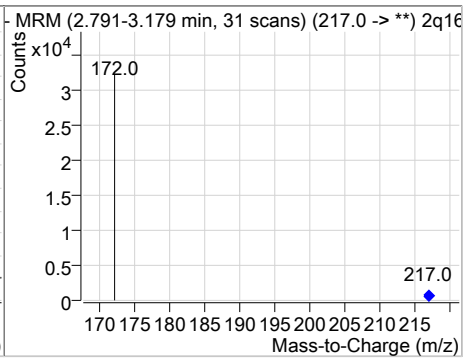




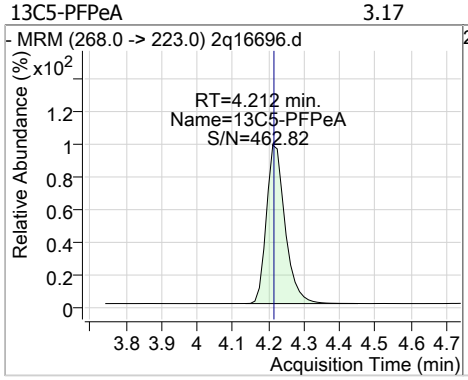
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	3.17	2.88	-0.01	21809				

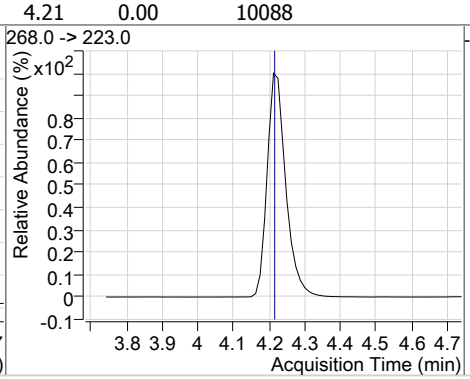


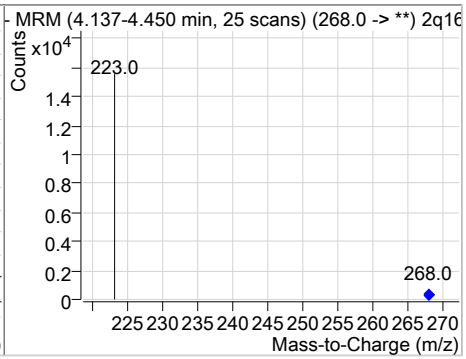




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	3.17	4.21	0.00	10088				

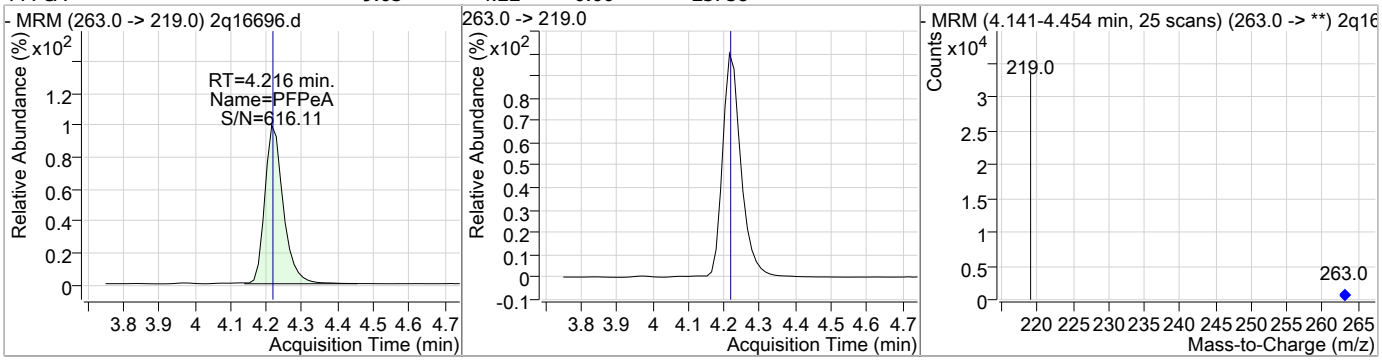




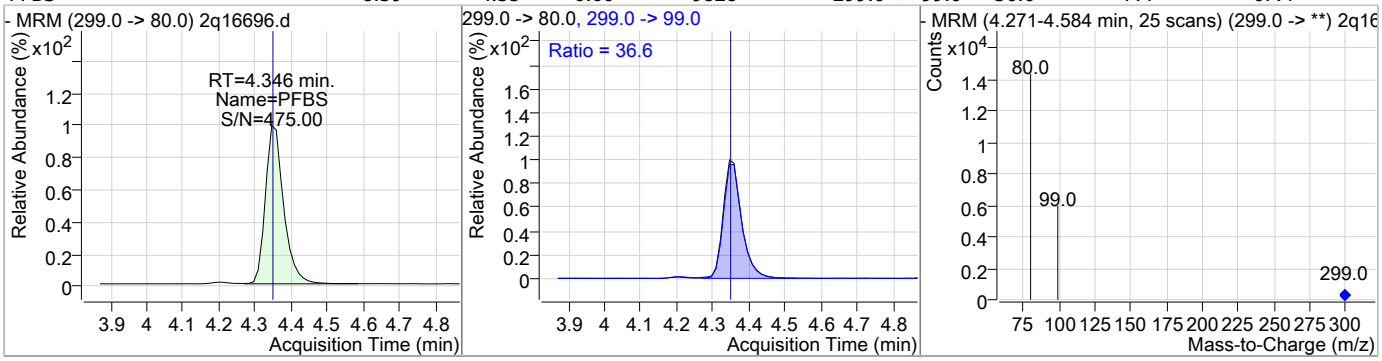


Perfluorinated Compounds by LC/MS/MS

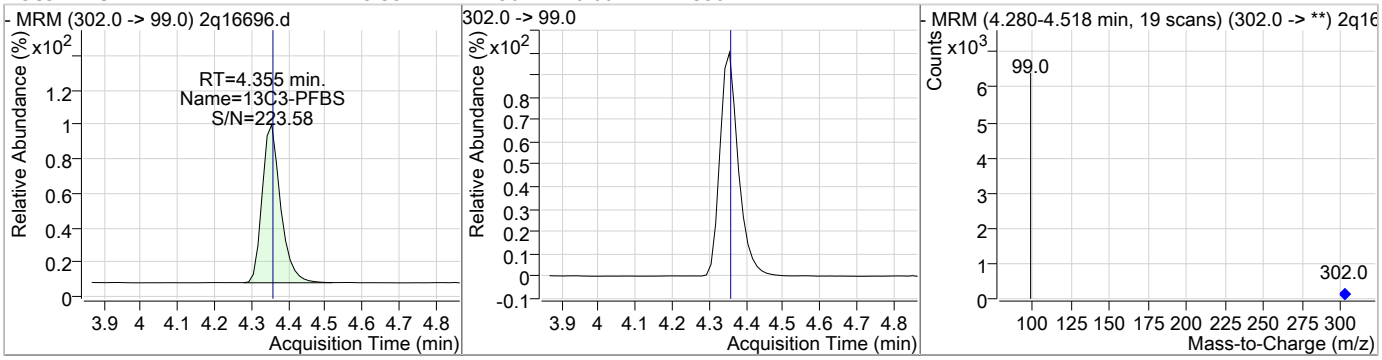
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	9.65	4.22	0.00	23758				



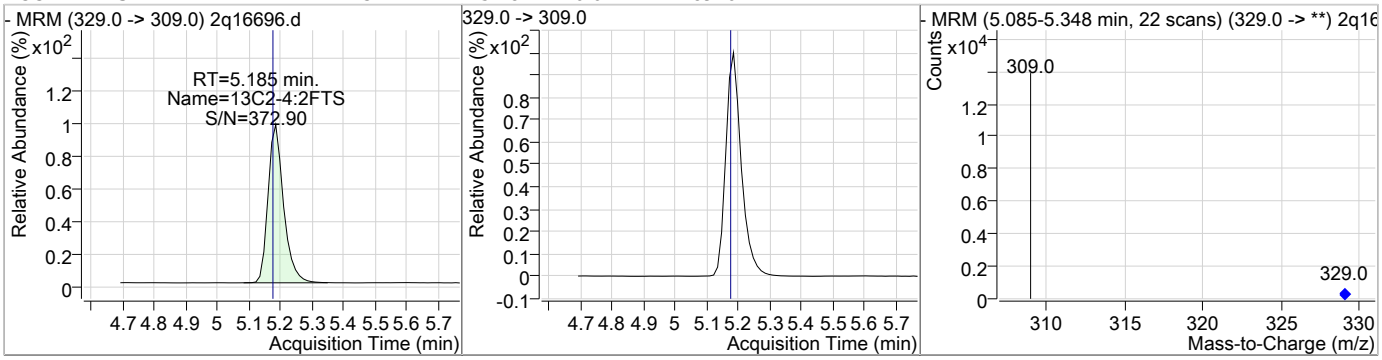
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	8.39	4.35	0.00	9828	299.0 -> 99.0	36.6	7.4	67.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	3.35	4.36	0.00	3502				

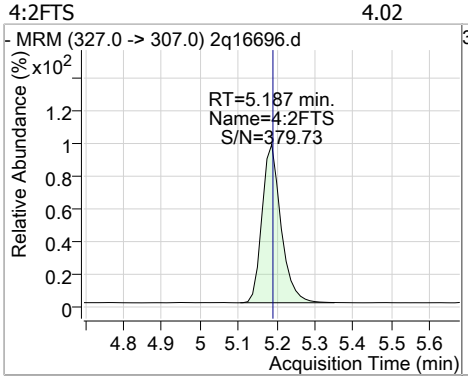


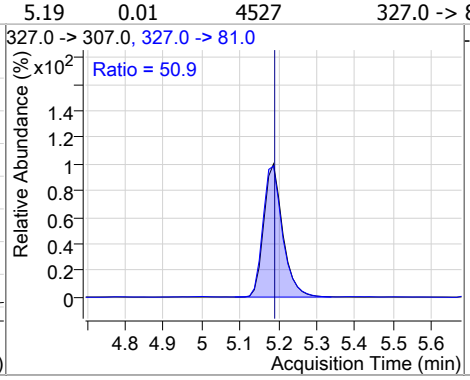
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	3.42	5.18	0.01	8970				

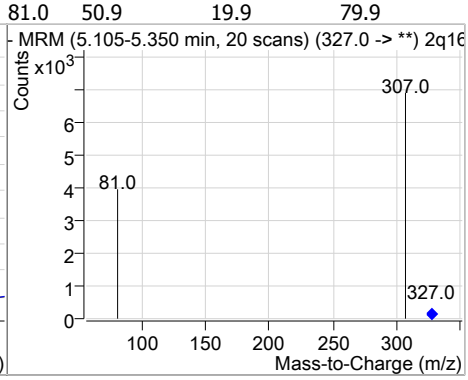


Perfluorinated Compounds by LC/MS/MS

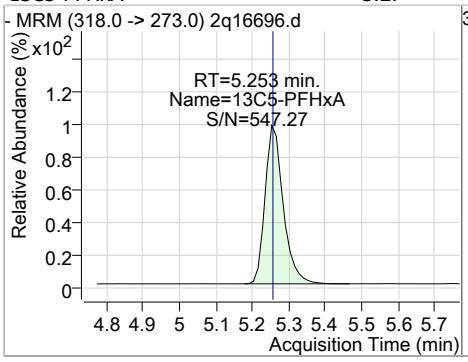
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	4.02	5.19	0.01	4527	327.0 -> 81.0	50.9	19.9	79.9

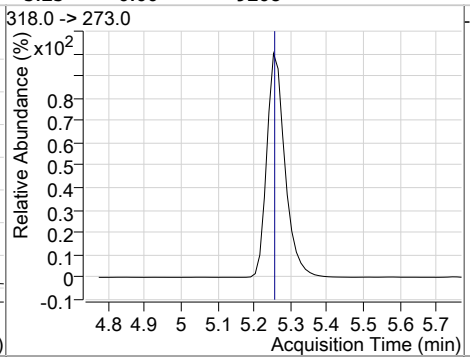


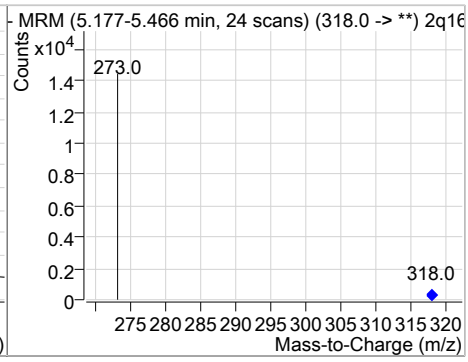




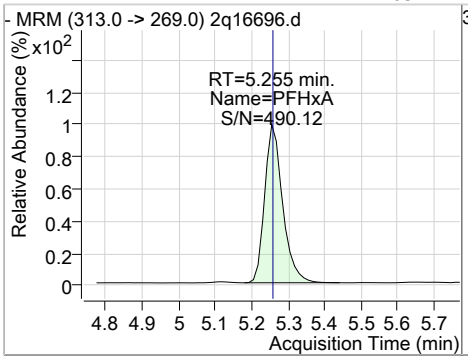
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	3.27	5.25	0.00	9268				

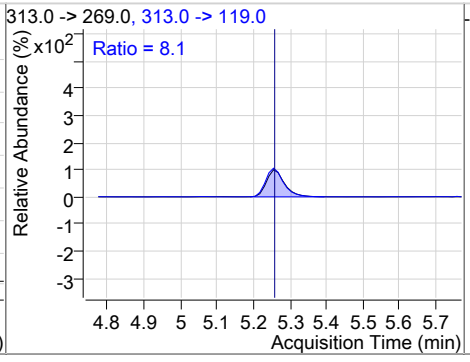


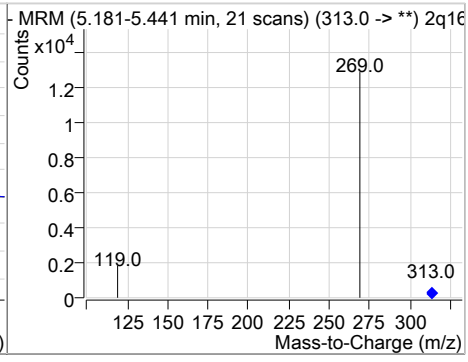




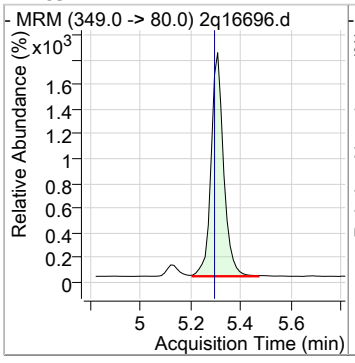
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	12.03	5.26	0.00	8966	313.0 -> 119.0	8.1	0.0	37.6

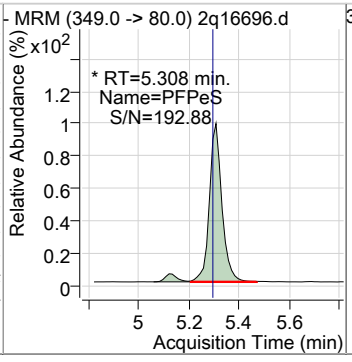


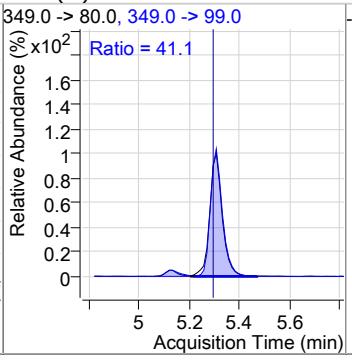


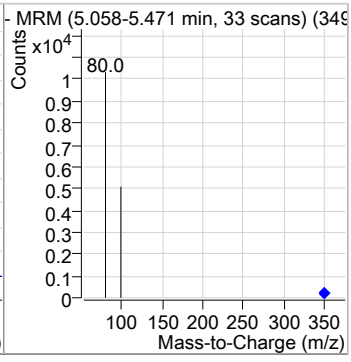


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	9.53	5.31	0.01	6650 (m)	349.0 -> 99.0	41.1	10.8	70.8



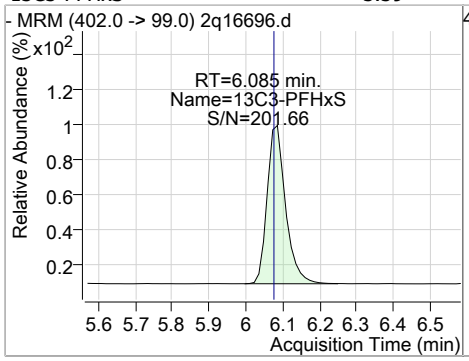


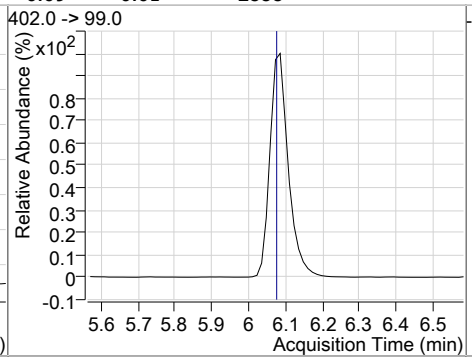


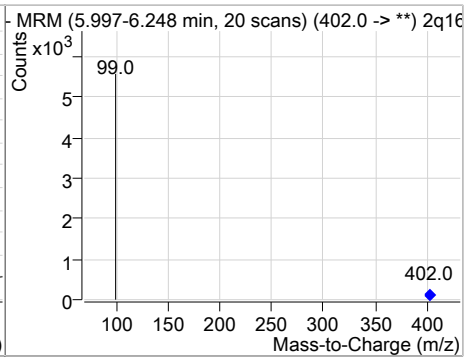


Perfluorinated Compounds by LC/MS/MS

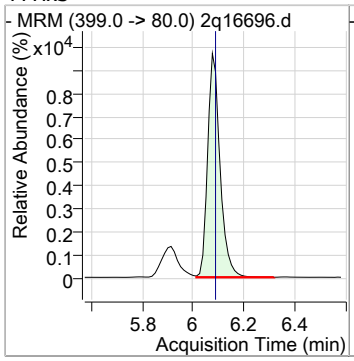
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	3.39	6.09	0.01	2888				

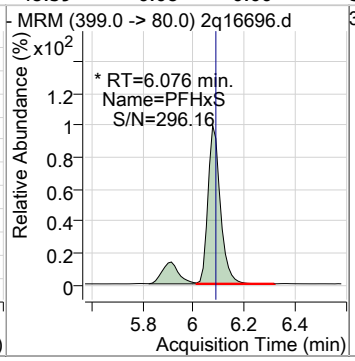


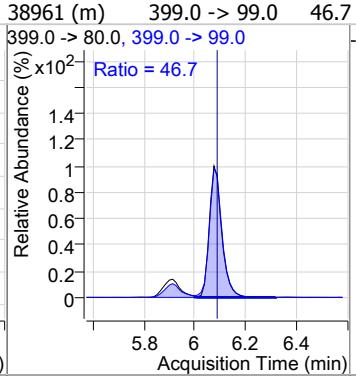


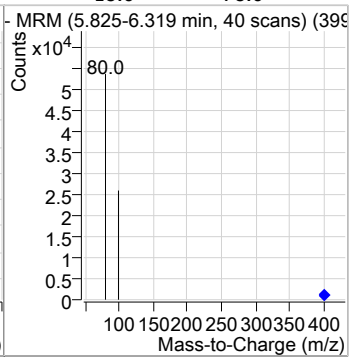


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	48.59	6.08	0.00	38961 (m)	399.0 -> 99.0	46.7	18.0	78.0

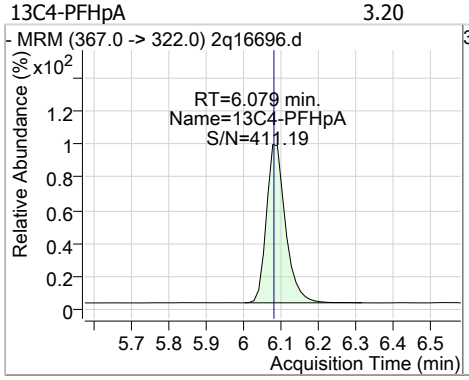


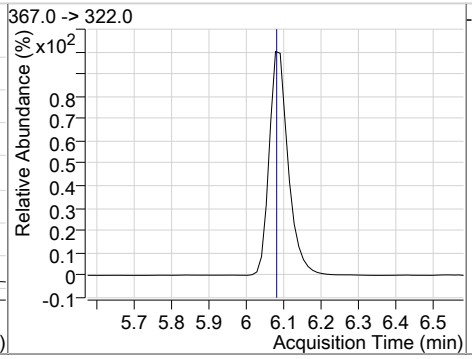


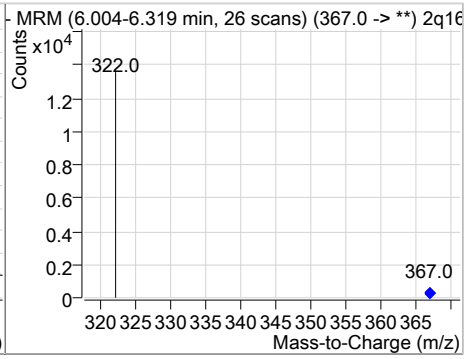




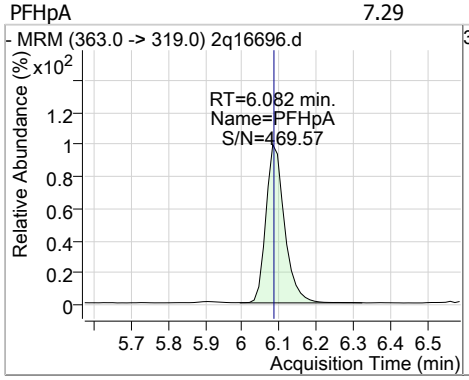
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	3.20	6.08	0.00	8612				

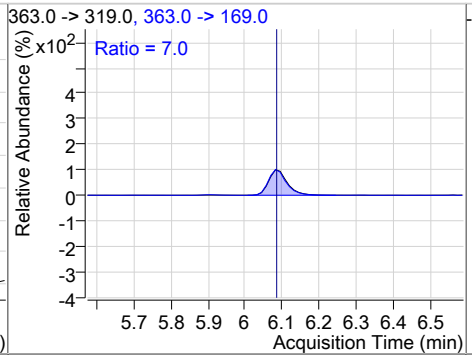


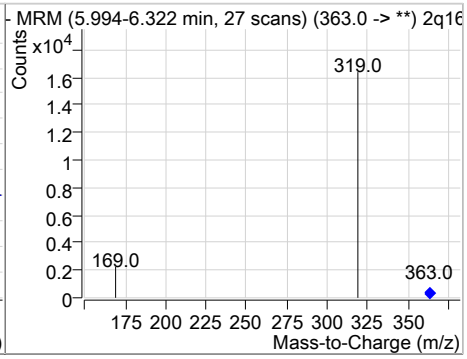




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	7.29	6.08	0.00	11248	363.0 -> 169.0	7.0	0.0	37.2

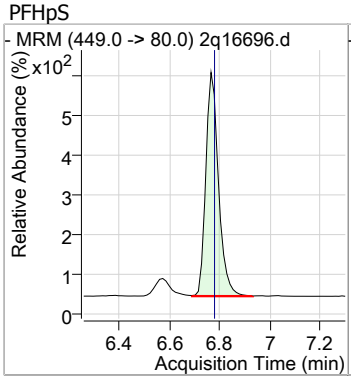


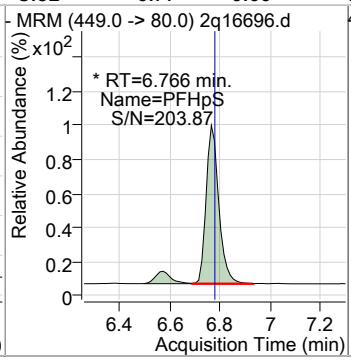


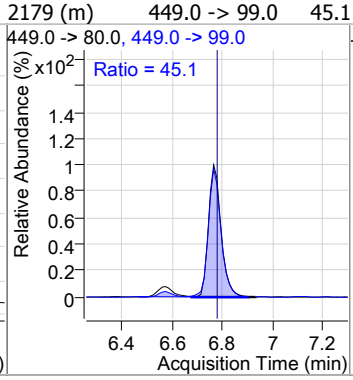


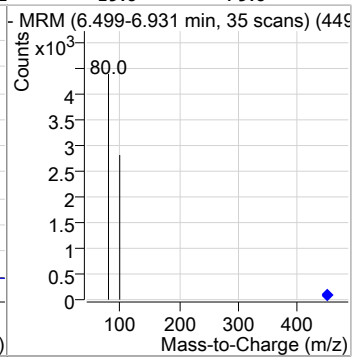
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	5.82	6.77	0.00	2179 (m)	449.0 -> 99.0	45.1	19.0	79.0

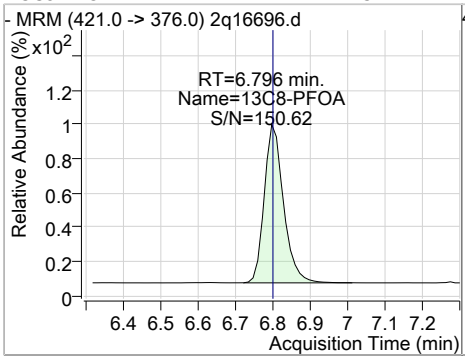


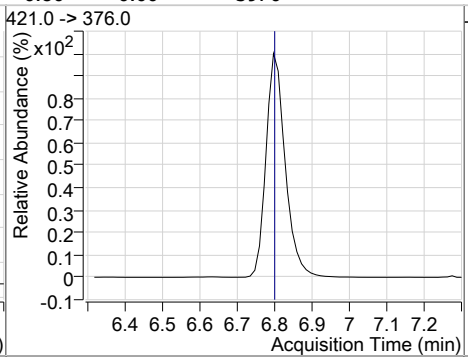


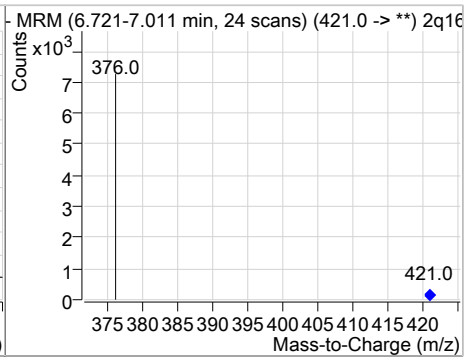




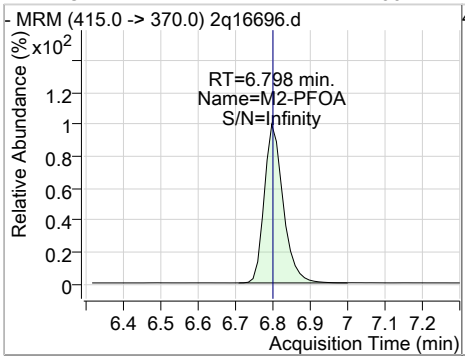
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	3.22	6.80	0.00	3970				

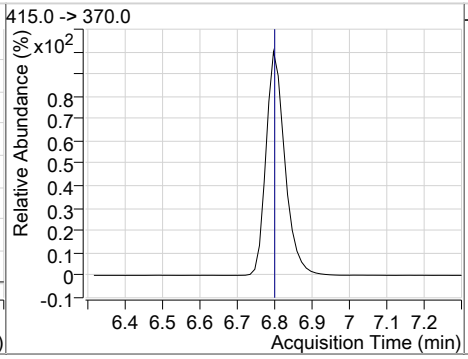


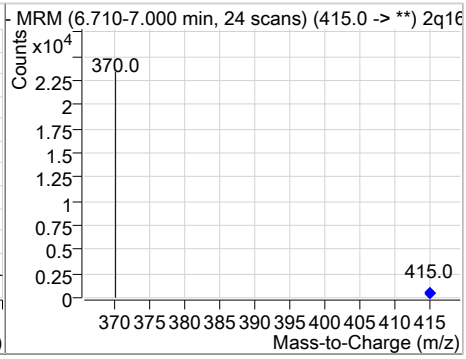




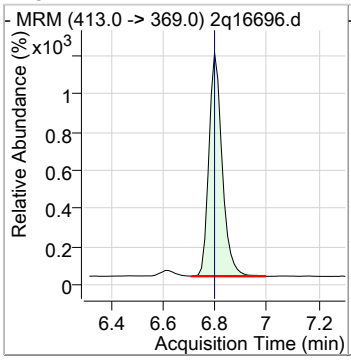
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	4.00	6.80	0.00	16805				

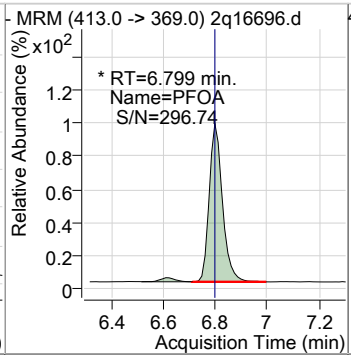


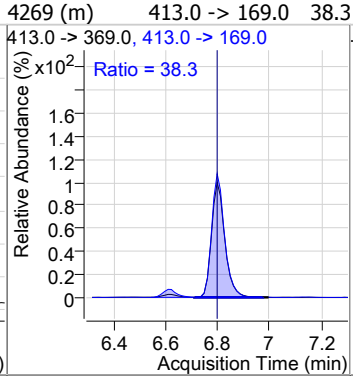


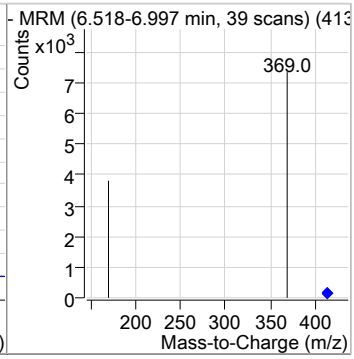


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	8.50	6.80	0.00	4269 (m)	413.0 -> 169.0	38.3	5.0	65.0



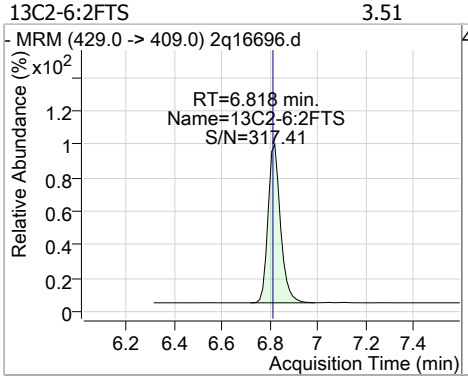


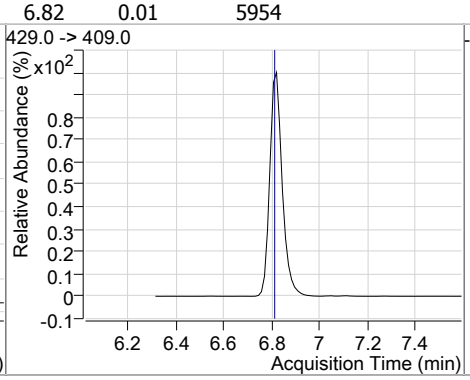


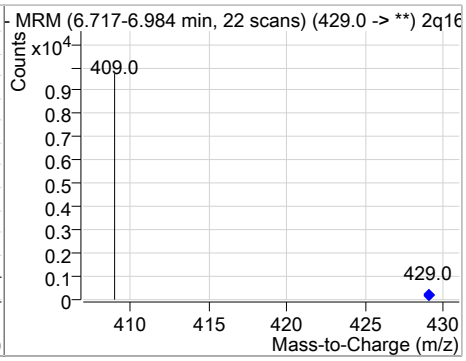


Perfluorinated Compounds by LC/MS/MS

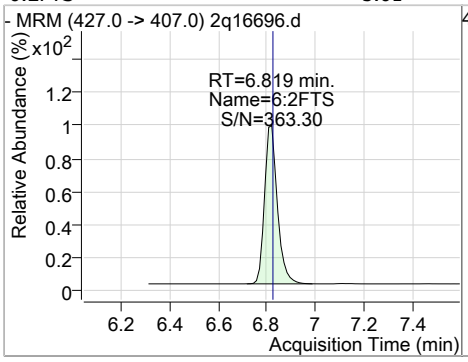
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	3.51	6.82	0.01	5954				

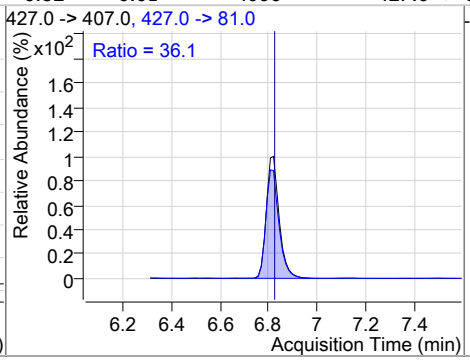


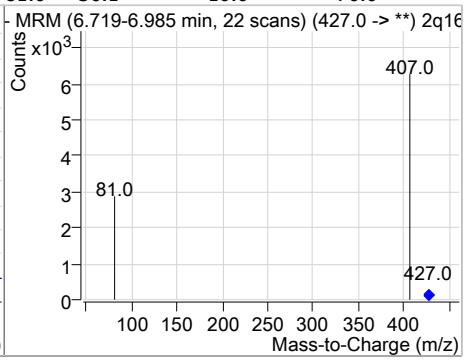




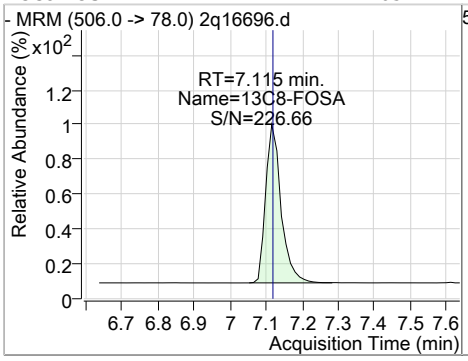
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	5.61	6.82	0.01	4006	427.0 -> 81.0	36.1	10.0	70.0

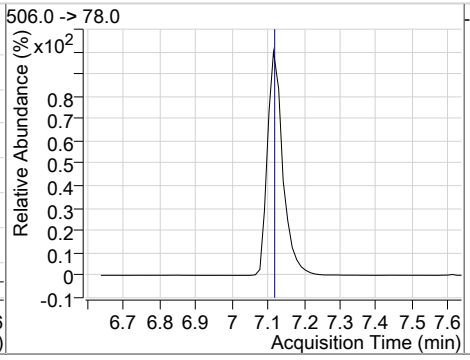


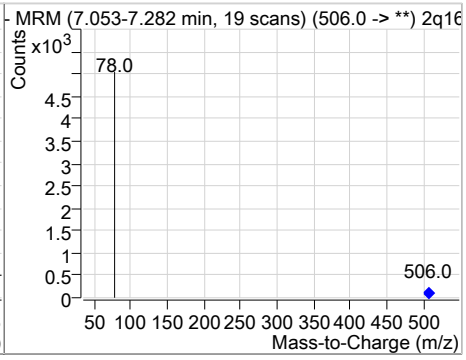




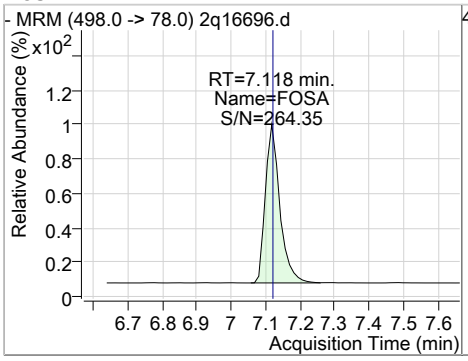
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.05	7.12	0.00	2719				

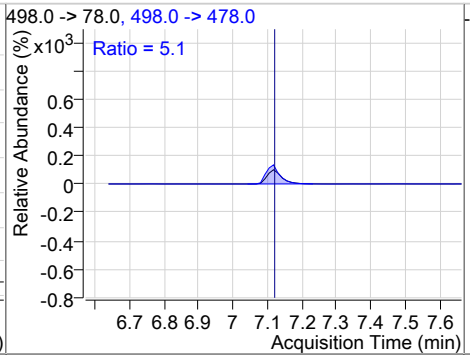


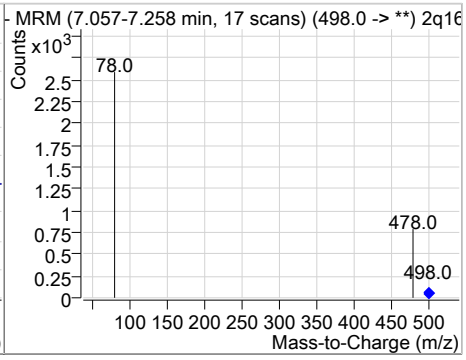




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	4.44	7.12	0.00	1464	498.0 -> 478.0	5.1	0.0	34.0

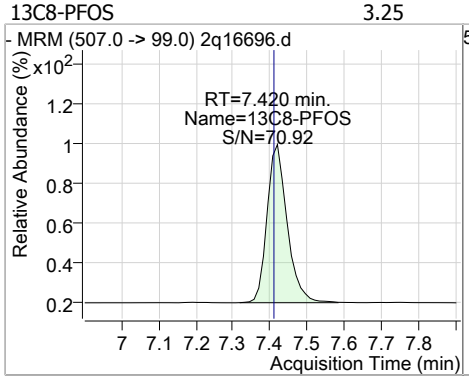


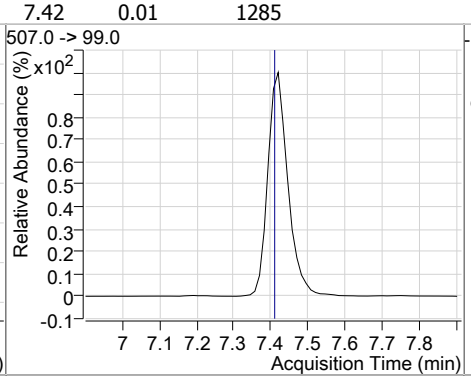


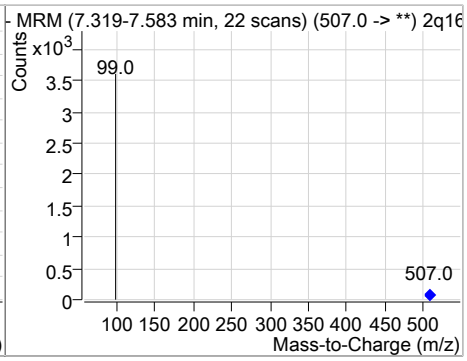


Perfluorinated Compounds by LC/MS/MS

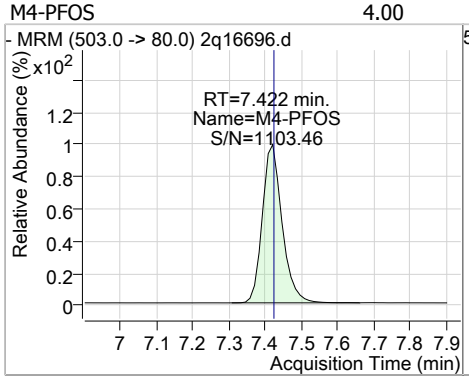
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	3.25	7.42	0.01	1285				

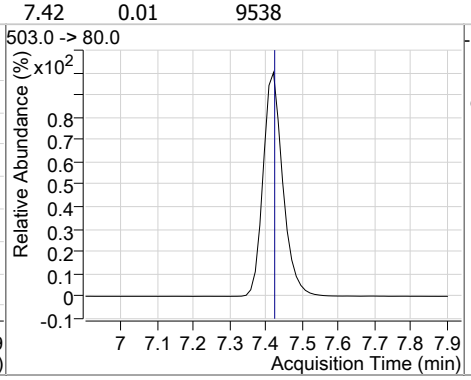


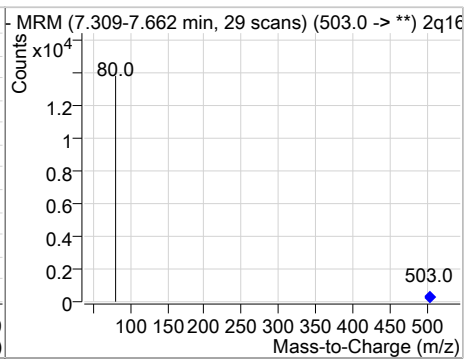




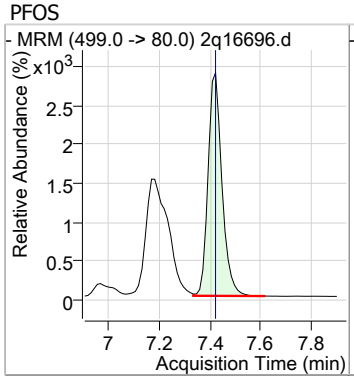
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	4.00	7.42	0.01	9538				

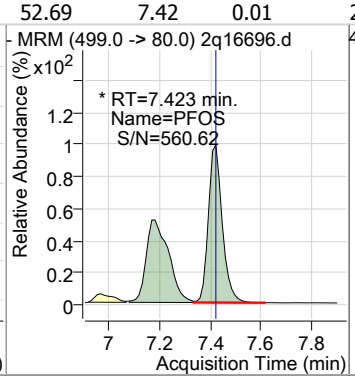


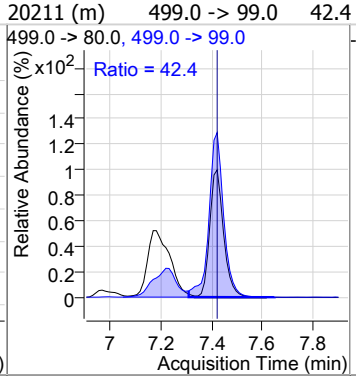


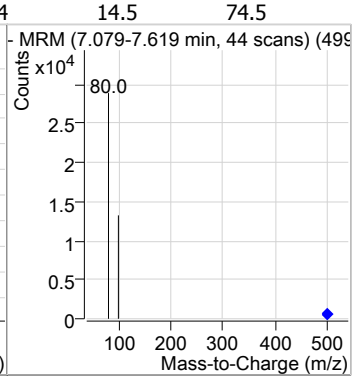


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	52.69	7.42	0.01	20211 (m)	499.0 -> 99.0	42.4	14.5	74.5

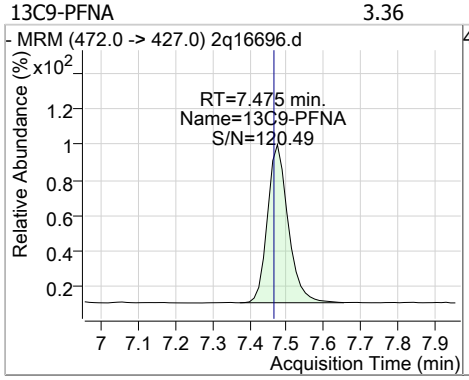


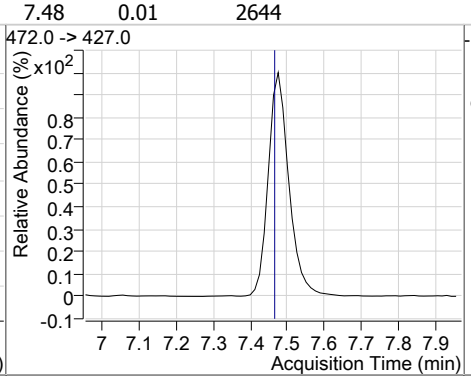


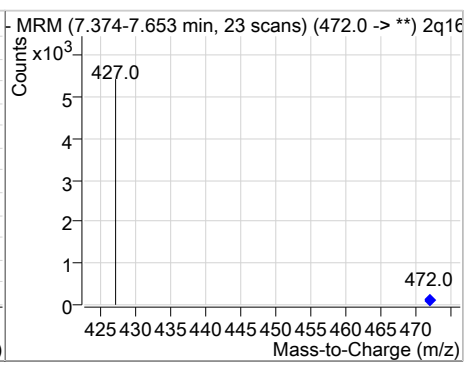




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	3.36	7.48	0.01	2644				

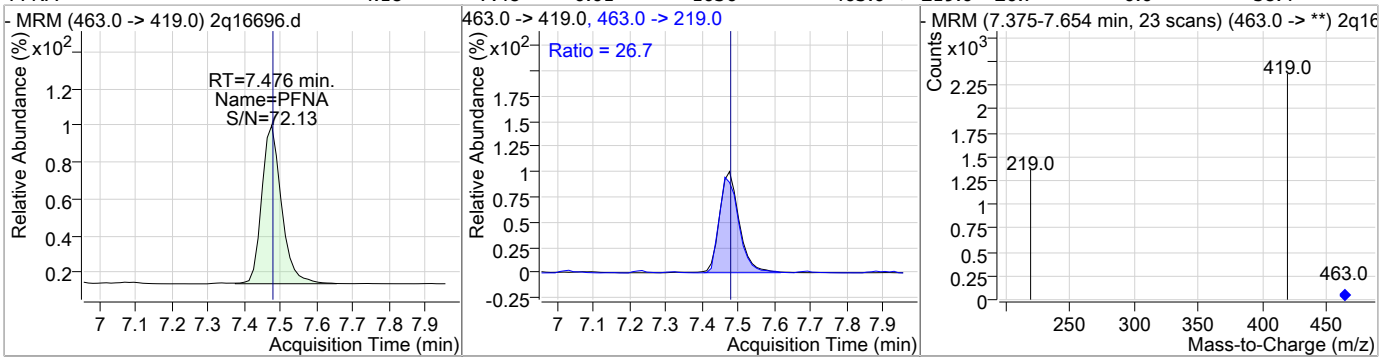




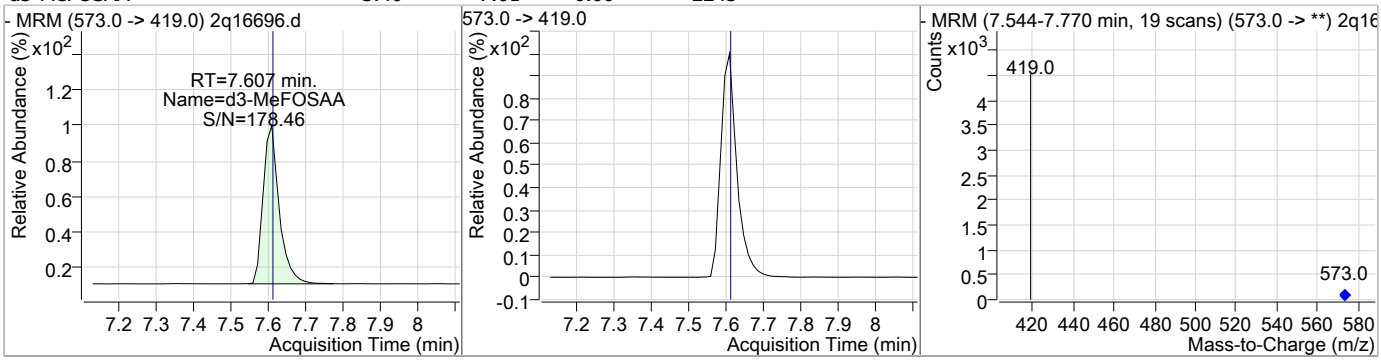


Perfluorinated Compounds by LC/MS/MS

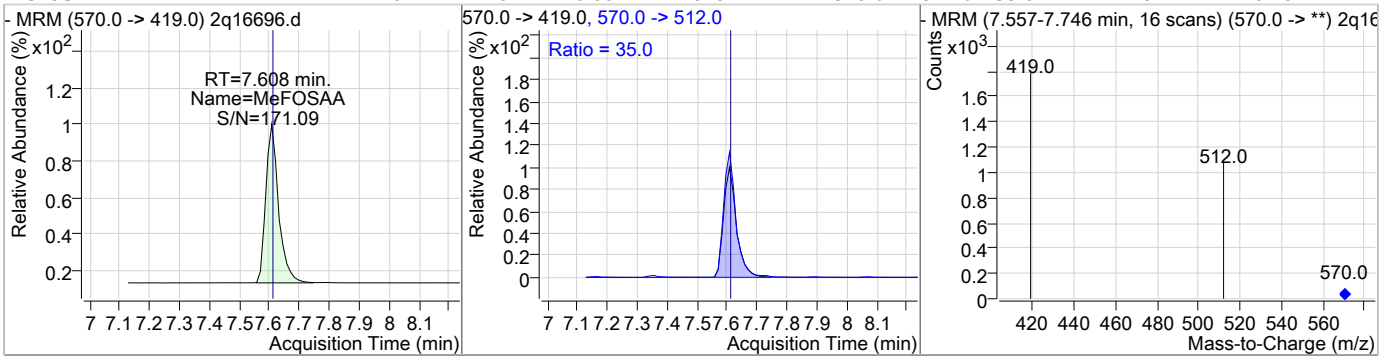
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	4.18	7.48	0.01	1036	463.0 -> 219.0	26.7	0.0	58.4



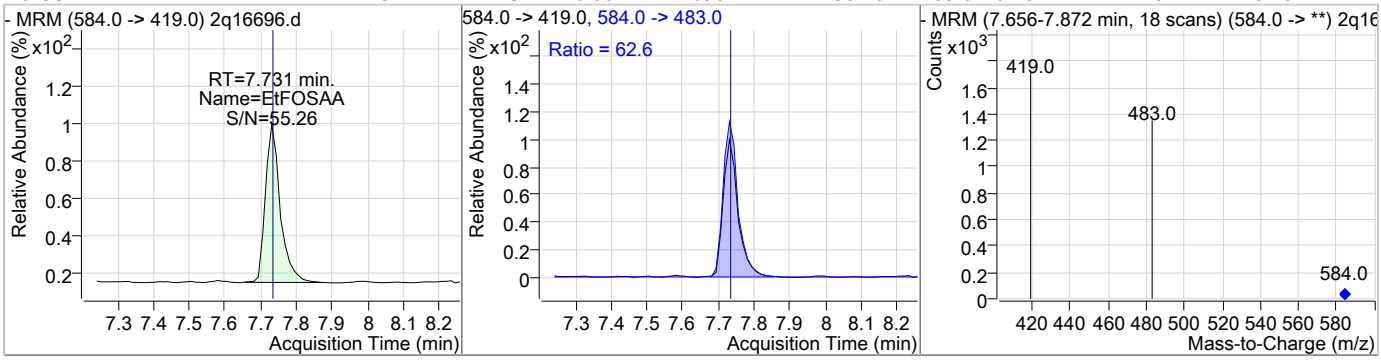
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	3.40	7.61	0.00	2245				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	4.10	7.61	0.00	828	570.0 -> 512.0	35.0	1.8	61.8

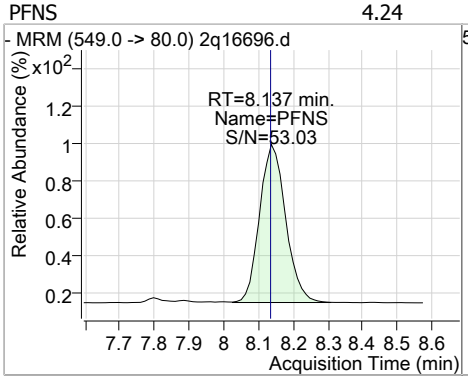


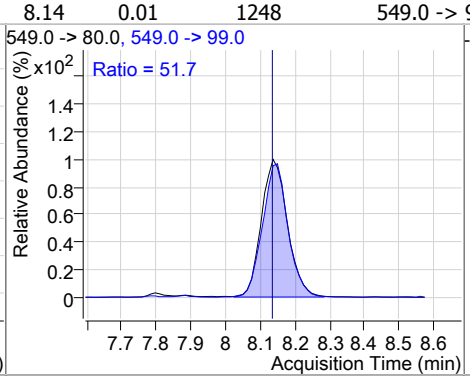
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	4.31	7.73	0.00	690	584.0 -> 483.0	62.6	24.8	84.8

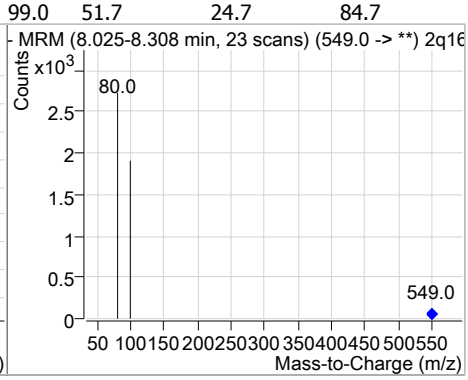


Perfluorinated Compounds by LC/MS/MS

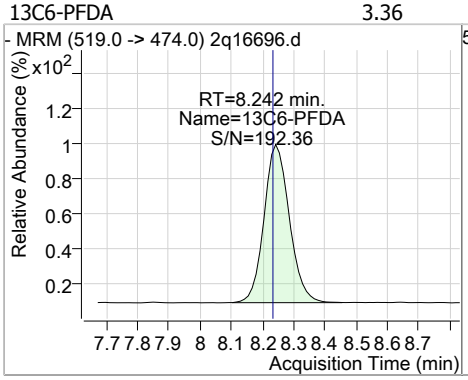
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	4.24	8.14	0.01	1248	549.0 -> 99.0	51.7	24.7	84.7

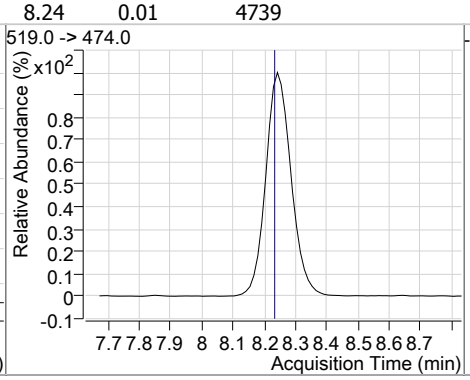


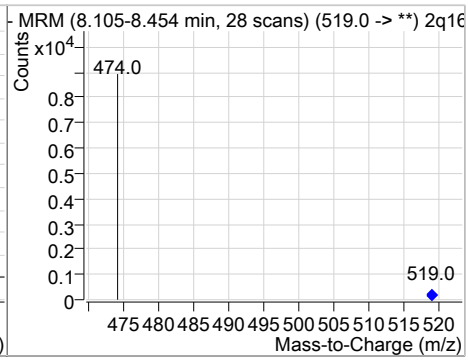




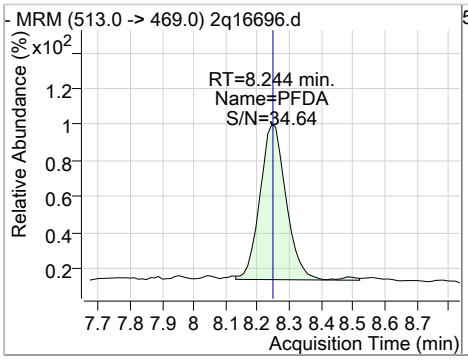
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	3.36	8.24	0.01	4739				

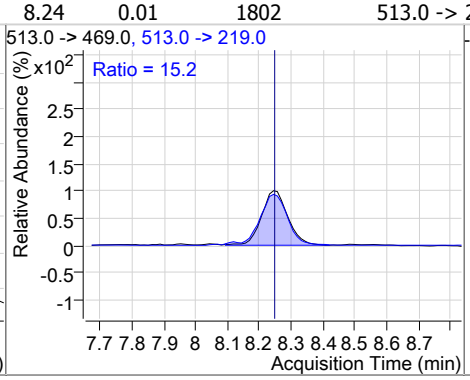


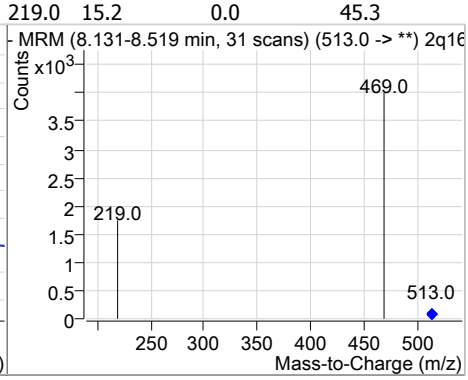




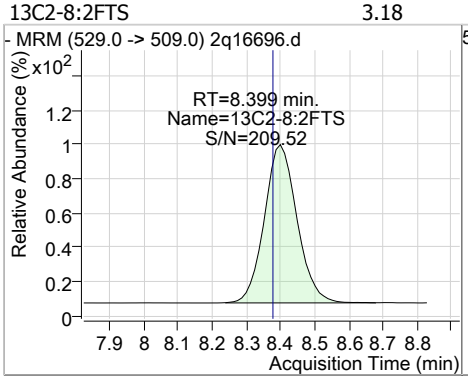
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	4.27	8.24	0.01	1802	513.0 -> 219.0	15.2	0.0	45.3

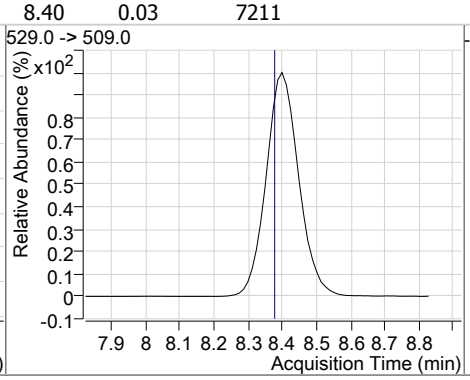


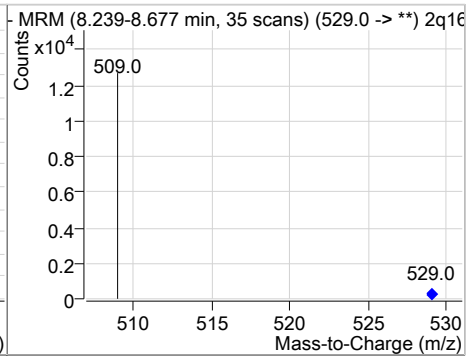




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	3.18	8.40	0.03	7211				

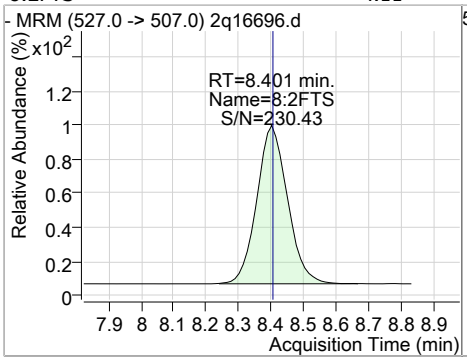


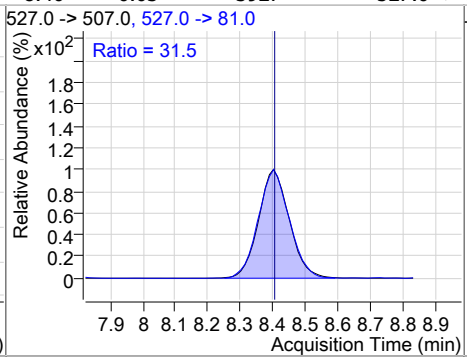


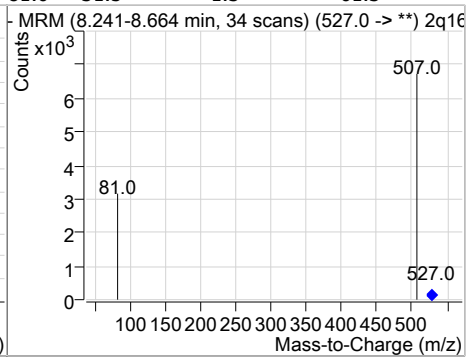


Perfluorinated Compounds by LC/MS/MS

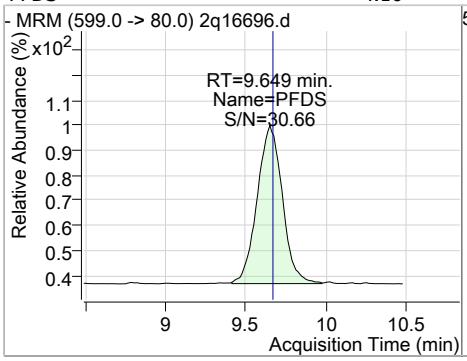
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	4.11	8.40	0.03	3927	527.0 -> 81.0	31.5	1.3	61.3

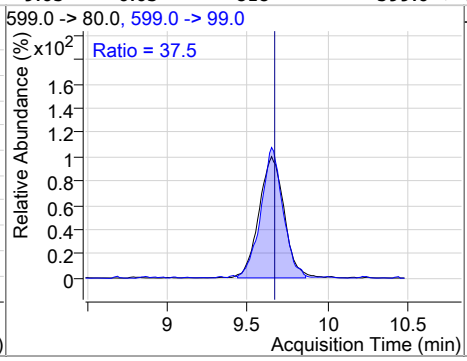


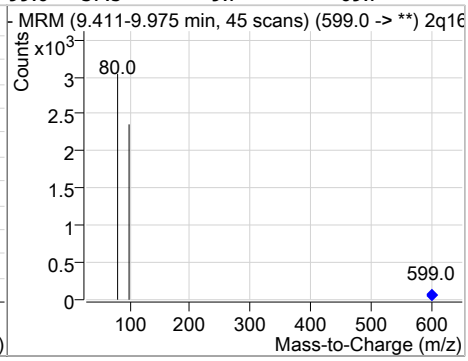




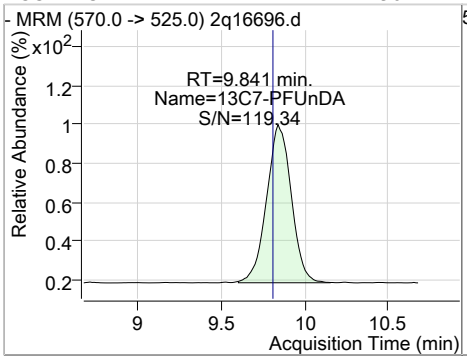
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	4.16	9.65	0.03	818	599.0 -> 99.0	37.5	9.7	69.7

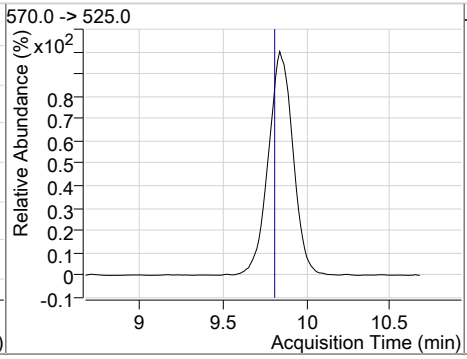


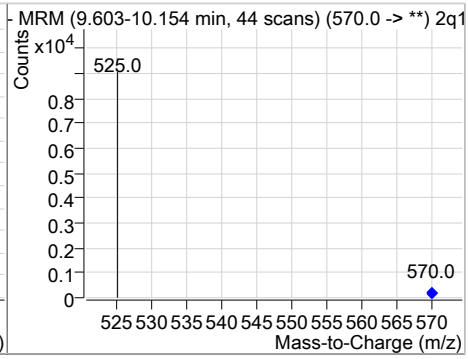




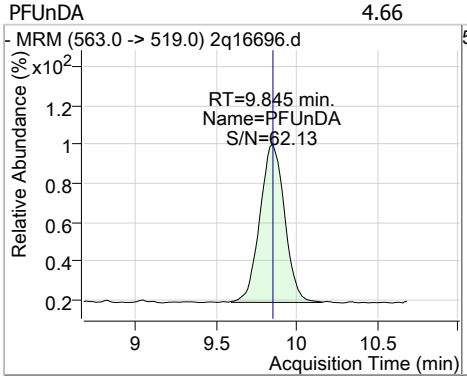
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	2.90	9.84	0.04	3864				

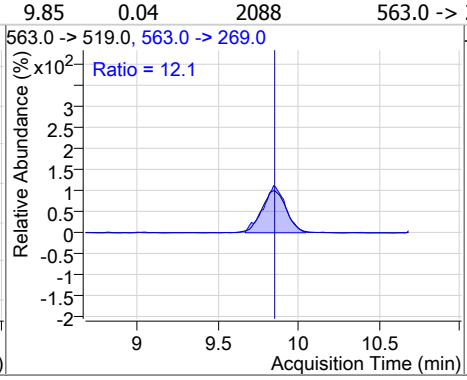


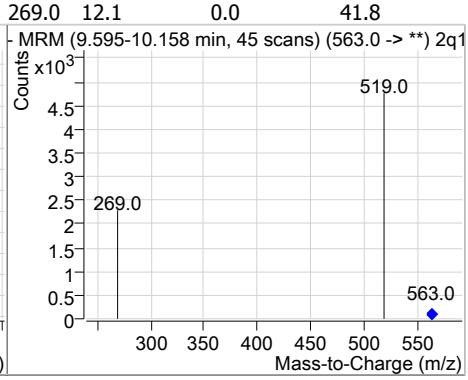




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	4.66	9.85	0.04	2088	563.0 -> 269.0	12.1	0.0	41.8

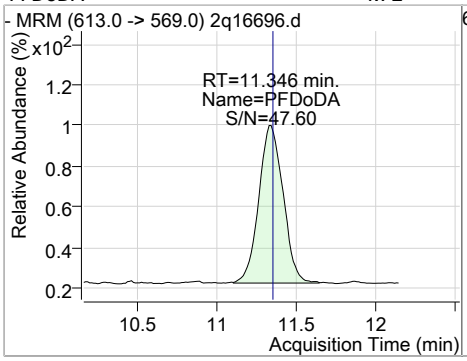


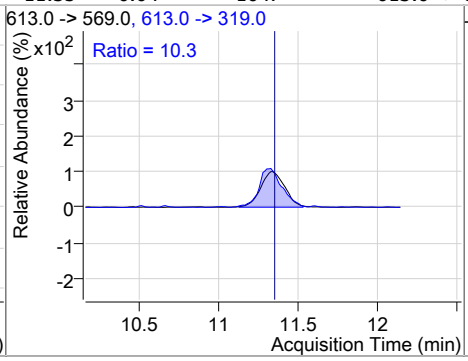


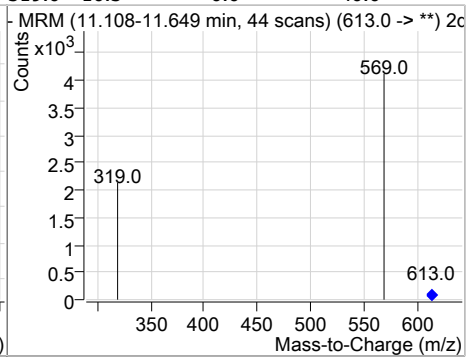


Perfluorinated Compounds by LC/MS/MS

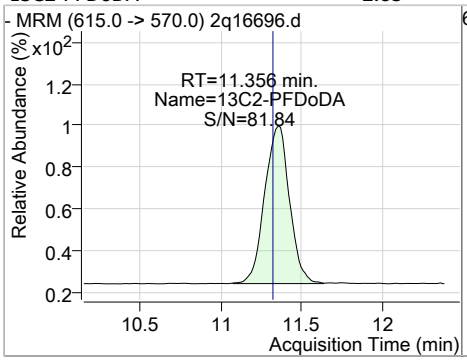
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	4.72	11.35	0.04	1647	613.0 -> 319.0	10.3	0.0	40.0

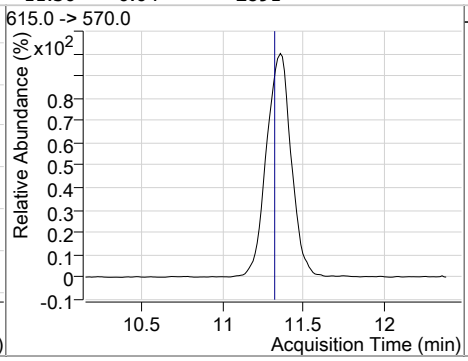


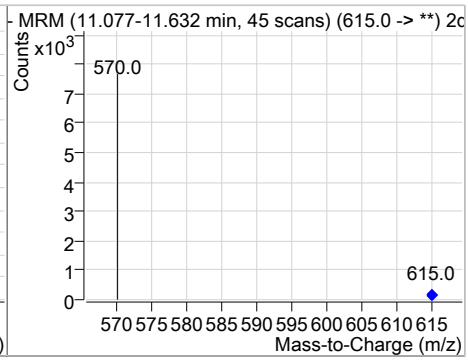




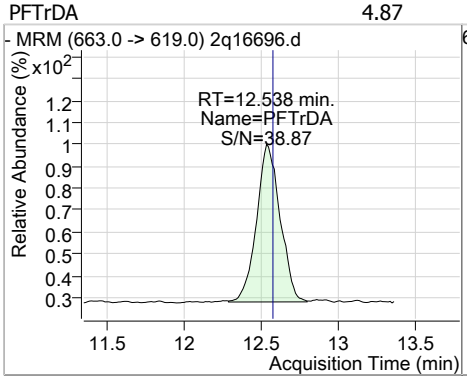
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	2.85	11.36	0.04	2891				

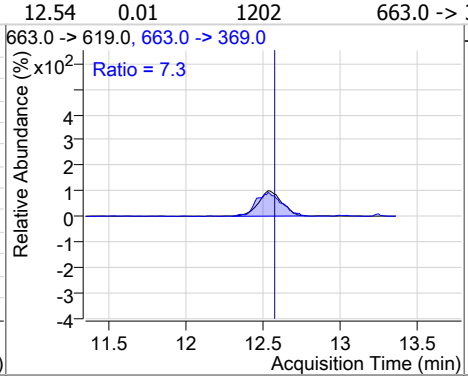


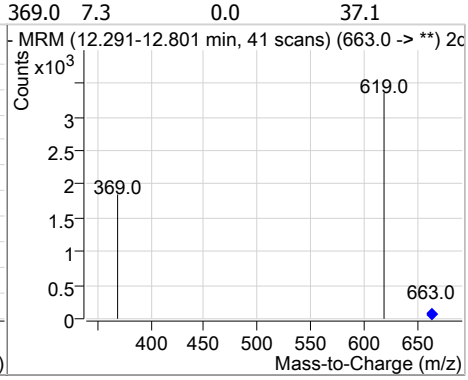




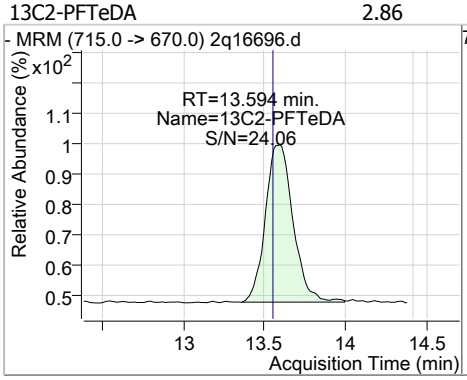
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	4.87	12.54	0.01	1202	663.0 -> 369.0	7.3	0.0	37.1

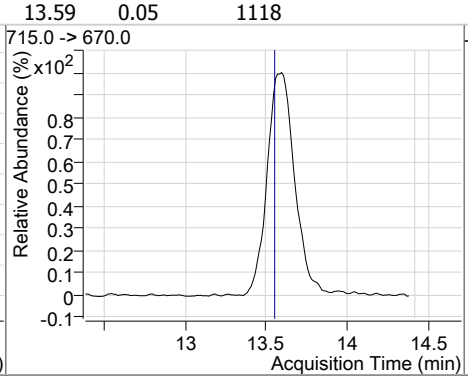


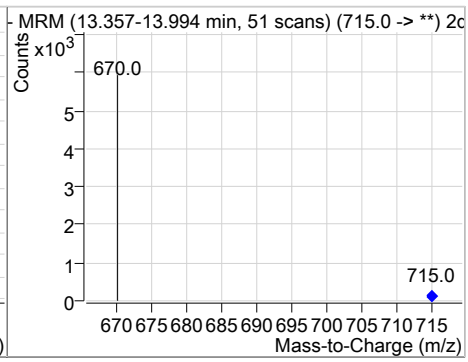




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	2.86	13.59	0.05	1118				

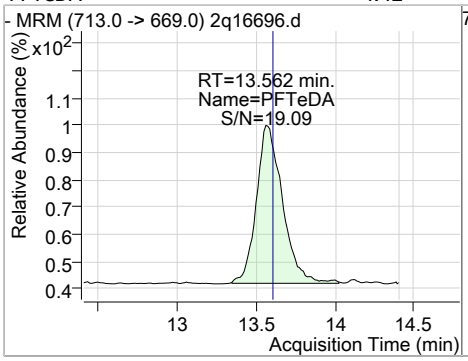


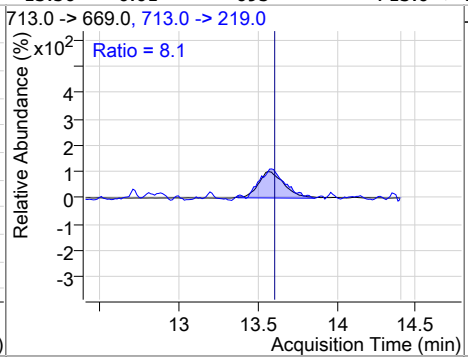


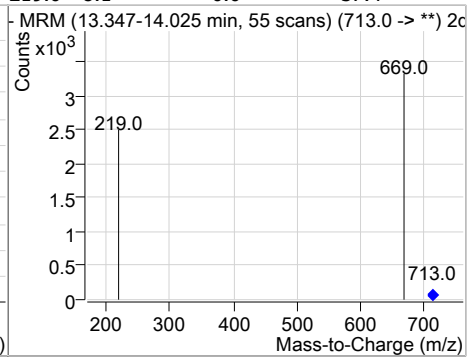


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	4.42	13.56	0.01	695	713.0 -> 219.0	8.1	0.0	37.4







Manual Integration Approval Summary

Sample Number: OP70743-MSD
Lab FileID: 2Q16696.D
Injection Time: 07/07/18 12:43
Method: EPA 537M QSM5.1 B-15
Analyst approved: 07/09/18 15:30 Natasha Gumtie
Supervisor approved: 07/10/18 17:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanesulfonic acid	2706-91-4		5.31	Split peak
Perfluorohexanesulfonic acid	355-46-4		6.08	Split peak
Perfluoroheptanesulfonic acid	375-92-8		6.77	Split peak
Perfluorooctanoic acid	335-67-1		6.80	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.42	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 07/12/18 14:31

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16980.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/11/2018 11:56:47 PM
Sample Name : op70805-ms
Vial : Vial 24
DA Method File : PFC_ID_071018_S2Q294.quantmethod.xml
Batch Name : s2q294.batch.bin
Sample Information : op70805,S2Q294,120,,,1.0,1,water

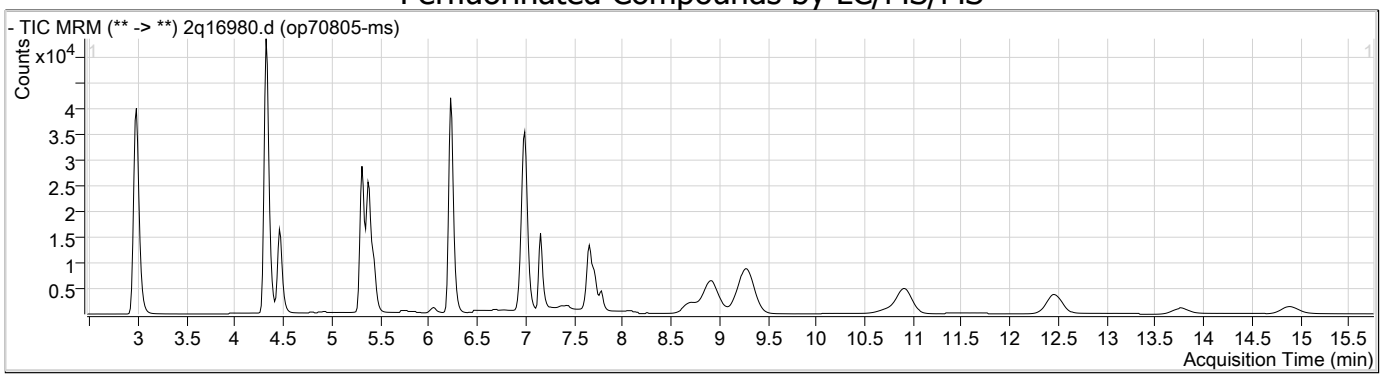
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.984	415.0 -> 370.0	18908	20.00	µg/L	0.038
13C4-PFOS	7.648	503.0 -> 80.0	9634	20.00	µg/L	0.046
M4-PFBA	2.978	217.0 -> 172.0	128603	20.00	µg/L	0.012
M5-PFPeA	4.325	268.0 -> 223.0	61881	20.00	µg/L	0.013
M5-PFHxA	5.391	318.0 -> 273.0	56509	20.00	µg/L	0.030
M4-PFHpA	6.229	367.0 -> 322.0	57388	20.00	µg/L	0.020
M8-PFOA	6.983	421.0 -> 376.0	28953	20.00	µg/L	0.037
M9-PFNA	7.715	472.0 -> 427.0	17629	20.00	µg/L	0.048
M6-PFDA	8.929	519.0 -> 474.0	48369	20.00	µg/L	0.187
M7-PFUnDA	10.917	570.0 -> 525.0	34471	20.00	µg/L	0.156
M2-PFDoDA	12.453	615.0 -> 570.0	26490	20.00	µg/L	0.114
M2-PFTeDA	14.894	715.0 -> 670.0	11225	20.00	µg/L	0.119
M8-FOSA	7.155	506.0 -> 78.0	27739	20.00	µg/L	0.010
M3-PFBS	4.456	302.0 -> 99.0	20000	20.00	µg/L	0.019
M3-PFHxS	6.223	402.0 -> 99.0	16471	20.00	µg/L	0.027
M8-PFOS	7.646	507.0 -> 99.0	7095	20.00	µg/L	0.045
M2-4:2FTS	5.310	329.0 -> 309.0	54562	20.00	µg/L	0.027
M2-6:2FTS	7.005	429.0 -> 409.0	42486	20.00	µg/L	0.047
M2-8:2FTS	9.272	529.0 -> 509.0	63742	20.00	µg/L	0.177
M3-MeFOSAA	7.658	573.0 -> 419.0	11636	20.00	µg/L	0.021
System Monitoring Compounds						
13C2-4:2FTS	5.310	329.0 -> 309.0	54567	20.36	µg/L	0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.8%		
13C2-6:2FTS	7.005	429.0 -> 409.0	42482	20.47	µg/L	0.047
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%		
13C2-8:2FTS	9.272	529.0 -> 509.0	62461	14.22	µg/L	0.177
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.1%		
13C2-PFDoDA	12.453	615.0 -> 570.0	26527	13.80	µg/L	0.114
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.0%		
13C2-PFTeDA	14.894	715.0 -> 670.0	11274	12.85	µg/L	0.119
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.3%		
13C3-PFBS	4.456	302.0 -> 99.0	20014	20.12	µg/L	0.019
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%		
13C3-PFHxS	6.223	402.0 -> 99.0	16473	19.85	µg/L	0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.2%		
13C4-PFBA	2.978	217.0 -> 172.0	128562	20.07	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C4-PFHpA	6.229	367.0 -> 322.0	57373	21.10	µg/L	0.020
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.5%		
13C5-PFHxA	5.391	318.0 -> 273.0	56512	19.93	µg/L	0.030
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.6%		
13C5-PFPeA	4.325	268.0 -> 223.0	61854	19.77	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.9%		
13C6-PFDA	8.929	519.0 -> 474.0	47648	16.46	µg/L	0.187
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.3%		

Perfluorinated Compounds by LC/MS/MS

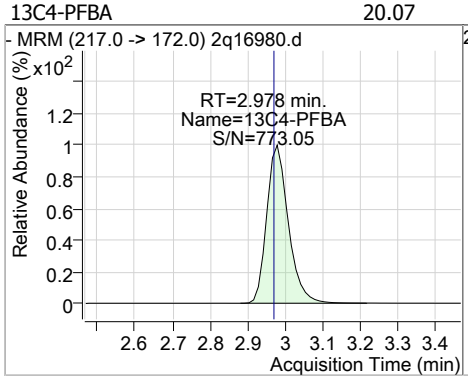
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.917	570.0 -> 525.0	34542	14.54	µg/L		0.156
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.7%			
13C8-FOSA	7.155	506.0 -> 78.0	27751	17.70	µg/L		0.010
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.5%			
13C8-PFOA	6.983	421.0 -> 376.0	28973	20.84	µg/L		0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.2%			
13C8-PFOS	7.646	507.0 -> 99.0	7090	16.43	µg/L		0.045
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.1%			
13C9-PFNA	7.715	472.0 -> 427.0	17629	18.30	µg/L		0.048
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.5%			
d3-MeFOSAA	7.658	573.0 -> 419.0	11642	15.39	µg/L		0.021
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.9%			
M2-PFOA	6.984	415.0 -> 370.0	18894	19.99	ng/ml		0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%			
M4-PFOS	7.648	503.0 -> 80.0	9643	20.02	ng/ml		0.046
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
Target Compounds							**QValue**
4:2FTS	5.313	327.0 -> 307.0	28583	20.95	µg/L		99
6:2FTS	7.006	427.0 -> 407.0	22550	21.97	µg/L		97
8:2FTS	9.279	527.0 -> 507.0	34825	21.13	µg/L		95
EtFOSAA	7.781	584.0 -> 419.0	3983	20.30	µg/L		98
FOSA	7.158	498.0 -> 78.0	15350	22.53	µg/L		100
MeFOSAA	7.659	570.0 -> 419.0	4928	23.68	µg/L		99
PFBA	2.974	213.0 -> 169.0	32782	32.66	µg/L		100
PFBS	4.459	299.0 -> 80.0	25918	19.00	µg/L		100
PFDA	8.919	513.0 -> 469.0	18048	20.54	µg/L		100
PFDoDA	12.459	613.0 -> 569.0	16480	24.16	µg/L		99
PFDS	10.725	599.0 -> 80.0	5793	19.86	µg/L		97
PFHpA	6.232	363.0 -> 319.0	46893	22.33	µg/L		100
PFHpS	6.941	449.0 -> 80.0	9983	19.81	µg/L		99
PFHxA	5.381	313.0 -> 269.0	23337	24.35	µg/L		99
PFHxS	6.226	399.0 -> 80.0	18748	19.05	µg/L	m	99
PFNA	7.716	463.0 -> 419.0	7088	20.86	µg/L		91
PFNS	8.696	549.0 -> 80.0	11971	21.67	µg/L		100
PFOA	6.985	413.0 -> 369.0	16416	20.67	µg/L		99
PFOS	7.649	499.0 -> 80.0	9952	22.54	µg/L	m	94
PFPeA	4.329	263.0 -> 219.0	129575	43.83	µg/L		100
PFPeS	5.433	349.0 -> 80.0	17527	19.99	µg/L		100
PFTeDA	14.888	713.0 -> 669.0	7380	21.69	µg/L		99
PFTrDA	13.763	663.0 -> 619.0	12878	26.12	µg/L		99
PFUnDA	10.908	563.0 -> 519.0	19315	23.13	µg/L		99

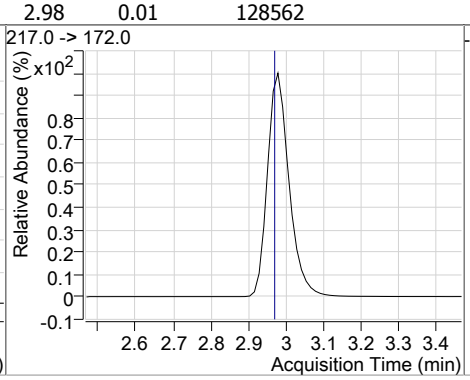
 # = Qualifier out of range, m = manually integrated, + = Area summed

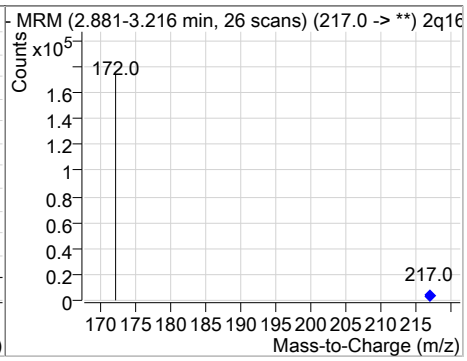
Perfluorinated Compounds by LC/MS/MS



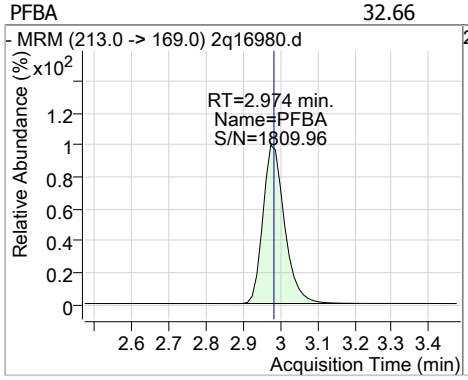
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.07	2.98	0.01	128562				

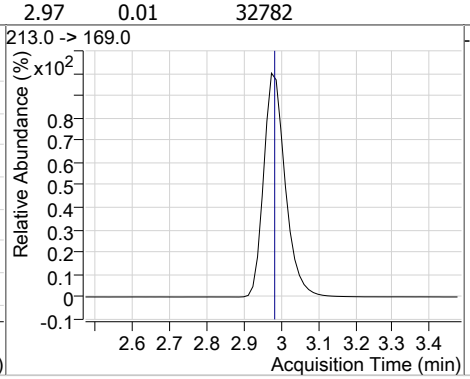


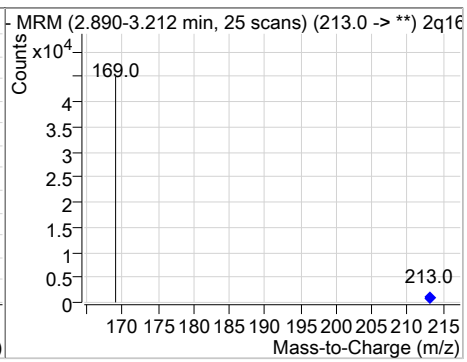




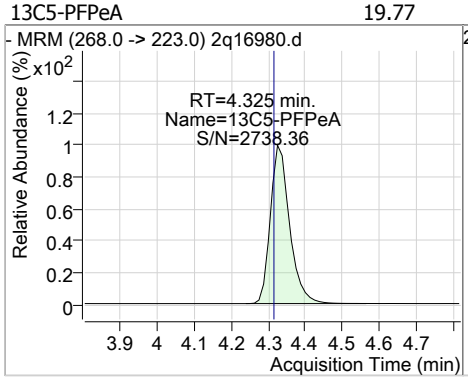
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	32.66	2.97	0.01	32782				

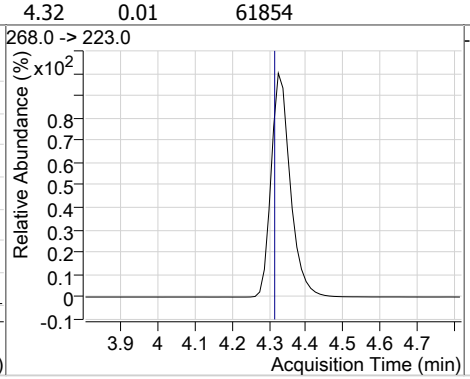


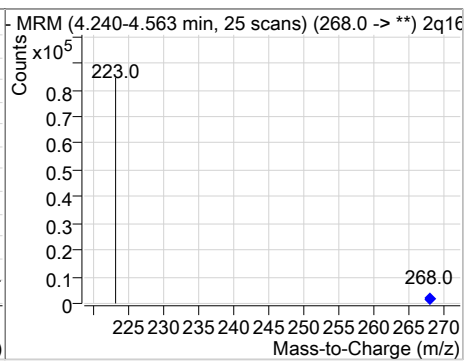




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.77	4.32	0.01	61854				

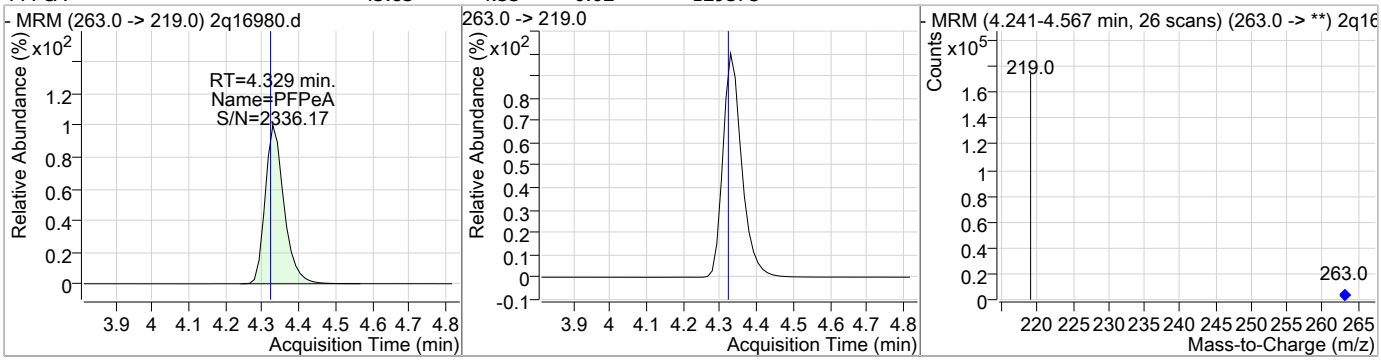




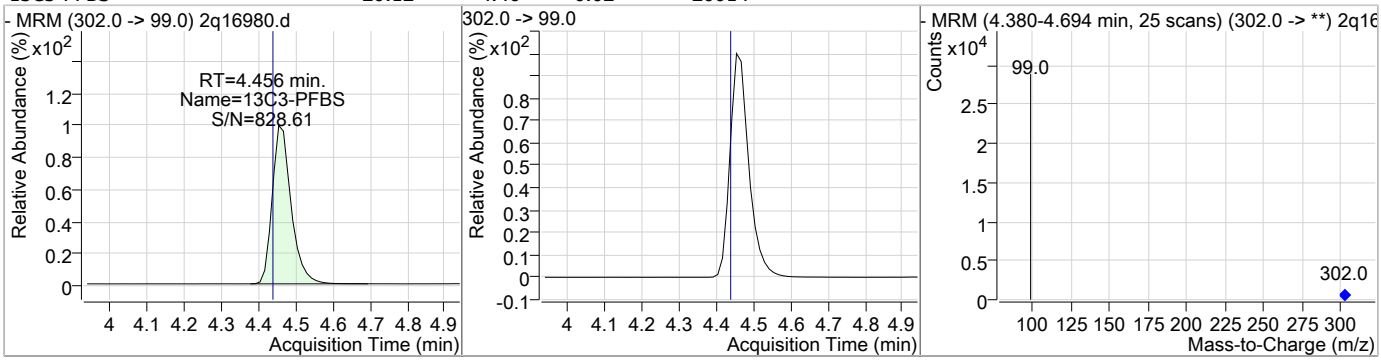


Perfluorinated Compounds by LC/MS/MS

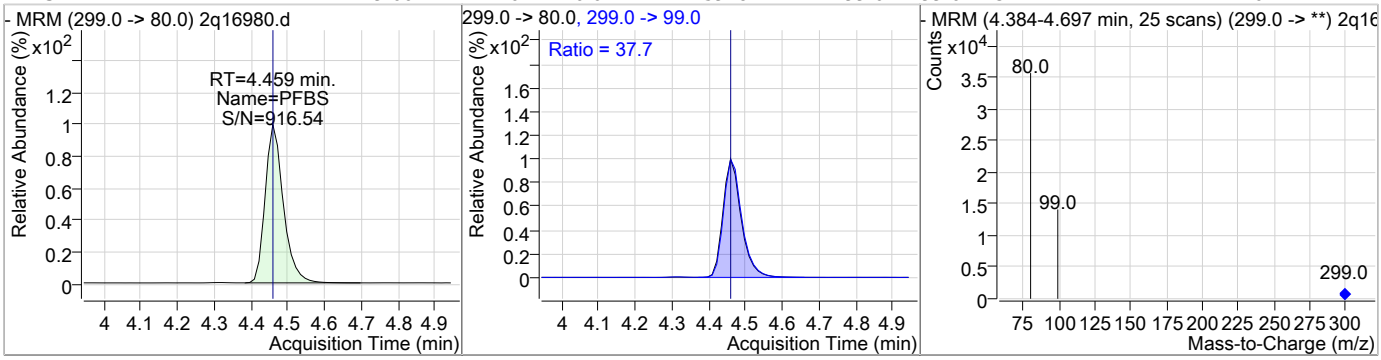
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	43.83	4.33	0.02	129575				



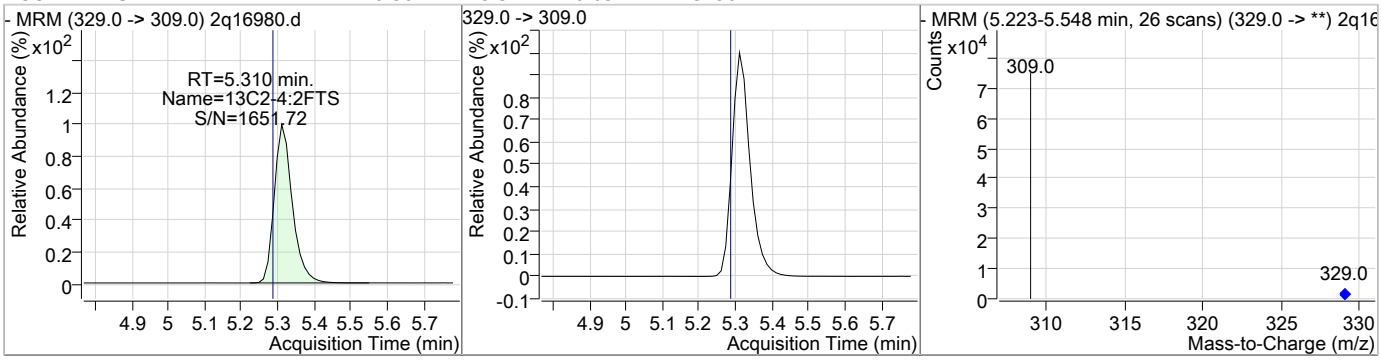
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.12	4.46	0.02	20014				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.00	4.46	0.02	25918	299.0 -> 99.0	37.7	7.4	67.4

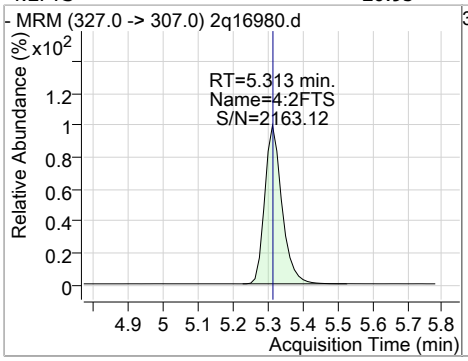


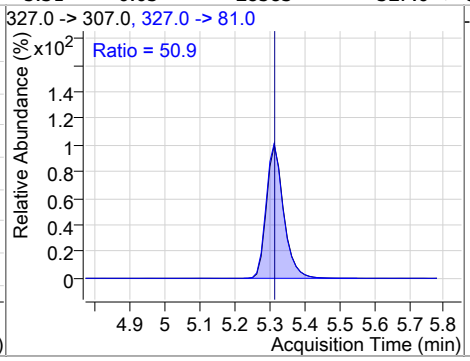
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.36	5.31	0.03	54567				

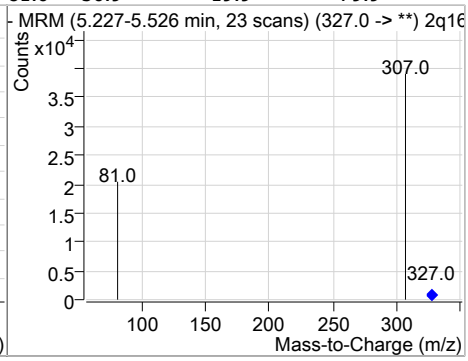


Perfluorinated Compounds by LC/MS/MS

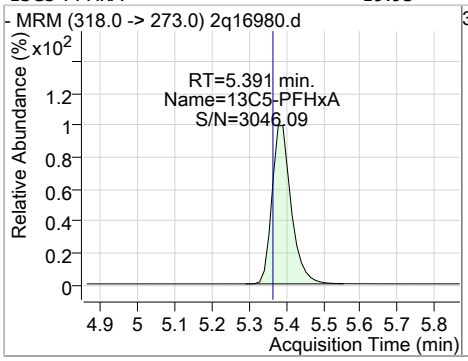
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.95	5.31	0.03	28583	327.0 -> 81.0	50.9	19.9	79.9

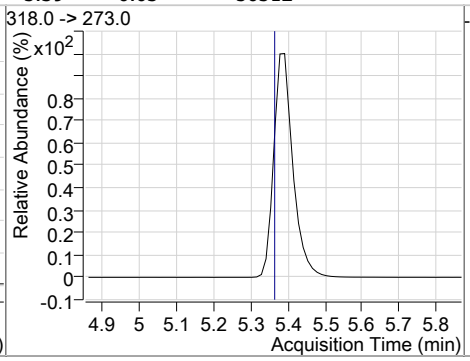


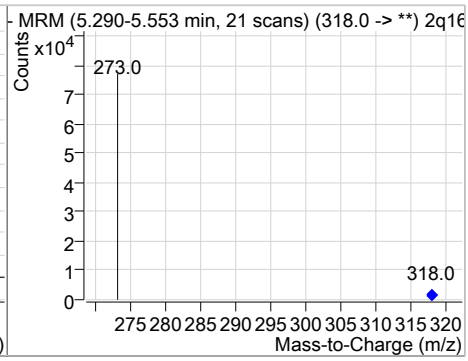




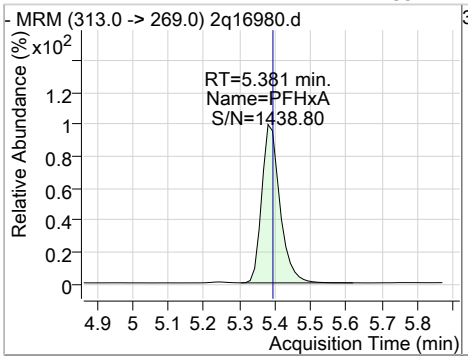
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.93	5.39	0.03	56512				

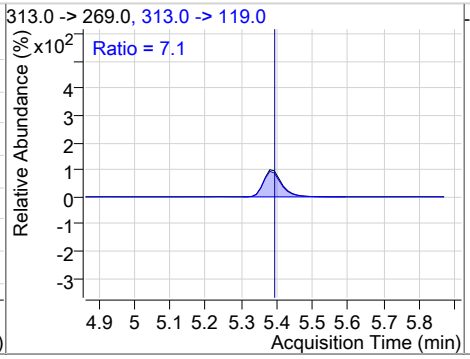


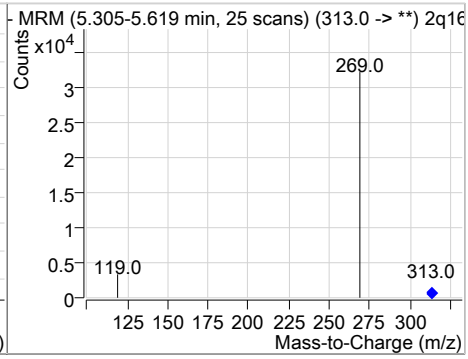




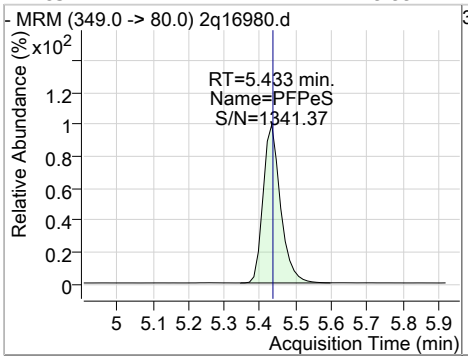
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	24.35	5.38	0.02	23337	313.0 -> 119.0	7.1	0.0	37.6

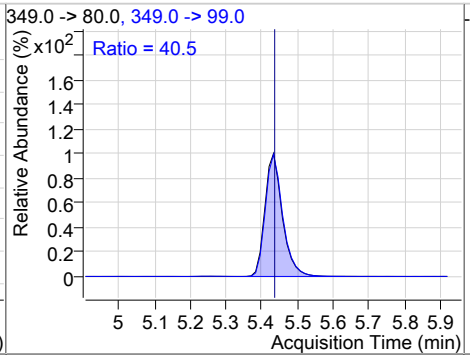


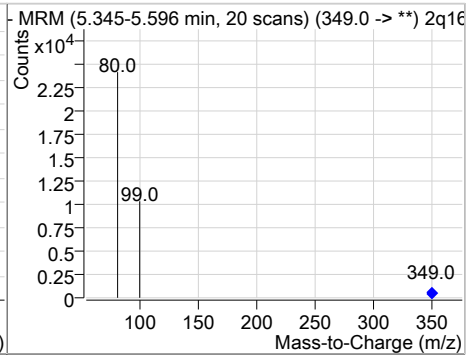




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.99	5.43	0.02	17527	349.0 -> 99.0	40.5	10.8	70.8

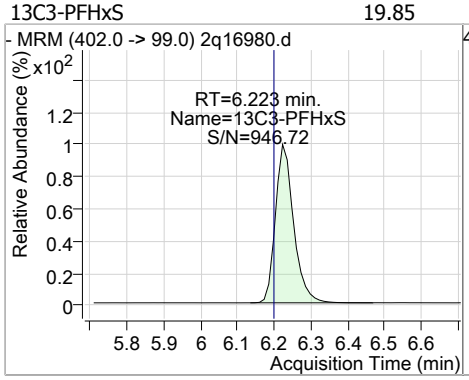


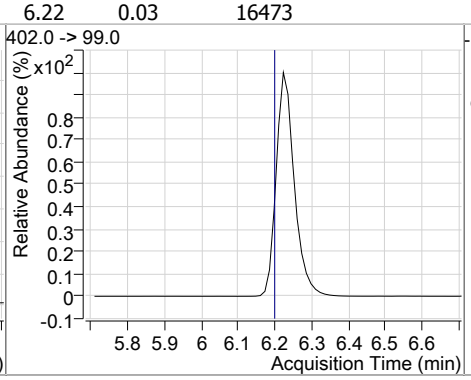


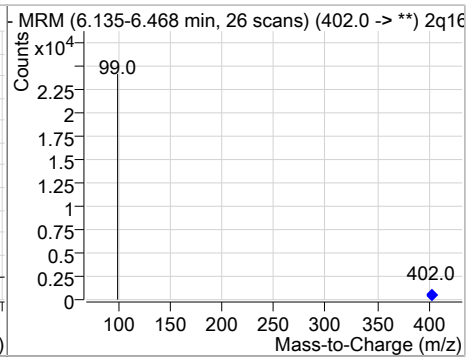


Perfluorinated Compounds by LC/MS/MS

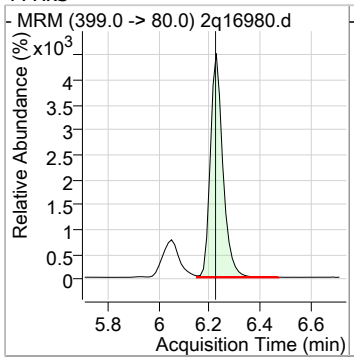
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.85	6.22	0.03	16473				

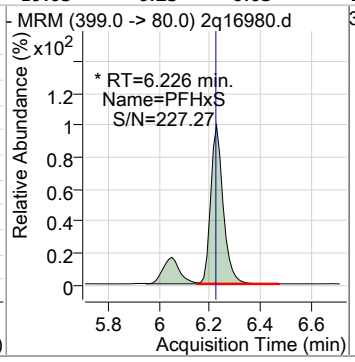


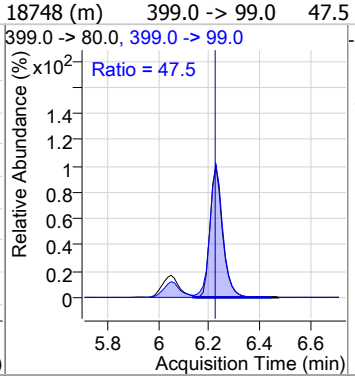


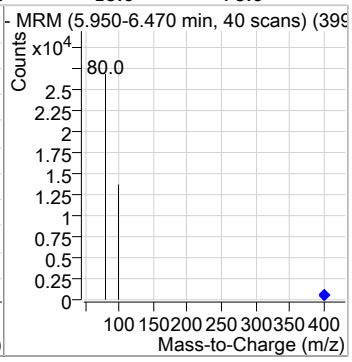


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.05	6.23	0.03	18748 (m)	399.0 -> 99.0	47.5	18.0	78.0

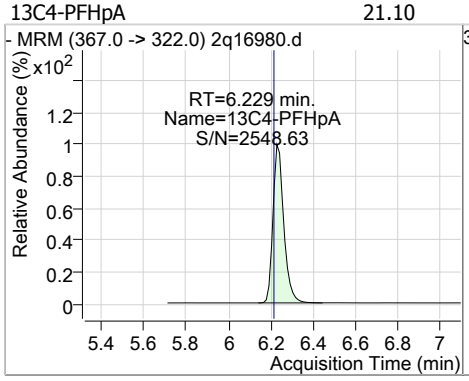


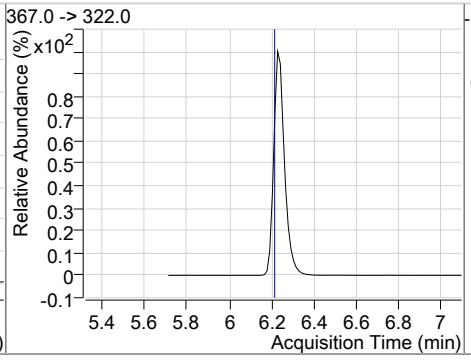


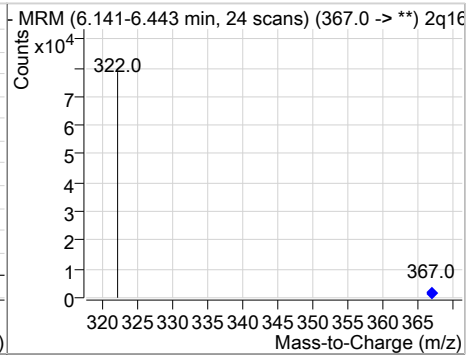




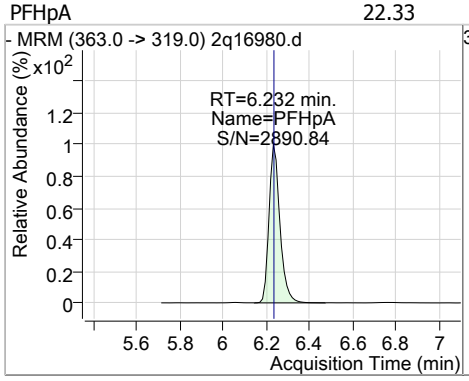
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.10	6.23	0.02	57373				

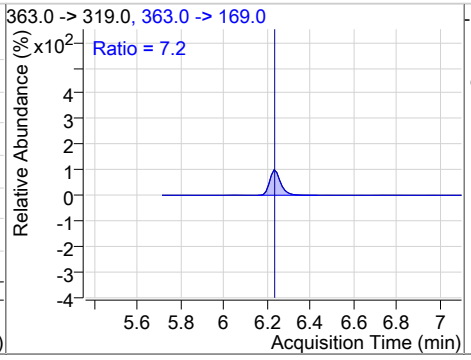


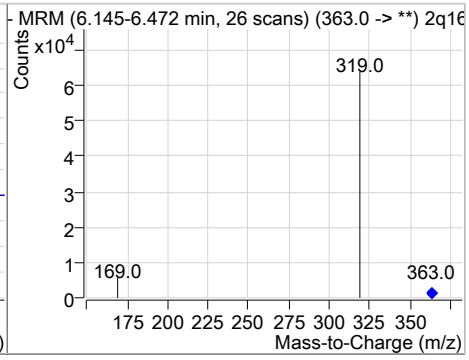




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	22.33	6.23	0.02	46893	363.0 -> 169.0	7.2	0.0	37.2

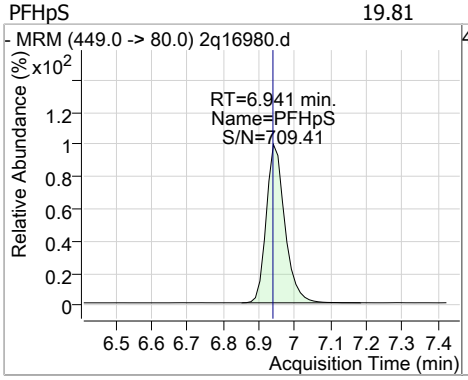


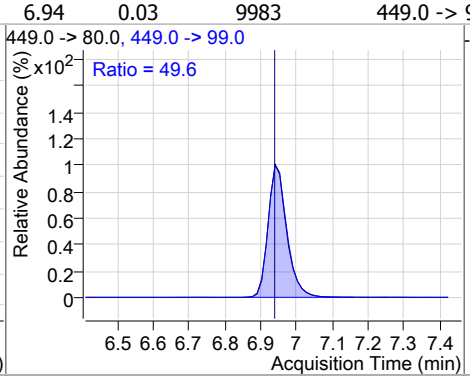


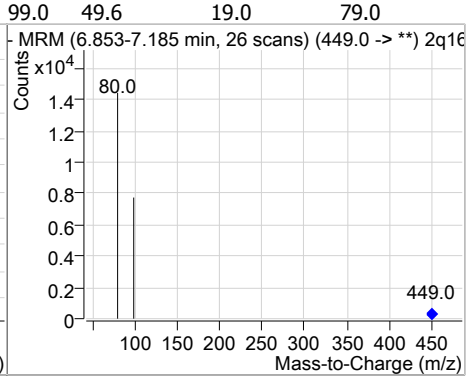


Perfluorinated Compounds by LC/MS/MS

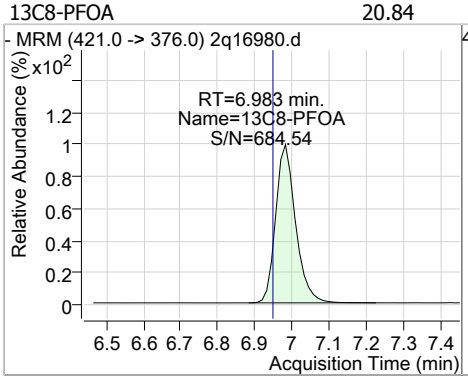
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	19.81	6.94	0.03	9983	449.0 -> 99.0	49.6	19.0	79.0

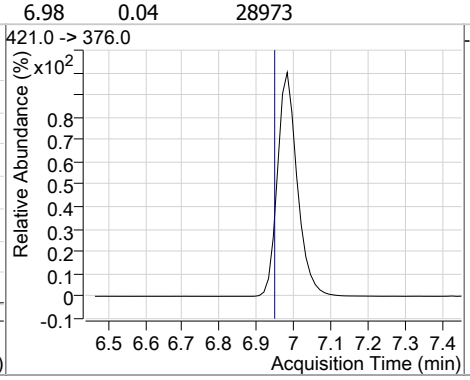


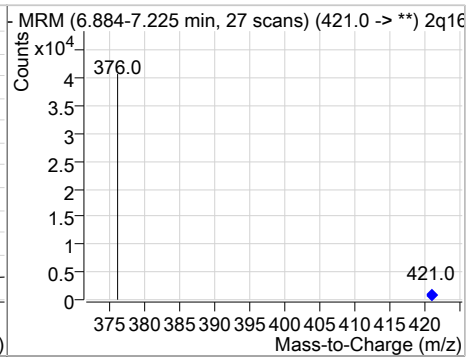




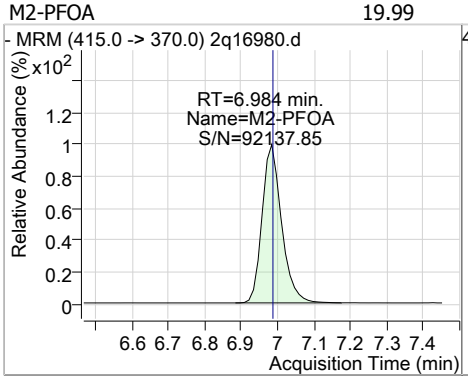
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.84	6.98	0.04	28973				

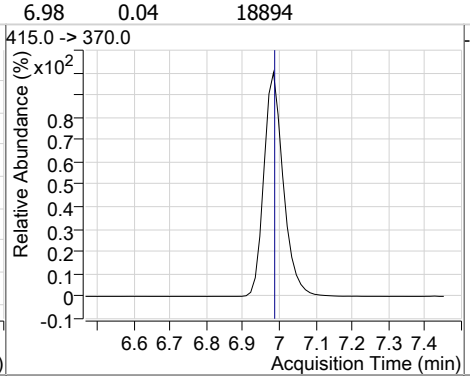


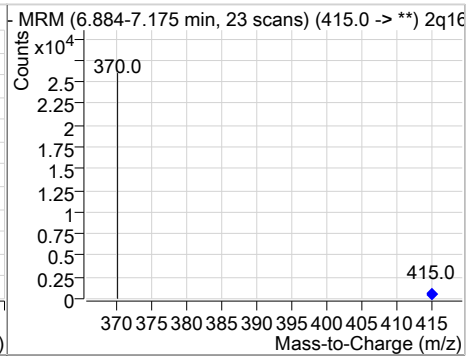




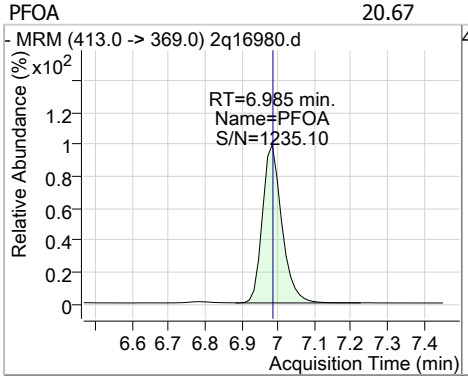
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	19.99	6.98	0.04	18894				

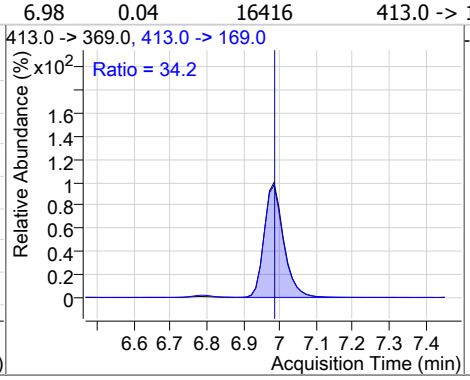


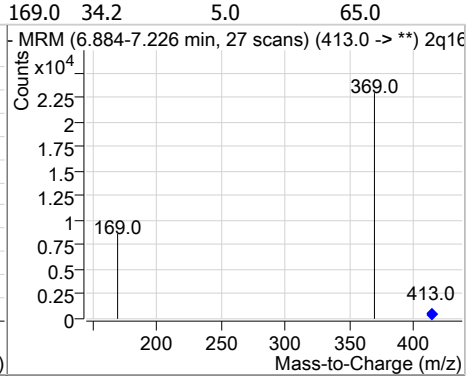




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	20.67	6.98	0.04	16416	413.0 -> 169.0	34.2	5.0	65.0

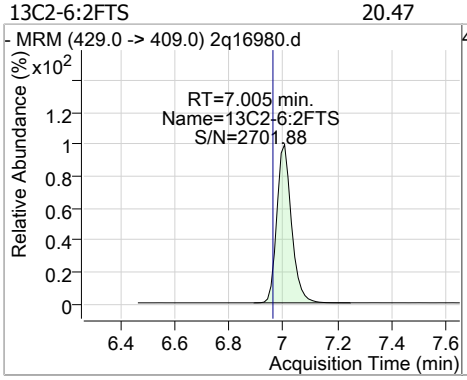


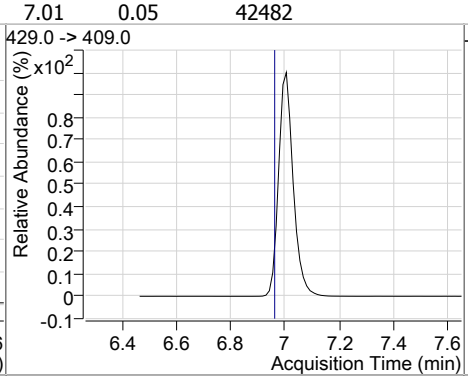


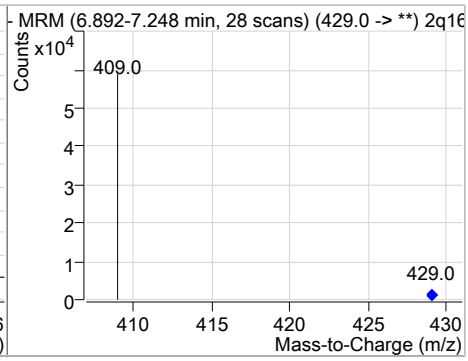


Perfluorinated Compounds by LC/MS/MS

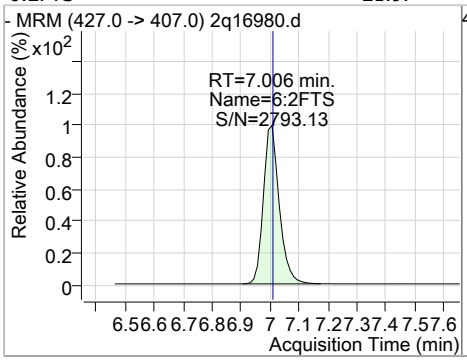
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.47	7.01	0.05	42482				

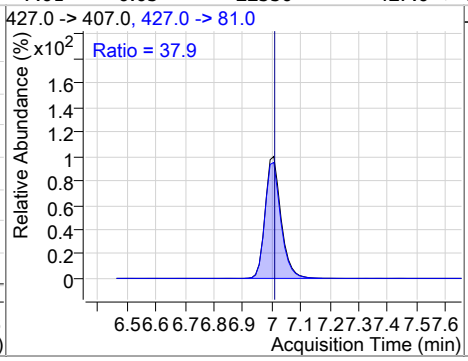


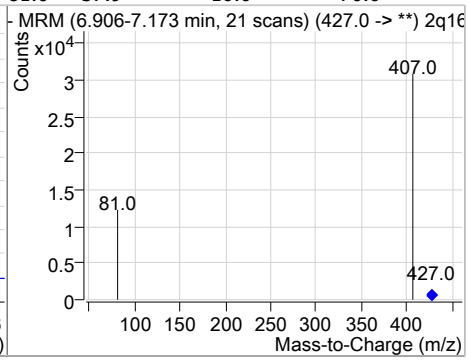




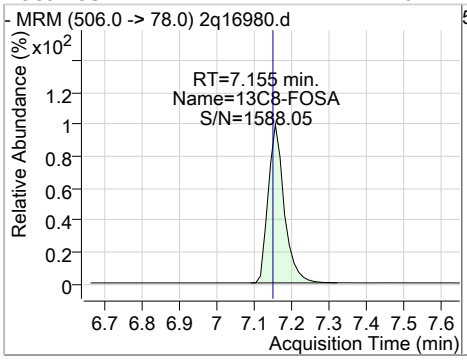
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	21.97	7.01	0.05	22550	427.0 -> 81.0	37.9	10.0	70.0

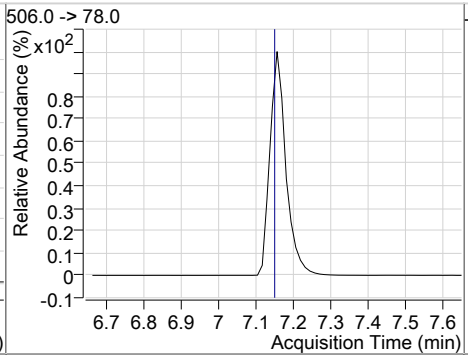


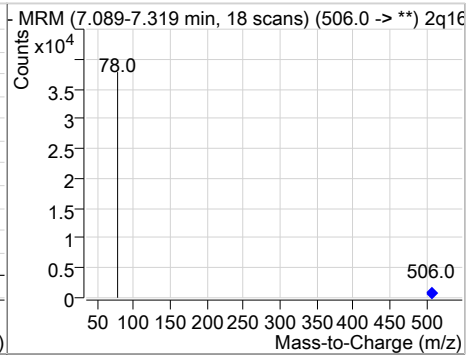




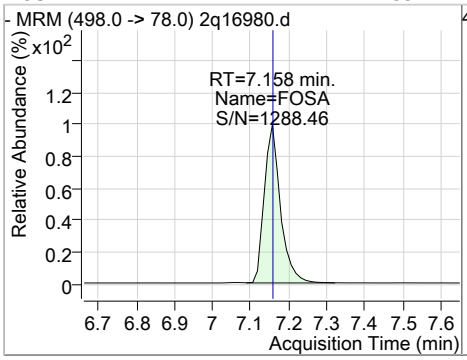
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	17.70	7.15	0.01	27751				

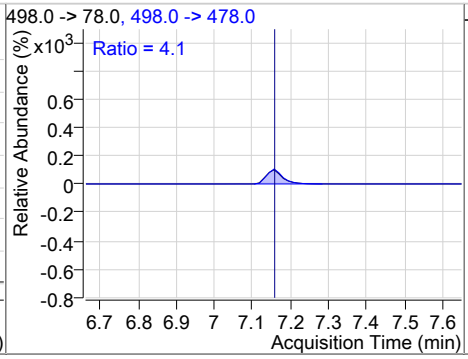


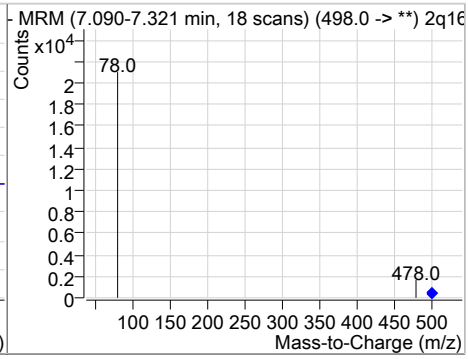




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	22.53	7.16	0.01	15350	498.0 -> 478.0	4.1	0.0	34.0

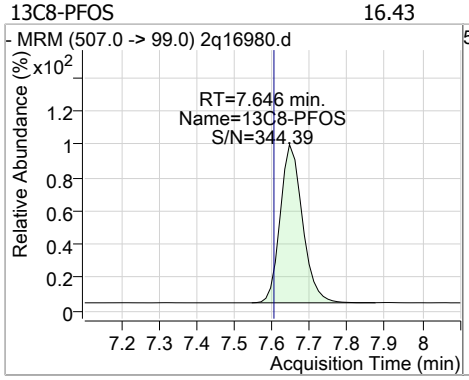


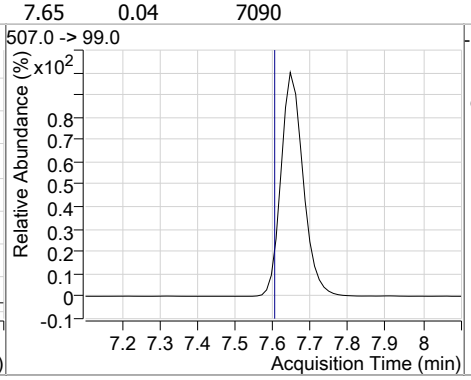


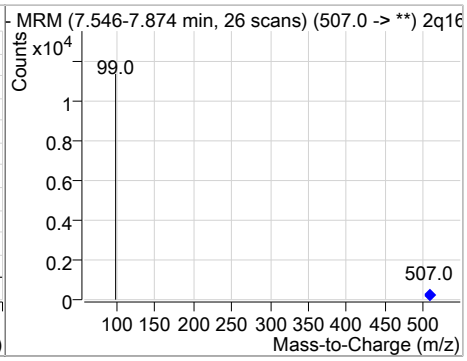


Perfluorinated Compounds by LC/MS/MS

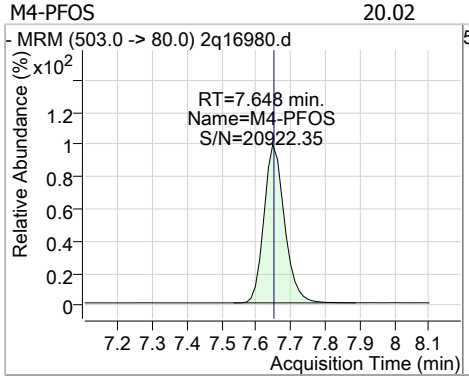
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	16.43	7.65	0.04	7090				

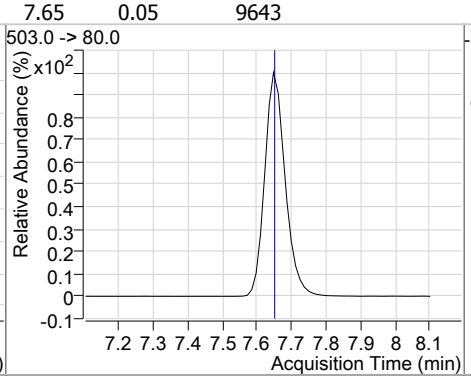


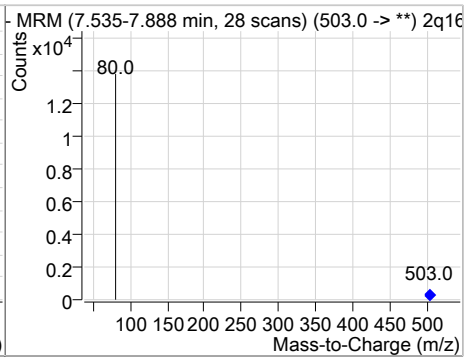




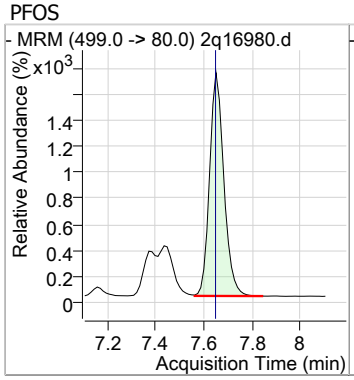
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.02	7.65	0.05	9643				

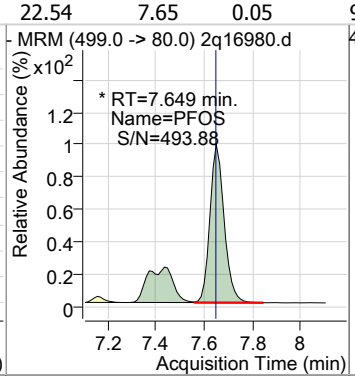


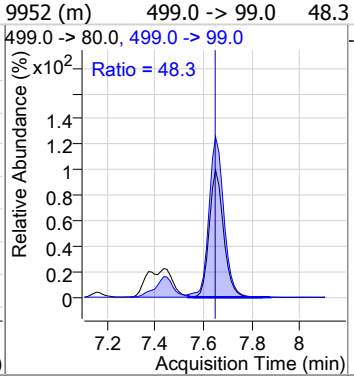


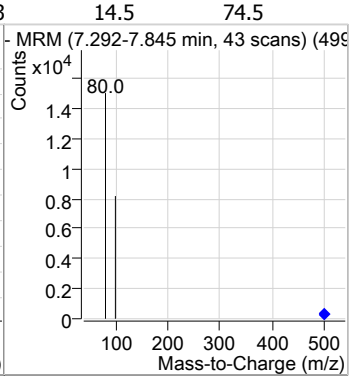


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	22.54	7.65	0.05	9952 (m)	499.0 -> 99.0	48.3	14.5	74.5

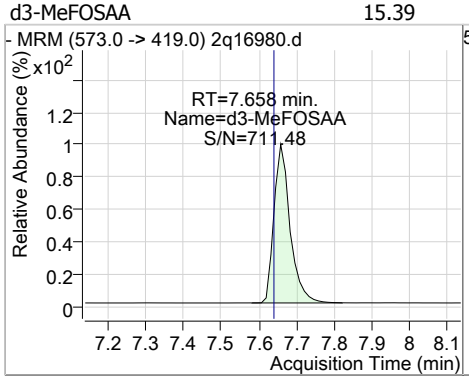


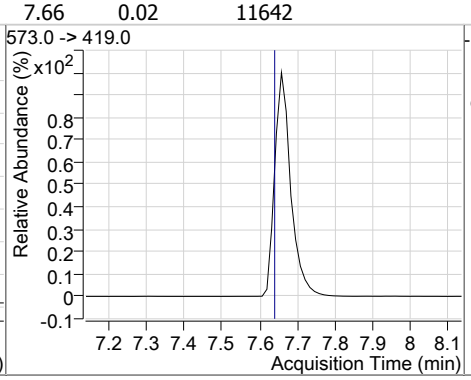


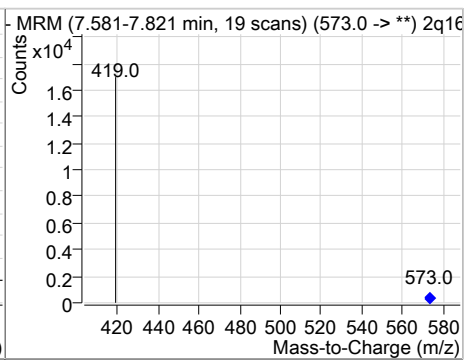




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	15.39	7.66	0.02	11642				

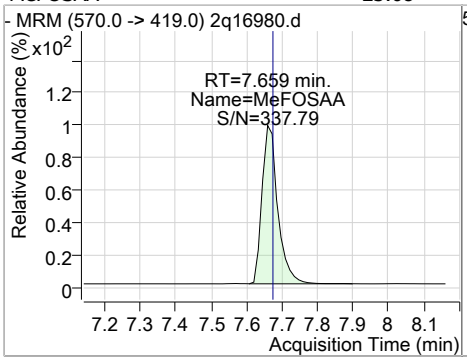


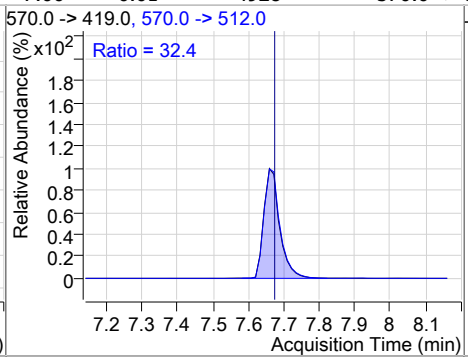


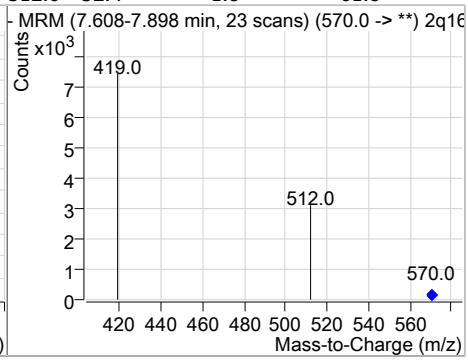


Perfluorinated Compounds by LC/MS/MS

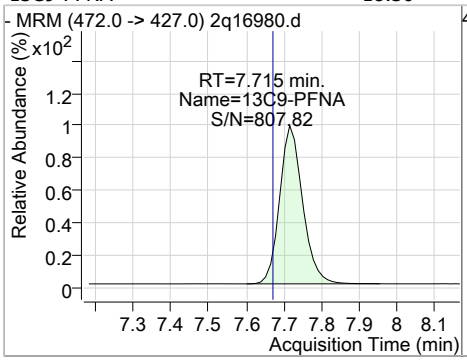
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	23.68	7.66	0.01	4928	570.0 -> 512.0	32.4	1.8	61.8

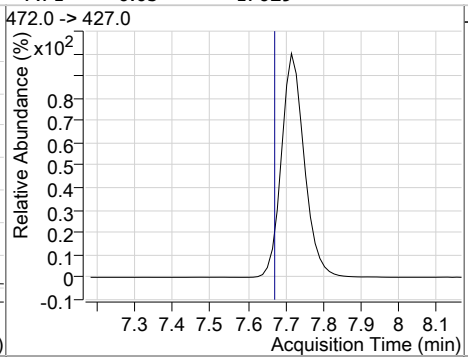


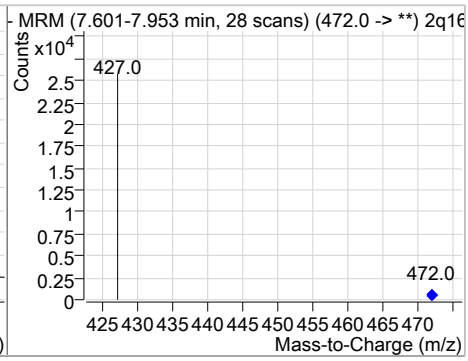




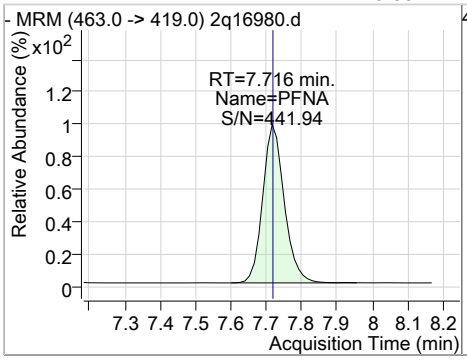
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.30	7.71	0.05	17629				

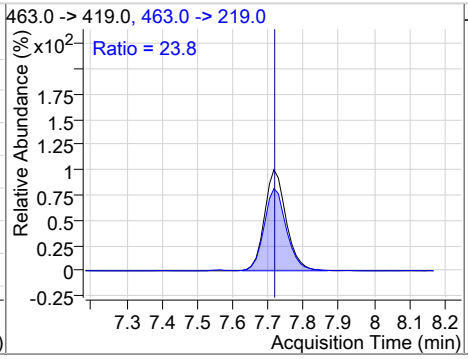


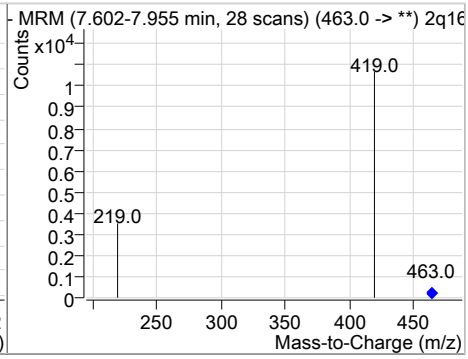




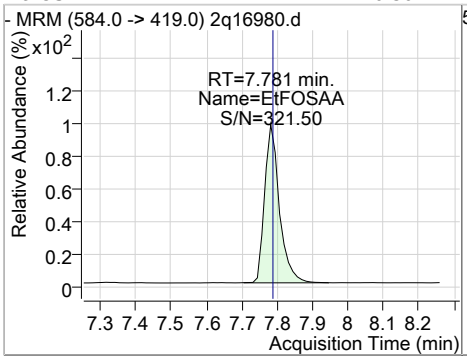
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	20.86	7.72	0.05	7088	463.0 -> 219.0	23.8	0.0	58.4

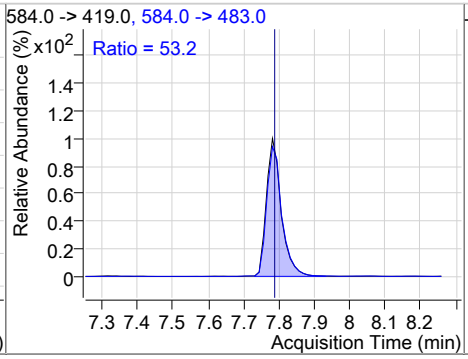


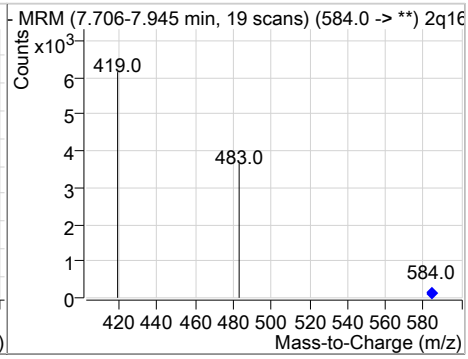




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.30	7.78	0.02	3983	584.0 -> 483.0	53.2	24.8	84.8

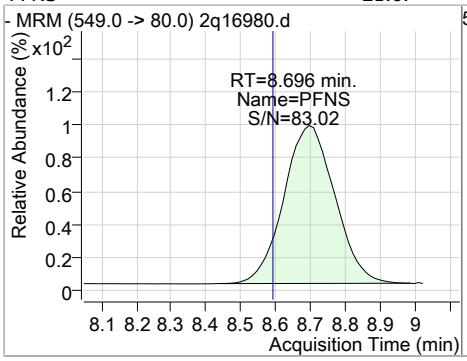


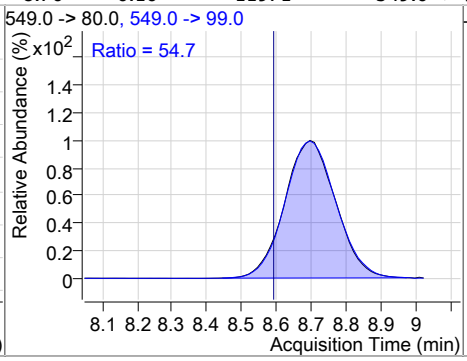


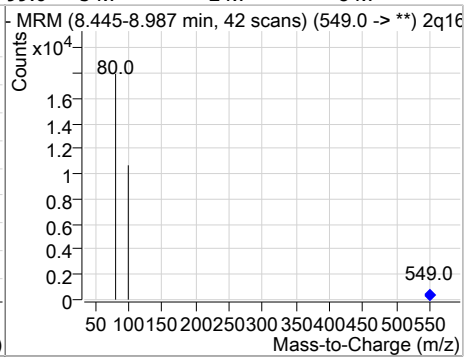


Perfluorinated Compounds by LC/MS/MS

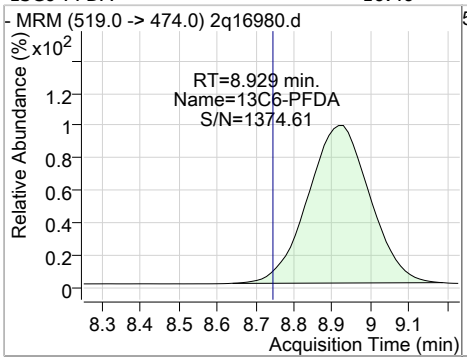
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	21.67	8.70	0.16	11971	549.0 -> 99.0	54.7	24.7	84.7

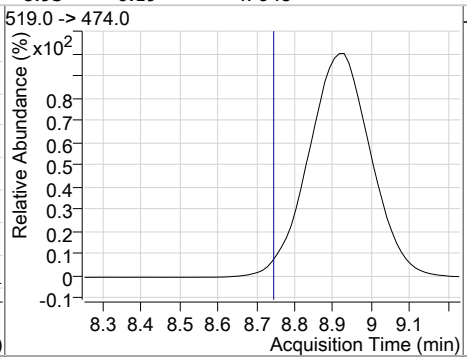


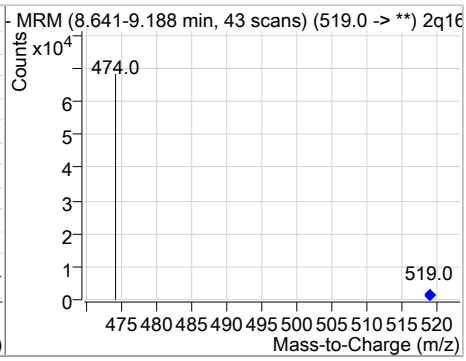




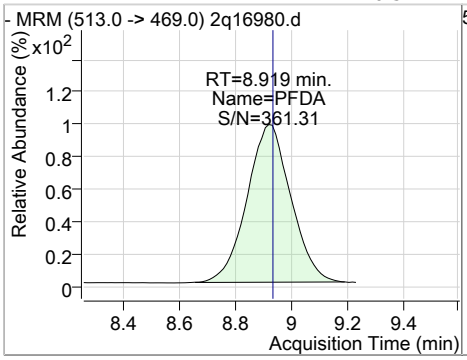
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	16.46	8.93	0.19	47648				

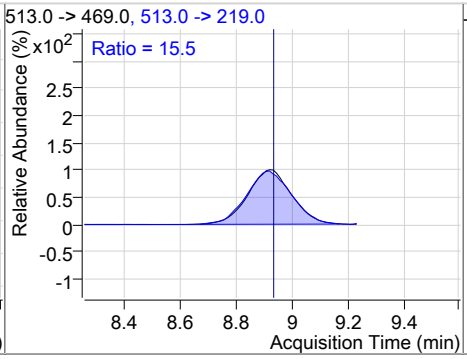


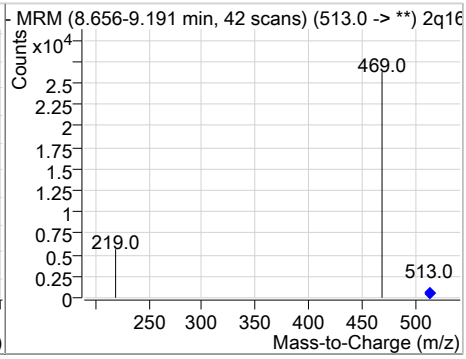




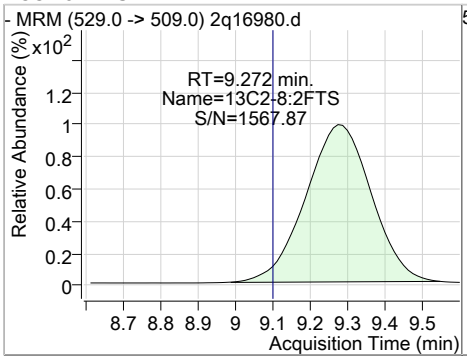
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.54	8.92	0.18	18048	513.0 -> 219.0	15.5	0.0	45.3

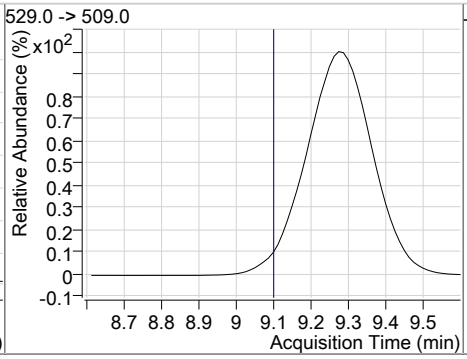


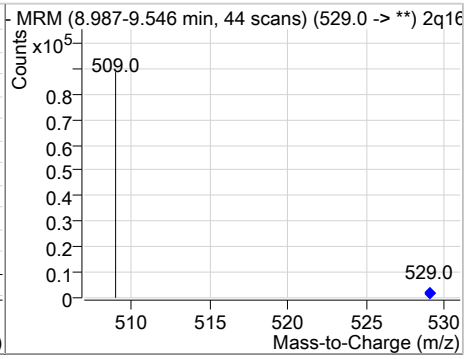




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	14.22	9.27	0.18	62461				

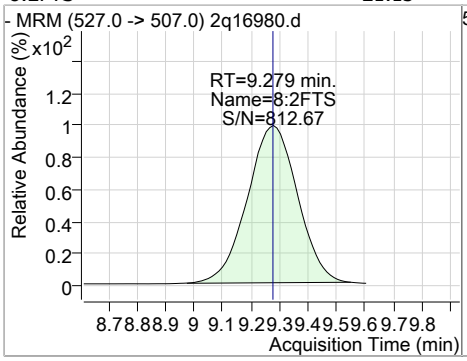


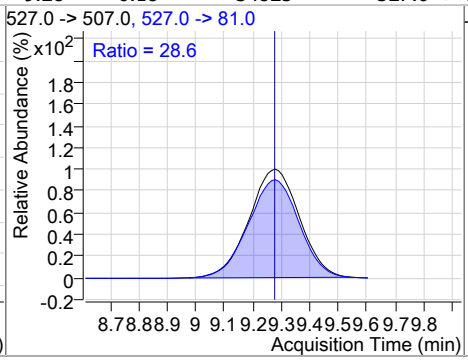


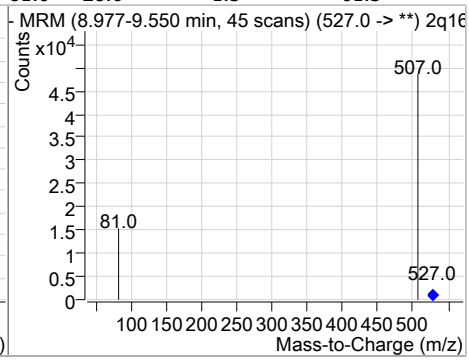


Perfluorinated Compounds by LC/MS/MS

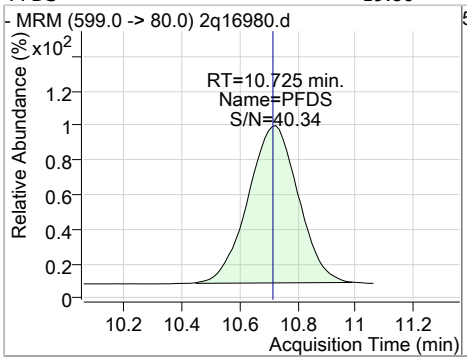
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	21.13	9.28	0.18	34825	527.0 -> 81.0	28.6	1.3	61.3

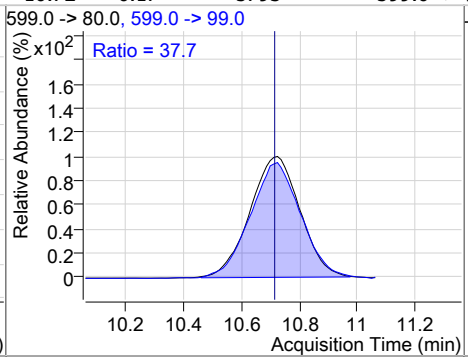


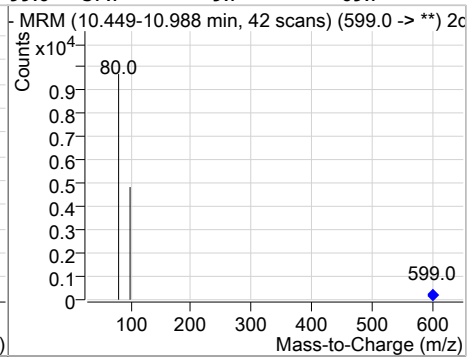




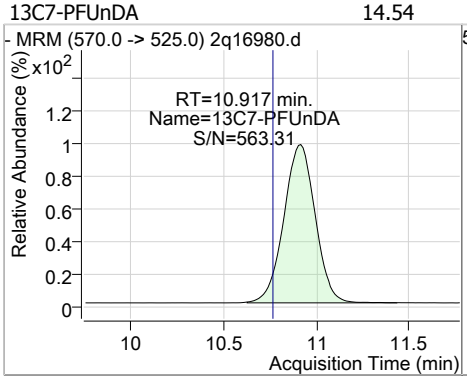
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.86	10.72	0.17	5793	599.0 -> 99.0	37.7	9.7	69.7

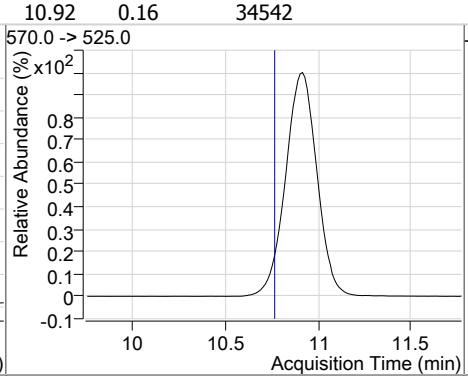


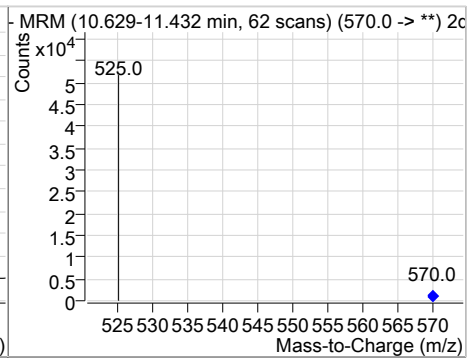




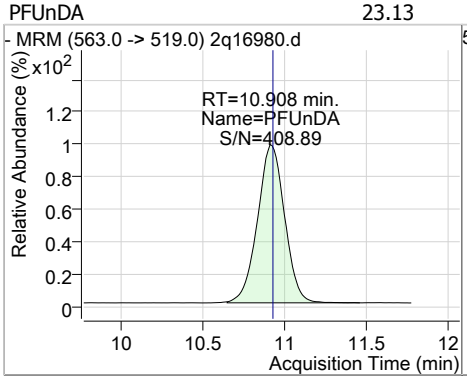
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	14.54	10.92	0.16	34542				

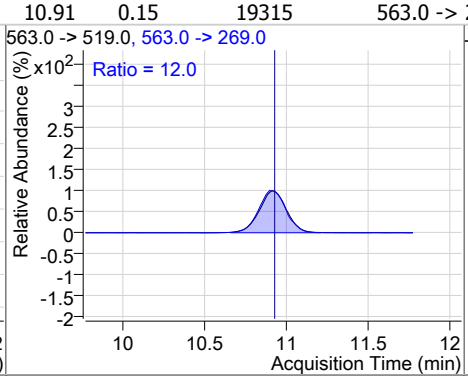


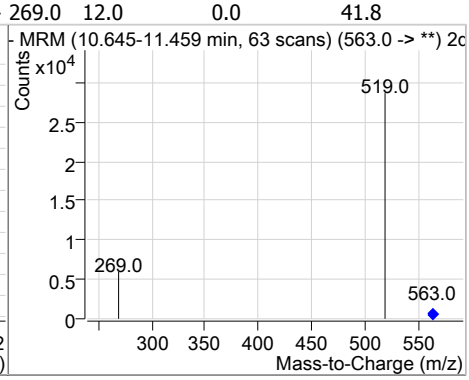




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	23.13	10.91	0.15	19315	563.0 -> 269.0	12.0	0.0	41.8

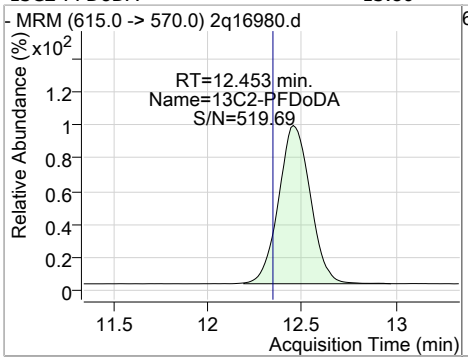


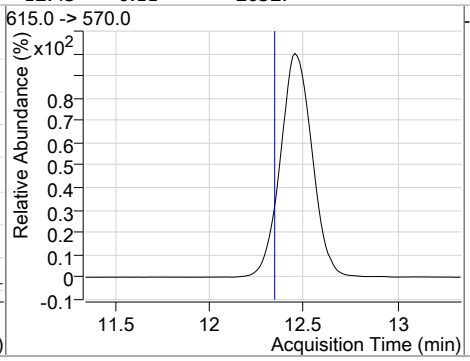


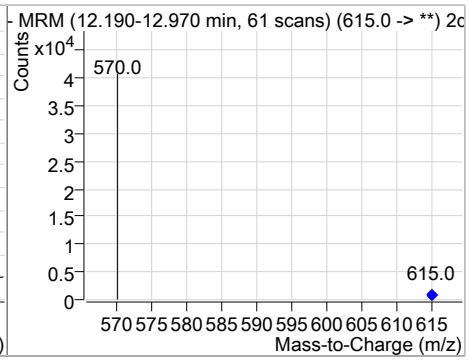


Perfluorinated Compounds by LC/MS/MS

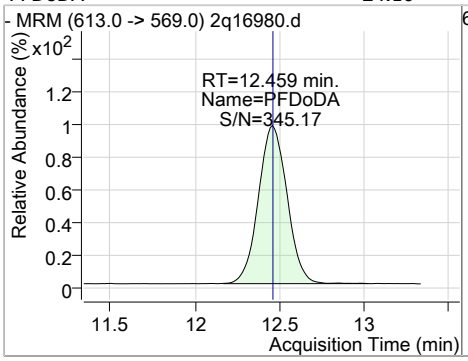
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	13.80	12.45	0.11	26527				

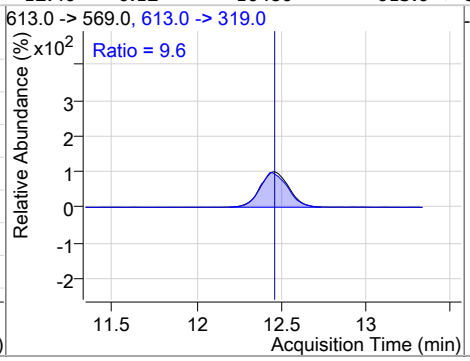


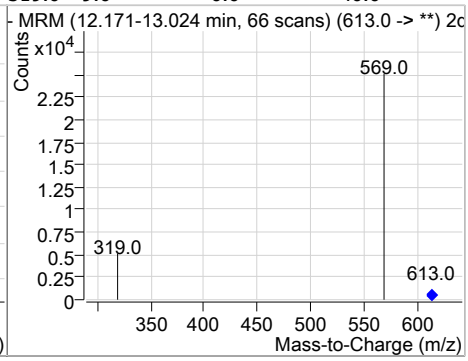




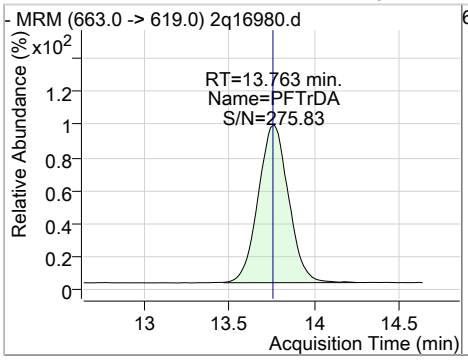
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	24.16	12.46	0.12	16480	613.0 -> 319.0	9.6	0.0	40.0

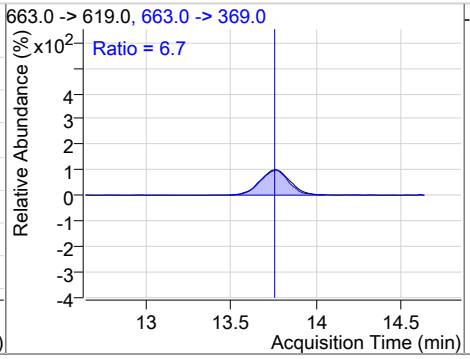


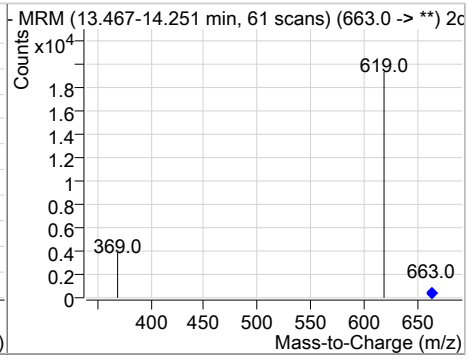




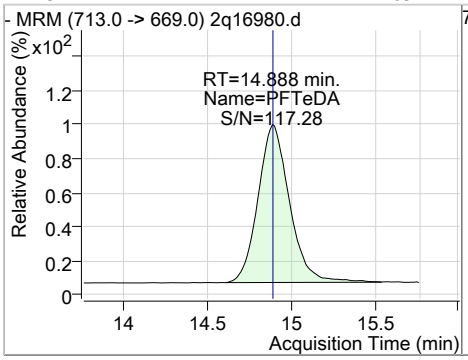
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	26.12	13.76	0.12	12878	663.0 -> 369.0	6.7	0.0	37.1

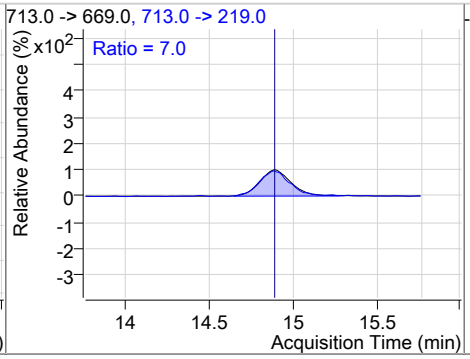


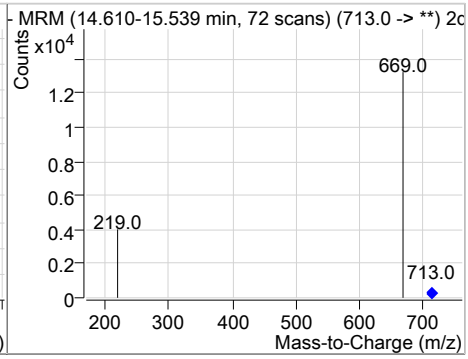




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	21.69	14.89	0.12	7380	713.0 -> 219.0	7.0	0.0	37.4

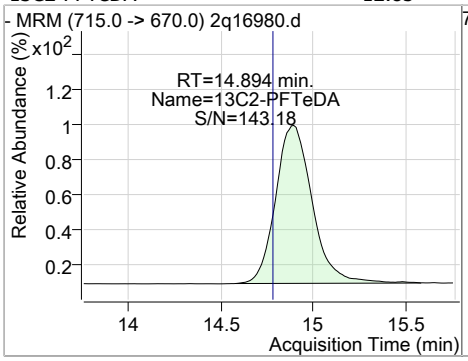


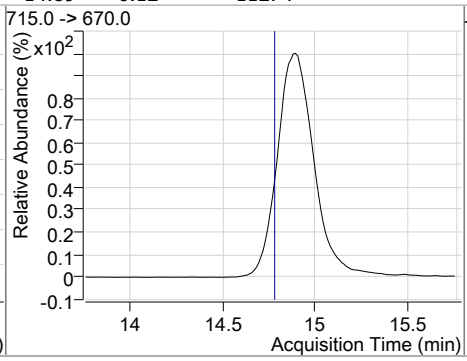


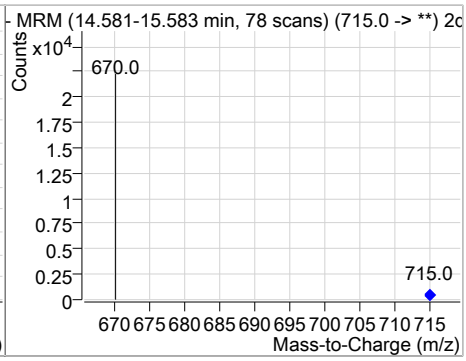


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	12.85	14.89	0.12	11274				







7.4.3

7

Manual Integration Approval Summary

Sample Number:	OP70805-MS	**Method:**	EPA 537M QSM5.1 B-15
Lab FileID:	2Q16980.D	**Analyst approved:**	07/12/18 09:56 Nancy Saunders
Injection Time:	07/11/18 23:56	**Supervisor approved:**	07/12/18 14:31 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.23	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.65	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 07/12/18 14:31

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16981.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/12/2018 12:17:32 AM
Sample Name : op70805-msd
Vial : Vial 25
DA Method File : PFC_ID_071018_S2Q294.quantmethod.xml
Batch Name : s2q294.batch.bin
Sample Information : op70805,S2Q294,120,,,1.0,1,water

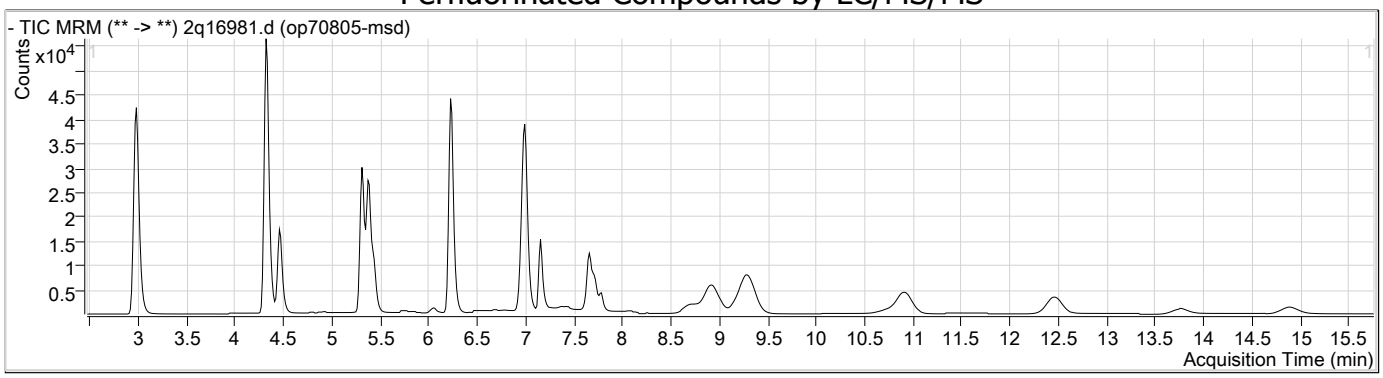
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.984	415.0 -> 370.0	20926	20.00	µg/L	0.038
13C4-PFOS	7.648	503.0 -> 80.0	10171	20.00	µg/L	0.046
M4-PFBA	2.978	217.0 -> 172.0	134900	20.00	µg/L	0.012
M5-PFPeA	4.325	268.0 -> 223.0	64781	20.00	µg/L	0.013
M5-PFHxA	5.391	318.0 -> 273.0	60022	20.00	µg/L	0.030
M4-PFHpA	6.229	367.0 -> 322.0	61461	20.00	µg/L	0.020
M8-PFOA	6.983	421.0 -> 376.0	31919	20.00	µg/L	0.037
M9-PFNA	7.715	472.0 -> 427.0	16559	20.00	µg/L	0.048
M6-PFDA	8.929	519.0 -> 474.0	43497	20.00	µg/L	0.187
M7-PFUnDA	10.917	570.0 -> 525.0	30994	20.00	µg/L	0.156
M2-PFDoDA	12.453	615.0 -> 570.0	24106	20.00	µg/L	0.114
M2-PFTeDA	14.882	715.0 -> 670.0	10754	20.00	µg/L	0.107
M8-FOSA	7.155	506.0 -> 78.0	26293	20.00	µg/L	0.010
M3-PFBS	4.456	302.0 -> 99.0	20520	20.00	µg/L	0.019
M3-PFHxS	6.223	402.0 -> 99.0	16109	20.00	µg/L	0.027
M8-PFOS	7.646	507.0 -> 99.0	5771	20.00	µg/L	0.045
M2-4:2FTS	5.310	329.0 -> 309.0	56625	20.00	µg/L	0.027
M2-6:2FTS	7.005	429.0 -> 409.0	45598	20.00	µg/L	0.047
M2-8:2FTS	9.285	529.0 -> 509.0	57402	20.00	µg/L	0.190
M3-MeFOSAA	7.658	573.0 -> 419.0	10459	20.00	µg/L	0.021
System Monitoring Compounds						
13C2-4:2FTS	5.310	329.0 -> 309.0	56646	21.13	µg/L	0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.7%		
13C2-6:2FTS	7.005	429.0 -> 409.0	45598	21.97	µg/L	0.047
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.8%		
13C2-8:2FTS	9.285	529.0 -> 509.0	56086	12.77	µg/L	0.190
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 63.8%		
13C2-PFDoDA	12.453	615.0 -> 570.0	24125	12.55	µg/L	0.114
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 62.7%		
13C2-PFTeDA	14.882	715.0 -> 670.0	10806	12.32	µg/L	0.107
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 61.6%		
13C3-PFBS	4.456	302.0 -> 99.0	20512	20.62	µg/L	0.019
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.1%		
13C3-PFHxS	6.223	402.0 -> 99.0	16109	19.41	µg/L	0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.1%		
13C4-PFBA	2.978	217.0 -> 172.0	134842	21.05	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.2%		
13C4-PFHpA	6.229	367.0 -> 322.0	61471	22.61	µg/L	0.020
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.0%		
13C5-PFHxA	5.391	318.0 -> 273.0	60039	21.17	µg/L	0.030
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.9%		
13C5-PFPeA	4.325	268.0 -> 223.0	64767	20.70	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C6-PFDA	8.929	519.0 -> 474.0	42925	14.83	µg/L	0.187
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.2%		

Perfluorinated Compounds by LC/MS/MS

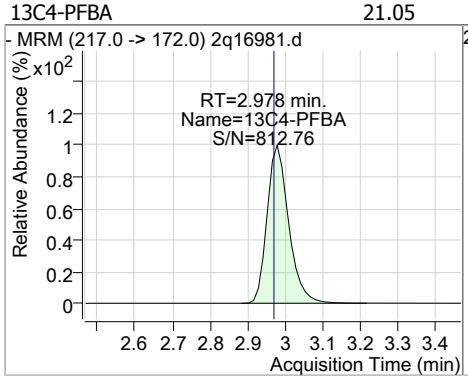
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.917	570.0 -> 525.0	31039	13.07	µg/L		0.156
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.3%			
13C8-FOSA	7.155	506.0 -> 78.0	26302	16.78	µg/L		0.010
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.9%			
13C8-PFOA	6.983	421.0 -> 376.0	31920	22.96	µg/L		0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.8%			
13C8-PFOS	7.646	507.0 -> 99.0	5771	13.37	µg/L		0.045
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.9%			
13C9-PFNA	7.715	472.0 -> 427.0	16541	17.17	µg/L		0.048
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.9%			
d3-MeFOSAA	7.658	573.0 -> 419.0	10458	13.82	µg/L		0.021
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.1%			
M2-PFOA	6.984	415.0 -> 370.0	20927	20.00	ng/ml		0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.648	503.0 -> 80.0	10159	19.98	ng/ml		0.046
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%			
Target Compounds							**QValue**
4:2FTS	5.313	327.0 -> 307.0	30253	21.38	µg/L		100
6:2FTS	7.006	427.0 -> 407.0	24708	22.45	µg/L		97
8:2FTS	9.291	527.0 -> 507.0	32035	21.60	µg/L		96
EtFOSAA	7.781	584.0 -> 419.0	3813	21.61	µg/L		97
FOSA	7.158	498.0 -> 78.0	14960	23.16	µg/L		100
MeFOSAA	7.659	570.0 -> 419.0	4510	24.11	µg/L		100
PFBA	2.974	213.0 -> 169.0	34590	32.85	µg/L		100
PFBS	4.459	299.0 -> 80.0	27570	19.69	µg/L		100
PFDA	8.919	513.0 -> 469.0	17216	21.79	µg/L		100
PFDoDA	12.471	613.0 -> 569.0	15094	24.32	µg/L		99
PFDS	10.712	599.0 -> 80.0	5326	20.31	µg/L		98
PFHpA	6.232	363.0 -> 319.0	51470	22.88	µg/L		100
PFHpS	6.941	449.0 -> 80.0	9409	19.09	µg/L		99
PFHxA	5.381	313.0 -> 269.0	25447	24.99	µg/L		99
PFHxS	6.226	399.0 -> 80.0	18488	19.20	µg/L	m	100
PFNA	7.716	463.0 -> 419.0	6923	21.69	µg/L		96
PFNS	8.696	549.0 -> 80.0	10850	24.15	µg/L		98
PFOA	6.985	413.0 -> 369.0	18858	21.54	µg/L		98
PFOS	7.649	499.0 -> 80.0	8238	22.94	µg/L	m	92
PFPeA	4.329	263.0 -> 219.0	136555	44.12	µg/L		100
PFPeS	5.433	349.0 -> 80.0	18224	20.26	µg/L		99
PFTeDA	14.888	713.0 -> 669.0	7160	21.96	µg/L		99
PFTrDA	13.763	663.0 -> 619.0	12214	25.86	µg/L		99
PFUnDA	10.908	563.0 -> 519.0	17560	23.38	µg/L		99

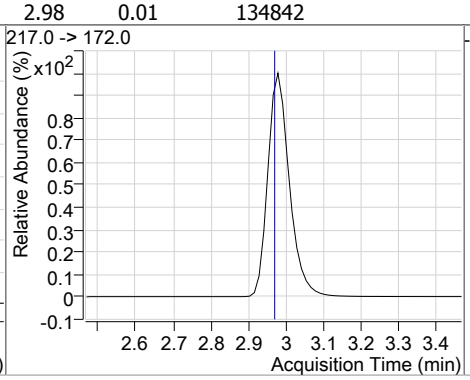
 # = Qualifier out of range, m = manually integrated, + = Area summed

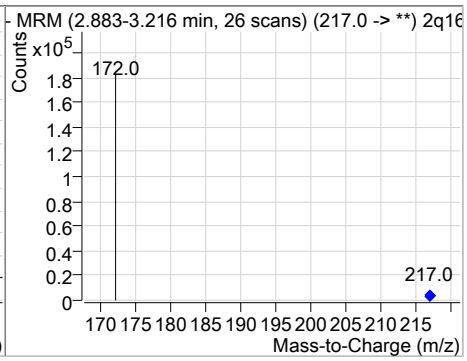
Perfluorinated Compounds by LC/MS/MS



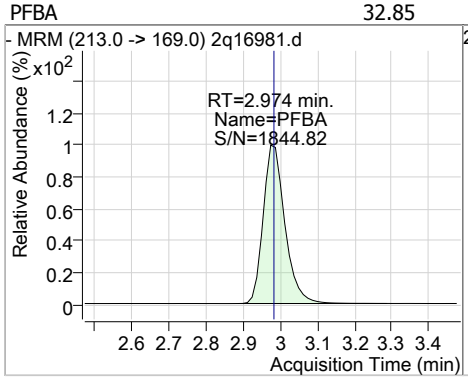
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	21.05	2.98	0.01	134842				

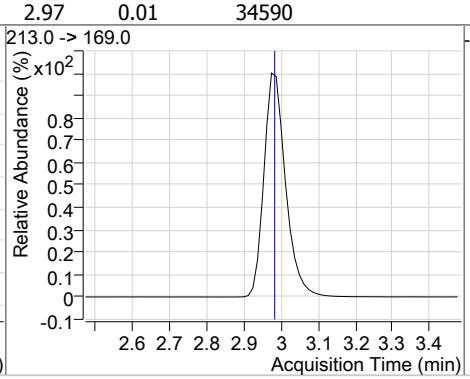


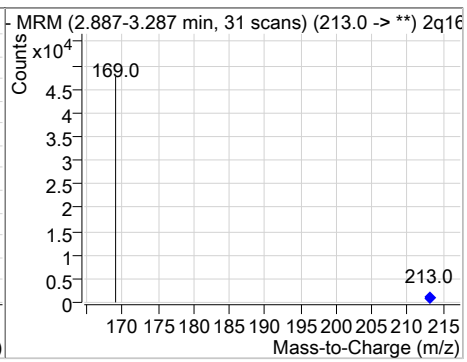




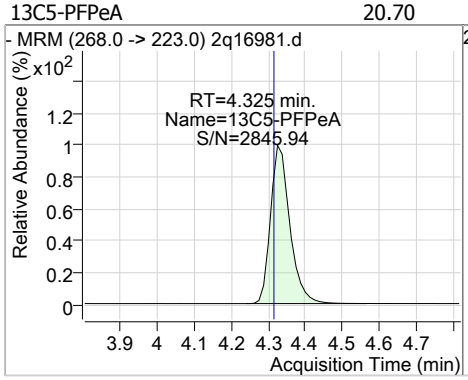
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	32.85	2.97	0.01	34590				

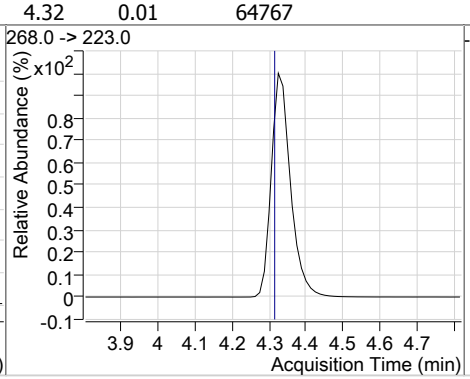


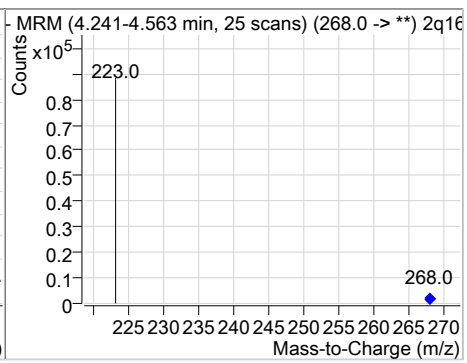




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.70	4.32	0.01	64767				

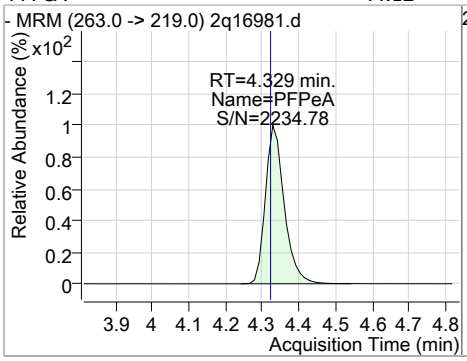


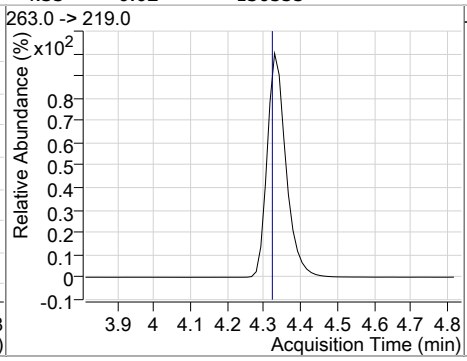


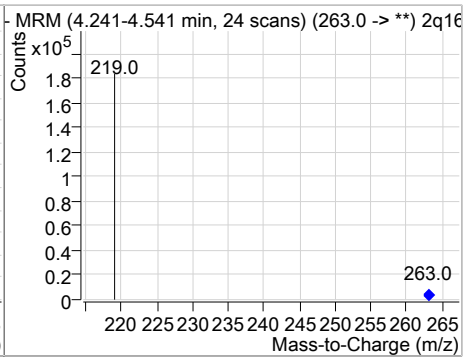


Perfluorinated Compounds by LC/MS/MS

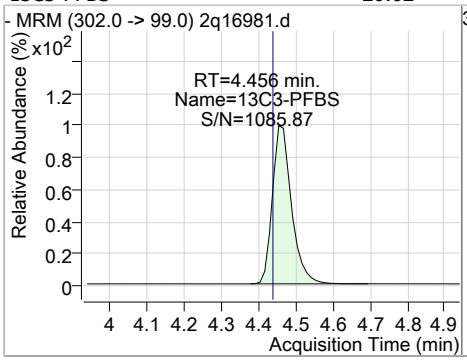
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	44.12	4.33	0.02	136555				

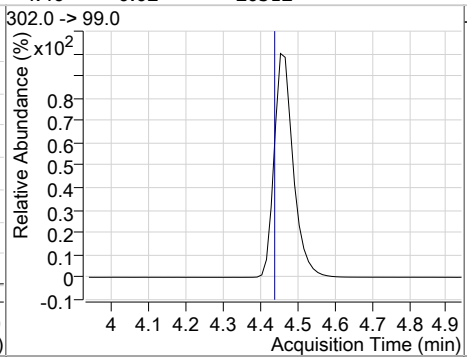


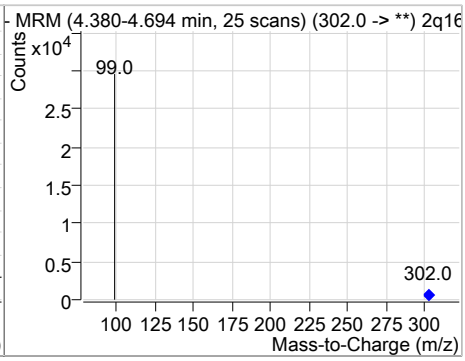




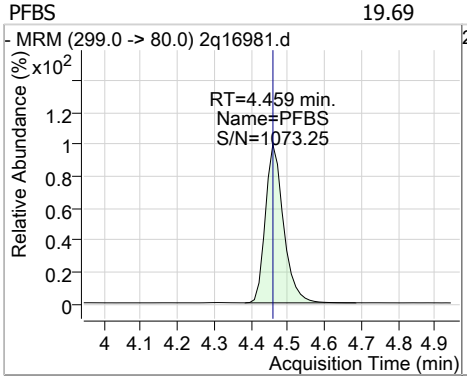
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.62	4.46	0.02	20512				

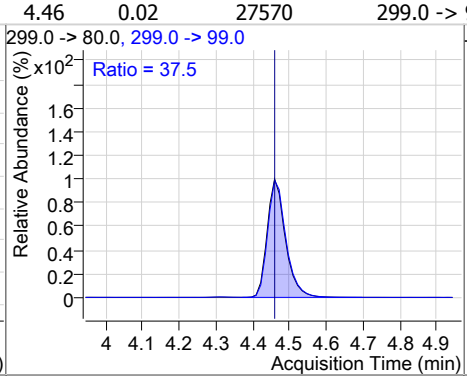


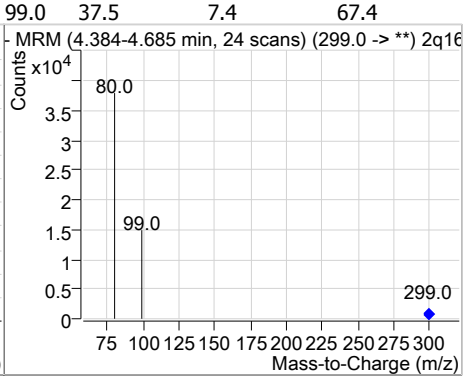




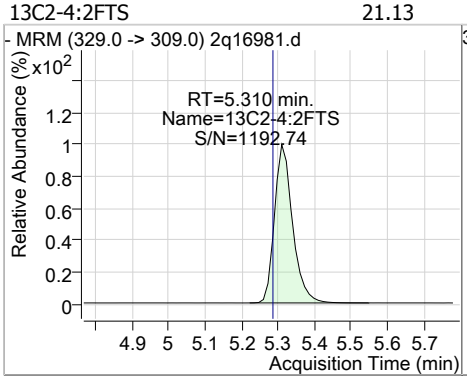
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.69	4.46	0.02	27570	299.0 -> 99.0	37.5	7.4	67.4

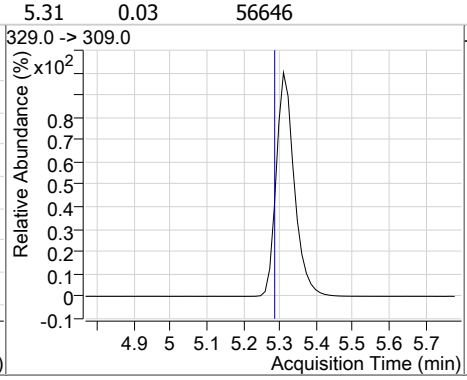


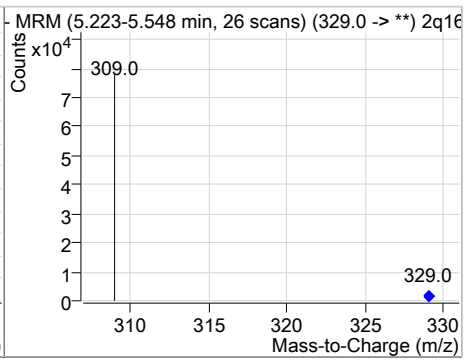




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	21.13	5.31	0.03	56646				

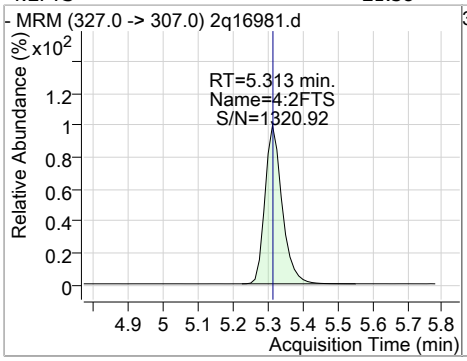


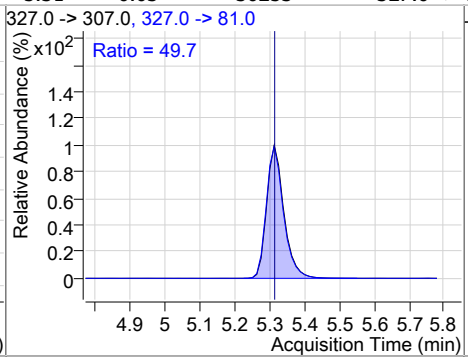


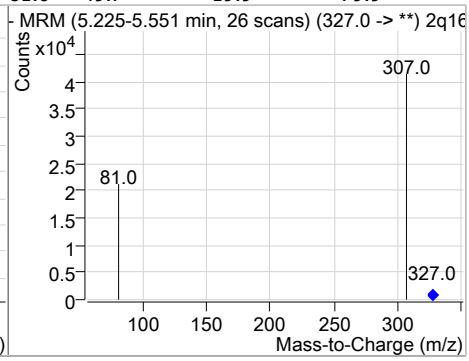


Perfluorinated Compounds by LC/MS/MS

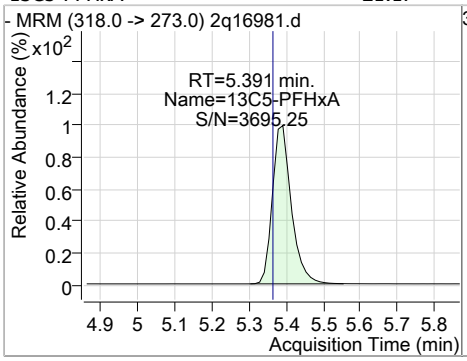
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	21.38	5.31	0.03	30253	327.0 -> 81.0	49.7	19.9	79.9

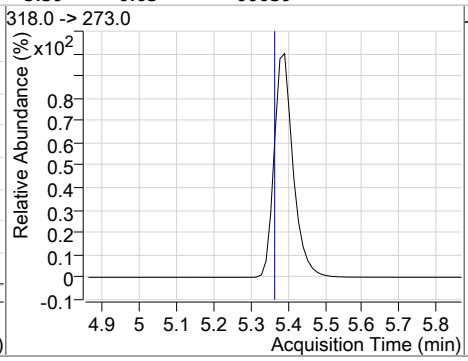


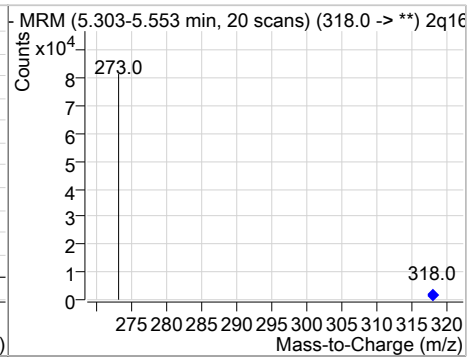




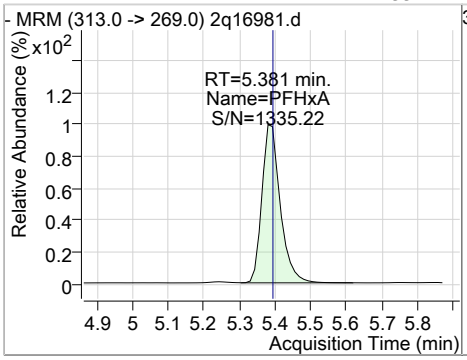
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.17	5.39	0.03	60039				

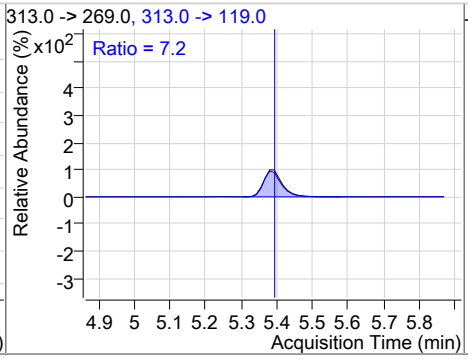


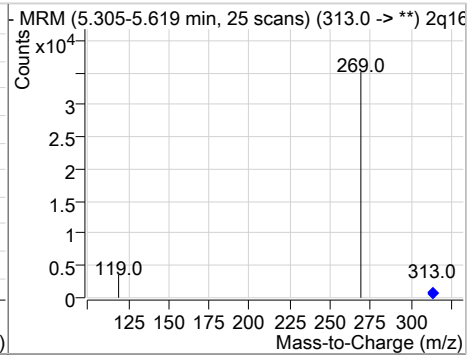




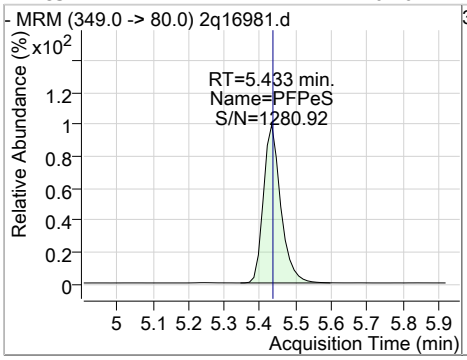
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	24.99	5.38	0.02	25447	313.0 -> 119.0	7.2	0.0	37.6

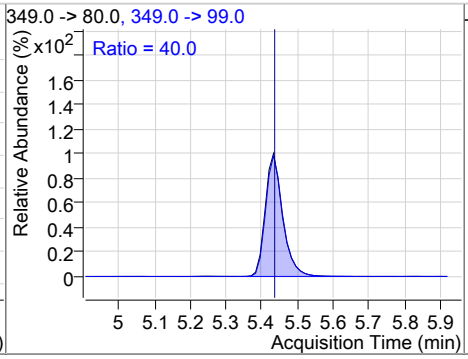


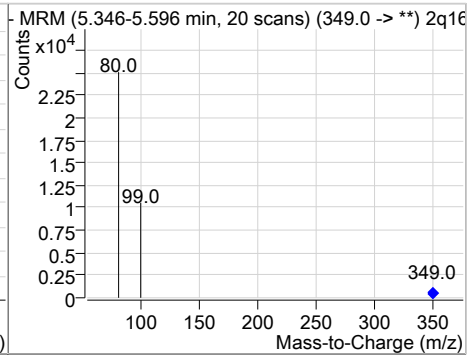




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	20.26	5.43	0.02	18224	349.0 -> 99.0	40.0	10.8	70.8

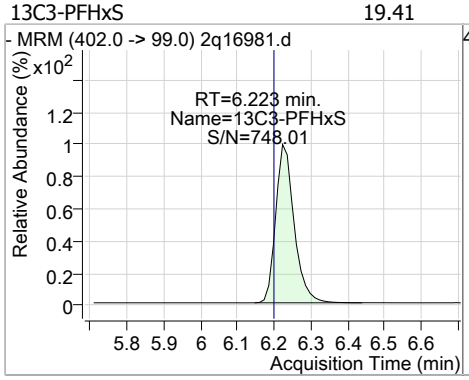


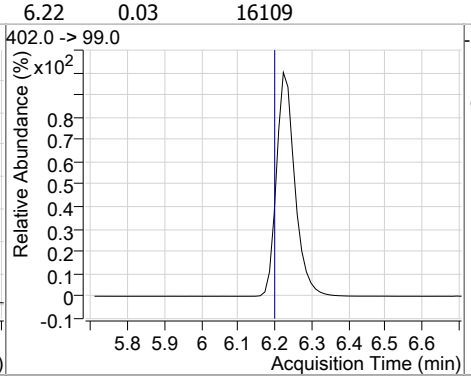


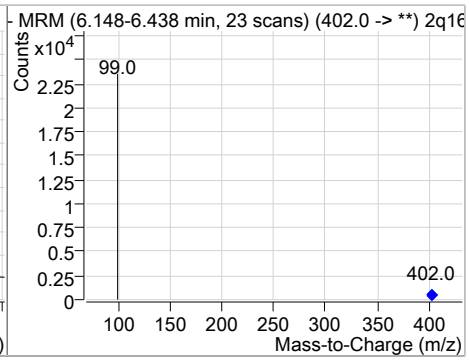


Perfluorinated Compounds by LC/MS/MS

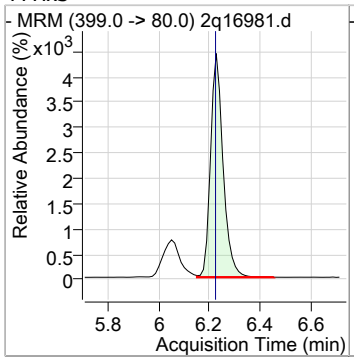
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.41	6.22	0.03	16109				

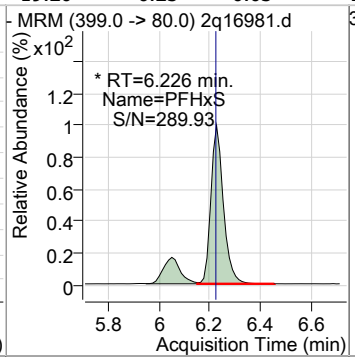


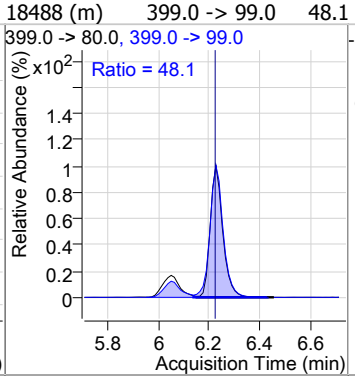


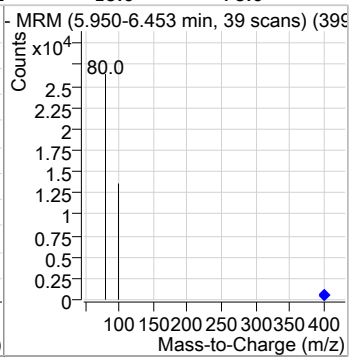


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.20	6.23	0.03	18488 (m)	399.0 -> 99.0	48.1	18.0	78.0

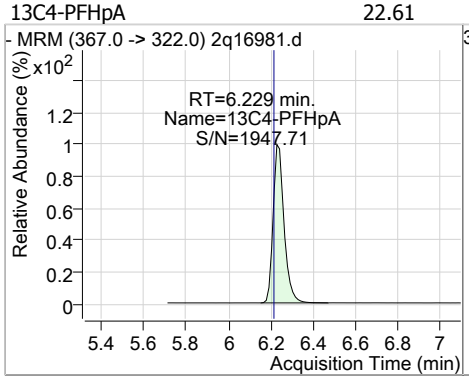


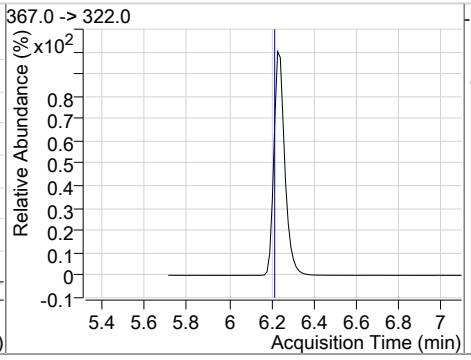


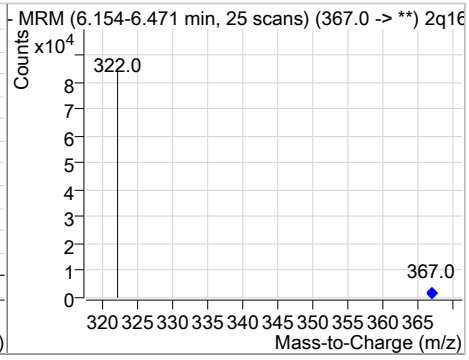




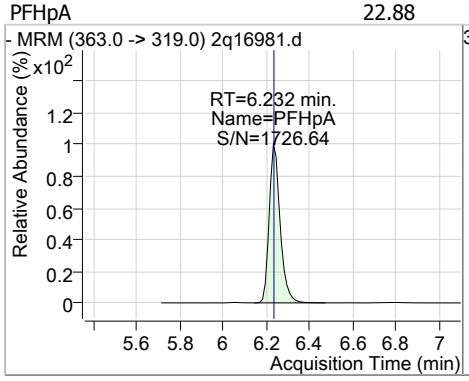
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	22.61	6.23	0.02	61471				

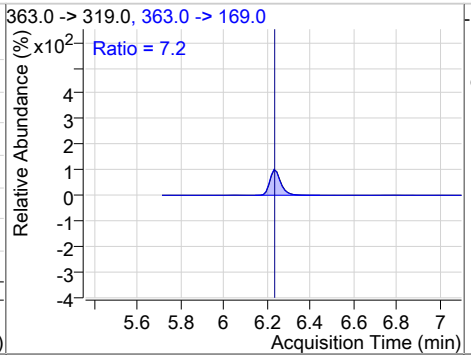


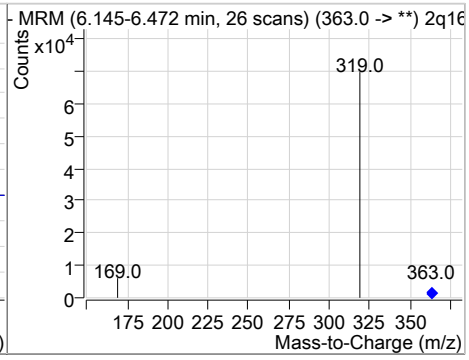




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	22.88	6.23	0.02	51470	363.0 -> 169.0	7.2	0.0	37.2

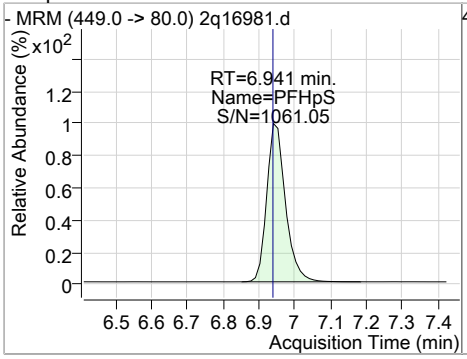


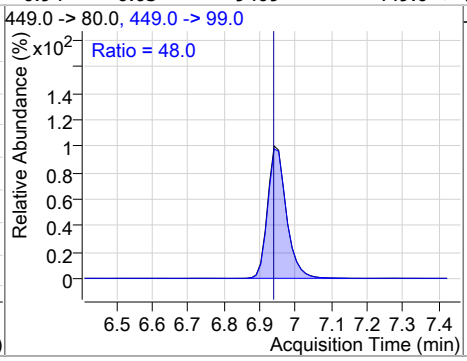


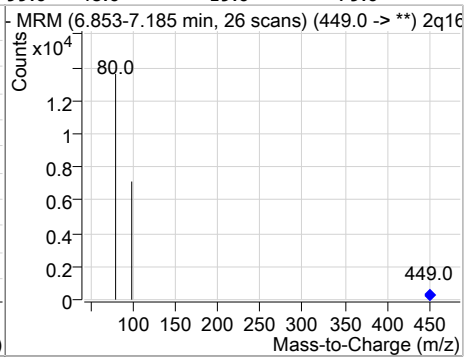


Perfluorinated Compounds by LC/MS/MS

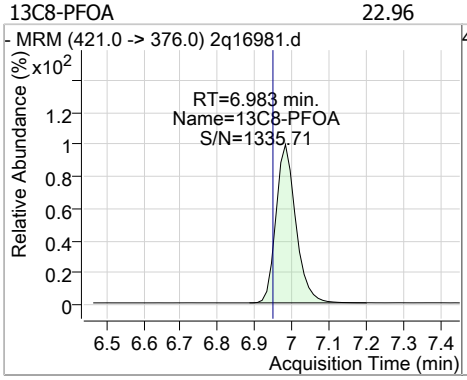
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	19.09	6.94	0.03	9409	449.0 -> 99.0	48.0	19.0	79.0

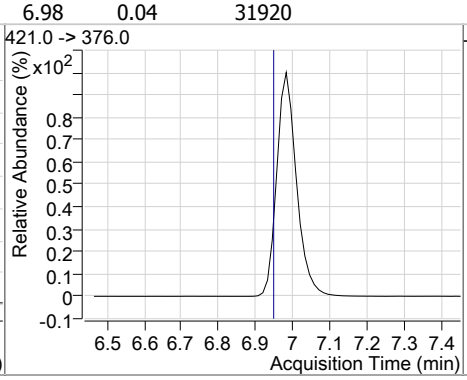


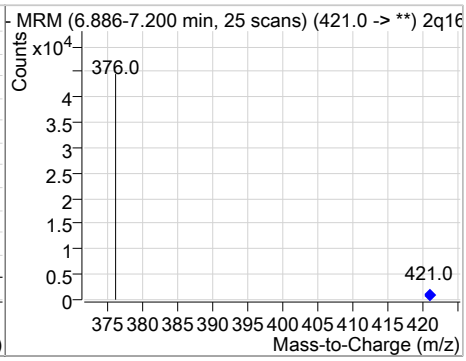




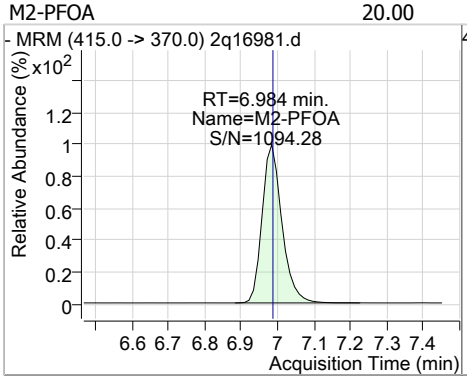
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	22.96	6.98	0.04	31920				

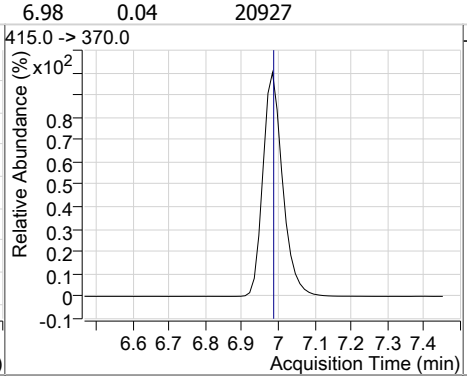


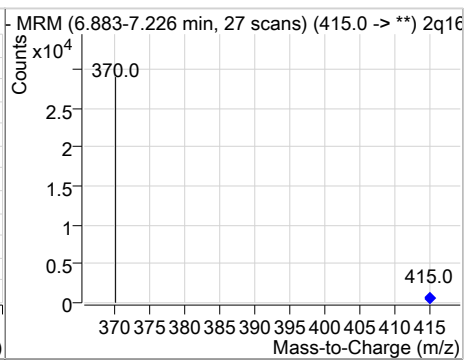




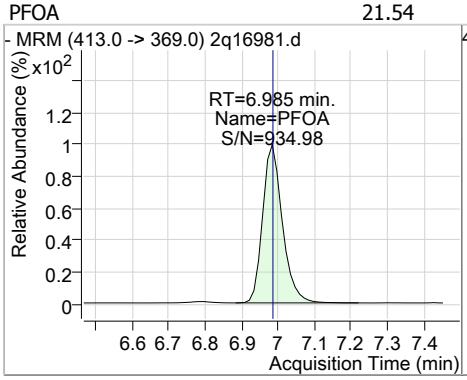
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.98	0.04	20927				

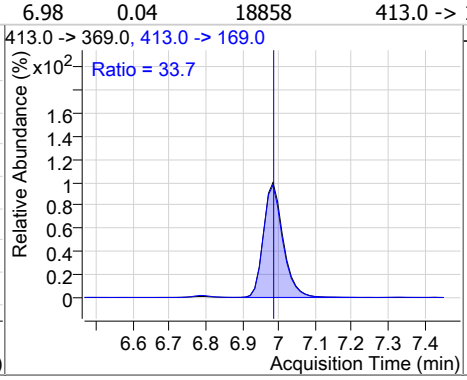


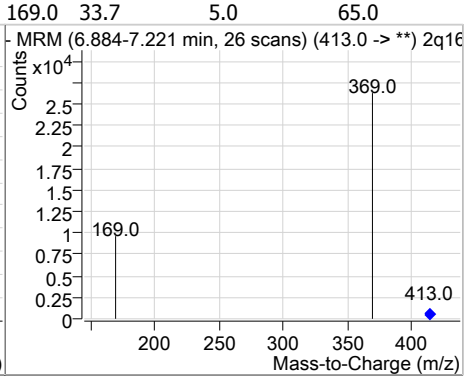




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	21.54	6.98	0.04	18858	413.0 -> 169.0	33.7	5.0	65.0

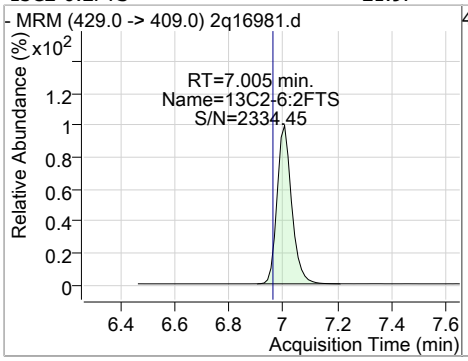


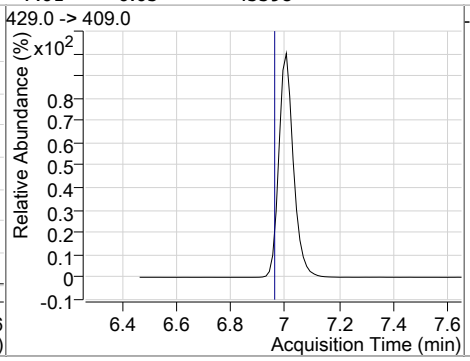


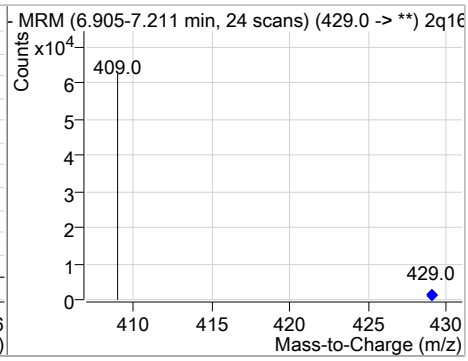


Perfluorinated Compounds by LC/MS/MS

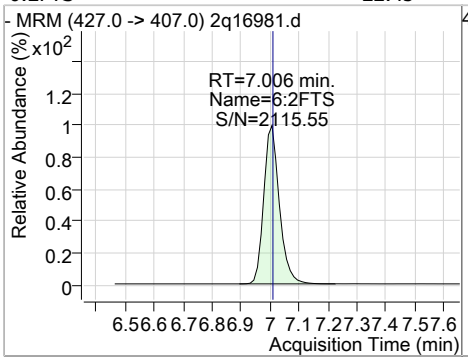
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	21.97	7.01	0.05	45598				

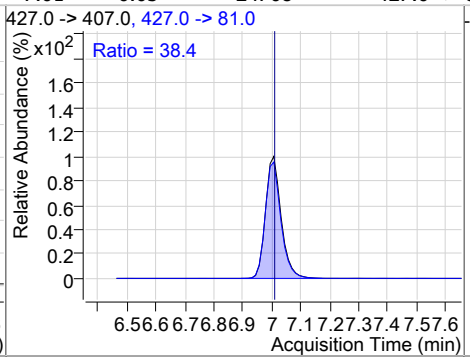


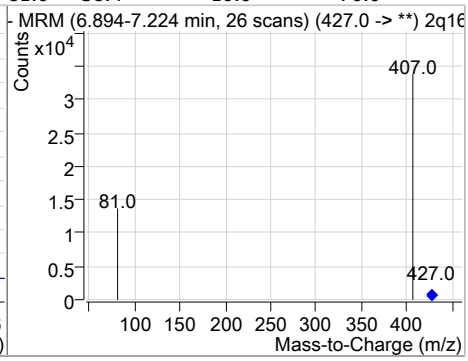




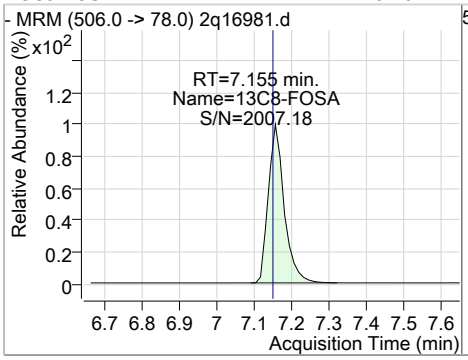
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	22.45	7.01	0.05	24708	427.0 -> 81.0	38.4	10.0	70.0

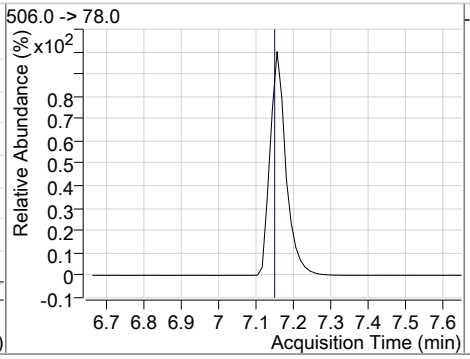


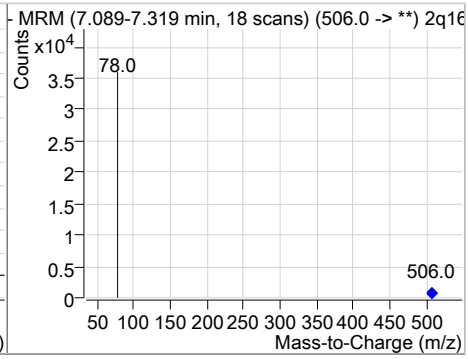




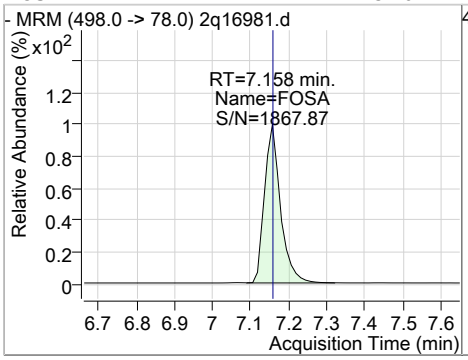
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	16.78	7.15	0.01	26302				

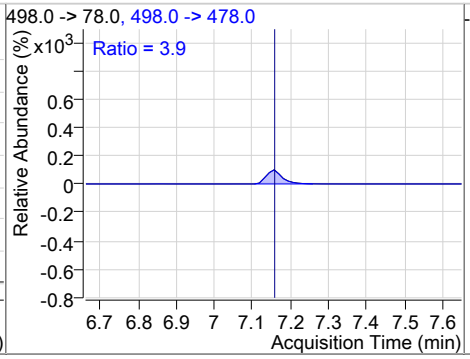


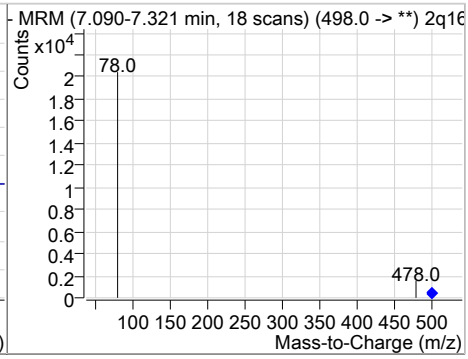




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	23.16	7.16	0.01	14960	498.0 -> 478.0	3.9	0.0	34.0

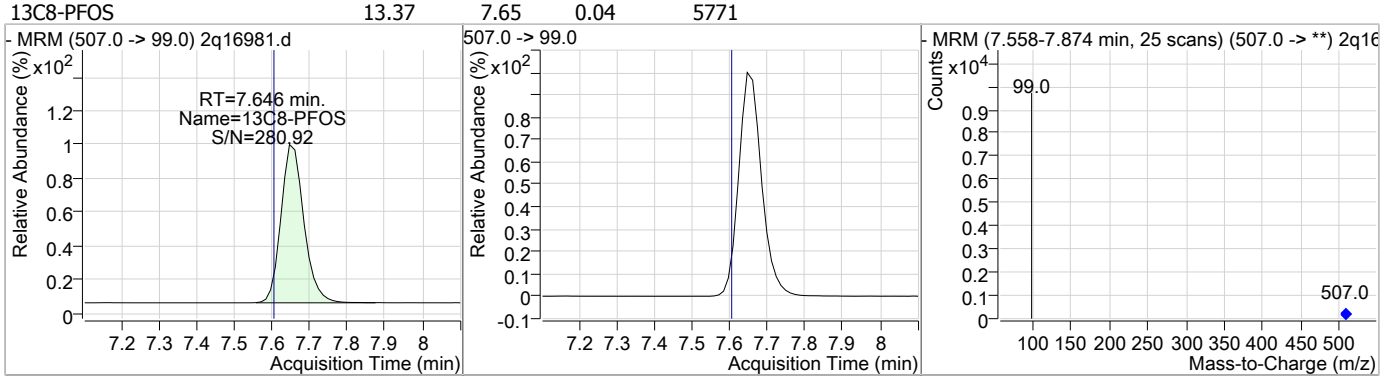




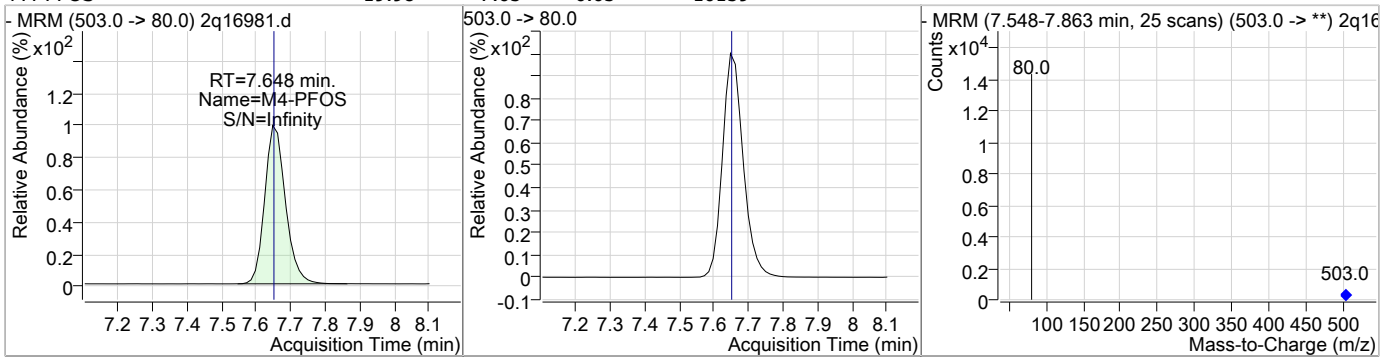


Perfluorinated Compounds by LC/MS/MS

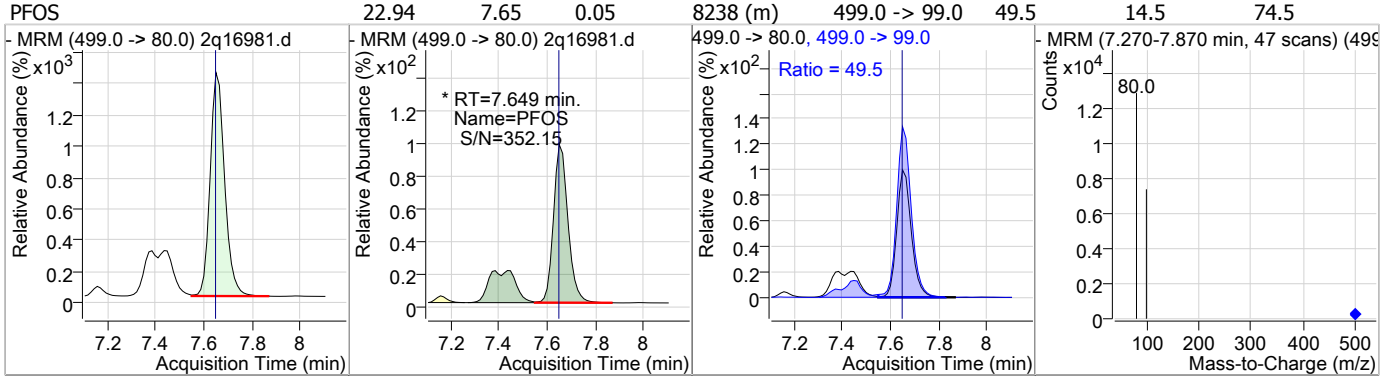
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	13.37	7.65	0.04	5771				



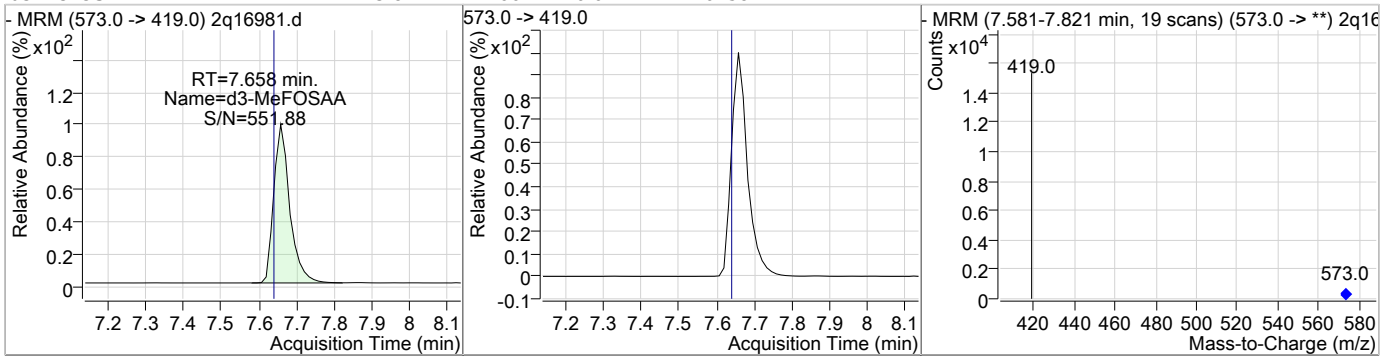
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	19.98	7.65	0.05	10159				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	22.94	7.65	0.05	8238 (m)	499.0 -> 99.0	49.5	14.5	74.5

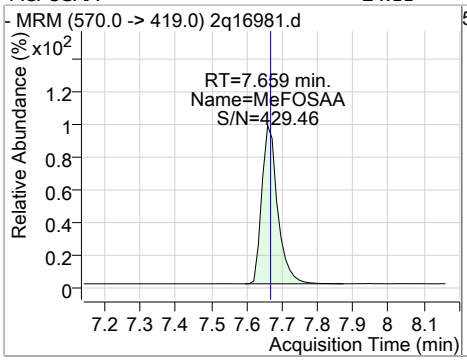


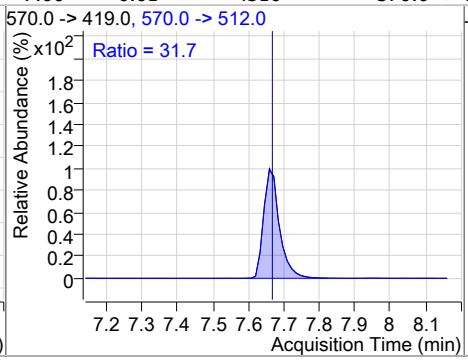
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	13.82	7.66	0.02	10458				

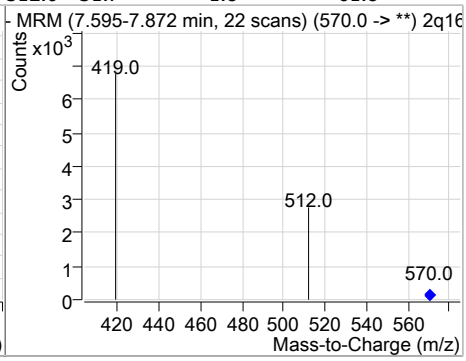


Perfluorinated Compounds by LC/MS/MS

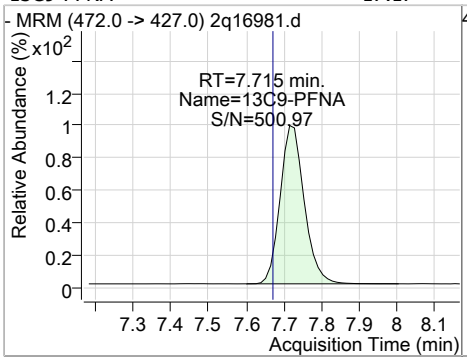
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	24.11	7.66	0.01	4510	570.0 -> 512.0	31.7	1.8	61.8

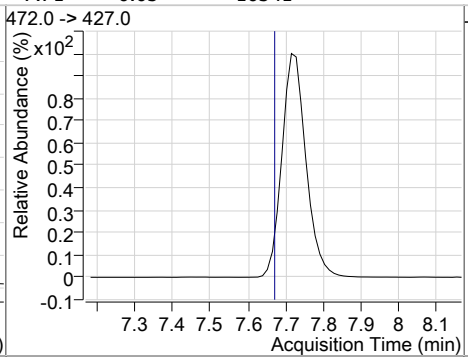


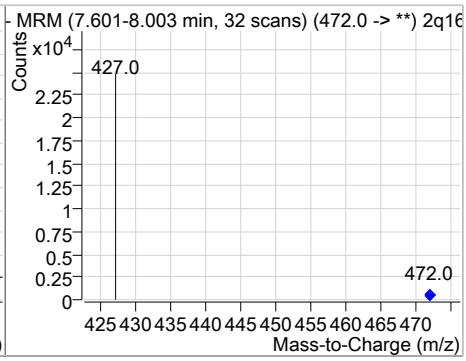




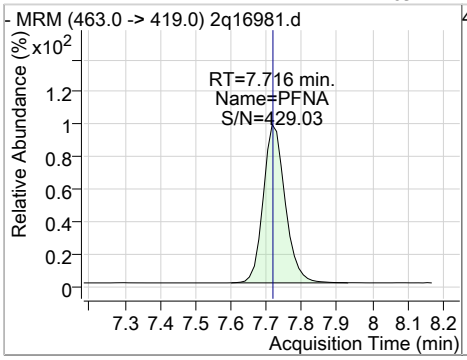
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	17.17	7.71	0.05	16541				

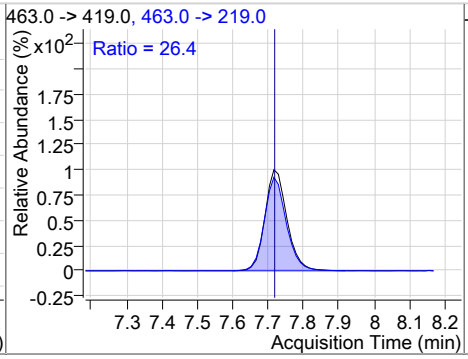


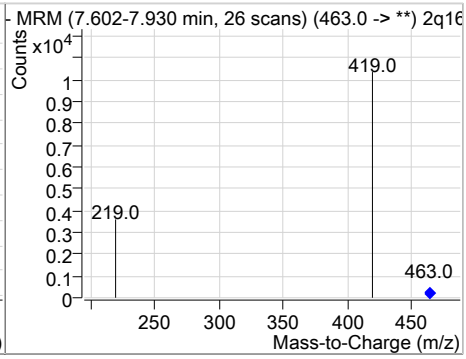




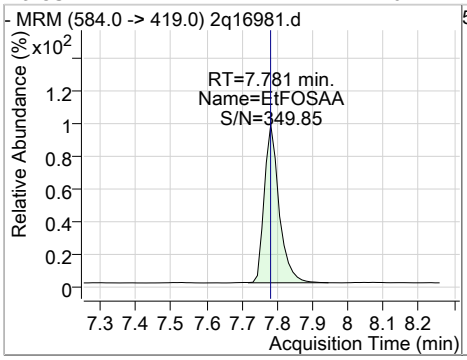
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	21.69	7.72	0.05	6923	463.0 -> 219.0	26.4	0.0	58.4

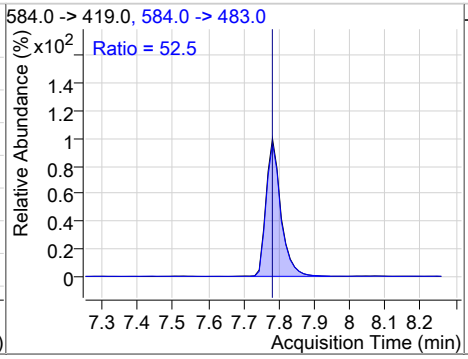


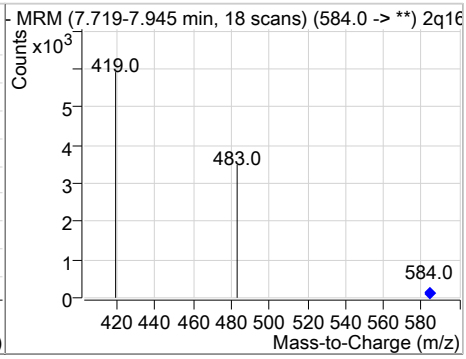




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	21.61	7.78	0.02	3813	584.0 -> 483.0	52.5	24.8	84.8

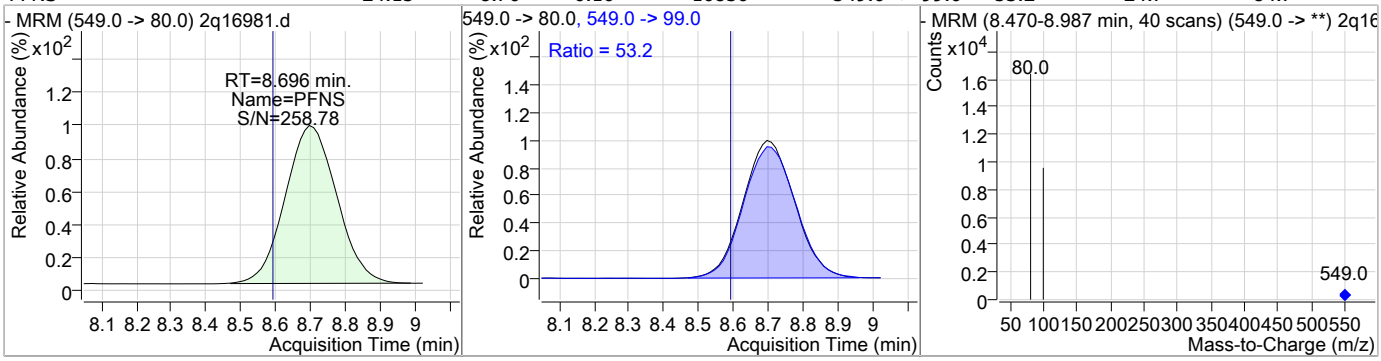




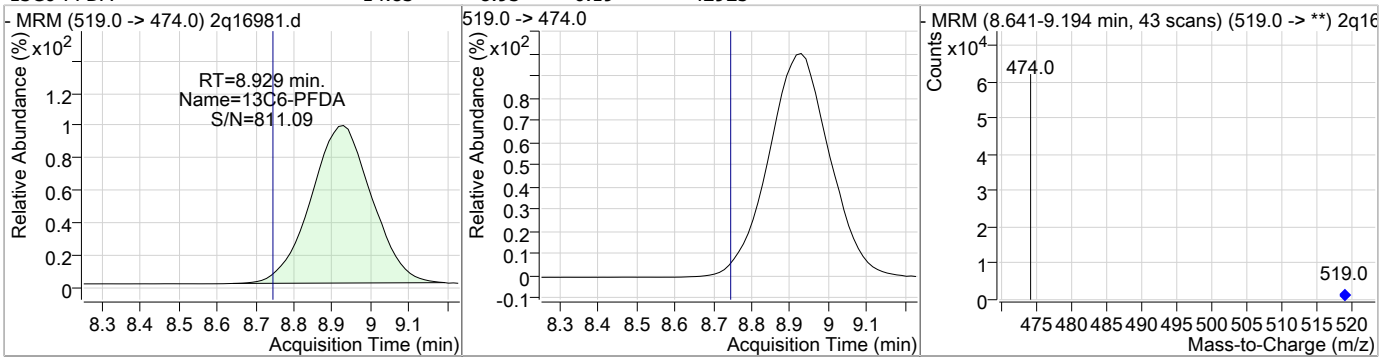


Perfluorinated Compounds by LC/MS/MS

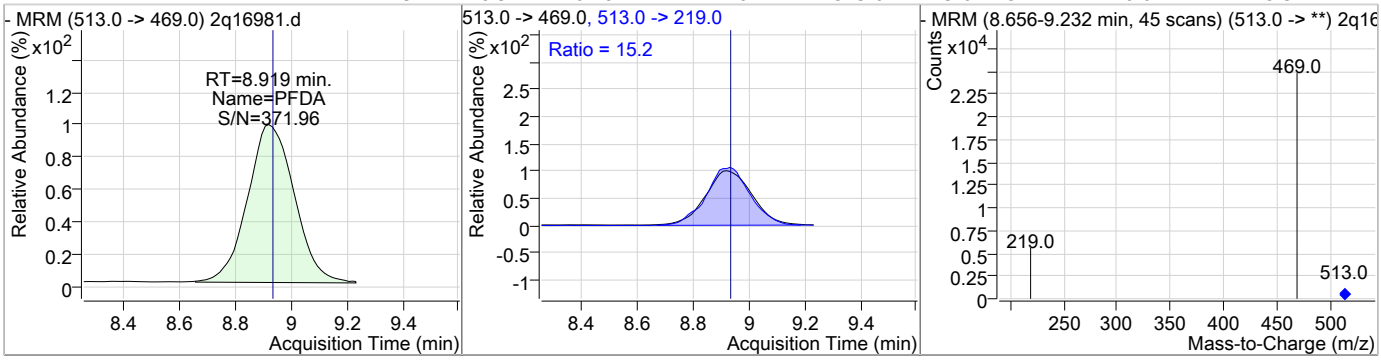
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	24.15	8.70	0.16	10850	549.0 -> 99.0	53.2	24.7	84.7



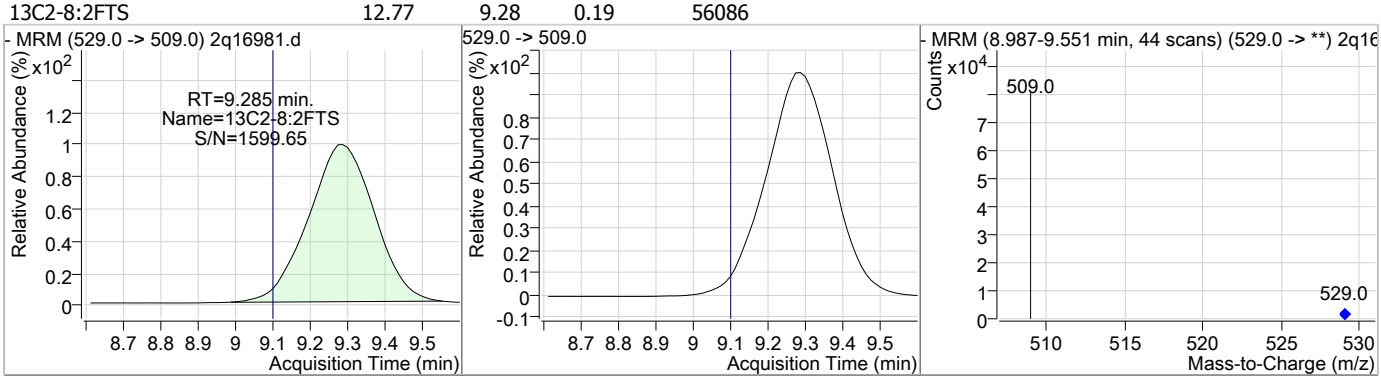
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	14.83	8.93	0.19	42925				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	21.79	8.92	0.18	17216	513.0 -> 219.0	15.2	0.0	45.3

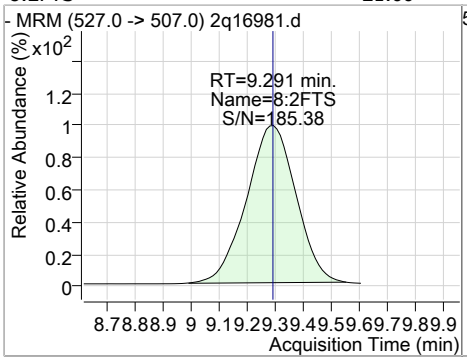


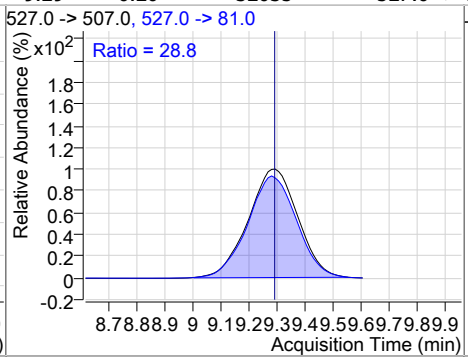
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	12.77	9.28	0.19	56086				

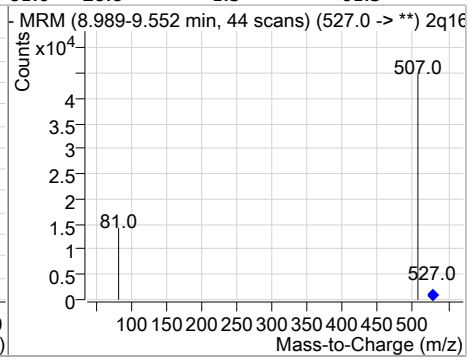


Perfluorinated Compounds by LC/MS/MS

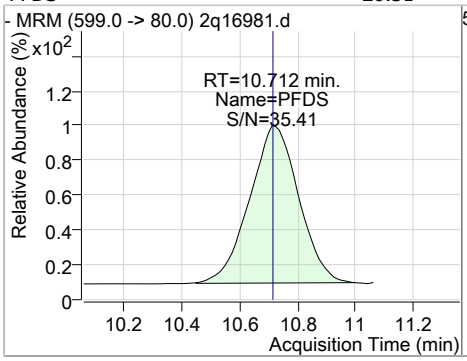
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	21.60	9.29	0.20	32035	527.0 -> 81.0	28.8	1.3	61.3

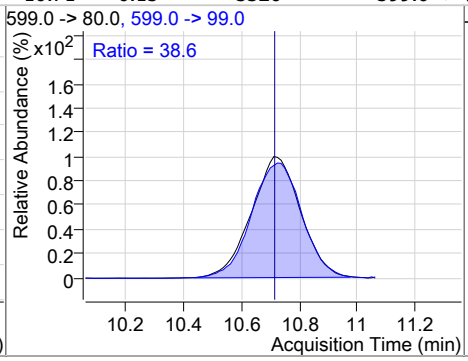


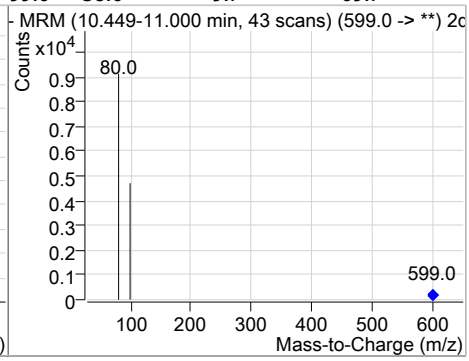




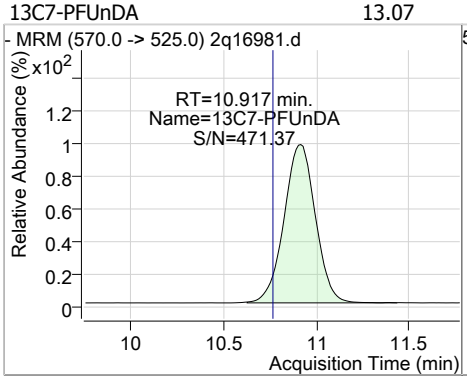
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	20.31	10.71	0.15	5326	599.0 -> 99.0	38.6	9.7	69.7

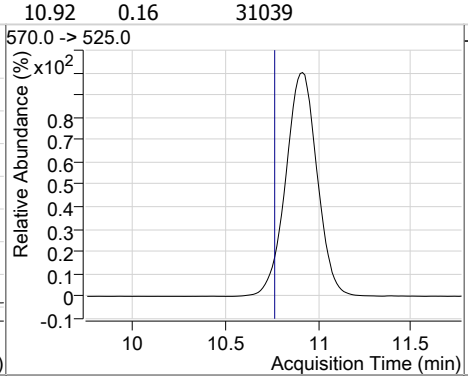


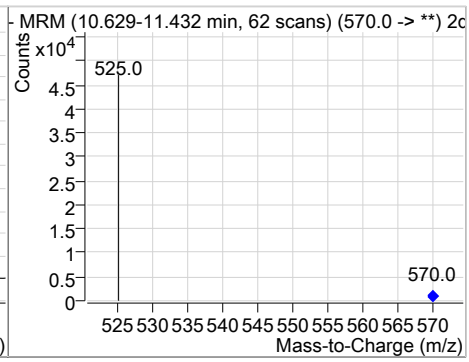




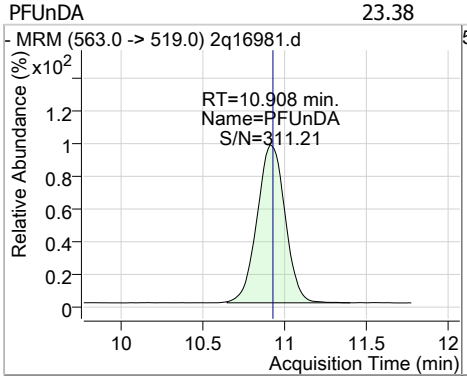
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	13.07	10.92	0.16	31039				

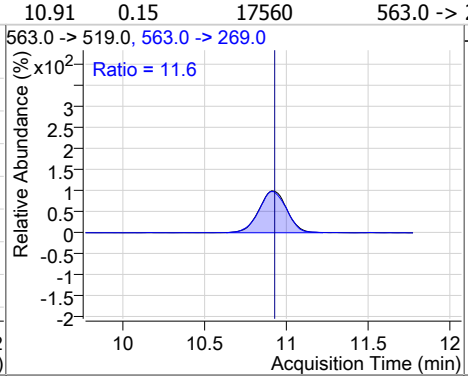


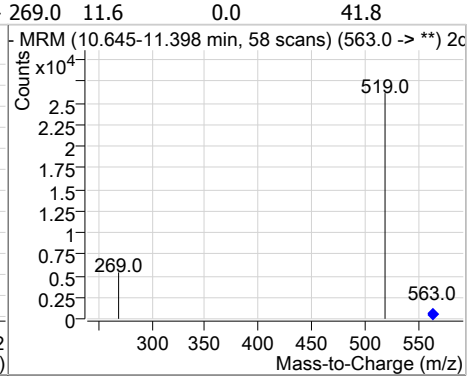




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	23.38	10.91	0.15	17560	563.0 -> 269.0	11.6	0.0	41.8

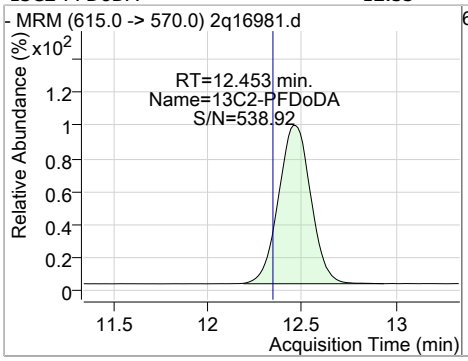


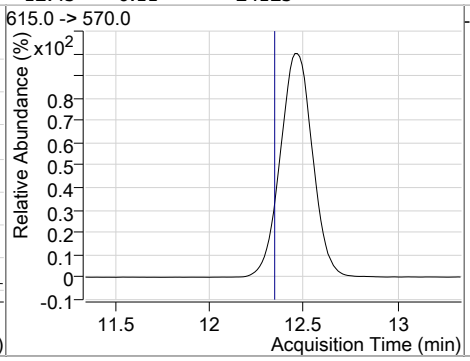


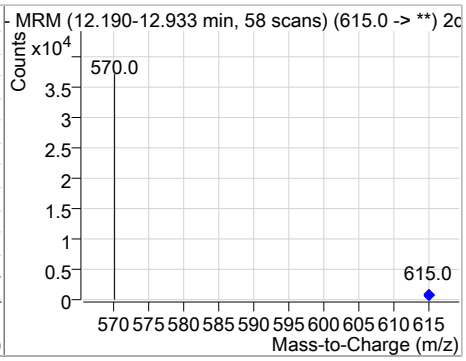


Perfluorinated Compounds by LC/MS/MS

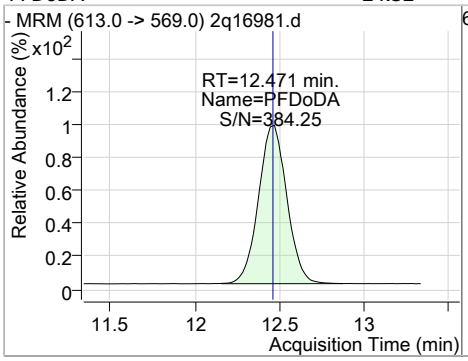
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	12.55	12.45	0.11	24125				

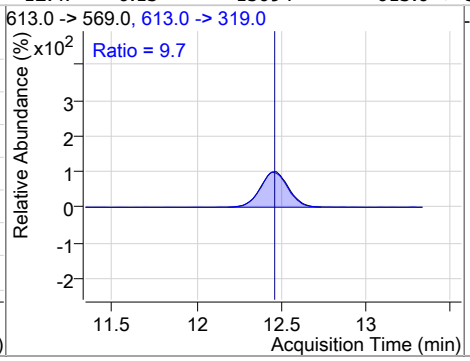


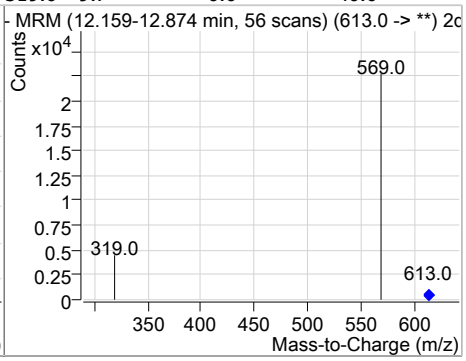




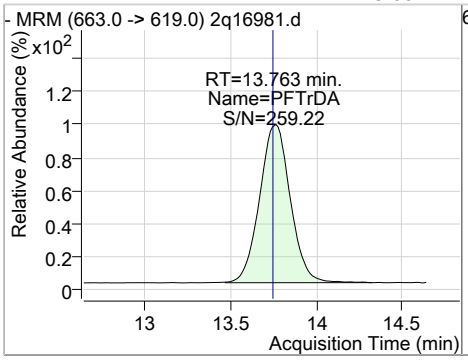
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	24.32	12.47	0.13	15094	613.0 -> 319.0	9.7	0.0	40.0

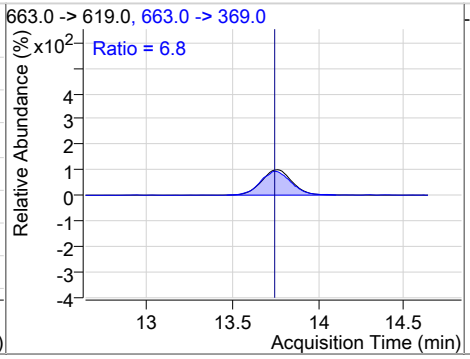


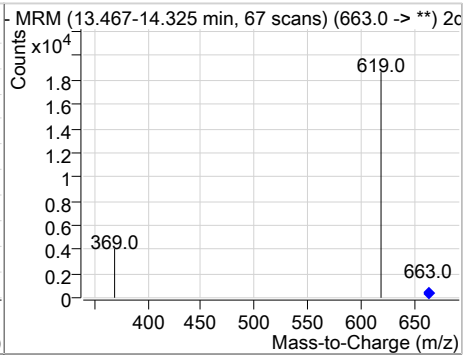




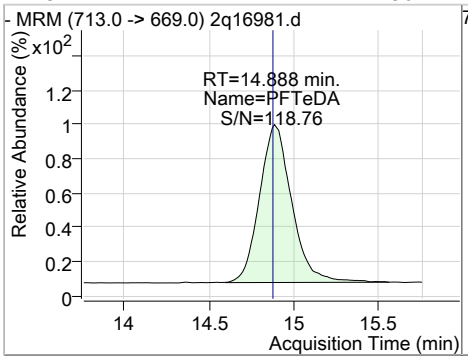
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	25.86	13.76	0.12	12214	663.0 -> 369.0	6.8	0.0	37.1

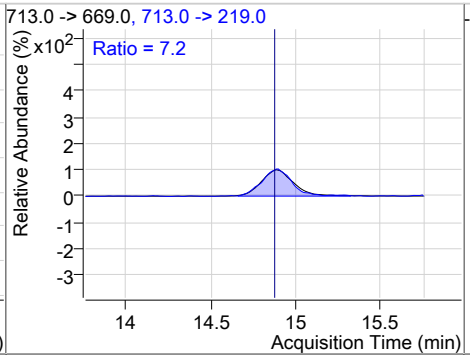


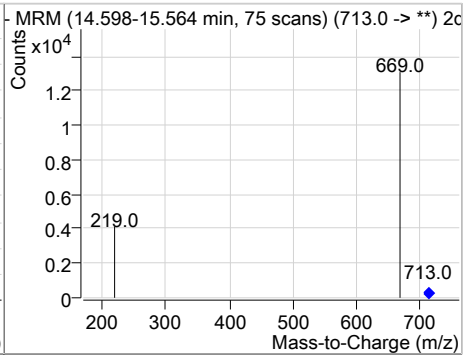




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	21.96	14.89	0.12	7160	713.0 -> 219.0	7.2	0.0	37.4

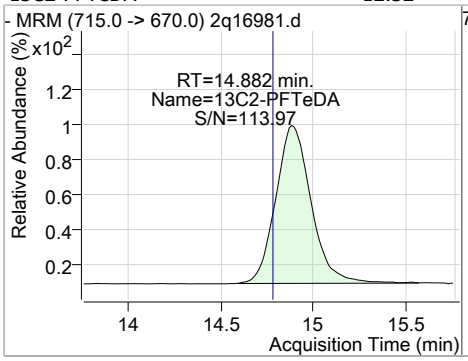


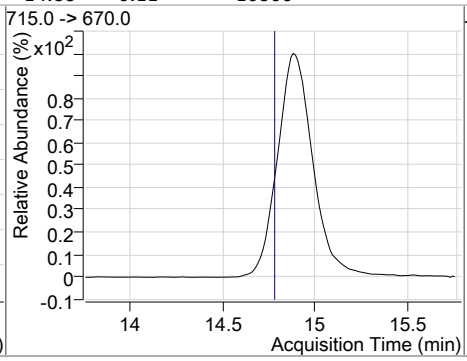


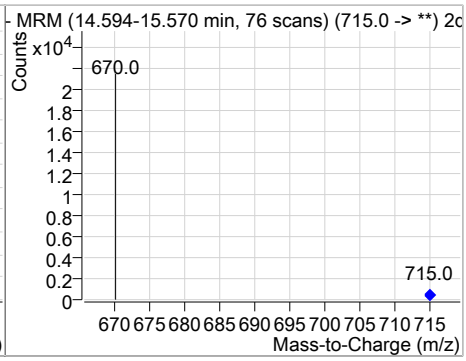


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	12.32	14.88	0.11	10806				







Manual Integration Approval Summary

Sample Number:	OP70805-MSD	**Method:**	EPA 537M QSM5.1 B-15
Lab FileID:	2Q16981.D	**Analyst approved:**	07/12/18 09:56 Nancy Saunders
Injection Time:	07/12/18 00:17	**Supervisor approved:**	07/12/18 14:31 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.23	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.65	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
07/06/18 17:13

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16564.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/5/2018 4:31:07 PM
Sample Name : ic291-0.5
Vial : Vial 2
DA Method File : PFC_ID_070518_S2Q291.quantmethod.xml
Batch Name : s2q291.batch.bin
Sample Information : op70743,S2Q291,130,,,1.0,1,water

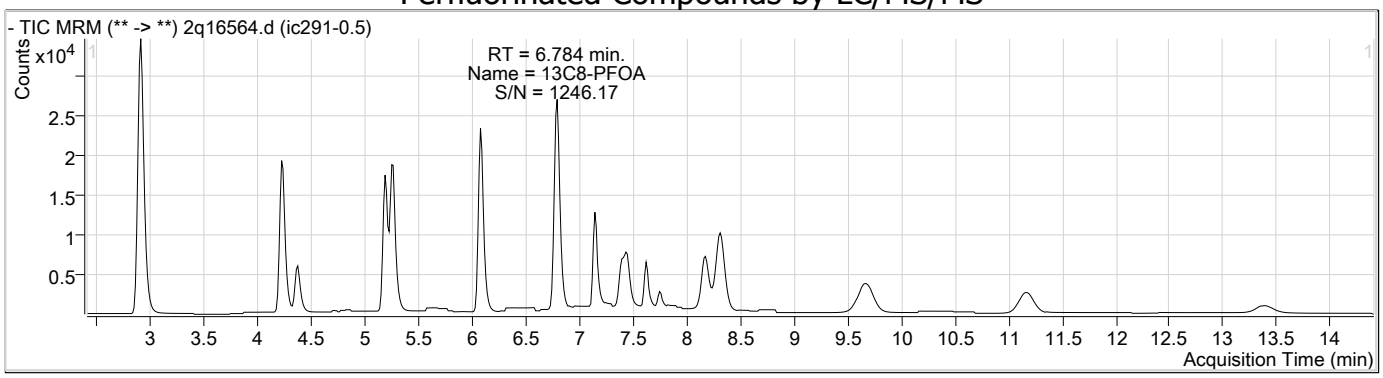
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.785	415.0 -> 370.0	21366	20.00	µg/L	-0.013
13C4-PFOS	7.397	503.0 -> 80.0	10792	20.00	µg/L	0.000
M4-PFBA	2.903	217.0 -> 172.0	140300	20.00	µg/L	0.000
M5-PFPeA	4.225	268.0 -> 223.0	67000	20.00	µg/L	-0.013
M5-PFHxA	5.265	318.0 -> 273.0	60408	20.00	µg/L	0.000
M4-PFHpA	6.079	367.0 -> 322.0	59226	20.00	µg/L	-0.013
M8-PFOA	6.784	421.0 -> 376.0	31307	20.00	µg/L	-0.013
M9-PFNA	7.450	472.0 -> 427.0	21338	20.00	µg/L	0.000
M6-PFDA	8.180	519.0 -> 474.0	33605	20.00	µg/L	0.000
M7-PFUnDA	9.666	570.0 -> 525.0	37738	20.00	µg/L	-0.013
M2-PFDoDA	11.164	615.0 -> 570.0	26493	20.00	µg/L	-0.005
M2-PFTeDA	13.381	715.0 -> 670.0	11232	20.00	µg/L	0.000
M8-FOSA	7.142	506.0 -> 78.0	34296	20.00	µg/L	0.000
M3-PFBS	4.368	302.0 -> 99.0	19903	20.00	µg/L	0.000
M3-PFHxS	6.073	402.0 -> 99.0	18263	20.00	µg/L	-0.013
M8-PFOS	7.395	507.0 -> 99.0	9164	20.00	µg/L	0.000
M2-4:2FTS	5.185	329.0 -> 309.0	56735	20.00	µg/L	-0.013
M2-6:2FTS	6.793	429.0 -> 409.0	45520	20.00	µg/L	-0.015
M2-8:2FTS	8.311	529.0 -> 509.0	56572	20.00	µg/L	-0.015
M3-MeFOSAA	7.619	573.0 -> 419.0	16389	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.185	329.0 -> 309.0	56766	17.31	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.5%		
13C2-6:2FTS	6.793	429.0 -> 409.0	45518	17.22	µg/L	-0.015
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.1%		
13C2-8:2FTS	8.311	529.0 -> 509.0	56542	17.42	µg/L	-0.015
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.1%		
13C2-PFDoDA	11.164	615.0 -> 570.0	26542	18.11	µg/L	-0.005
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.6%		
13C2-PFTeDA	13.381	715.0 -> 670.0	11229	18.10	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.5%		
13C3-PFBS	4.368	302.0 -> 99.0	19908	18.01	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.1%		
13C3-PFHxS	6.073	402.0 -> 99.0	18282	18.25	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.3%		
13C4-PFBA	2.903	217.0 -> 172.0	140280	18.32	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.6%		
13C4-PFHpA	6.079	367.0 -> 322.0	59210	18.37	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.9%		
13C5-PFHxA	5.265	318.0 -> 273.0	60409	18.44	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.2%		
13C5-PFPeA	4.225	268.0 -> 223.0	66975	18.38	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.9%		
13C6-PFDA	8.180	519.0 -> 474.0	33595	18.14	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.7%		

Perfluorinated Compounds by LC/MS/MS

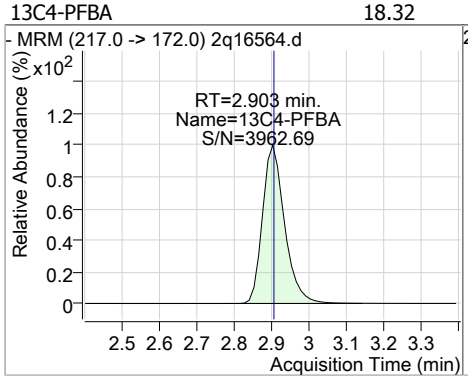
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	9.666	570.0 -> 525.0	37797	18.48	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.4%			
13C8-FOSA	7.142	506.0 -> 78.0	34292	19.48	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.4%			
13C8-PFOA	6.784	421.0 -> 376.0	31325	17.99	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.9%			
13C8-PFOS	7.395	507.0 -> 99.0	9161	18.70	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.5%			
13C9-PFNA	7.450	472.0 -> 427.0	21331	17.93	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.6%			
d3-MeFOSAA	7.619	573.0 -> 419.0	16382	18.66	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.3%			
M2-PFOA	6.785	415.0 -> 370.0	21369	20.00	ng/ml		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.397	503.0 -> 80.0	10792	20.01	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
Target Compounds							**QValue**
4:2FTS	5.187	327.0 -> 307.0	687	0.46	µg/L		61
6:2FTS	6.794	427.0 -> 407.0	528	0.45	µg/L		85
8:2FTS	8.313	527.0 -> 507.0	747	0.47	µg/L		64
EtFOSAA	7.756	584.0 -> 419.0	118	0.44	µg/L		81
FOSA	7.144	498.0 -> 78.0	324	0.37	µg/L		87
MeFOSAA	7.620	570.0 -> 419.0	117	0.41	µg/L		100
PFBA	2.899	213.0 -> 169.0	556	0.49	µg/L		100
PFBS	4.359	299.0 -> 80.0	597	0.45	µg/L		92
PFDA	8.194	513.0 -> 469.0	331	0.51	µg/L		97
PFDoDA	11.158	613.0 -> 569.0	370	0.54	µg/L		99
PFDS	9.499	599.0 -> 80.0	156	0.46	µg/L		86
PFHpA	6.082	363.0 -> 319.0	1006	0.48	µg/L		95
PFHpS	6.753	449.0 -> 80.0	244	0.46	µg/L		98
PFHxA	5.268	313.0 -> 269.0	482	0.49	µg/L		96
PFHxS	6.076	399.0 -> 80.0	472	0.47	µg/L	m	96
PFNA	7.451	463.0 -> 419.0	206	0.49	µg/L		72
PFNS	8.088	549.0 -> 80.0	181	0.44	µg/L		88
PFOA	6.786	413.0 -> 369.0	506	0.64	µg/L		91
PFOS	7.397	499.0 -> 80.0	304	0.55	µg/L	m	78
PFPeA	4.228	263.0 -> 219.0	2242	0.69	µg/L		100
PFPeS	5.308	349.0 -> 80.0	409	0.50	µg/L		98
PFTeDA	13.387	713.0 -> 669.0	193	0.54	µg/L		80
PFTrDA	12.354	663.0 -> 619.0	243	0.47	µg/L		94
PFUnDA	9.657	563.0 -> 519.0	421	0.47	µg/L		98

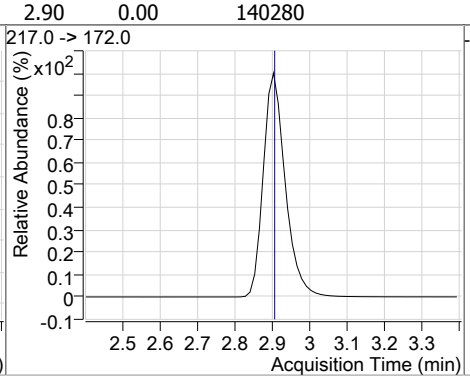
 # = Qualifier out of range, m = manually integrated, + = Area summed

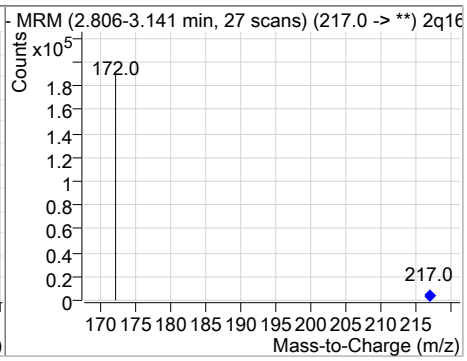
Perfluorinated Compounds by LC/MS/MS



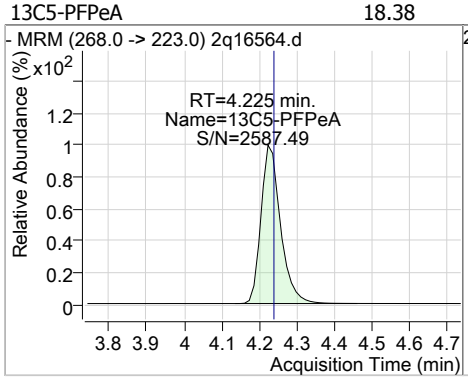
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.32	2.90	0.00	140280				

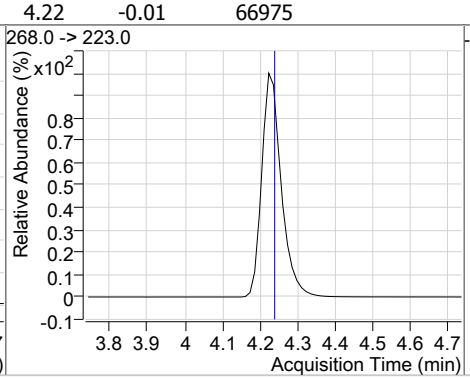


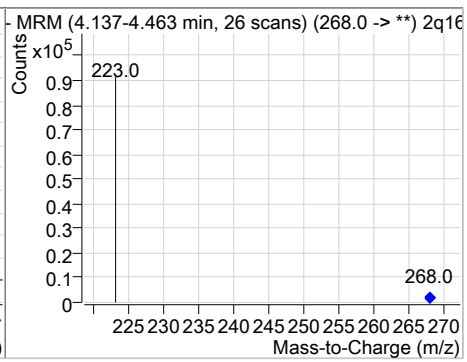




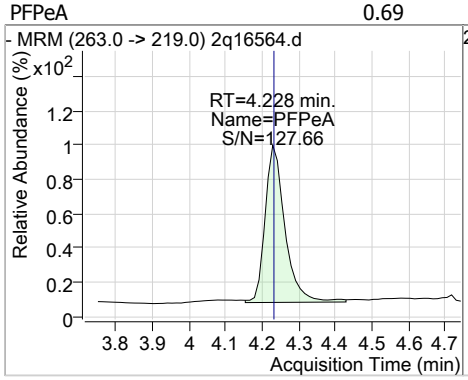
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.38	4.22	-0.01	66975				

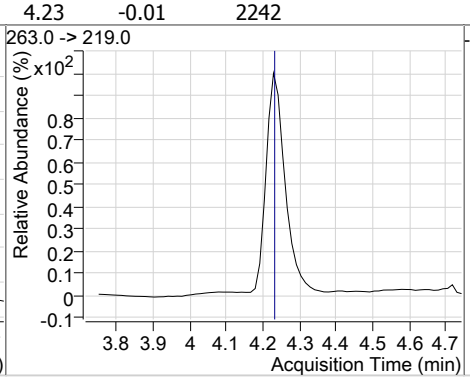


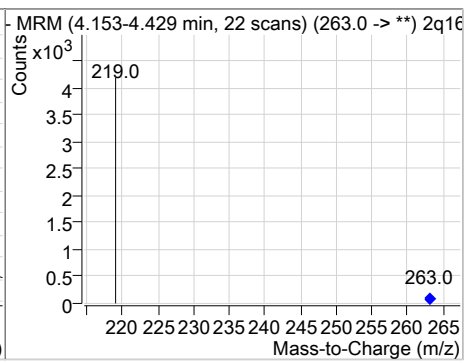




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.69	4.23	-0.01	2242				

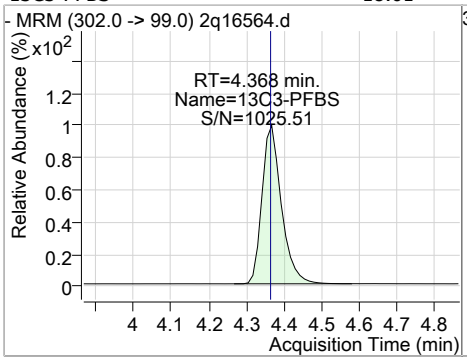


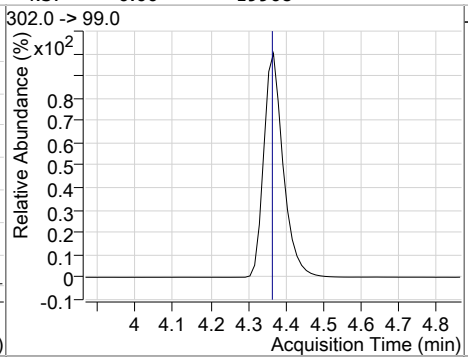


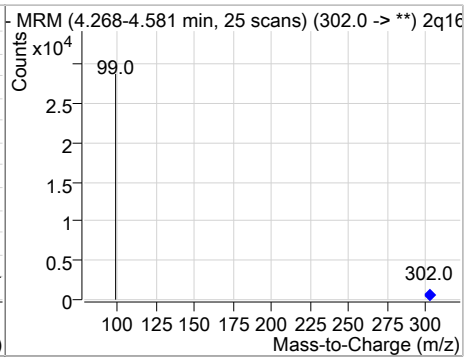


Perfluorinated Compounds by LC/MS/MS

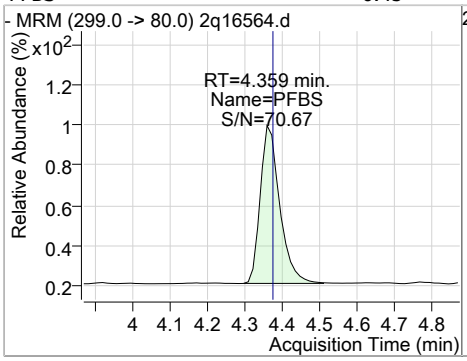
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.01	4.37	0.00	19908				

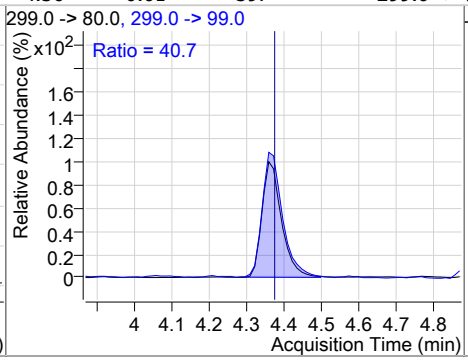


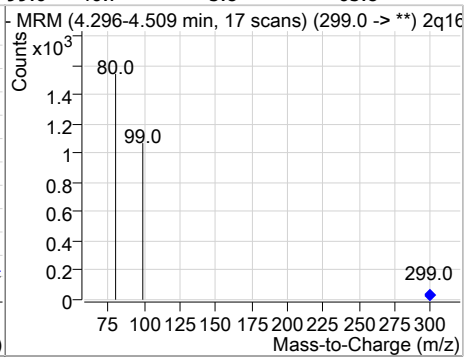




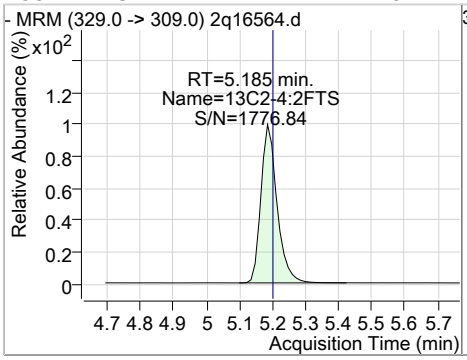
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.45	4.36	-0.01	597	299.0 -> 99.0	40.7	5.8	65.8

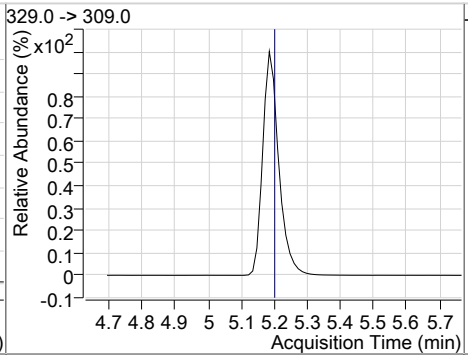


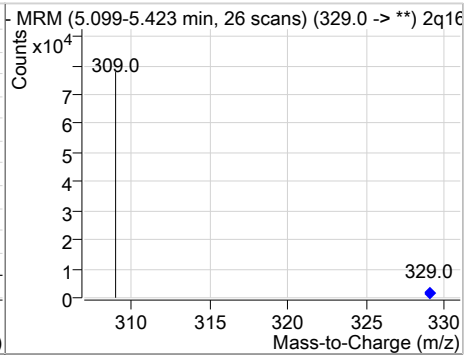




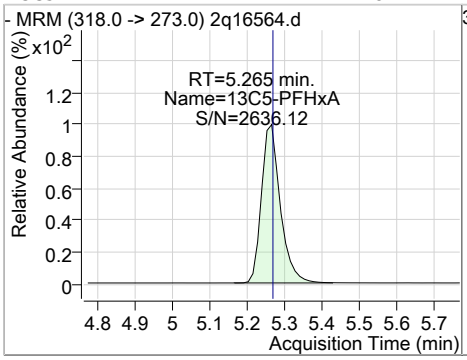
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	17.31	5.18	-0.01	56766				

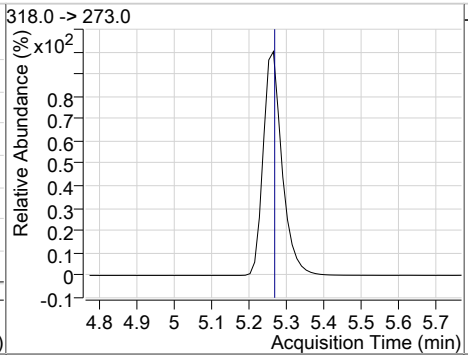


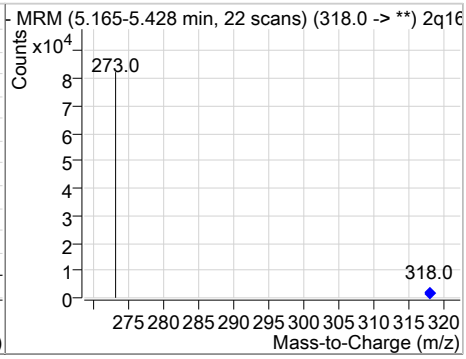




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.44	5.27	0.00	60409				

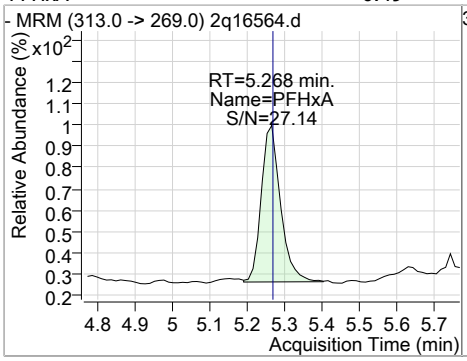


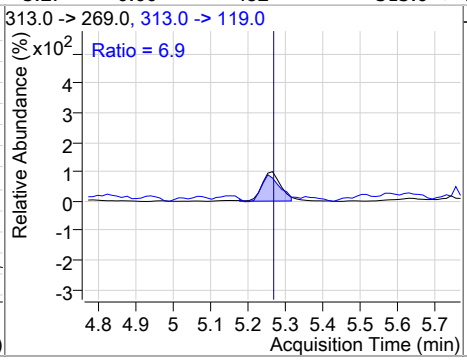


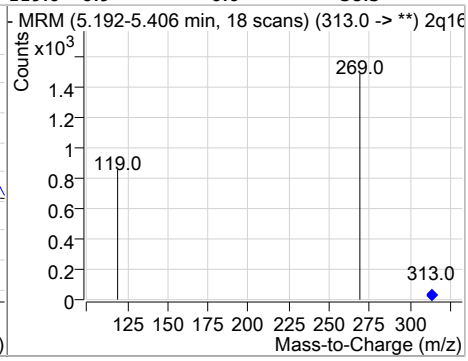


Perfluorinated Compounds by LC/MS/MS

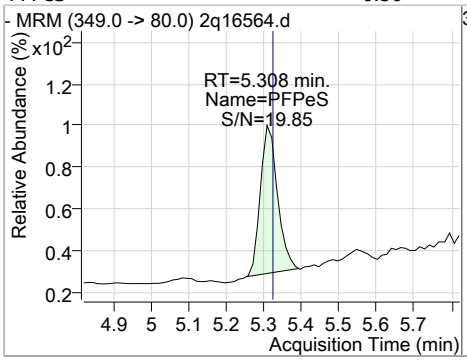
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.49	5.27	0.00	482	313.0 -> 119.0	6.9	0.0	38.3

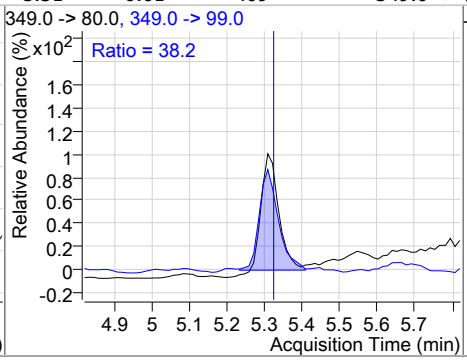


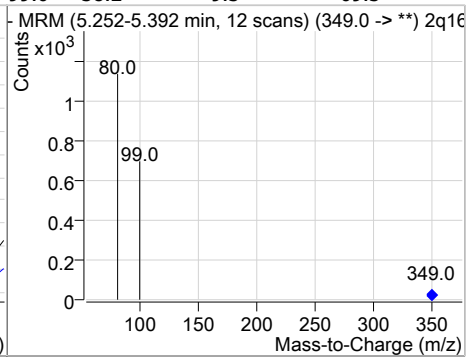




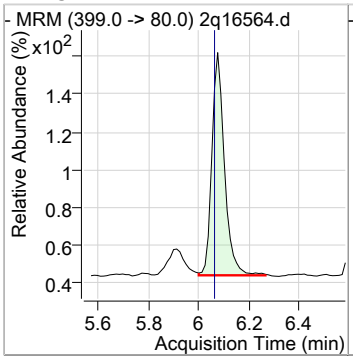
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.50	5.31	-0.01	409	349.0 -> 99.0	38.2	9.3	69.3

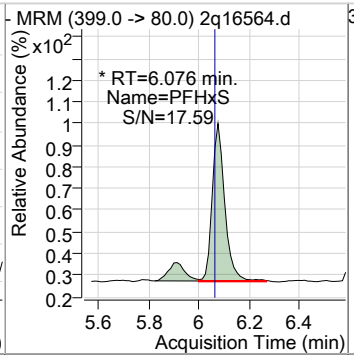


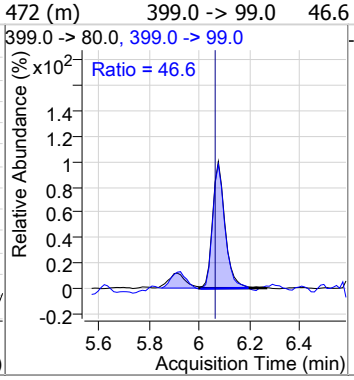


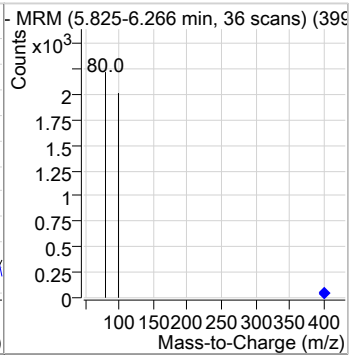


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.47	6.08	0.00	472 (m)	399.0 -> 99.0	46.6	19.0	79.0

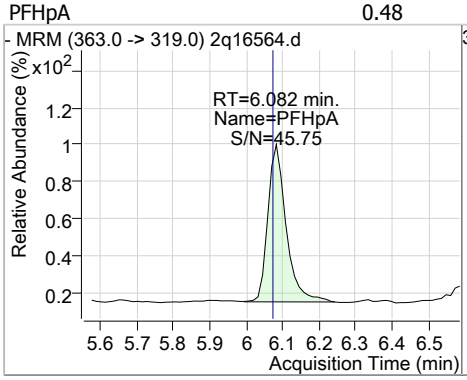


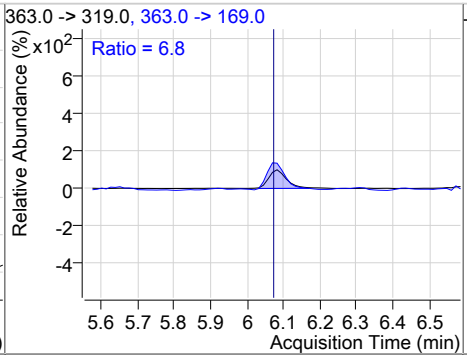


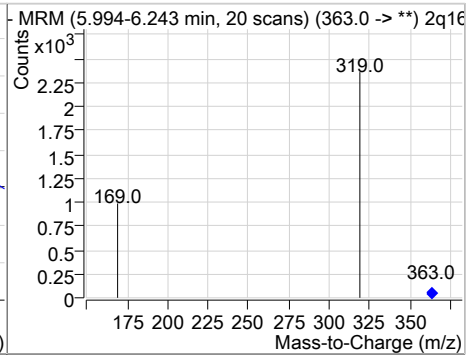




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.48	6.08	0.00	1006	363.0 -> 169.0	6.8	0.0	35.3

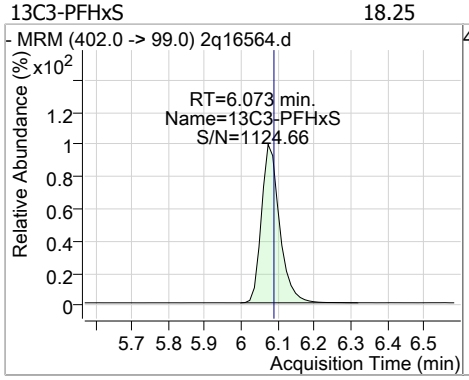


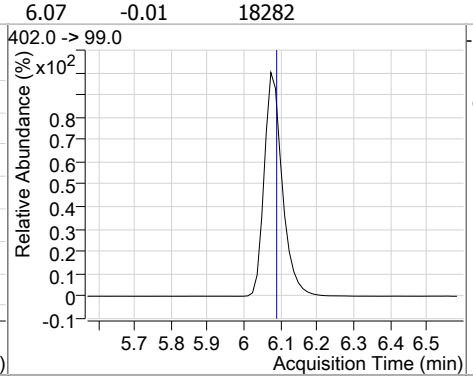


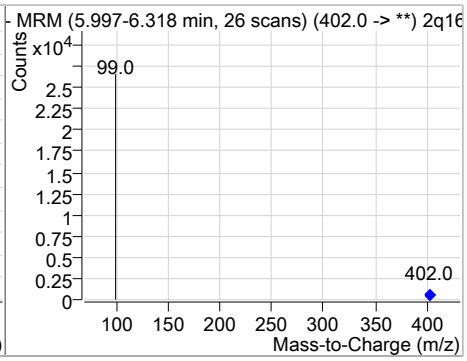


Perfluorinated Compounds by LC/MS/MS

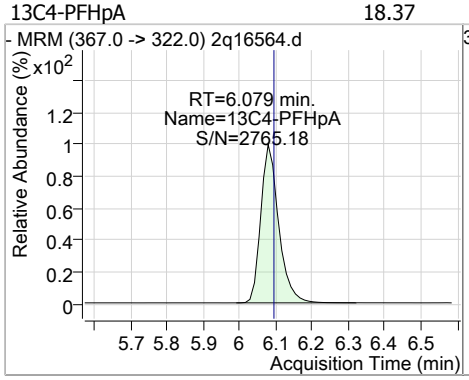
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.25	6.07	-0.01	18282				

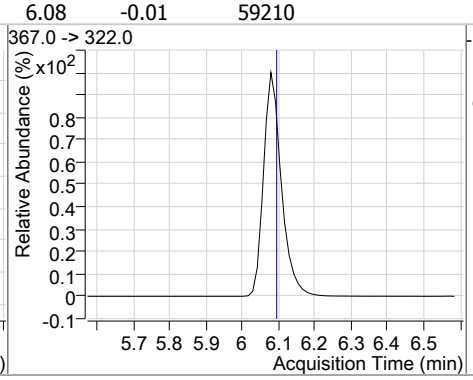


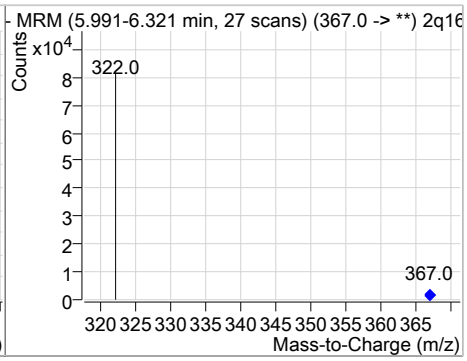




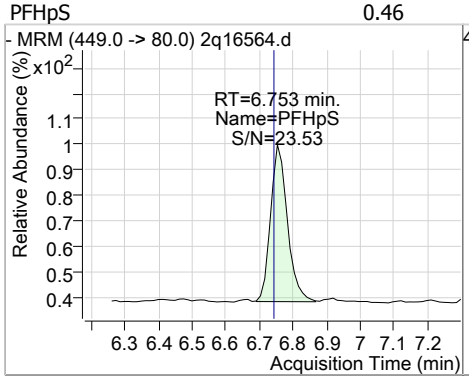
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.37	6.08	-0.01	59210				

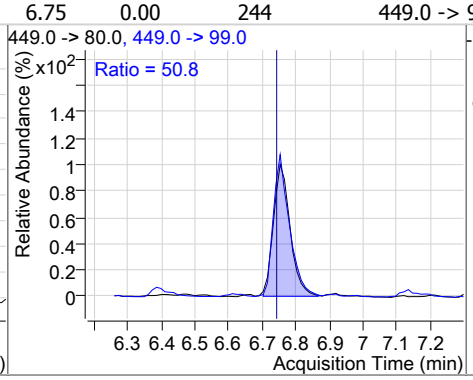


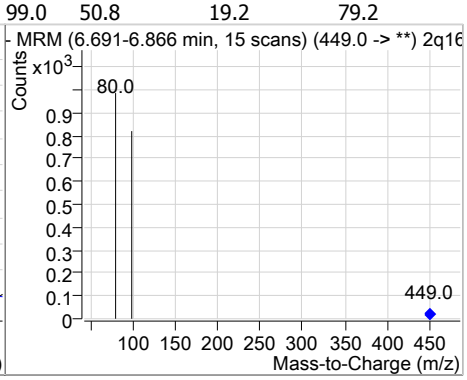




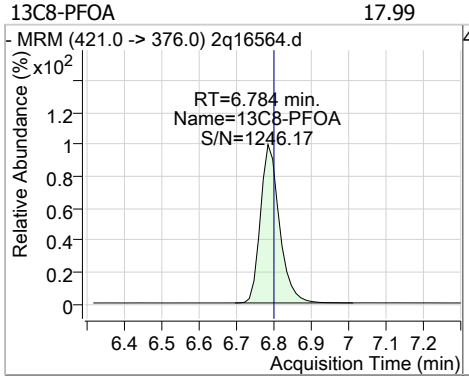
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.46	6.75	0.00	244	449.0 -> 99.0	50.8	19.2	79.2

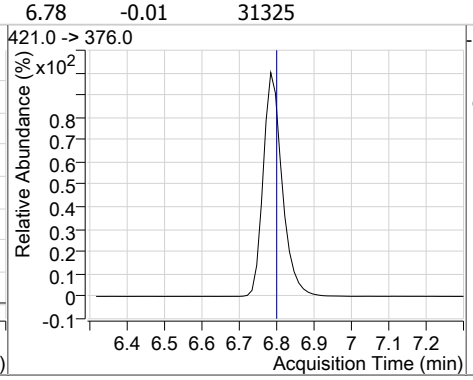


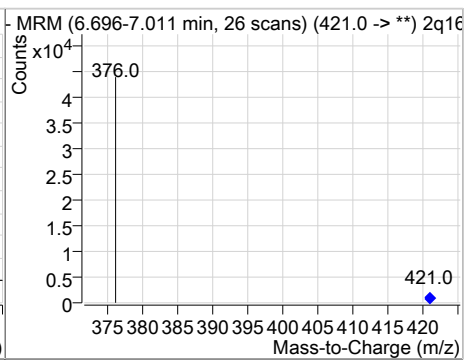




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	17.99	6.78	-0.01	31325				

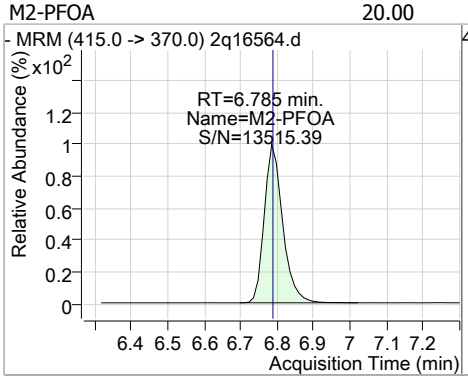


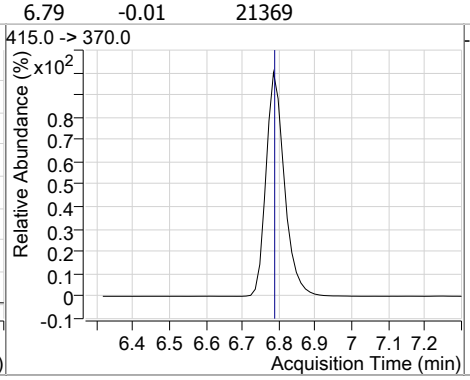


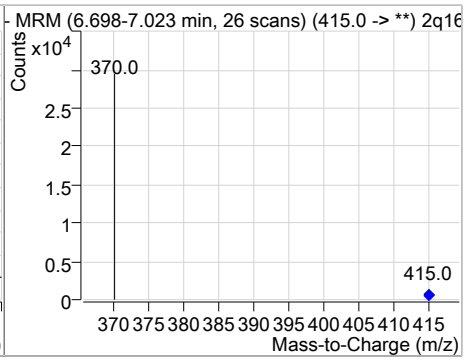


Perfluorinated Compounds by LC/MS/MS

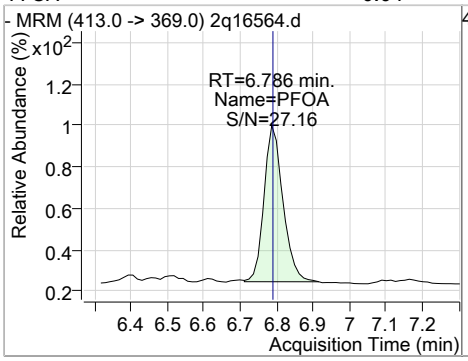
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.79	-0.01	21369				

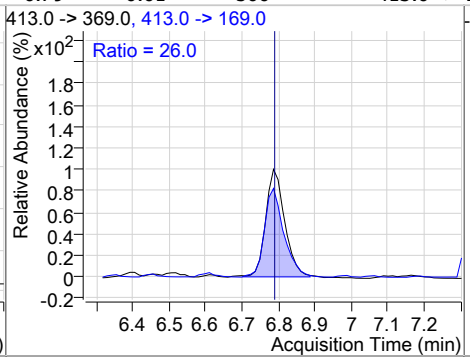


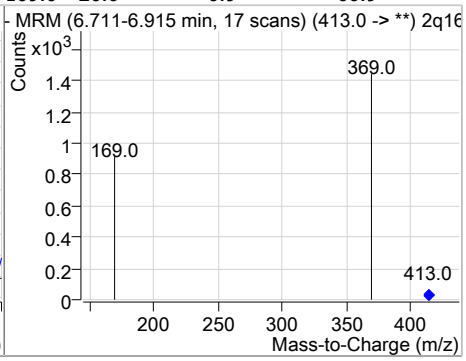




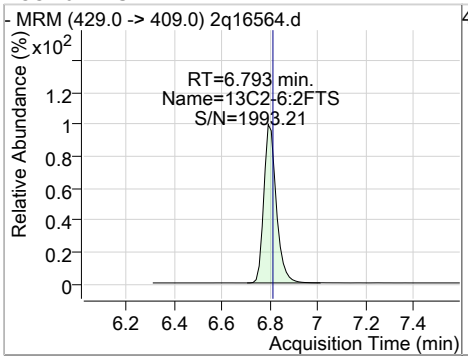
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.64	6.79	-0.01	506	413.0 -> 169.0	26.0	0.9	60.9

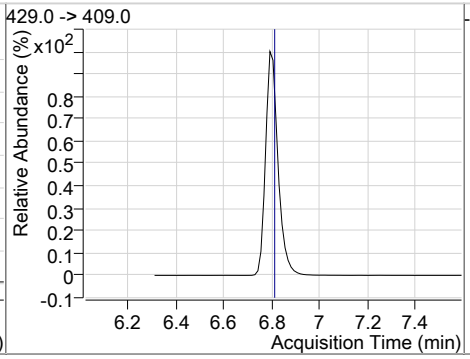


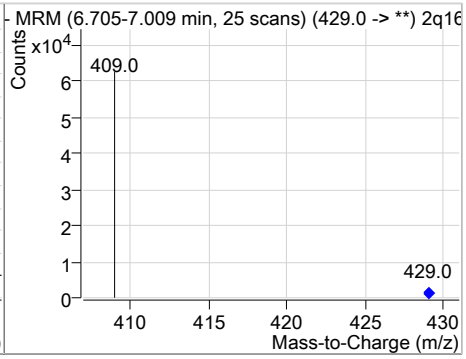




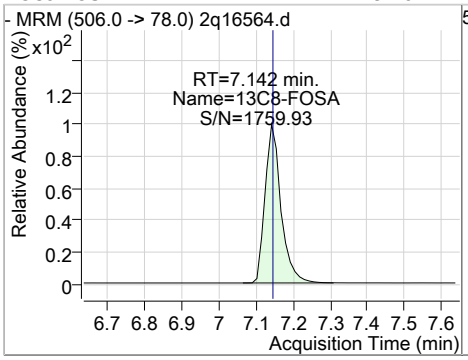
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	17.22	6.79	-0.01	45518				

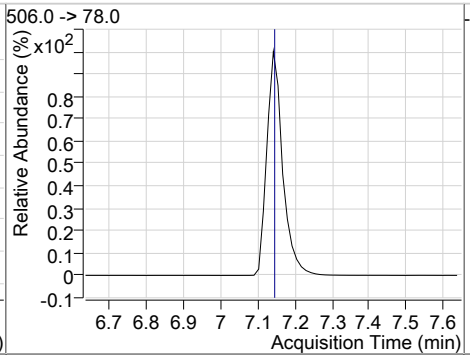


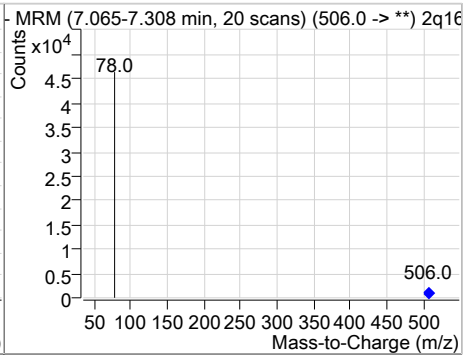




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.48	7.14	0.00	34292				

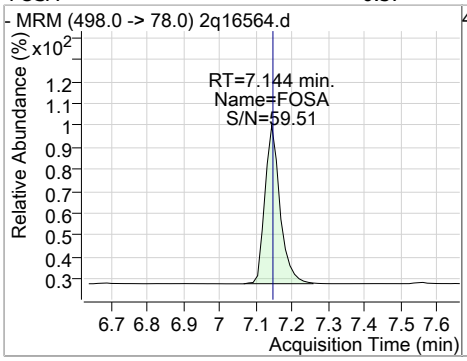


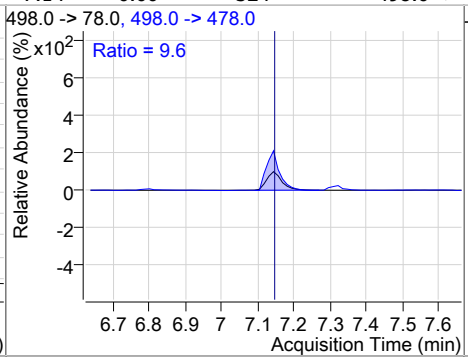


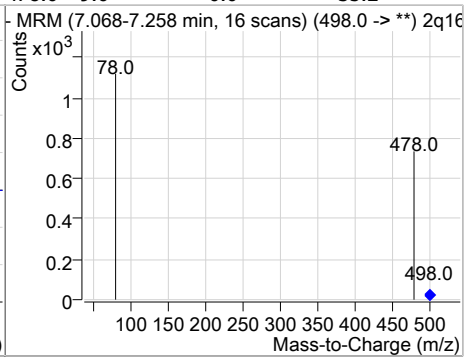


Perfluorinated Compounds by LC/MS/MS

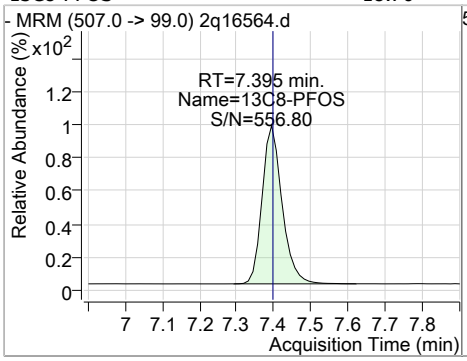
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.37	7.14	0.00	324	498.0 -> 478.0	9.6	0.0	35.2

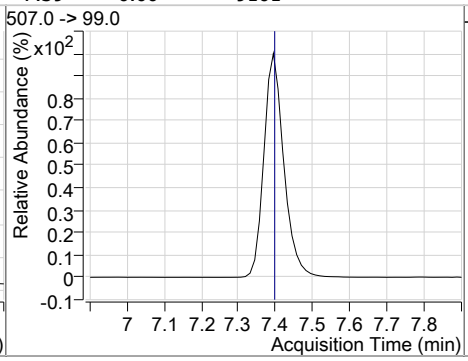


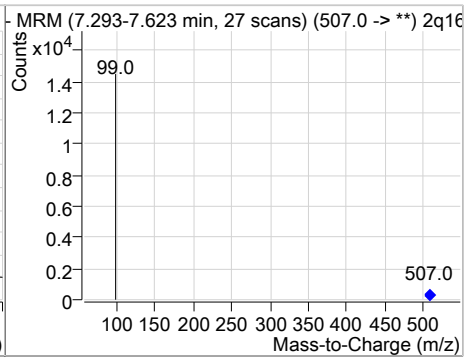




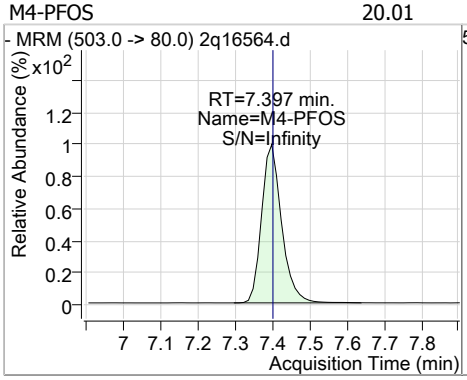
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.70	7.39	0.00	9161				

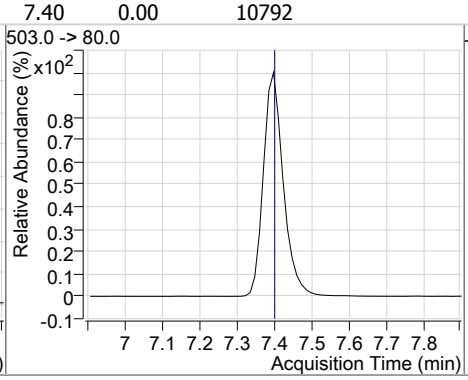


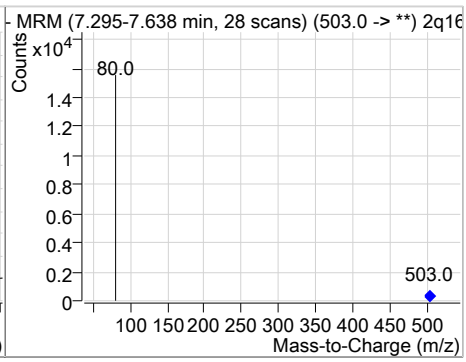




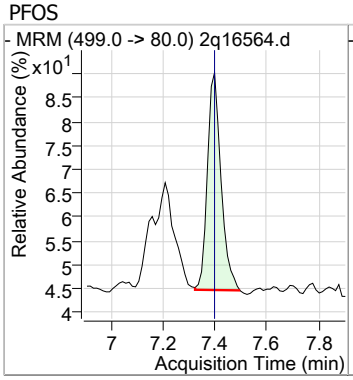
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.01	7.40	0.00	10792				

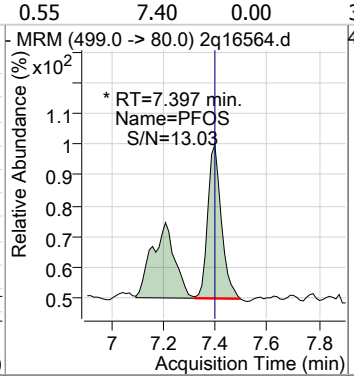


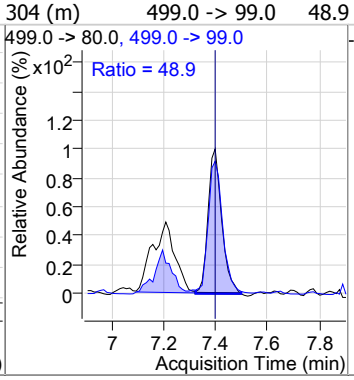


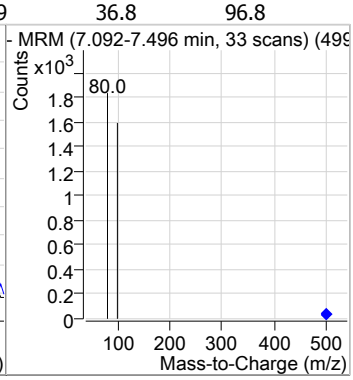


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.55	7.40	0.00	304 (m)	499.0 -> 99.0	48.9	36.8	96.8



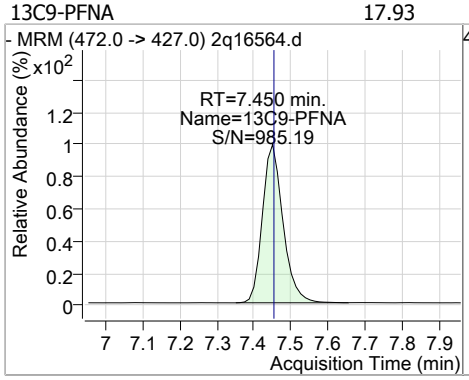


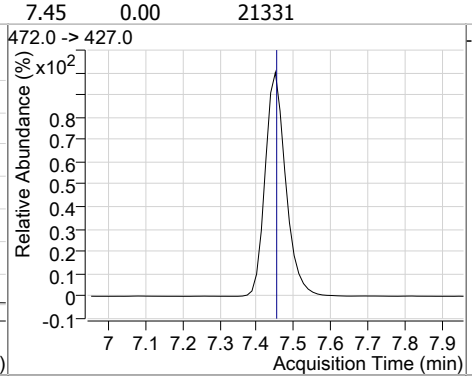


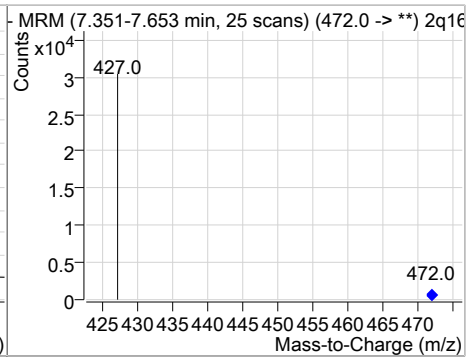


Perfluorinated Compounds by LC/MS/MS

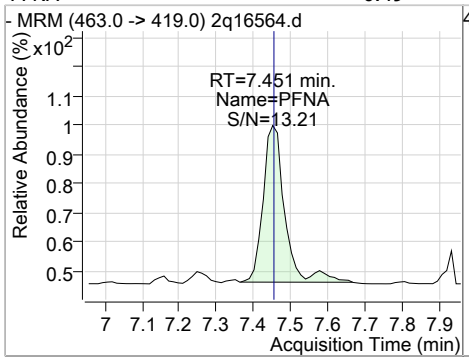
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	17.93	7.45	0.00	21331				

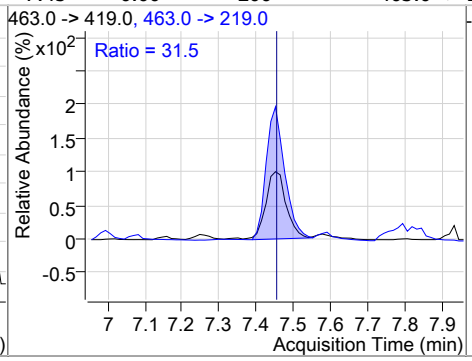


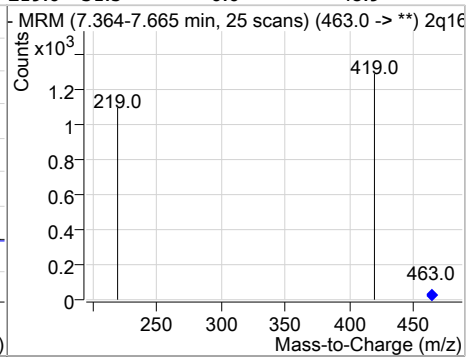




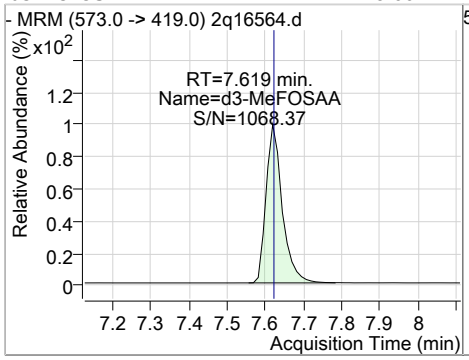
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.49	7.45	0.00	206	463.0 -> 219.0	31.5	0.0	48.9

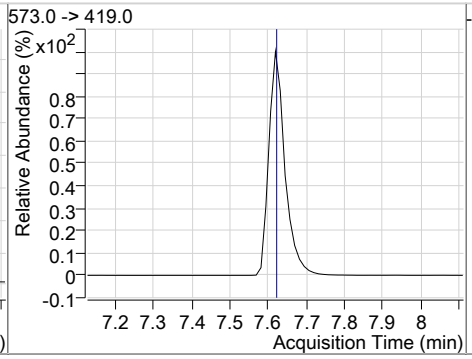


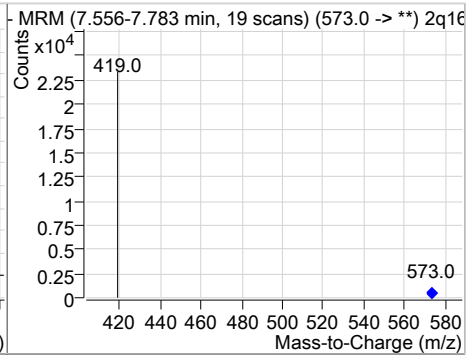




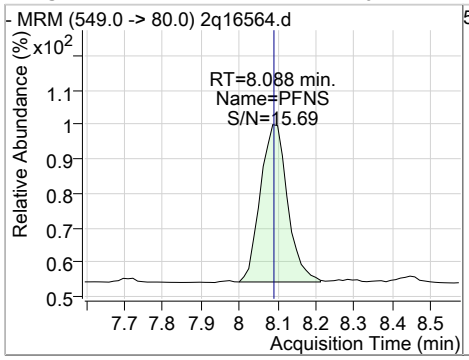
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.66	7.62	0.00	16382				

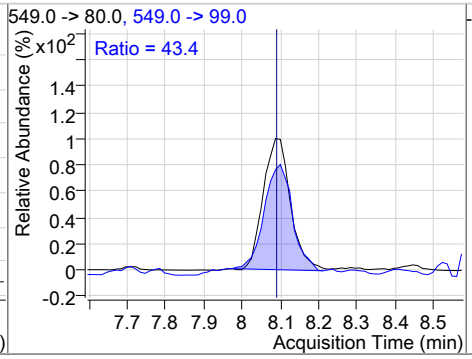


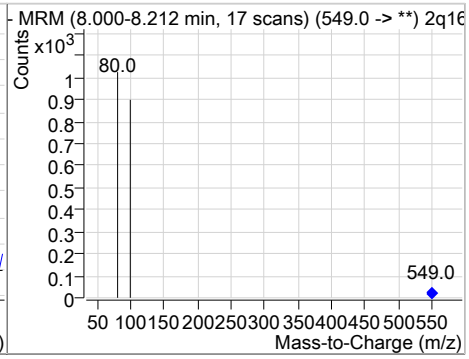




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.44	8.09	0.00	181	549.0 -> 99.0	43.4	22.2	82.2

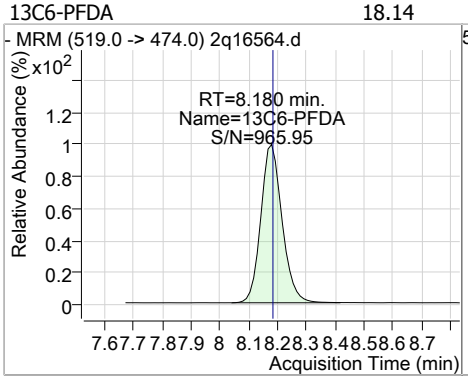


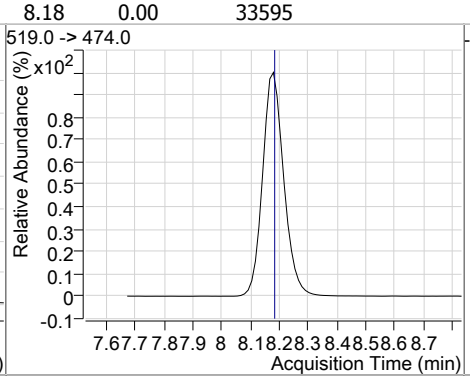


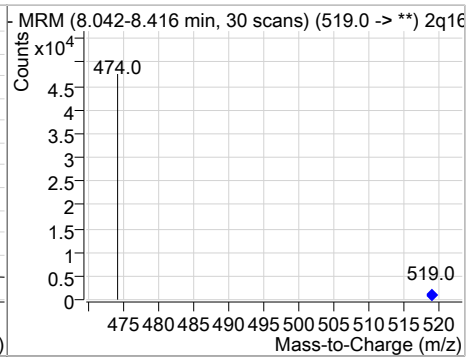


Perfluorinated Compounds by LC/MS/MS

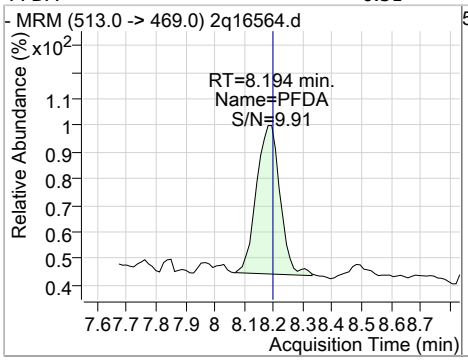
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	18.14	8.18	0.00	33595				

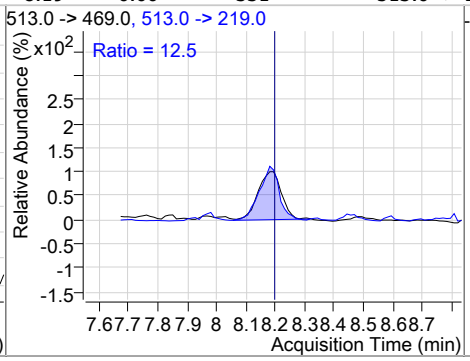


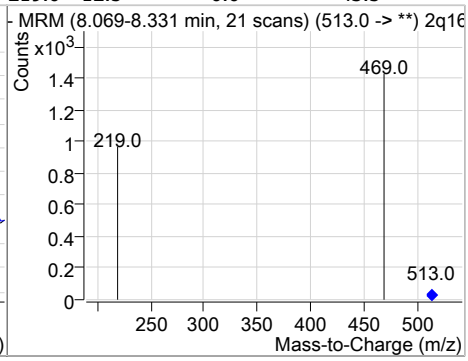




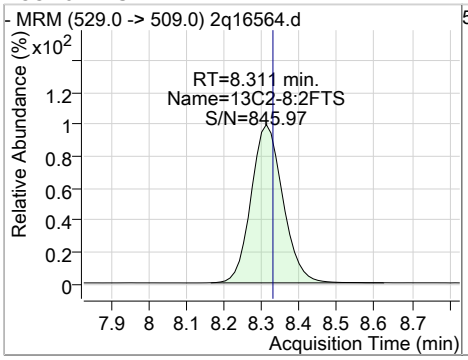
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.51	8.19	0.00	331	513.0 -> 219.0	12.5	0.0	43.5

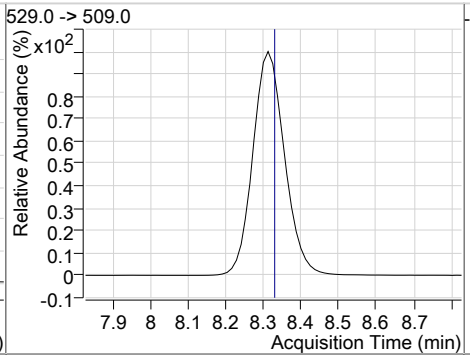


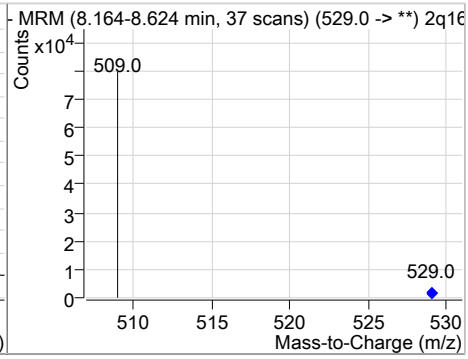




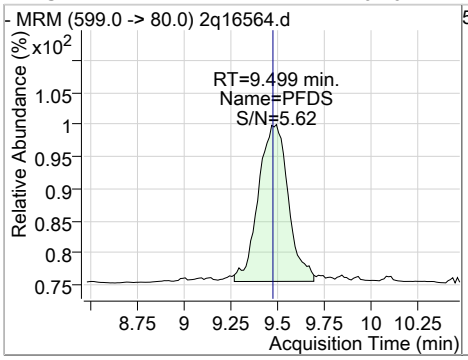
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	17.42	8.31	-0.01	56542				

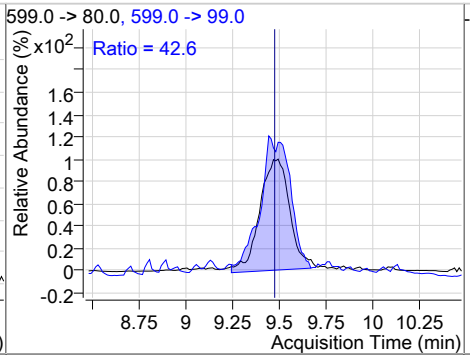


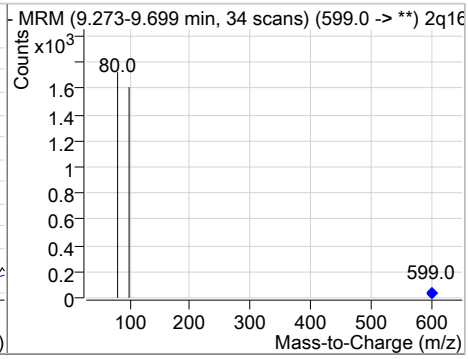




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.46	9.50	0.01	156	599.0 -> 99.0	42.6	4.8	64.8

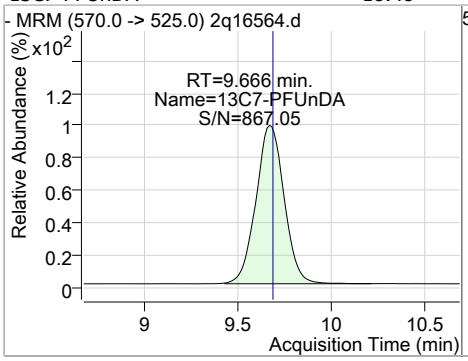


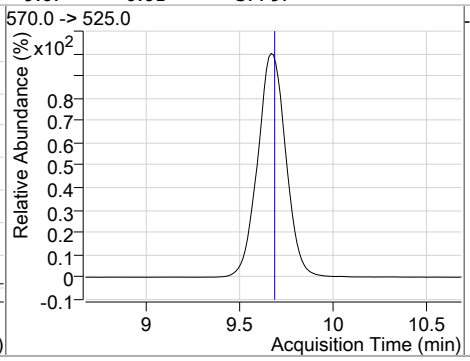


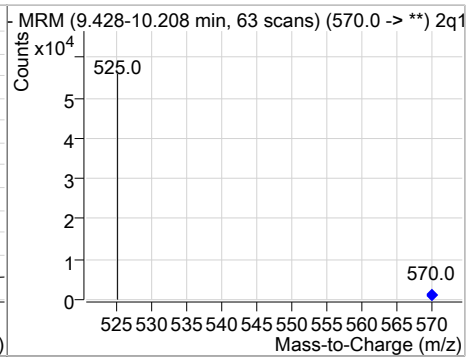


Perfluorinated Compounds by LC/MS/MS

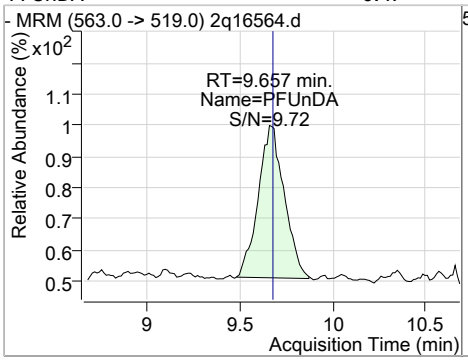
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.48	9.67	-0.01	37797				

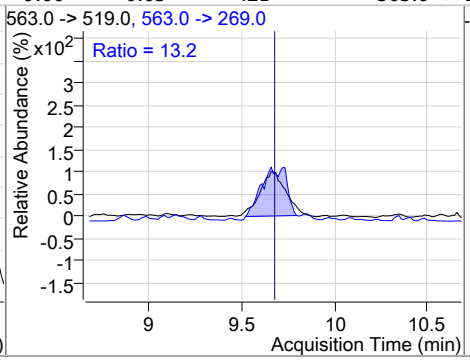


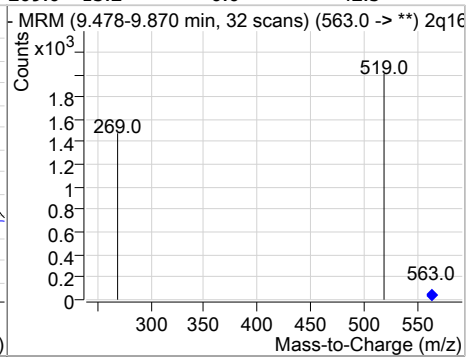




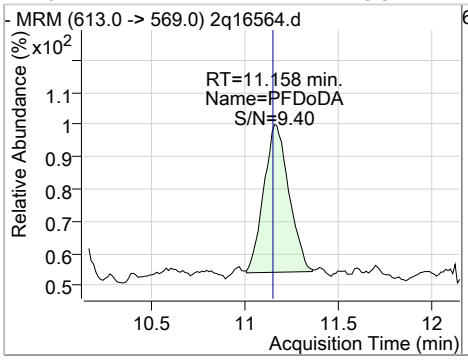
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.47	9.66	-0.03	421	563.0 -> 269.0	13.2	0.0	42.5

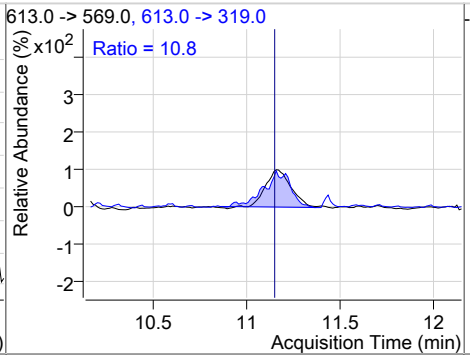


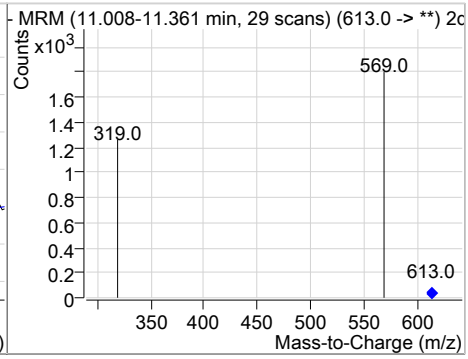




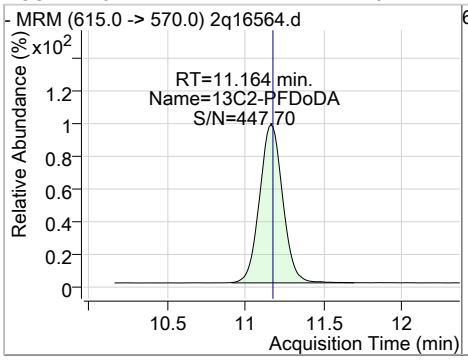
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.54	11.16	0.01	370	613.0 -> 319.0	10.8	0.0	40.5

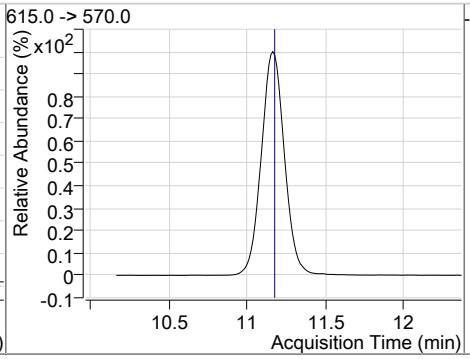


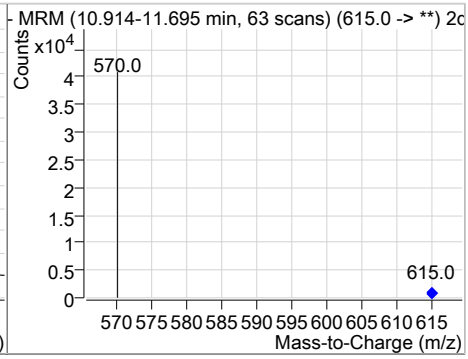




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.11	11.16	0.00	26542				

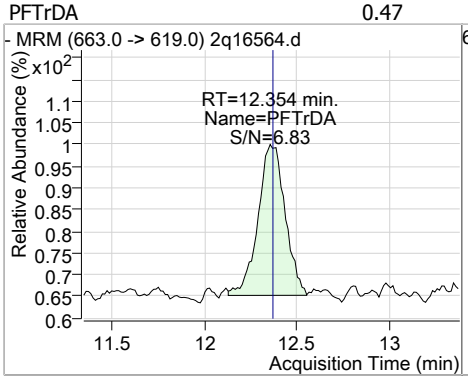


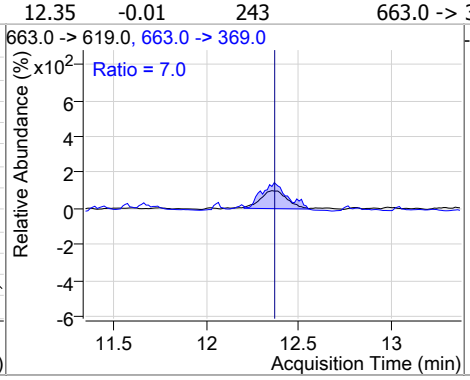


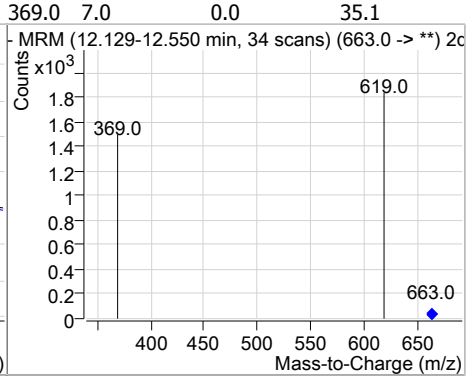


Perfluorinated Compounds by LC/MS/MS

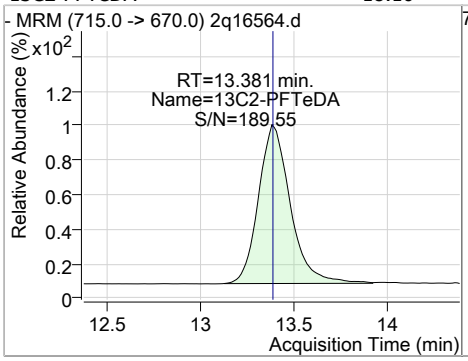
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.47	12.35	-0.01	243	663.0 -> 369.0	7.0	0.0	35.1

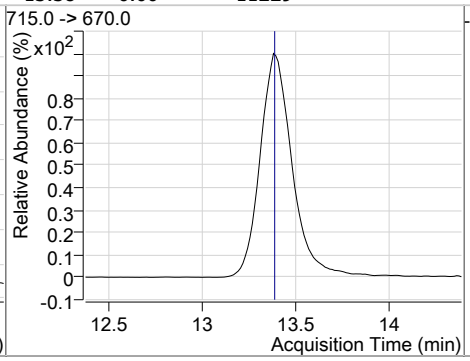


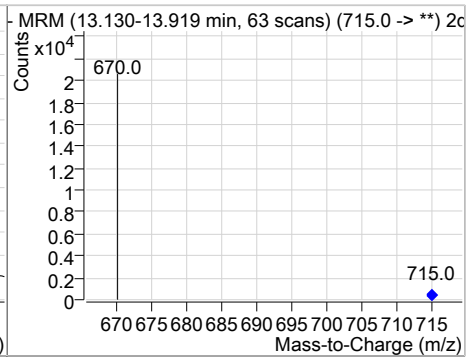




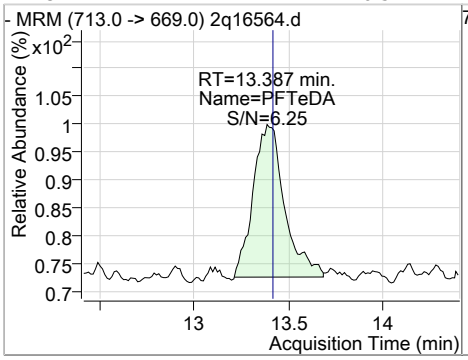
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	18.10	13.38	0.00	11229				

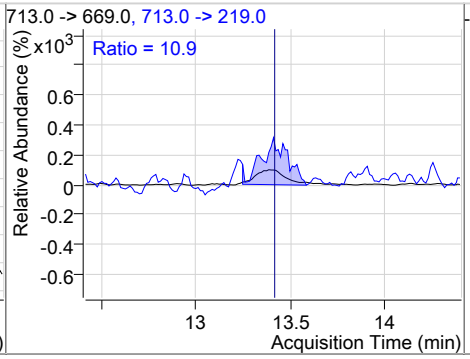


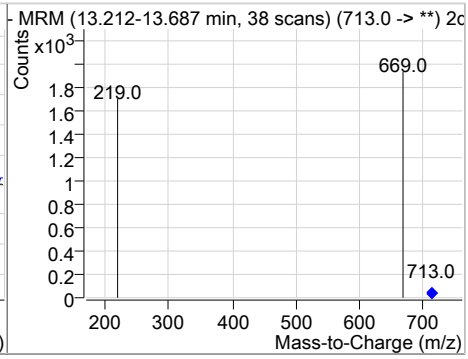




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.54	13.39	-0.03	193	713.0 -> 219.0	10.9	0.0	34.2







Manual Integration Approval Summary

Sample Number:	S2Q291-IC291	**Method:**	EPA 537M QSM5.1 B-15
Lab FileID:	2Q16564.D	**Analyst approved:**	07/06/18 10:17 Natasha Gumtie
Injection Time:	07/05/18 16:31	**Supervisor approved:**	07/06/18 17:13 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.08	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.40	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/06/18 17:13

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16565.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/5/2018 4:50:52 PM
Sample Name : ic291-1
Vial : Vial 3
DA Method File : PFC_ID_070518_S2Q291.quantmethod.xml
Batch Name : s2q291.batch.bin
Sample Information : op70743,S2Q291,130,,,1.0,1,water

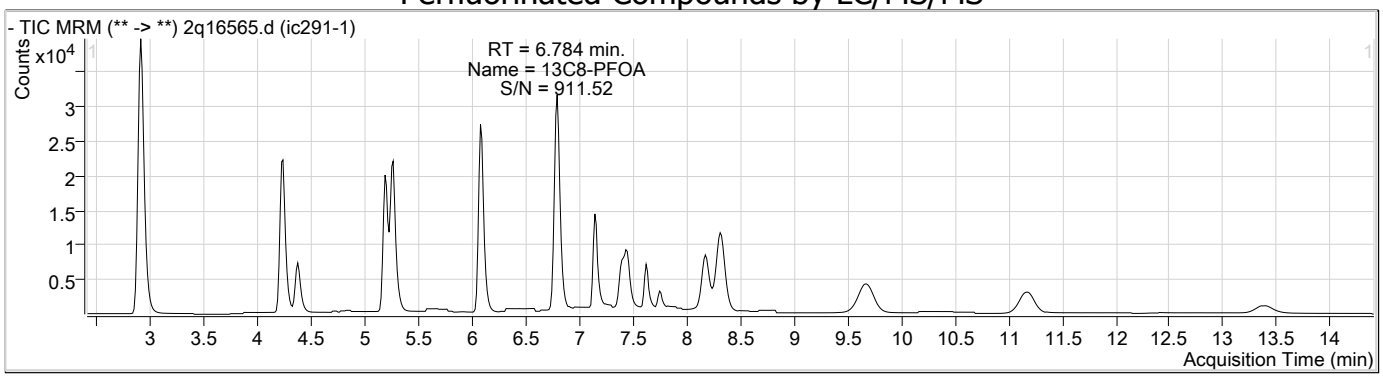
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.785	415.0 -> 370.0	24136	20.00	µg/L	-0.013
13C4-PFOS	7.397	503.0 -> 80.0	12328	20.00	µg/L	0.000
M4-PFBA	2.903	217.0 -> 172.0	159924	20.00	µg/L	0.000
M5-PFPeA	4.237	268.0 -> 223.0	76588	20.00	µg/L	0.000
M5-PFHxA	5.265	318.0 -> 273.0	69353	20.00	µg/L	0.000
M4-PFHpA	6.079	367.0 -> 322.0	68207	20.00	µg/L	-0.013
M8-PFOA	6.784	421.0 -> 376.0	36643	20.00	µg/L	-0.013
M9-PFNA	7.450	472.0 -> 427.0	25611	20.00	µg/L	0.000
M6-PFDA	8.180	519.0 -> 474.0	39528	20.00	µg/L	0.000
M7-PFUnDA	9.678	570.0 -> 525.0	42838	20.00	µg/L	0.000
M2-PFDoDA	11.177	615.0 -> 570.0	31048	20.00	µg/L	0.008
M2-PFTeDA	13.393	715.0 -> 670.0	12907	20.00	µg/L	0.012
M8-FOSA	7.142	506.0 -> 78.0	38897	20.00	µg/L	0.000
M3-PFBS	4.368	302.0 -> 99.0	23045	20.00	µg/L	0.000
M3-PFHxS	6.073	402.0 -> 99.0	20987	20.00	µg/L	-0.013
M8-PFOS	7.395	507.0 -> 99.0	10406	20.00	µg/L	0.000
M2-4:2FTS	5.185	329.0 -> 309.0	64638	20.00	µg/L	-0.013
M2-6:2FTS	6.793	429.0 -> 409.0	52224	20.00	µg/L	-0.015
M2-8:2FTS	8.311	529.0 -> 509.0	63917	20.00	µg/L	-0.015
M3-MeFOSAA	7.619	573.0 -> 419.0	18082	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.185	329.0 -> 309.0	64659	19.72	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.6%		
13C2-6:2FTS	6.793	429.0 -> 409.0	52220	19.76	µg/L	-0.015
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.8%		
13C2-8:2FTS	8.311	529.0 -> 509.0	63883	19.69	µg/L	-0.015
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.4%		
13C2-PFDoDA	11.177	615.0 -> 570.0	31092	21.22	µg/L	0.008
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.1%		
13C2-PFTeDA	13.393	715.0 -> 670.0	12794	20.62	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.1%		
13C3-PFBS	4.368	302.0 -> 99.0	23058	20.86	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.3%		
13C3-PFHxS	6.073	402.0 -> 99.0	21011	20.98	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.9%		
13C4-PFBA	2.903	217.0 -> 172.0	159781	20.87	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.3%		
13C4-PFHpA	6.079	367.0 -> 322.0	68205	21.17	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.8%		
13C5-PFHxA	5.265	318.0 -> 273.0	69366	21.17	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.8%		
13C5-PFPeA	4.237	268.0 -> 223.0	76581	21.02	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.1%		
13C6-PFDA	8.180	519.0 -> 474.0	39520	21.34	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.7%		

Perfluorinated Compounds by LC/MS/MS

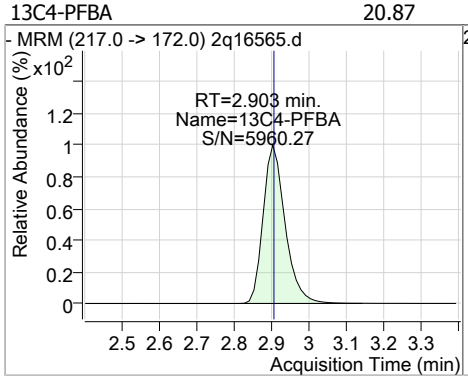
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	9.678	570.0 -> 525.0	42852	20.95	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.8%			
13C8-FOSA	7.142	506.0 -> 78.0	38900	22.10	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.5%			
13C8-PFOA	6.784	421.0 -> 376.0	36653	21.05	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.2%			
13C8-PFOS	7.395	507.0 -> 99.0	10407	21.24	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.2%			
13C9-PFNA	7.450	472.0 -> 427.0	25624	21.54	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.7%			
d3-MeFOSAA	7.619	573.0 -> 419.0	18080	20.59	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.0%			
M2-PFOA	6.785	415.0 -> 370.0	24128	19.99	ng/ml		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.397	503.0 -> 80.0	12323	20.00	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
Target Compounds							**QValue**
4:2FTS	5.187	327.0 -> 307.0	1713	1.00	µg/L		88
6:2FTS	6.794	427.0 -> 407.0	1285	0.96	µg/L		82
8:2FTS	8.313	527.0 -> 507.0	1776	1.00	µg/L		74
EtFOSAA	7.756	584.0 -> 419.0	357	1.22	µg/L		65
FOSA	7.144	498.0 -> 78.0	964	0.98	µg/L		93
MeFOSAA	7.620	570.0 -> 419.0	321	1.01	µg/L		95
PFBA	2.912	213.0 -> 169.0	1291	1.00	µg/L		100
PFBS	4.371	299.0 -> 80.0	1508	0.97	µg/L		95
PFDA	8.181	513.0 -> 469.0	719	0.94	µg/L		98
PFDoDA	11.158	613.0 -> 569.0	854	1.07	µg/L		91
PFDS	9.499	599.0 -> 80.0	389	1.01	µg/L		92
PFHpA	6.082	363.0 -> 319.0	2507	1.03	µg/L		93
PFHpS	6.753	449.0 -> 80.0	563	0.93	µg/L		92
PFHxA	5.268	313.0 -> 269.0	1197	1.06	µg/L		92
PFHxS	6.076	399.0 -> 80.0	1099	0.94	µg/L	m	99
PFNA	7.451	463.0 -> 419.0	508	1.00	µg/L		85
PFNS	8.088	549.0 -> 80.0	437	0.93	µg/L		93
PFOA	6.786	413.0 -> 369.0	973	1.06	µg/L		91
PFOS	7.397	499.0 -> 80.0	698	1.11	µg/L	#m	62
PFPeA	4.228	263.0 -> 219.0	4323	1.17	µg/L		100
PFPeS	5.308	349.0 -> 80.0	949	1.00	µg/L		96
PFTeDA	13.400	713.0 -> 669.0	434	1.06	µg/L		99
PFTrDA	12.366	663.0 -> 619.0	611	1.02	µg/L		98
PFUnDA	9.670	563.0 -> 519.0	1055	1.05	µg/L		96

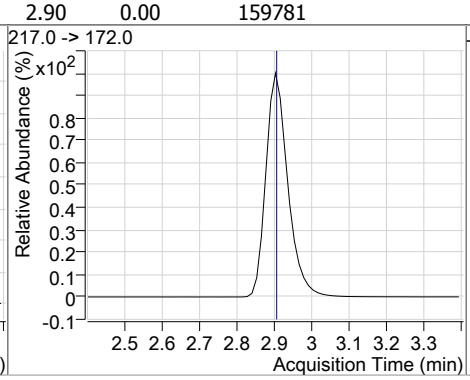
 # = Qualifier out of range, m = manually integrated, + = Area summed

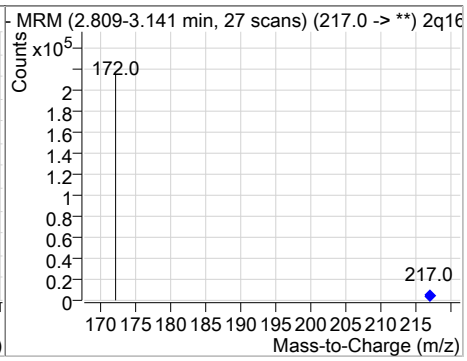
Perfluorinated Compounds by LC/MS/MS



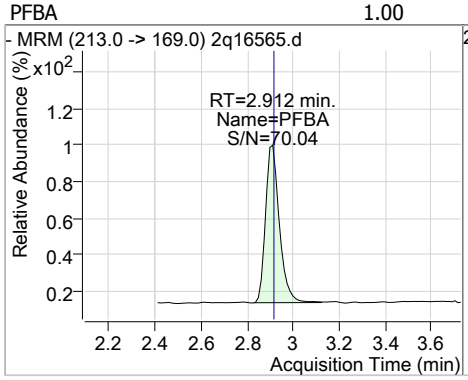
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.87	2.90	0.00	159781				

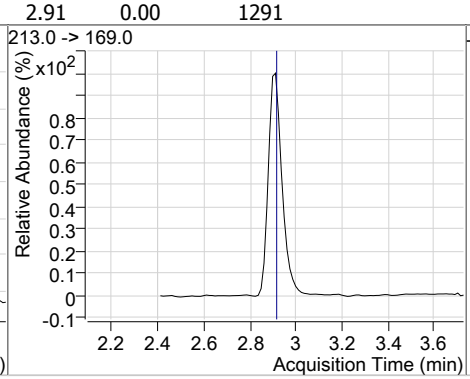


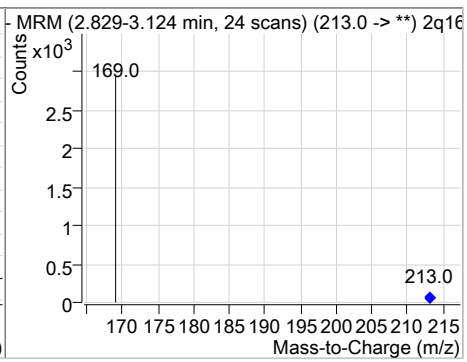




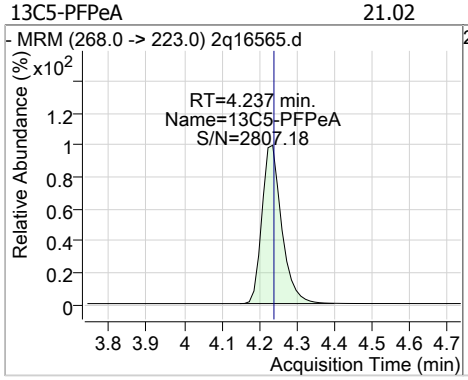
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.00	2.91	0.00	1291				

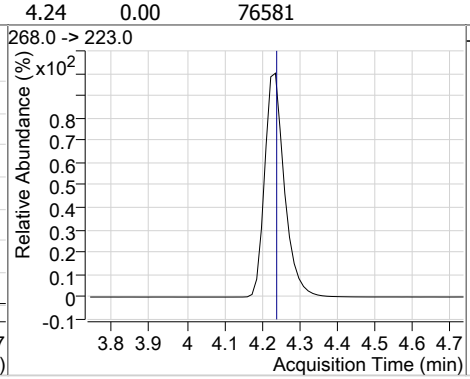


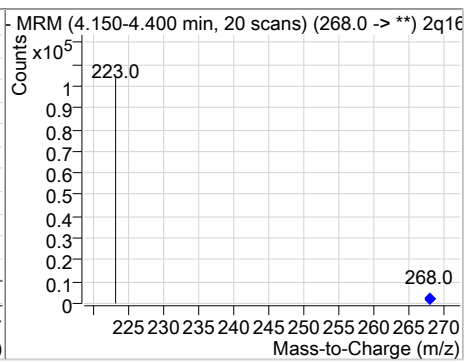




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	21.02	4.24	0.00	76581				

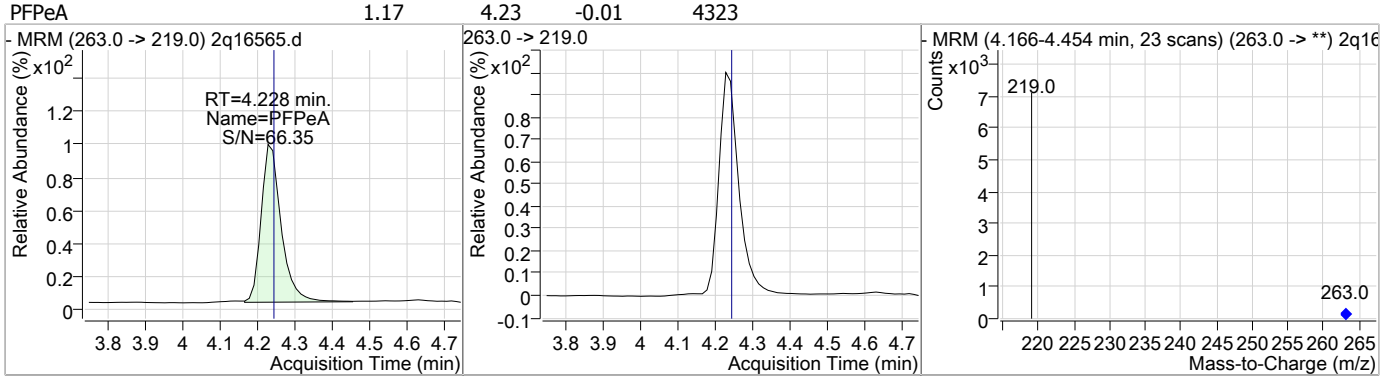




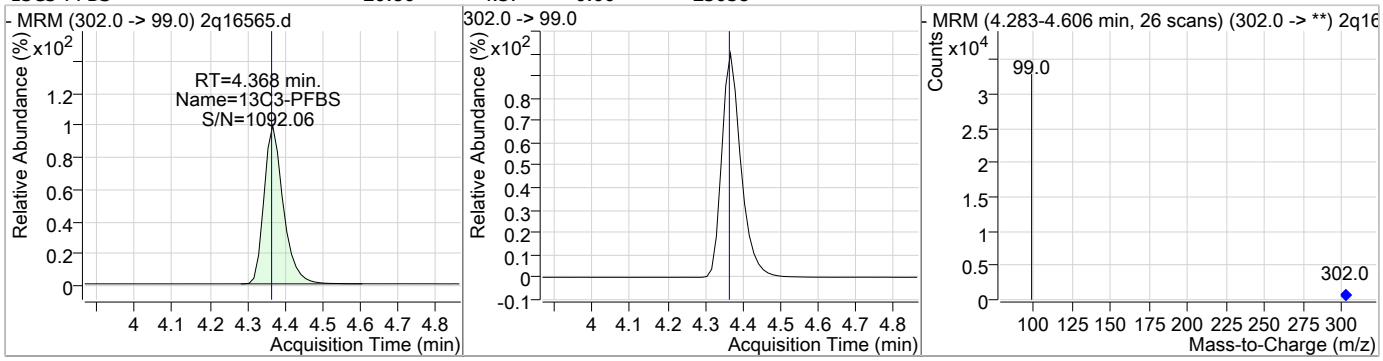


Perfluorinated Compounds by LC/MS/MS

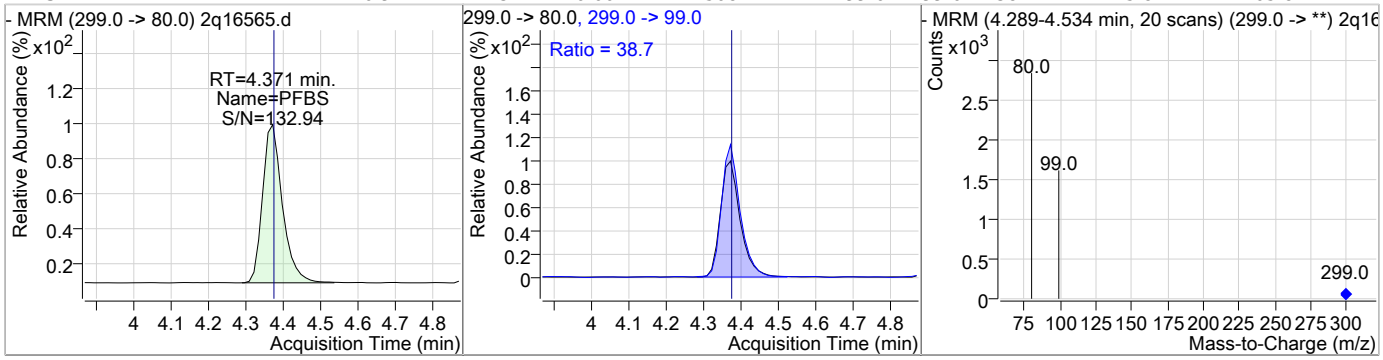
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.17	4.23	-0.01	4323				



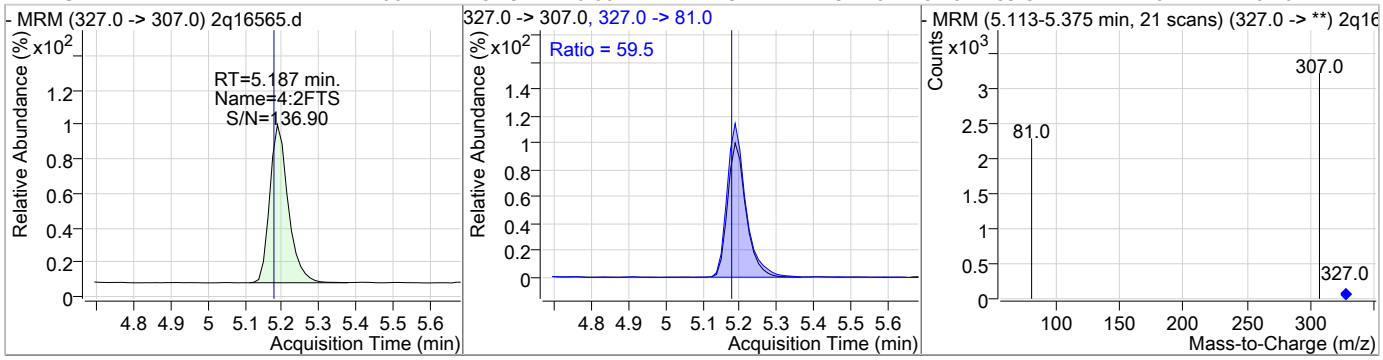
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.86	4.37	0.00	23058				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.97	4.37	0.00	1508	299.0 -> 99.0	38.7	5.8	65.8

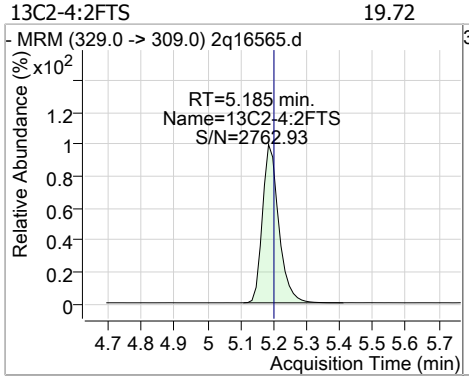


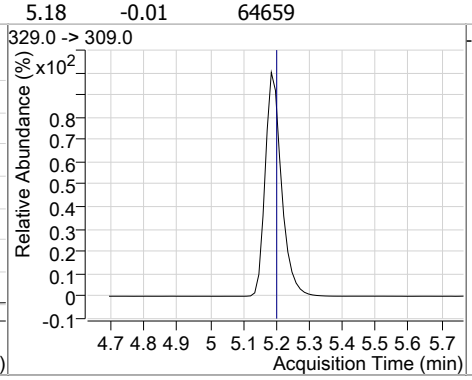
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.00	5.19	0.00	1713	327.0 -> 81.0	59.5	21.0	81.0

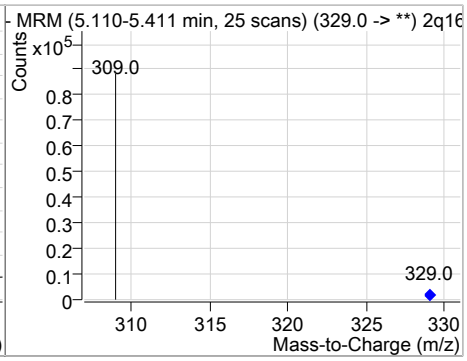


Perfluorinated Compounds by LC/MS/MS

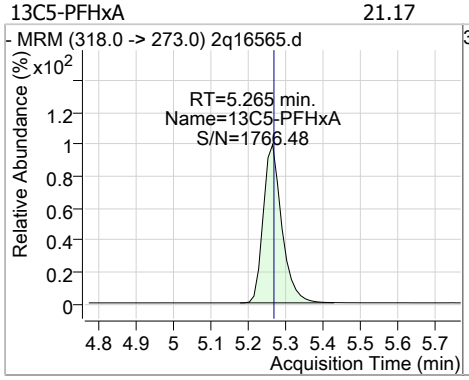
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.72	5.18	-0.01	64659				

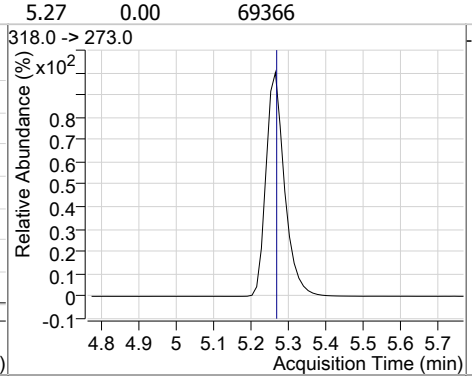


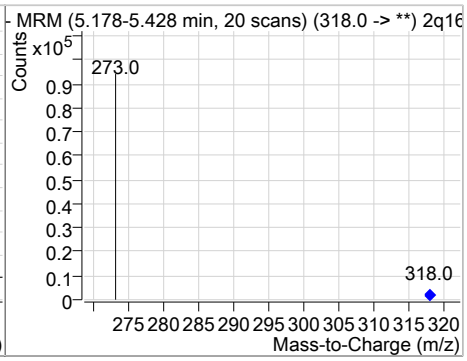




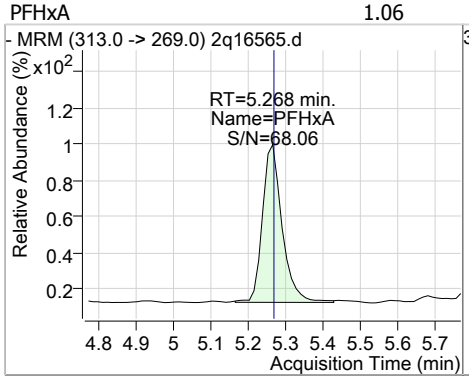
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.17	5.27	0.00	69366				

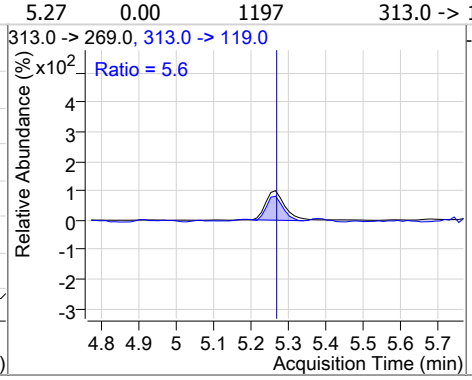


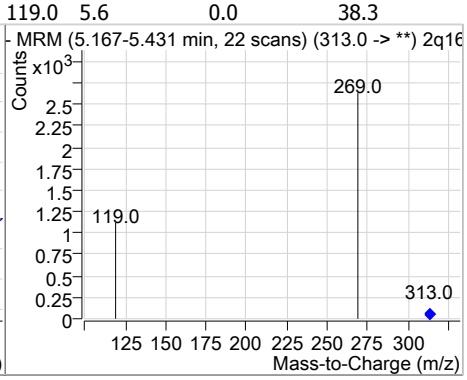




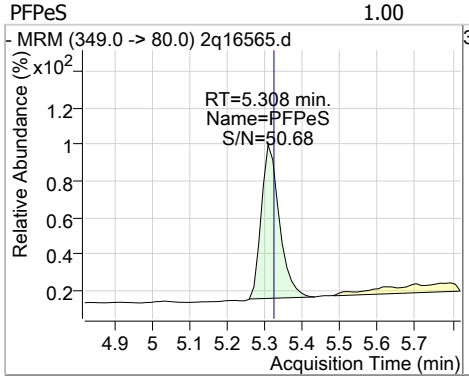
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.06	5.27	0.00	1197	313.0 -> 119.0	5.6	0.0	38.3

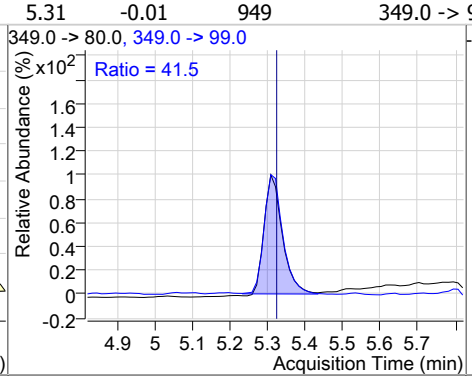


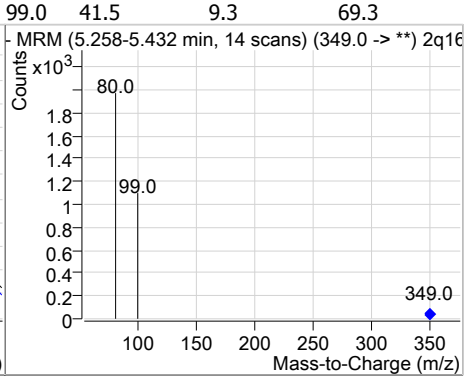




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.00	5.31	-0.01	949	349.0 -> 99.0	41.5	9.3	69.3

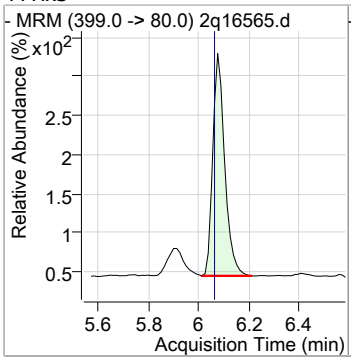


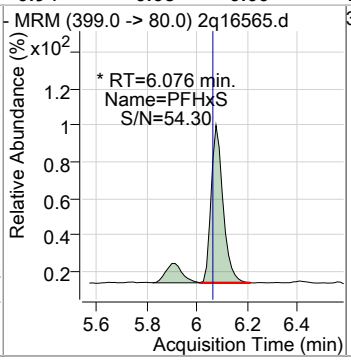


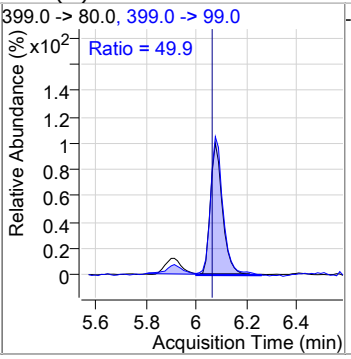


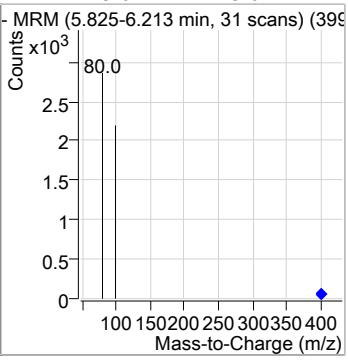
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.94	6.08	0.00	1099 (m)	399.0 -> 99.0	49.9	19.0	79.0

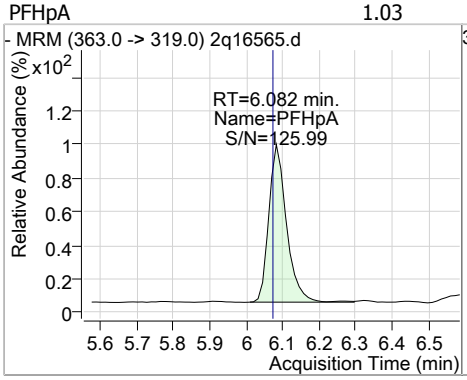


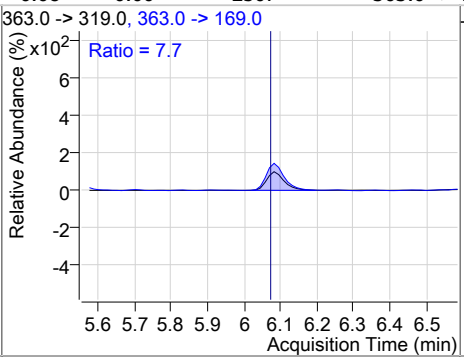


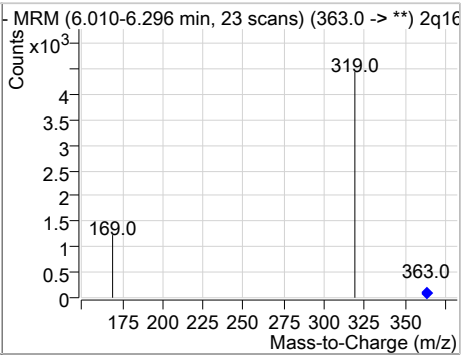




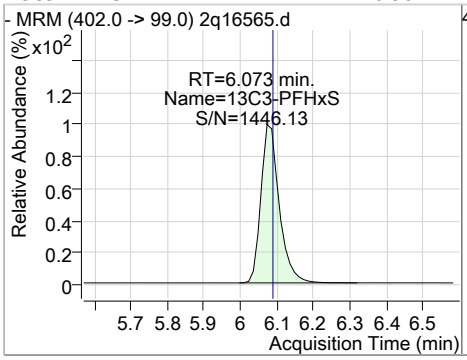
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.03	6.08	0.00	2507	363.0 -> 169.0	7.7	0.0	35.3

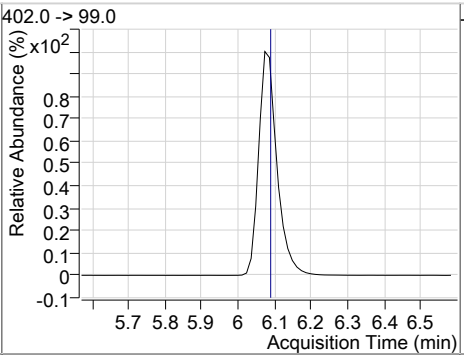


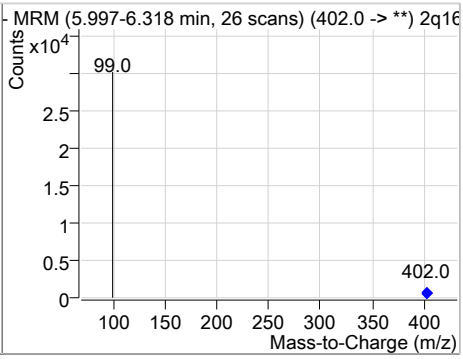




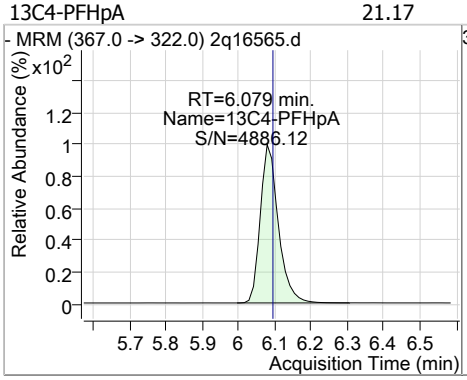
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.98	6.07	-0.01	21011				

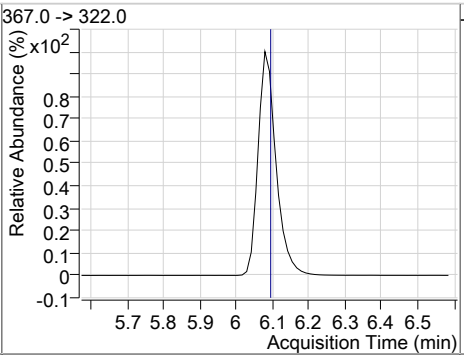


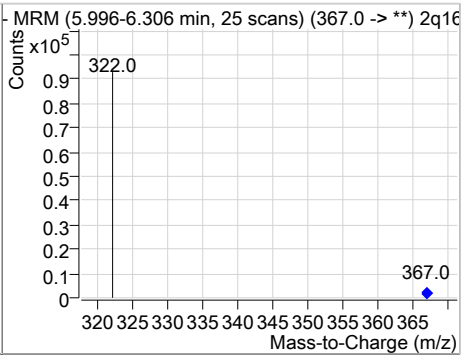




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.17	6.08	-0.01	68205				

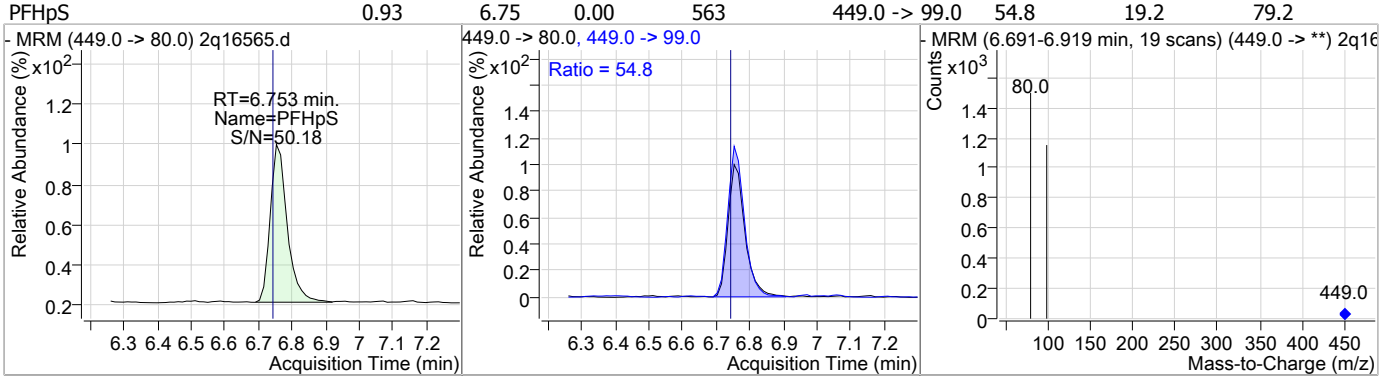




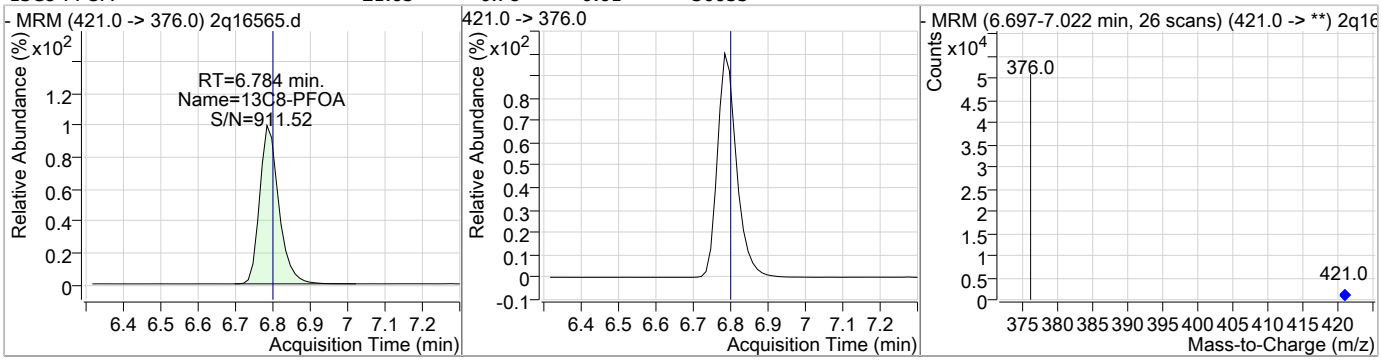


Perfluorinated Compounds by LC/MS/MS

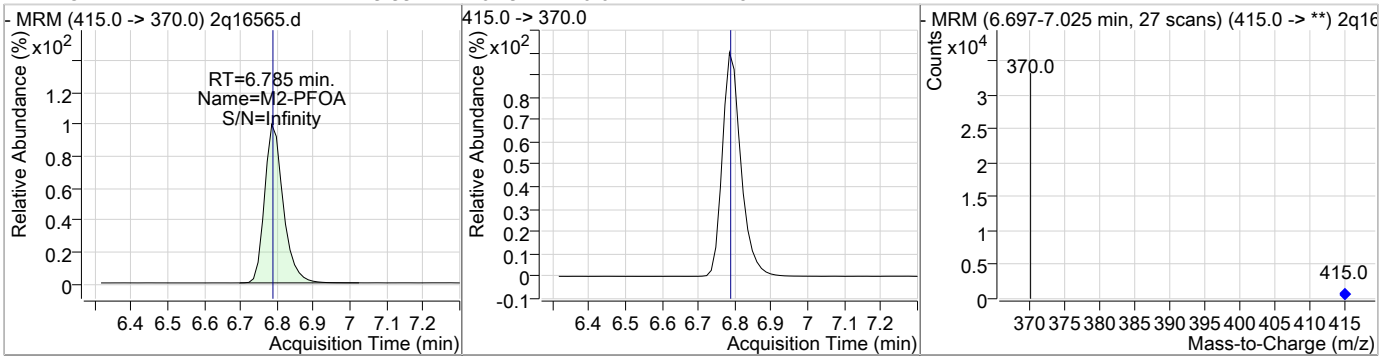
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.93	6.75	0.00	563	449.0 -> 99.0	54.8	19.2	79.2



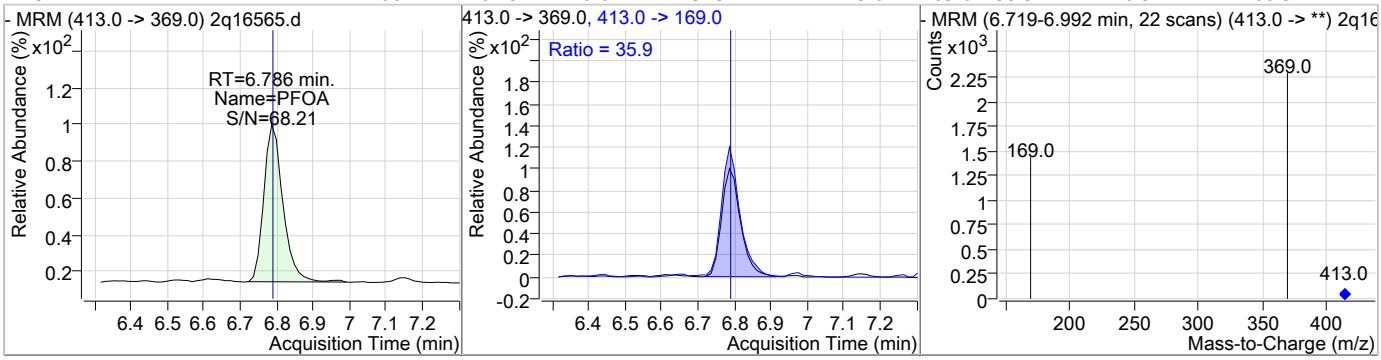
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.05	6.78	-0.01	36653				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	19.99	6.79	-0.01	24128				

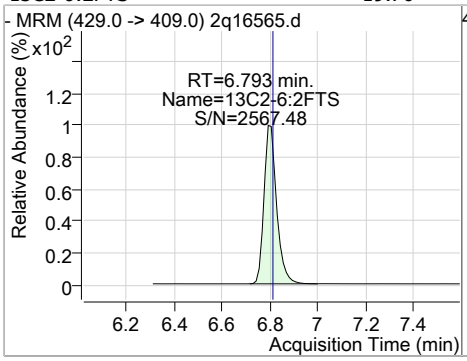


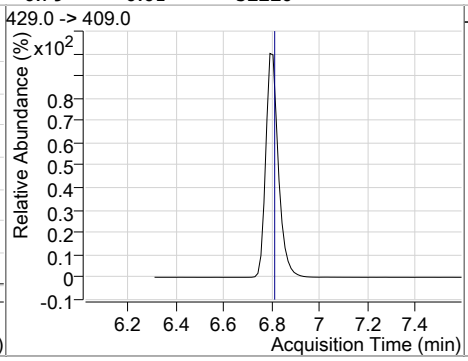
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.06	6.79	-0.01	973	413.0 -> 169.0	35.9	0.9	60.9

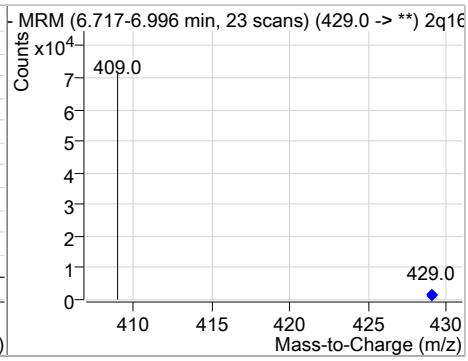


Perfluorinated Compounds by LC/MS/MS

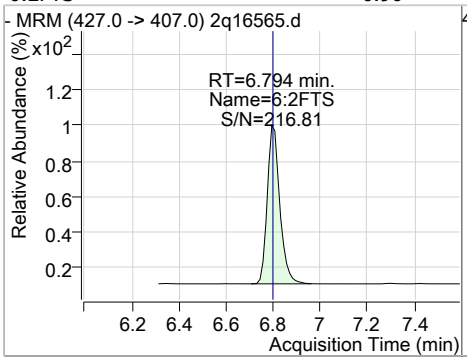
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.76	6.79	-0.01	52220				

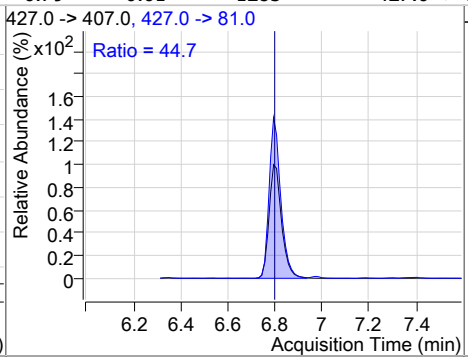


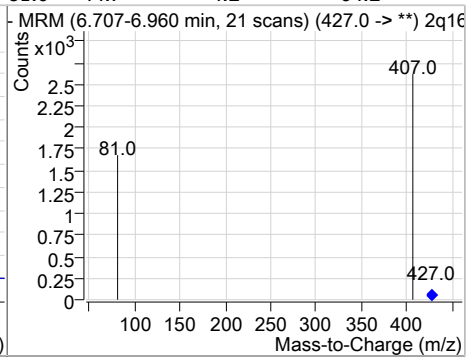




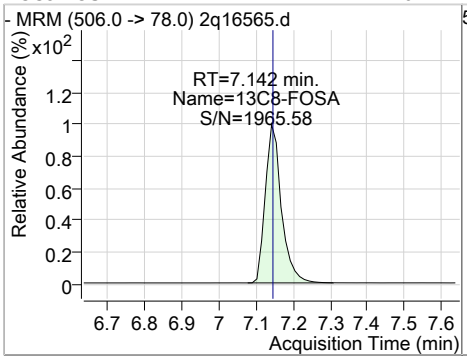
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.96	6.79	-0.01	1285	427.0 -> 81.0	44.7	4.2	64.2

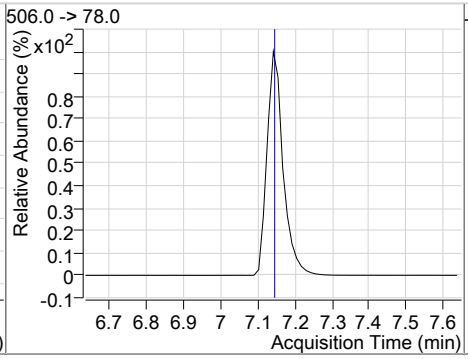


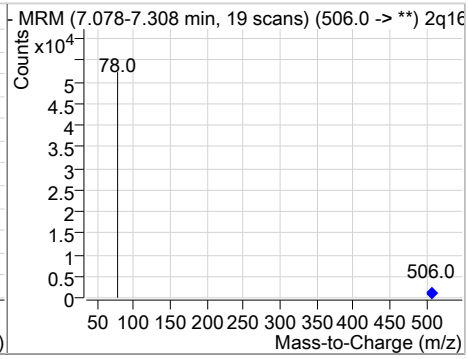




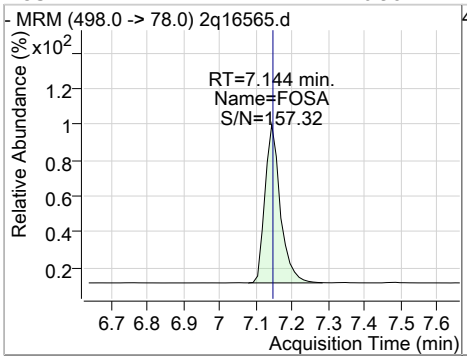
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	22.10	7.14	0.00	38900				

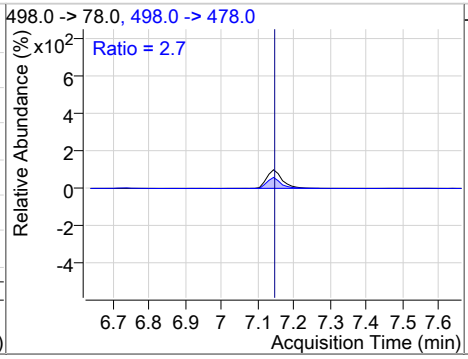


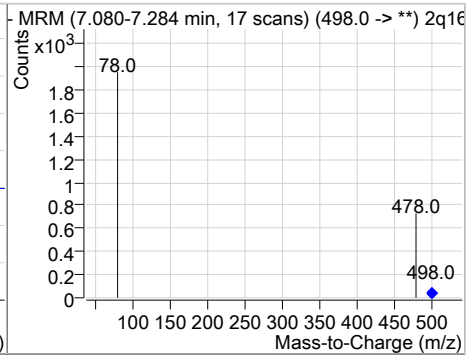




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.98	7.14	0.00	964	498.0 -> 478.0	2.7	0.0	35.2

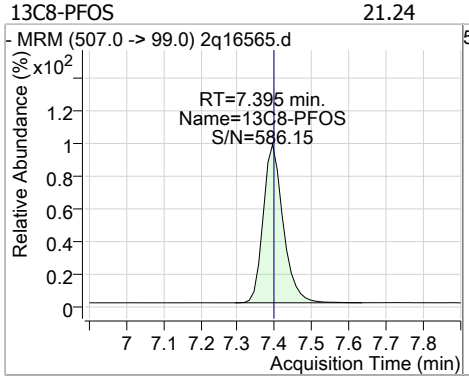


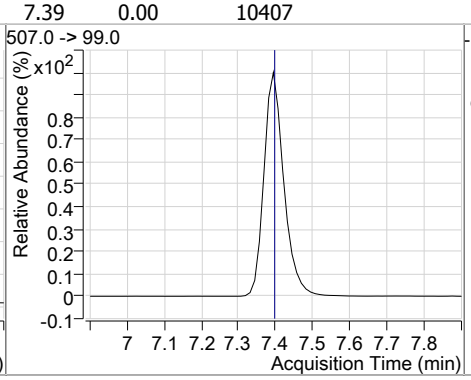


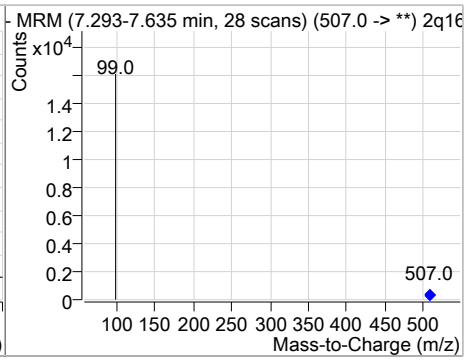


Perfluorinated Compounds by LC/MS/MS

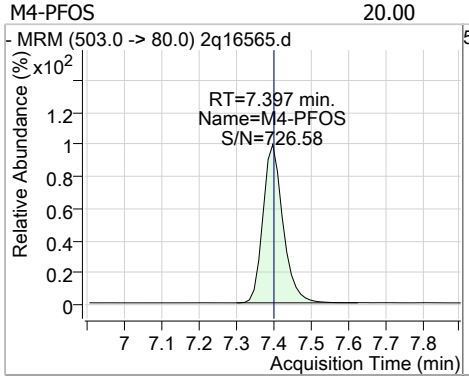
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	21.24	7.39	0.00	10407				

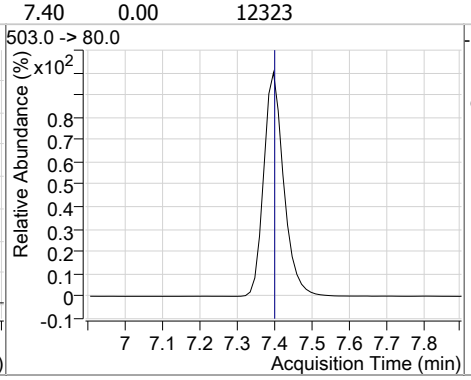


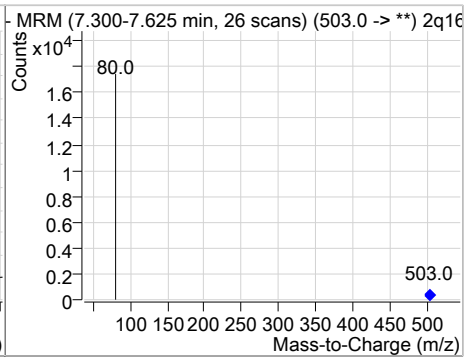




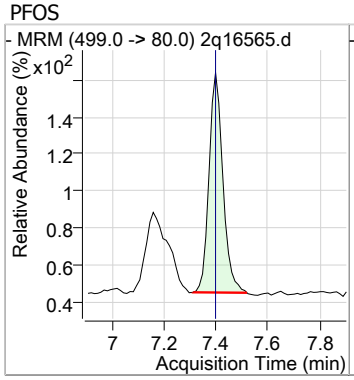
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.00	7.40	0.00	12323				

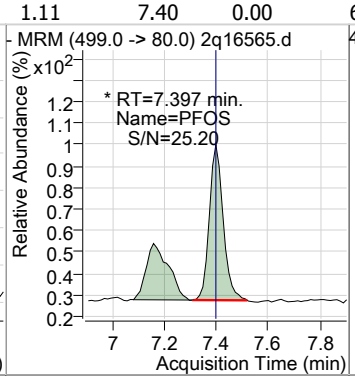


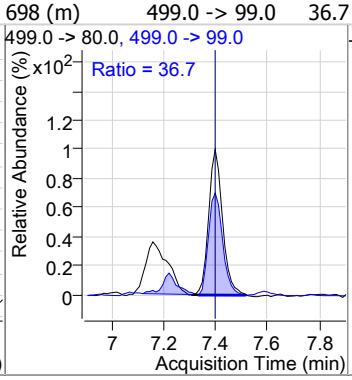


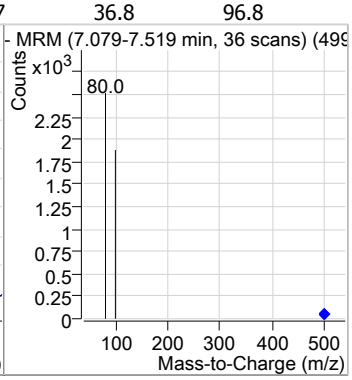


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.11	7.40	0.00	698 (m)	499.0 -> 99.0	36.7	36.8	96.8

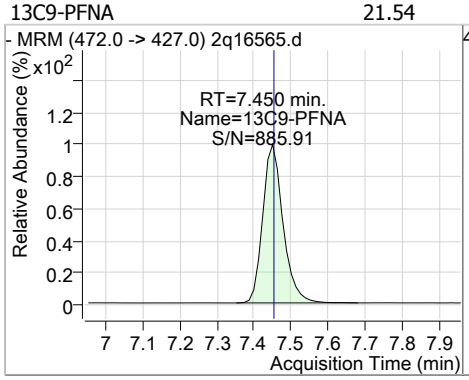


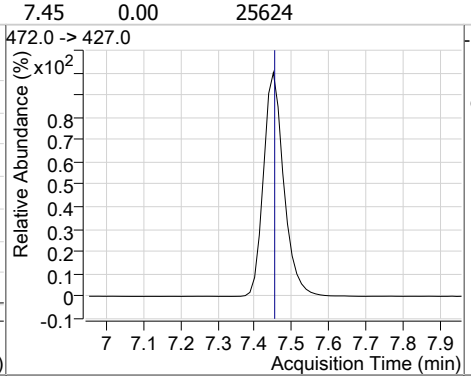


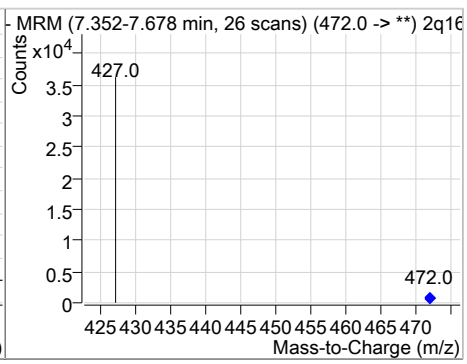




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.54	7.45	0.00	25624				

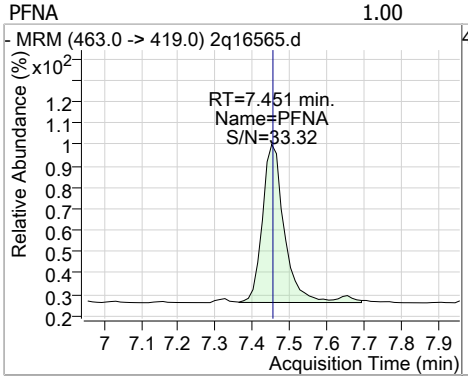


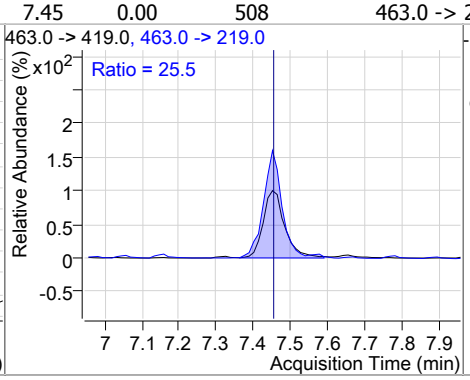


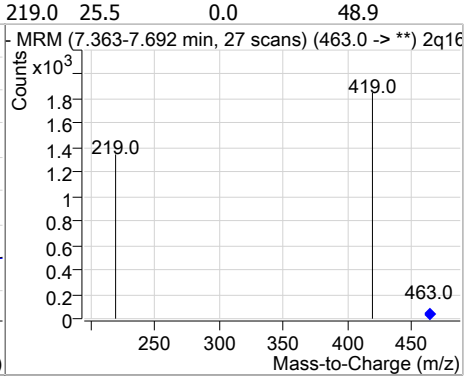


Perfluorinated Compounds by LC/MS/MS

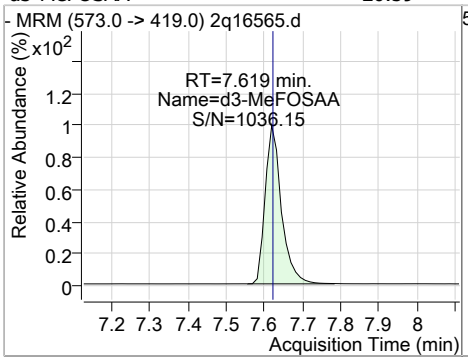
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.00	7.45	0.00	508	463.0 -> 219.0	25.5	0.0	48.9

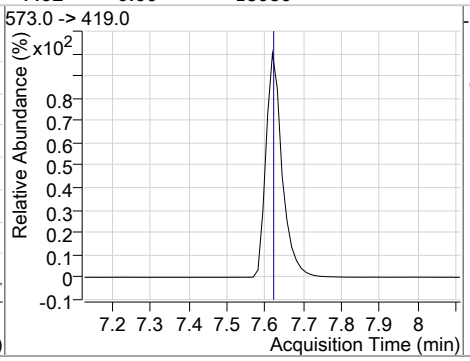


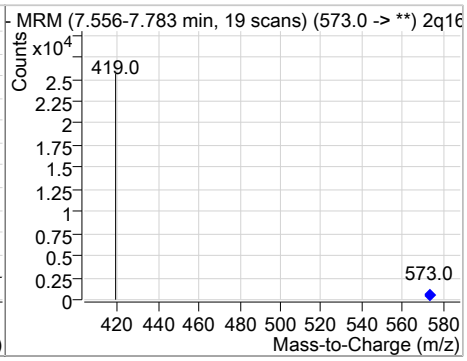




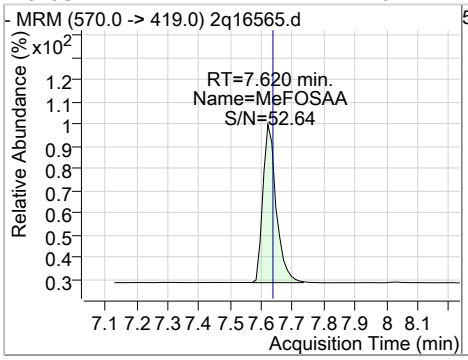
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.59	7.62	0.00	18080				

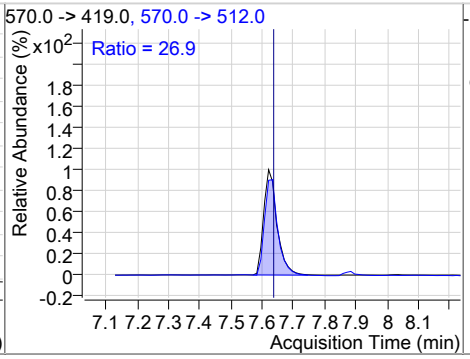


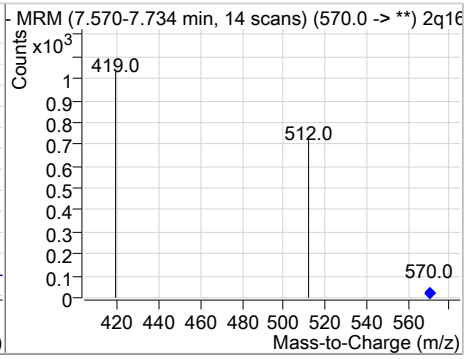




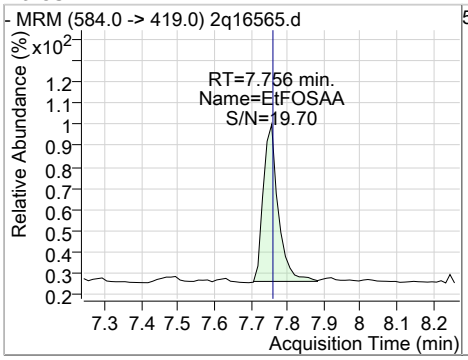
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	1.01	7.62	-0.01	321	570.0 -> 512.0	26.9	0.0	59.6

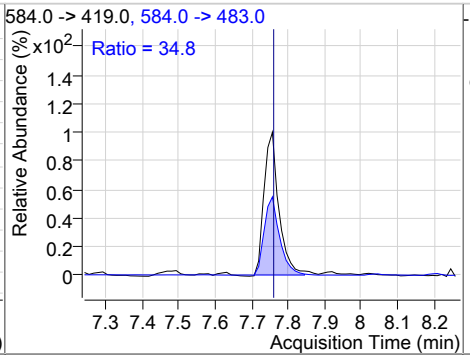


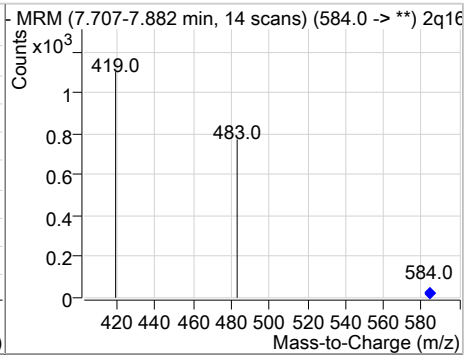




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.22	7.76	0.00	357	584.0 -> 483.0	34.8	31.9	91.9

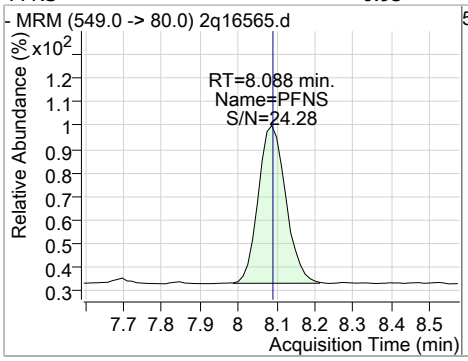


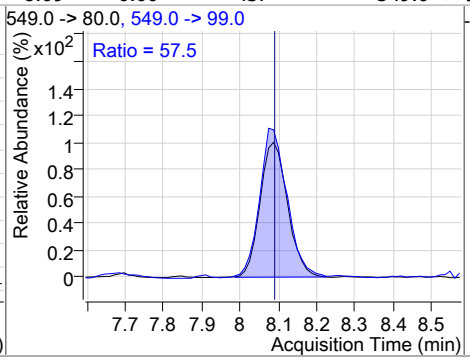


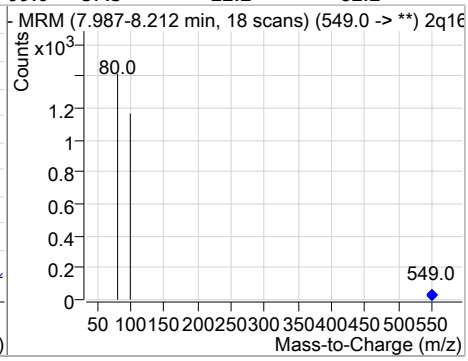


Perfluorinated Compounds by LC/MS/MS

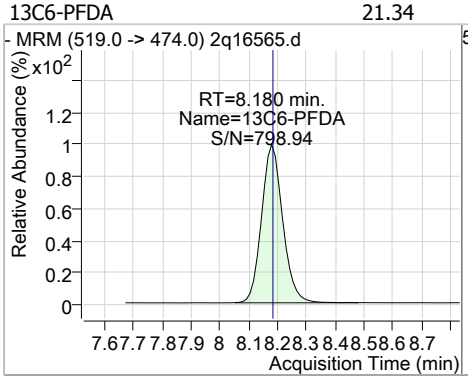
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.93	8.09	0.00	437	549.0 -> 99.0	57.5	22.2	82.2

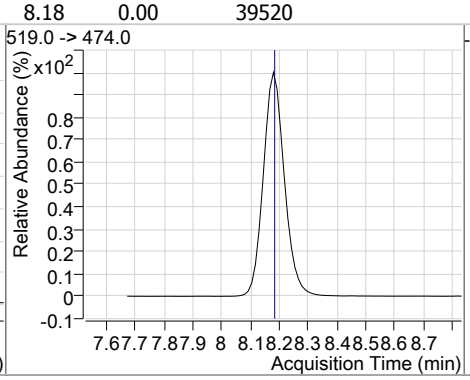


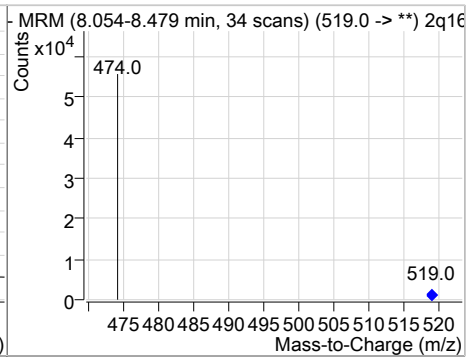




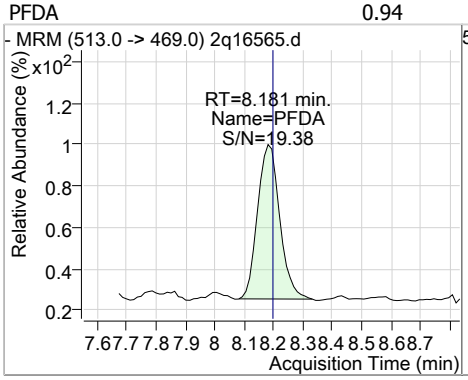
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.34	8.18	0.00	39520				

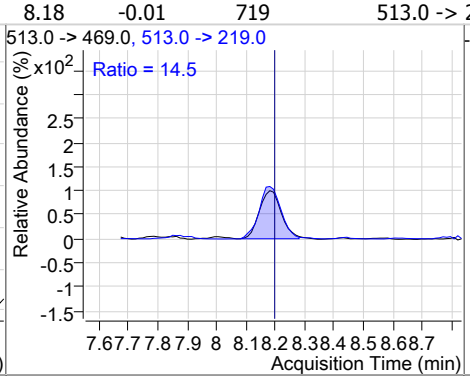


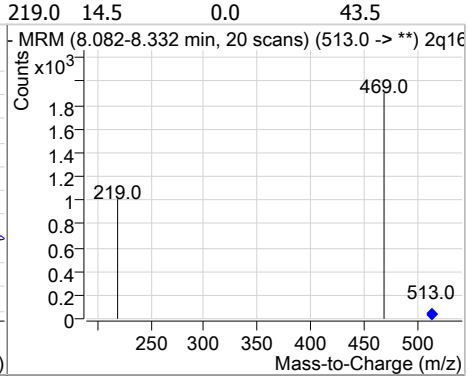




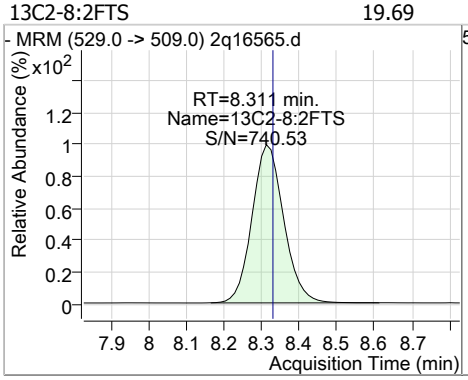
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.94	8.18	-0.01	719	513.0 -> 219.0	14.5	0.0	43.5

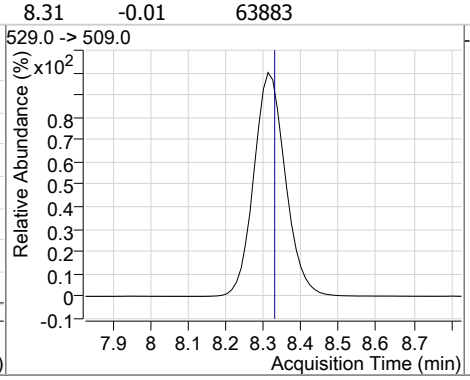


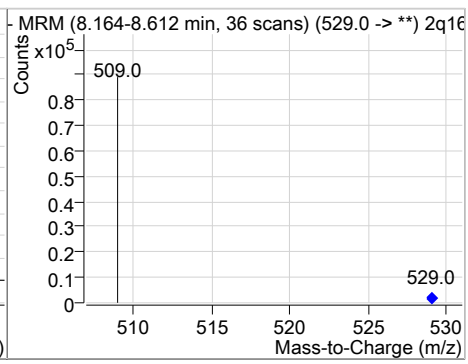




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.69	8.31	-0.01	63883				

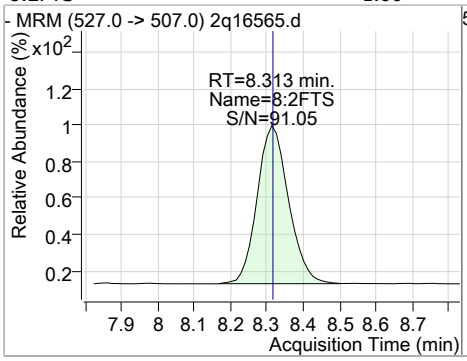


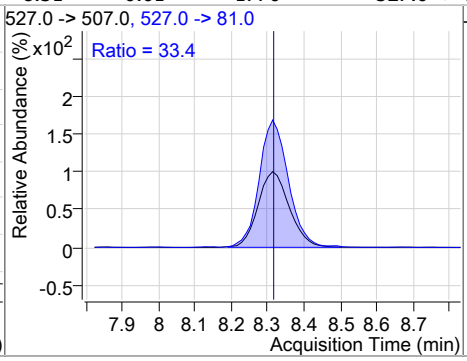


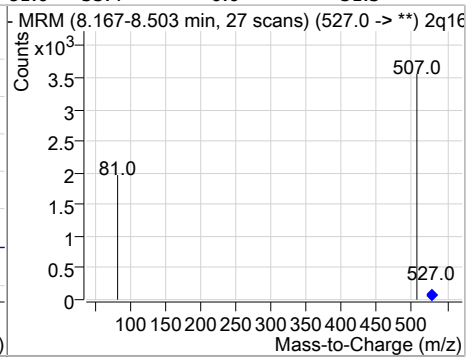


Perfluorinated Compounds by LC/MS/MS

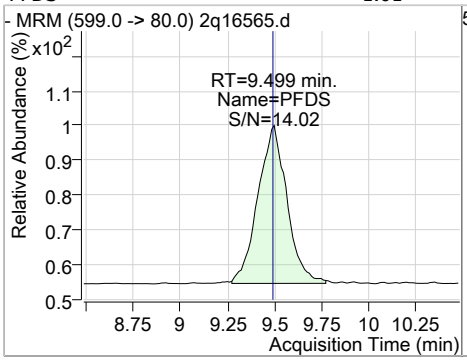
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.00	8.31	-0.01	1776	527.0 -> 81.0	33.4	0.0	51.3

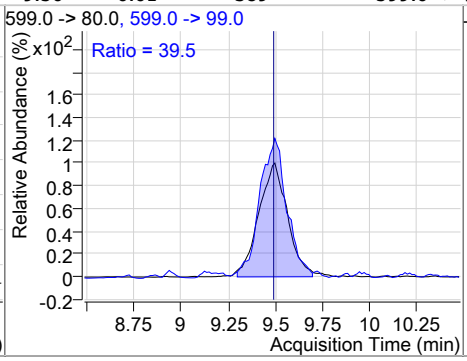


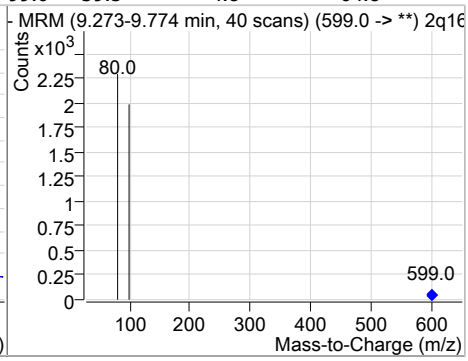




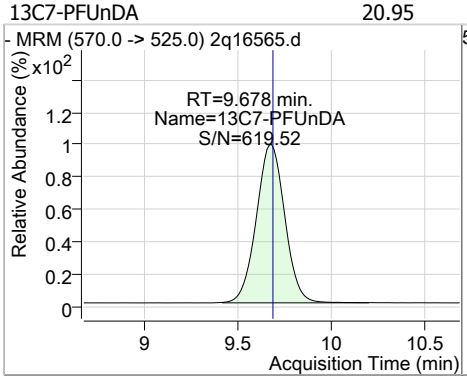
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	1.01	9.50	0.01	389	599.0 -> 99.0	39.5	4.8	64.8

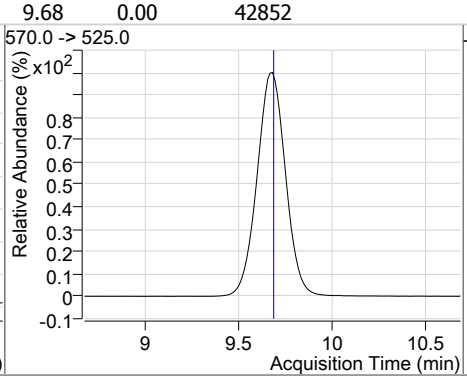


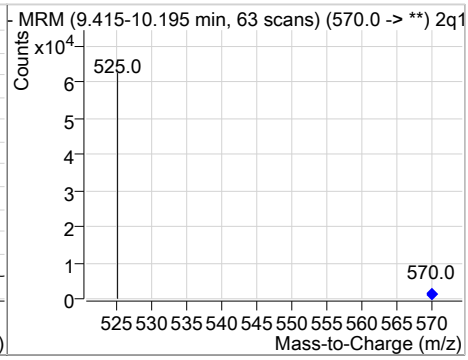




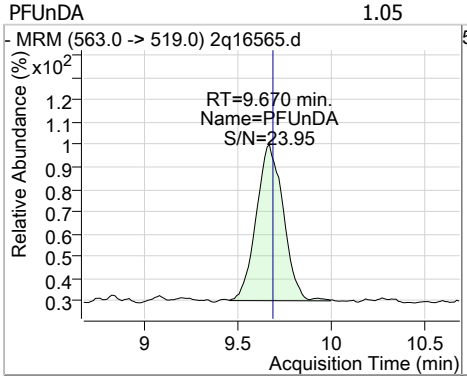
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.95	9.68	0.00	42852				

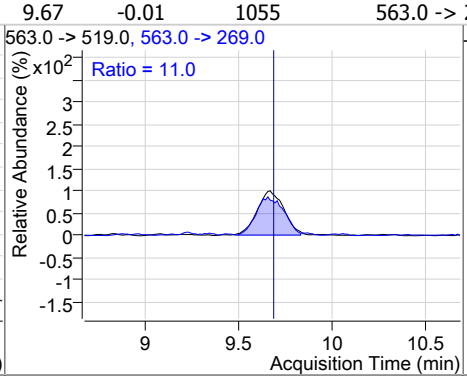


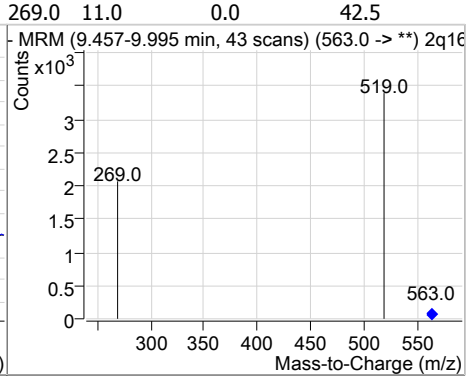




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	1.05	9.67	-0.01	1055	563.0 -> 269.0	11.0	0.0	42.5

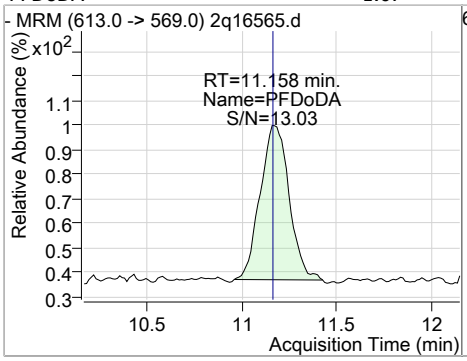


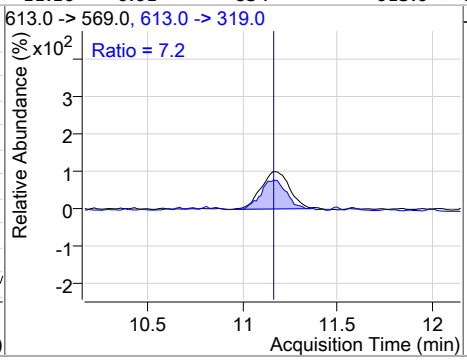


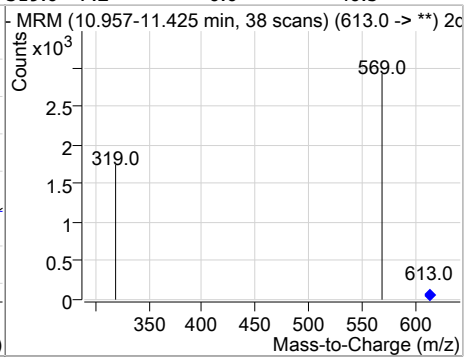


Perfluorinated Compounds by LC/MS/MS

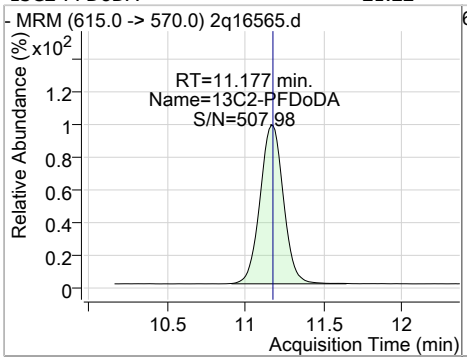
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	1.07	11.16	0.01	854	613.0 -> 319.0	7.2	0.0	40.5

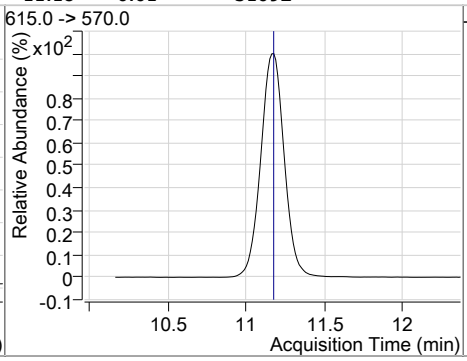


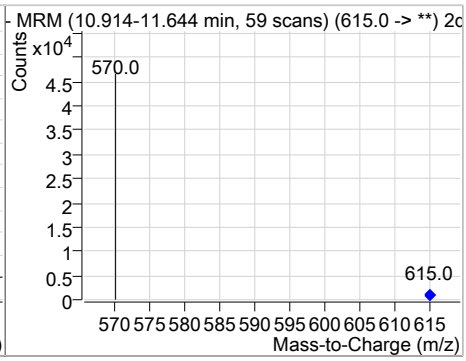




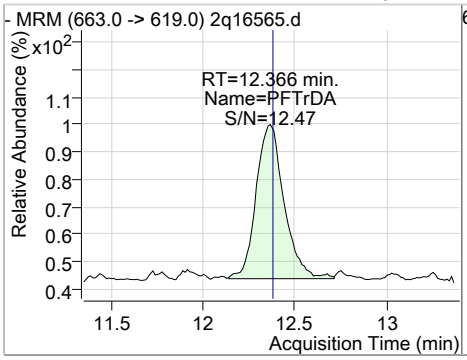
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.22	11.18	0.01	31092				

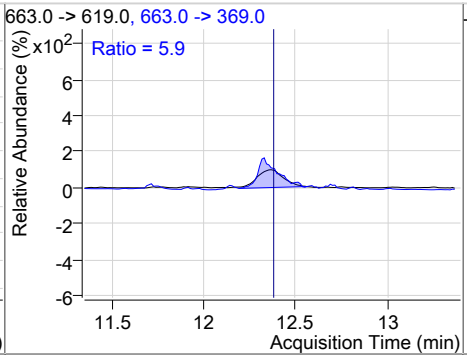


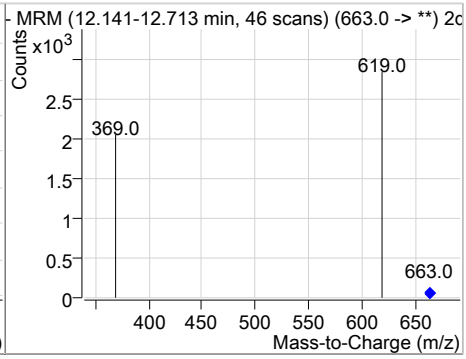




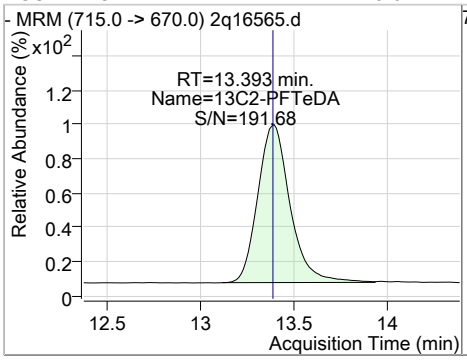
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	1.02	12.37	0.00	611	663.0 -> 369.0	5.9	0.0	35.1

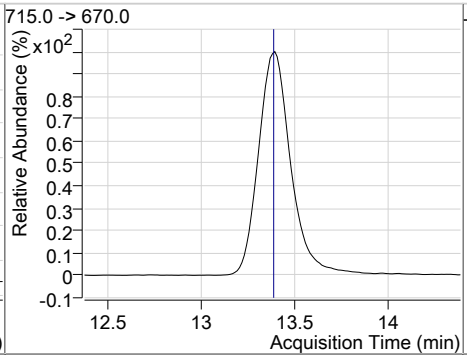


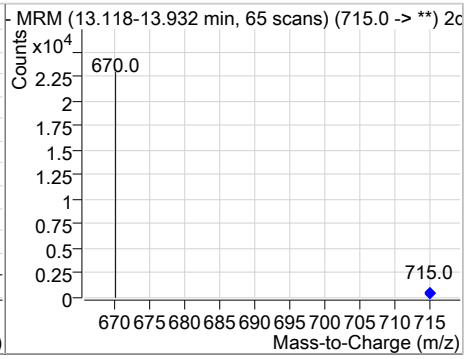




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.62	13.39	0.01	12794				

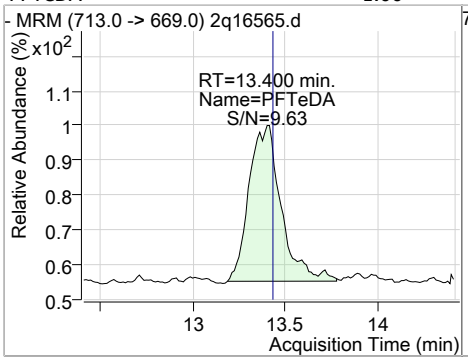


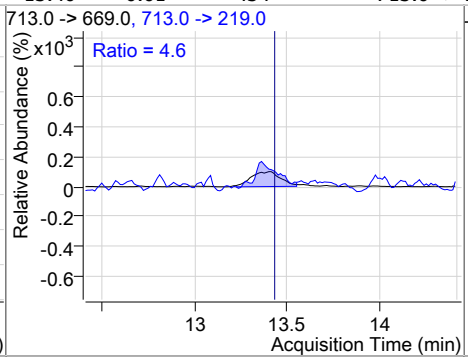


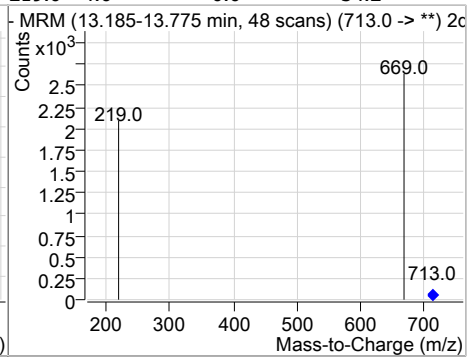


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.06	13.40	-0.01	434	713.0 -> 219.0	4.6	0.0	34.2







Manual Integration Approval Summary

Sample Number: S2Q291-IC291
Lab FileID: 2Q16565.D
Injection Time: 07/05/18 16:50
Method: EPA 537M QSM5.1 B-15
Analyst approved: 07/06/18 10:17 Natasha Gumtie
Supervisor approved: 07/06/18 17:13 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.08	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.40	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/06/18 17:13

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16566.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/5/2018 5:10:36 PM
Sample Name : ic291-2
Vial : Vial 4
DA Method File : PFC_ID_070518_S2Q291.quantmethod.xml
Batch Name : s2q291.batch.bin
Sample Information : op70743,S2Q291,130,,,1.0,1,water

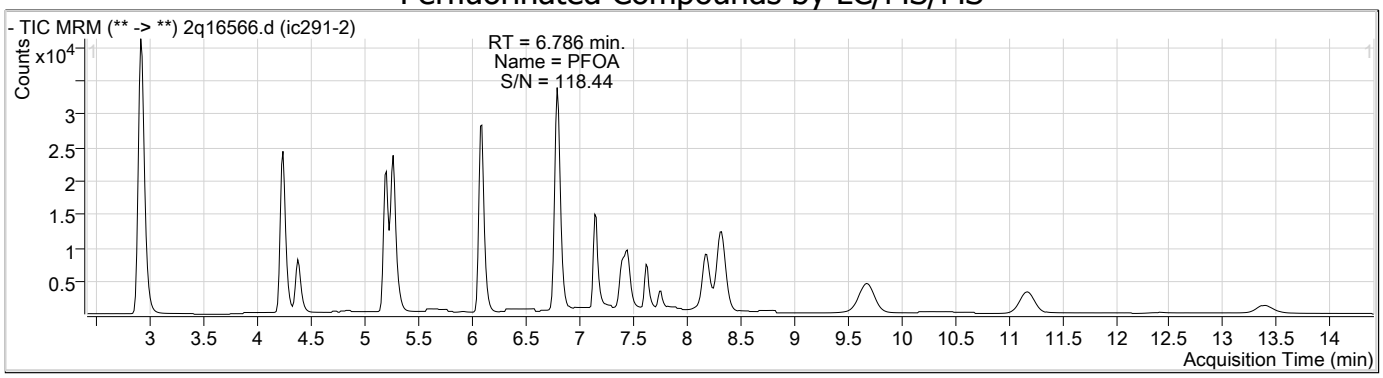
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.798	415.0 -> 370.0	25338	20.00	µg/L	0.000
13C4-PFOS	7.397	503.0 -> 80.0	13502	20.00	µg/L	0.000
M4-PFBA	2.903	217.0 -> 172.0	166076	20.00	µg/L	0.000
M5-PFPeA	4.237	268.0 -> 223.0	78659	20.00	µg/L	0.000
M5-PFHxA	5.265	318.0 -> 273.0	72293	20.00	µg/L	0.000
M4-PFHpA	6.079	367.0 -> 322.0	70038	20.00	µg/L	-0.013
M8-PFOA	6.796	421.0 -> 376.0	38401	20.00	µg/L	0.000
M9-PFNA	7.450	472.0 -> 427.0	25595	20.00	µg/L	0.000
M6-PFDA	8.180	519.0 -> 474.0	41541	20.00	µg/L	0.000
M7-PFUnDA	9.678	570.0 -> 525.0	44012	20.00	µg/L	0.000
M2-PFDoDA	11.177	615.0 -> 570.0	31346	20.00	µg/L	0.008
M2-PFTeDA	13.393	715.0 -> 670.0	13086	20.00	µg/L	0.012
M8-FOSA	7.142	506.0 -> 78.0	40494	20.00	µg/L	0.000
M3-PFBS	4.368	302.0 -> 99.0	23777	20.00	µg/L	0.000
M3-PFHxS	6.085	402.0 -> 99.0	21634	20.00	µg/L	0.000
M8-PFOS	7.395	507.0 -> 99.0	10298	20.00	µg/L	0.000
M2-4:2FTS	5.198	329.0 -> 309.0	67801	20.00	µg/L	0.000
M2-6:2FTS	6.805	429.0 -> 409.0	54697	20.00	µg/L	-0.002
M2-8:2FTS	8.323	529.0 -> 509.0	66503	20.00	µg/L	-0.002
M3-MeFOSAA	7.619	573.0 -> 419.0	19108	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.198	329.0 -> 309.0	67813	20.68	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.4%		
13C2-6:2FTS	6.805	429.0 -> 409.0	54788	20.73	µg/L	-0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.7%		
13C2-8:2FTS	8.323	529.0 -> 509.0	66401	20.46	µg/L	-0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%		
13C2-PFDoDA	11.177	615.0 -> 570.0	31342	21.39	µg/L	0.008
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.9%		
13C2-PFTeDA	13.393	715.0 -> 670.0	13092	21.10	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.5%		
13C3-PFBS	4.368	302.0 -> 99.0	23768	21.50	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.5%		
13C3-PFHxS	6.085	402.0 -> 99.0	21640	21.61	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.0%		
13C4-PFBA	2.903	217.0 -> 172.0	165957	21.68	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.4%		
13C4-PFHpA	6.079	367.0 -> 322.0	70019	21.73	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.6%		
13C5-PFHxA	5.265	318.0 -> 273.0	72295	22.06	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.3%		
13C5-PFPeA	4.237	268.0 -> 223.0	78629	21.58	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.9%		
13C6-PFDA	8.180	519.0 -> 474.0	41510	22.42	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.1%		

Perfluorinated Compounds by LC/MS/MS

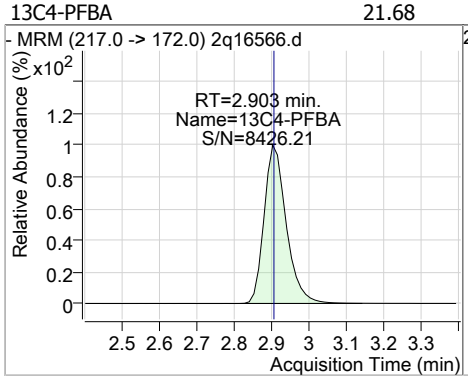
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	9.678	570.0 -> 525.0	44019	21.52	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.6%			
13C8-FOSA	7.142	506.0 -> 78.0	40470	22.99	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.9%			
13C8-PFOA	6.796	421.0 -> 376.0	38399	22.05	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.2%			
13C8-PFOS	7.395	507.0 -> 99.0	10312	21.05	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.2%			
13C9-PFNA	7.450	472.0 -> 427.0	25614	21.53	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.6%			
d3-MeFOSAA	7.619	573.0 -> 419.0	19101	21.75	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.8%			
M2-PFOA	6.798	415.0 -> 370.0	25340	20.00	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.397	503.0 -> 80.0	13488	19.99	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%			
Target Compounds							**QValue**
4:2FTS	5.187	327.0 -> 307.0	3431	1.92	µg/L		94
6:2FTS	6.807	427.0 -> 407.0	2791	2.00	µg/L		93
8:2FTS	8.313	527.0 -> 507.0	3850	2.08	µg/L		83
EtFOSAA	7.756	584.0 -> 419.0	604	1.95	µg/L		82
FOSA	7.144	498.0 -> 78.0	1835	1.80	µg/L		93
MeFOSAA	7.633	570.0 -> 419.0	650	1.94	µg/L		90
PFBA	2.912	213.0 -> 169.0	2711	2.03	µg/L		100
PFBS	4.371	299.0 -> 80.0	3153	1.98	µg/L		96
PFDA	8.181	513.0 -> 469.0	1480	1.84	µg/L		90
PFDoDA	11.183	613.0 -> 569.0	1658	2.06	µg/L		98
PFDS	9.499	599.0 -> 80.0	770	1.95	µg/L		88
PFHpA	6.082	363.0 -> 319.0	4775	1.91	µg/L		91
PFHpS	6.766	449.0 -> 80.0	1190	1.90	µg/L		94
PFHxA	5.268	313.0 -> 269.0	2258	1.92	µg/L		97
PFHxS	6.076	399.0 -> 80.0	2324	1.94	µg/L	m	98
PFNA	7.451	463.0 -> 419.0	1149	2.26	µg/L		85
PFNS	8.088	549.0 -> 80.0	1001	2.14	µg/L		96
PFOA	6.786	413.0 -> 369.0	1997	2.07	µg/L		95
PFOS	7.397	499.0 -> 80.0	1332	2.14	µg/L	m	75
PFPeA	4.241	263.0 -> 219.0	8247	2.17	µg/L		100
PFPeS	5.320	349.0 -> 80.0	1848	1.89	µg/L		99
PFTeDA	13.387	713.0 -> 669.0	816	1.96	µg/L		89
PFTrDA	12.385	663.0 -> 619.0	1188	1.96	µg/L		94
PFUnDA	9.682	563.0 -> 519.0	2122	2.05	µg/L		99

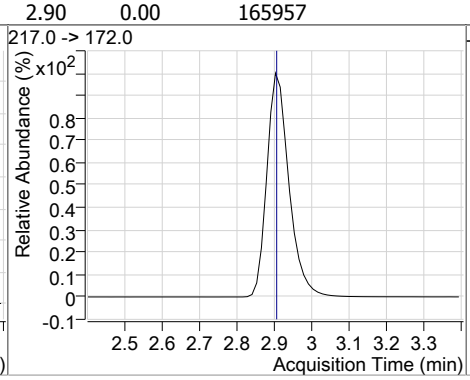
 # = Qualifier out of range, m = manually integrated, + = Area summed

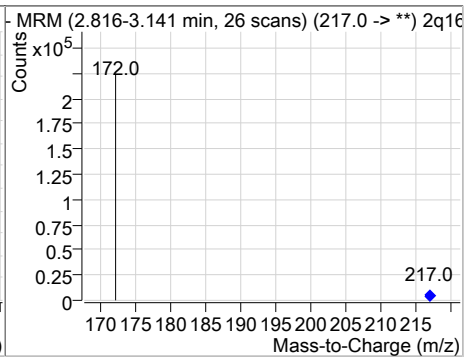
Perfluorinated Compounds by LC/MS/MS



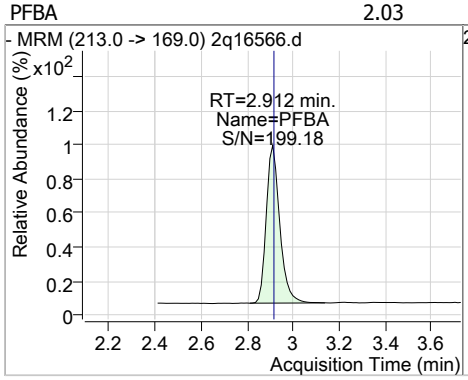
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	21.68	2.90	0.00	165957				

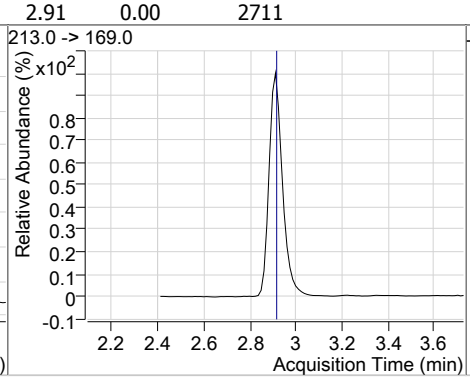


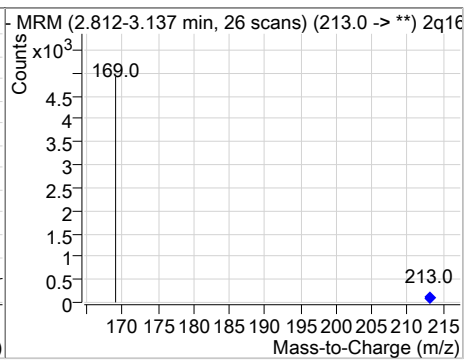




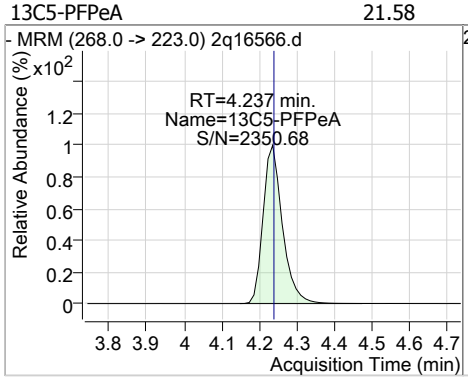
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	2.03	2.91	0.00	2711				

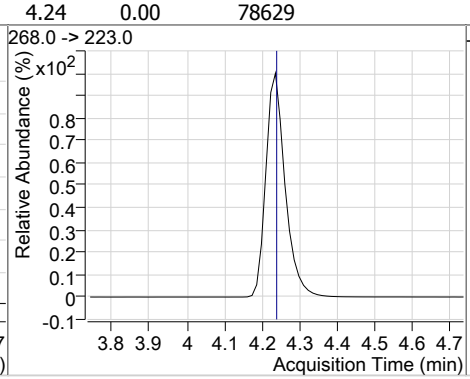


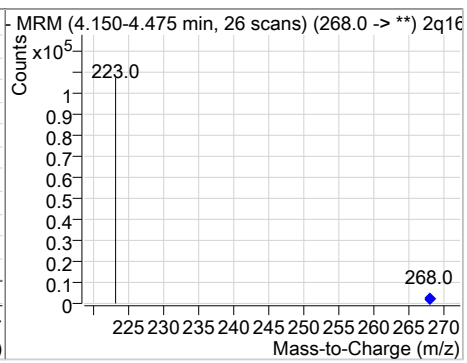




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	21.58	4.24	0.00	78629				

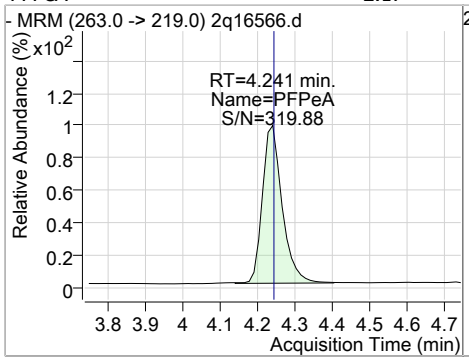


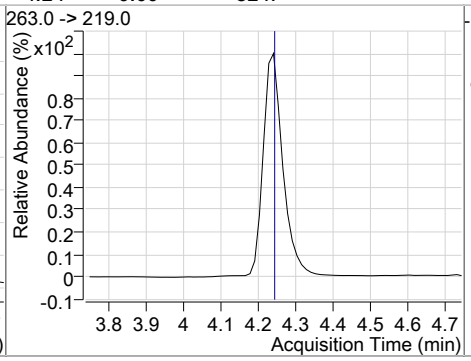


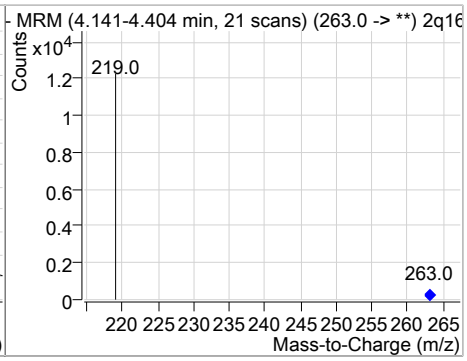


Perfluorinated Compounds by LC/MS/MS

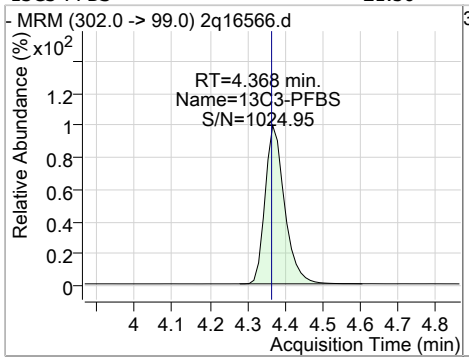
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	2.17	4.24	0.00	8247				

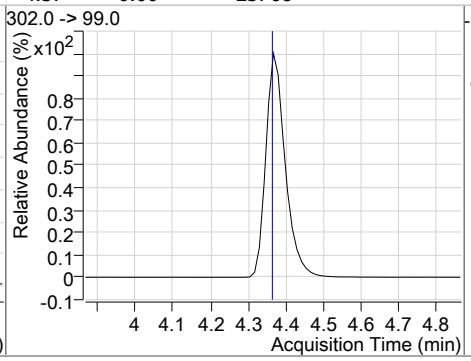


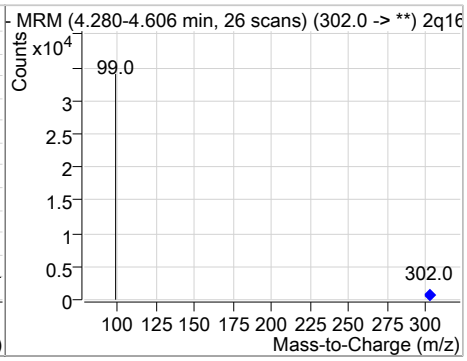




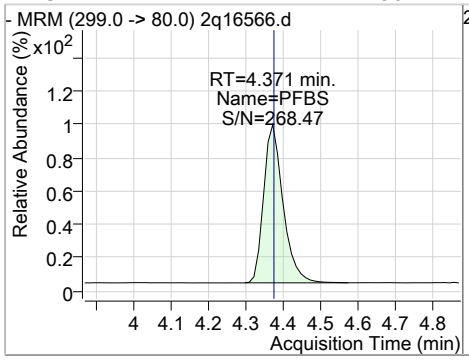
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.50	4.37	0.00	23768				

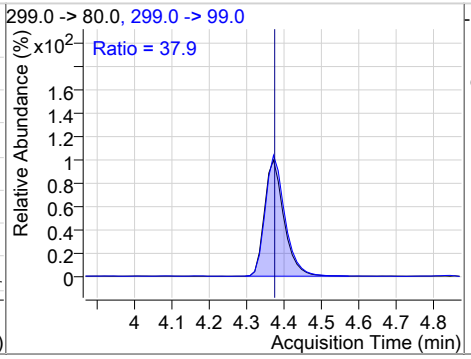


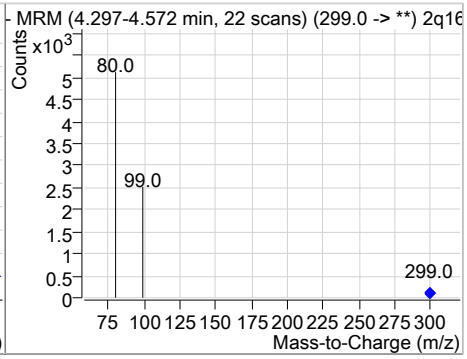




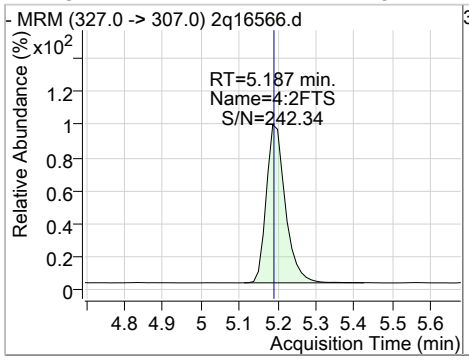
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.98	4.37	0.00	3153	299.0 -> 99.0	37.9	5.8	65.8

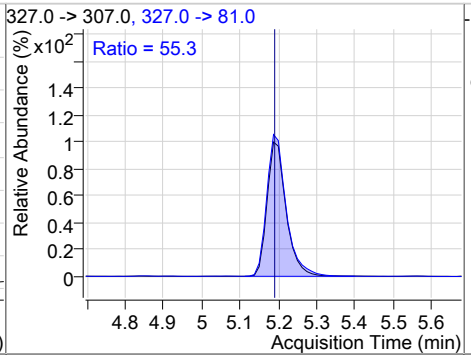


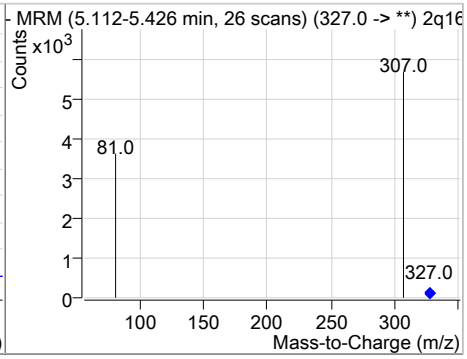




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.92	5.19	0.00	3431	327.0 -> 81.0	55.3	21.0	81.0

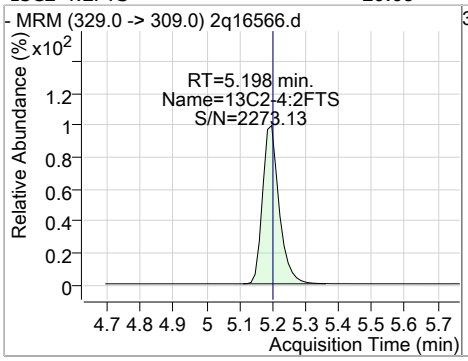


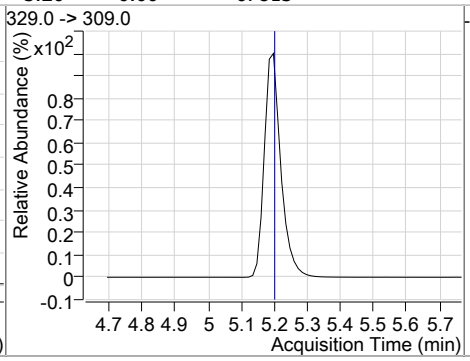


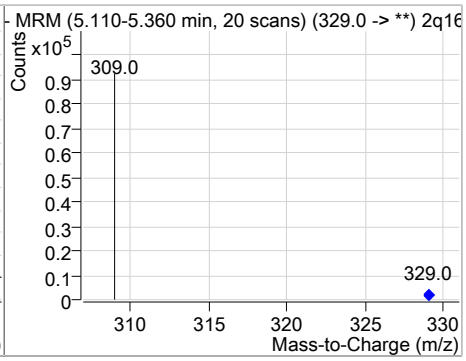


Perfluorinated Compounds by LC/MS/MS

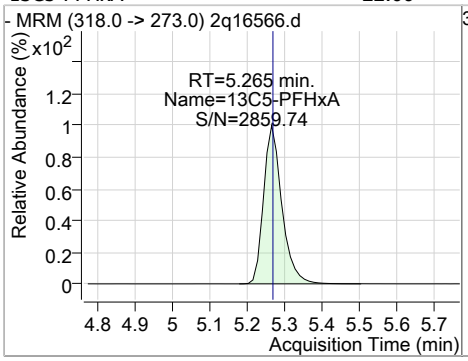
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.68	5.20	0.00	67813				

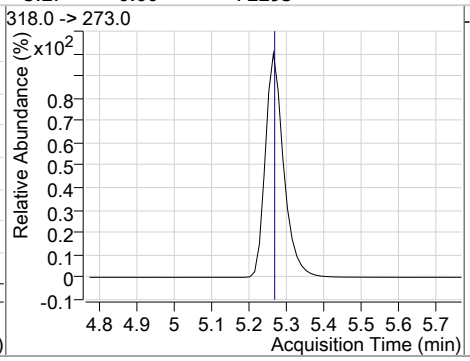


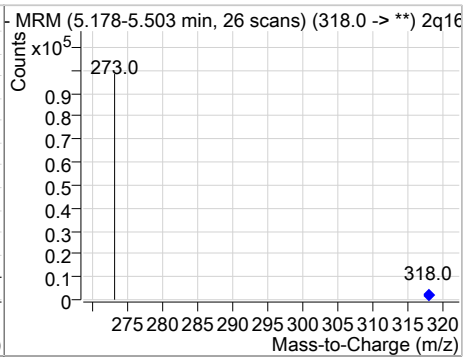




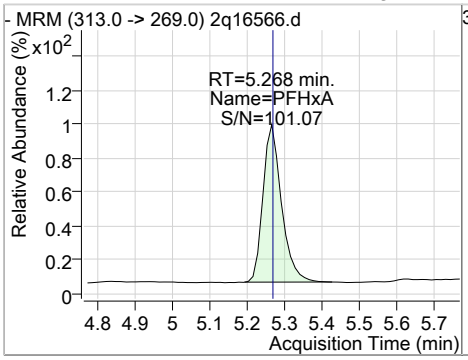
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	22.06	5.27	0.00	72295				

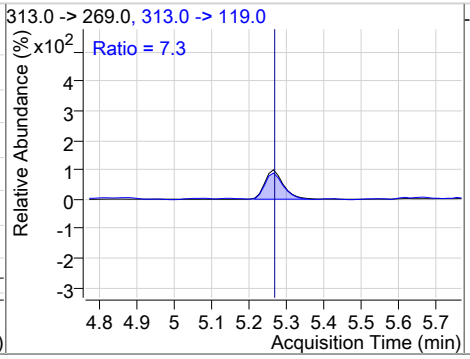


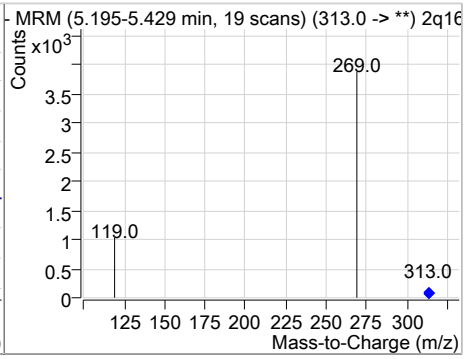




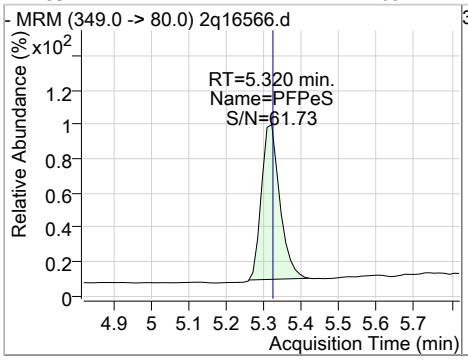
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.92	5.27	0.00	2258	313.0 -> 119.0	7.3	0.0	38.3

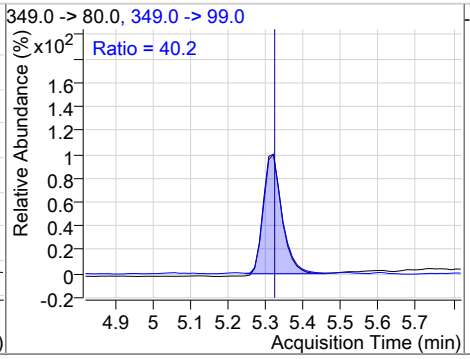


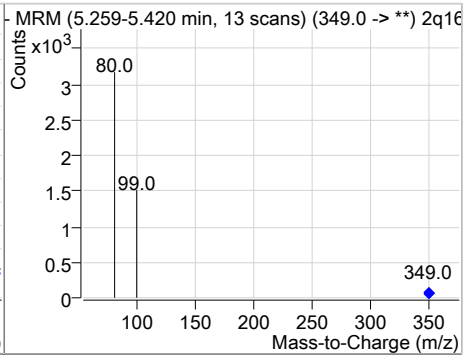




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.89	5.32	0.00	1848	349.0 -> 99.0	40.2	9.3	69.3

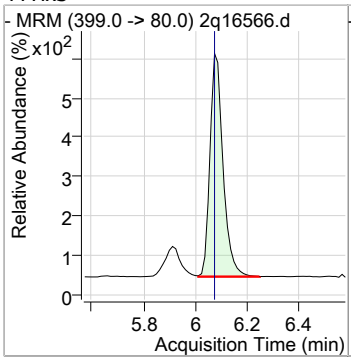


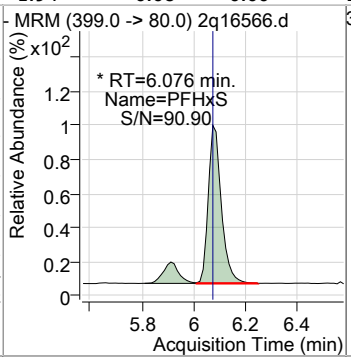


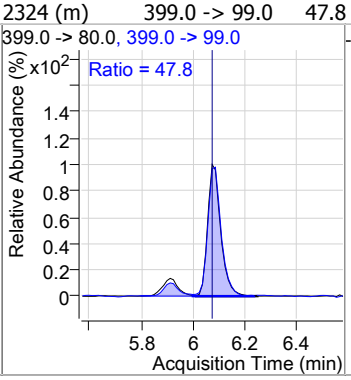


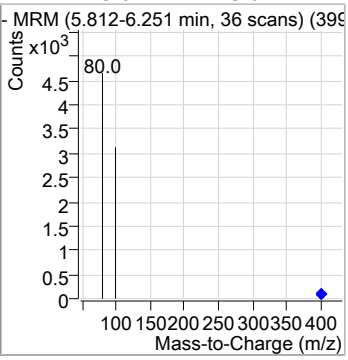
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.94	6.08	0.00	2324 (m)	399.0 -> 99.0	47.8	19.0	79.0

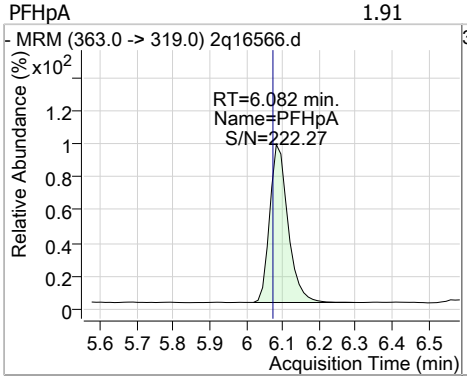


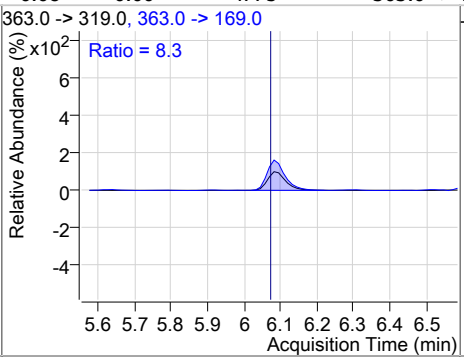


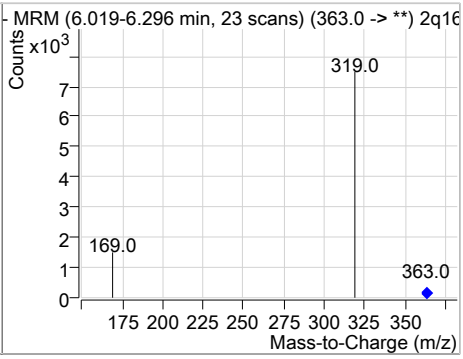




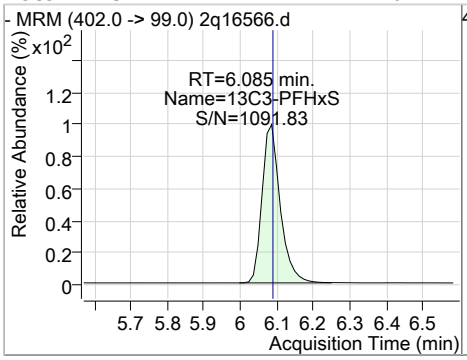
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.91	6.08	0.00	4775	363.0 -> 169.0	8.3	0.0	35.3

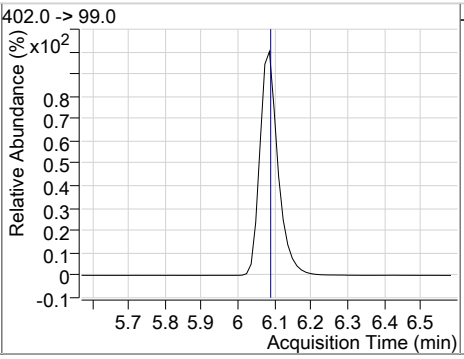


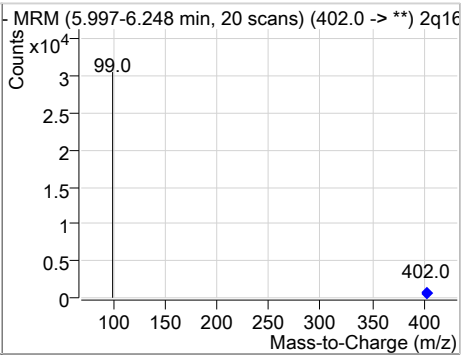




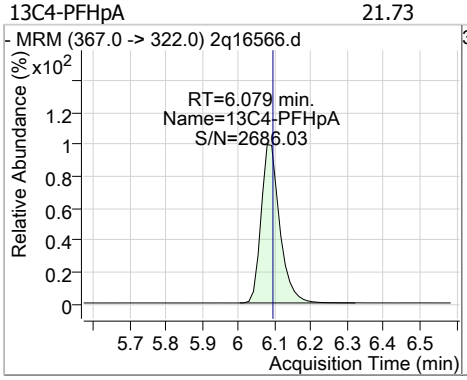
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.61	6.09	0.00	21640				

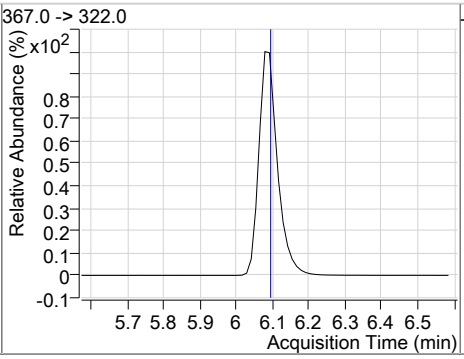


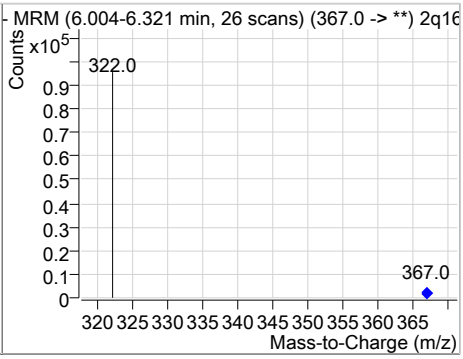




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.73	6.08	-0.01	70019				

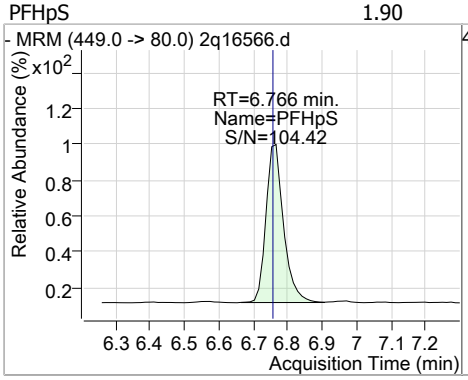


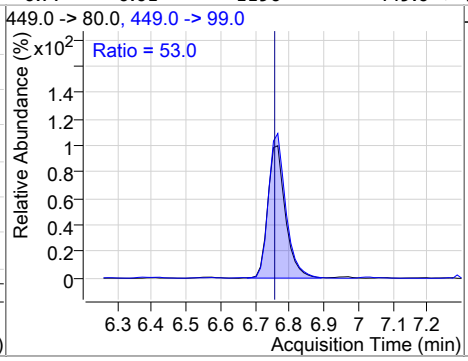


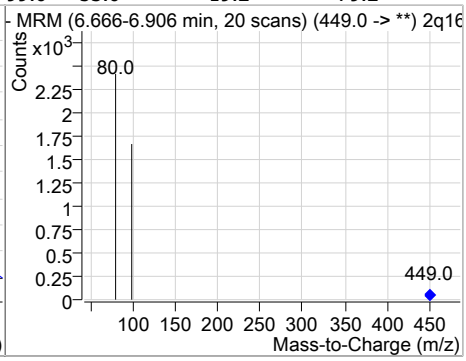


Perfluorinated Compounds by LC/MS/MS

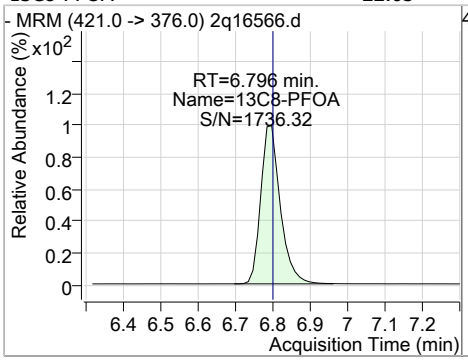
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.90	6.77	0.01	1190	449.0 -> 99.0	53.0	19.2	79.2

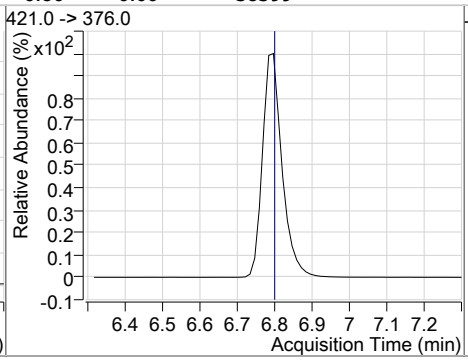


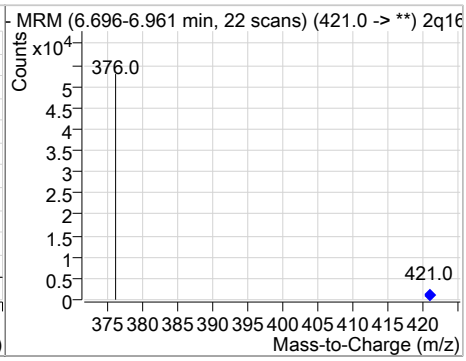




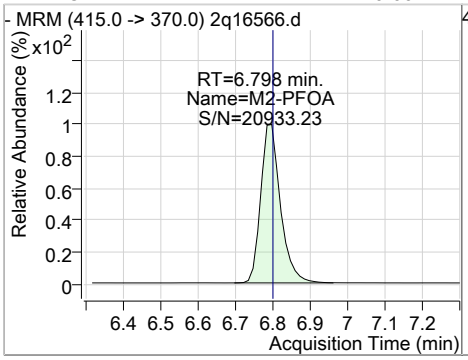
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	22.05	6.80	0.00	38399				

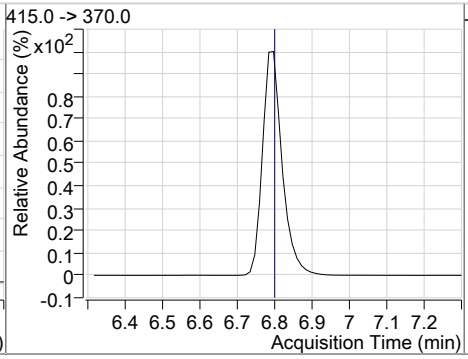


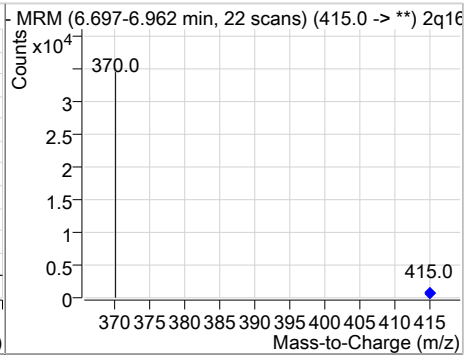




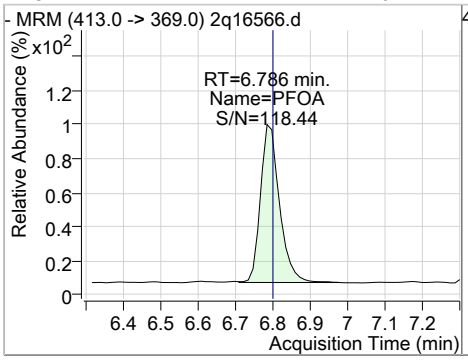
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.80	0.00	25340				

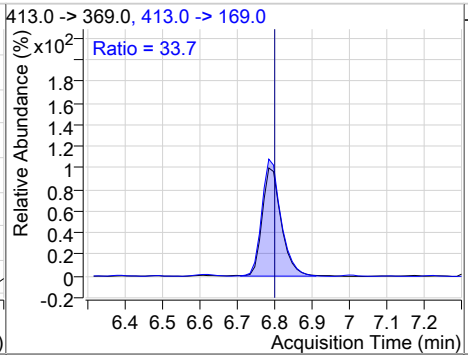


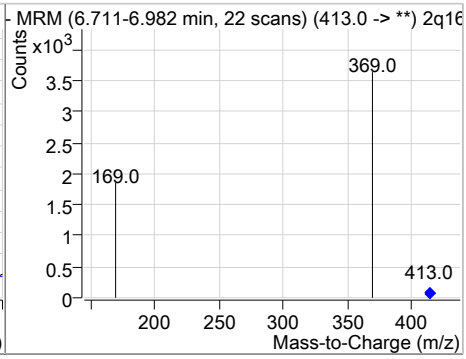




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.07	6.79	-0.01	1997	413.0 -> 169.0	33.7	0.9	60.9

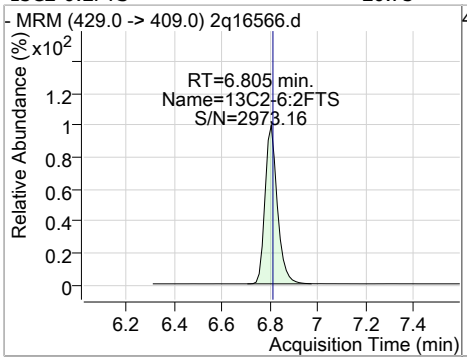


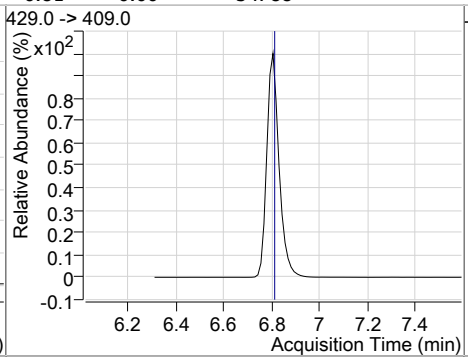


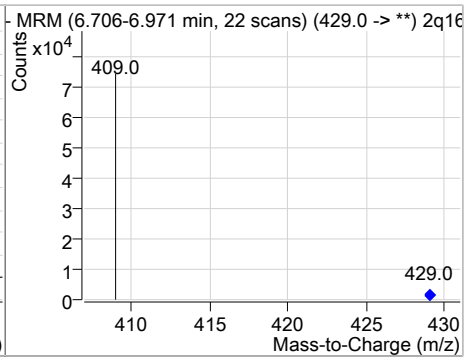


Perfluorinated Compounds by LC/MS/MS

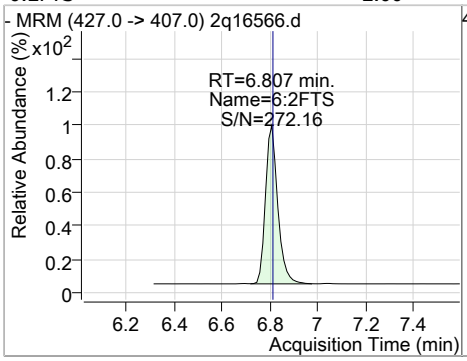
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.73	6.81	0.00	54788				

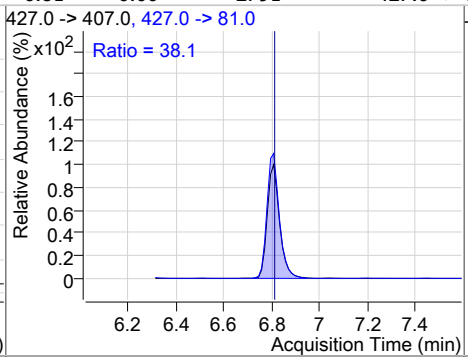


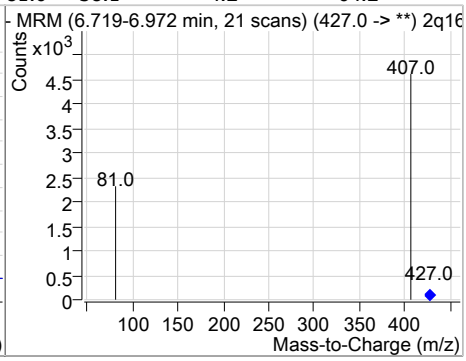




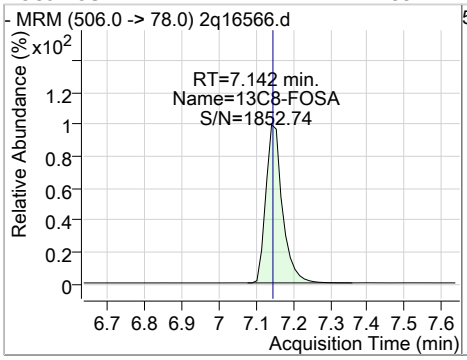
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	2.00	6.81	0.00	2791	427.0 -> 81.0	38.1	4.2	64.2

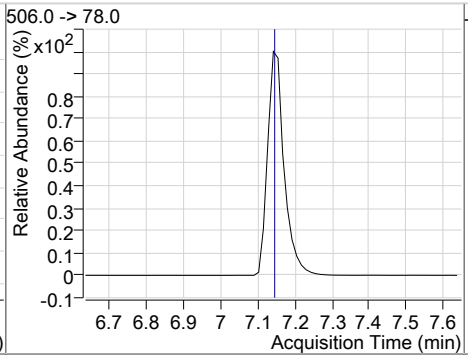


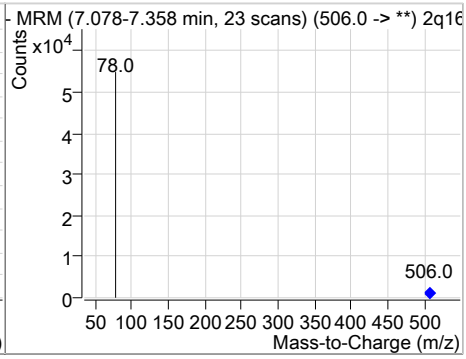




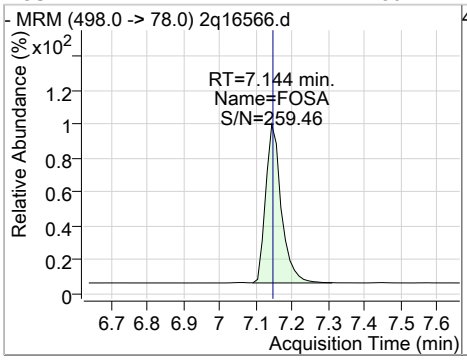
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	22.99	7.14	0.00	40470				

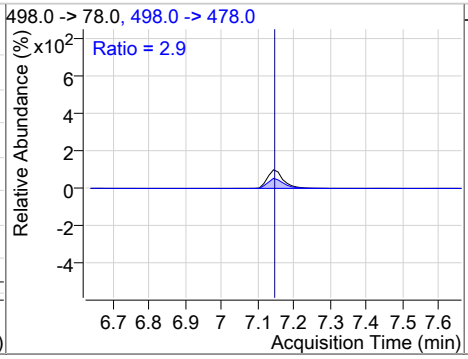


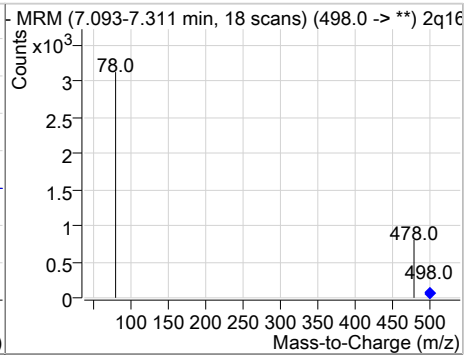




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.80	7.14	0.00	1835	498.0 -> 478.0	2.9	0.0	35.2

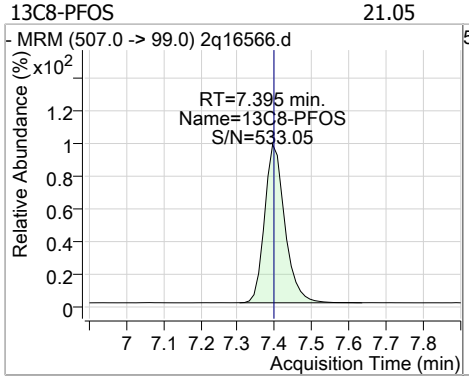


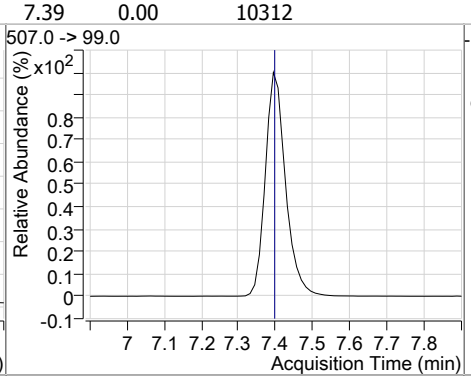


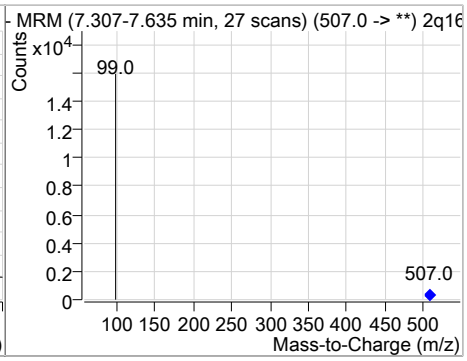


Perfluorinated Compounds by LC/MS/MS

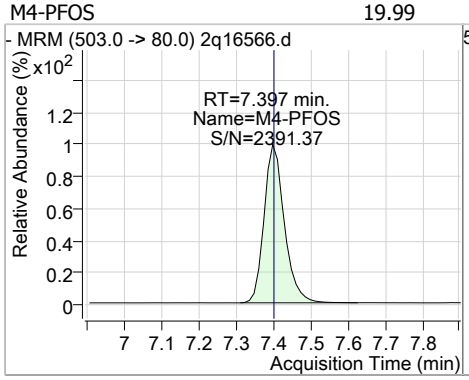
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	21.05	7.39	0.00	10312				

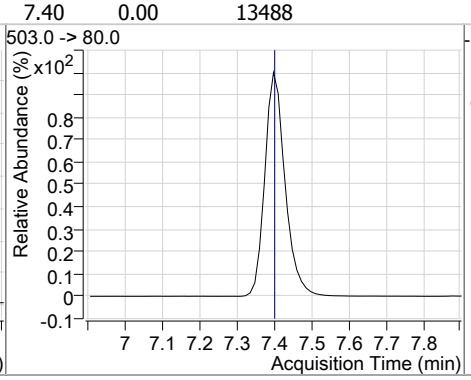


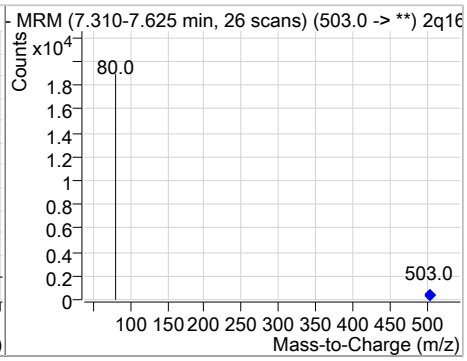




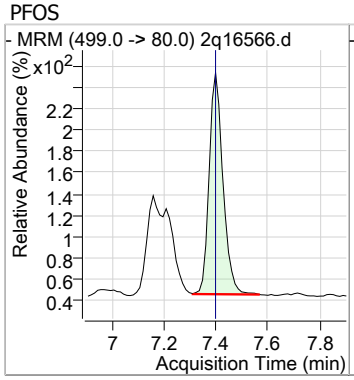
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	19.99	7.40	0.00	13488				

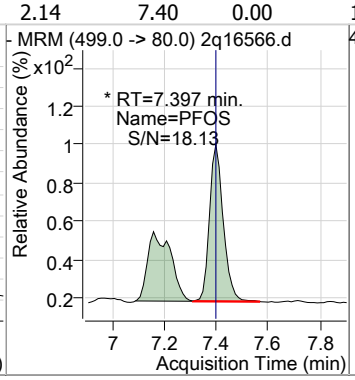


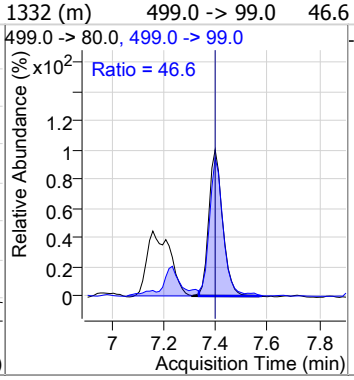


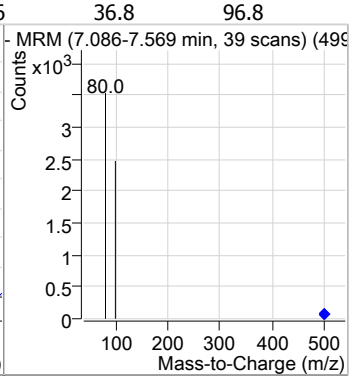


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.14	7.40	0.00	1332 (m)	499.0 -> 99.0	46.6	36.8	96.8

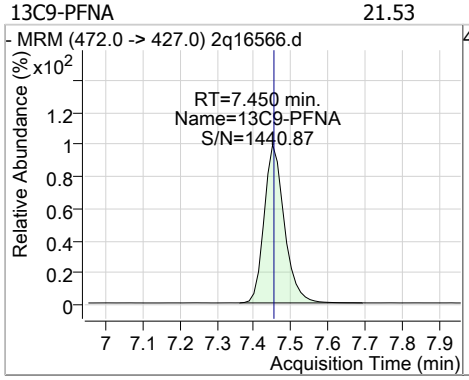


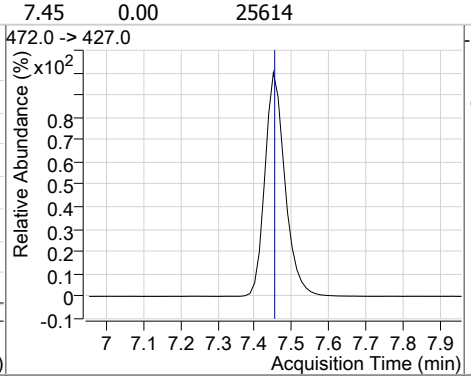


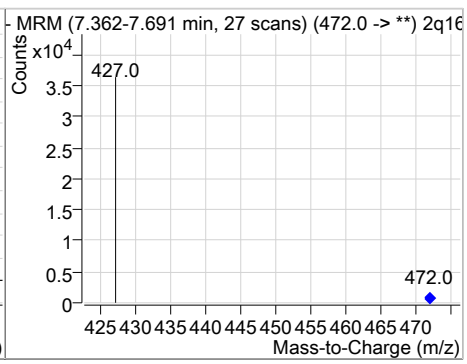




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.53	7.45	0.00	25614				

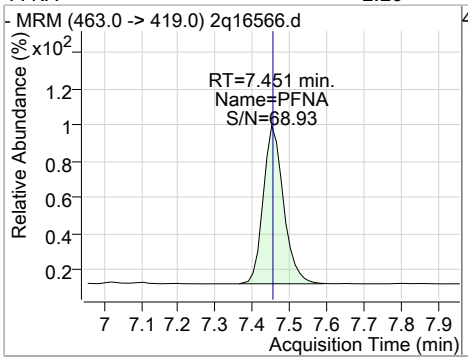


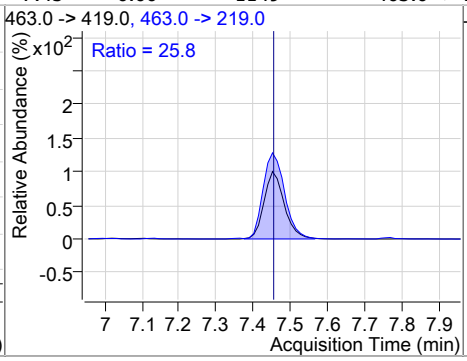


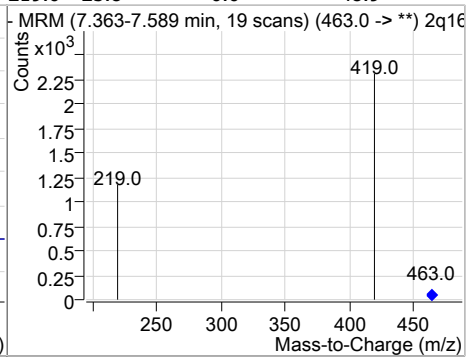


Perfluorinated Compounds by LC/MS/MS

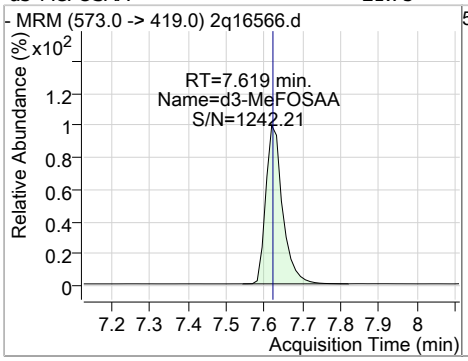
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.26	7.45	0.00	1149	463.0 -> 219.0	25.8	0.0	48.9

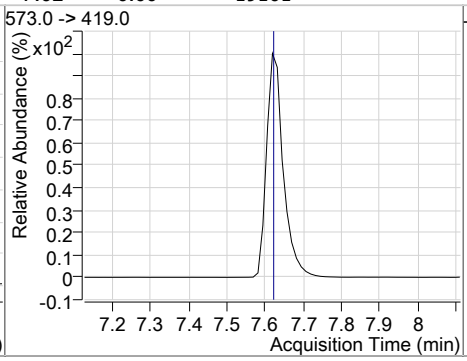


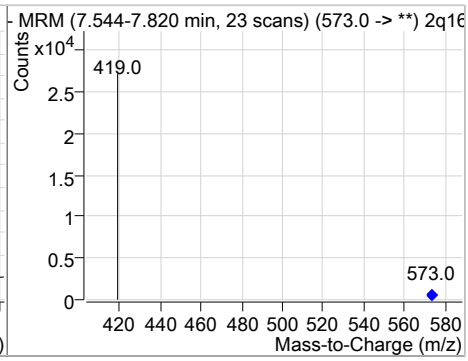




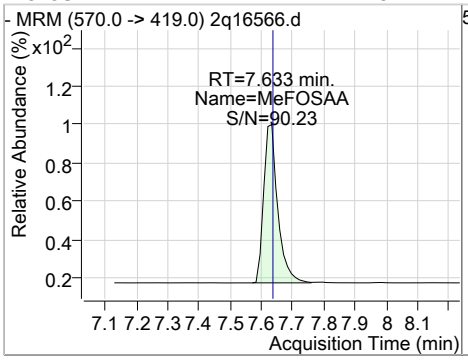
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.75	7.62	0.00	19101				

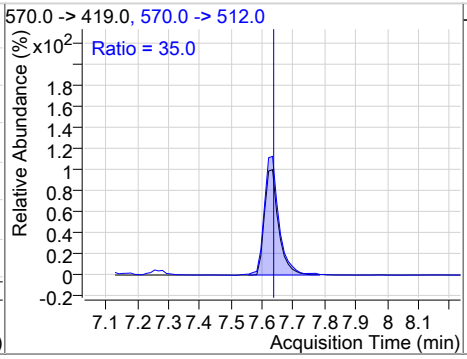


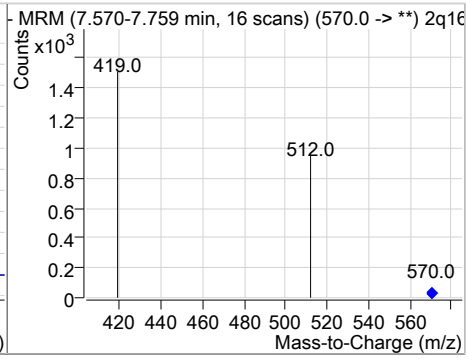




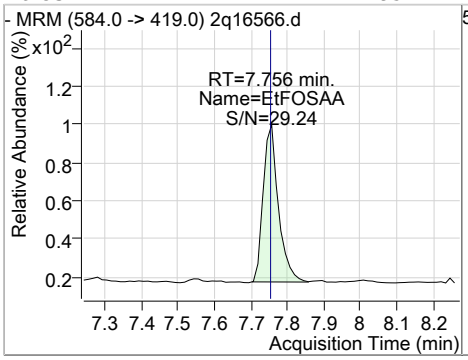
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	1.94	7.63	0.00	650	570.0 -> 512.0	35.0	0.0	59.6

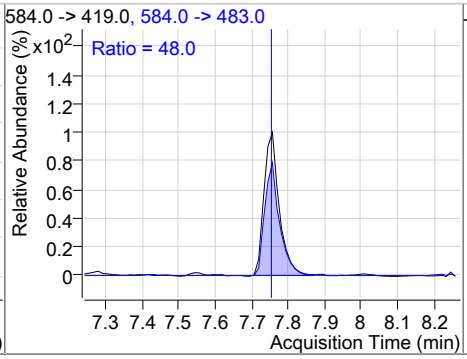


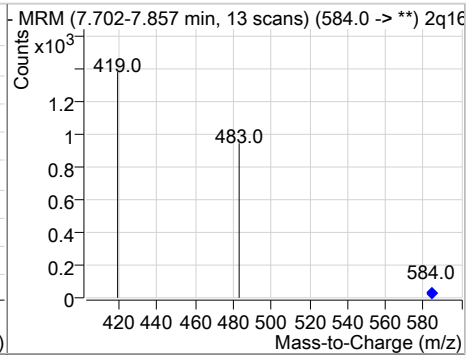




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.95	7.76	0.00	604	584.0 -> 483.0	48.0	31.9	91.9

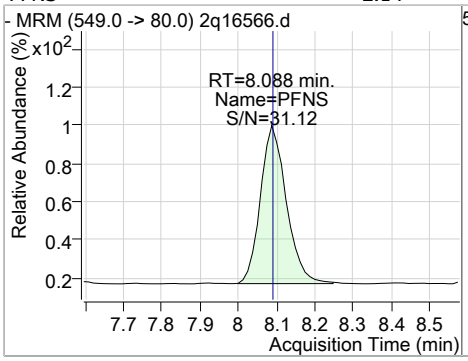


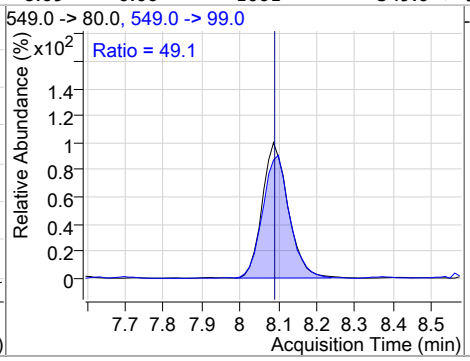


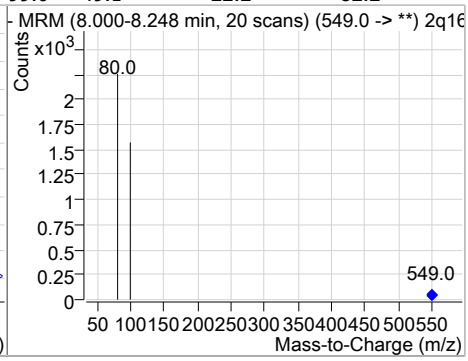


Perfluorinated Compounds by LC/MS/MS

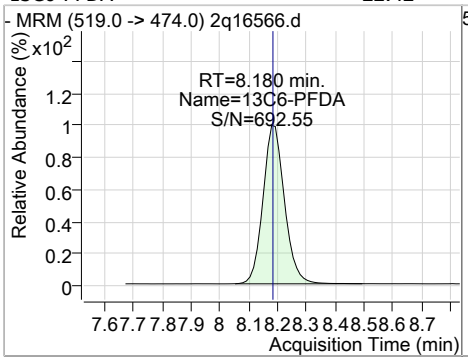
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.14	8.09	0.00	1001	549.0 -> 99.0	49.1	22.2	82.2

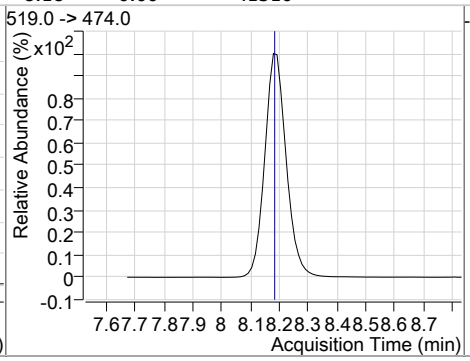


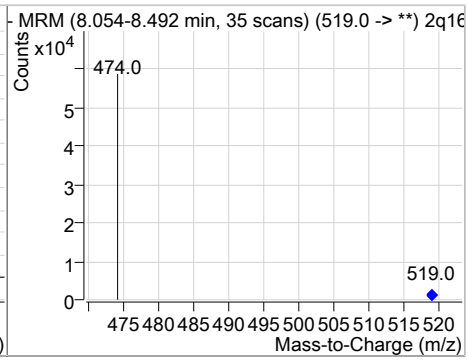




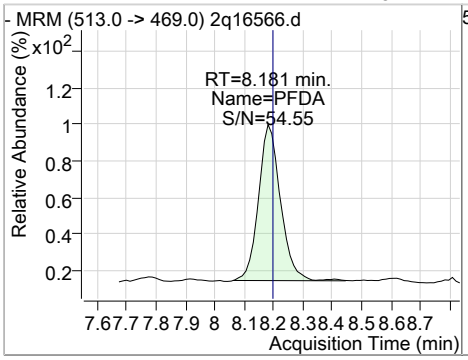
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	22.42	8.18	0.00	41510				

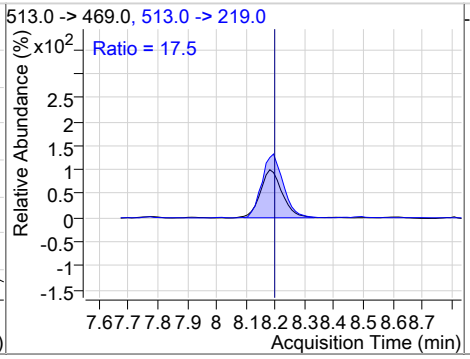


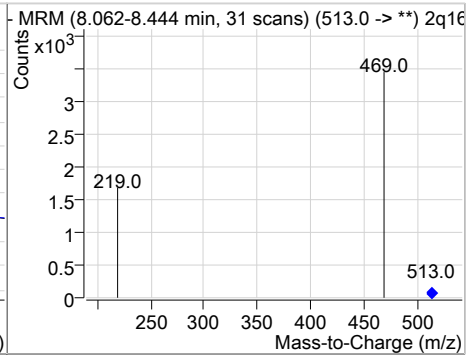




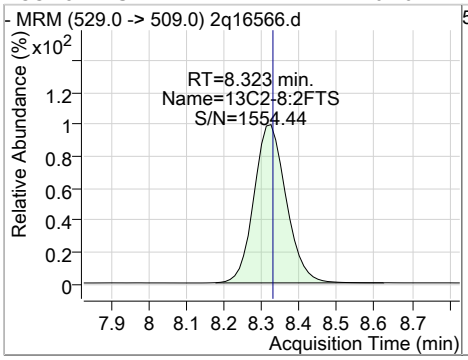
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	1.84	8.18	-0.01	1480	513.0 -> 219.0	17.5	0.0	43.5

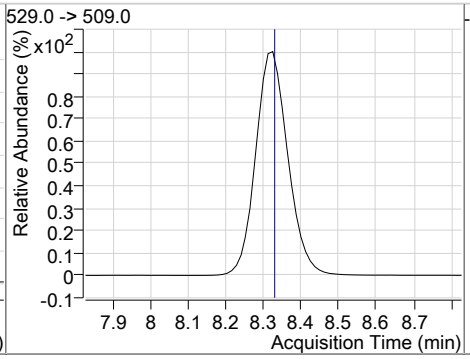


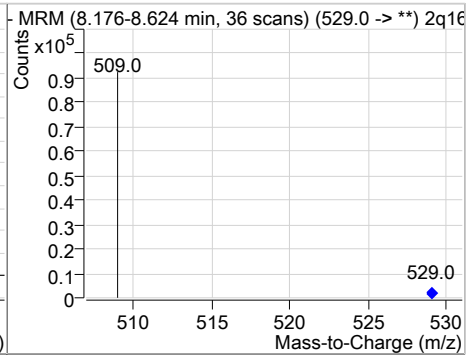




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.46	8.32	0.00	66401				

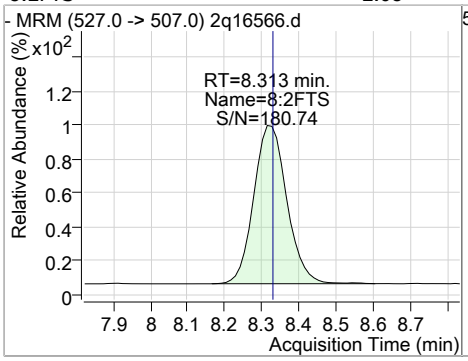


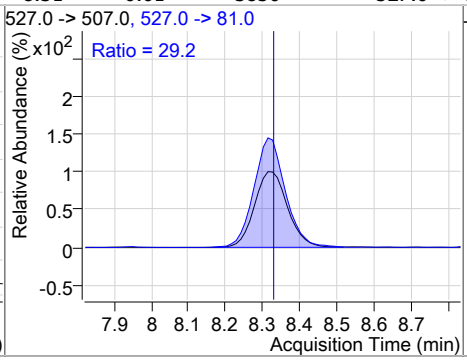


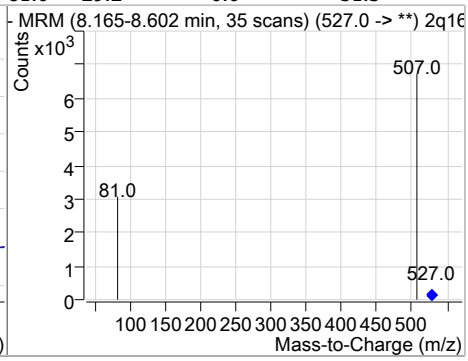


Perfluorinated Compounds by LC/MS/MS

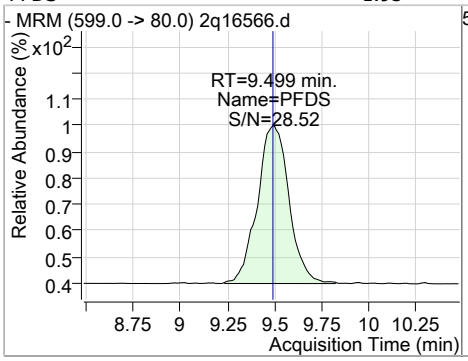
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	2.08	8.31	-0.01	3850	527.0 -> 81.0	29.2	0.0	51.3

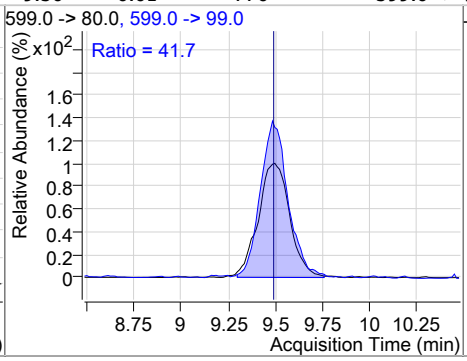


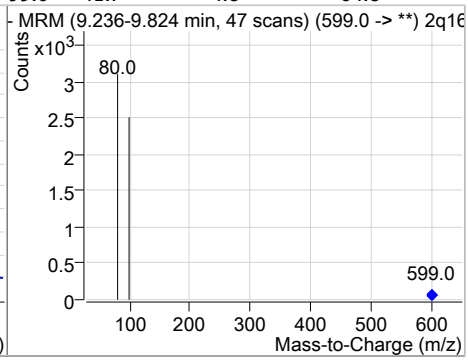




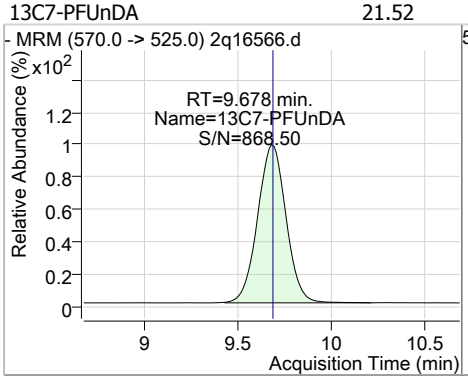
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	1.95	9.50	0.01	770	599.0 -> 99.0	41.7	4.8	64.8

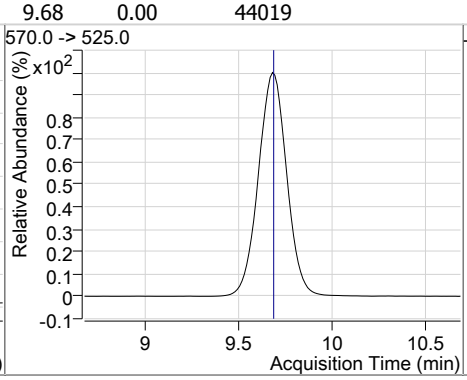


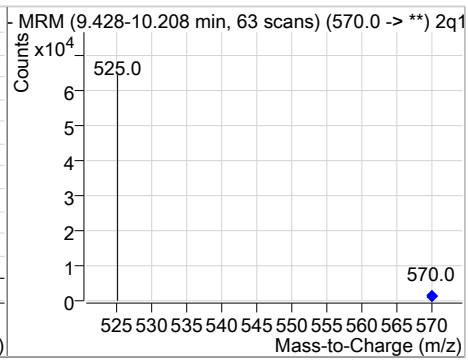




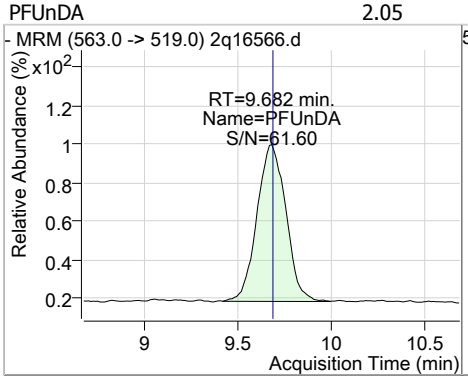
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.52	9.68	0.00	44019				

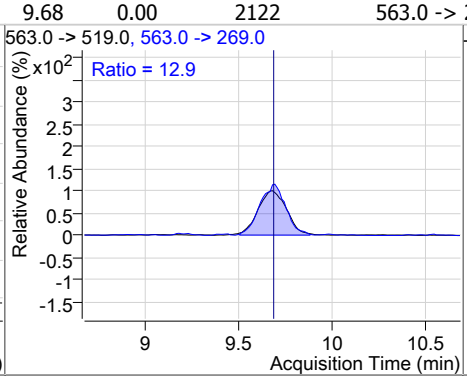


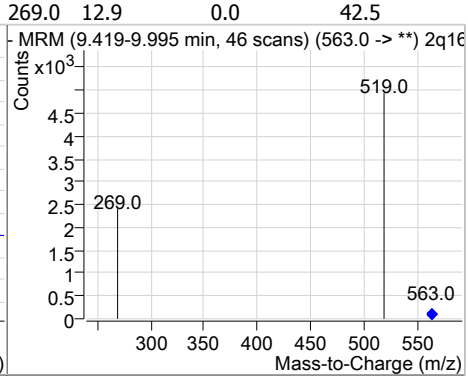




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.05	9.68	0.00	2122	563.0 -> 269.0	12.9	0.0	42.5

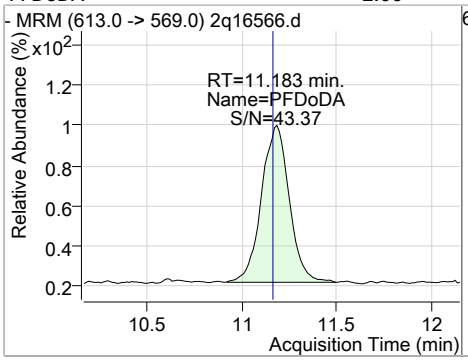


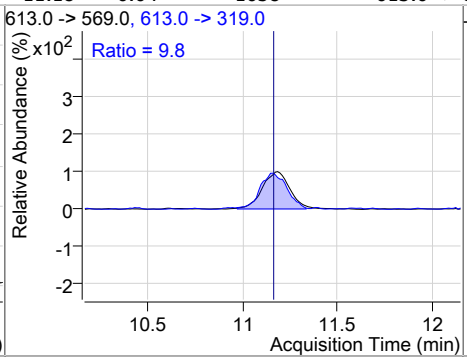


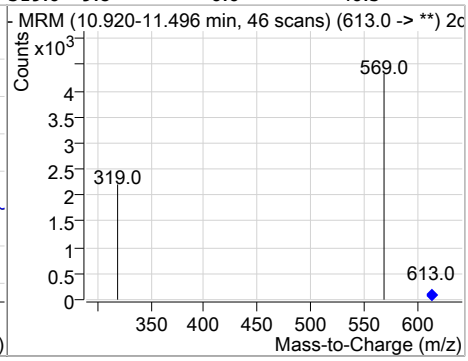


Perfluorinated Compounds by LC/MS/MS

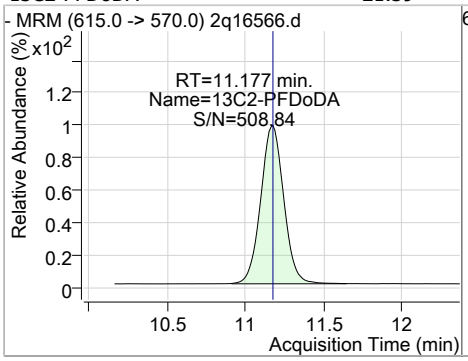
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.06	11.18	0.04	1658	613.0 -> 319.0	9.8	0.0	40.5

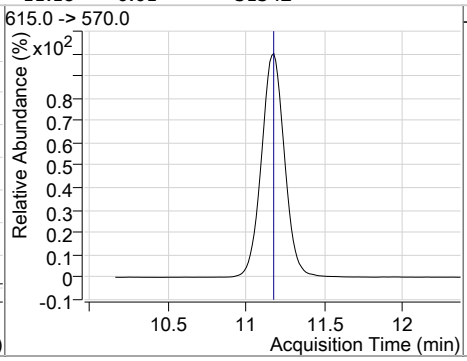


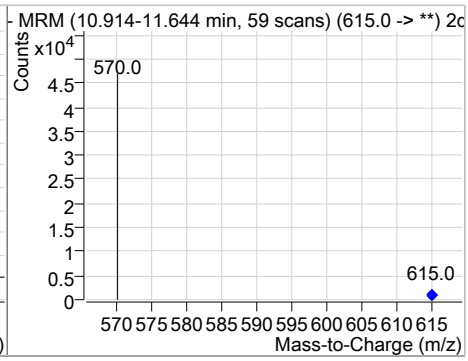




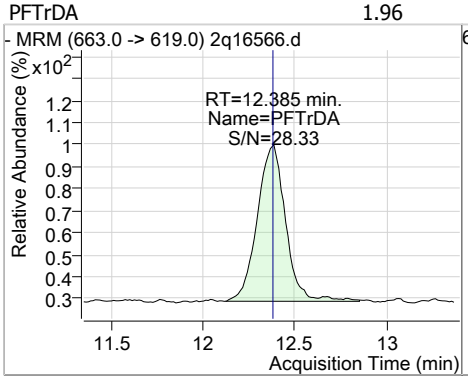
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.39	11.18	0.01	31342				

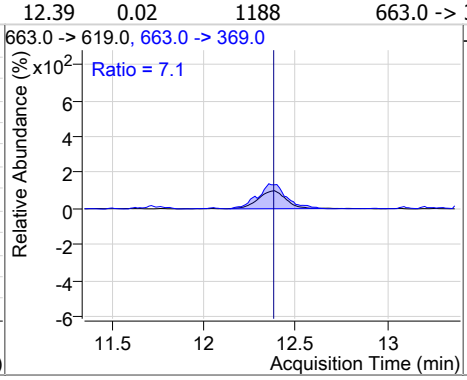


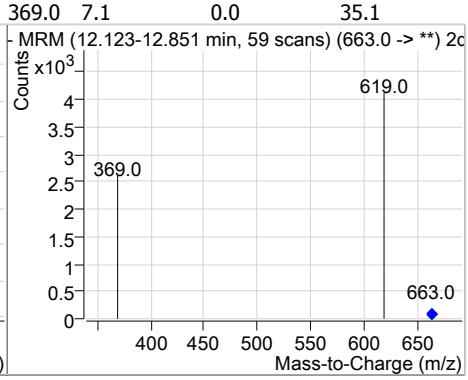




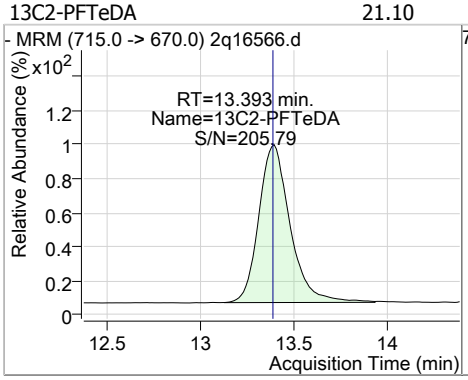
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	1.96	12.39	0.02	1188	663.0 -> 369.0	7.1	0.0	35.1

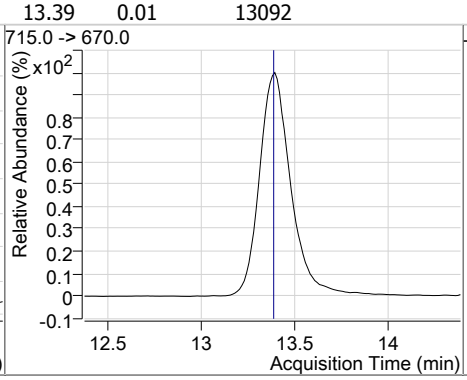


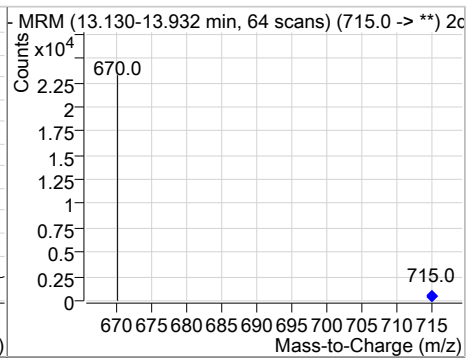




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.10	13.39	0.01	13092				

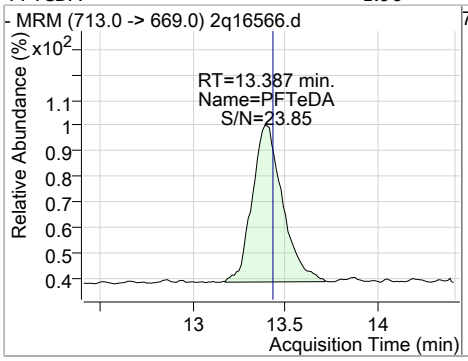


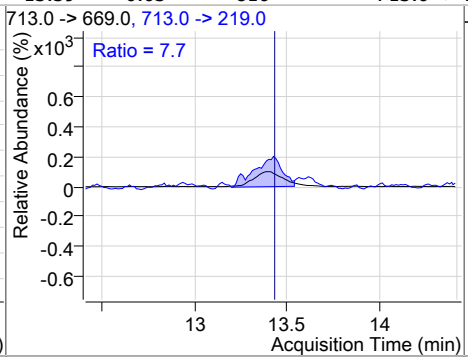


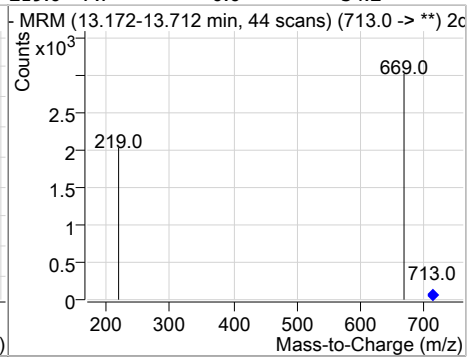


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.96	13.39	-0.03	816	713.0 -> 219.0	7.7	0.0	34.2







Manual Integration Approval Summary

Sample Number: S2Q291-IC291
Lab FileID: 2Q16566.D
Injection Time: 07/05/18 17:10
Method: EPA 537M QSM5.1 B-15
Analyst approved: 07/06/18 10:17 Natasha Gumtie
Supervisor approved: 07/06/18 17:13 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.08	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.40	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/06/18 17:13

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16567.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/5/2018 5:30:22 PM
Sample Name : ic291-5
Vial : Vial 5
DA Method File : PFC_ID_070518_S2Q291.quantmethod.xml
Batch Name : s2q291.batch.bin
Sample Information : op70743,S2Q291,130,,,1.0,1,water

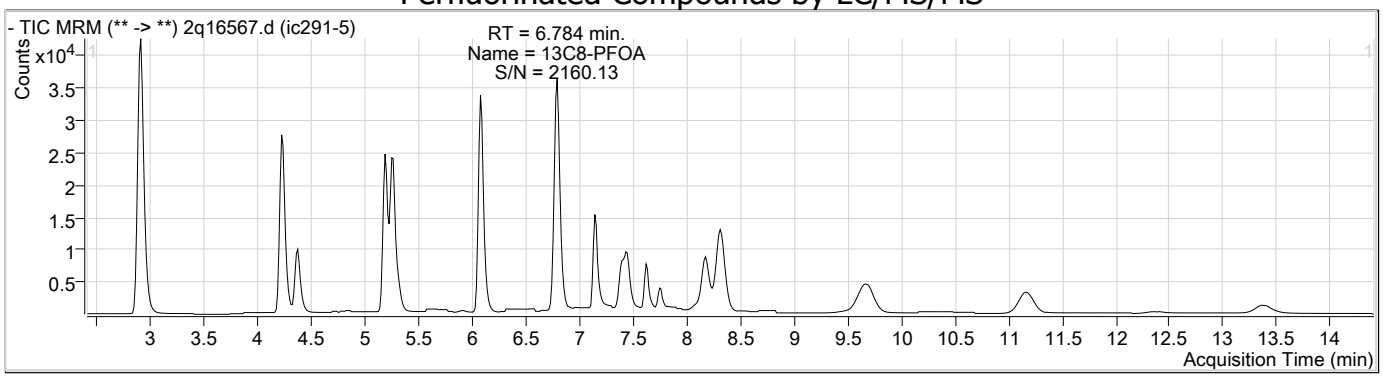
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.785	415.0 -> 370.0	24471	20.00	µg/L	-0.013
13C4-PFOS	7.397	503.0 -> 80.0	12005	20.00	µg/L	0.000
M4-PFBA	2.903	217.0 -> 172.0	168023	20.00	µg/L	0.000
M5-PFPeA	4.225	268.0 -> 223.0	79948	20.00	µg/L	-0.013
M5-PFHxA	5.265	318.0 -> 273.0	71917	20.00	µg/L	0.000
M4-PFHpA	6.079	367.0 -> 322.0	71676	20.00	µg/L	-0.013
M8-PFOA	6.784	421.0 -> 376.0	37742	20.00	µg/L	-0.013
M9-PFNA	7.450	472.0 -> 427.0	24598	20.00	µg/L	0.000
M6-PFDA	8.180	519.0 -> 474.0	38144	20.00	µg/L	0.000
M7-PFUnDA	9.666	570.0 -> 525.0	41958	20.00	µg/L	-0.013
M2-PFDoDA	11.164	615.0 -> 570.0	29536	20.00	µg/L	-0.005
M2-PFTeDA	13.381	715.0 -> 670.0	12669	20.00	µg/L	0.000
M8-FOSA	7.142	506.0 -> 78.0	37475	20.00	µg/L	0.000
M3-PFBS	4.368	302.0 -> 99.0	24154	20.00	µg/L	0.000
M3-PFHxS	6.073	402.0 -> 99.0	22107	20.00	µg/L	-0.013
M8-PFOS	7.395	507.0 -> 99.0	9975	20.00	µg/L	0.000
M2-4:2FTS	5.185	329.0 -> 309.0	69066	20.00	µg/L	-0.013
M2-6:2FTS	6.793	429.0 -> 409.0	54912	20.00	µg/L	-0.015
M2-8:2FTS	8.311	529.0 -> 509.0	62829	20.00	µg/L	-0.015
M3-MeFOSAA	7.619	573.0 -> 419.0	18223	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.185	329.0 -> 309.0	69076	21.06	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.3%		
13C2-6:2FTS	6.793	429.0 -> 409.0	54911	20.78	µg/L	-0.015
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.9%		
13C2-8:2FTS	8.311	529.0 -> 509.0	62802	19.35	µg/L	-0.015
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.8%		
13C2-PFDoDA	11.164	615.0 -> 570.0	29726	20.28	µg/L	-0.005
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.4%		
13C2-PFTeDA	13.381	715.0 -> 670.0	12667	20.41	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.1%		
13C3-PFBS	4.368	302.0 -> 99.0	24149	21.85	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.2%		
13C3-PFHxS	6.073	402.0 -> 99.0	22104	22.07	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.3%		
13C4-PFBA	2.903	217.0 -> 172.0	167931	21.93	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.7%		
13C4-PFHpA	6.079	367.0 -> 322.0	71700	22.25	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.3%		
13C5-PFHxA	5.265	318.0 -> 273.0	71919	21.95	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.7%		
13C5-PFPeA	4.225	268.0 -> 223.0	79933	21.94	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.7%		
13C6-PFDA	8.180	519.0 -> 474.0	38104	20.58	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.9%		

Perfluorinated Compounds by LC/MS/MS

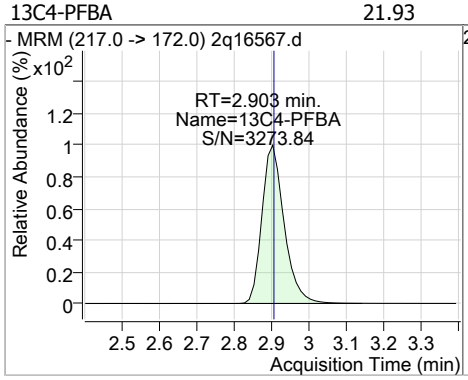
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	9.666	570.0 -> 525.0	42023	20.55	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.7%			
13C8-FOSA	7.142	506.0 -> 78.0	37476	21.29	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.4%			
13C8-PFOA	6.784	421.0 -> 376.0	37740	21.67	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.4%			
13C8-PFOS	7.395	507.0 -> 99.0	9985	20.38	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%			
13C9-PFNA	7.450	472.0 -> 427.0	24597	20.67	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.4%			
d3-MeFOSAA	7.619	573.0 -> 419.0	18225	20.76	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.8%			
M2-PFOA	6.785	415.0 -> 370.0	24453	19.99	ng/ml		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%			
M4-PFOS	7.397	503.0 -> 80.0	11999	20.00	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
Target Compounds							**QValue**
4:2FTS	5.187	327.0 -> 307.0	8548	4.71	µg/L		96
6:2FTS	6.794	427.0 -> 407.0	6725	4.83	µg/L		90
8:2FTS	8.313	527.0 -> 507.0	8583	4.95	µg/L		80
EtFOSAA	7.756	584.0 -> 419.0	1319	4.48	µg/L		98
FOSA	7.144	498.0 -> 78.0	4641	4.92	µg/L		98
MeFOSAA	7.633	570.0 -> 419.0	1590	4.97	µg/L		87
PFBA	2.899	213.0 -> 169.0	6694	4.95	µg/L		100
PFBS	4.359	299.0 -> 80.0	7964	4.91	µg/L		95
PFDA	8.181	513.0 -> 469.0	3405	4.63	µg/L		97
PFDoDA	11.158	613.0 -> 569.0	3758	4.95	µg/L		98
PFDS	9.474	599.0 -> 80.0	1912	5.07	µg/L		93
PFHpA	6.082	363.0 -> 319.0	12550	4.91	µg/L		94
PFHpS	6.753	449.0 -> 80.0	3142	4.90	µg/L		98
PFHxA	5.268	313.0 -> 269.0	5831	4.99	µg/L		98
PFHxS	6.076	399.0 -> 80.0	6107	4.98	µg/L	m	97
PFNA	7.451	463.0 -> 419.0	2356	4.82	µg/L		90
PFNS	8.088	549.0 -> 80.0	2330	5.15	µg/L		100
PFOA	6.786	413.0 -> 369.0	4899	5.17	µg/L		96
PFOS	7.397	499.0 -> 80.0	3007	4.99	µg/L	m	75
PFPeA	4.228	263.0 -> 219.0	19514	5.05	µg/L		100
PFPeS	5.308	349.0 -> 80.0	5106	5.15	µg/L		99
PFTeDA	13.387	713.0 -> 669.0	1918	4.78	µg/L		89
PFTrDA	12.354	663.0 -> 619.0	2767	4.73	µg/L		95
PFUnDA	9.670	563.0 -> 519.0	4949	5.01	µg/L		99

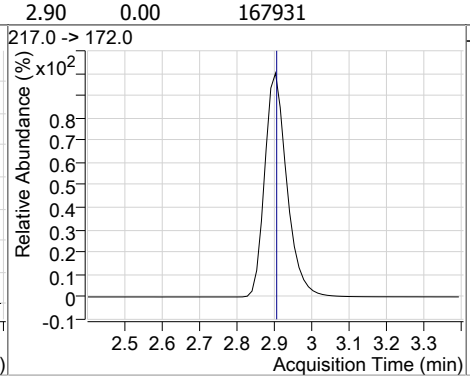
 # = Qualifier out of range, m = manually integrated, + = Area summed

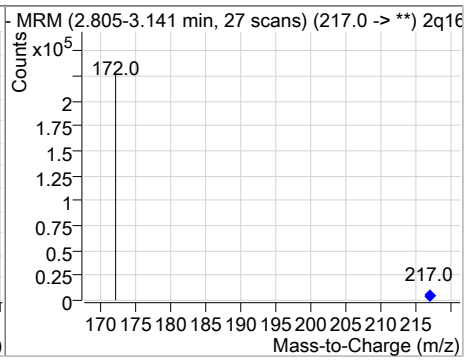
Perfluorinated Compounds by LC/MS/MS



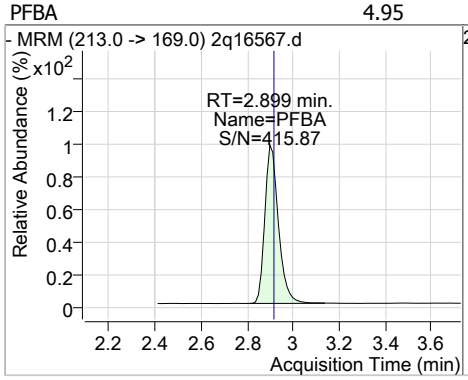
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	21.93	2.90	0.00	167931				

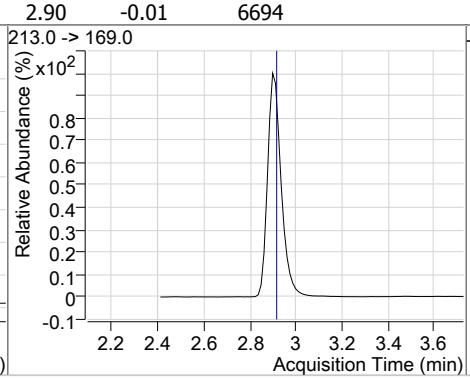


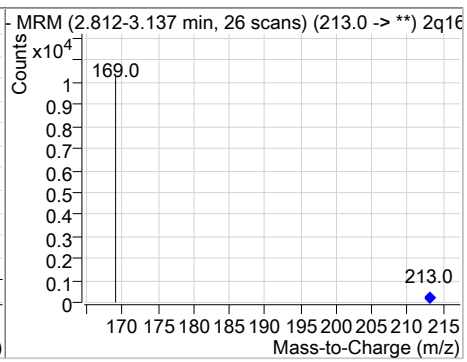




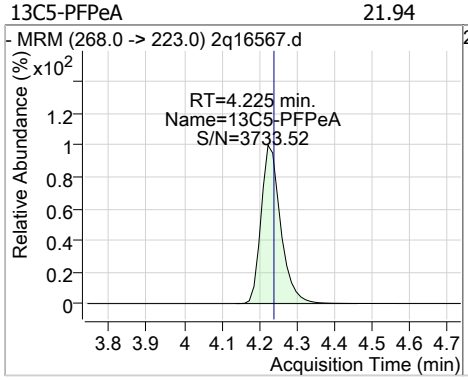
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	4.95	2.90	-0.01	6694				

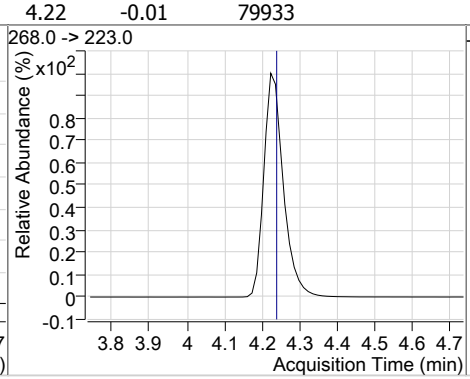


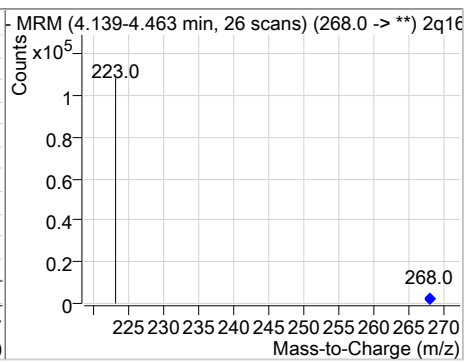




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	21.94	4.22	-0.01	79933				

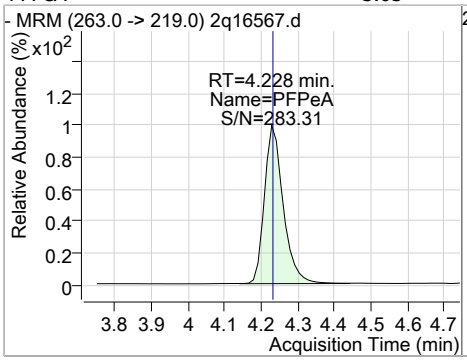


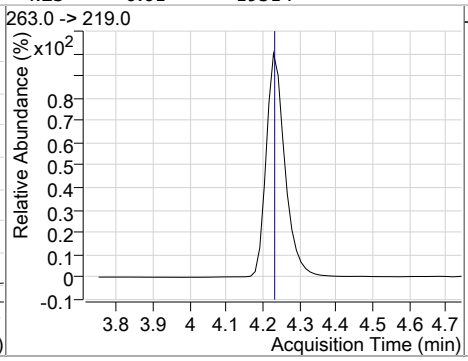


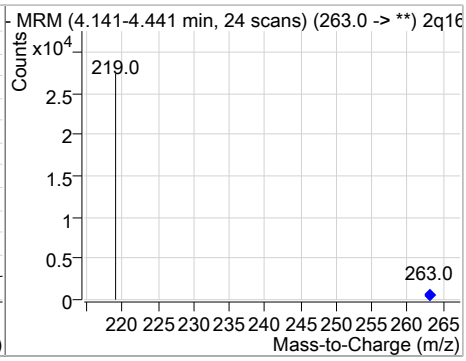


Perfluorinated Compounds by LC/MS/MS

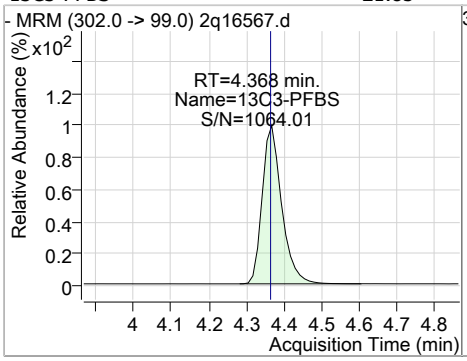
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	5.05	4.23	-0.01	19514				

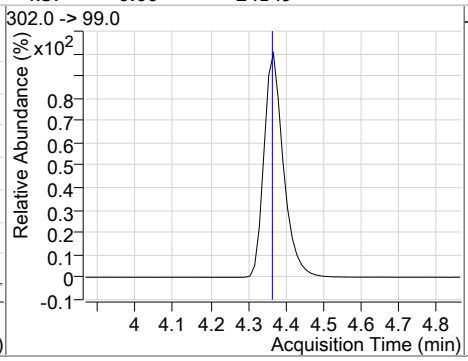


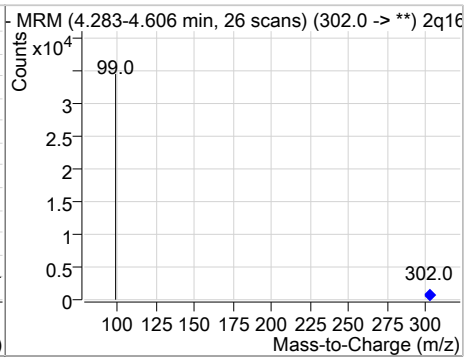




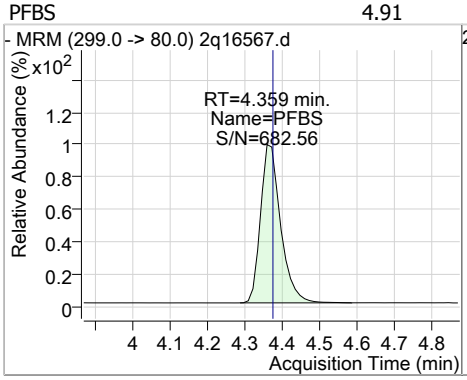
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.85	4.37	0.00	24149				

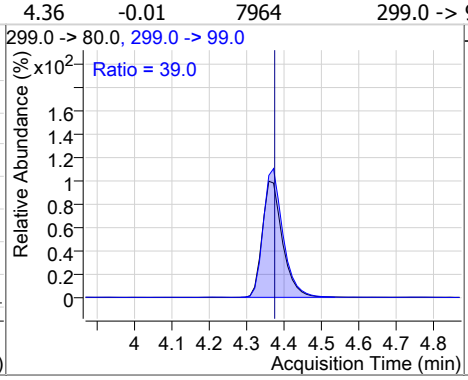


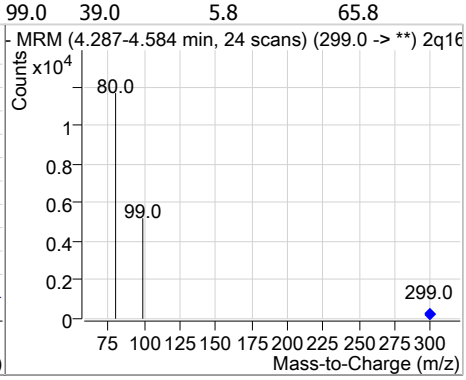




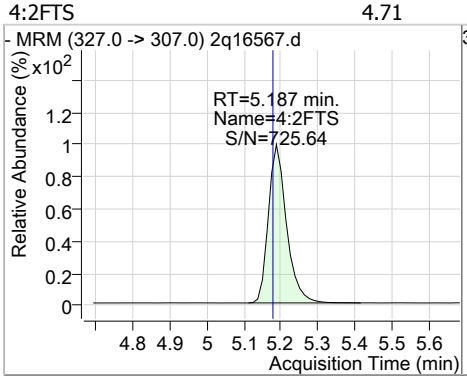
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	4.91	4.36	-0.01	7964	299.0 -> 99.0	39.0	5.8	65.8

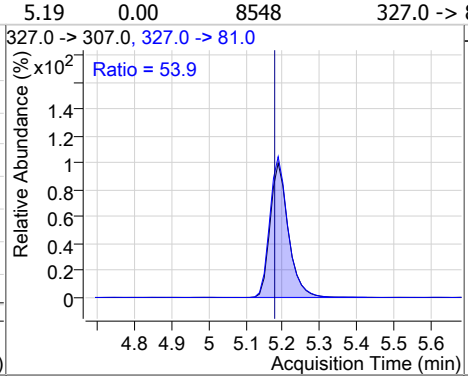


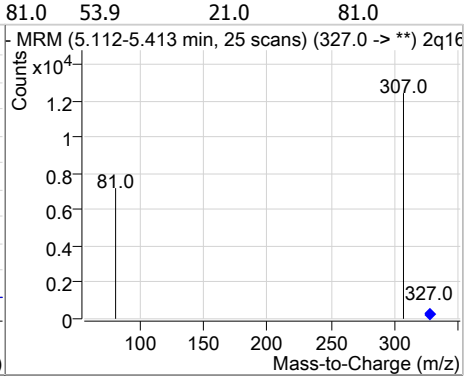




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	4.71	5.19	0.00	8548	327.0 -> 81.0	53.9	21.0	81.0

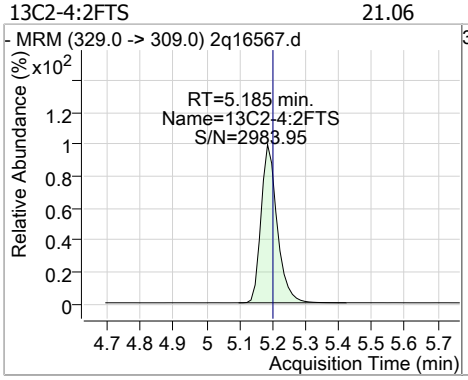


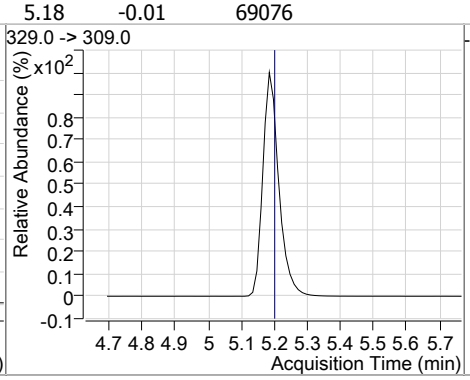


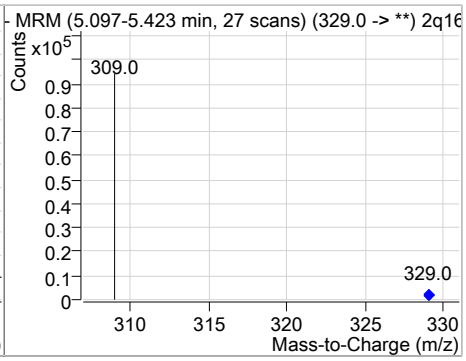


Perfluorinated Compounds by LC/MS/MS

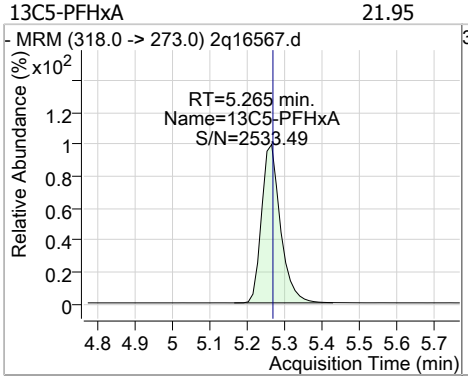
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	21.06	5.18	-0.01	69076				

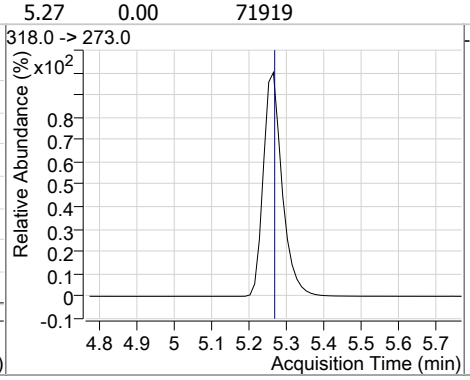


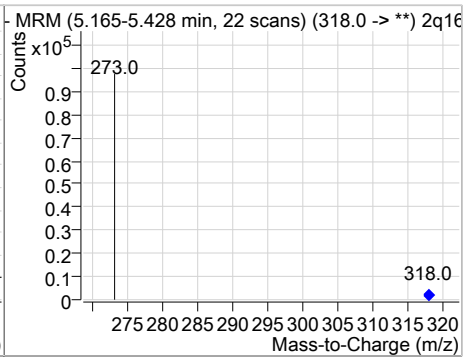




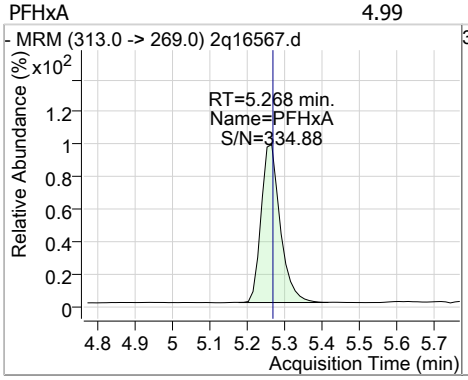
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.95	5.27	0.00	71919				

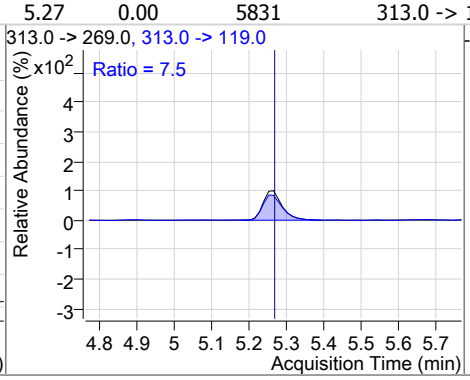


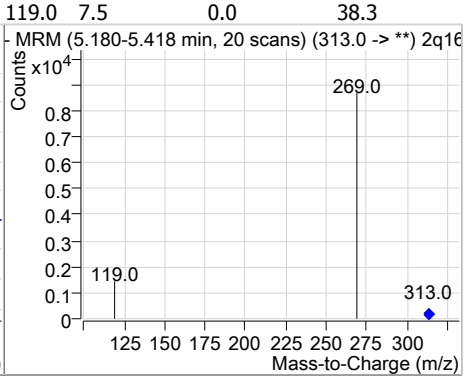




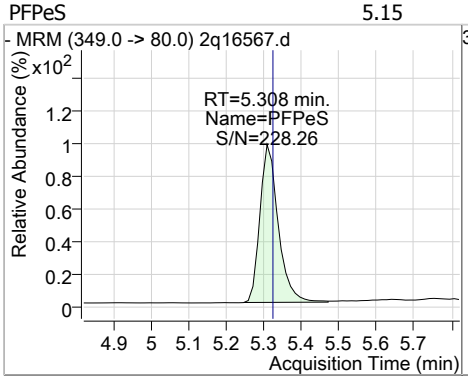
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	4.99	5.27	0.00	5831	313.0 -> 119.0	7.5	0.0	38.3

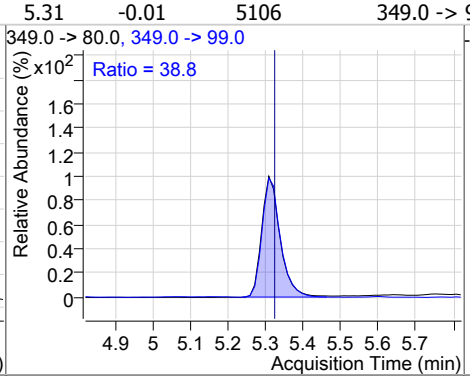


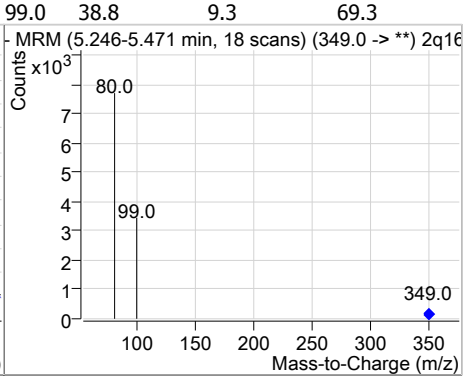




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	5.15	5.31	-0.01	5106	349.0 -> 99.0	38.8	9.3	69.3

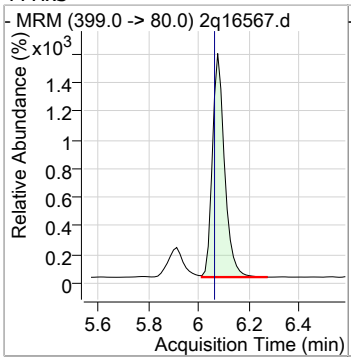


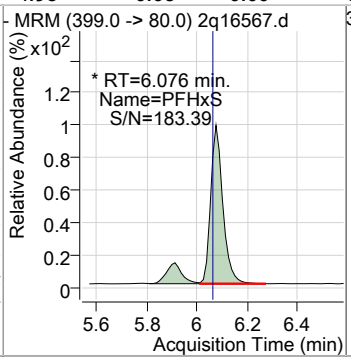


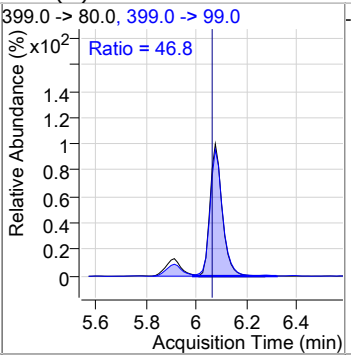


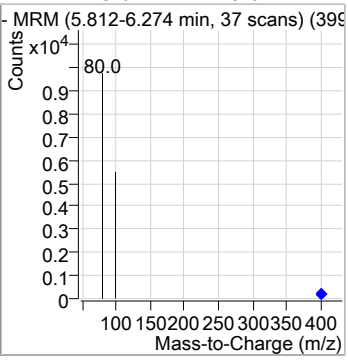
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	4.98	6.08	0.00	6107 (m)	399.0 -> 99.0	46.8	19.0	79.0

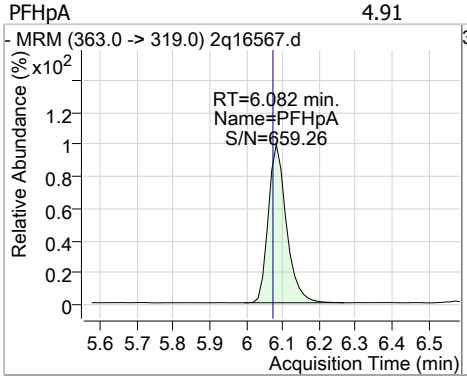


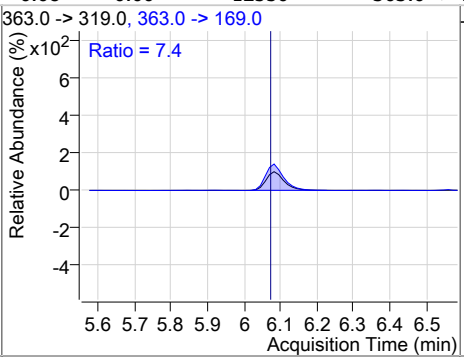


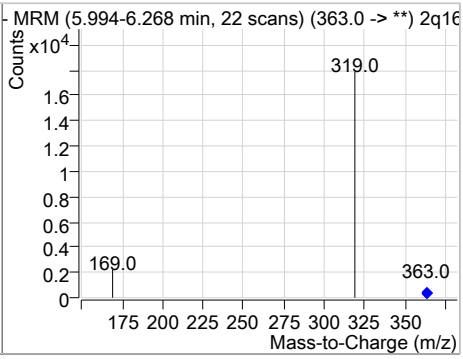




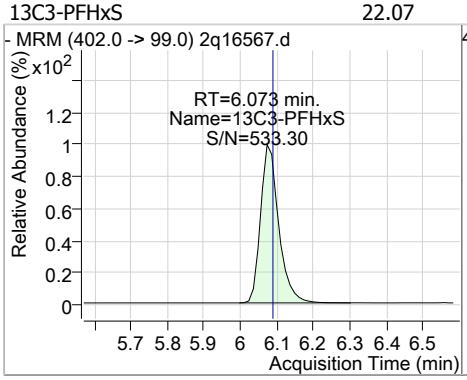
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	4.91	6.08	0.00	12550	363.0 -> 169.0	7.4	0.0	35.3

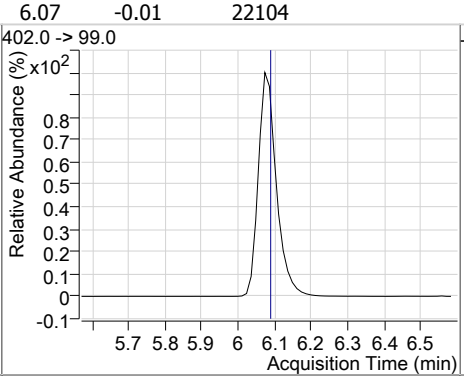


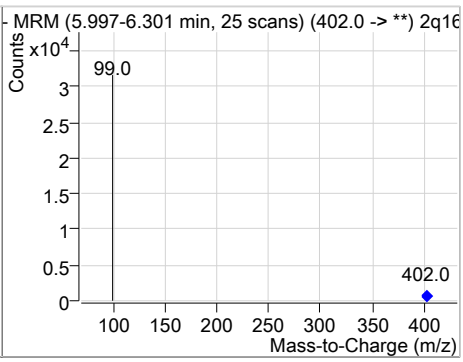




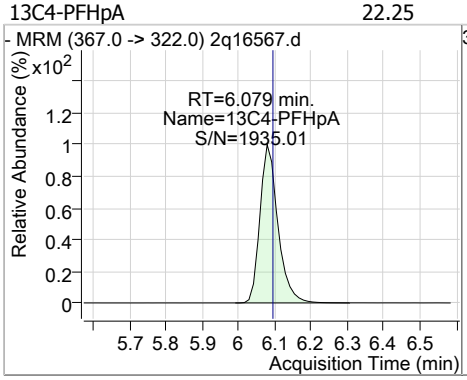
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	22.07	6.07	-0.01	22104				

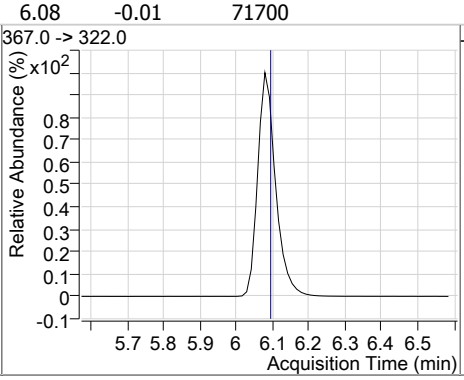


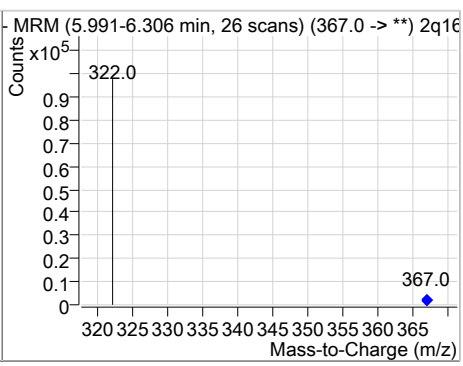




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	22.25	6.08	-0.01	71700				

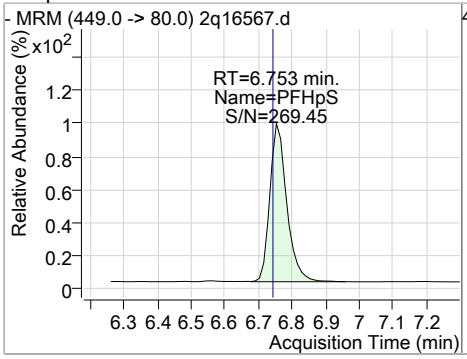


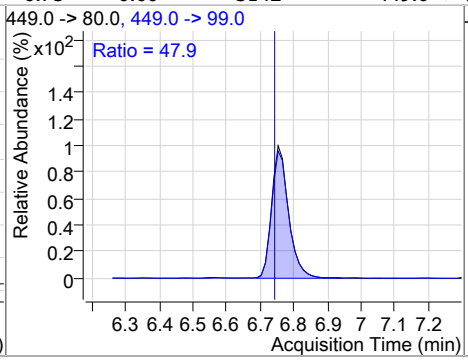


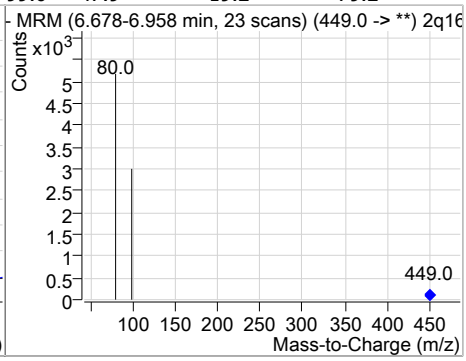


Perfluorinated Compounds by LC/MS/MS

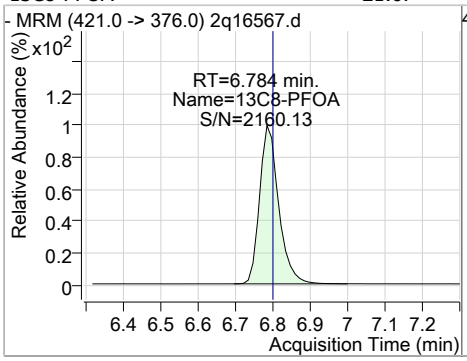
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	4.90	6.75	0.00	3142	449.0 -> 99.0	47.9	19.2	79.2

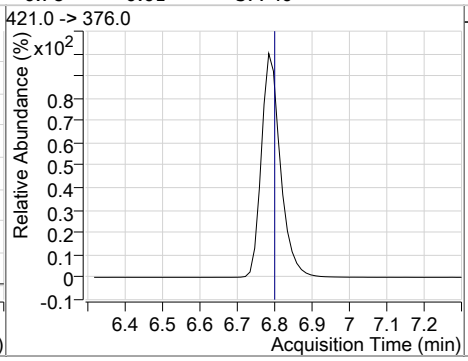


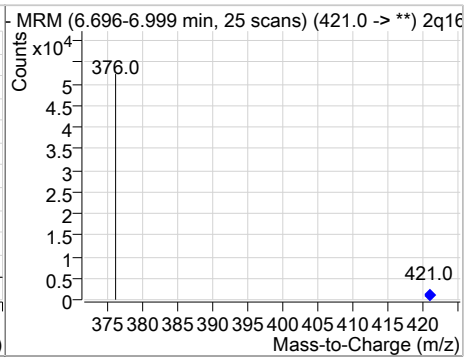




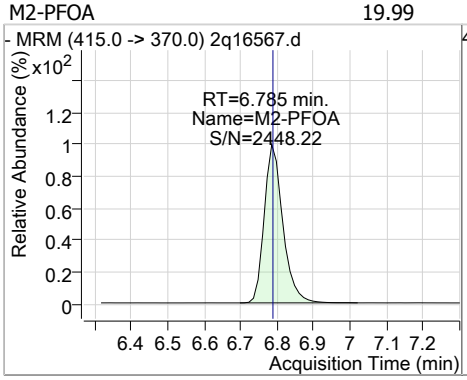
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.67	6.78	-0.01	37740				

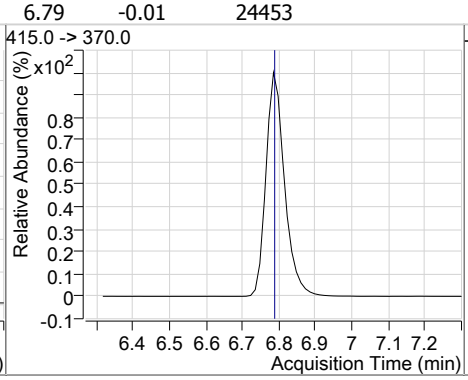


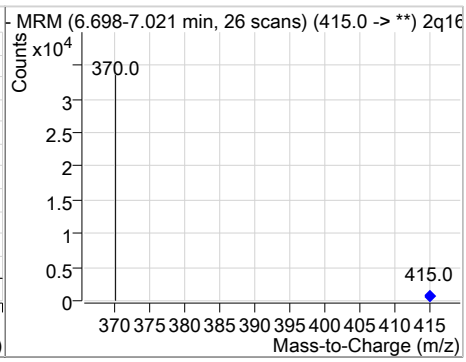




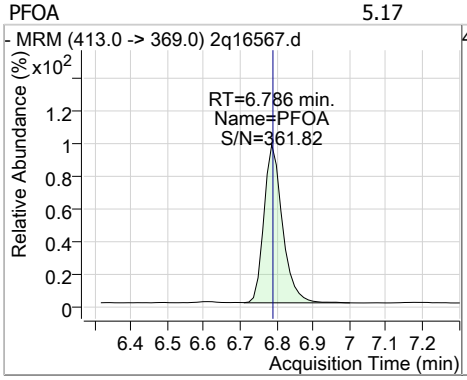
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	19.99	6.79	-0.01	24453				

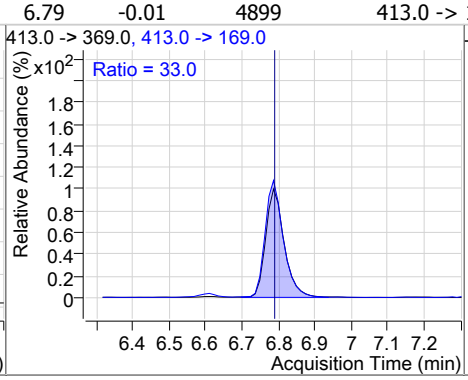


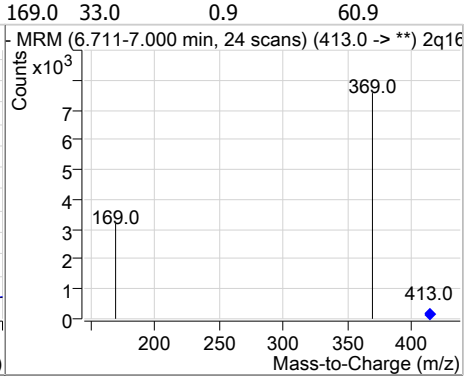




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	5.17	6.79	-0.01	4899	413.0 -> 169.0	33.0	0.9	60.9

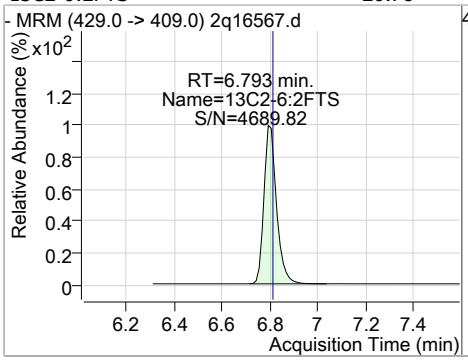


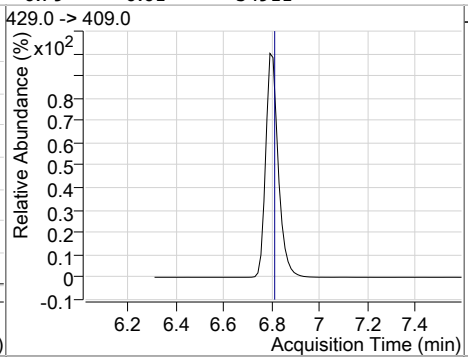


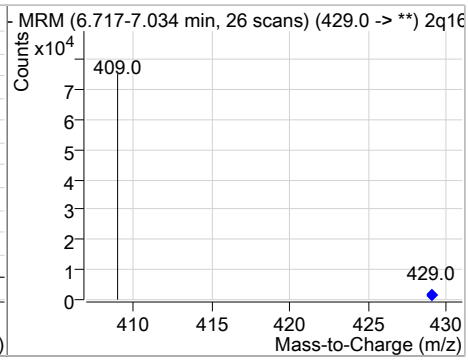


Perfluorinated Compounds by LC/MS/MS

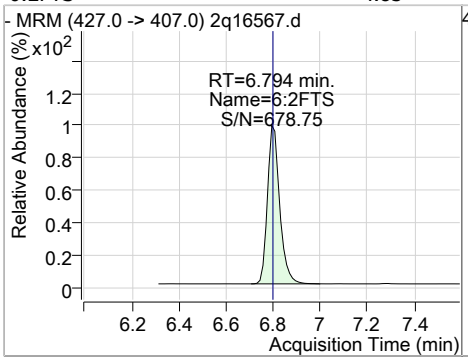
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.78	6.79	-0.01	54911				

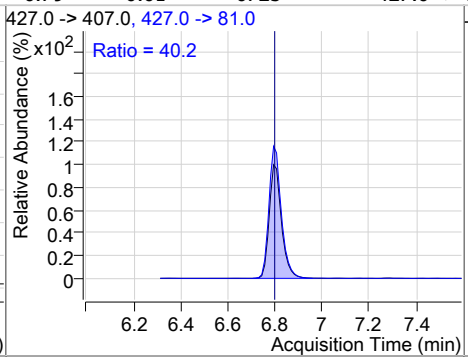


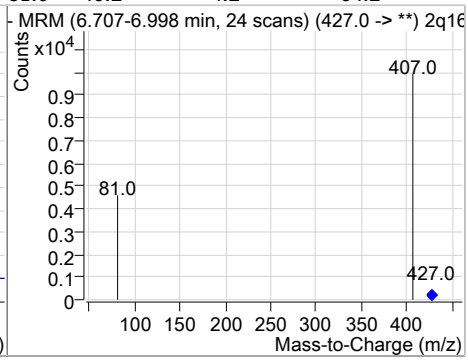




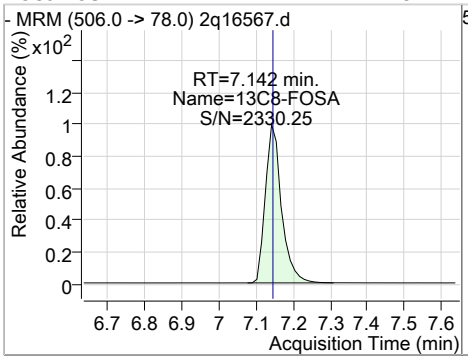
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	4.83	6.79	-0.01	6725	427.0 -> 81.0	40.2	4.2	64.2

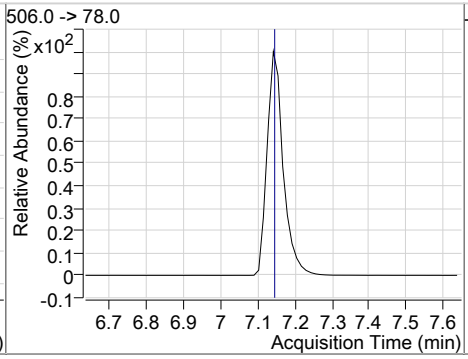


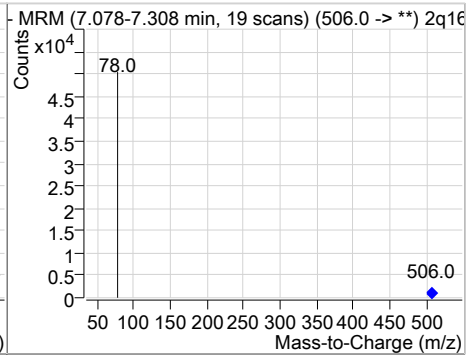




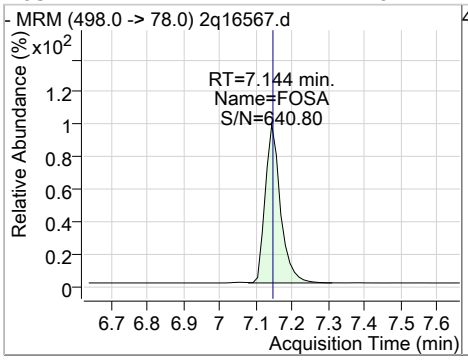
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.29	7.14	0.00	37476				

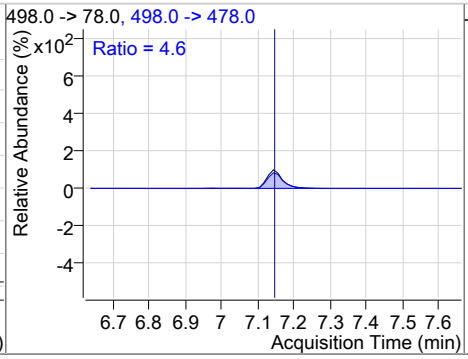


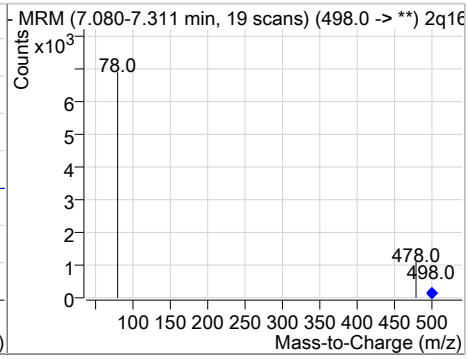




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	4.92	7.14	0.00	4641	498.0 -> 478.0	4.6	0.0	35.2

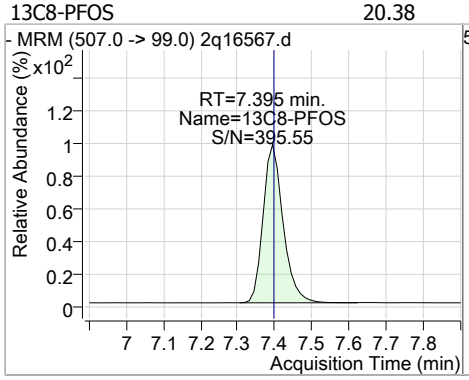


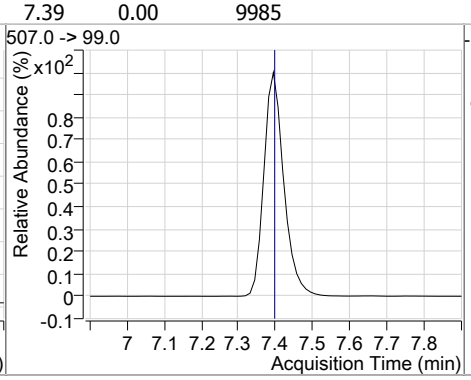


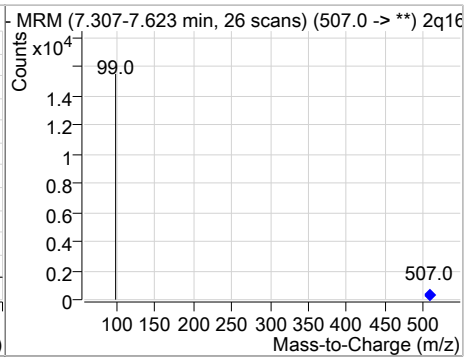


Perfluorinated Compounds by LC/MS/MS

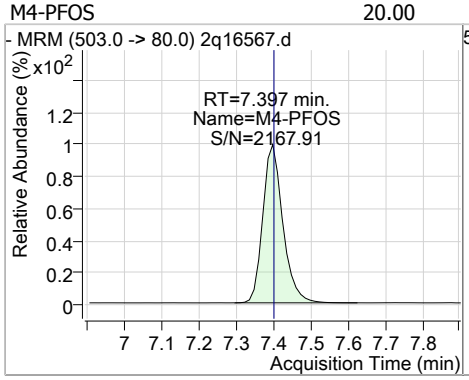
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.38	7.39	0.00	9985				

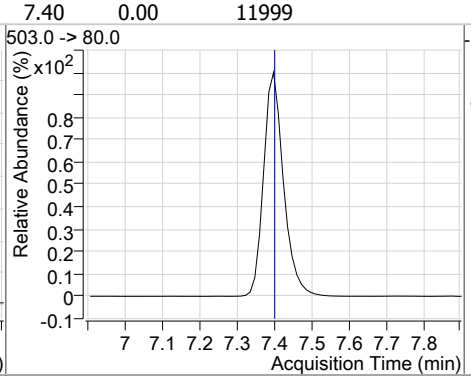


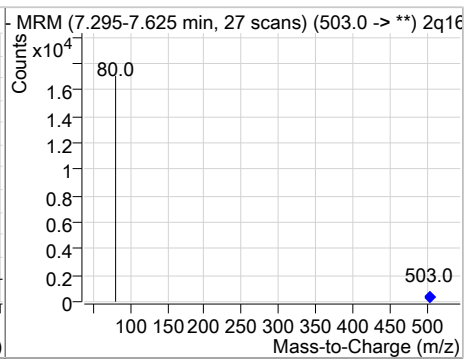




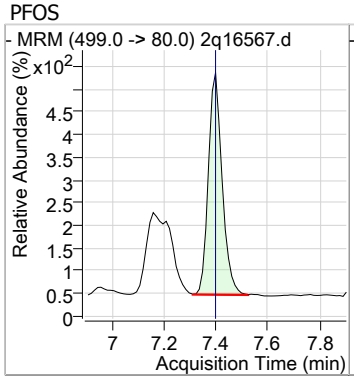
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.00	7.40	0.00	11999				

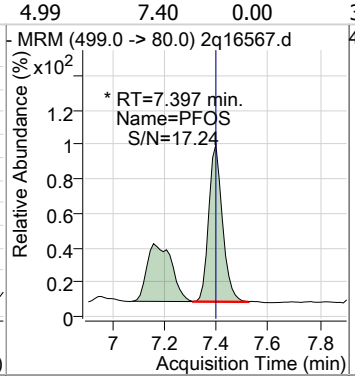


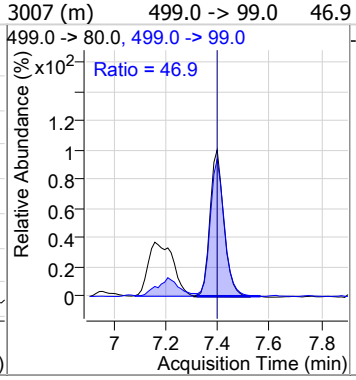


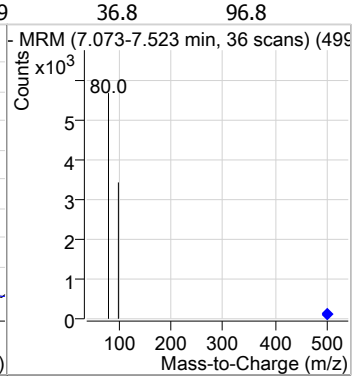


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	4.99	7.40	0.00	3007 (m)	499.0 -> 99.0	46.9	36.8	96.8

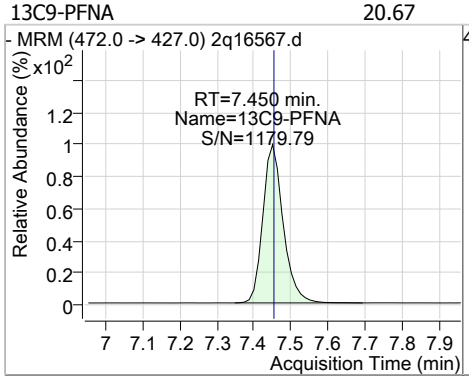


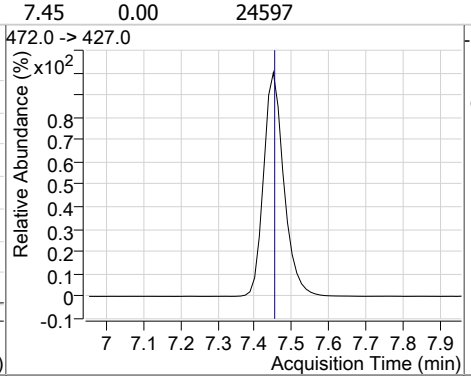


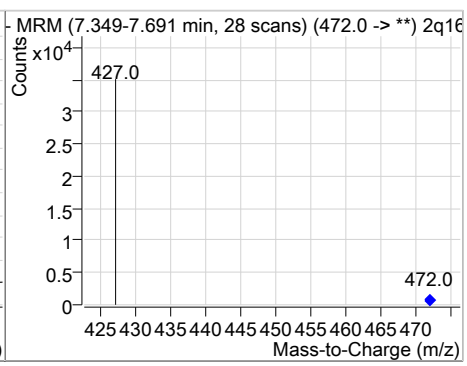




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.67	7.45	0.00	24597				

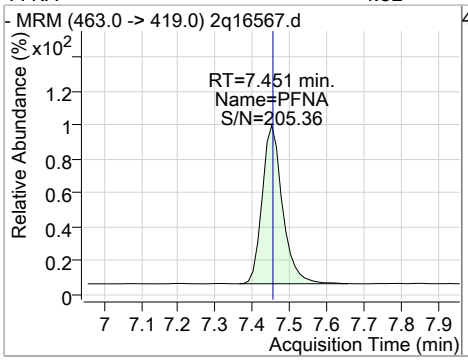


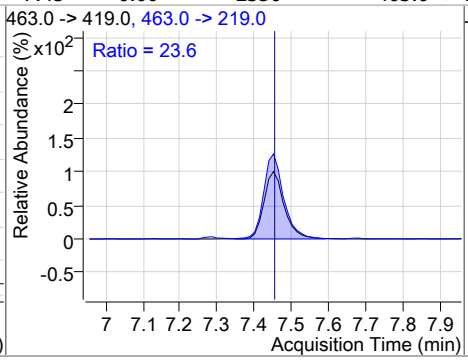


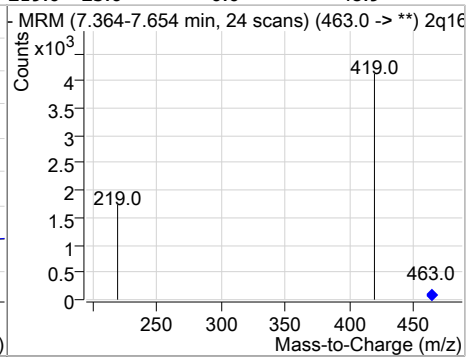


Perfluorinated Compounds by LC/MS/MS

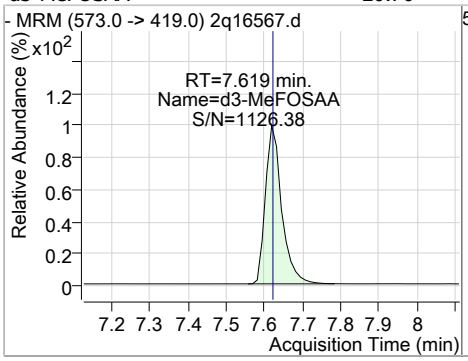
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	4.82	7.45	0.00	2356	463.0 -> 219.0	23.6	0.0	48.9

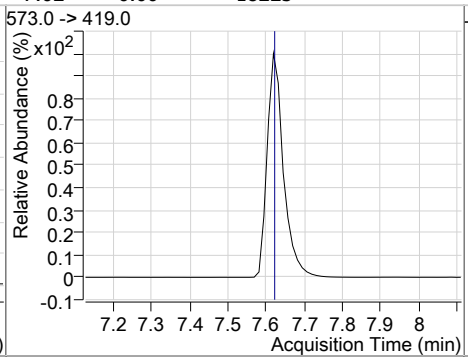


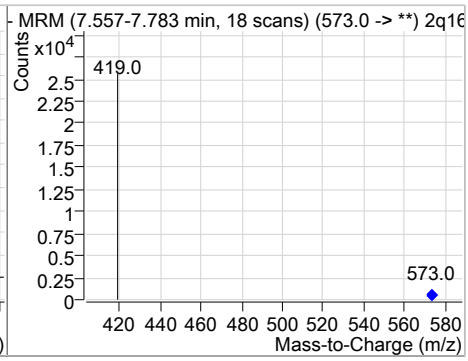




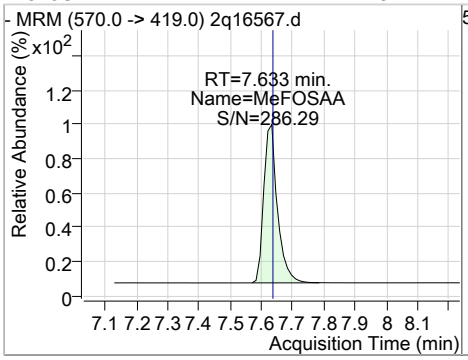
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.76	7.62	0.00	18225				

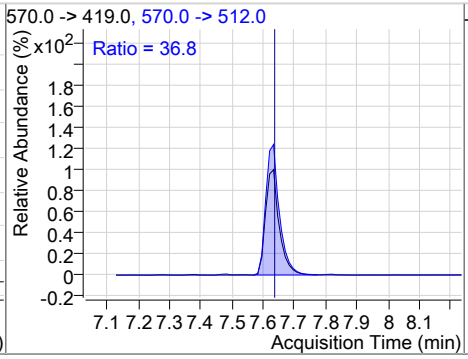


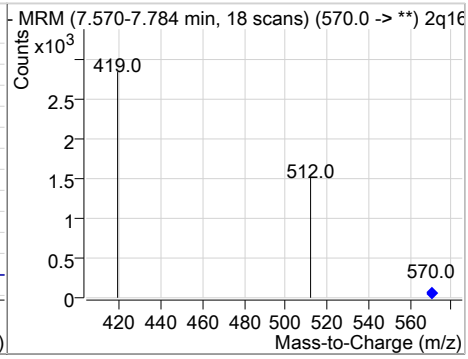




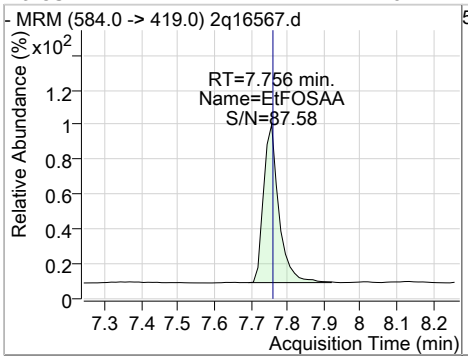
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	4.97	7.63	0.00	1590	570.0 -> 512.0	36.8	0.0	59.6

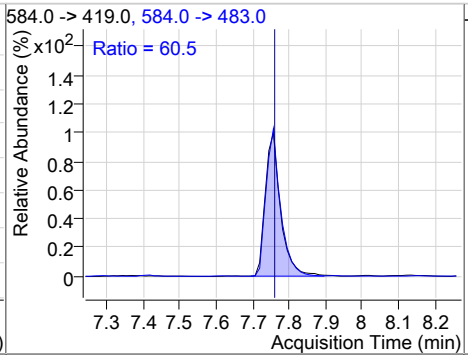


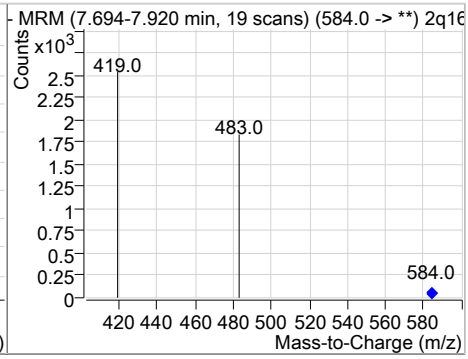




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	4.48	7.76	0.00	1319	584.0 -> 483.0	60.5	31.9	91.9

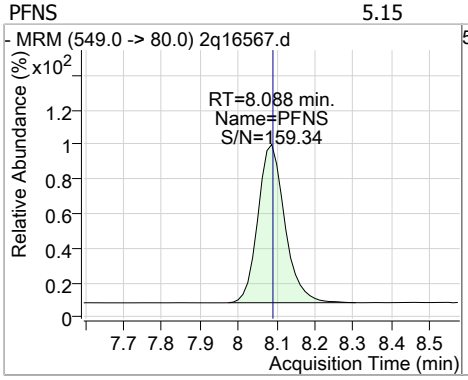


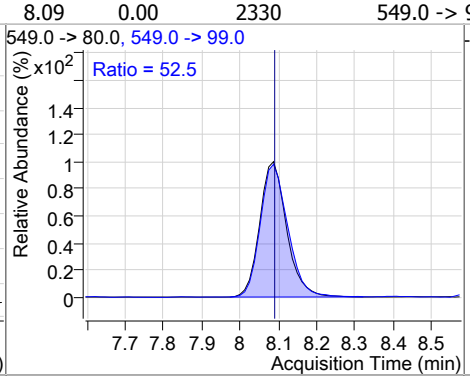


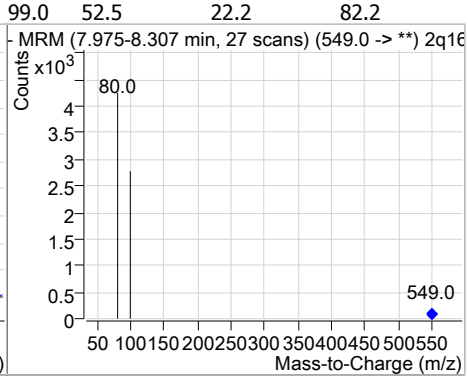


Perfluorinated Compounds by LC/MS/MS

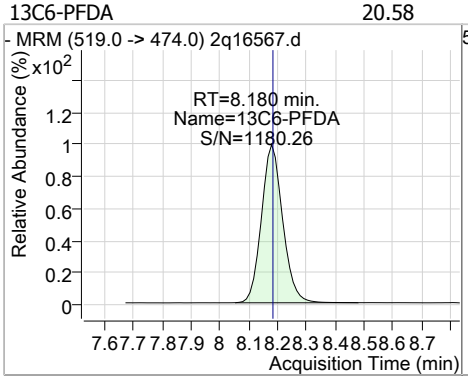
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	5.15	8.09	0.00	2330	549.0 -> 99.0	52.5	22.2	82.2

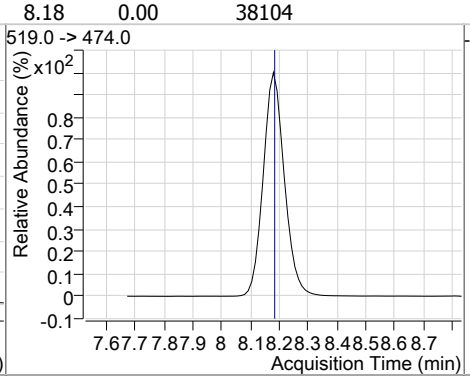


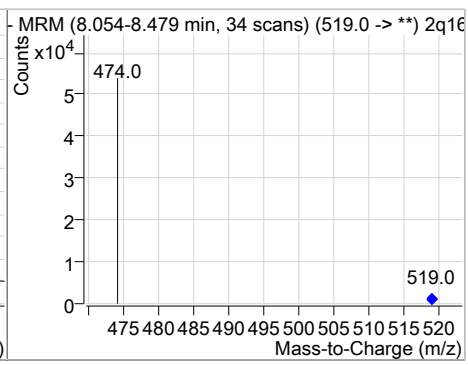




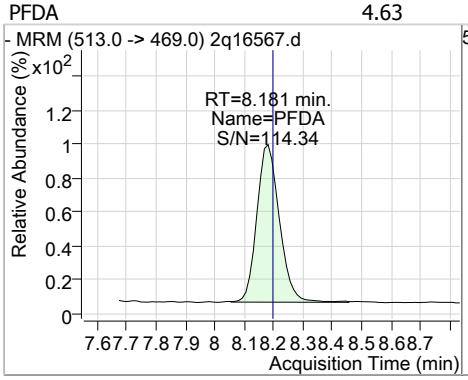
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.58	8.18	0.00	38104				

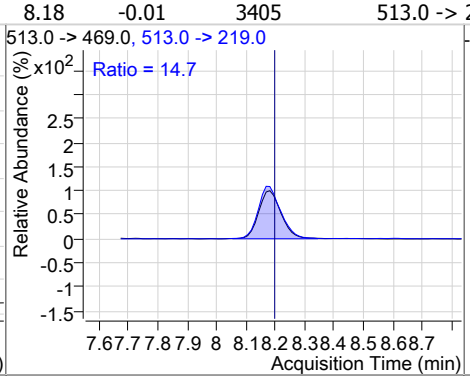


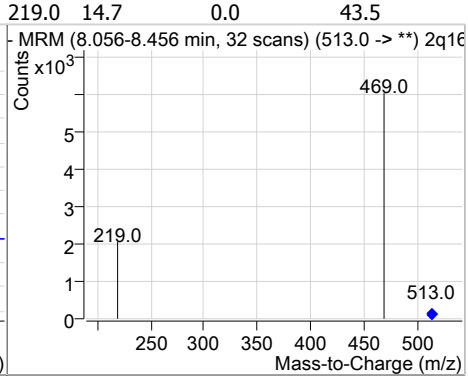




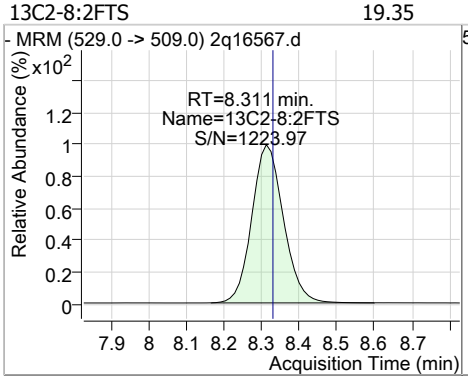
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	4.63	8.18	-0.01	3405	513.0 -> 219.0	14.7	0.0	43.5

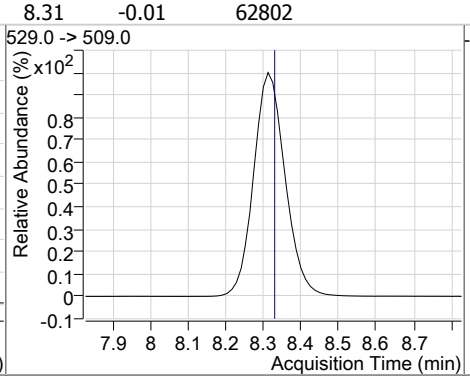


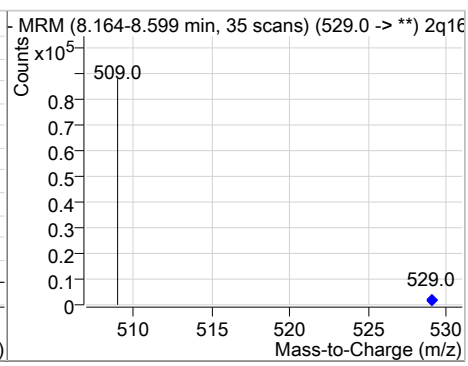




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.35	8.31	-0.01	62802				

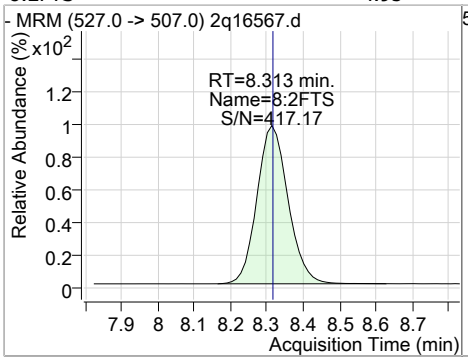


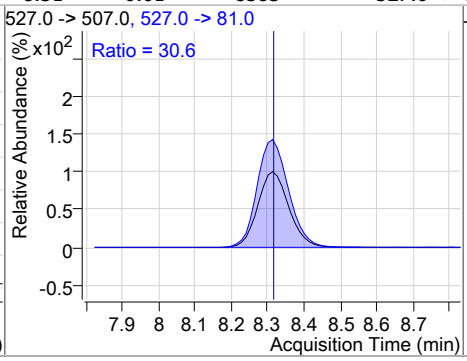


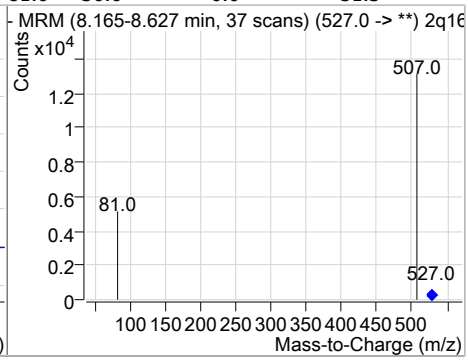


Perfluorinated Compounds by LC/MS/MS

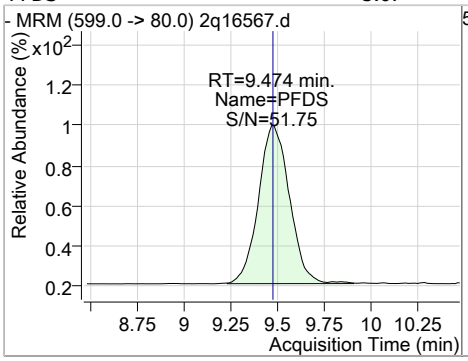
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	4.95	8.31	-0.01	8583	527.0 -> 81.0	30.6	0.0	51.3

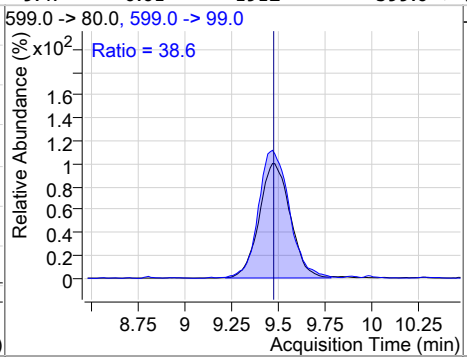


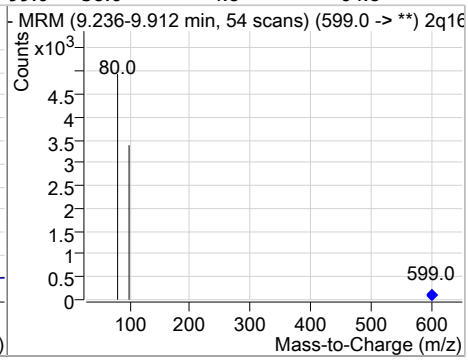




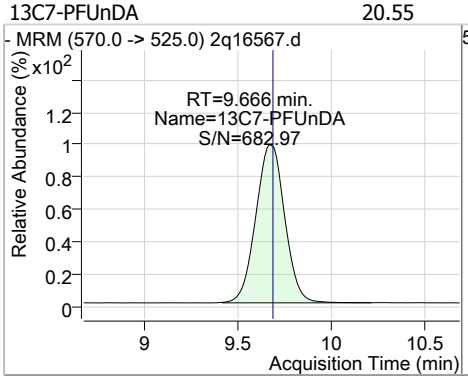
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	5.07	9.47	-0.01	1912	599.0 -> 99.0	38.6	4.8	64.8

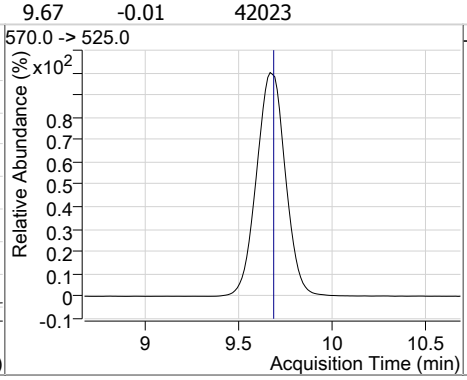


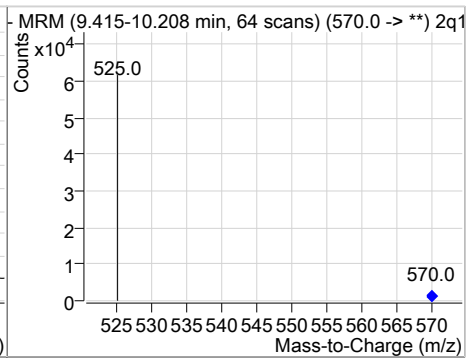




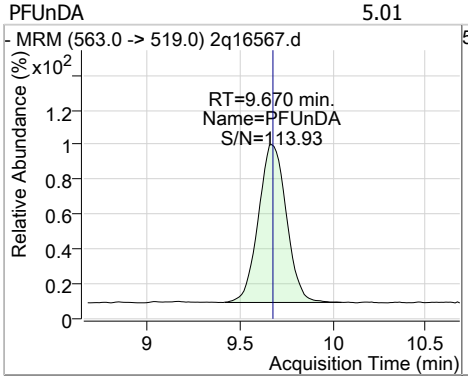
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.55	9.67	-0.01	42023				

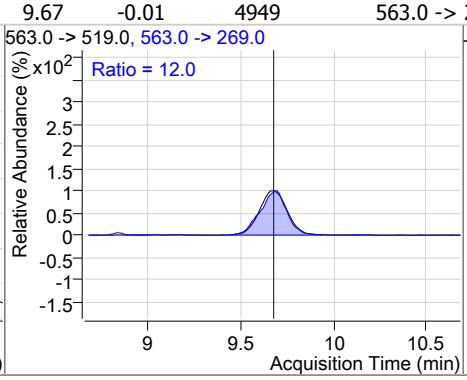


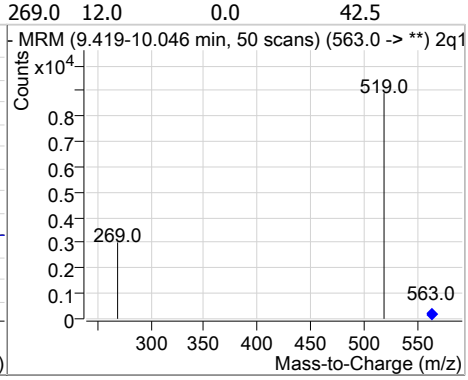




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	5.01	9.67	-0.01	4949	563.0 -> 269.0	12.0	0.0	42.5

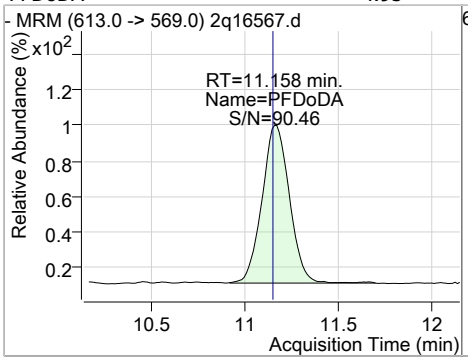


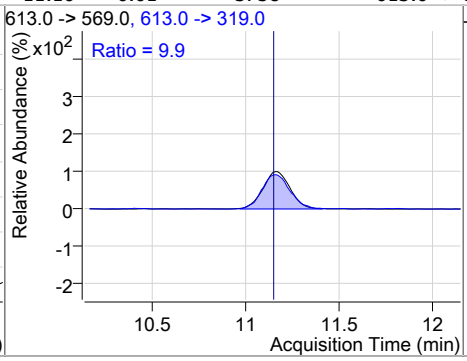


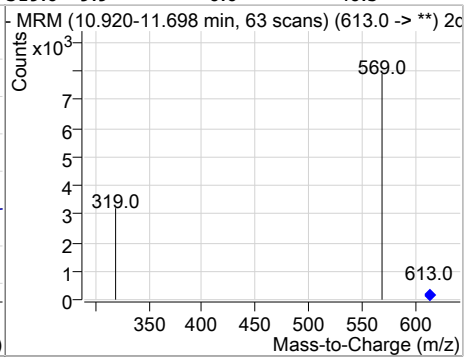


Perfluorinated Compounds by LC/MS/MS

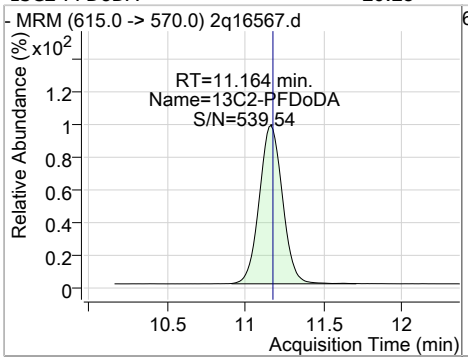
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	4.95	11.16	0.01	3758	613.0 -> 319.0	9.9	0.0	40.5

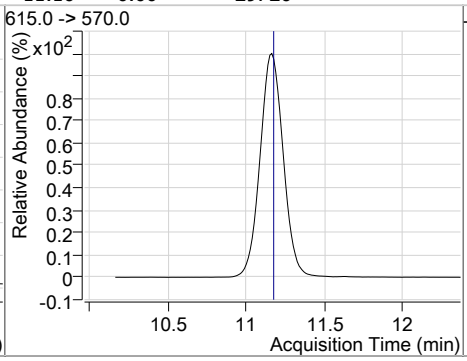


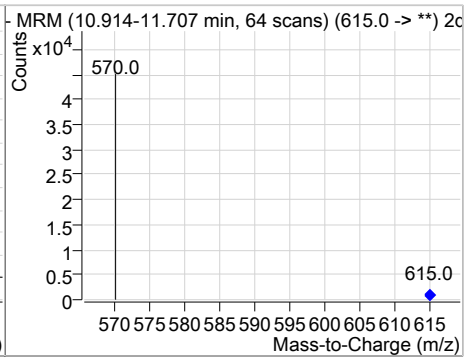




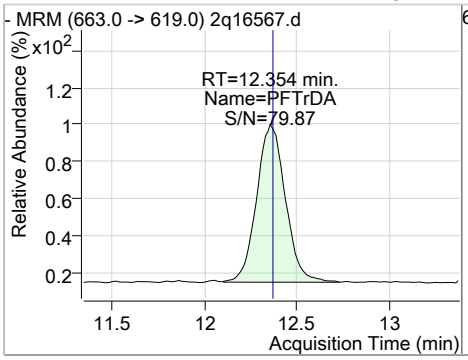
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.28	11.16	0.00	29726				

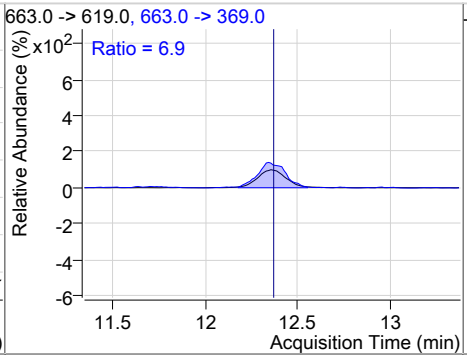


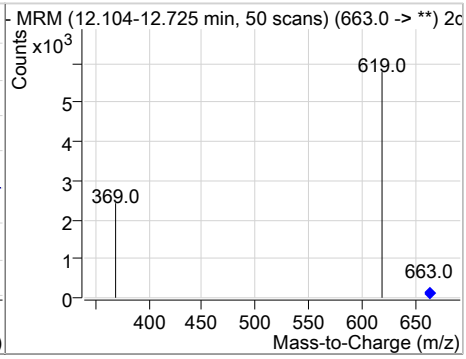




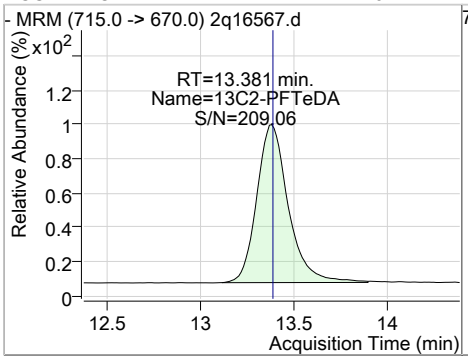
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	4.73	12.35	-0.01	2767	663.0 -> 369.0	6.9	0.0	35.1

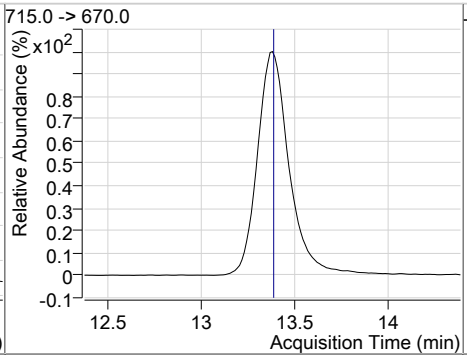


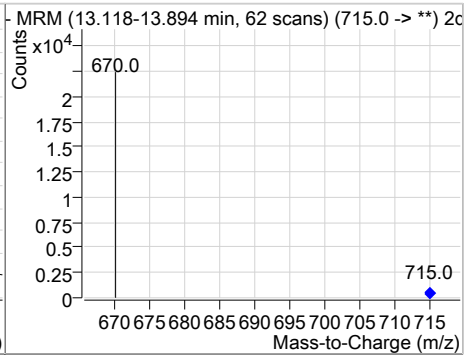




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.41	13.38	0.00	12667				

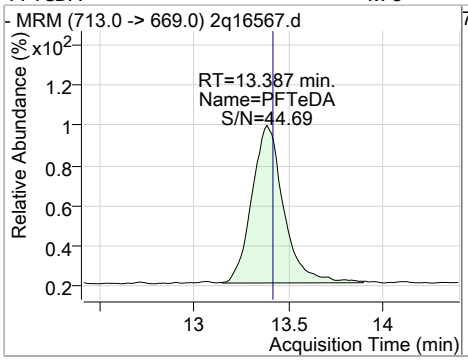


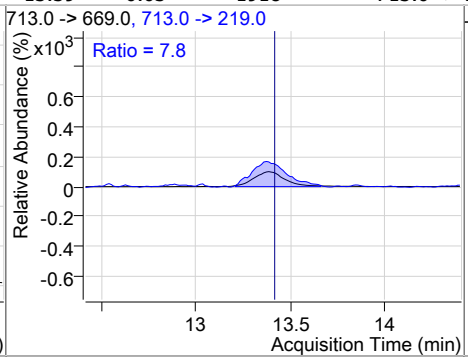


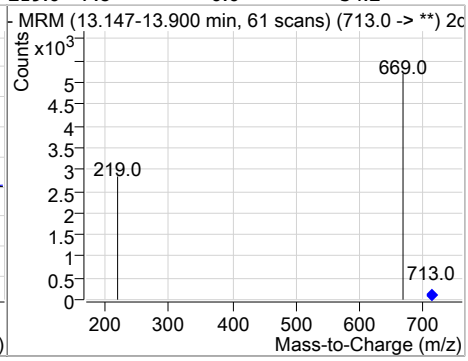


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	4.78	13.39	-0.03	1918	713.0 -> 219.0	7.8	0.0	34.2







Manual Integration Approval Summary

Sample Number:	S2Q291-IC291	**Method:**	EPA 537M QSM5.1 B-15
Lab FileID:	2Q16567.D	**Analyst approved:**	07/06/18 10:17 Natasha Gumtie
Injection Time:	07/05/18 17:30	**Supervisor approved:**	07/06/18 17:13 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.08	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.40	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
07/06/18 17:13

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16568.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/5/2018 5:50:06 PM
Sample Name : ic291-10
Vial : Vial 6
DA Method File : PFC_ID_070518_S2Q291.quantmethod.xml
Batch Name : s2q291.batch.bin
Sample Information : op70743,S2Q291,130,,,1.0,1,water

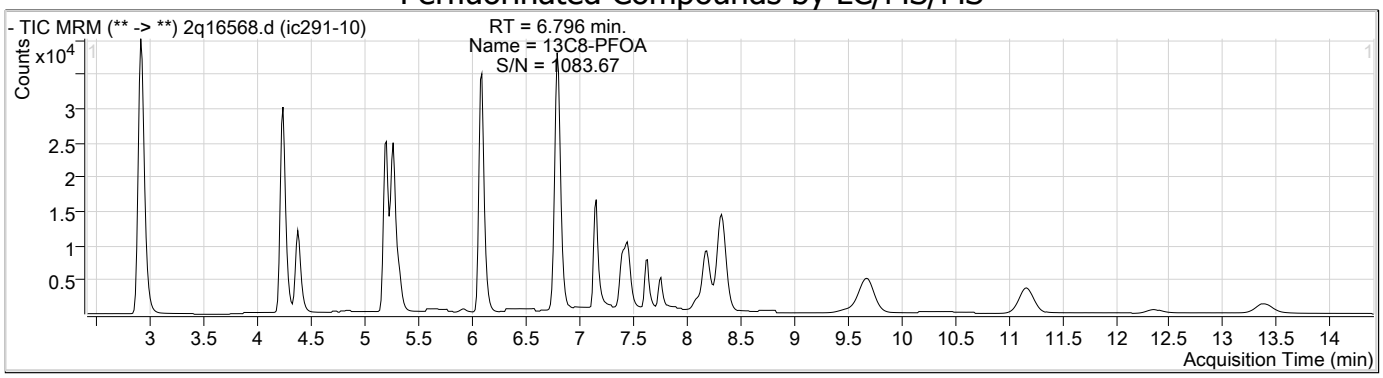
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.798	415.0 -> 370.0	23523	20.00	µg/L	0.000
13C4-PFOS	7.397	503.0 -> 80.0	12277	20.00	µg/L	0.000
M4-PFBA	2.903	217.0 -> 172.0	151748	20.00	µg/L	0.000
M5-PFPeA	4.237	268.0 -> 223.0	72112	20.00	µg/L	0.000
M5-PFHxA	5.265	318.0 -> 273.0	66284	20.00	µg/L	0.000
M4-PFHpA	6.091	367.0 -> 322.0	64159	20.00	µg/L	0.000
M8-PFOA	6.796	421.0 -> 376.0	34558	20.00	µg/L	0.000
M9-PFNA	7.450	472.0 -> 427.0	23817	20.00	µg/L	0.000
M6-PFDA	8.192	519.0 -> 474.0	37138	20.00	µg/L	0.012
M7-PFUnDA	9.678	570.0 -> 525.0	41167	20.00	µg/L	0.000
M2-PFDoDA	11.164	615.0 -> 570.0	29222	20.00	µg/L	-0.005
M2-PFTeDA	13.381	715.0 -> 670.0	12585	20.00	µg/L	0.000
M8-FOSA	7.155	506.0 -> 78.0	36477	20.00	µg/L	0.012
M3-PFBS	4.368	302.0 -> 99.0	21881	20.00	µg/L	0.000
M3-PFHxS	6.085	402.0 -> 99.0	20052	20.00	µg/L	0.000
M8-PFOS	7.395	507.0 -> 99.0	9988	20.00	µg/L	0.000
M2-4:2FTS	5.198	329.0 -> 309.0	62962	20.00	µg/L	0.000
M2-6:2FTS	6.805	429.0 -> 409.0	51396	20.00	µg/L	-0.002
M2-8:2FTS	8.323	529.0 -> 509.0	62491	20.00	µg/L	-0.002
M3-MeFOSAA	7.619	573.0 -> 419.0	17683	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.198	329.0 -> 309.0	62950	19.19	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.0%		
13C2-6:2FTS	6.805	429.0 -> 409.0	51401	19.45	µg/L	-0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.2%		
13C2-8:2FTS	8.323	529.0 -> 509.0	62455	19.25	µg/L	-0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.2%		
13C2-PFDoDA	11.164	615.0 -> 570.0	29310	20.00	µg/L	-0.005
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C2-PFTeDA	13.381	715.0 -> 670.0	12508	20.16	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.8%		
13C3-PFBS	4.368	302.0 -> 99.0	22169	20.06	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C3-PFHxS	6.085	402.0 -> 99.0	20050	20.02	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%		
13C4-PFBA	2.903	217.0 -> 172.0	151768	19.82	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%		
13C4-PFHpA	6.091	367.0 -> 322.0	64157	19.91	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%		
13C5-PFHxA	5.265	318.0 -> 273.0	66271	20.23	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%		
13C5-PFPeA	4.237	268.0 -> 223.0	72114	19.79	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%		
13C6-PFDA	8.192	519.0 -> 474.0	37167	20.07	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.4%		

Perfluorinated Compounds by LC/MS/MS

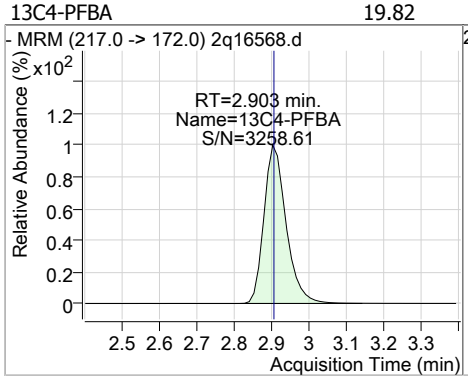
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	9.678	570.0 -> 525.0	41171	20.13	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%			
13C8-FOSA	7.155	506.0 -> 78.0	36480	20.72	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.6%			
13C8-PFOA	6.796	421.0 -> 376.0	34562	19.85	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.2%			
13C8-PFOS	7.395	507.0 -> 99.0	9985	20.38	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%			
13C9-PFNA	7.450	472.0 -> 427.0	23809	20.01	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
d3-MeFOSAA	7.619	573.0 -> 419.0	17691	20.15	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%			
M2-PFOA	6.798	415.0 -> 370.0	23521	20.00	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.397	503.0 -> 80.0	12272	20.00	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
Target Compounds							**QValue**
4:2FTS	5.187	327.0 -> 307.0	15774	9.65	µg/L		99
6:2FTS	6.807	427.0 -> 407.0	12448	9.67	µg/L		94
8:2FTS	8.326	527.0 -> 507.0	16982	9.96	µg/L		82
EtFOSAA	7.756	584.0 -> 419.0	2656	9.35	µg/L		90
FOSA	7.157	498.0 -> 78.0	8571	9.35	µg/L		98
MeFOSAA	7.633	570.0 -> 419.0	3103	9.99	µg/L		91
PFBA	2.912	213.0 -> 169.0	12161	9.96	µg/L		100
PFBS	4.371	299.0 -> 80.0	14650	9.97	µg/L		97
PFDA	8.181	513.0 -> 469.0	6547	9.19	µg/L		98
PFDoDA	11.158	613.0 -> 569.0	7521	10.06	µg/L		98
PFDS	9.499	599.0 -> 80.0	3723	10.07	µg/L		92
PFHpA	6.082	363.0 -> 319.0	22803	9.97	µg/L		94
PFHpS	6.766	449.0 -> 80.0	5647	9.72	µg/L		99
PFHxA	5.268	313.0 -> 269.0	10671	9.91	µg/L		97
PFHxS	6.076	399.0 -> 80.0	10796	9.71	µg/L	m	98
PFNA	7.451	463.0 -> 419.0	4878	10.31	µg/L		87
PFNS	8.088	549.0 -> 80.0	4726	10.43	µg/L		99
PFOA	6.799	413.0 -> 369.0	8718	10.06	µg/L		95
PFOS	7.397	499.0 -> 80.0	5973	9.90	µg/L	m	76
PFPeA	4.241	263.0 -> 219.0	35491	10.19	µg/L		100
PFPeS	5.320	349.0 -> 80.0	8631	9.60	µg/L		96
PFTeDA	13.375	713.0 -> 669.0	3822	9.64	µg/L		91
PFTrDA	12.354	663.0 -> 619.0	5427	9.39	µg/L		96
PFUnDA	9.682	563.0 -> 519.0	9847	10.16	µg/L		98

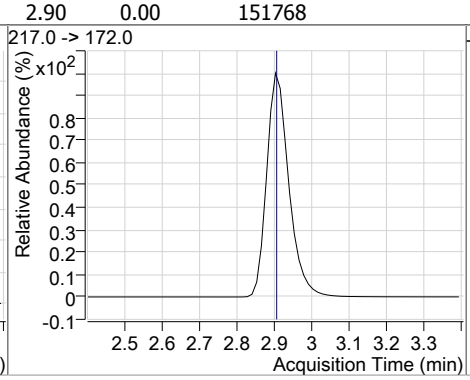
 # = Qualifier out of range, m = manually integrated, + = Area summed

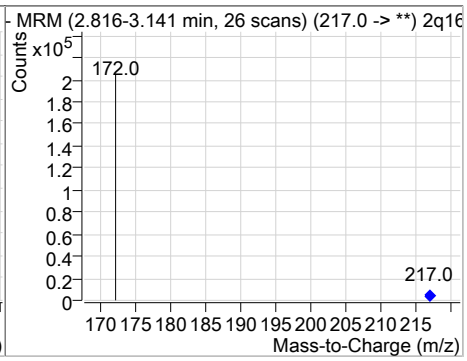
Perfluorinated Compounds by LC/MS/MS



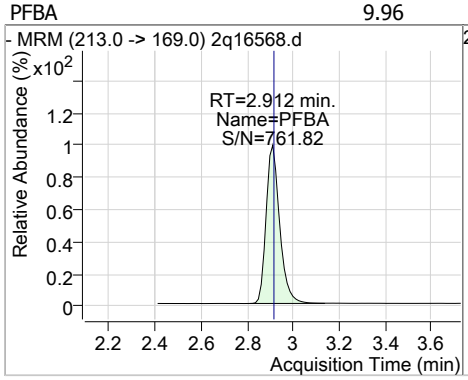
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.82	2.90	0.00	151768				

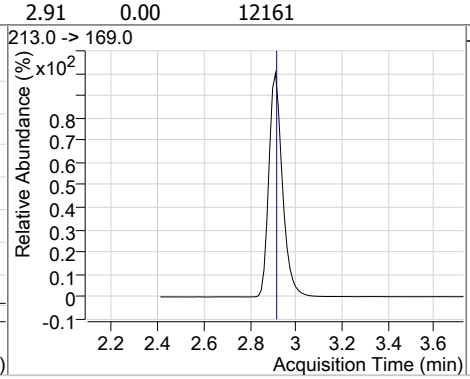


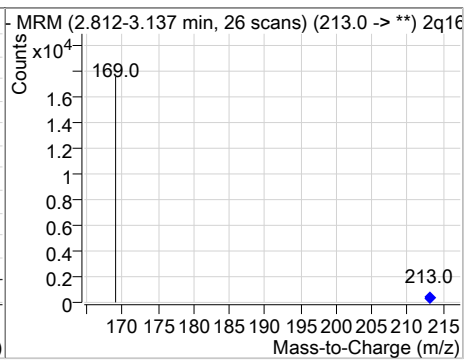




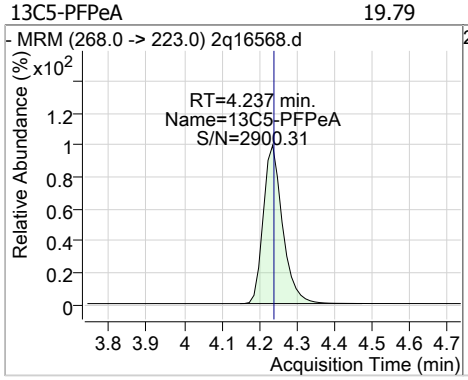
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	9.96	2.91	0.00	12161				

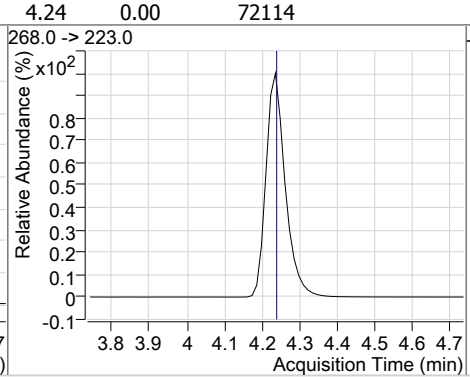


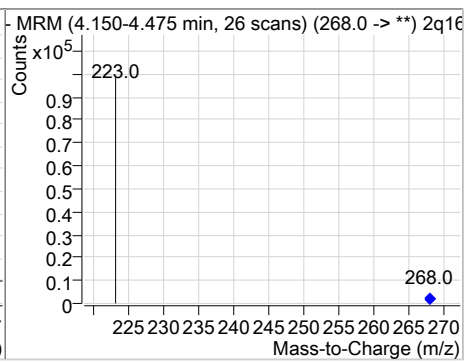




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.79	4.24	0.00	72114				

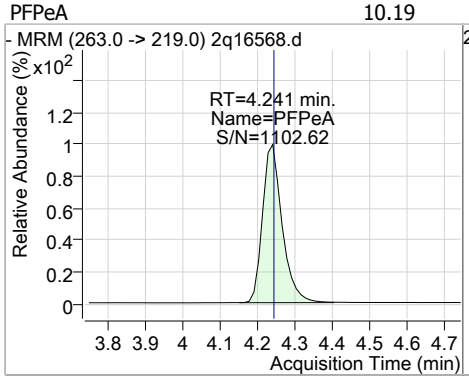


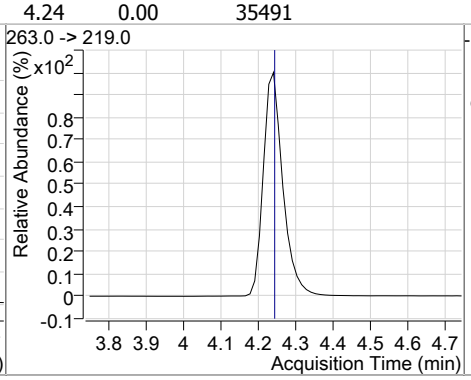


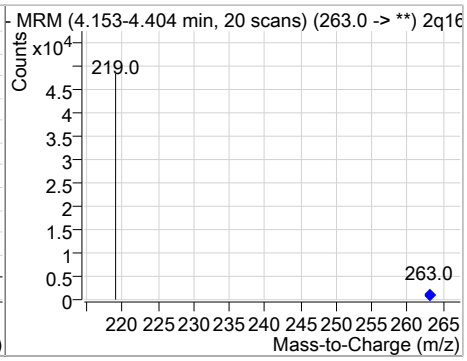


Perfluorinated Compounds by LC/MS/MS

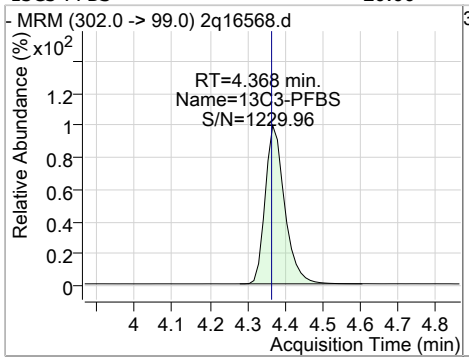
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	10.19	4.24	0.00	35491				

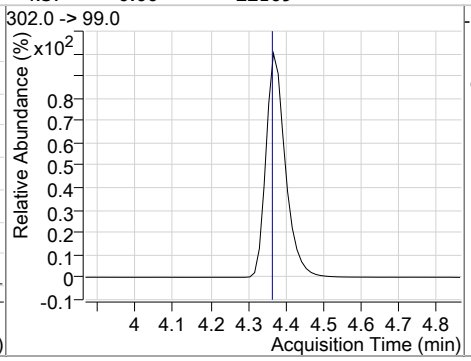


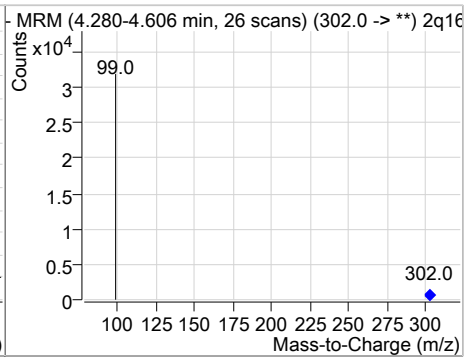




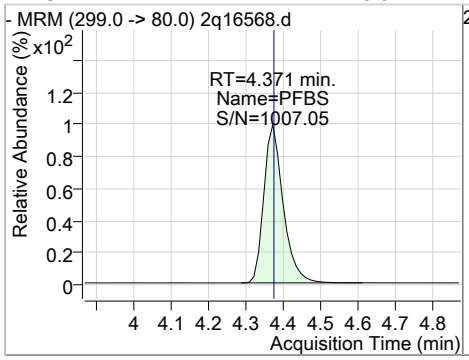
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.06	4.37	0.00	22169				

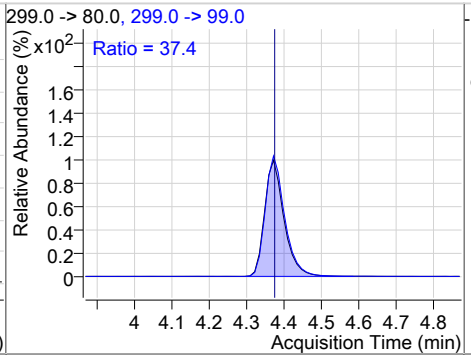


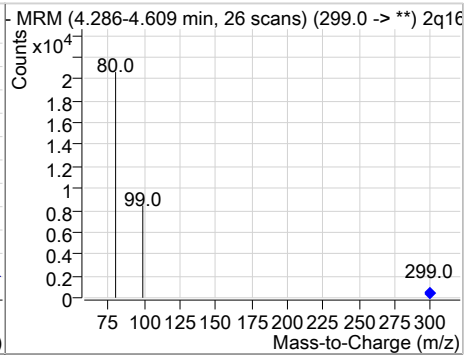




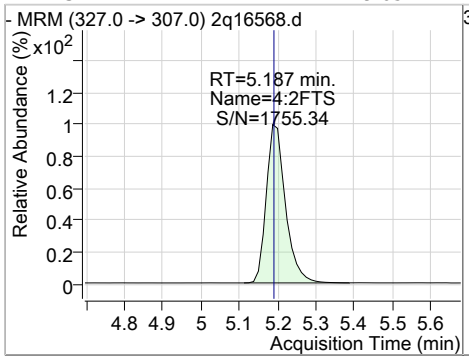
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	9.97	4.37	0.00	14650	299.0 -> 99.0	37.4	5.8	65.8

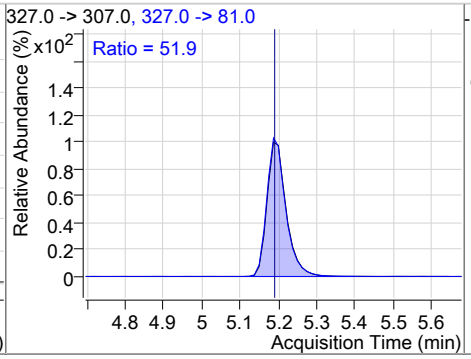


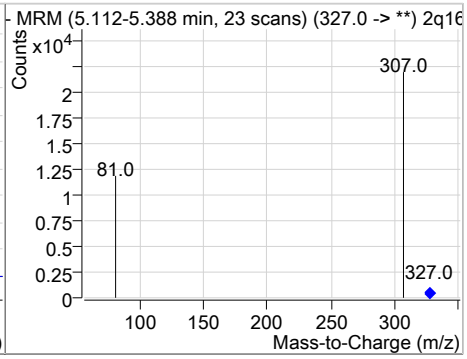




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	9.65	5.19	0.00	15774	327.0 -> 81.0	51.9	21.0	81.0

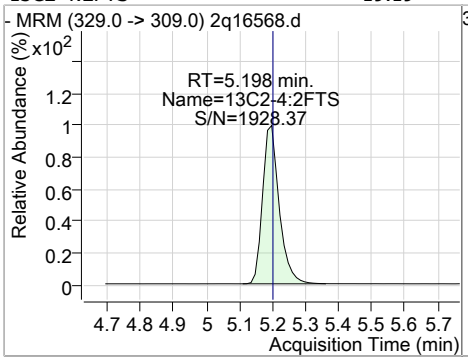


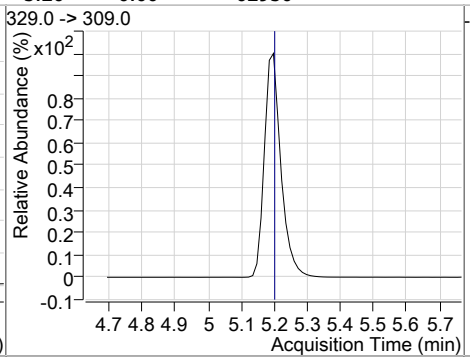


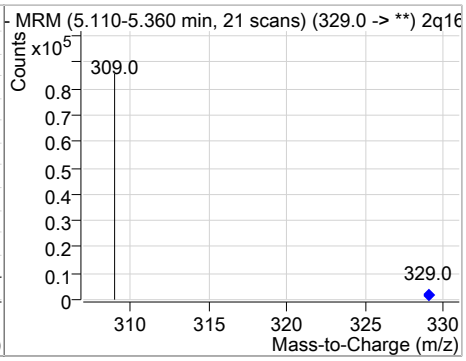


Perfluorinated Compounds by LC/MS/MS

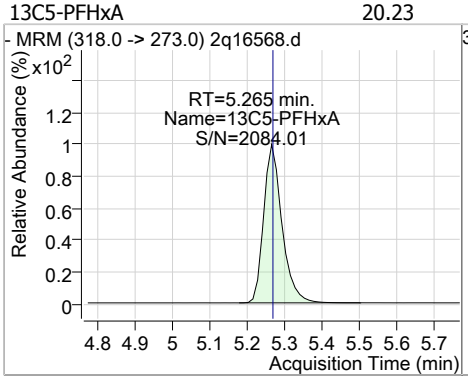
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.19	5.20	0.00	62950				

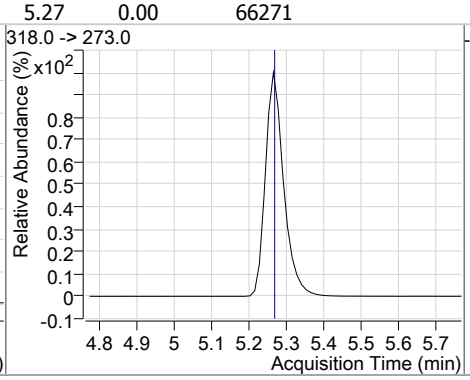


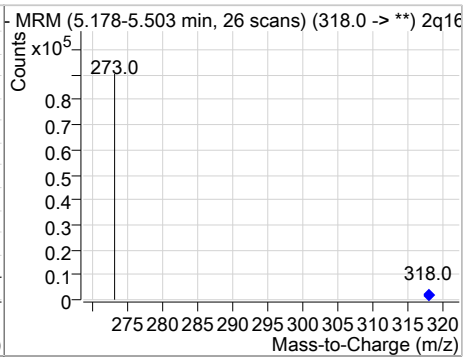




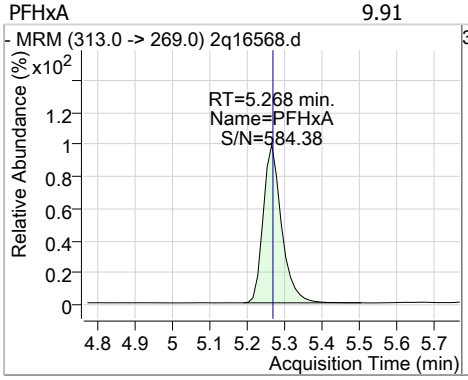
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.23	5.27	0.00	66271				

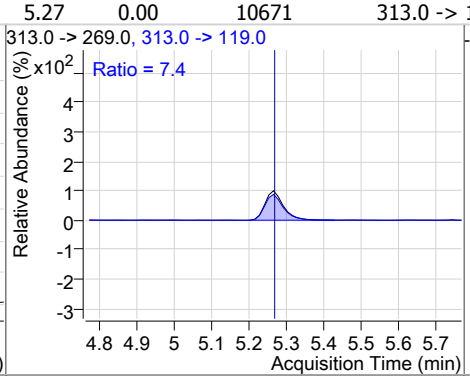


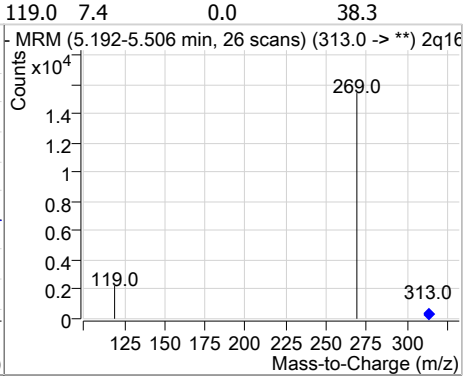




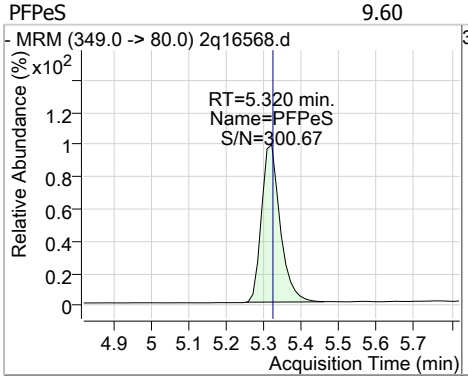
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	9.91	5.27	0.00	10671	313.0 -> 119.0	7.4	0.0	38.3

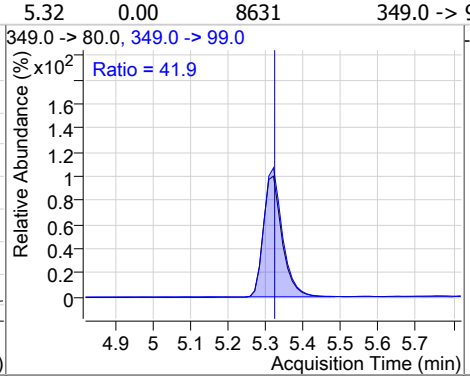


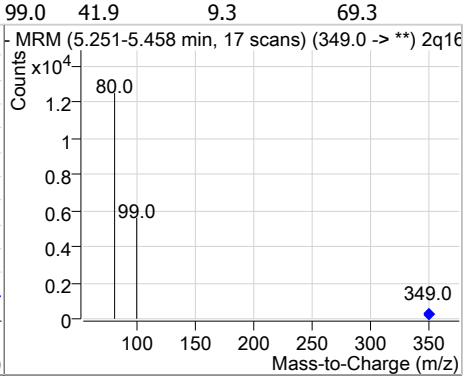




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	9.60	5.32	0.00	8631	349.0 -> 99.0	41.9	9.3	69.3

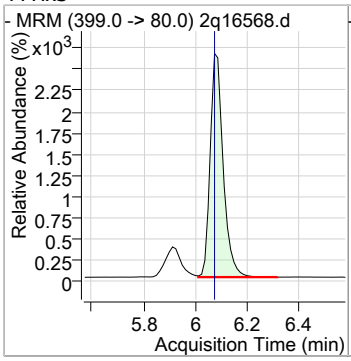


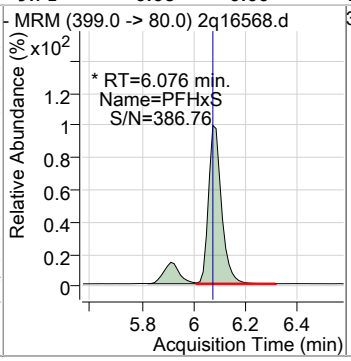


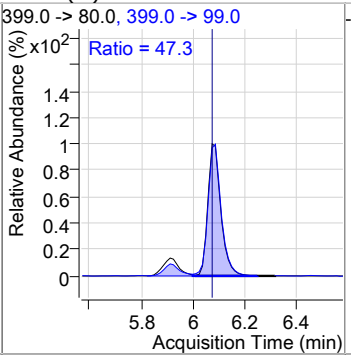


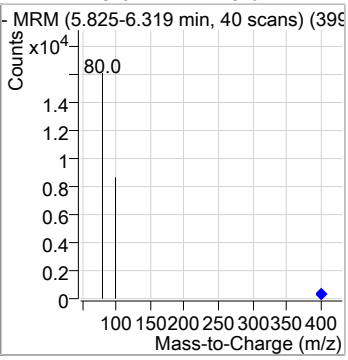
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	9.71	6.08	0.00	10796 (m)	399.0 -> 99.0	47.3	19.0	79.0

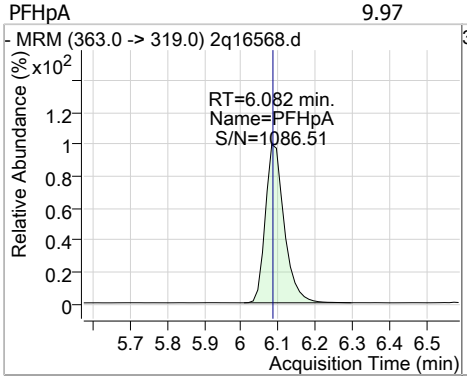


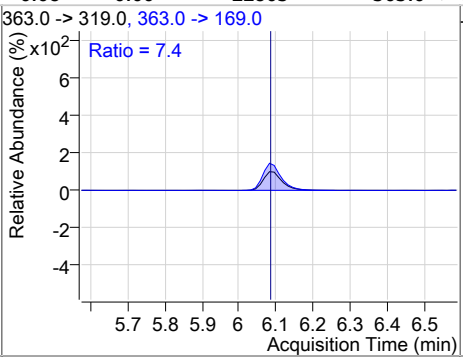


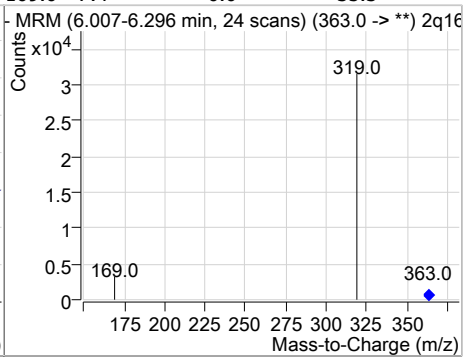




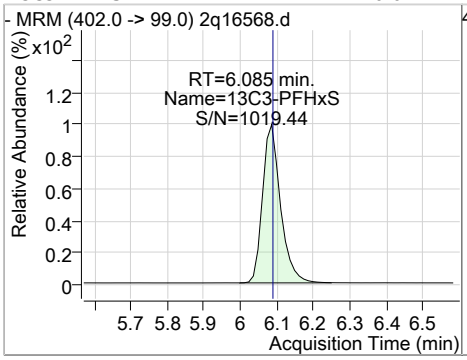
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	9.97	6.08	0.00	22803	363.0 -> 169.0	7.4	0.0	35.3

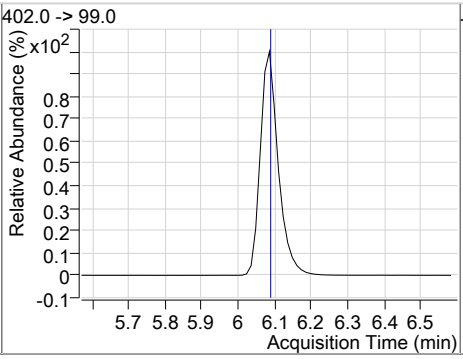


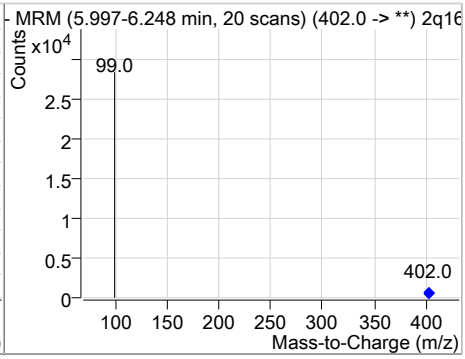




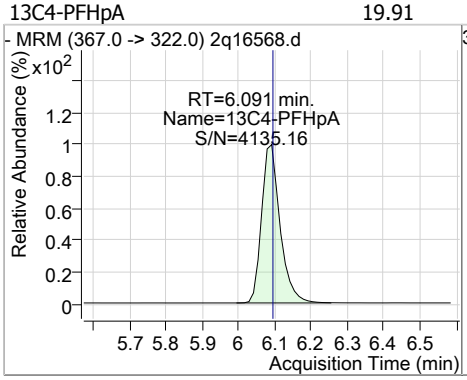
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.02	6.09	0.00	20050				

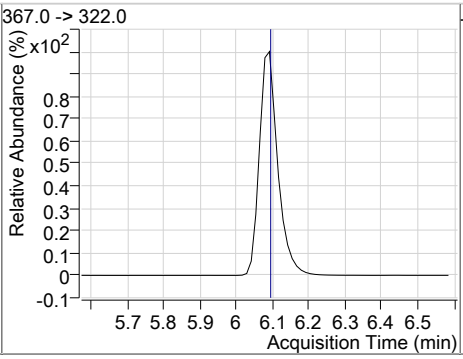


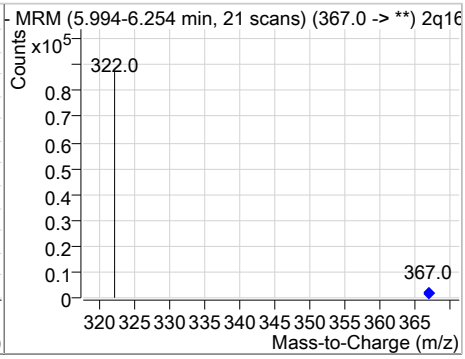




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.91	6.09	0.00	64157				

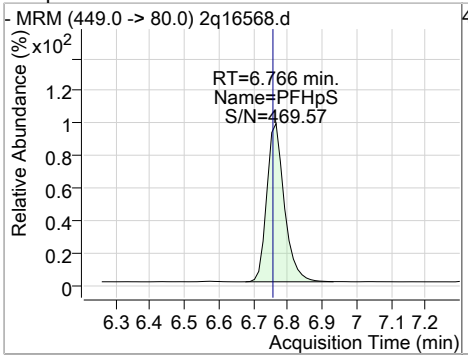


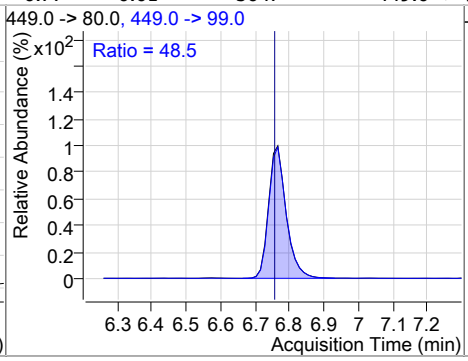


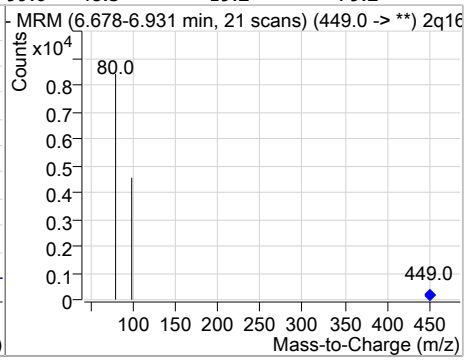


Perfluorinated Compounds by LC/MS/MS

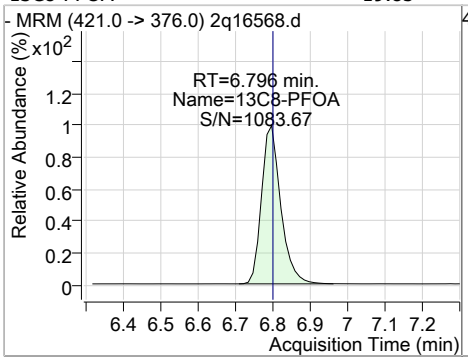
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	9.72	6.77	0.01	5647	449.0 -> 99.0	48.5	19.2	79.2

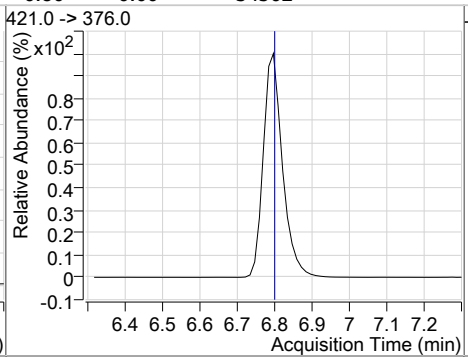


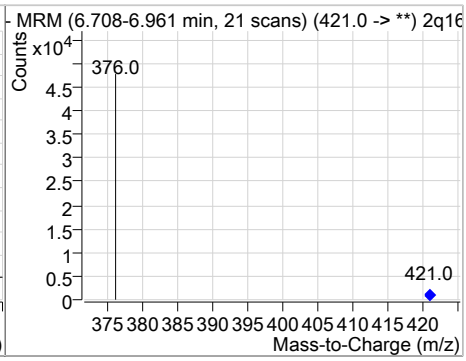




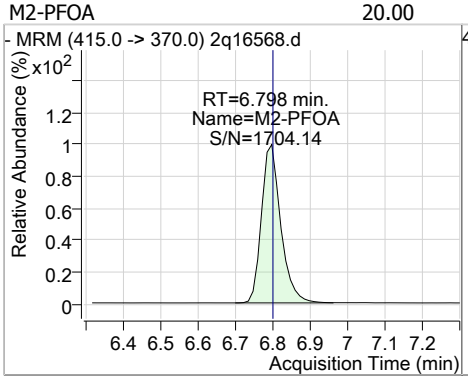
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.85	6.80	0.00	34562				

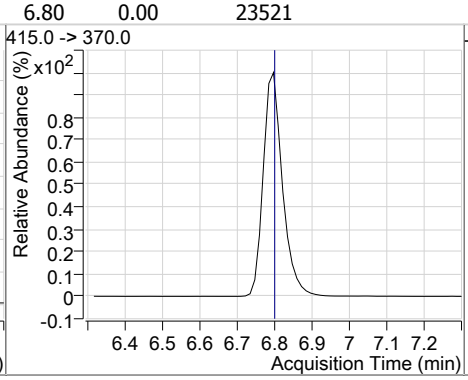


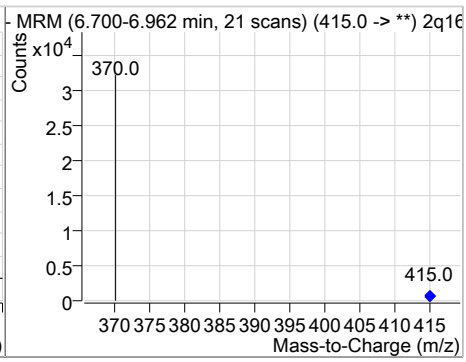




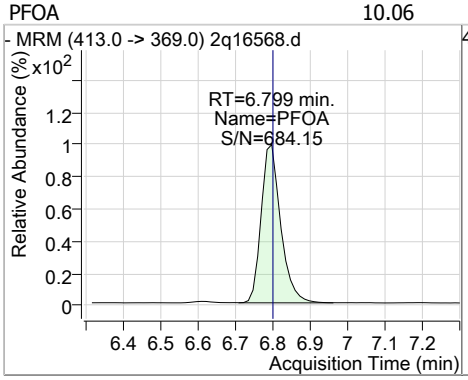
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.80	0.00	23521				

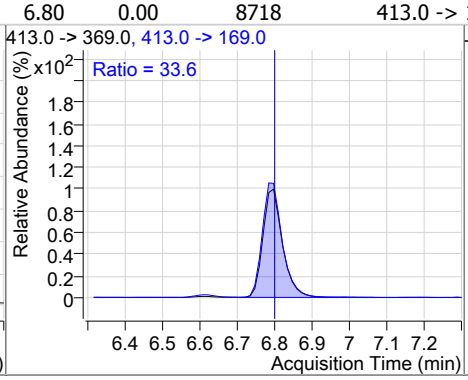


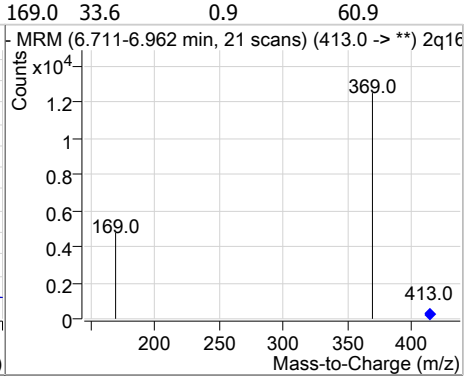




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	10.06	6.80	0.00	8718	413.0 -> 169.0	33.6	0.9	60.9

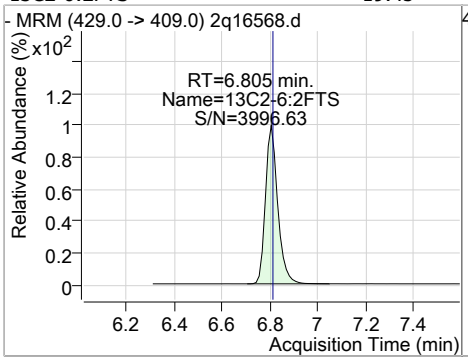


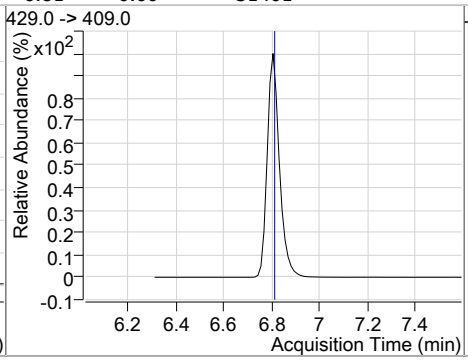


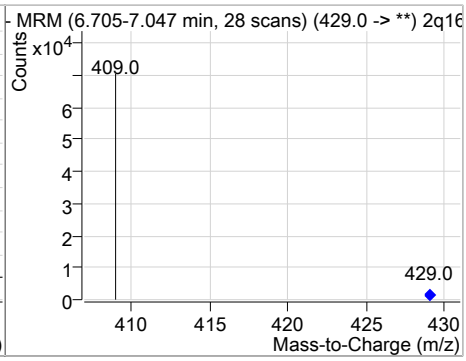


Perfluorinated Compounds by LC/MS/MS

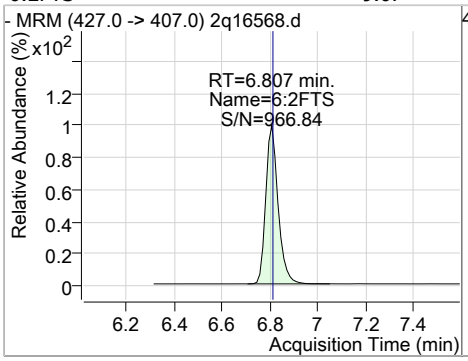
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.45	6.81	0.00	51401				

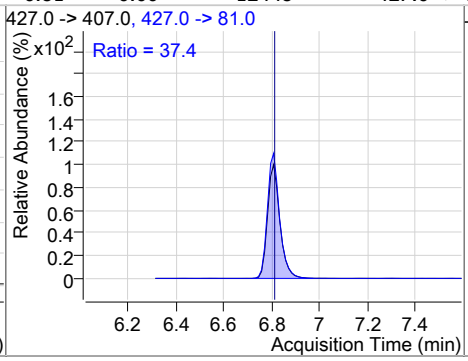


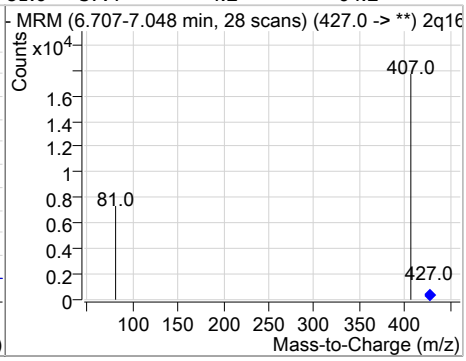




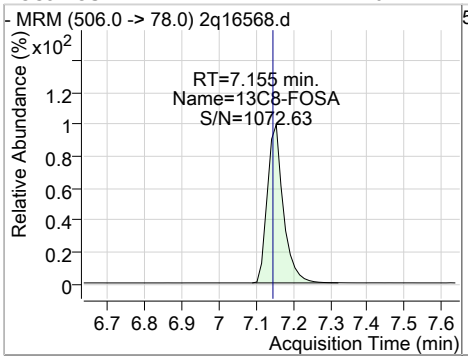
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	9.67	6.81	0.00	12448	427.0 -> 81.0	37.4	4.2	64.2

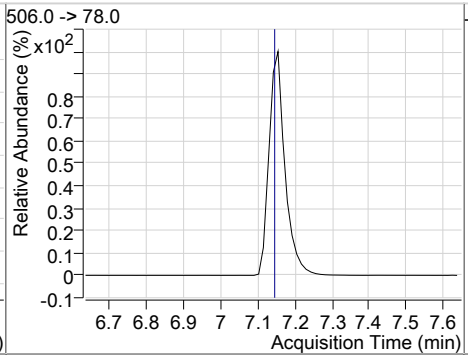


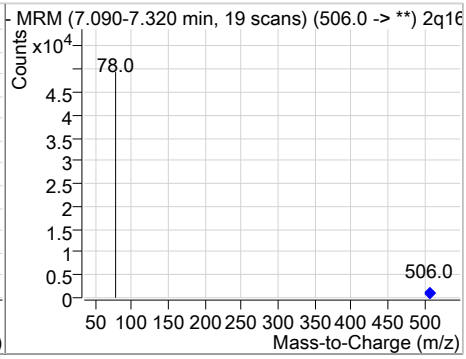




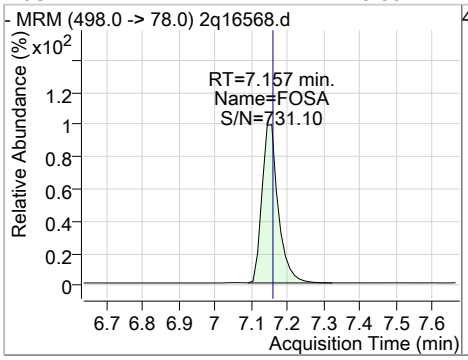
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.72	7.15	0.01	36480				

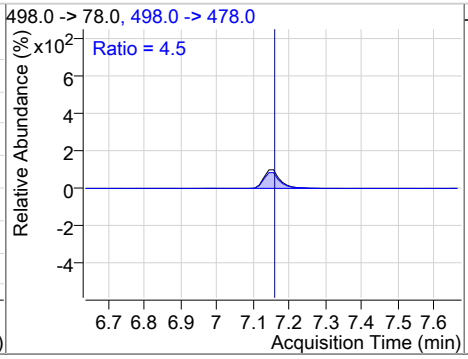


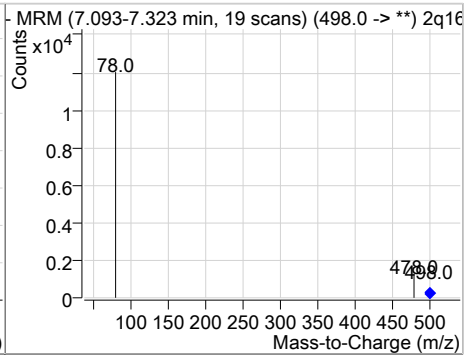




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	9.35	7.16	0.01	8571	498.0 -> 478.0	4.5	0.0	35.2

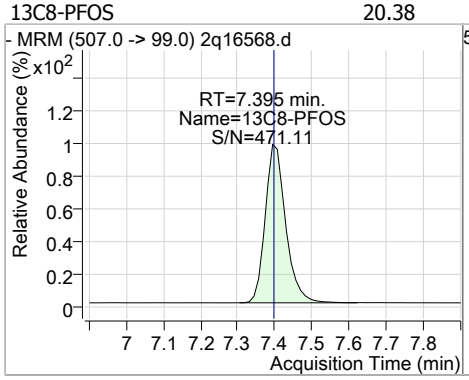


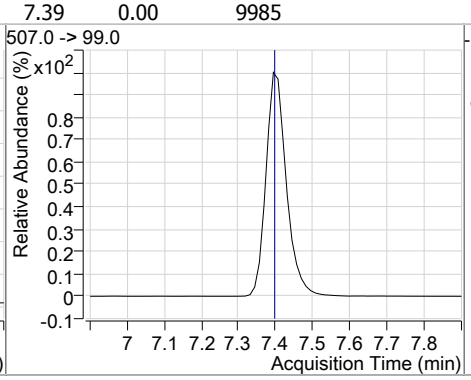


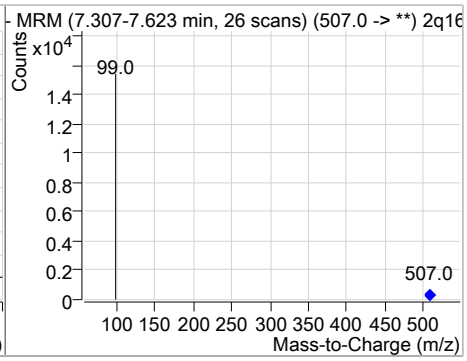


Perfluorinated Compounds by LC/MS/MS

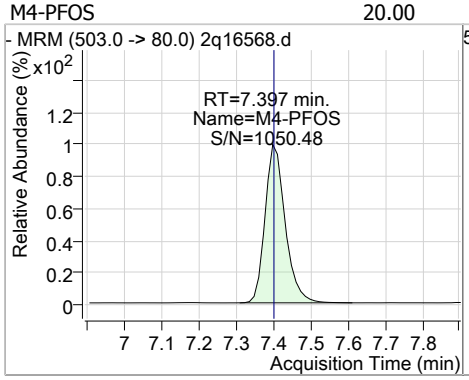
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.38	7.39	0.00	9985				

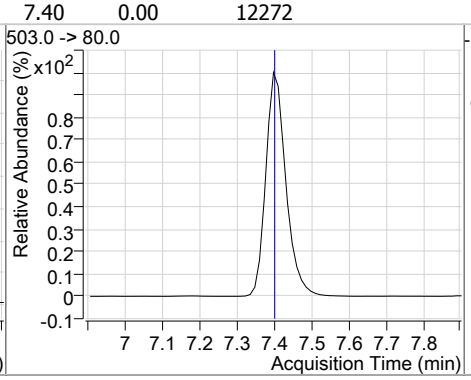


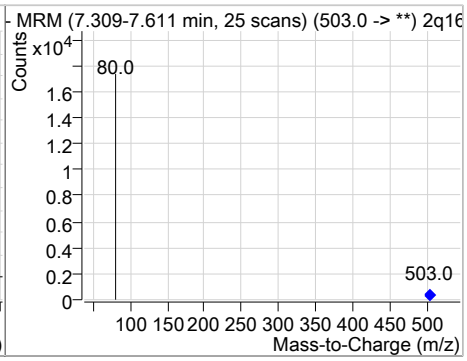




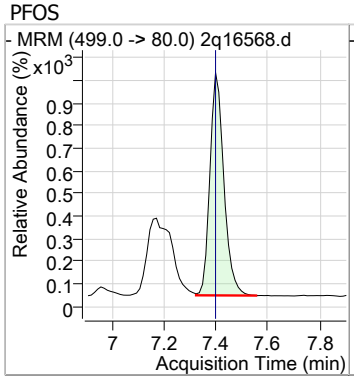
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.00	7.40	0.00	12272				

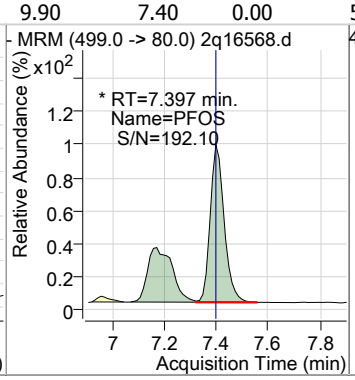


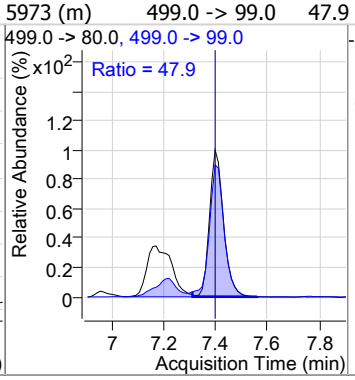


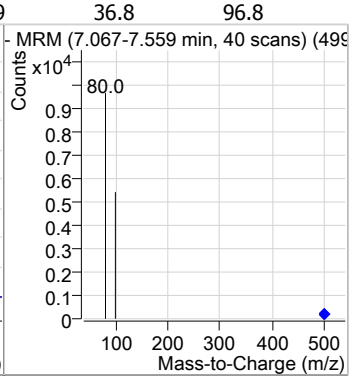


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	9.90	7.40	0.00	5973 (m)	499.0 -> 99.0	47.9	36.8	96.8

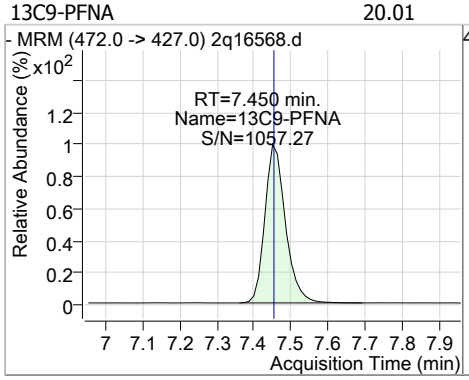


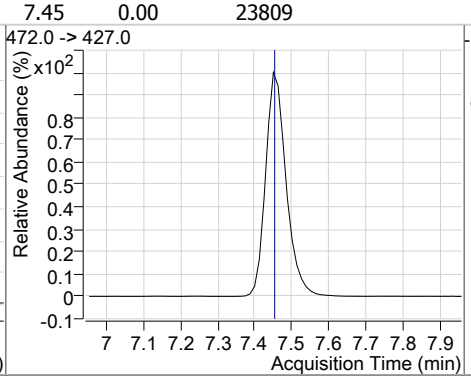


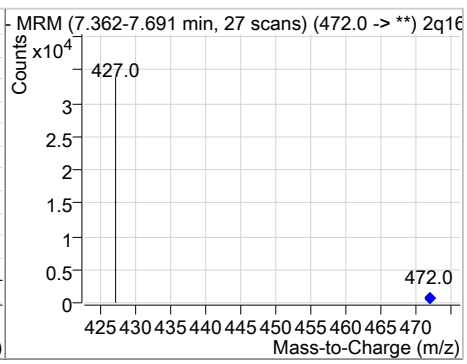




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.01	7.45	0.00	23809				

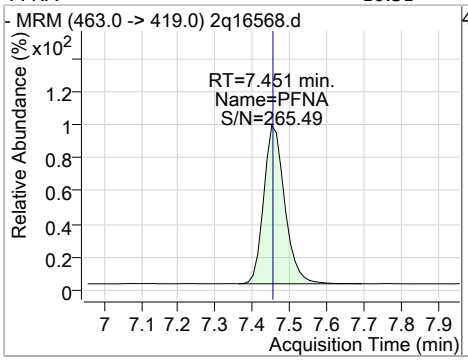


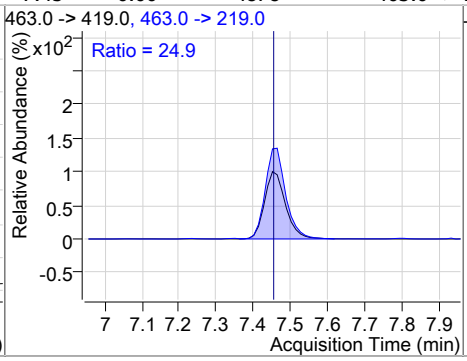


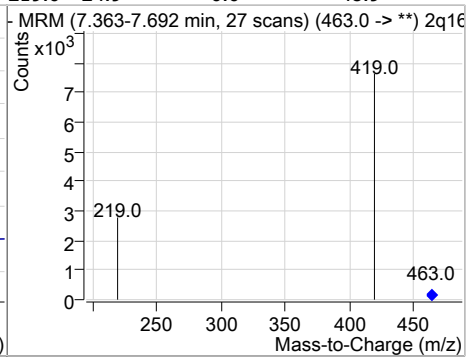


Perfluorinated Compounds by LC/MS/MS

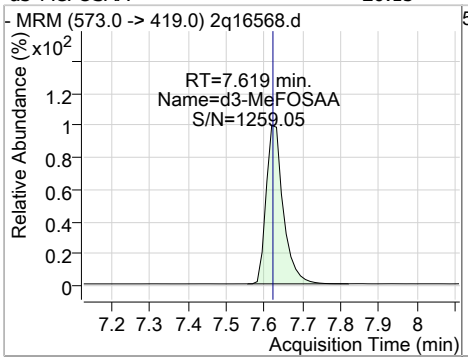
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	10.31	7.45	0.00	4878	463.0 -> 219.0	24.9	0.0	48.9

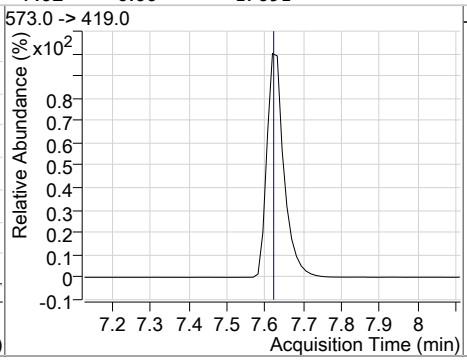


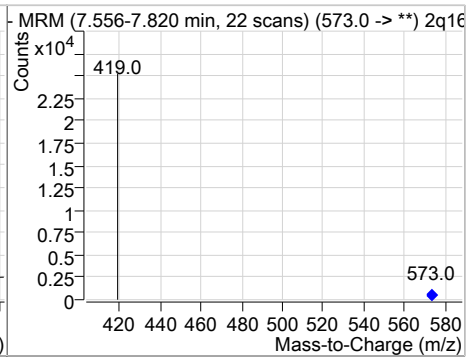




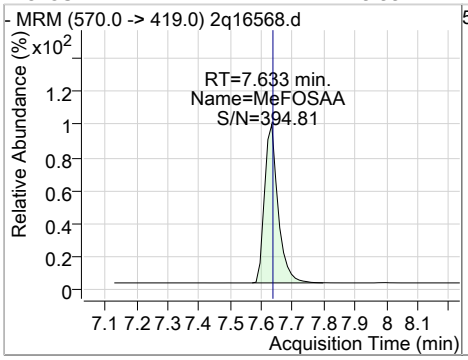
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.15	7.62	0.00	17691				

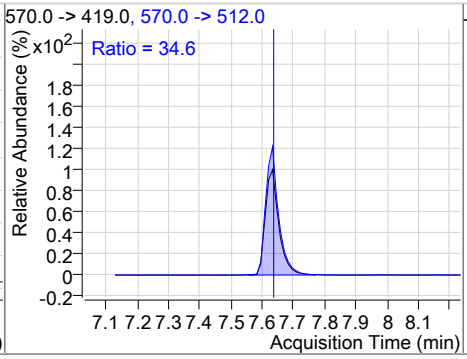


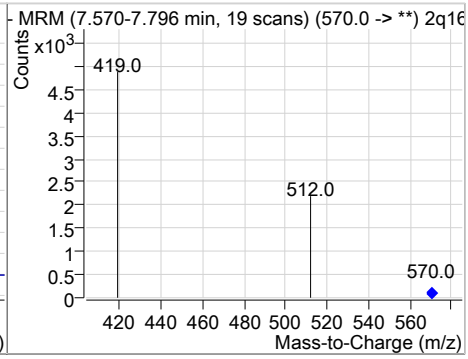




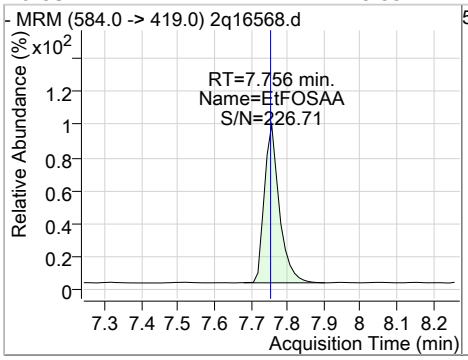
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	9.99	7.63	0.00	3103	570.0 -> 512.0	34.6	0.0	59.6

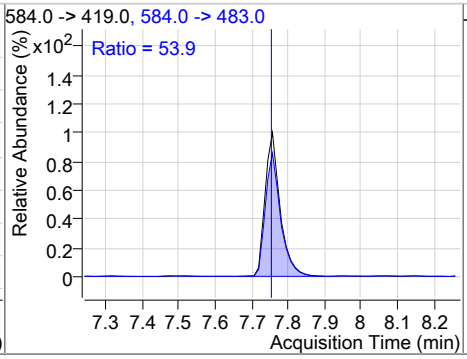


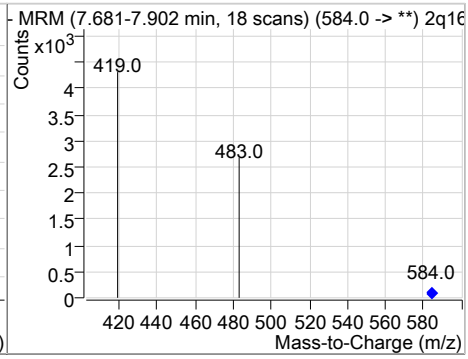




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	9.35	7.76	0.00	2656	584.0 -> 483.0	53.9	31.9	91.9

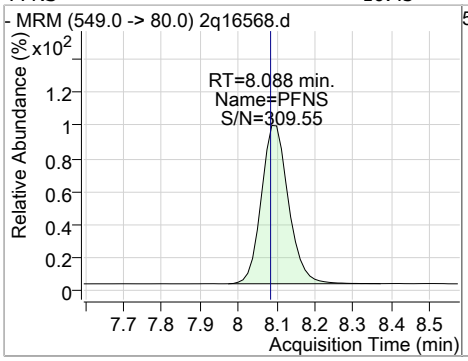


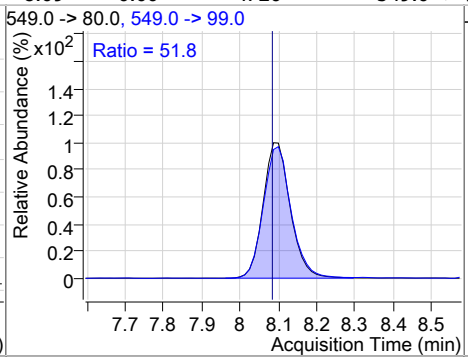


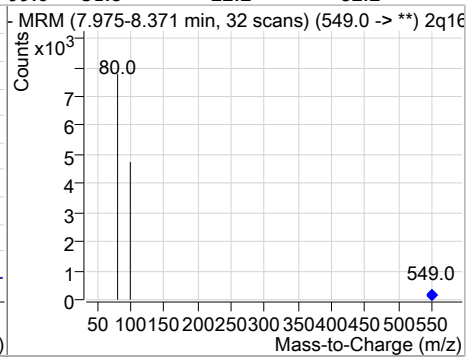


Perfluorinated Compounds by LC/MS/MS

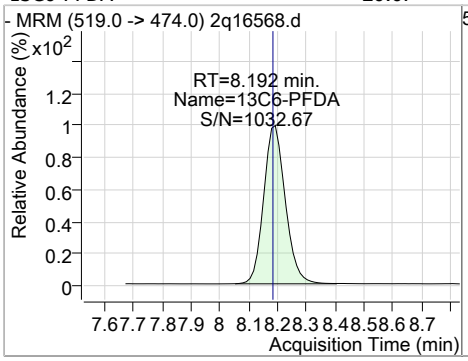
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	10.43	8.09	0.00	4726	549.0 -> 99.0	51.8	22.2	82.2

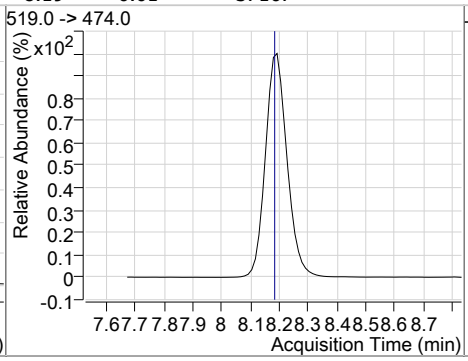


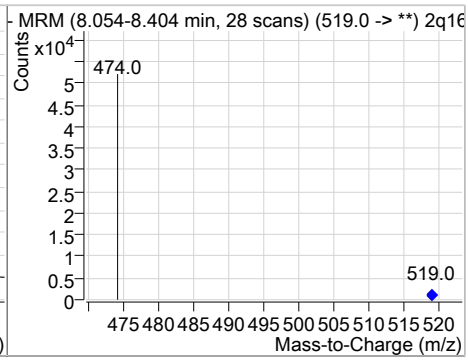




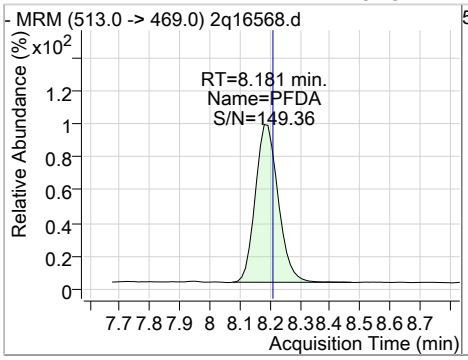
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.07	8.19	0.01	37167				

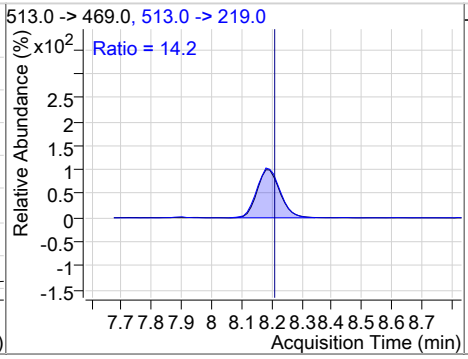


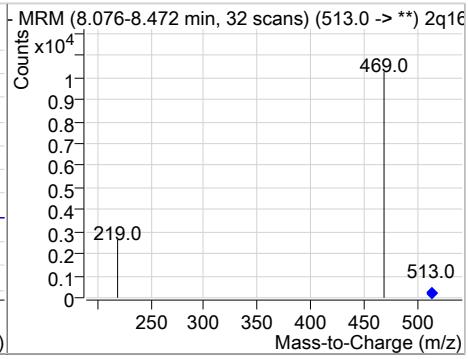




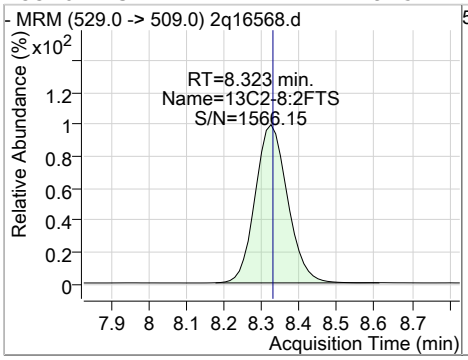
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	9.19	8.18	-0.01	6547	513.0 -> 219.0	14.2	0.0	43.5

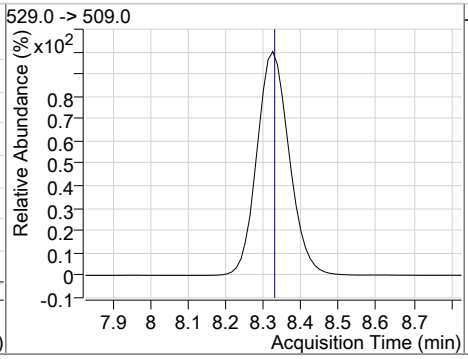


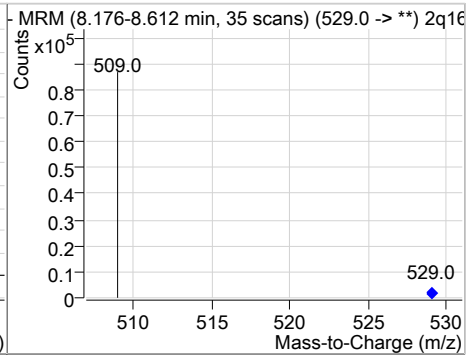




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.25	8.32	0.00	62455				

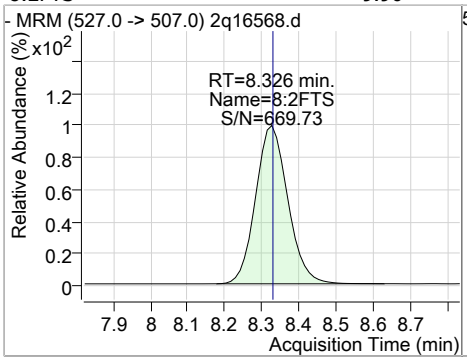


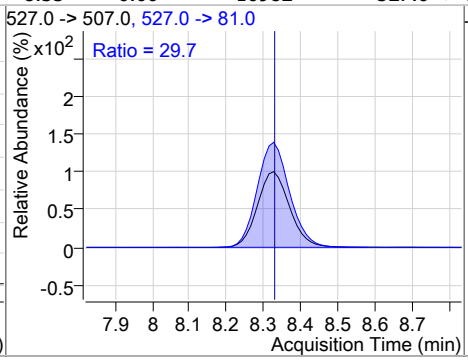


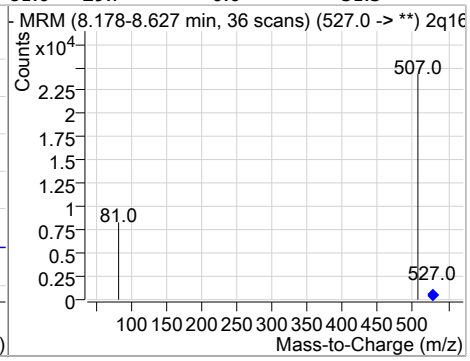


Perfluorinated Compounds by LC/MS/MS

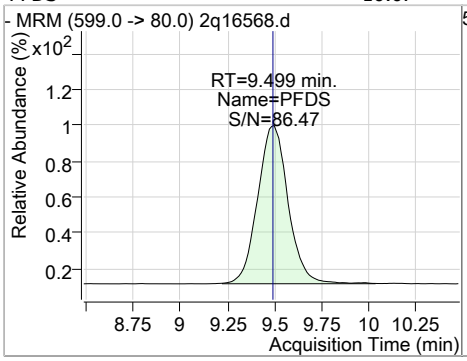
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	9.96	8.33	0.00	16982	527.0 -> 81.0	29.7	0.0	51.3

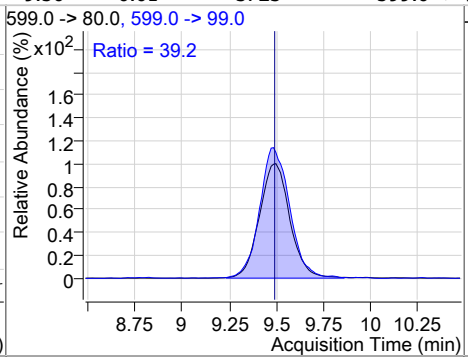


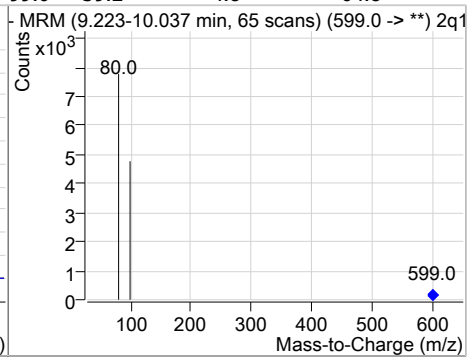




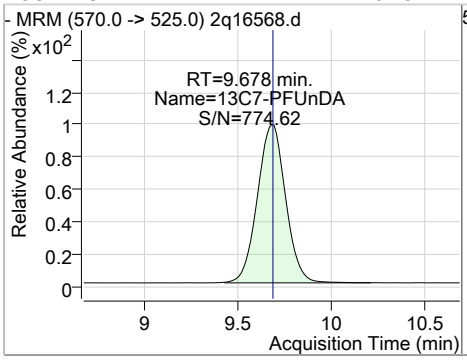
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	10.07	9.50	0.01	3723	599.0 -> 99.0	39.2	4.8	64.8

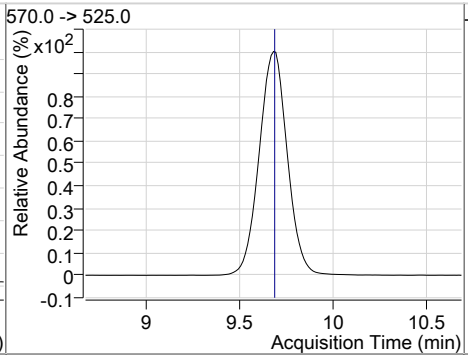


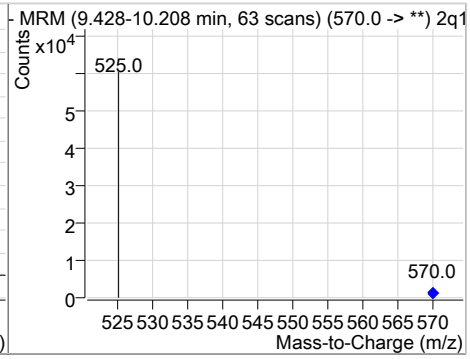




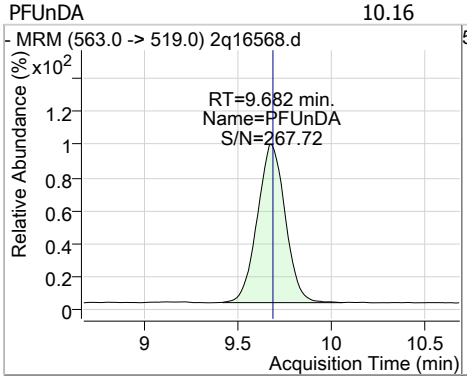
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.13	9.68	0.00	41171				

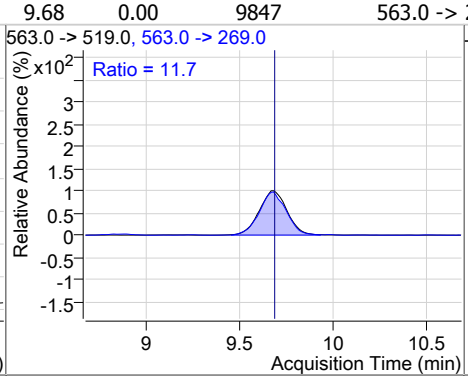


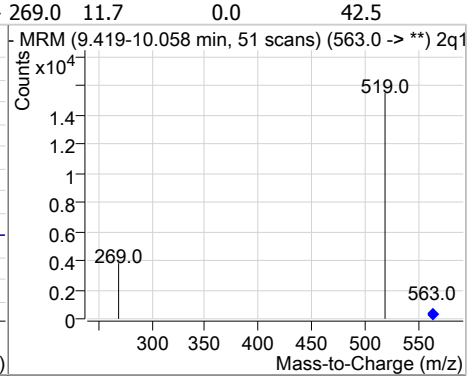




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	10.16	9.68	0.00	9847	563.0 -> 269.0	11.7	0.0	42.5

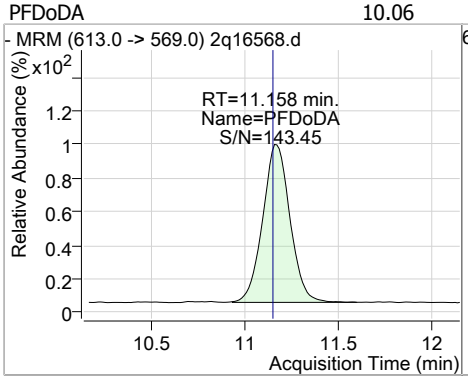


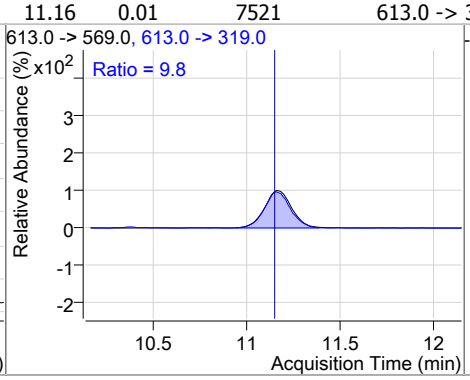


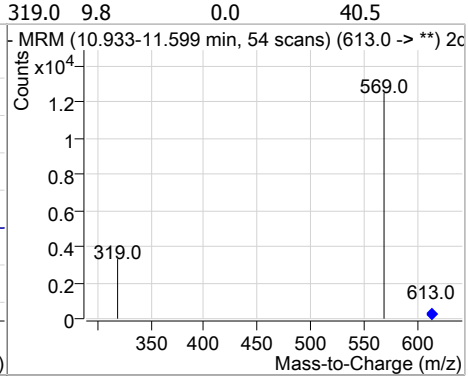


Perfluorinated Compounds by LC/MS/MS

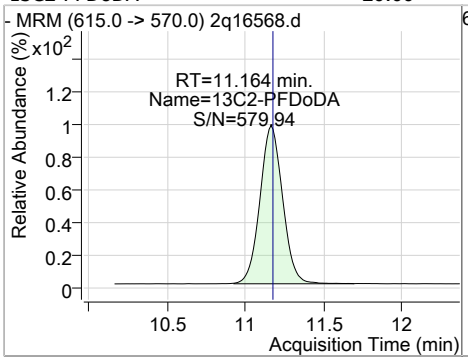
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	10.06	11.16	0.01	7521	613.0 -> 319.0	9.8	0.0	40.5

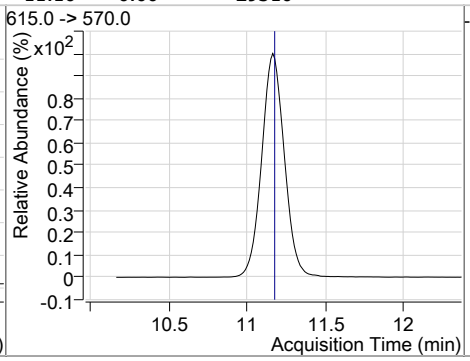


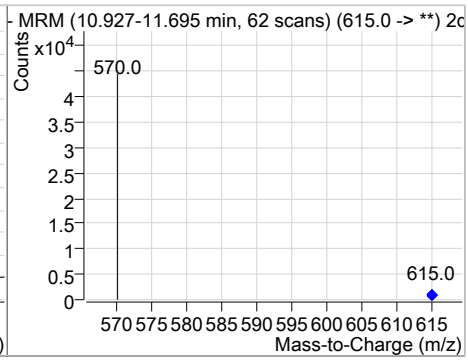




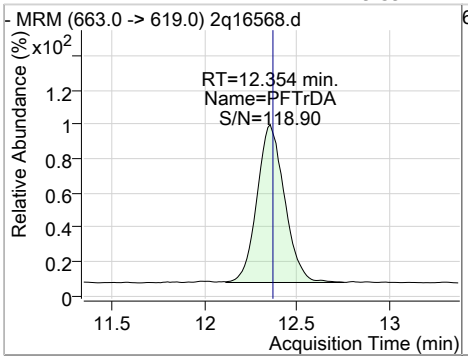
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.00	11.16	0.00	29310				

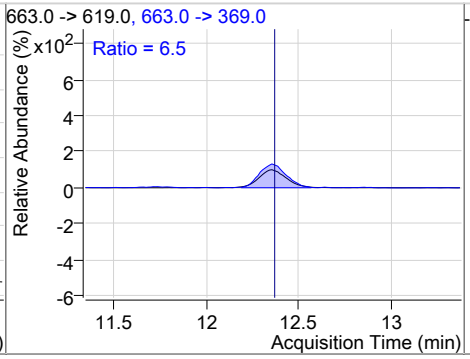


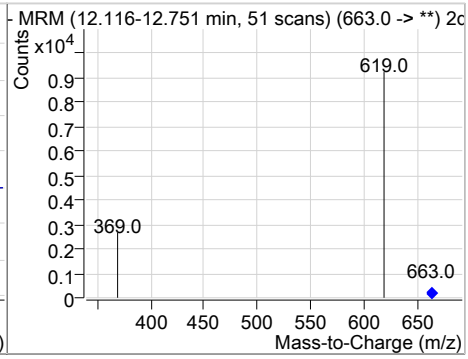




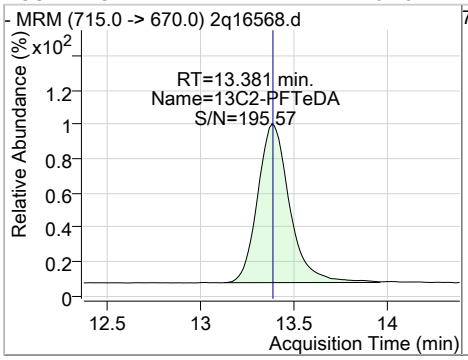
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	9.39	12.35	-0.01	5427	663.0 -> 369.0	6.5	0.0	35.1

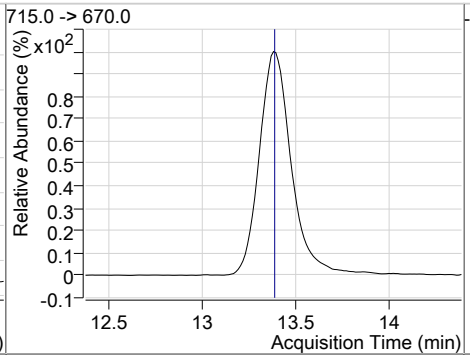


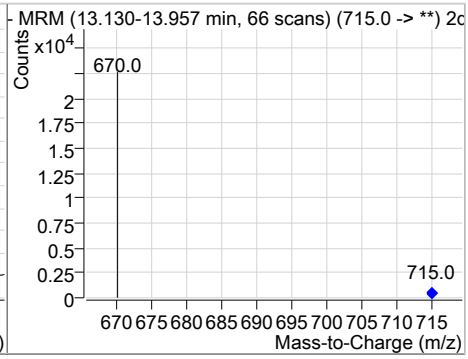




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.16	13.38	0.00	12508				

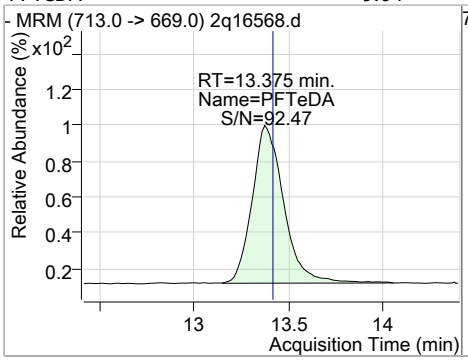


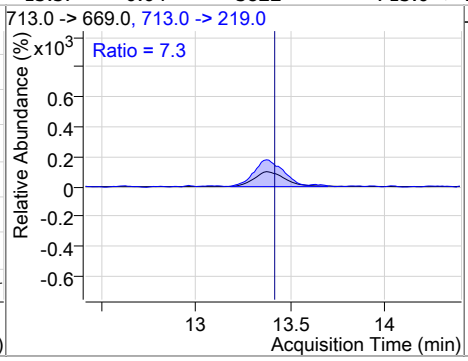


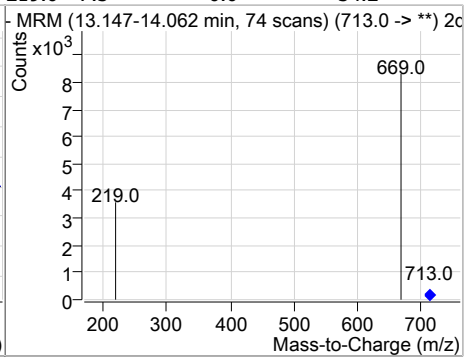


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	9.64	13.37	-0.04	3822	713.0 -> 219.0	7.3	0.0	34.2







Manual Integration Approval Summary

Sample Number:	S2Q291-IC291	**Method:**	EPA 537M QSM5.1 B-15
Lab FileID:	2Q16568.D	**Analyst approved:**	07/06/18 10:17 Natasha Gumtie
Injection Time:	07/05/18 17:50	**Supervisor approved:**	07/06/18 17:13 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.08	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.40	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
07/06/18 17:13

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16569.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/5/2018 6:09:50 PM
Sample Name : icc291-20
Vial : Vial 7
DA Method File : PFC_ID_070518_S2Q291.quantmethod.xml
Batch Name : s2q291.batch.bin
Sample Information : op70743,S2Q291,130,,,1.0,1,water

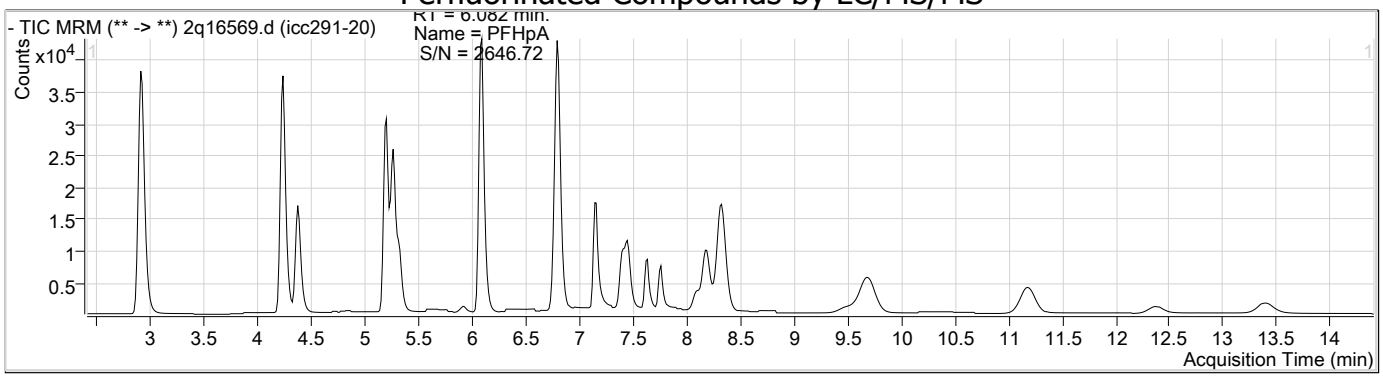
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.798	415.0 -> 370.0	20113	20.00	µg/L	0.000
13C4-PFOS	7.397	503.0 -> 80.0	10665	20.00	µg/L	0.000
M4-PFBA	2.903	217.0 -> 172.0	134403	20.00	µg/L	0.000
M5-PFPeA	4.237	268.0 -> 223.0	63909	20.00	µg/L	0.000
M5-PFHxA	5.265	318.0 -> 273.0	57717	20.00	µg/L	0.000
M4-PFHpA	6.091	367.0 -> 322.0	56878	20.00	µg/L	0.000
M8-PFOA	6.796	421.0 -> 376.0	30943	20.00	µg/L	0.000
M9-PFNA	7.450	472.0 -> 427.0	21350	20.00	µg/L	0.000
M6-PFDA	8.192	519.0 -> 474.0	32802	20.00	µg/L	0.012
M7-PFUnDA	9.691	570.0 -> 525.0	36290	20.00	µg/L	0.012
M2-PFDoDA	11.177	615.0 -> 570.0	25942	20.00	µg/L	0.008
M2-PFTeDA	13.393	715.0 -> 670.0	10990	20.00	µg/L	0.012
M8-FOSA	7.155	506.0 -> 78.0	31482	20.00	µg/L	0.012
M3-PFBS	4.368	302.0 -> 99.0	19567	20.00	µg/L	0.000
M3-PFHxS	6.085	402.0 -> 99.0	17603	20.00	µg/L	0.000
M8-PFOS	7.395	507.0 -> 99.0	8783	20.00	µg/L	0.000
M2-4:2FTS	5.198	329.0 -> 309.0	57145	20.00	µg/L	0.000
M2-6:2FTS	6.805	429.0 -> 409.0	46184	20.00	µg/L	-0.002
M2-8:2FTS	8.323	529.0 -> 509.0	57644	20.00	µg/L	-0.002
M3-MeFOSAA	7.619	573.0 -> 419.0	15732	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.198	329.0 -> 309.0	57153	17.43	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.1%		
13C2-6:2FTS	6.805	429.0 -> 409.0	46190	17.48	µg/L	-0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.4%		
13C2-8:2FTS	8.323	529.0 -> 509.0	57575	17.74	µg/L	-0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.7%		
13C2-PFDoDA	11.177	615.0 -> 570.0	25941	17.70	µg/L	0.008
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.5%		
13C2-PFTeDA	13.393	715.0 -> 670.0	11125	17.93	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.6%		
13C3-PFBS	4.368	302.0 -> 99.0	19571	17.71	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.5%		
13C3-PFHxS	6.085	402.0 -> 99.0	17606	17.58	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.9%		
13C4-PFBA	2.903	217.0 -> 172.0	134339	17.55	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.7%		
13C4-PFHpA	6.091	367.0 -> 322.0	56876	17.65	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.3%		
13C5-PFHxA	5.265	318.0 -> 273.0	57715	17.61	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.1%		
13C5-PFPeA	4.237	268.0 -> 223.0	63891	17.53	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.7%		
13C6-PFDA	8.192	519.0 -> 474.0	32802	17.71	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.6%		

Perfluorinated Compounds by LC/MS/MS

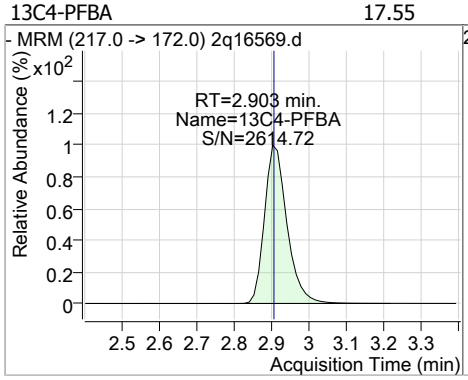
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	9.691	570.0 -> 525.0	36337	17.77	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.8%			
13C8-FOSA	7.155	506.0 -> 78.0	31491	17.89	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.4%			
13C8-PFOA	6.796	421.0 -> 376.0	30946	17.77	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.8%			
13C8-PFOS	7.395	507.0 -> 99.0	8779	17.92	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.6%			
13C9-PFNA	7.450	472.0 -> 427.0	21345	17.94	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.7%			
d3-MeFOSAA	7.619	573.0 -> 419.0	15724	17.91	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.5%			
M2-PFOA	6.798	415.0 -> 370.0	20109	20.00	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.397	503.0 -> 80.0	10654	19.98	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%			
Target Compounds							**QValue**
4:2FTS	5.200	327.0 -> 307.0	32138	22.32	µg/L		99
6:2FTS	6.807	427.0 -> 407.0	24357	21.65	µg/L		92
8:2FTS	8.326	527.0 -> 507.0	33474	21.87	µg/L		82
EtFOSAA	7.756	584.0 -> 419.0	5212	20.86	µg/L		94
FOSA	7.144	498.0 -> 78.0	17097	21.73	µg/L		96
MeFOSAA	7.633	570.0 -> 419.0	6327	22.90	µg/L		96
PFBA	2.912	213.0 -> 169.0	24201	22.39	µg/L		100
PFBS	4.371	299.0 -> 80.0	29482	22.44	µg/L		98
PFDA	8.181	513.0 -> 469.0	13701	22.04	µg/L		99
PFDoDA	11.183	613.0 -> 569.0	14740	22.37	µg/L		98
PFDS	9.499	599.0 -> 80.0	7446	22.84	µg/L		93
PFHpA	6.082	363.0 -> 319.0	46365	22.88	µg/L		95
PFHpS	6.766	449.0 -> 80.0	11374	22.30	µg/L		98
PFHxA	5.268	313.0 -> 269.0	20573	21.95	µg/L		98
PFHxS	6.076	399.0 -> 80.0	21838	22.37	µg/L	m	97
PFNA	7.451	463.0 -> 419.0	9972	23.51	µg/L		93
PFNS	8.088	549.0 -> 80.0	8835	22.18	µg/L		98
PFOA	6.786	413.0 -> 369.0	17044	21.96	µg/L		94
PFOS	7.397	499.0 -> 80.0	11942	22.51	µg/L	m	74
PFPeA	4.241	263.0 -> 219.0	70029	22.68	µg/L		100
PFPeS	5.320	349.0 -> 80.0	17718	22.04	µg/L		97
PFTeDA	13.400	713.0 -> 669.0	7373	21.65	µg/L		91
PFTrDA	12.366	663.0 -> 619.0	10783	21.64	µg/L		94
PFUnDA	9.682	563.0 -> 519.0	19352	22.66	µg/L		99

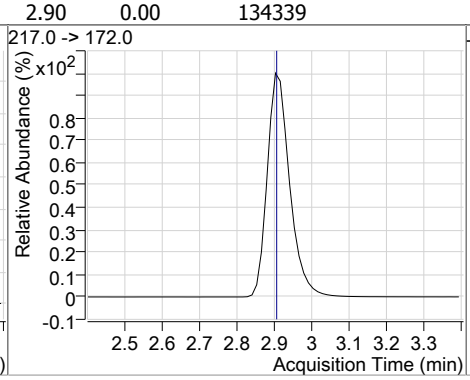
 # = Qualifier out of range, m = manually integrated, + = Area summed

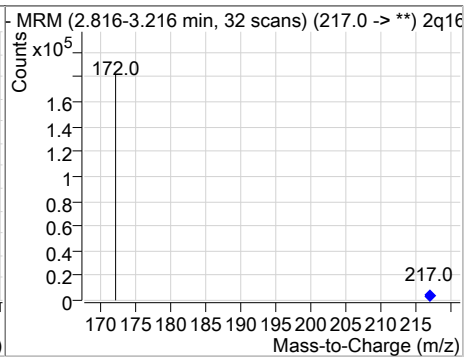
Perfluorinated Compounds by LC/MS/MS



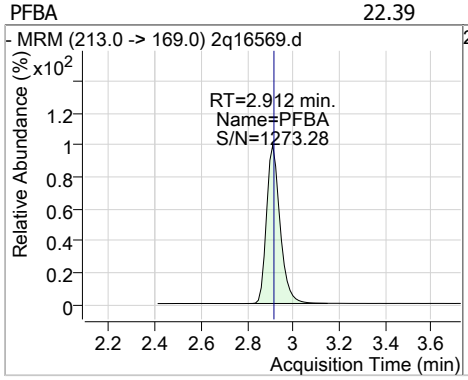
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	17.55	2.90	0.00	134339				

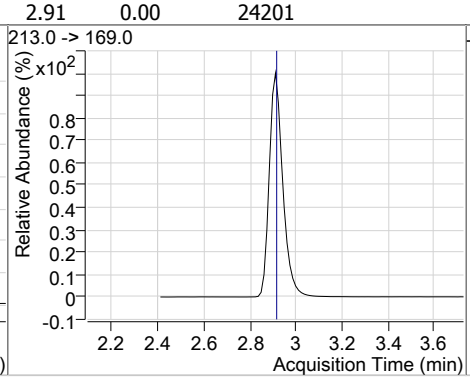


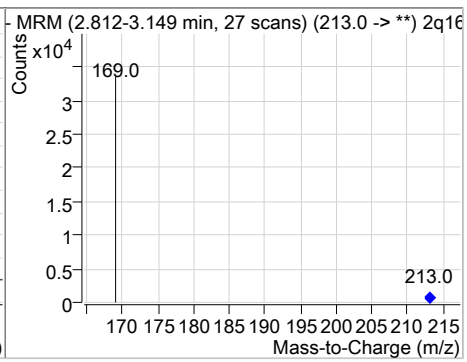




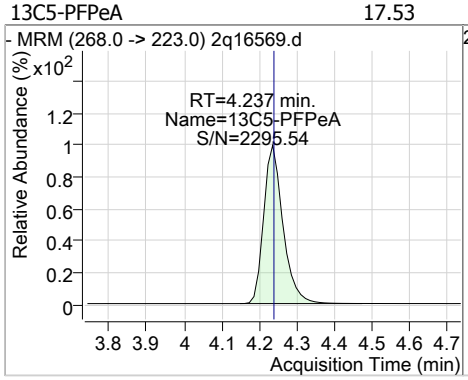
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	22.39	2.91	0.00	24201				

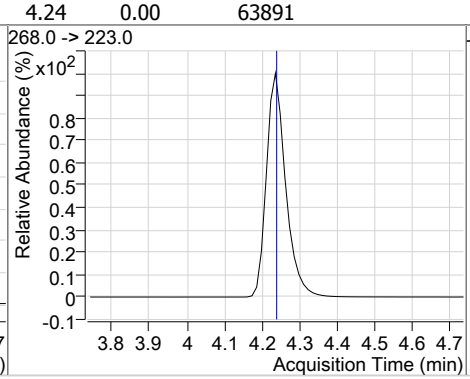


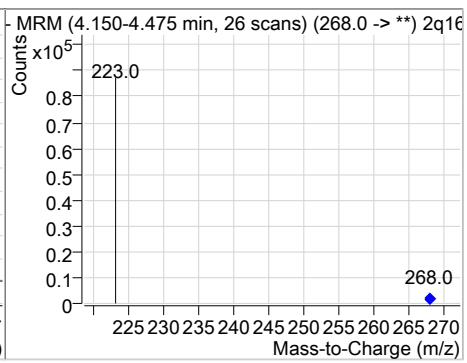




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	17.53	4.24	0.00	63891				

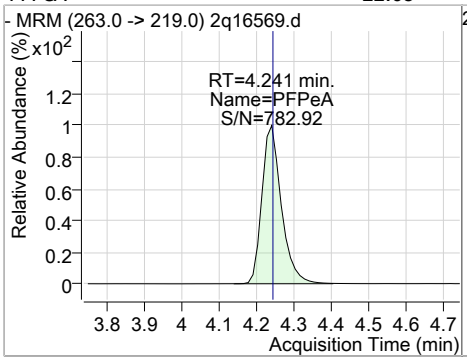


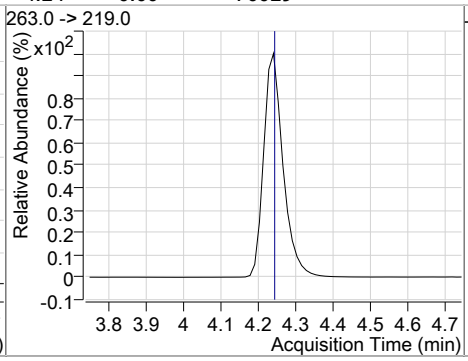


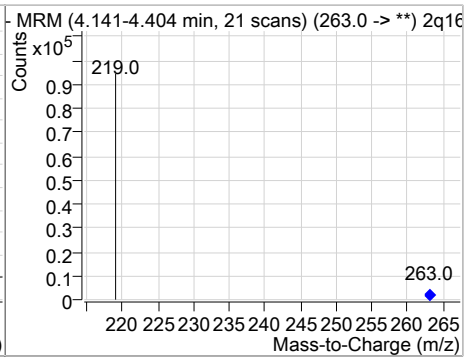


Perfluorinated Compounds by LC/MS/MS

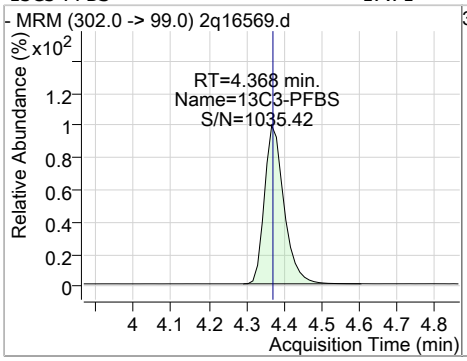
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	22.68	4.24	0.00	70029				

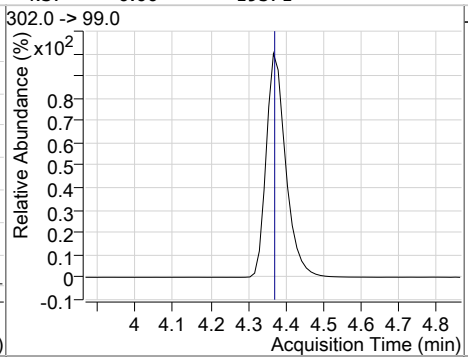


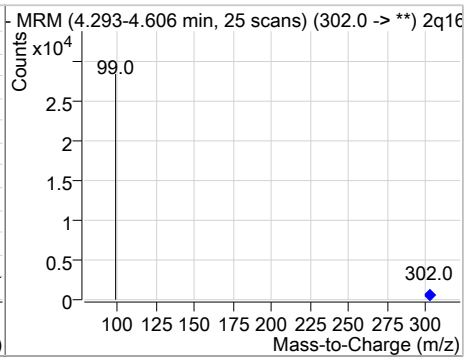




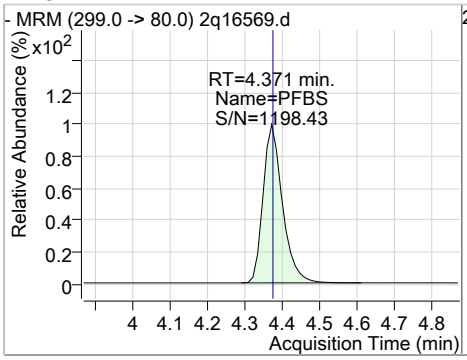
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	17.71	4.37	0.00	19571				

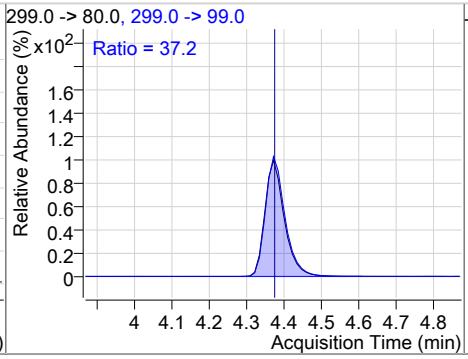


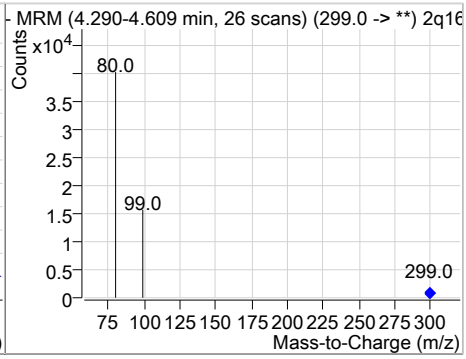




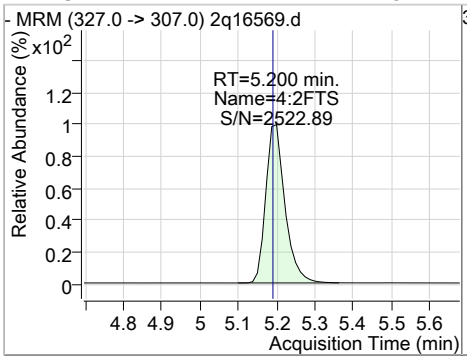
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	22.44	4.37	0.00	29482	299.0 -> 99.0	37.2	5.8	65.8

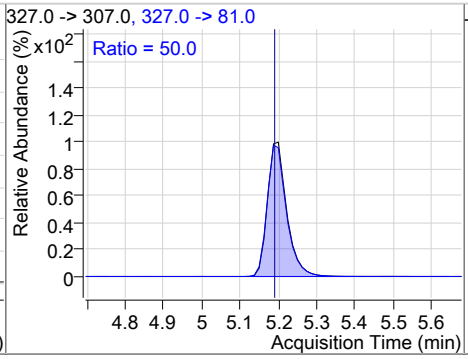


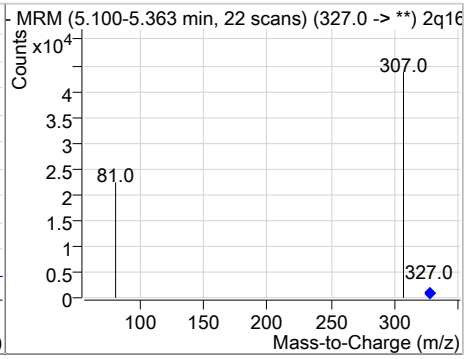




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	22.32	5.20	0.01	32138	327.0 -> 81.0	50.0	21.0	81.0

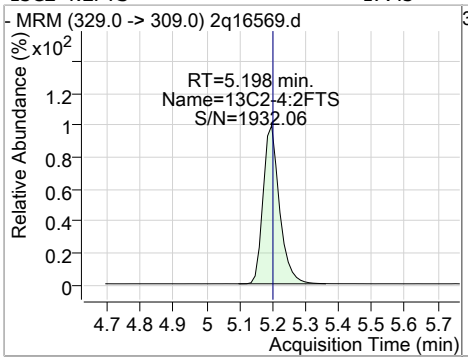


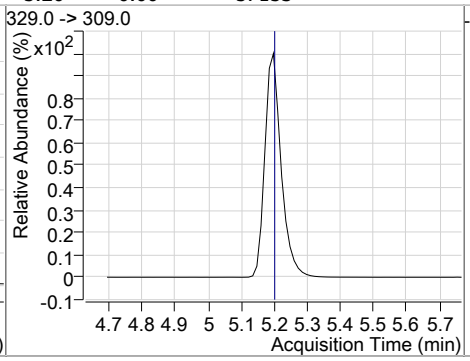


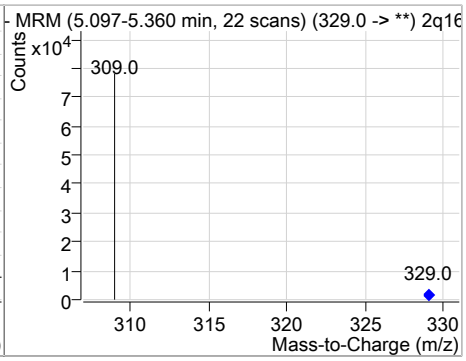


Perfluorinated Compounds by LC/MS/MS

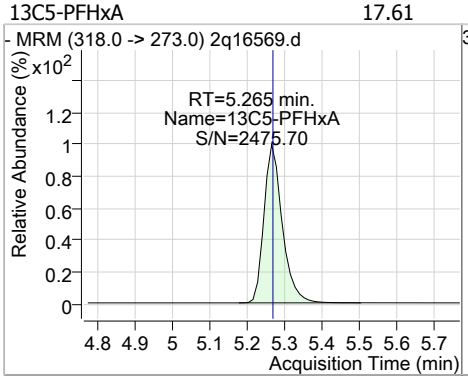
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	17.43	5.20	0.00	57153				

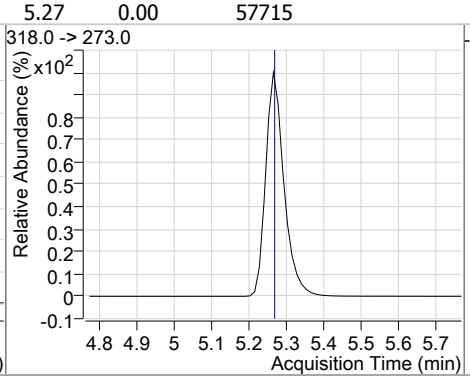


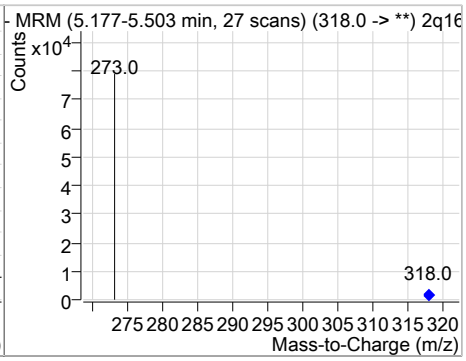




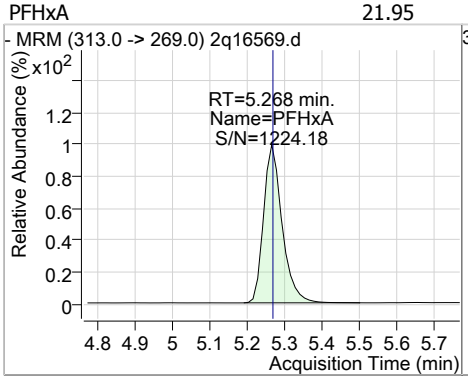
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	17.61	5.27	0.00	57715				

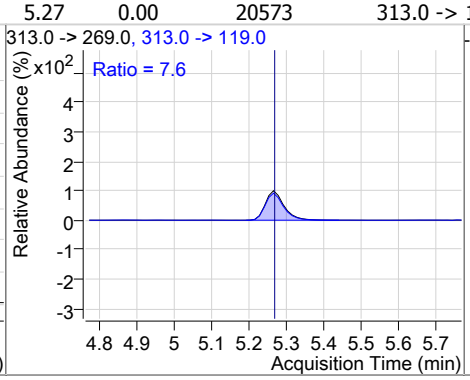


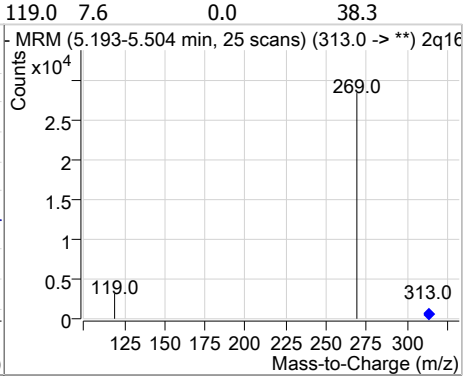




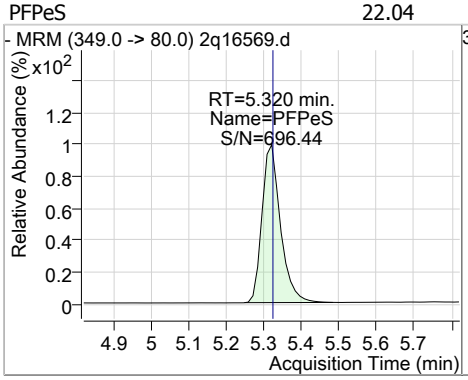
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	21.95	5.27	0.00	20573	313.0 -> 119.0	7.6	0.0	38.3

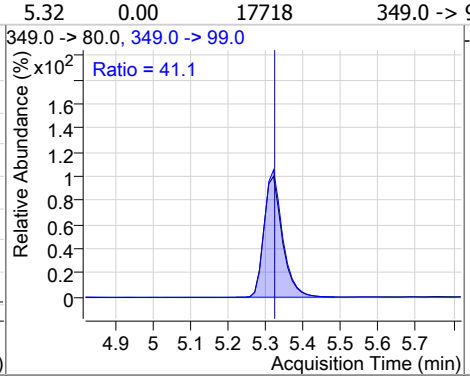


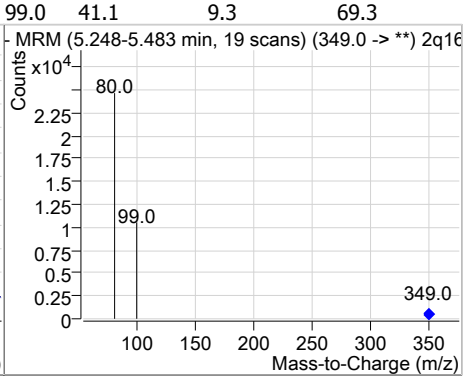




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	22.04	5.32	0.00	17718	349.0 -> 99.0	41.1	9.3	69.3

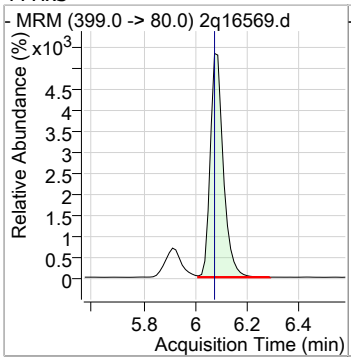


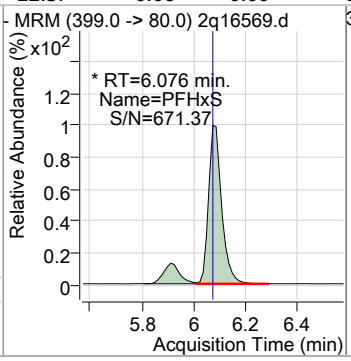


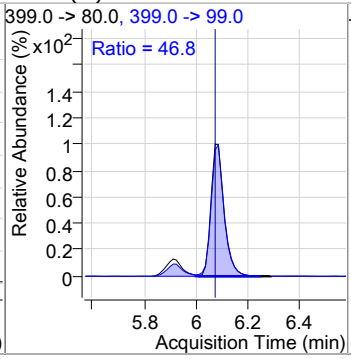


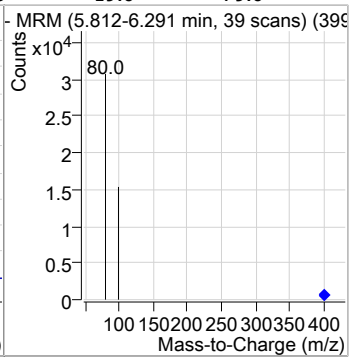
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	22.37	6.08	0.00	21838 (m)	399.0 -> 99.0	46.8	19.0	79.0

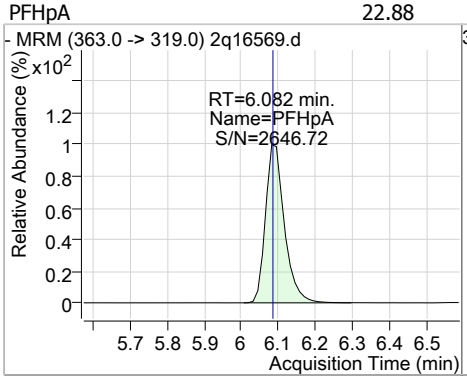


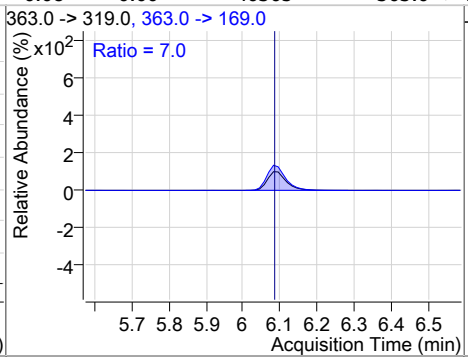


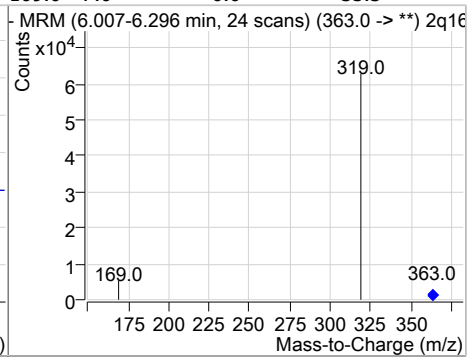




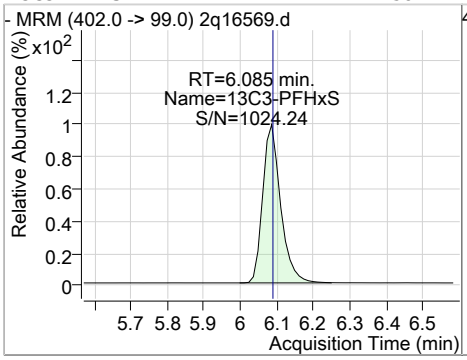
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	22.88	6.08	0.00	46365	363.0 -> 169.0	7.0	0.0	35.3

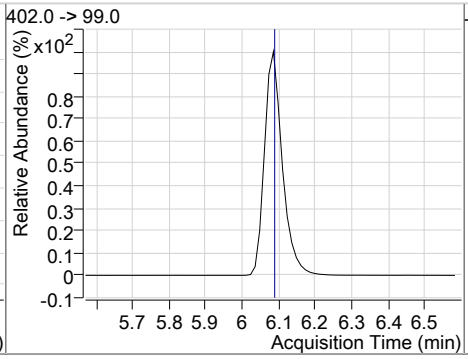


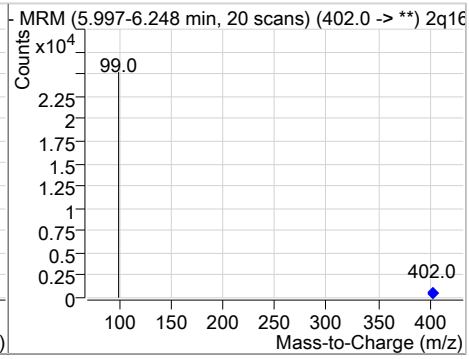




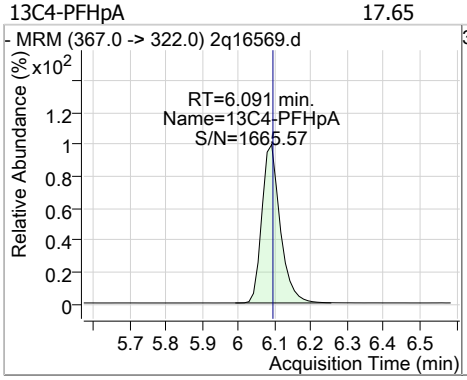
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	17.58	6.09	0.00	17606				

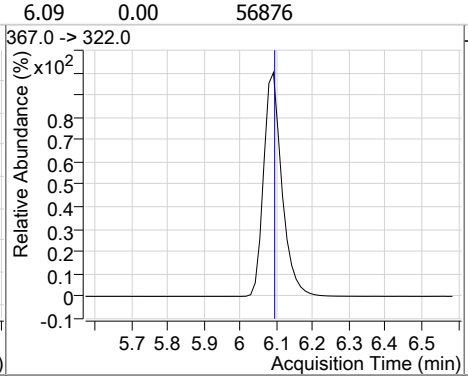


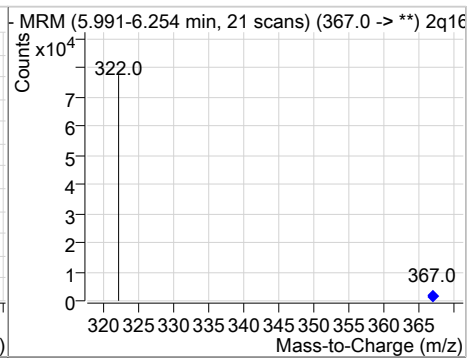




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	17.65	6.09	0.00	56876				

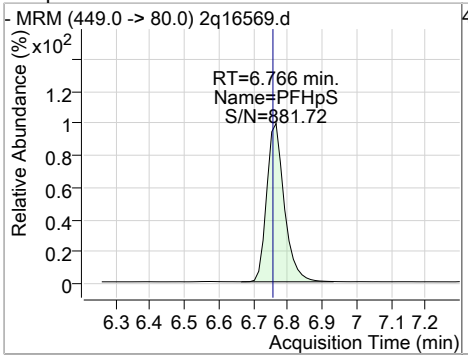


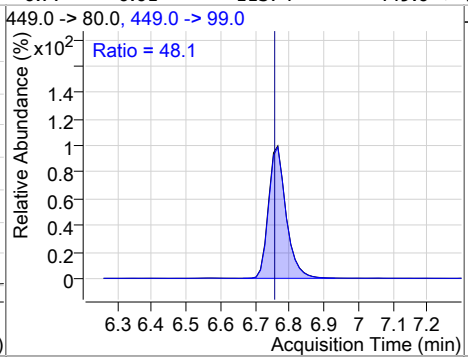


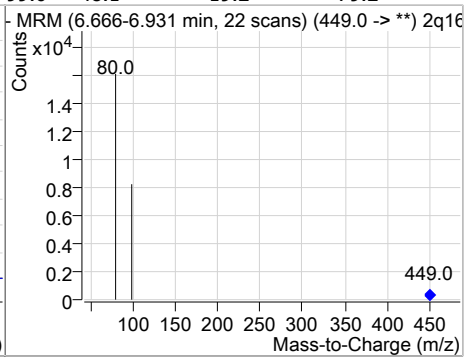


Perfluorinated Compounds by LC/MS/MS

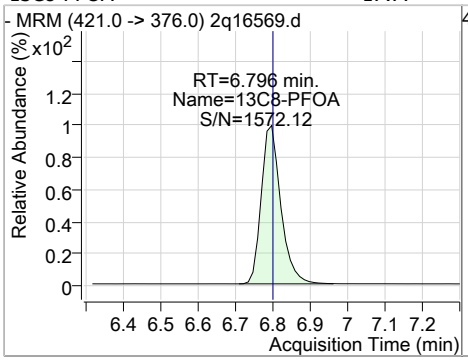
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	22.30	6.77	0.01	11374	449.0 -> 99.0	48.1	19.2	79.2

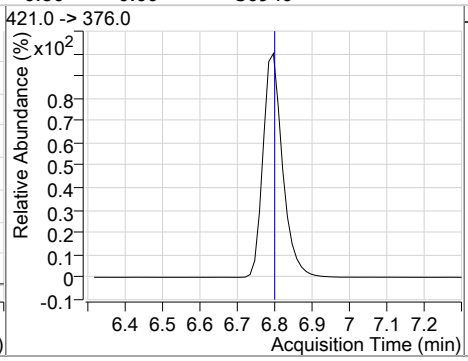


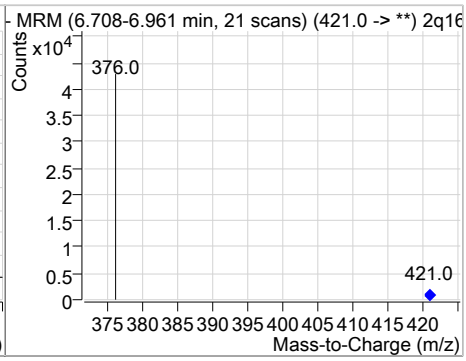




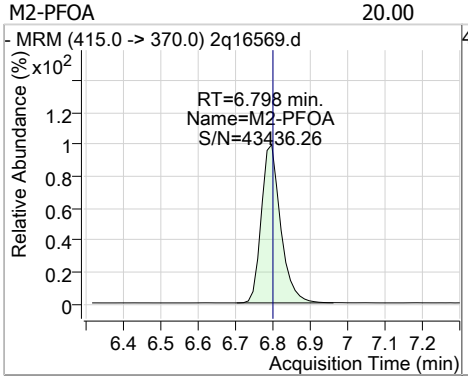
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	17.77	6.80	0.00	30946				

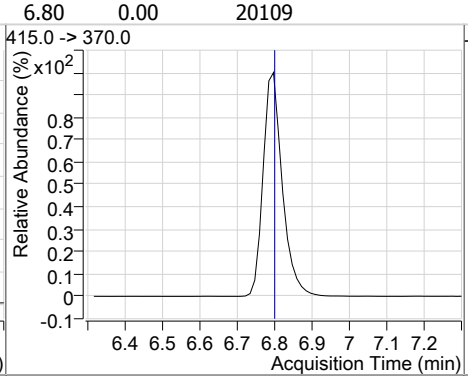


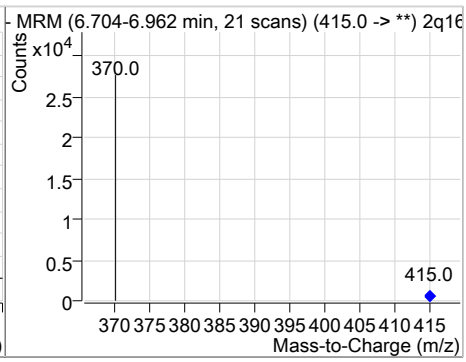




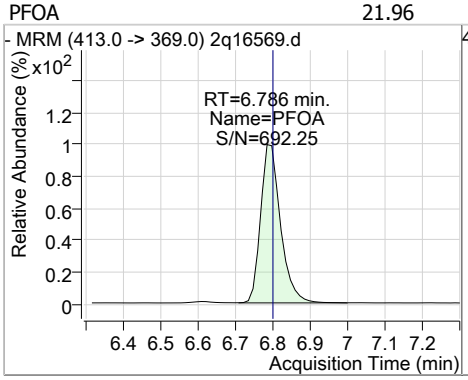
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.80	0.00	20109				

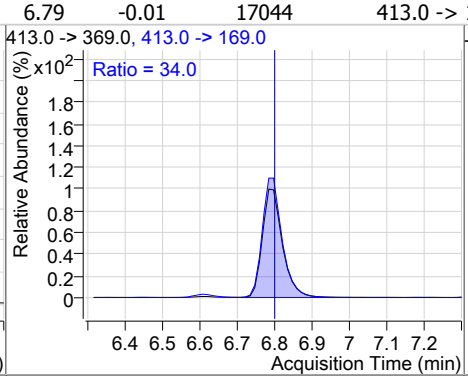


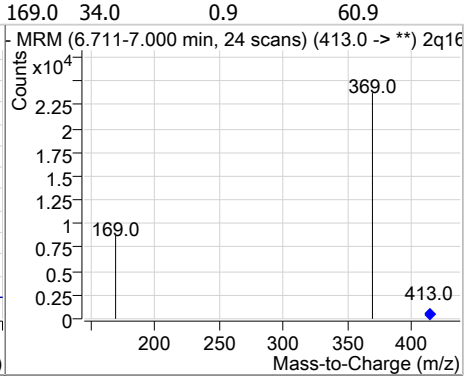




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	21.96	6.79	-0.01	17044	413.0 -> 169.0	34.0	0.9	60.9

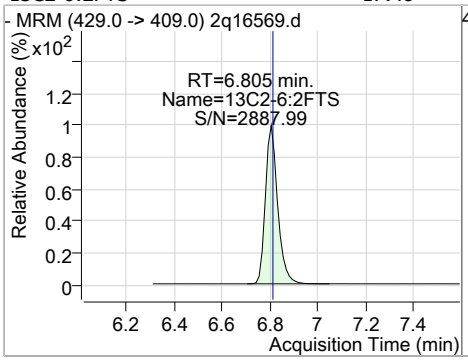


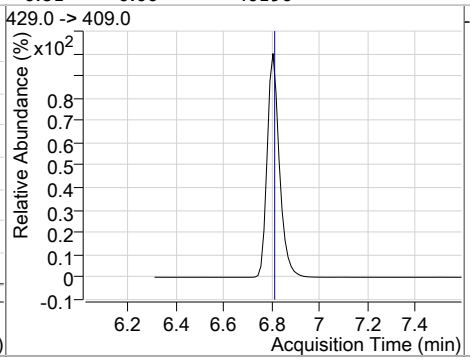


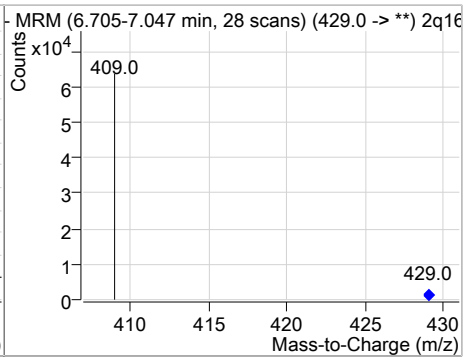


Perfluorinated Compounds by LC/MS/MS

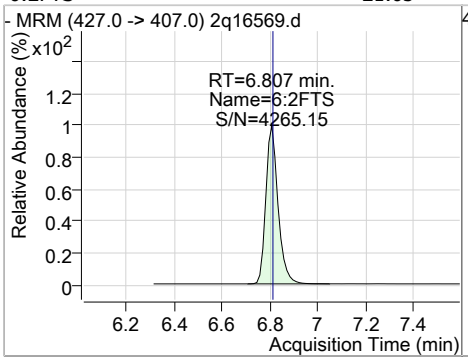
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	17.48	6.81	0.00	46190				

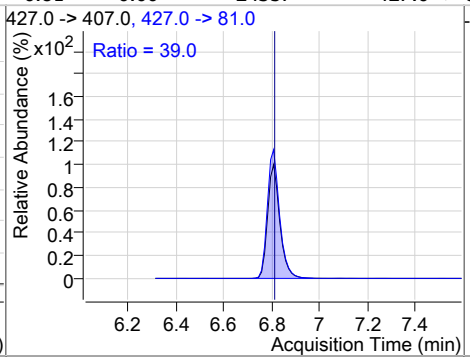


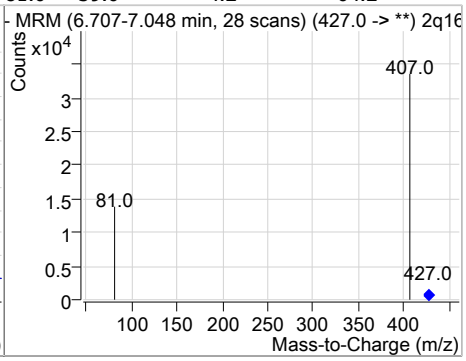




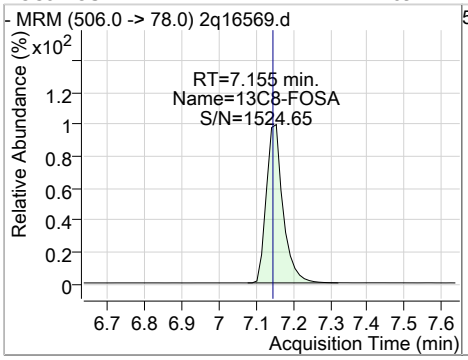
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	21.65	6.81	0.00	24357	427.0 -> 81.0	39.0	4.2	64.2

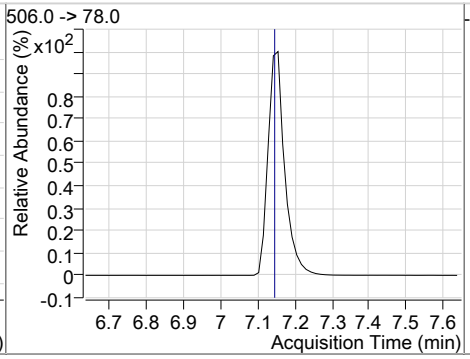


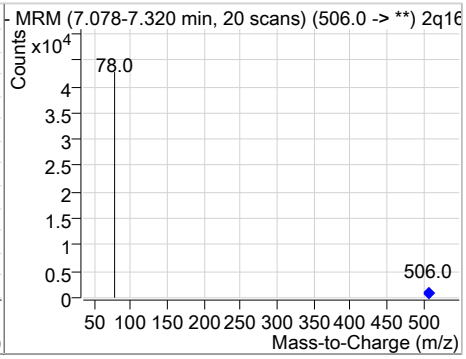




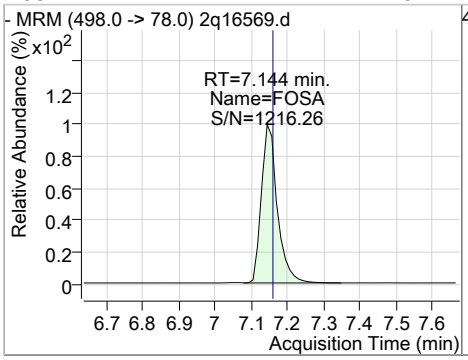
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	17.89	7.15	0.01	31491				

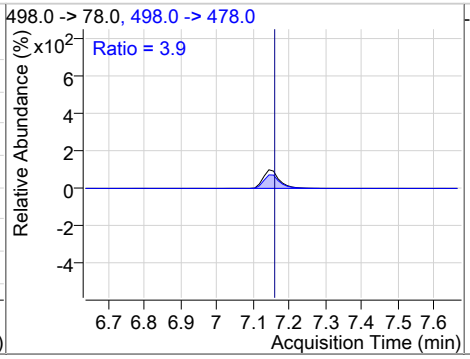


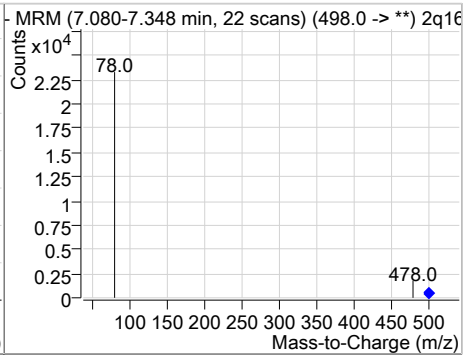




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	21.73	7.14	0.00	17097	498.0 -> 478.0	3.9	0.0	35.2

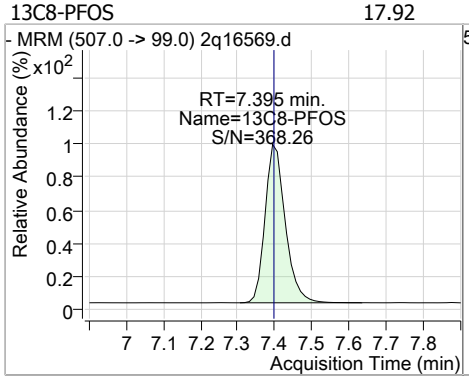


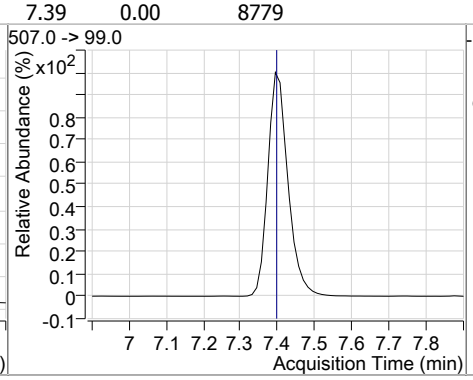


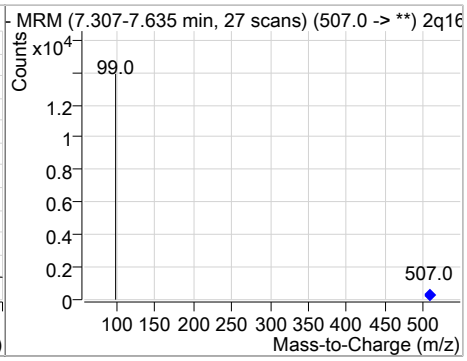


Perfluorinated Compounds by LC/MS/MS

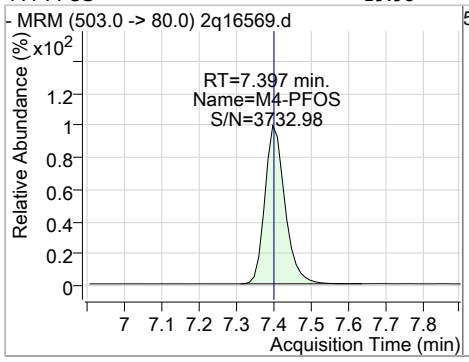
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	17.92	7.39	0.00	8779				

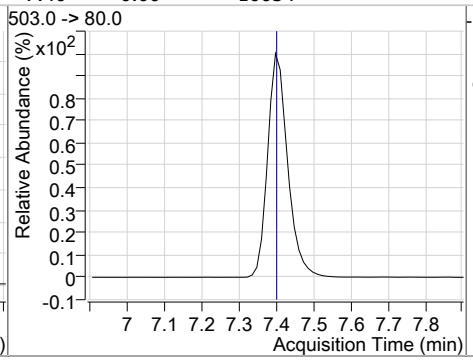


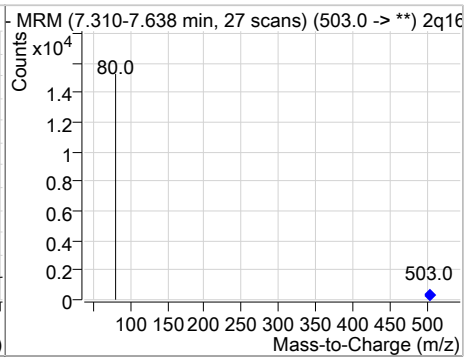




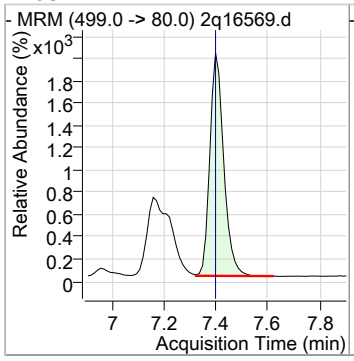
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	19.98	7.40	0.00	10654				

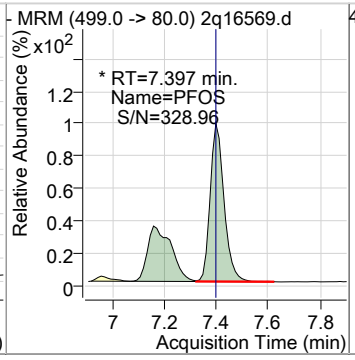


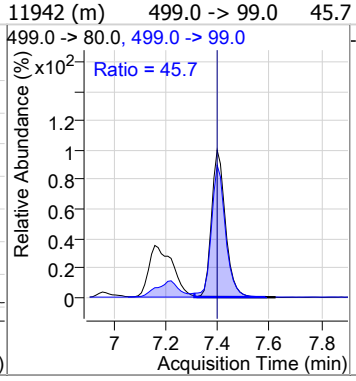


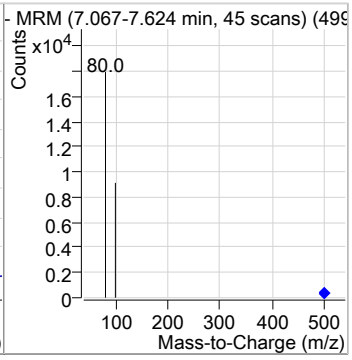


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	22.51	7.40	0.00	11942 (m)	499.0 -> 99.0	45.7	36.8	96.8

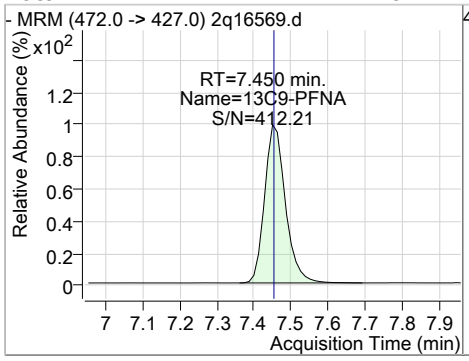


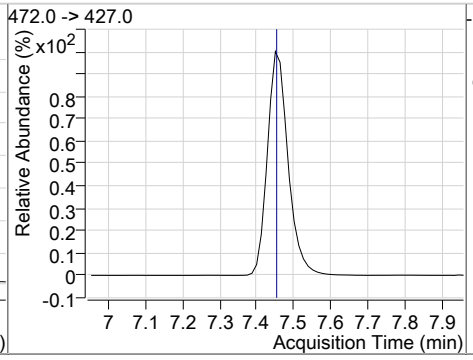


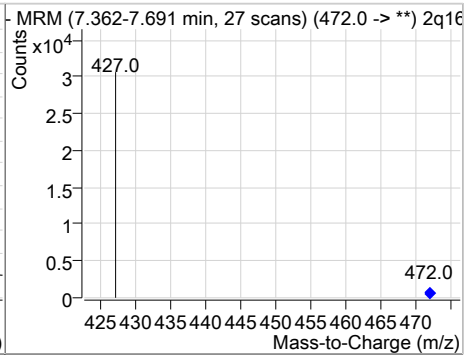




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	17.94	7.45	0.00	21345				

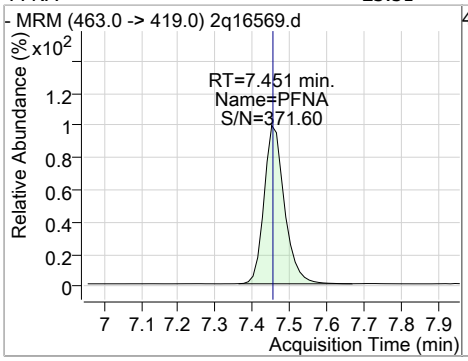


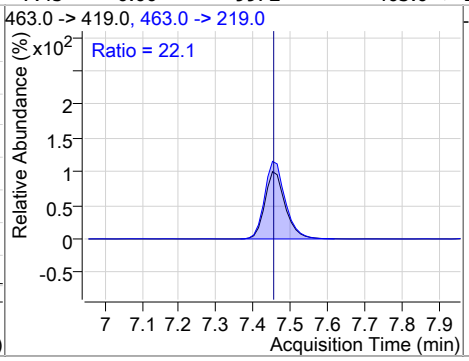


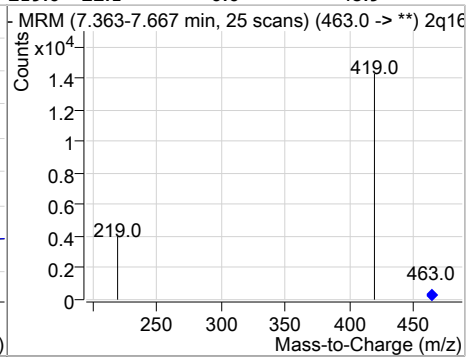


Perfluorinated Compounds by LC/MS/MS

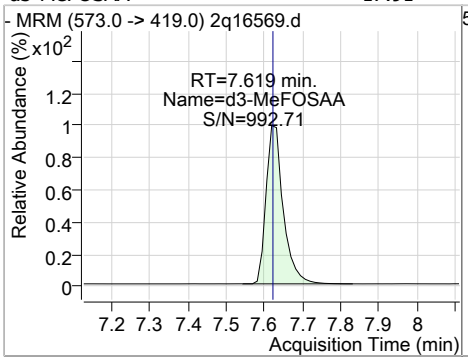
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	23.51	7.45	0.00	9972	463.0 -> 219.0	22.1	0.0	48.9

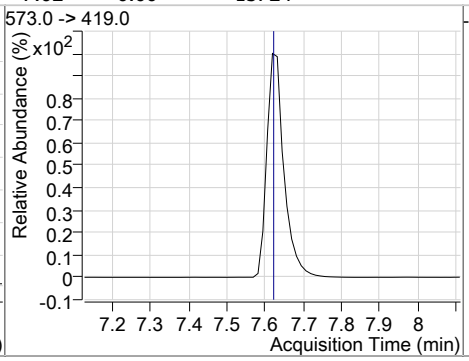


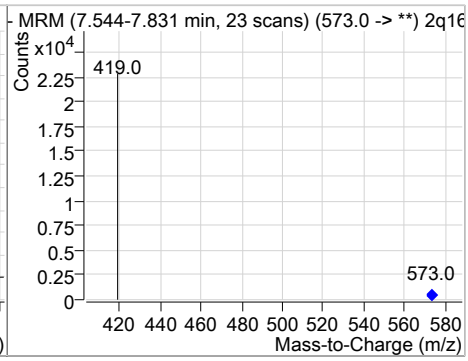




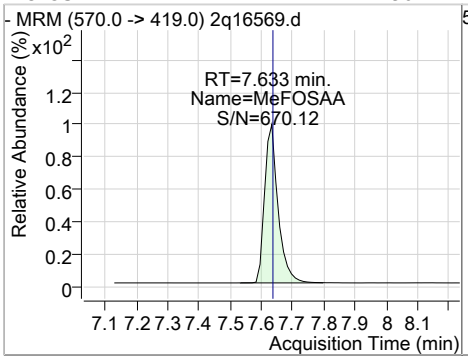
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	17.91	7.62	0.00	15724				

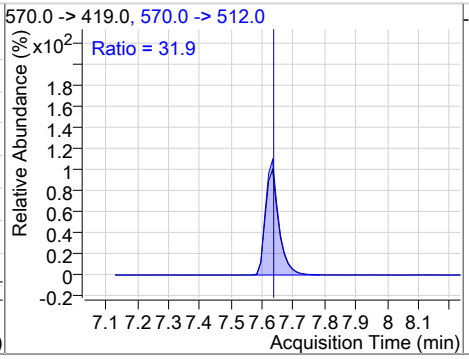


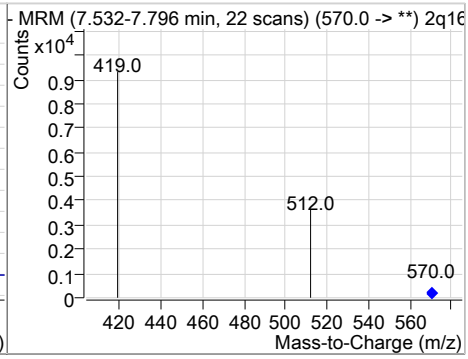




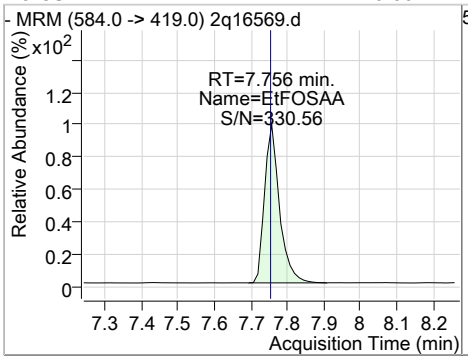
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	22.90	7.63	0.00	6327	570.0 -> 512.0	31.9	0.0	59.6

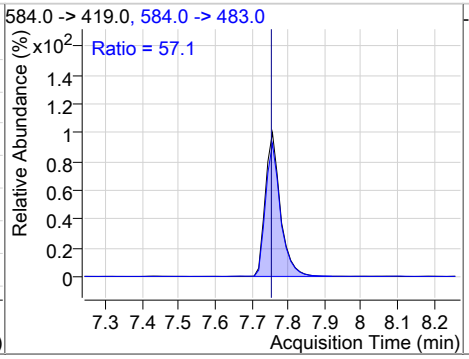


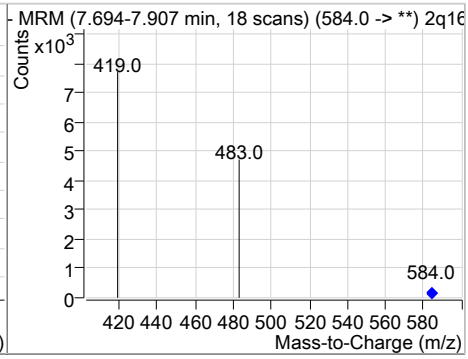




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.86	7.76	0.00	5212	584.0 -> 483.0	57.1	31.9	91.9

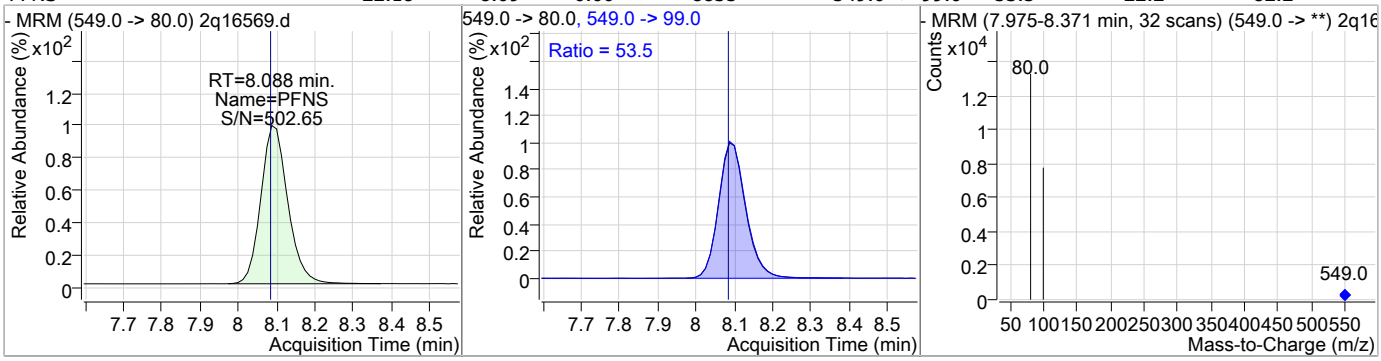




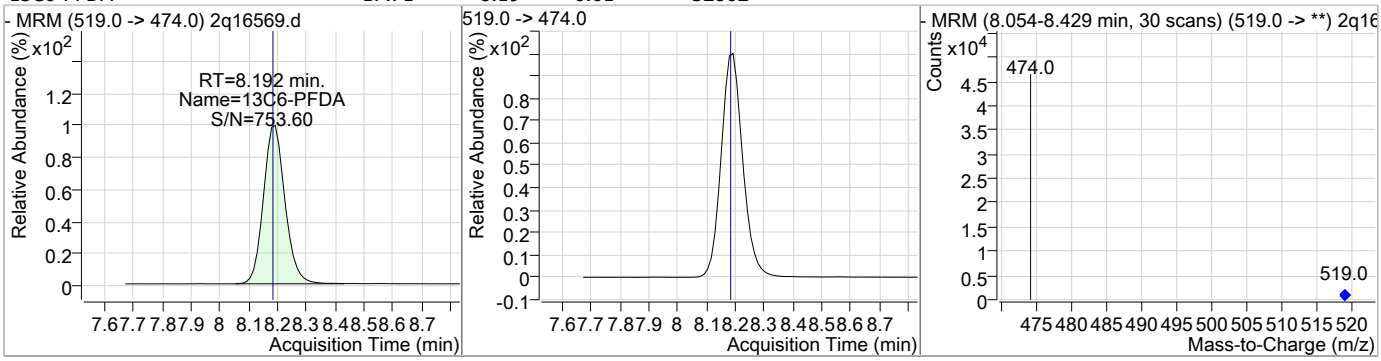


Perfluorinated Compounds by LC/MS/MS

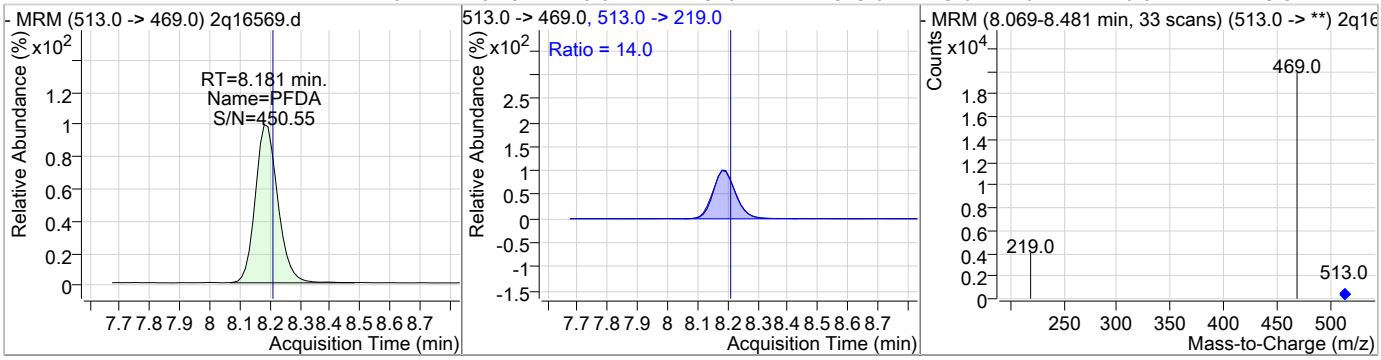
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	22.18	8.09	0.00	8835	549.0 -> 99.0	53.5	22.2	82.2



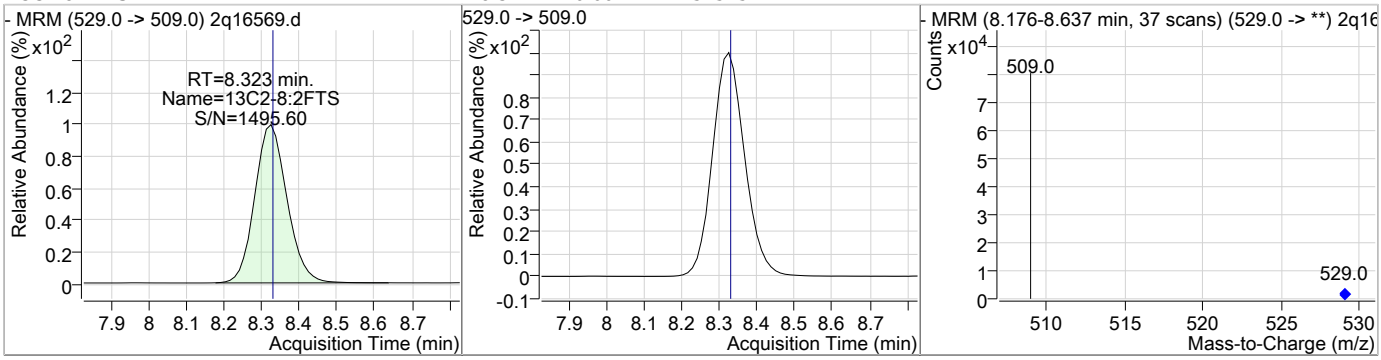
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	17.71	8.19	0.01	32802				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	22.04	8.18	-0.01	13701	513.0 -> 219.0	14.0	0.0	43.5

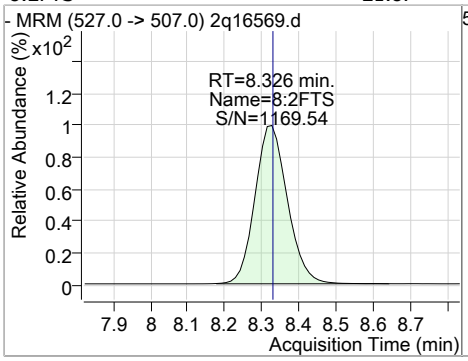


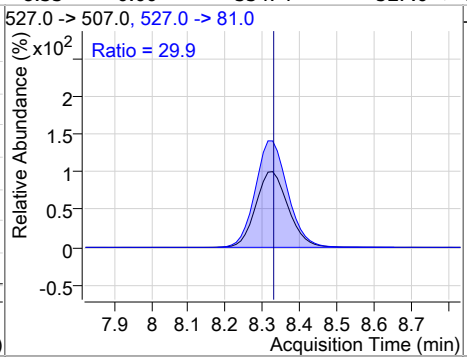
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	17.74	8.32	0.00	57575				

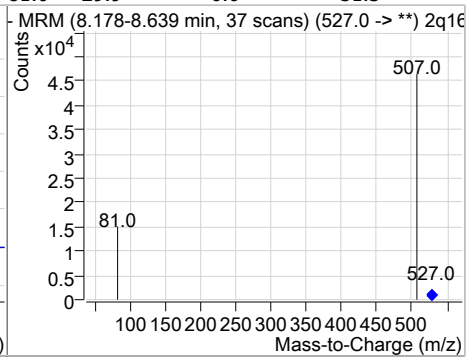


Perfluorinated Compounds by LC/MS/MS

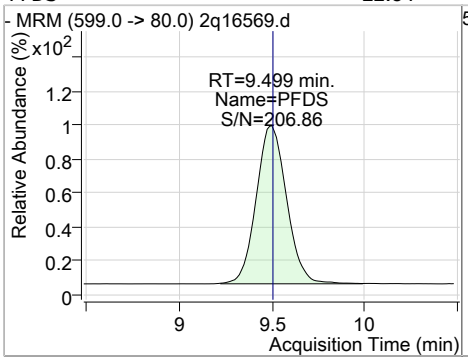
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	21.87	8.33	0.00	33474	527.0 -> 81.0	29.9	0.0	51.3

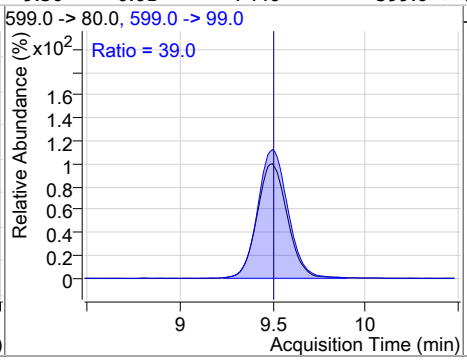


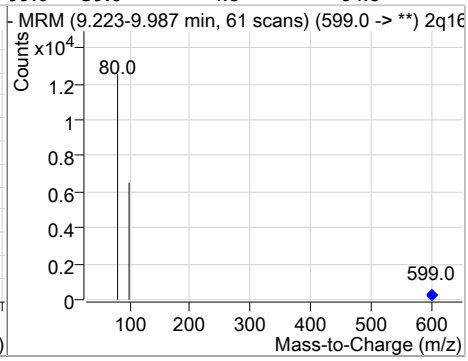




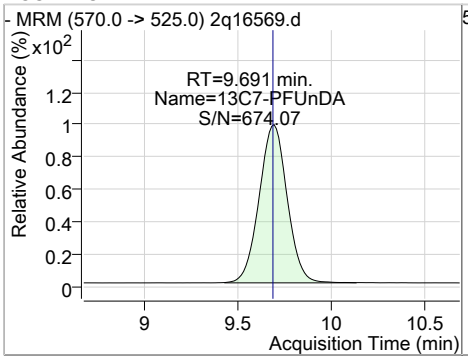
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	22.84	9.50	0.01	7446	599.0 -> 99.0	39.0	4.8	64.8

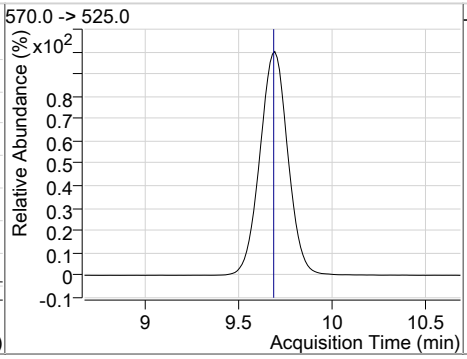


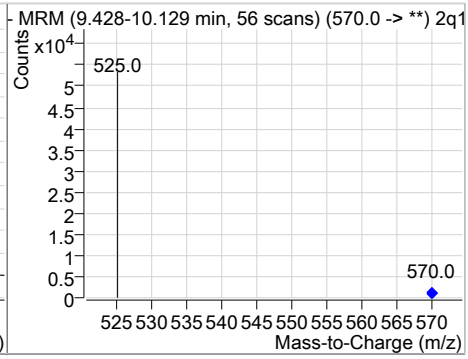




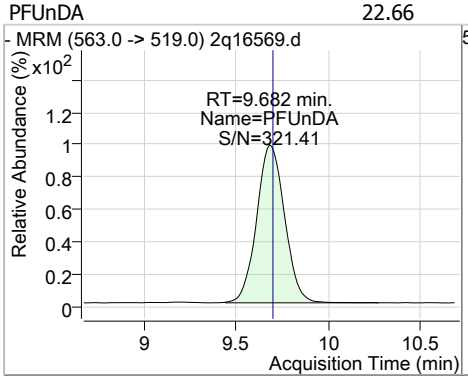
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	17.77	9.69	0.01	36337				

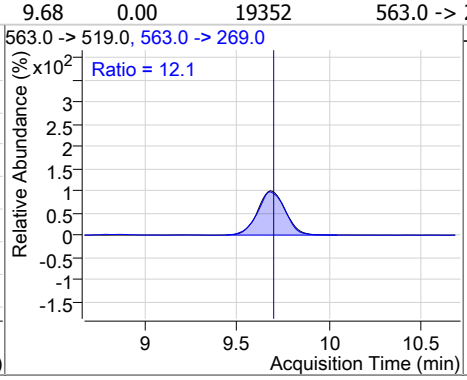


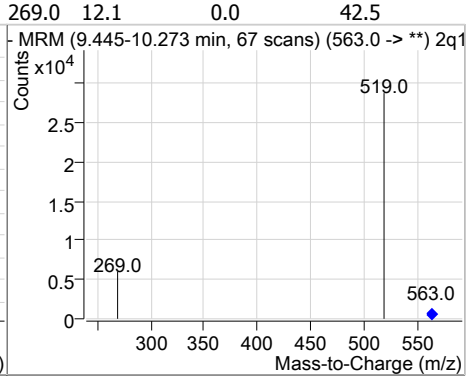




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	22.66	9.68	0.00	19352	563.0 -> 269.0	12.1	0.0	42.5

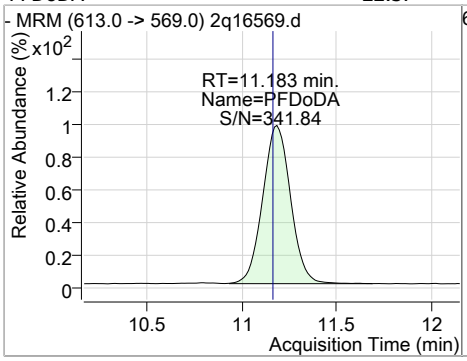


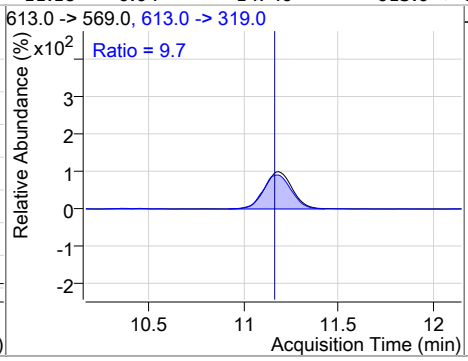


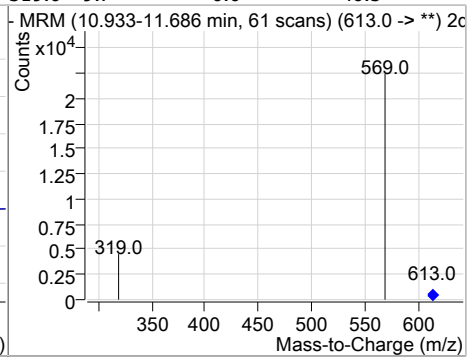


Perfluorinated Compounds by LC/MS/MS

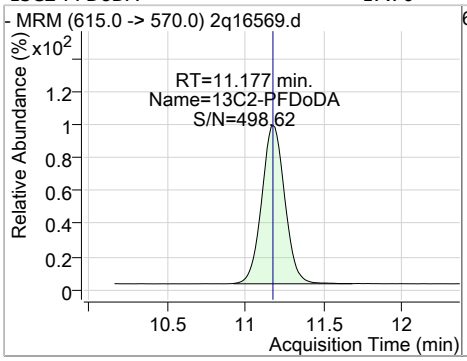
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	22.37	11.18	0.04	14740	613.0 -> 319.0	9.7	0.0	40.5

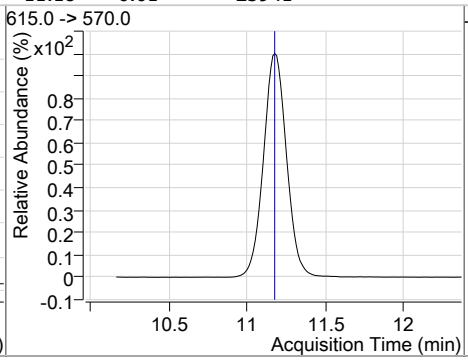


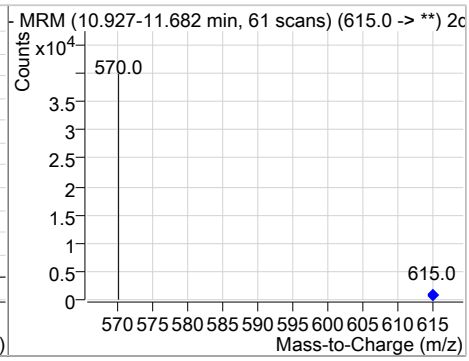




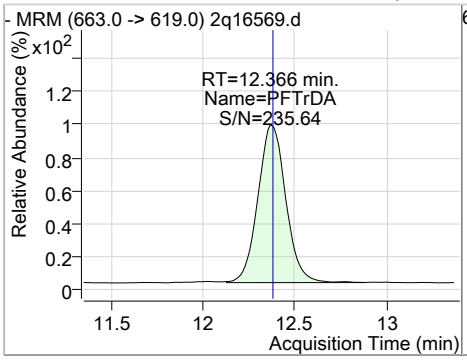
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	17.70	11.18	0.01	25941				

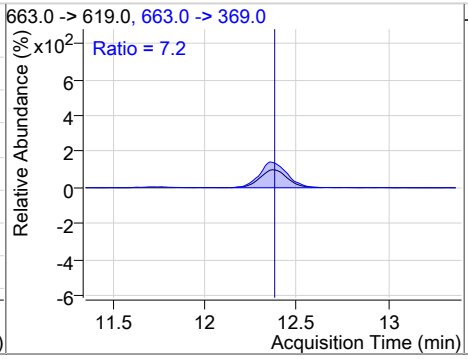


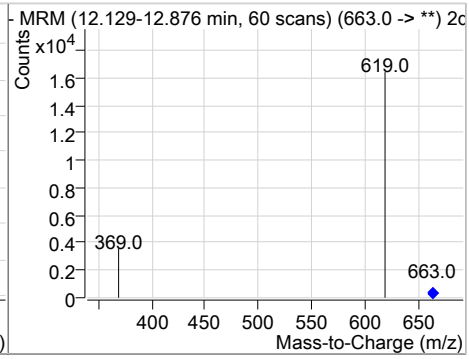




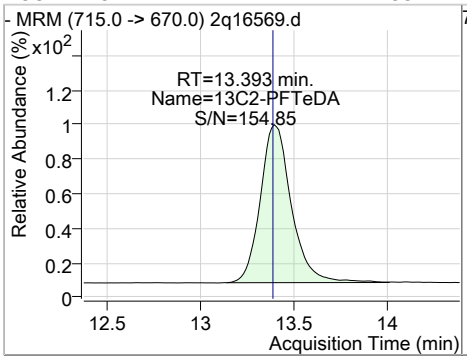
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	21.64	12.37	0.00	10783	663.0 -> 369.0	7.2	0.0	35.1

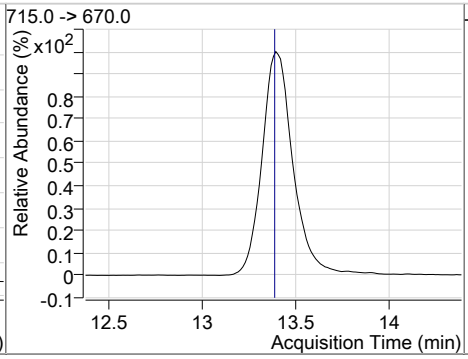


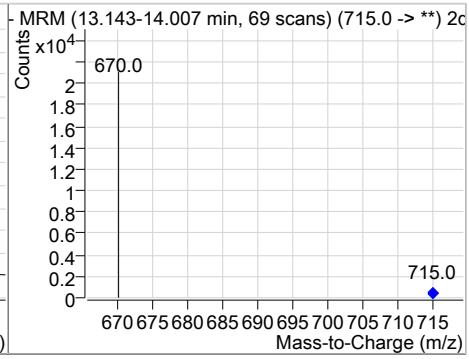




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	17.93	13.39	0.01	11125				

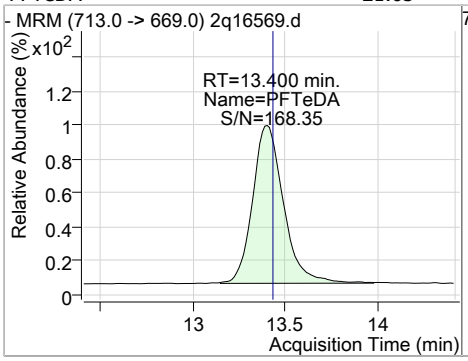


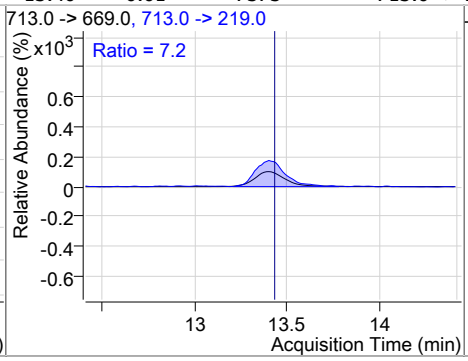


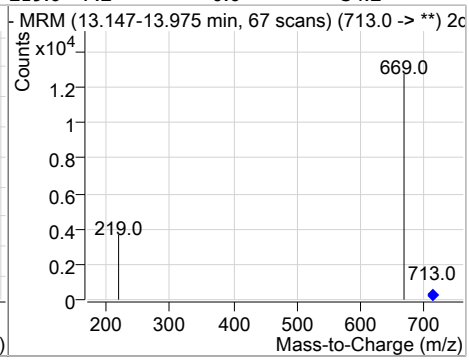


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	21.65	13.40	-0.01	7373	713.0 -> 219.0	7.2	0.0	34.2







Manual Integration Approval Summary

Sample Number:	S2Q291-ICC291	**Method:**	EPA 537M QSM5.1 B-15
Lab FileID:	2Q16569.D	**Analyst approved:**	07/06/18 10:17 Natasha Gumtie
Injection Time:	07/05/18 18:09	**Supervisor approved:**	07/06/18 17:13 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.08	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.40	Split peak

2Q16570.D

Manual Integrations APPROVED (compounds with "m" flag)

Mike Eger 07/06/18 17:13

Perfluorinated Compounds by LC/MS/MS

Data File	:	2q16570.d
Operator	:	NATASHAG
Acq. Method	:	dMRM_ID_PFC.m
Acq. Date-Time	:	7/5/2018 6:29:36 PM
Sample Name	:	ic291-50
Vial	:	Vial 8
DA Method File	:	PFC_ID_070518_S2Q291.quantmethod.xml
Batch Name	:	s2q291.batch.bin
Sample Information	:	op70743,S2Q291,130,,,1.0,1,water

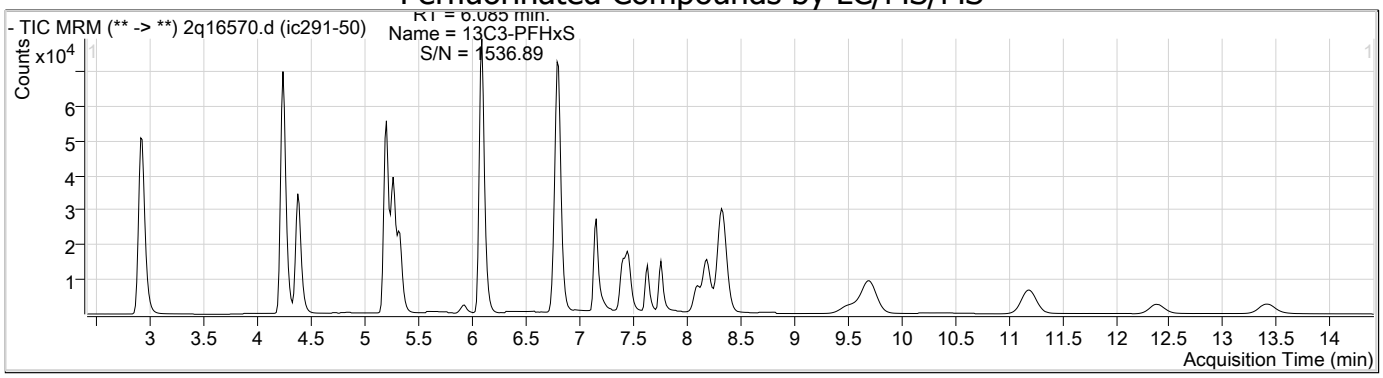
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.798	415.0 -> 370.0	23636	20.00	µg/L	0.000
13C4-PFOS	7.410	503.0 -> 80.0	12003	20.00	µg/L	0.012
M4-PFBA	2.916	217.0 -> 172.0	152476	20.00	µg/L	0.013
M5-PFPeA	4.237	268.0 -> 223.0	72690	20.00	µg/L	0.000
M5-PFHxA	5.265	318.0 -> 273.0	64369	20.00	µg/L	0.000
M4-PFHpA	6.091	367.0 -> 322.0	63109	20.00	µg/L	0.000
M8-PFOA	6.796	421.0 -> 376.0	34533	20.00	µg/L	0.000
M9-PFNA	7.462	472.0 -> 427.0	24312	20.00	µg/L	0.012
M6-PFDA	8.192	519.0 -> 474.0	37413	20.00	µg/L	0.012
M7-PFUnDA	9.703	570.0 -> 525.0	42042	20.00	µg/L	0.025
M2-PFDoDA	11.190	615.0 -> 570.0	30278	20.00	µg/L	0.020
M2-PFTeDA	13.406	715.0 -> 670.0	12664	20.00	µg/L	0.025
M8-FOSA	7.155	506.0 -> 78.0	32794	20.00	µg/L	0.012
M3-PFBS	4.368	302.0 -> 99.0	22288	20.00	µg/L	0.000
M3-PFHxS	6.085	402.0 -> 99.0	20037	20.00	µg/L	0.000
M8-PFOS	7.407	507.0 -> 99.0	10010	20.00	µg/L	0.012
M2-4:2FTS	5.198	329.0 -> 309.0	69709	20.00	µg/L	0.000
M2-6:2FTS	6.805	429.0 -> 409.0	56082	20.00	µg/L	-0.002
M2-8:2FTS	8.323	529.0 -> 509.0	71187	20.00	µg/L	-0.002
M3-MeFOSAA	7.632	573.0 -> 419.0	17608	20.00	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	5.198	329.0 -> 309.0	69689	21.25	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.2%		
13C2-6:2FTS	6.805	429.0 -> 409.0	56080	21.22	µg/L	-0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.1%		
13C2-8:2FTS	8.323	529.0 -> 509.0	71113	21.91	µg/L	-0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.6%		
13C2-PFDoDA	11.190	615.0 -> 570.0	30358	20.72	µg/L	0.020
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.6%		
13C2-PFTeDA	13.406	715.0 -> 670.0	12840	20.69	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C3-PFBS	4.368	302.0 -> 99.0	22275	20.15	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.8%		
13C3-PFHxS	6.085	402.0 -> 99.0	20037	20.00	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C4-PFBA	2.916	217.0 -> 172.0	152420	19.91	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%		
13C4-PFHpA	6.091	367.0 -> 322.0	63112	19.59	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%		
13C5-PFHxA	5.265	318.0 -> 273.0	64357	19.64	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.2%		
13C5-PFPeA	4.237	268.0 -> 223.0	72650	19.94	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C6-PFDA	8.192	519.0 -> 474.0	37397	20.20	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%		

Perfluorinated Compounds by LC/MS/MS

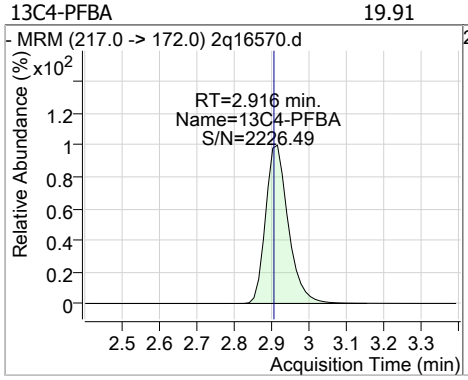
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	9.703	570.0 -> 525.0	42070	20.57	µg/L		0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.8%			
13C8-FOSA	7.155	506.0 -> 78.0	32790	18.63	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.1%			
13C8-PFOA	6.796	421.0 -> 376.0	34536	19.83	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.2%			
13C8-PFOS	7.407	507.0 -> 99.0	10009	20.43	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.1%			
13C9-PFNA	7.462	472.0 -> 427.0	24305	20.43	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.1%			
d3-MeFOSAA	7.632	573.0 -> 419.0	17602	20.05	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.2%			
M2-PFOA	6.798	415.0 -> 370.0	23646	20.01	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.410	503.0 -> 80.0	12007	20.01	ng/ml		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
Target Compounds							**QValue**
4:2FTS	5.200	327.0 -> 307.0	79843	48.50	µg/L		99
6:2FTS	6.807	427.0 -> 407.0	62583	48.96	µg/L		94
8:2FTS	8.326	527.0 -> 507.0	86164	48.63	µg/L		84
EtFOSAA	7.756	584.0 -> 419.0	13497	49.77	µg/L		88
FOSA	7.157	498.0 -> 78.0	39777	49.14	µg/L		97
MeFOSAA	7.633	570.0 -> 419.0	16178	52.31	µg/L		98
PFBA	2.912	213.0 -> 169.0	61522	50.17	µg/L		100
PFBS	4.371	299.0 -> 80.0	73989	49.45	µg/L		98
PFDA	8.194	513.0 -> 469.0	33844	49.03	µg/L		97
PFDoDA	11.196	613.0 -> 569.0	36623	48.41	µg/L		97
PFDS	9.511	599.0 -> 80.0	18499	48.99	µg/L		94
PFHpA	6.095	363.0 -> 319.0	112456	50.01	µg/L		94
PFHpS	6.766	449.0 -> 80.0	28640	49.33	µg/L		100
PFHxA	5.268	313.0 -> 269.0	51992	49.73	µg/L		97
PFHxS	6.088	399.0 -> 80.0	54451	49.01	µg/L	m	97
PFNA	7.463	463.0 -> 419.0	23895	49.47	µg/L		91
PFNS	8.100	549.0 -> 80.0	22656	49.89	µg/L		99
PFOA	6.799	413.0 -> 369.0	43524	50.24	µg/L		94
PFOS	7.410	499.0 -> 80.0	29504	48.79	µg/L	m	75
PFPeA	4.241	263.0 -> 219.0	176318	50.21	µg/L		100
PFPeS	5.320	349.0 -> 80.0	45421	49.61	µg/L		99
PFTeDA	13.425	713.0 -> 669.0	18535	49.05	µg/L		91
PFTrDA	12.385	663.0 -> 619.0	27397	49.18	µg/L		95
PFUnDA	9.707	563.0 -> 519.0	49382	49.90	µg/L		99

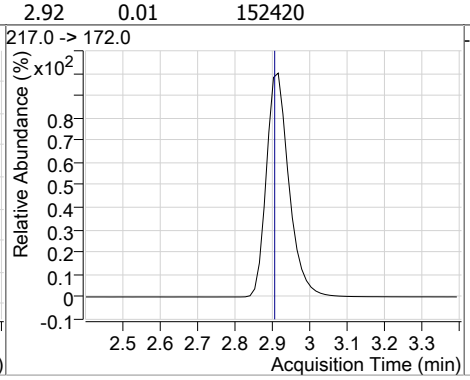
 # = Qualifier out of range, m = manually integrated, + = Area summed

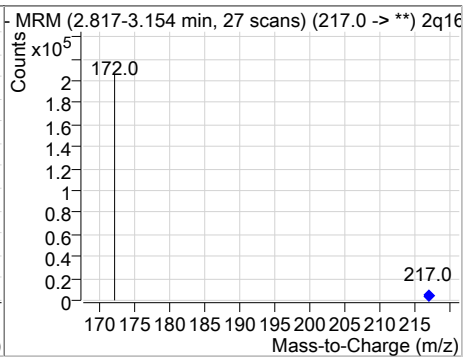
Perfluorinated Compounds by LC/MS/MS



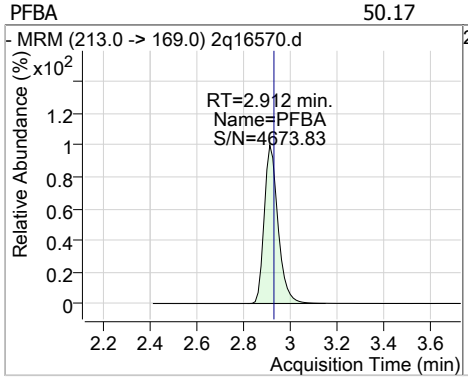
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.91	2.92	0.01	152420				

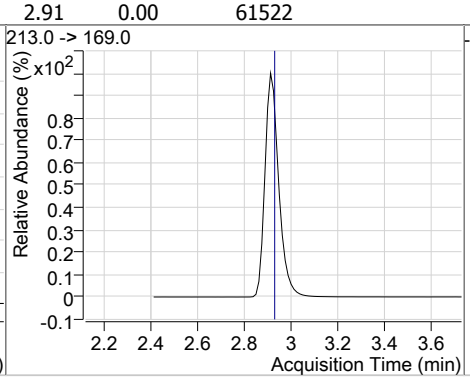


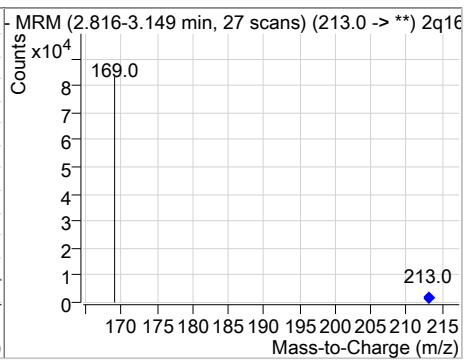




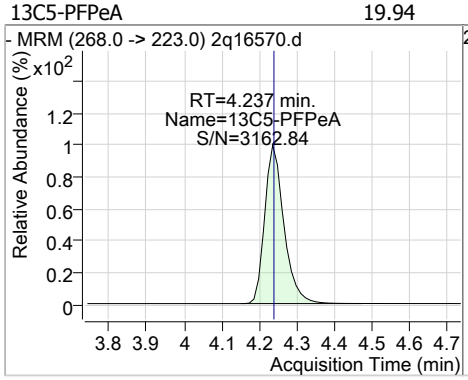
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	50.17	2.91	0.00	61522				

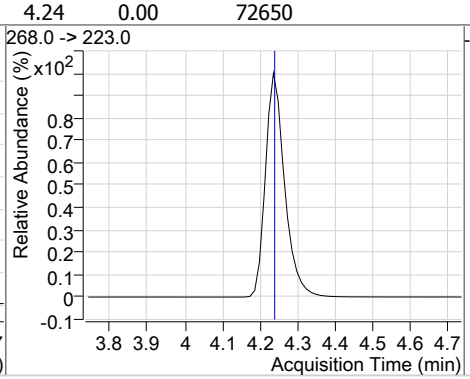


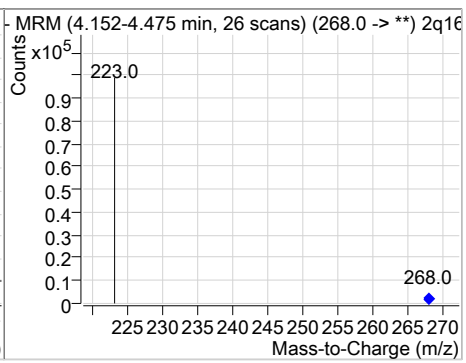




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.94	4.24	0.00	72650				

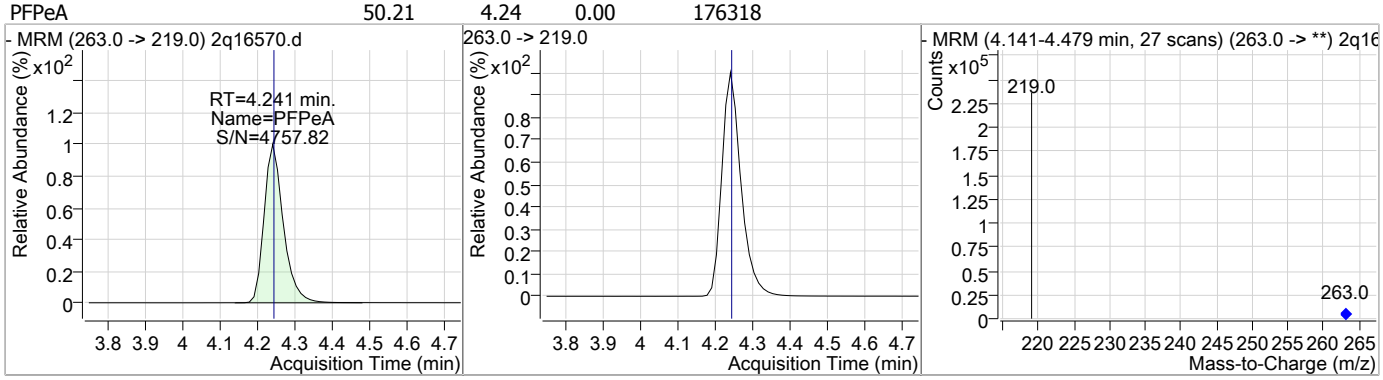




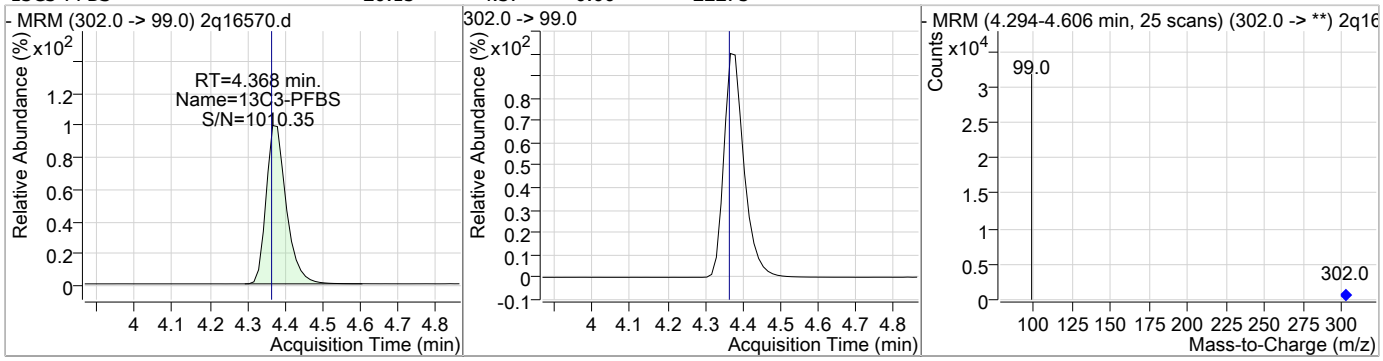


Perfluorinated Compounds by LC/MS/MS

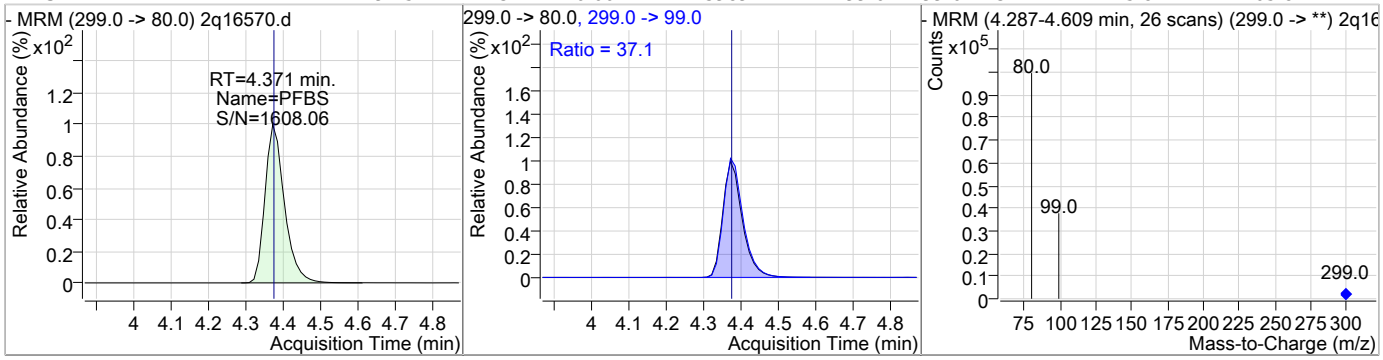
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	50.21	4.24	0.00	176318				



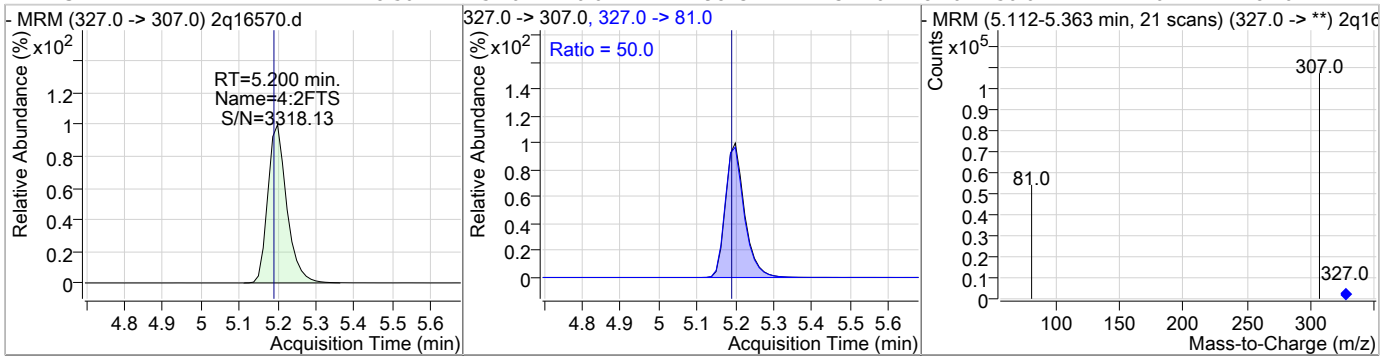
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.15	4.37	0.00	22275				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	49.45	4.37	0.00	73989	299.0 -> 99.0	37.1	5.8	65.8

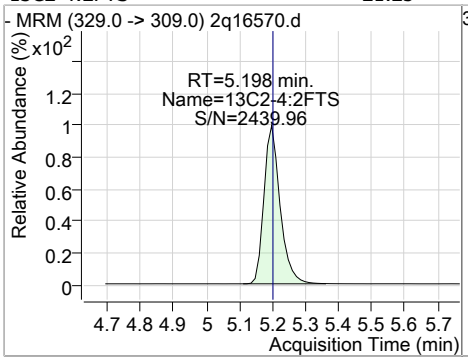


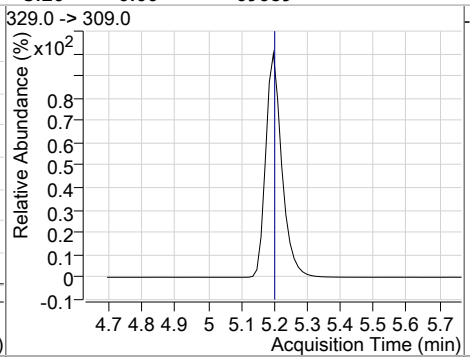
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	48.50	5.20	0.01	79843	327.0 -> 81.0	50.0	21.0	81.0

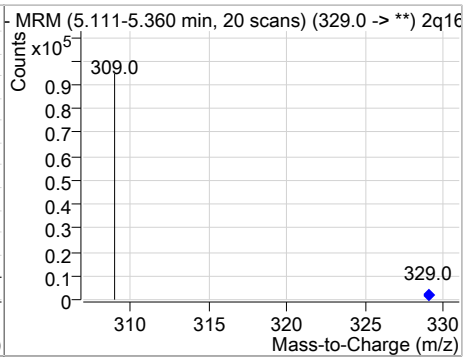


Perfluorinated Compounds by LC/MS/MS

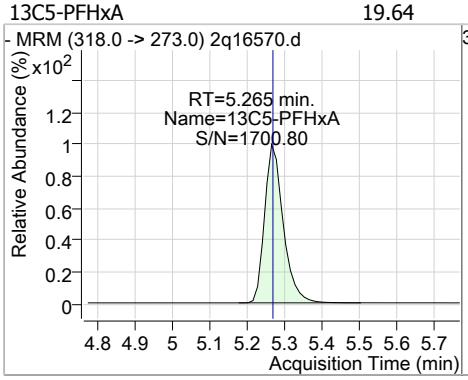
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	21.25	5.20	0.00	69689				

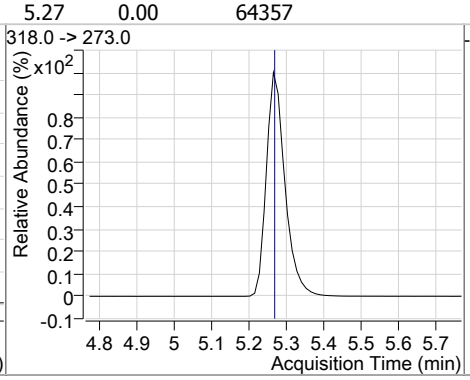


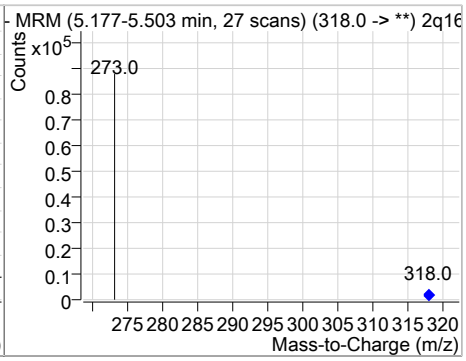




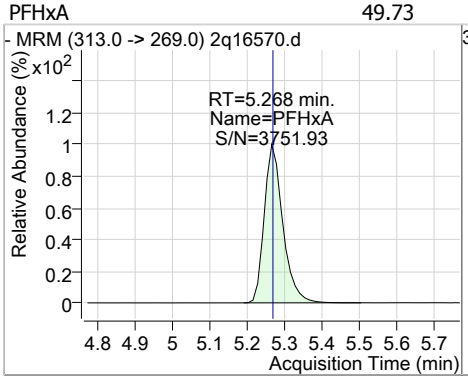
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.64	5.27	0.00	64357				

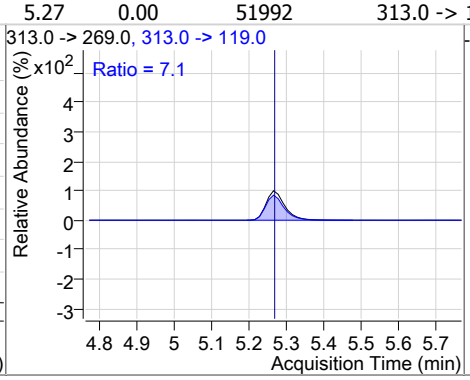


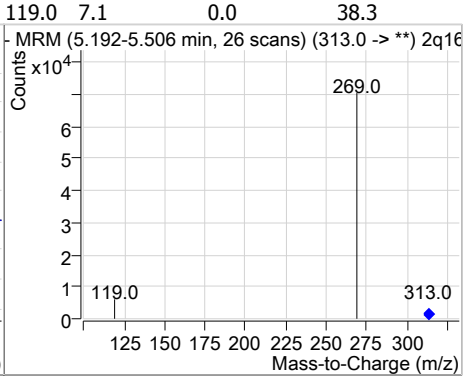




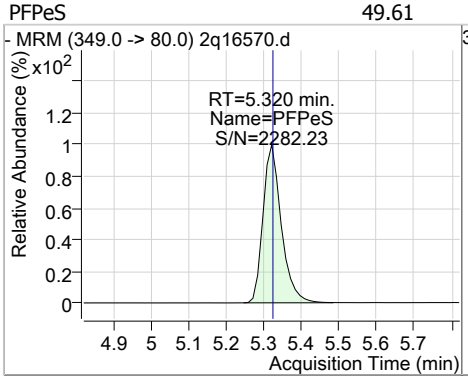
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	49.73	5.27	0.00	51992	313.0 -> 119.0	7.1	0.0	38.3

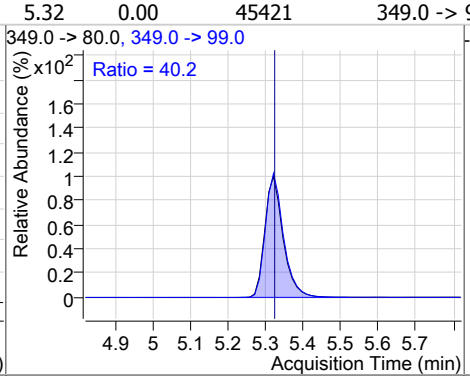


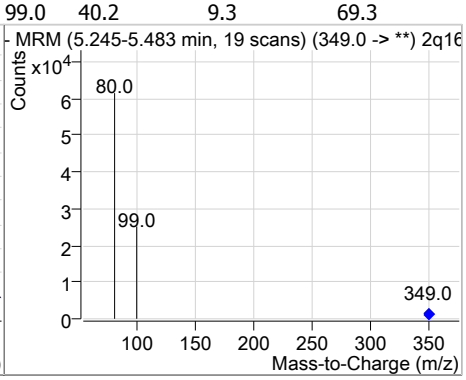




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	49.61	5.32	0.00	45421	349.0 -> 99.0	40.2	9.3	69.3

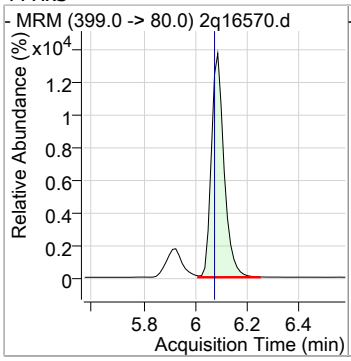


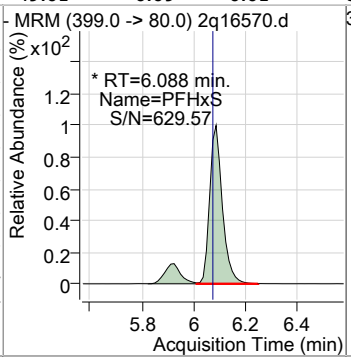


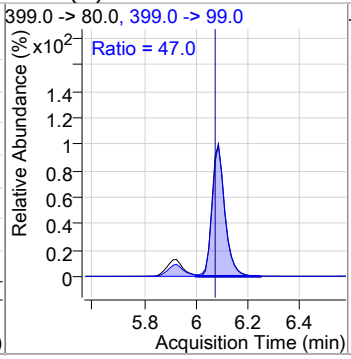


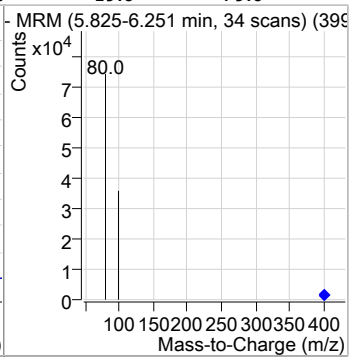
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	49.01	6.09	0.01	54451 (m)	399.0 -> 99.0	47.0	19.0	79.0

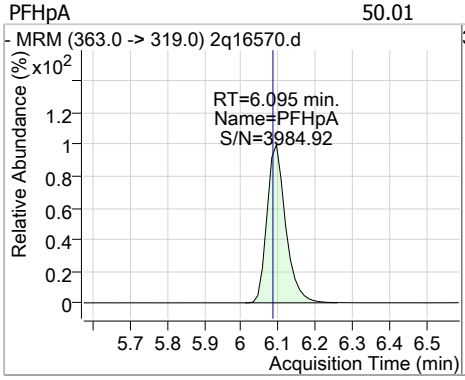


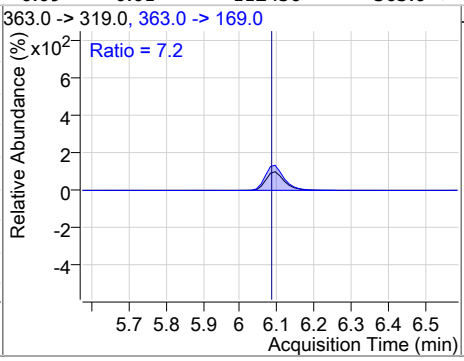


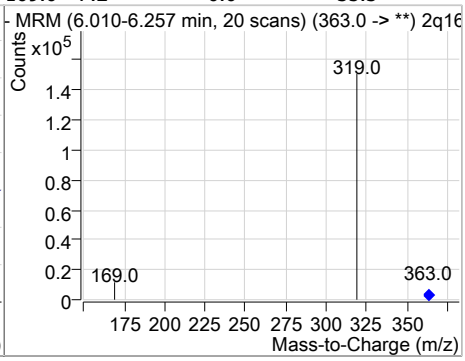




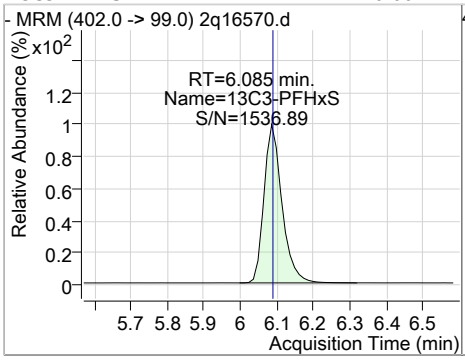
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	50.01	6.09	0.01	112456	363.0 -> 169.0	7.2	0.0	35.3

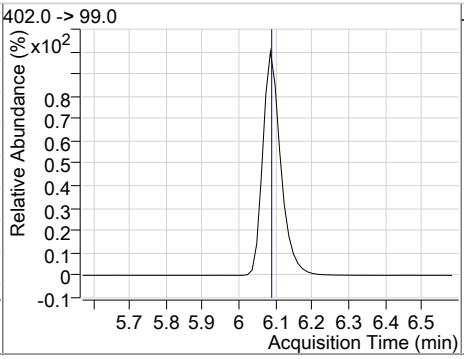


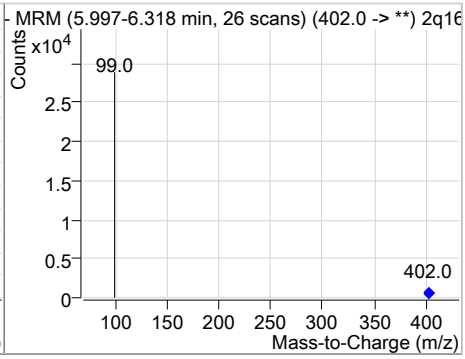




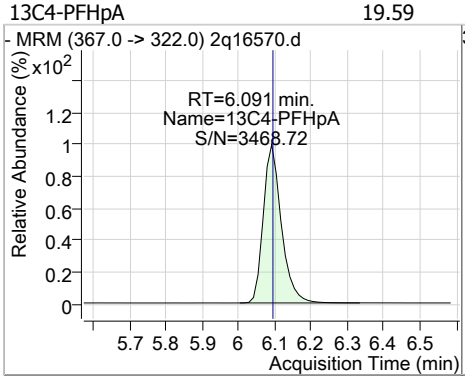
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.00	6.09	0.00	20037				

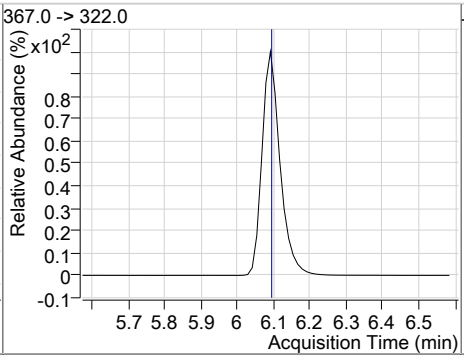


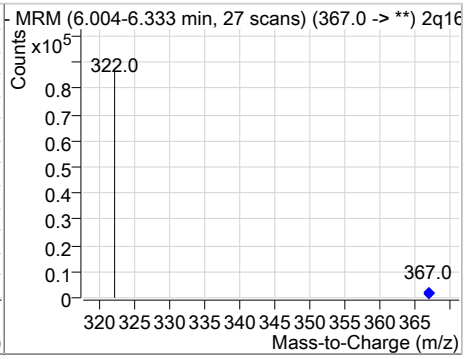




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.59	6.09	0.00	63112				

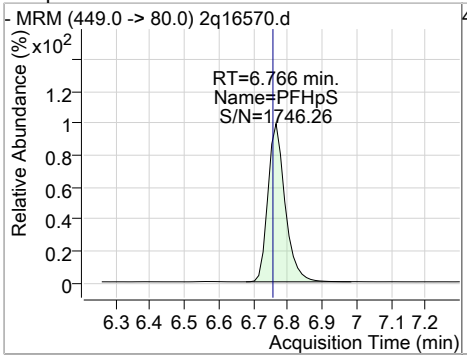


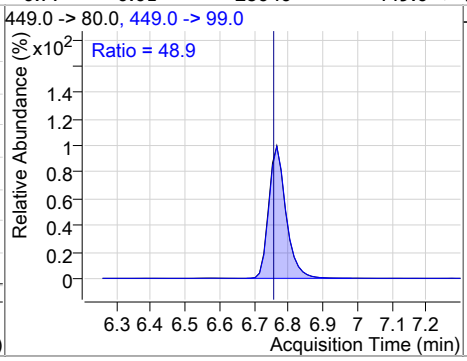


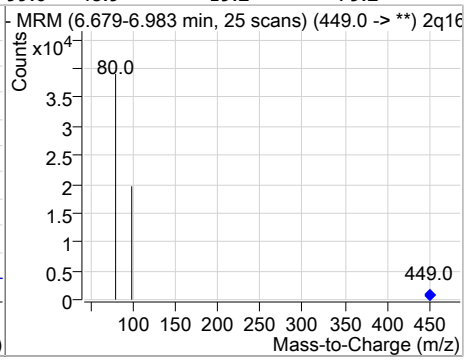


Perfluorinated Compounds by LC/MS/MS

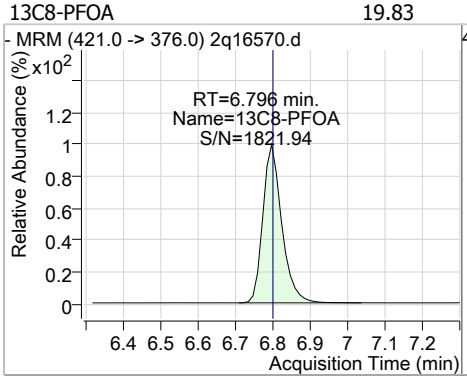
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	49.33	6.77	0.01	28640	449.0 -> 99.0	48.9	19.2	79.2

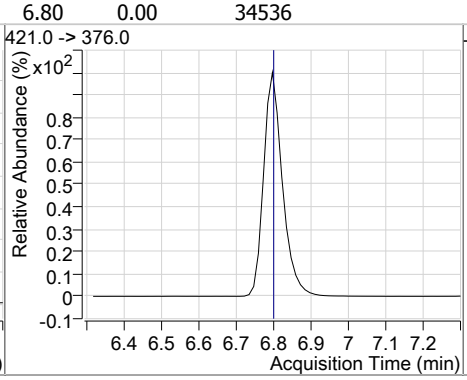


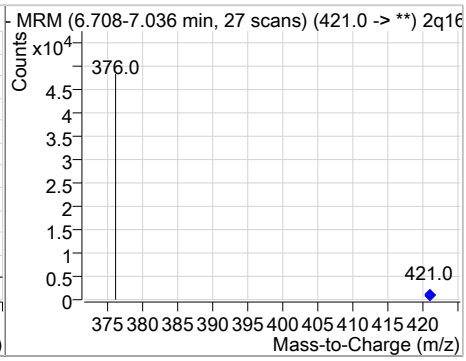




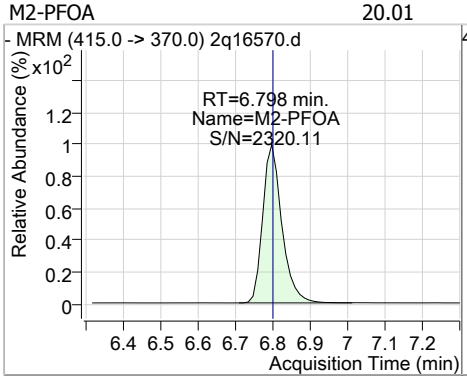
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.83	6.80	0.00	34536				

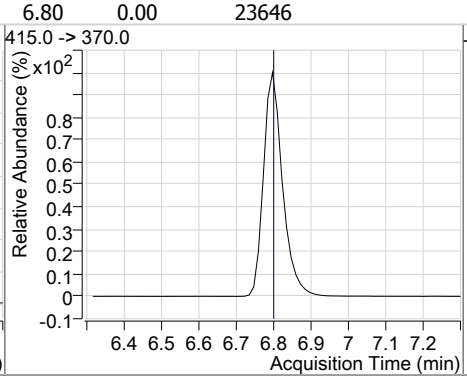


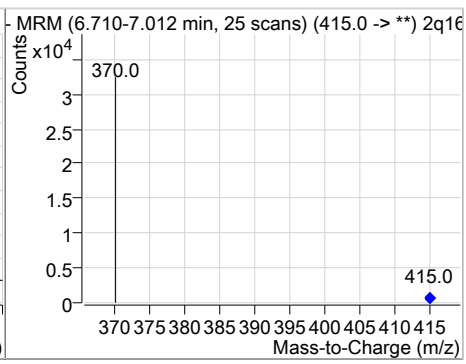




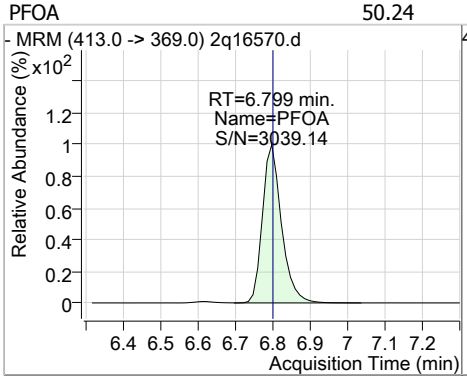
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.01	6.80	0.00	23646				

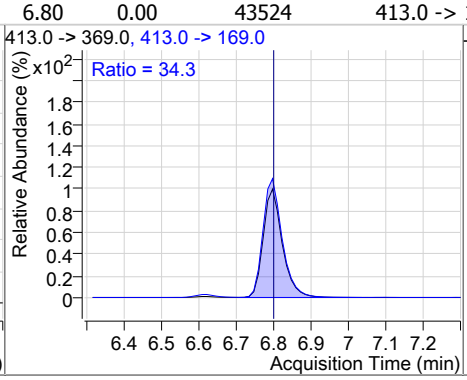


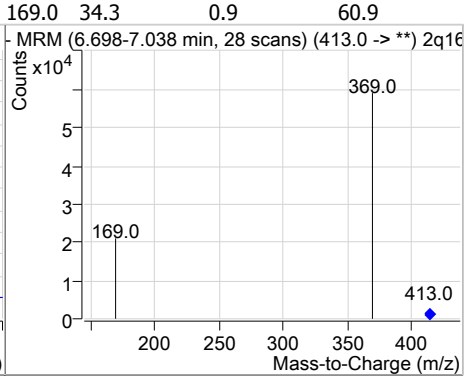




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	50.24	6.80	0.00	43524	413.0 -> 169.0	34.3	0.9	60.9

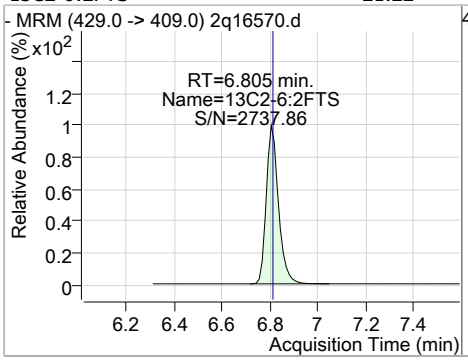


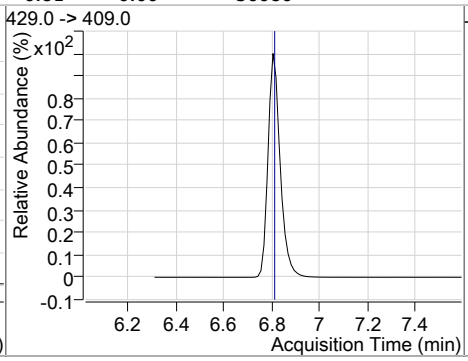


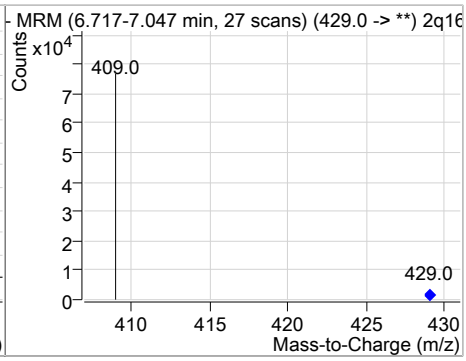


Perfluorinated Compounds by LC/MS/MS

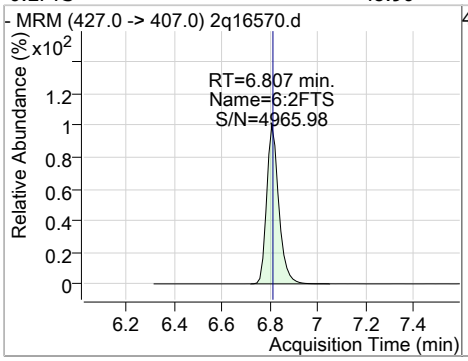
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	21.22	6.81	0.00	56080				

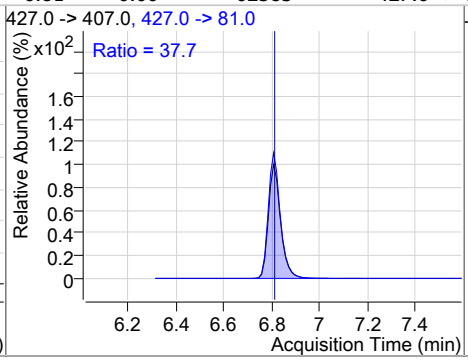


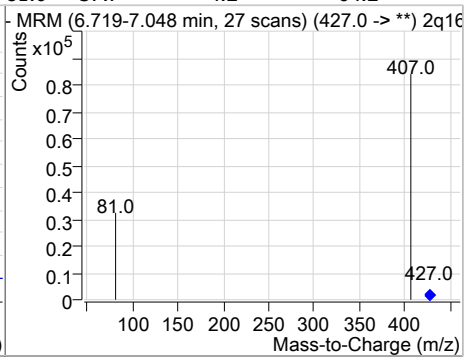




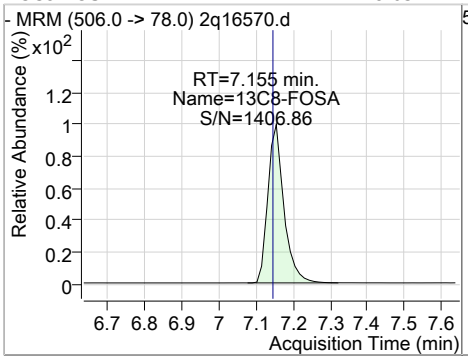
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	48.96	6.81	0.00	62583	427.0 -> 81.0	37.7	4.2	64.2

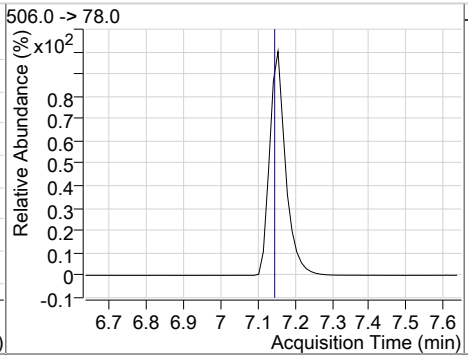


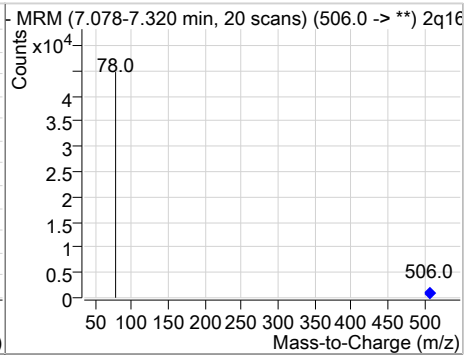




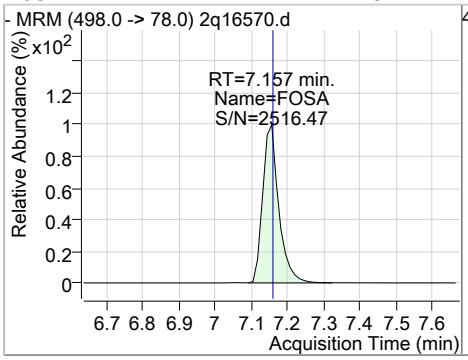
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.63	7.15	0.01	32790				

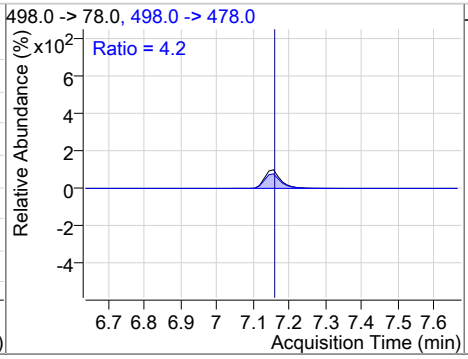


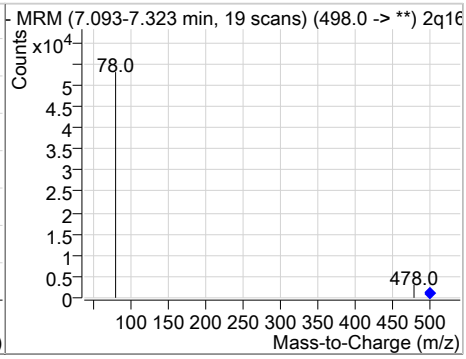




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	49.14	7.16	0.01	39777	498.0 -> 478.0	4.2	0.0	35.2

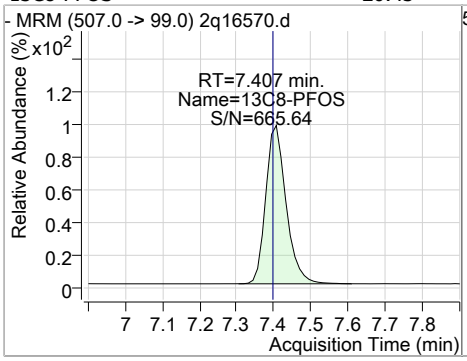


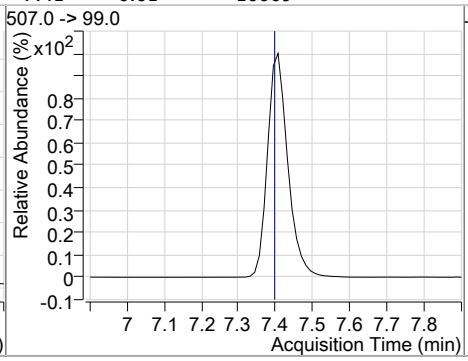


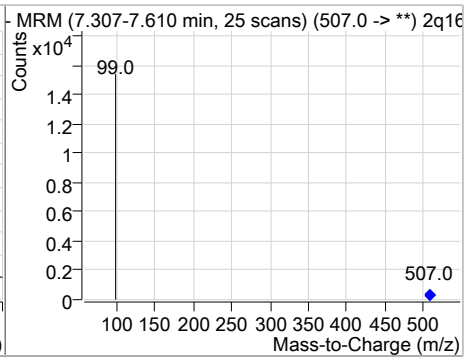


Perfluorinated Compounds by LC/MS/MS

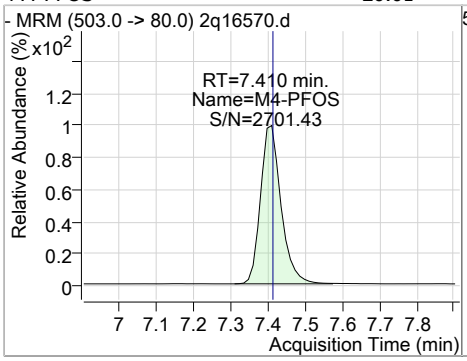
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.43	7.41	0.01	10009				

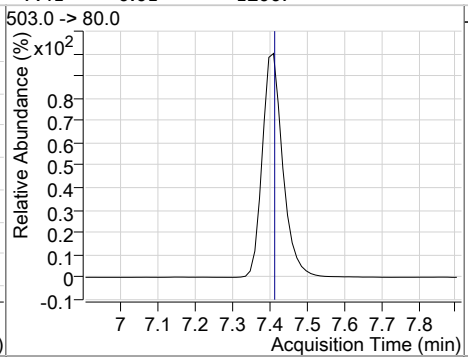


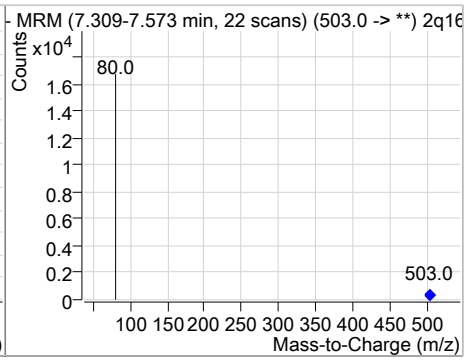




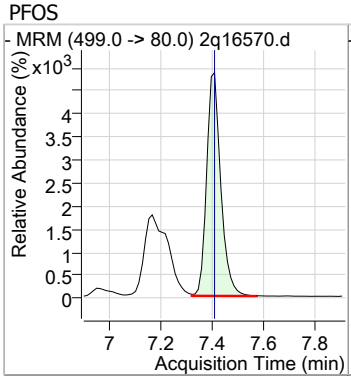
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.01	7.41	0.01	12007				

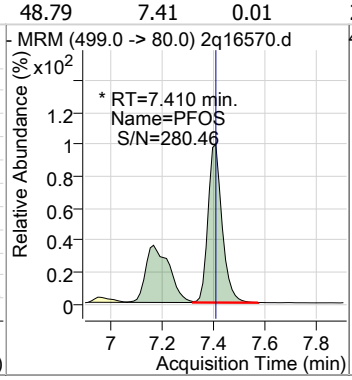


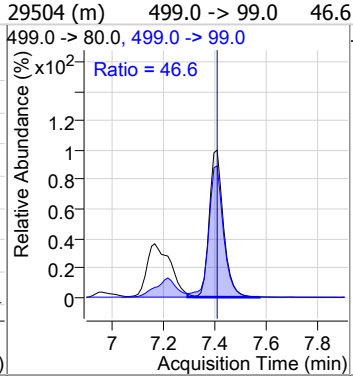


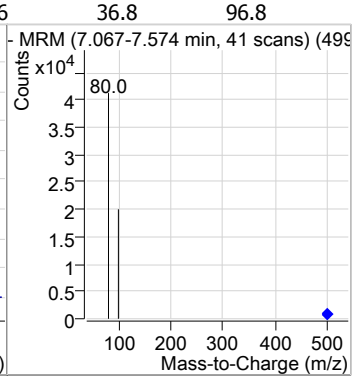


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	48.79	7.41	0.01	29504 (m)	499.0 -> 99.0	46.6	36.8	96.8

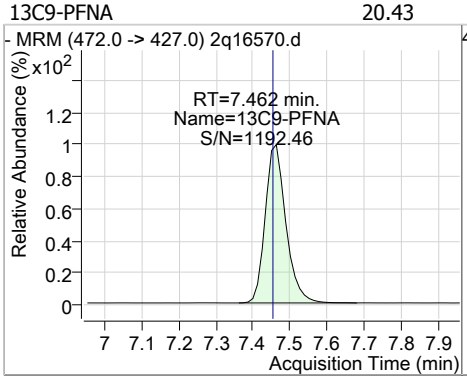


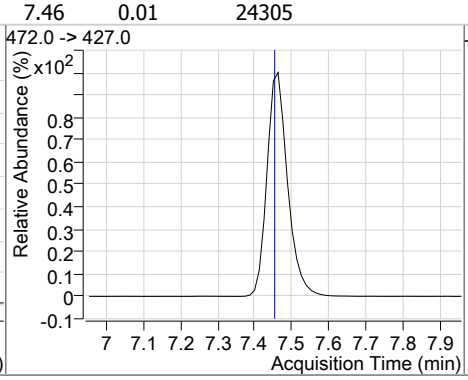


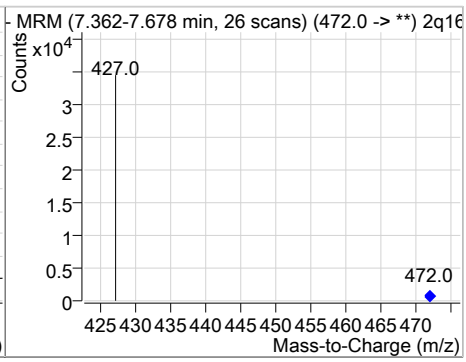




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.43	7.46	0.01	24305				

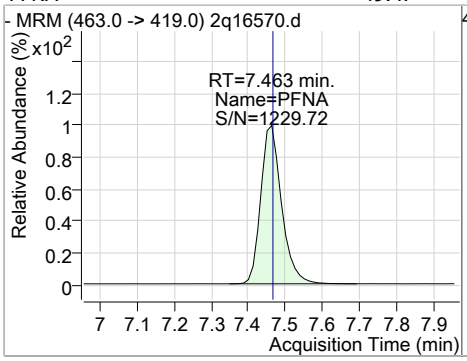


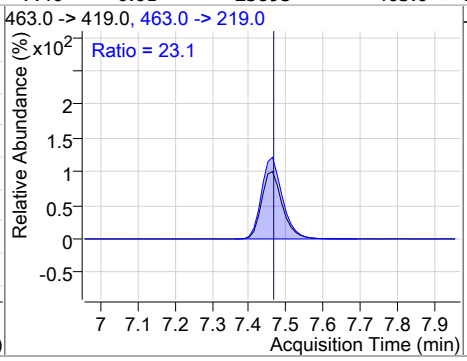


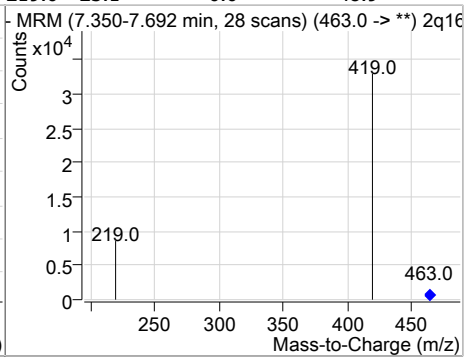


Perfluorinated Compounds by LC/MS/MS

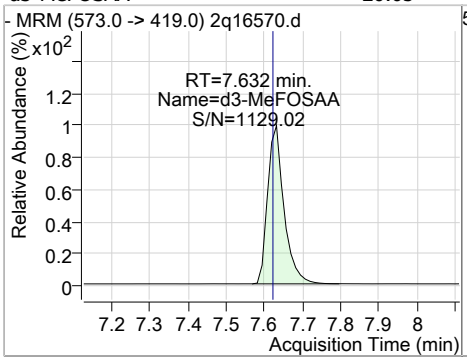
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	49.47	7.46	0.01	23895	463.0 -> 219.0	23.1	0.0	48.9

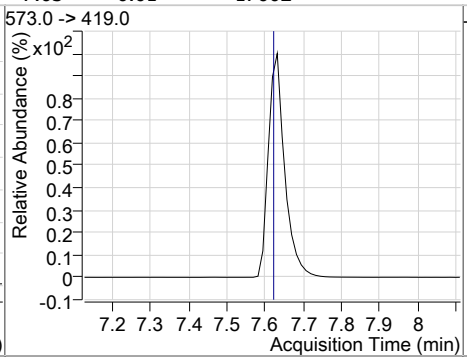


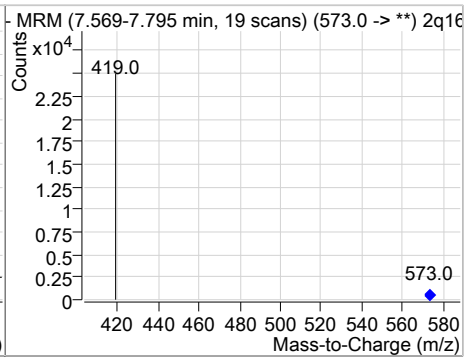




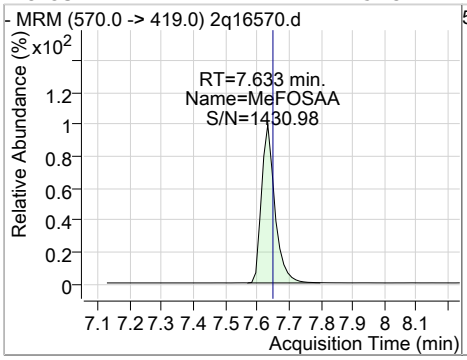
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.05	7.63	0.01	17602				

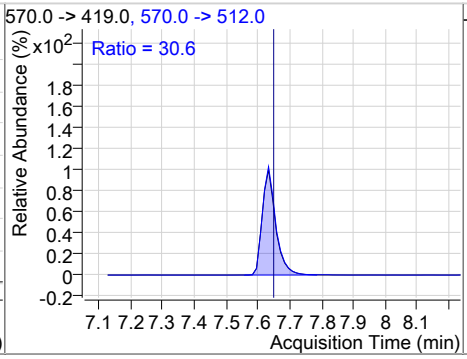


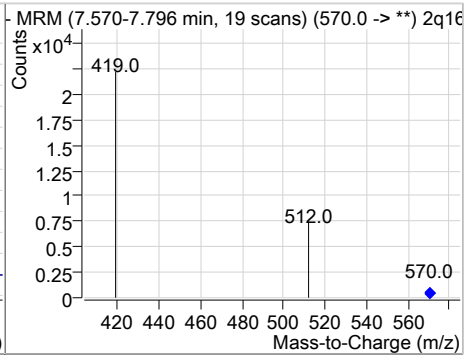




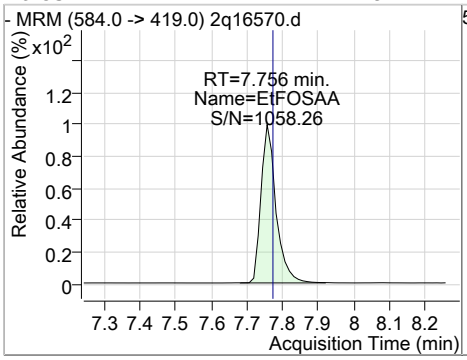
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	52.31	7.63	0.00	16178	570.0 -> 512.0	30.6	0.0	59.6

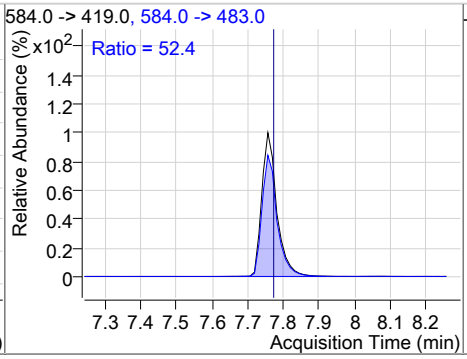


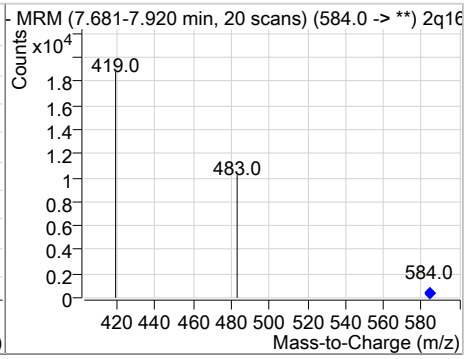




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	49.77	7.76	0.00	13497	584.0 -> 483.0	52.4	31.9	91.9

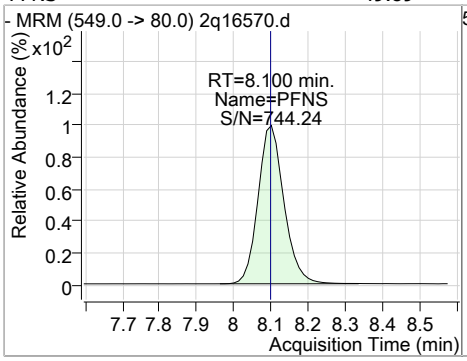


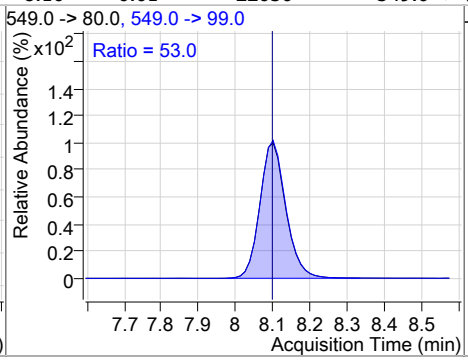


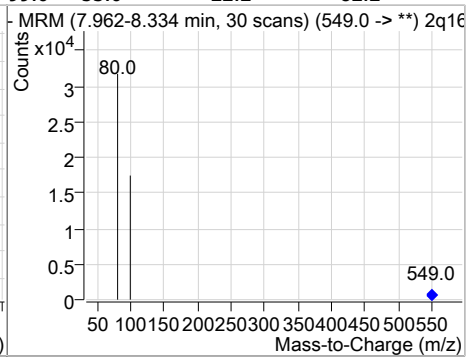


Perfluorinated Compounds by LC/MS/MS

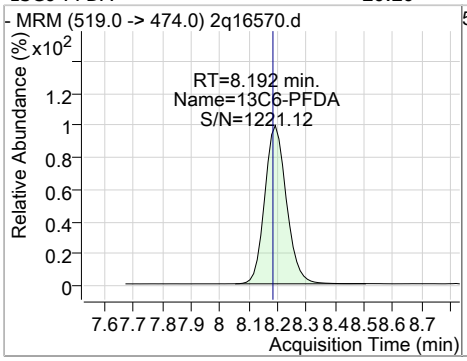
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	49.89	8.10	0.01	22656	549.0 -> 99.0	53.0	22.2	82.2

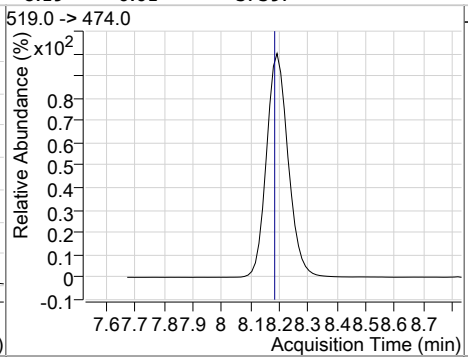


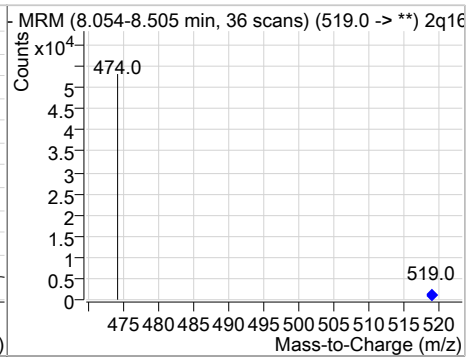




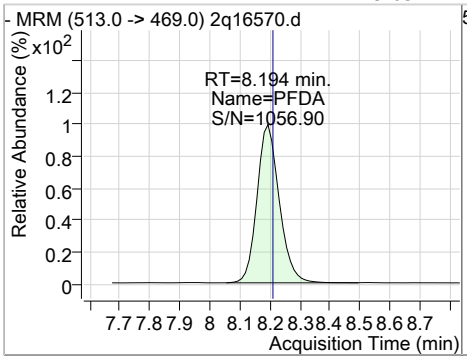
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.20	8.19	0.01	37397				

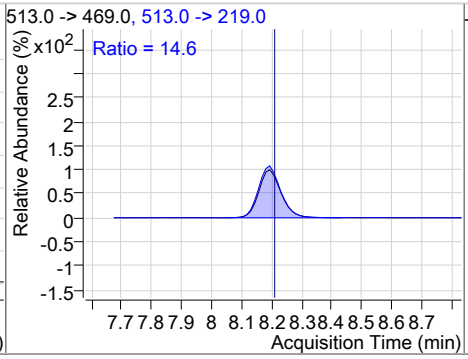


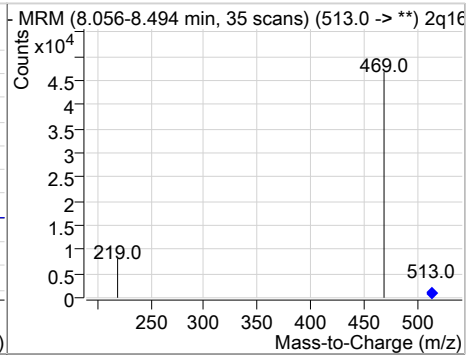




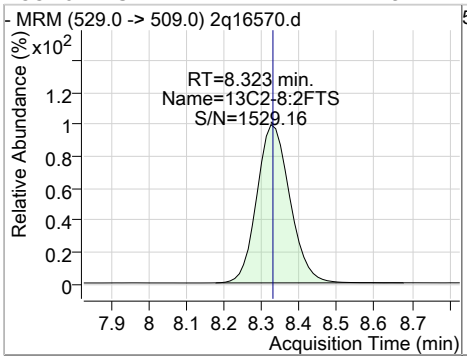
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	49.03	8.19	0.00	33844	513.0 -> 219.0	14.6	0.0	43.5

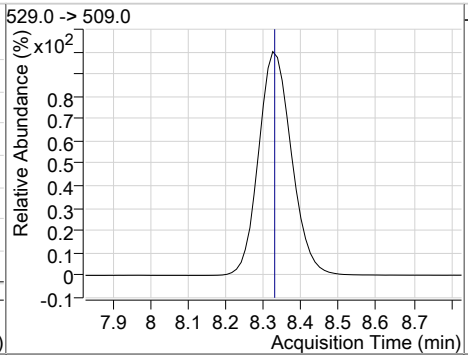


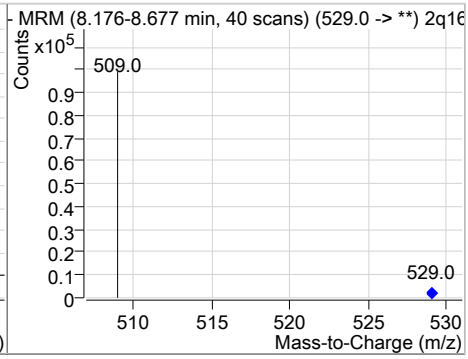




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	21.91	8.32	0.00	71113				

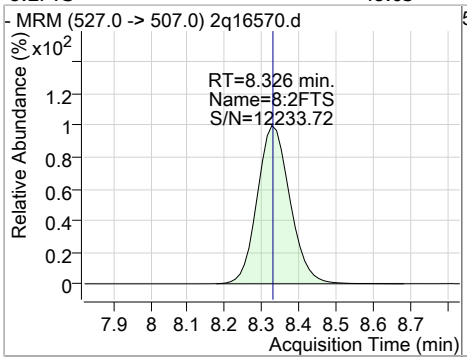


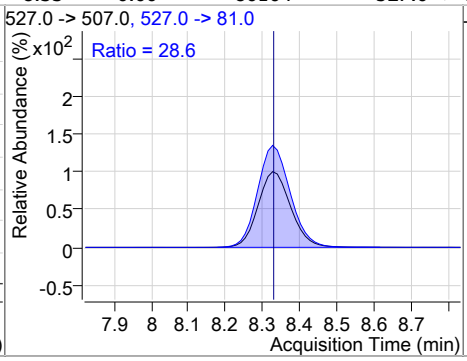


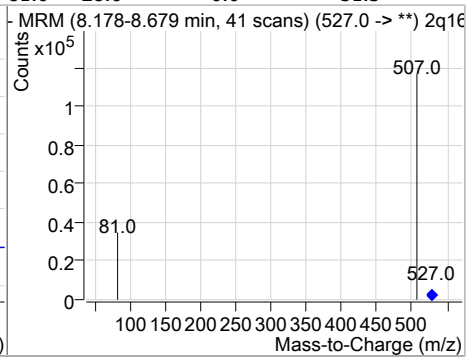


Perfluorinated Compounds by LC/MS/MS

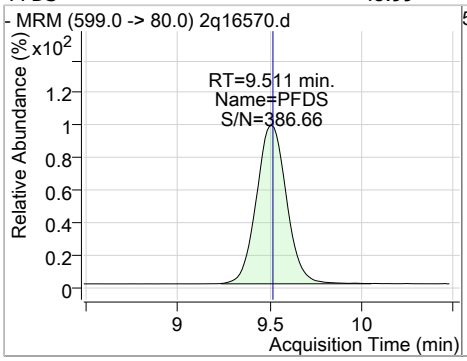
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	48.63	8.33	0.00	86164	527.0 -> 81.0	28.6	0.0	51.3

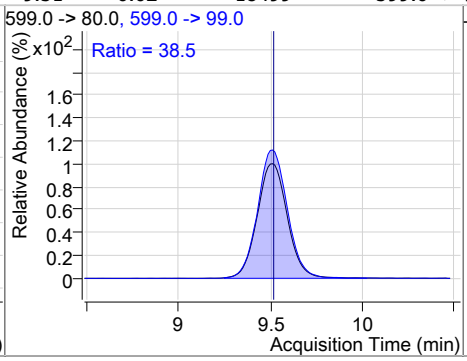


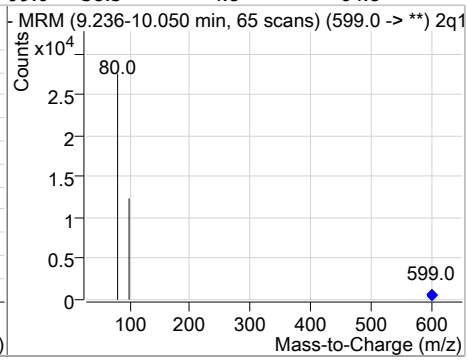




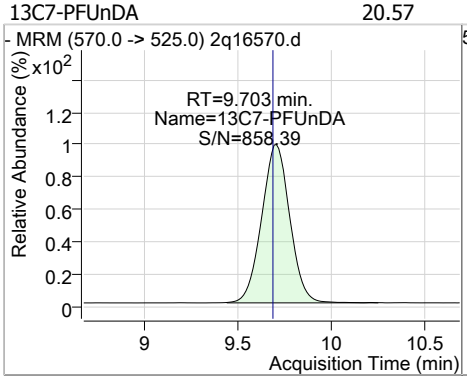
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	48.99	9.51	0.02	18499	599.0 -> 99.0	38.5	4.8	64.8

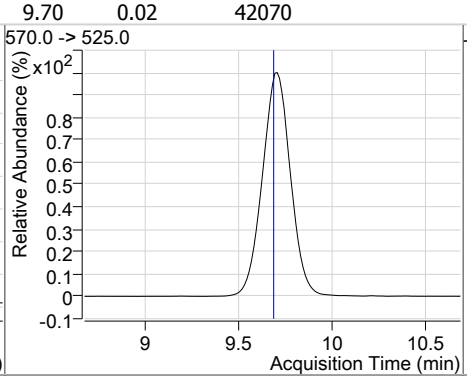


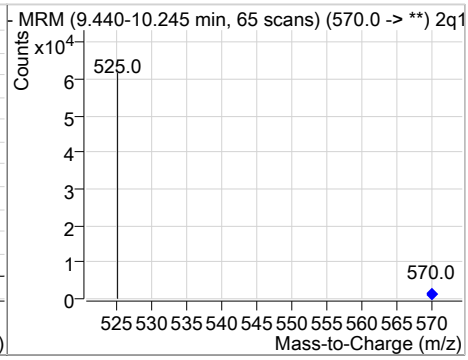




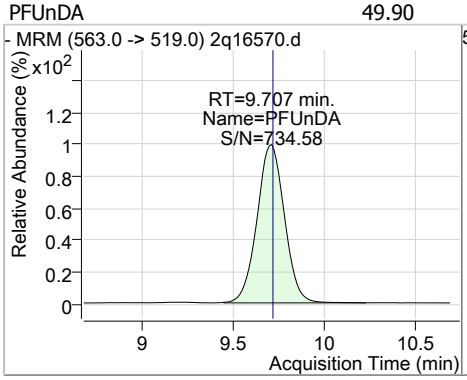
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.57	9.70	0.02	42070				

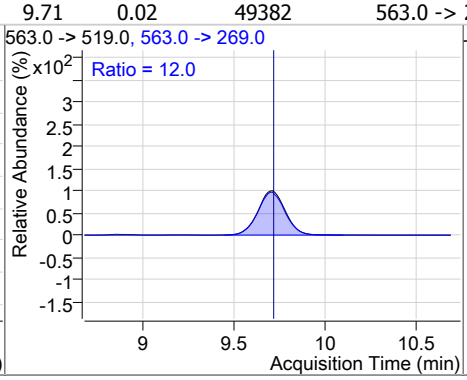


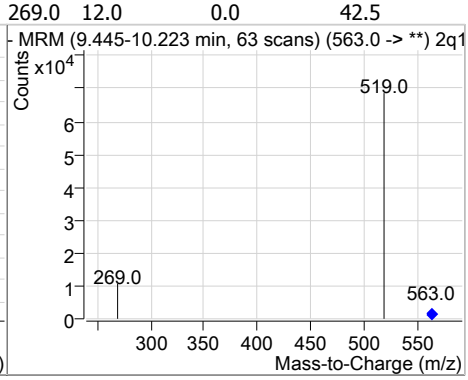




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	49.90	9.71	0.02	49382	563.0 -> 269.0	12.0	0.0	42.5

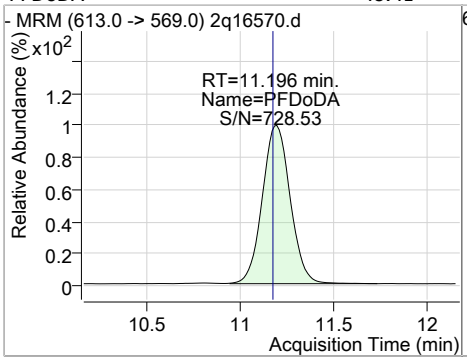


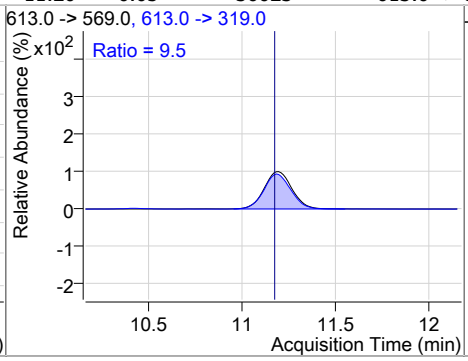


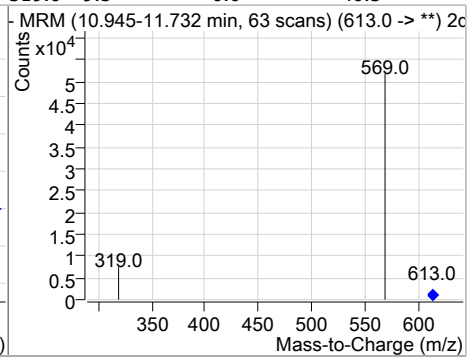


Perfluorinated Compounds by LC/MS/MS

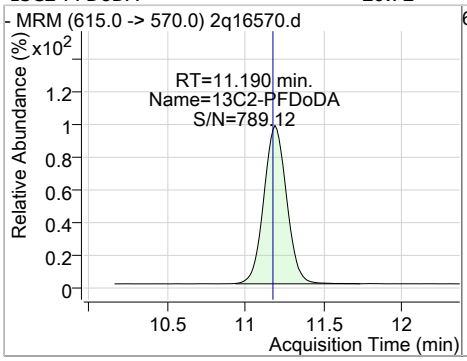
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	48.41	11.20	0.05	36623	613.0 -> 319.0	9.5	0.0	40.5

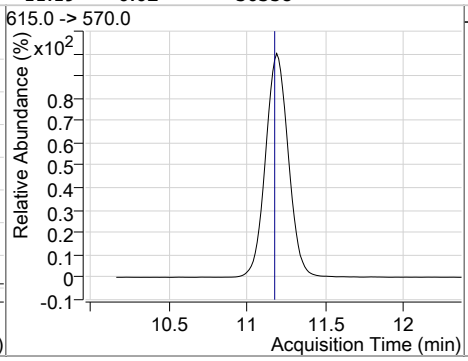


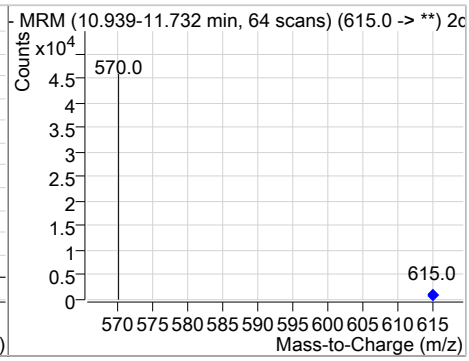




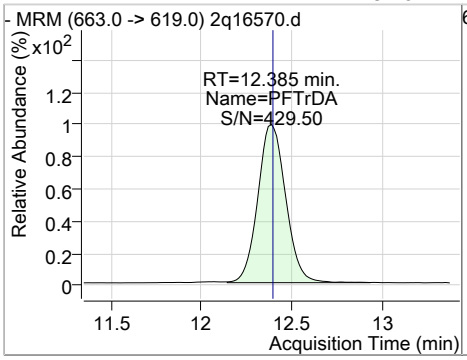
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.72	11.19	0.02	30358				

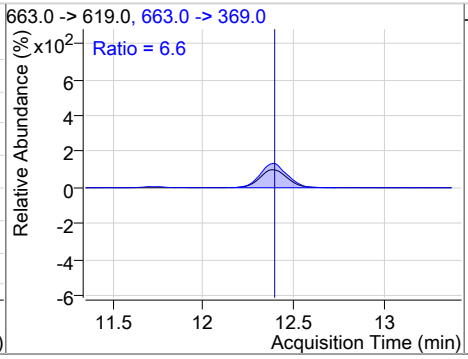


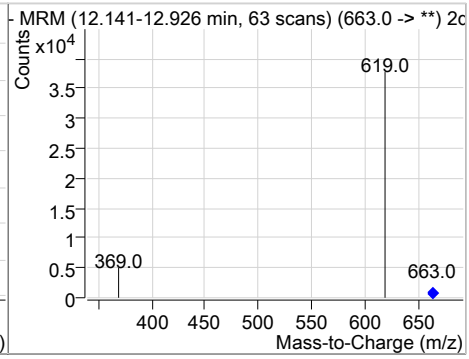




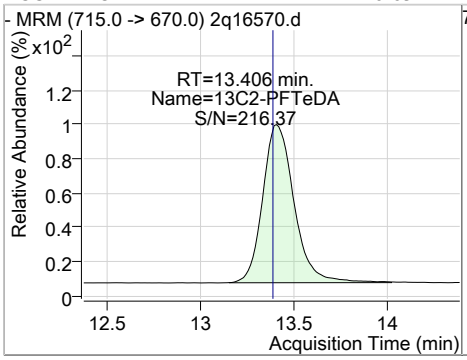
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	49.18	12.39	0.02	27397	663.0 -> 369.0	6.6	0.0	35.1

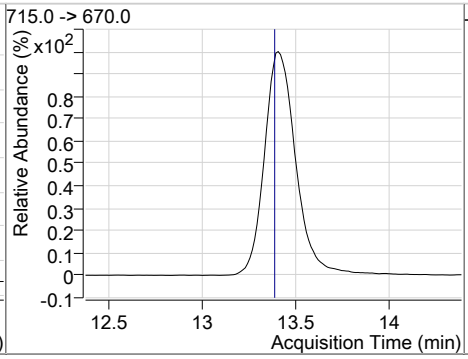


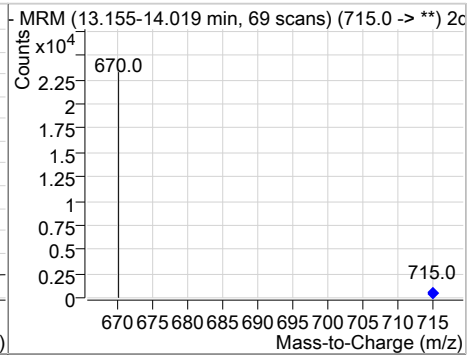




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.69	13.41	0.02	12840				

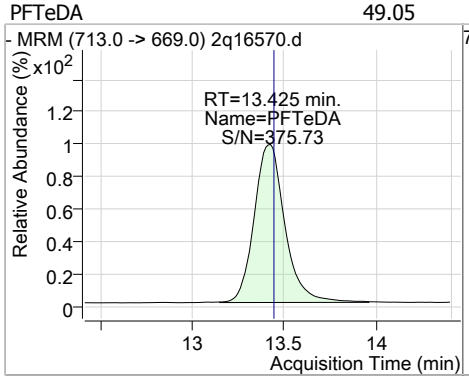


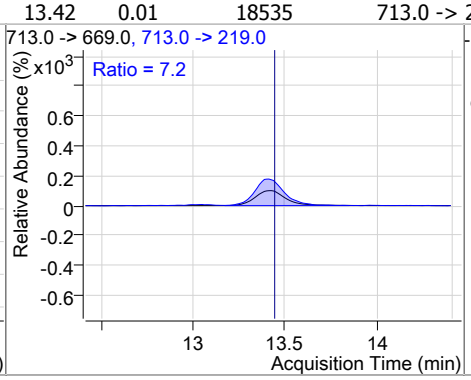


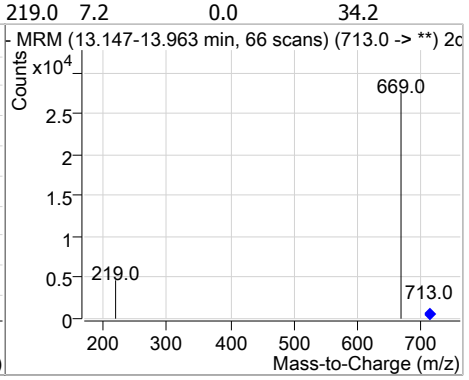


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	49.05	13.42	0.01	18535	713.0 -> 219.0	7.2	0.0	34.2







Manual Integration Approval Summary

Sample Number:	S2Q291-IC291	**Method:**	EPA 537M QSM5.1 B-15
Lab FileID:	2Q16570.D	**Analyst approved:**	07/06/18 10:17 Natasha Gumtie
Injection Time:	07/05/18 18:29	**Supervisor approved:**	07/06/18 17:13 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.09	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.41	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/06/18 17:13

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16571.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/5/2018 6:49:21 PM
Sample Name : ic291-100
Vial : Vial 9
DA Method File : PFC_ID_070518_S2Q291.quantmethod.xml
Batch Name : s2q291.batch.bin
Sample Information : op70743,S2Q291,130,,,1.0,1,water

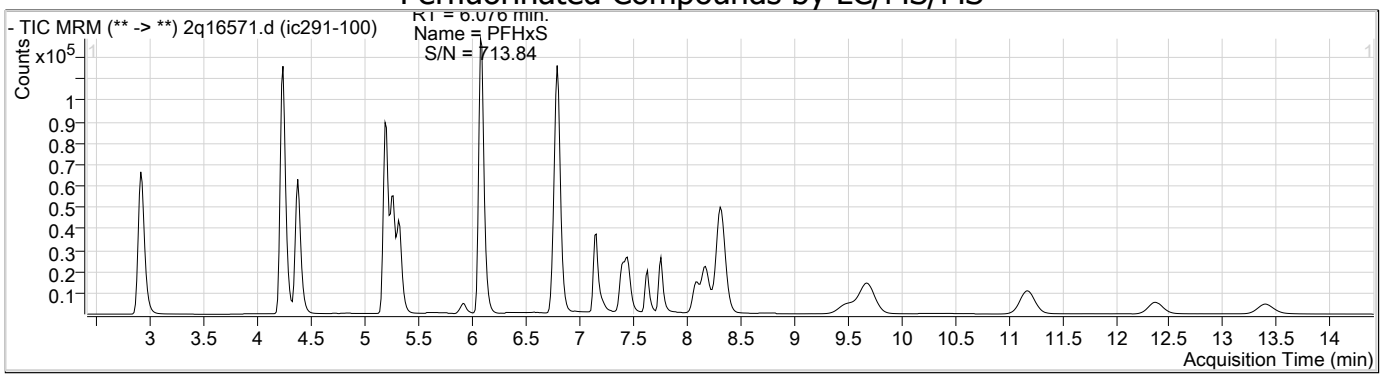
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-PFOA	6.785	415.0 -> 370.0	20318	20.00 µg/L	-0.013
13C4-PFOS	7.397	503.0 -> 80.0	11067	20.00 µg/L	0.000
M4-PFBA	2.903	217.0 -> 172.0	152649	20.00 µg/L	0.000
M5-PFPeA	4.237	268.0 -> 223.0	72288	20.00 µg/L	0.000
M5-PFHxA	5.265	318.0 -> 273.0	61891	20.00 µg/L	0.000
M4-PFHpA	6.091	367.0 -> 322.0	62294	20.00 µg/L	0.000
M8-PFOA	6.796	421.0 -> 376.0	34488	20.00 µg/L	0.000
M9-PFNA	7.450	472.0 -> 427.0	23744	20.00 µg/L	0.000
M6-PFDA	8.180	519.0 -> 474.0	36161	20.00 µg/L	0.000
M7-PFUnDA	9.678	570.0 -> 525.0	40893	20.00 µg/L	0.000
M2-PFDoDA	11.177	615.0 -> 570.0	30114	20.00 µg/L	0.008
M2-PFTeDA	13.393	715.0 -> 670.0	13024	20.00 µg/L	0.012
M8-FOSA	7.155	506.0 -> 78.0	29749	20.00 µg/L	0.012
M3-PFBS	4.368	302.0 -> 99.0	21963	20.00 µg/L	0.000
M3-PFHxS	6.085	402.0 -> 99.0	19515	20.00 µg/L	0.000
M8-PFOS	7.395	507.0 -> 99.0	9750	20.00 µg/L	0.000
M2-4:2FTS	5.198	329.0 -> 309.0	76656	20.00 µg/L	0.000
M2-6:2FTS	6.805	429.0 -> 409.0	61765	20.00 µg/L	-0.002
M2-8:2FTS	8.311	529.0 -> 509.0	78557	20.00 µg/L	-0.015
M3-MeFOSAA	7.632	573.0 -> 419.0	17685	20.00 µg/L	0.012
System Monitoring Compounds					
13C2-4:2FTS	5.198	329.0 -> 309.0	76638	23.37 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.8%	
13C2-6:2FTS	6.805	429.0 -> 409.0	61765	23.37 µg/L	-0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.8%	
13C2-8:2FTS	8.311	529.0 -> 509.0	78453	24.18 µg/L	-0.015
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 120.9%	
13C2-PFDoDA	11.177	615.0 -> 570.0	30157	20.58 µg/L	0.008
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.9%	
13C2-PFTeDA	13.393	715.0 -> 670.0	13024	20.99 µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.9%	
13C3-PFBS	4.368	302.0 -> 99.0	21950	19.86 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C3-PFHxS	6.085	402.0 -> 99.0	19525	19.49 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.5%	
13C4-PFBA	2.903	217.0 -> 172.0	152506	19.92 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C4-PFHpA	6.091	367.0 -> 322.0	62301	19.33 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.7%	
13C5-PFHxA	5.265	318.0 -> 273.0	61930	18.90 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.5%	
13C5-PFPeA	4.237	268.0 -> 223.0	72251	19.83 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C6-PFDA	8.180	519.0 -> 474.0	36173	19.54 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.7%	

Perfluorinated Compounds by LC/MS/MS

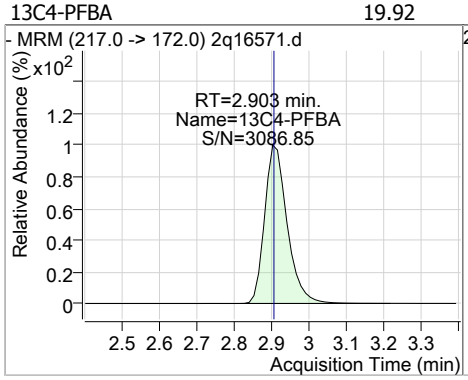
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	9.678	570.0 -> 525.0	40982	20.04	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.2%			
13C8-FOSA	7.155	506.0 -> 78.0	29765	16.91	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.5%			
13C8-PFOA	6.796	421.0 -> 376.0	34481	19.80	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%			
13C8-PFOS	7.395	507.0 -> 99.0	9750	19.90	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%			
13C9-PFNA	7.450	472.0 -> 427.0	23740	19.95	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%			
d3-MeFOSAA	7.632	573.0 -> 419.0	17688	20.14	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%			
M2-PFOA	6.785	415.0 -> 370.0	20319	20.00	ng/ml		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.397	503.0 -> 80.0	11074	20.02	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
Target Compounds							**QValue**
4:2FTS	5.187	327.0 -> 307.0	157709	100.39	µg/L		98
6:2FTS	6.807	427.0 -> 407.0	122839	100.26	µg/L		94
8:2FTS	8.313	527.0 -> 507.0	170928	100.36	µg/L		85
EtFOSAA	7.756	584.0 -> 419.0	25780	100.03	µg/L		88
FOSA	7.144	498.0 -> 78.0	71796	100.16	µg/L		96
MeFOSAA	7.633	570.0 -> 419.0	30528	98.27	µg/L		95
PFBA	2.912	213.0 -> 169.0	122082	99.44	µg/L		100
PFBS	4.371	299.0 -> 80.0	147129	99.79	µg/L		98
PFDA	8.181	513.0 -> 469.0	63395	100.19	µg/L		98
PFDoDA	11.183	613.0 -> 569.0	72991	100.32	µg/L		97
PFDS	9.486	599.0 -> 80.0	36702	99.93	µg/L		93
PFHpA	6.082	363.0 -> 319.0	220711	99.43	µg/L		95
PFHpS	6.753	449.0 -> 80.0	56496	99.91	µg/L		100
PFHxA	5.268	313.0 -> 269.0	100274	99.75	µg/L		97
PFHxS	6.076	399.0 -> 80.0	108264	100.05	µg/L	m	97
PFNA	7.451	463.0 -> 419.0	46958	99.54	µg/L		91
PFNS	8.088	549.0 -> 80.0	44037	99.57	µg/L		98
PFOA	6.786	413.0 -> 369.0	86073	99.47	µg/L		95
PFOS	7.397	499.0 -> 80.0	58962	100.11	µg/L	m	72
PFPeA	4.241	263.0 -> 219.0	346866	99.33	µg/L		100
PFPeS	5.320	349.0 -> 80.0	90050	99.82	µg/L		99
PFTeDA	13.400	713.0 -> 669.0	36133	100.20	µg/L		90
PFTrDA	12.366	663.0 -> 619.0	54110	100.16	µg/L		95
PFUnDA	9.682	563.0 -> 519.0	95766	99.50	µg/L		99

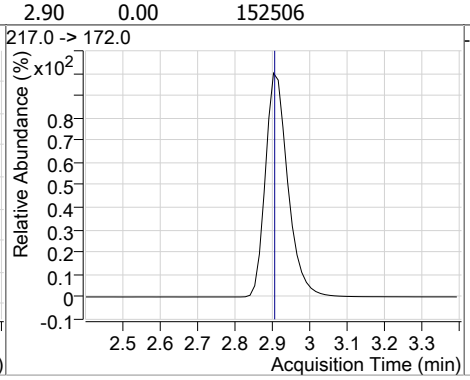
 # = Qualifier out of range, m = manually integrated, + = Area summed

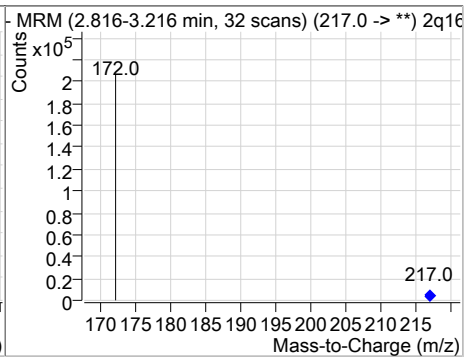
Perfluorinated Compounds by LC/MS/MS



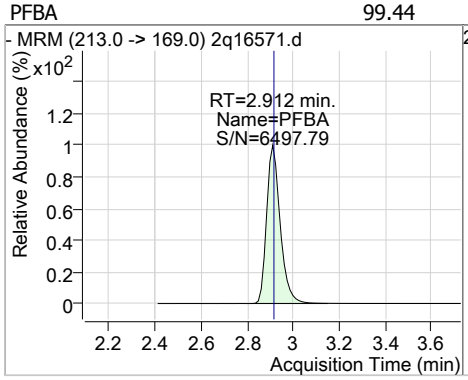
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.92	2.90	0.00	152506				

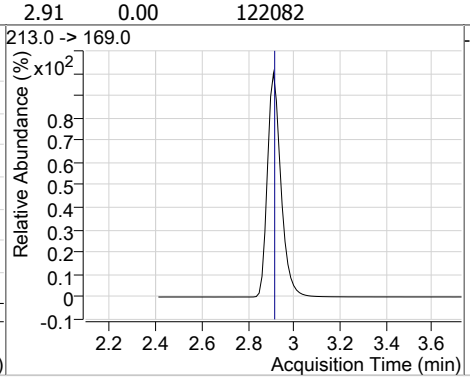


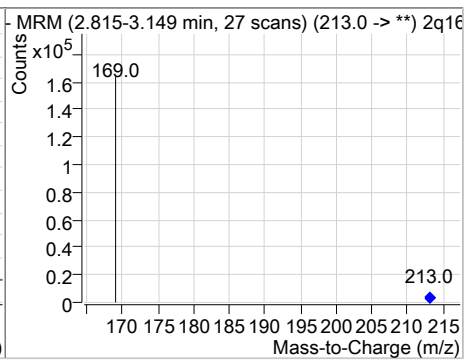




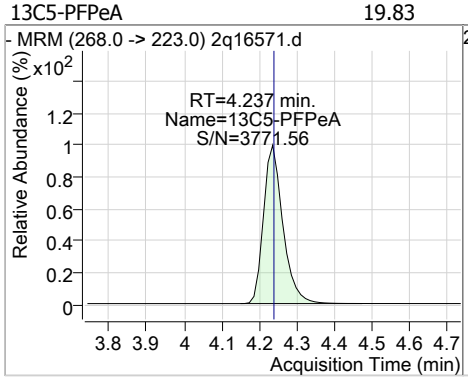
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	99.44	2.91	0.00	122082				

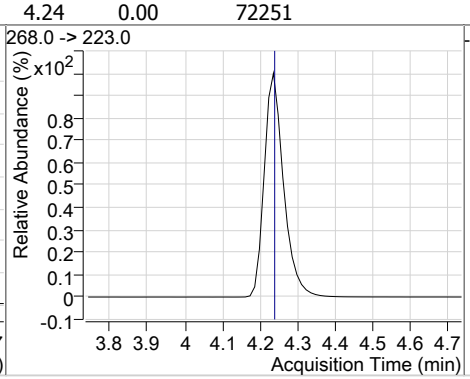


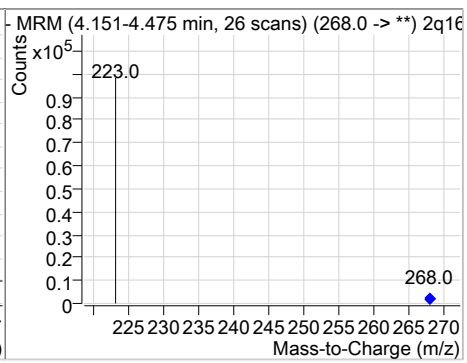




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.83	4.24	0.00	72251				

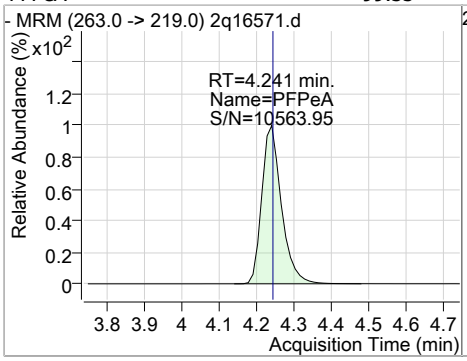


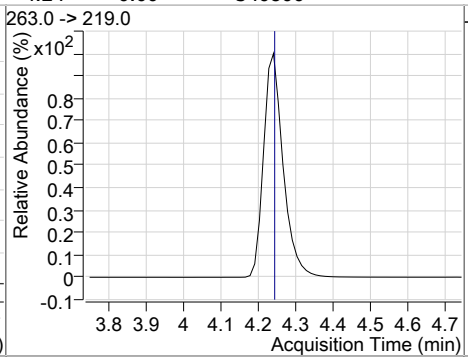


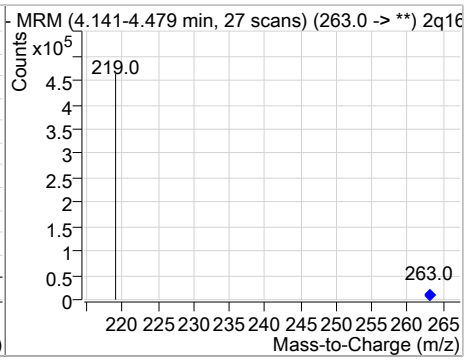


Perfluorinated Compounds by LC/MS/MS

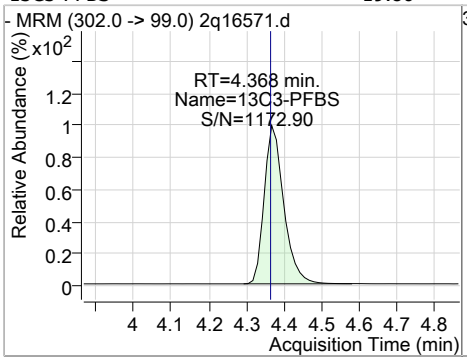
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	99.33	4.24	0.00	346866				

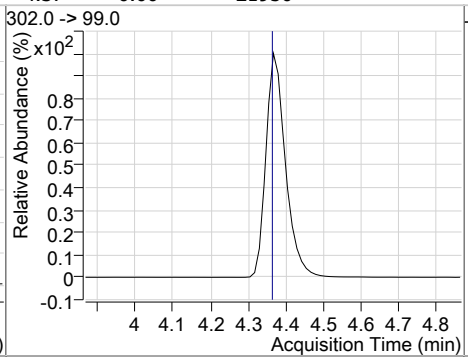


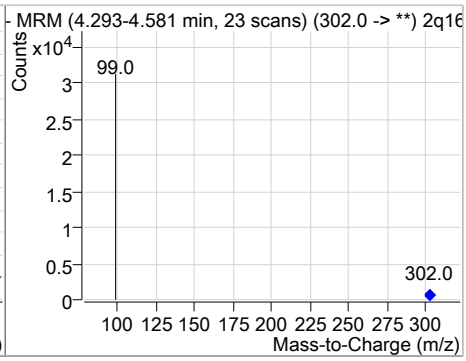




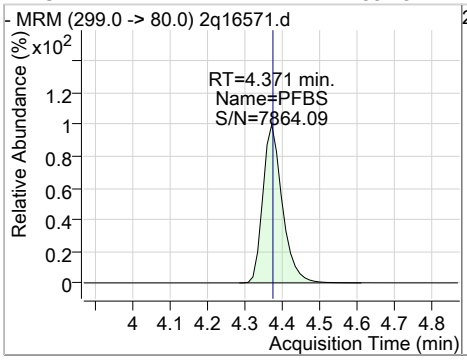
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.86	4.37	0.00	21950				

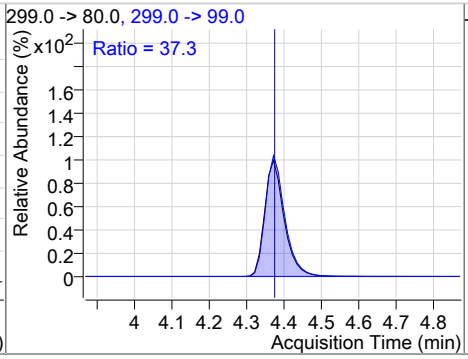


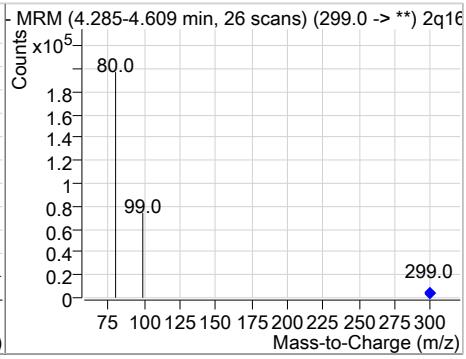




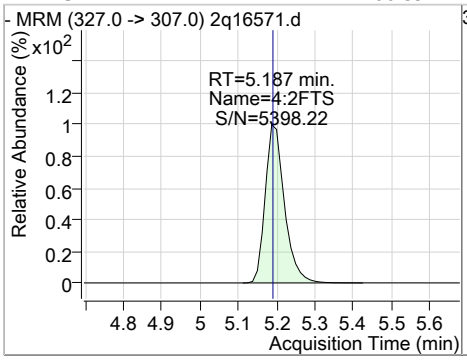
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	99.79	4.37	0.00	147129	299.0 -> 99.0	37.3	5.8	65.8

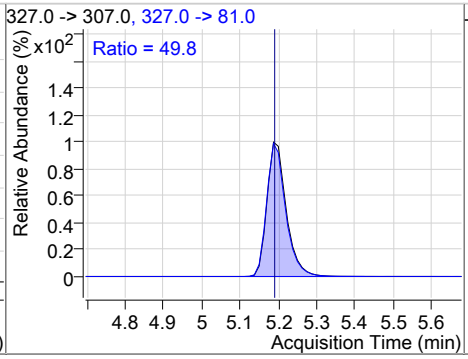


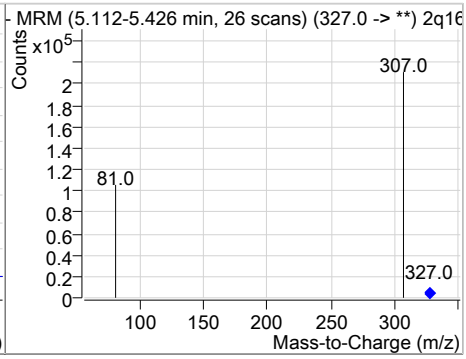




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	100.39	5.19	0.00	157709	327.0 -> 81.0	49.8	21.0	81.0

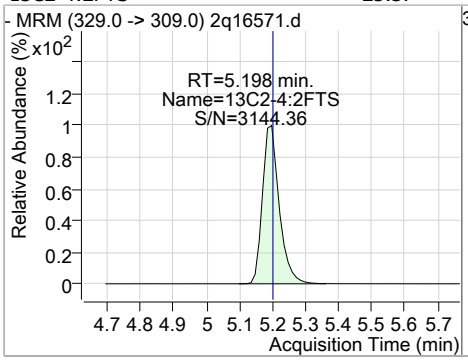


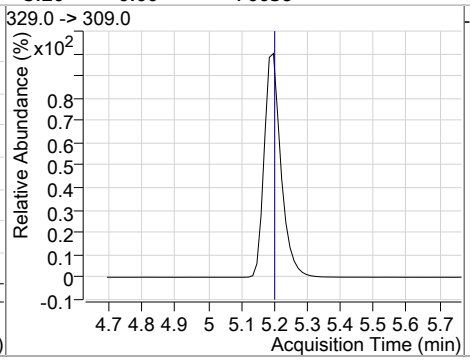


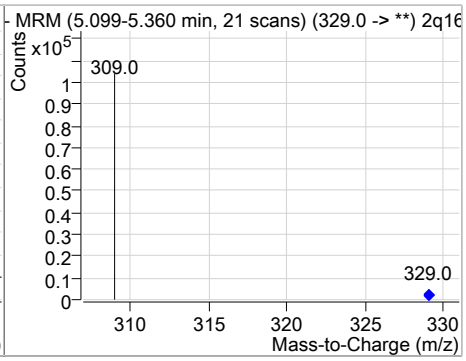


Perfluorinated Compounds by LC/MS/MS

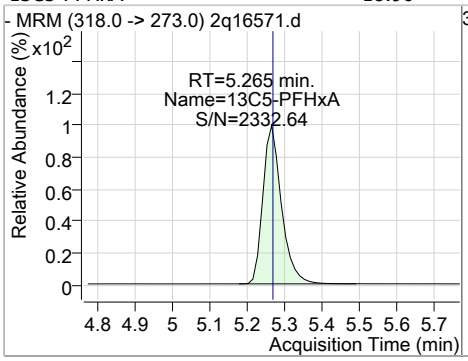
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	23.37	5.20	0.00	76638				

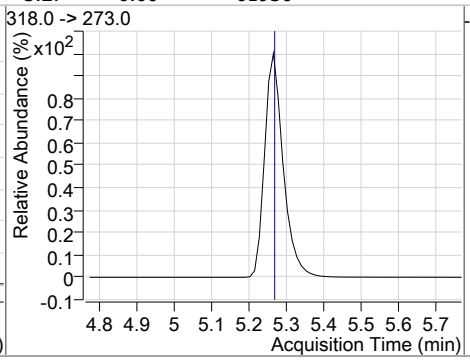


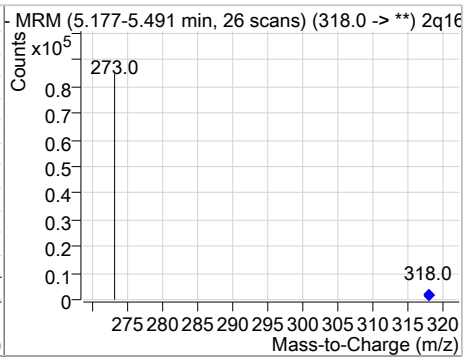




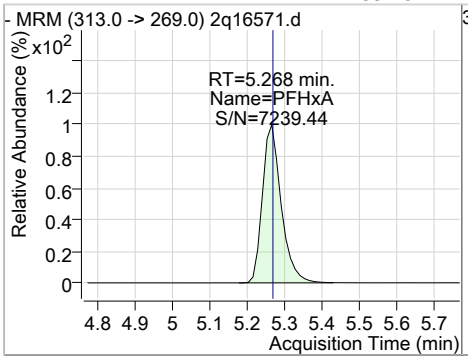
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.90	5.27	0.00	61930				

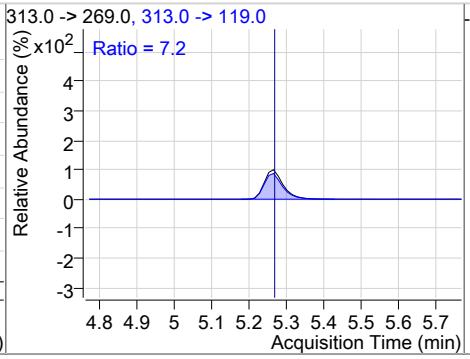


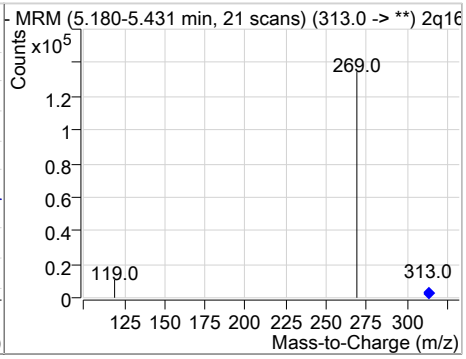




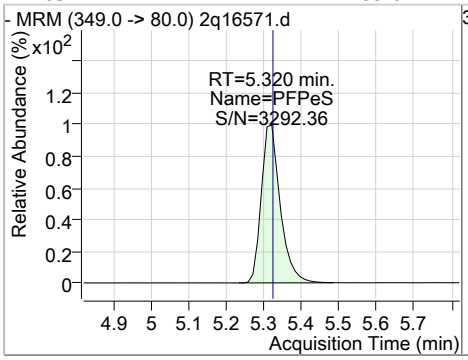
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	99.75	5.27	0.00	100274	313.0 -> 119.0	7.2	0.0	38.3

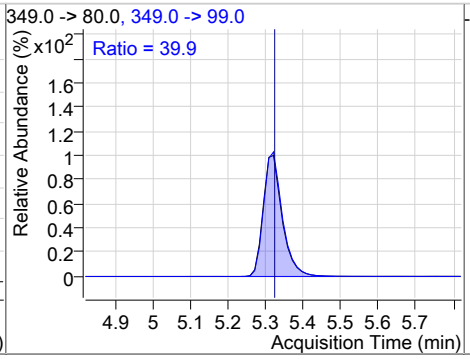


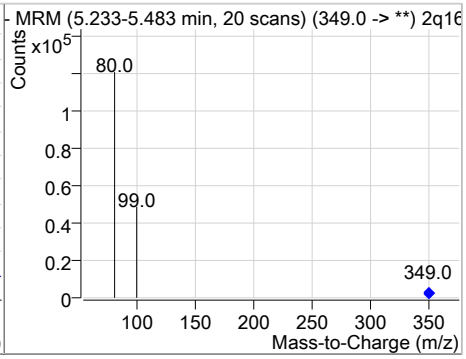




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	99.82	5.32	0.00	90050	349.0 -> 99.0	39.9	9.3	69.3

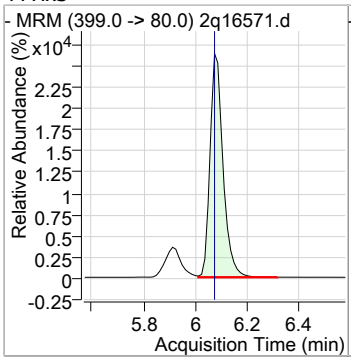


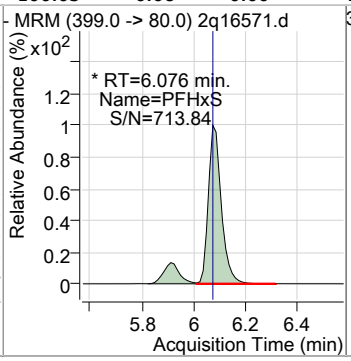


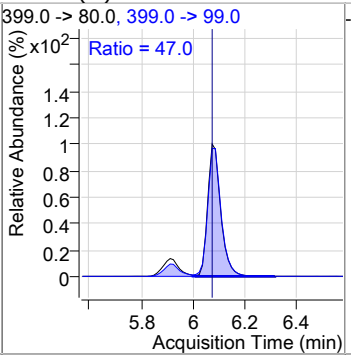


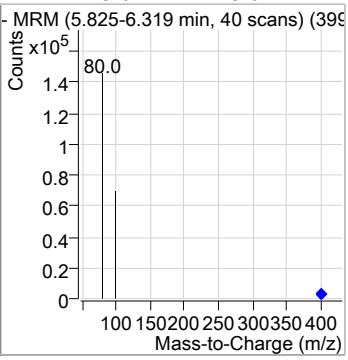
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	100.05	6.08	0.00	108264 (m)	399.0 -> 99.0	47.0	19.0	79.0

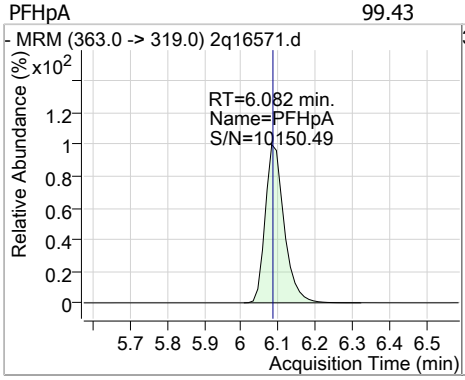


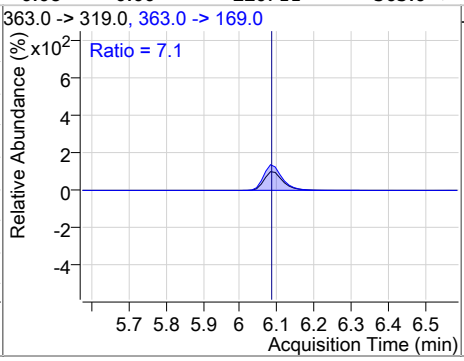


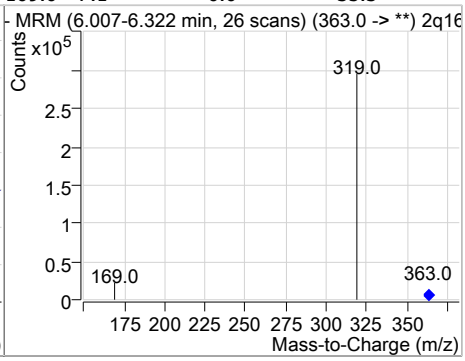




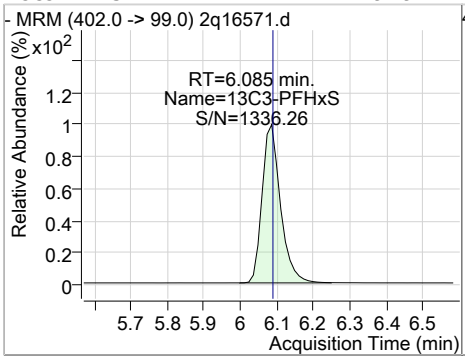
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	99.43	6.08	0.00	220711	363.0 -> 169.0	7.1	0.0	35.3

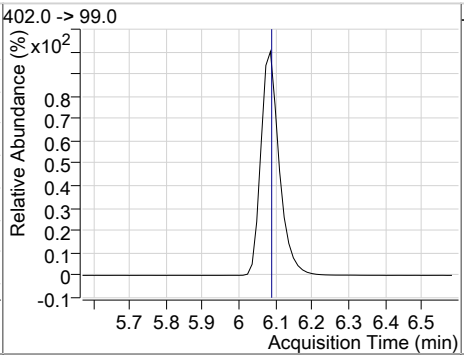


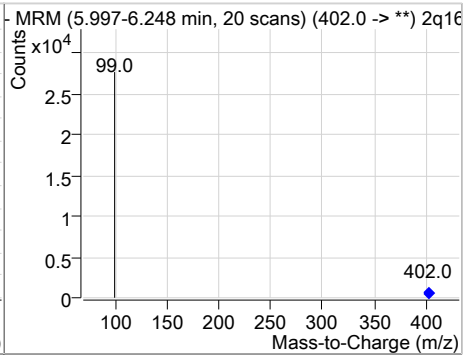




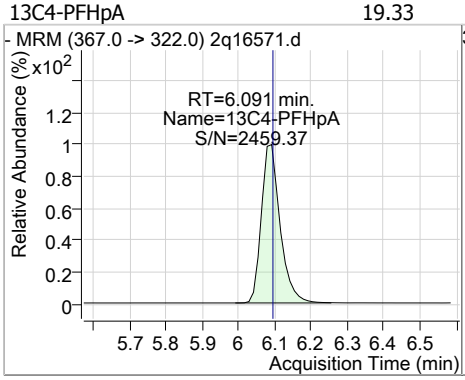
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.49	6.09	0.00	19525				

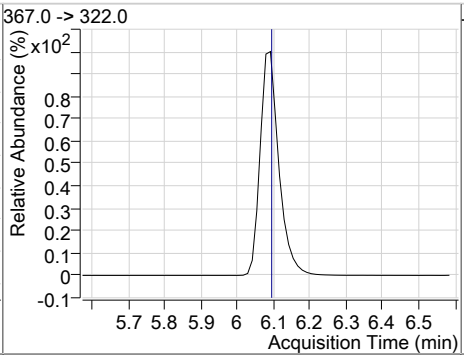


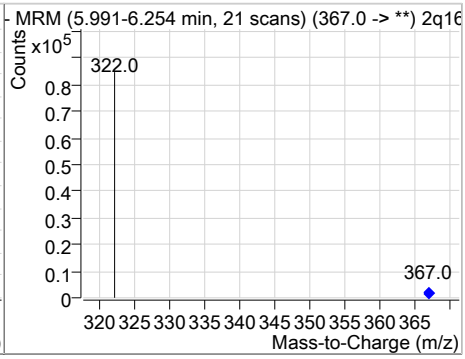




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.33	6.09	0.00	62301				

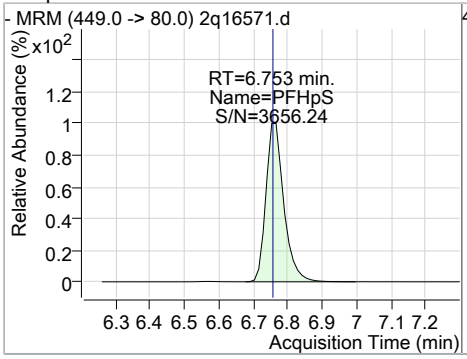


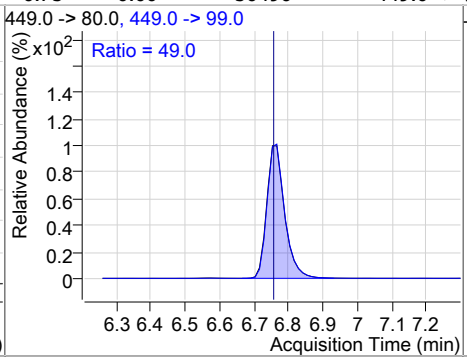


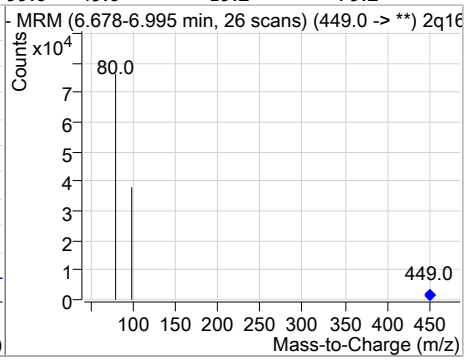


Perfluorinated Compounds by LC/MS/MS

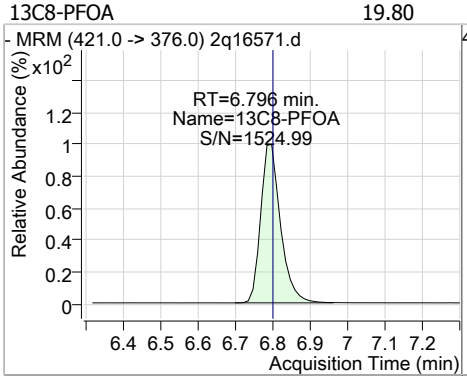
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	99.91	6.75	0.00	56496	449.0 -> 99.0	49.0	19.2	79.2

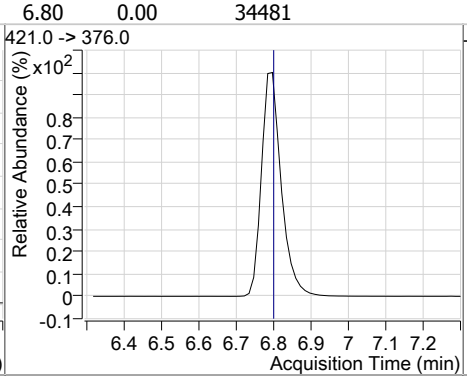


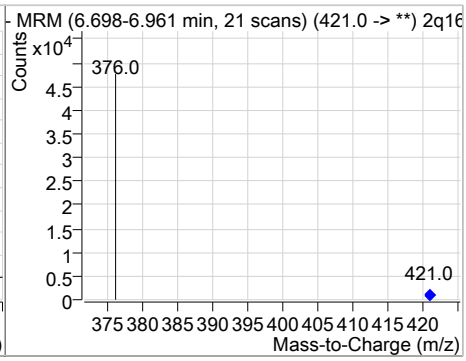




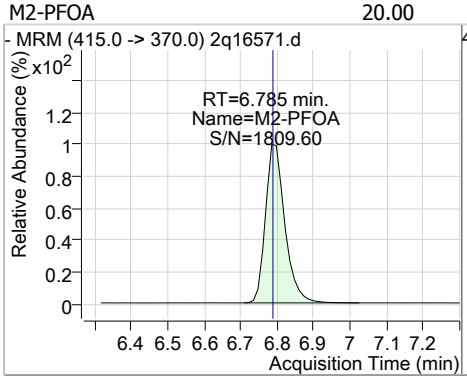
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.80	6.80	0.00	34481				

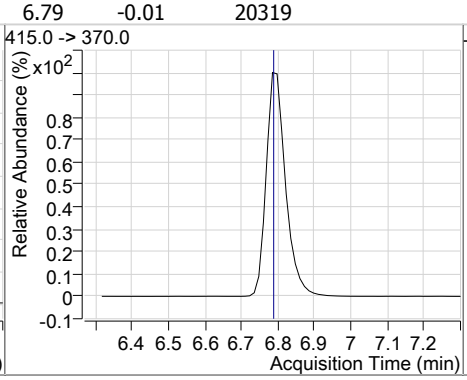


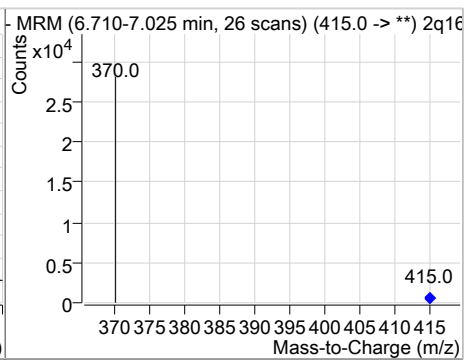




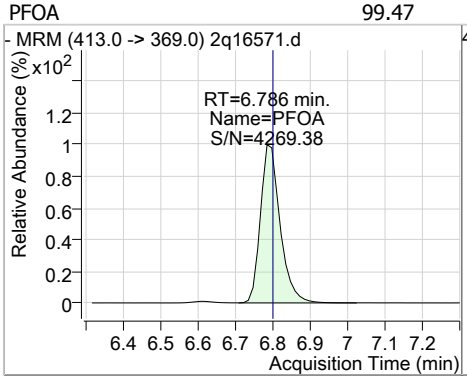
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.79	-0.01	20319				

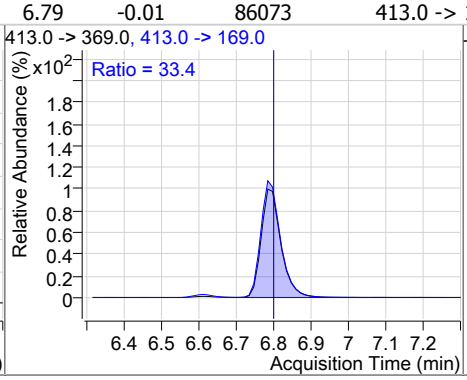


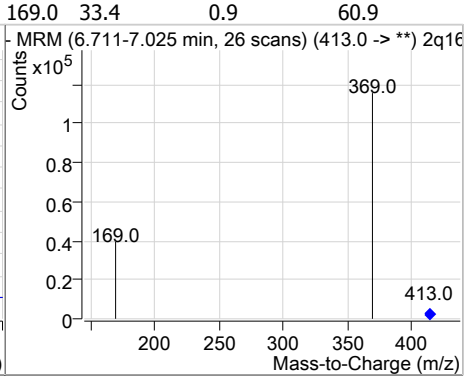




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	99.47	6.79	-0.01	86073	413.0 -> 169.0	33.4	0.9	60.9

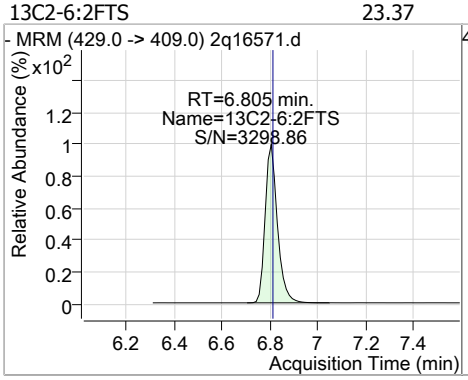


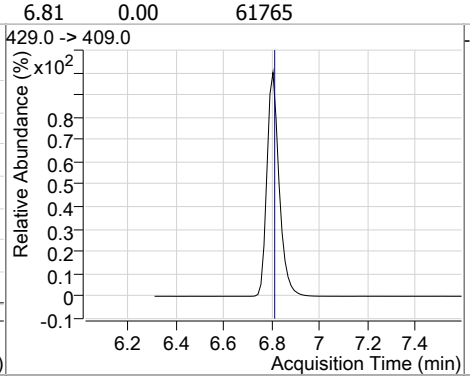


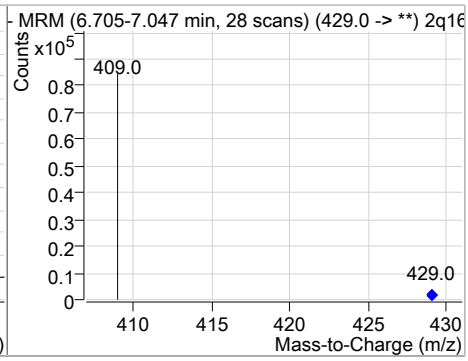


Perfluorinated Compounds by LC/MS/MS

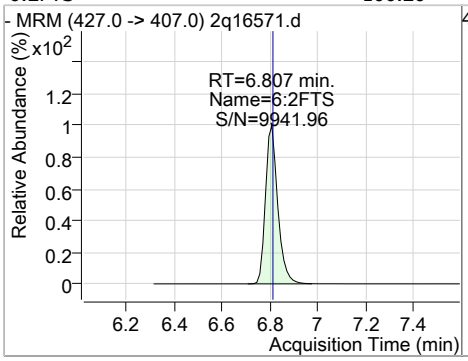
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	23.37	6.81	0.00	61765				

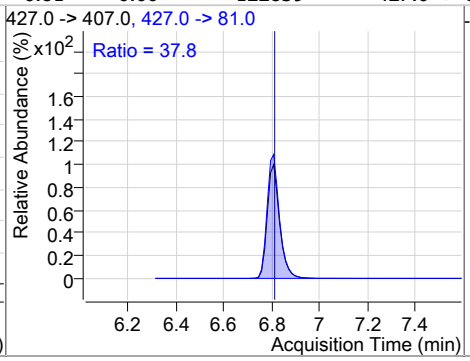


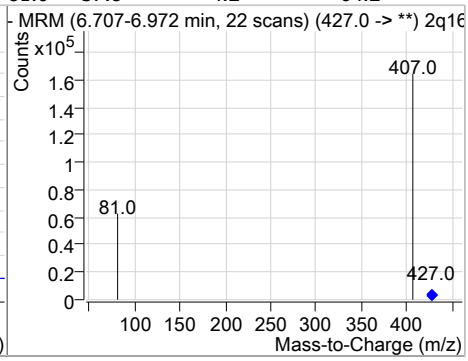




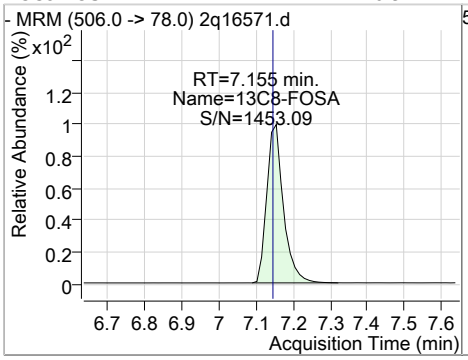
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	100.26	6.81	0.00	122839	427.0 -> 81.0	37.8	4.2	64.2

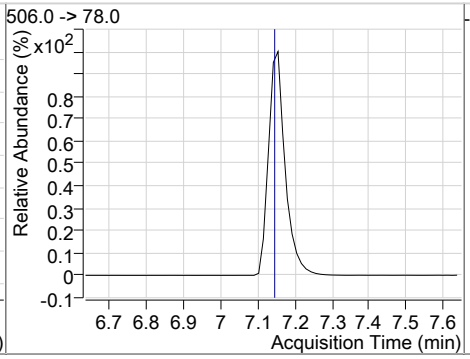


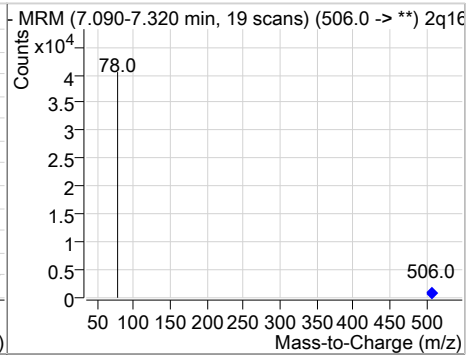




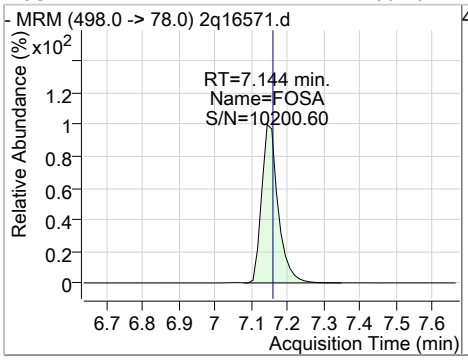
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	16.91	7.15	0.01	29765				

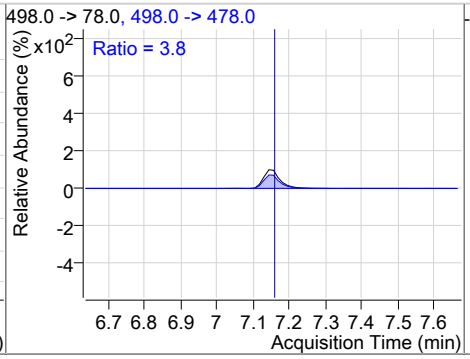


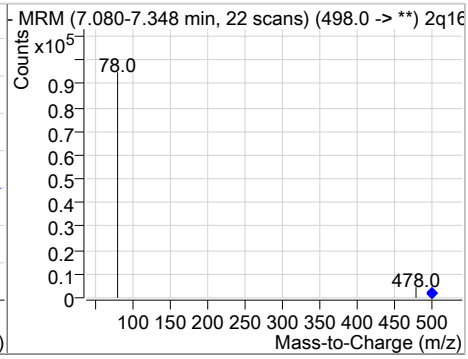




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	100.16	7.14	0.00	71796	498.0 -> 478.0	3.8	0.0	35.2

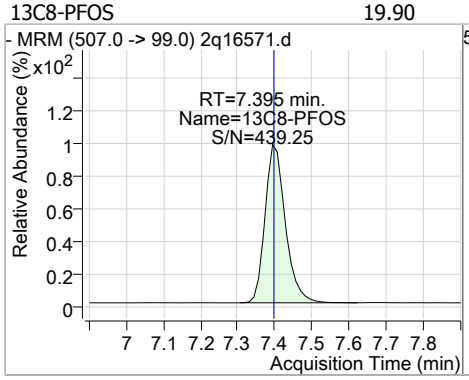


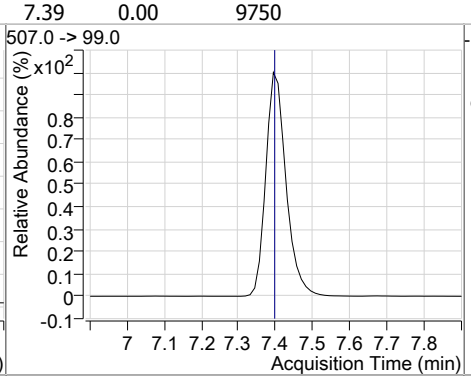


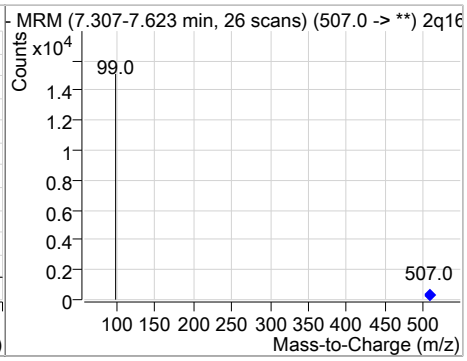


Perfluorinated Compounds by LC/MS/MS

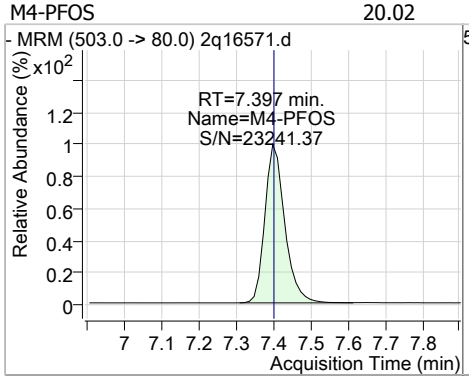
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.90	7.39	0.00	9750				

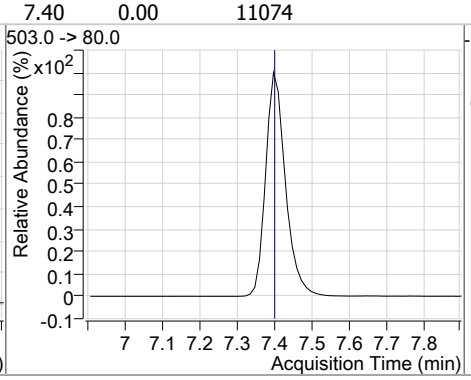


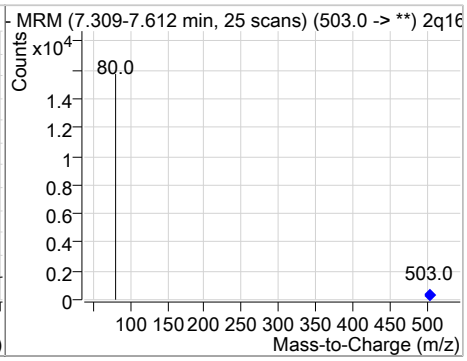




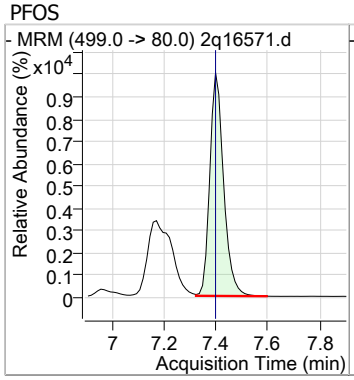
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.02	7.40	0.00	11074				

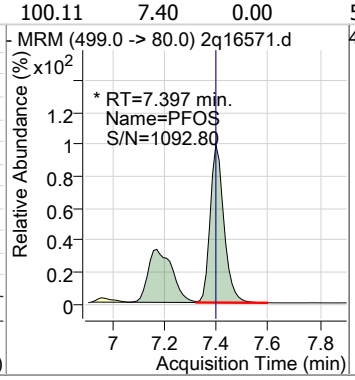


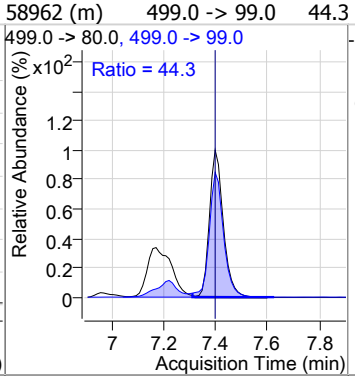


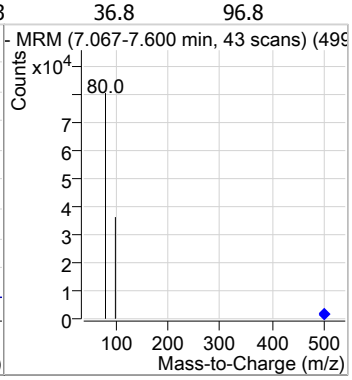


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	100.11	7.40	0.00	58962 (m)	499.0 -> 99.0	44.3	36.8	96.8

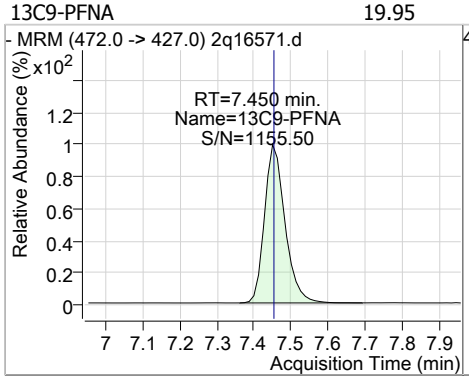


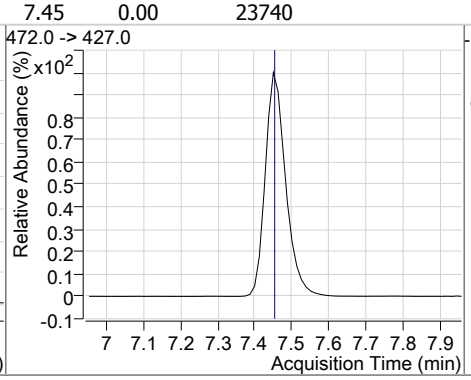


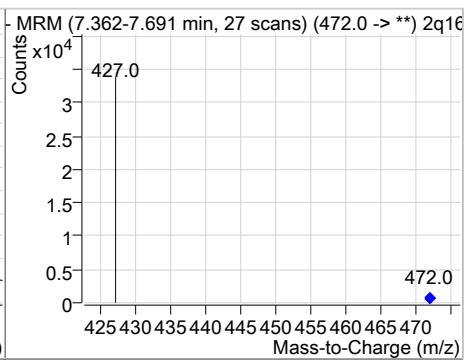




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.95	7.45	0.00	23740				

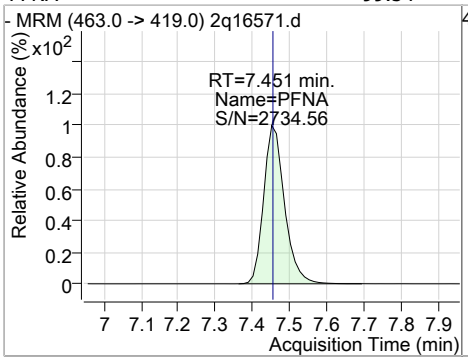


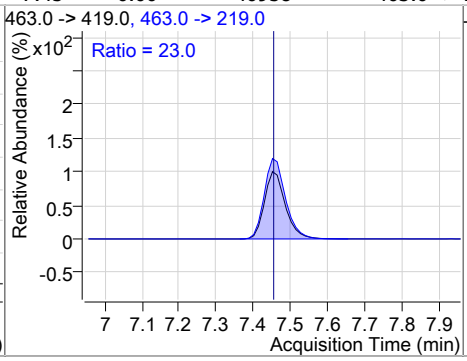


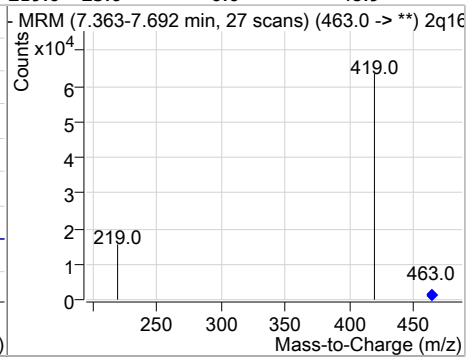


Perfluorinated Compounds by LC/MS/MS

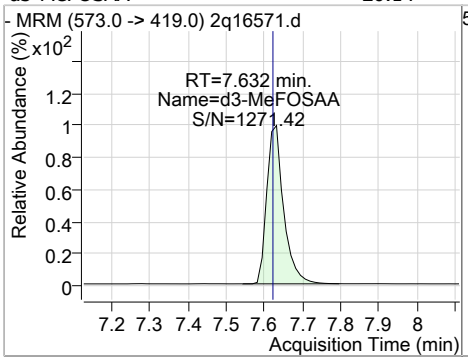
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	99.54	7.45	0.00	46958	463.0 -> 219.0	23.0	0.0	48.9

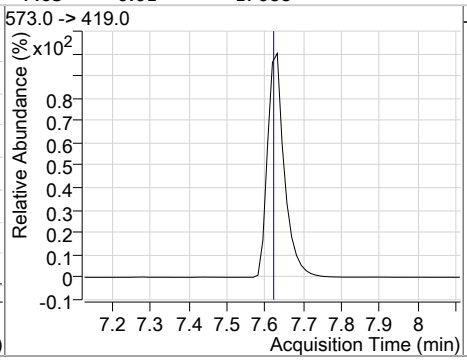


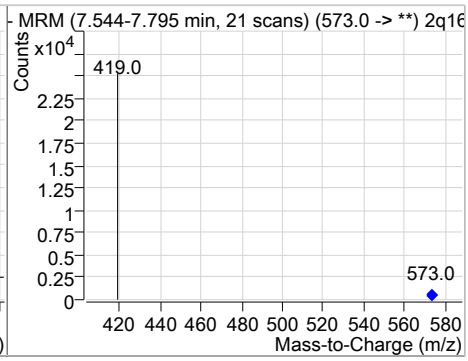




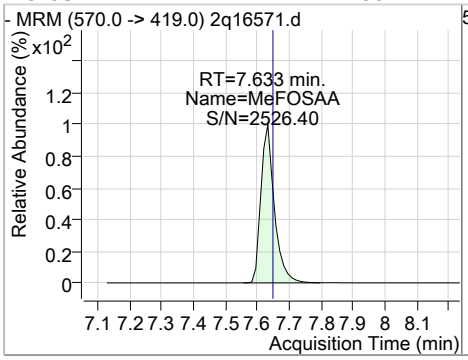
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.14	7.63	0.01	17688				

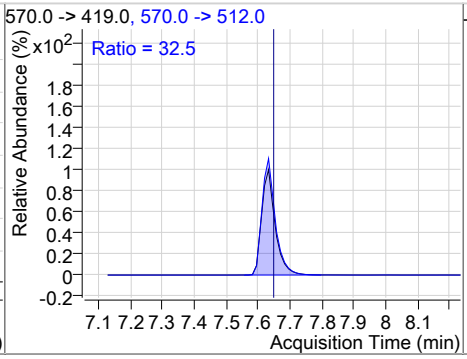


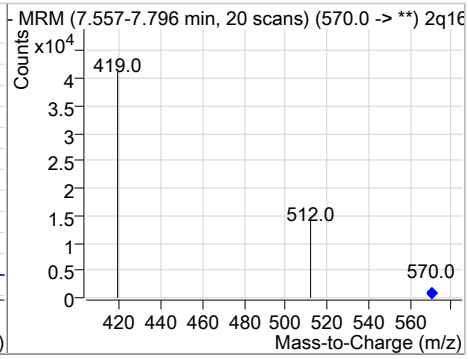




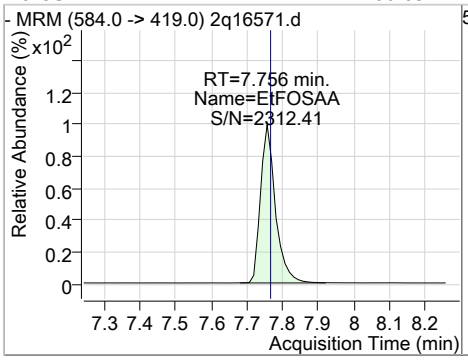
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	98.27	7.63	0.00	30528	570.0 -> 512.0	32.5	0.0	59.6

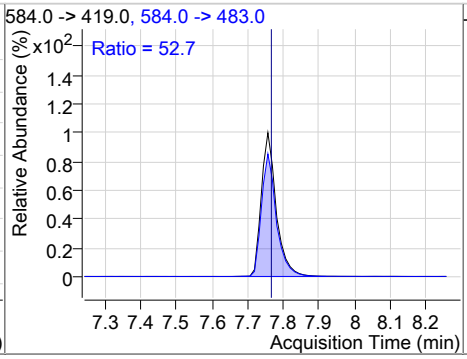


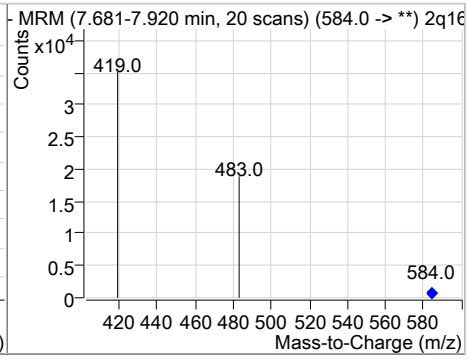




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	100.03	7.76	0.00	25780	584.0 -> 483.0	52.7	31.9	91.9

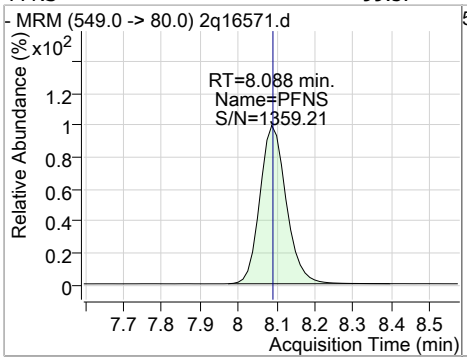


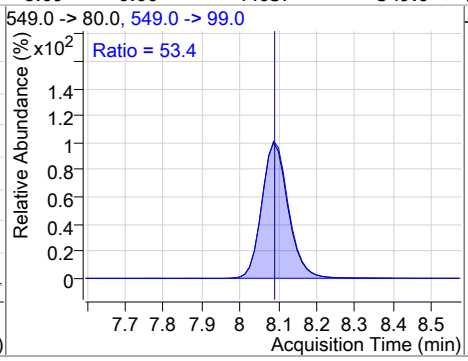


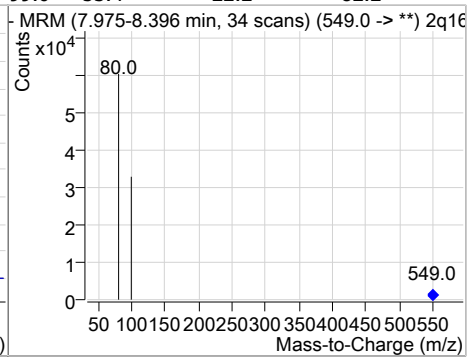


Perfluorinated Compounds by LC/MS/MS

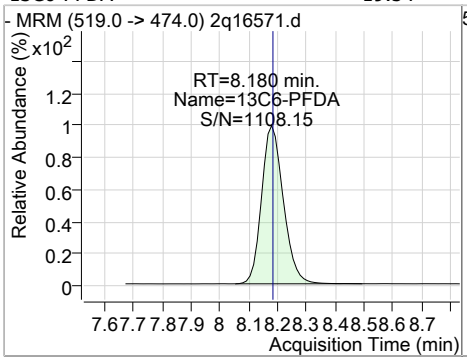
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	99.57	8.09	0.00	44037	549.0 -> 99.0	53.4	22.2	82.2

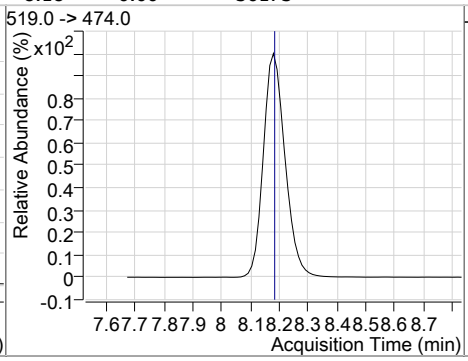


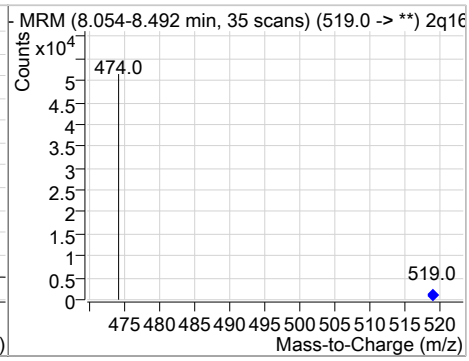




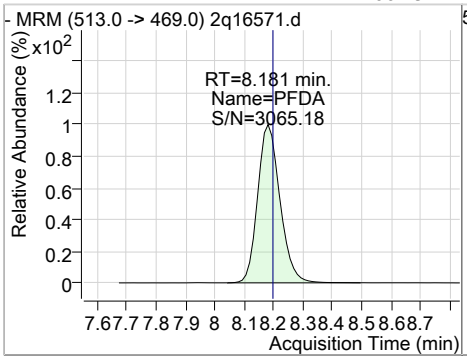
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.54	8.18	0.00	36173				

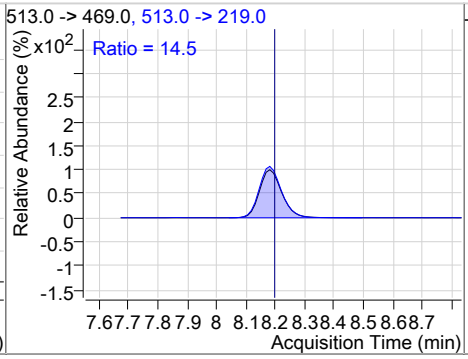


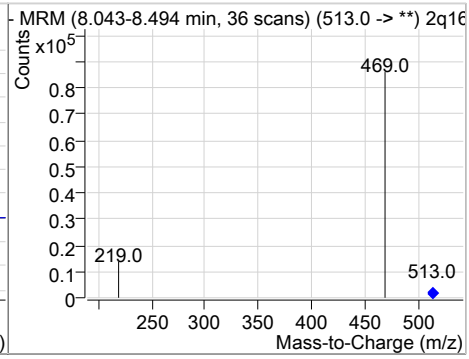




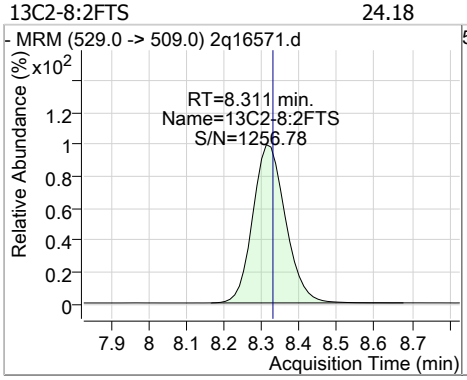
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	100.19	8.18	-0.01	63395	513.0 -> 219.0	14.5	0.0	43.5

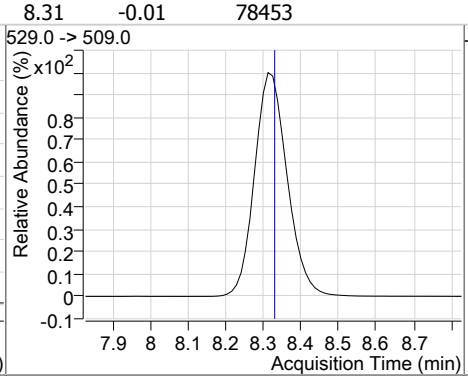


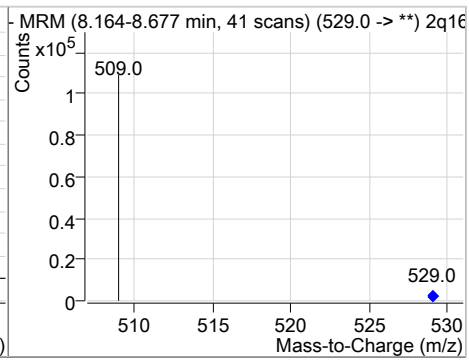




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	24.18	8.31	-0.01	78453				

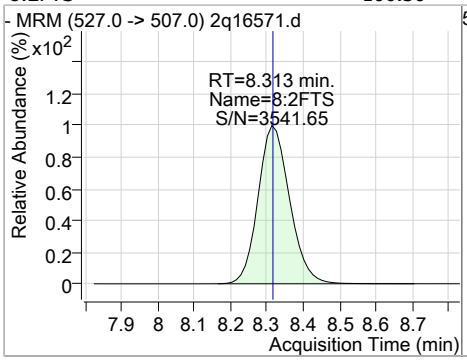


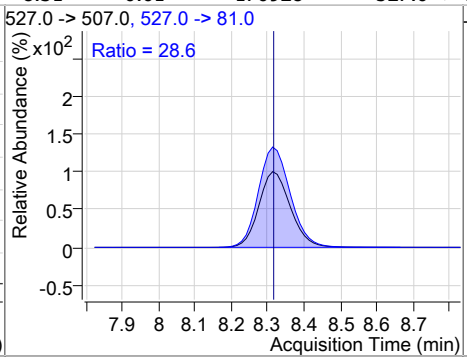


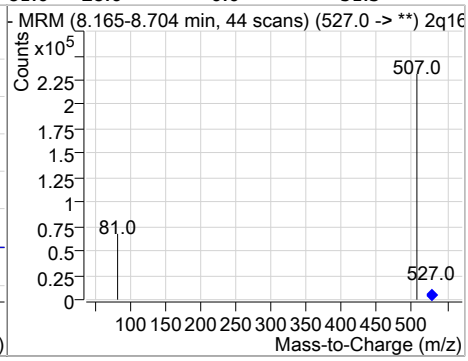


Perfluorinated Compounds by LC/MS/MS

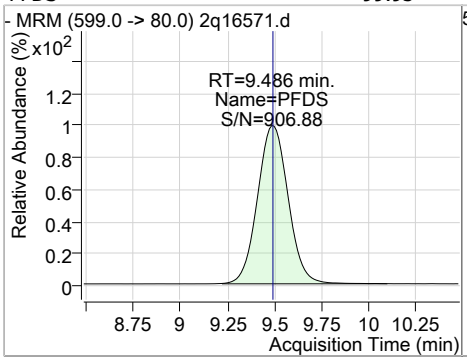
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	100.36	8.31	-0.01	170928	527.0 -> 81.0	28.6	0.0	51.3

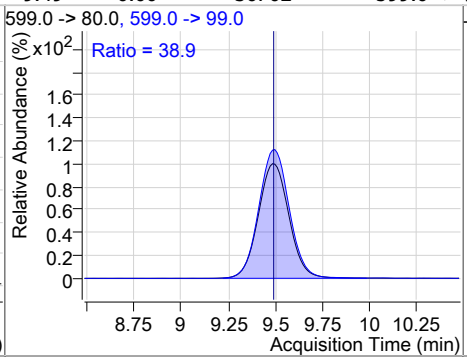


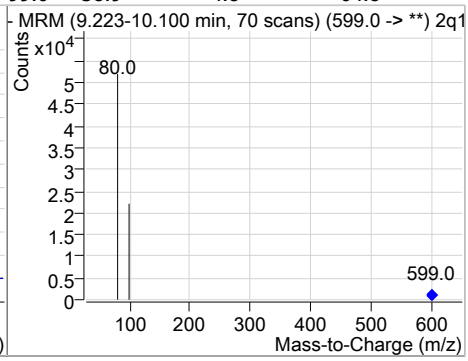




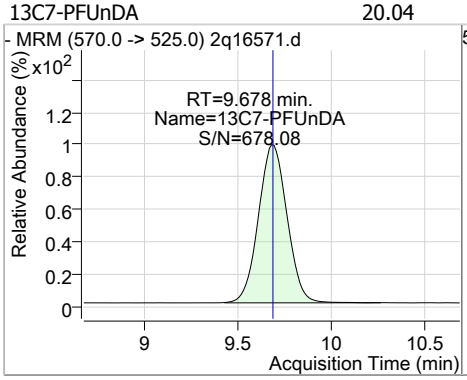
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	99.93	9.49	0.00	36702	599.0 -> 99.0	38.9	4.8	64.8

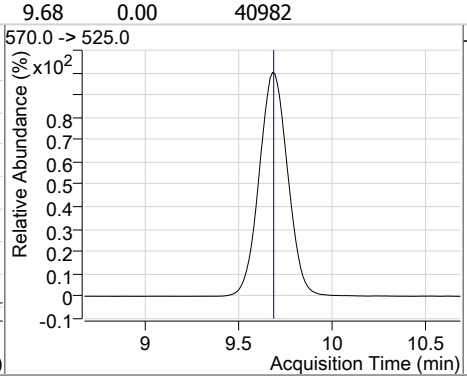


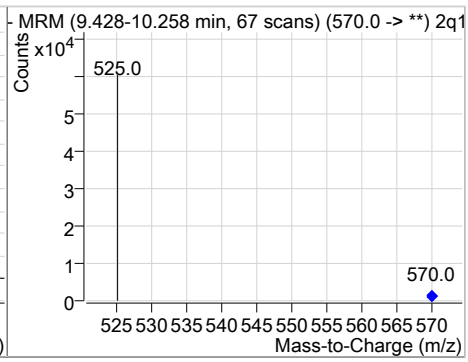




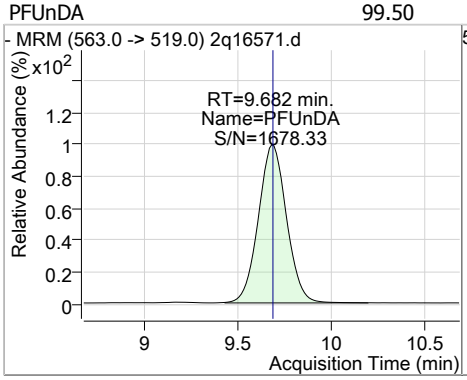
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.04	9.68	0.00	40982				

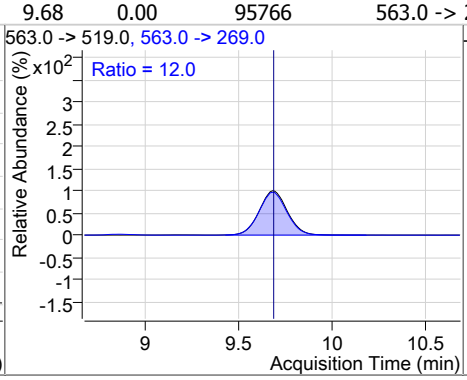


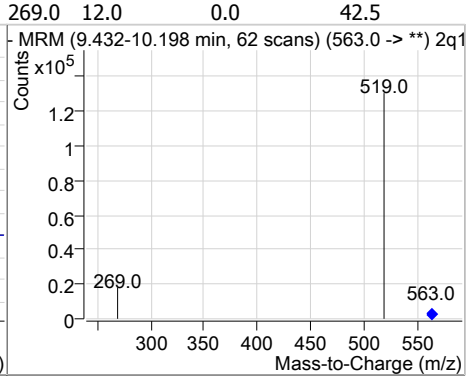




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	99.50	9.68	0.00	95766	563.0 -> 269.0	12.0	0.0	42.5

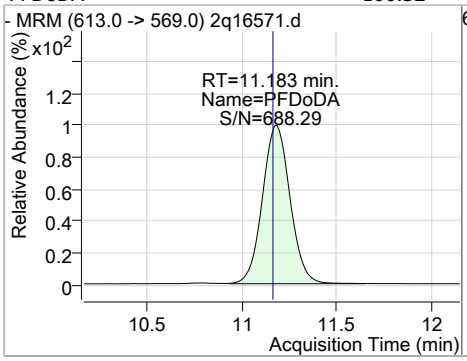


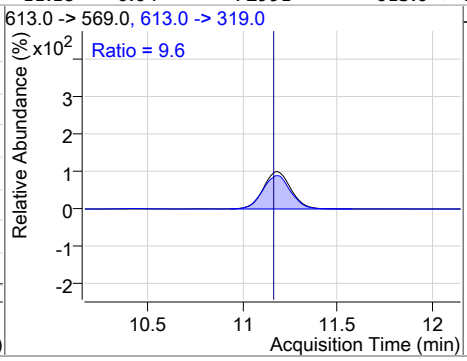


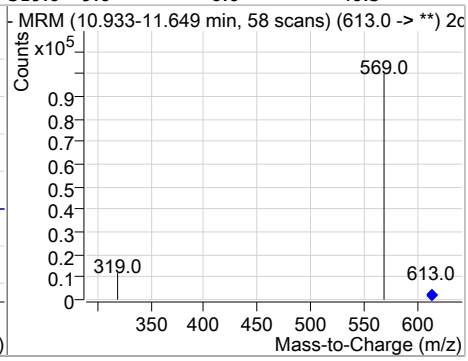


Perfluorinated Compounds by LC/MS/MS

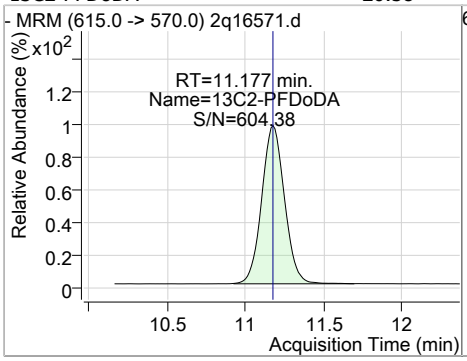
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	100.32	11.18	0.04	72991	613.0 -> 319.0	9.6	0.0	40.5

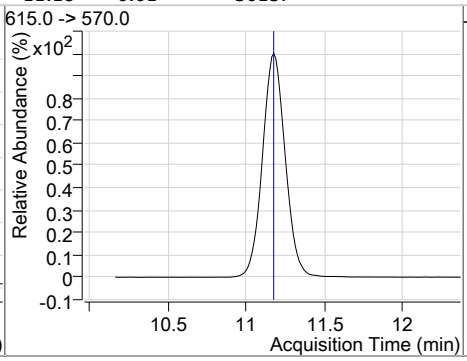


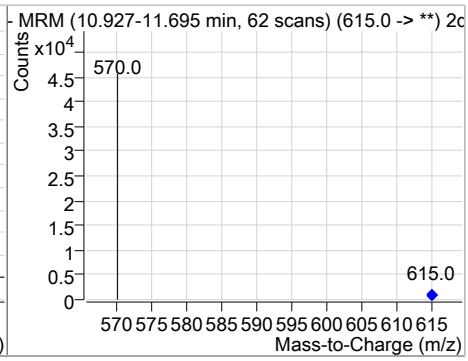




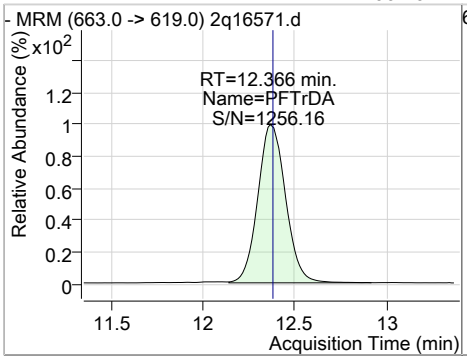
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.58	11.18	0.01	30157				

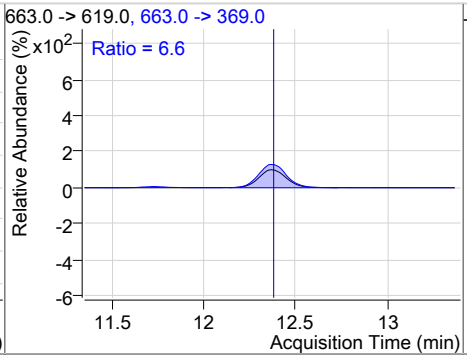


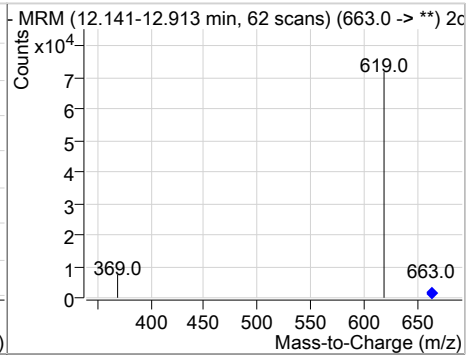




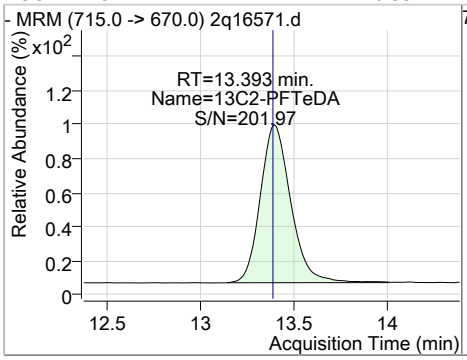
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	100.16	12.37	0.00	54110	663.0 -> 369.0	6.6	0.0	35.1

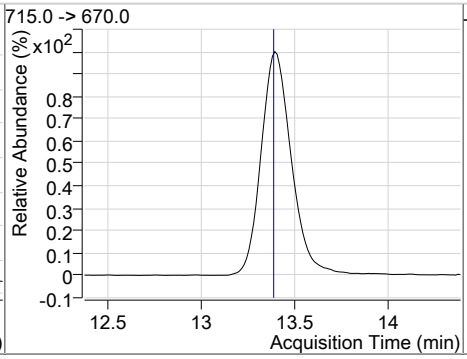


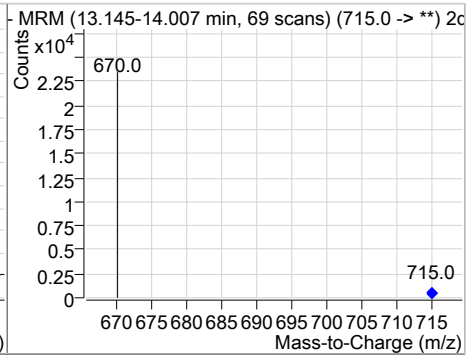




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.99	13.39	0.01	13024				

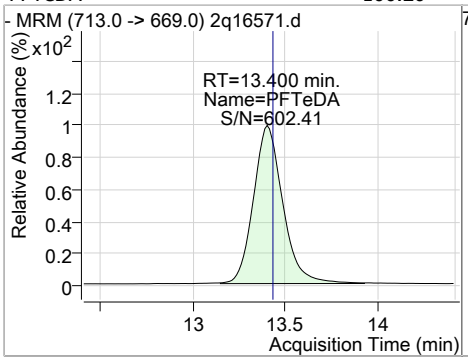


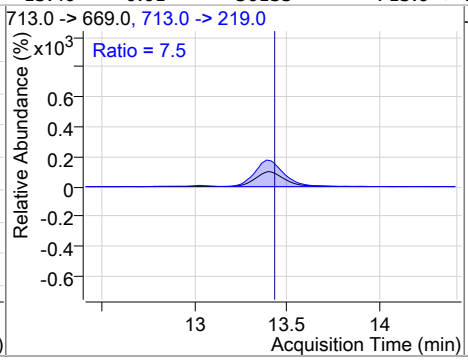


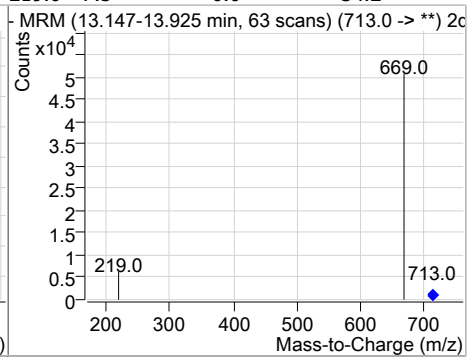


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	100.20	13.40	-0.01	36133	713.0 -> 219.0	7.5	0.0	34.2







Manual Integration Approval Summary

Sample Number: S2Q291-IC291
Lab FileID: 2Q16571.D
Injection Time: 07/05/18 18:49
Method: EPA 537M QSM5.1 B-15
Analyst approved: 07/06/18 10:17 Natasha Gumtie
Supervisor approved: 07/06/18 17:13 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.08	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.40	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
07/06/18 17:13

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16573.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/5/2018 7:28:51 PM
Sample Name : icv291-20
Vial : Vial 10
DA Method File : PFC_ID_070518_S2Q291.quantmethod.xml
Batch Name : s2q291.batch.bin
Sample Information : op70743,S2Q291,130,,,1.0,1,water

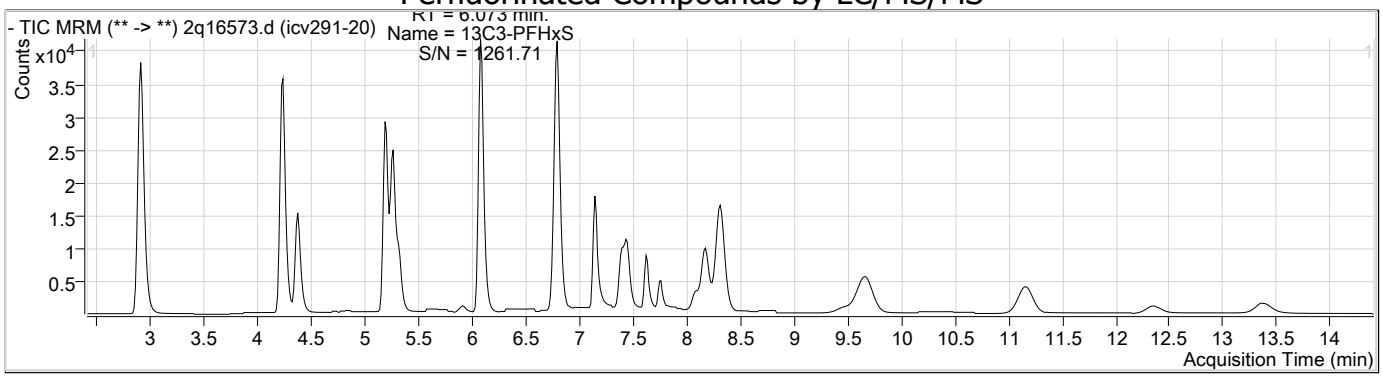
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.785	415.0 -> 370.0	18031	20.00	µg/L	-0.013
13C4-PFOS	7.397	503.0 -> 80.0	9535	20.00	µg/L	0.000
M4-PFBA	2.903	217.0 -> 172.0	133362	20.00	µg/L	0.000
M5-PFPeA	4.237	268.0 -> 223.0	63141	20.00	µg/L	0.000
M5-PFHxA	5.265	318.0 -> 273.0	57870	20.00	µg/L	0.000
M4-PFHpA	6.079	367.0 -> 322.0	56416	20.00	µg/L	-0.013
M8-PFOA	6.784	421.0 -> 376.0	30570	20.00	µg/L	-0.013
M9-PFNA	7.450	472.0 -> 427.0	21752	20.00	µg/L	0.000
M6-PFDA	8.180	519.0 -> 474.0	33422	20.00	µg/L	0.000
M7-PFUnDA	9.666	570.0 -> 525.0	36522	20.00	µg/L	-0.013
M2-PFDoDA	11.164	615.0 -> 570.0	25667	20.00	µg/L	-0.005
M2-PFTeDA	13.381	715.0 -> 670.0	10746	20.00	µg/L	0.000
M8-FOSA	7.142	506.0 -> 78.0	31328	20.00	µg/L	0.000
M3-PFBS	4.368	302.0 -> 99.0	19491	20.00	µg/L	0.000
M3-PFHxS	6.073	402.0 -> 99.0	17642	20.00	µg/L	-0.013
M8-PFOS	7.395	507.0 -> 99.0	8753	20.00	µg/L	0.000
M2-4:2FTS	5.185	329.0 -> 309.0	56508	20.00	µg/L	-0.013
M2-6:2FTS	6.805	429.0 -> 409.0	45073	20.00	µg/L	-0.002
M2-8:2FTS	8.311	529.0 -> 509.0	56586	20.00	µg/L	-0.015
M3-MeFOSAA	7.619	573.0 -> 419.0	16071	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.185	329.0 -> 309.0	56546	17.24	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.2%		
13C2-6:2FTS	6.805	429.0 -> 409.0	45071	17.05	µg/L	-0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.3%		
13C2-8:2FTS	8.311	529.0 -> 509.0	56581	17.44	µg/L	-0.015
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.2%		
13C2-PFDoDA	11.164	615.0 -> 570.0	25717	17.55	µg/L	-0.005
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.7%		
13C2-PFTeDA	13.381	715.0 -> 670.0	10882	17.54	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.7%		
13C3-PFBS	4.368	302.0 -> 99.0	19502	17.64	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.2%		
13C3-PFHxS	6.073	402.0 -> 99.0	17640	17.61	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.1%		
13C4-PFBA	2.903	217.0 -> 172.0	133251	17.40	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.0%		
13C4-PFHpA	6.079	367.0 -> 322.0	56417	17.51	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.5%		
13C5-PFHxA	5.265	318.0 -> 273.0	57885	17.67	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.3%		
13C5-PFPeA	4.237	268.0 -> 223.0	63115	17.32	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.6%		
13C6-PFDA	8.180	519.0 -> 474.0	33400	18.04	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.2%		

Perfluorinated Compounds by LC/MS/MS

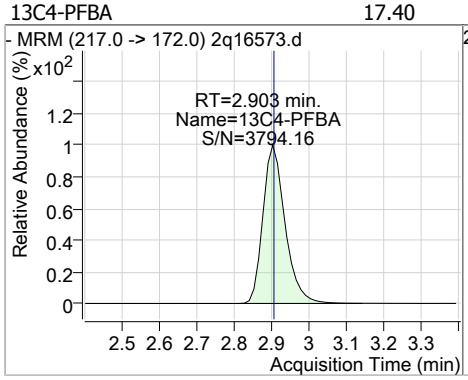
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	9.666	570.0 -> 525.0	36533	17.86	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.3%			
13C8-FOSA	7.142	506.0 -> 78.0	31327	17.80	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.0%			
13C8-PFOA	6.784	421.0 -> 376.0	30566	17.55	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.8%			
13C8-PFOS	7.395	507.0 -> 99.0	8754	17.87	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.3%			
13C9-PFNA	7.450	472.0 -> 427.0	21742	18.27	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.4%			
d3-MeFOSAA	7.619	573.0 -> 419.0	16069	18.30	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.5%			
M2-PFOA	6.785	415.0 -> 370.0	18031	20.00	ng/ml		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.397	503.0 -> 80.0	9545	20.03	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
Target Compounds							**QValue**
4:2FTS	5.187	327.0 -> 307.0	28483	19.89	µg/L		99
6:2FTS	6.794	427.0 -> 407.0	22720	20.64	µg/L		92
8:2FTS	8.313	527.0 -> 507.0	29694	19.66	µg/L		83
EtFOSAA	7.756	584.0 -> 419.0	5011	19.61	µg/L		90
FOSA	7.144	498.0 -> 78.0	16518	21.09	µg/L		97
MeFOSAA	7.620	570.0 -> 419.0	6038	21.39	µg/L		96
PFBA	2.912	213.0 -> 169.0	23476	21.89	µg/L		100
PFBS	4.371	299.0 -> 80.0	24969	19.08	µg/L		97
PFDA	8.181	513.0 -> 469.0	12146	19.12	µg/L		97
PFDoDA	11.158	613.0 -> 569.0	14451	22.16	µg/L		97
PFDS	9.461	599.0 -> 80.0	6592	20.10	µg/L		92
PFHpA	6.082	363.0 -> 319.0	44123	21.95	µg/L		94
PFHpS	6.753	449.0 -> 80.0	10487	20.51	µg/L		96
PFHxA	5.268	313.0 -> 269.0	18326	19.50	µg/L		97
PFHxS	6.076	399.0 -> 80.0	18118	18.52	µg/L	m	100
PFNA	7.451	463.0 -> 419.0	8277	19.15	µg/L		80
PFNS	8.088	549.0 -> 80.0	8304	20.91	µg/L		96
PFOA	6.786	413.0 -> 369.0	16748	21.84	µg/L		95
PFOS	7.397	499.0 -> 80.0	11667	22.06	µg/L	m	77
PFPeA	4.228	263.0 -> 219.0	66864	21.92	µg/L		100
PFPeS	5.308	349.0 -> 80.0	16145	20.17	µg/L		97
PFTeDA	13.375	713.0 -> 669.0	6445	19.29	µg/L		90
PFTrDA	12.354	663.0 -> 619.0	11080	22.77	µg/L		94
PFUnDA	9.670	563.0 -> 519.0	18694	21.75	µg/L		99

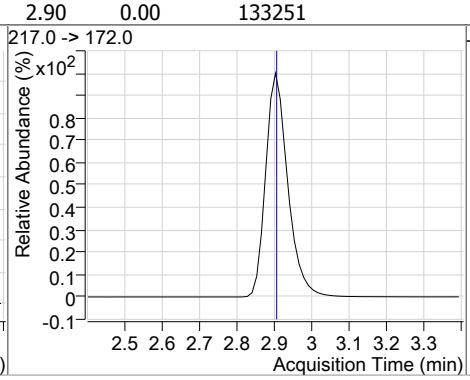
 # = Qualifier out of range, m = manually integrated, + = Area summed

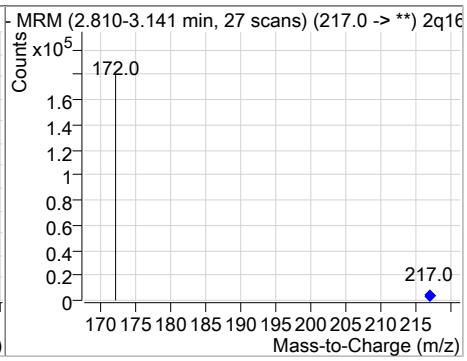
Perfluorinated Compounds by LC/MS/MS



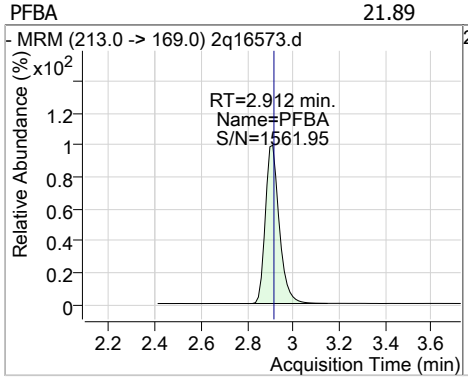
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	17.40	2.90	0.00	133251				

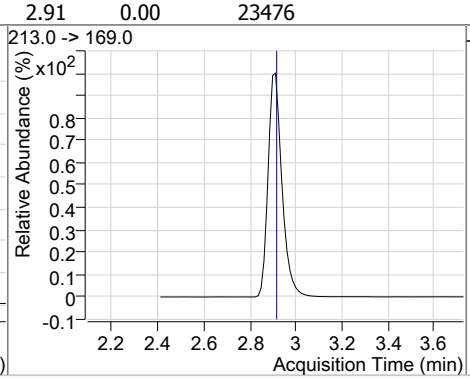


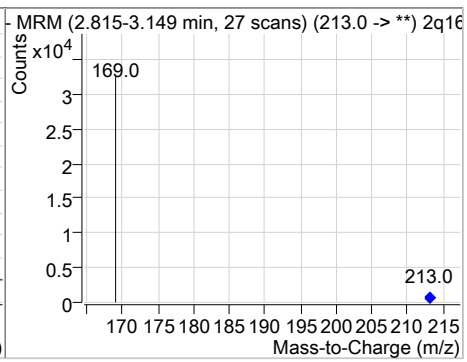




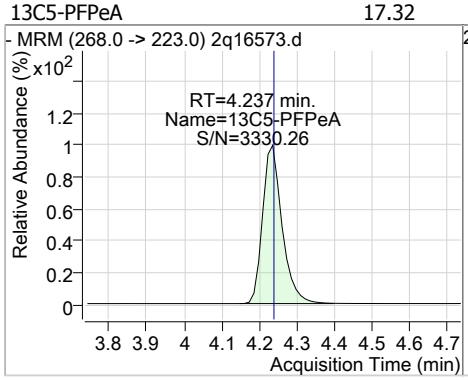
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	21.89	2.91	0.00	23476				

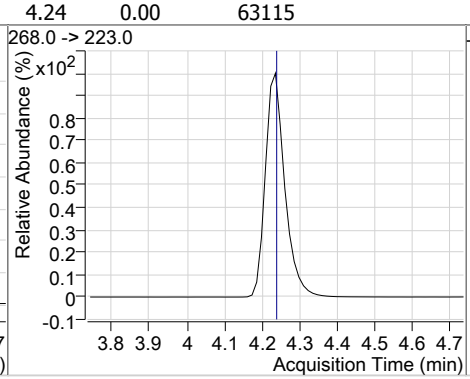


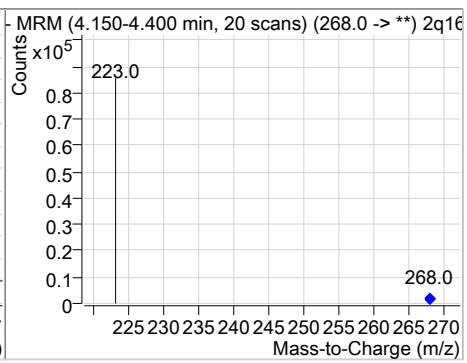




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	17.32	4.24	0.00	63115				

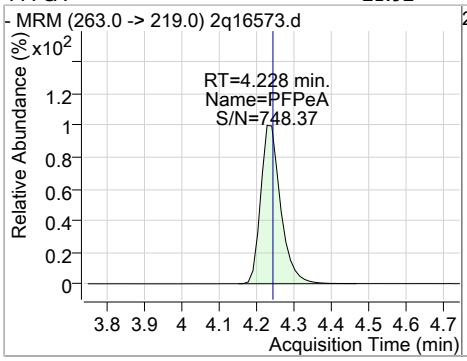


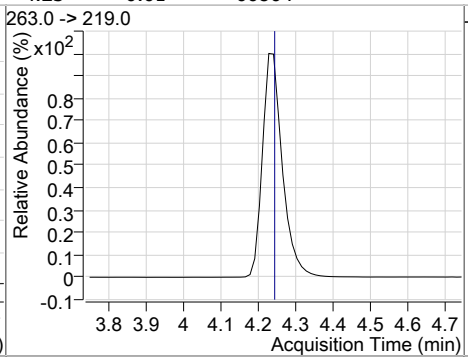


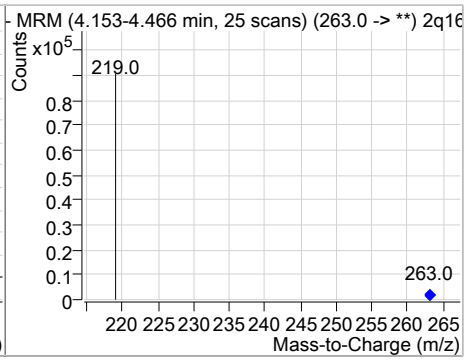


Perfluorinated Compounds by LC/MS/MS

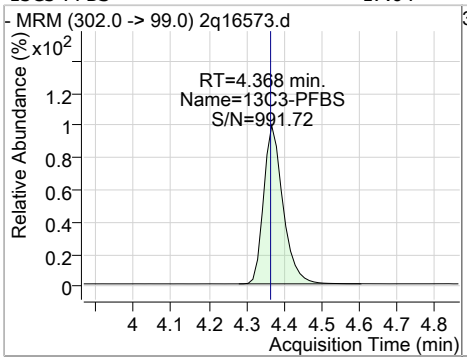
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	21.92	4.23	-0.01	66864				

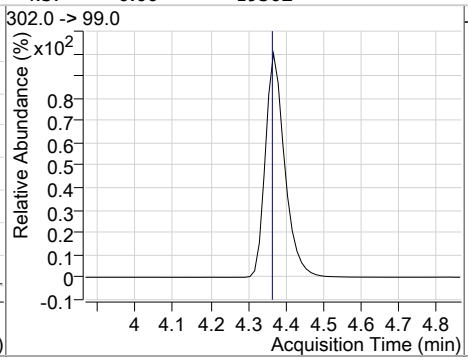


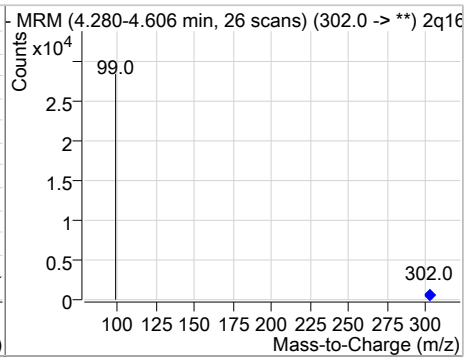




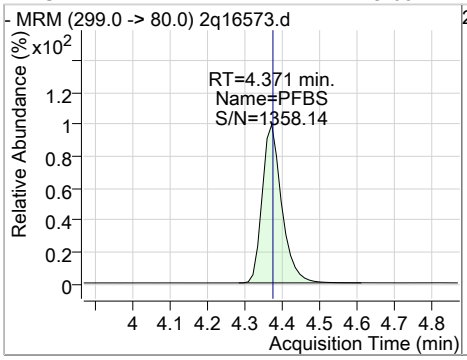
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	17.64	4.37	0.00	19502				

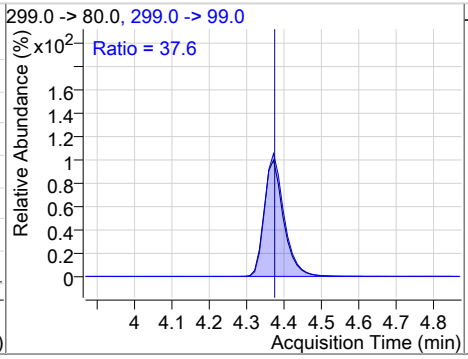


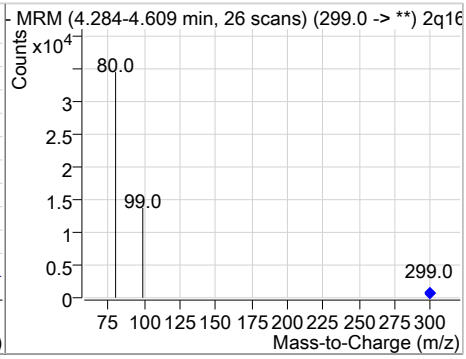




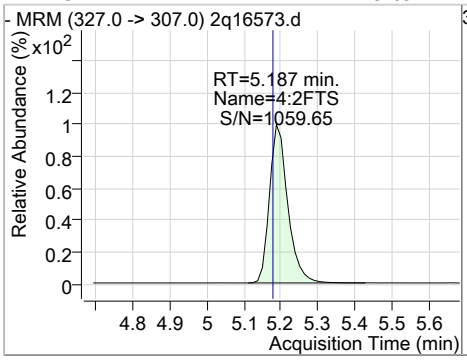
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.08	4.37	0.00	24969	299.0 -> 99.0	37.6	5.8	65.8

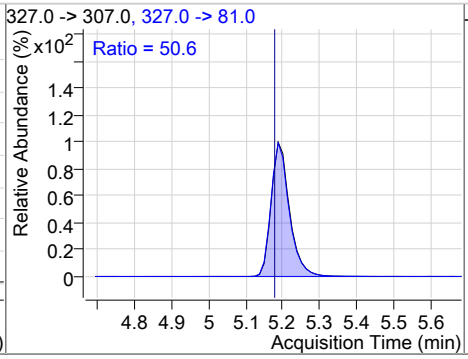


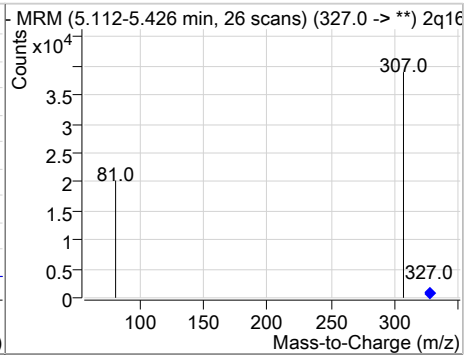




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.89	5.19	0.00	28483	327.0 -> 81.0	50.6	21.0	81.0

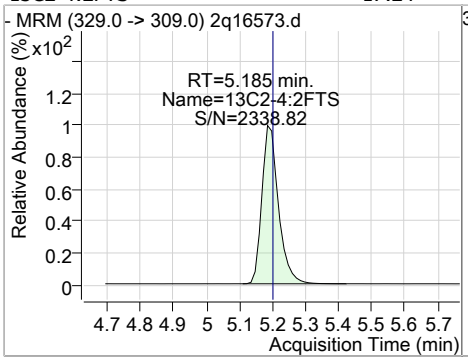


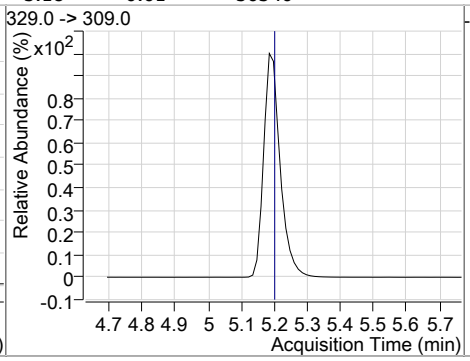


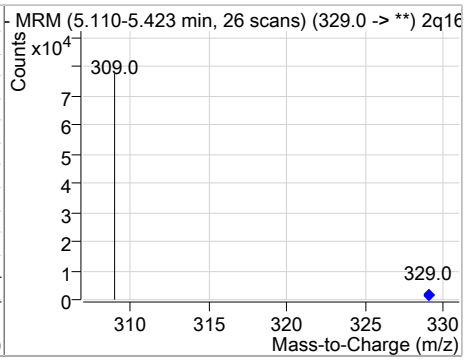


Perfluorinated Compounds by LC/MS/MS

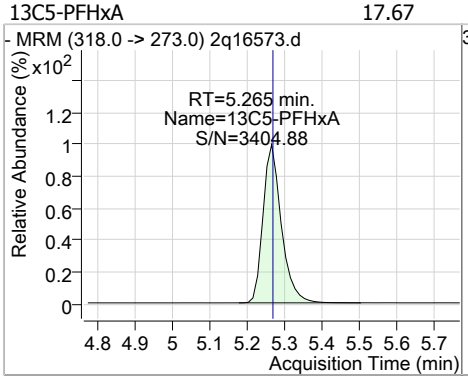
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	17.24	5.18	-0.01	56546				

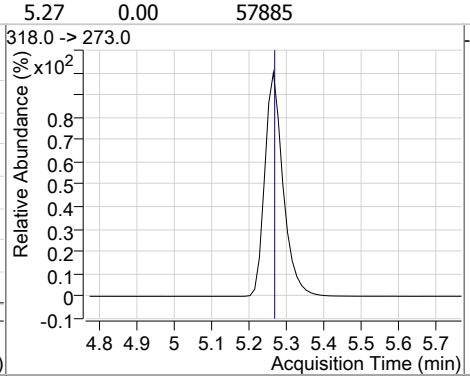


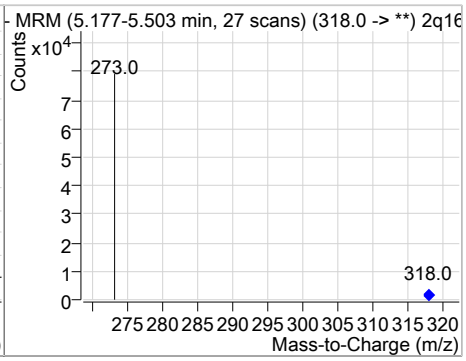




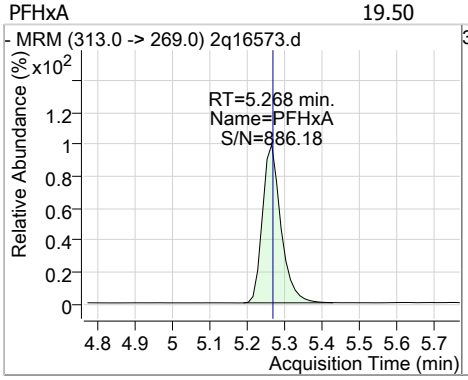
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	17.67	5.27	0.00	57885				

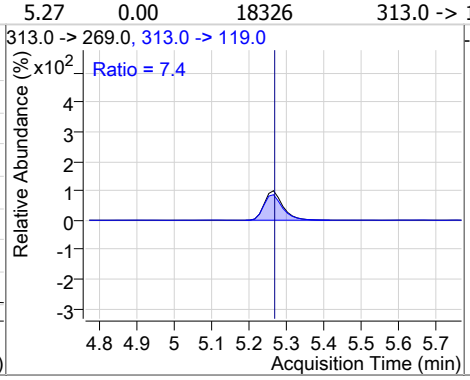


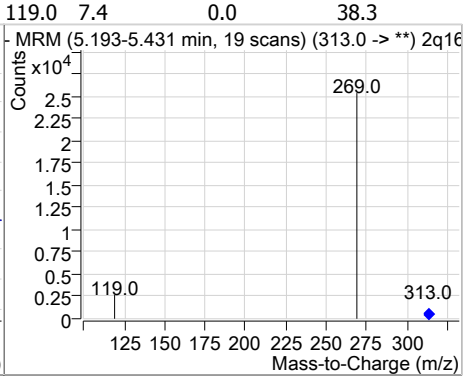




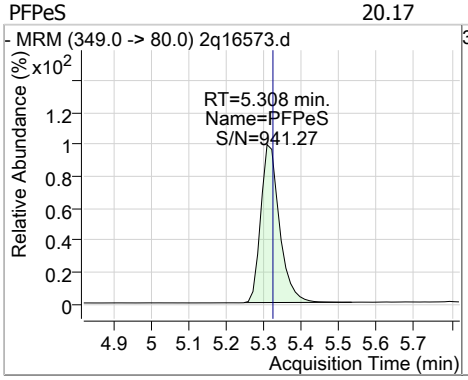
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.50	5.27	0.00	18326	313.0 -> 119.0	7.4	0.0	38.3

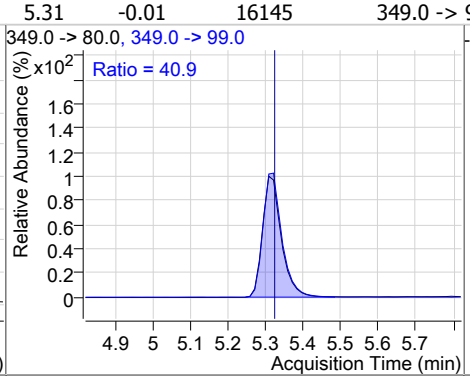


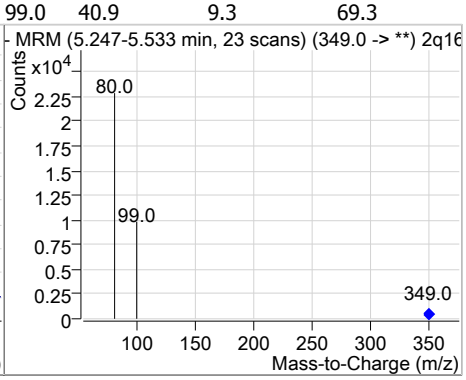




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	20.17	5.31	-0.01	16145	349.0 -> 99.0	40.9	9.3	69.3

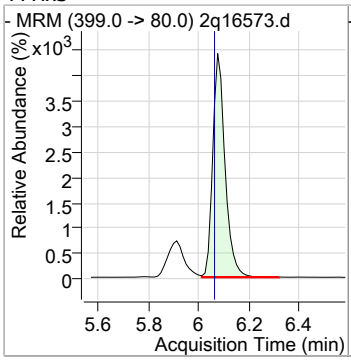


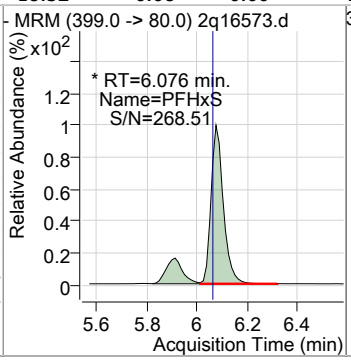


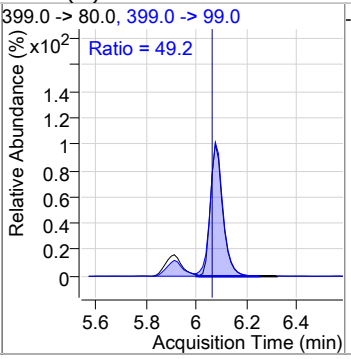


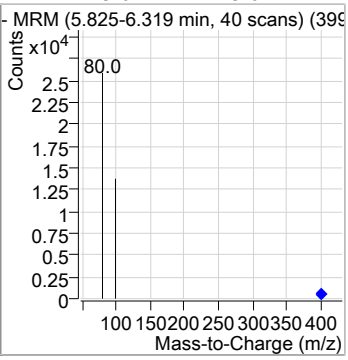
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	18.52	6.08	0.00	18118 (m)	399.0 -> 99.0	49.2	19.0	79.0

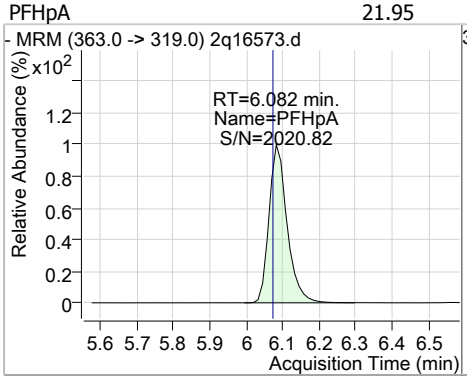


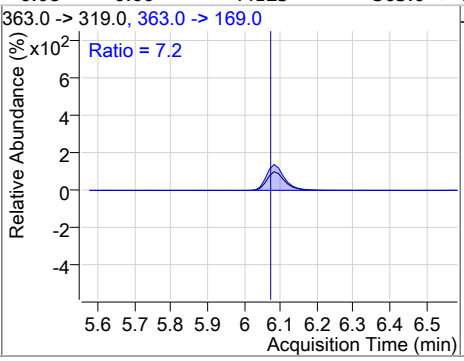


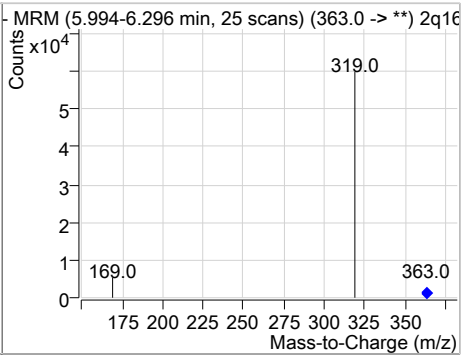




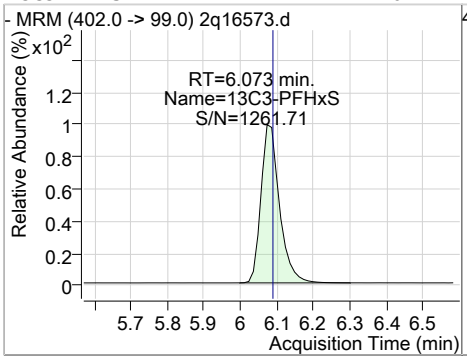
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	21.95	6.08	0.00	44123	363.0 -> 169.0	7.2	0.0	35.3

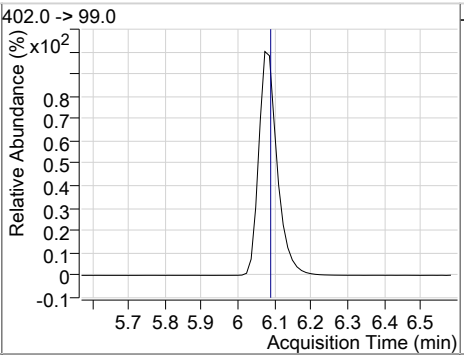


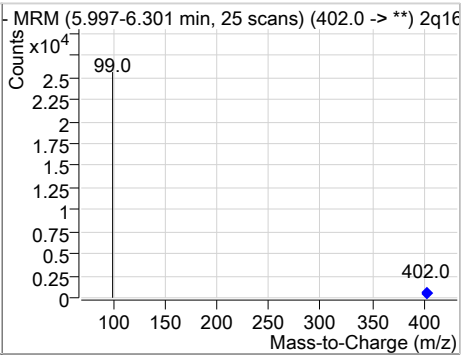




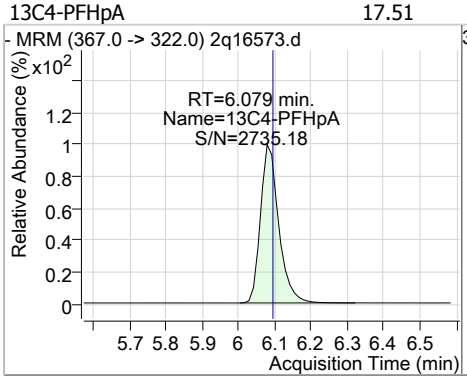
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	17.61	6.07	-0.01	17640				

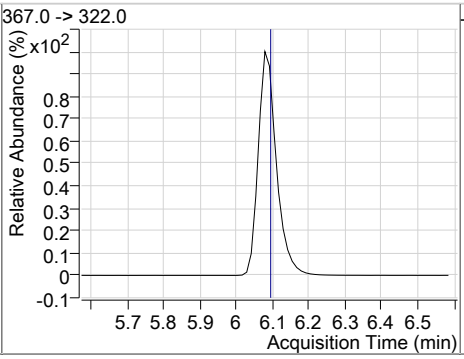


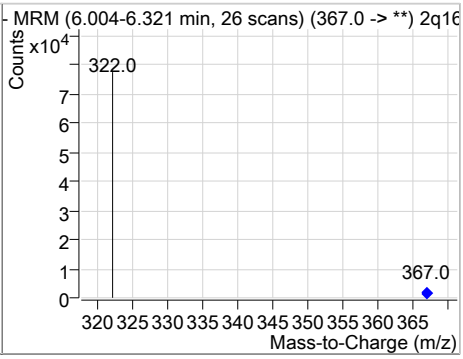




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	17.51	6.08	-0.01	56417				

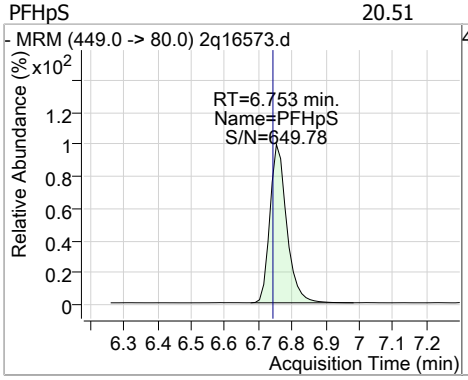


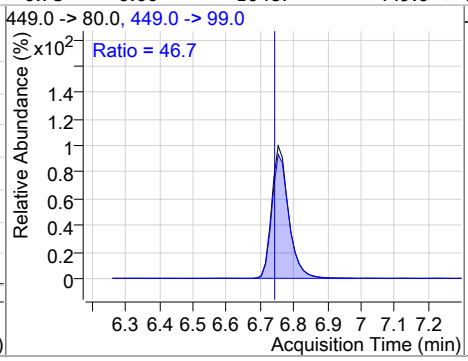


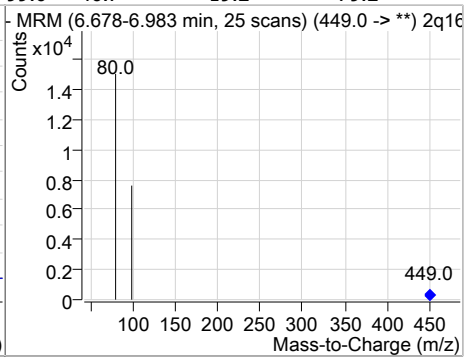


Perfluorinated Compounds by LC/MS/MS

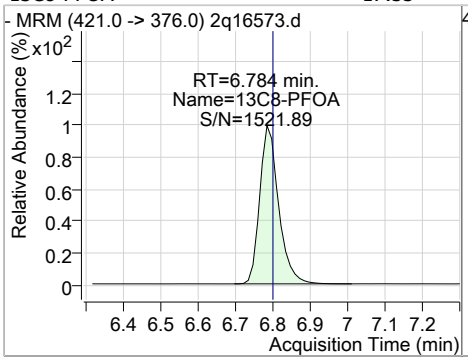
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.51	6.75	0.00	10487	449.0 -> 99.0	46.7	19.2	79.2

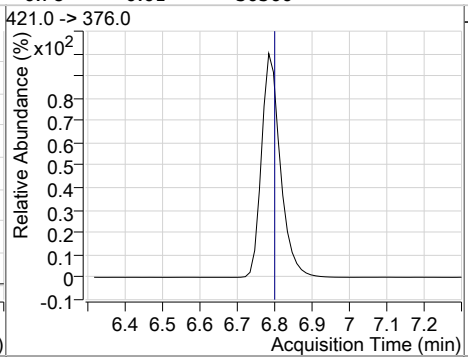


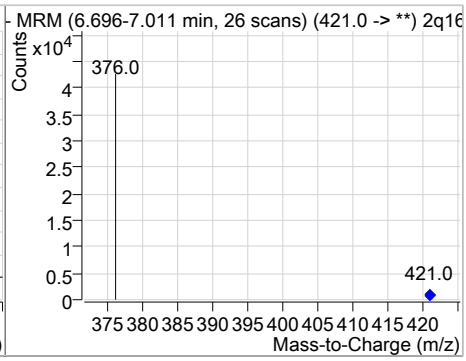




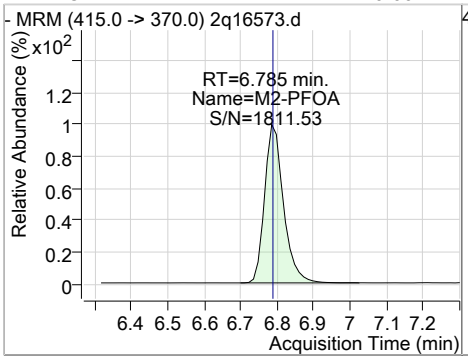
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	17.55	6.78	-0.01	30566				

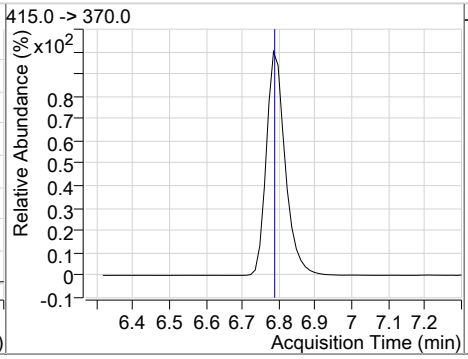


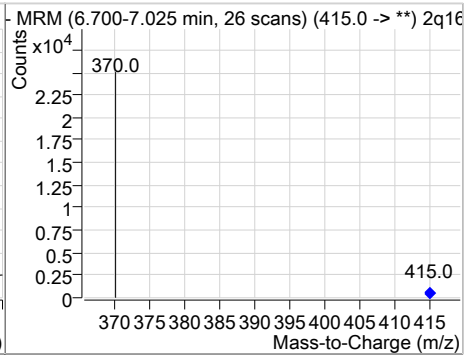




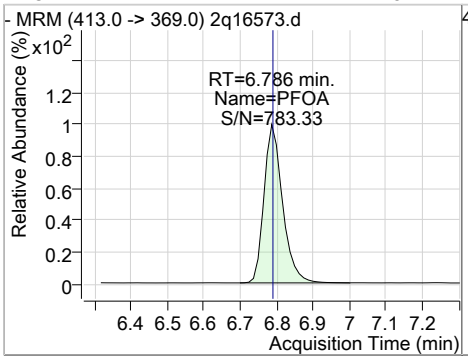
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.79	-0.01	18031				

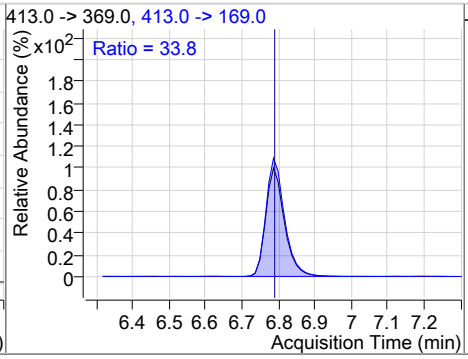


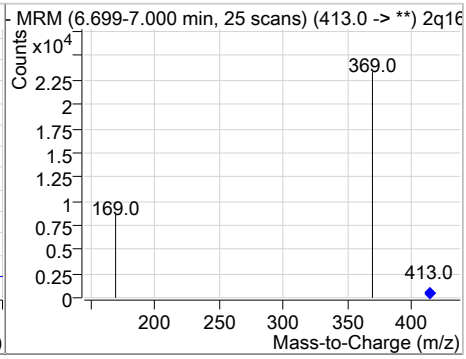




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	21.84	6.79	-0.01	16748	413.0 -> 169.0	33.8	0.9	60.9

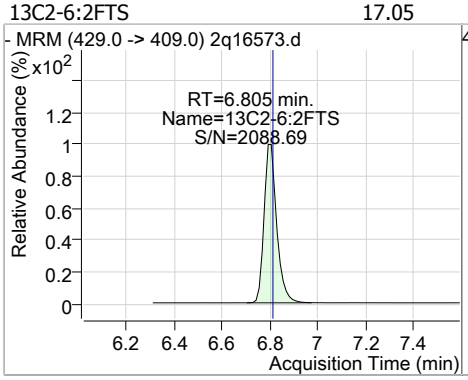


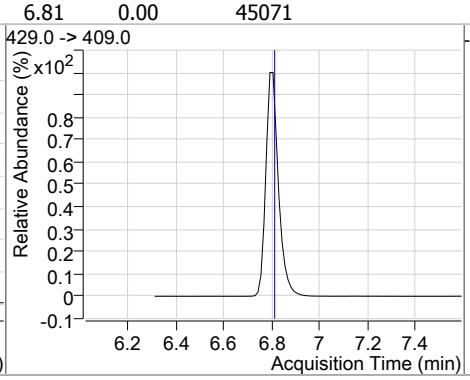


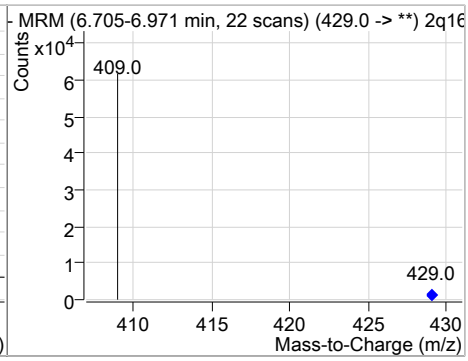


Perfluorinated Compounds by LC/MS/MS

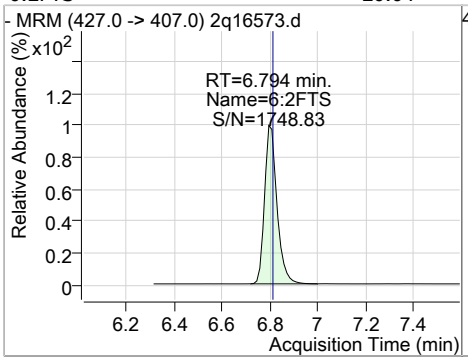
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	17.05	6.81	0.00	45071				

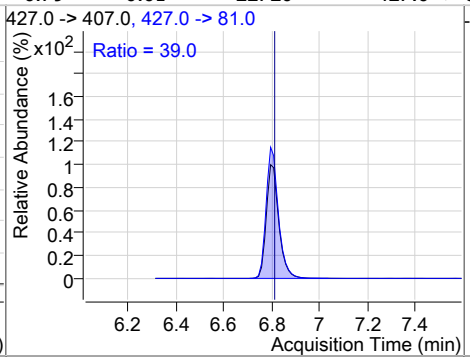


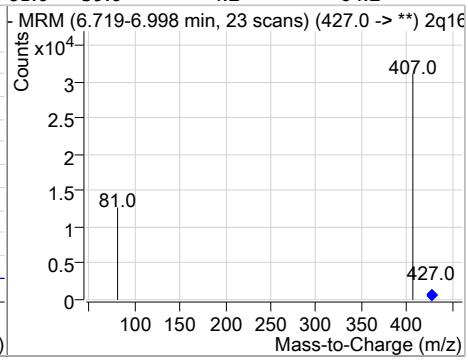




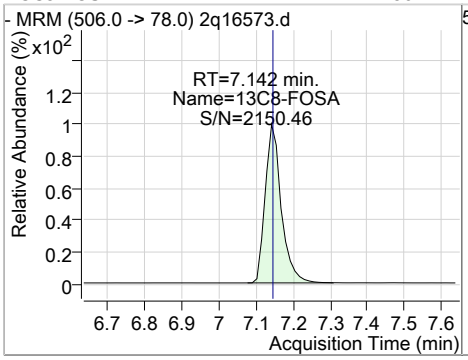
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.64	6.79	-0.01	22720	427.0 -> 81.0	39.0	4.2	64.2

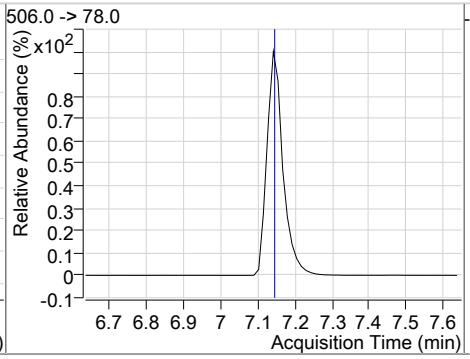


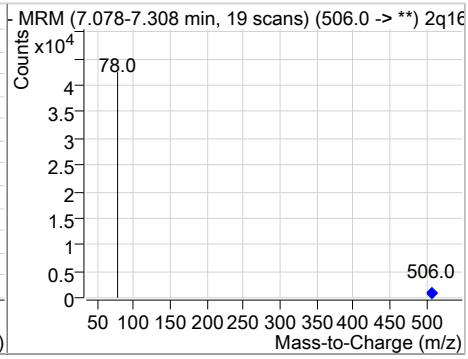




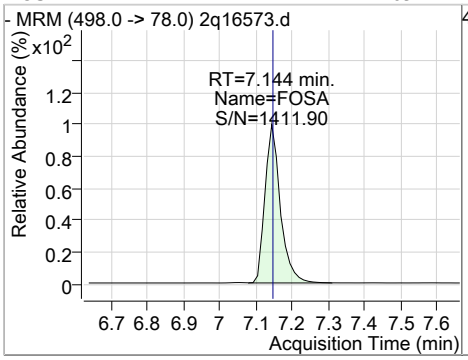
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	17.80	7.14	0.00	31327				

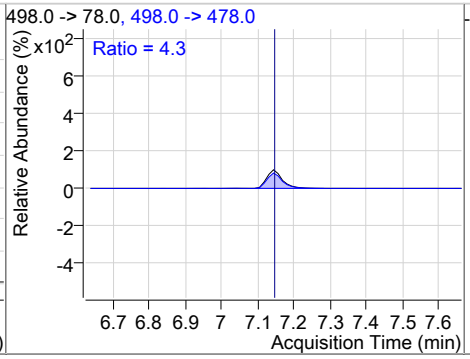


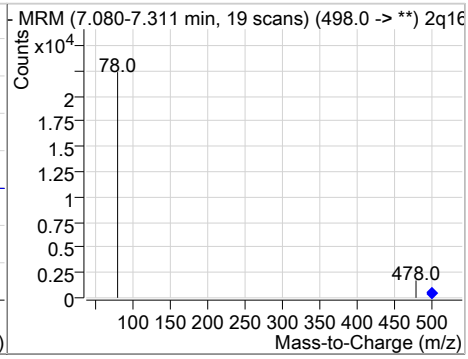




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	21.09	7.14	0.00	16518	498.0 -> 478.0	4.3	0.0	35.2

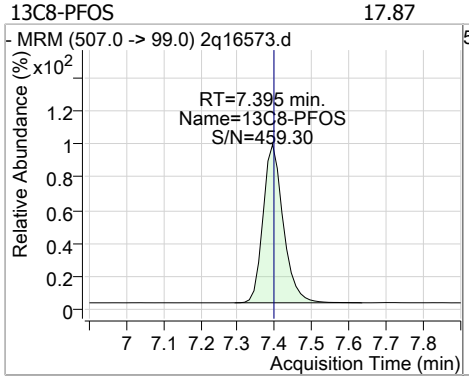


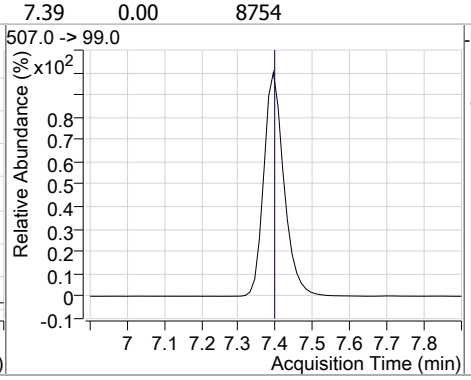


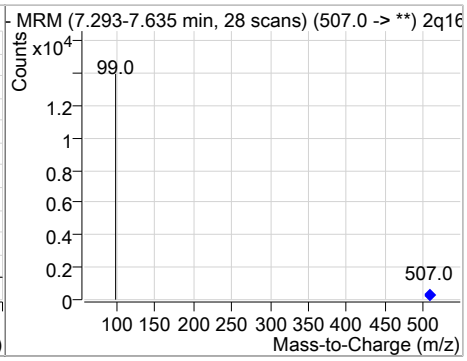


Perfluorinated Compounds by LC/MS/MS

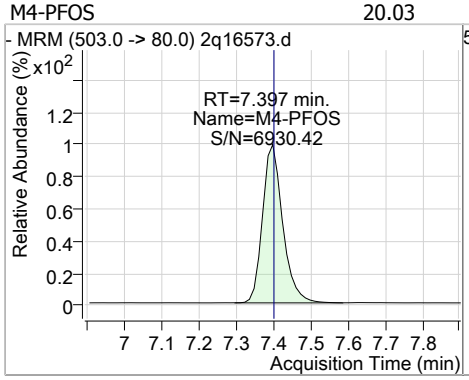
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	17.87	7.39	0.00	8754				

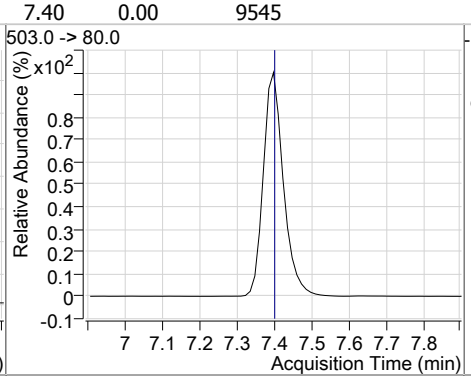


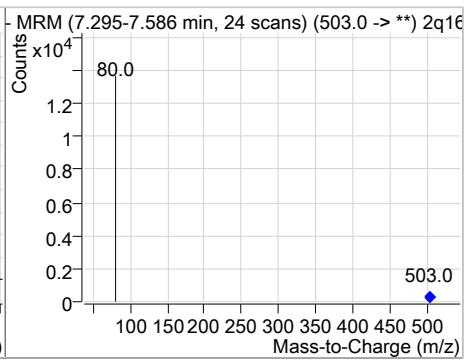




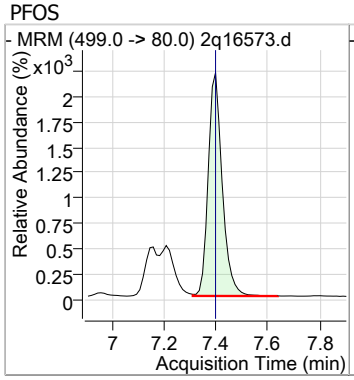
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.03	7.40	0.00	9545				

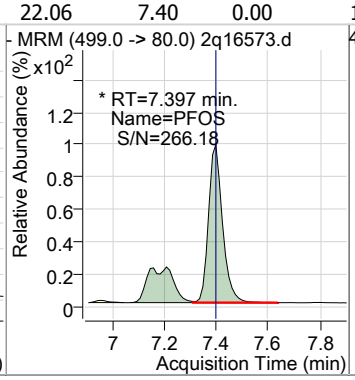


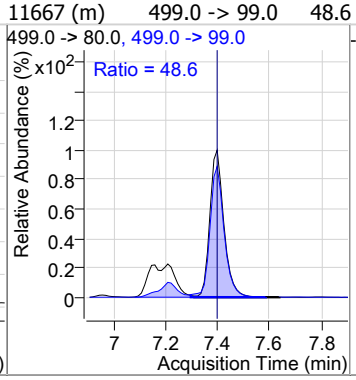


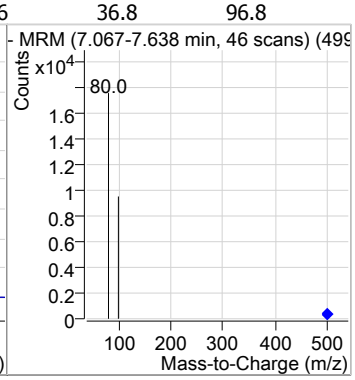


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	22.06	7.40	0.00	11667 (m)	499.0 -> 99.0	48.6	36.8	96.8

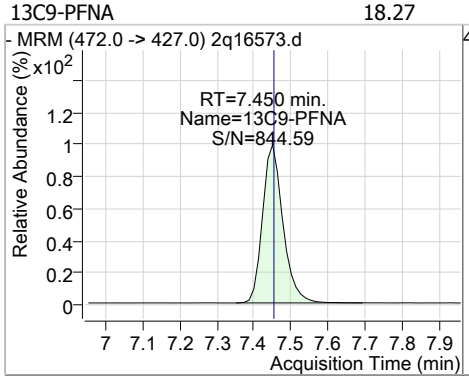


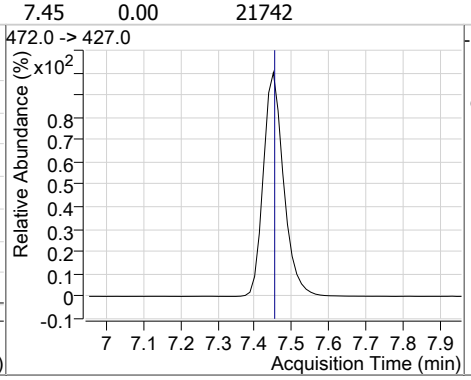


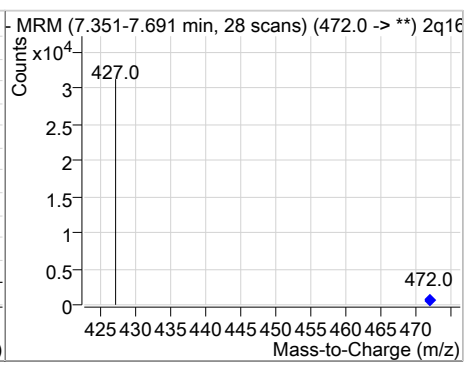




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.27	7.45	0.00	21742				

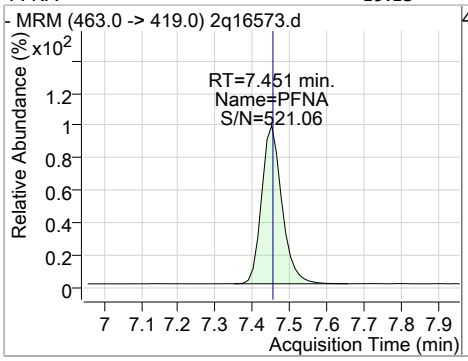


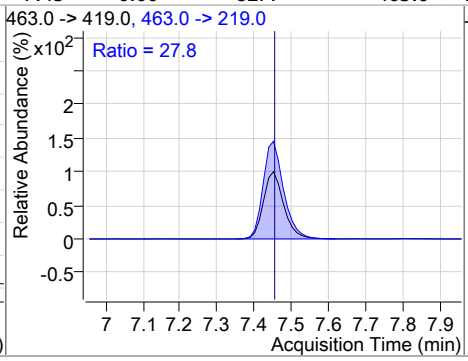


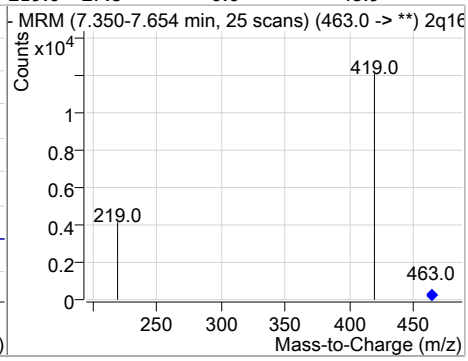


Perfluorinated Compounds by LC/MS/MS

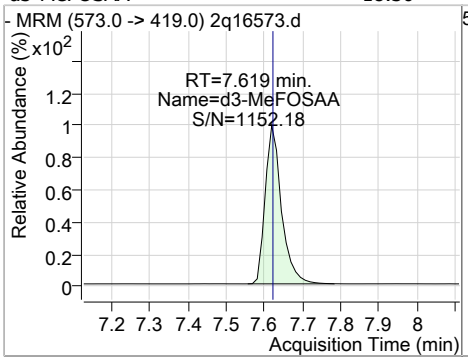
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.15	7.45	0.00	8277	463.0 -> 219.0	27.8	0.0	48.9

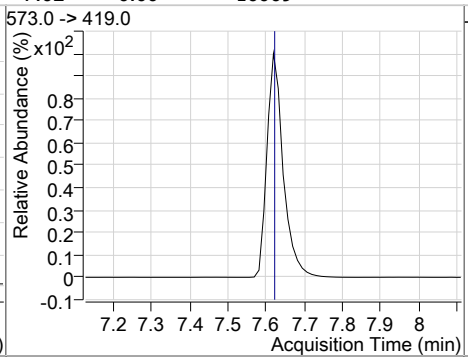


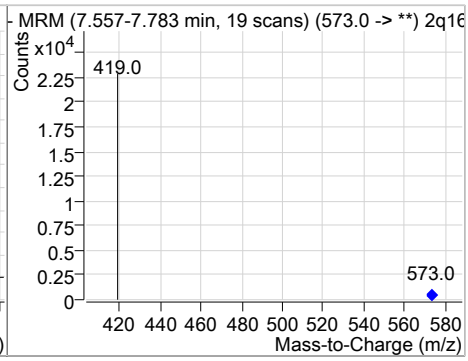




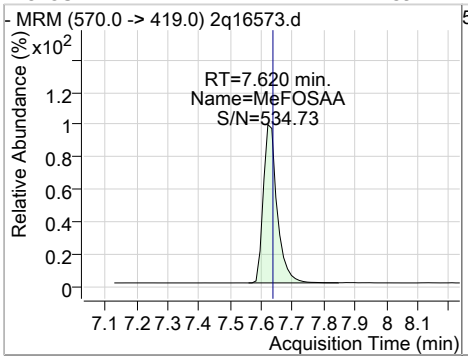
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.30	7.62	0.00	16069				

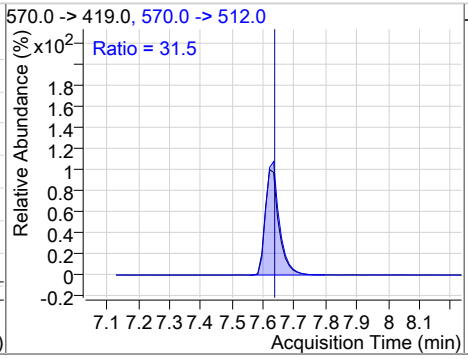


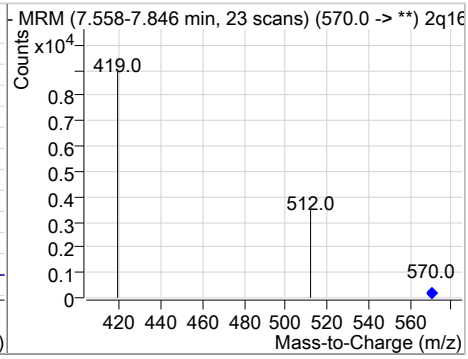




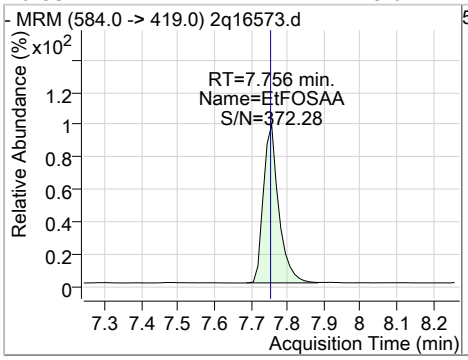
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	21.39	7.62	-0.01	6038	570.0 -> 512.0	31.5	0.0	59.6

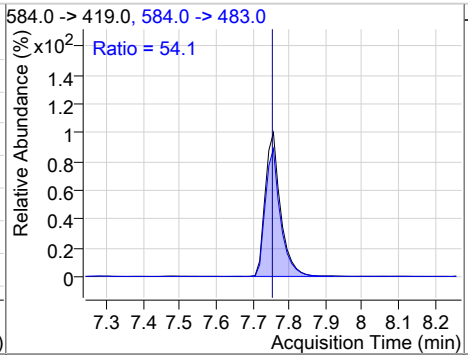


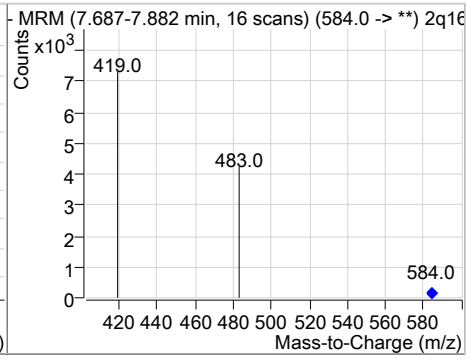




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.61	7.76	0.00	5011	584.0 -> 483.0	54.1	31.9	91.9

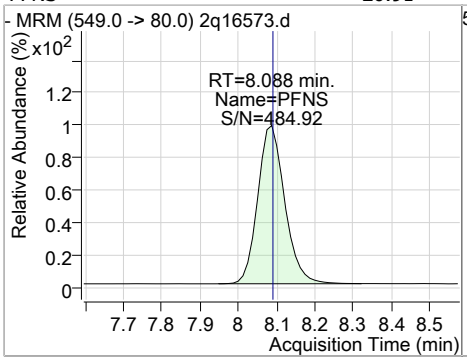


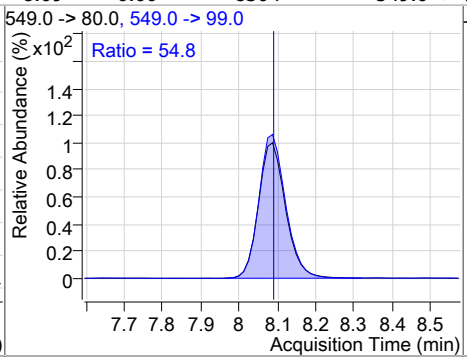


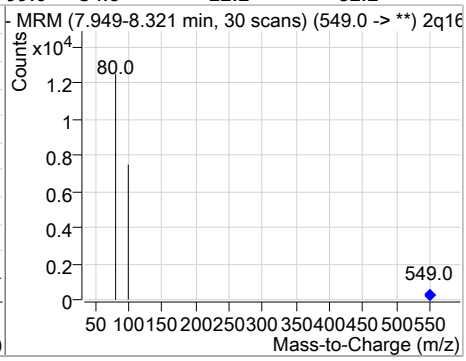


Perfluorinated Compounds by LC/MS/MS

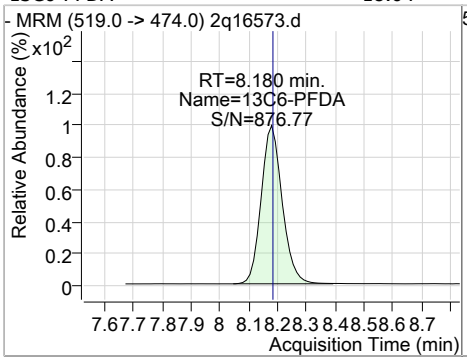
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	20.91	8.09	0.00	8304	549.0 -> 99.0	54.8	22.2	82.2

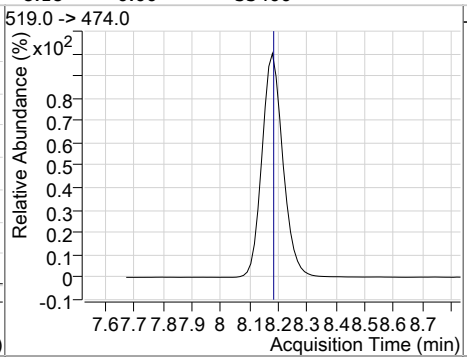


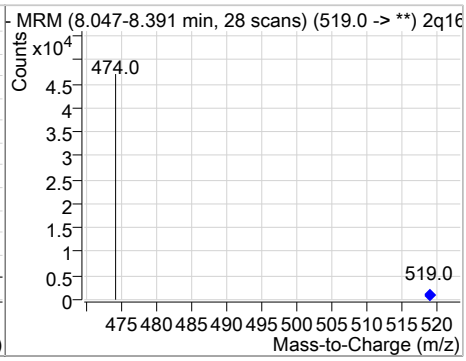




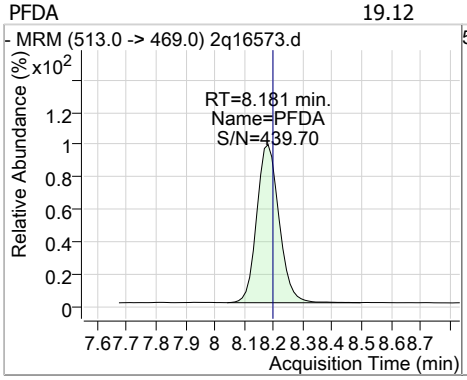
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	18.04	8.18	0.00	33400				

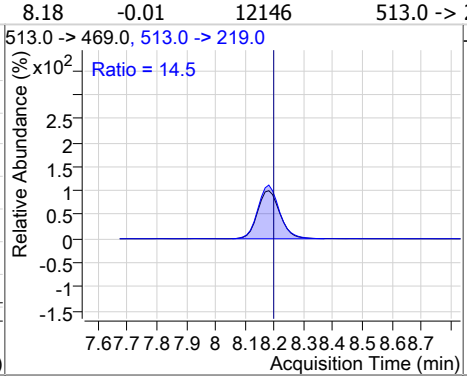


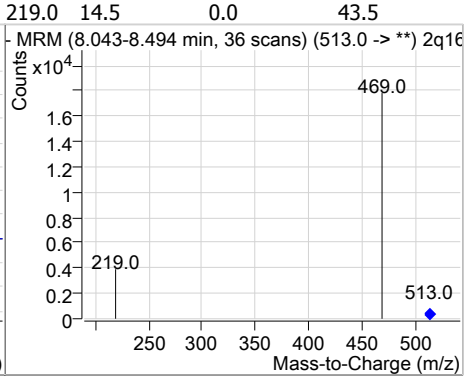




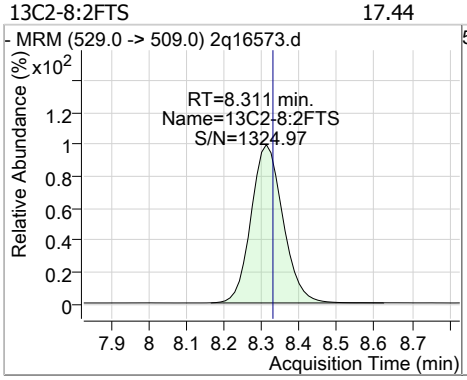
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.12	8.18	-0.01	12146	513.0 -> 219.0	14.5	0.0	43.5

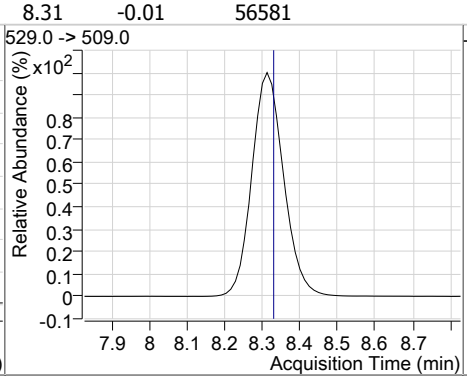


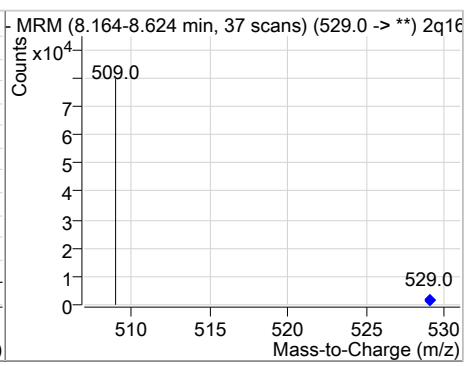




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	17.44	8.31	-0.01	56581				

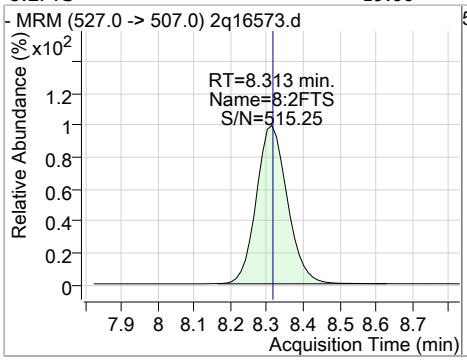


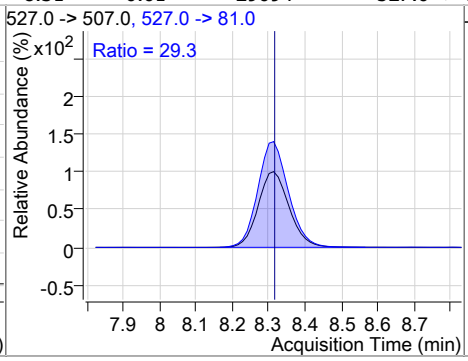


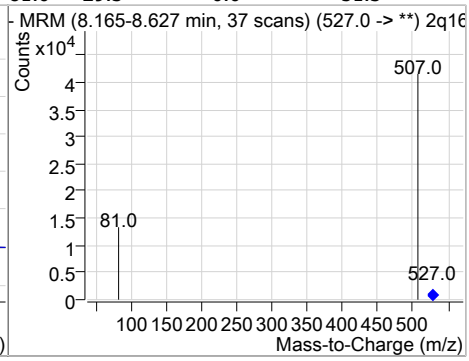


Perfluorinated Compounds by LC/MS/MS

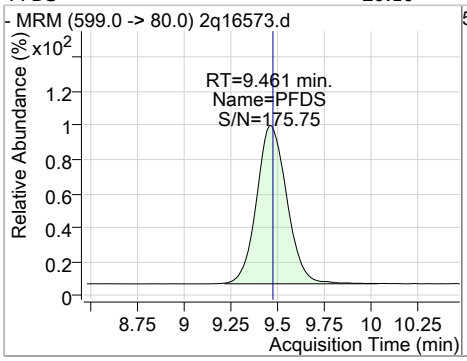
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.66	8.31	-0.01	29694	527.0 -> 81.0	29.3	0.0	51.3

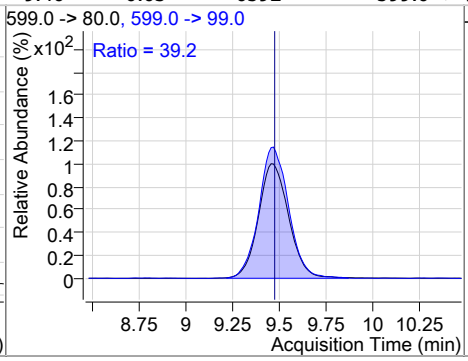


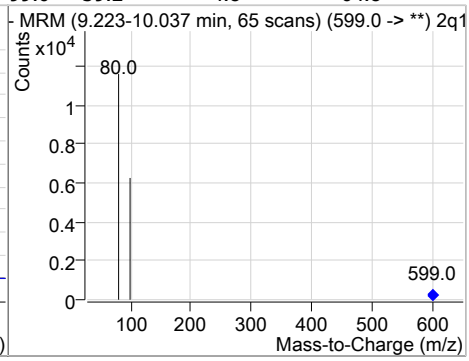




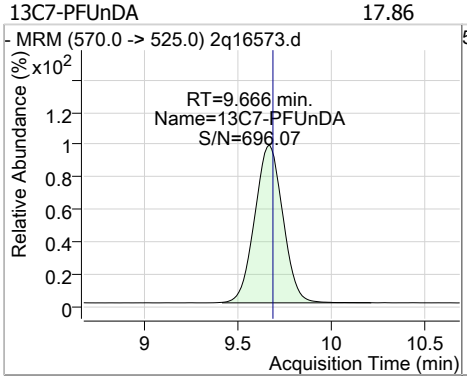
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	20.10	9.46	-0.03	6592	599.0 -> 99.0	39.2	4.8	64.8

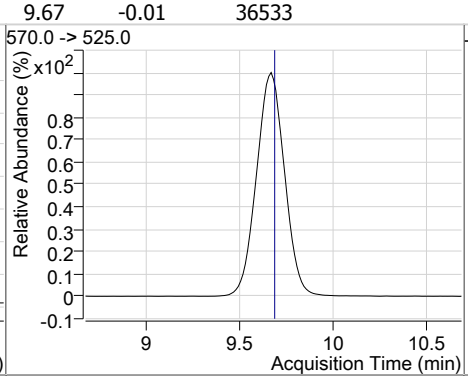


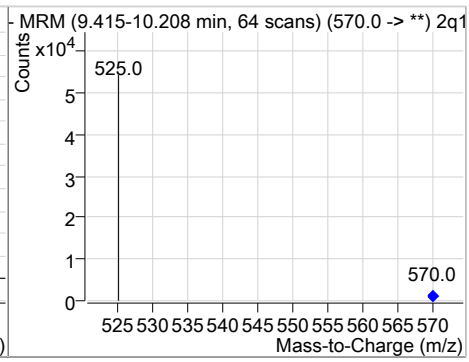




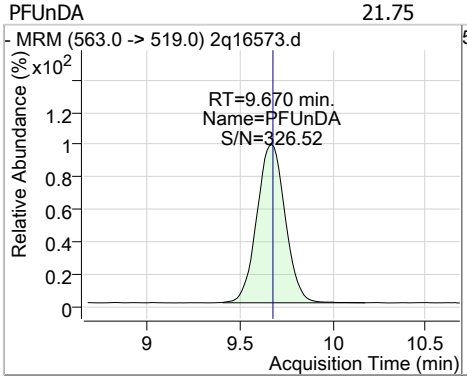
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	17.86	9.67	-0.01	36533				

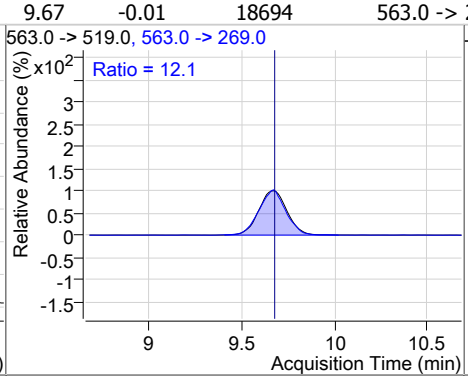


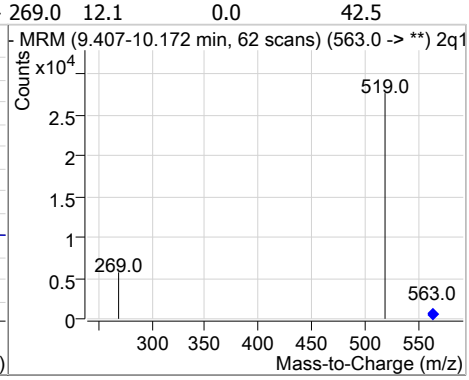




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	21.75	9.67	-0.01	18694	563.0 -> 269.0	12.1	0.0	42.5

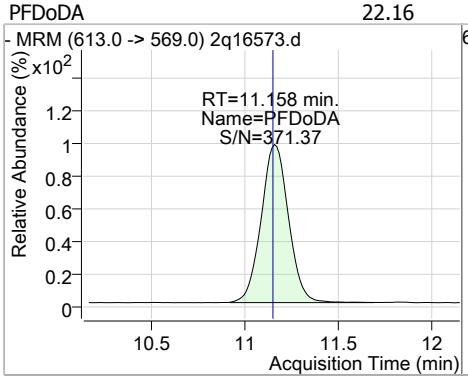


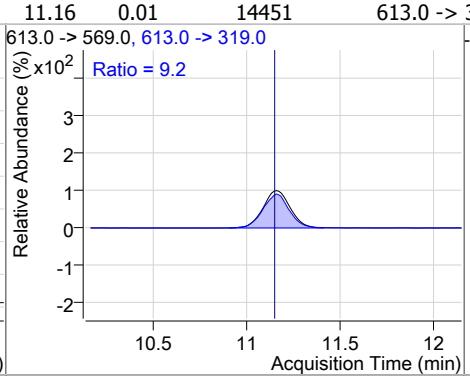


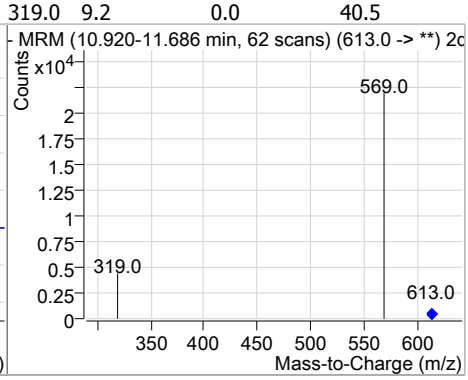


Perfluorinated Compounds by LC/MS/MS

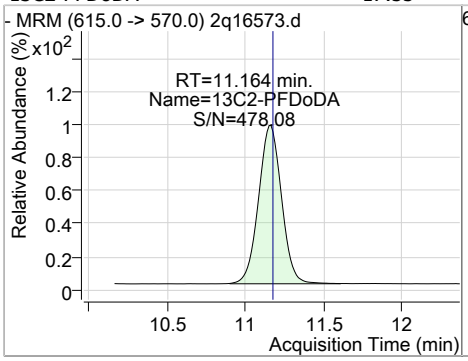
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	22.16	11.16	0.01	14451	613.0 -> 319.0	9.2	0.0	40.5

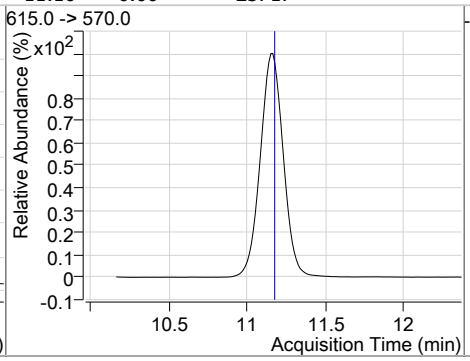


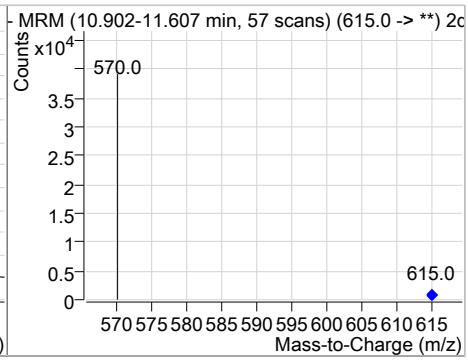




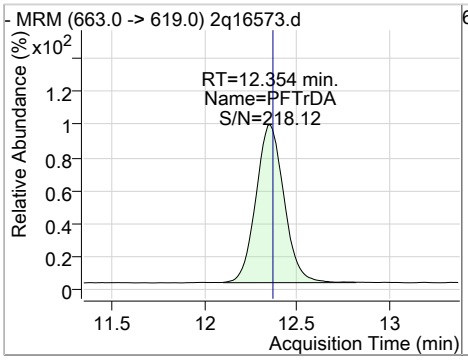
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	17.55	11.16	0.00	25717				

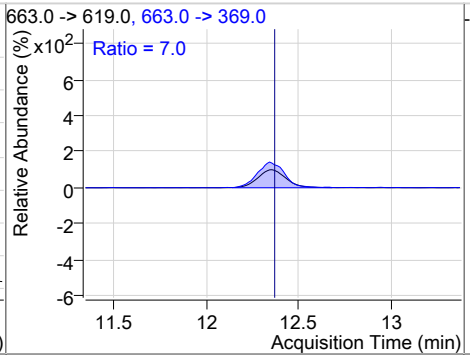


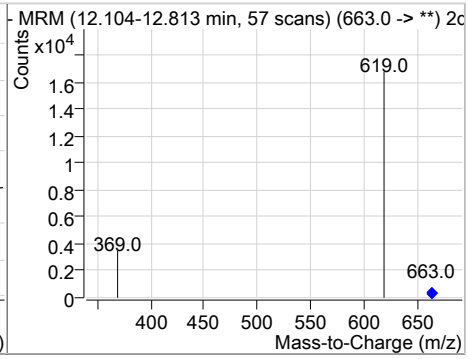




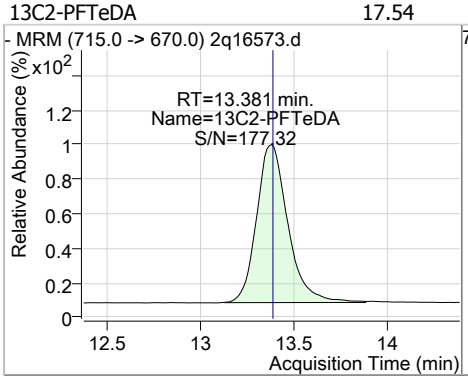
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	22.77	12.35	-0.01	11080	663.0 -> 369.0	7.0	0.0	35.1

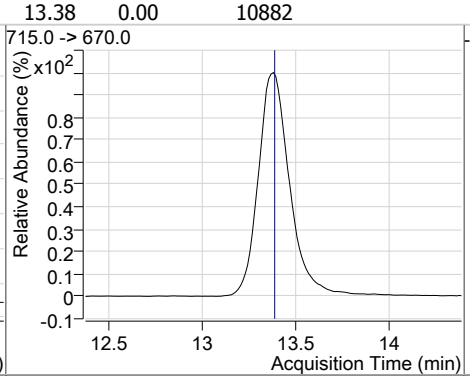


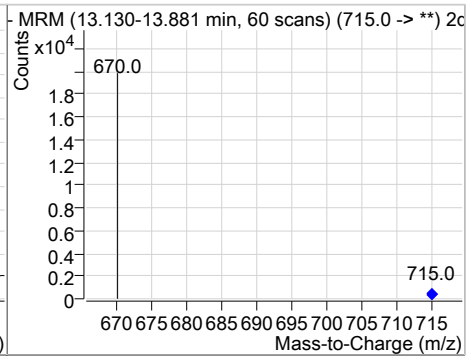




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	17.54	13.38	0.00	10882				

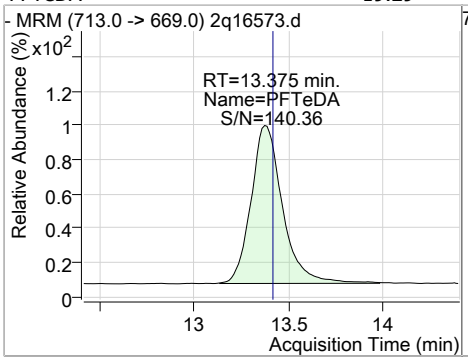


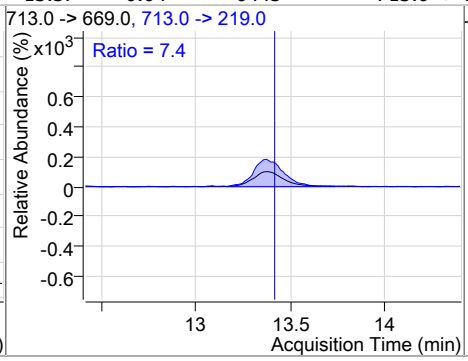


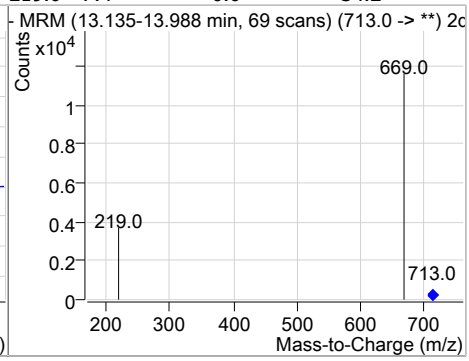


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.29	13.37	-0.04	6445	713.0 -> 219.0	7.4	0.0	34.2







Manual Integration Approval Summary

Sample Number: S2Q291-ICV291
Lab FileID: 2Q16573.D
Injection Time: 07/05/18 19:28
Method: EPA 537M QSM5.1 B-15
Analyst approved: 07/06/18 10:17 Natasha Gumtie
Supervisor approved: 07/06/18 17:13 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.08	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.40	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
07/06/18 17:13

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16584.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/5/2018 11:06:09 PM
Sample Name : cc291-20
Vial : Vial 7
DA Method File : PFC_ID_070518_S2Q291.quantmethod.xml
Batch Name : s2q291.batch.bin
Sample Information : op70743,S2Q291,130,,,1.0,1,water

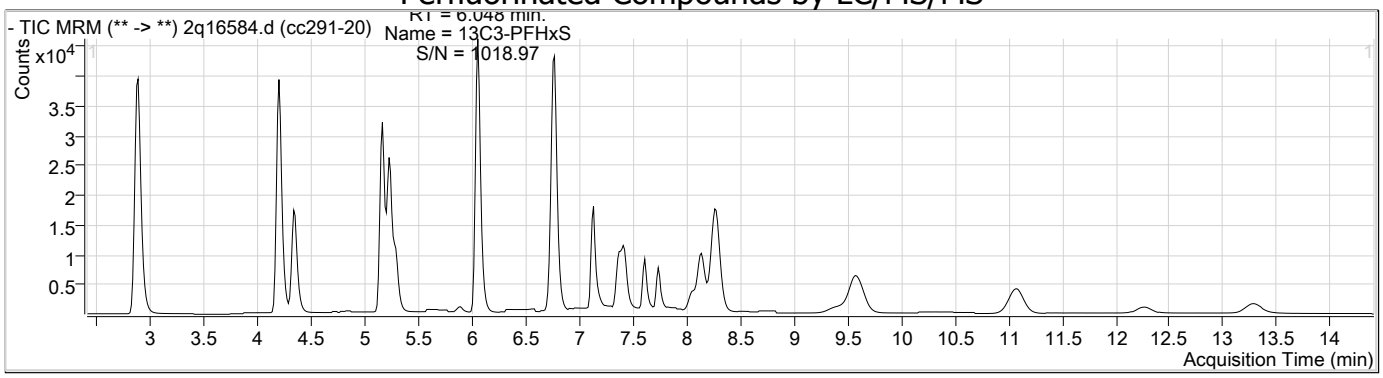
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.760	415.0 -> 370.0	20081	20.00	µg/L	-0.038
13C4-PFOS	7.372	503.0 -> 80.0	10799	20.00	µg/L	-0.026
M4-PFBA	2.878	217.0 -> 172.0	138701	20.00	µg/L	-0.025
M5-PFPeA	4.200	268.0 -> 223.0	65513	20.00	µg/L	-0.038
M5-PFHxA	5.228	318.0 -> 273.0	58869	20.00	µg/L	-0.038
M4-PFHpA	6.054	367.0 -> 322.0	58708	20.00	µg/L	-0.038
M8-PFOA	6.758	421.0 -> 376.0	30487	20.00	µg/L	-0.038
M9-PFNA	7.425	472.0 -> 427.0	20823	20.00	µg/L	-0.026
M6-PFDA	8.142	519.0 -> 474.0	32458	20.00	µg/L	-0.038
M7-PFUnDA	9.578	570.0 -> 525.0	38895	20.00	µg/L	-0.100
M2-PFDoDA	11.077	615.0 -> 570.0	26121	20.00	µg/L	-0.092
M2-PFTeDA	13.281	715.0 -> 670.0	10820	20.00	µg/L	-0.100
M8-FOSA	7.130	506.0 -> 78.0	31027	20.00	µg/L	-0.013
M3-PFBS	4.343	302.0 -> 99.0	20159	20.00	µg/L	-0.025
M3-PFHxS	6.048	402.0 -> 99.0	18176	20.00	µg/L	-0.038
M8-PFOS	7.370	507.0 -> 99.0	9133	20.00	µg/L	-0.026
M2-4:2FTS	5.160	329.0 -> 309.0	58951	20.00	µg/L	-0.038
M2-6:2FTS	6.768	429.0 -> 409.0	46724	20.00	µg/L	-0.040
M2-8:2FTS	8.273	529.0 -> 509.0	56110	20.00	µg/L	-0.052
M3-MeFOSAA	7.607	573.0 -> 419.0	15982	20.00	µg/L	-0.013
System Monitoring Compounds						
13C2-4:2FTS	5.160	329.0 -> 309.0	58955	17.98	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.9%		
13C2-6:2FTS	6.768	429.0 -> 409.0	46744	17.69	µg/L	-0.040
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.4%		
13C2-8:2FTS	8.273	529.0 -> 509.0	56070	17.28	µg/L	-0.052
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.4%		
13C2-PFDoDA	11.077	615.0 -> 570.0	26183	17.87	µg/L	-0.092
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.3%		
13C2-PFTeDA	13.281	715.0 -> 670.0	10911	17.59	µg/L	-0.100
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.9%		
13C3-PFBS	4.343	302.0 -> 99.0	20164	18.24	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.2%		
13C3-PFHxS	6.048	402.0 -> 99.0	18178	18.15	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.7%		
13C4-PFBA	2.878	217.0 -> 172.0	138658	18.11	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.6%		
13C4-PFHpA	6.054	367.0 -> 322.0	58722	18.22	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.1%		
13C5-PFHxA	5.228	318.0 -> 273.0	58839	17.96	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.8%		
13C5-PFPeA	4.200	268.0 -> 223.0	65525	17.98	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.9%		
13C6-PFDA	8.142	519.0 -> 474.0	32435	17.52	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.6%		

Perfluorinated Compounds by LC/MS/MS

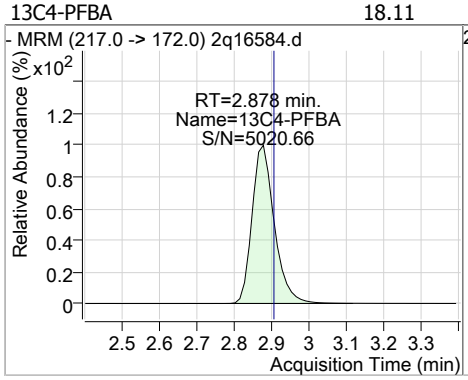
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	9.578	570.0 -> 525.0	38955	19.05	µg/L		-0.100
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.2%			
13C8-FOSA	7.130	506.0 -> 78.0	31020	17.62	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.1%			
13C8-PFOA	6.758	421.0 -> 376.0	30491	17.51	µg/L		-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.5%			
13C8-PFOS	7.370	507.0 -> 99.0	9132	18.64	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.2%			
13C9-PFNA	7.425	472.0 -> 427.0	20837	17.51	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.6%			
d3-MeFOSAA	7.607	573.0 -> 419.0	15981	18.20	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.0%			
M2-PFOA	6.760	415.0 -> 370.0	20080	20.00	ng/ml		-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.372	503.0 -> 80.0	10802	20.01	ng/ml		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
Target Compounds							**QValue**
4:2FTS	5.162	327.0 -> 307.0	32318	21.73	µg/L		99
6:2FTS	6.769	427.0 -> 407.0	24371	21.39	µg/L		91
8:2FTS	8.265	527.0 -> 507.0	32732	21.98	µg/L		83
EtFOSAA	7.731	584.0 -> 419.0	5360	21.13	µg/L		88
FOSA	7.132	498.0 -> 78.0	16711	21.55	µg/L		96
MeFOSAA	7.608	570.0 -> 419.0	6162	21.95	µg/L		86
PFBA	2.874	213.0 -> 169.0	24513	21.98	µg/L		100
PFBS	4.334	299.0 -> 80.0	30103	22.25	µg/L		97
PFDA	8.144	513.0 -> 469.0	13087	21.26	µg/L		95
PFDoDA	11.071	613.0 -> 569.0	14751	22.23	µg/L		98
PFDS	9.386	599.0 -> 80.0	7330	20.98	µg/L		91
PFHpA	6.057	363.0 -> 319.0	47320	22.62	µg/L		94
PFHpS	6.728	449.0 -> 80.0	11656	22.13	µg/L		99
PFHxA	5.230	313.0 -> 269.0	20642	21.59	µg/L		98
PFHxS	6.051	399.0 -> 80.0	22359	22.18	µg/L	m	97
PFNA	7.426	463.0 -> 419.0	9495	22.95	µg/L		87
PFNS	8.050	549.0 -> 80.0	9030	21.79	µg/L		97
PFOA	6.761	413.0 -> 369.0	17513	22.90	µg/L		93
PFOS	7.372	499.0 -> 80.0	12286	22.27	µg/L	m	71
PFPeA	4.203	263.0 -> 219.0	73100	23.10	µg/L		100
PFPeS	5.283	349.0 -> 80.0	18567	22.42	µg/L		99
PFTeDA	13.285	713.0 -> 669.0	7096	21.14	µg/L		89
PFTrDA	12.266	663.0 -> 619.0	10810	22.04	µg/L		96
PFUnDA	9.582	563.0 -> 519.0	20709	22.62	µg/L		99

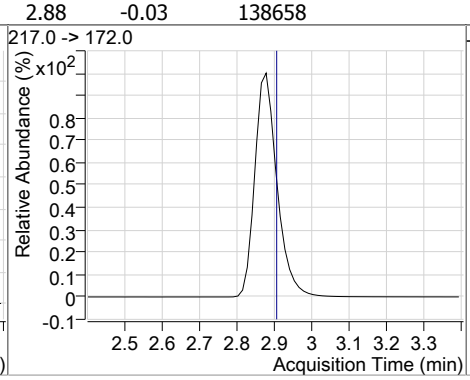
 # = Qualifier out of range, m = manually integrated, + = Area summed

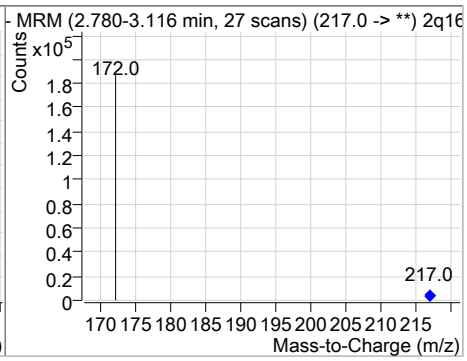
Perfluorinated Compounds by LC/MS/MS



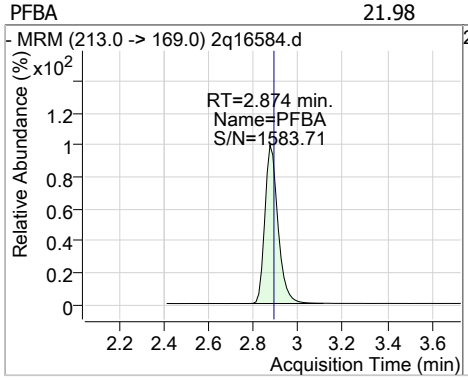
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.11	2.88	-0.03	138658				

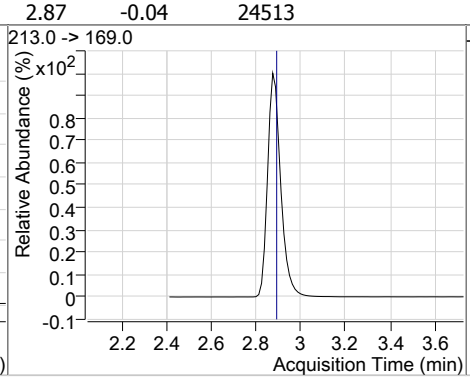


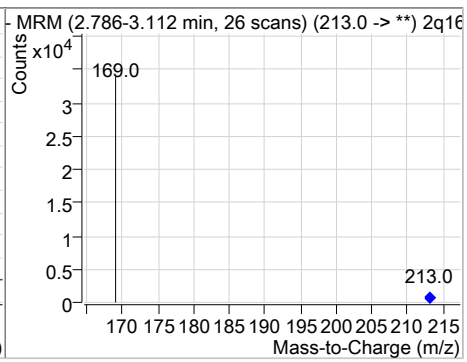




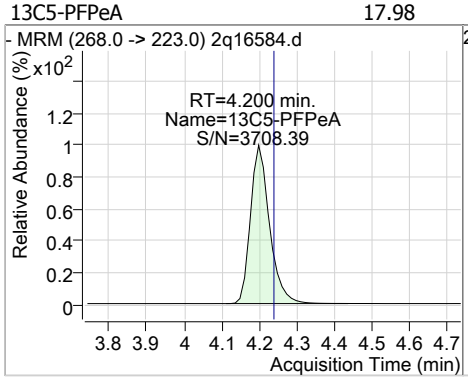
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	21.98	2.87	-0.04	24513				

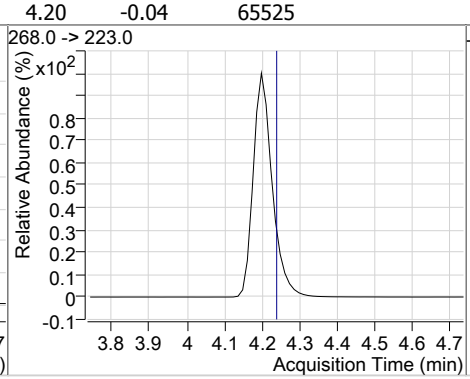


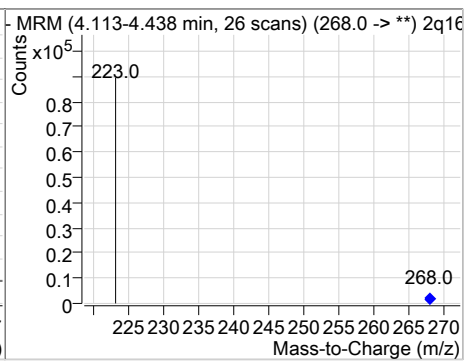




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	17.98	4.20	-0.04	65525				

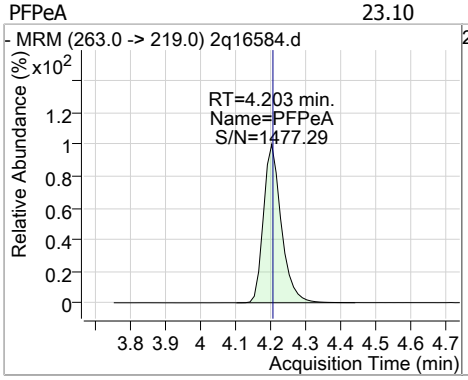


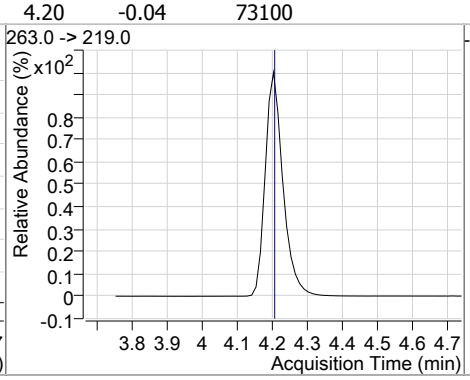


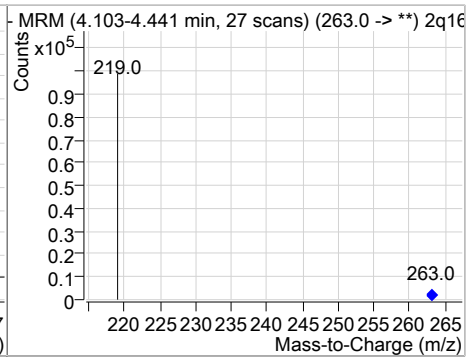


Perfluorinated Compounds by LC/MS/MS

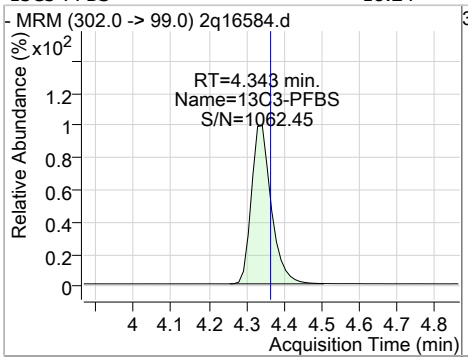
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	23.10	4.20	-0.04	73100				

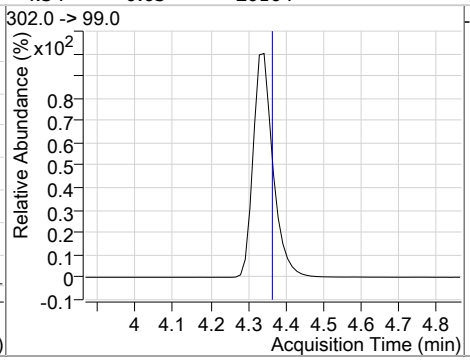


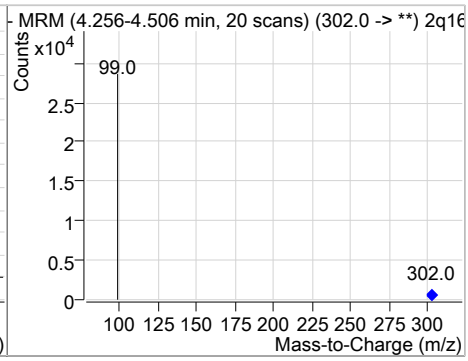




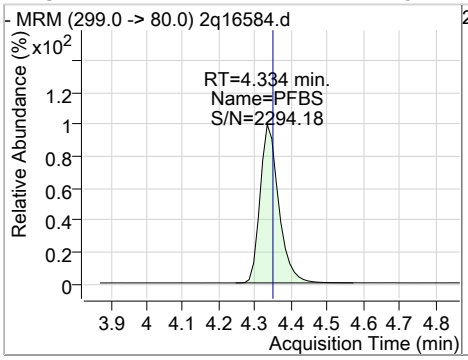
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.24	4.34	-0.03	20164				

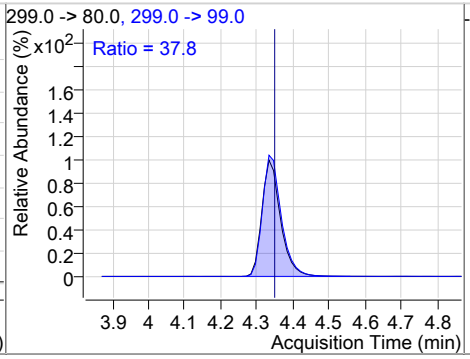


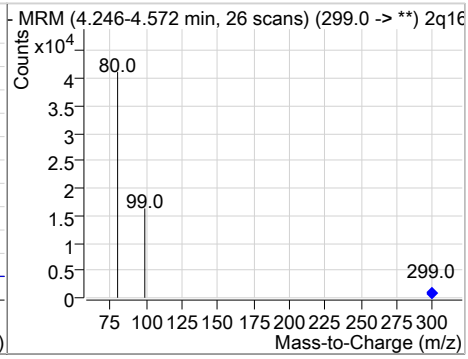




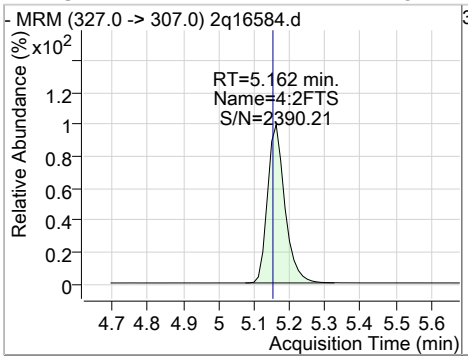
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	22.25	4.33	-0.04	30103	299.0 -> 99.0	37.8	5.8	65.8

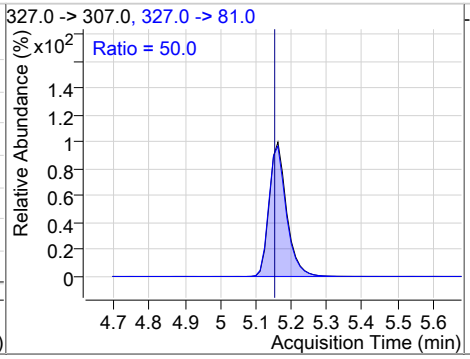


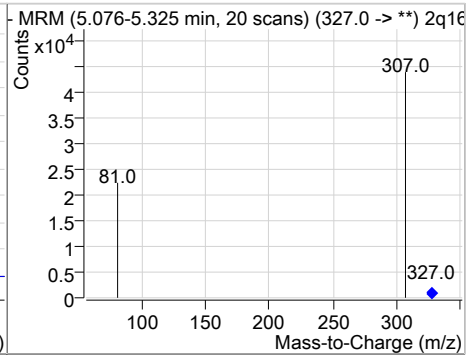




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	21.73	5.16	-0.03	32318	327.0 -> 81.0	50.0	21.0	81.0

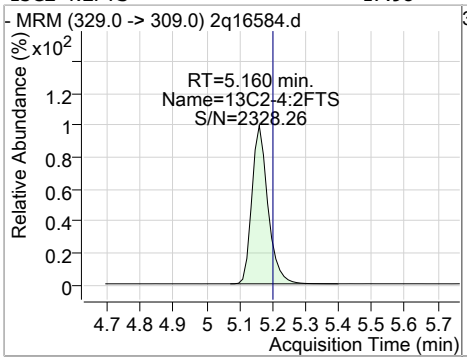


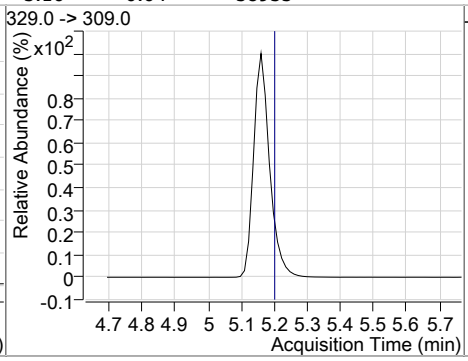


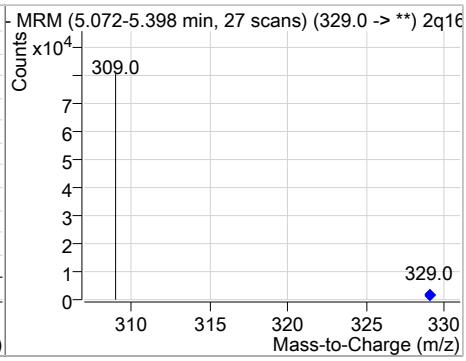


Perfluorinated Compounds by LC/MS/MS

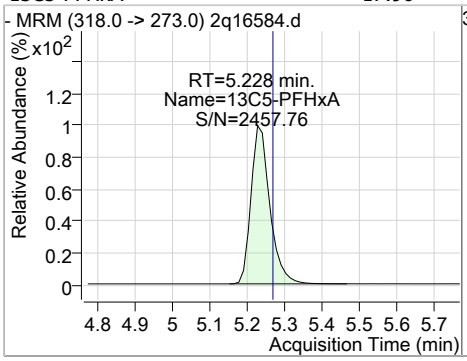
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	17.98	5.16	-0.04	58955				

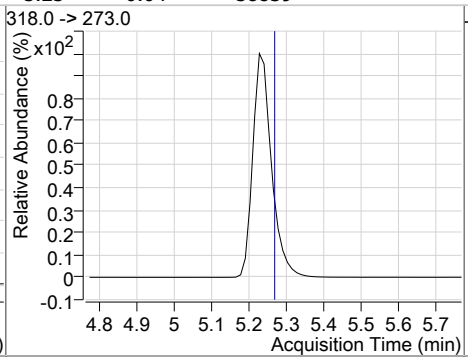


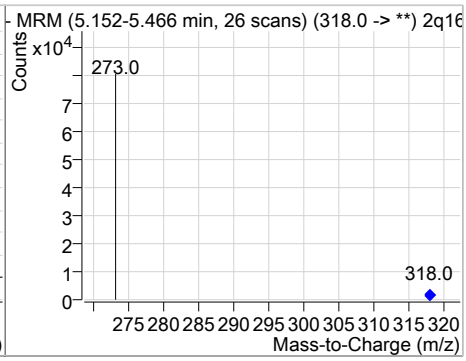




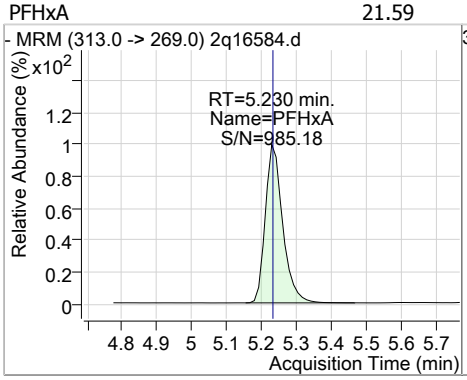
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	17.96	5.23	-0.04	58839				

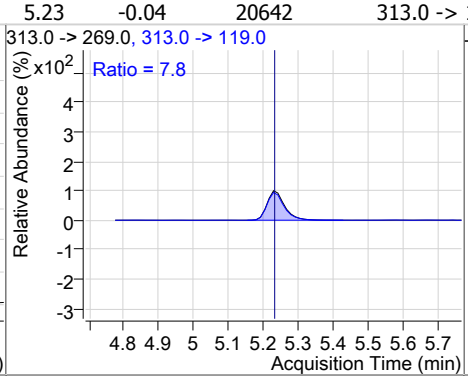


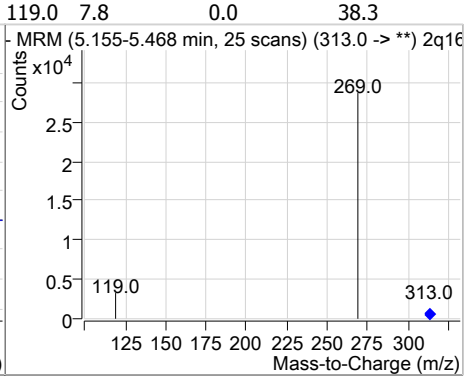




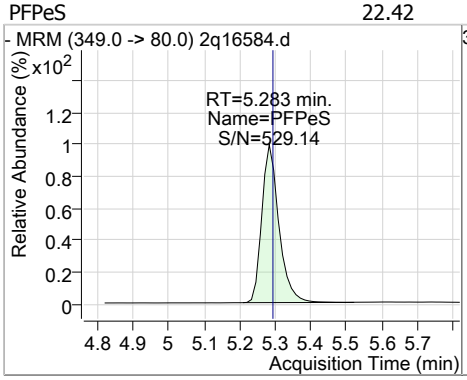
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	21.59	5.23	-0.04	20642	313.0 -> 119.0	7.8	0.0	38.3

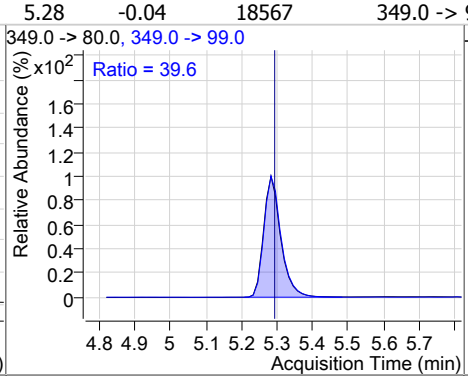


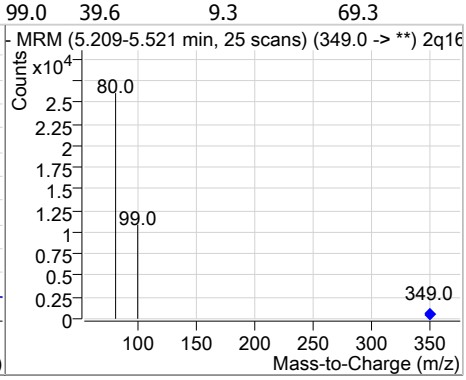




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	22.42	5.28	-0.04	18567	349.0 -> 99.0	39.6	9.3	69.3

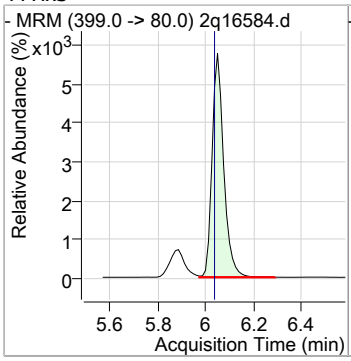


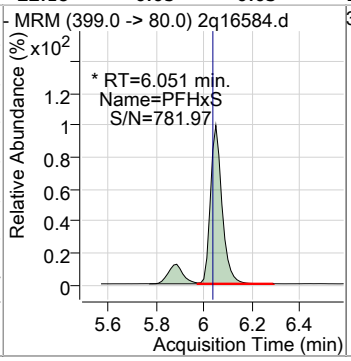


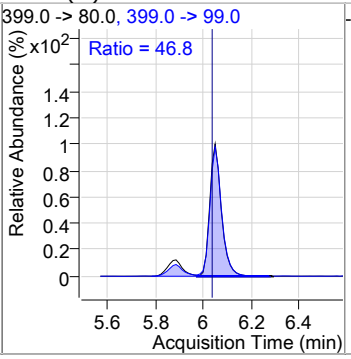


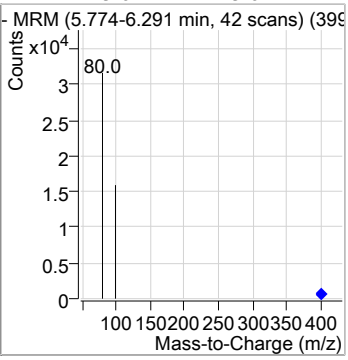
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	22.18	6.05	-0.03	22359 (m)	399.0 -> 99.0	46.8	19.0	79.0

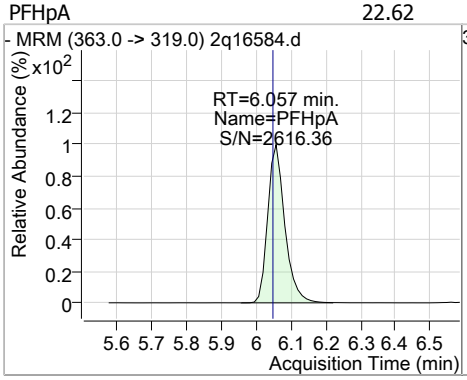


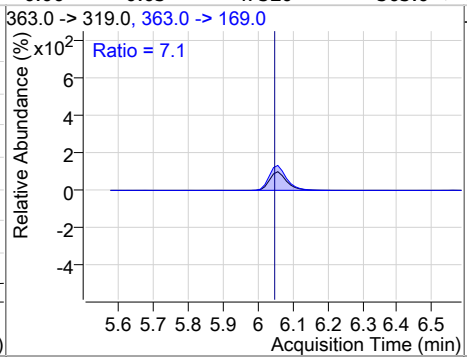


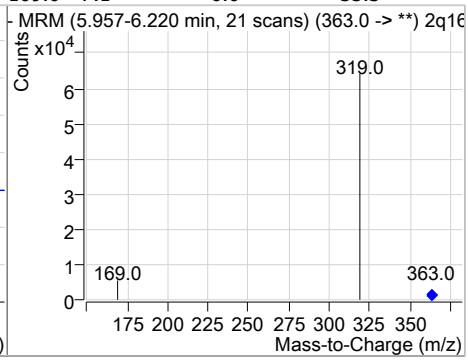




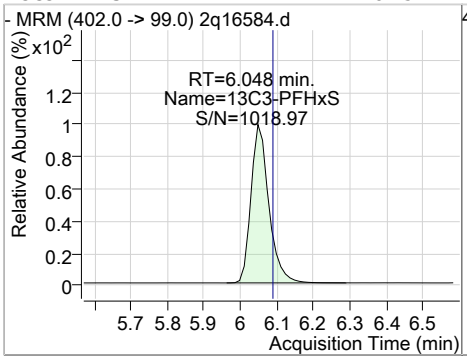
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	22.62	6.06	-0.03	47320	363.0 -> 169.0	7.1	0.0	35.3

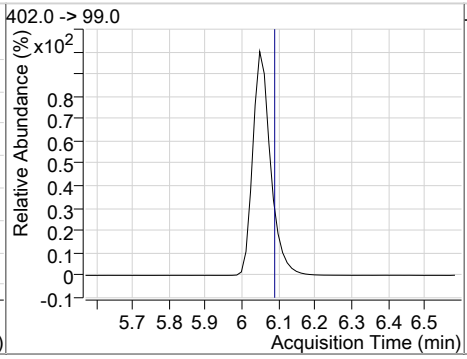


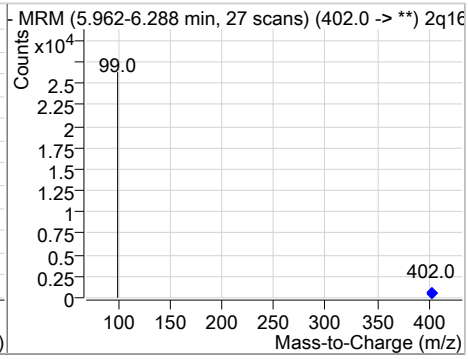




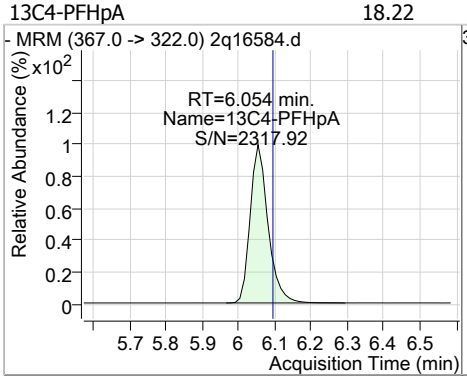
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.15	6.05	-0.04	18178				

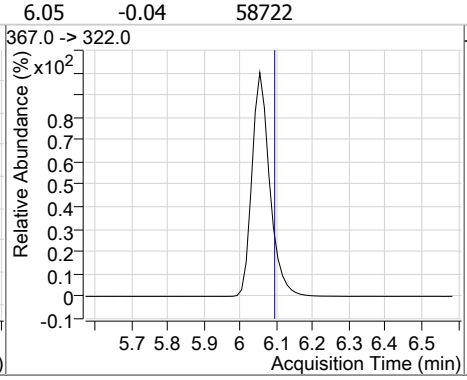


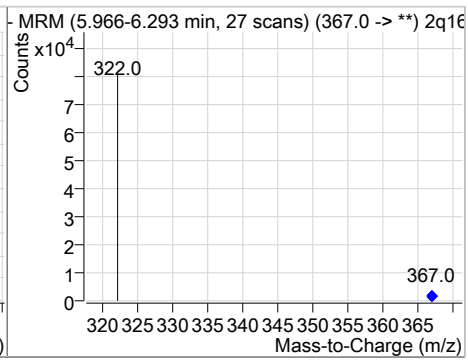




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.22	6.05	-0.04	58722				

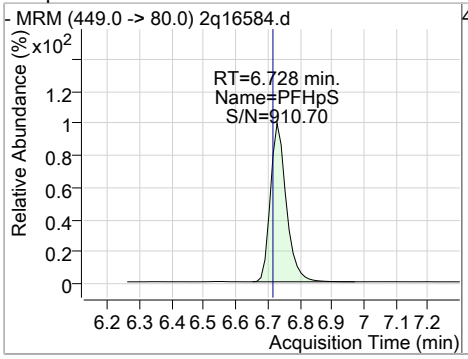


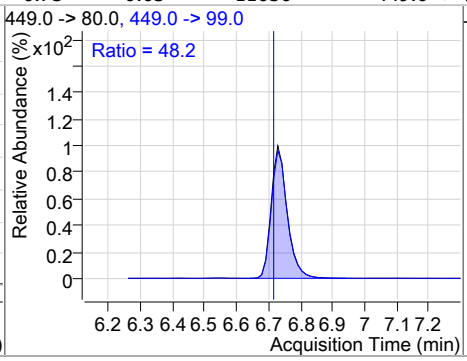


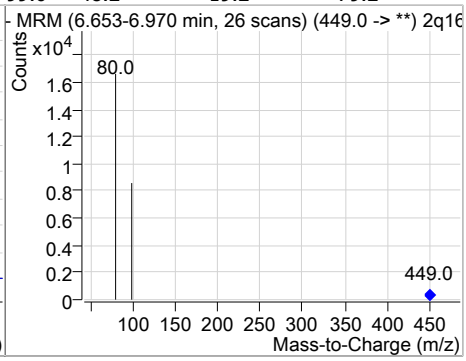


Perfluorinated Compounds by LC/MS/MS

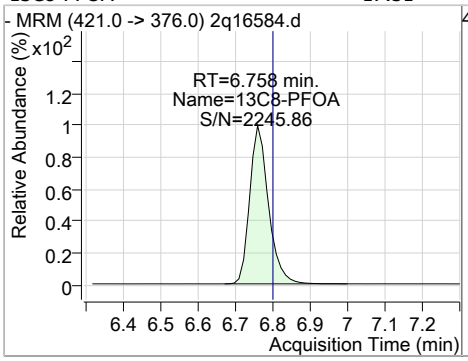
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	22.13	6.73	-0.03	11656	449.0 -> 99.0	48.2	19.2	79.2

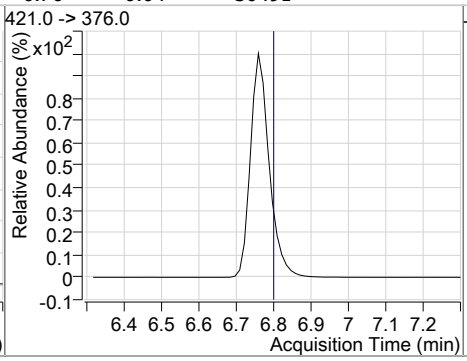


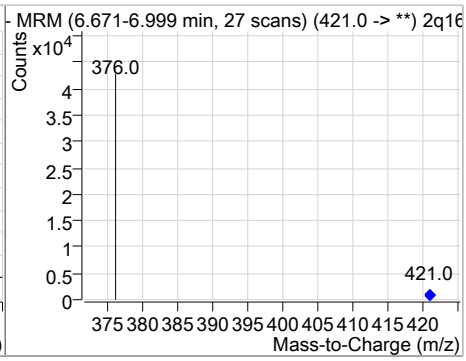




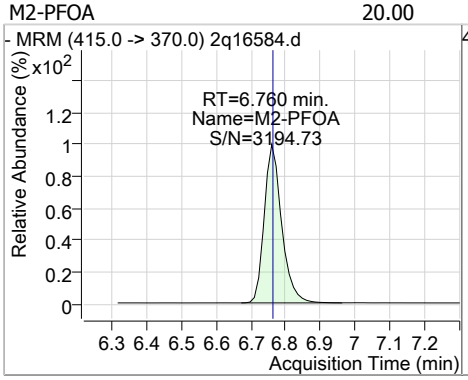
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	17.51	6.76	-0.04	30491				

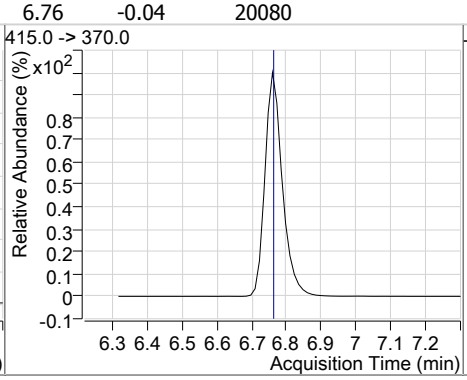


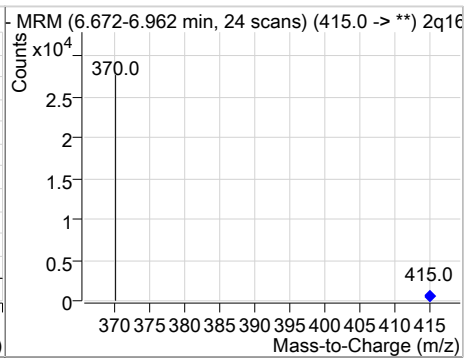




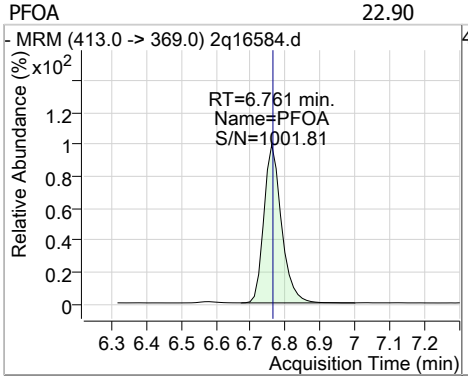
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.76	-0.04	20080				

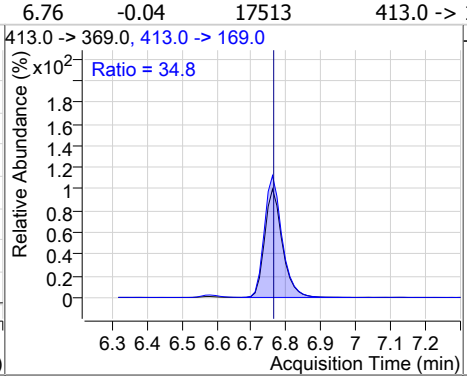


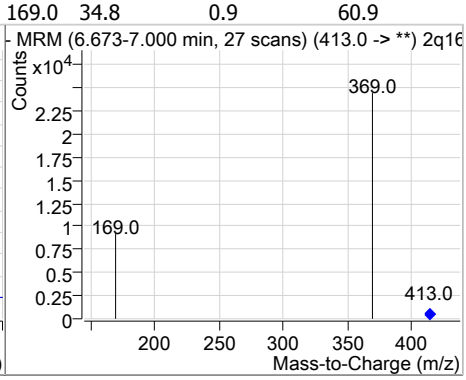




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	22.90	6.76	-0.04	17513	413.0 -> 169.0	34.8	0.9	60.9

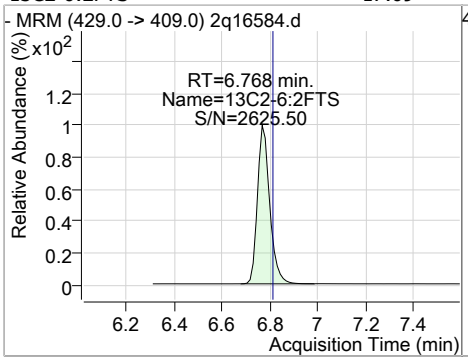


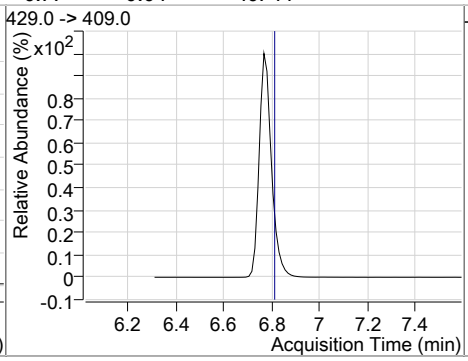


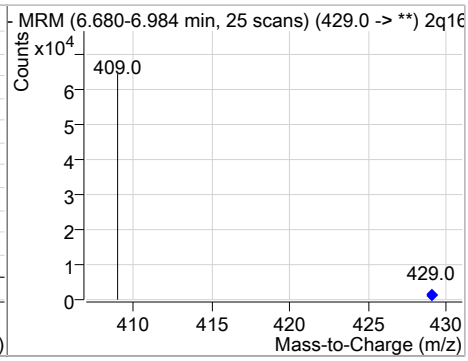


Perfluorinated Compounds by LC/MS/MS

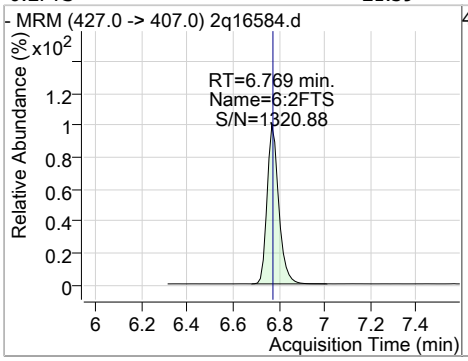
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	17.69	6.77	-0.04	46744				

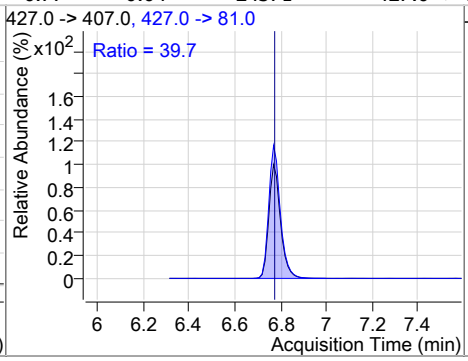


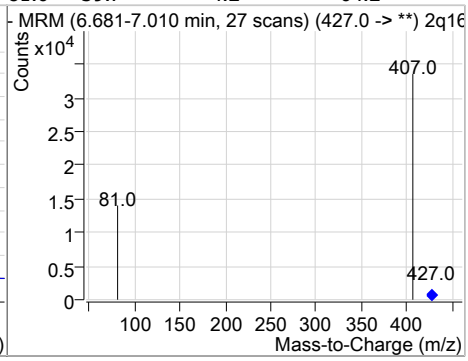




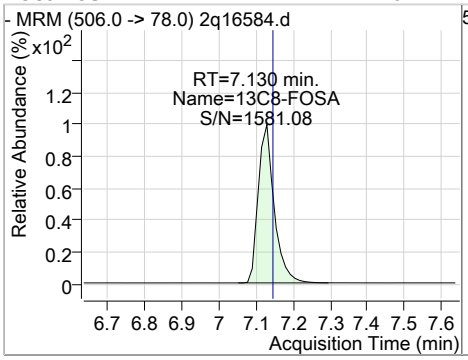
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	21.39	6.77	-0.04	24371	427.0 -> 81.0	39.7	4.2	64.2

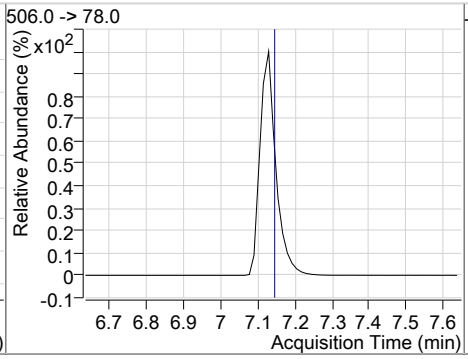


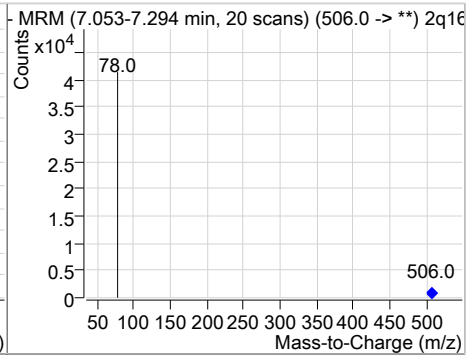




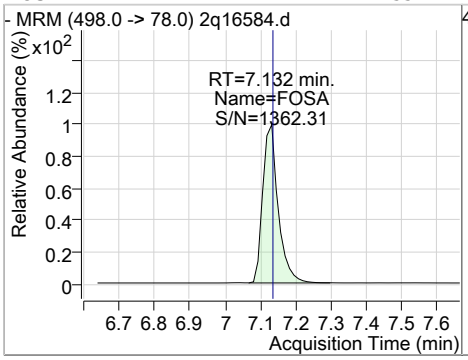
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	17.62	7.13	-0.01	31020				

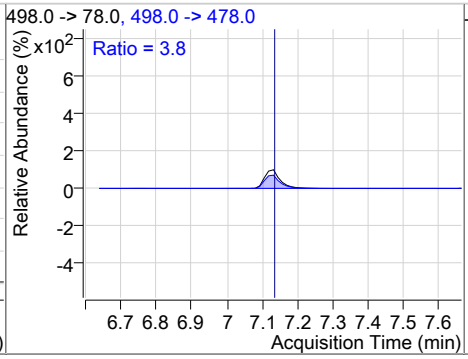


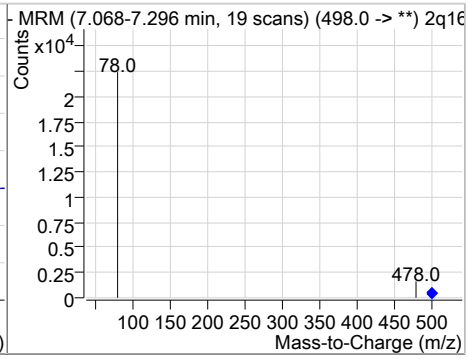




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	21.55	7.13	-0.01	16711	498.0 -> 478.0	3.8	0.0	35.2

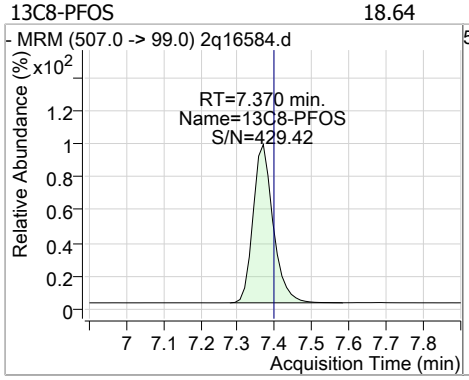


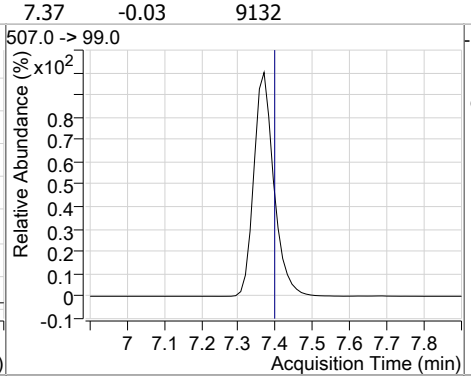


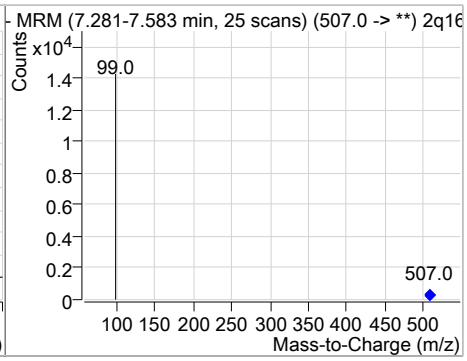


Perfluorinated Compounds by LC/MS/MS

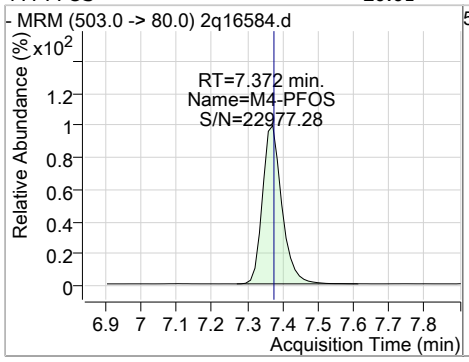
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.64	7.37	-0.03	9132				

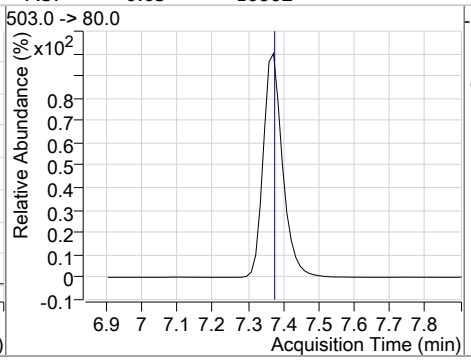


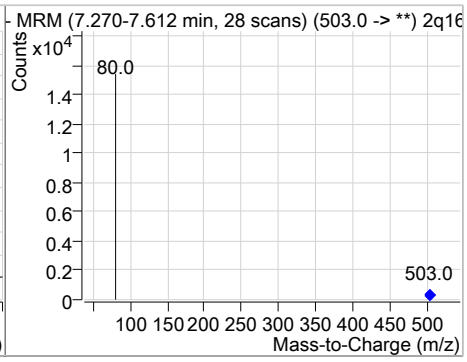




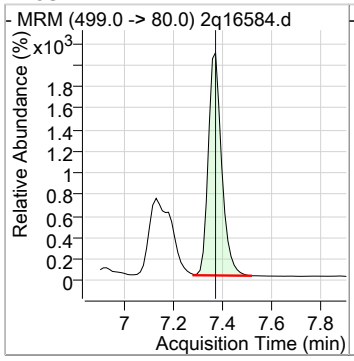
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.01	7.37	-0.03	10802				

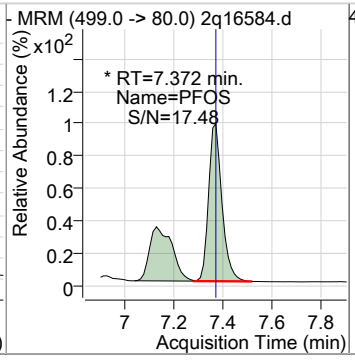


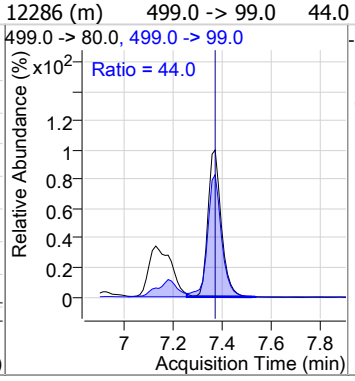


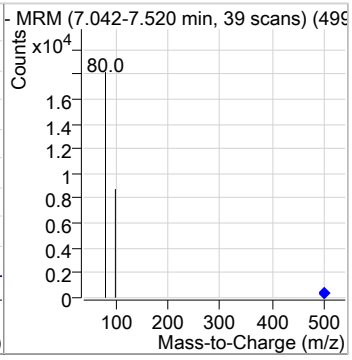


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	22.27	7.37	-0.03	12286 (m)	499.0 -> 99.0	44.0	36.8	96.8

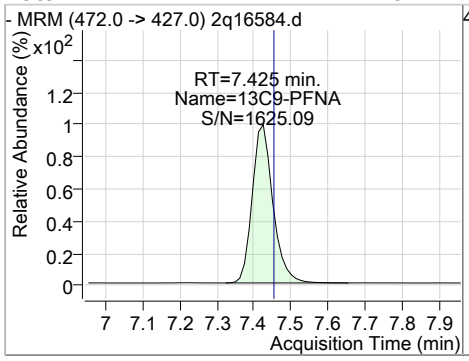


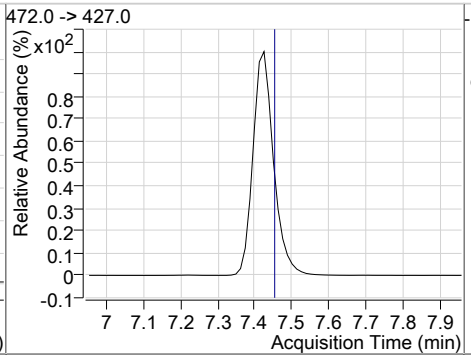


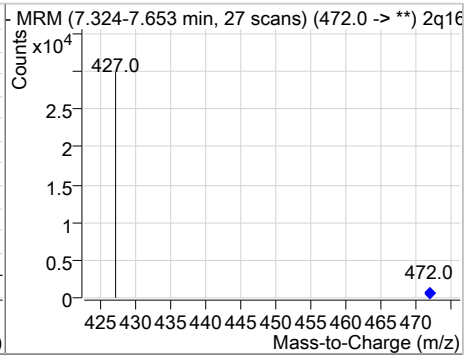




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	17.51	7.42	-0.03	20837				

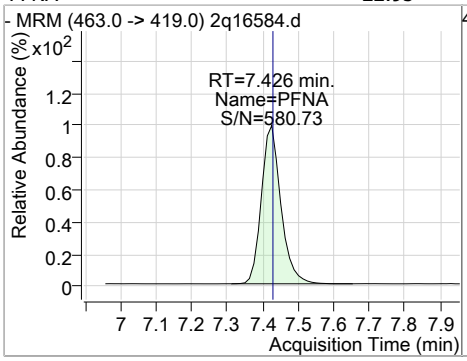


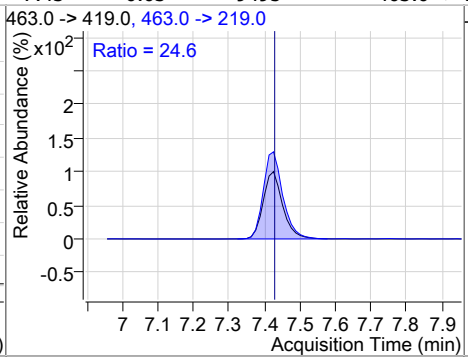


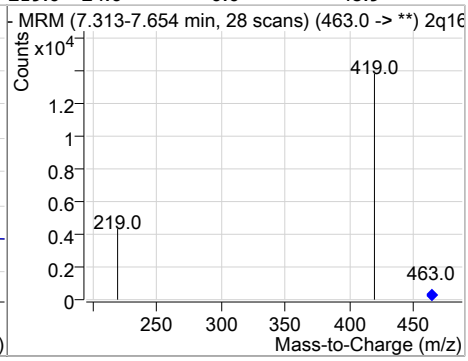


Perfluorinated Compounds by LC/MS/MS

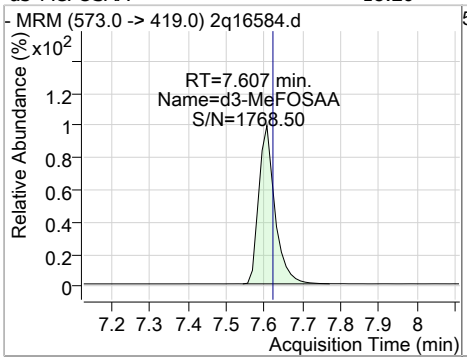
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	22.95	7.43	-0.03	9495	463.0 -> 219.0	24.6	0.0	48.9

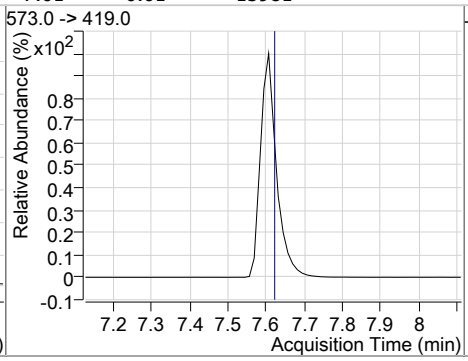


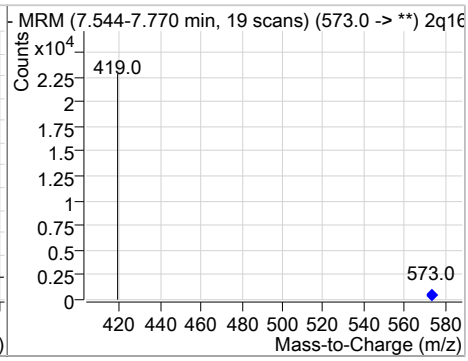




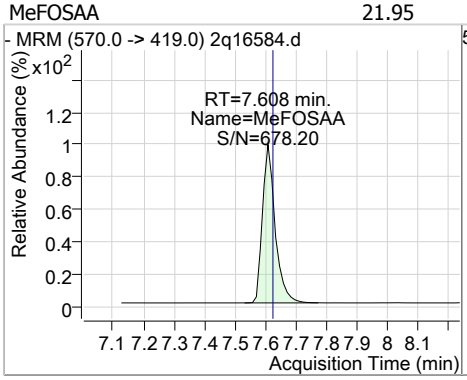
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.20	7.61	-0.01	15981				

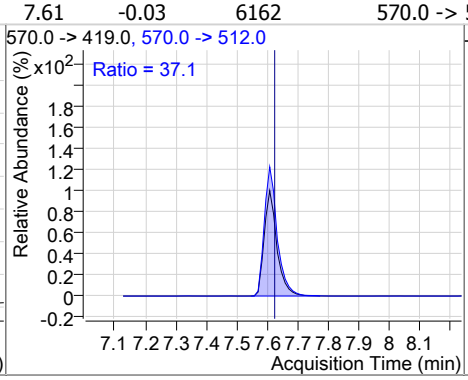


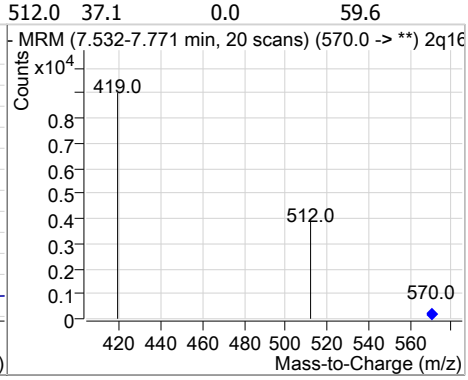




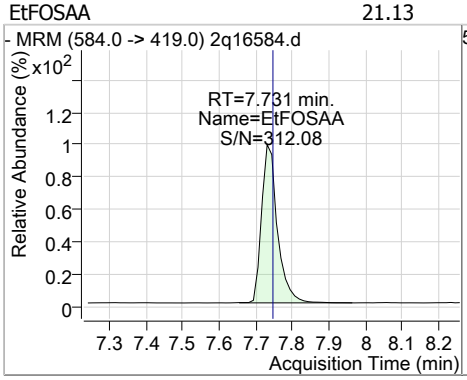
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	21.95	7.61	-0.03	6162	570.0 -> 512.0	37.1	0.0	59.6

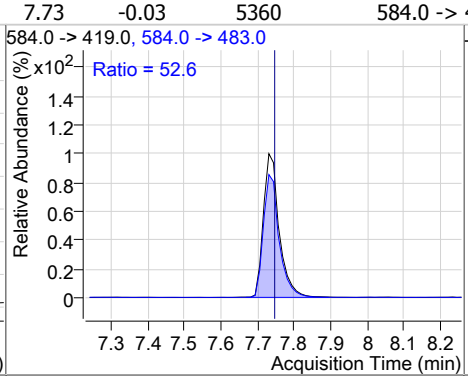


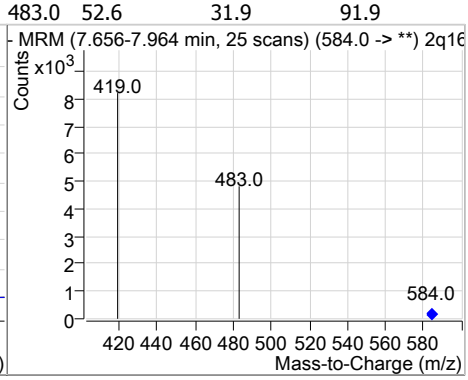




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	21.13	7.73	-0.03	5360	584.0 -> 483.0	52.6	31.9	91.9

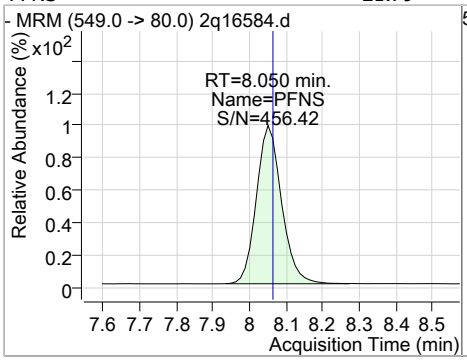


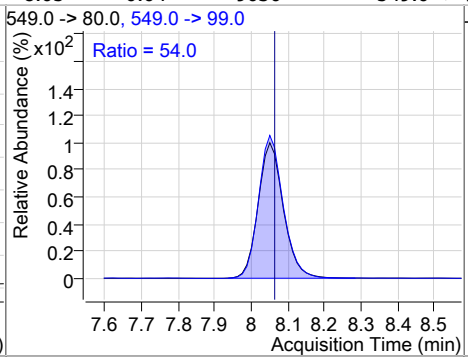


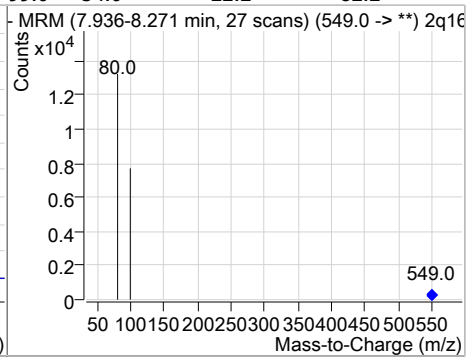


Perfluorinated Compounds by LC/MS/MS

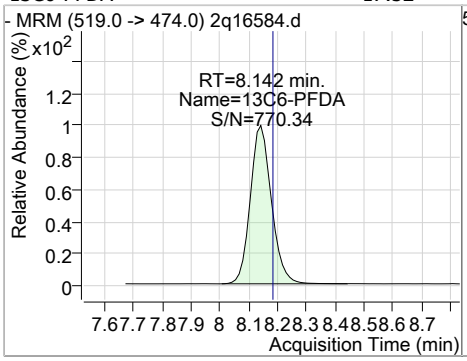
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	21.79	8.05	-0.04	9030	549.0 -> 99.0	54.0	22.2	82.2

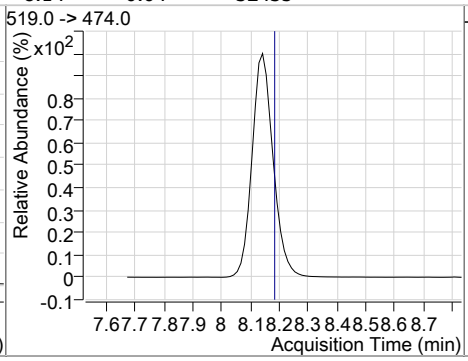


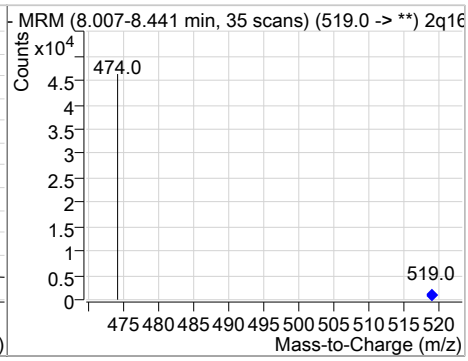




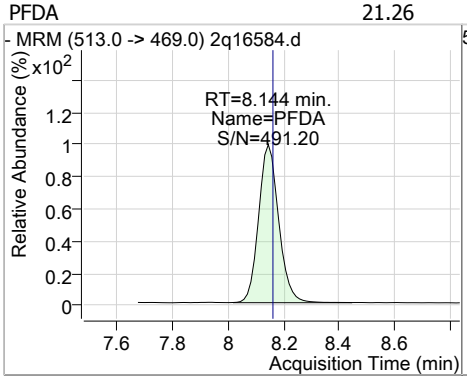
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	17.52	8.14	-0.04	32435				

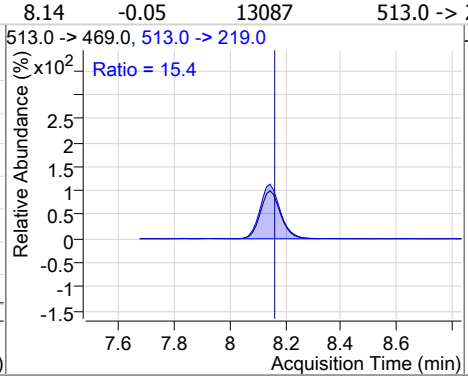


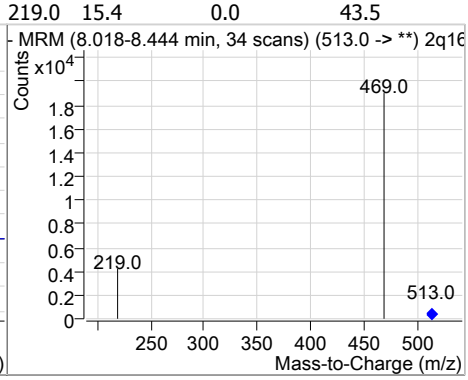




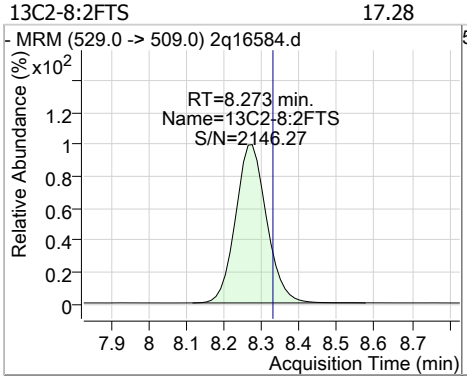
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	21.26	8.14	-0.05	13087	513.0 -> 219.0	15.4	0.0	43.5

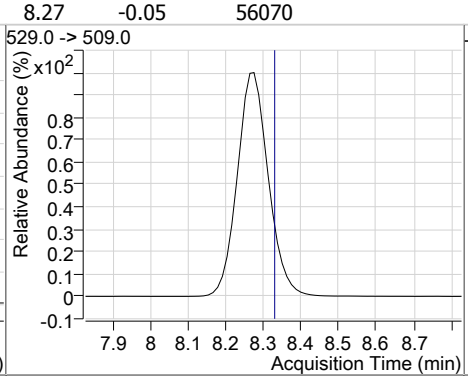


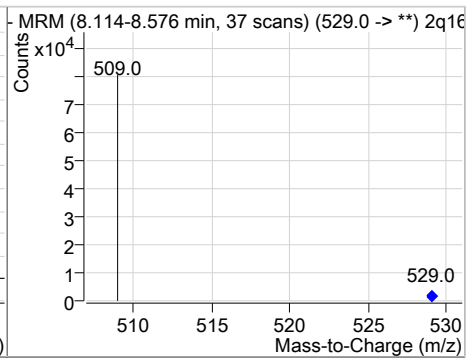




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	17.28	8.27	-0.05	56070				

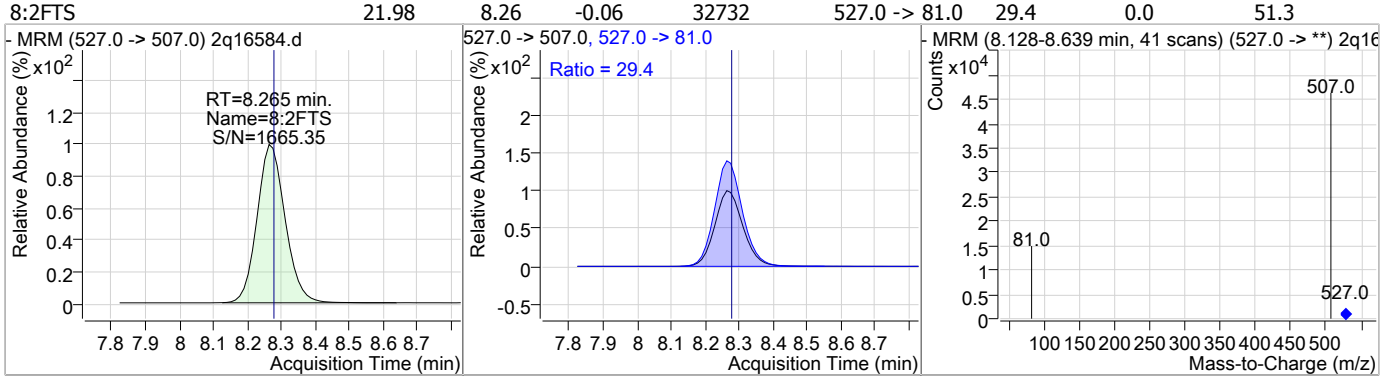




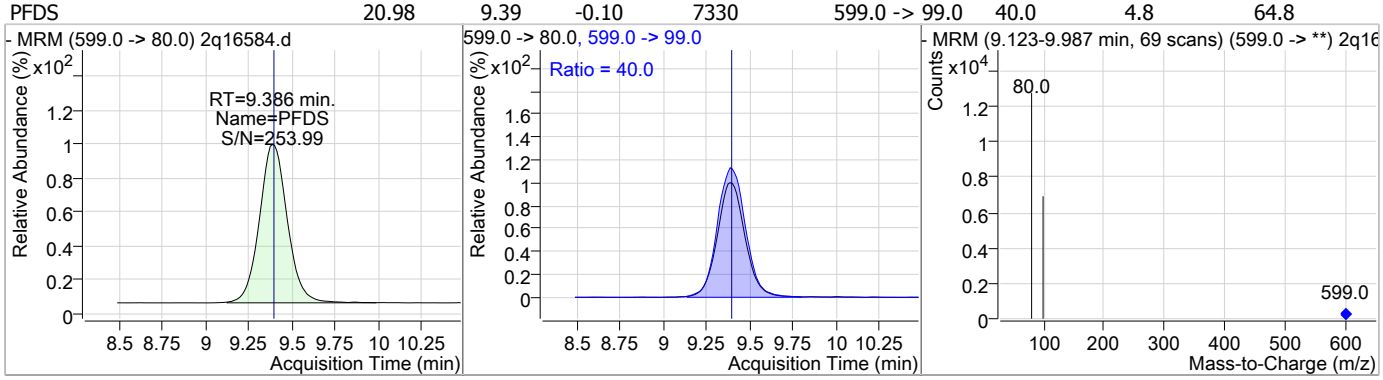


Perfluorinated Compounds by LC/MS/MS

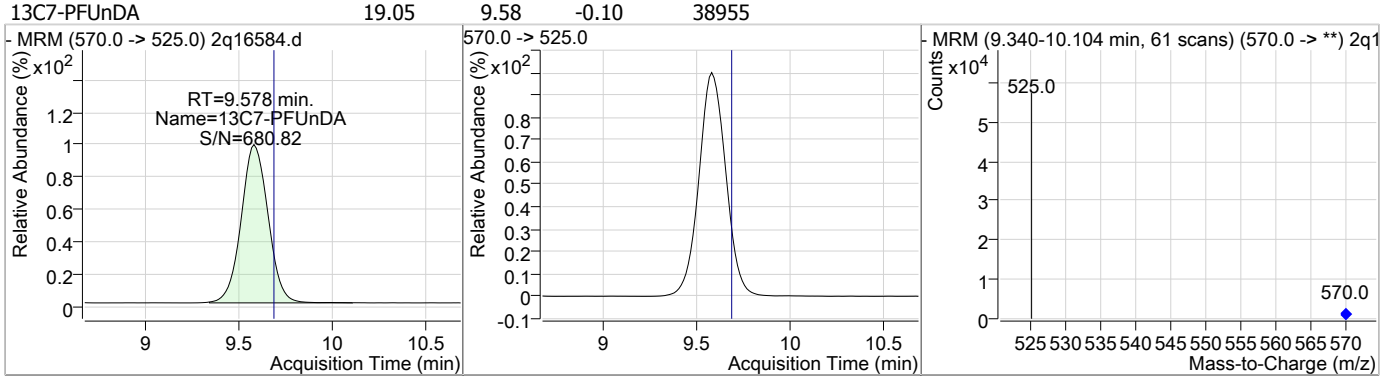
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	21.98	8.26	-0.06	32732	527.0 -> 81.0	29.4	0.0	51.3



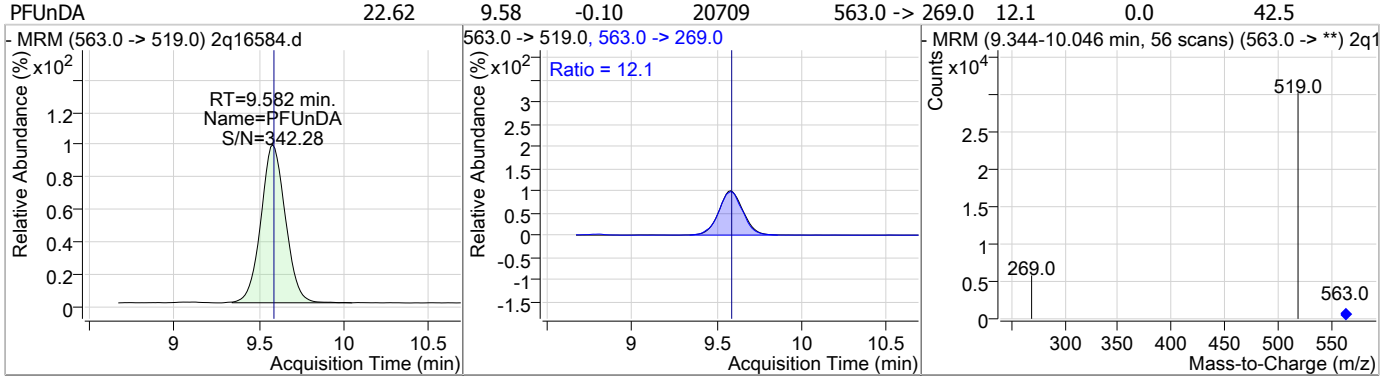
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	20.98	9.39	-0.10	7330	599.0 -> 99.0	40.0	4.8	64.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.05	9.58	-0.10	38955				

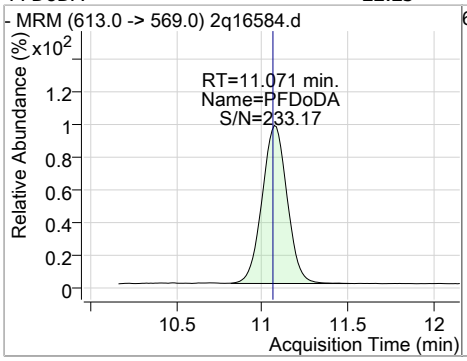


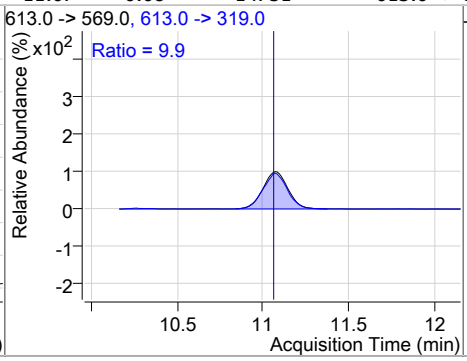
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	22.62	9.58	-0.10	20709	563.0 -> 269.0	12.1	0.0	42.5

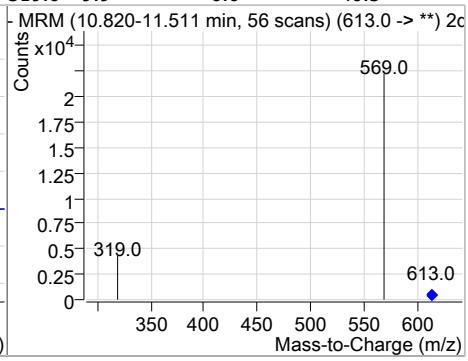


Perfluorinated Compounds by LC/MS/MS

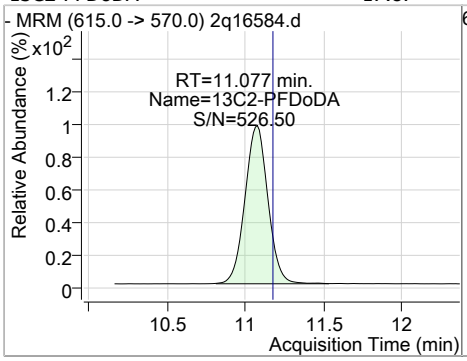
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	22.23	11.07	-0.08	14751	613.0 -> 319.0	9.9	0.0	40.5

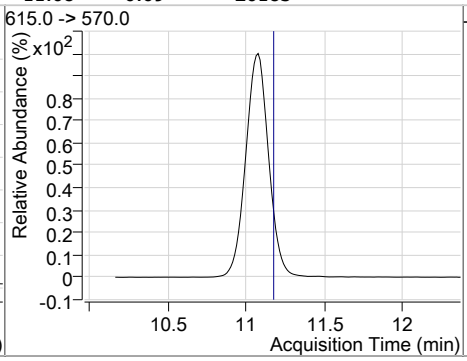


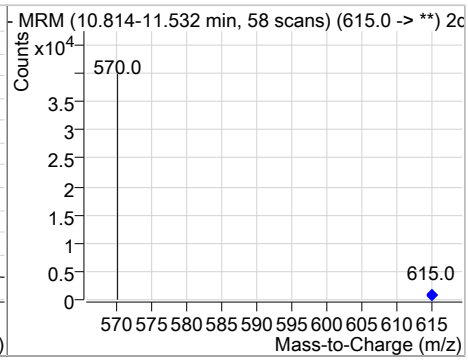




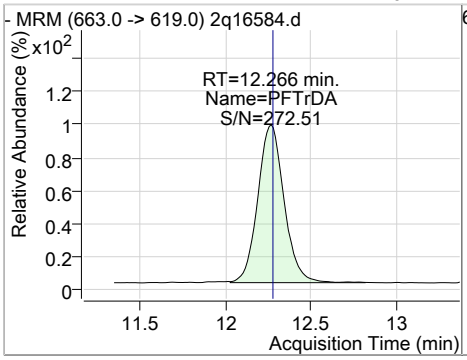
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	17.87	11.08	-0.09	26183				

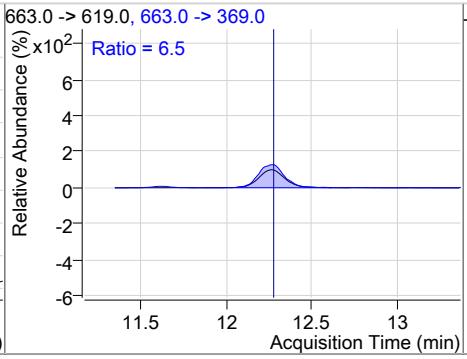


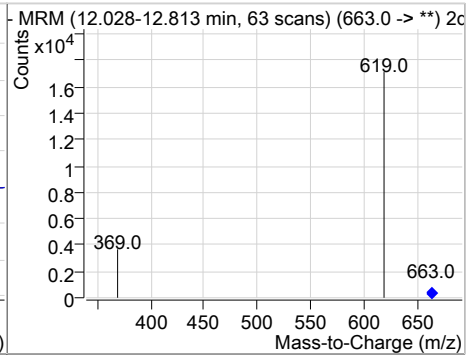




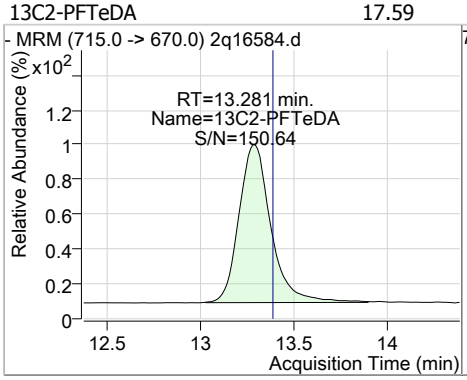
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	22.04	12.27	-0.10	10810	663.0 -> 369.0	6.5	0.0	35.1

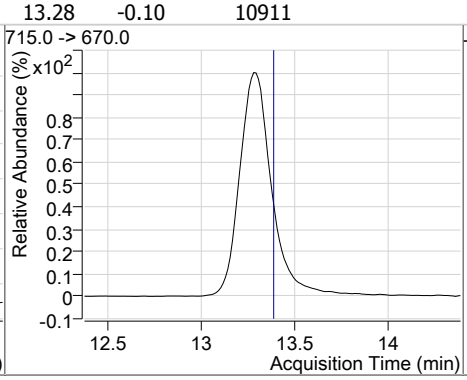


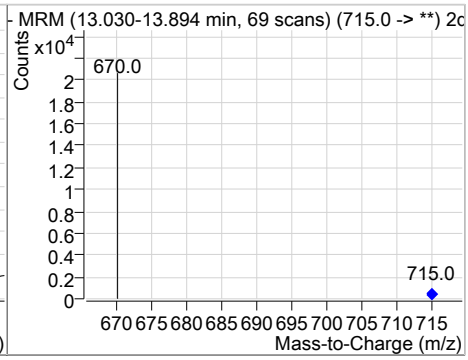




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	17.59	13.28	-0.10	10911				

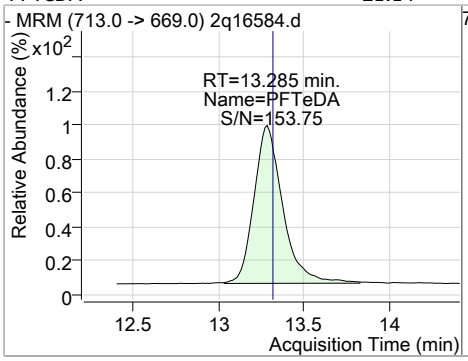


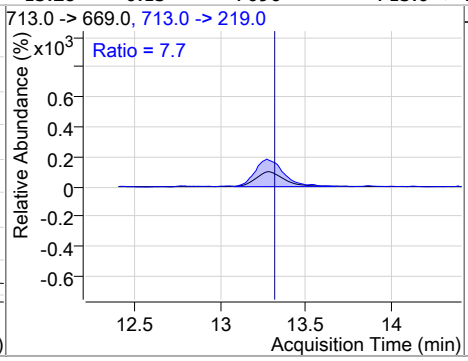


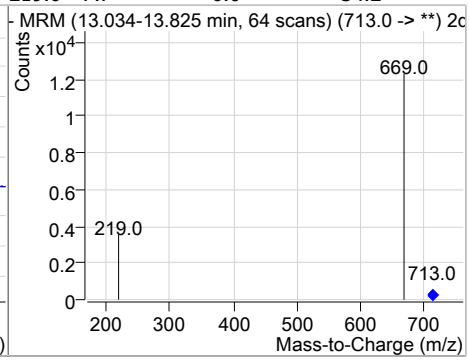


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	21.14	13.28	-0.13	7096	713.0 -> 219.0	7.7	0.0	34.2







Manual Integration Approval Summary

Sample Number:	S2Q291-CC291	**Method:**	EPA 537M QSM5.1 B-15
Lab FileID:	2Q16584.D	**Analyst approved:**	07/06/18 10:17 Natasha Gumtie
Injection Time:	07/05/18 23:06	**Supervisor approved:**	07/06/18 17:13 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.05	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.37	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
07/06/18 17:13

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16592.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/6/2018 1:44:02 AM
Sample Name : cc291-20
Vial : Vial 7
DA Method File : PFC_ID_070518_S2Q291.quantmethod.xml
Batch Name : s2q291.batch.bin
Sample Information : op70743,S2Q291,130,,,1.0,1,water

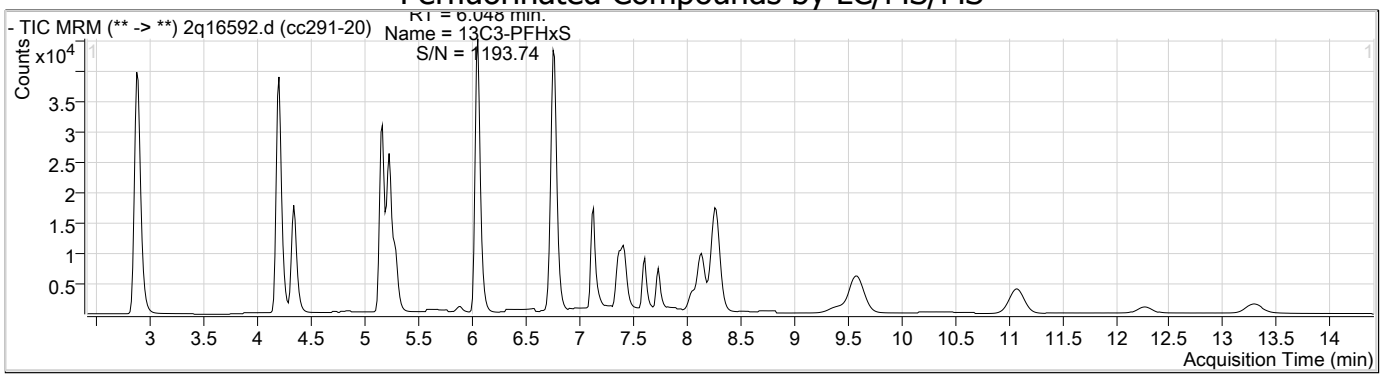
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.760	415.0 -> 370.0	20028	20.00	µg/L	-0.038
13C4-PFOS	7.372	503.0 -> 80.0	10763	20.00	µg/L	-0.026
M4-PFBA	2.866	217.0 -> 172.0	139119	20.00	µg/L	-0.038
M5-PFPeA	4.200	268.0 -> 223.0	66113	20.00	µg/L	-0.038
M5-PFHxA	5.228	318.0 -> 273.0	59267	20.00	µg/L	-0.038
M4-PFHpA	6.054	367.0 -> 322.0	58559	20.00	µg/L	-0.038
M8-PFOA	6.758	421.0 -> 376.0	31037	20.00	µg/L	-0.038
M9-PFNA	7.412	472.0 -> 427.0	20994	20.00	µg/L	-0.038
M6-PFDA	8.142	519.0 -> 474.0	32509	20.00	µg/L	-0.038
M7-PFUnDA	9.578	570.0 -> 525.0	38636	20.00	µg/L	-0.100
M2-PFDoDA	11.077	615.0 -> 570.0	25825	20.00	µg/L	-0.092
M2-PFTeDA	13.293	715.0 -> 670.0	10196	20.00	µg/L	-0.088
M8-FOSA	7.130	506.0 -> 78.0	30958	20.00	µg/L	-0.013
M3-PFBS	4.330	302.0 -> 99.0	20141	20.00	µg/L	-0.038
M3-PFHxS	6.048	402.0 -> 99.0	18127	20.00	µg/L	-0.038
M8-PFOS	7.370	507.0 -> 99.0	8955	20.00	µg/L	-0.026
M2-4:2FTS	5.160	329.0 -> 309.0	58561	20.00	µg/L	-0.038
M2-6:2FTS	6.768	429.0 -> 409.0	46821	20.00	µg/L	-0.040
M2-8:2FTS	8.262	529.0 -> 509.0	55462	20.00	µg/L	-0.063
M3-MeFOSAA	7.607	573.0 -> 419.0	16073	20.00	µg/L	-0.013
System Monitoring Compounds						
13C2-4:2FTS	5.160	329.0 -> 309.0	58549	17.85	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.3%		
13C2-6:2FTS	6.768	429.0 -> 409.0	46819	17.71	µg/L	-0.040
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.6%		
13C2-8:2FTS	8.262	529.0 -> 509.0	55463	17.09	µg/L	-0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.5%		
13C2-PFDoDA	11.077	615.0 -> 570.0	25837	17.63	µg/L	-0.092
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.2%		
13C2-PFTeDA	13.293	715.0 -> 670.0	10219	16.47	µg/L	-0.088
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.3%		
13C3-PFBS	4.330	302.0 -> 99.0	20135	18.22	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.1%		
13C3-PFHxS	6.048	402.0 -> 99.0	18138	18.11	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.5%		
13C4-PFBA	2.866	217.0 -> 172.0	139111	18.17	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.8%		
13C4-PFHpA	6.054	367.0 -> 322.0	58566	18.17	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.9%		
13C5-PFHxA	5.228	318.0 -> 273.0	59286	18.09	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.5%		
13C5-PFPeA	4.200	268.0 -> 223.0	66115	18.14	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.7%		
13C6-PFDA	8.142	519.0 -> 474.0	32510	17.56	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.8%		

Perfluorinated Compounds by LC/MS/MS

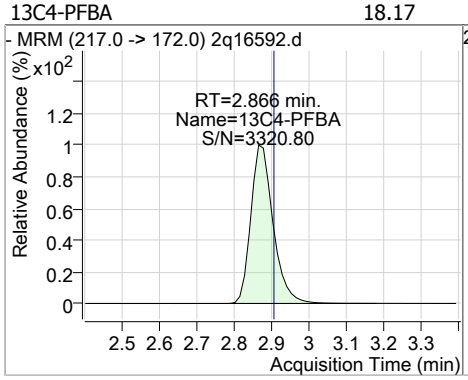
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	9.578	570.0 -> 525.0	38644	18.89	µg/L		-0.100
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.5%			
13C8-FOSA	7.130	506.0 -> 78.0	30945	17.58	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.9%			
13C8-PFOA	6.758	421.0 -> 376.0	31045	17.83	µg/L		-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.1%			
13C8-PFOS	7.370	507.0 -> 99.0	8967	18.30	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.5%			
13C9-PFNA	7.412	472.0 -> 427.0	21005	17.65	µg/L		-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.3%			
d3-MeFOSAA	7.607	573.0 -> 419.0	16072	18.30	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.5%			
M2-PFOA	6.760	415.0 -> 370.0	20030	20.00	ng/ml		-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.372	503.0 -> 80.0	10753	19.99	ng/ml		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%			
Target Compounds							**QValue**
4:2FTS	5.162	327.0 -> 307.0	32100	21.73	µg/L		99
6:2FTS	6.769	427.0 -> 407.0	25320	22.23	µg/L		94
8:2FTS	8.265	527.0 -> 507.0	32496	22.08	µg/L		83
EtFOSAA	7.731	584.0 -> 419.0	5418	21.24	µg/L		85
FOSA	7.118	498.0 -> 78.0	16351	21.12	µg/L		97
MeFOSAA	7.608	570.0 -> 419.0	6580	23.30	µg/L		95
PFBA	2.874	213.0 -> 169.0	24340	21.75	µg/L		100
PFBS	4.334	299.0 -> 80.0	30275	22.39	µg/L		97
PFDA	8.144	513.0 -> 469.0	12707	20.59	µg/L		93
PFDoDA	11.083	613.0 -> 569.0	14335	21.85	µg/L		99
PFDS	9.399	599.0 -> 80.0	7282	20.98	µg/L		93
PFHpA	6.057	363.0 -> 319.0	46986	22.52	µg/L		94
PFHpS	6.728	449.0 -> 80.0	11380	21.67	µg/L		100
PFHxA	5.230	313.0 -> 269.0	20682	21.49	µg/L		98
PFHxS	6.051	399.0 -> 80.0	22344	22.23	µg/L	m	97
PFNA	7.426	463.0 -> 419.0	8748	20.97	µg/L		87
PFNS	8.050	549.0 -> 80.0	8783	21.62	µg/L		96
PFOA	6.761	413.0 -> 369.0	17192	22.08	µg/L		92
PFOS	7.372	499.0 -> 80.0	12064	22.30	µg/L	m	72
PFPeA	4.203	263.0 -> 219.0	72712	22.77	µg/L		100
PFPeS	5.283	349.0 -> 80.0	18266	22.08	µg/L		98
PFTeDA	13.285	713.0 -> 669.0	7116	22.55	µg/L		91
PFTrDA	12.266	663.0 -> 619.0	10640	23.05	µg/L		96
PFUnDA	9.595	563.0 -> 519.0	20162	22.17	µg/L		99

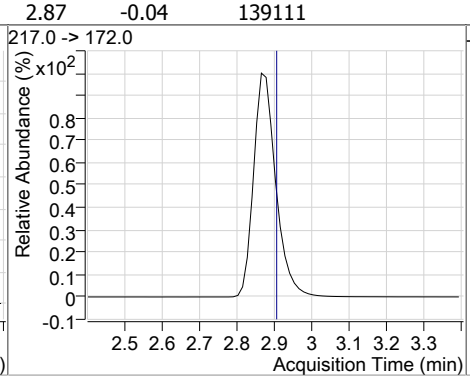
 # = Qualifier out of range, m = manually integrated, + = Area summed

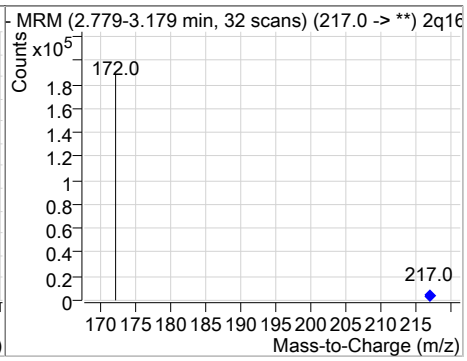
Perfluorinated Compounds by LC/MS/MS



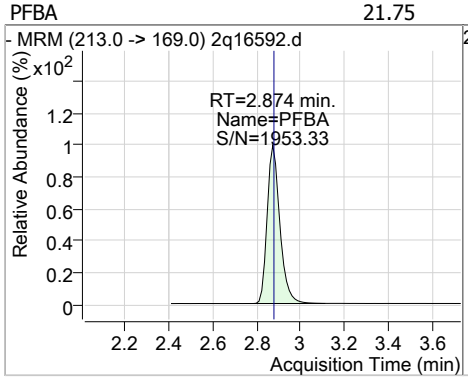
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.17	2.87	-0.04	139111				

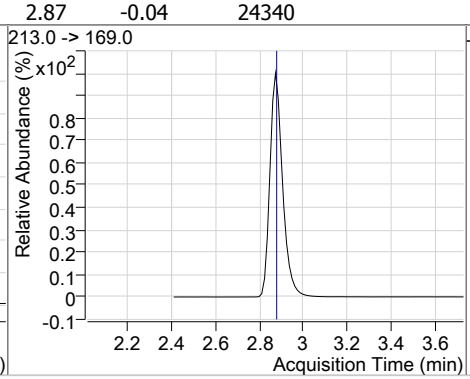


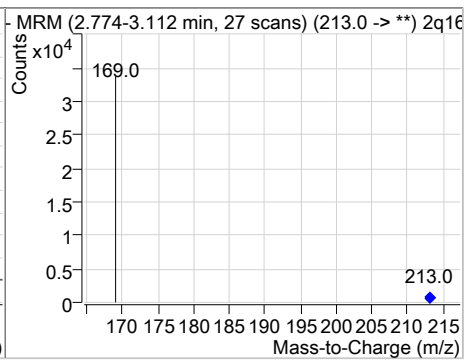




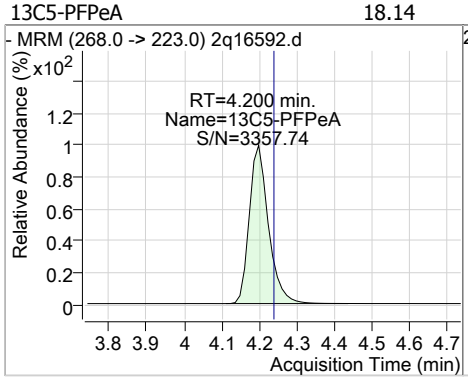
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	21.75	2.87	-0.04	24340				

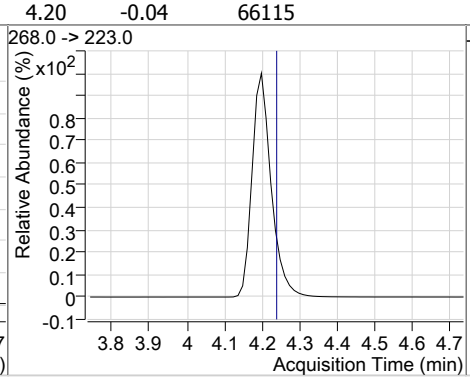


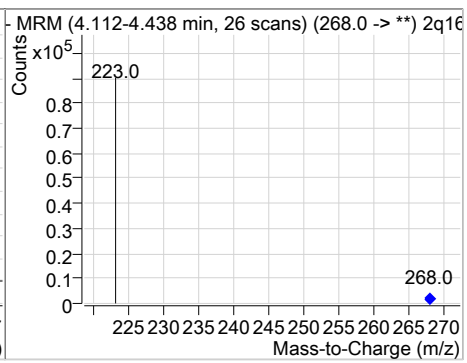




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.14	4.20	-0.04	66115				

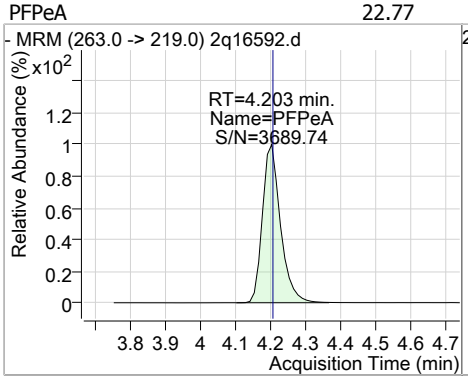


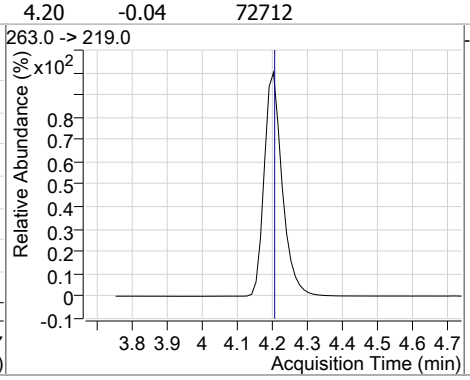


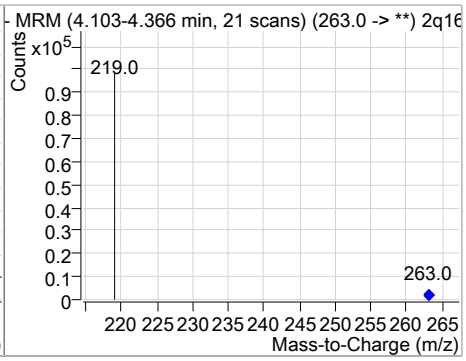


Perfluorinated Compounds by LC/MS/MS

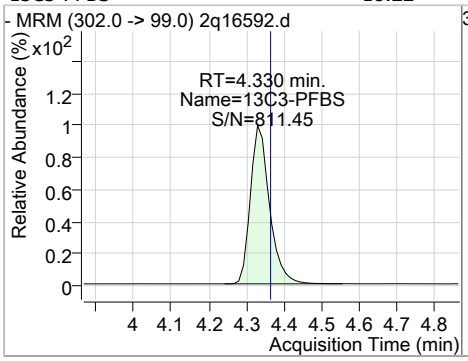
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	22.77	4.20	-0.04	72712				

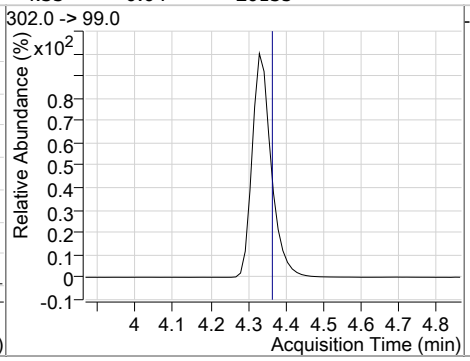


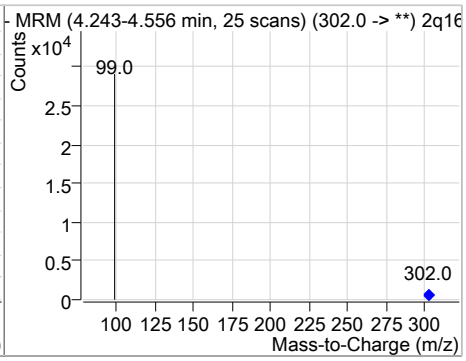




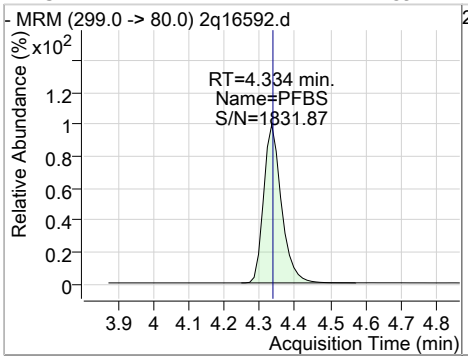
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.22	4.33	-0.04	20135				

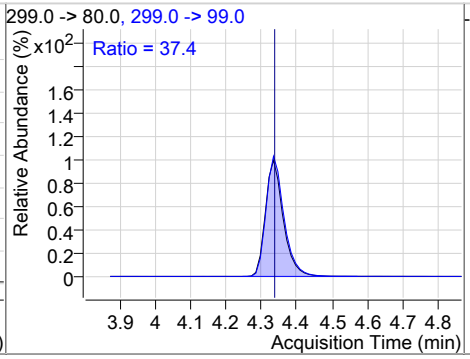


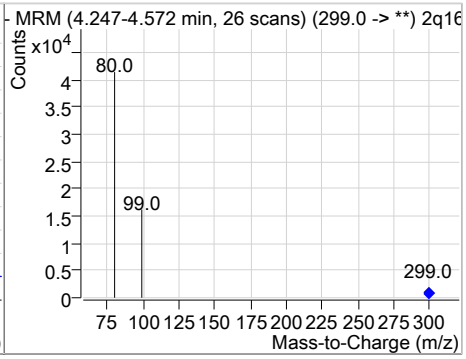




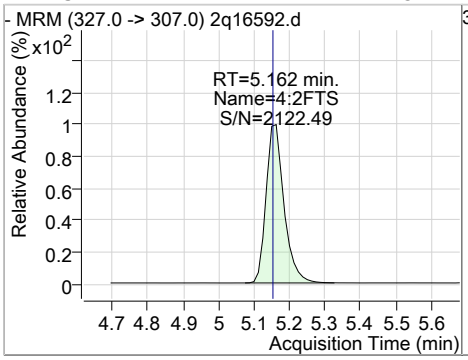
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	22.39	4.33	-0.04	30275	299.0 -> 99.0	37.4	5.8	65.8

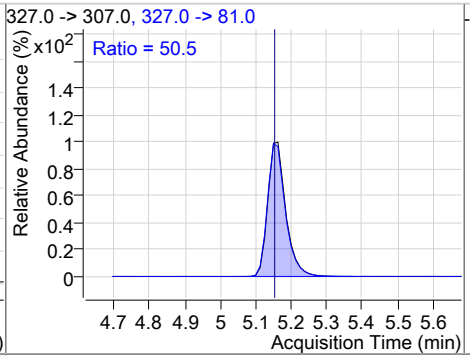


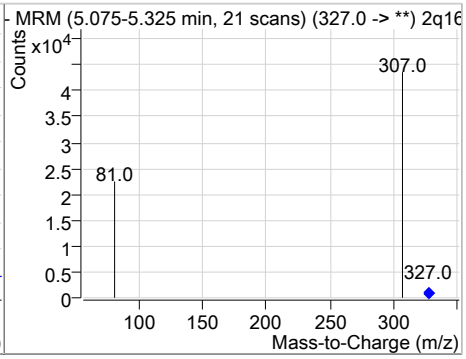




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	21.73	5.16	-0.03	32100	327.0 -> 81.0	50.5	21.0	81.0

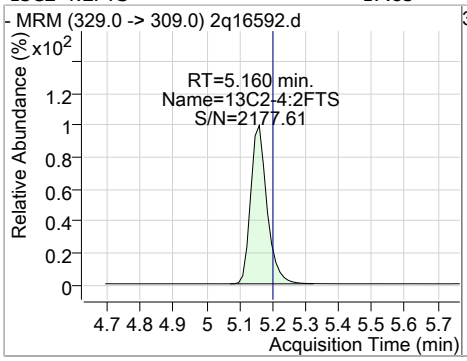


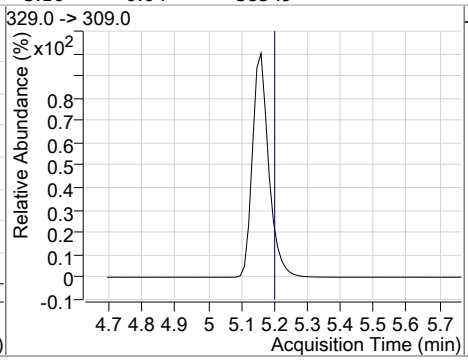


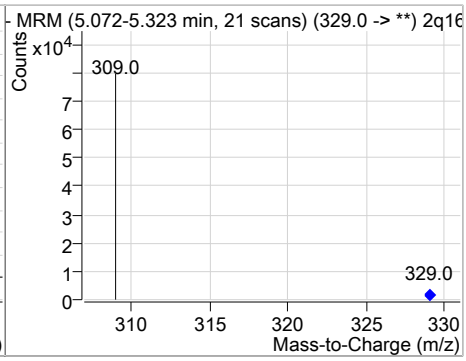


Perfluorinated Compounds by LC/MS/MS

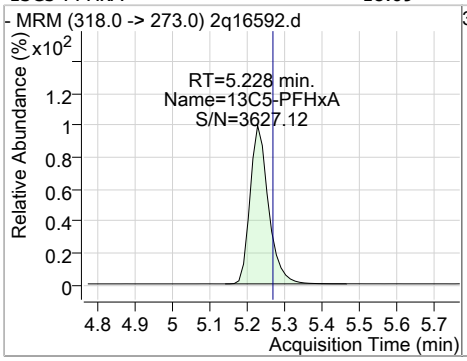
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	17.85	5.16	-0.04	58549				

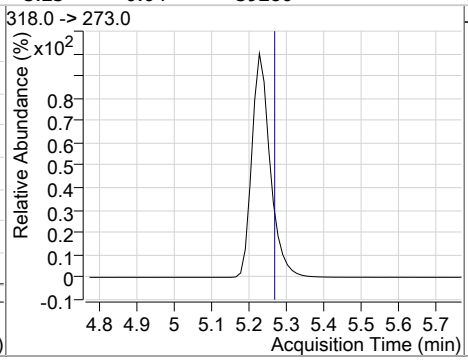


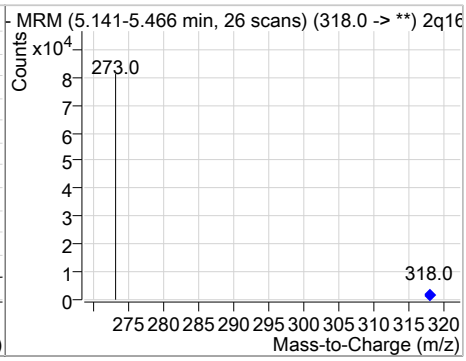




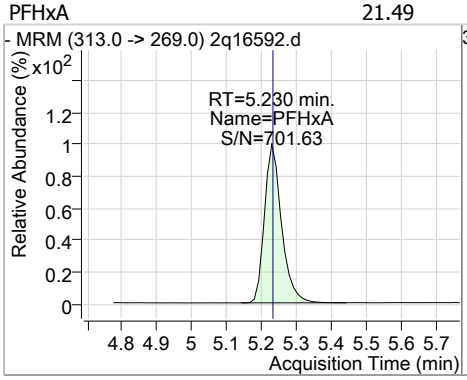
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.09	5.23	-0.04	59286				

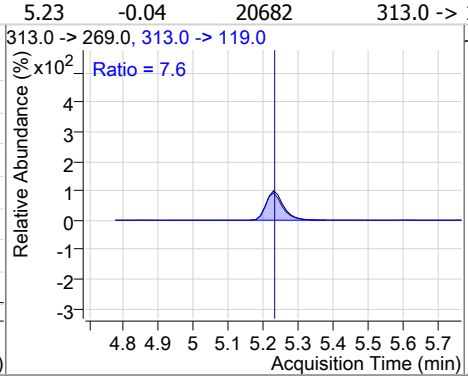


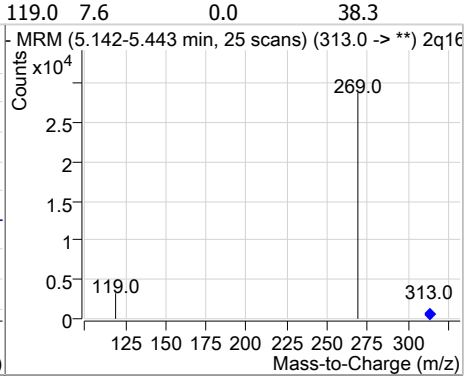




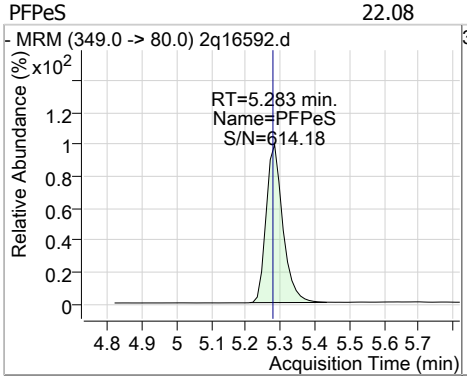
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	21.49	5.23	-0.04	20682	313.0 -> 119.0	7.6	0.0	38.3

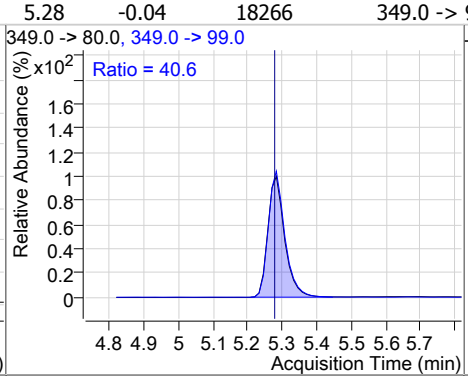


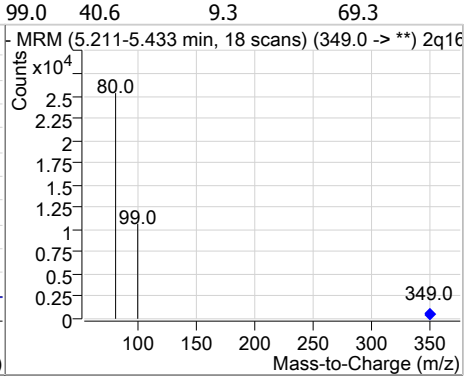




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	22.08	5.28	-0.04	18266	349.0 -> 99.0	40.6	9.3	69.3

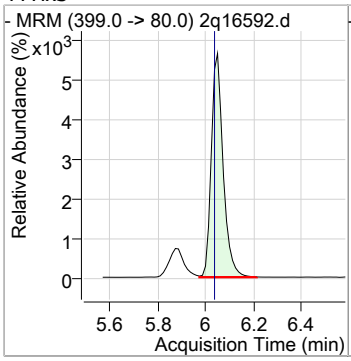


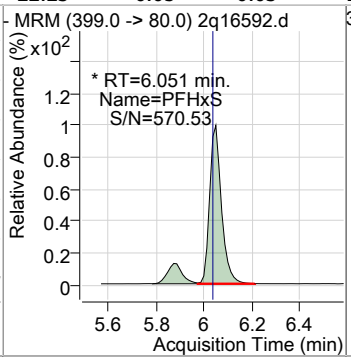


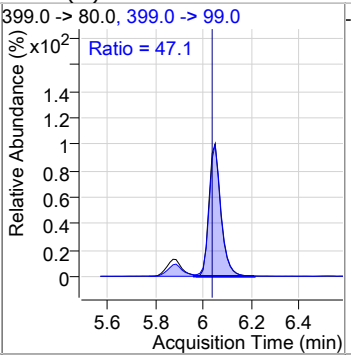


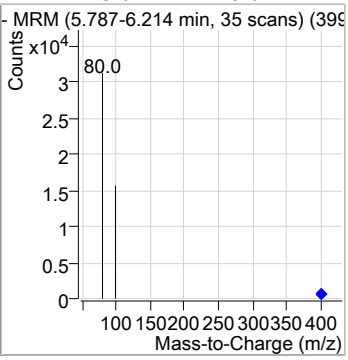
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	22.23	6.05	-0.03	22344 (m)	399.0 -> 99.0	47.1	19.0	79.0

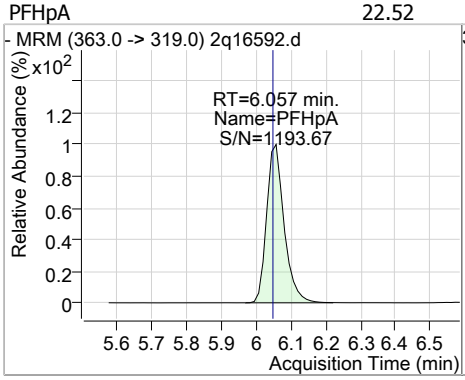


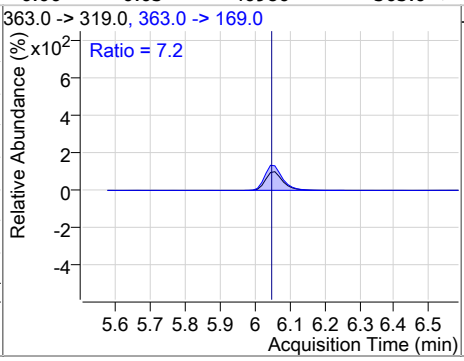


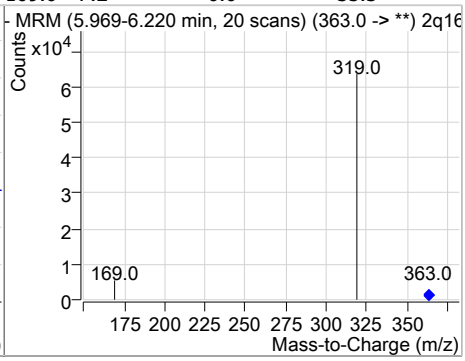




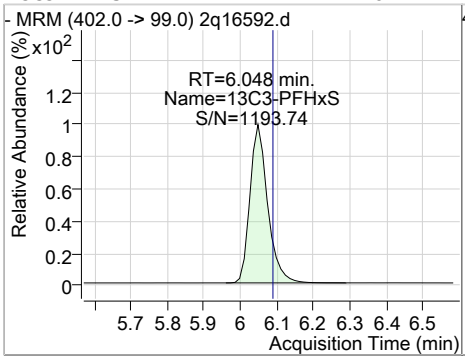
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	22.52	6.06	-0.03	46986	363.0 -> 169.0	7.2	0.0	35.3

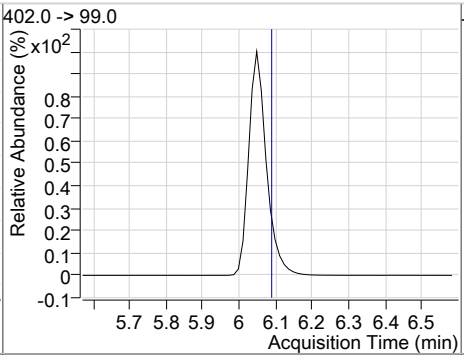


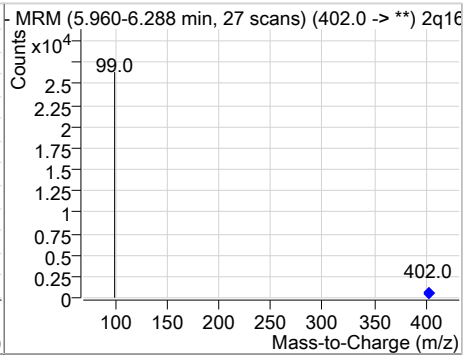




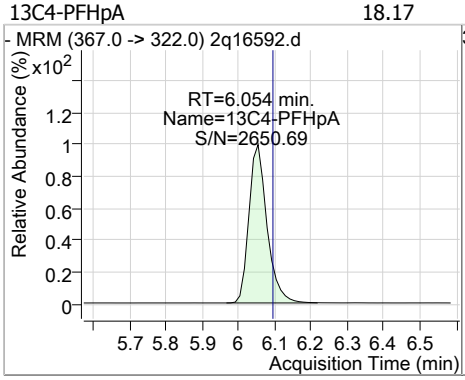
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.11	6.05	-0.04	18138				

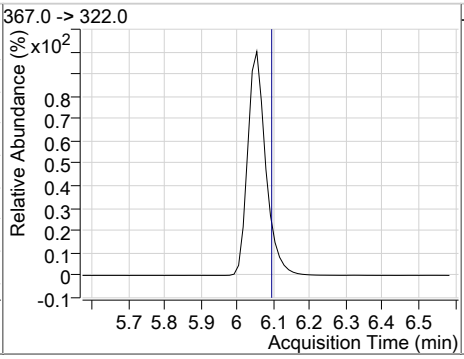


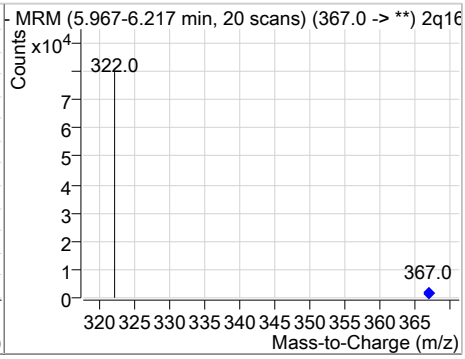




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.17	6.05	-0.04	58566				

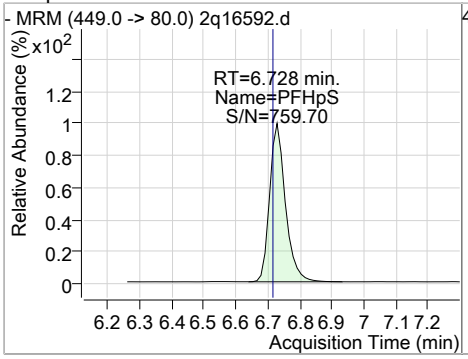


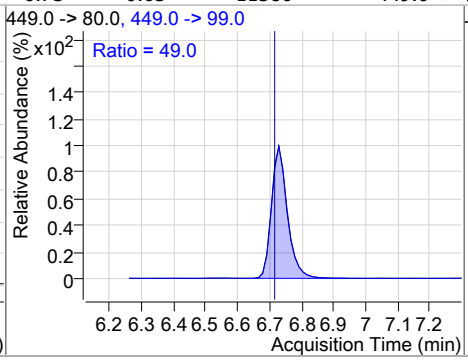


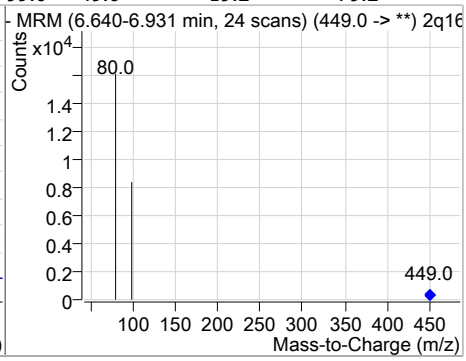


Perfluorinated Compounds by LC/MS/MS

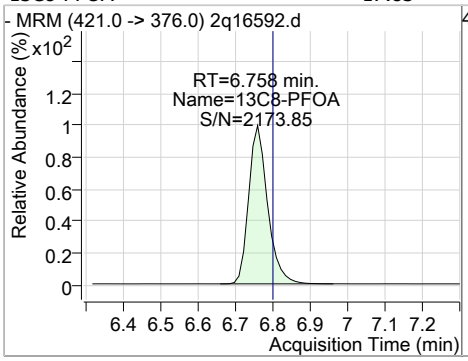
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.67	6.73	-0.03	11380	449.0 -> 99.0	49.0	19.2	79.2

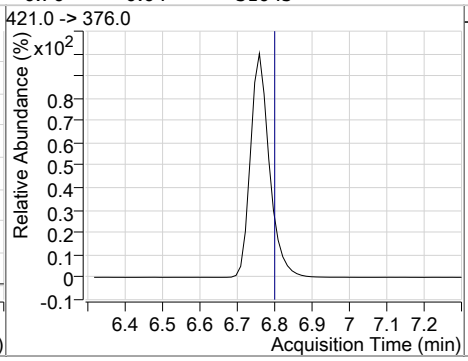


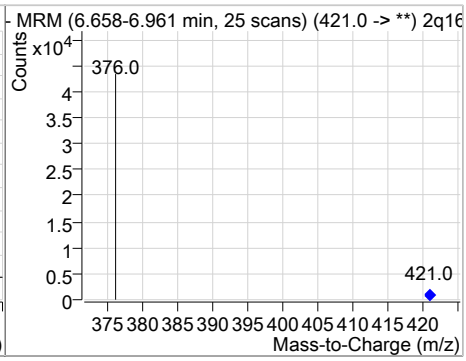




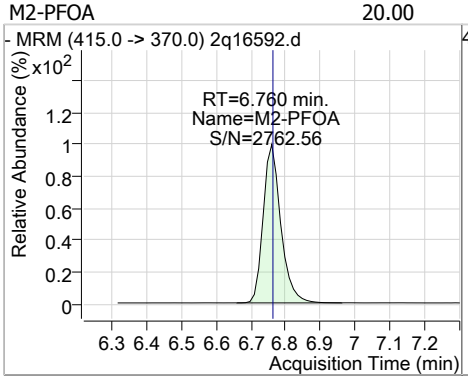
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	17.83	6.76	-0.04	31045				

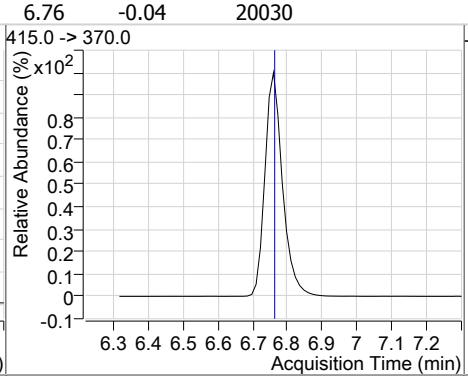


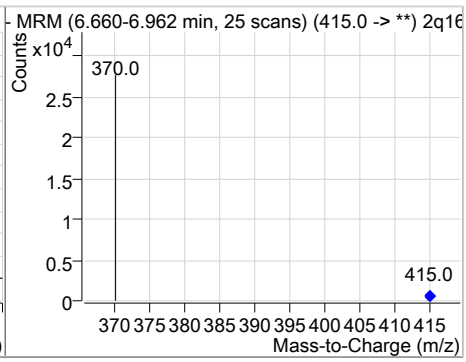




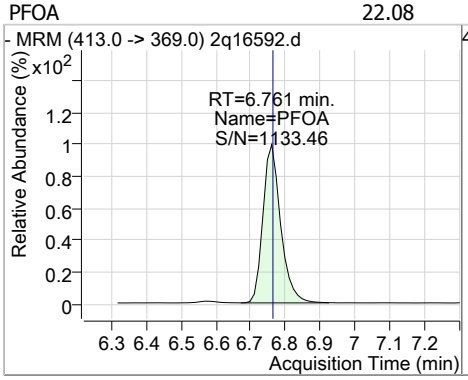
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.76	-0.04	20030				

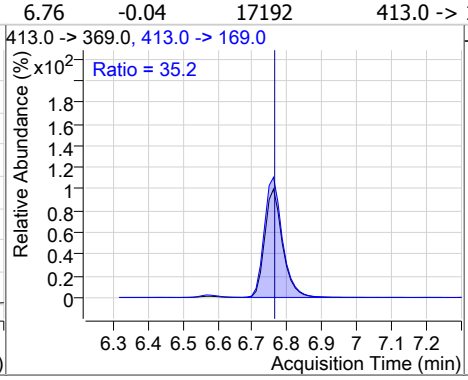


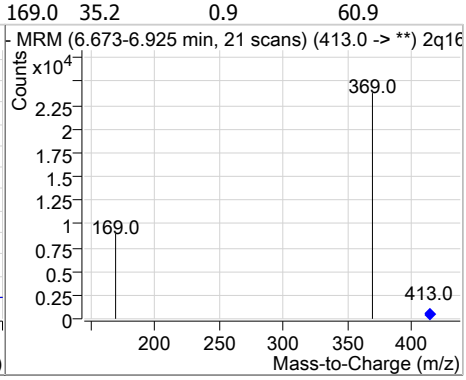




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	22.08	6.76	-0.04	17192	413.0 -> 169.0	35.2	0.9	60.9

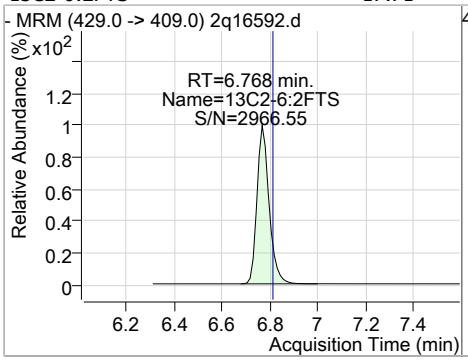


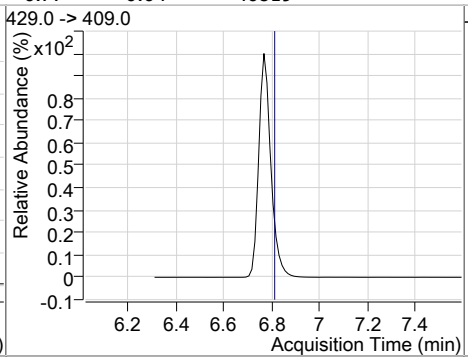


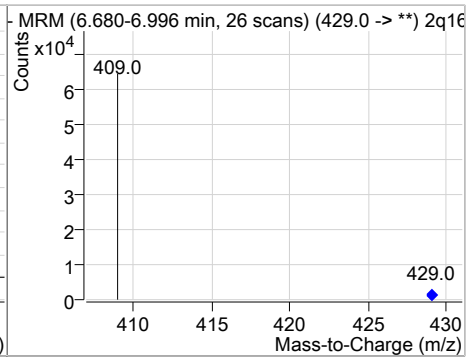


Perfluorinated Compounds by LC/MS/MS

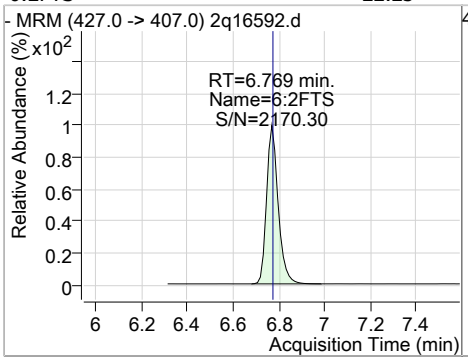
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	17.71	6.77	-0.04	46819				

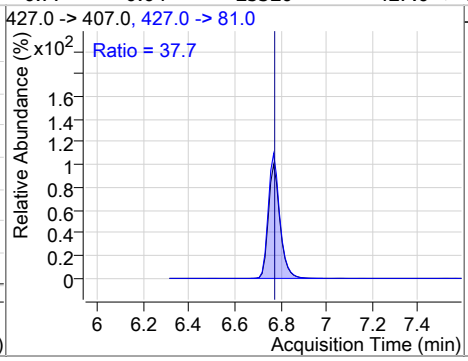


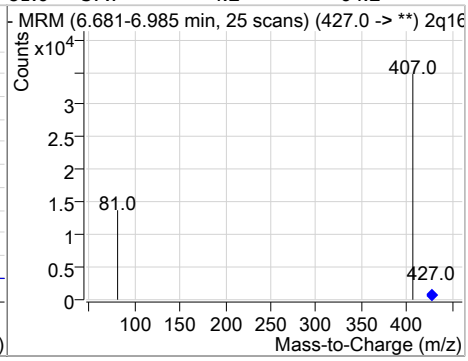




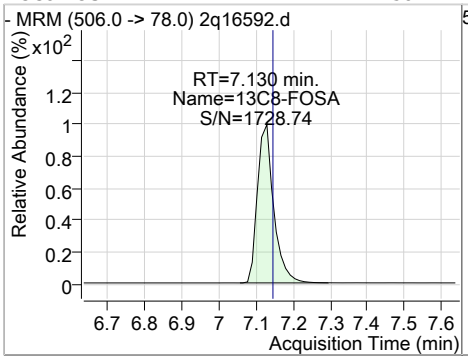
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	22.23	6.77	-0.04	25320	427.0 -> 81.0	37.7	4.2	64.2

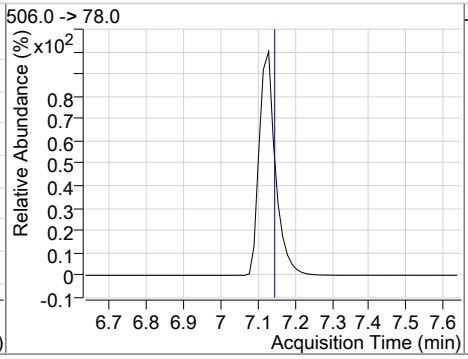


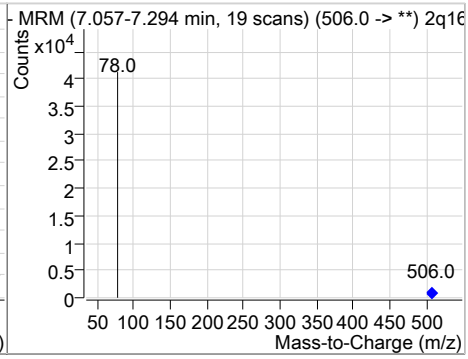




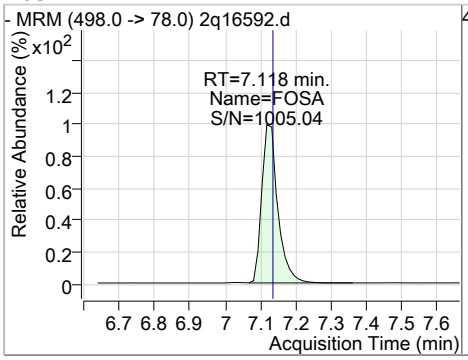
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	17.58	7.13	-0.01	30945				

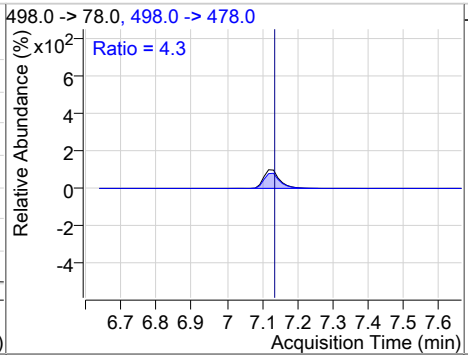


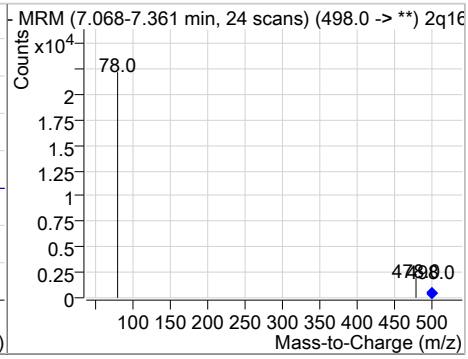




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	21.12	7.12	-0.03	16351	498.0 -> 478.0	4.3	0.0	35.2

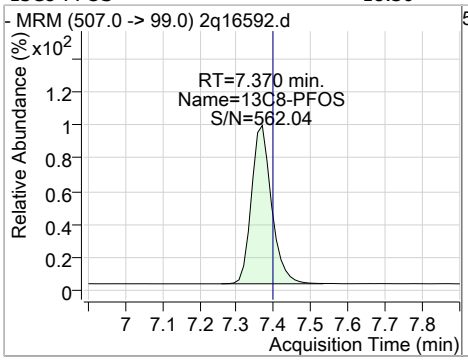


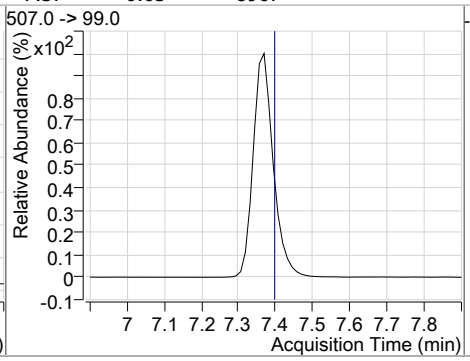


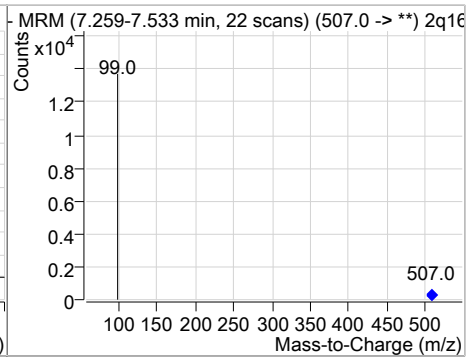


Perfluorinated Compounds by LC/MS/MS

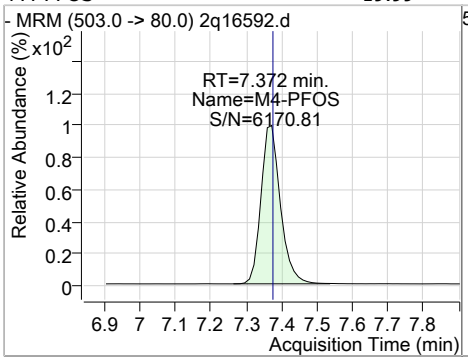
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.30	7.37	-0.03	8967				

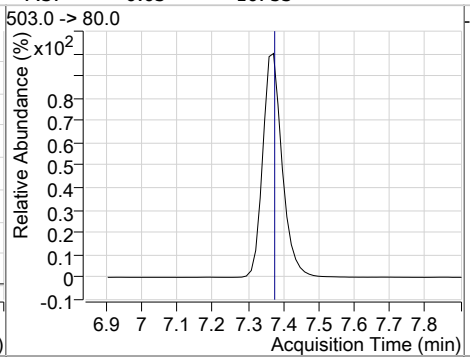


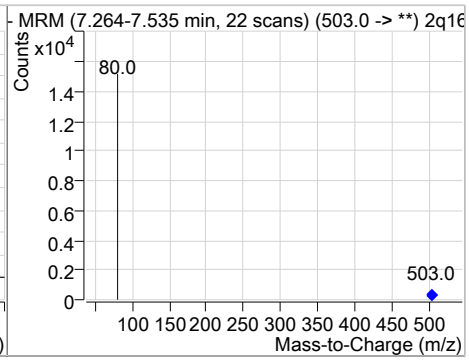




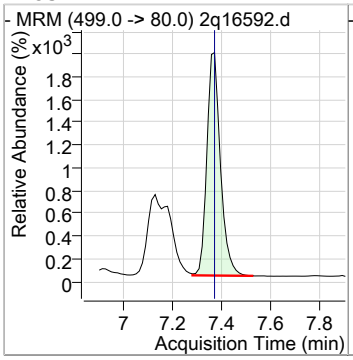
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	19.99	7.37	-0.03	10753				

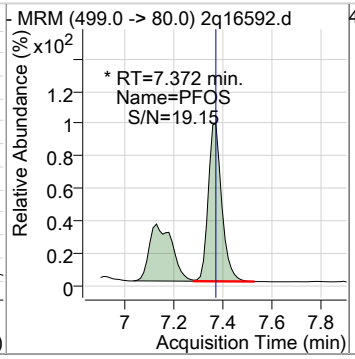


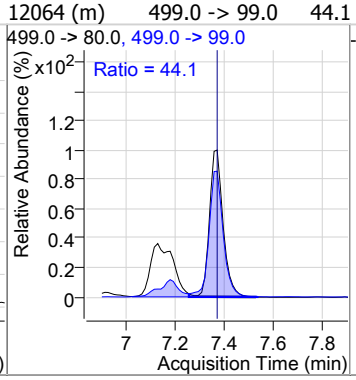


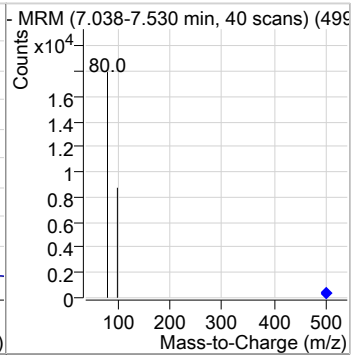


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	22.30	7.37	-0.03	12064 (m)	499.0 -> 99.0	44.1	36.8	96.8

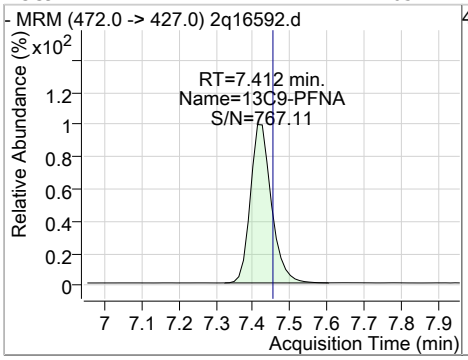


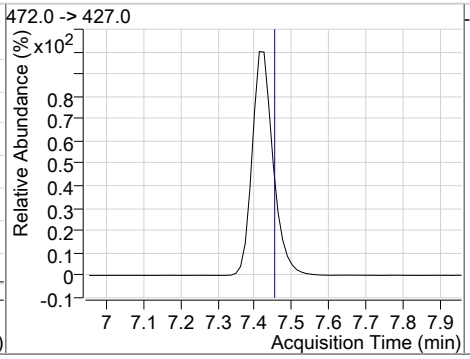


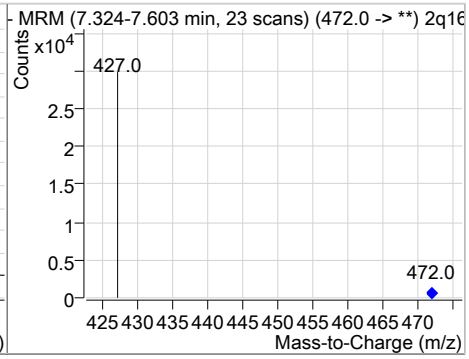




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	17.65	7.41	-0.04	21005				

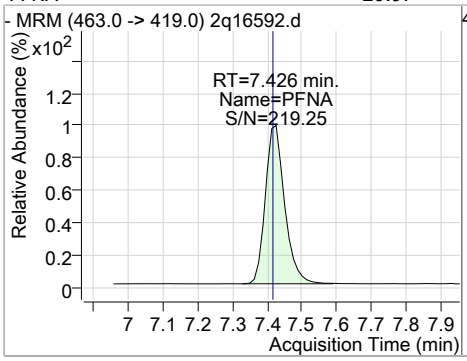


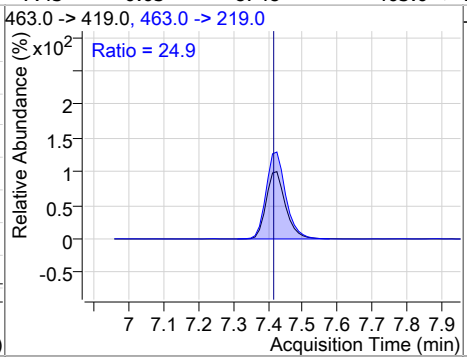


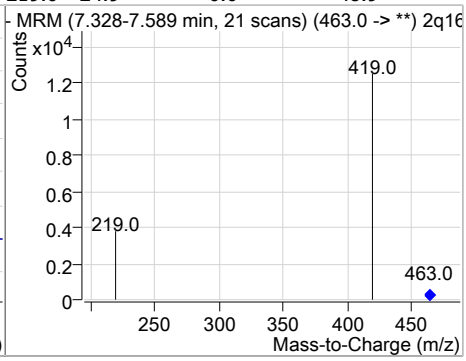


Perfluorinated Compounds by LC/MS/MS

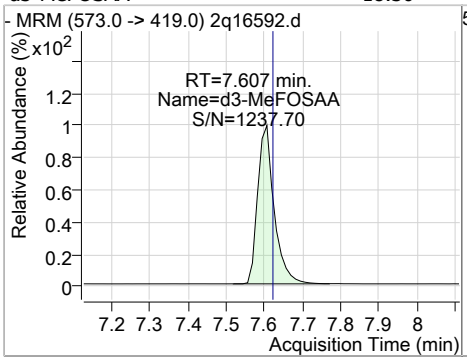
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	20.97	7.43	-0.03	8748	463.0 -> 219.0	24.9	0.0	48.9

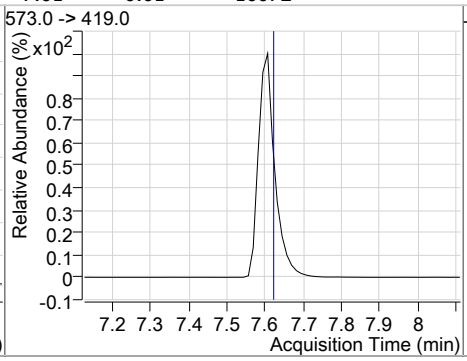


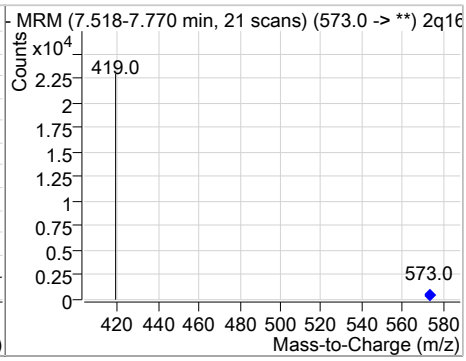




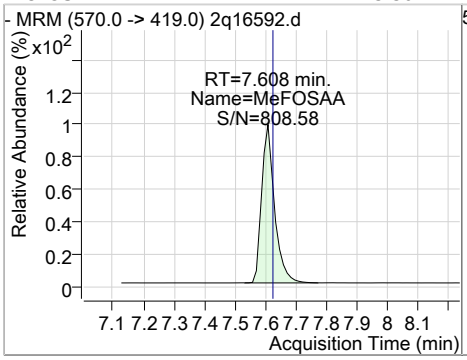
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.30	7.61	-0.01	16072				

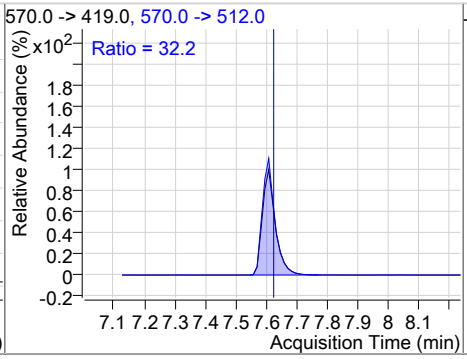


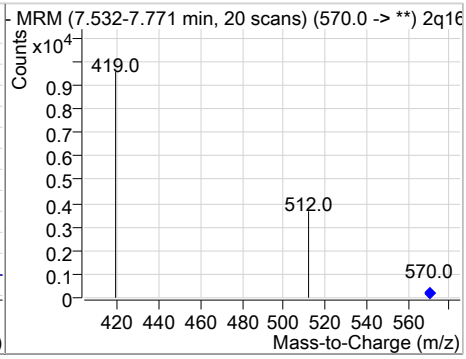




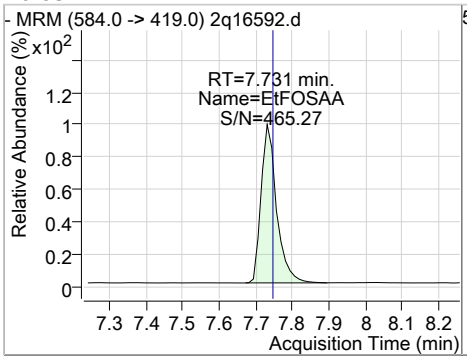
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	23.30	7.61	-0.03	6580	570.0 -> 512.0	32.2	0.0	59.6

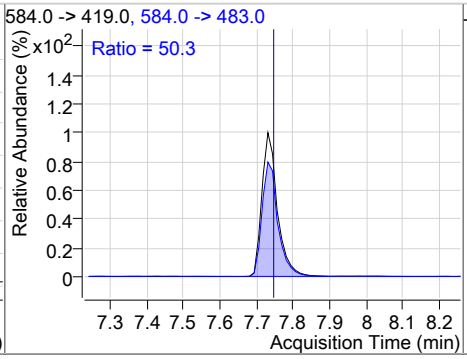


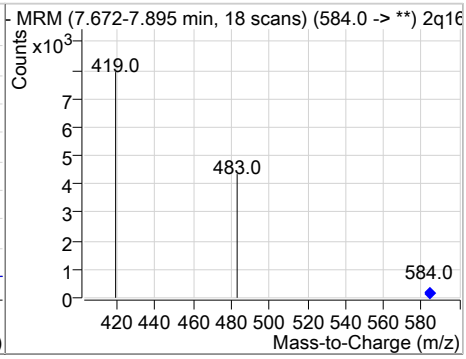




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	21.24	7.73	-0.03	5418	584.0 -> 483.0	50.3	31.9	91.9

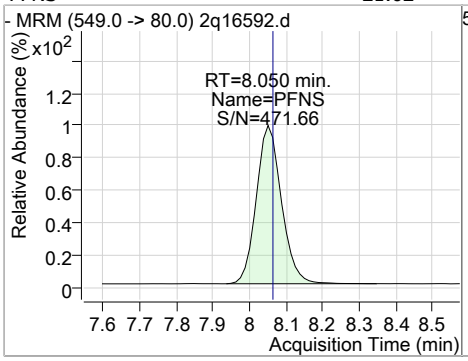


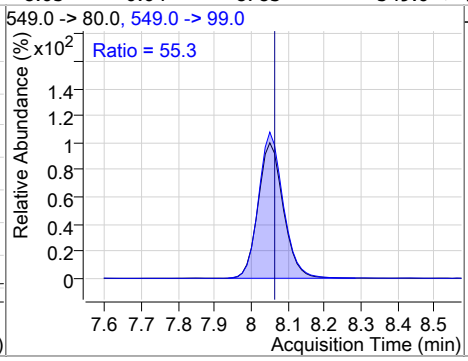


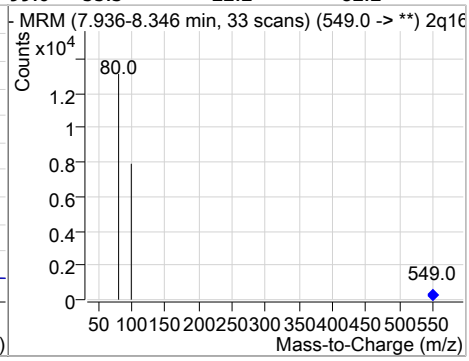


Perfluorinated Compounds by LC/MS/MS

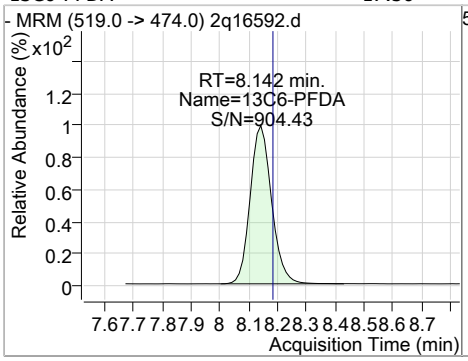
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	21.62	8.05	-0.04	8783	549.0 -> 99.0	55.3	22.2	82.2

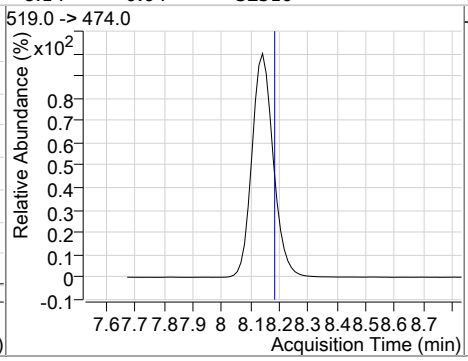


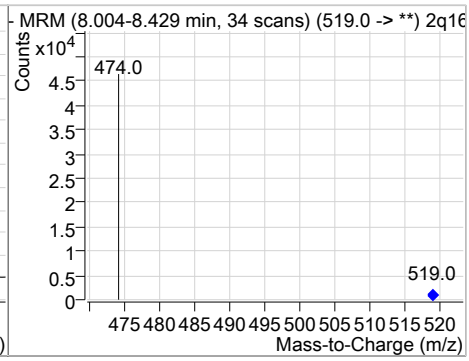




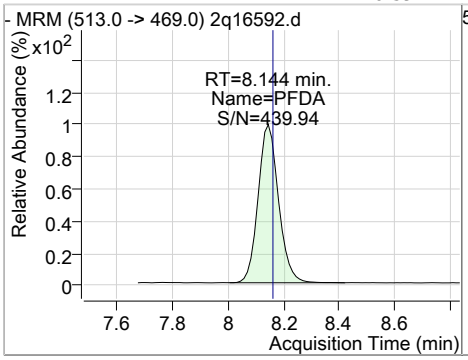
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	17.56	8.14	-0.04	32510				

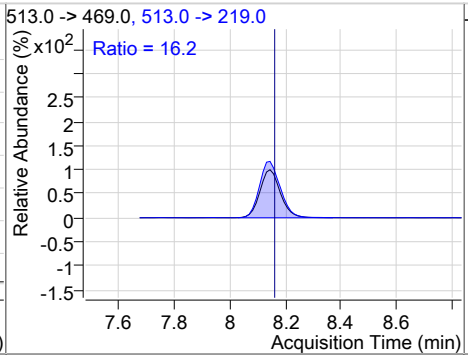


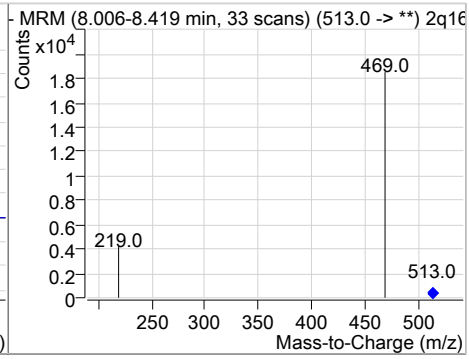




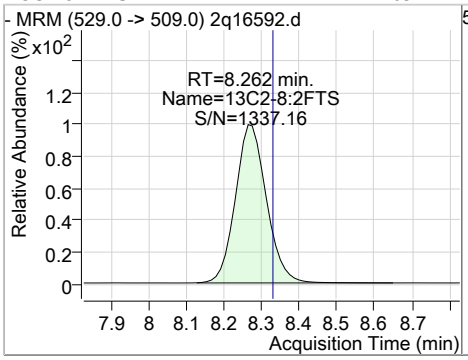
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.59	8.14	-0.05	12707	513.0 -> 219.0	16.2	0.0	43.5

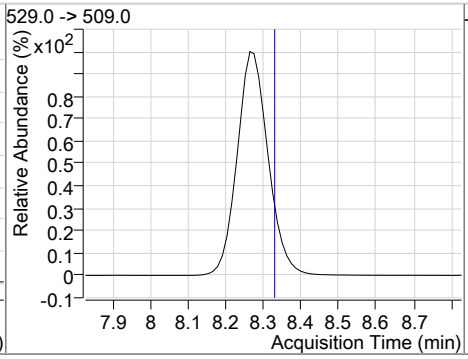


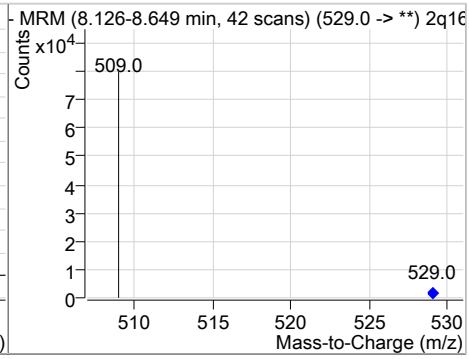




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	17.09	8.26	-0.06	55463				

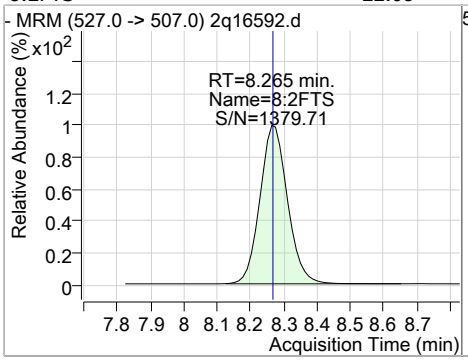


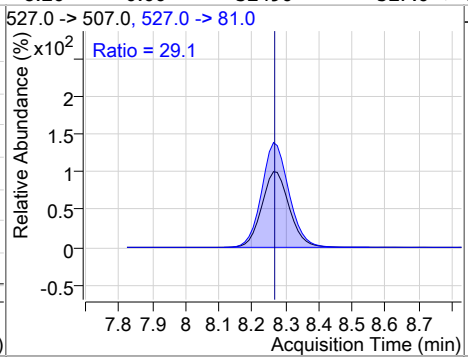


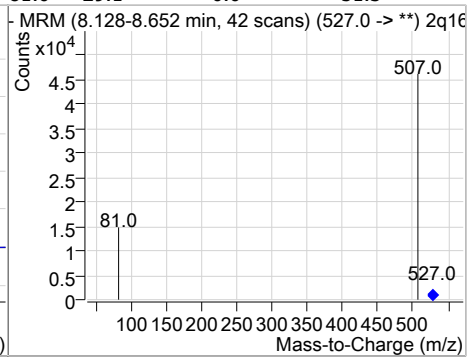


Perfluorinated Compounds by LC/MS/MS

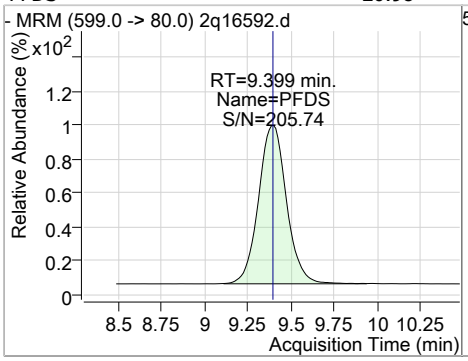
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	22.08	8.26	-0.06	32496	527.0 -> 81.0	29.1	0.0	51.3

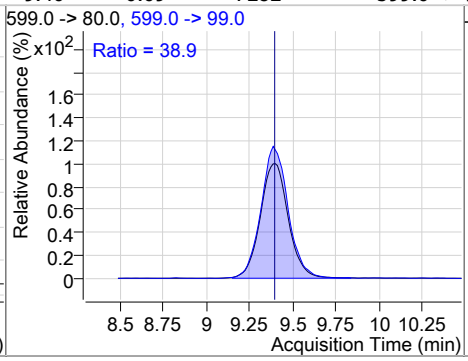


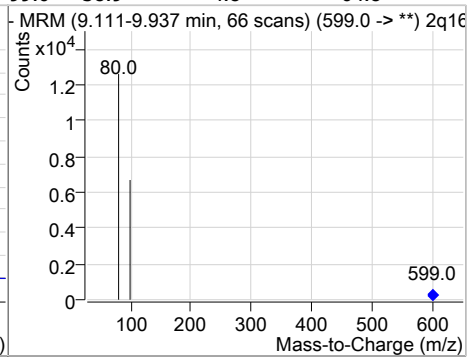




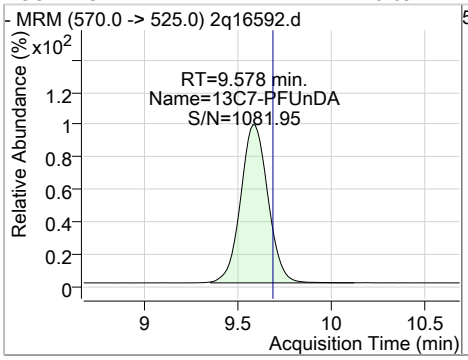
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	20.98	9.40	-0.09	7282	599.0 -> 99.0	38.9	4.8	64.8

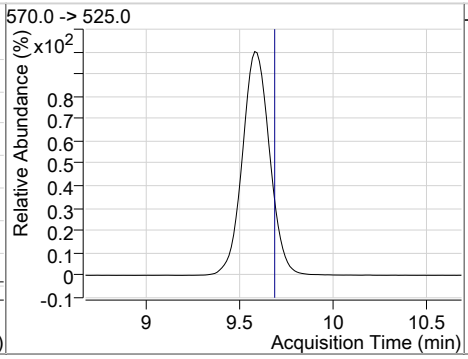


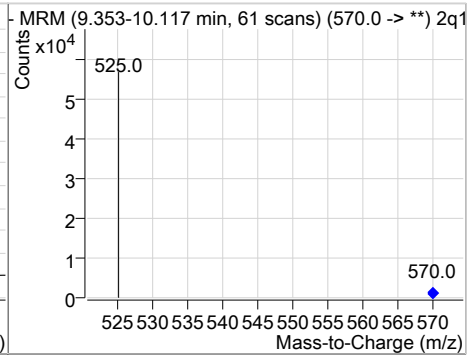




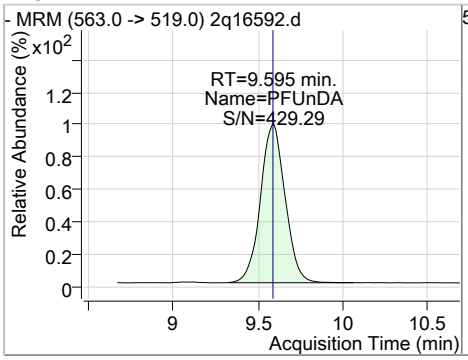
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.89	9.58	-0.10	38644				

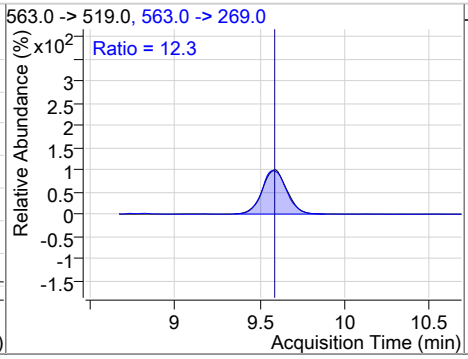


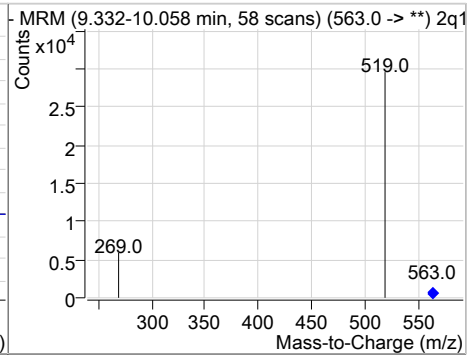




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	22.17	9.59	-0.09	20162	563.0 -> 269.0	12.3	0.0	42.5

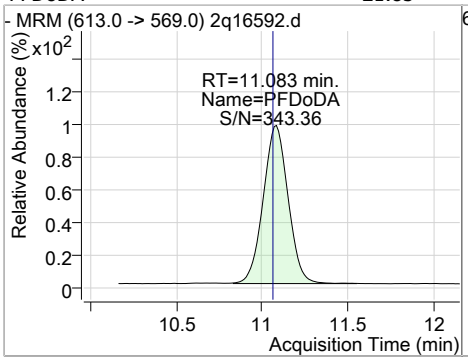


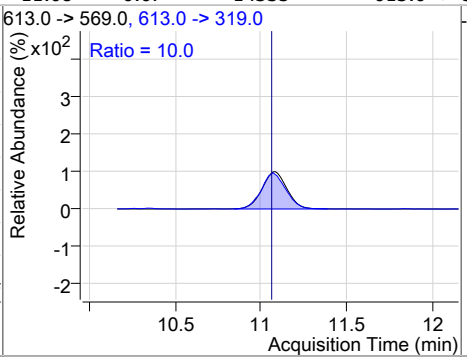


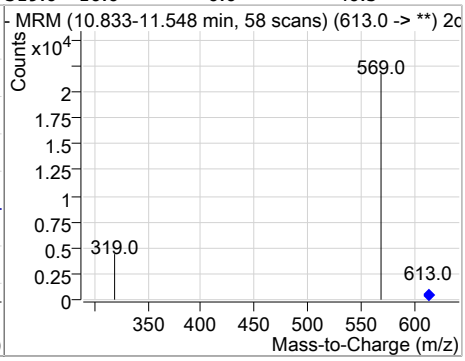


Perfluorinated Compounds by LC/MS/MS

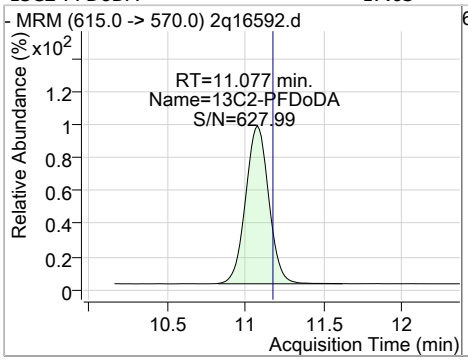
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	21.85	11.08	-0.07	14335	613.0 -> 319.0	10.0	0.0	40.5

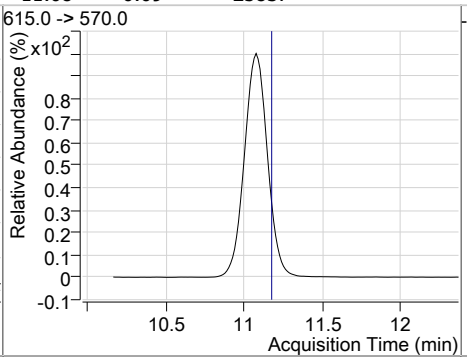


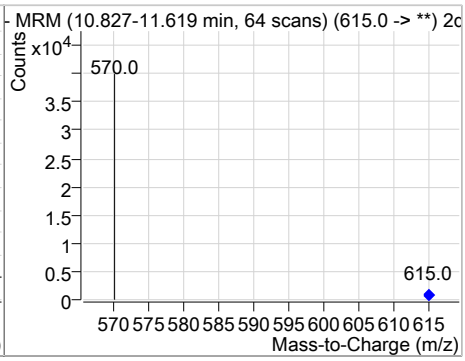




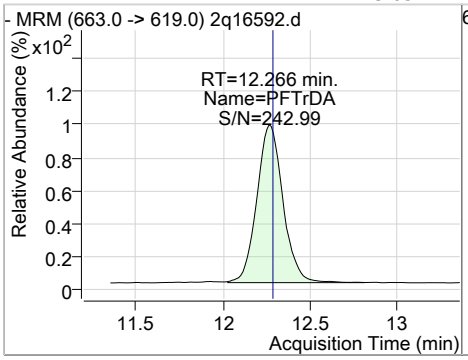
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	17.63	11.08	-0.09	25837				

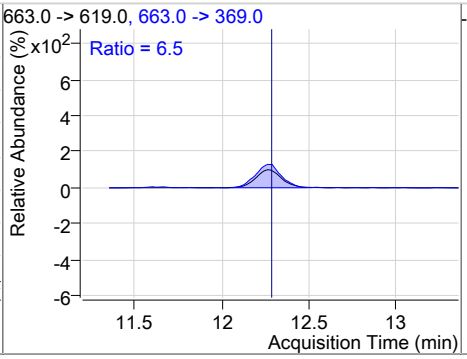


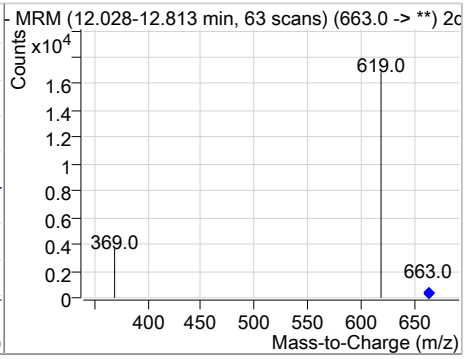




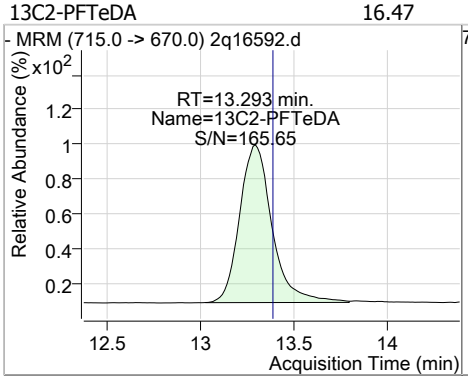
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	23.05	12.27	-0.10	10640	663.0 -> 369.0	6.5	0.0	35.1

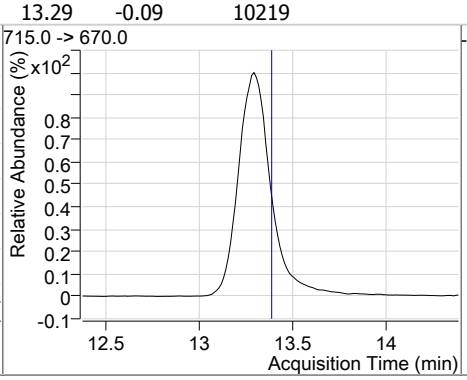


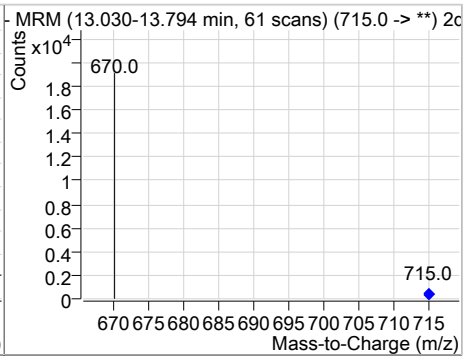




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	16.47	13.29	-0.09	10219				

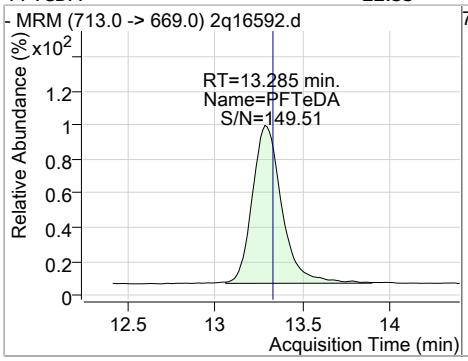


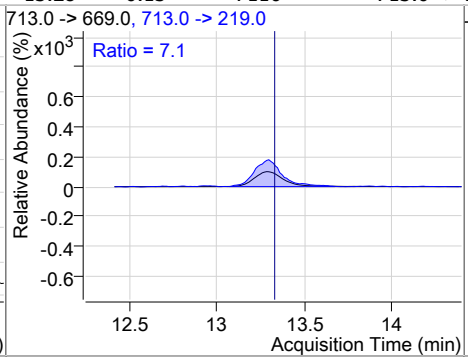


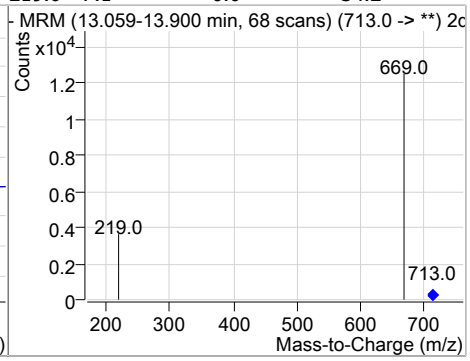


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	22.55	13.28	-0.13	7116	713.0 -> 219.0	7.1	0.0	34.2







Manual Integration Approval Summary

Sample Number: S2Q291-CC291
Lab FileID: 2Q16592.D
Injection Time: 07/06/18 01:44
Method: EPA 537M QSM5.1 B-15
Analyst approved: 07/06/18 10:17 Natasha Gumtie
Supervisor approved: 07/06/18 17:13 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.05	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.37	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/06/18 17:13

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16599.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/6/2018 4:02:18 AM
Sample Name : cc291-1
Vial : Vial 3
DA Method File : PFC_ID_070518_S2Q291.quantmethod.xml
Batch Name : s2q291.batch.bin
Sample Information : op70743,S2Q291,130,,,1.0,1,water

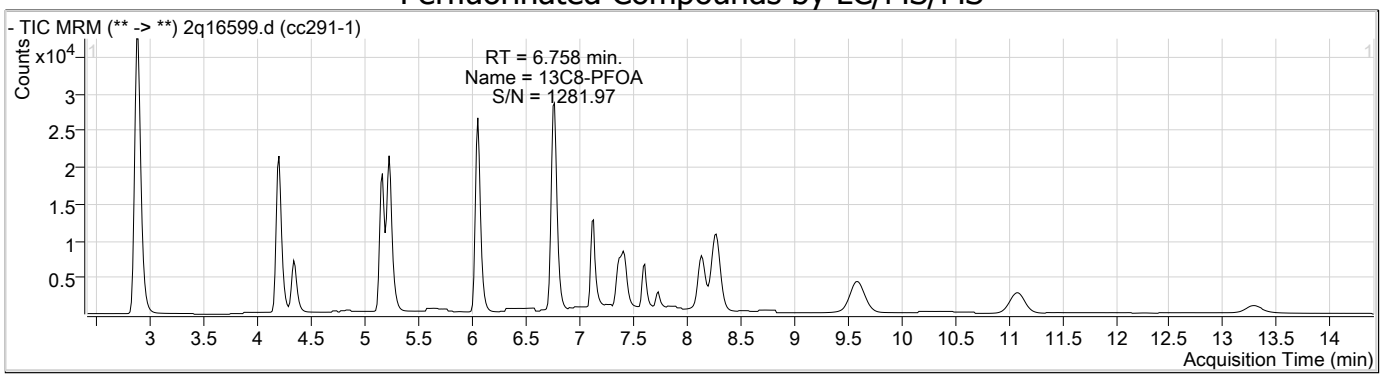
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.760	415.0 -> 370.0	22671	20.00	µg/L	-0.038
13C4-PFOS	7.372	503.0 -> 80.0	11922	20.00	µg/L	-0.026
M4-PFBA	2.878	217.0 -> 172.0	154225	20.00	µg/L	-0.025
M5-PFPeA	4.200	268.0 -> 223.0	71852	20.00	µg/L	-0.038
M5-PFHxA	5.228	318.0 -> 273.0	65422	20.00	µg/L	-0.038
M4-PFHpA	6.054	367.0 -> 322.0	65499	20.00	µg/L	-0.038
M8-PFOA	6.758	421.0 -> 376.0	33606	20.00	µg/L	-0.038
M9-PFNA	7.425	472.0 -> 427.0	22932	20.00	µg/L	-0.026
M6-PFDA	8.142	519.0 -> 474.0	35888	20.00	µg/L	-0.038
M7-PFUnDA	9.591	570.0 -> 525.0	41835	20.00	µg/L	-0.088
M2-PFDoDA	11.077	615.0 -> 570.0	27866	20.00	µg/L	-0.092
M2-PFTeDA	13.281	715.0 -> 670.0	11205	20.00	µg/L	-0.100
M8-FOSA	7.130	506.0 -> 78.0	35758	20.00	µg/L	-0.013
M3-PFBS	4.330	302.0 -> 99.0	22465	20.00	µg/L	-0.038
M3-PFHxS	6.048	402.0 -> 99.0	20124	20.00	µg/L	-0.038
M8-PFOS	7.370	507.0 -> 99.0	9850	20.00	µg/L	-0.026
M2-4:2FTS	5.160	329.0 -> 309.0	61619	20.00	µg/L	-0.038
M2-6:2FTS	6.768	429.0 -> 409.0	48453	20.00	µg/L	-0.040
M2-8:2FTS	8.273	529.0 -> 509.0	57565	20.00	µg/L	-0.052
M3-MeFOSAA	7.607	573.0 -> 419.0	17617	20.00	µg/L	-0.013
System Monitoring Compounds						
13C2-4:2FTS	5.160	329.0 -> 309.0	61624	18.79	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.9%		
13C2-6:2FTS	6.768	429.0 -> 409.0	48452	18.33	µg/L	-0.040
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.7%		
13C2-8:2FTS	8.273	529.0 -> 509.0	57533	17.73	µg/L	-0.052
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.6%		
13C2-PFDoDA	11.077	615.0 -> 570.0	28131	19.20	µg/L	-0.092
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.0%		
13C2-PFTeDA	13.281	715.0 -> 670.0	11239	18.11	µg/L	-0.100
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.6%		
13C3-PFBS	4.330	302.0 -> 99.0	22459	20.32	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
13C3-PFHxS	6.048	402.0 -> 99.0	20124	20.09	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.5%		
13C4-PFBA	2.878	217.0 -> 172.0	154124	20.13	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%		
13C4-PFHpA	6.054	367.0 -> 322.0	65473	20.32	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
13C5-PFHxA	5.228	318.0 -> 273.0	65741	20.06	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C5-PFPeA	4.200	268.0 -> 223.0	71843	19.72	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.6%		
13C6-PFDA	8.142	519.0 -> 474.0	35880	19.38	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.9%		

Perfluorinated Compounds by LC/MS/MS

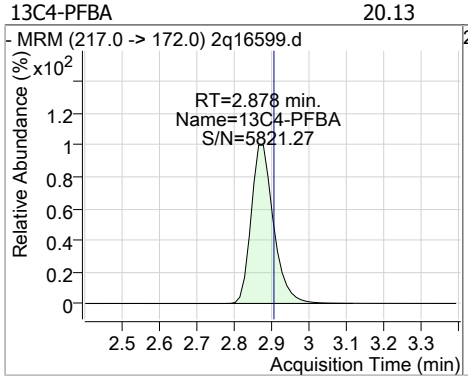
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	9.591	570.0 -> 525.0	41837	20.45	µg/L		-0.088
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%			
13C8-FOSA	7.130	506.0 -> 78.0	35775	20.32	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.6%			
13C8-PFOA	6.758	421.0 -> 376.0	33611	19.30	µg/L		-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.5%			
13C8-PFOS	7.370	507.0 -> 99.0	9844	20.09	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.5%			
13C9-PFNA	7.425	472.0 -> 427.0	22929	19.27	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.4%			
d3-MeFOSAA	7.607	573.0 -> 419.0	17614	20.06	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.3%			
M2-PFOA	6.760	415.0 -> 370.0	22684	20.01	ng/ml		-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
M4-PFOS	7.372	503.0 -> 80.0	11919	20.00	ng/ml		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
Target Compounds							**QValue**
4:2FTS	5.162	327.0 -> 307.0	1568	0.96	µg/L		80
6:2FTS	6.769	427.0 -> 407.0	1155	0.93	µg/L		87
8:2FTS	8.276	527.0 -> 507.0	1644	1.03	µg/L		72
EtFOSAA	7.731	584.0 -> 419.0	300	1.05	µg/L		74
FOSA	7.118	498.0 -> 78.0	853	0.95	µg/L		94
MeFOSAA	7.608	570.0 -> 419.0	300	0.97	µg/L		86
PFBA	2.874	213.0 -> 169.0	1175	0.95	µg/L		100
PFBS	4.334	299.0 -> 80.0	1479	0.98	µg/L		94
PFDA	8.144	513.0 -> 469.0	658	0.95	µg/L		98
PFDoDA	11.083	613.0 -> 569.0	800	1.11	µg/L		99
PFDS	9.374	599.0 -> 80.0	352	0.94	µg/L		91
PFHpA	6.057	363.0 -> 319.0	2420	1.04	µg/L		96
PFHpS	6.728	449.0 -> 80.0	563	0.96	µg/L		94
PFHxA	5.230	313.0 -> 269.0	1055	0.99	µg/L		91
PFHxS	6.051	399.0 -> 80.0	1150	1.03	µg/L	m	97
PFNA	7.426	463.0 -> 419.0	507	1.11	µg/L		78
PFNS	8.050	549.0 -> 80.0	456	1.02	µg/L		98
PFOA	6.761	413.0 -> 369.0	890	1.06	µg/L		96
PFOS	7.372	499.0 -> 80.0	619	1.04	µg/L	m	82
PFPeA	4.203	263.0 -> 219.0	4239	1.22	µg/L		100
PFPeS	5.283	349.0 -> 80.0	840	0.91	µg/L		99
PFTeDA	13.285	713.0 -> 669.0	383	1.07	µg/L		85
PFTrDA	12.254	663.0 -> 619.0	527	1.02	µg/L		98
PFUnDA	9.595	563.0 -> 519.0	929	0.94	µg/L		97

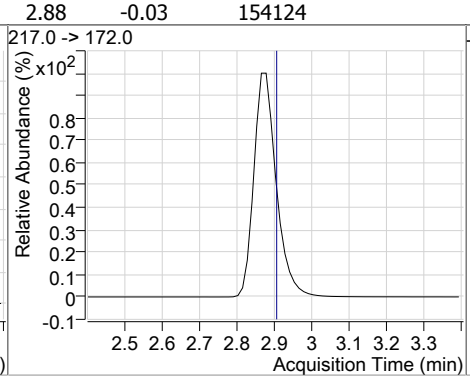
 # = Qualifier out of range, m = manually integrated, + = Area summed

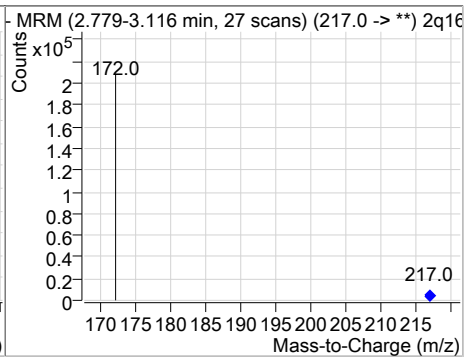
Perfluorinated Compounds by LC/MS/MS



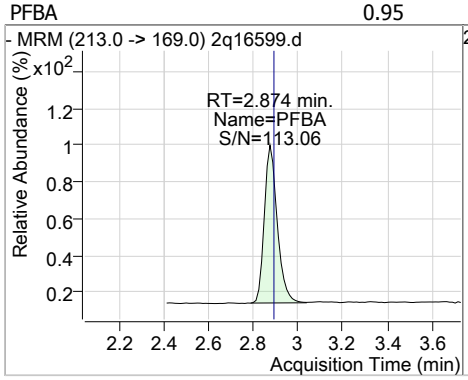
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.13	2.88	-0.03	154124				

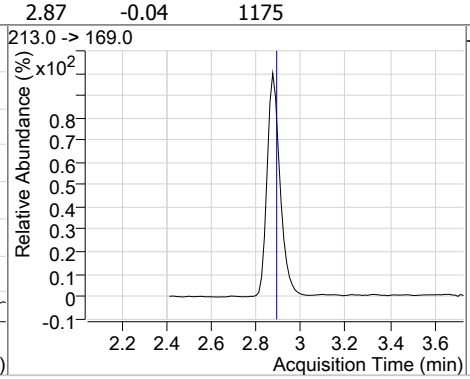


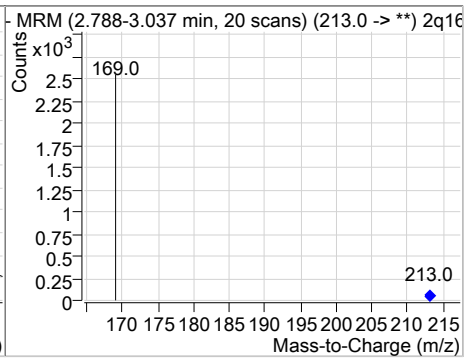




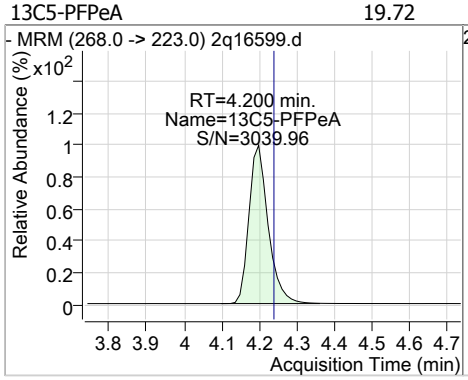
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.95	2.87	-0.04	1175				

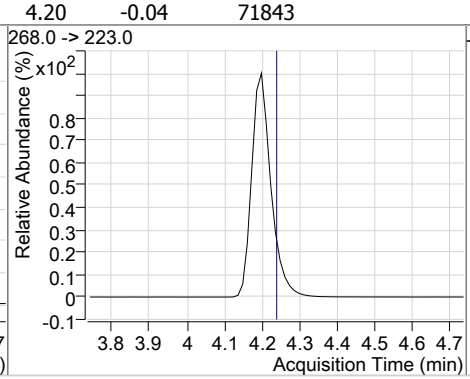


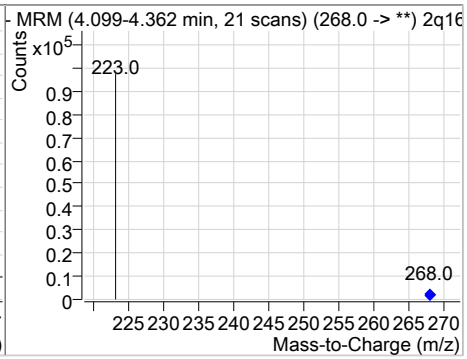




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.72	4.20	-0.04	71843				

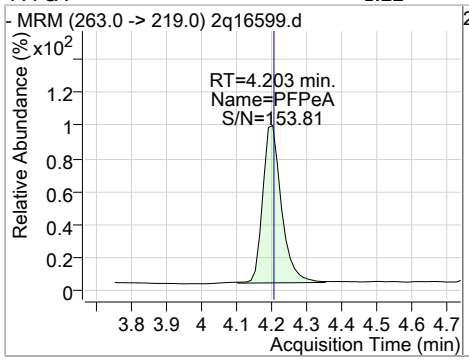


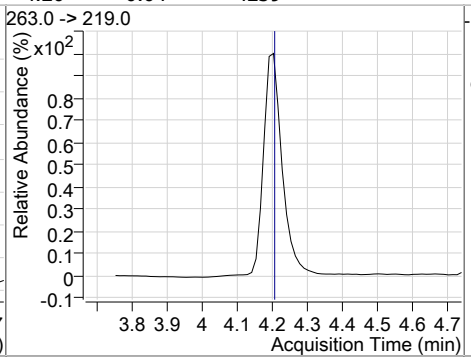


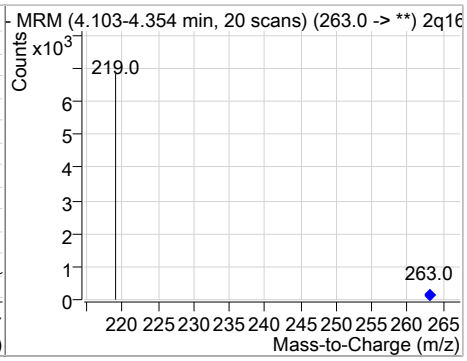


Perfluorinated Compounds by LC/MS/MS

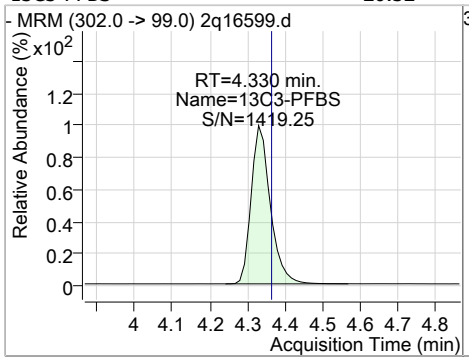
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.22	4.20	-0.04	4239				

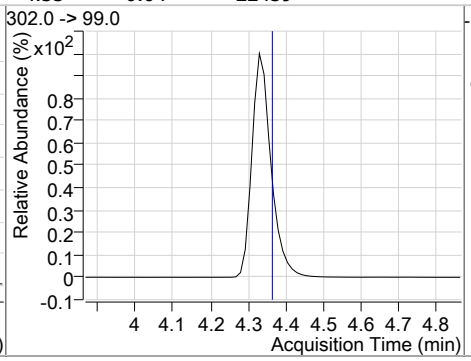


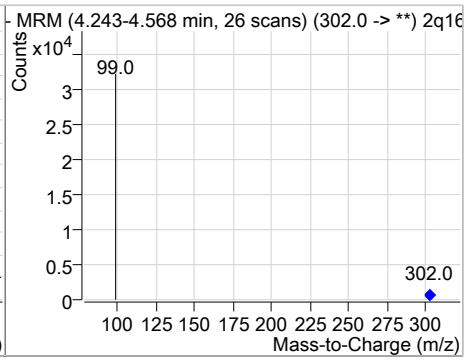




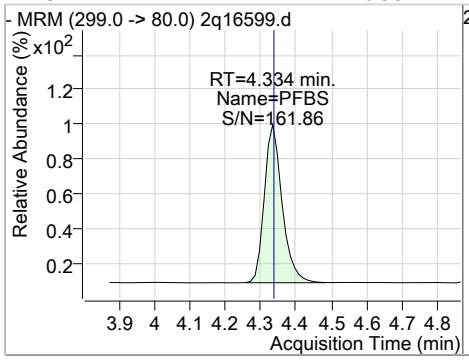
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.32	4.33	-0.04	22459				

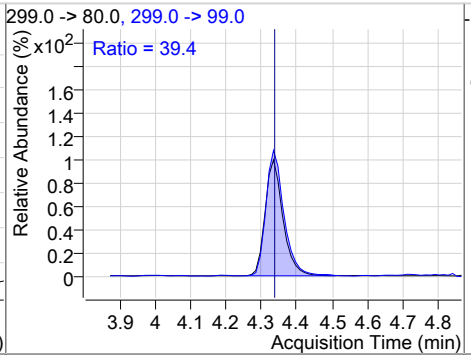


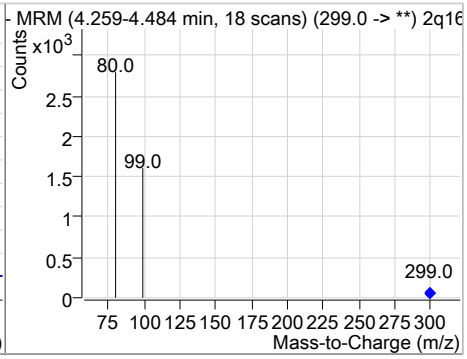




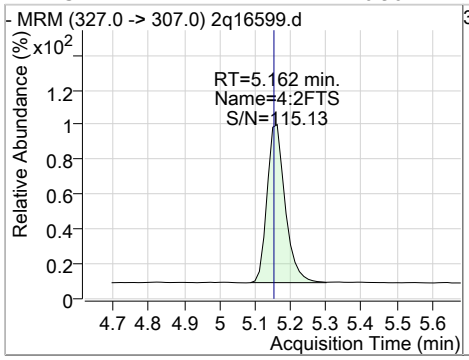
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.98	4.33	-0.04	1479	299.0 -> 99.0	39.4	5.8	65.8

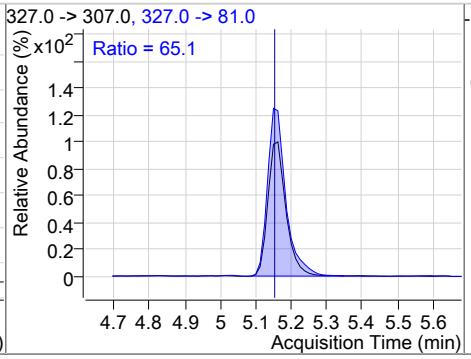


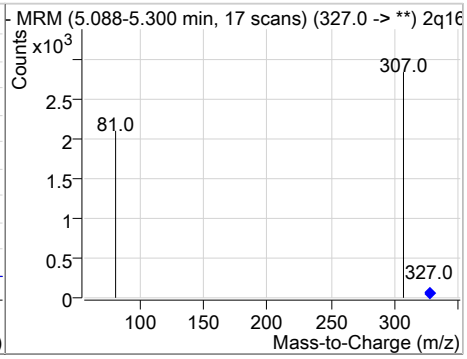




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.96	5.16	-0.03	1568	327.0 -> 81.0	65.1	21.0	81.0

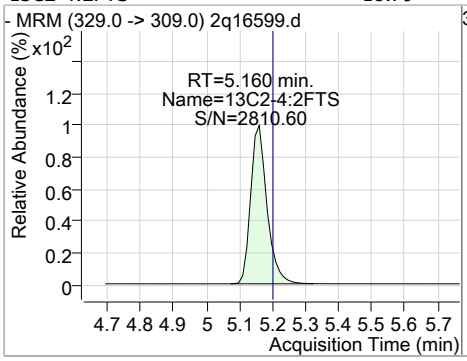


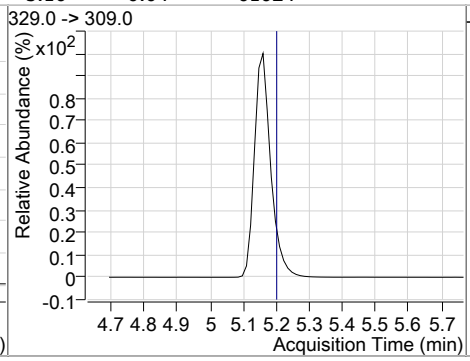


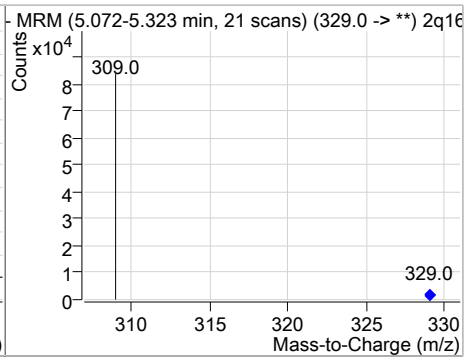


Perfluorinated Compounds by LC/MS/MS

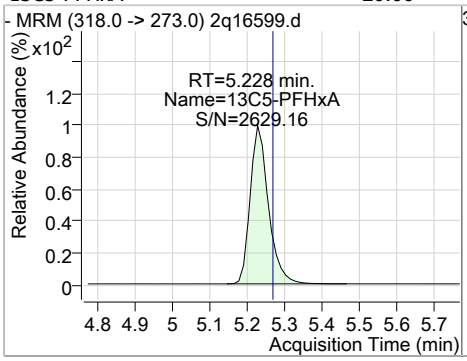
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.79	5.16	-0.04	61624				

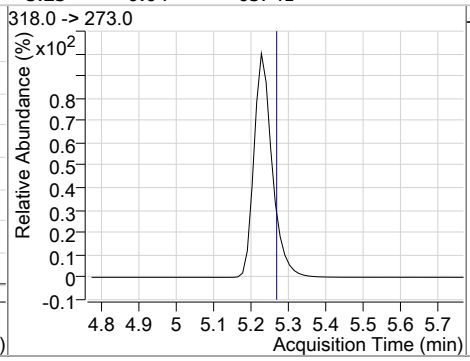


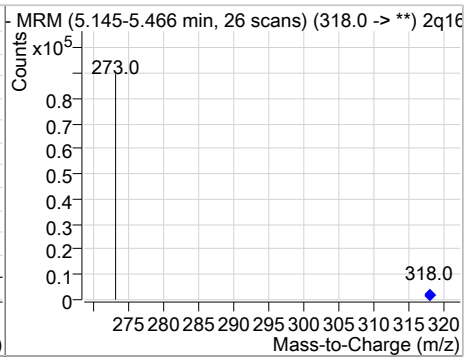




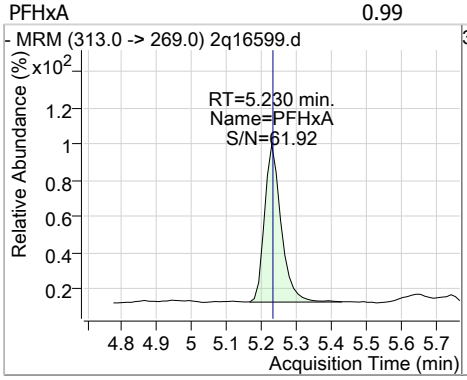
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.06	5.23	-0.04	65741				

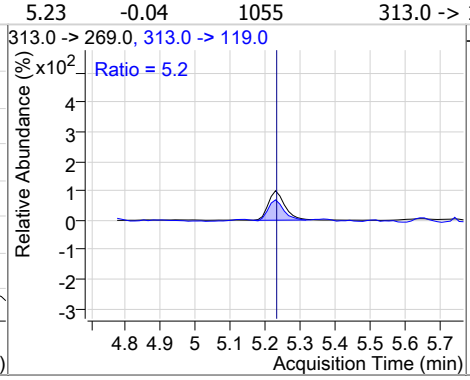


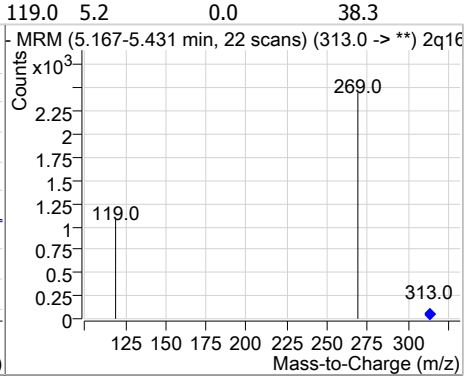




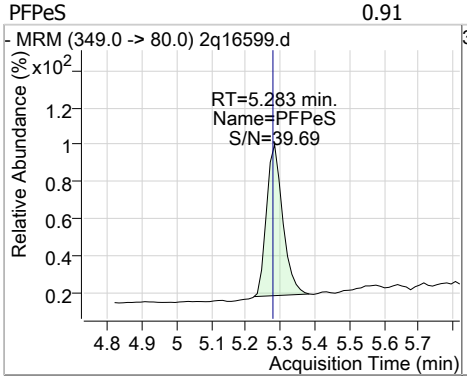
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.99	5.23	-0.04	1055	313.0 -> 119.0	5.2	0.0	38.3

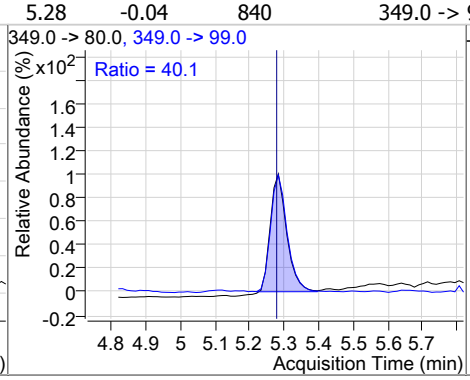


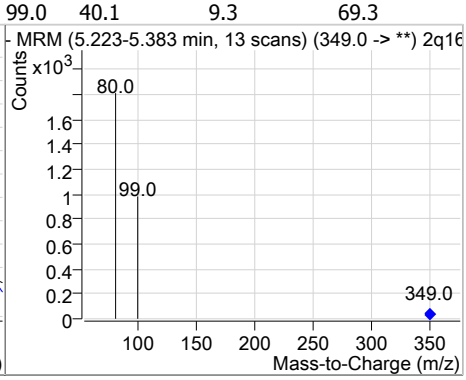




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.91	5.28	-0.04	840	349.0 -> 99.0	40.1	9.3	69.3

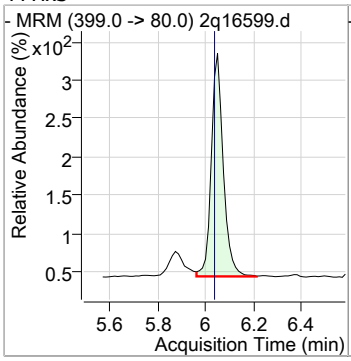


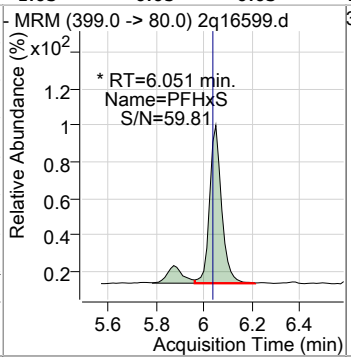


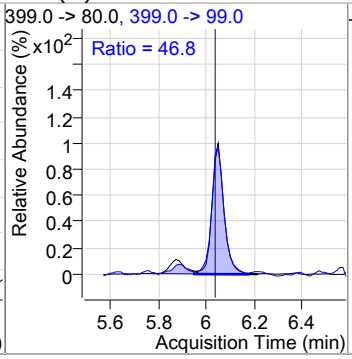


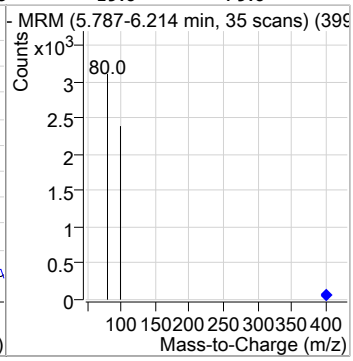
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.03	6.05	-0.03	1150 (m)	399.0 -> 99.0	46.8	19.0	79.0

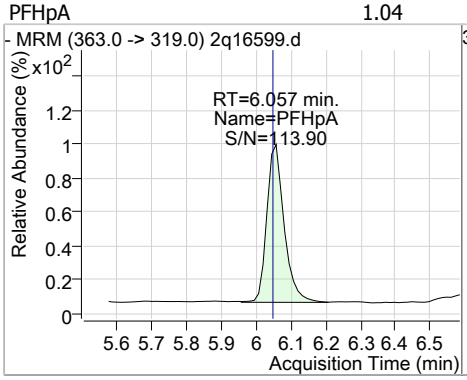


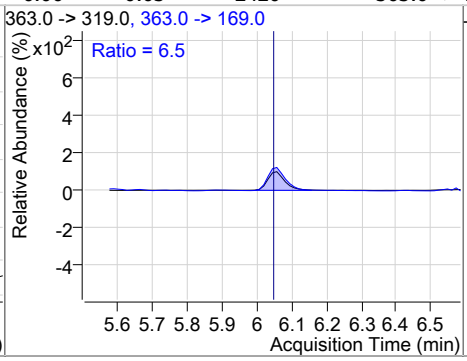


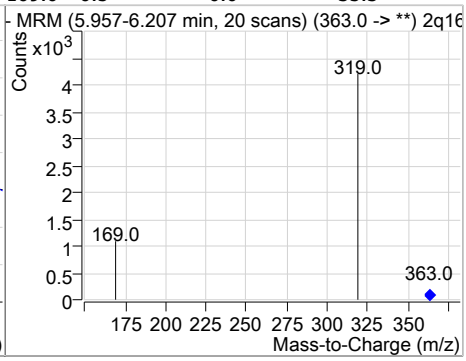




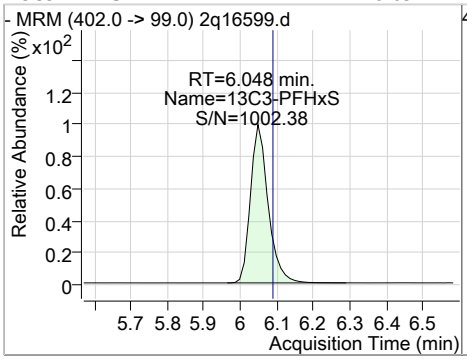
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.04	6.06	-0.03	2420	363.0 -> 169.0	6.5	0.0	35.3

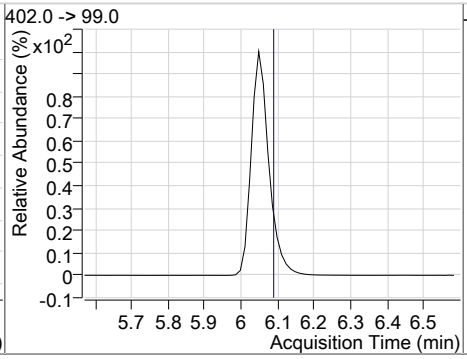


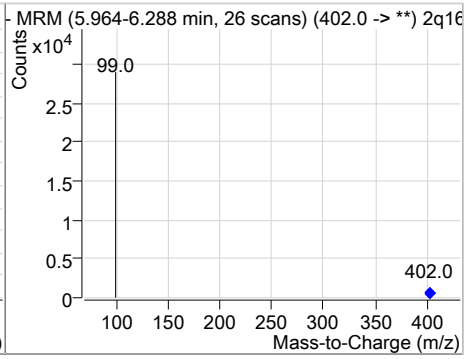




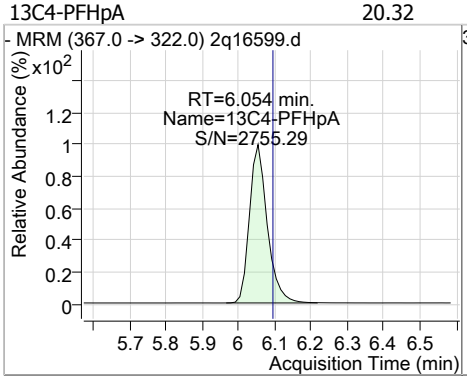
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.09	6.05	-0.04	20124				

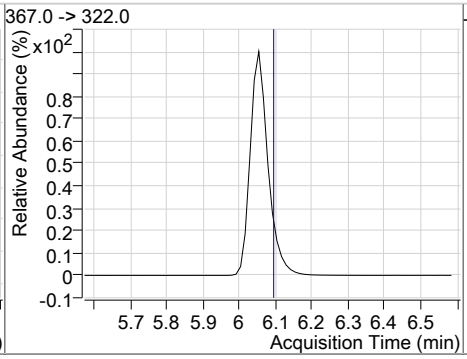


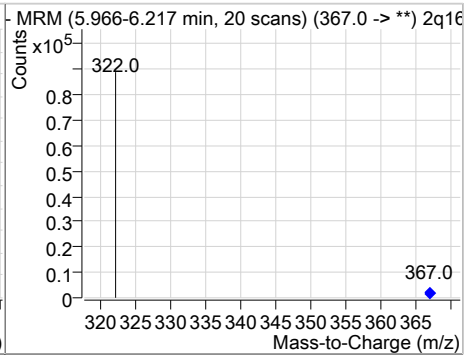




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.32	6.05	-0.04	65473				

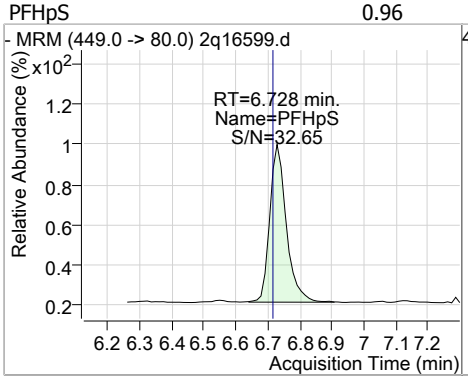


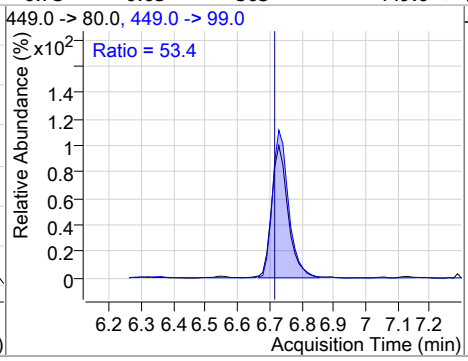


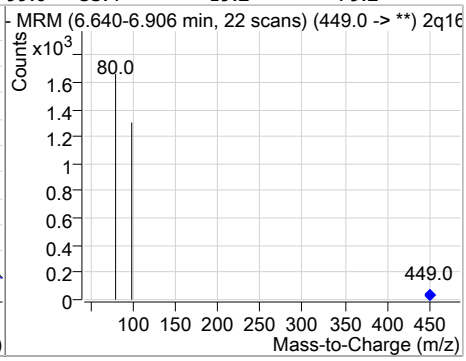


Perfluorinated Compounds by LC/MS/MS

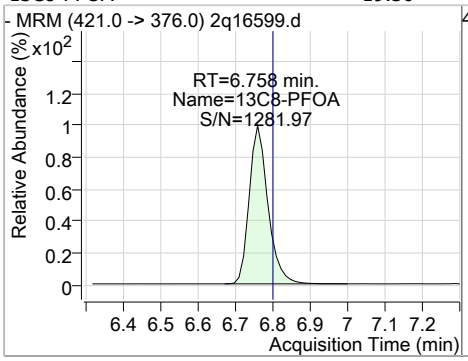
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.96	6.73	-0.03	563	449.0 -> 99.0	53.4	19.2	79.2

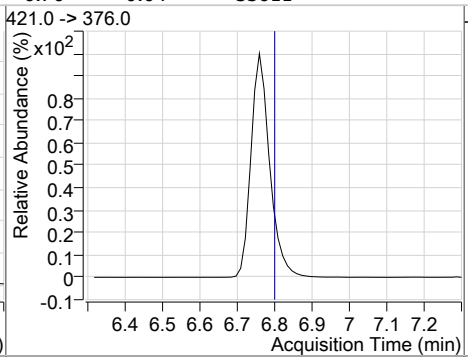


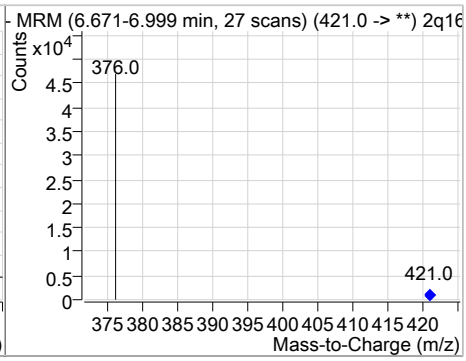




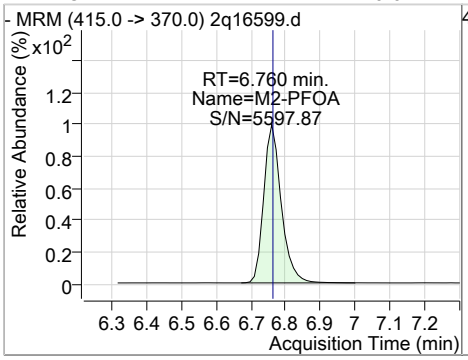
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.30	6.76	-0.04	33611				

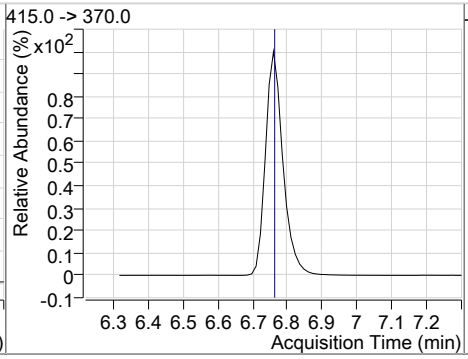


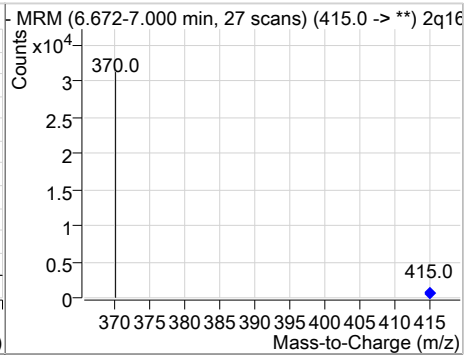




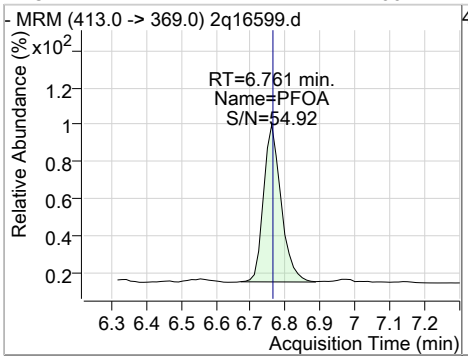
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.01	6.76	-0.04	22684				

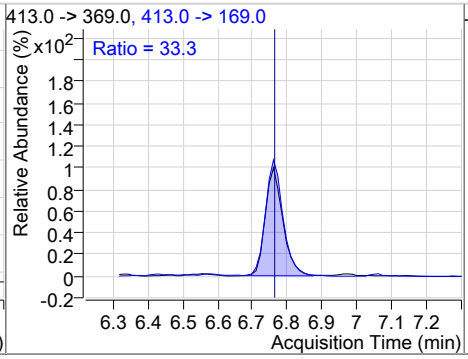


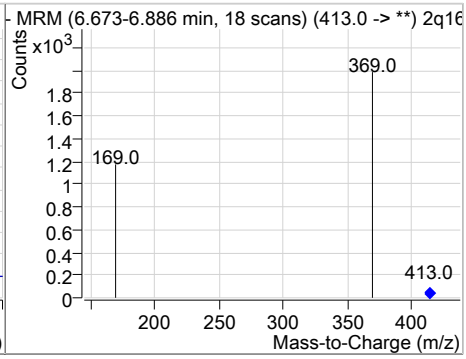




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.06	6.76	-0.04	890	413.0 -> 169.0	33.3	0.9	60.9

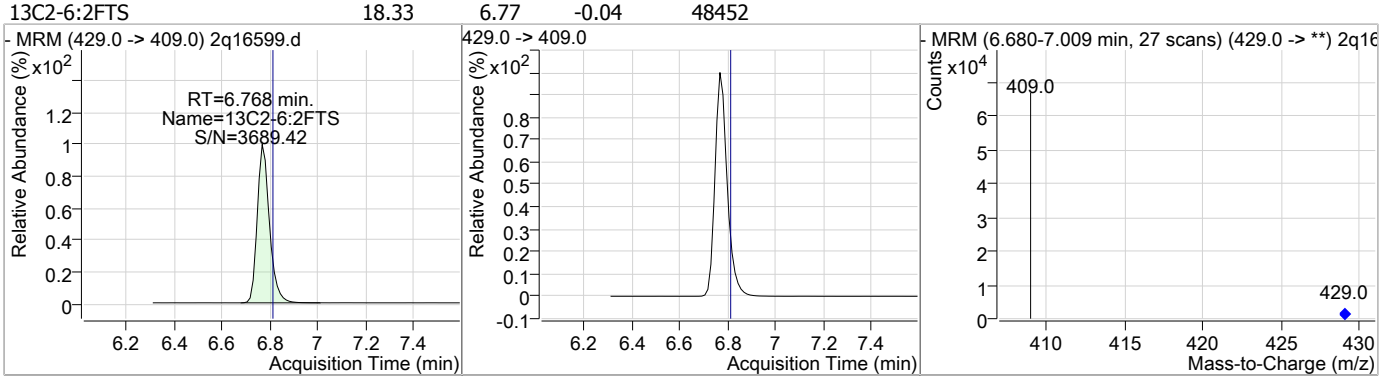




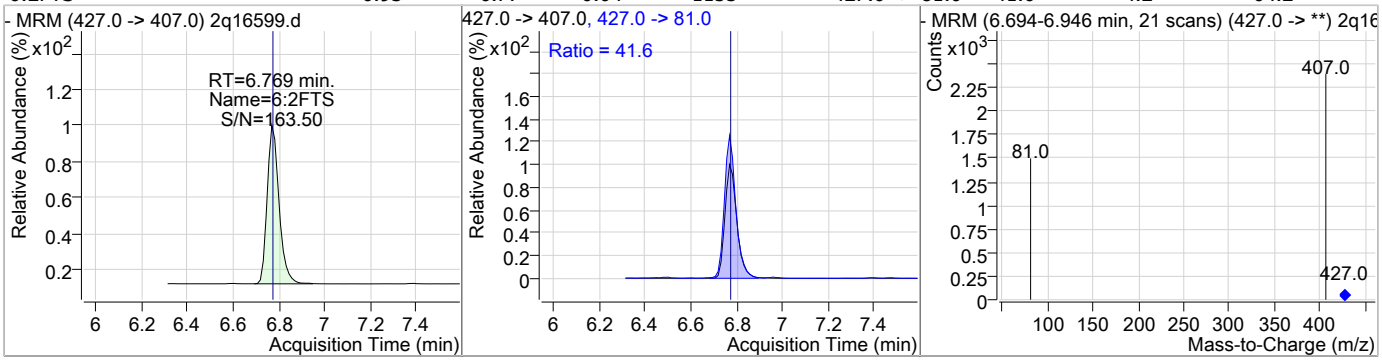


Perfluorinated Compounds by LC/MS/MS

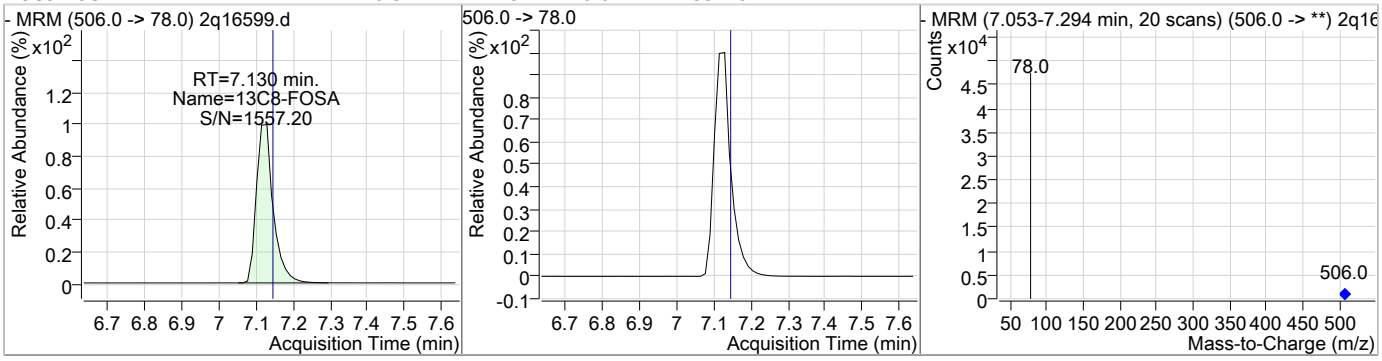
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.33	6.77	-0.04	48452				



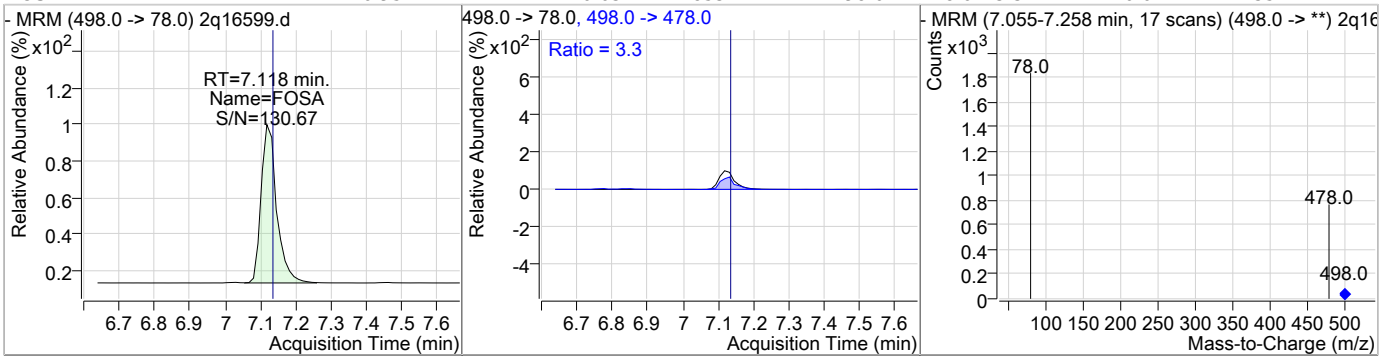
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.93	6.77	-0.04	1155	427.0 -> 81.0	41.6	4.2	64.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.32	7.13	-0.01	35775				

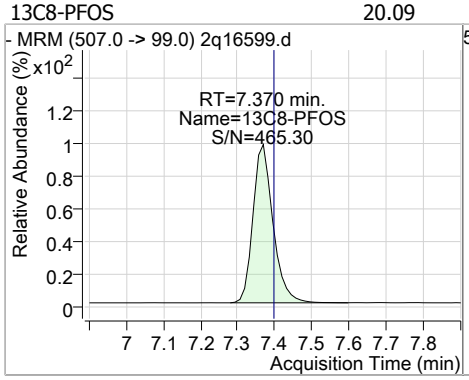


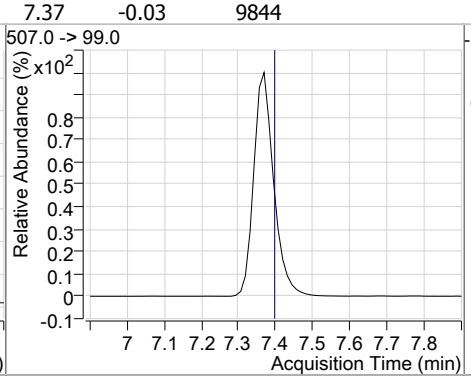
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.95	7.12	-0.03	853	498.0 -> 478.0	3.3	0.0	35.2

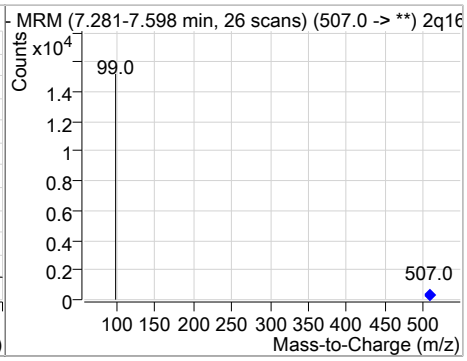


Perfluorinated Compounds by LC/MS/MS

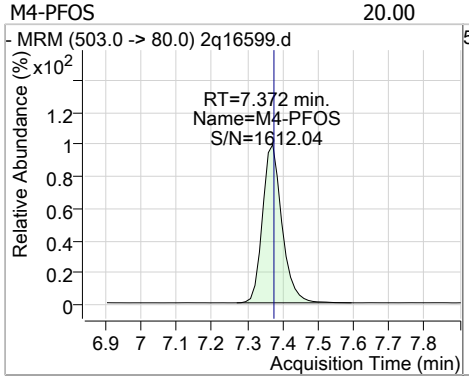
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.09	7.37	-0.03	9844				

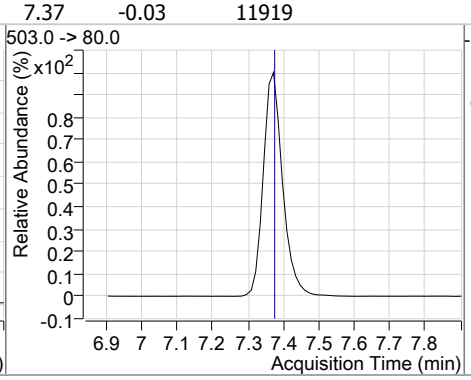


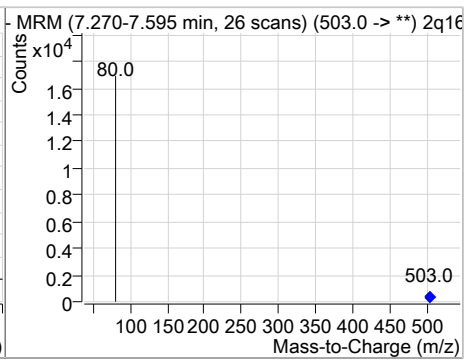




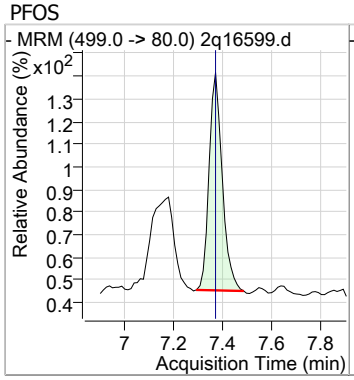
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.00	7.37	-0.03	11919				

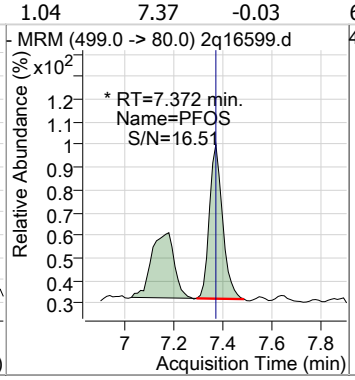


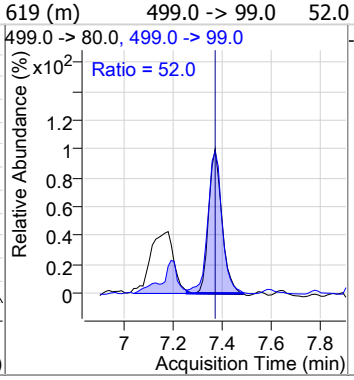


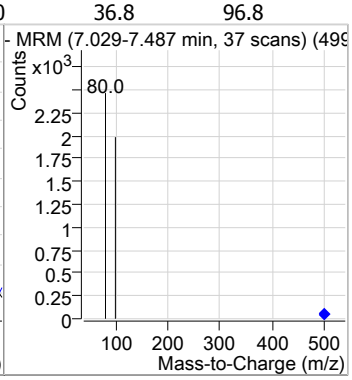


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.04	7.37	-0.03	619 (m)	499.0 -> 99.0	52.0	36.8	96.8

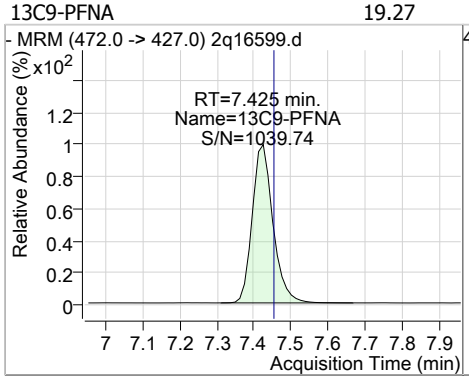


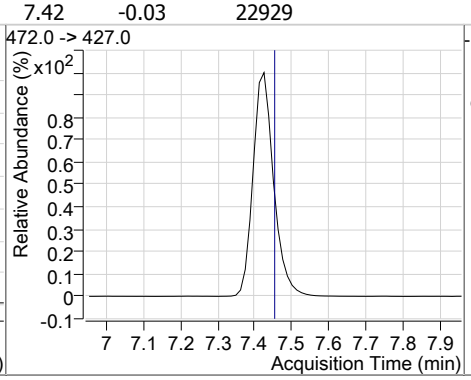


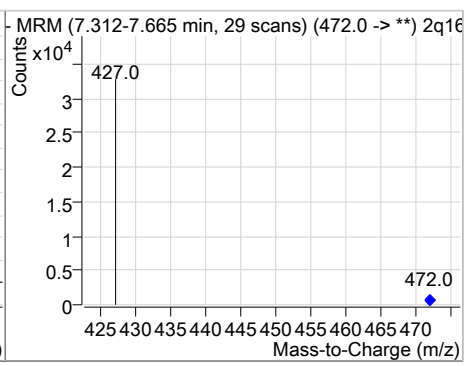




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.27	7.42	-0.03	22929				

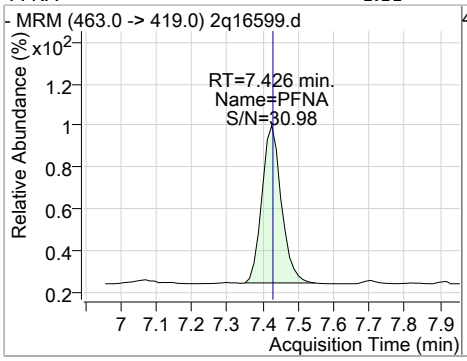


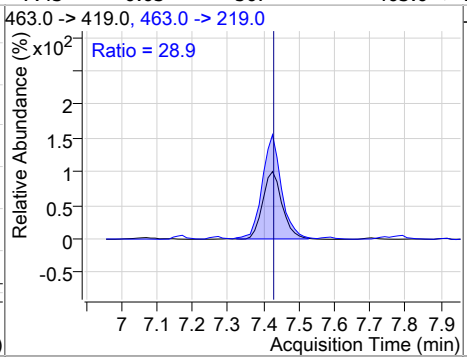


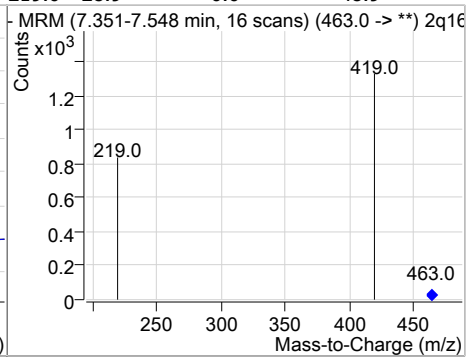


Perfluorinated Compounds by LC/MS/MS

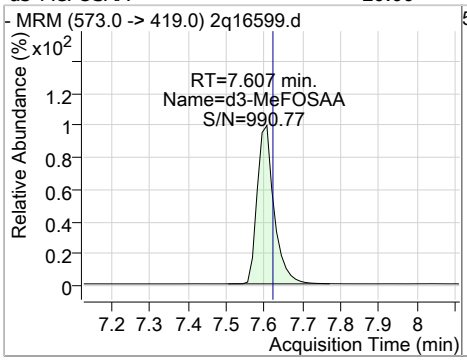
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.11	7.43	-0.03	507	463.0 -> 219.0	28.9	0.0	48.9

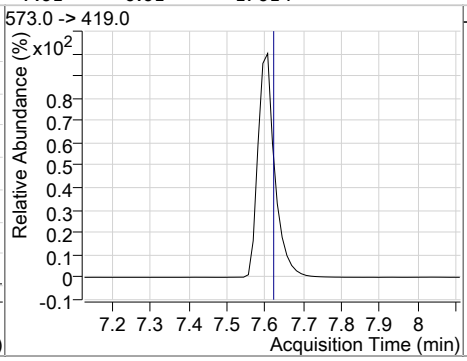


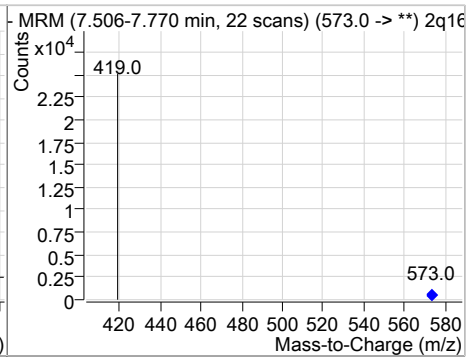




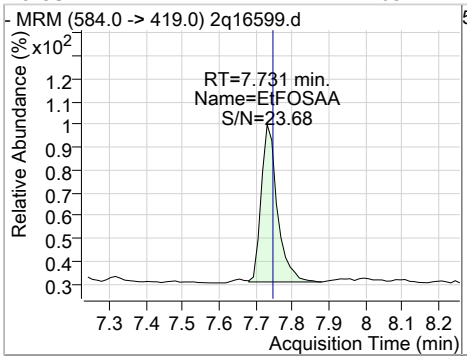
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.06	7.61	-0.01	17614				

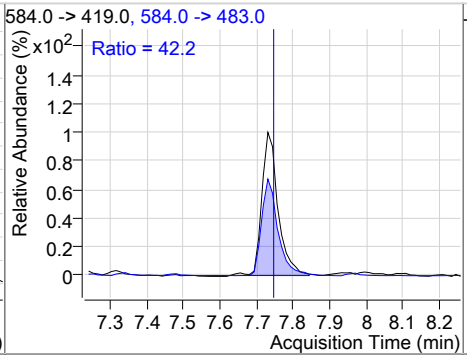


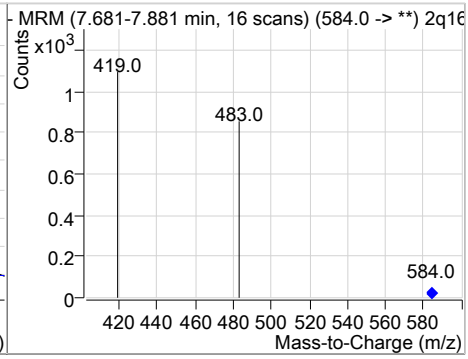




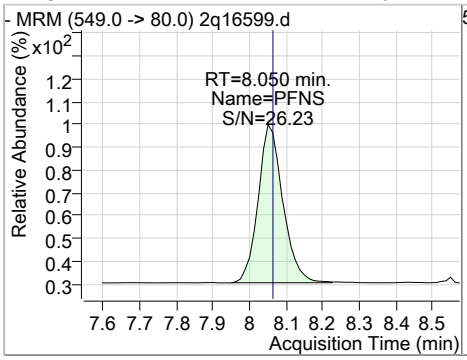
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.05	7.73	-0.03	300	584.0 -> 483.0	42.2	31.9	91.9

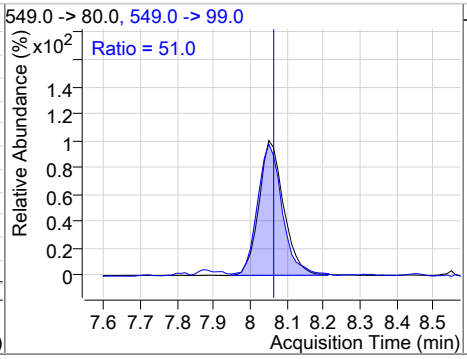


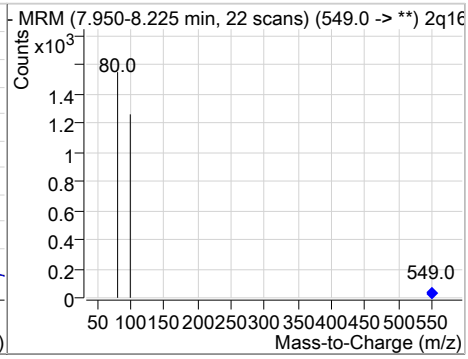




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	1.02	8.05	-0.04	456	549.0 -> 99.0	51.0	22.2	82.2

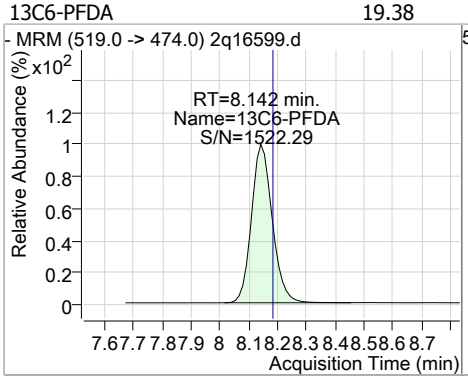


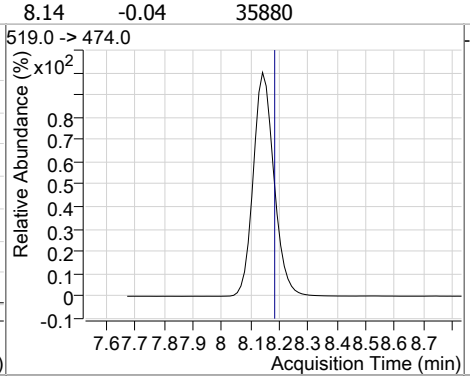


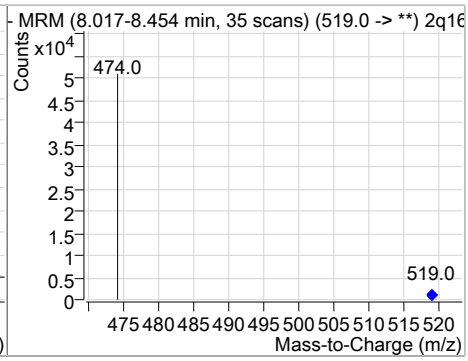


Perfluorinated Compounds by LC/MS/MS

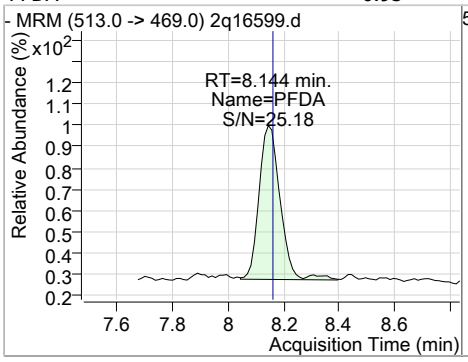
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.38	8.14	-0.04	35880				

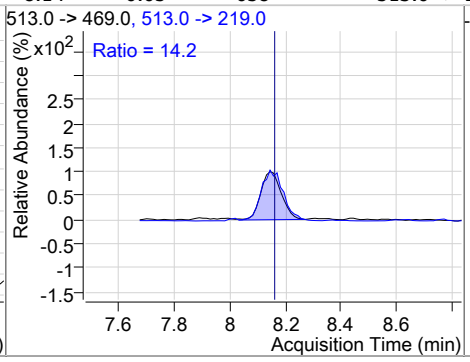


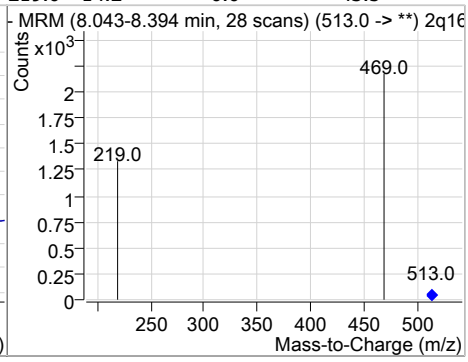




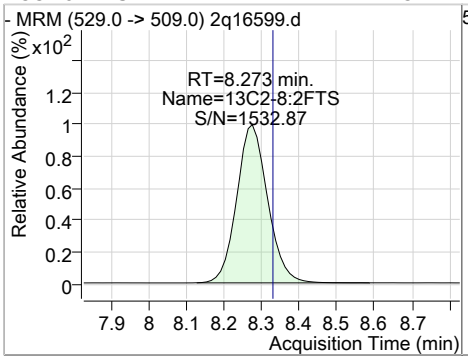
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.95	8.14	-0.05	658	513.0 -> 219.0	14.2	0.0	43.5

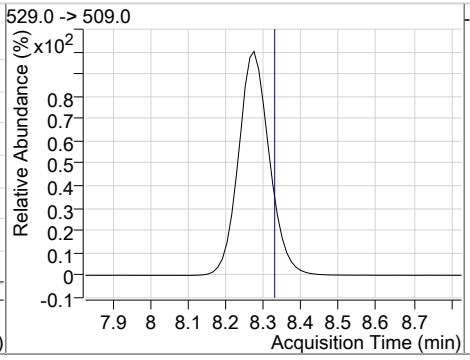


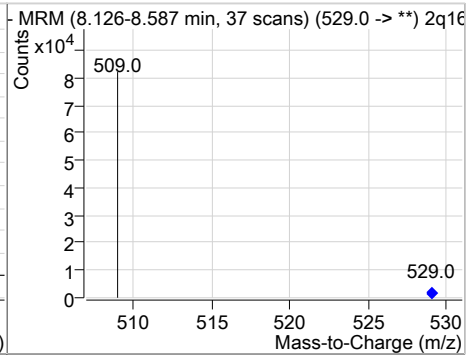




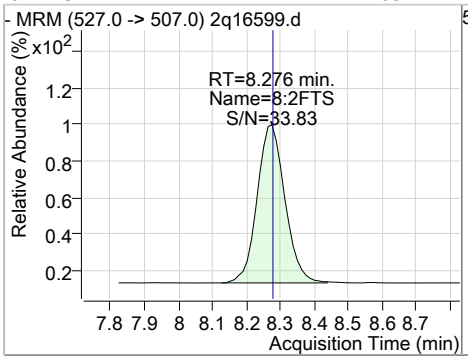
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	17.73	8.27	-0.05	57533				

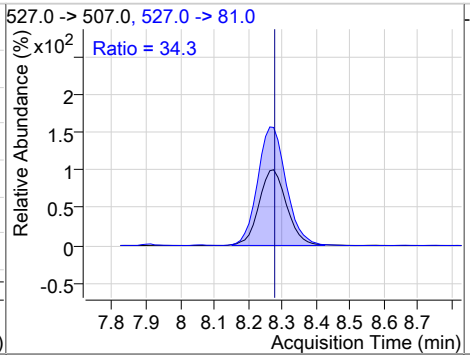


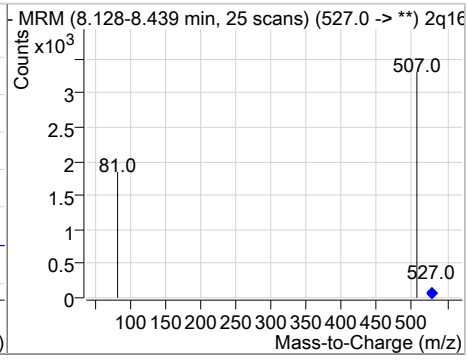




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.03	8.28	-0.05	1644	527.0 -> 81.0	34.3	0.0	51.3

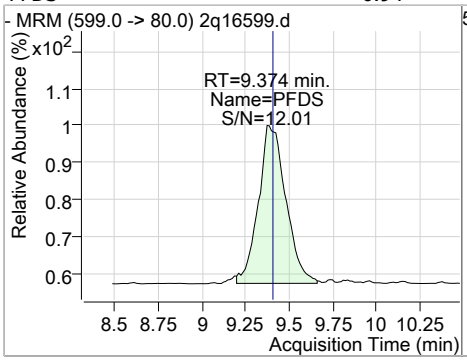


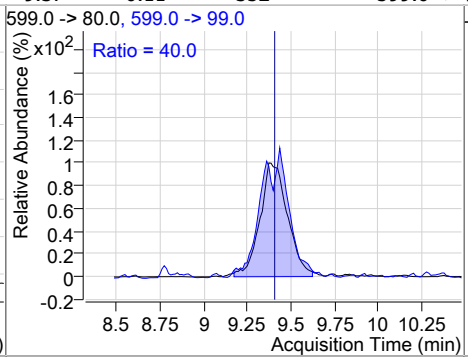


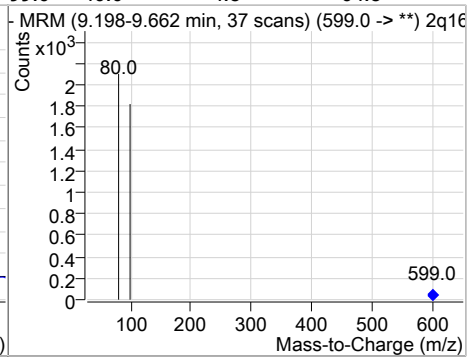


Perfluorinated Compounds by LC/MS/MS

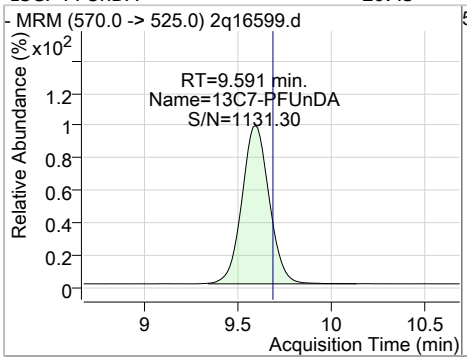
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.94	9.37	-0.11	352	599.0 -> 99.0	40.0	4.8	64.8

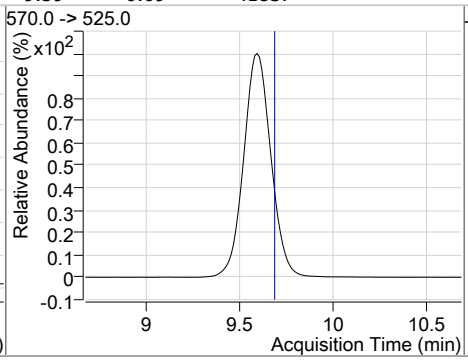


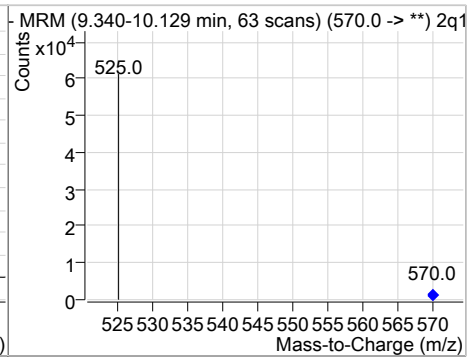




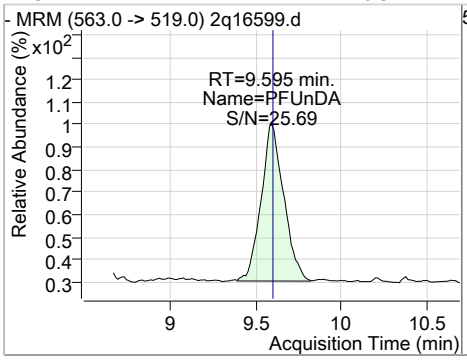
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.45	9.59	-0.09	41837				

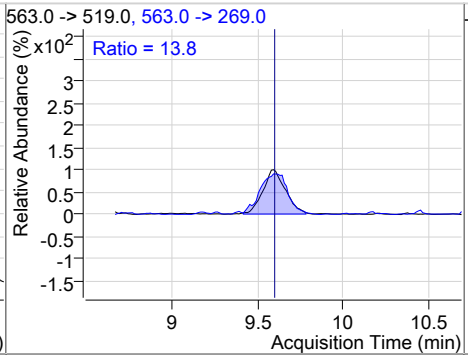


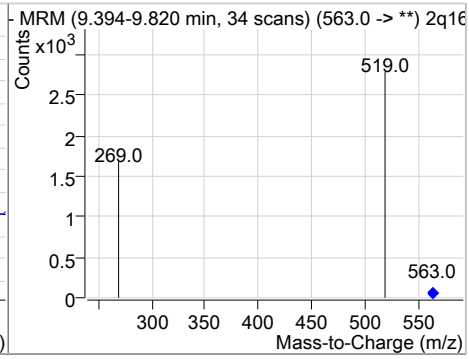




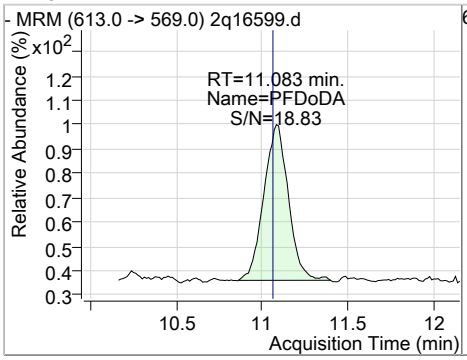
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.94	9.59	-0.09	929	563.0 -> 269.0	13.8	0.0	42.5

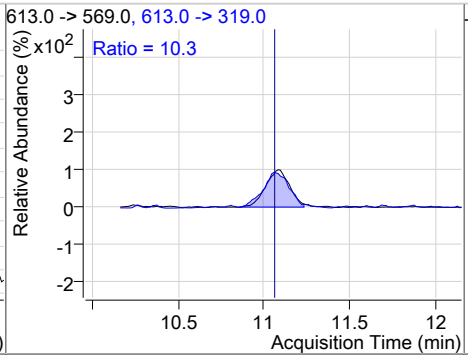


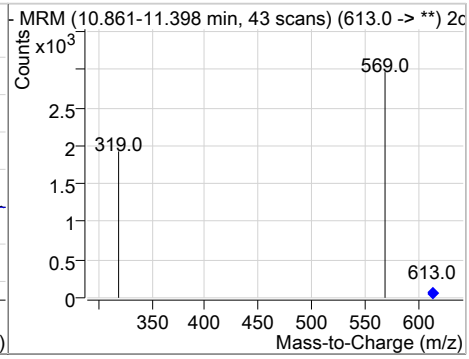




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	1.11	11.08	-0.07	800	613.0 -> 319.0	10.3	0.0	40.5

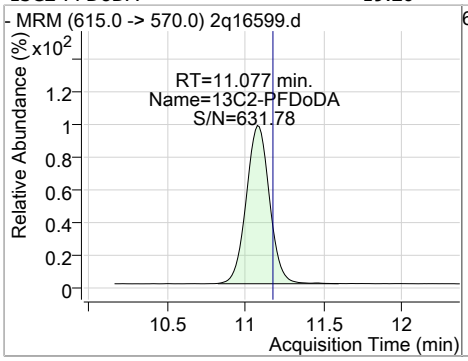


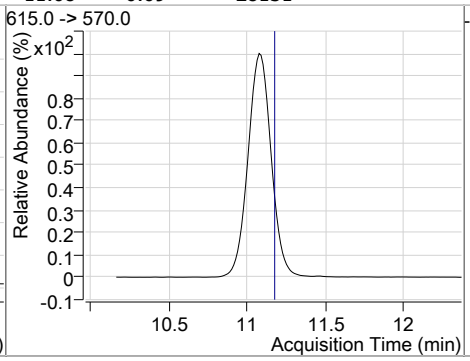


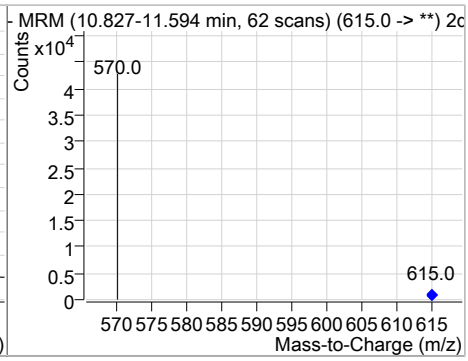


Perfluorinated Compounds by LC/MS/MS

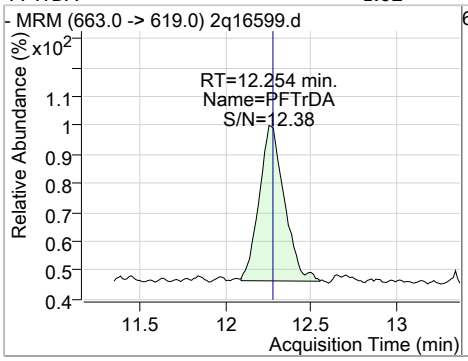
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.20	11.08	-0.09	28131				

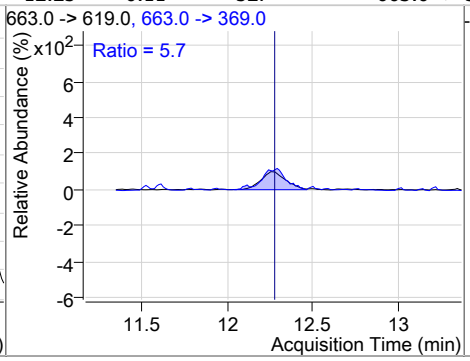


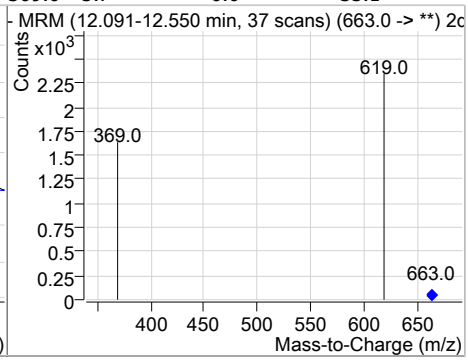




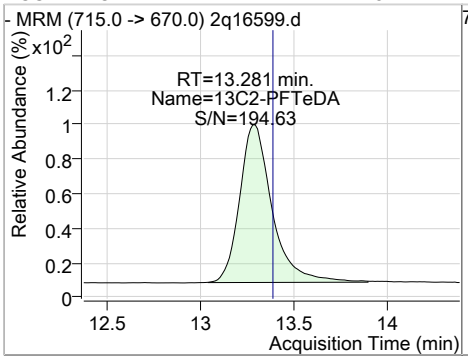
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	1.02	12.25	-0.11	527	663.0 -> 369.0	5.7	0.0	35.1

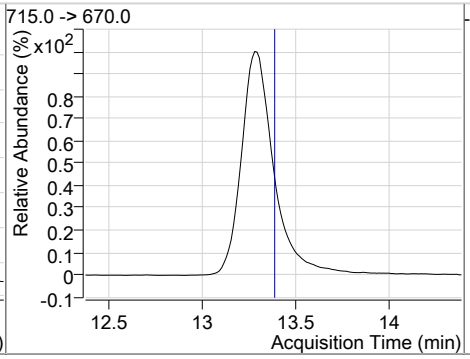


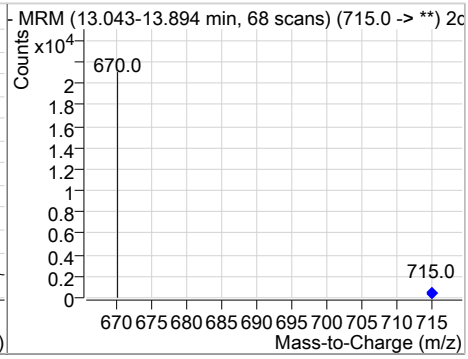




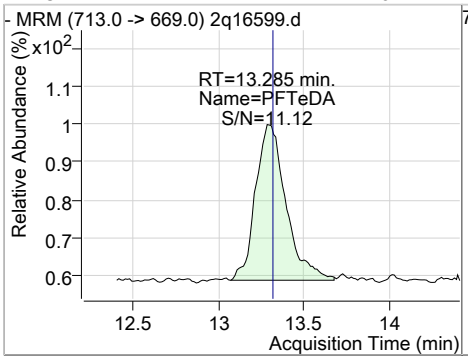
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	18.11	13.28	-0.10	11239				

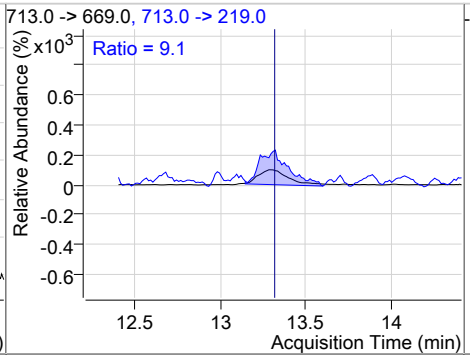


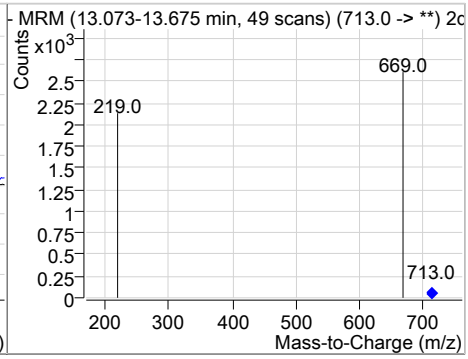




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.07	13.28	-0.13	383	713.0 -> 219.0	9.1	0.0	34.2







Manual Integration Approval Summary

Sample Number:	S2Q291-CC291	**Method:**	EPA 537M QSM5.1 B-15
Lab FileID:	2Q16599.D	**Analyst approved:**	07/06/18 10:17 Natasha Gumtie
Injection Time:	07/06/18 04:02	**Supervisor approved:**	07/06/18 17:13 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.05	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.37	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/06/18 17:13

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16600.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/6/2018 4:22:02 AM
Sample Name : cc291-20
Vial : Vial 7
DA Method File : PFC_ID_070518_S2Q291.quantmethod.xml
Batch Name : s2q291.batch.bin
Sample Information : op70743,S2Q291,130,,,1.0,1,water

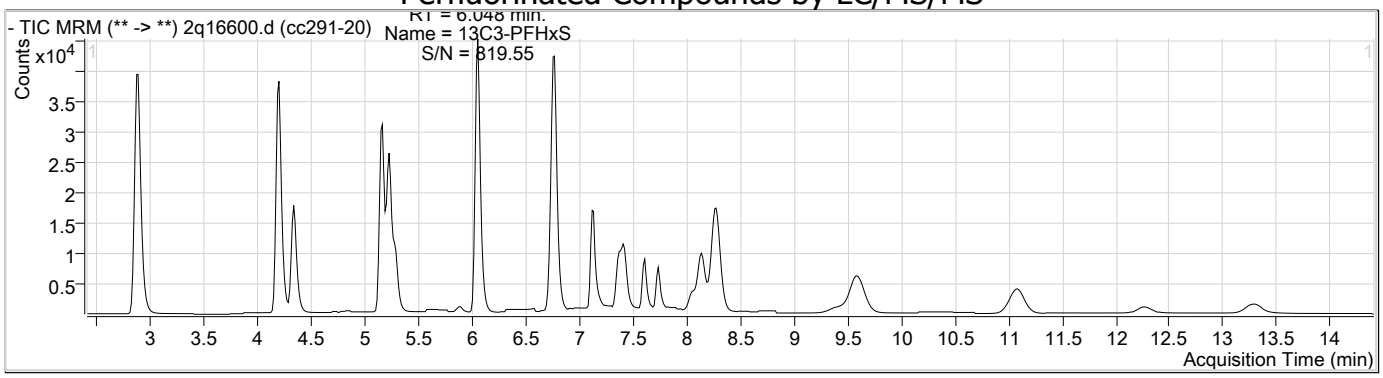
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.760	415.0 -> 370.0	19812	20.00	µg/L	-0.038
13C4-PFOS	7.372	503.0 -> 80.0	10599	20.00	µg/L	-0.026
M4-PFBA	2.878	217.0 -> 172.0	140396	20.00	µg/L	-0.025
M5-PFPeA	4.200	268.0 -> 223.0	65128	20.00	µg/L	-0.038
M5-PFHxA	5.228	318.0 -> 273.0	59143	20.00	µg/L	-0.038
M4-PFHpA	6.054	367.0 -> 322.0	57607	20.00	µg/L	-0.038
M8-PFOA	6.758	421.0 -> 376.0	30785	20.00	µg/L	-0.038
M9-PFNA	7.425	472.0 -> 427.0	21006	20.00	µg/L	-0.026
M6-PFDA	8.142	519.0 -> 474.0	31493	20.00	µg/L	-0.038
M7-PFUnDA	9.591	570.0 -> 525.0	38089	20.00	µg/L	-0.088
M2-PFDoDA	11.077	615.0 -> 570.0	25729	20.00	µg/L	-0.092
M2-PFTeDA	13.293	715.0 -> 670.0	9968	20.00	µg/L	-0.088
M8-FOSA	7.130	506.0 -> 78.0	30995	20.00	µg/L	-0.013
M3-PFBS	4.330	302.0 -> 99.0	20278	20.00	µg/L	-0.038
M3-PFHxS	6.048	402.0 -> 99.0	18027	20.00	µg/L	-0.038
M8-PFOS	7.370	507.0 -> 99.0	8859	20.00	µg/L	-0.026
M2-4:2FTS	5.160	329.0 -> 309.0	58804	20.00	µg/L	-0.038
M2-6:2FTS	6.768	429.0 -> 409.0	46337	20.00	µg/L	-0.040
M2-8:2FTS	8.273	529.0 -> 509.0	55783	20.00	µg/L	-0.052
M3-MeFOSAA	7.607	573.0 -> 419.0	15906	20.00	µg/L	-0.013
System Monitoring Compounds						
13C2-4:2FTS	5.160	329.0 -> 309.0	58809	17.93	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.7%		
13C2-6:2FTS	6.768	429.0 -> 409.0	46336	17.53	µg/L	-0.040
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.7%		
13C2-8:2FTS	8.273	529.0 -> 509.0	55785	17.19	µg/L	-0.052
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.0%		
13C2-PFDoDA	11.077	615.0 -> 570.0	25743	17.57	µg/L	-0.092
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.8%		
13C2-PFTeDA	13.293	715.0 -> 670.0	10202	16.44	µg/L	-0.088
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.2%		
13C3-PFBS	4.330	302.0 -> 99.0	20280	18.35	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.7%		
13C3-PFHxS	6.048	402.0 -> 99.0	18026	18.00	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.0%		
13C4-PFBA	2.878	217.0 -> 172.0	140325	18.33	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.6%		
13C4-PFHpA	6.054	367.0 -> 322.0	57613	17.88	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.4%		
13C5-PFHxA	5.228	318.0 -> 273.0	59148	18.05	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.3%		
13C5-PFPeA	4.200	268.0 -> 223.0	65151	17.88	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.4%		
13C6-PFDA	8.142	519.0 -> 474.0	31496	17.01	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.0%		

Perfluorinated Compounds by LC/MS/MS

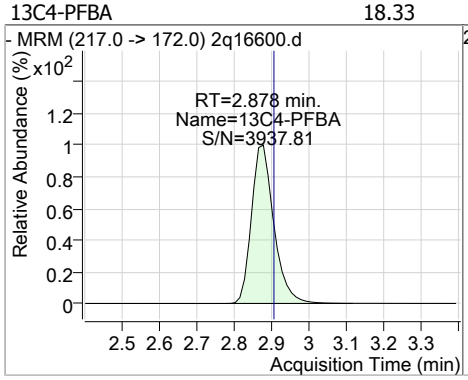
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	9.591	570.0 -> 525.0	38091	18.62	µg/L		-0.088
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.1%			
13C8-FOSA	7.130	506.0 -> 78.0	30996	17.61	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.0%			
13C8-PFOA	6.758	421.0 -> 376.0	30796	17.68	µg/L		-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.4%			
13C8-PFOS	7.370	507.0 -> 99.0	8862	18.09	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.4%			
13C9-PFNA	7.425	472.0 -> 427.0	21017	17.66	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.3%			
d3-MeFOSAA	7.607	573.0 -> 419.0	15935	18.15	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.7%			
M2-PFOA	6.760	415.0 -> 370.0	19806	20.00	ng/ml		-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.372	503.0 -> 80.0	10602	20.01	ng/ml		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
Target Compounds							**QValue**
4:2FTS	5.162	327.0 -> 307.0	32662	22.03	µg/L		99
6:2FTS	6.769	427.0 -> 407.0	24507	21.71	µg/L		93
8:2FTS	8.265	527.0 -> 507.0	32905	22.24	µg/L		82
EtFOSAA	7.731	584.0 -> 419.0	5301	20.99	µg/L		88
FOSA	7.118	498.0 -> 78.0	16711	21.57	µg/L		97
MeFOSAA	7.608	570.0 -> 419.0	6551	23.45	µg/L		99
PFBA	2.874	213.0 -> 169.0	24363	21.58	µg/L		100
PFBS	4.334	299.0 -> 80.0	30408	22.34	µg/L		98
PFDA	8.144	513.0 -> 469.0	13152	22.03	µg/L		97
PFDoDA	11.083	613.0 -> 569.0	14330	21.92	µg/L		99
PFDS	9.399	599.0 -> 80.0	7157	20.92	µg/L		93
PFHpA	6.057	363.0 -> 319.0	47563	23.17	µg/L		95
PFHpS	6.728	449.0 -> 80.0	11548	22.11	µg/L		100
PFHxA	5.230	313.0 -> 269.0	20885	21.74	µg/L		99
PFHxS	6.051	399.0 -> 80.0	22194	22.20	µg/L	m	97
PFNA	7.426	463.0 -> 419.0	9281	22.24	µg/L		88
PFNS	8.050	549.0 -> 80.0	8992	22.37	µg/L		100
PFOA	6.761	413.0 -> 369.0	17064	22.09	µg/L		91
PFOS	7.372	499.0 -> 80.0	11729	21.92	µg/L	m	75
PFPeA	4.203	263.0 -> 219.0	72815	23.14	µg/L		100
PFPeS	5.283	349.0 -> 80.0	18308	21.98	µg/L		98
PFTeDA	13.297	713.0 -> 669.0	6777	21.95	µg/L		89
PFTrDA	12.266	663.0 -> 619.0	10604	23.51	µg/L		95
PFUnDA	9.582	563.0 -> 519.0	20011	22.32	µg/L		100

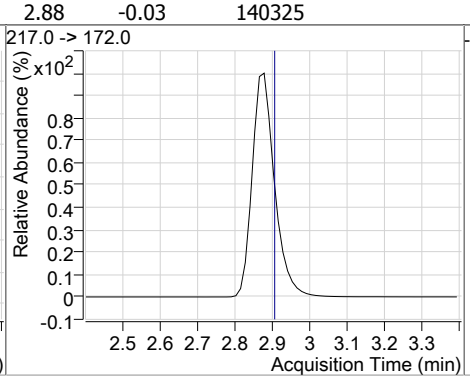
 # = Qualifier out of range, m = manually integrated, + = Area summed

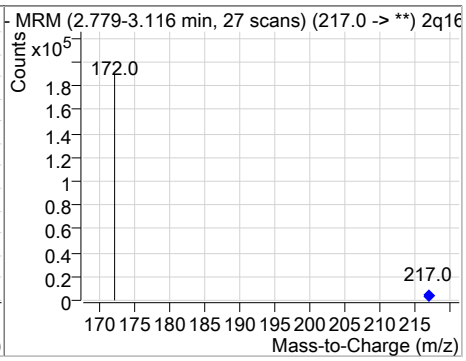
Perfluorinated Compounds by LC/MS/MS



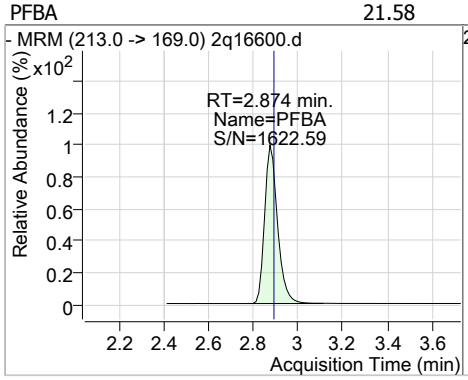
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.33	2.88	-0.03	140325				

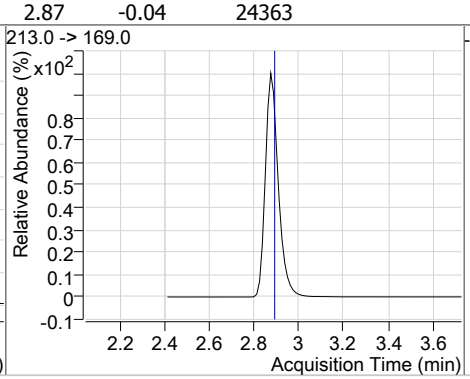


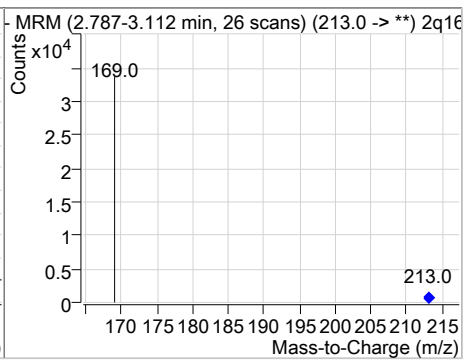




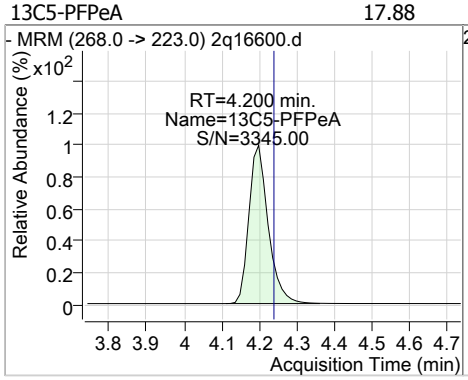
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	21.58	2.87	-0.04	24363				

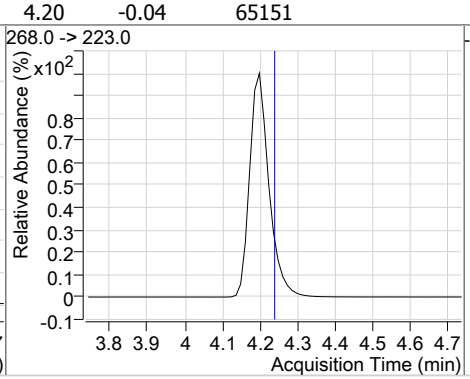


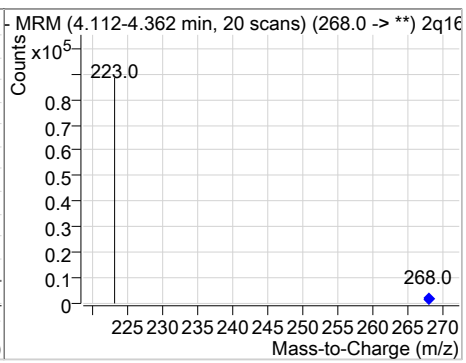




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	17.88	4.20	-0.04	65151				

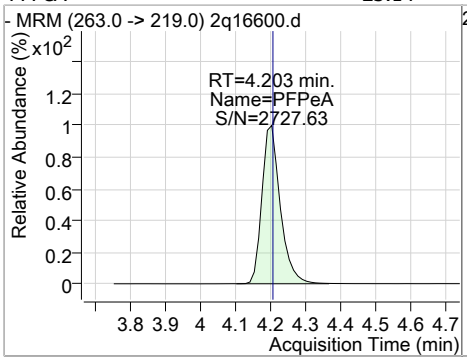


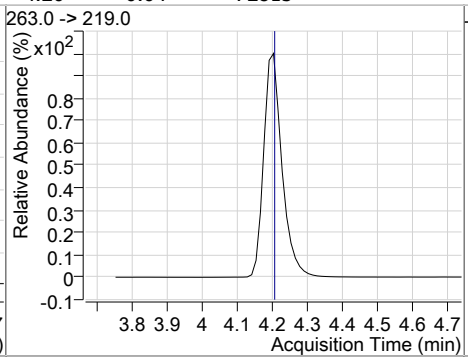


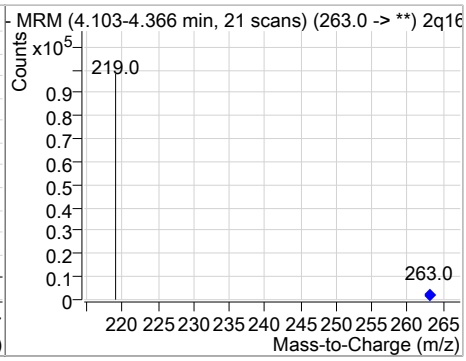


Perfluorinated Compounds by LC/MS/MS

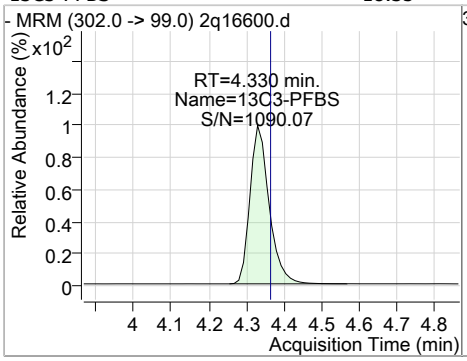
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	23.14	4.20	-0.04	72815				

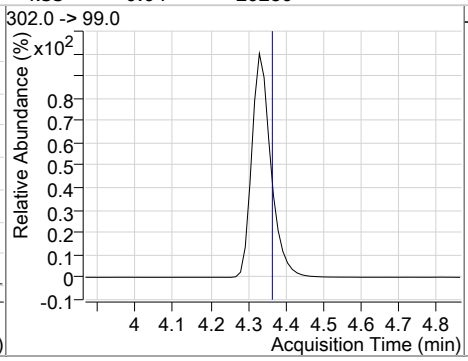


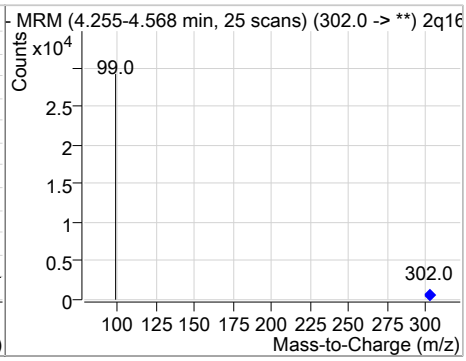




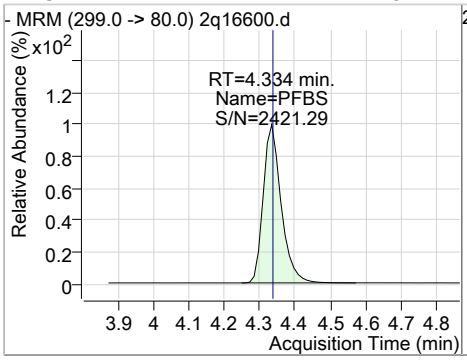
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.35	4.33	-0.04	20280				

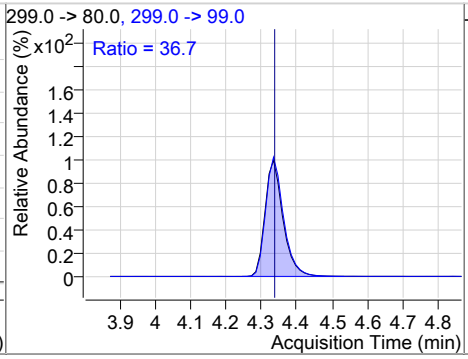


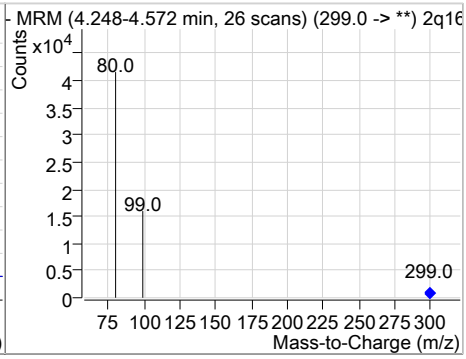




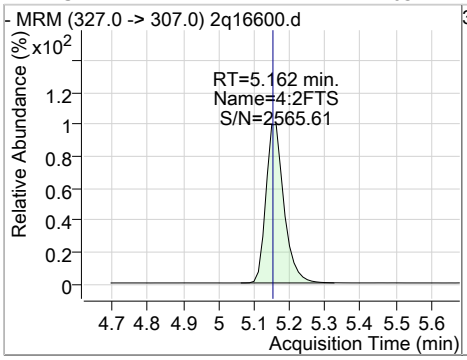
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	22.34	4.33	-0.04	30408	299.0 -> 99.0	36.7	5.8	65.8

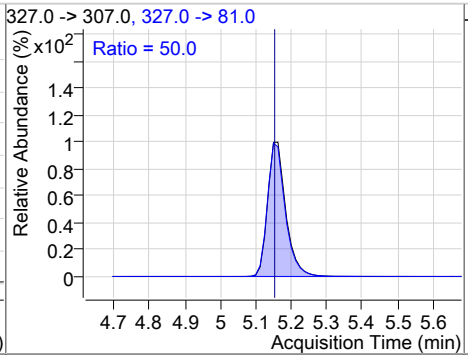


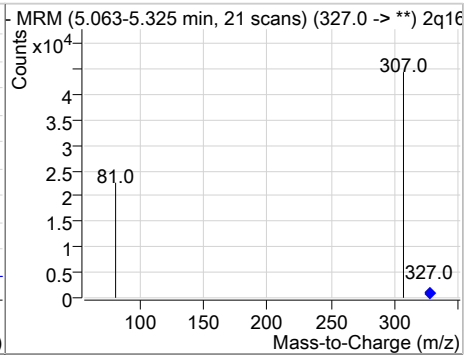




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	22.03	5.16	-0.03	32662	327.0 -> 81.0	50.0	21.0	81.0

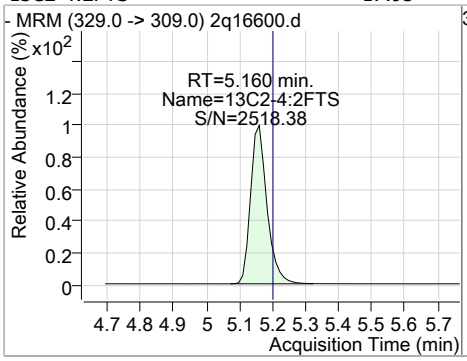


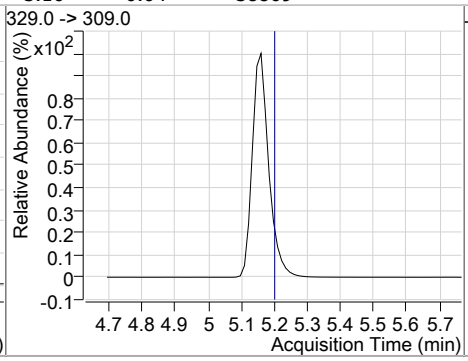


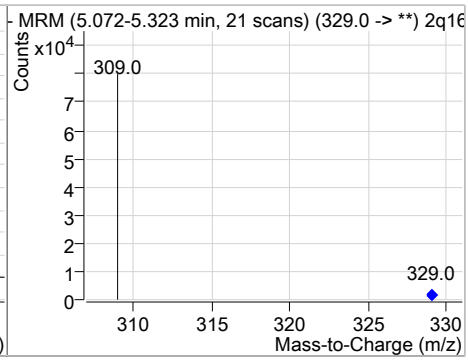


Perfluorinated Compounds by LC/MS/MS

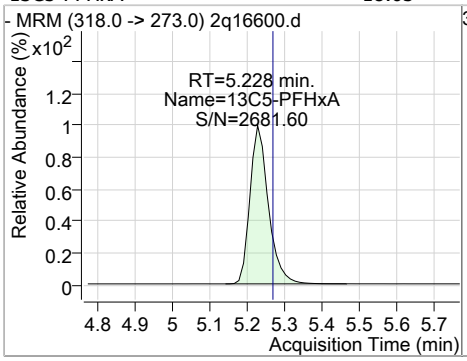
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	17.93	5.16	-0.04	58809				

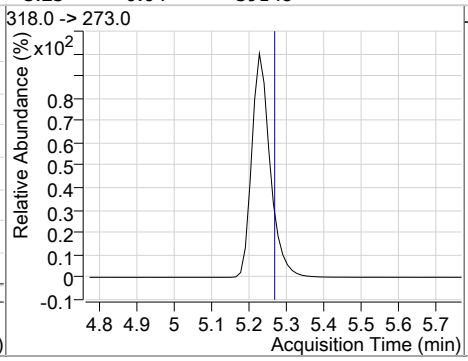


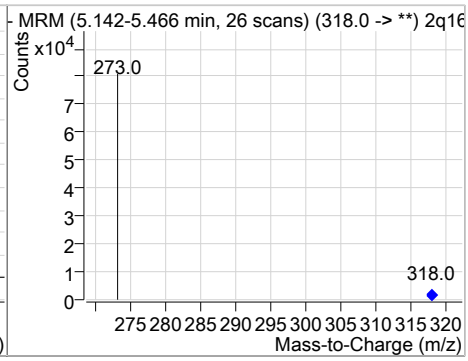




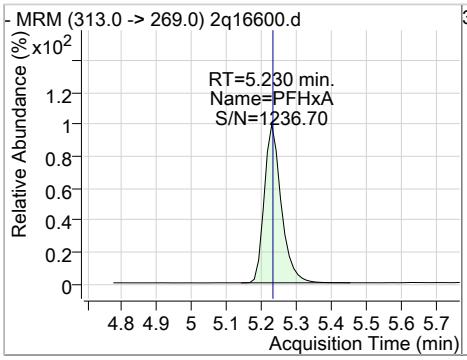
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.05	5.23	-0.04	59148				

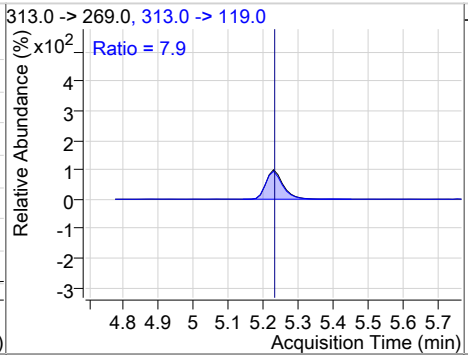


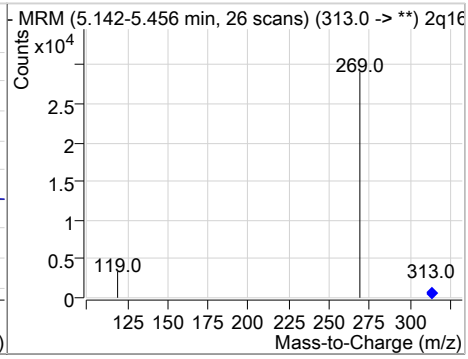




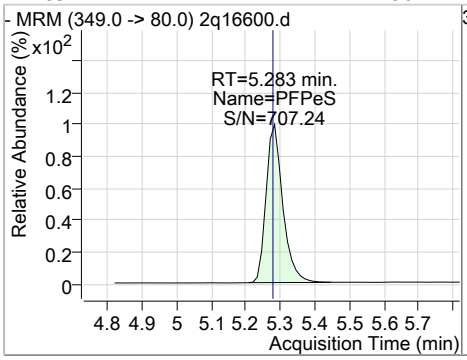
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	21.74	5.23	-0.04	20885	313.0 -> 119.0	7.9	0.0	38.3

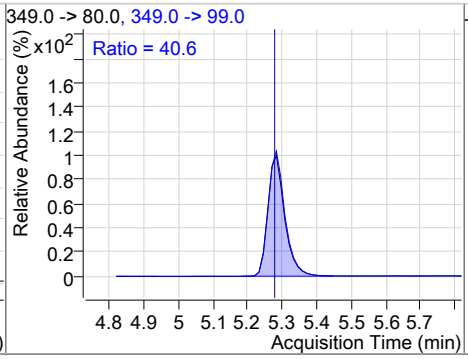


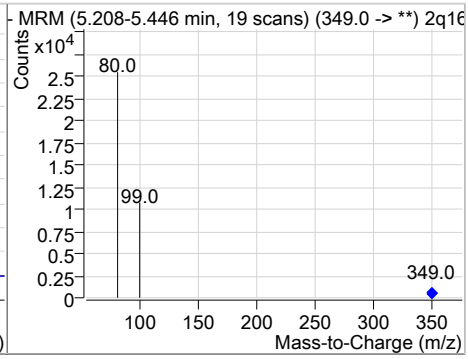




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	21.98	5.28	-0.04	18308	349.0 -> 99.0	40.6	9.3	69.3

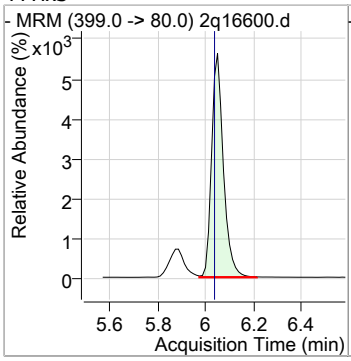


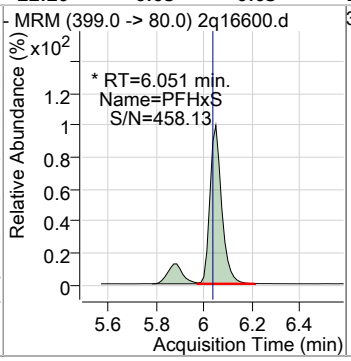


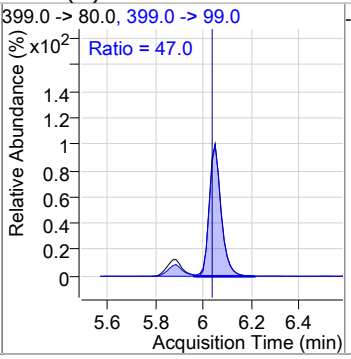


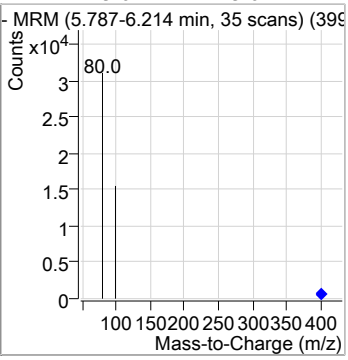
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	22.20	6.05	-0.03	22194 (m)	399.0 -> 99.0	47.0	19.0	79.0

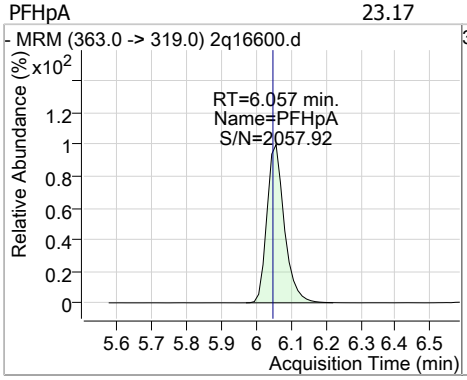


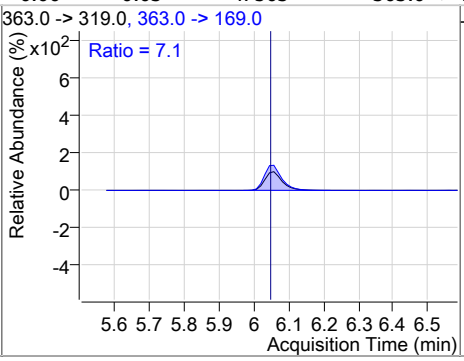


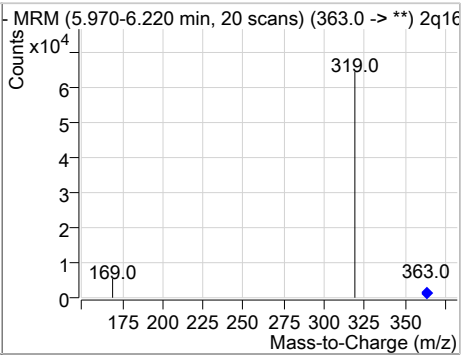




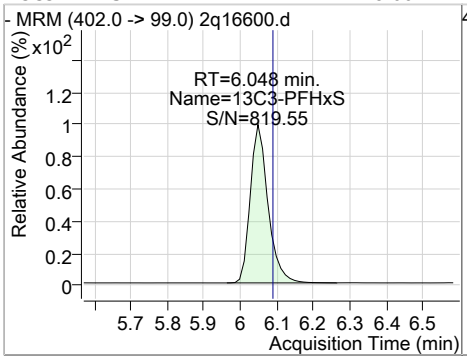
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	23.17	6.06	-0.03	47563	363.0 -> 169.0	7.1	0.0	35.3

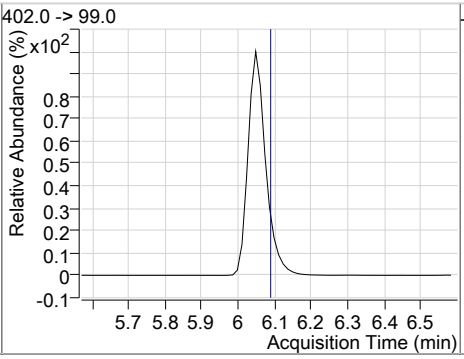


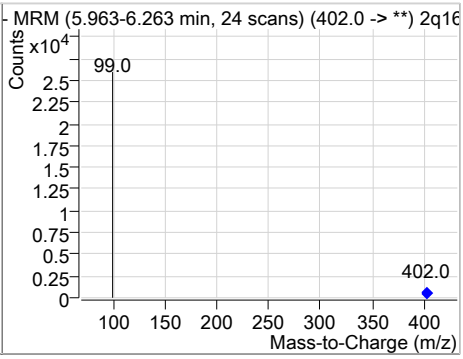




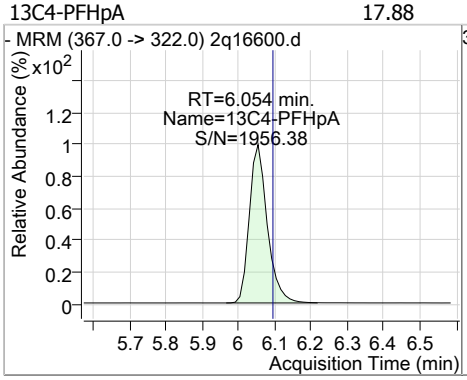
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.00	6.05	-0.04	18026				

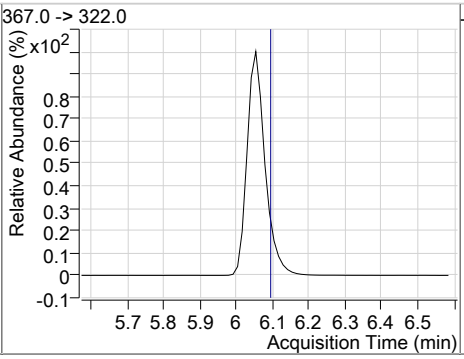


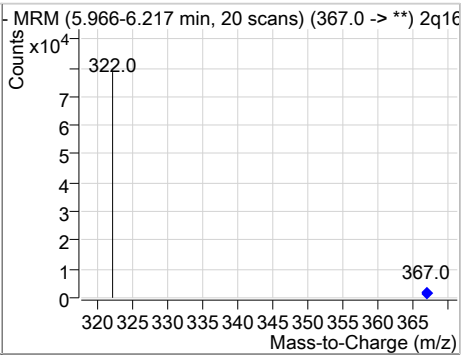




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	17.88	6.05	-0.04	57613				

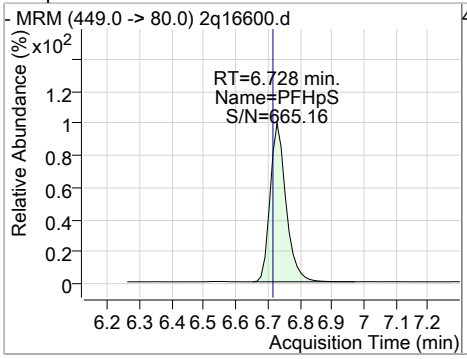


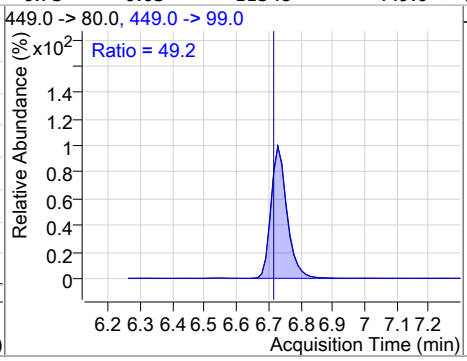


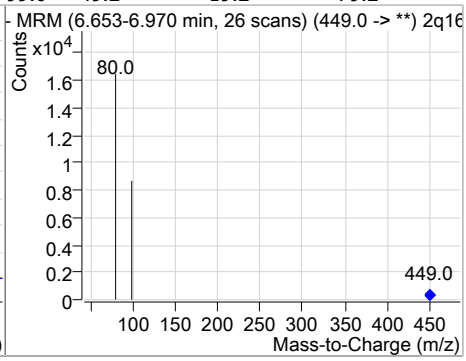


Perfluorinated Compounds by LC/MS/MS

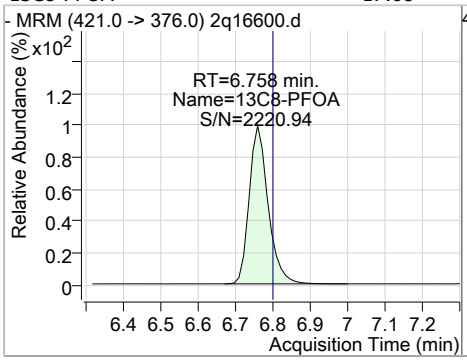
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	22.11	6.73	-0.03	11548	449.0 -> 99.0	49.2	19.2	79.2

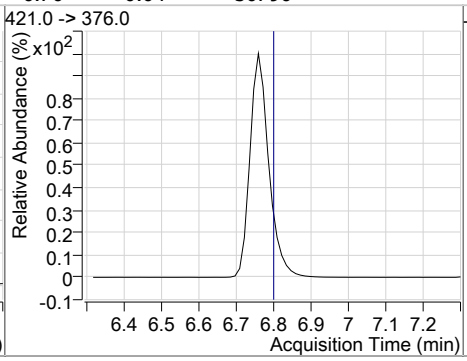


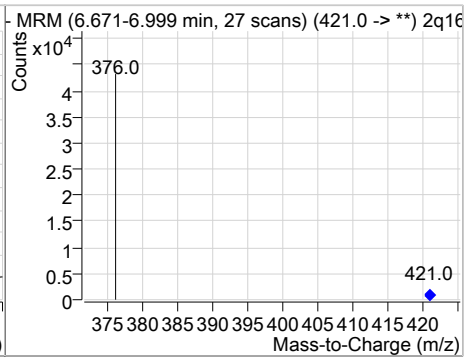




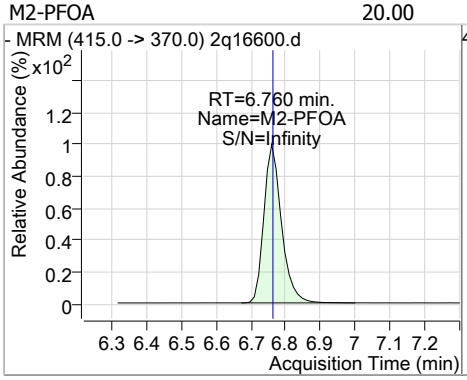
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	17.68	6.76	-0.04	30796				

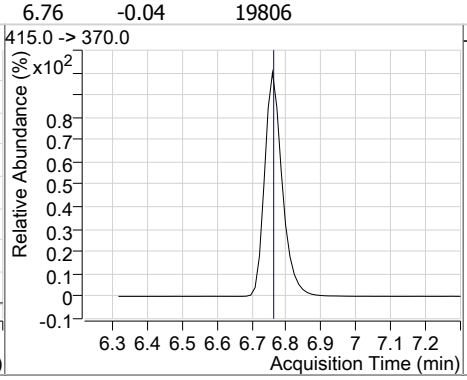


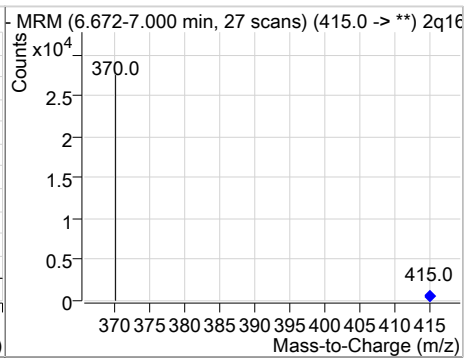




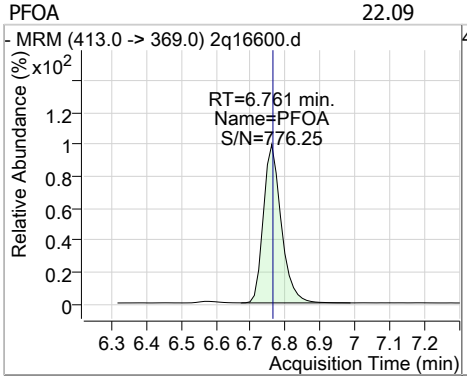
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.76	-0.04	19806				

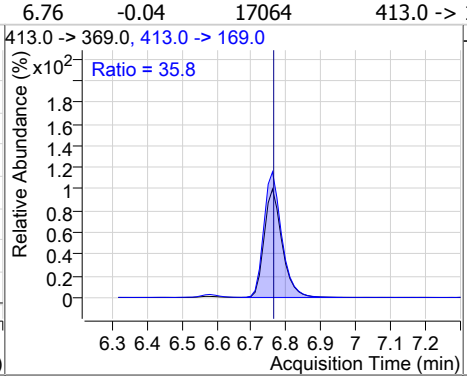


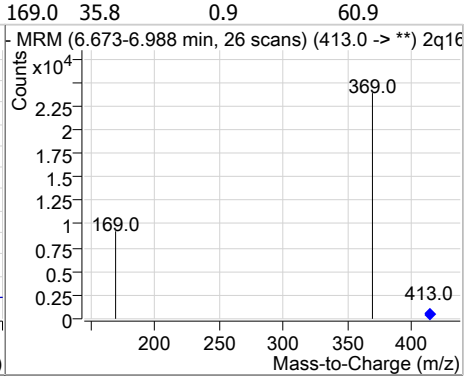




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	22.09	6.76	-0.04	17064	413.0 -> 169.0	35.8	0.9	60.9

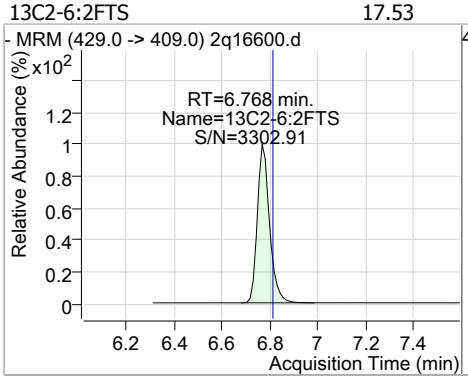


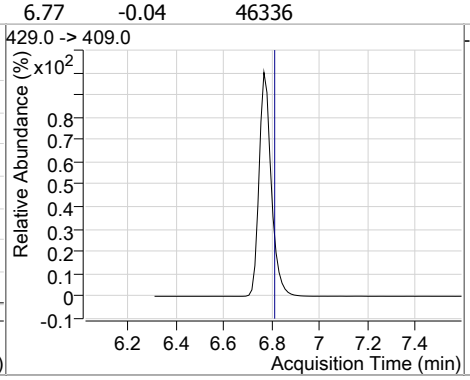


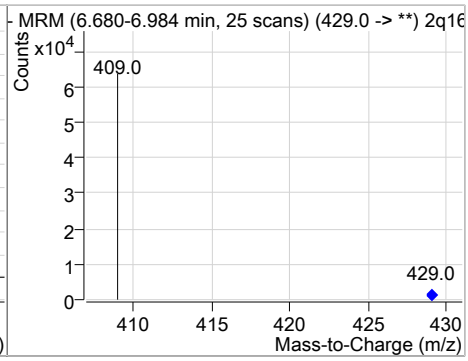


Perfluorinated Compounds by LC/MS/MS

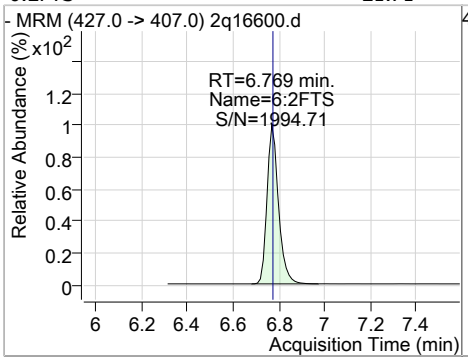
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	17.53	6.77	-0.04	46336				

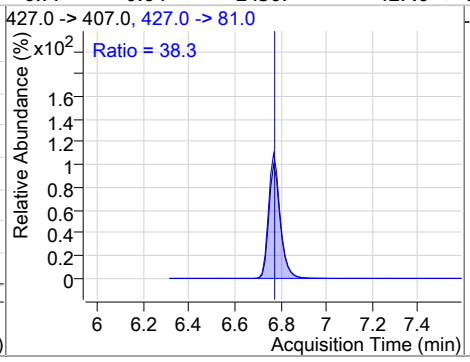


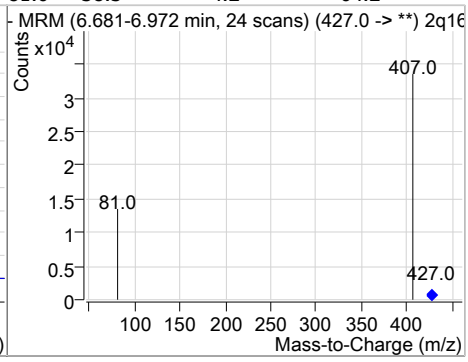




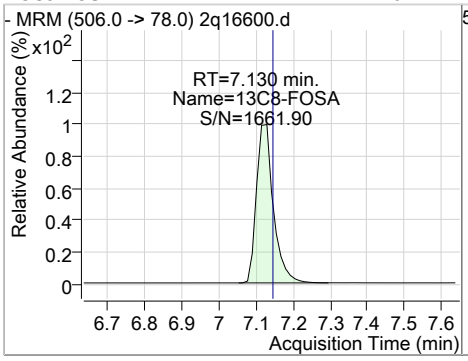
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	21.71	6.77	-0.04	24507	427.0 -> 81.0	38.3	4.2	64.2

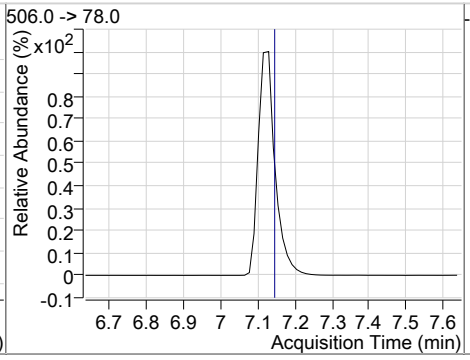


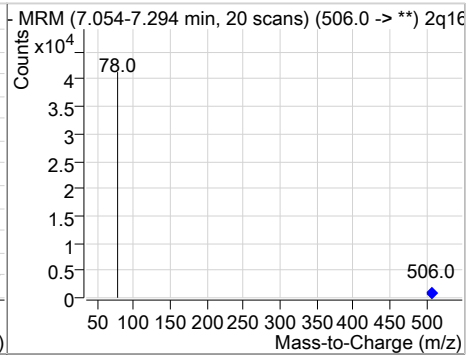




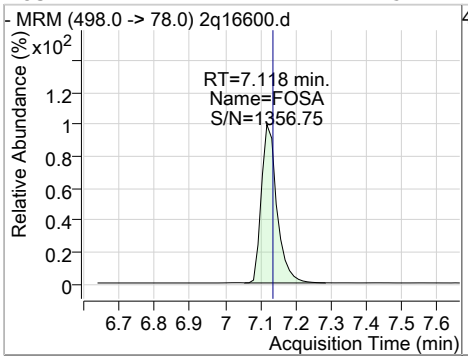
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	17.61	7.13	-0.01	30996				

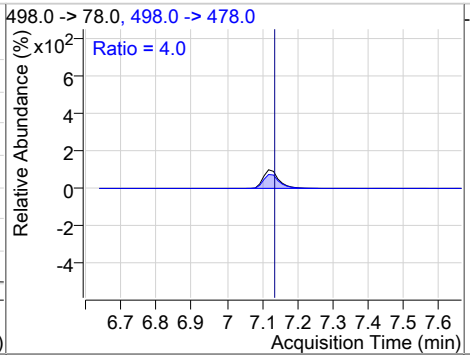


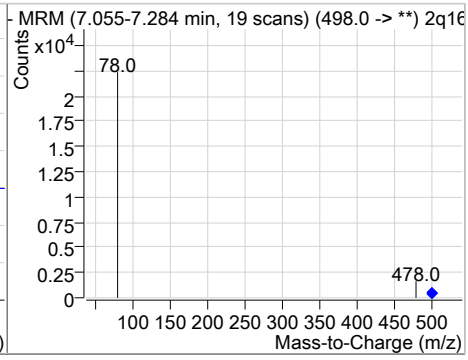




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	21.57	7.12	-0.03	16711	498.0 -> 478.0	4.0	0.0	35.2

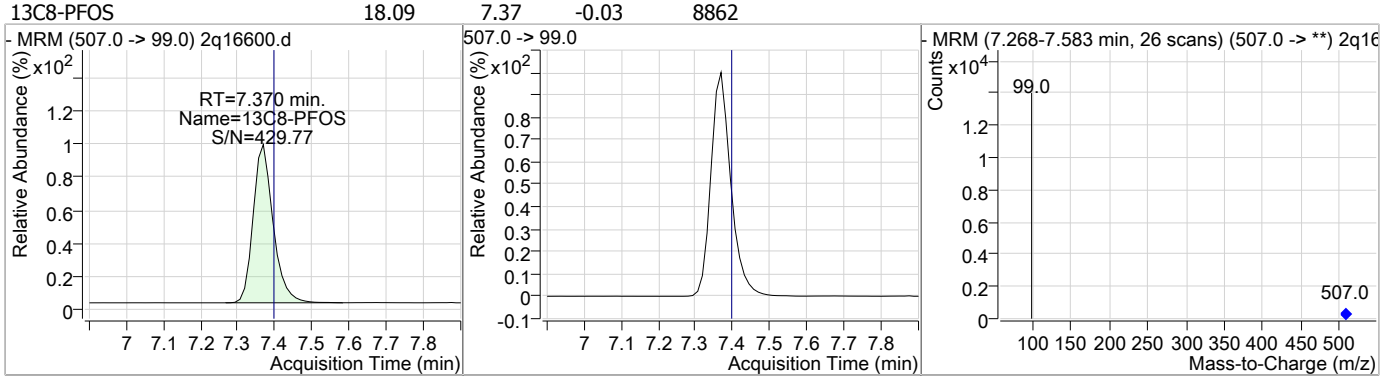




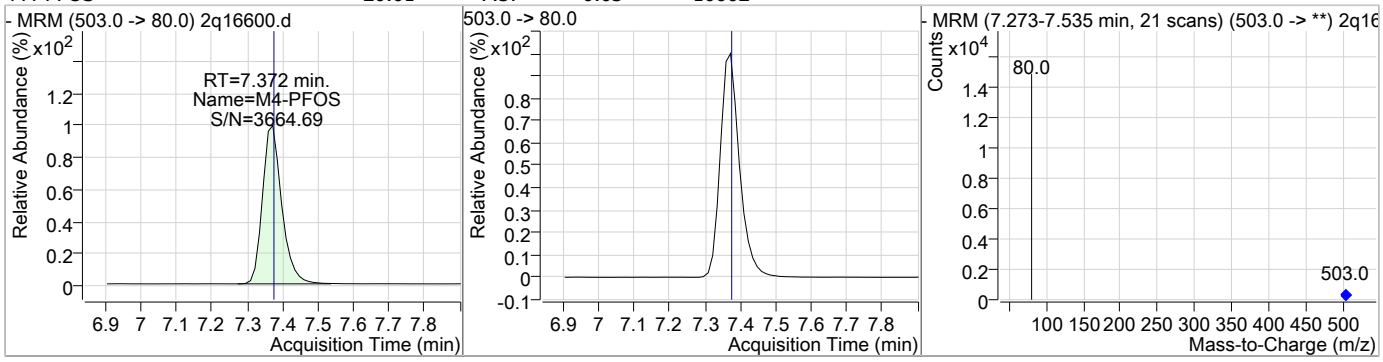


Perfluorinated Compounds by LC/MS/MS

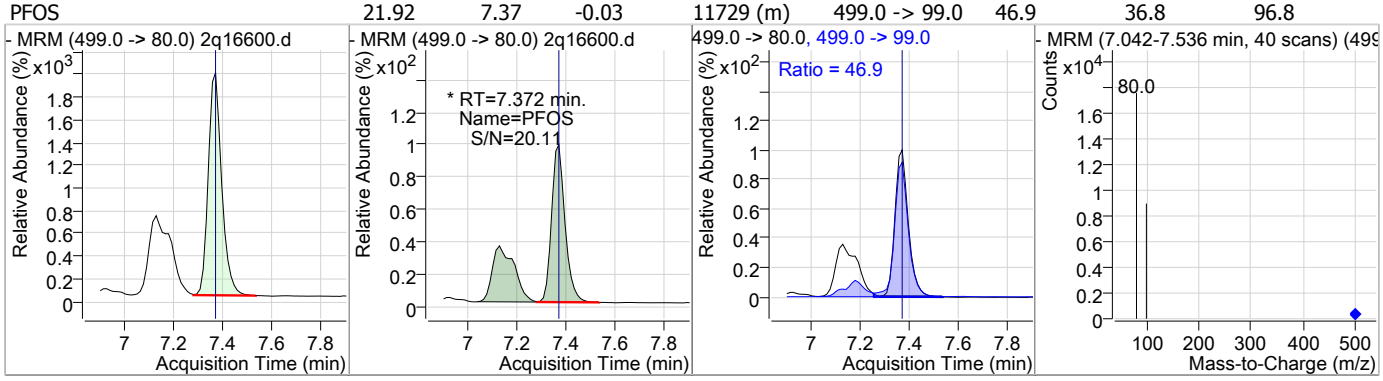
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.09	7.37	-0.03	8862				



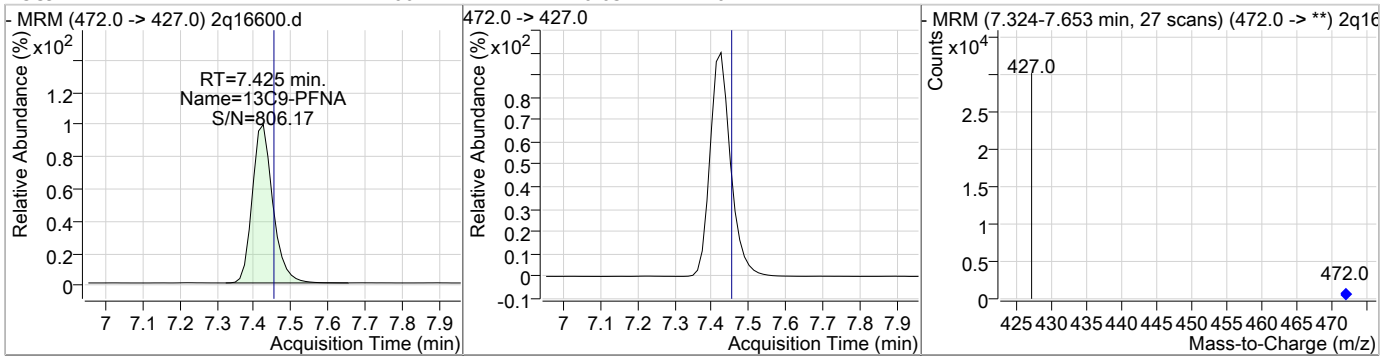
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.01	7.37	-0.03	10602				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	21.92	7.37	-0.03	11729 (m)	499.0 -> 99.0	46.9	36.8	96.8

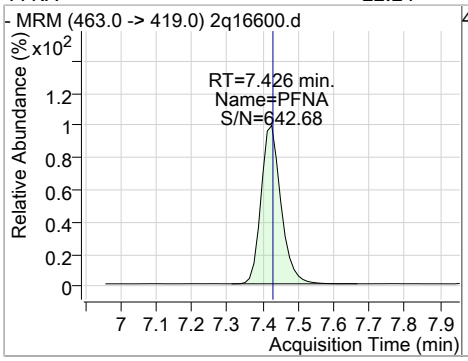


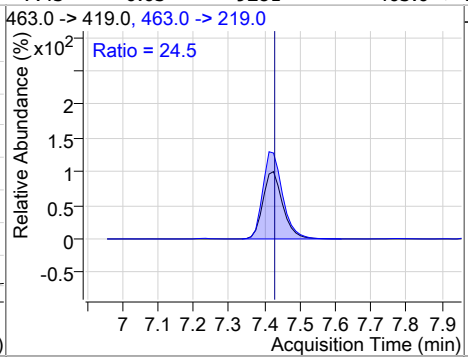
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	17.66	7.42	-0.03	21017				

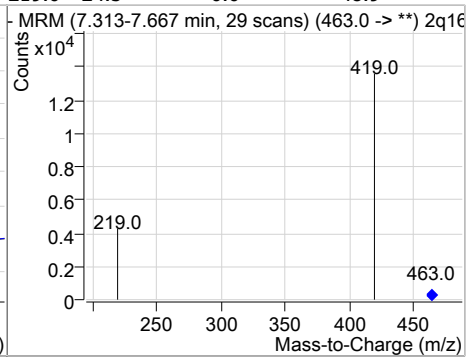


Perfluorinated Compounds by LC/MS/MS

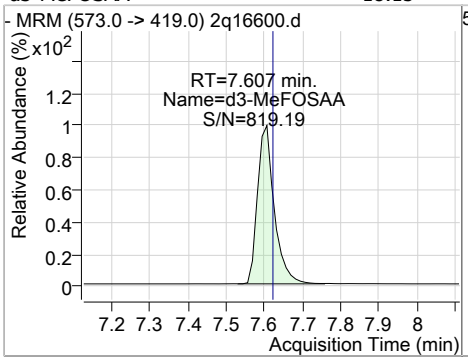
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	22.24	7.43	-0.03	9281	463.0 -> 219.0	24.5	0.0	48.9

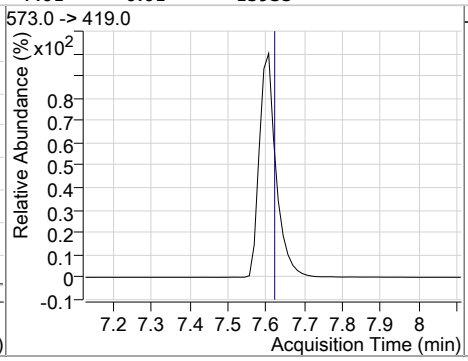


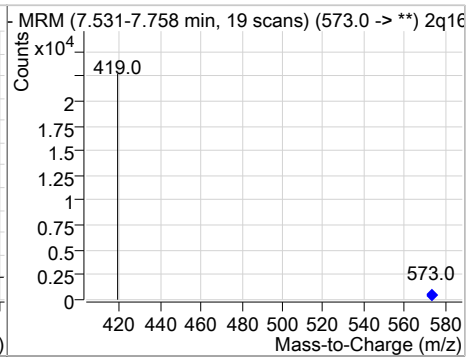




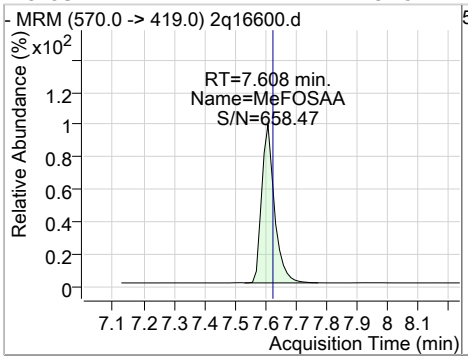
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.15	7.61	-0.01	15935				

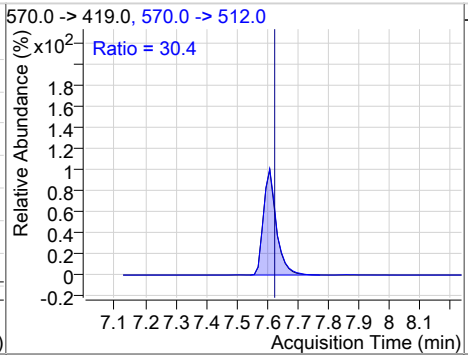


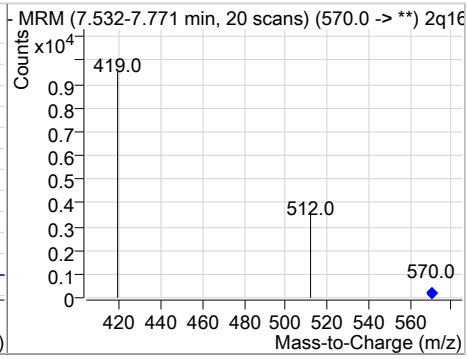




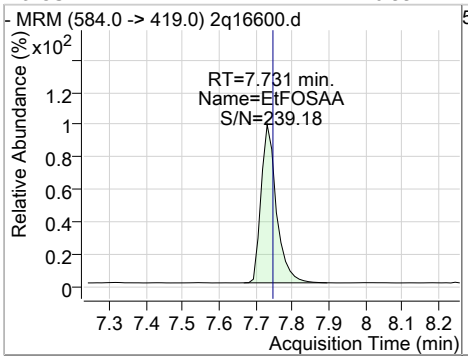
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	23.45	7.61	-0.03	6551	570.0 -> 512.0	30.4	0.0	59.6

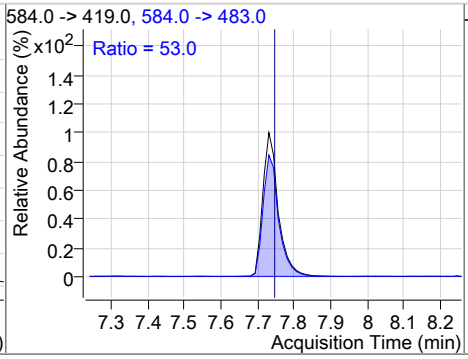


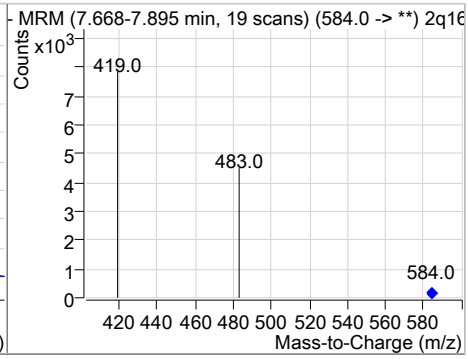




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.99	7.73	-0.03	5301	584.0 -> 483.0	53.0	31.9	91.9

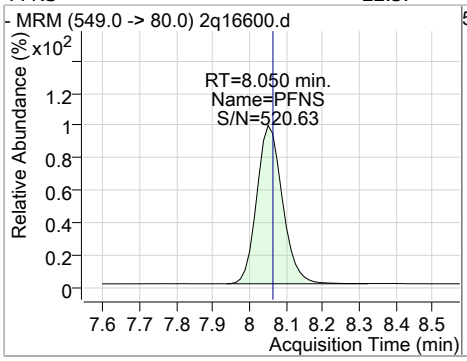


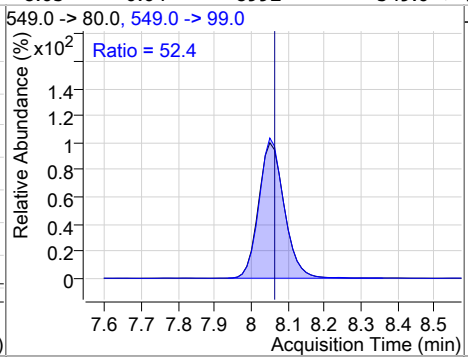


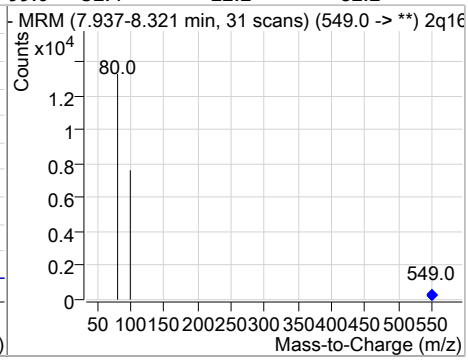


Perfluorinated Compounds by LC/MS/MS

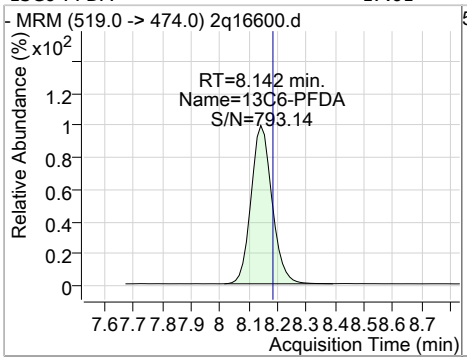
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	22.37	8.05	-0.04	8992	549.0 -> 99.0	52.4	22.2	82.2

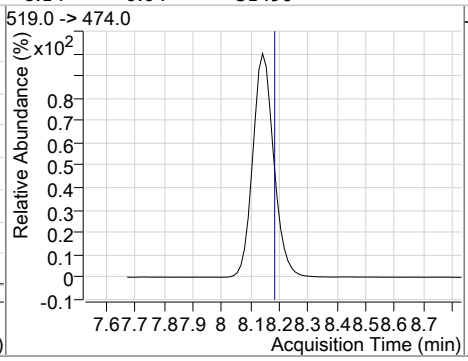


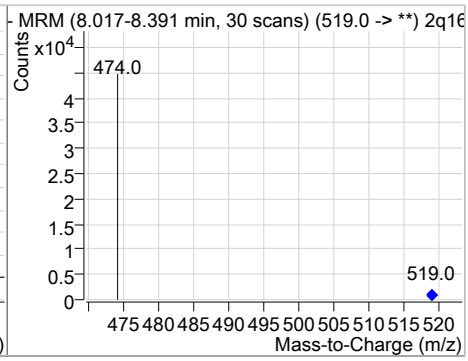




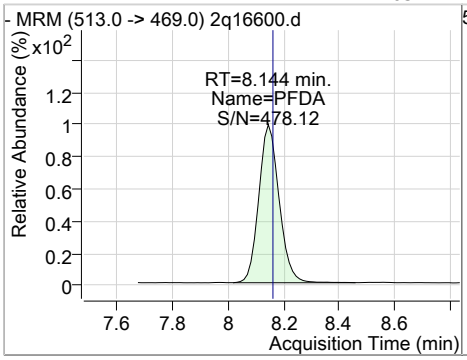
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	17.01	8.14	-0.04	31496				

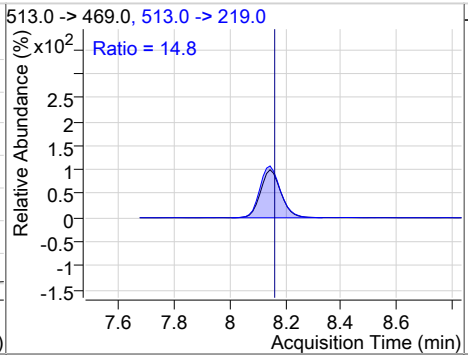


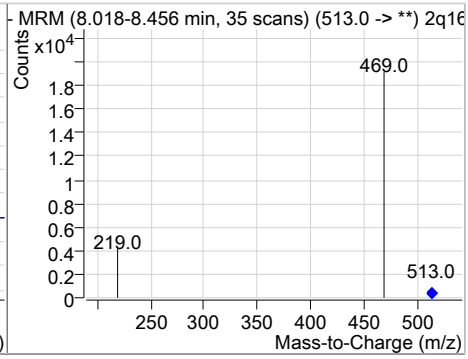




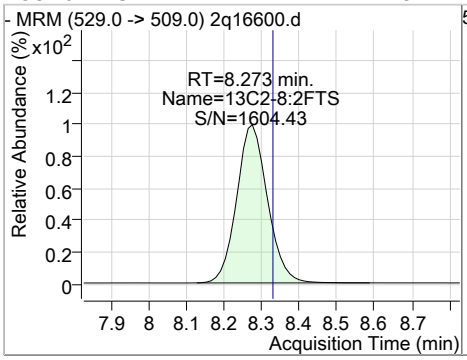
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	22.03	8.14	-0.05	13152	513.0 -> 219.0	14.8	0.0	43.5

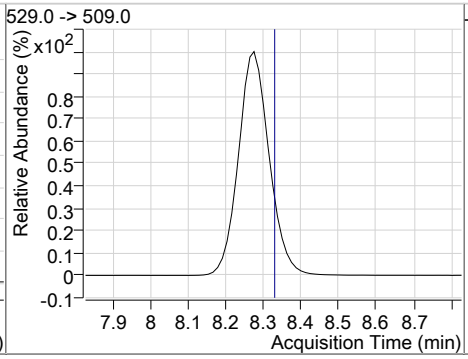


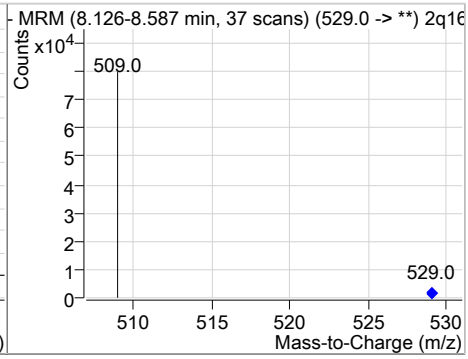




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	17.19	8.27	-0.05	55785				

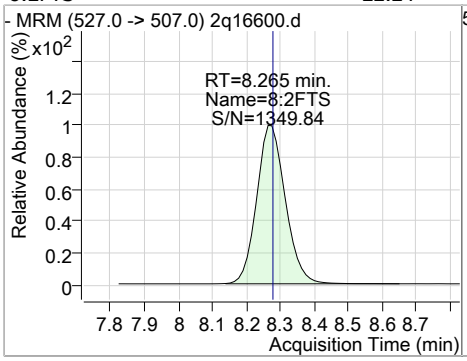


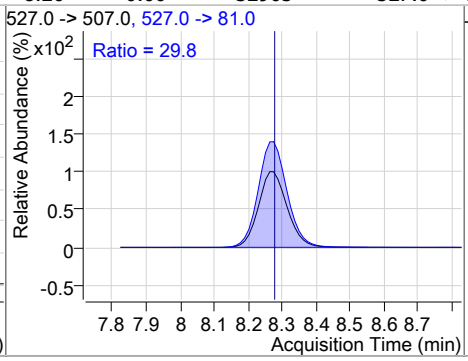


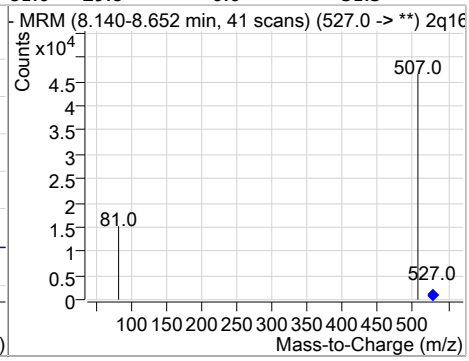


Perfluorinated Compounds by LC/MS/MS

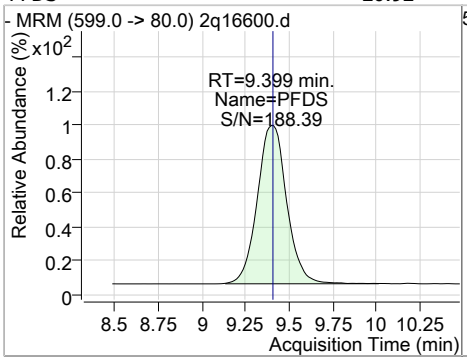
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	22.24	8.26	-0.06	32905	527.0 -> 81.0	29.8	0.0	51.3

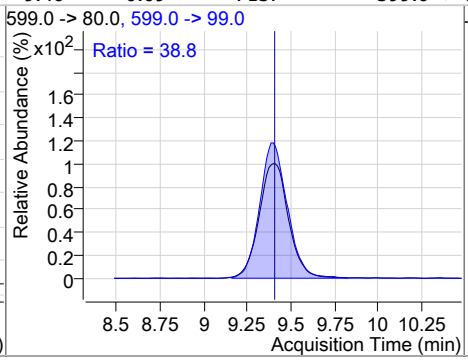


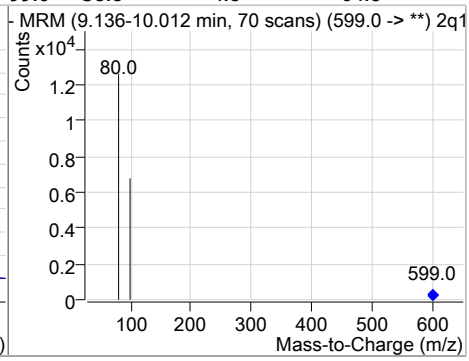




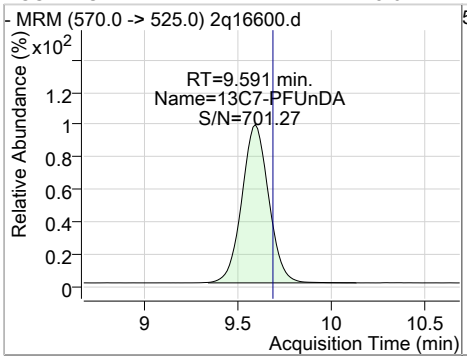
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	20.92	9.40	-0.09	7157	599.0 -> 99.0	38.8	4.8	64.8

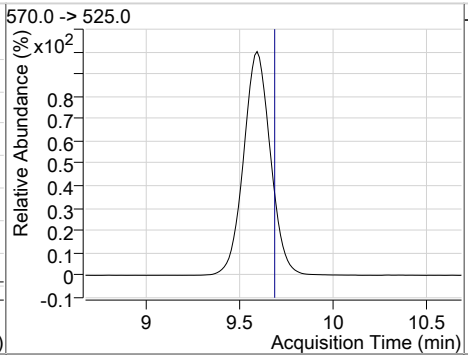


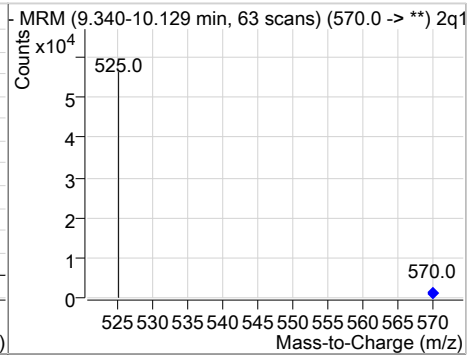




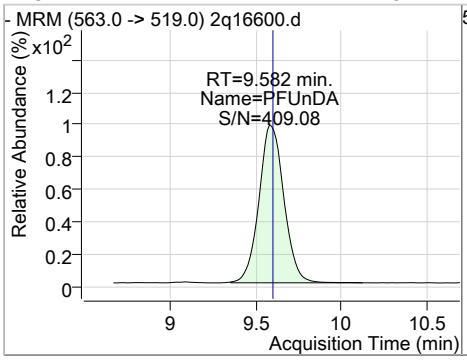
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.62	9.59	-0.09	38091				

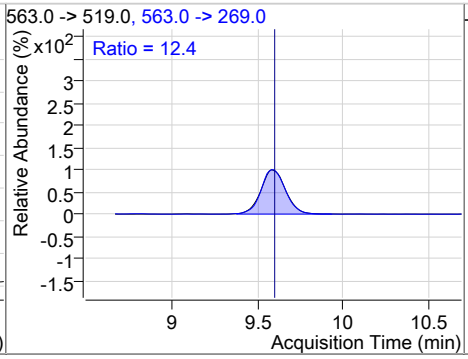


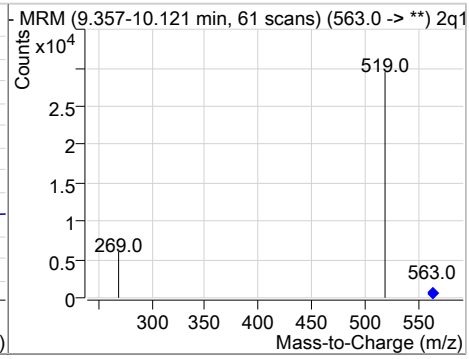




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	22.32	9.58	-0.10	20011	563.0 -> 269.0	12.4	0.0	42.5

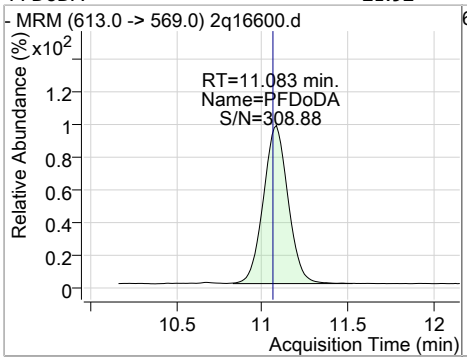


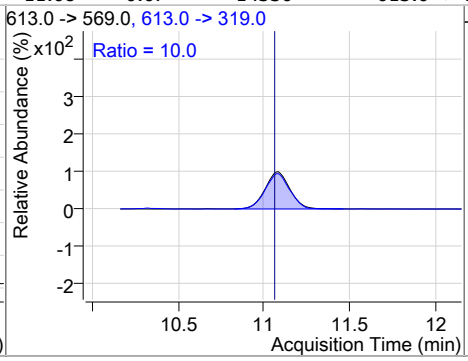


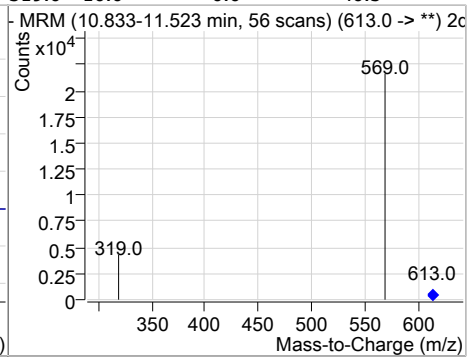


Perfluorinated Compounds by LC/MS/MS

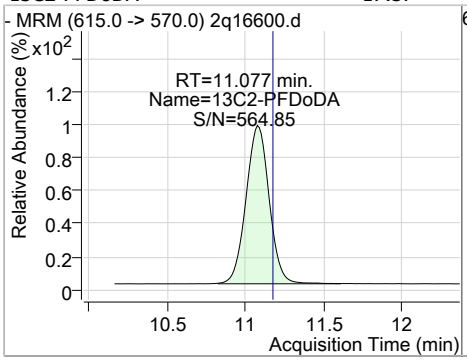
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	21.92	11.08	-0.07	14330	613.0 -> 319.0	10.0	0.0	40.5

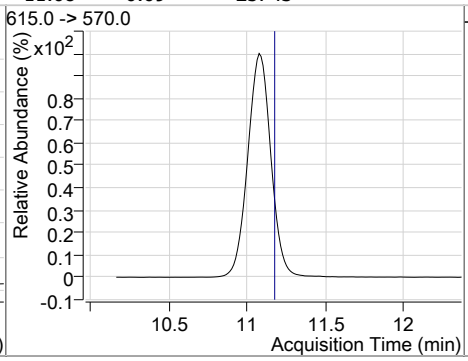


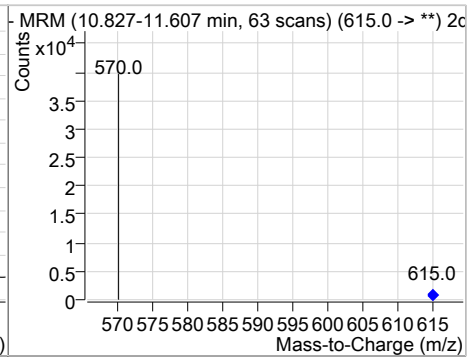




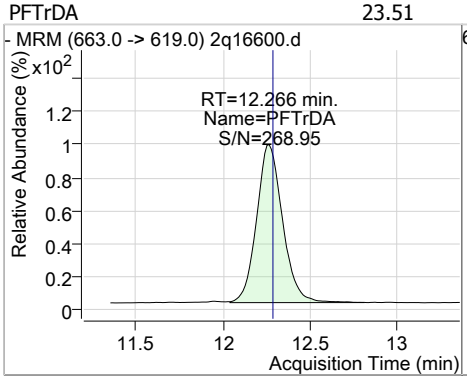
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	17.57	11.08	-0.09	25743				

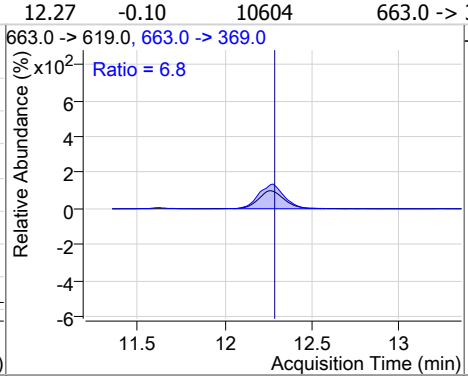


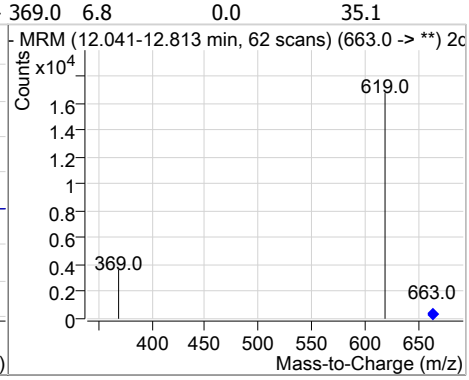




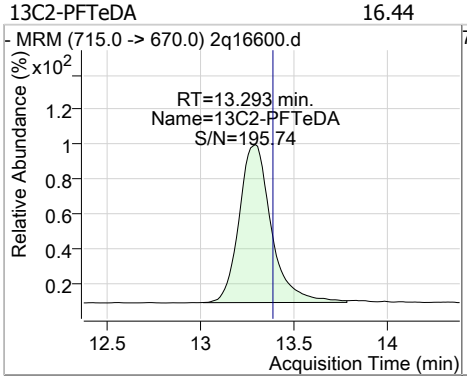
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	23.51	12.27	-0.10	10604	663.0 -> 369.0	6.8	0.0	35.1

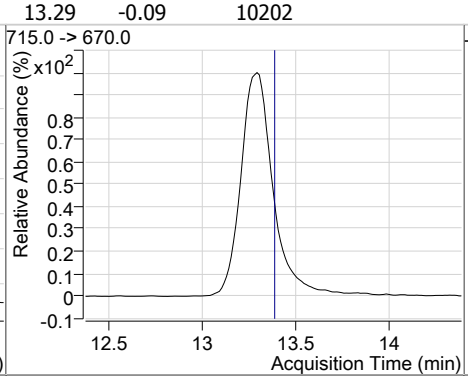


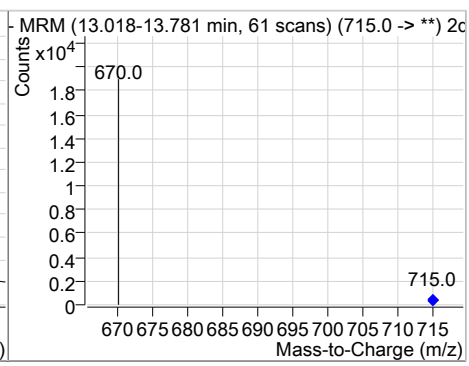




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	16.44	13.29	-0.09	10202				

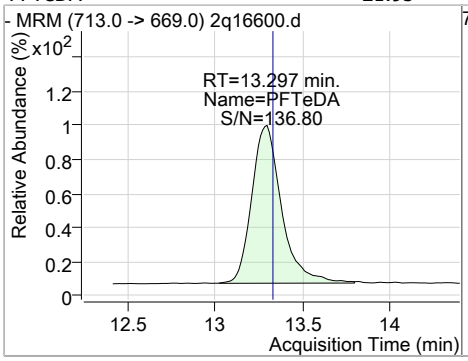


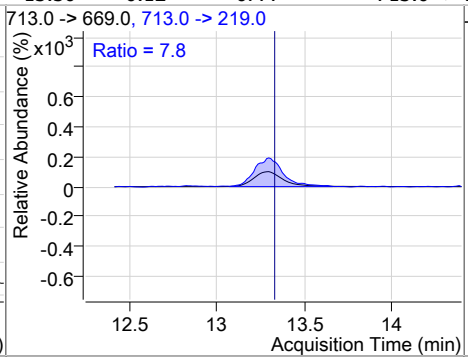


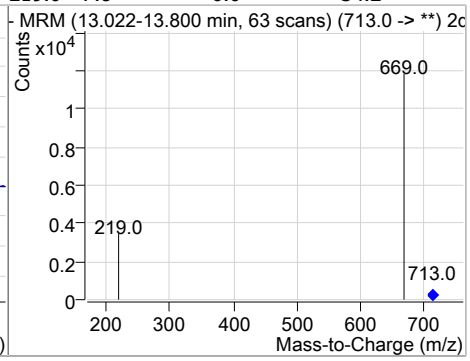


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	21.95	13.30	-0.12	6777	713.0 -> 219.0	7.8	0.0	34.2







Manual Integration Approval Summary

Sample Number: S2Q291-CC291
Lab FileID: 2Q16600.D
Injection Time: 07/06/18 04:22
Method: EPA 537M QSM5.1 B-15
Analyst approved: 07/06/18 10:17 Natasha Gumtie
Supervisor approved: 07/06/18 17:13 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.05	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.37	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
07/10/18 17:09

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16684.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/7/2018 8:46:07 AM
Sample Name : ic292-0.5
Vial : Vial 2
DA Method File : PFC_ID_070718_S2Q292.quantmethod.xml
Batch Name : s2q292.batch.bin
Sample Information : op70610,S2Q292,130,,,1.0,1,water

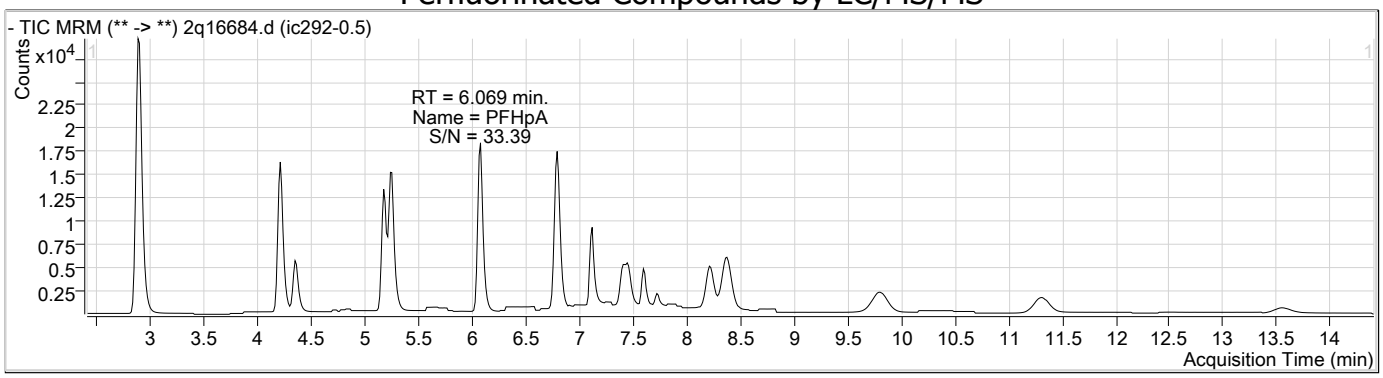
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.785	415.0 -> 370.0	14804	20.00	µg/L	-0.013
13C4-PFOS	7.410	503.0 -> 80.0	8149	20.00	µg/L	0.000
M4-PFBA	2.878	217.0 -> 172.0	119390	20.00	µg/L	-0.013
M5-PFPeA	4.212	268.0 -> 223.0	55156	20.00	µg/L	0.000
M5-PFHxA	5.253	318.0 -> 273.0	49193	20.00	µg/L	0.000
M4-PFHpA	6.079	367.0 -> 322.0	46576	20.00	µg/L	0.000
M8-PFOA	6.784	421.0 -> 376.0	21198	20.00	µg/L	-0.013
M9-PFNA	7.462	472.0 -> 427.0	13603	20.00	µg/L	0.000
M6-PFDA	8.217	519.0 -> 474.0	24429	20.00	µg/L	-0.013
M7-PFUnDA	9.803	570.0 -> 525.0	22730	20.00	µg/L	0.000
M2-PFDoDA	11.302	615.0 -> 570.0	17319	20.00	µg/L	-0.013
M2-PFTeDA	13.544	715.0 -> 670.0	6683	20.00	µg/L	0.000
M8-FOSA	7.115	506.0 -> 78.0	24526	20.00	µg/L	0.000
M3-PFBS	4.343	302.0 -> 99.0	18290	20.00	µg/L	-0.013
M3-PFHxS	6.073	402.0 -> 99.0	14784	20.00	µg/L	0.000
M8-PFOS	7.407	507.0 -> 99.0	6862	20.00	µg/L	0.000
M2-4:2FTS	5.172	329.0 -> 309.0	43178	20.00	µg/L	0.000
M2-6:2FTS	6.805	429.0 -> 409.0	27579	20.00	µg/L	0.000
M2-8:2FTS	8.374	529.0 -> 509.0	36859	20.00	µg/L	0.000
M3-MeFOSAA	7.594	573.0 -> 419.0	11682	20.00	µg/L	-0.013
System Monitoring Compounds						
13C2-4:2FTS	5.172	329.0 -> 309.0	43170	16.47	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.4%		
13C2-6:2FTS	6.805	429.0 -> 409.0	27575	16.25	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.2%		
13C2-8:2FTS	8.374	529.0 -> 509.0	36863	16.26	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.3%		
13C2-PFDoDA	11.302	615.0 -> 570.0	17343	17.11	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.6%		
13C2-PFTeDA	13.544	715.0 -> 670.0	6690	17.10	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.5%		
13C3-PFBS	4.343	302.0 -> 99.0	18303	17.49	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.4%		
13C3-PFHxS	6.073	402.0 -> 99.0	14783	17.33	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.7%		
13C4-PFBA	2.878	217.0 -> 172.0	119336	17.33	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.6%		
13C4-PFHpA	6.079	367.0 -> 322.0	46578	17.29	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.4%		
13C5-PFHxA	5.253	318.0 -> 273.0	49202	17.36	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.8%		
13C5-PFPeA	4.212	268.0 -> 223.0	55141	17.33	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.6%		
13C6-PFDA	8.217	519.0 -> 474.0	24432	17.34	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.7%		

Perfluorinated Compounds by LC/MS/MS

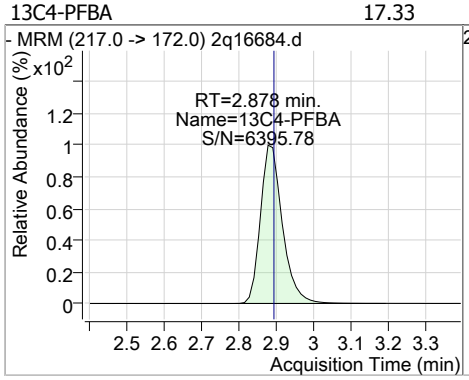
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	9.803	570.0 -> 525.0	22728	17.08	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.4%			
13C8-FOSA	7.115	506.0 -> 78.0	24523	18.49	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.4%			
13C8-PFOA	6.784	421.0 -> 376.0	21186	17.18	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.9%			
13C8-PFOS	7.407	507.0 -> 99.0	6873	17.40	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.0%			
13C9-PFNA	7.462	472.0 -> 427.0	13615	17.29	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.4%			
d3-MeFOSAA	7.594	573.0 -> 419.0	11681	17.69	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.4%			
M2-PFOA	6.785	415.0 -> 370.0	14805	20.01	ng/ml		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.410	503.0 -> 80.0	8149	20.00	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
Target Compounds							**QValue**
4:2FTS	5.175	327.0 -> 307.0	558	0.49	µg/L		68
6:2FTS	6.794	427.0 -> 407.0	350	0.50	µg/L		95
8:2FTS	8.364	527.0 -> 507.0	495	0.48	µg/L		89
EtFOSAA	7.731	584.0 -> 419.0	87	0.52	µg/L	m	86
FOSA	7.118	498.0 -> 78.0	231	0.39	µg/L		94
MeFOSAA	7.608	570.0 -> 419.0	83	0.39	µg/L	m	93
PFBA	2.887	213.0 -> 169.0	434	0.46	µg/L		100
PFBS	4.346	299.0 -> 80.0	569	0.47	µg/L		97
PFDA	8.231	513.0 -> 469.0	247	0.57	µg/L		63
PFDoDA	11.308	613.0 -> 569.0	237	0.57	µg/L		73
PFDS	9.599	599.0 -> 80.0	112	0.48	µg/L		36
PFHpA	6.069	363.0 -> 319.0	835	0.50	µg/L		79
PFHpS	6.753	449.0 -> 80.0	181	0.47	µg/L		28
PFHxA	5.243	313.0 -> 269.0	392	0.49	µg/L		78
PFHxS	6.076	399.0 -> 80.0	463	0.56	µg/L	m	92
PFNA	7.476	463.0 -> 419.0	126	0.49	µg/L		46
PFNS	8.124	549.0 -> 80.0	127	0.40	µg/L		24
PFOA	6.786	413.0 -> 369.0	275	0.51	µg/L		40
PFOS	7.410	499.0 -> 80.0	232	0.57	µg/L	m	94
PFPeA	4.216	263.0 -> 219.0	1747	0.65	µg/L		100
PFPeS	5.295	349.0 -> 80.0	319	0.44	µg/L		93
PFTeDA	13.587	713.0 -> 669.0	119	0.63	µg/L		79
PFTrDA	12.500	663.0 -> 619.0	157	0.53	µg/L		79
PFUnDA	9.833	563.0 -> 519.0	251	0.48	µg/L		69

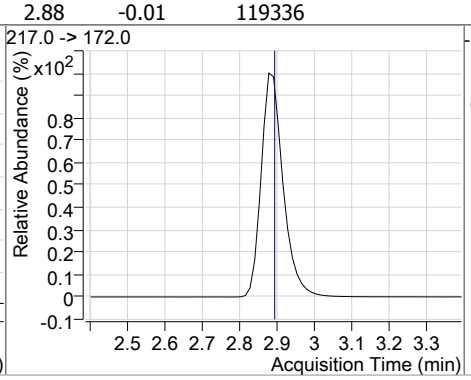
 # = Qualifier out of range, m = manually integrated, + = Area summed

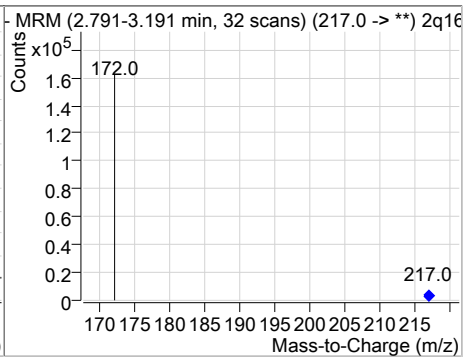
Perfluorinated Compounds by LC/MS/MS



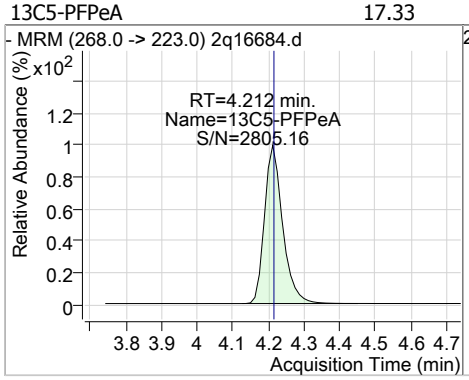
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	17.33	2.88	-0.01	119336				

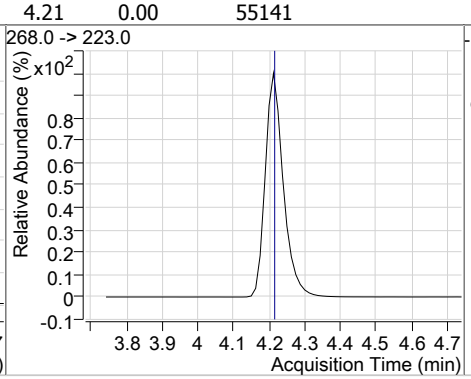


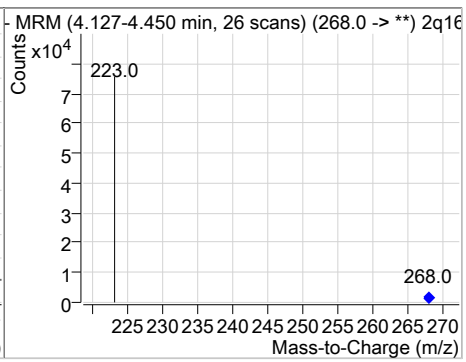




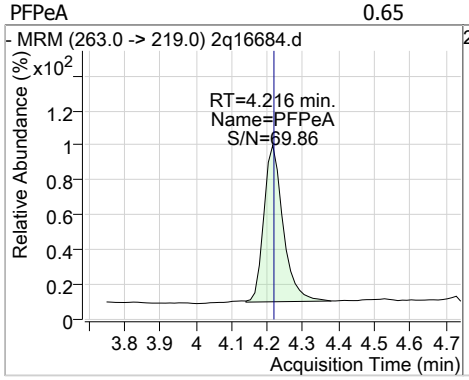
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	17.33	4.21	0.00	55141				

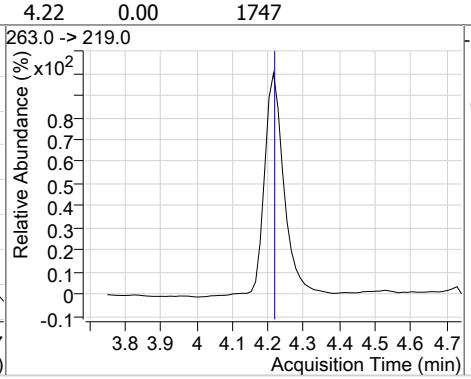


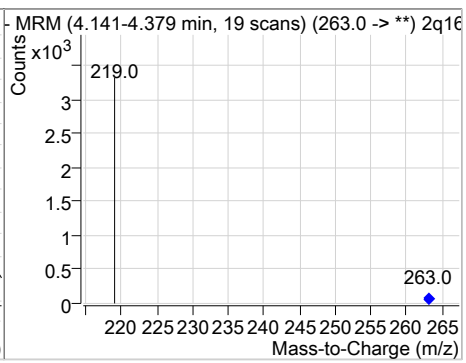




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.65	4.22	0.00	1747				

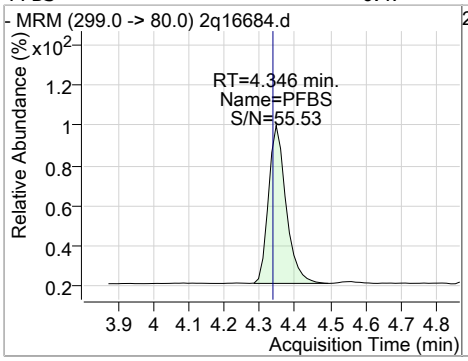


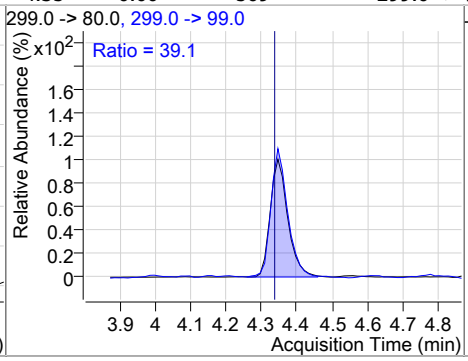


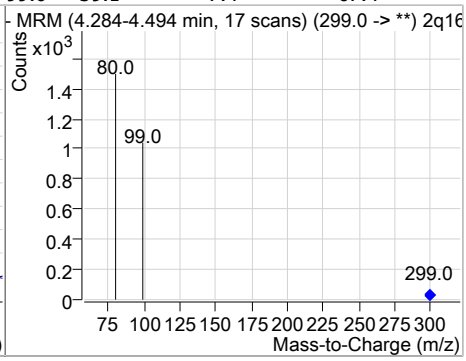


Perfluorinated Compounds by LC/MS/MS

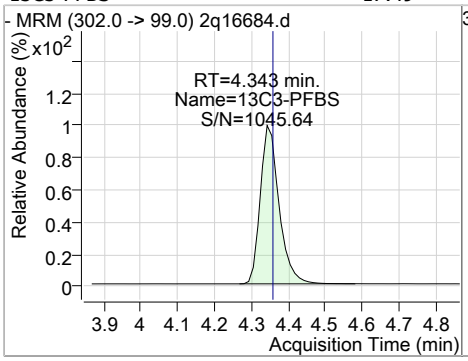
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.47	4.35	0.00	569	299.0 -> 99.0	39.1	7.4	67.4

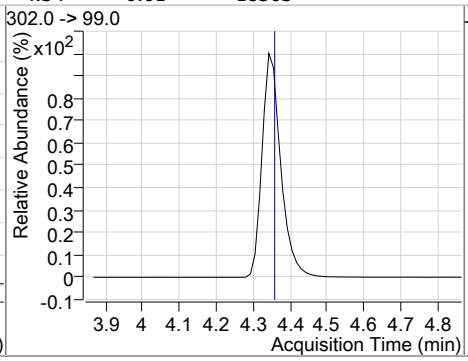


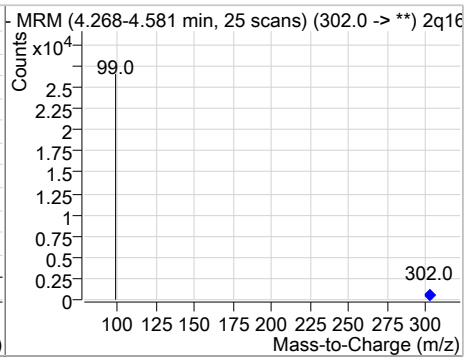




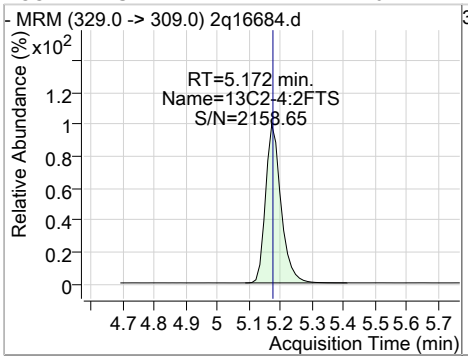
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	17.49	4.34	-0.01	18303				

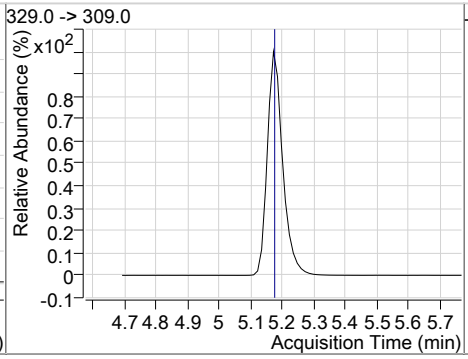


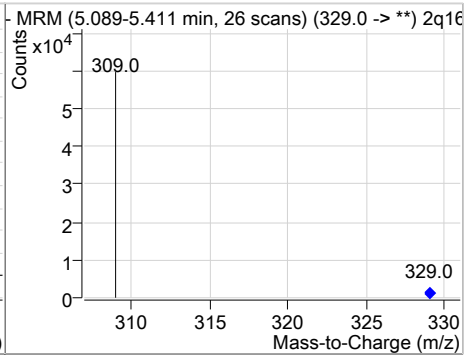




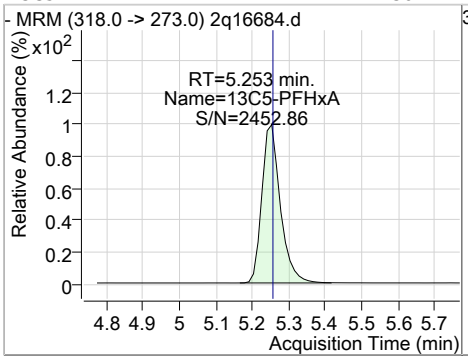
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	16.47	5.17	0.00	43170				

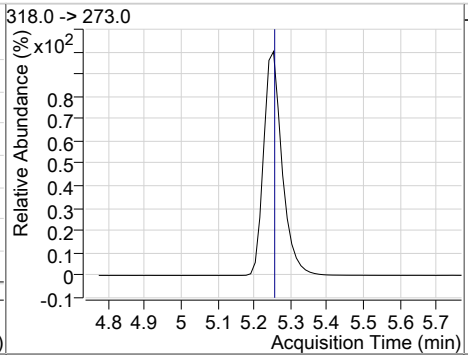


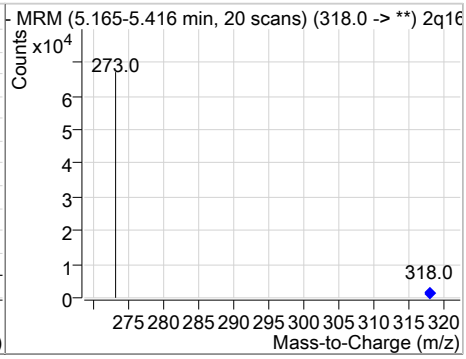




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	17.36	5.25	0.00	49202				

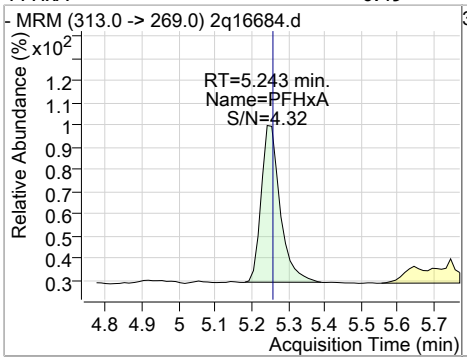


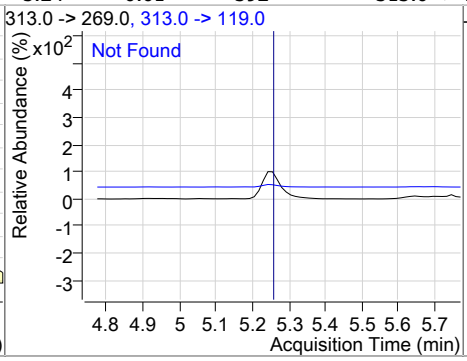


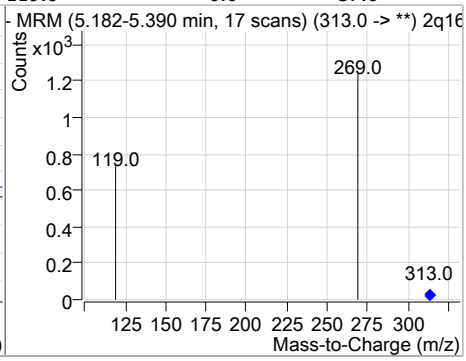


Perfluorinated Compounds by LC/MS/MS

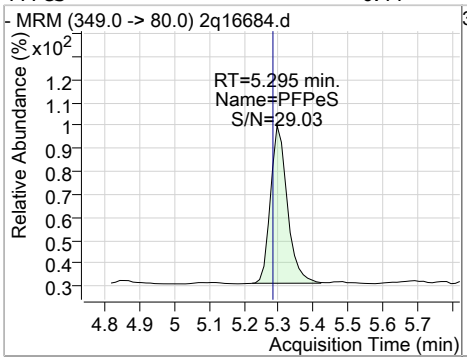
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.49	5.24	-0.01	392	313.0 -> 119.0		0.0	37.6

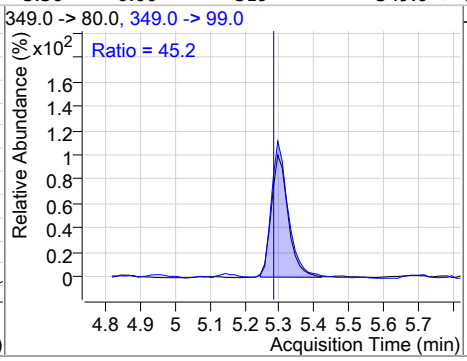


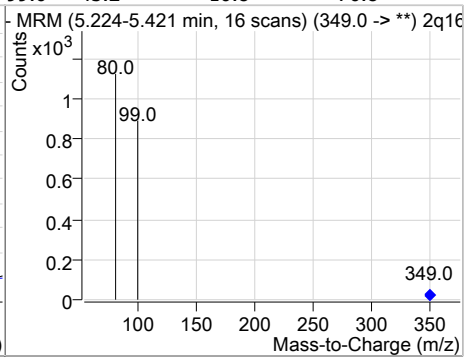




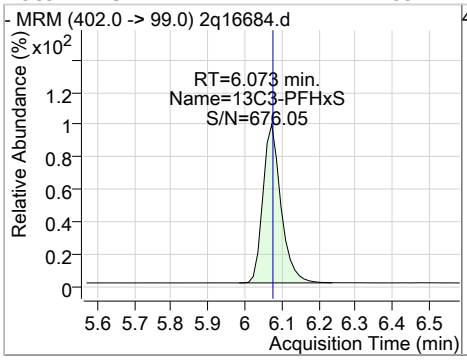
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.44	5.30	0.00	319	349.0 -> 99.0	45.2	10.8	70.8

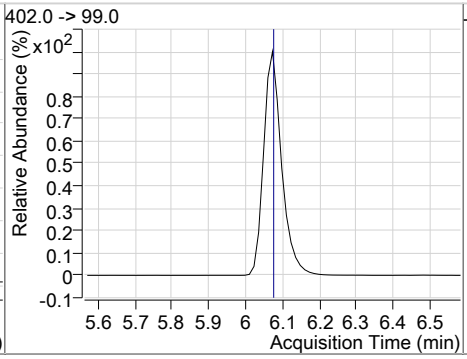


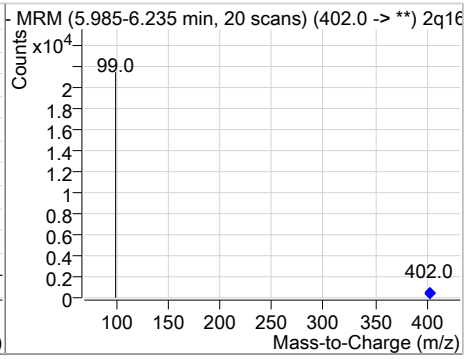




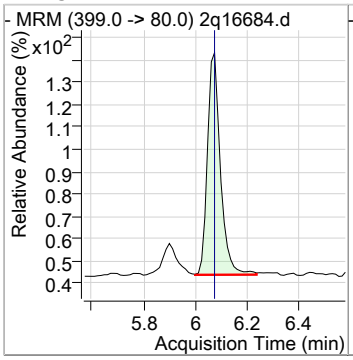
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	17.33	6.07	0.00	14783				

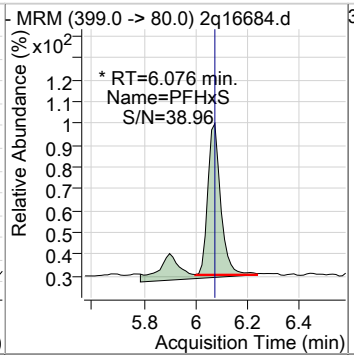


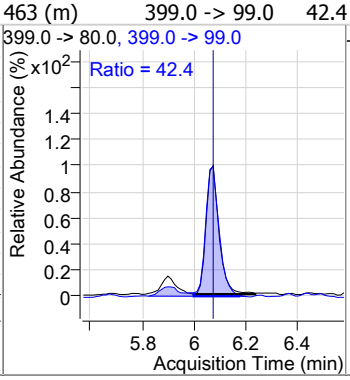


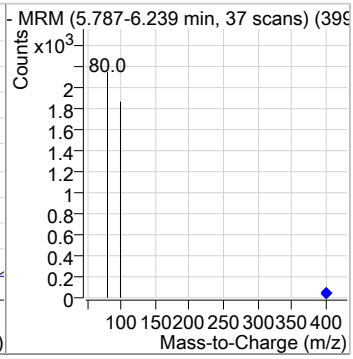


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.56	6.08	0.00	463 (m)	399.0 -> 99.0	42.4	18.0	78.0



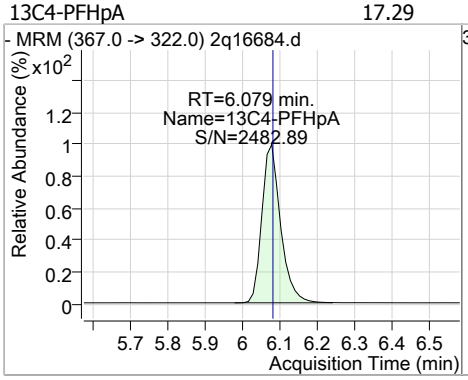


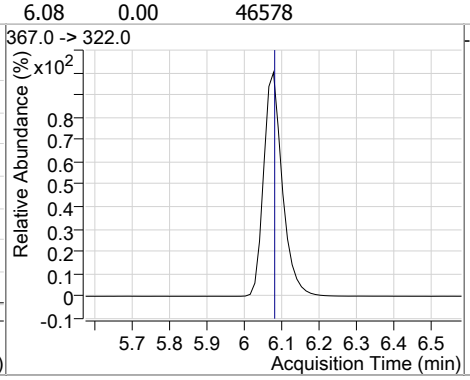


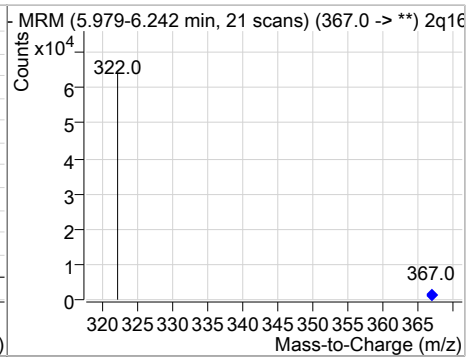


Perfluorinated Compounds by LC/MS/MS

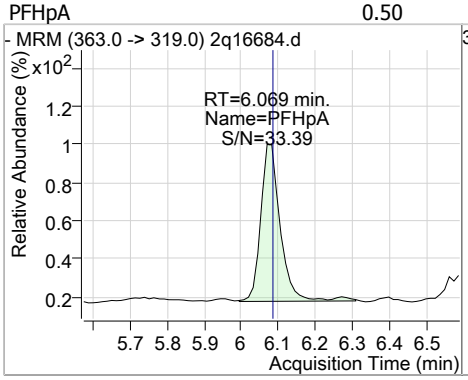
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	17.29	6.08	0.00	46578				

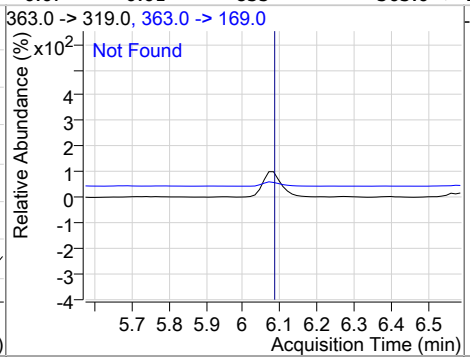


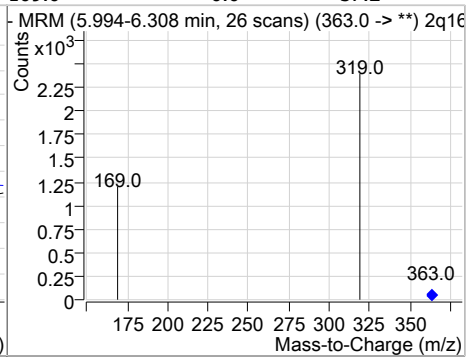




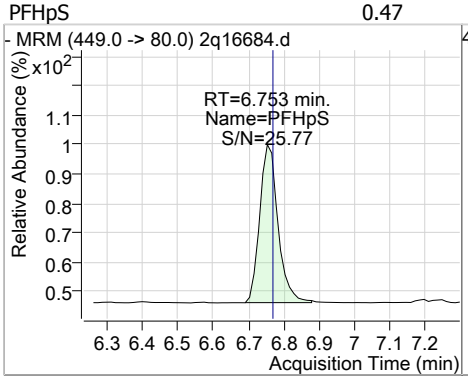
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.50	6.07	-0.01	835	363.0 -> 169.0		0.0	37.2

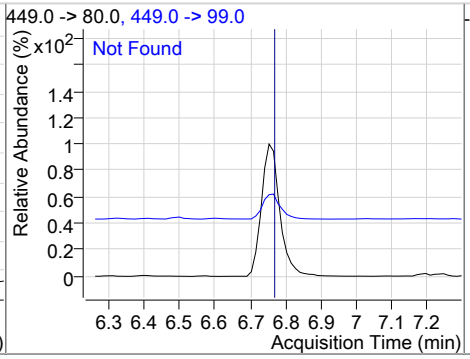


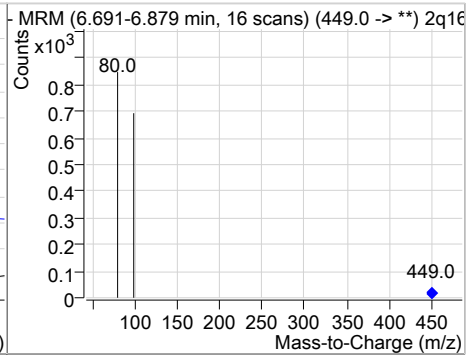




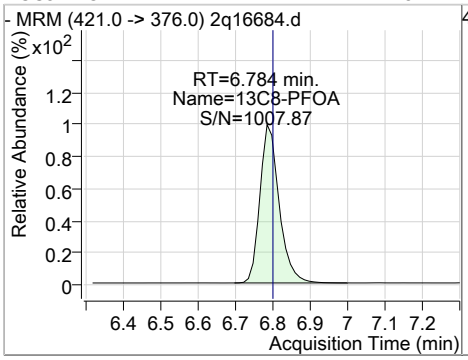
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.47	6.75	-0.01	181	449.0 -> 99.0		19.0	79.0

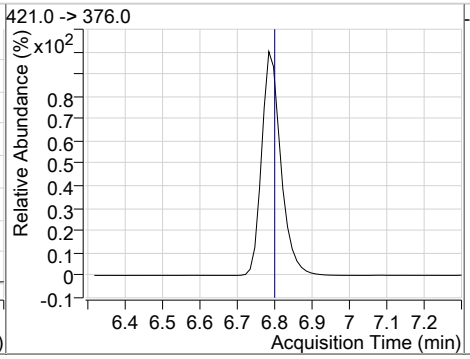


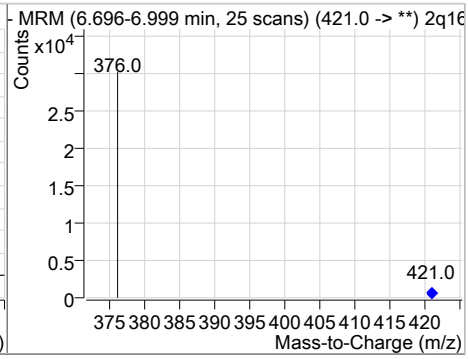




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	17.18	6.78	-0.01	21186				

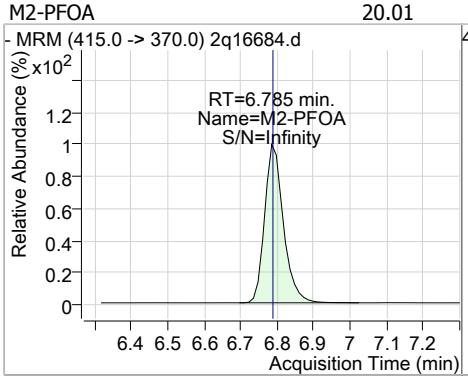


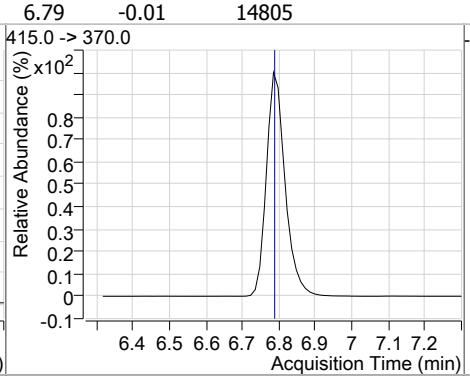


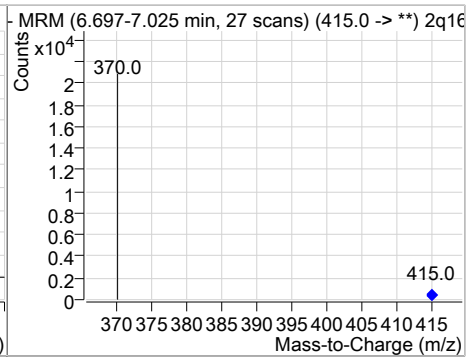


Perfluorinated Compounds by LC/MS/MS

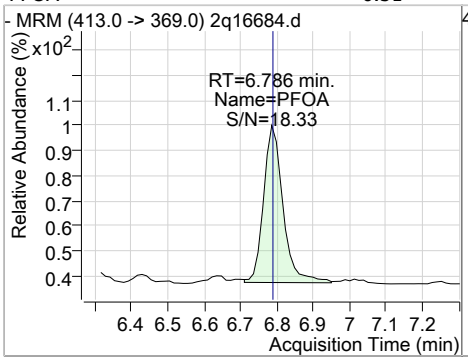
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.01	6.79	-0.01	14805				

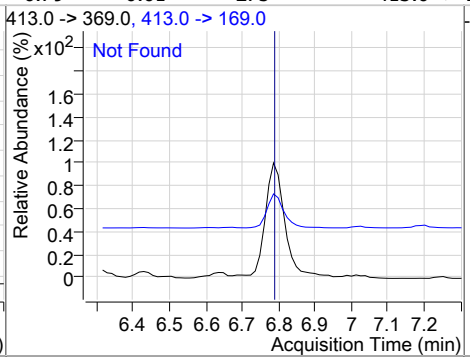


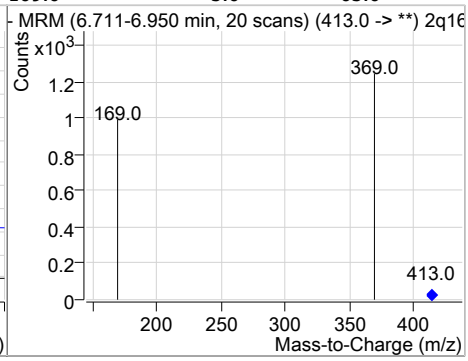




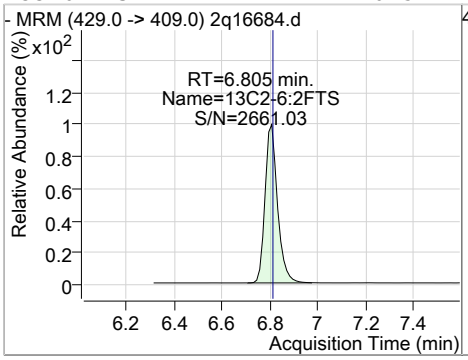
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.51	6.79	-0.01	275	413.0 -> 169.0		5.0	65.0

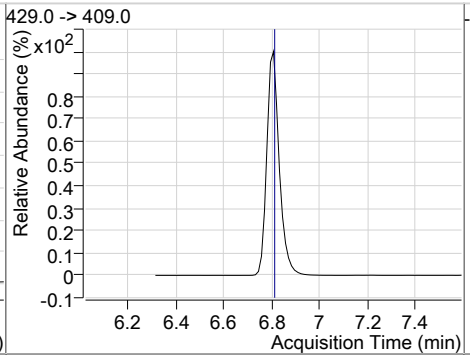


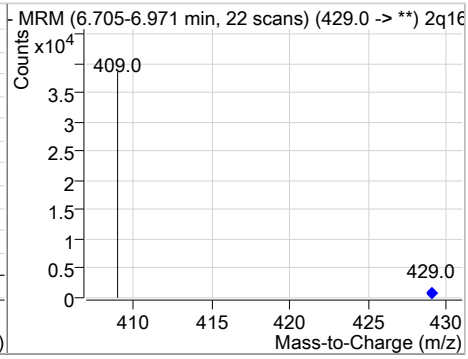




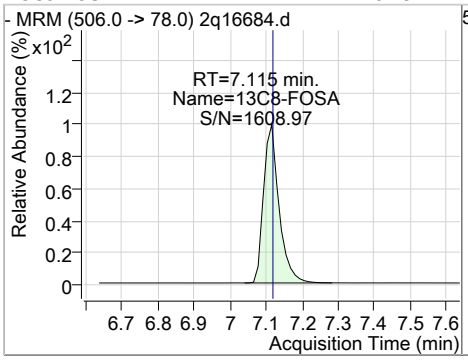
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	16.25	6.81	0.00	27575				

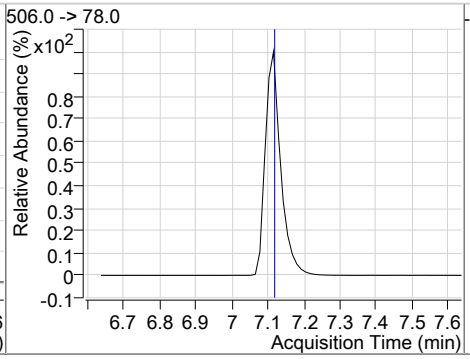


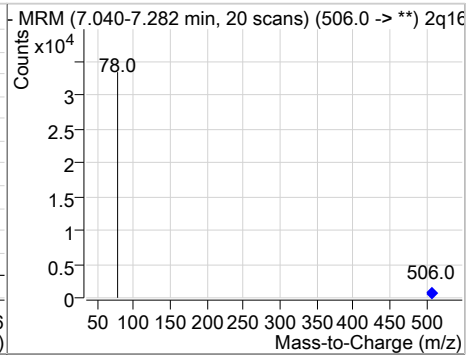




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.49	7.12	0.00	24523				

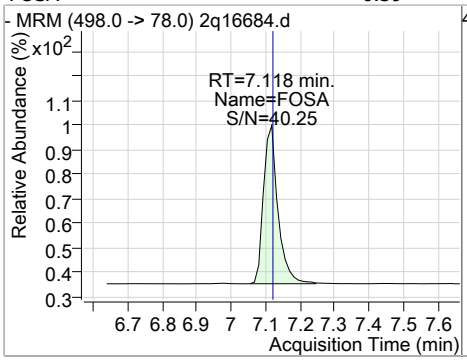


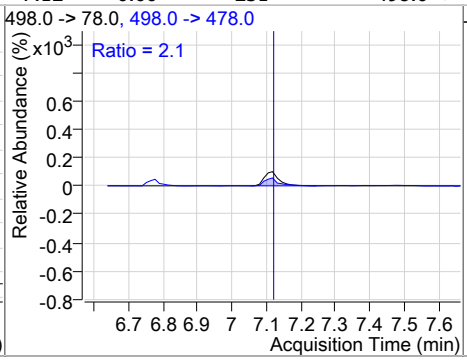


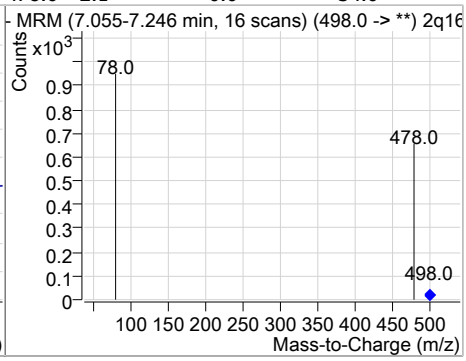


Perfluorinated Compounds by LC/MS/MS

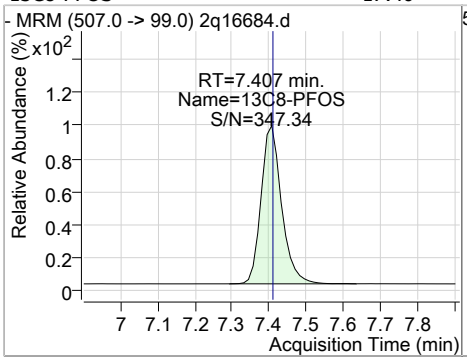
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.39	7.12	0.00	231	498.0 -> 478.0	2.1	0.0	34.0

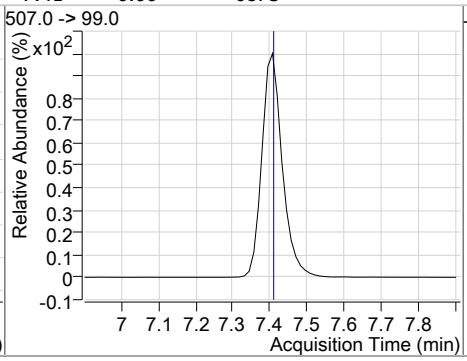


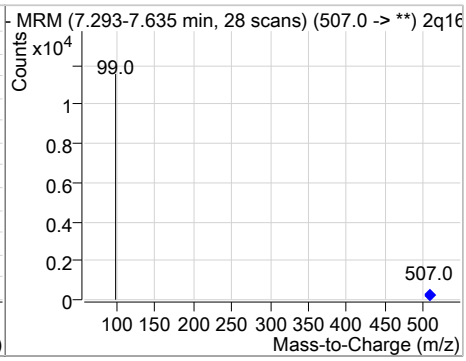




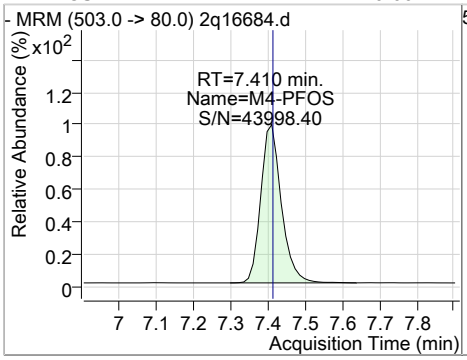
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	17.40	7.41	0.00	6873				

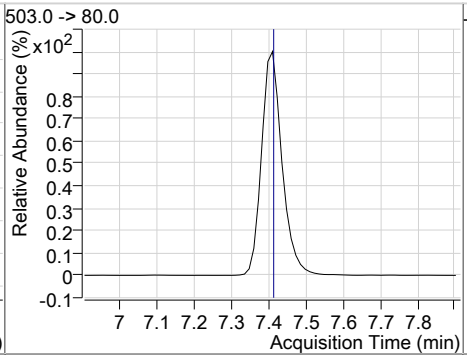


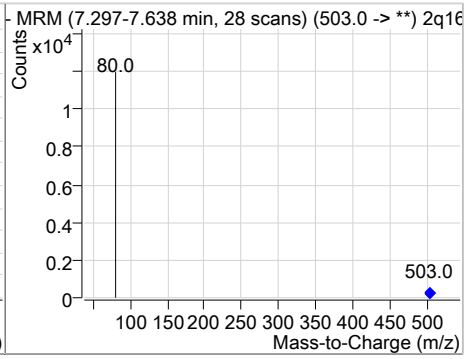




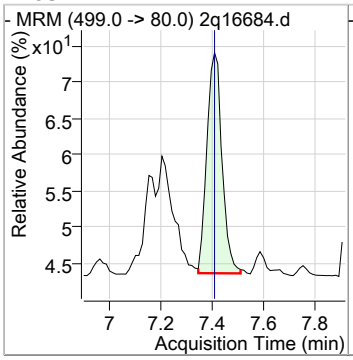
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.00	7.41	0.00	8149				

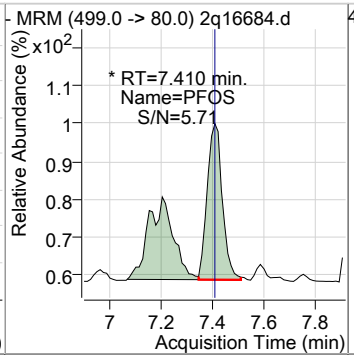


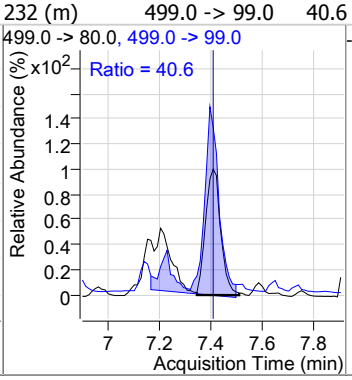


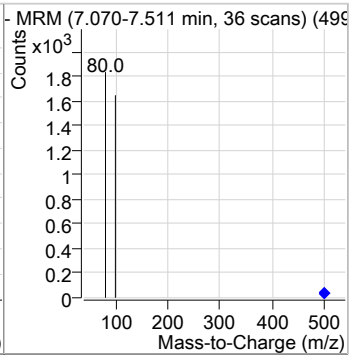


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.57	7.41	0.00	232 (m)	499.0 -> 99.0	40.6	14.5	74.5



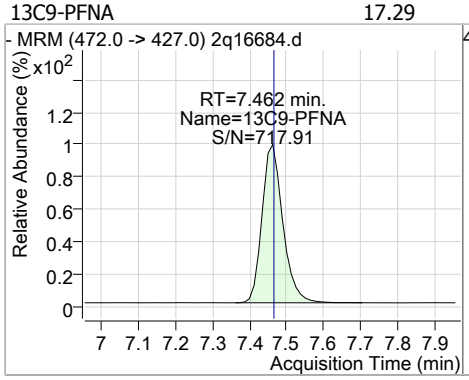


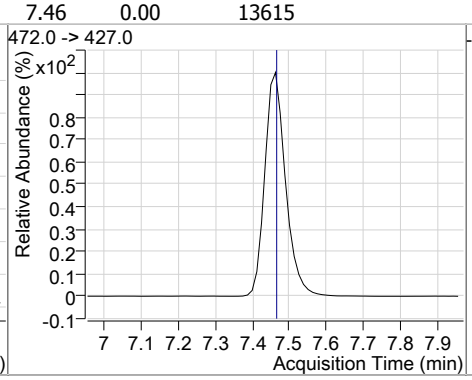


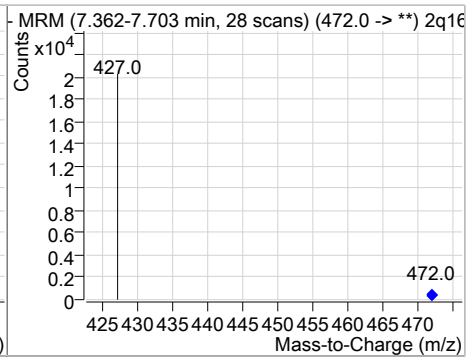


Perfluorinated Compounds by LC/MS/MS

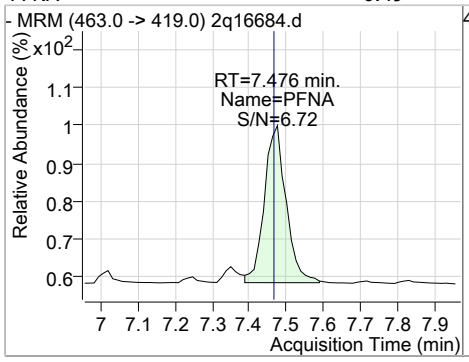
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	17.29	7.46	0.00	13615				

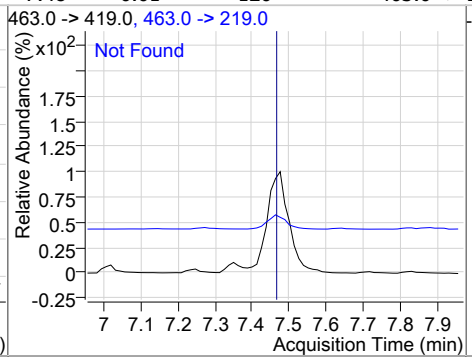


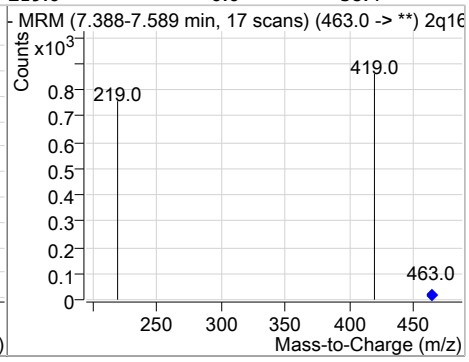




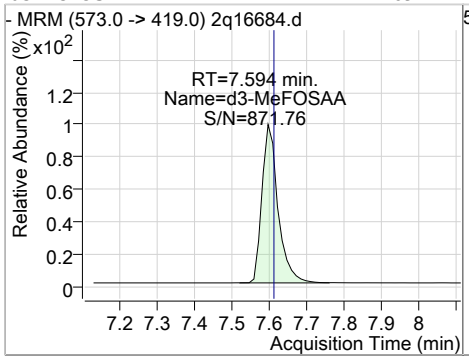
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.49	7.48	0.01	126	463.0 -> 219.0		0.0	58.4

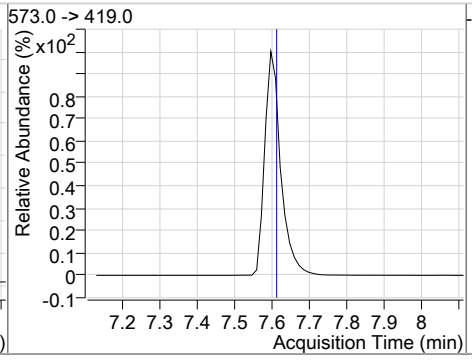


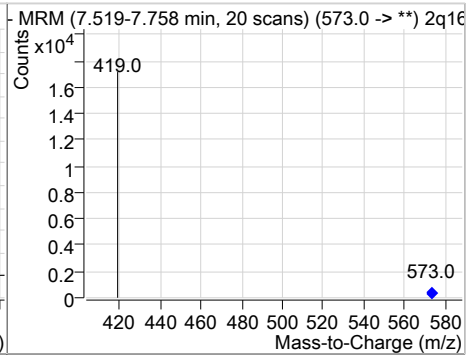




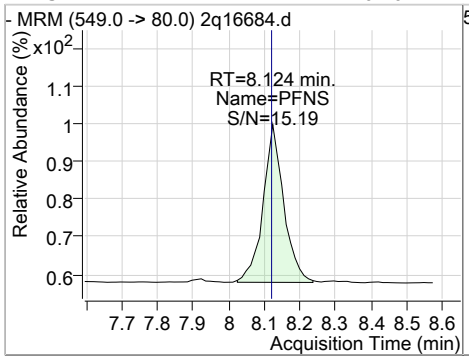
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	17.69	7.59	-0.01	11681				

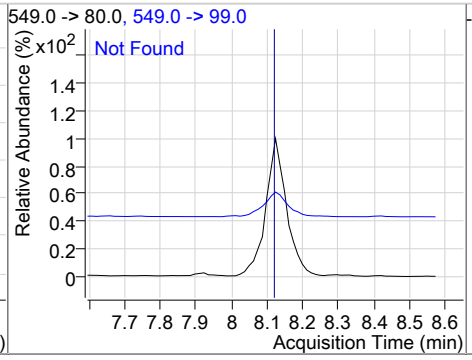


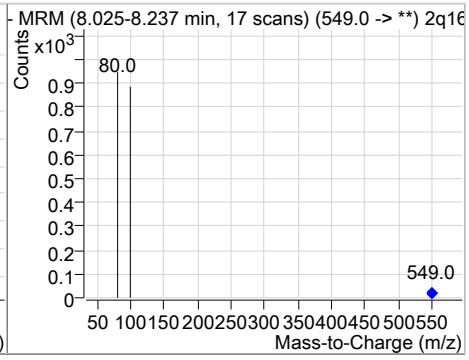




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.40	8.12	0.00	127	549.0 -> 99.0		24.7	84.7

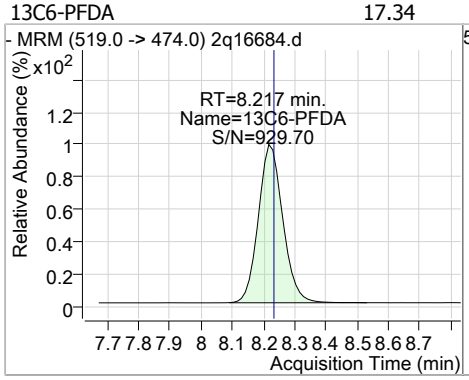


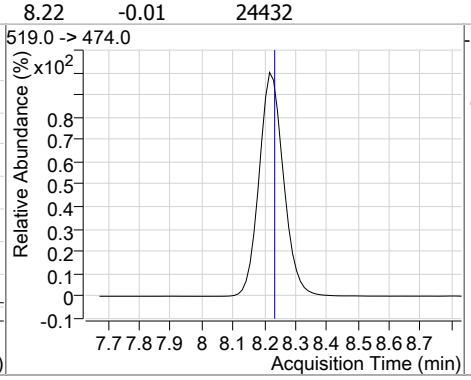


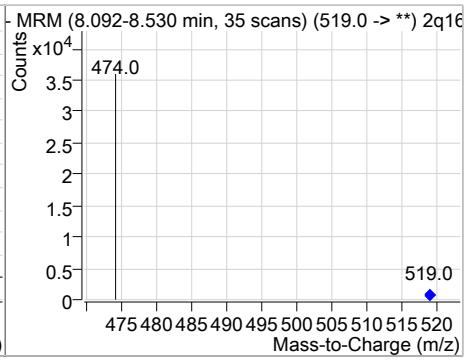


Perfluorinated Compounds by LC/MS/MS

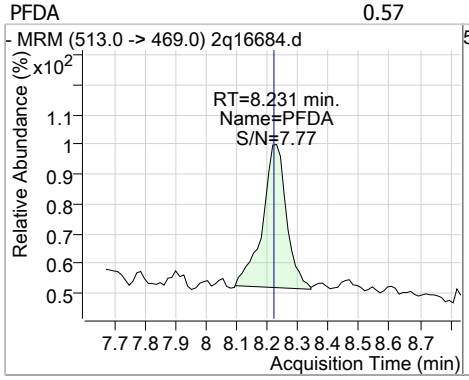
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	17.34	8.22	-0.01	24432				

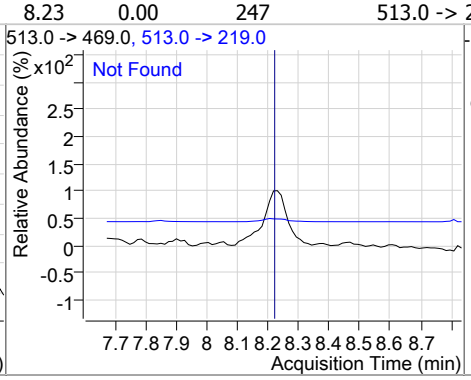


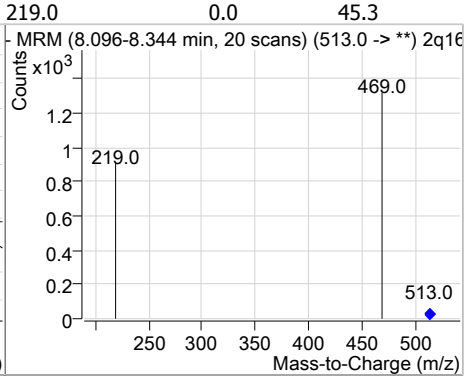




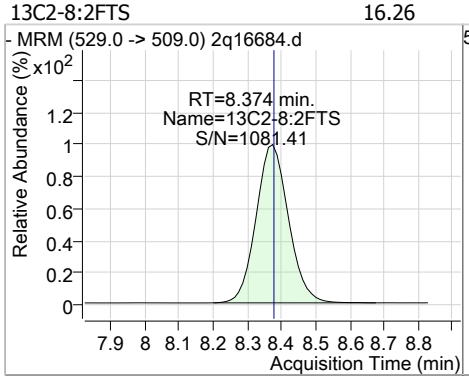
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.57	8.23	0.00	247	513.0 -> 219.0		0.0	45.3

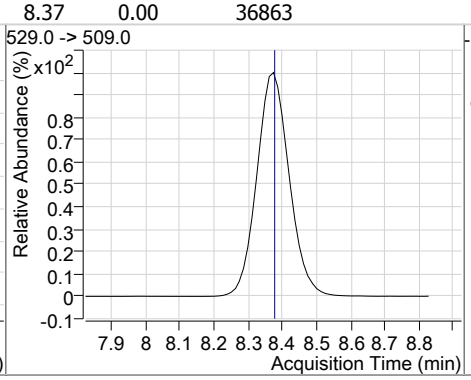


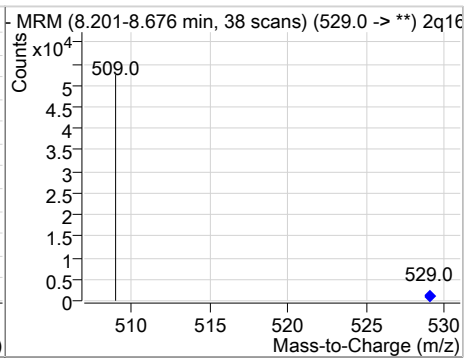




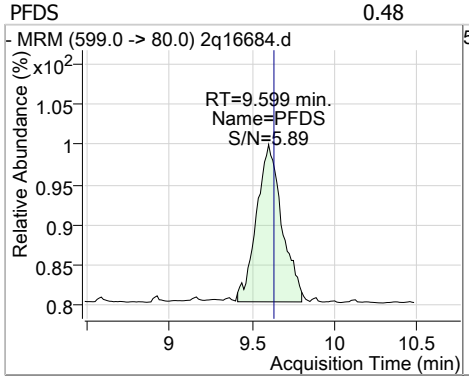
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	16.26	8.37	0.00	36863				

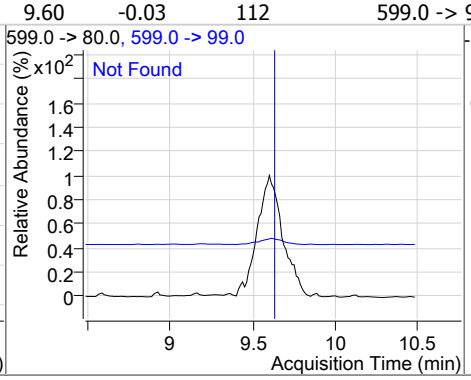


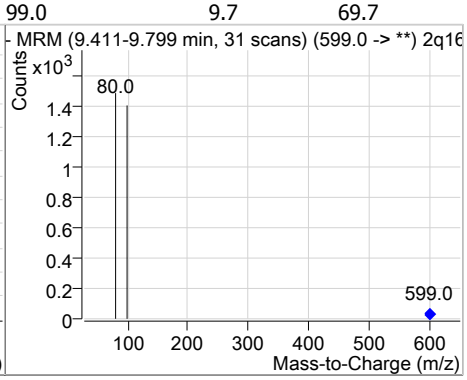




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.48	9.60	-0.03	112	599.0 -> 99.0		9.7	69.7

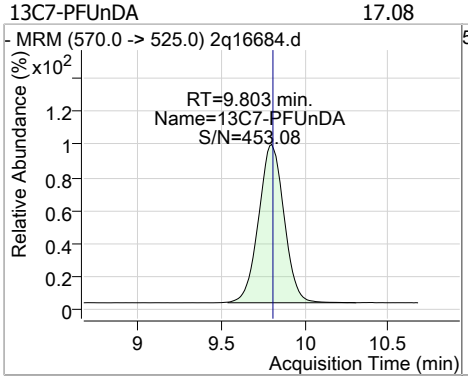


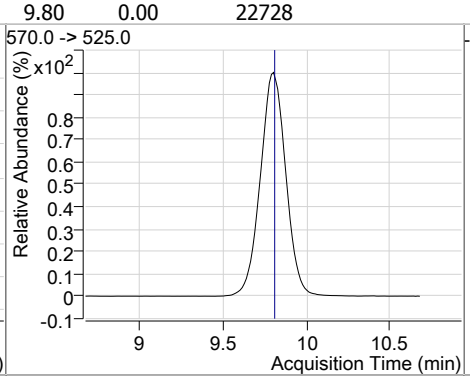


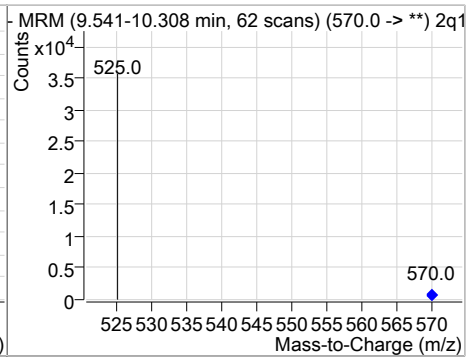


Perfluorinated Compounds by LC/MS/MS

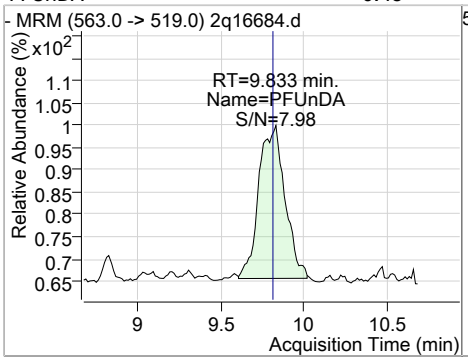
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	17.08	9.80	0.00	22728				

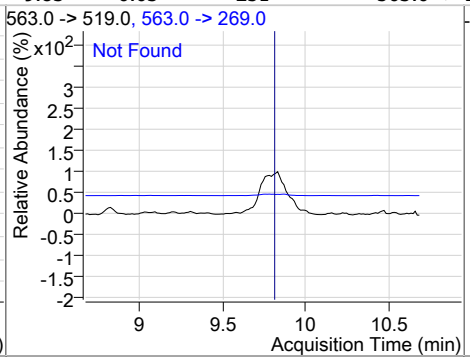


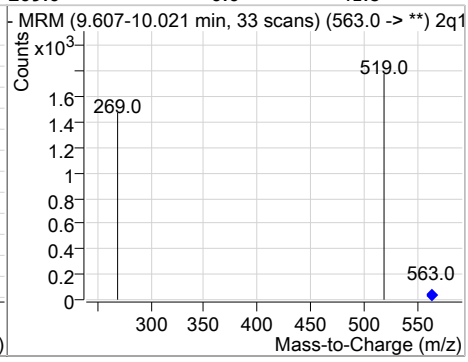




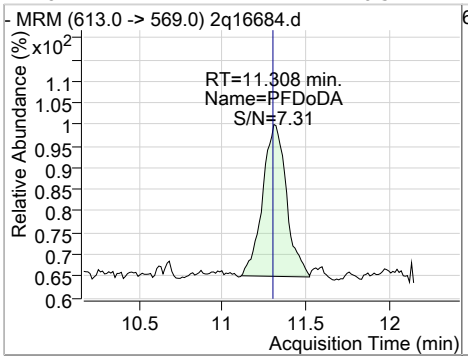
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.48	9.83	0.03	251	563.0 -> 269.0		0.0	41.8

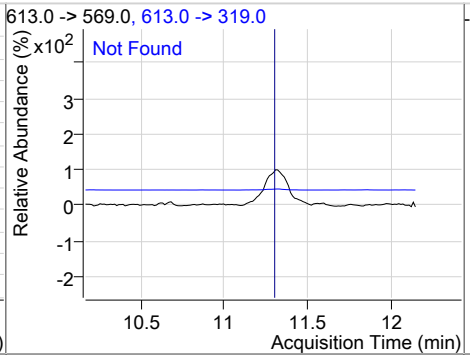


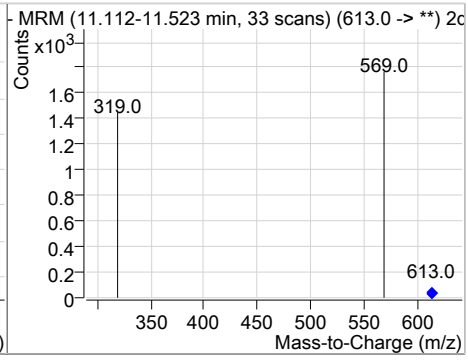




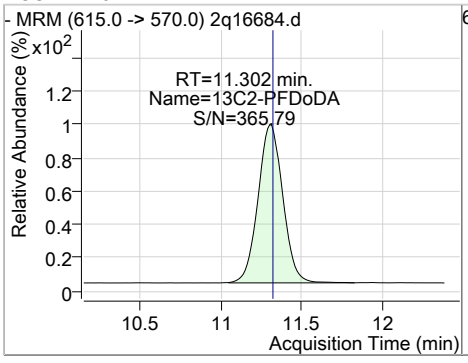
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.57	11.31	0.00	237	613.0 -> 319.0		0.0	40.0

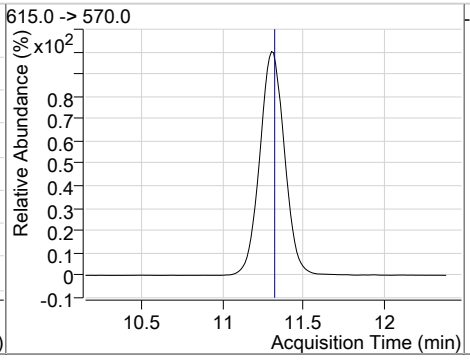


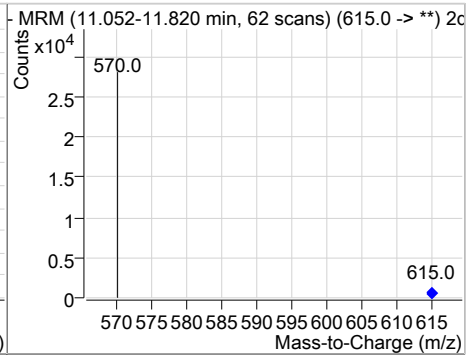




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	17.11	11.30	-0.01	17343				

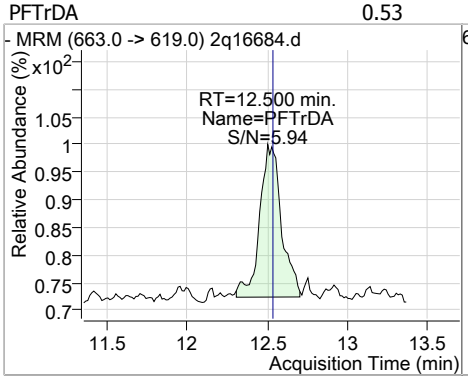


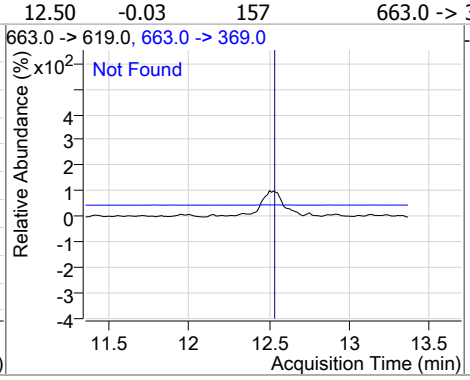


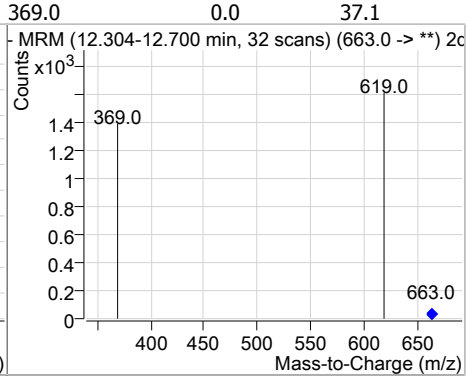


Perfluorinated Compounds by LC/MS/MS

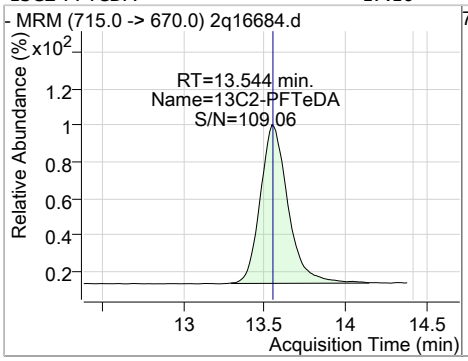
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.53	12.50	-0.03	157	663.0 -> 369.0		0.0	37.1

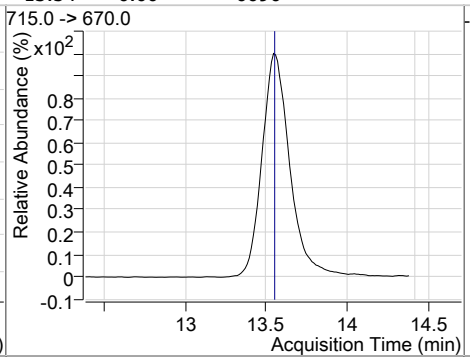


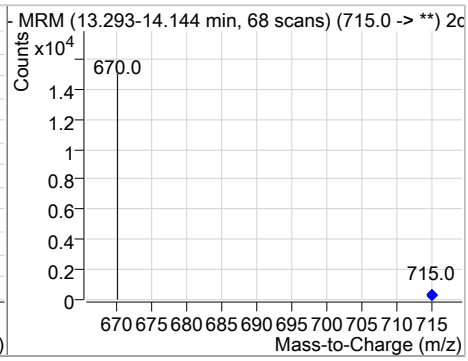




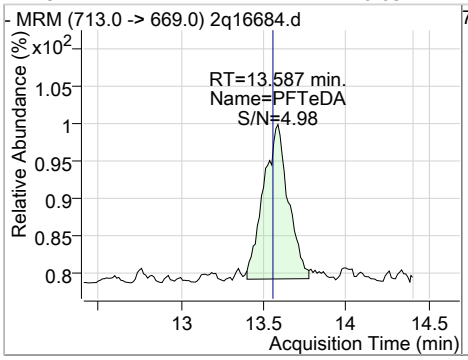
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	17.10	13.54	0.00	6690				

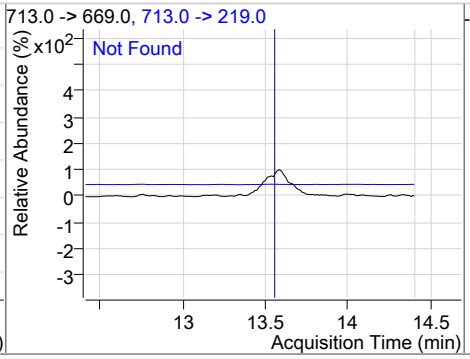


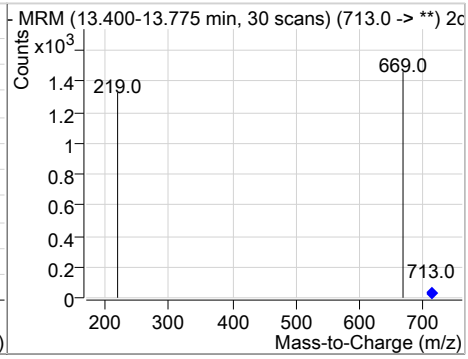




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.63	13.59	0.04	119	713.0 -> 219.0		0.0	37.4







Manual Integration Approval Summary

Sample Number: S2Q292-IC292
Lab FileID: 2Q16684.D
Injection Time: 07/07/18 08:46
Method: EPA 537M QSM5.1 B-15
Analyst approved: 07/09/18 13:31 Natasha Gumtie
Supervisor approved: 07/10/18 17:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.08	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.41	Split peak
MeFOSAA	2355-31-9		7.61	Split peak
EtFOSAA	2991-50-6		7.73	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/10/18 17:09

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16685.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/7/2018 9:05:53 AM
Sample Name : ic292-1
Vial : Vial 3
DA Method File : PFC_ID_070718_S2Q292.quantmethod.xml
Batch Name : s2q292.batch.bin
Sample Information : op70610,S2Q292,130,,,1.0,1,water

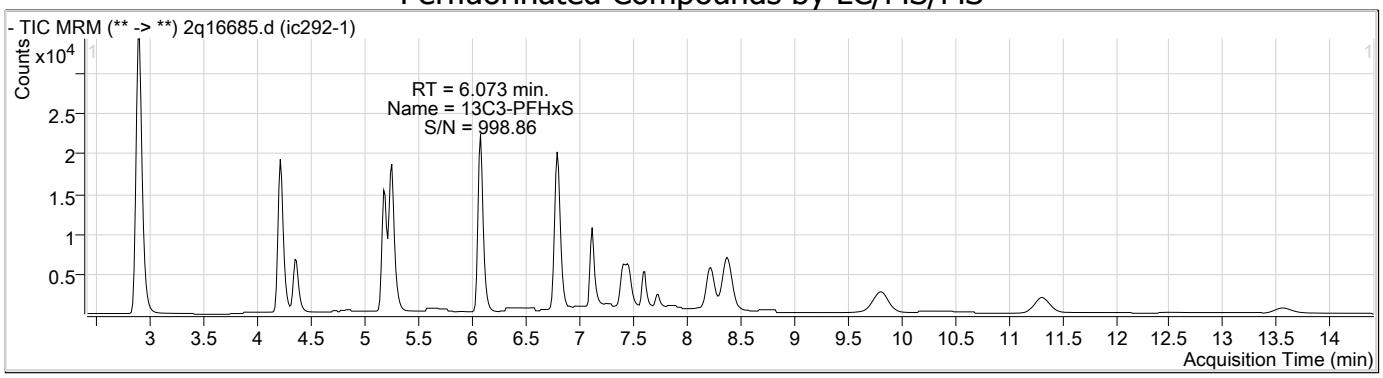
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.785	415.0 -> 370.0	16215	20.00	µg/L	-0.013
13C4-PFOS	7.410	503.0 -> 80.0	9985	20.00	µg/L	0.000
M4-PFBA	2.891	217.0 -> 172.0	139193	20.00	µg/L	0.000
M5-PFPeA	4.212	268.0 -> 223.0	63769	20.00	µg/L	0.000
M5-PFHxA	5.253	318.0 -> 273.0	58279	20.00	µg/L	0.000
M4-PFHpA	6.079	367.0 -> 322.0	55104	20.00	µg/L	0.000
M8-PFOA	6.784	421.0 -> 376.0	24504	20.00	µg/L	-0.013
M9-PFNA	7.462	472.0 -> 427.0	15751	20.00	µg/L	0.000
M6-PFDA	8.230	519.0 -> 474.0	28292	20.00	µg/L	0.000
M7-PFUnDA	9.816	570.0 -> 525.0	26254	20.00	µg/L	0.013
M2-PFDoDA	11.315	615.0 -> 570.0	19738	20.00	µg/L	0.000
M2-PFTeDA	13.556	715.0 -> 670.0	7703	20.00	µg/L	0.012
M8-FOSA	7.115	506.0 -> 78.0	27993	20.00	µg/L	0.000
M3-PFBS	4.343	302.0 -> 99.0	21287	20.00	µg/L	-0.013
M3-PFHxS	6.073	402.0 -> 99.0	17294	20.00	µg/L	0.000
M8-PFOS	7.407	507.0 -> 99.0	8077	20.00	µg/L	0.000
M2-4:2FTS	5.172	329.0 -> 309.0	49895	20.00	µg/L	0.000
M2-6:2FTS	6.805	429.0 -> 409.0	32137	20.00	µg/L	0.000
M2-8:2FTS	8.374	529.0 -> 509.0	42245	20.00	µg/L	0.000
M3-MeFOSAA	7.607	573.0 -> 419.0	13289	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.172	329.0 -> 309.0	49898	19.04	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.2%		
13C2-6:2FTS	6.805	429.0 -> 409.0	32147	18.94	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.7%		
13C2-8:2FTS	8.374	529.0 -> 509.0	42187	18.61	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.1%		
13C2-PFDoDA	11.315	615.0 -> 570.0	19854	19.59	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%		
13C2-PFTeDA	13.556	715.0 -> 670.0	7693	19.67	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.3%		
13C3-PFBS	4.343	302.0 -> 99.0	21290	20.34	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.7%		
13C3-PFHxS	6.073	402.0 -> 99.0	17289	20.27	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.4%		
13C4-PFBA	2.891	217.0 -> 172.0	139074	20.20	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%		
13C4-PFHpA	6.079	367.0 -> 322.0	55089	20.45	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%		
13C5-PFHxA	5.253	318.0 -> 273.0	58302	20.58	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.9%		
13C5-PFPeA	4.212	268.0 -> 223.0	63770	20.04	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C6-PFDA	8.230	519.0 -> 474.0	28274	20.06	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.3%		

Perfluorinated Compounds by LC/MS/MS

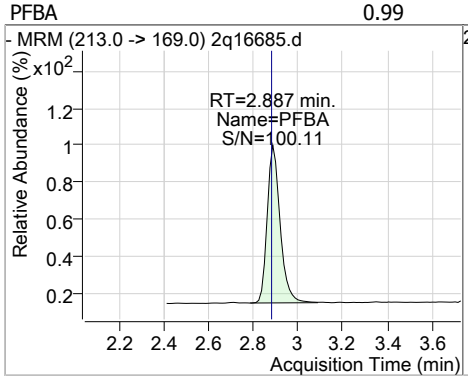
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	9.816	570.0 -> 525.0	26407	19.85	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.2%			
13C8-FOSA	7.115	506.0 -> 78.0	27997	21.11	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.5%			
13C8-PFOA	6.784	421.0 -> 376.0	24516	19.88	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.4%			
13C8-PFOS	7.407	507.0 -> 99.0	8071	20.44	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%			
13C9-PFNA	7.462	472.0 -> 427.0	15768	20.02	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
d3-MeFOSAA	7.607	573.0 -> 419.0	13292	20.13	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%			
M2-PFOA	6.785	415.0 -> 370.0	16204	19.99	ng/ml		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.410	503.0 -> 80.0	9992	20.02	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
Target Compounds							**QValue**
4:2FTS	5.175	327.0 -> 307.0	1284	0.98	µg/L		84
6:2FTS	6.794	427.0 -> 407.0	821	1.00	µg/L		97
8:2FTS	8.376	527.0 -> 507.0	1297	1.10	µg/L		95
EtFOSAA	7.731	584.0 -> 419.0	185	0.97	µg/L		77
FOSA	7.118	498.0 -> 78.0	692	1.02	µg/L		88
MeFOSAA	7.608	570.0 -> 419.0	210	0.88	µg/L		43
PFBA	2.887	213.0 -> 169.0	1082	0.99	µg/L		100
PFBS	4.346	299.0 -> 80.0	1432	1.01	µg/L		98
PFDA	8.231	513.0 -> 469.0	604	1.20	µg/L		63
PFDoDA	11.296	613.0 -> 569.0	534	1.12	µg/L		73
PFDS	9.611	599.0 -> 80.0	290	1.08	µg/L		97
PFHpA	6.082	363.0 -> 319.0	1945	0.99	µg/L		100
PFHpS	6.766	449.0 -> 80.0	439	0.98	µg/L		91
PFHxA	5.255	313.0 -> 269.0	931	0.99	µg/L		78
PFHxS	6.076	399.0 -> 80.0	974	1.01	µg/L	m	97
PFNA	7.476	463.0 -> 419.0	236	0.80	µg/L		46
PFNS	8.124	549.0 -> 80.0	391	1.06	µg/L		95
PFOA	6.786	413.0 -> 369.0	728	1.18	µg/L		94
PFOS	7.410	499.0 -> 80.0	521	1.08	µg/L	m	93
PFPeA	4.216	263.0 -> 219.0	3596	1.16	µg/L		100
PFPeS	5.295	349.0 -> 80.0	875	1.03	µg/L		98
PFTeDA	13.562	713.0 -> 669.0	260	1.19	µg/L		79
PFTrDA	12.513	663.0 -> 619.0	374	1.09	µg/L		79
PFUnDA	9.820	563.0 -> 519.0	659	1.08	µg/L		69

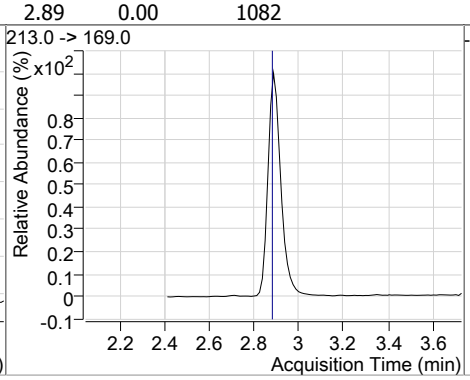
 # = Qualifier out of range, m = manually integrated, + = Area summed

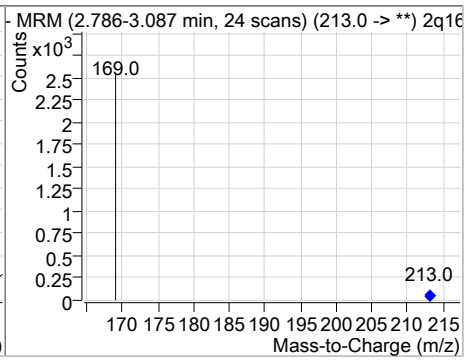
Perfluorinated Compounds by LC/MS/MS



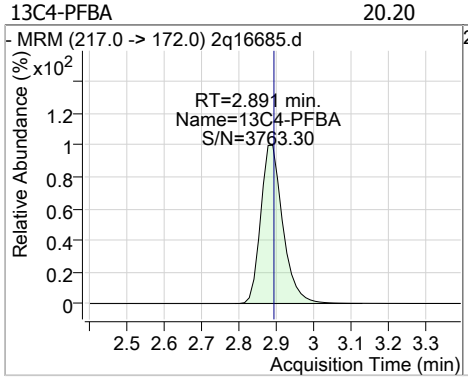
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.99	2.89	0.00	1082				

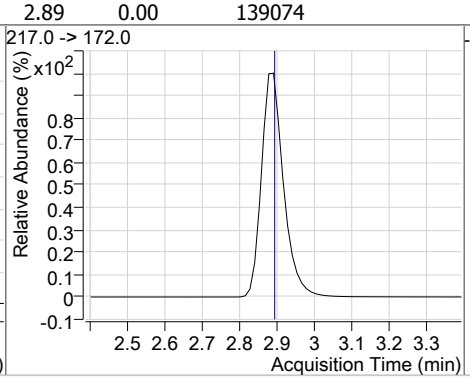


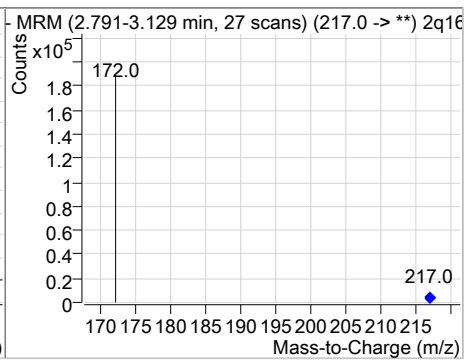




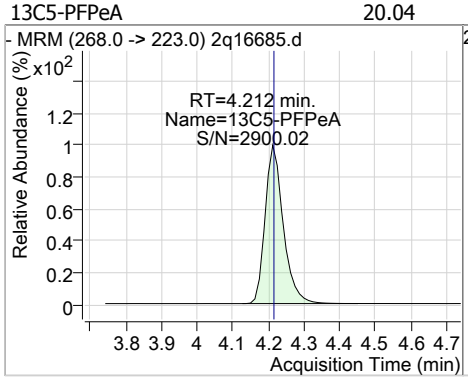
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.20	2.89	0.00	139074				

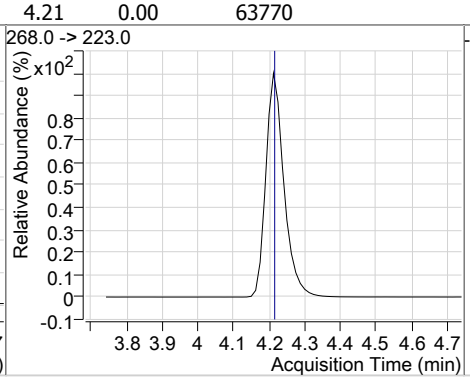


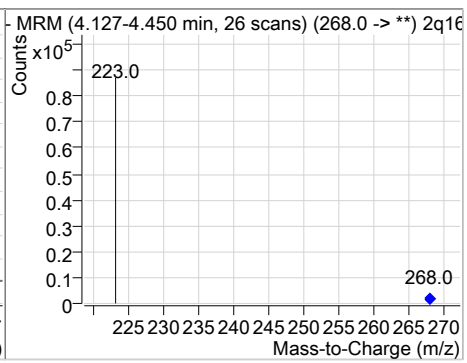




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.04	4.21	0.00	63770				

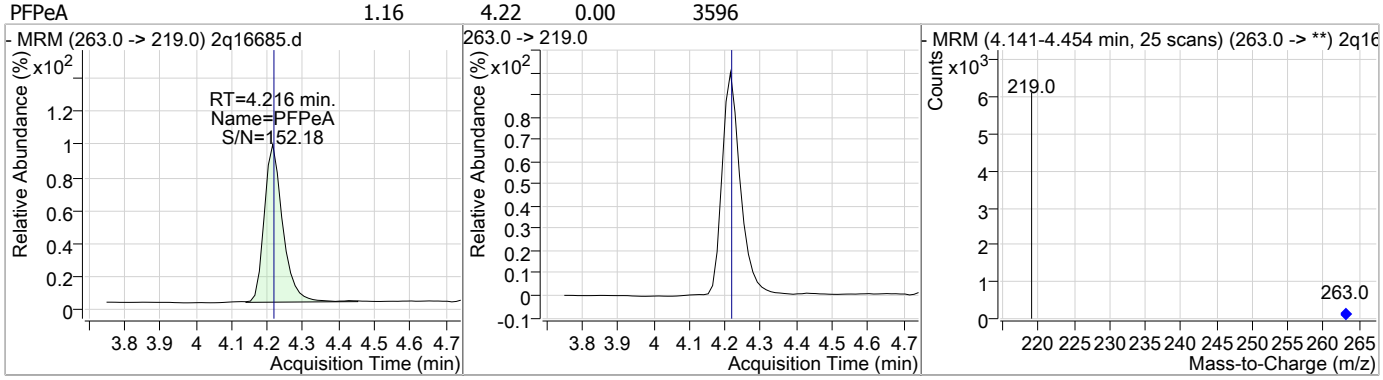




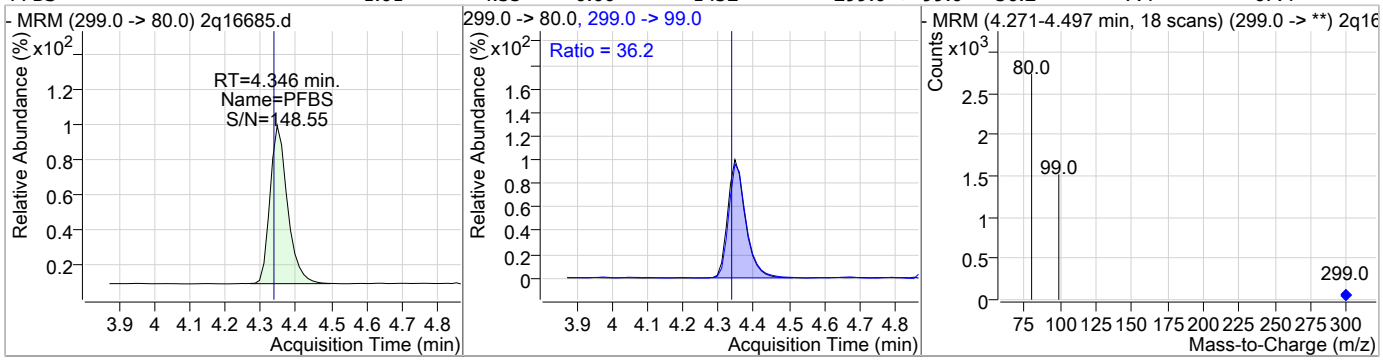


Perfluorinated Compounds by LC/MS/MS

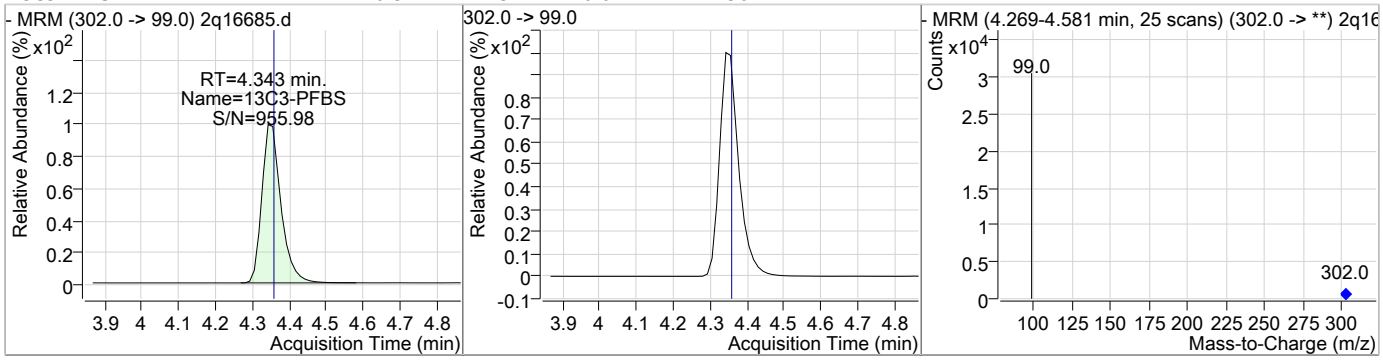
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.16	4.22	0.00	3596				



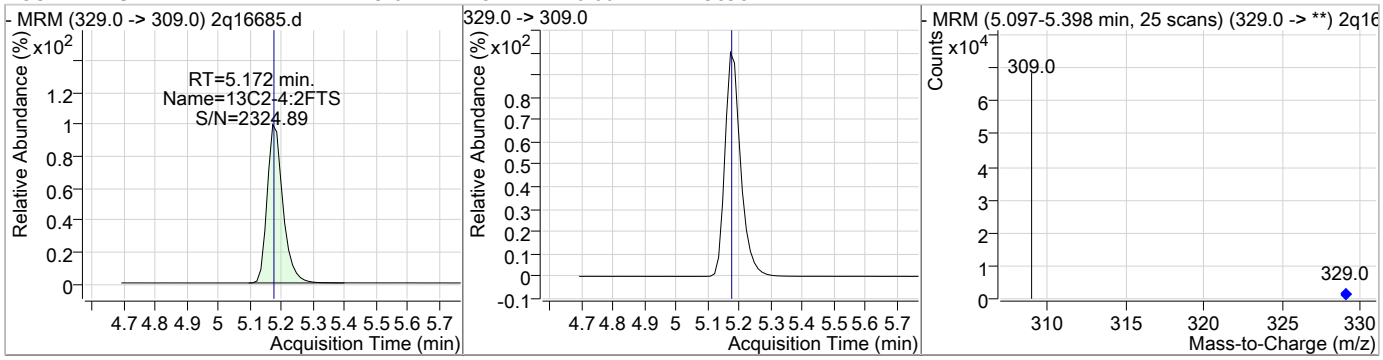
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.01	4.35	0.00	1432	299.0 -> 99.0	36.2	7.4	67.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.34	4.34	-0.01	21290				

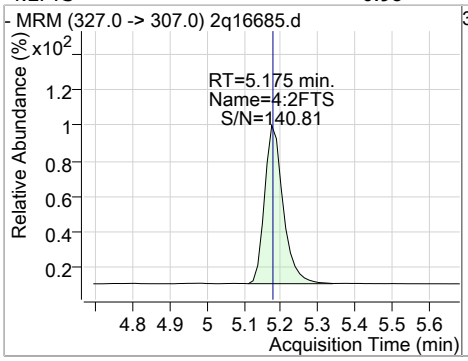


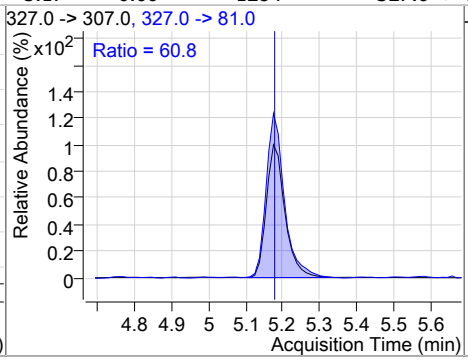
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.04	5.17	0.00	49898				

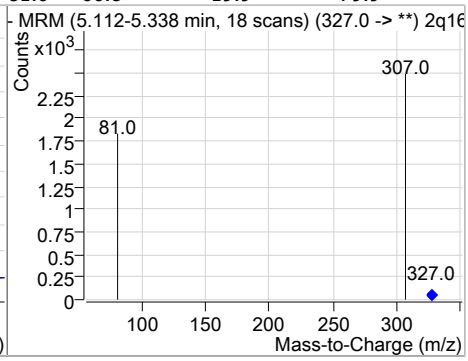


Perfluorinated Compounds by LC/MS/MS

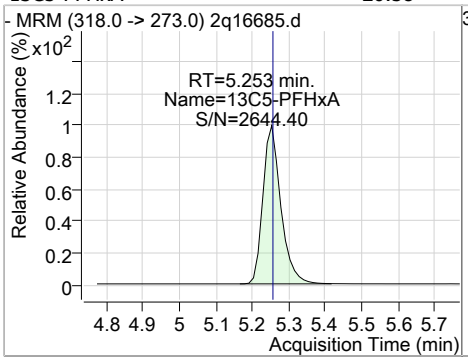
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.98	5.17	0.00	1284	327.0 -> 81.0	60.8	19.9	79.9

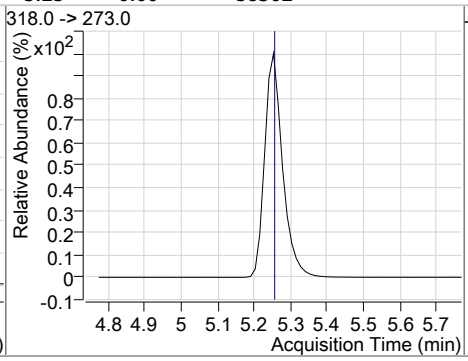


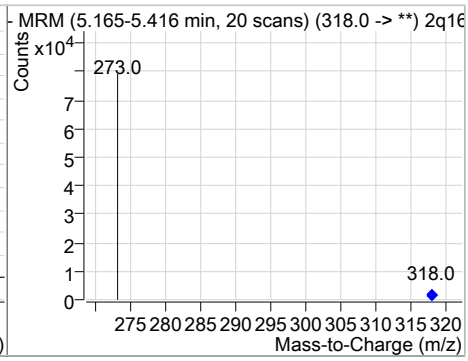




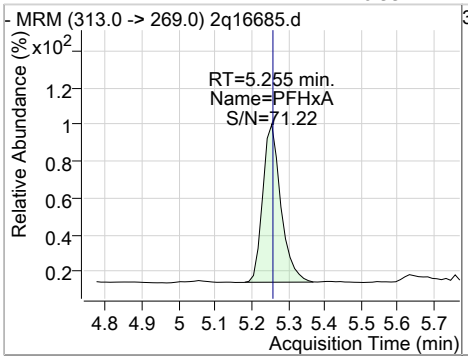
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.58	5.25	0.00	58302				

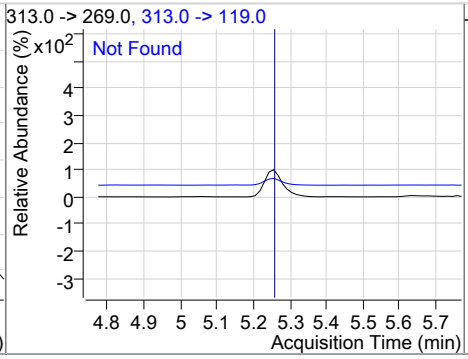


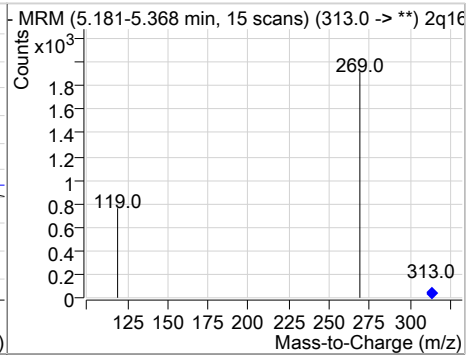




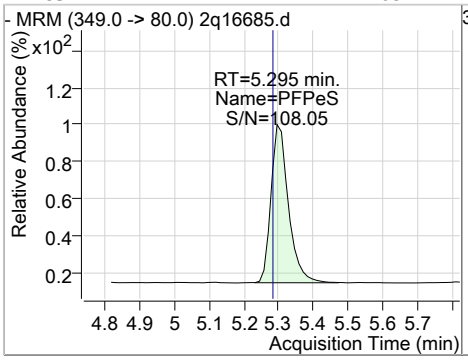
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.99	5.26	0.00	931	313.0 -> 119.0		0.0	37.6

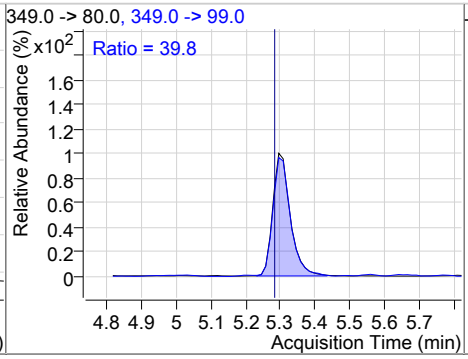


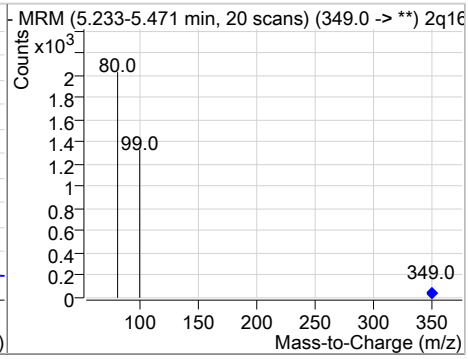




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.03	5.30	0.00	875	349.0 -> 99.0	39.8	10.8	70.8

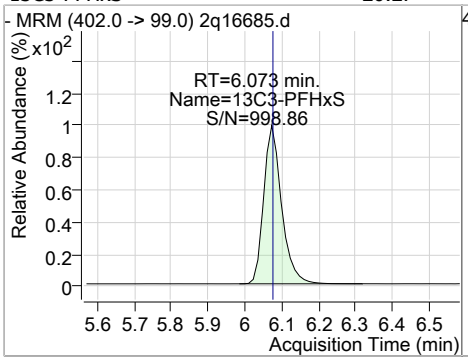


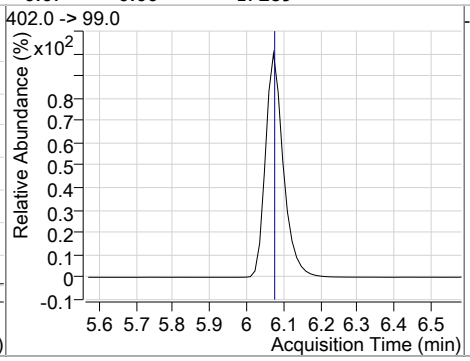


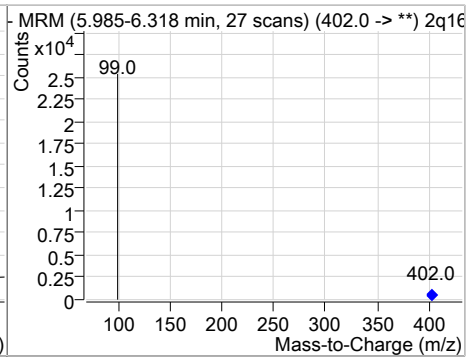


Perfluorinated Compounds by LC/MS/MS

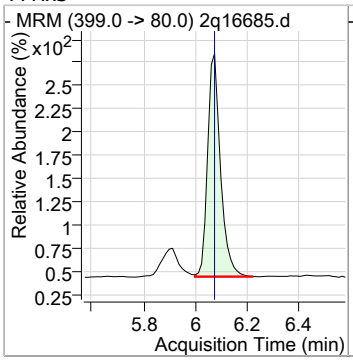
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.27	6.07	0.00	17289				

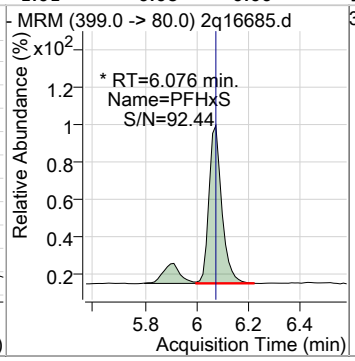


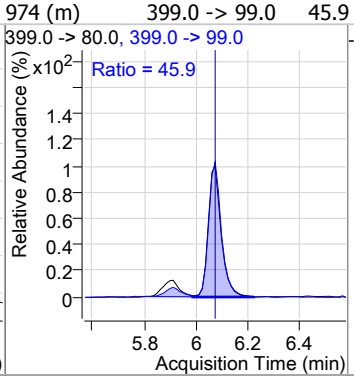


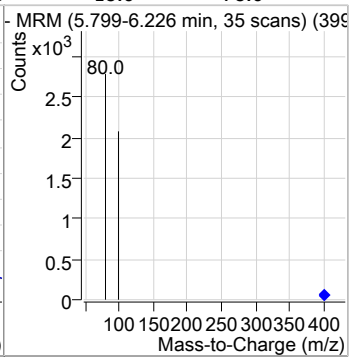


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.01	6.08	0.00	974 (m)	399.0 -> 99.0	45.9	18.0	78.0

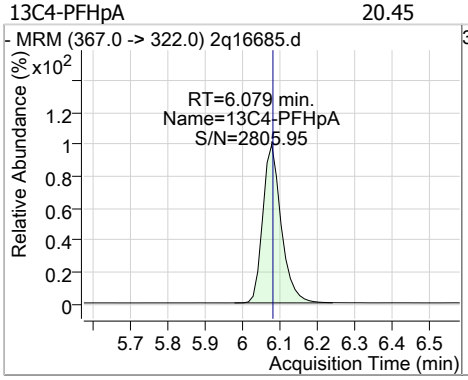


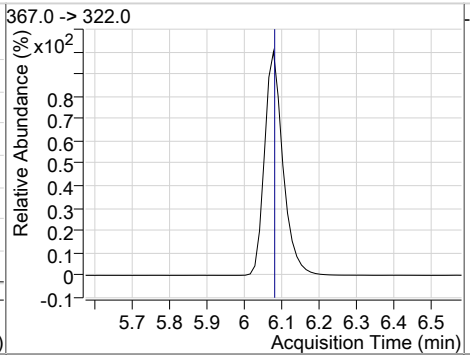


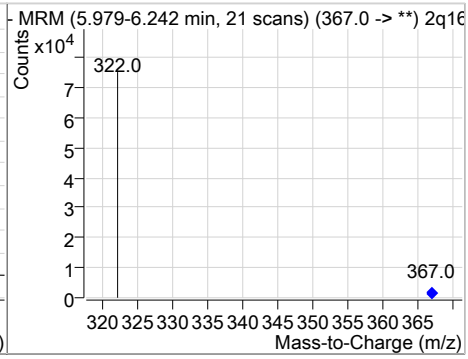




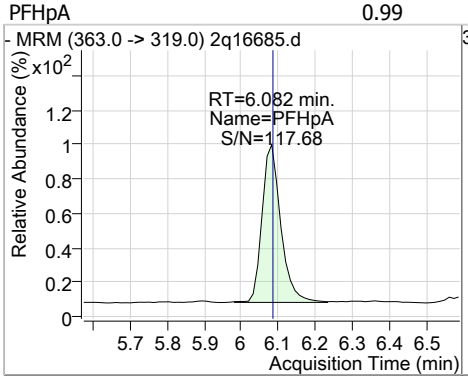
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.45	6.08	0.00	55089				

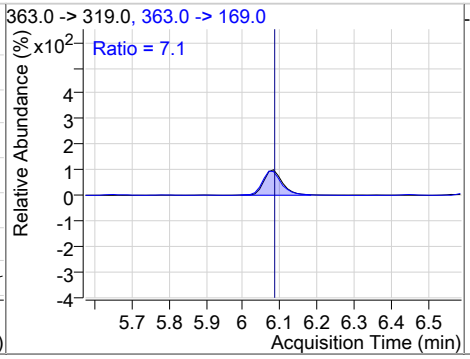


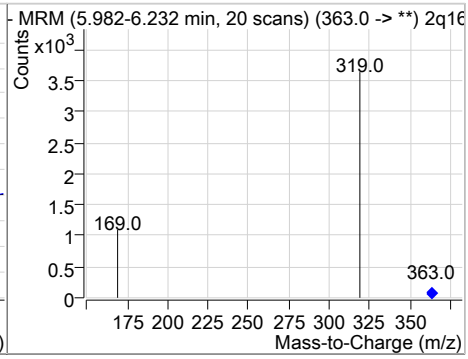




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.99	6.08	0.00	1945	363.0 -> 169.0	7.1	0.0	37.2

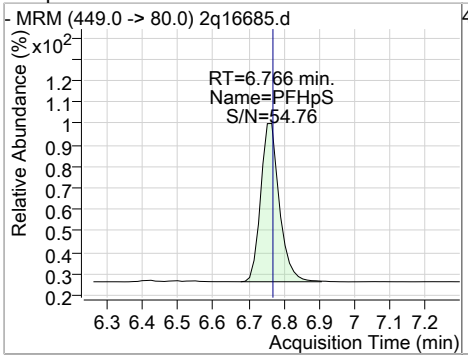


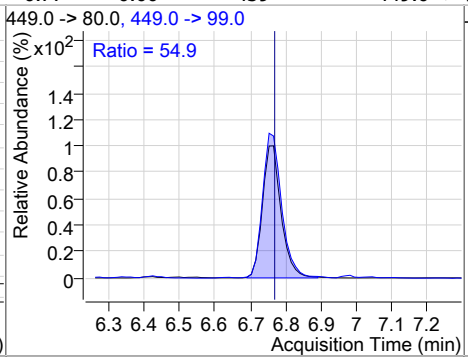


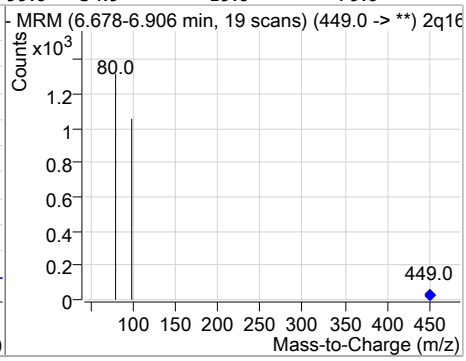


Perfluorinated Compounds by LC/MS/MS

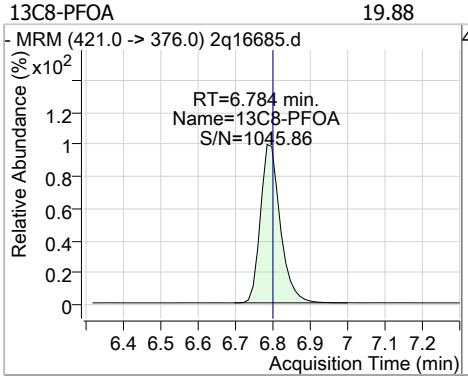
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.98	6.77	0.00	439	449.0 -> 99.0	54.9	19.0	79.0

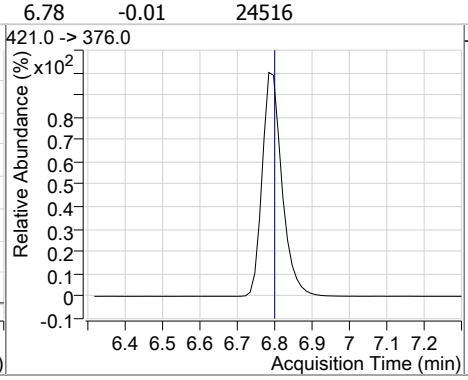


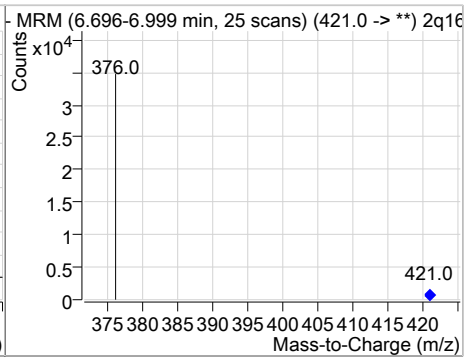




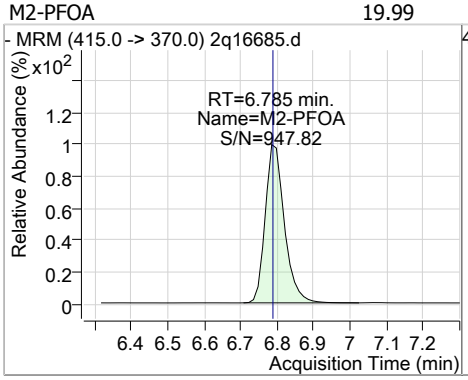
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.88	6.78	-0.01	24516				

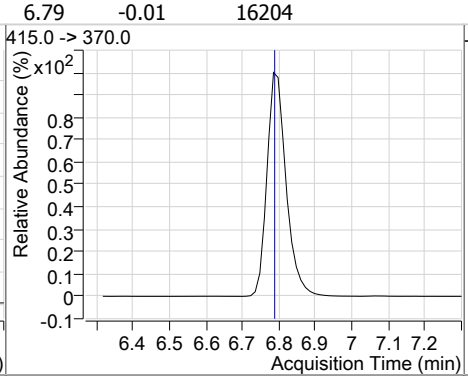


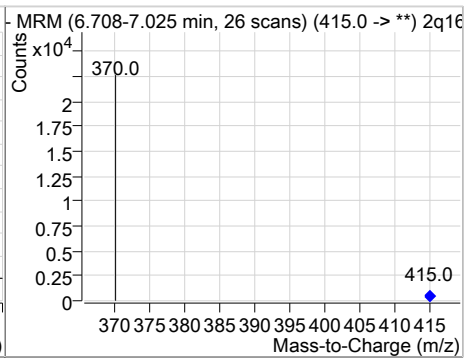




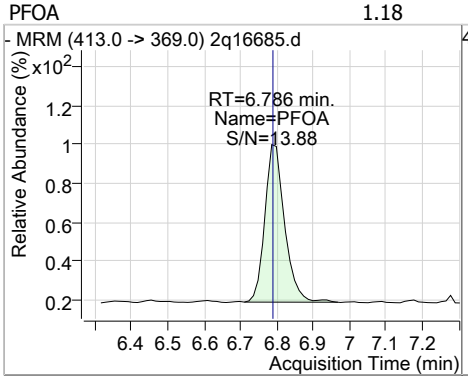
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	19.99	6.79	-0.01	16204				

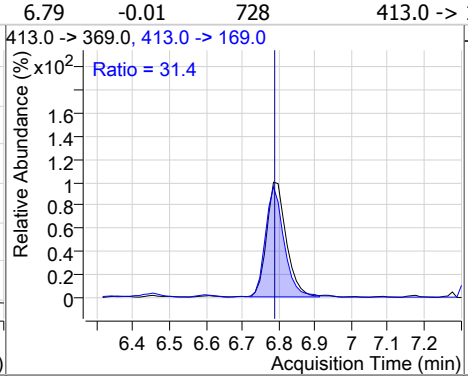


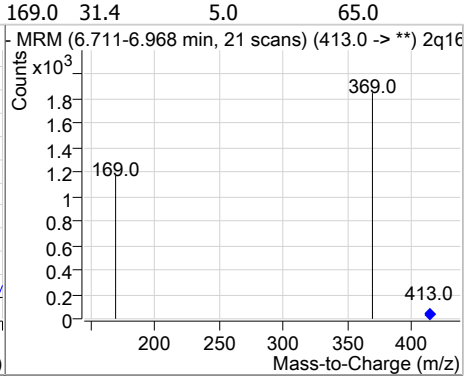




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.18	6.79	-0.01	728	413.0 -> 169.0	31.4	5.0	65.0

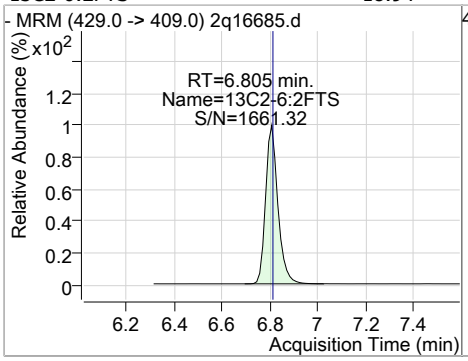


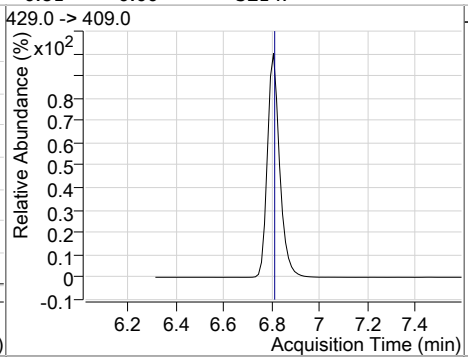


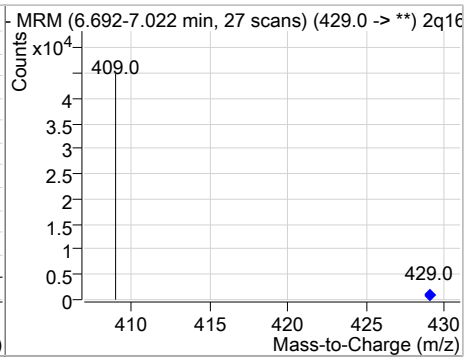


Perfluorinated Compounds by LC/MS/MS

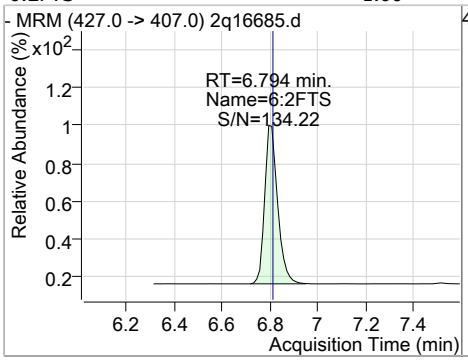
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.94	6.81	0.00	32147				

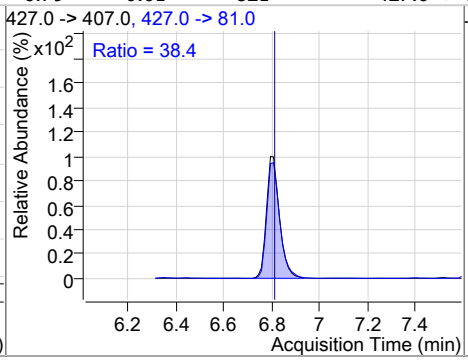


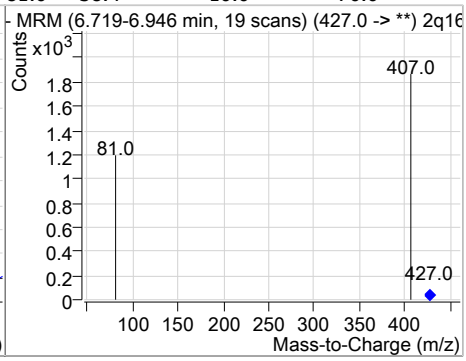




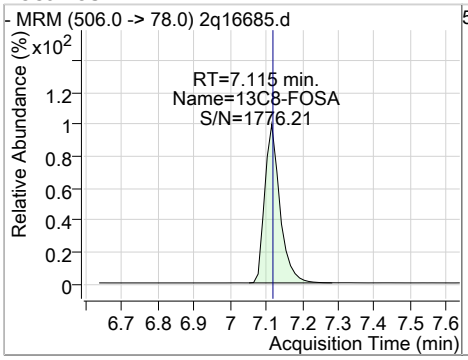
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.00	6.79	-0.01	821	427.0 -> 81.0	38.4	10.0	70.0

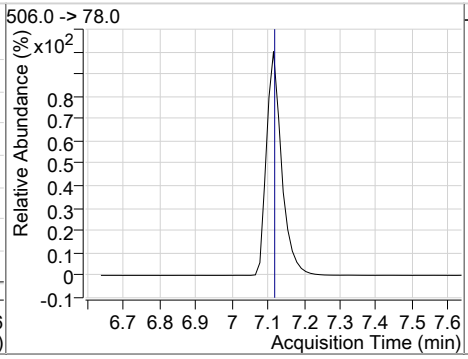


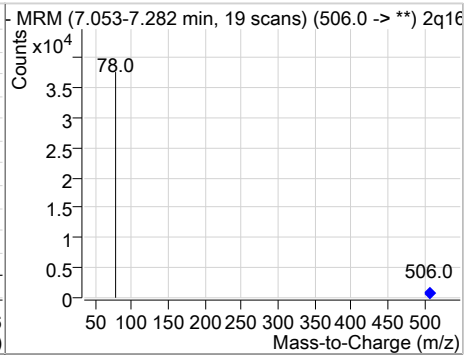




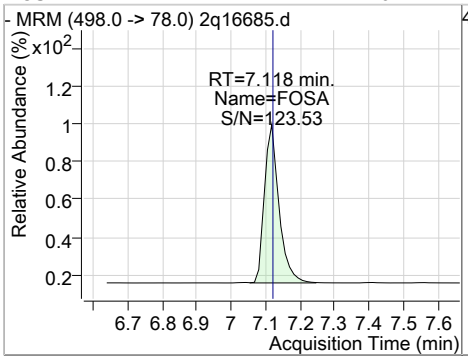
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.11	7.12	0.00	27997				

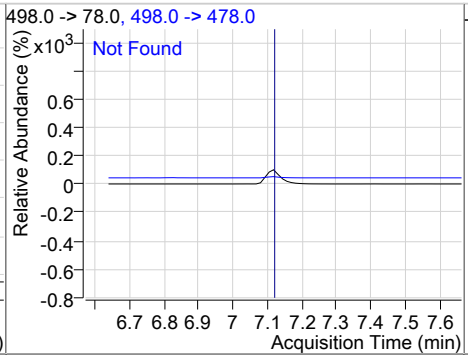


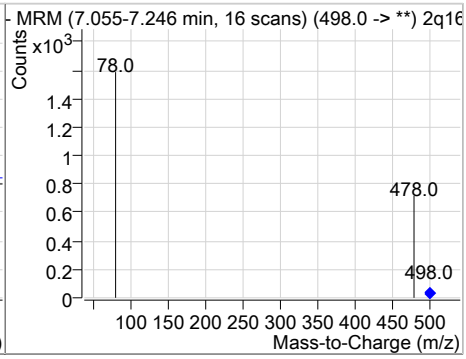




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.02	7.12	0.00	692	498.0 -> 478.0		0.0	34.0

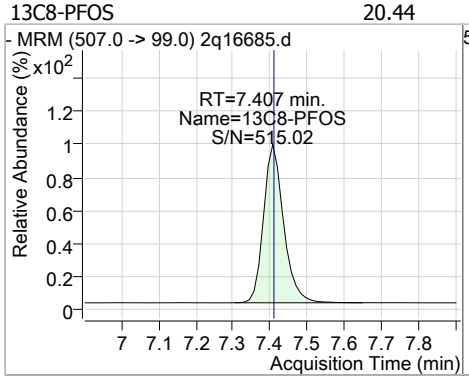


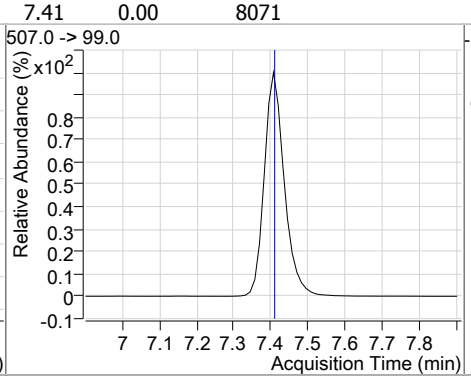


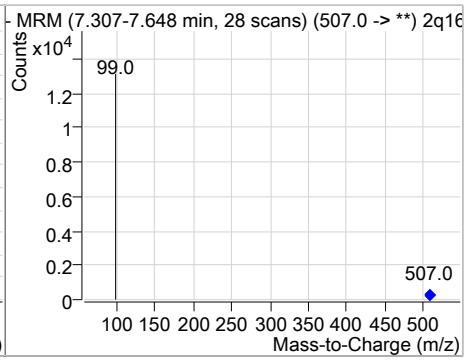


Perfluorinated Compounds by LC/MS/MS

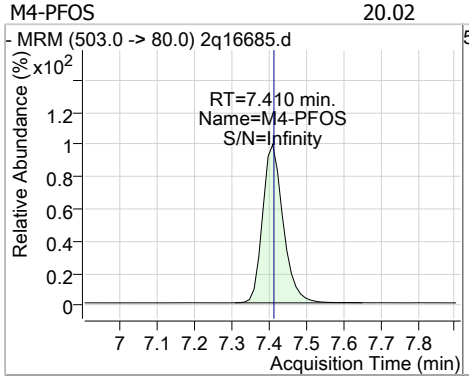
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.44	7.41	0.00	8071				

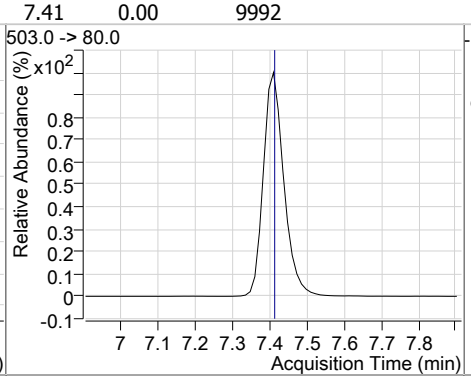


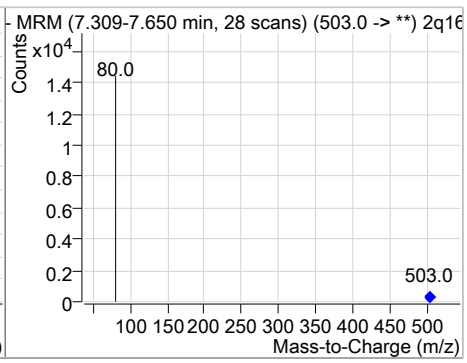




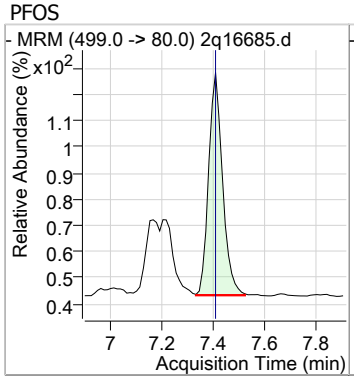
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.02	7.41	0.00	9992				

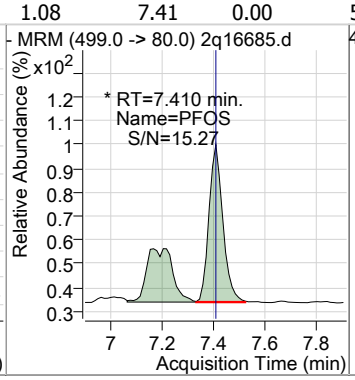


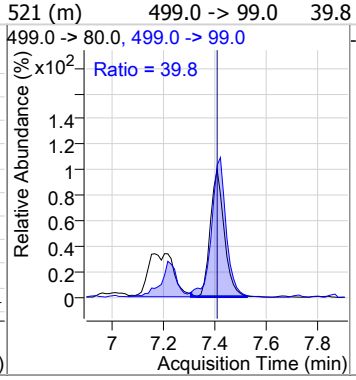


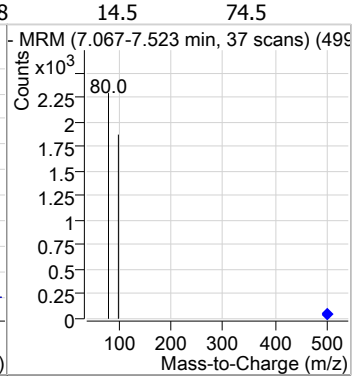


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.08	7.41	0.00	521 (m)	499.0 -> 99.0	39.8	14.5	74.5

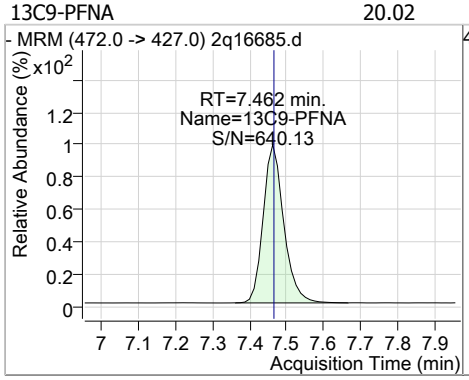


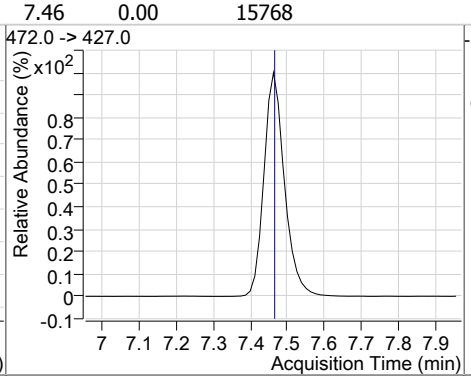


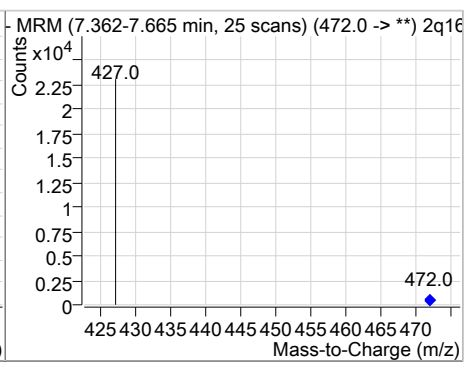




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.02	7.46	0.00	15768				

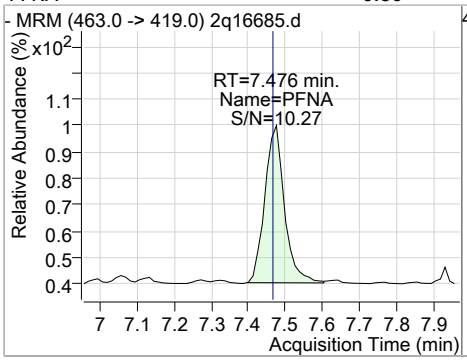


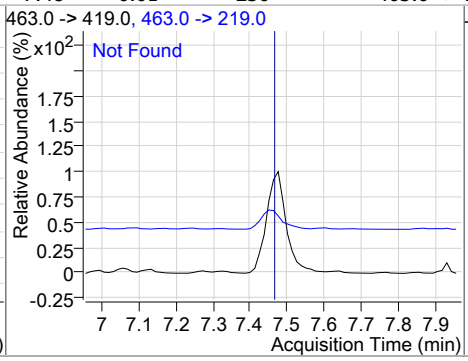


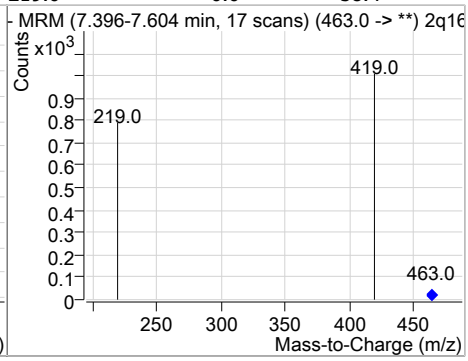


Perfluorinated Compounds by LC/MS/MS

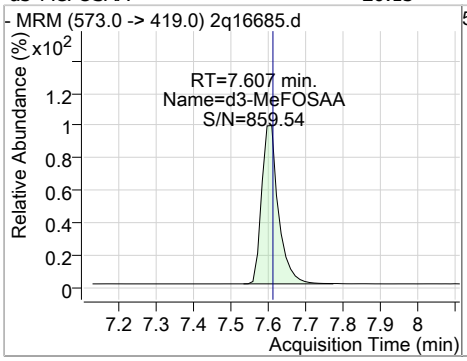
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.80	7.48	0.01	236	463.0 -> 219.0		0.0	58.4

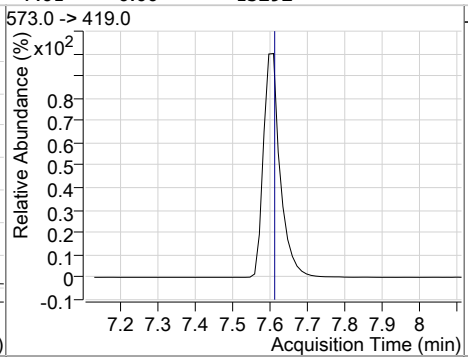


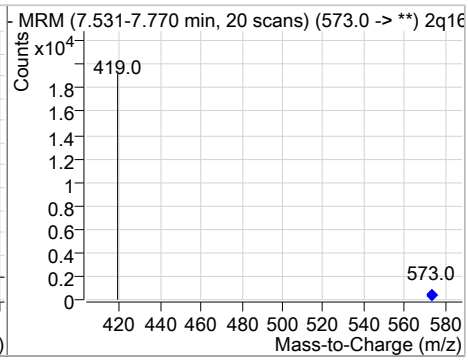




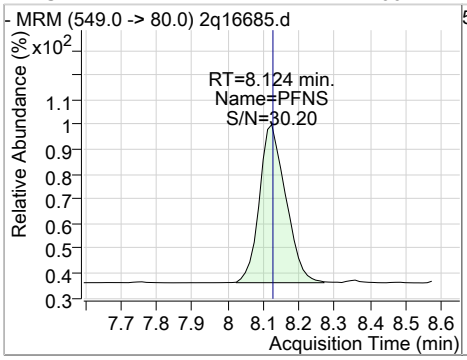
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.13	7.61	0.00	13292				

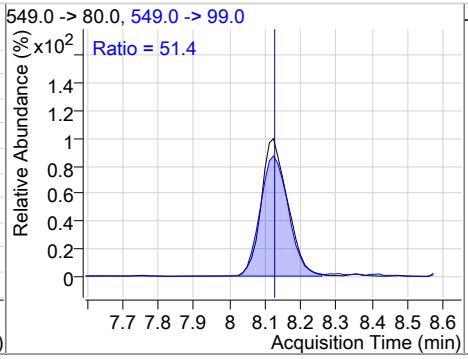


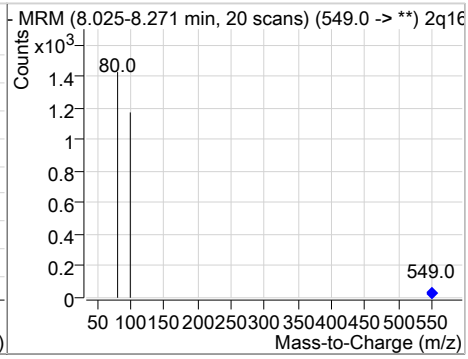




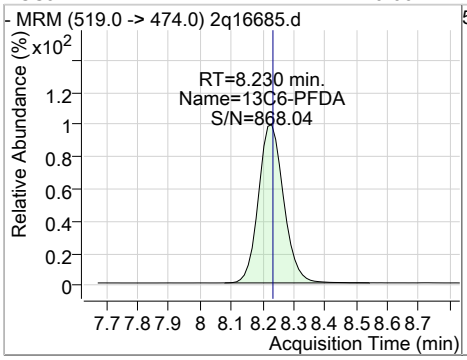
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	1.06	8.12	0.00	391	549.0 -> 99.0	51.4	24.7	84.7

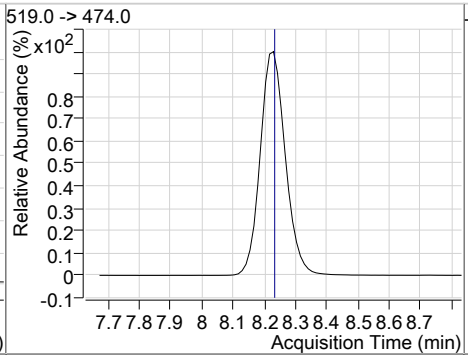


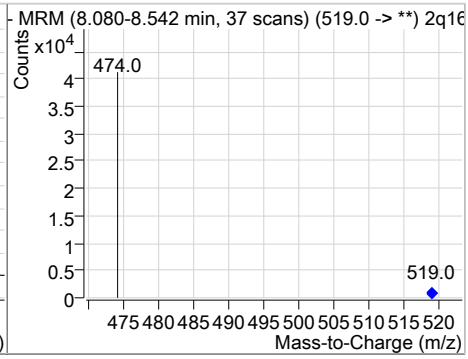




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.06	8.23	0.00	28274				

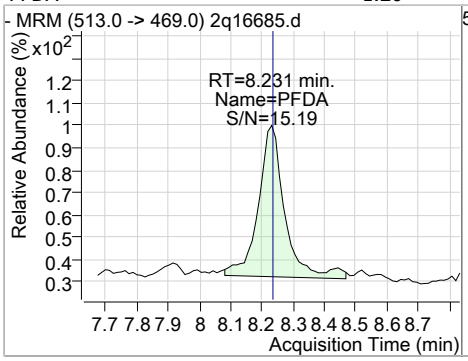


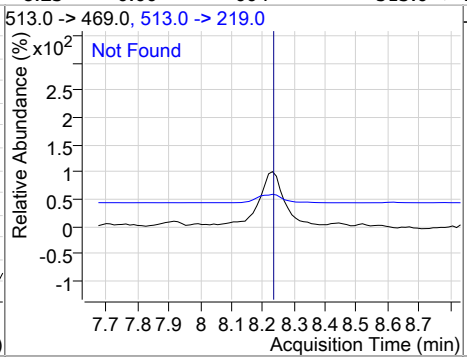


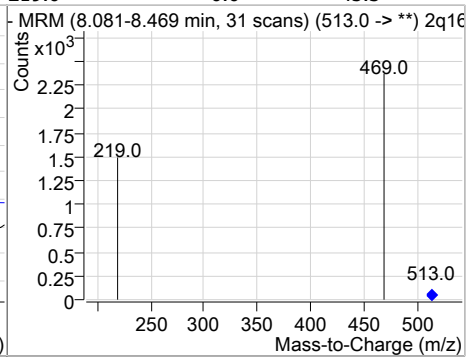


Perfluorinated Compounds by LC/MS/MS

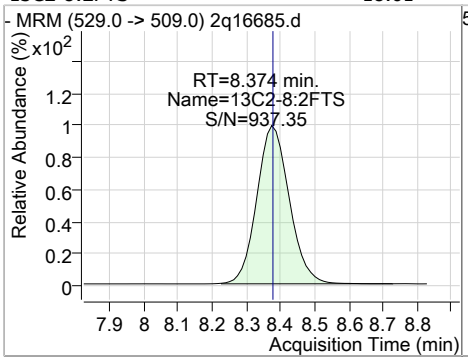
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	1.20	8.23	0.00	604	513.0 -> 219.0		0.0	45.3

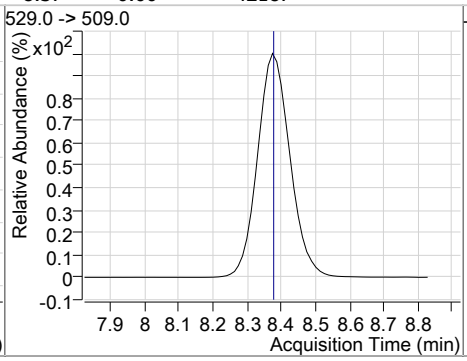


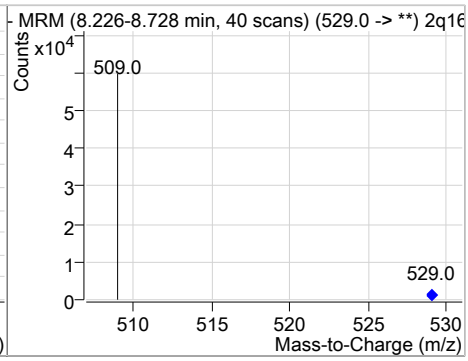




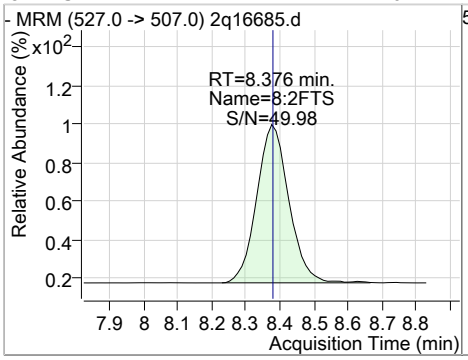
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.61	8.37	0.00	42187				

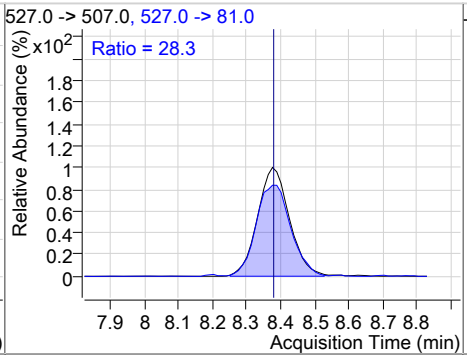


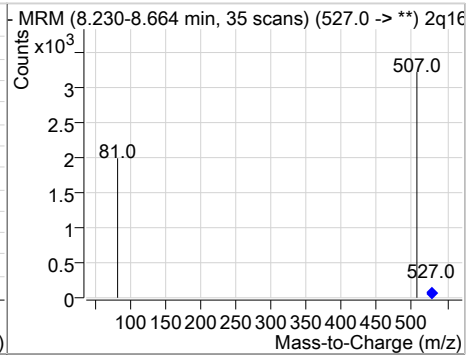




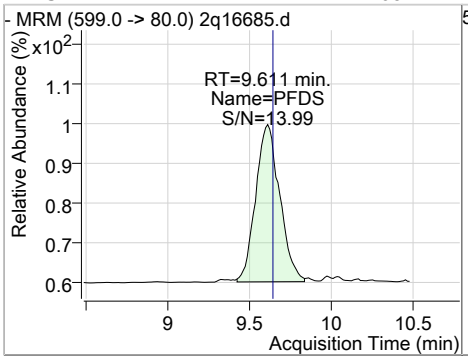
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.10	8.38	0.00	1297	527.0 -> 81.0	28.3	1.3	61.3

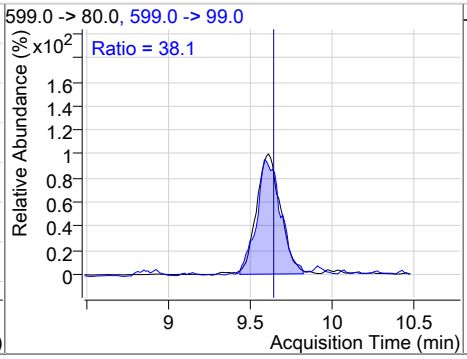


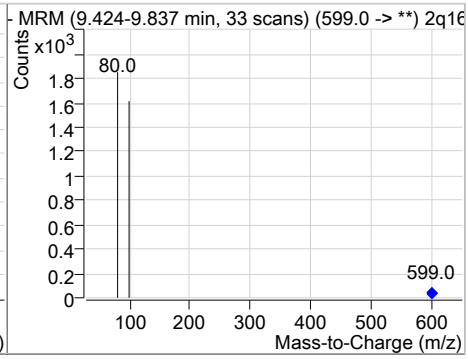




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	1.08	9.61	-0.01	290	599.0 -> 99.0	38.1	9.7	69.7

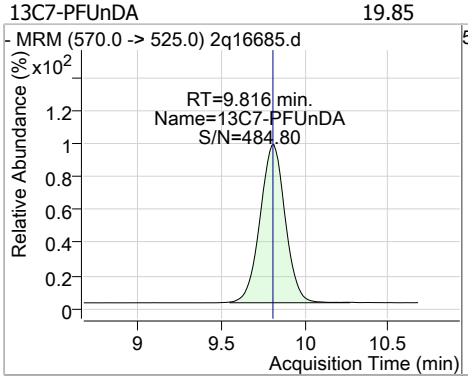


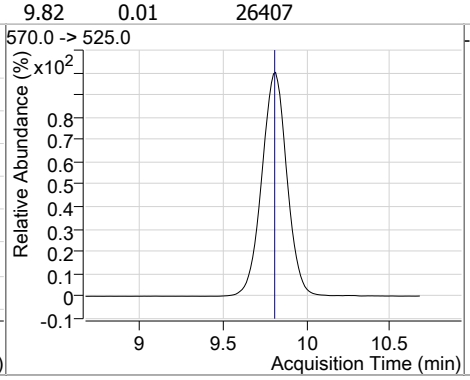


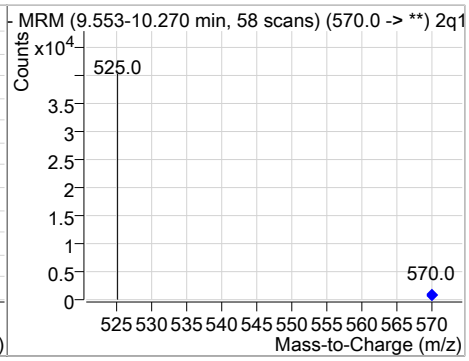


Perfluorinated Compounds by LC/MS/MS

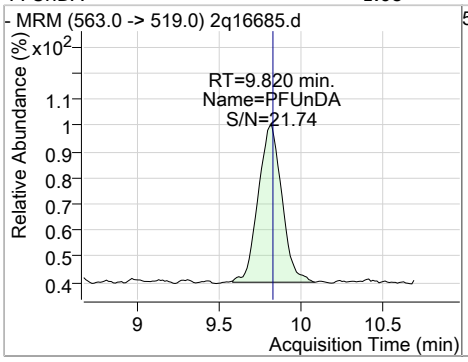
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.85	9.82	0.01	26407				

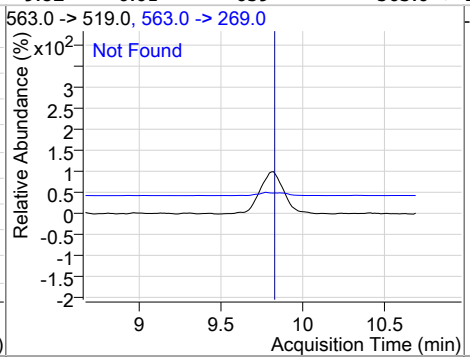


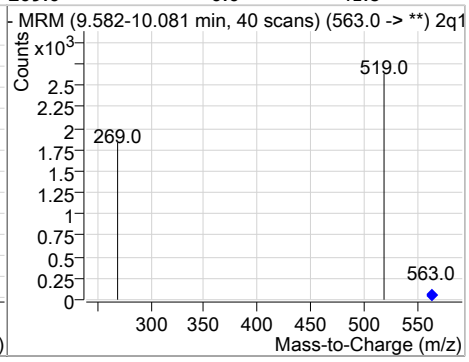




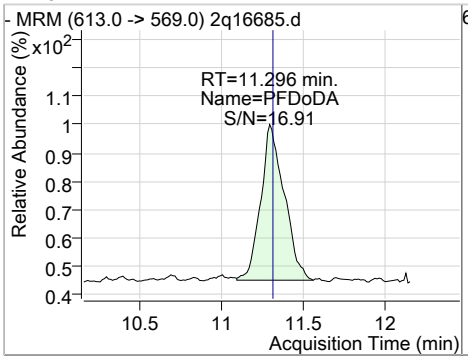
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	1.08	9.82	0.01	659	563.0 -> 269.0		0.0	41.8

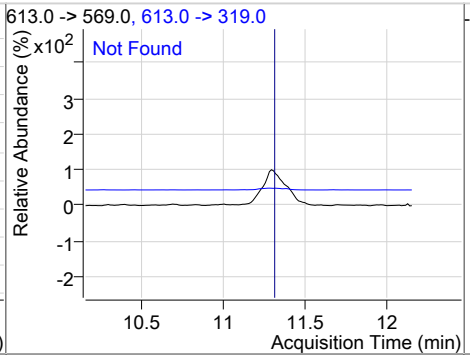


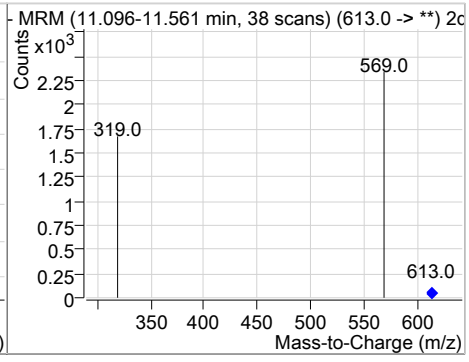




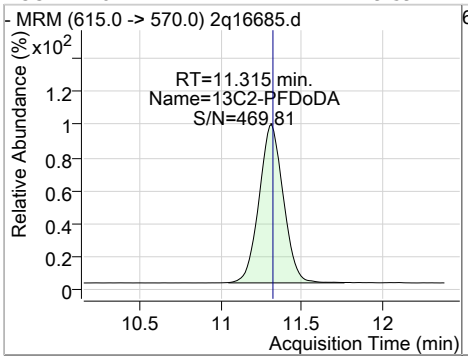
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	1.12	11.30	-0.01	534	613.0 -> 319.0		0.0	40.0

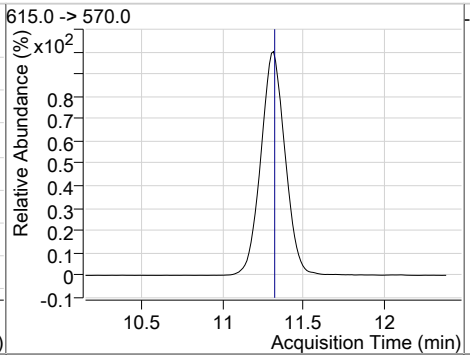


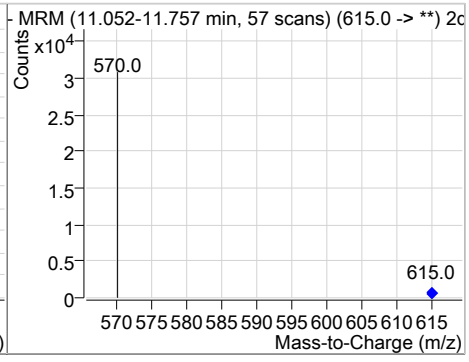




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.59	11.31	0.00	19854				

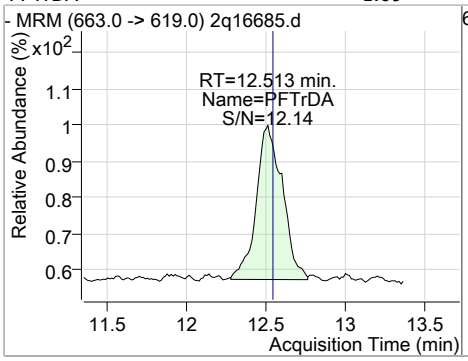


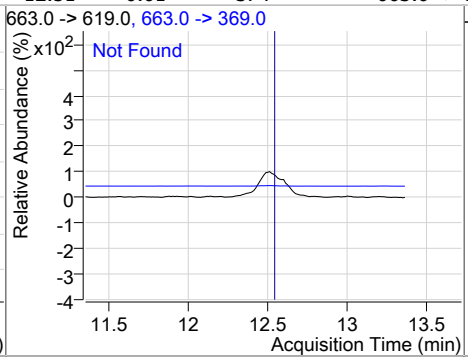


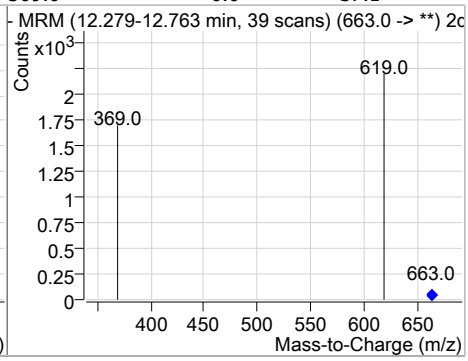


Perfluorinated Compounds by LC/MS/MS

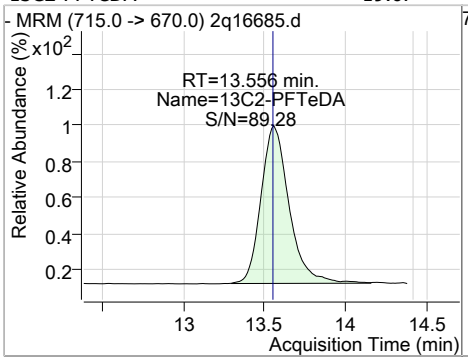
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	1.09	12.51	-0.01	374	663.0 -> 369.0		0.0	37.1

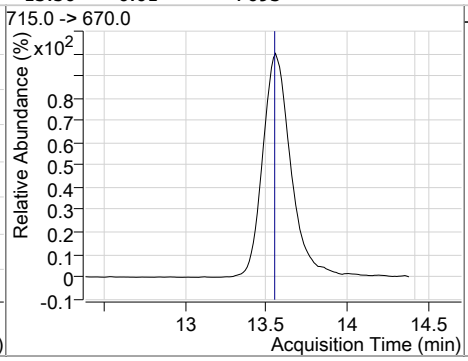


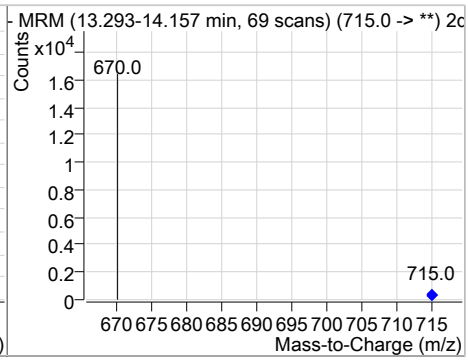




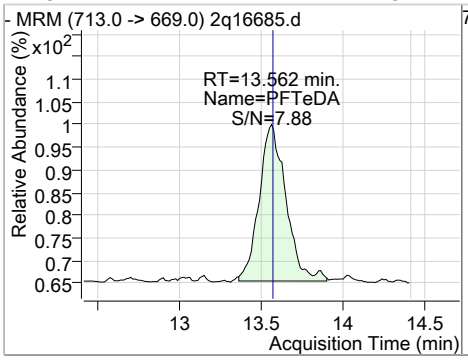
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.67	13.56	0.01	7693				

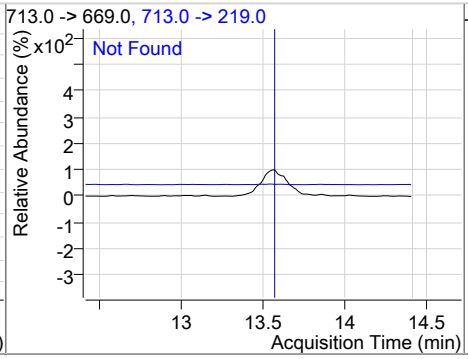


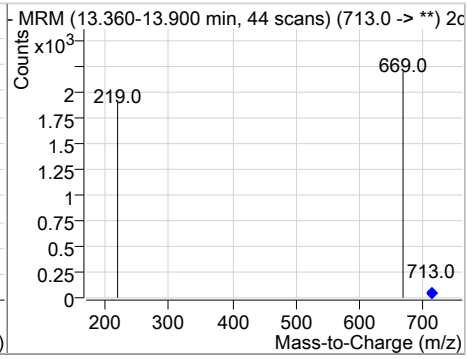




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.19	13.56	0.01	260	713.0 -> 219.0		0.0	37.4







Manual Integration Approval Summary

Sample Number:	S2Q292-IC292	**Method:**	EPA 537M QSM5.1 B-15
Lab FileID:	2Q16685.D	**Analyst approved:**	07/09/18 13:31 Natasha Gumtie
Injection Time:	07/07/18 09:05	**Supervisor approved:**	07/10/18 17:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.08	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.41	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/10/18 17:09

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16686.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/7/2018 9:25:37 AM
Sample Name : ic292-2
Vial : Vial 4
DA Method File : PFC_ID_070718_S2Q292.quantmethod.xml
Batch Name : s2q292.batch.bin
Sample Information : op70610,S2Q292,130,,,1.0,1,water

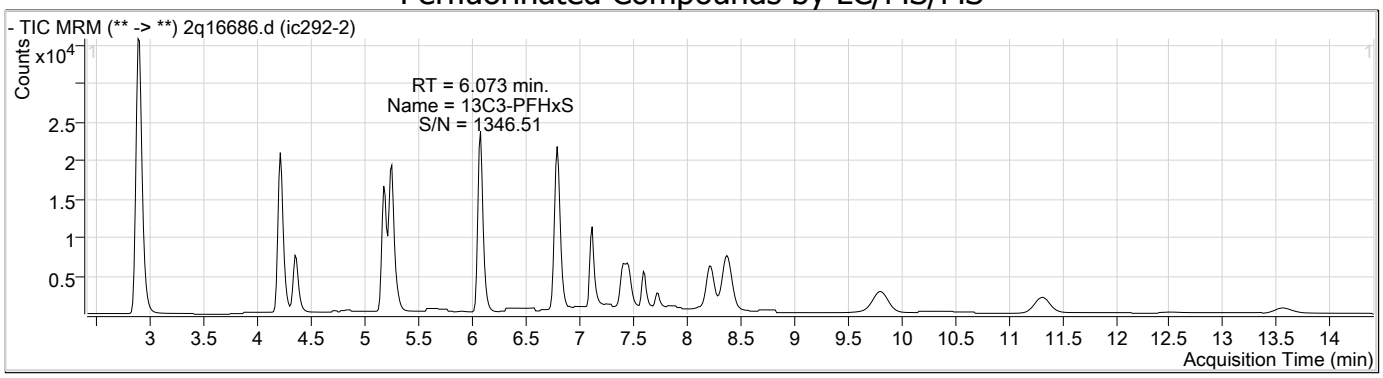
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.785	415.0 -> 370.0	17186	20.00	µg/L	-0.013
13C4-PFOS	7.410	503.0 -> 80.0	10430	20.00	µg/L	0.000
M4-PFBA	2.878	217.0 -> 172.0	144032	20.00	µg/L	-0.013
M5-PFPeA	4.212	268.0 -> 223.0	66532	20.00	µg/L	0.000
M5-PFHxA	5.253	318.0 -> 273.0	60045	20.00	µg/L	0.000
M4-PFHpA	6.079	367.0 -> 322.0	56271	20.00	µg/L	0.000
M8-PFOA	6.784	421.0 -> 376.0	25615	20.00	µg/L	-0.013
M9-PFNA	7.462	472.0 -> 427.0	16324	20.00	µg/L	0.000
M6-PFDA	8.217	519.0 -> 474.0	30032	20.00	µg/L	-0.013
M7-PFUnDA	9.803	570.0 -> 525.0	27673	20.00	µg/L	0.000
M2-PFDoDA	11.315	615.0 -> 570.0	20777	20.00	µg/L	0.000
M2-PFTeDA	13.556	715.0 -> 670.0	7949	20.00	µg/L	0.013
M8-FOSA	7.115	506.0 -> 78.0	29322	20.00	µg/L	0.000
M3-PFBS	4.343	302.0 -> 99.0	21847	20.00	µg/L	-0.013
M3-PFHxS	6.073	402.0 -> 99.0	17709	20.00	µg/L	0.000
M8-PFOS	7.407	507.0 -> 99.0	8185	20.00	µg/L	0.000
M2-4:2FTS	5.172	329.0 -> 309.0	51547	20.00	µg/L	0.000
M2-6:2FTS	6.805	429.0 -> 409.0	33460	20.00	µg/L	0.000
M2-8:2FTS	8.374	529.0 -> 509.0	44195	20.00	µg/L	0.000
M3-MeFOSAA	7.594	573.0 -> 419.0	13492	20.00	µg/L	-0.013
System Monitoring Compounds						
13C2-4:2FTS	5.172	329.0 -> 309.0	51530	19.66	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.3%		
13C2-6:2FTS	6.805	429.0 -> 409.0	33455	19.71	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.6%		
13C2-8:2FTS	8.374	529.0 -> 509.0	44230	19.51	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.6%		
13C2-PFDoDA	11.315	615.0 -> 570.0	20806	20.53	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.6%		
13C2-PFTeDA	13.556	715.0 -> 670.0	7970	20.37	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C3-PFBS	4.343	302.0 -> 99.0	21878	20.90	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.5%		
13C3-PFHxS	6.073	402.0 -> 99.0	17709	20.76	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.8%		
13C4-PFBA	2.878	217.0 -> 172.0	143868	20.89	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.5%		
13C4-PFHpA	6.079	367.0 -> 322.0	56269	20.89	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.4%		
13C5-PFHxA	5.253	318.0 -> 273.0	60056	21.19	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.0%		
13C5-PFPeA	4.212	268.0 -> 223.0	66526	20.90	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.5%		
13C6-PFDA	8.217	519.0 -> 474.0	30030	21.31	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.5%		

Perfluorinated Compounds by LC/MS/MS

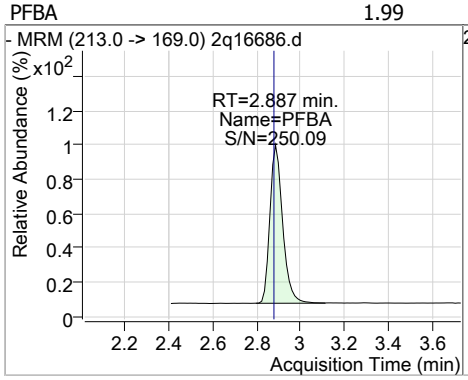
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	9.803	570.0 -> 525.0	27710	20.83	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.1%			
13C8-FOSA	7.115	506.0 -> 78.0	29324	22.11	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.5%			
13C8-PFOA	6.784	421.0 -> 376.0	25644	20.80	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.0%			
13C8-PFOS	7.407	507.0 -> 99.0	8182	20.72	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.6%			
13C9-PFNA	7.462	472.0 -> 427.0	16330	20.73	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.7%			
d3-MeFOSAA	7.594	573.0 -> 419.0	13506	20.45	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%			
M2-PFOA	6.785	415.0 -> 370.0	17160	19.98	ng/ml		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%			
M4-PFOS	7.410	503.0 -> 80.0	10418	19.98	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%			
Target Compounds							**QValue**
4:2FTS	5.175	327.0 -> 307.0	2738	2.03	µg/L		95
6:2FTS	6.807	427.0 -> 407.0	1795	2.11	µg/L		98
8:2FTS	8.376	527.0 -> 507.0	2493	2.03	µg/L		97
EtFOSAA	7.731	584.0 -> 419.0	482	2.50	µg/L		99
FOSA	7.118	498.0 -> 78.0	1312	1.84	µg/L		88
MeFOSAA	7.608	570.0 -> 419.0	504	2.07	µg/L		94
PFBA	2.887	213.0 -> 169.0	2255	1.99	µg/L		100
PFBS	4.346	299.0 -> 80.0	2878	1.97	µg/L		98
PFDA	8.219	513.0 -> 469.0	1076	2.02	µg/L		97
PFDoDA	11.321	613.0 -> 569.0	1120	2.24	µg/L		73
PFDS	9.624	599.0 -> 80.0	570	2.02	µg/L		96
PFHpA	6.082	363.0 -> 319.0	4065	2.02	µg/L		97
PFHpS	6.753	449.0 -> 80.0	937	2.04	µg/L		96
PFHxA	5.255	313.0 -> 269.0	1839	1.90	µg/L		98
PFHxS	6.076	399.0 -> 80.0	1947	1.98	µg/L	m	98
PFNA	7.463	463.0 -> 419.0	641	2.09	µg/L		99
PFNS	8.124	549.0 -> 80.0	765	2.04	µg/L		97
PFOA	6.786	413.0 -> 369.0	1312	2.03	µg/L		97
PFOS	7.410	499.0 -> 80.0	927	1.90	µg/L	m	93
PFPeA	4.216	263.0 -> 219.0	6900	2.13	µg/L		100
PFPeS	5.295	349.0 -> 80.0	1728	1.99	µg/L		97
PFTeDA	13.575	713.0 -> 669.0	484	2.15	µg/L		79
PFTrDA	12.500	663.0 -> 619.0	727	2.06	µg/L		79
PFUnDA	9.808	563.0 -> 519.0	1314	2.04	µg/L		100

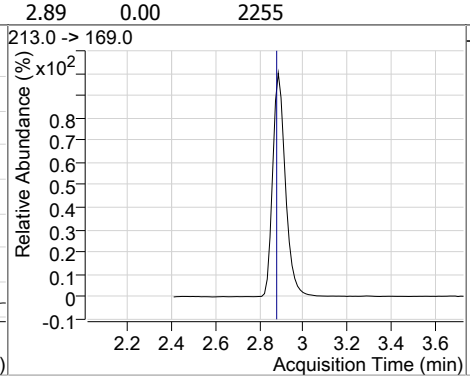
 # = Qualifier out of range, m = manually integrated, + = Area summed

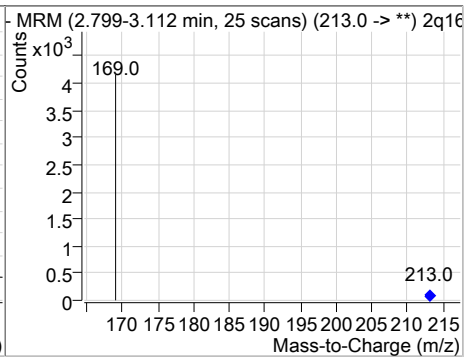
Perfluorinated Compounds by LC/MS/MS



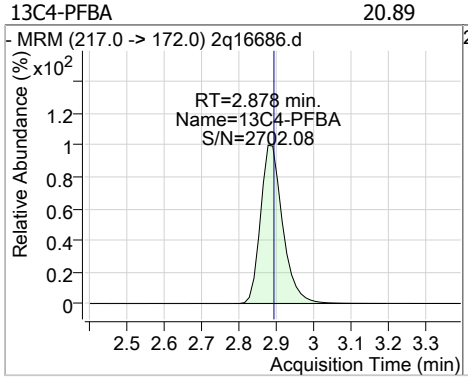
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.99	2.89	0.00	2255				

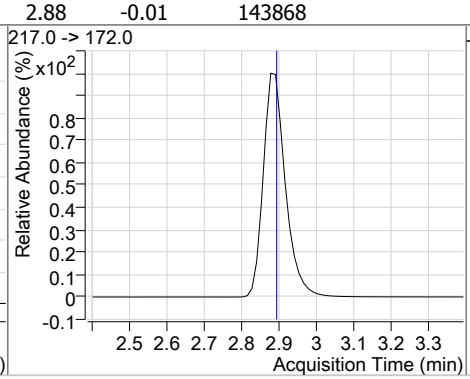


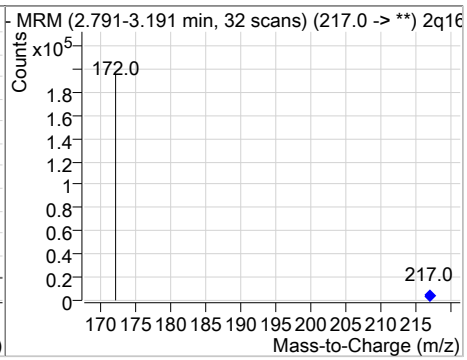




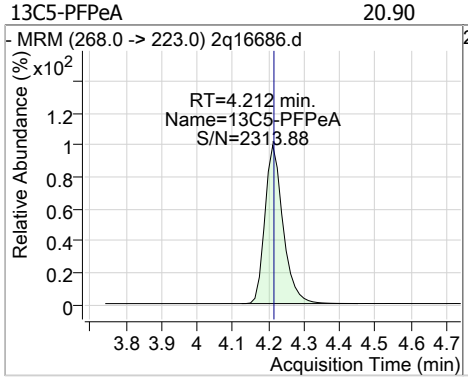
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.89	2.88	-0.01	143868				

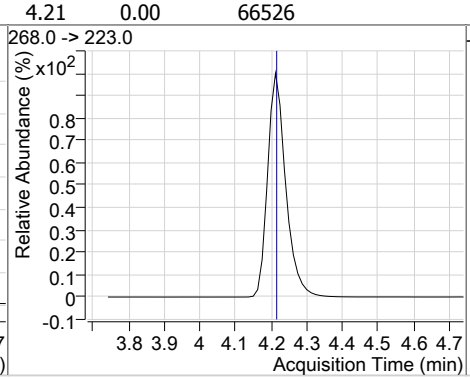


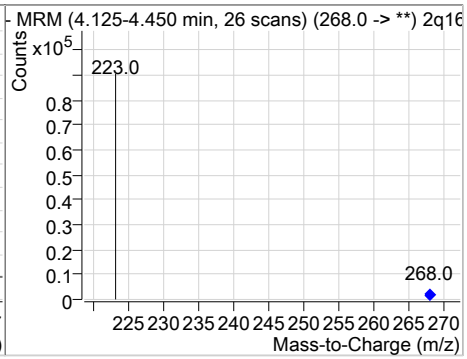




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.90	4.21	0.00	66526				

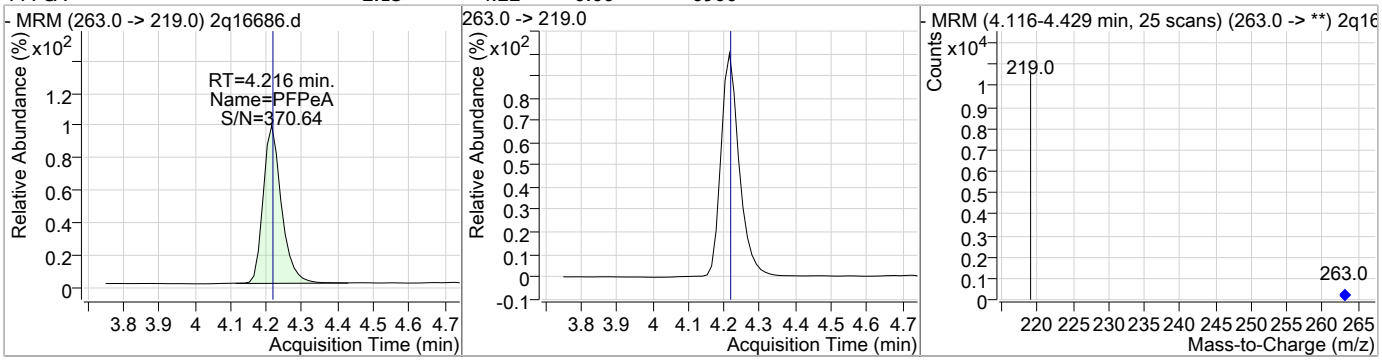




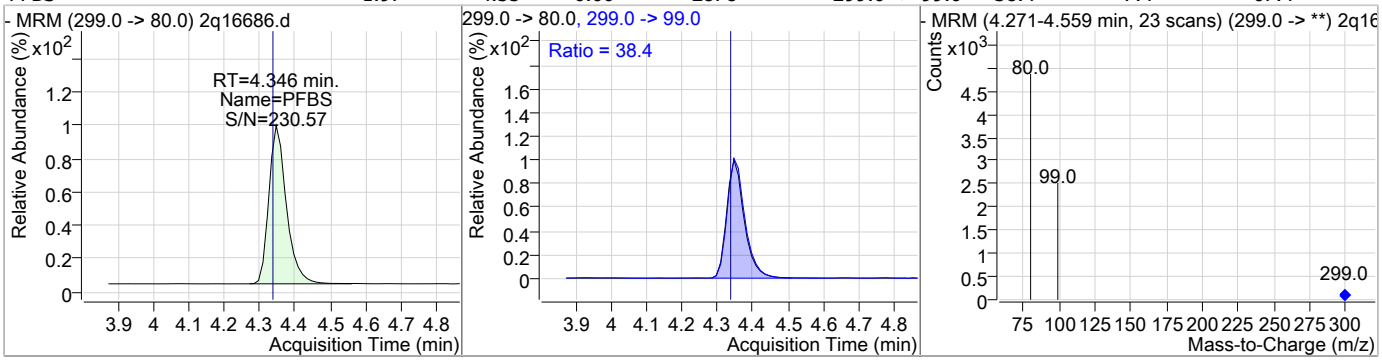


Perfluorinated Compounds by LC/MS/MS

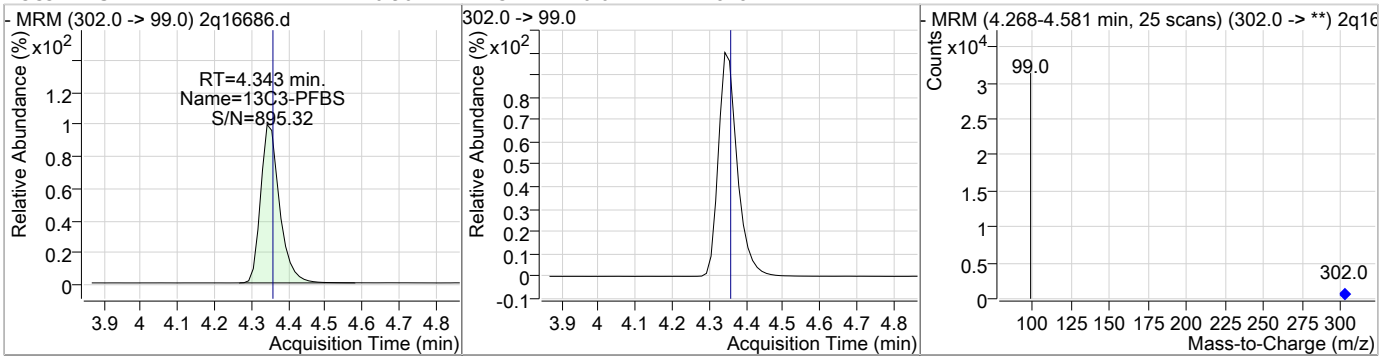
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	2.13	4.22	0.00	6900				



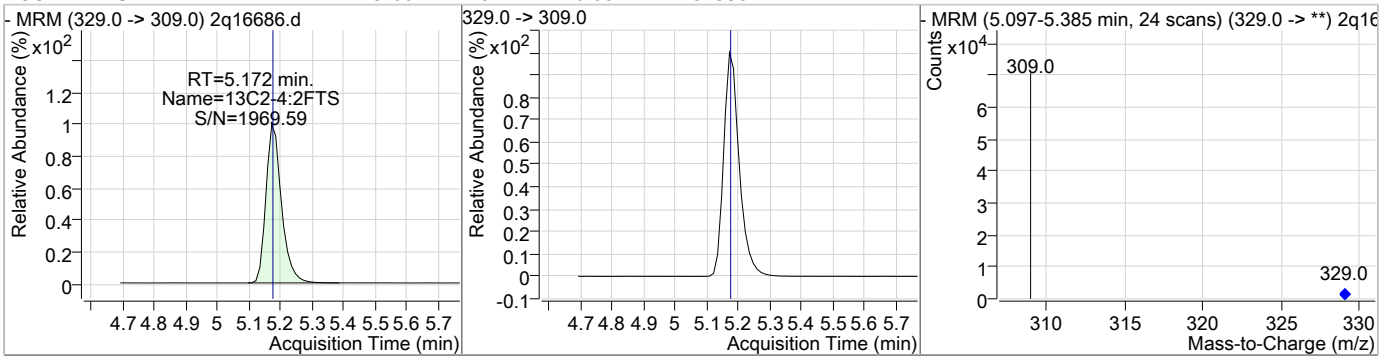
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.97	4.35	0.00	2878	299.0 -> 99.0	38.4	7.4	67.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.90	4.34	-0.01	21878				

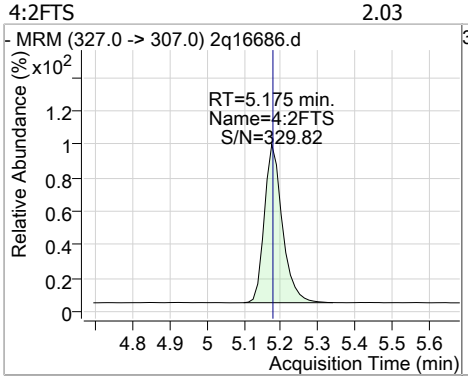


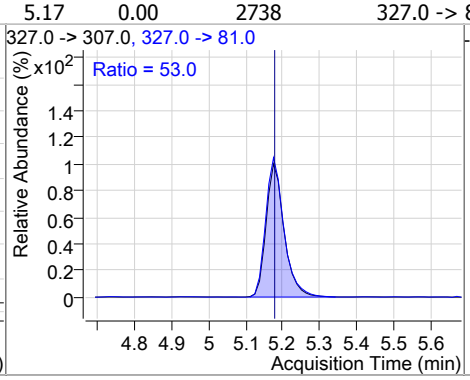
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.66	5.17	0.00	51530				

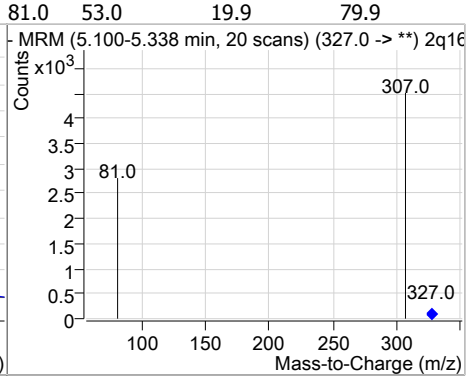


Perfluorinated Compounds by LC/MS/MS

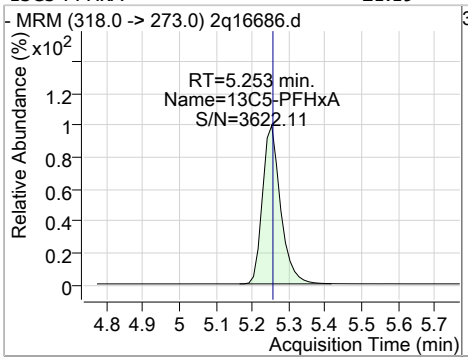
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	2.03	5.17	0.00	2738	327.0 -> 81.0	53.0	19.9	79.9

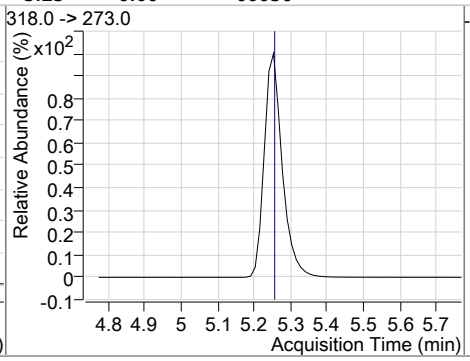


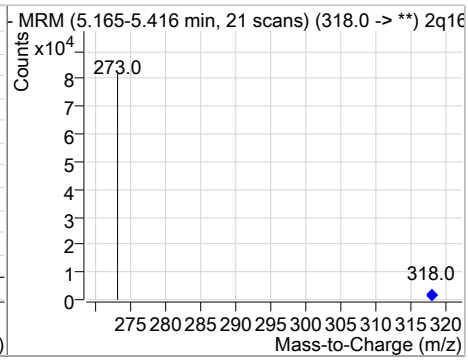




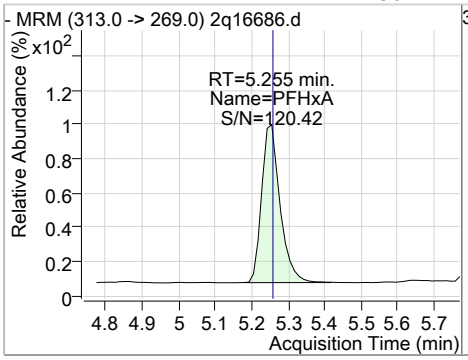
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.19	5.25	0.00	60056				

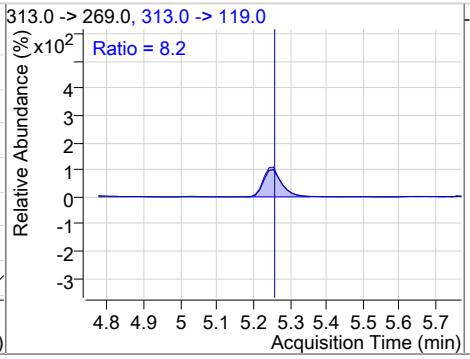


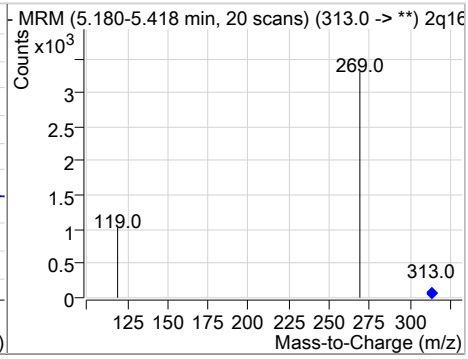




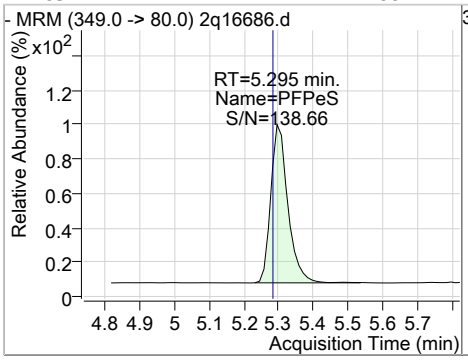
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.90	5.26	0.00	1839	313.0 -> 119.0	8.2	0.0	37.6

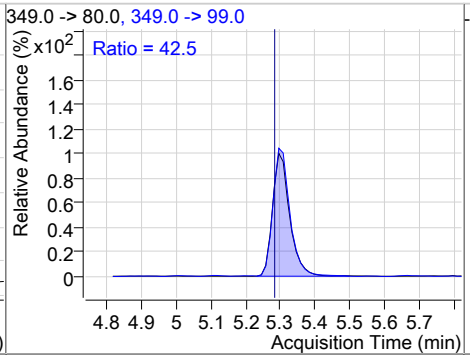


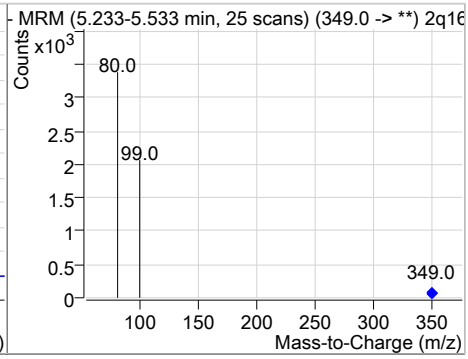




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.99	5.30	0.00	1728	349.0 -> 99.0	42.5	10.8	70.8

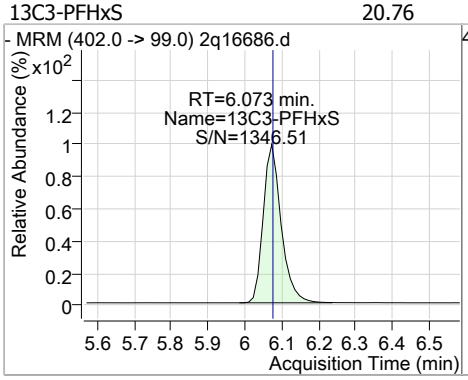


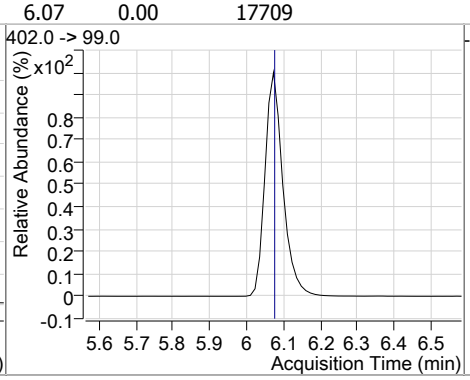


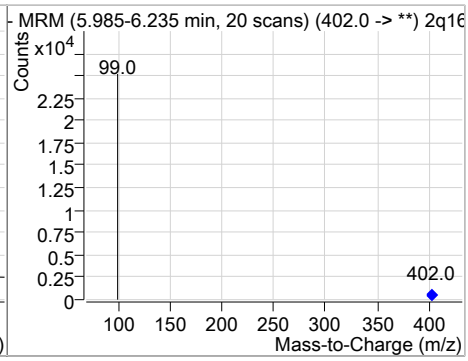


Perfluorinated Compounds by LC/MS/MS

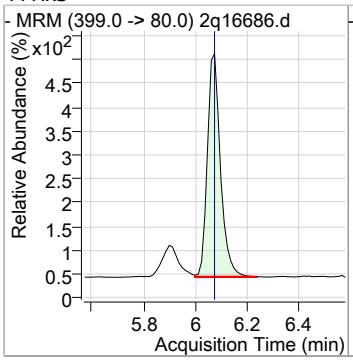
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.76	6.07	0.00	17709				

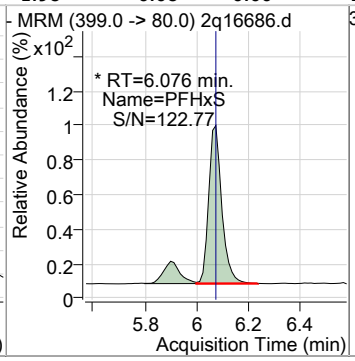


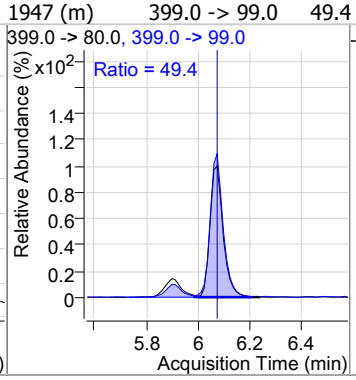


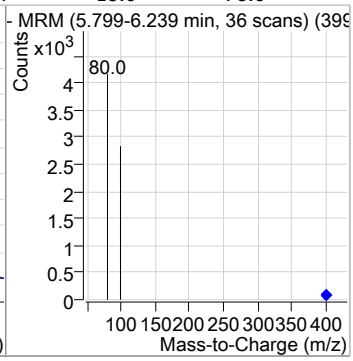


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.98	6.08	0.00	1947 (m)	399.0 -> 99.0	49.4	18.0	78.0

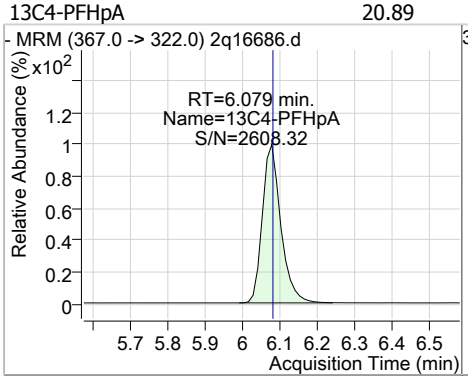


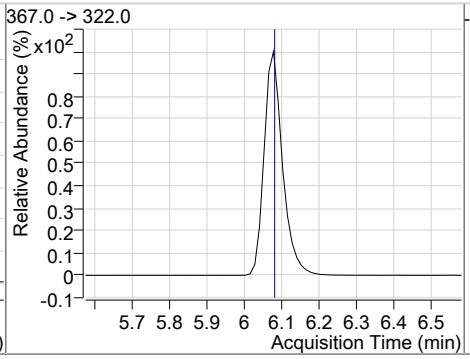


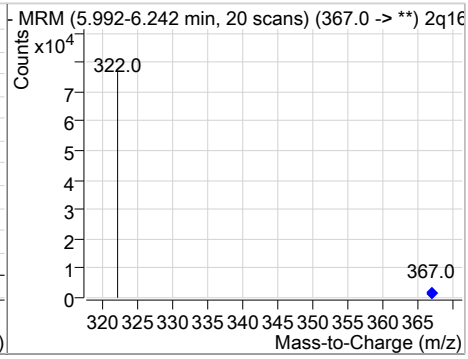




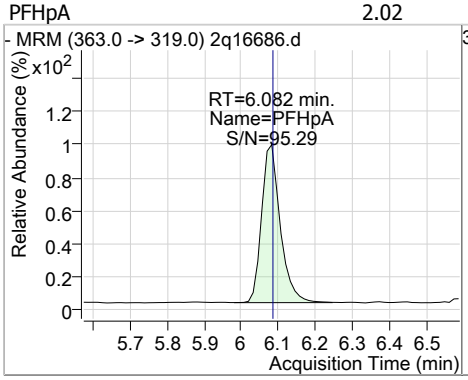
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.89	6.08	0.00	56269				

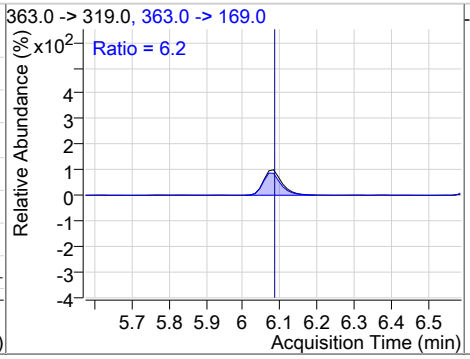


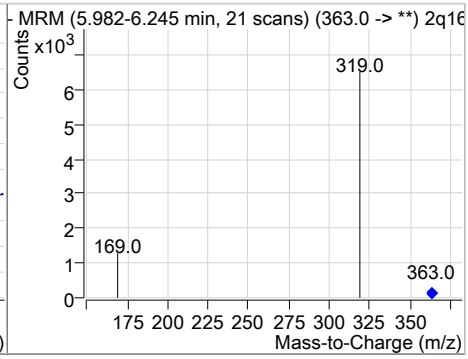




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.02	6.08	0.00	4065	363.0 -> 169.0	6.2	0.0	37.2

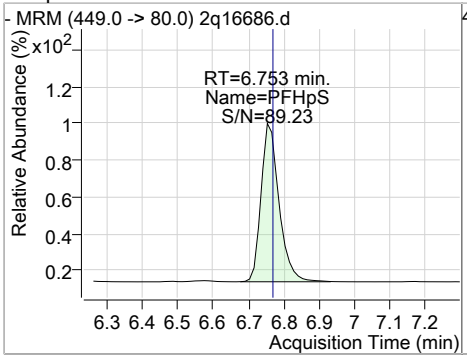


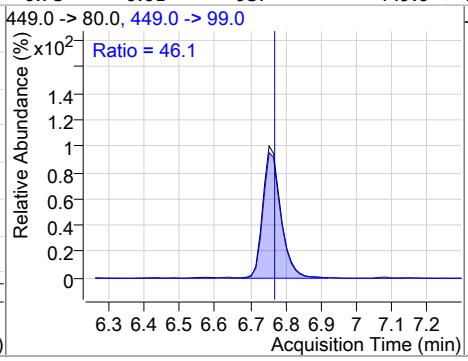


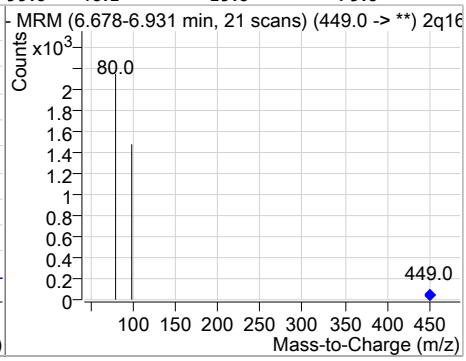


Perfluorinated Compounds by LC/MS/MS

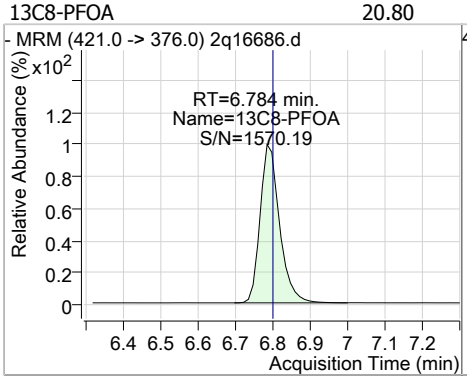
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.04	6.75	-0.01	937	449.0 -> 99.0	46.1	19.0	79.0

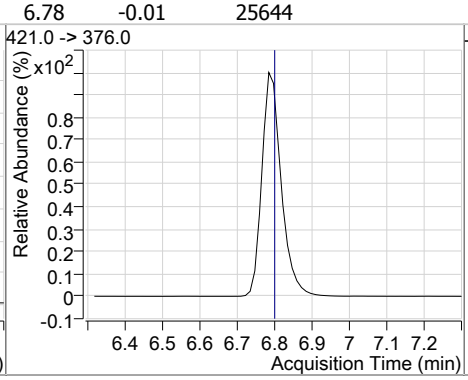


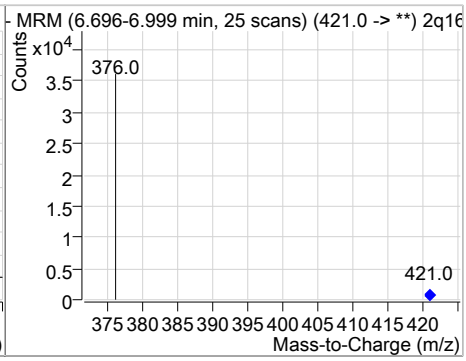




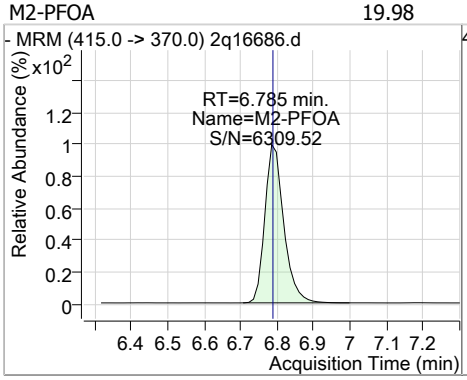
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.80	6.78	-0.01	25644				

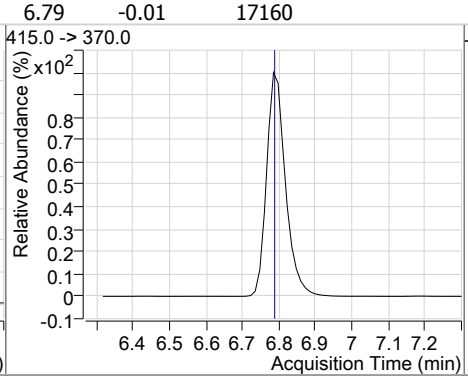


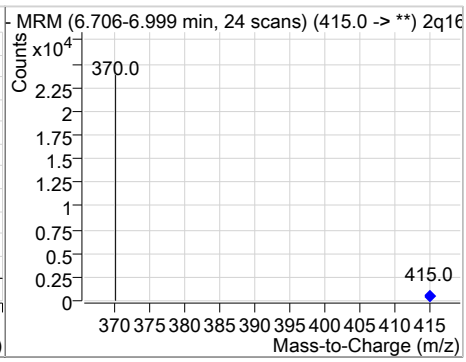




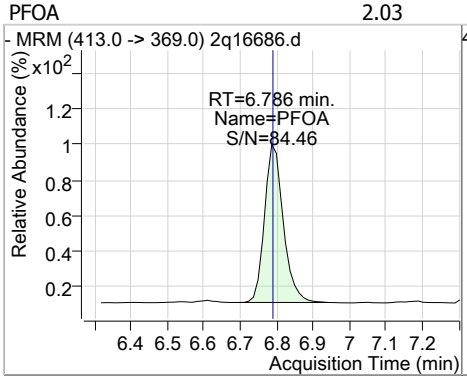
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	19.98	6.79	-0.01	17160				

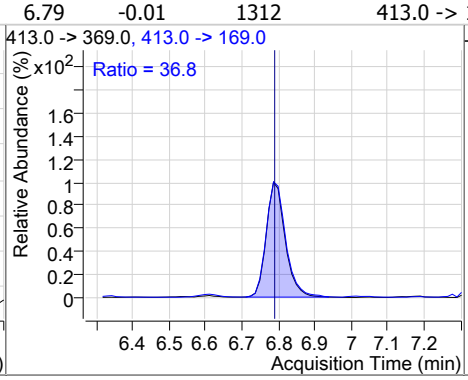


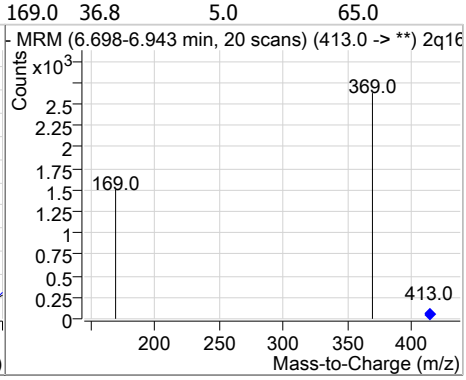




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.03	6.79	-0.01	1312	413.0 -> 169.0	36.8	5.0	65.0

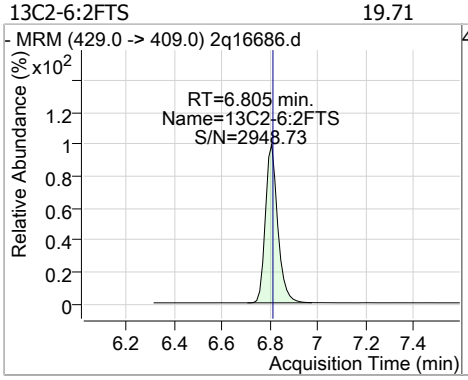


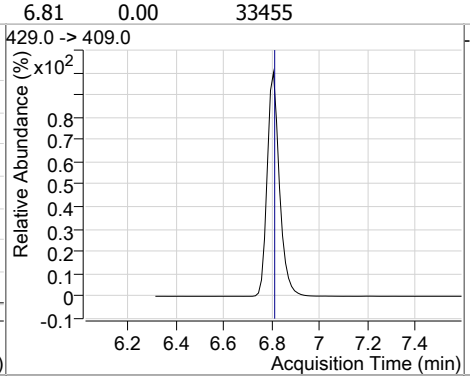


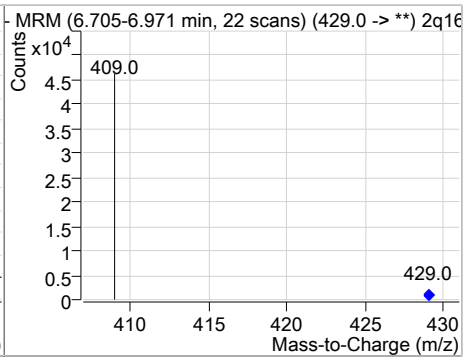


Perfluorinated Compounds by LC/MS/MS

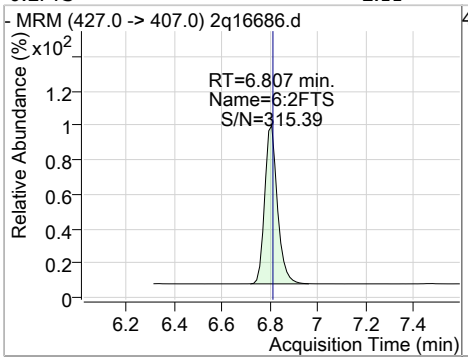
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.71	6.81	0.00	33455				

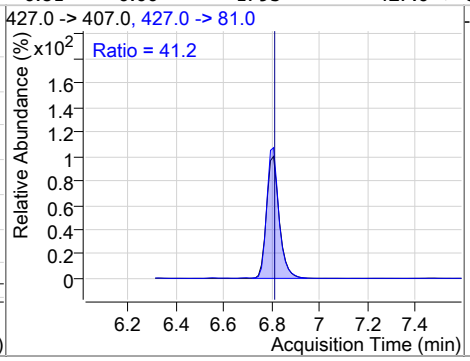


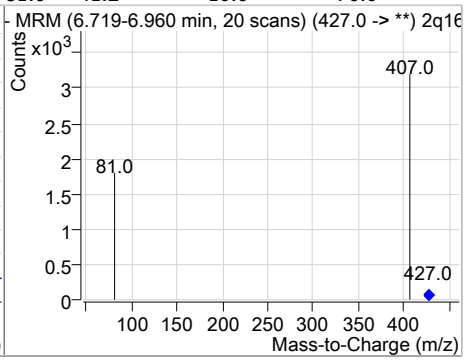




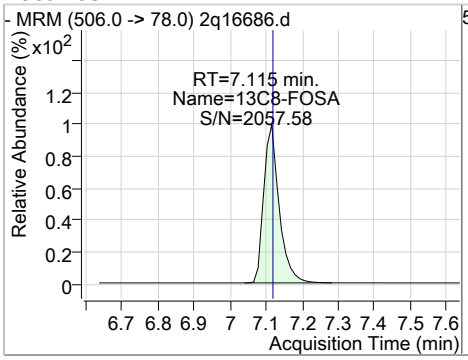
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	2.11	6.81	0.00	1795	427.0 -> 81.0	41.2	10.0	70.0

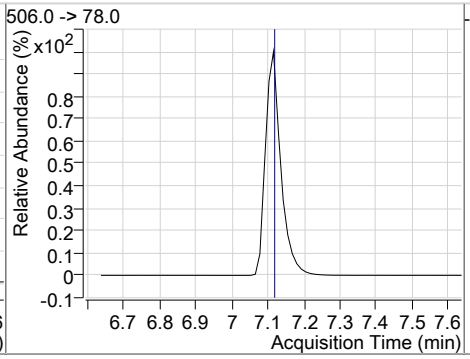


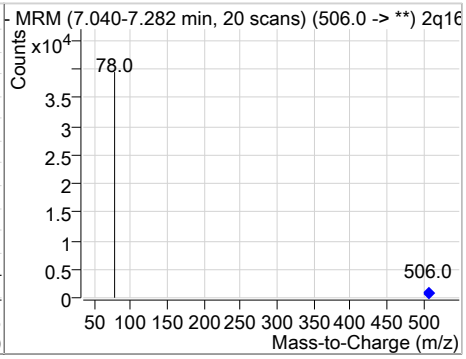




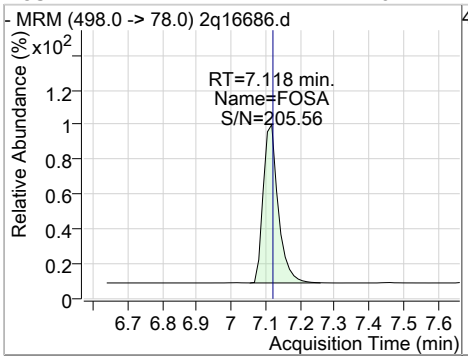
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	22.11	7.12	0.00	29324				

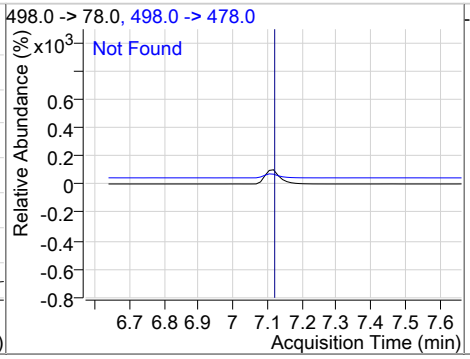


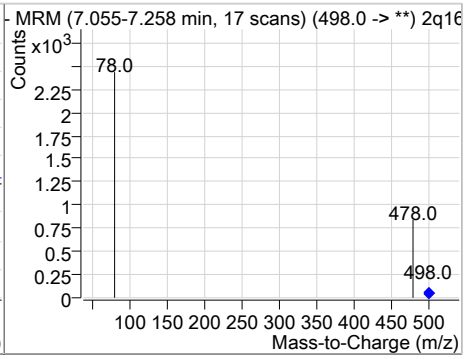




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.84	7.12	0.00	1312	498.0 -> 478.0		0.0	34.0

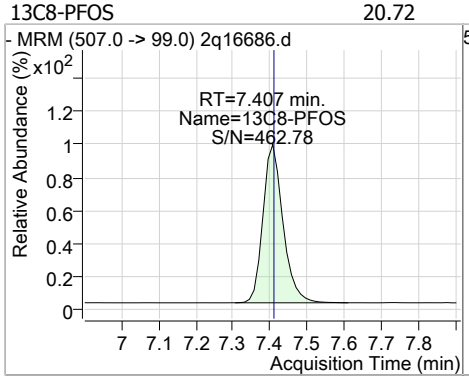


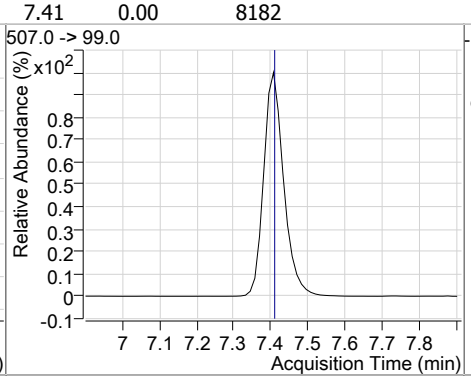


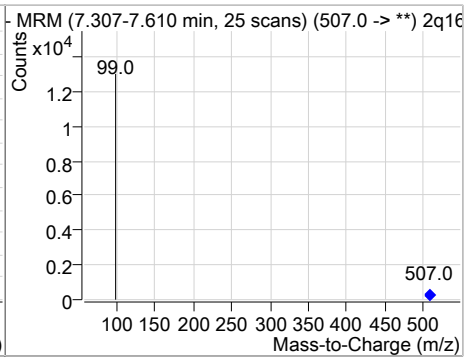


Perfluorinated Compounds by LC/MS/MS

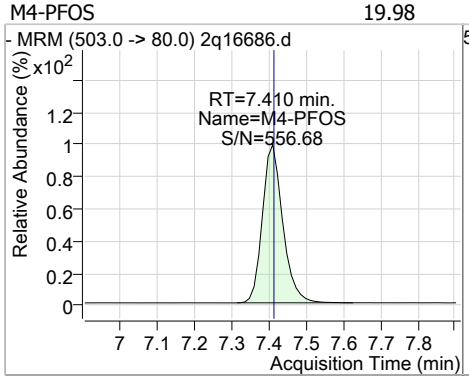
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.72	7.41	0.00	8182				

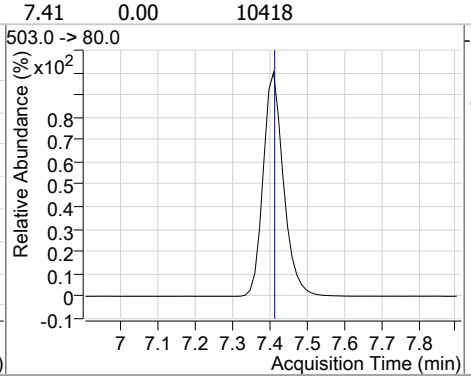


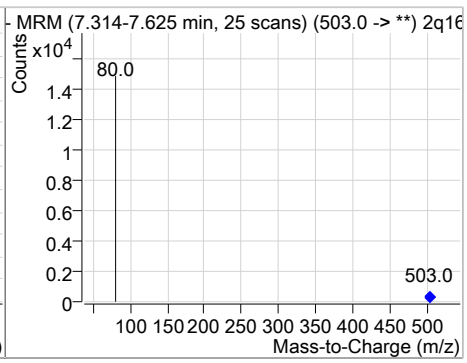




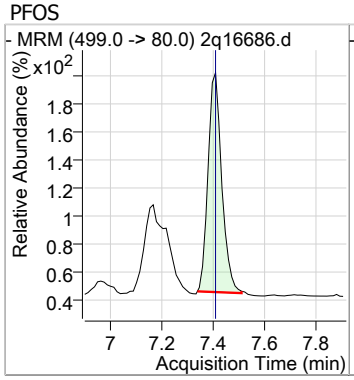
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	19.98	7.41	0.00	10418				

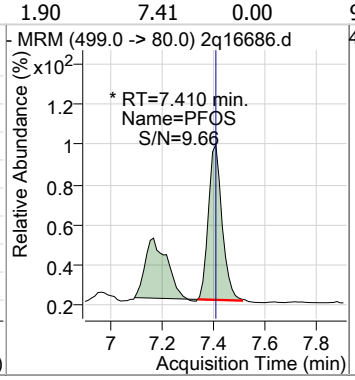


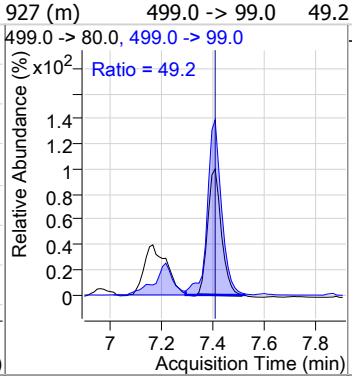


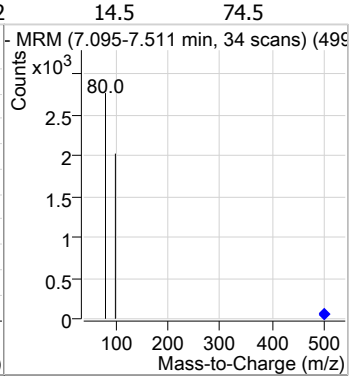


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.90	7.41	0.00	927 (m)	499.0 -> 99.0	49.2	14.5	74.5

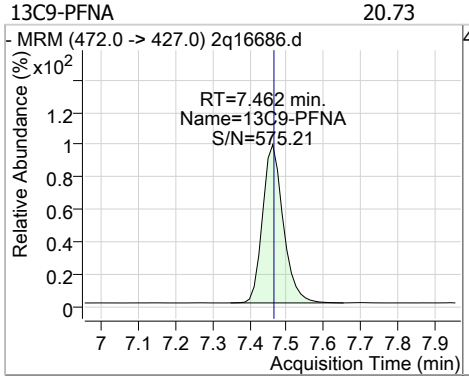


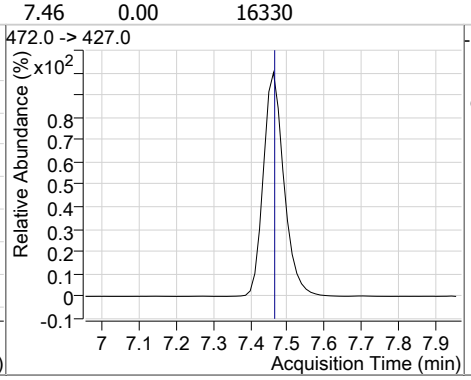


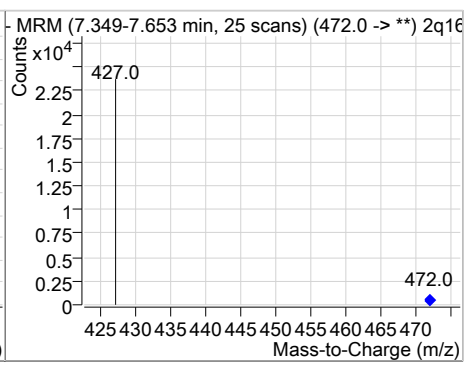




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.73	7.46	0.00	16330				

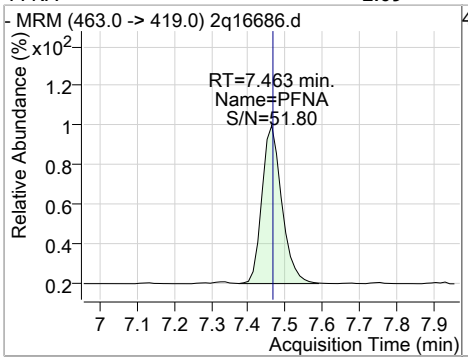


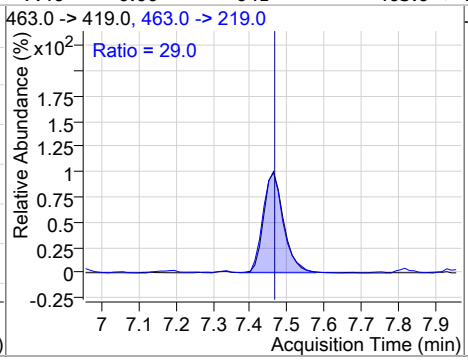


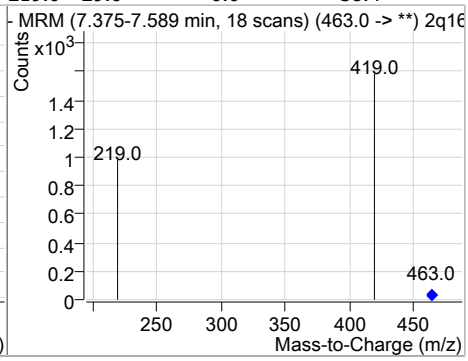


Perfluorinated Compounds by LC/MS/MS

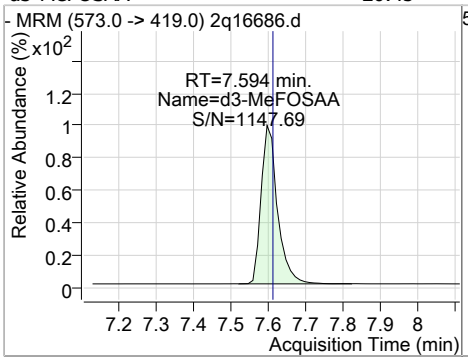
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.09	7.46	0.00	641	463.0 -> 219.0	29.0	0.0	58.4

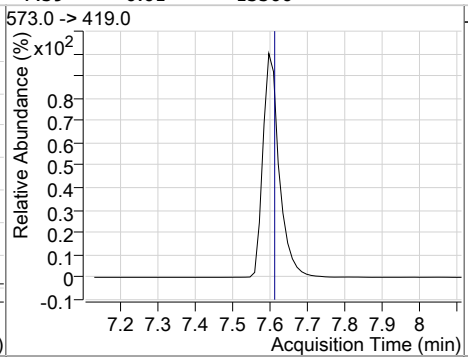


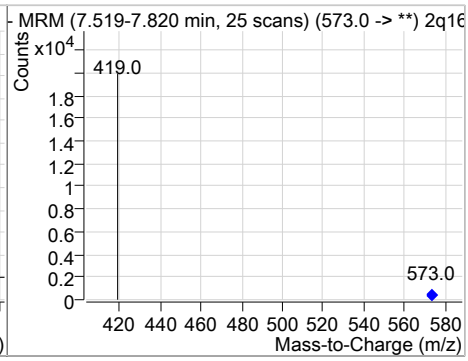




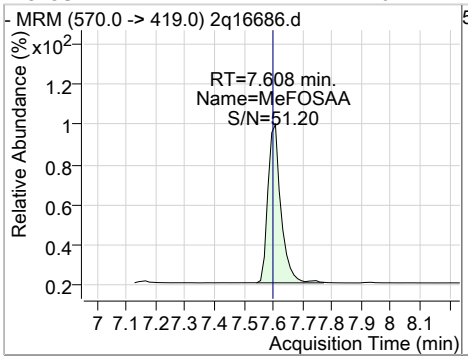
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.45	7.59	-0.01	13506				

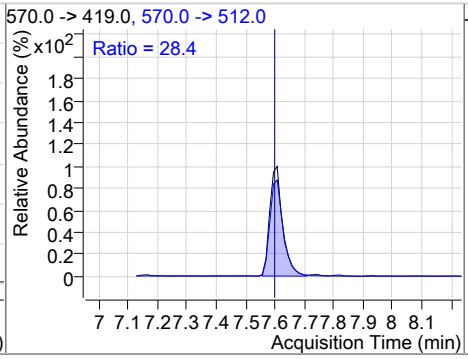


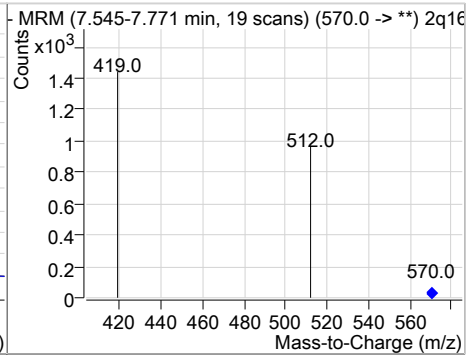




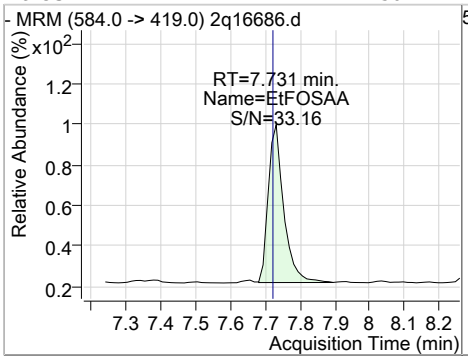
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.07	7.61	0.00	504	570.0 -> 512.0	28.4	1.8	61.8

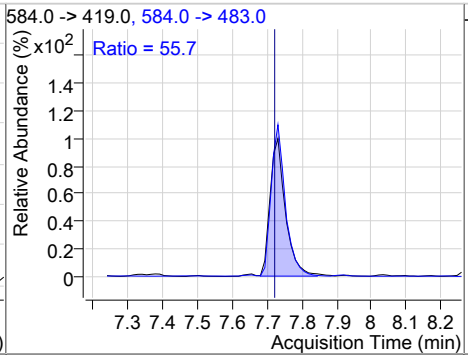


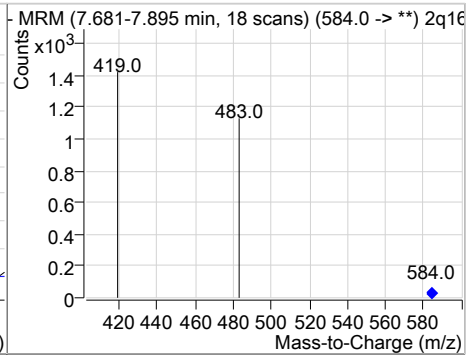




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.50	7.73	0.00	482	584.0 -> 483.0	55.7	24.8	84.8

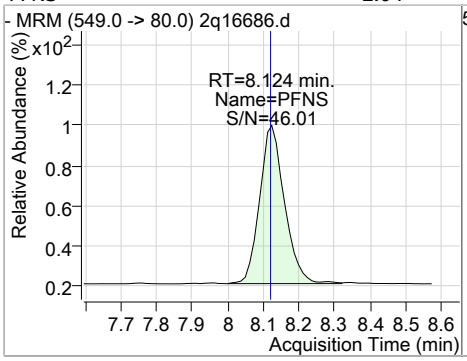


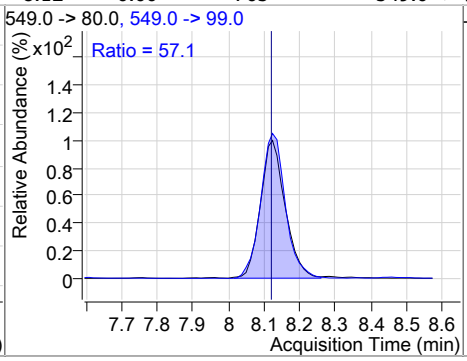


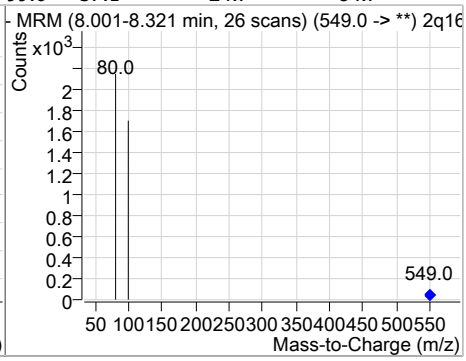


Perfluorinated Compounds by LC/MS/MS

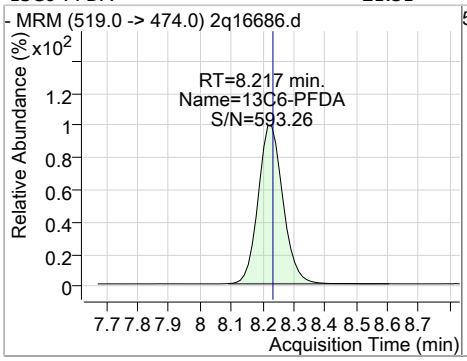
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.04	8.12	0.00	765	549.0 -> 99.0	57.1	24.7	84.7

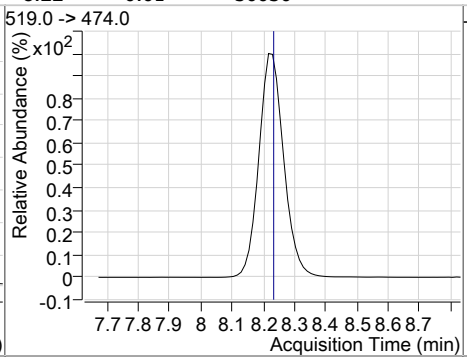


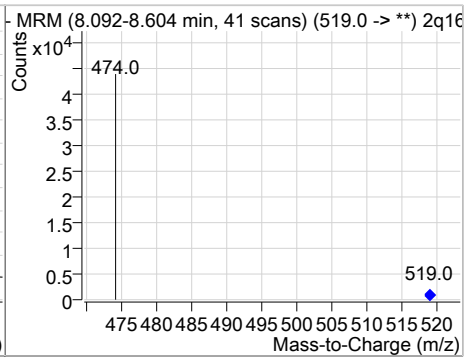




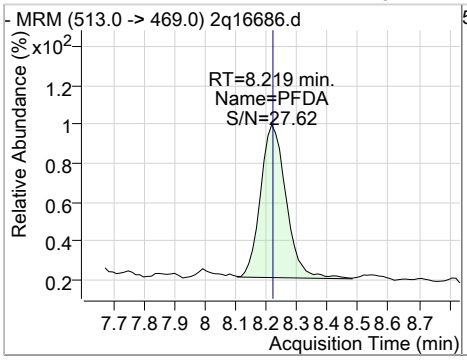
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.31	8.22	-0.01	30030				

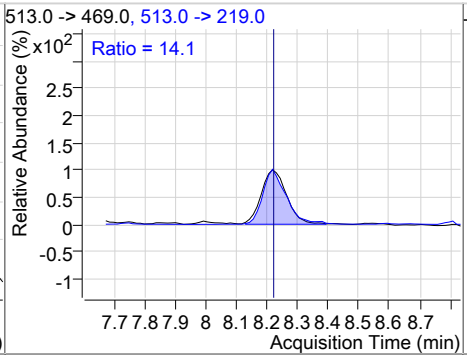


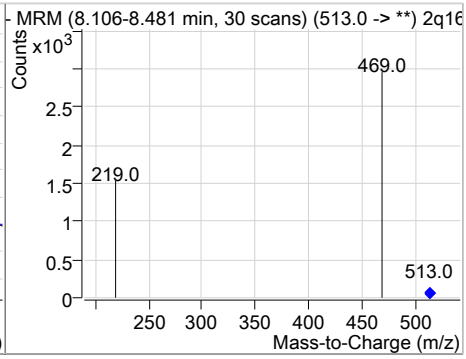




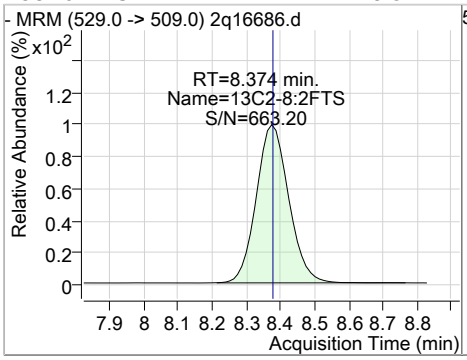
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.02	8.22	-0.01	1076	513.0 -> 219.0	14.1	0.0	45.3

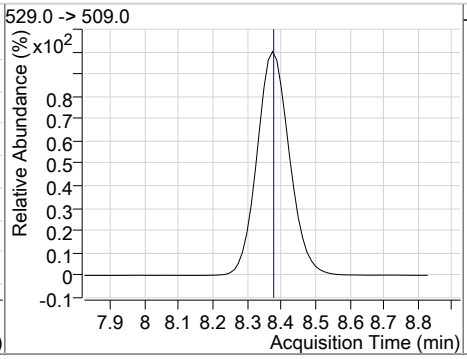


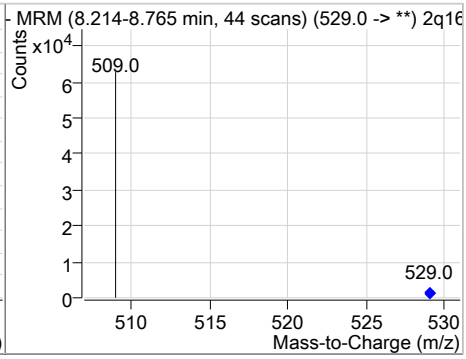




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.51	8.37	0.00	44230				

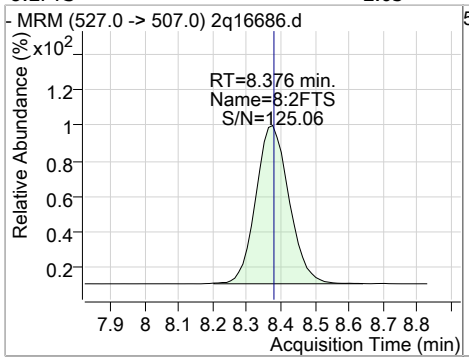


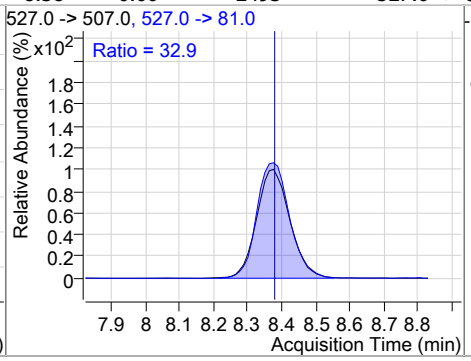


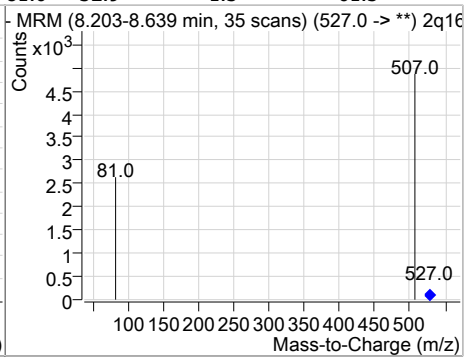


Perfluorinated Compounds by LC/MS/MS

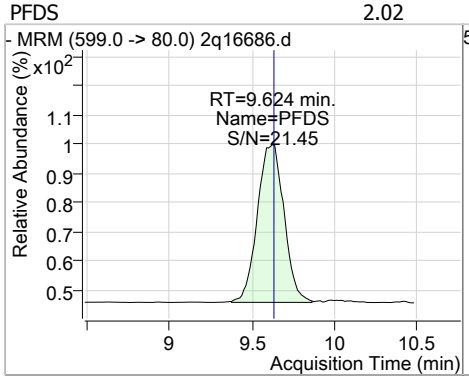
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	2.03	8.38	0.00	2493	527.0 -> 81.0	32.9	1.3	61.3

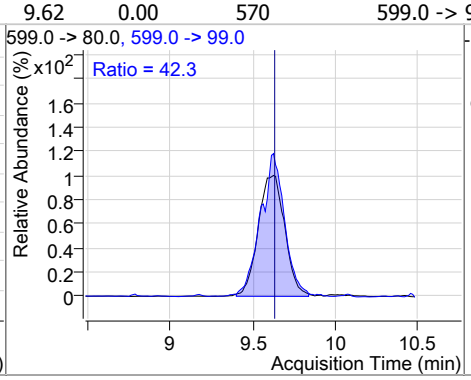


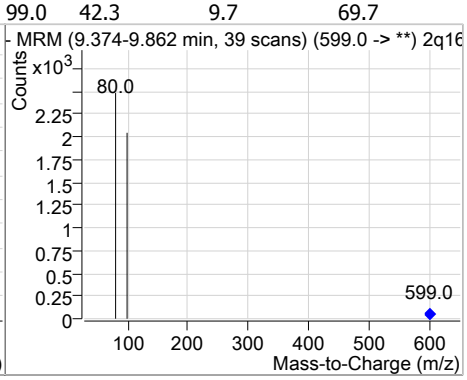




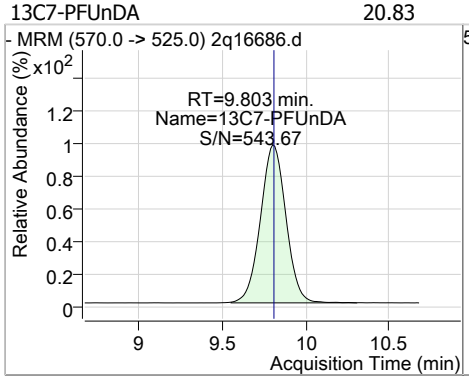
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.02	9.62	0.00	570	599.0 -> 99.0	42.3	9.7	69.7

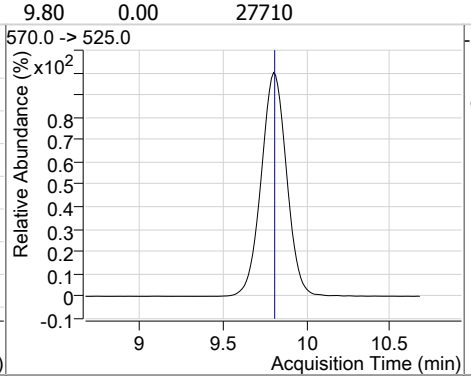


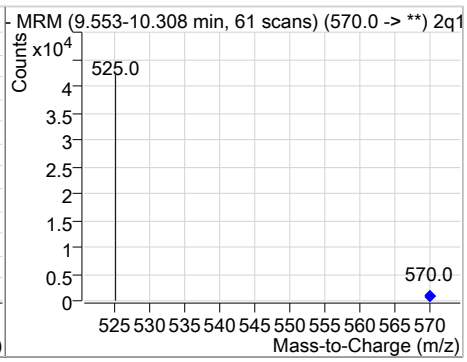




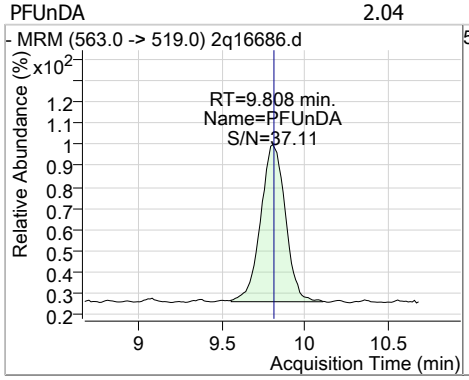
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.83	9.80	0.00	27710				

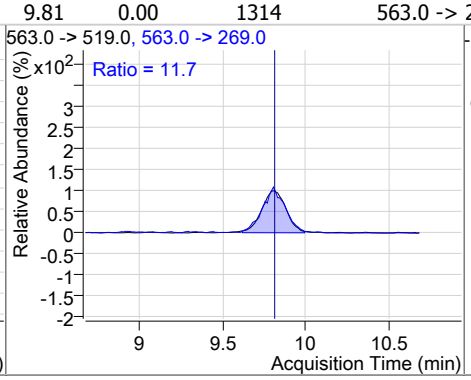


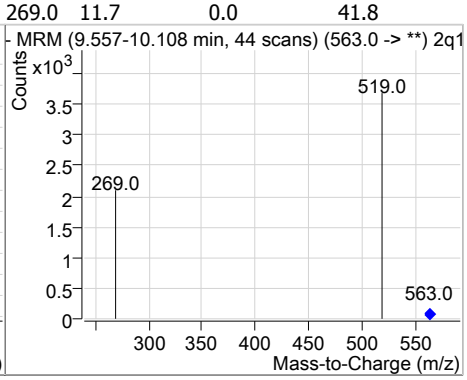




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.04	9.81	0.00	1314	563.0 -> 269.0	11.7	0.0	41.8

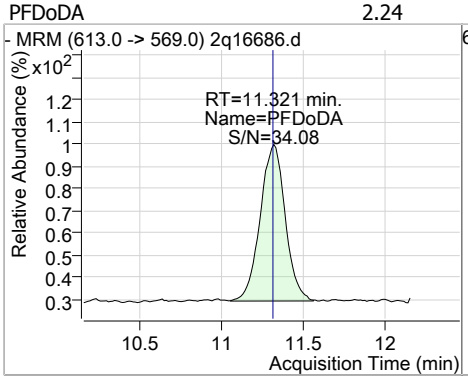


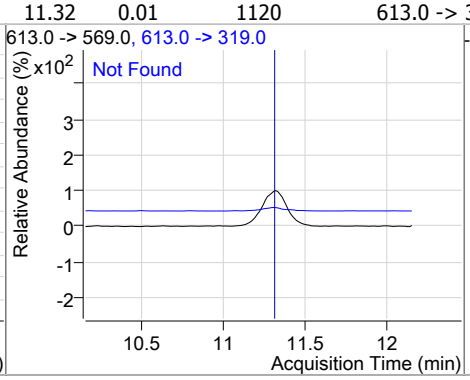


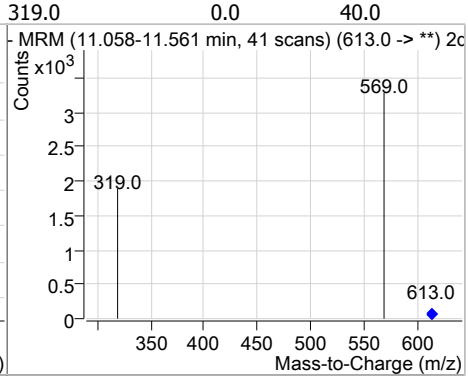


Perfluorinated Compounds by LC/MS/MS

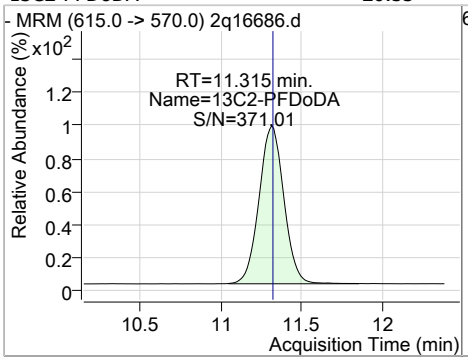
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.24	11.32	0.01	1120	613.0 -> 319.0		0.0	40.0

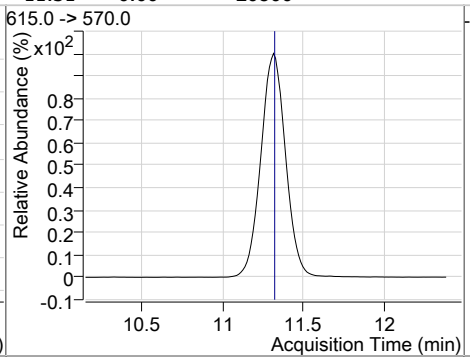


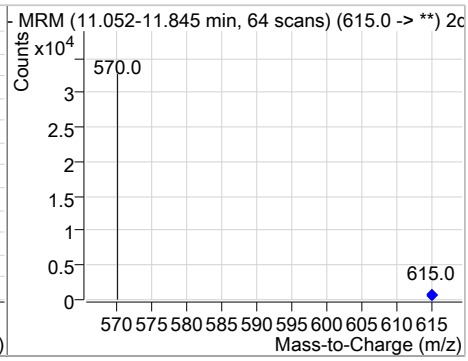




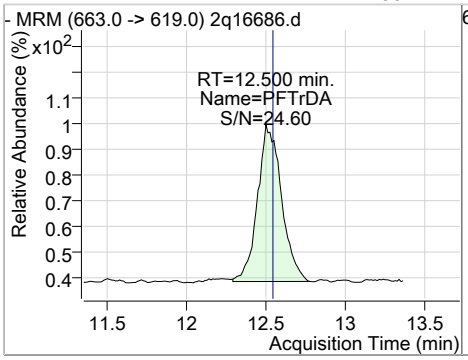
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.53	11.31	0.00	20806				

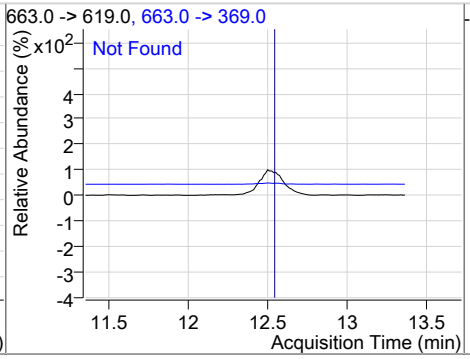


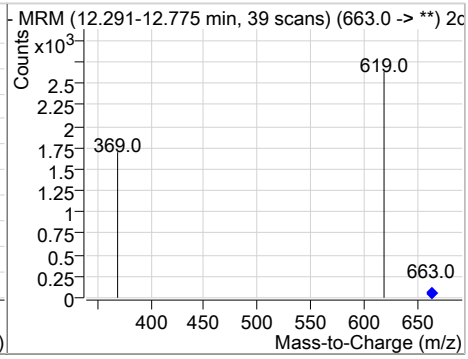




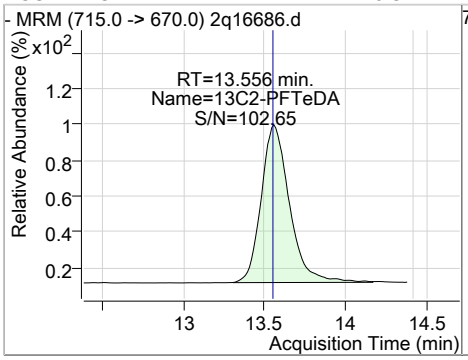
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.06	12.50	-0.03	727	663.0 -> 369.0		0.0	37.1

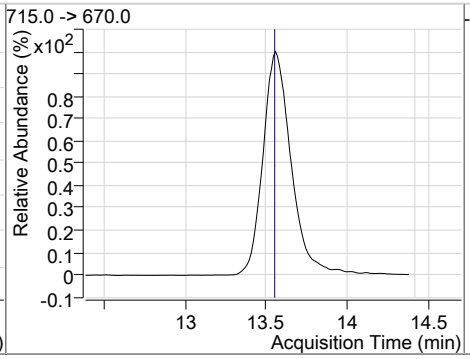


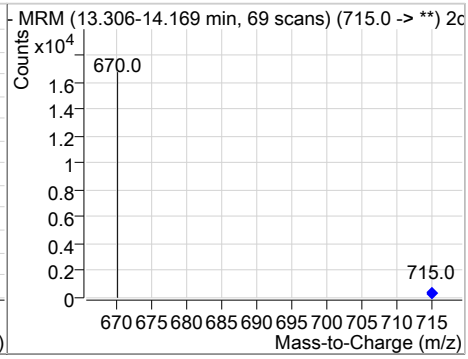




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.37	13.56	0.01	7970				

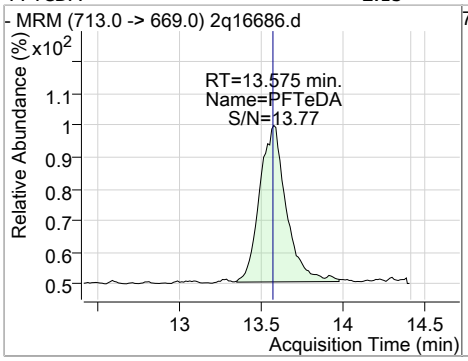


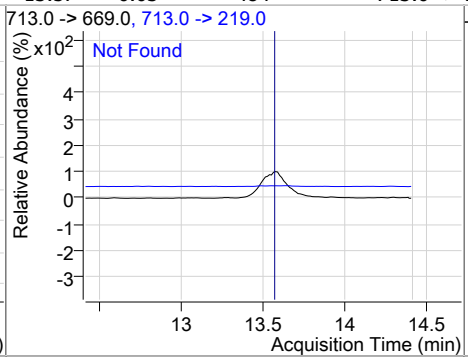


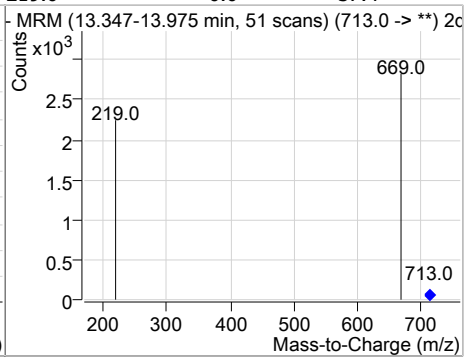


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.15	13.57	0.03	484	713.0 -> 219.0		0.0	37.4







Manual Integration Approval Summary

Sample Number: S2Q292-IC292
Lab FileID: 2Q16686.D
Injection Time: 07/07/18 09:25
Method: EPA 537M QSM5.1 B-15
Analyst approved: 07/09/18 13:31 Natasha Gumtie
Supervisor approved: 07/10/18 17:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.08	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.41	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/10/18 17:09

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16687.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/7/2018 9:45:22 AM
Sample Name : ic292-5
Vial : Vial 5
DA Method File : PFC_ID_070718_S2Q292.quantmethod.xml
Batch Name : s2q292.batch.bin
Sample Information : op70610,S2Q292,130,,,1.0,1,water

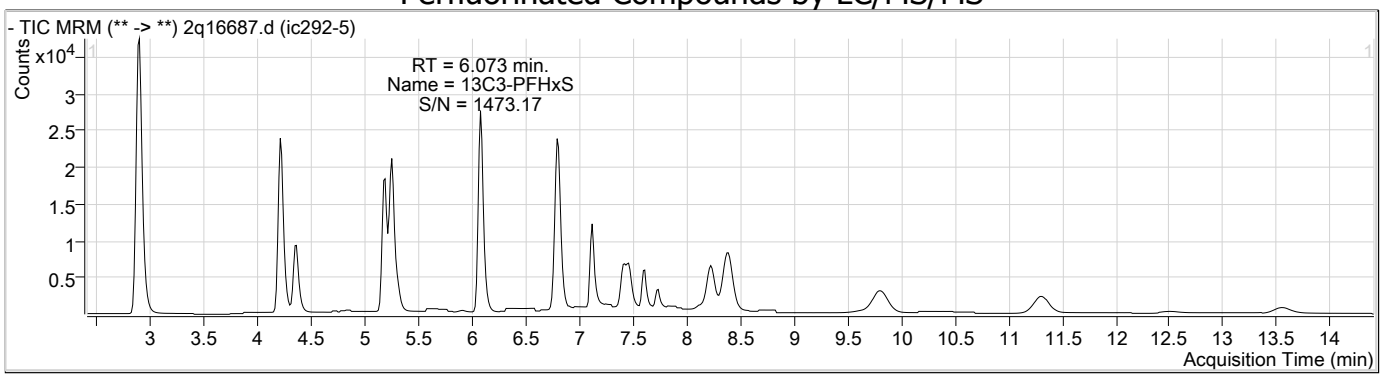
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.798	415.0 -> 370.0	16656	20.00	µg/L	0.000
13C4-PFOS	7.410	503.0 -> 80.0	10057	20.00	µg/L	0.000
M4-PFBA	2.891	217.0 -> 172.0	146028	20.00	µg/L	0.000
M5-PFPeA	4.212	268.0 -> 223.0	67460	20.00	µg/L	0.000
M5-PFHxA	5.253	318.0 -> 273.0	61062	20.00	µg/L	0.000
M4-PFHpA	6.079	367.0 -> 322.0	57670	20.00	µg/L	0.000
M8-PFOA	6.796	421.0 -> 376.0	26632	20.00	µg/L	0.000
M9-PFNA	7.462	472.0 -> 427.0	16384	20.00	µg/L	0.000
M6-PFDA	8.230	519.0 -> 474.0	29827	20.00	µg/L	0.000
M7-PFUnDA	9.803	570.0 -> 525.0	27787	20.00	µg/L	0.000
M2-PFDoDA	11.302	615.0 -> 570.0	21262	20.00	µg/L	-0.013
M2-PFTeDA	13.544	715.0 -> 670.0	8135	20.00	µg/L	0.000
M8-FOSA	7.115	506.0 -> 78.0	29538	20.00	µg/L	0.000
M3-PFBS	4.355	302.0 -> 99.0	22279	20.00	µg/L	0.000
M3-PFHxS	6.073	402.0 -> 99.0	18207	20.00	µg/L	0.000
M8-PFOS	7.407	507.0 -> 99.0	8189	20.00	µg/L	0.000
M2-4:2FTS	5.185	329.0 -> 309.0	53252	20.00	µg/L	0.013
M2-6:2FTS	6.805	429.0 -> 409.0	34415	20.00	µg/L	0.000
M2-8:2FTS	8.386	529.0 -> 509.0	45066	20.00	µg/L	0.013
M3-MeFOSAA	7.607	573.0 -> 419.0	14220	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.185	329.0 -> 309.0	53258	20.32	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
13C2-6:2FTS	6.805	429.0 -> 409.0	34412	20.27	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.4%		
13C2-8:2FTS	8.386	529.0 -> 509.0	45033	19.87	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.3%		
13C2-PFDoDA	11.302	615.0 -> 570.0	21298	21.01	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.1%		
13C2-PFTeDA	13.544	715.0 -> 670.0	8187	20.93	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.6%		
13C3-PFBS	4.355	302.0 -> 99.0	22280	21.29	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.4%		
13C3-PFHxS	6.073	402.0 -> 99.0	18209	21.35	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.8%		
13C4-PFBA	2.891	217.0 -> 172.0	145998	21.20	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.0%		
13C4-PFHpA	6.079	367.0 -> 322.0	57678	21.41	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.0%		
13C5-PFHxA	5.253	318.0 -> 273.0	61080	21.56	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.8%		
13C5-PFPeA	4.212	268.0 -> 223.0	67443	21.19	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.0%		
13C6-PFDA	8.230	519.0 -> 474.0	29815	21.16	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.8%		

Perfluorinated Compounds by LC/MS/MS

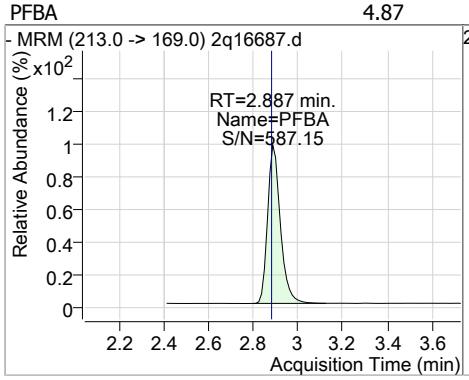
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	9.803	570.0 -> 525.0	27777	20.88	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.4%			
13C8-FOSA	7.115	506.0 -> 78.0	29540	22.27	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.4%			
13C8-PFOA	6.796	421.0 -> 376.0	26630	21.60	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.0%			
13C8-PFOS	7.407	507.0 -> 99.0	8198	20.76	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.8%			
13C9-PFNA	7.462	472.0 -> 427.0	16412	20.84	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.2%			
d3-MeFOSAA	7.607	573.0 -> 419.0	14213	21.52	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.6%			
M2-PFOA	6.798	415.0 -> 370.0	16660	20.01	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
M4-PFOS	7.410	503.0 -> 80.0	10057	20.00	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
Target Compounds							**QValue**
4:2FTS	5.175	327.0 -> 307.0	6400	4.63	µg/L		93
6:2FTS	6.807	427.0 -> 407.0	4227	4.86	µg/L		99
8:2FTS	8.376	527.0 -> 507.0	6210	5.00	µg/L		99
EtFOSAA	7.731	584.0 -> 419.0	1101	5.42	µg/L		97
FOSA	7.118	498.0 -> 78.0	3319	4.63	µg/L		99
MeFOSAA	7.608	570.0 -> 419.0	1207	4.71	µg/L		97
PFBA	2.887	213.0 -> 169.0	5593	4.87	µg/L		100
PFBS	4.346	299.0 -> 80.0	7436	4.99	µg/L		100
PFDA	8.231	513.0 -> 469.0	2595	4.89	µg/L		98
PFDoDA	11.308	613.0 -> 569.0	2716	5.30	µg/L		99
PFDS	9.611	599.0 -> 80.0	1473	5.20	µg/L		98
PFHpA	6.082	363.0 -> 319.0	10294	4.99	µg/L		99
PFHpS	6.766	449.0 -> 80.0	2393	5.07	µg/L		100
PFHxA	5.255	313.0 -> 269.0	4947	5.03	µg/L		100
PFHxS	6.076	399.0 -> 80.0	4951	4.90	µg/L	m	98
PFNA	7.463	463.0 -> 419.0	1516	4.92	µg/L		95
PFNS	8.124	549.0 -> 80.0	1928	5.14	µg/L		97
PFOA	6.799	413.0 -> 369.0	3415	5.07	µg/L		97
PFOS	7.410	499.0 -> 80.0	2423	4.96	µg/L	m	94
PFPeA	4.216	263.0 -> 219.0	16631	5.05	µg/L		100
PFPeS	5.308	349.0 -> 80.0	4354	4.91	µg/L		98
PFTeDA	13.537	713.0 -> 669.0	1174	5.10	µg/L		97
PFTrDA	12.513	663.0 -> 619.0	1805	5.00	µg/L		98
PFUnDA	9.808	563.0 -> 519.0	3291	5.10	µg/L		98

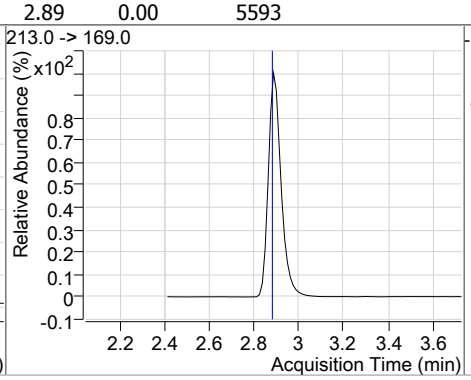
 # = Qualifier out of range, m = manually integrated, + = Area summed

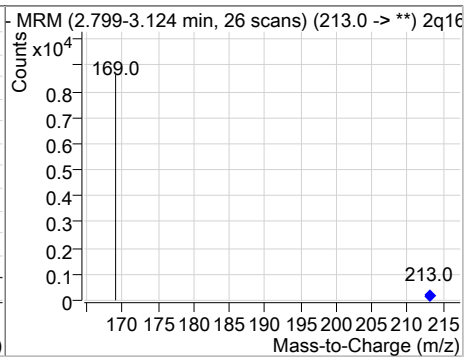
Perfluorinated Compounds by LC/MS/MS



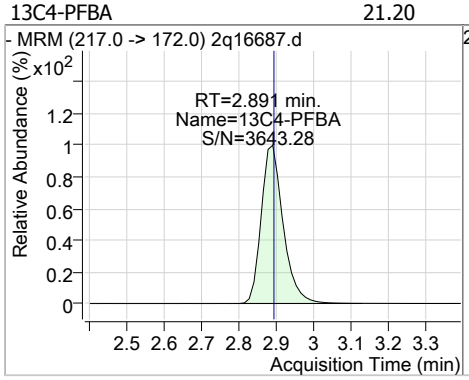
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	4.87	2.89	0.00	5593				

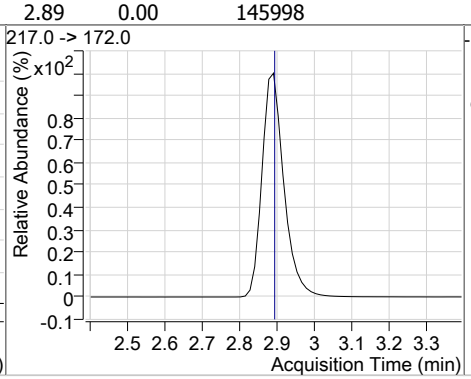


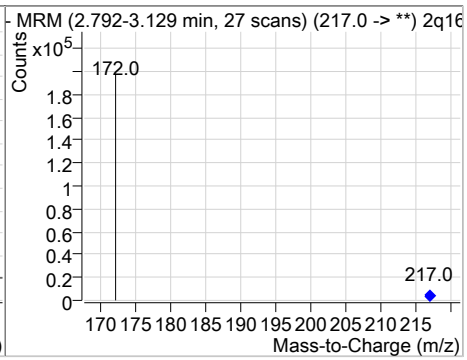




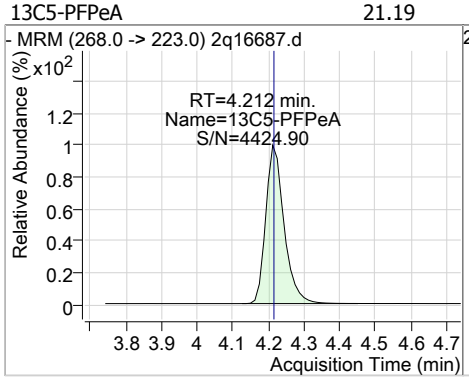
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	21.20	2.89	0.00	145998				

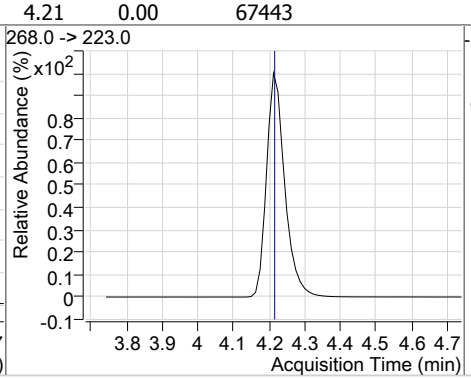


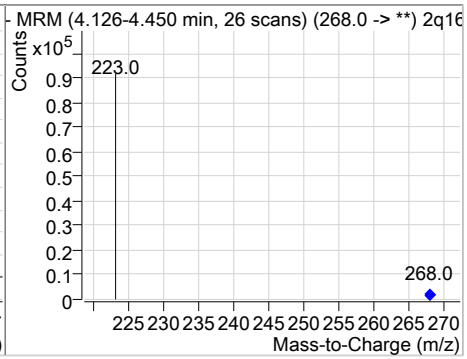




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	21.19	4.21	0.00	67443				

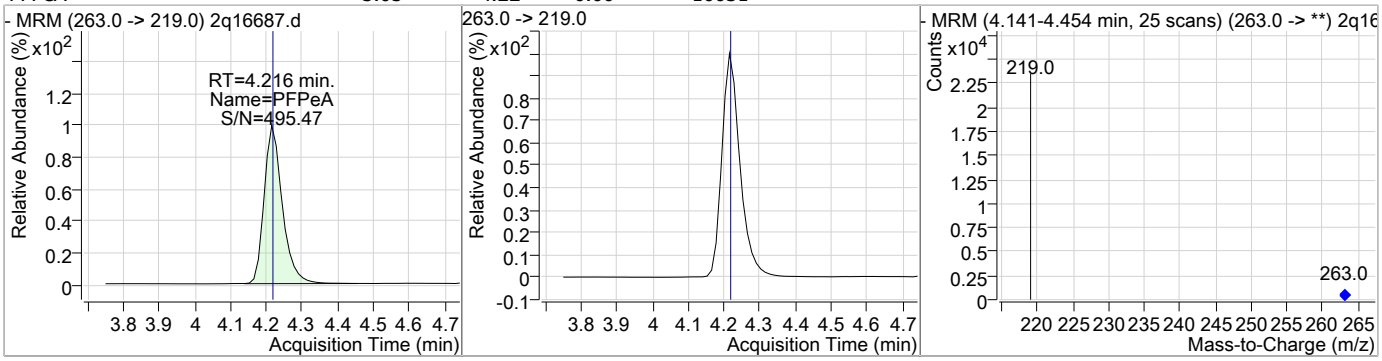




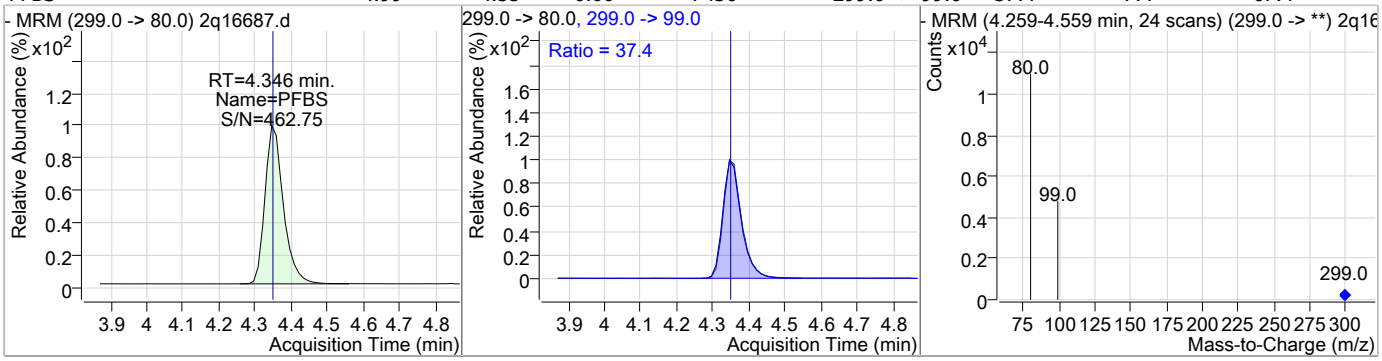


Perfluorinated Compounds by LC/MS/MS

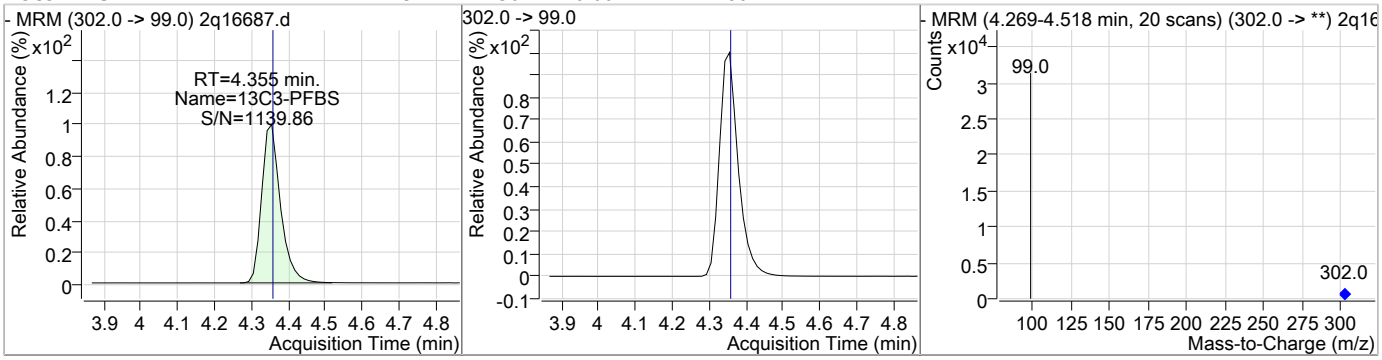
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	5.05	4.22	0.00	16631				



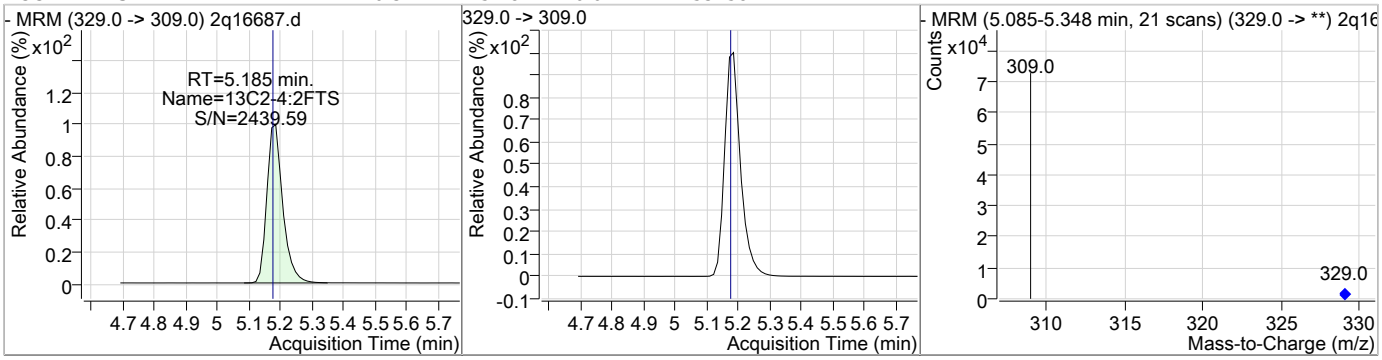
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	4.99	4.35	0.00	7436	299.0 -> 99.0	37.4	7.4	67.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.29	4.36	0.00	22280				

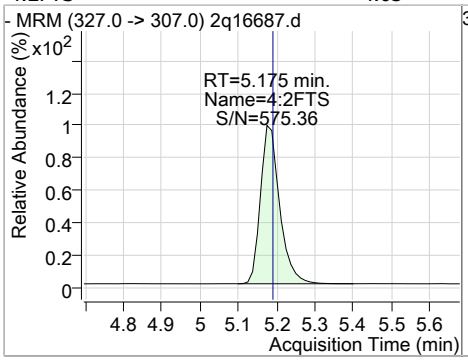


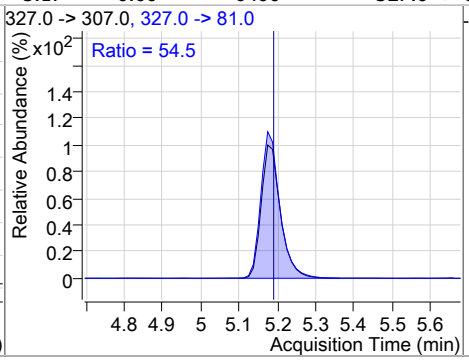
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.32	5.18	0.01	53258				

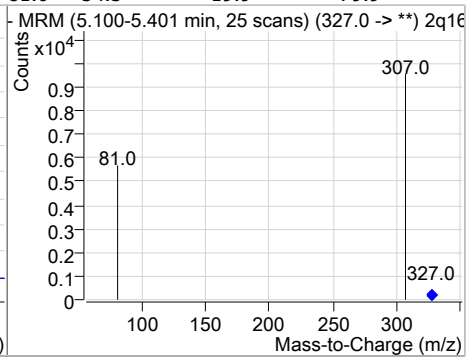


Perfluorinated Compounds by LC/MS/MS

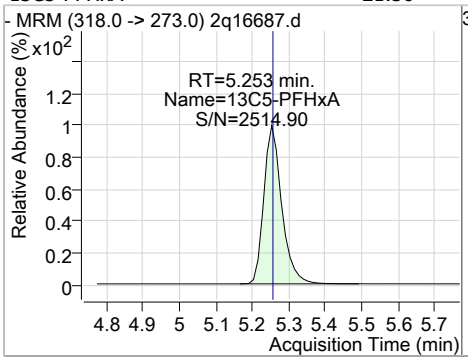
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	4.63	5.17	0.00	6400	327.0 -> 81.0	54.5	19.9	79.9

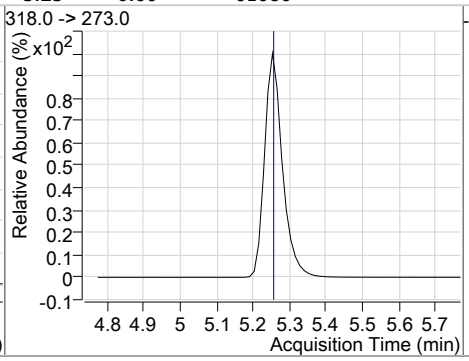


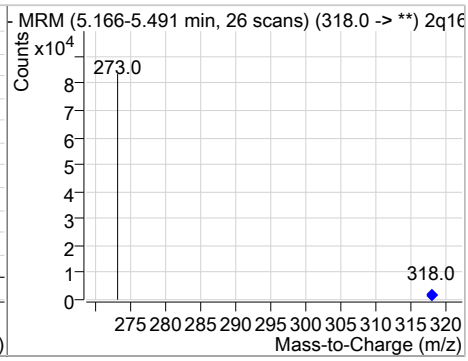




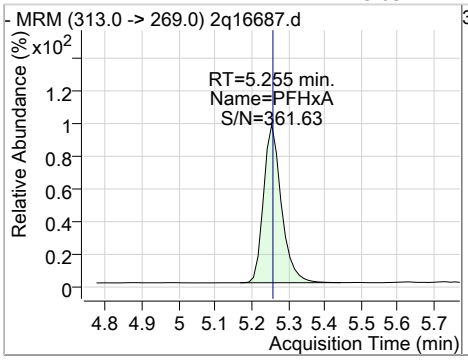
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.56	5.25	0.00	61080				

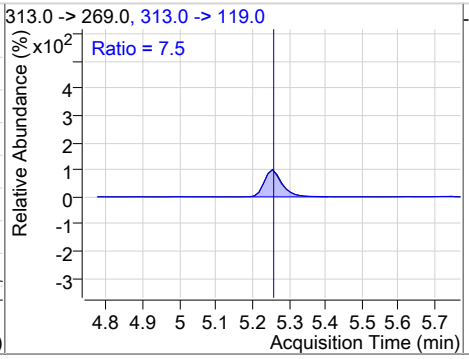


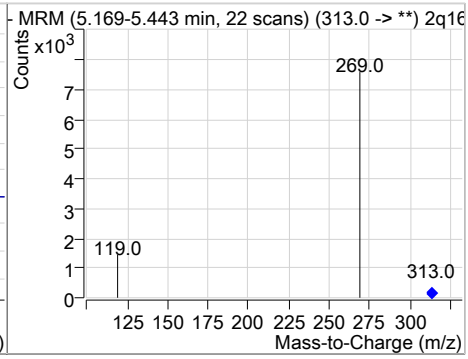




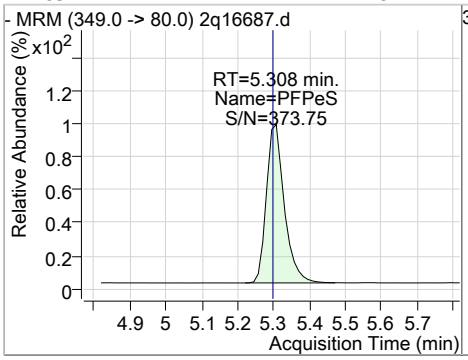
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	5.03	5.26	0.00	4947	313.0 -> 119.0	7.5	0.0	37.6

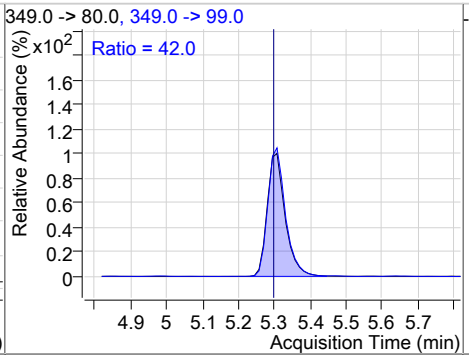


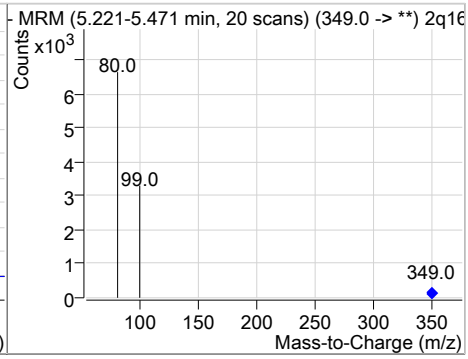




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	4.91	5.31	0.01	4354	349.0 -> 99.0	42.0	10.8	70.8

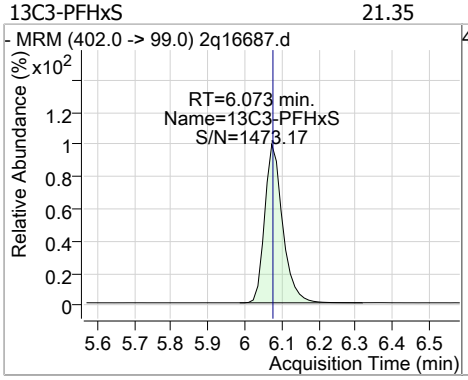


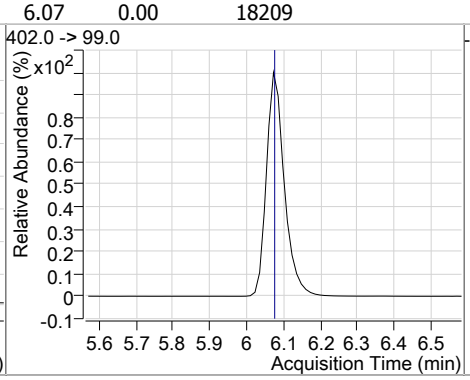


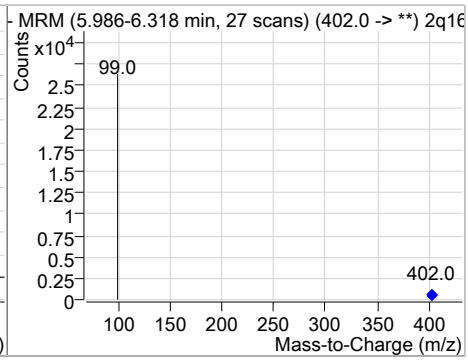


Perfluorinated Compounds by LC/MS/MS

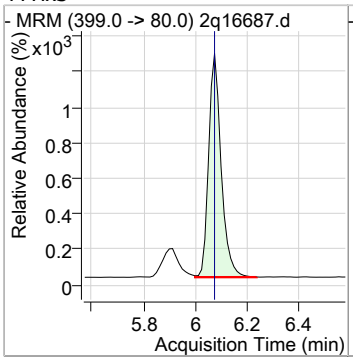
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.35	6.07	0.00	18209				

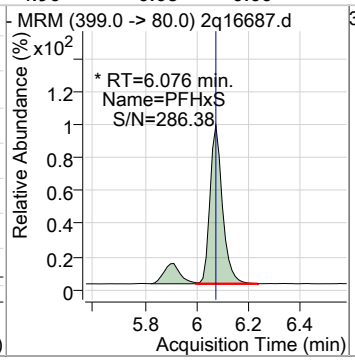


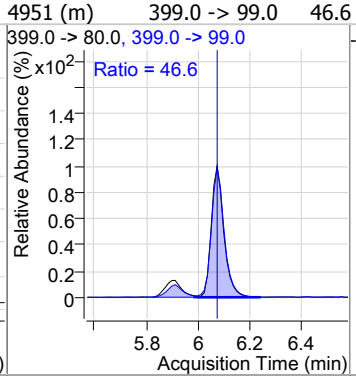


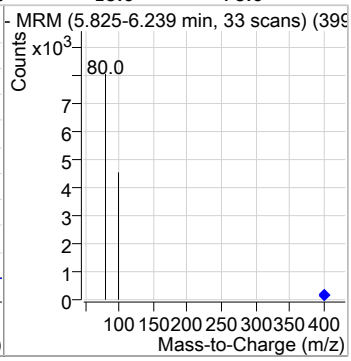


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	4.90	6.08	0.00	4951 (m)	399.0 -> 99.0	46.6	18.0	78.0

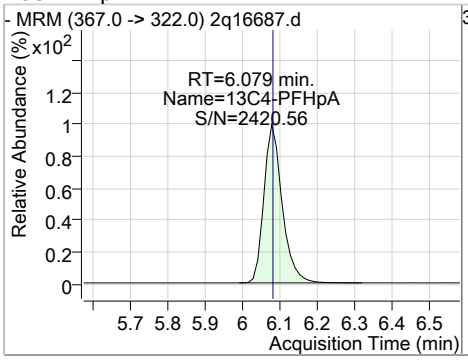


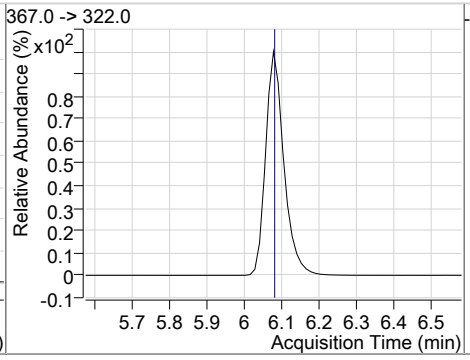


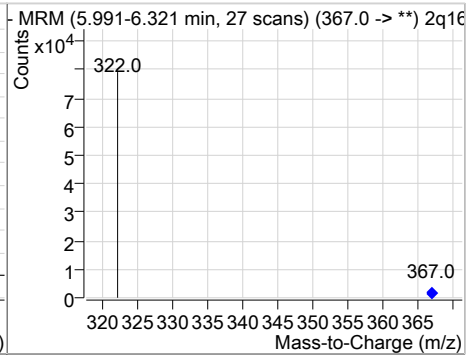




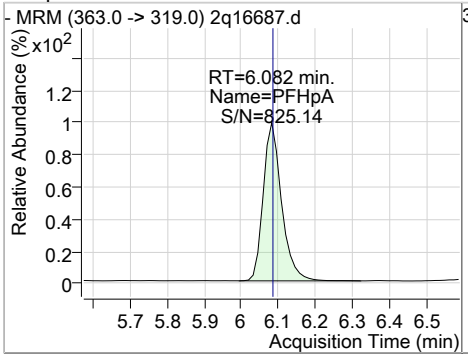
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.41	6.08	0.00	57678				

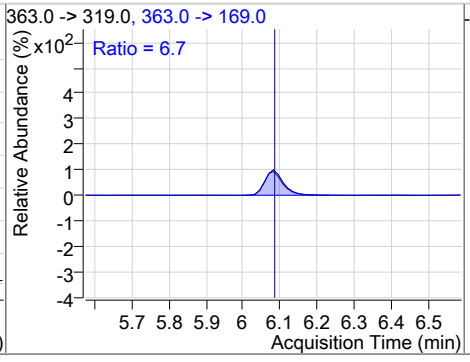


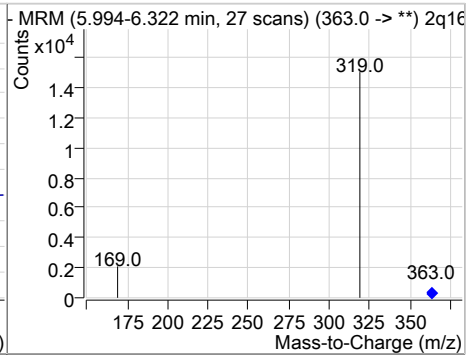




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	4.99	6.08	0.00	10294	363.0 -> 169.0	6.7	0.0	37.2

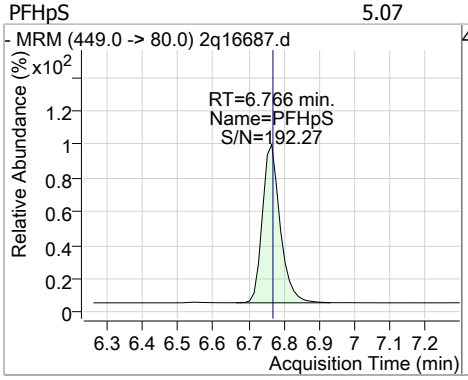


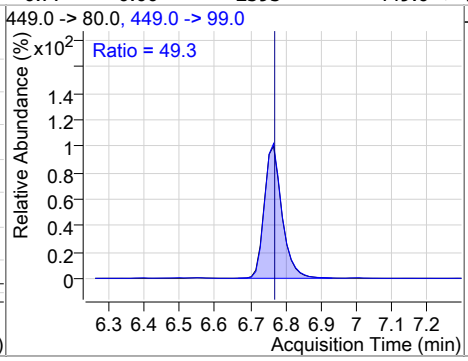


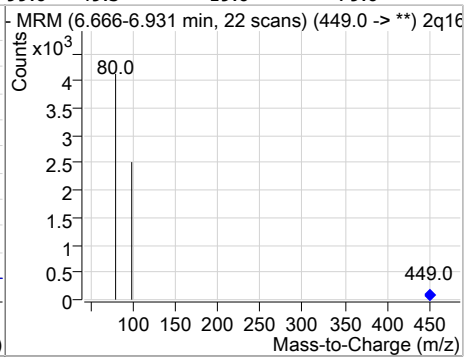


Perfluorinated Compounds by LC/MS/MS

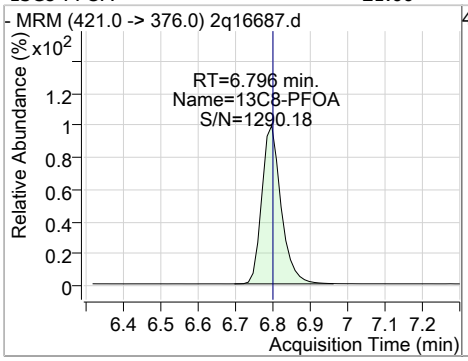
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	5.07	6.77	0.00	2393	449.0 -> 99.0	49.3	19.0	79.0

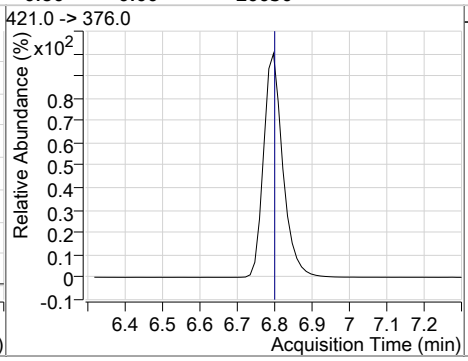


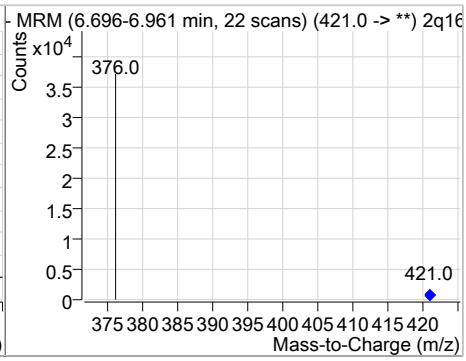




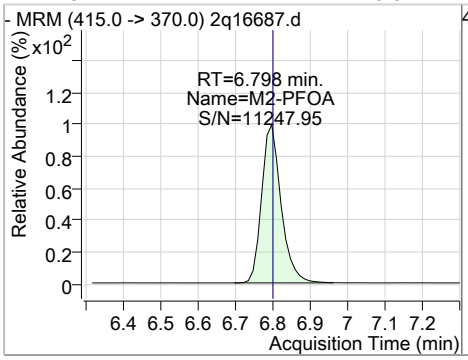
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.60	6.80	0.00	26630				

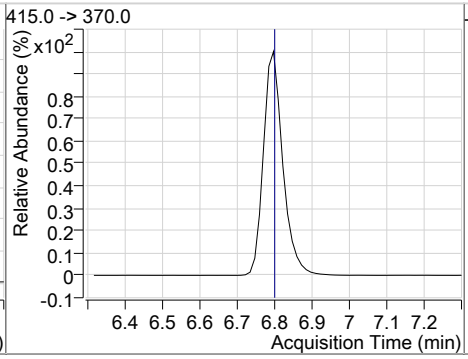


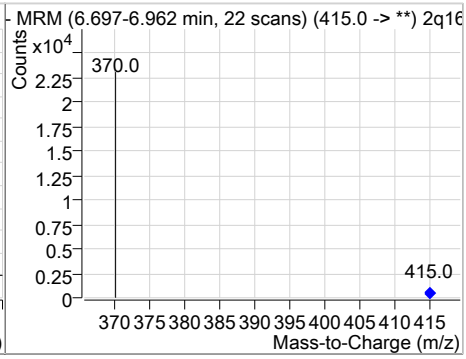




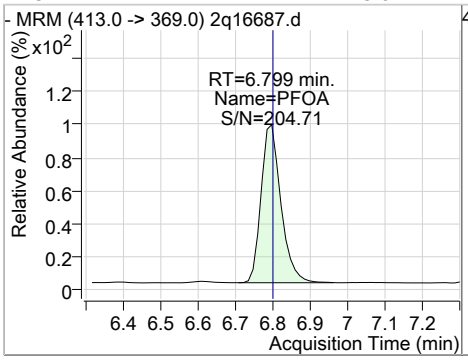
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.01	6.80	0.00	16660				

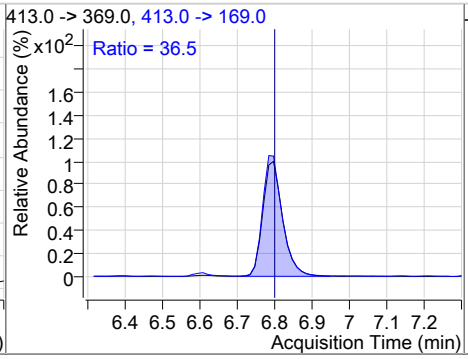


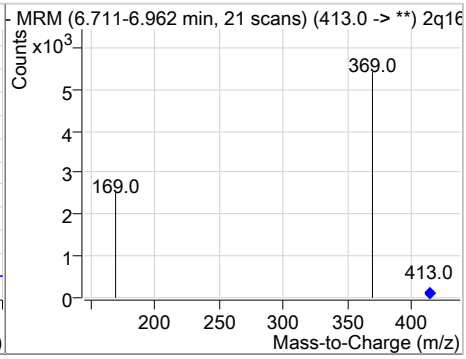




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	5.07	6.80	0.00	3415	413.0 -> 169.0	36.5	5.0	65.0

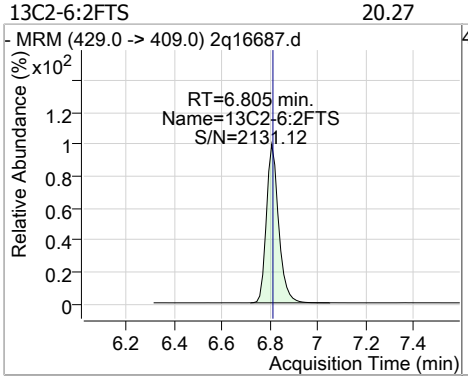


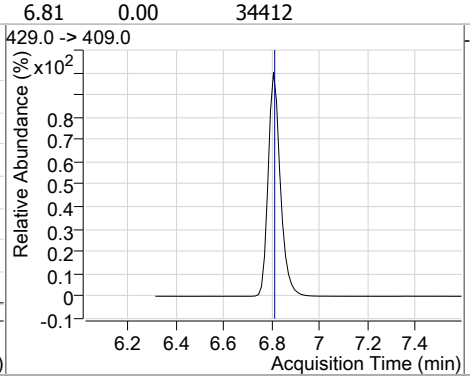


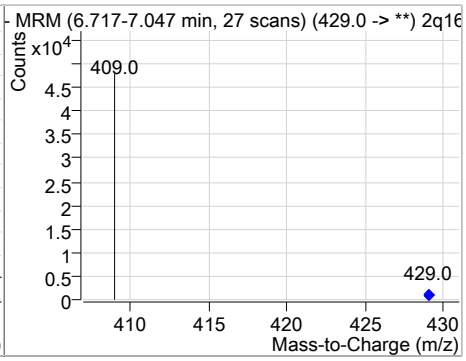


Perfluorinated Compounds by LC/MS/MS

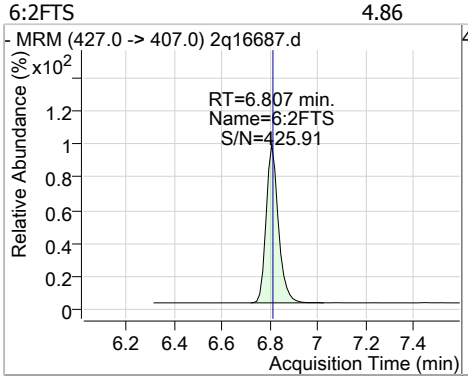
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.27	6.81	0.00	34412				

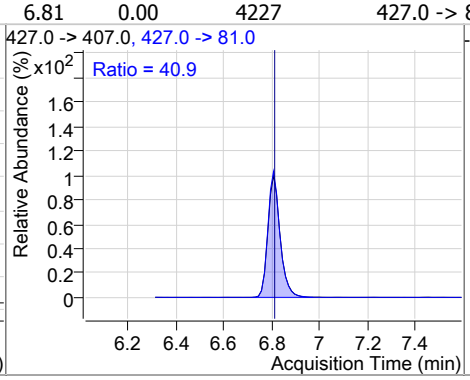


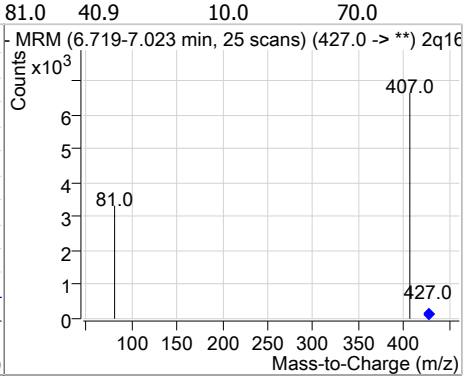




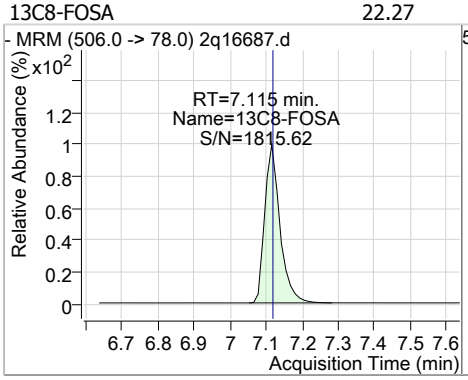
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	4.86	6.81	0.00	4227	427.0 -> 81.0	40.9	10.0	70.0

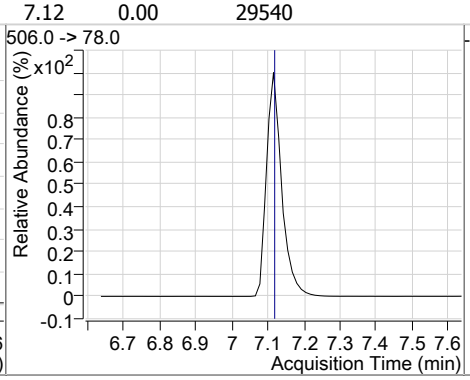


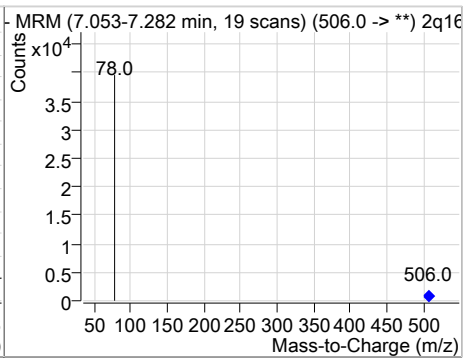




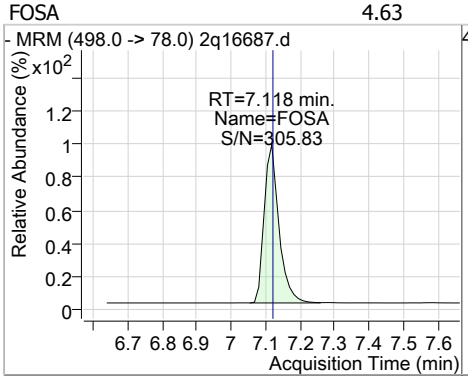
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	22.27	7.12	0.00	29540				

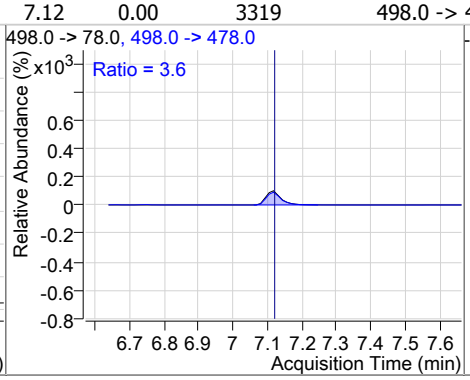


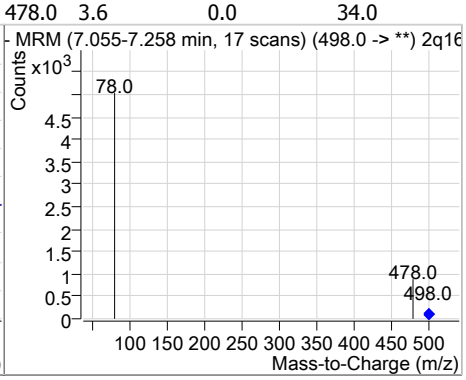




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	4.63	7.12	0.00	3319	498.0 -> 478.0	3.6	0.0	34.0

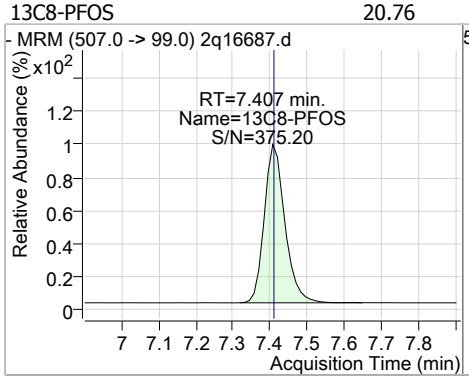


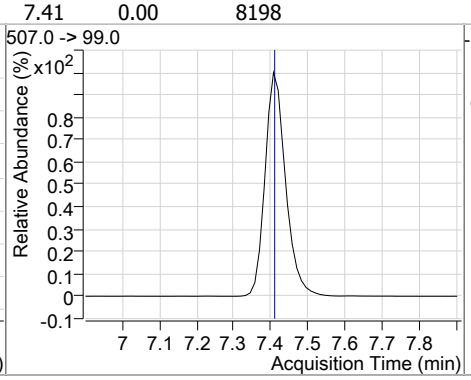


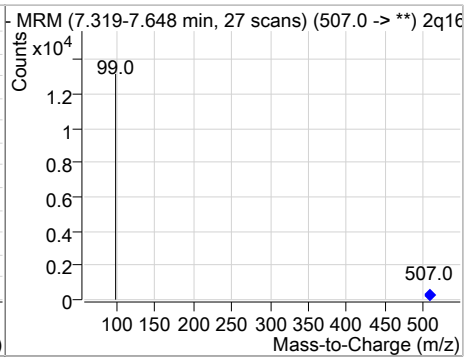


Perfluorinated Compounds by LC/MS/MS

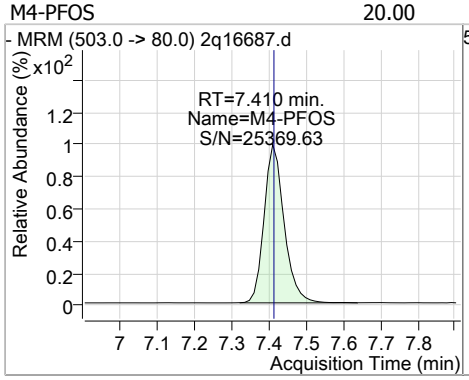
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.76	7.41	0.00	8198				

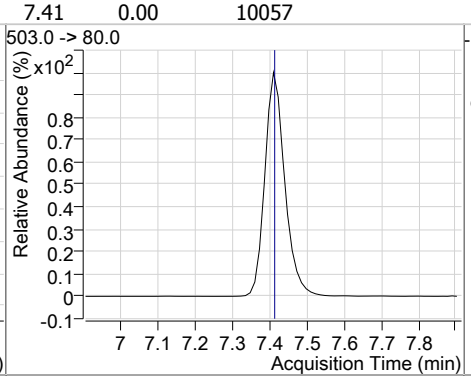


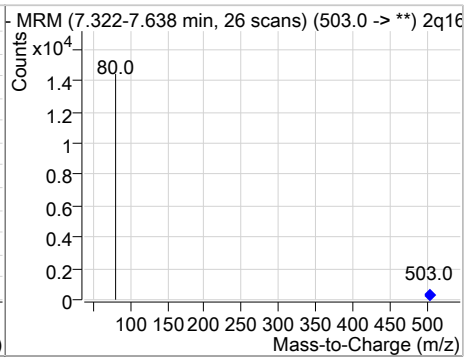




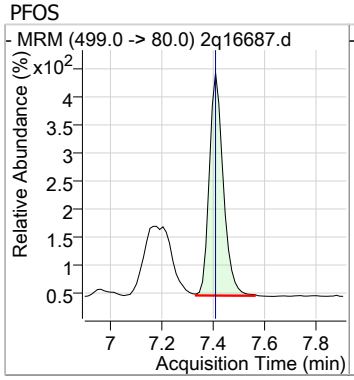
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.00	7.41	0.00	10057				

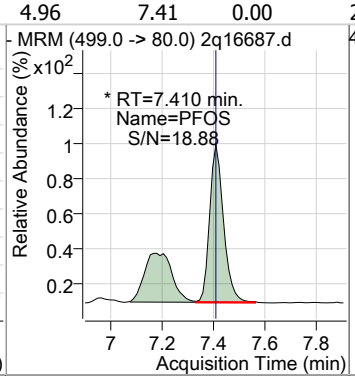


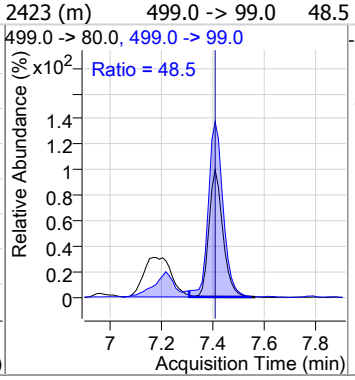


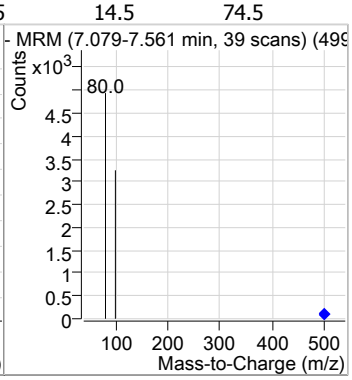


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	4.96	7.41	0.00	2423 (m)	499.0 -> 99.0	48.5	14.5	74.5

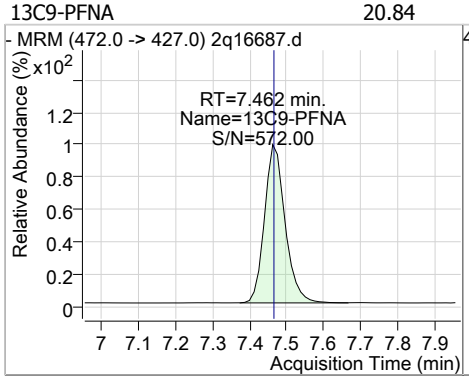


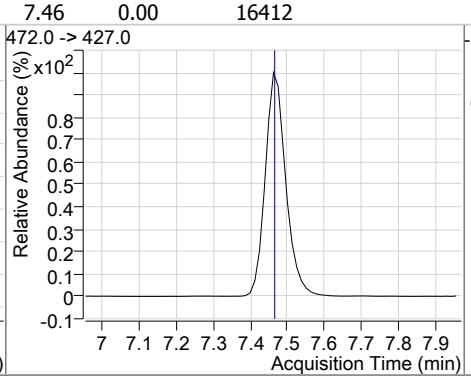


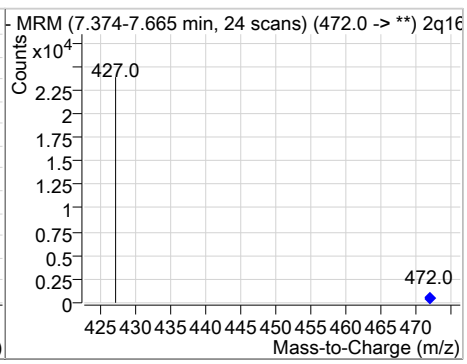




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.84	7.46	0.00	16412				

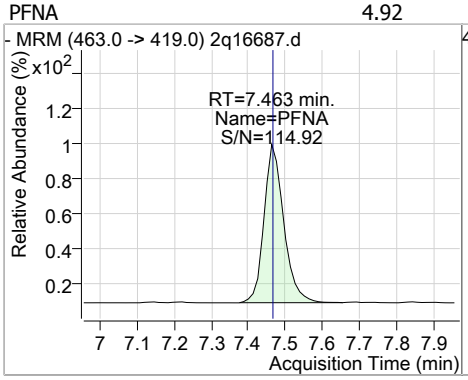


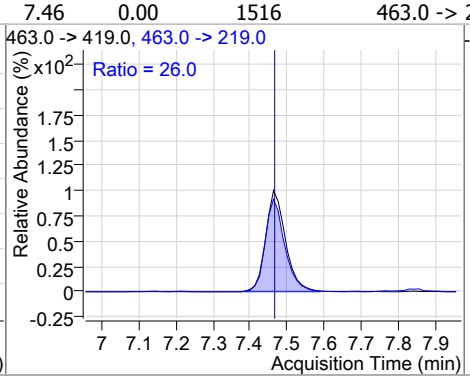


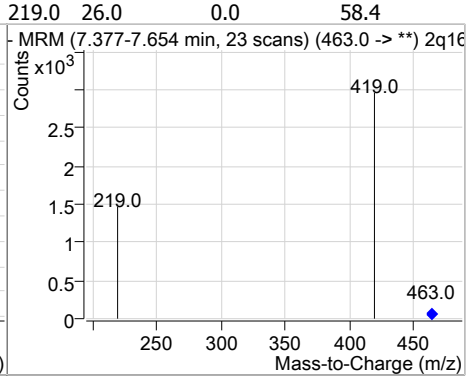


Perfluorinated Compounds by LC/MS/MS

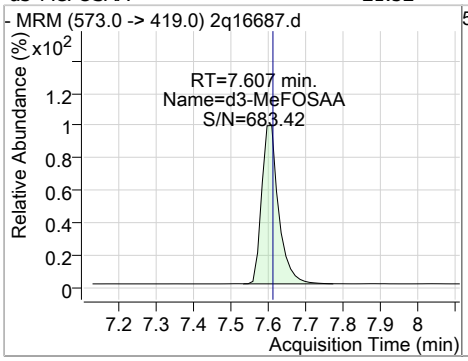
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	4.92	7.46	0.00	1516	463.0 -> 219.0	26.0	0.0	58.4

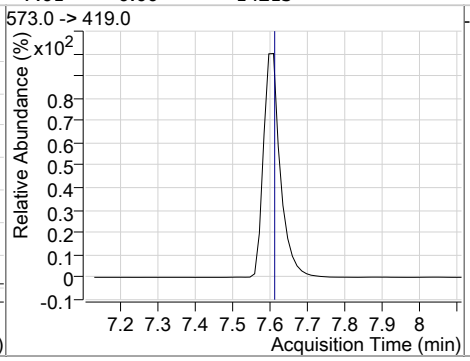


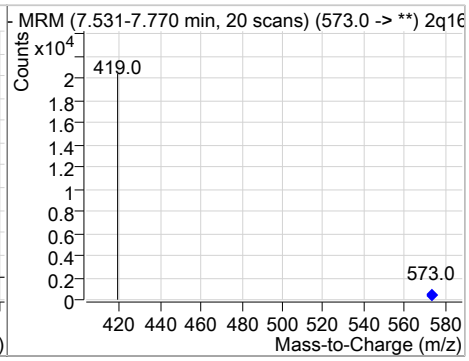




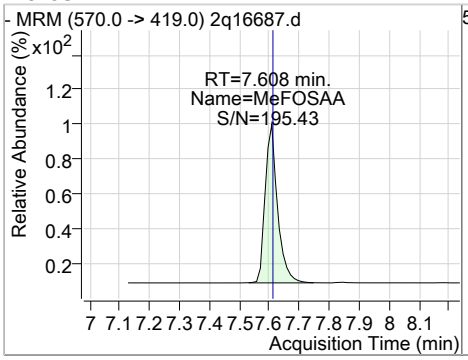
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.52	7.61	0.00	14213				

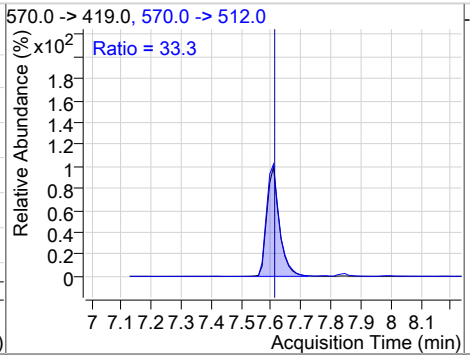


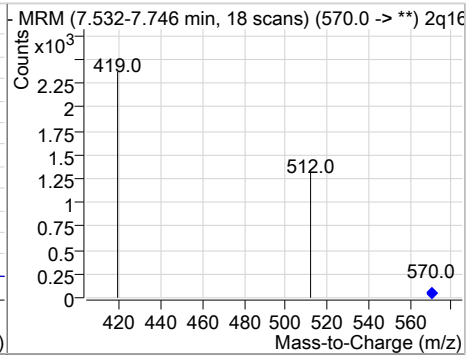




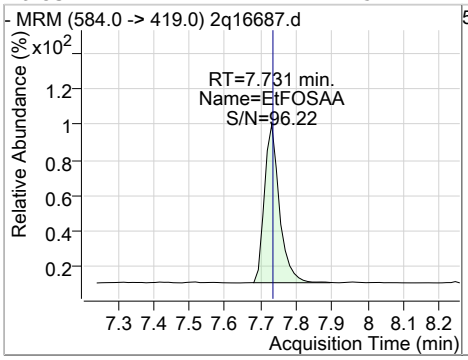
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	4.71	7.61	0.00	1207	570.0 -> 512.0	33.3	1.8	61.8

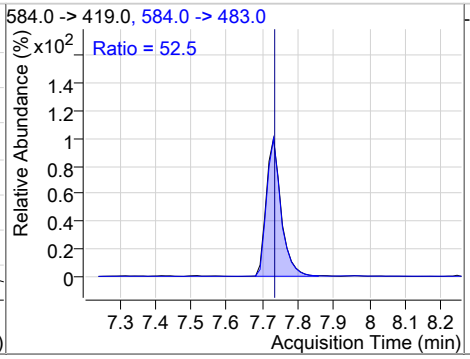


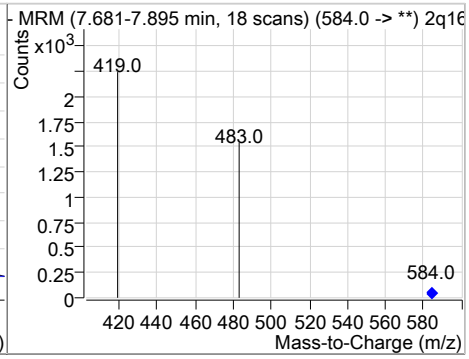




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	5.42	7.73	0.00	1101	584.0 -> 483.0	52.5	24.8	84.8

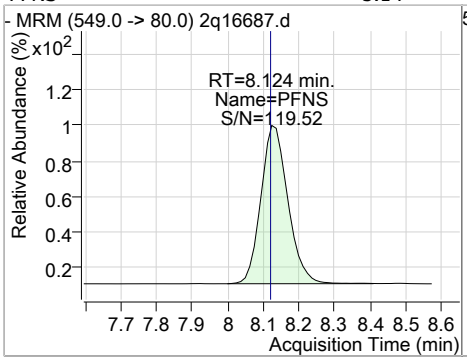


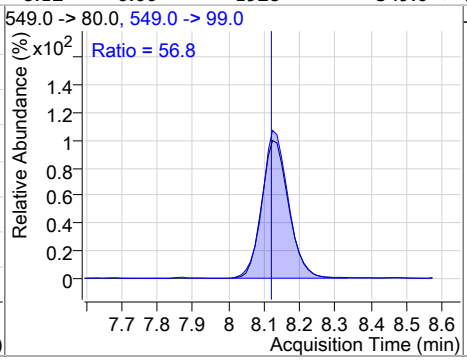


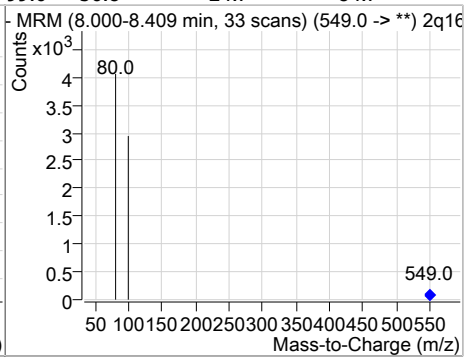


Perfluorinated Compounds by LC/MS/MS

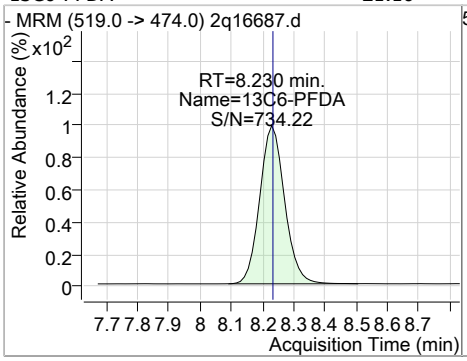
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	5.14	8.12	0.00	1928	549.0 -> 99.0	56.8	24.7	84.7

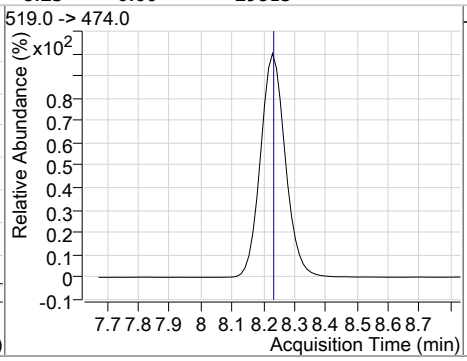


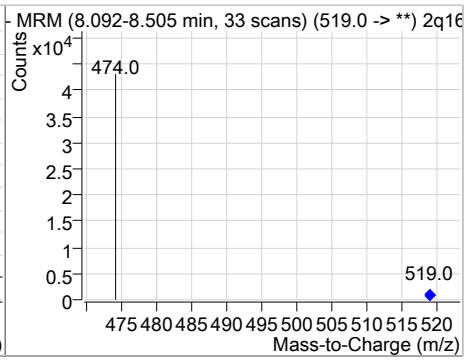




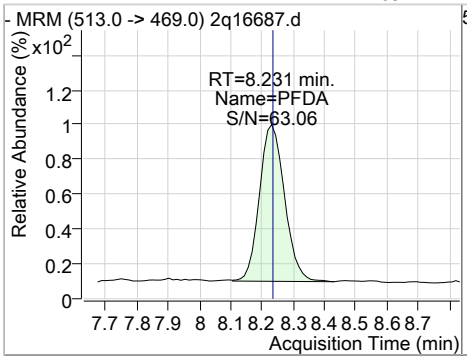
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.16	8.23	0.00	29815				

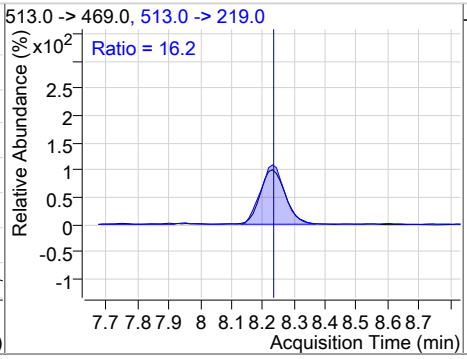


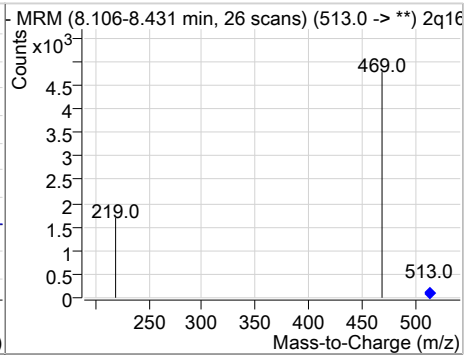




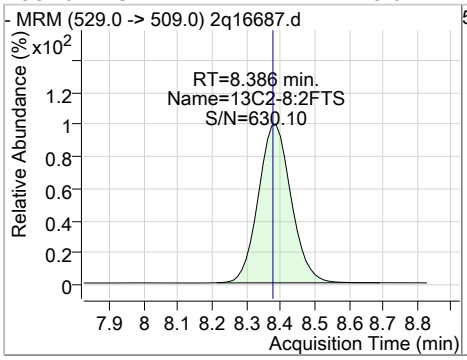
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	4.89	8.23	0.00	2595	513.0 -> 219.0	16.2	0.0	45.3

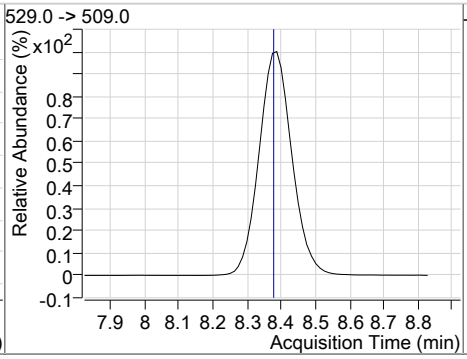


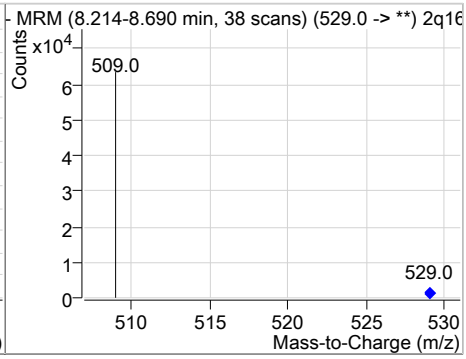




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.87	8.39	0.01	45033				

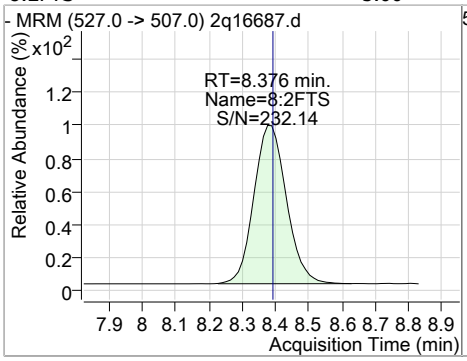


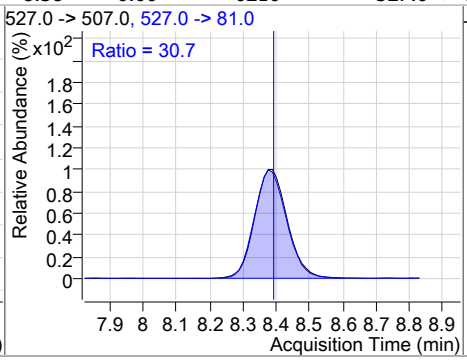


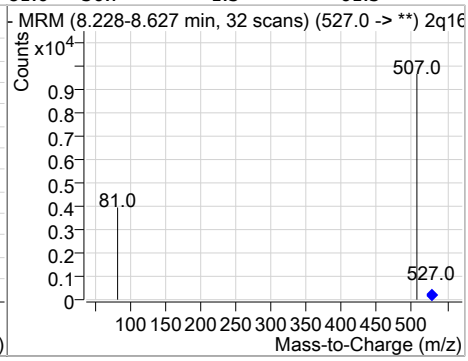


Perfluorinated Compounds by LC/MS/MS

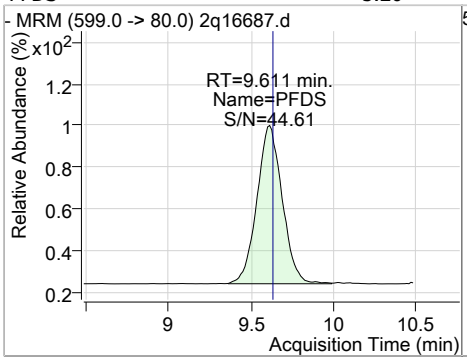
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	5.00	8.38	0.00	6210	527.0 -> 81.0	30.7	1.3	61.3

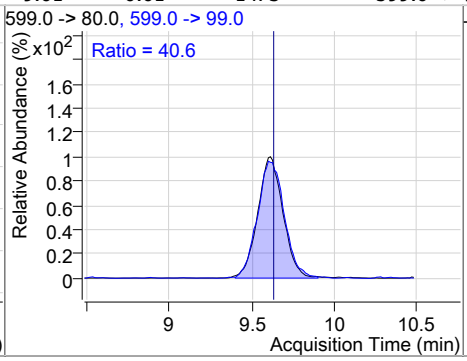


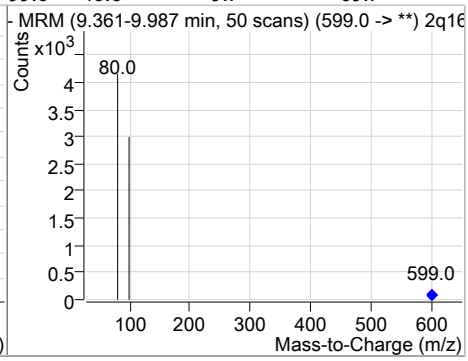




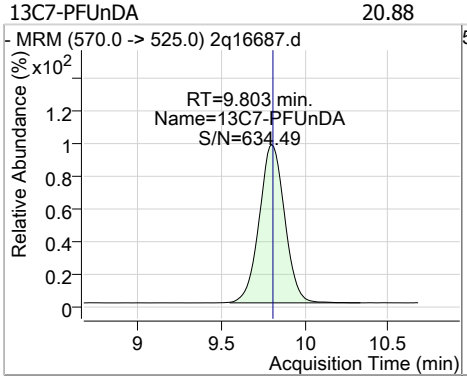
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	5.20	9.61	-0.01	1473	599.0 -> 99.0	40.6	9.7	69.7

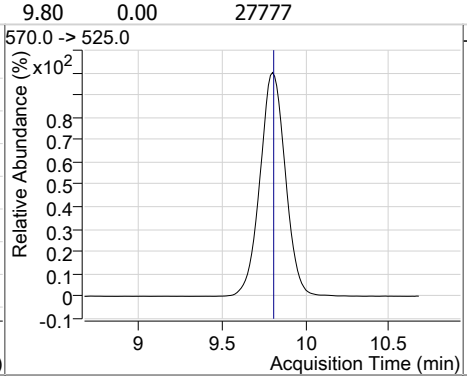


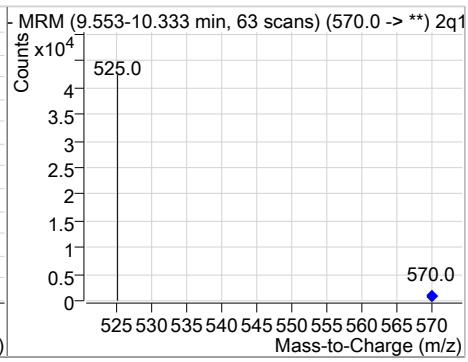




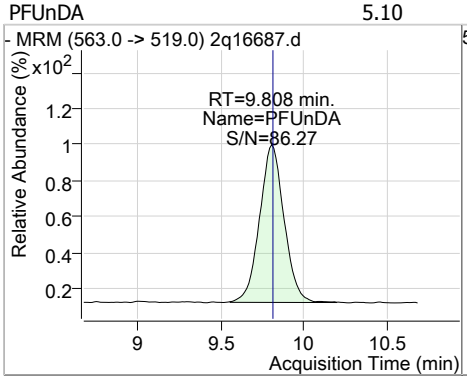
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.88	9.80	0.00	27777				

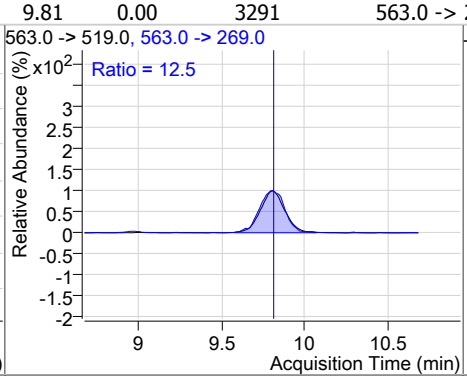


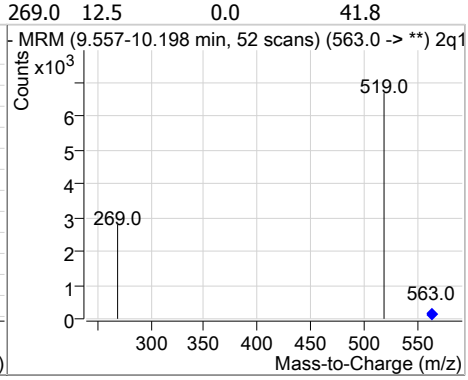




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	5.10	9.81	0.00	3291	563.0 -> 269.0	12.5	0.0	41.8

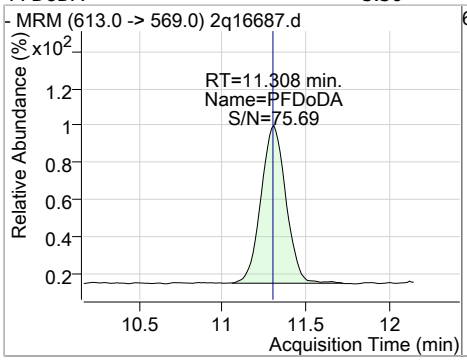


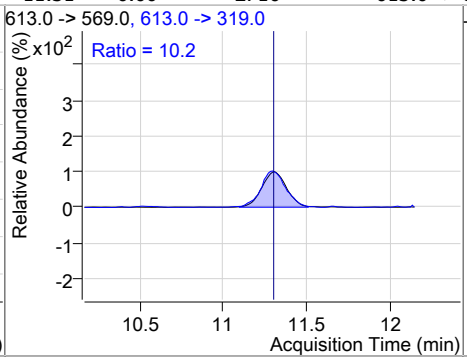


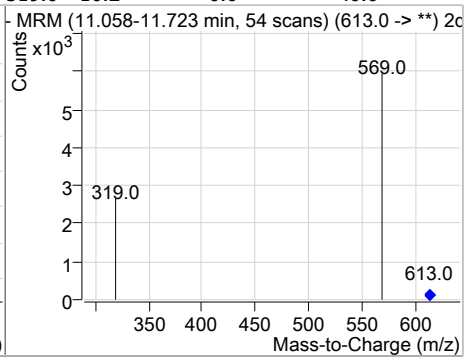


Perfluorinated Compounds by LC/MS/MS

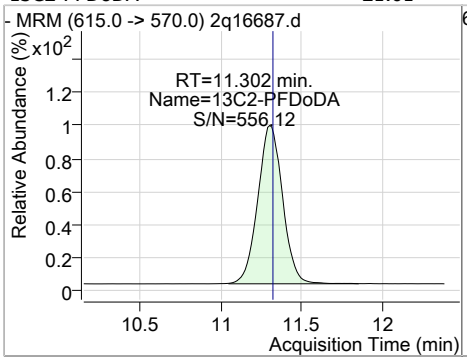
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	5.30	11.31	0.00	2716	613.0 -> 319.0	10.2	0.0	40.0

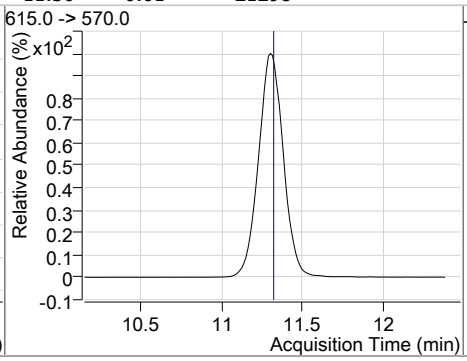


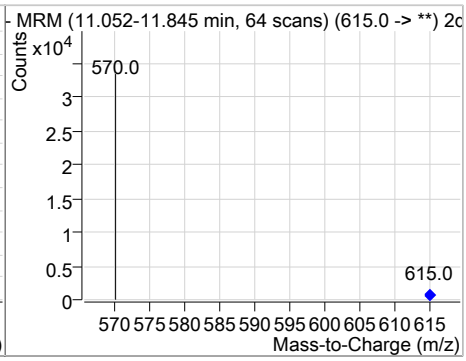




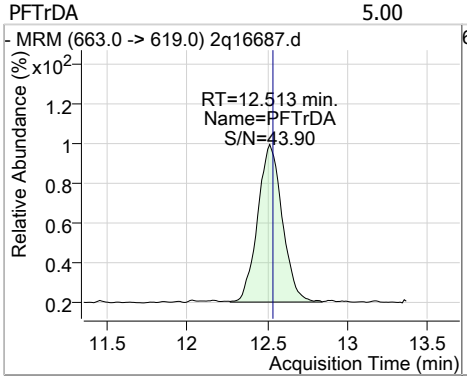
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.01	11.30	-0.01	21298				

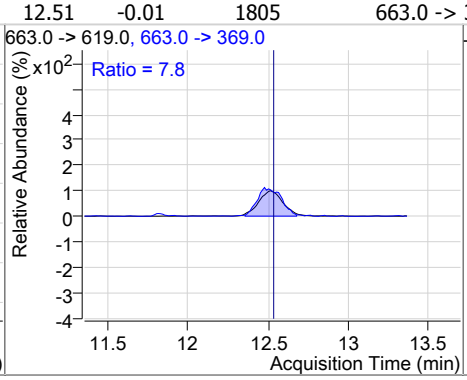


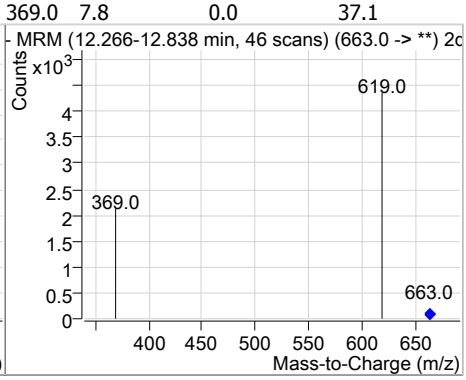




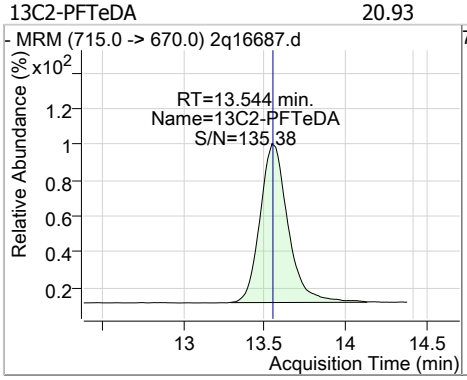
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	5.00	12.51	-0.01	1805	663.0 -> 369.0	7.8	0.0	37.1

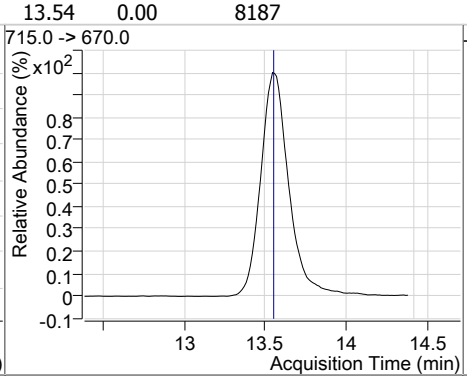


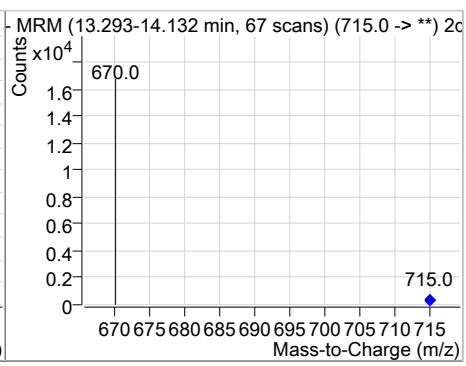




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.93	13.54	0.00	8187				

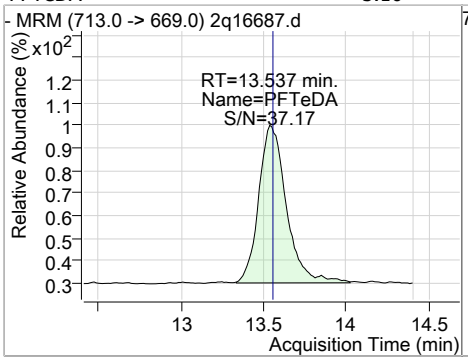


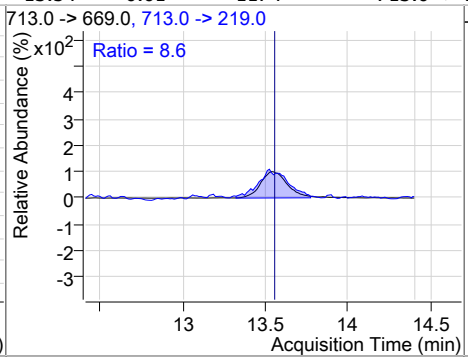


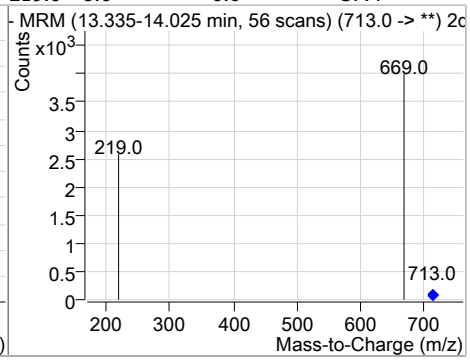


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	5.10	13.54	-0.01	1174	713.0 -> 219.0	8.6	0.0	37.4







7.5.17

7

Manual Integration Approval Summary

Sample Number:	S2Q292-IC292	**Method:**	EPA 537M QSM5.1 B-15
Lab FileID:	2Q16687.D	**Analyst approved:**	07/09/18 13:31 Natasha Gumtie
Injection Time:	07/07/18 09:45	**Supervisor approved:**	07/10/18 17:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.08	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.41	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/10/18 17:09

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16688.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/7/2018 10:05:10 AM
Sample Name : ic292-10
Vial : Vial 6
DA Method File : PFC_ID_070718_S2Q292.quantmethod.xml
Batch Name : s2q292.batch.bin
Sample Information : op70610,S2Q292,130,,,1.0,1,water

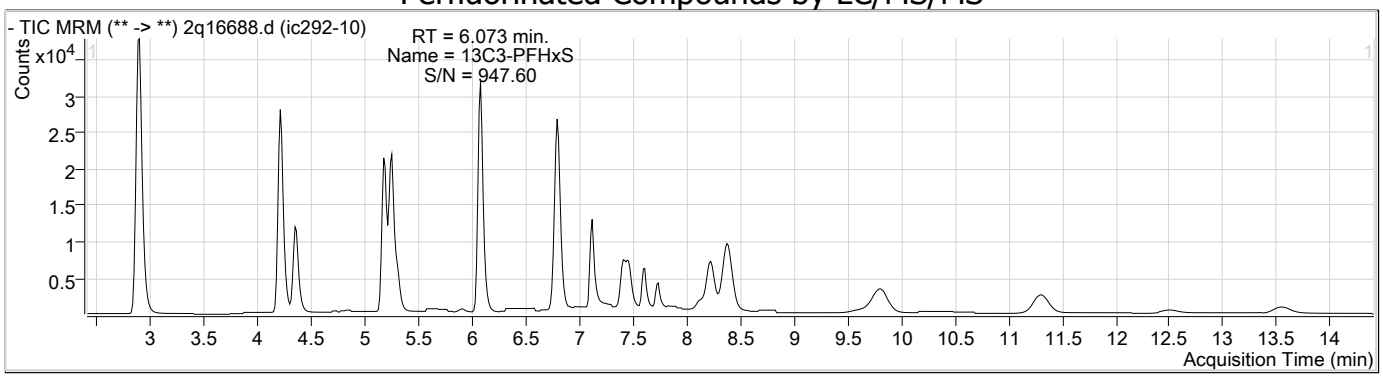
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.785	415.0 -> 370.0	17022	20.00	µg/L	-0.013
13C4-PFOS	7.410	503.0 -> 80.0	10123	20.00	µg/L	0.000
M4-PFBA	2.891	217.0 -> 172.0	143534	20.00	µg/L	0.000
M5-PFPeA	4.212	268.0 -> 223.0	66254	20.00	µg/L	0.000
M5-PFHxA	5.253	318.0 -> 273.0	59364	20.00	µg/L	0.000
M4-PFHpA	6.079	367.0 -> 322.0	56700	20.00	µg/L	0.000
M8-PFOA	6.796	421.0 -> 376.0	25262	20.00	µg/L	0.000
M9-PFNA	7.462	472.0 -> 427.0	16101	20.00	µg/L	0.000
M6-PFDA	8.230	519.0 -> 474.0	30413	20.00	µg/L	0.000
M7-PFUnDA	9.803	570.0 -> 525.0	27321	20.00	µg/L	0.000
M2-PFDoDA	11.302	615.0 -> 570.0	21140	20.00	µg/L	-0.013
M2-PFTeDA	13.544	715.0 -> 670.0	7941	20.00	µg/L	0.000
M8-FOSA	7.115	506.0 -> 78.0	28162	20.00	µg/L	0.000
M3-PFBS	4.355	302.0 -> 99.0	21743	20.00	µg/L	0.000
M3-PFHxS	6.073	402.0 -> 99.0	17830	20.00	µg/L	0.000
M8-PFOS	7.407	507.0 -> 99.0	8158	20.00	µg/L	0.000
M2-4:2FTS	5.172	329.0 -> 309.0	52611	20.00	µg/L	0.000
M2-6:2FTS	6.805	429.0 -> 409.0	34132	20.00	µg/L	0.000
M2-8:2FTS	8.374	529.0 -> 509.0	44958	20.00	µg/L	0.000
M3-MeFOSAA	7.594	573.0 -> 419.0	13616	20.00	µg/L	-0.013
System Monitoring Compounds						
13C2-4:2FTS	5.172	329.0 -> 309.0	52614	20.07	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.4%		
13C2-6:2FTS	6.805	429.0 -> 409.0	34129	20.11	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.5%		
13C2-8:2FTS	8.374	529.0 -> 509.0	44951	19.83	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.2%		
13C2-PFDoDA	11.302	615.0 -> 570.0	21141	20.86	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.3%		
13C2-PFTeDA	13.544	715.0 -> 670.0	7960	20.35	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.7%		
13C3-PFBS	4.355	302.0 -> 99.0	21753	20.78	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.9%		
13C3-PFHxS	6.073	402.0 -> 99.0	17849	20.93	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.6%		
13C4-PFBA	2.891	217.0 -> 172.0	143480	20.84	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.2%		
13C4-PFHpA	6.079	367.0 -> 322.0	56686	21.04	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.2%		
13C5-PFHxA	5.253	318.0 -> 273.0	59386	20.96	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.8%		
13C5-PFPeA	4.212	268.0 -> 223.0	66222	20.81	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.0%		
13C6-PFDA	8.230	519.0 -> 474.0	30441	21.60	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.0%		

Perfluorinated Compounds by LC/MS/MS

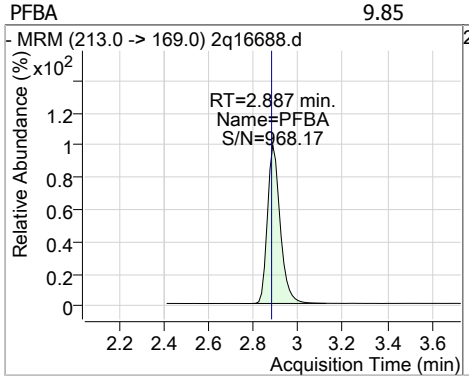
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	9.803	570.0 -> 525.0	27427	20.62	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.1%			
13C8-FOSA	7.115	506.0 -> 78.0	28174	21.24	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.2%			
13C8-PFOA	6.796	421.0 -> 376.0	25280	20.50	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%			
13C8-PFOS	7.407	507.0 -> 99.0	8157	20.66	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%			
13C9-PFNA	7.462	472.0 -> 427.0	16110	20.46	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%			
d3-MeFOSAA	7.594	573.0 -> 419.0	13613	20.61	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.1%			
M2-PFOA	6.785	415.0 -> 370.0	17019	20.00	ng/ml		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.410	503.0 -> 80.0	10114	19.99	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%			
Target Compounds							**QValue**
4:2FTS	5.175	327.0 -> 307.0	13249	9.81	µg/L		98
6:2FTS	6.807	427.0 -> 407.0	8452	9.91	µg/L		99
8:2FTS	8.376	527.0 -> 507.0	12147	9.93	µg/L		99
EtFOSAA	7.731	584.0 -> 419.0	2108	10.83	µg/L		90
FOSA	7.118	498.0 -> 78.0	6685	9.78	µg/L		99
MeFOSAA	7.608	570.0 -> 419.0	2393	9.75	µg/L		97
PFBA	2.887	213.0 -> 169.0	11123	9.85	µg/L		100
PFBS	4.346	299.0 -> 80.0	14295	9.84	µg/L		99
PFDA	8.219	513.0 -> 469.0	5320	9.84	µg/L		100
PFDoDA	11.296	613.0 -> 569.0	5247	10.29	µg/L		100
PFDS	9.612	599.0 -> 80.0	2937	10.55	µg/L		97
PFHpA	6.082	363.0 -> 319.0	19979	9.85	µg/L		100
PFHpS	6.753	449.0 -> 80.0	4507	9.75	µg/L		100
PFHxA	5.255	313.0 -> 269.0	9204	9.63	µg/L		100
PFHxS	6.076	399.0 -> 80.0	9631	9.72	µg/L	m	99
PFNA	7.464	463.0 -> 419.0	3040	10.04	µg/L		97
PFNS	8.124	549.0 -> 80.0	3985	10.67	µg/L		100
PFOA	6.786	413.0 -> 369.0	6706	10.50	µg/L		99
PFOS	7.410	499.0 -> 80.0	5011	10.30	µg/L	m	97
PFPeA	4.216	263.0 -> 219.0	32326	10.00	µg/L		100
PFPeS	5.295	349.0 -> 80.0	8572	9.90	µg/L		100
PFTeDA	13.537	713.0 -> 669.0	2443	10.88	µg/L		98
PFTrDA	12.513	663.0 -> 619.0	3831	10.88	µg/L		100
PFUnDA	9.808	563.0 -> 519.0	6573	10.36	µg/L		98

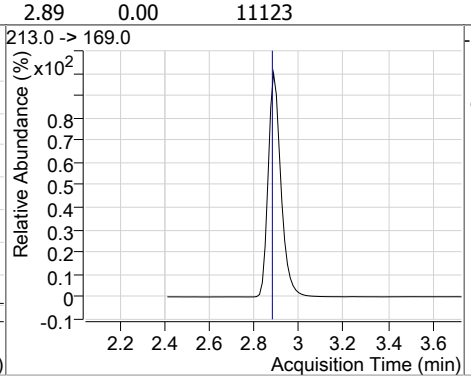
 # = Qualifier out of range, m = manually integrated, + = Area summed

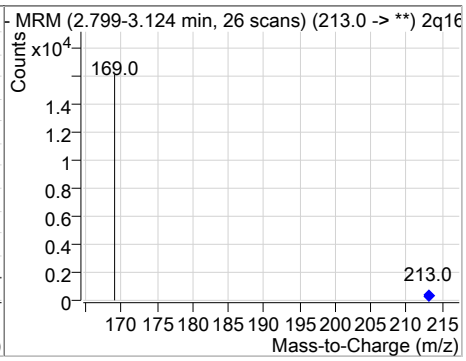
Perfluorinated Compounds by LC/MS/MS



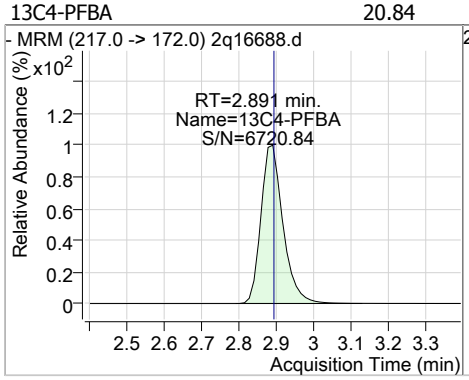
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	9.85	2.89	0.00	11123				

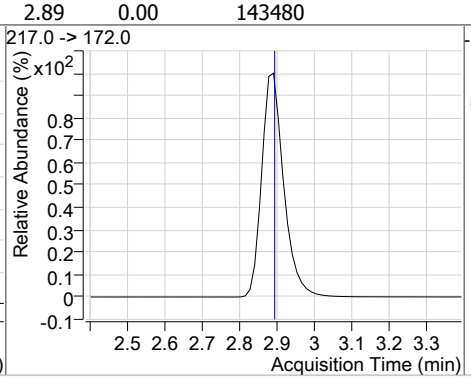


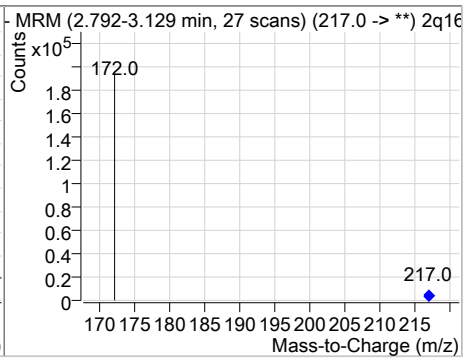




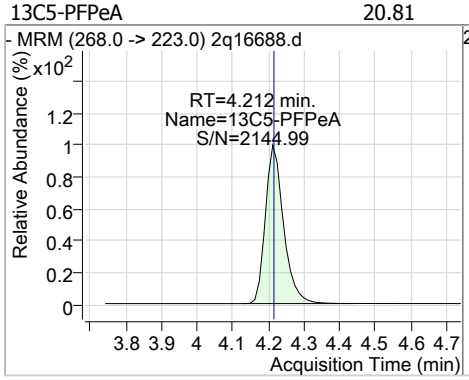
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.84	2.89	0.00	143480				

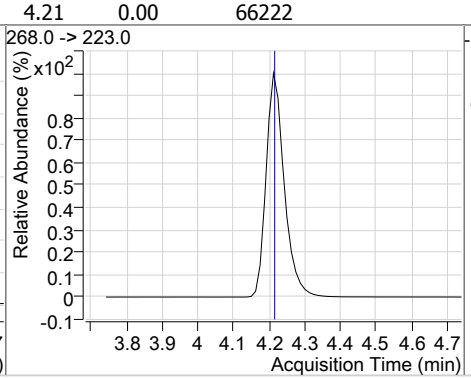


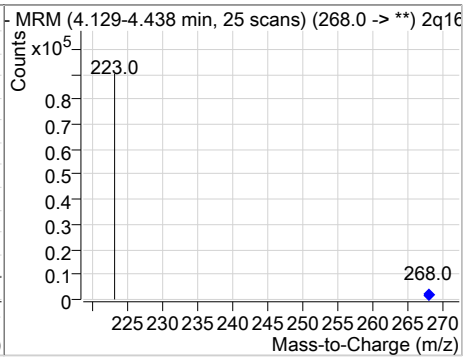




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.81	4.21	0.00	66222				

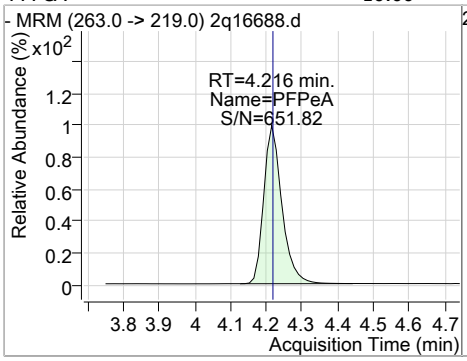


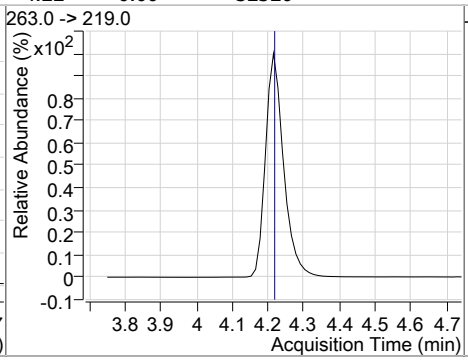


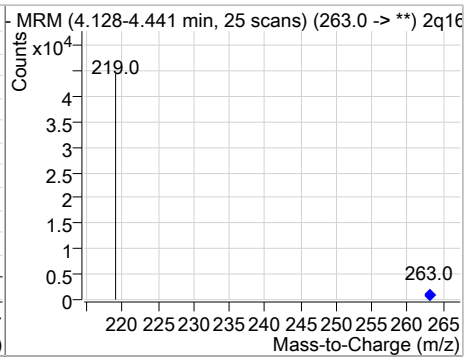


Perfluorinated Compounds by LC/MS/MS

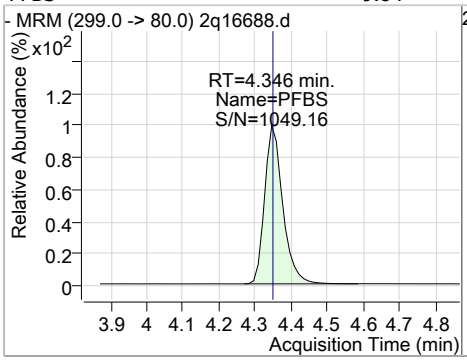
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	10.00	4.22	0.00	32326				

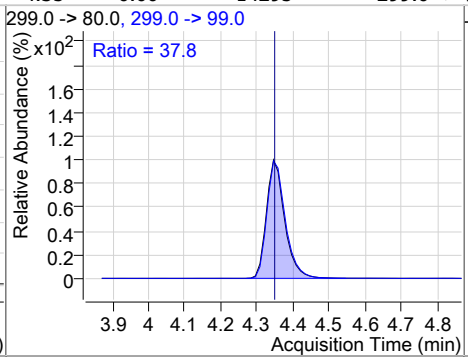


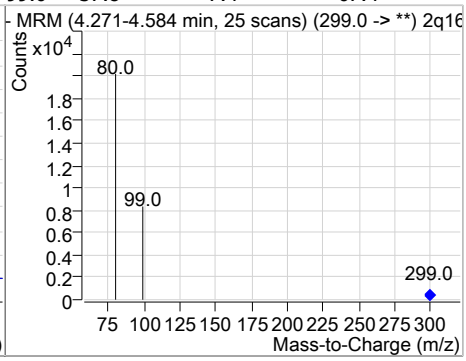




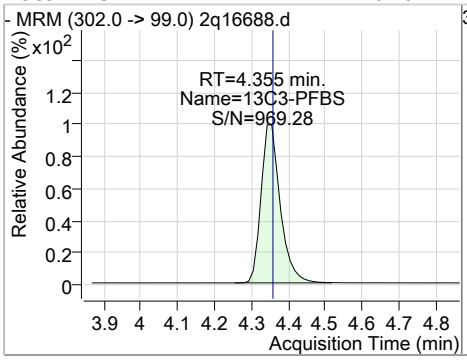
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	9.84	4.35	0.00	14295	299.0 -> 99.0	37.8	7.4	67.4

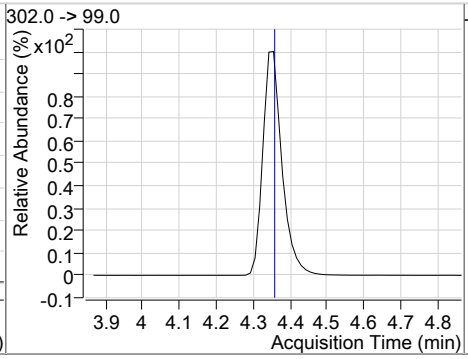


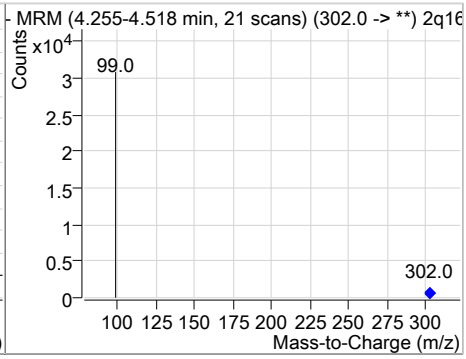




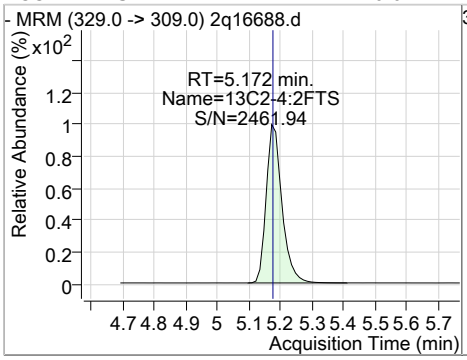
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.78	4.36	0.00	21753				

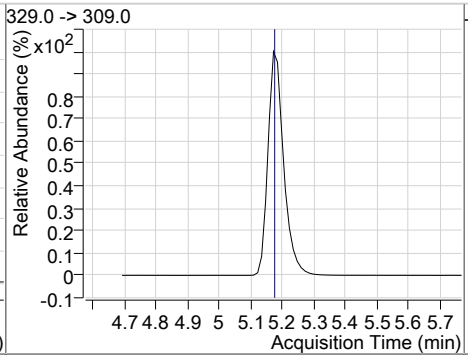


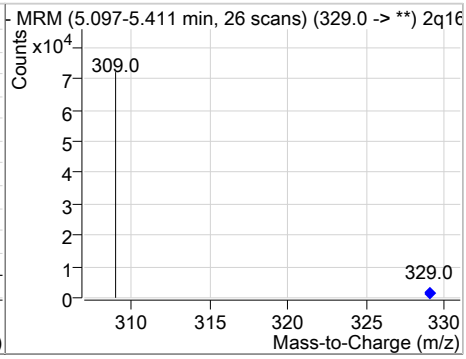




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.07	5.17	0.00	52614				

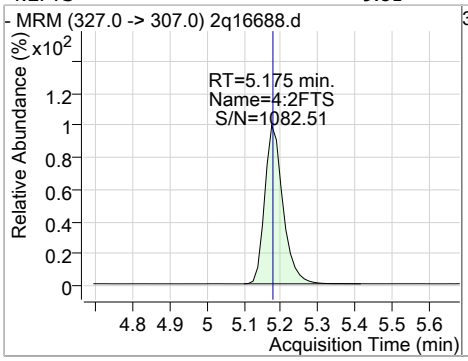


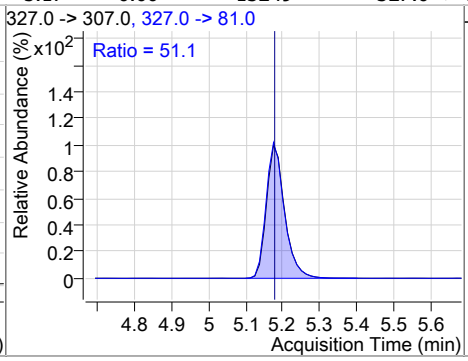


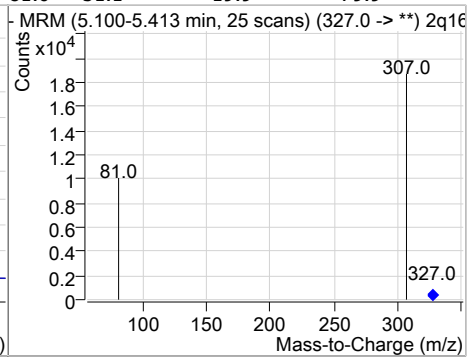


Perfluorinated Compounds by LC/MS/MS

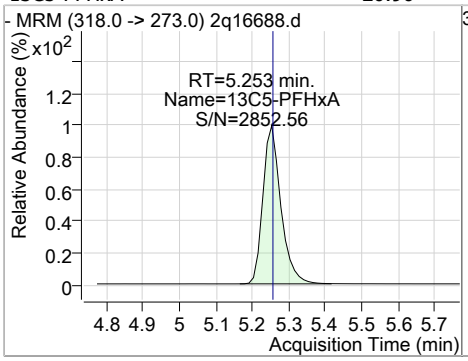
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	9.81	5.17	0.00	13249	327.0 -> 81.0	51.1	19.9	79.9

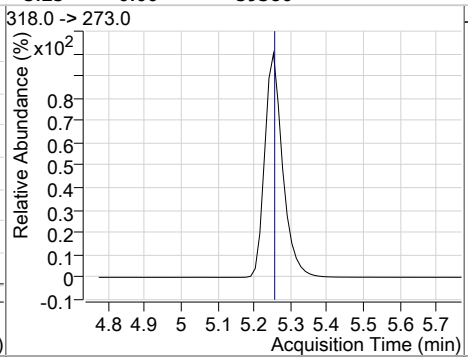


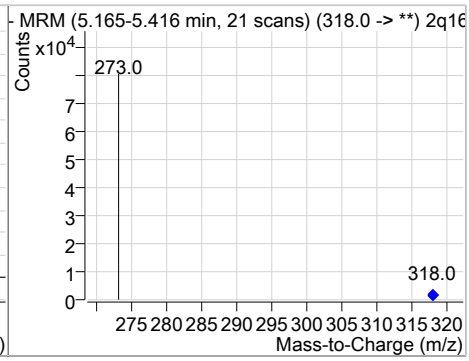




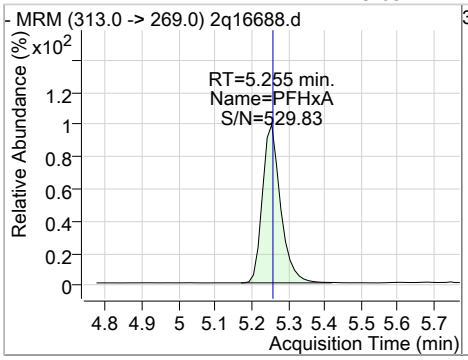
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.96	5.25	0.00	59386				

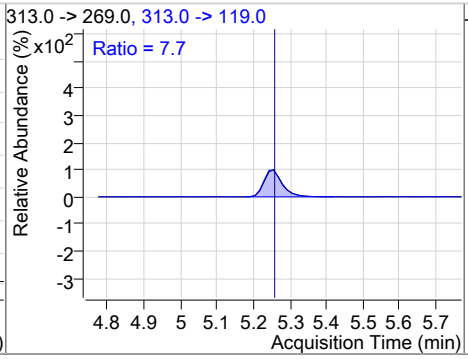


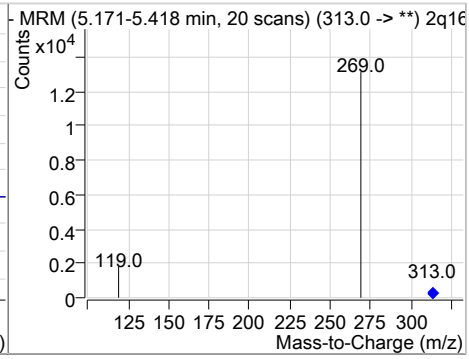




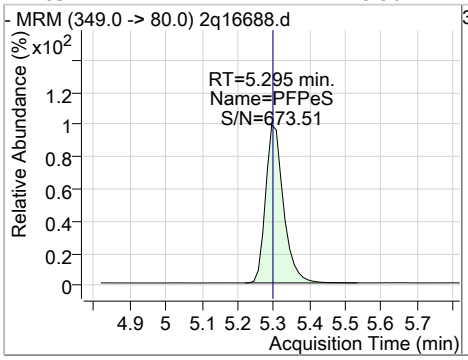
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	9.63	5.26	0.00	9204	313.0 -> 119.0	7.7	0.0	37.6

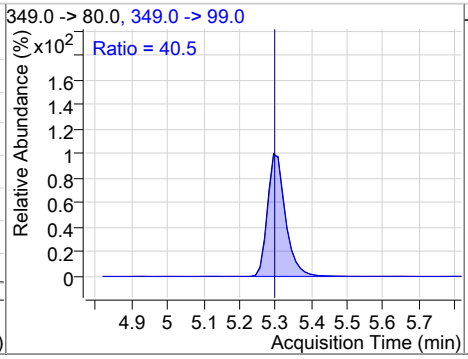


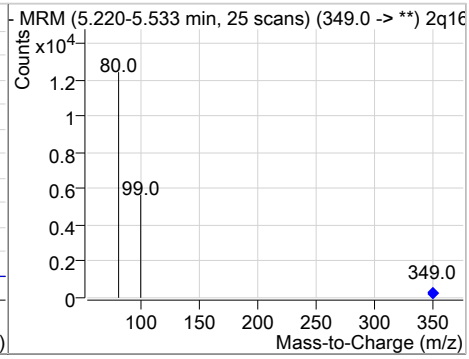




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	9.90	5.30	0.00	8572	349.0 -> 99.0	40.5	10.8	70.8

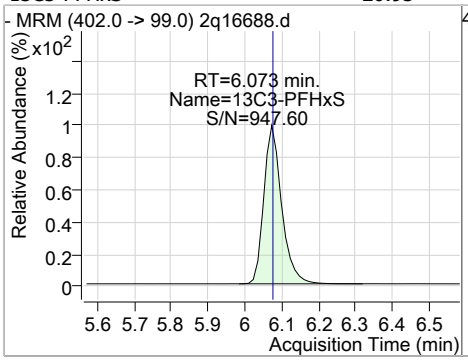


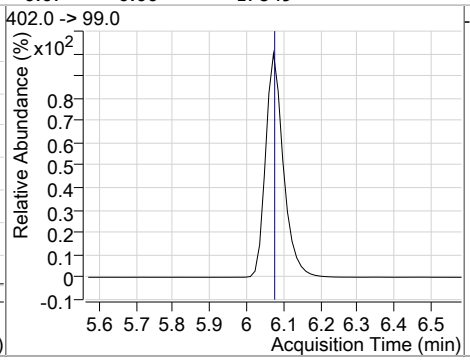


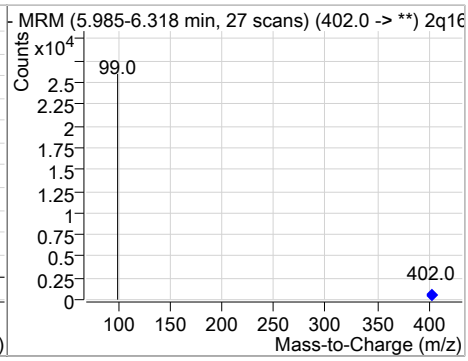


Perfluorinated Compounds by LC/MS/MS

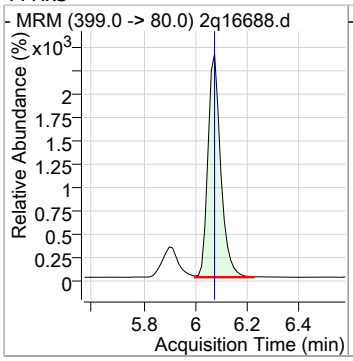
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.93	6.07	0.00	17849				

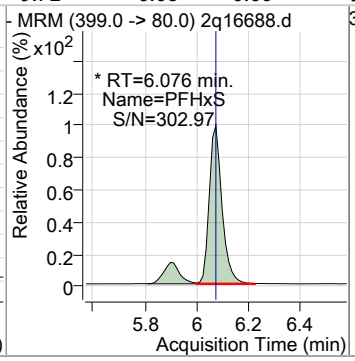


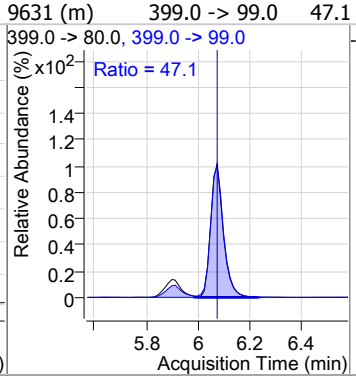


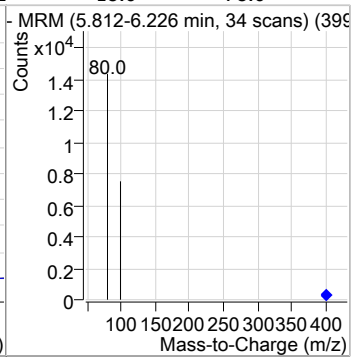


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	9.72	6.08	0.00	9631 (m)	399.0 -> 99.0	47.1	18.0	78.0

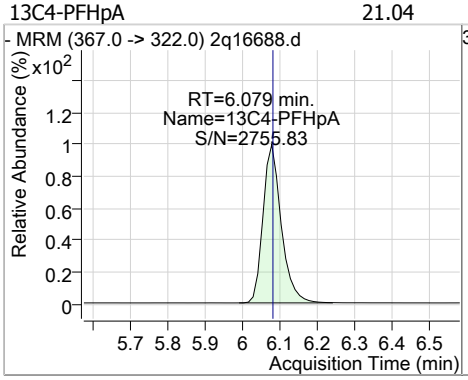


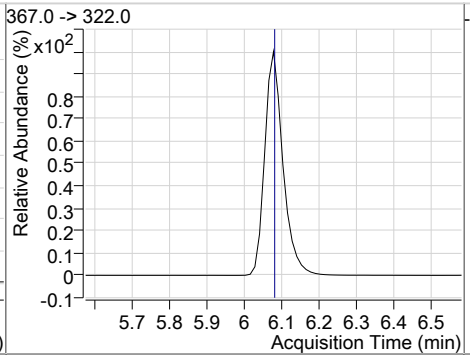


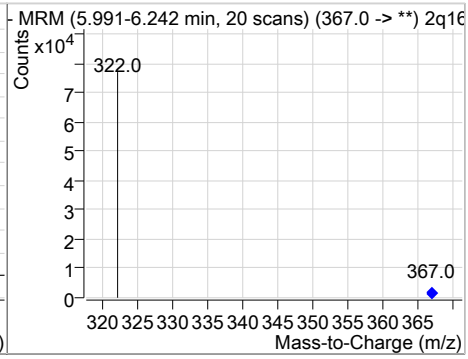




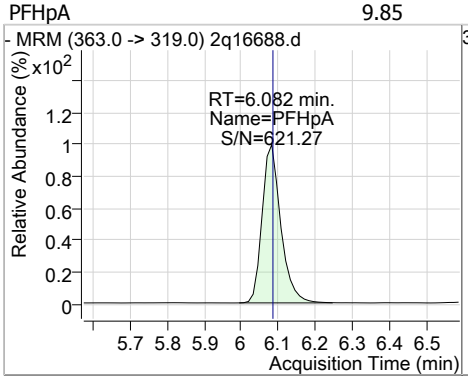
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.04	6.08	0.00	56686				

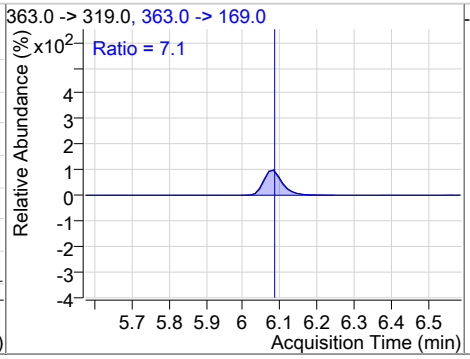


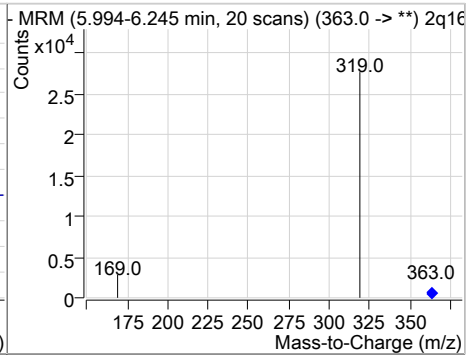




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	9.85	6.08	0.00	19979	363.0 -> 169.0	7.1	0.0	37.2

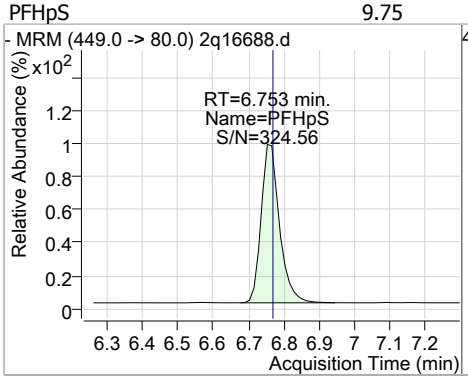


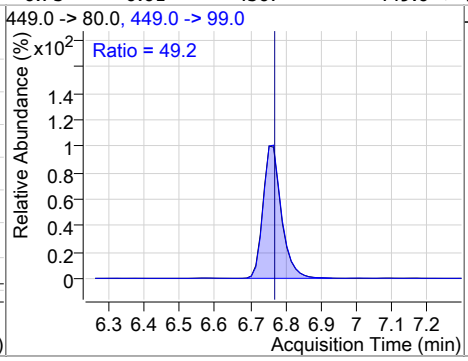


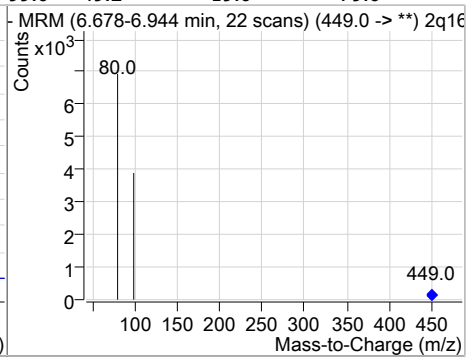


Perfluorinated Compounds by LC/MS/MS

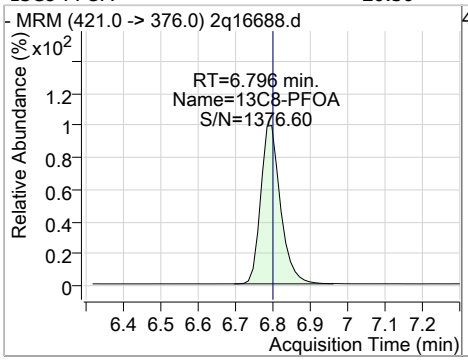
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	9.75	6.75	-0.01	4507	449.0 -> 99.0	49.2	19.0	79.0

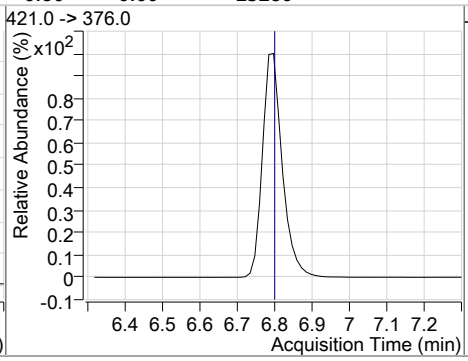


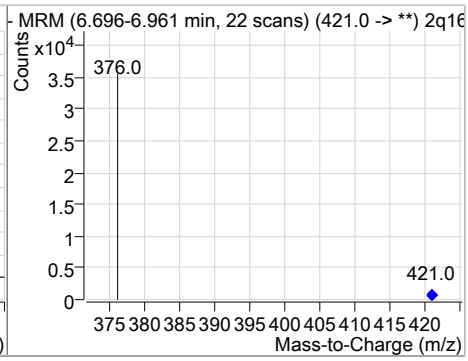




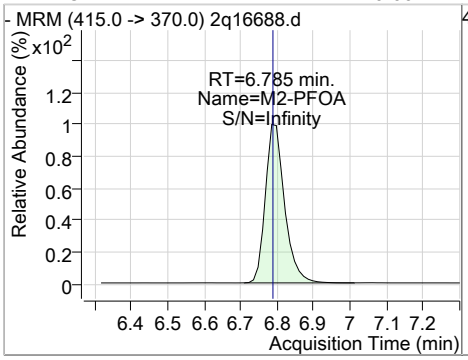
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.50	6.80	0.00	25280				

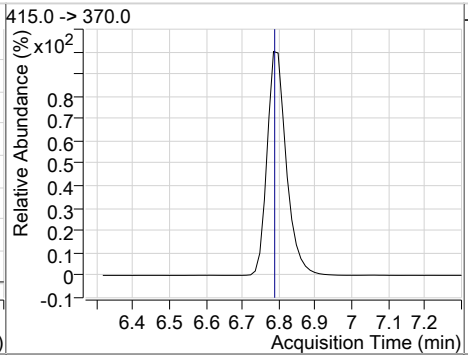


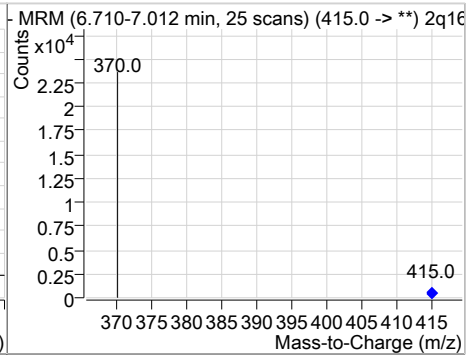




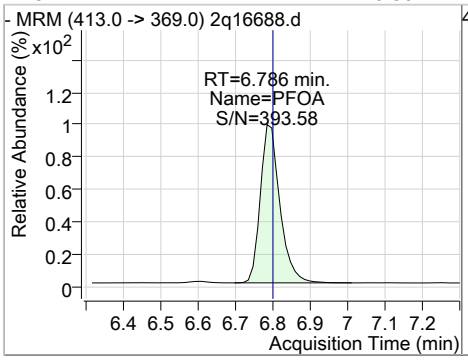
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.79	-0.01	17019				

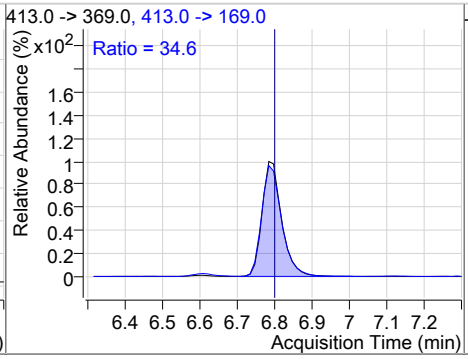


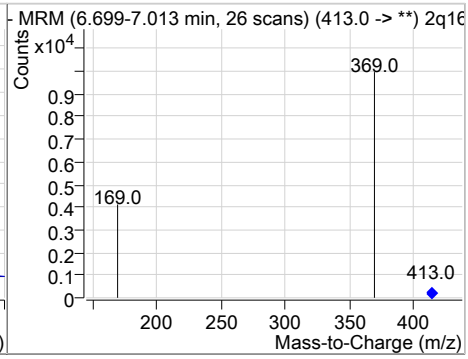




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	10.50	6.79	-0.01	6706	413.0 -> 169.0	34.6	5.0	65.0

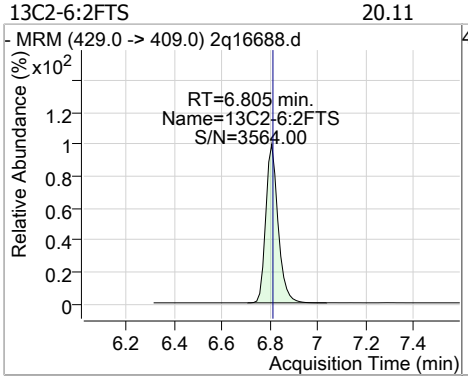


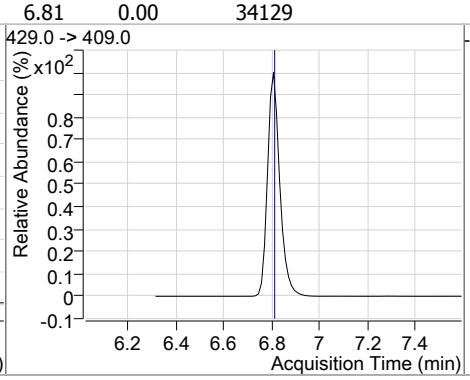


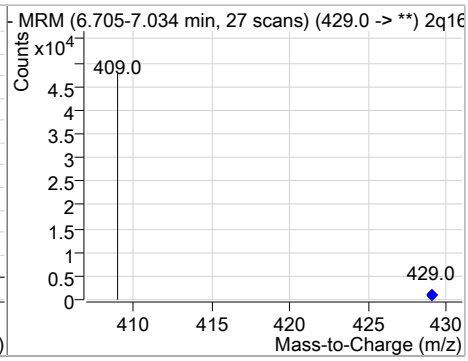


Perfluorinated Compounds by LC/MS/MS

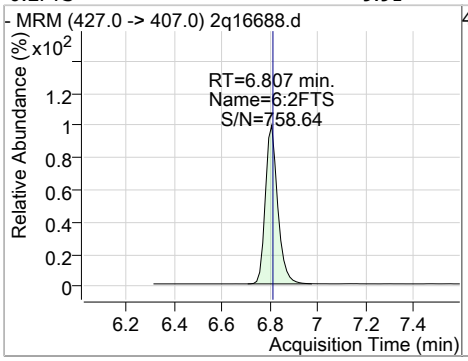
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.11	6.81	0.00	34129				

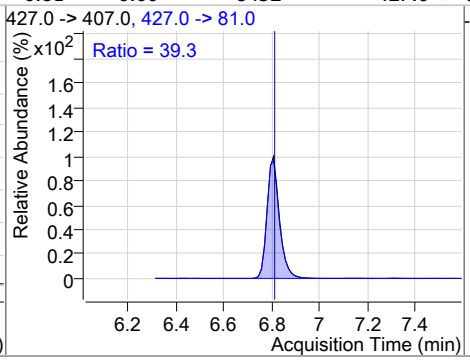


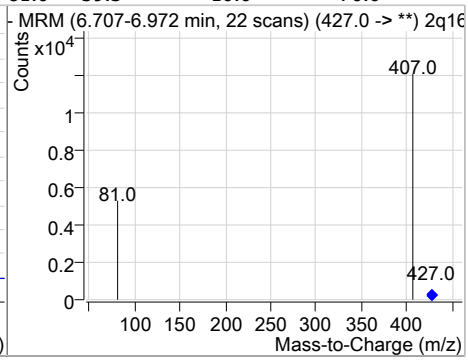




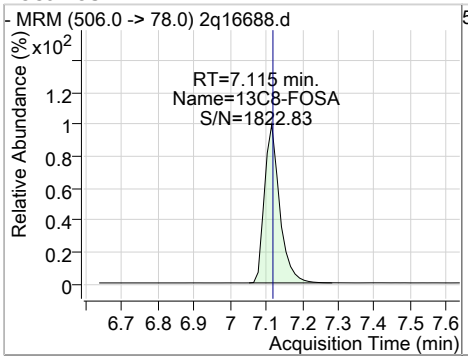
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	9.91	6.81	0.00	8452	427.0 -> 81.0	39.3	10.0	70.0

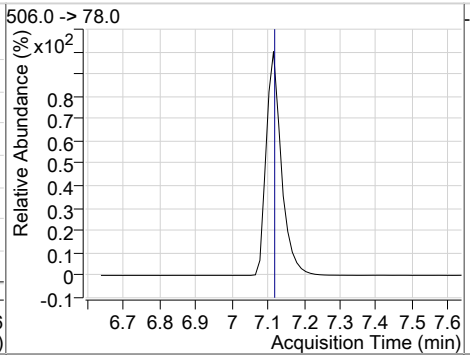


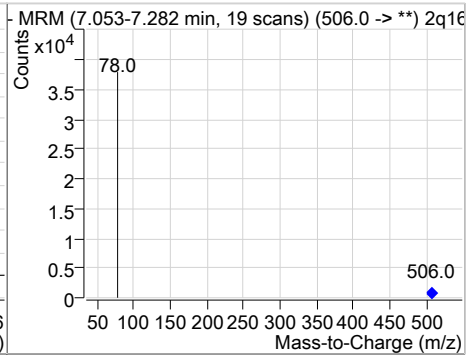




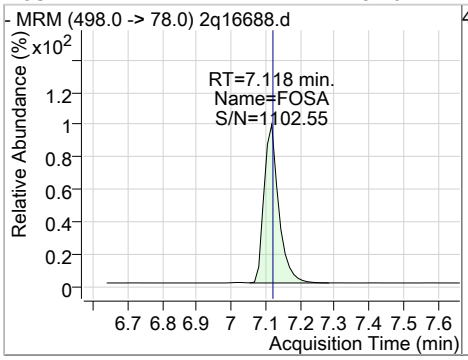
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.24	7.12	0.00	28174				

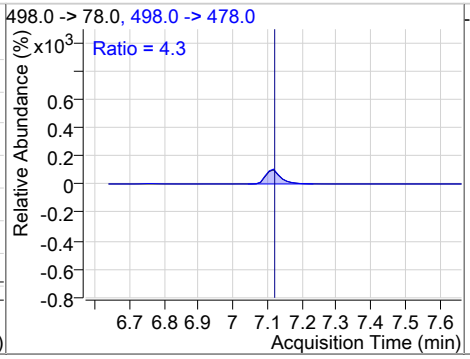


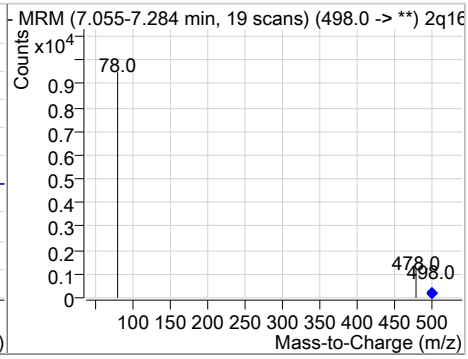




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	9.78	7.12	0.00	6685	498.0 -> 478.0	4.3	0.0	34.0

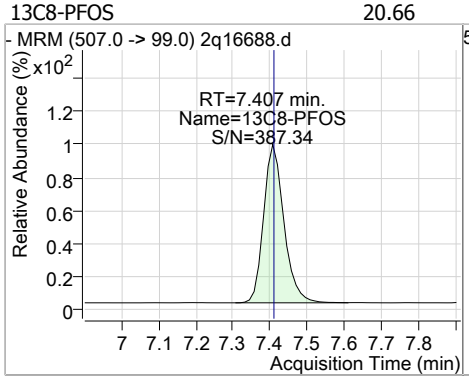


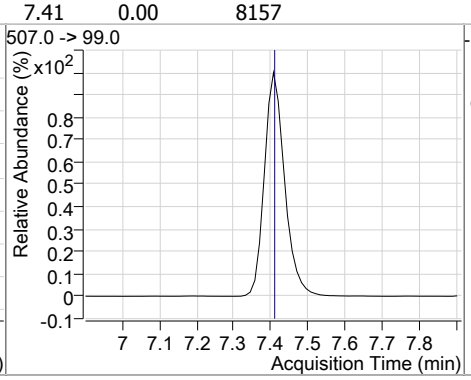


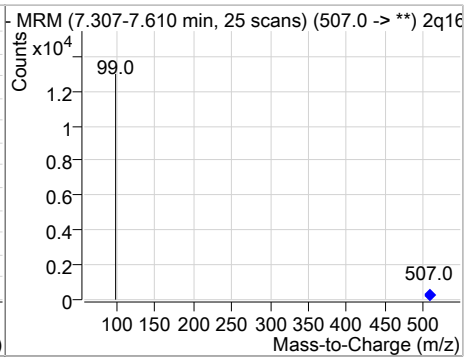


Perfluorinated Compounds by LC/MS/MS

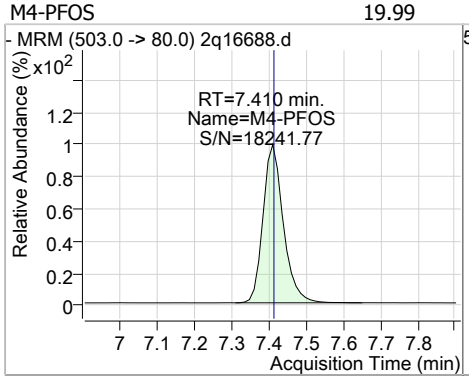
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.66	7.41	0.00	8157				

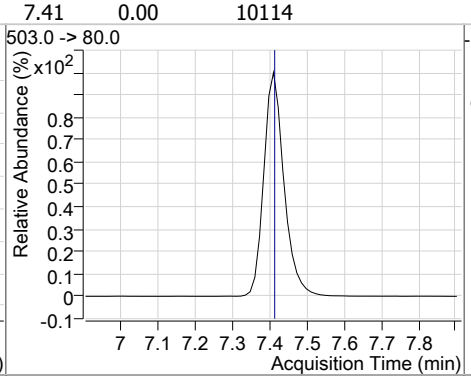


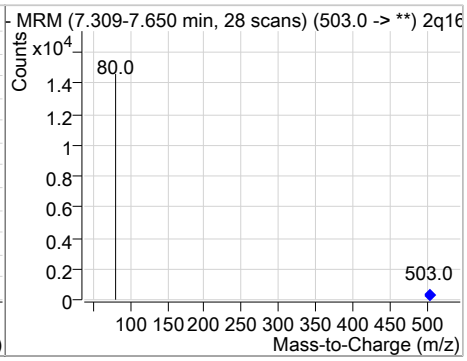




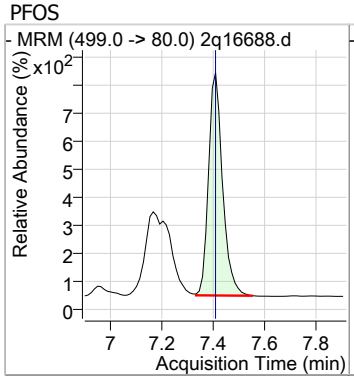
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	19.99	7.41	0.00	10114				

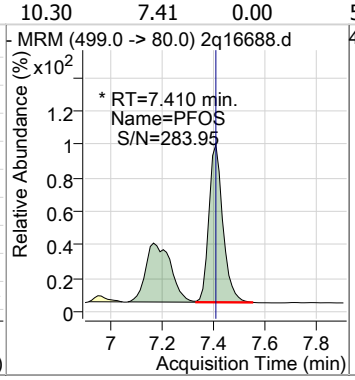


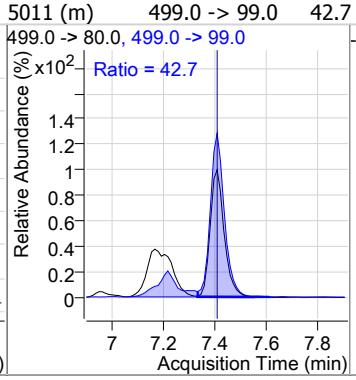


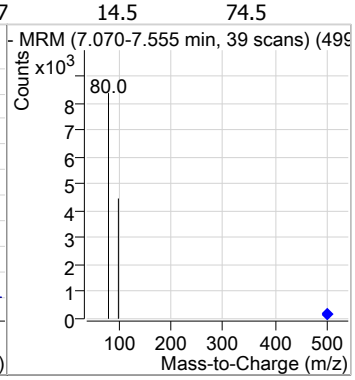


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	10.30	7.41	0.00	5011 (m)	499.0 -> 99.0	42.7	14.5	74.5

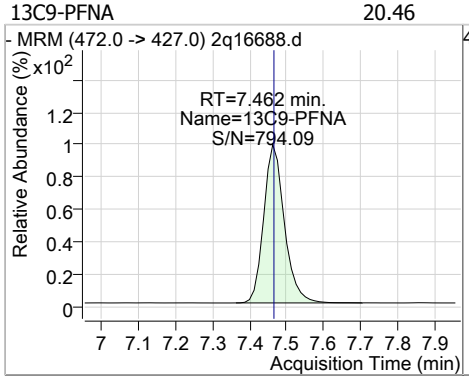


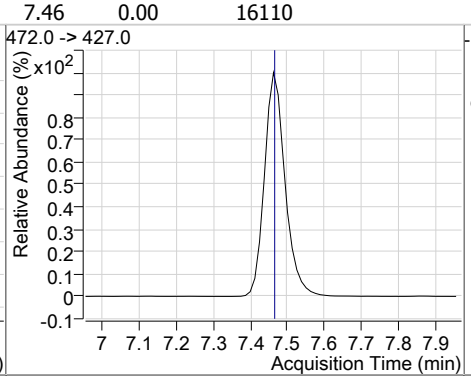


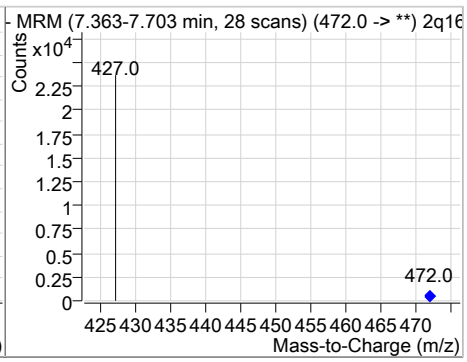




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.46	7.46	0.00	16110				

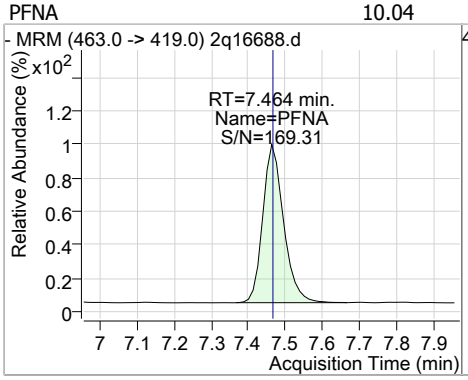


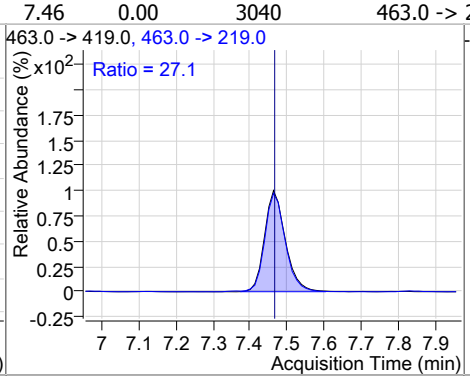


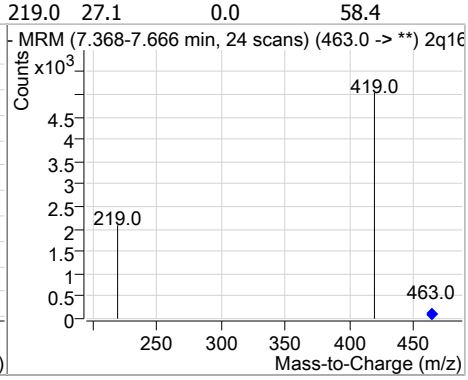


Perfluorinated Compounds by LC/MS/MS

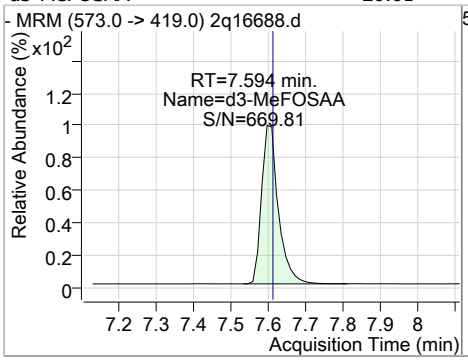
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	10.04	7.46	0.00	3040	463.0 -> 219.0	27.1	0.0	58.4

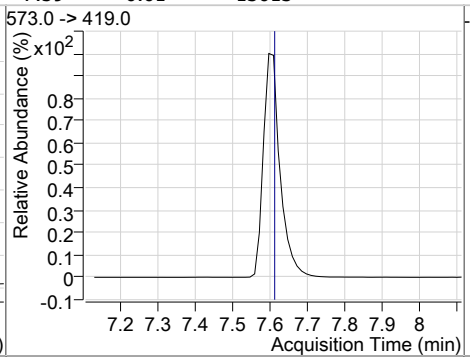


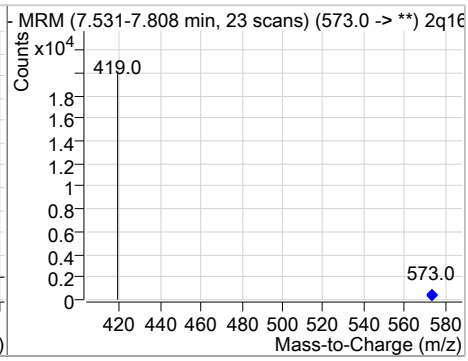




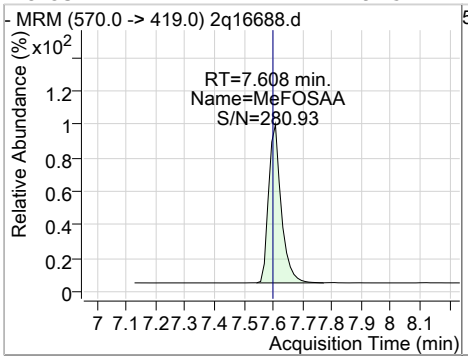
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.61	7.59	-0.01	13613				

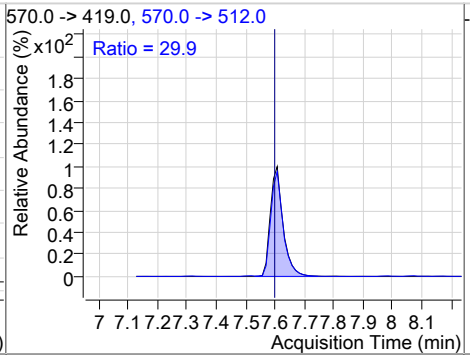


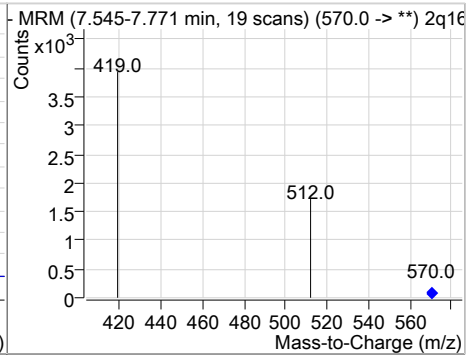




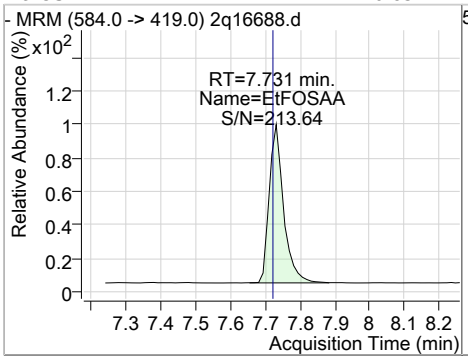
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	9.75	7.61	0.00	2393	570.0 -> 512.0	29.9	1.8	61.8

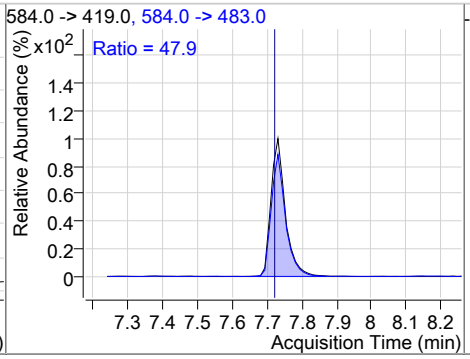


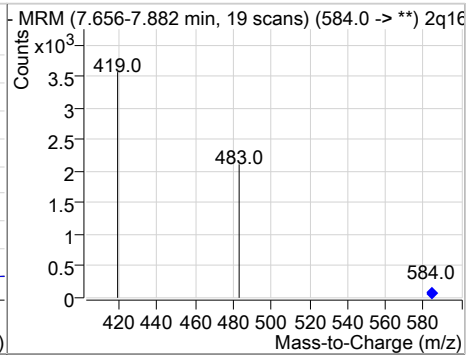




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	10.83	7.73	0.00	2108	584.0 -> 483.0	47.9	24.8	84.8

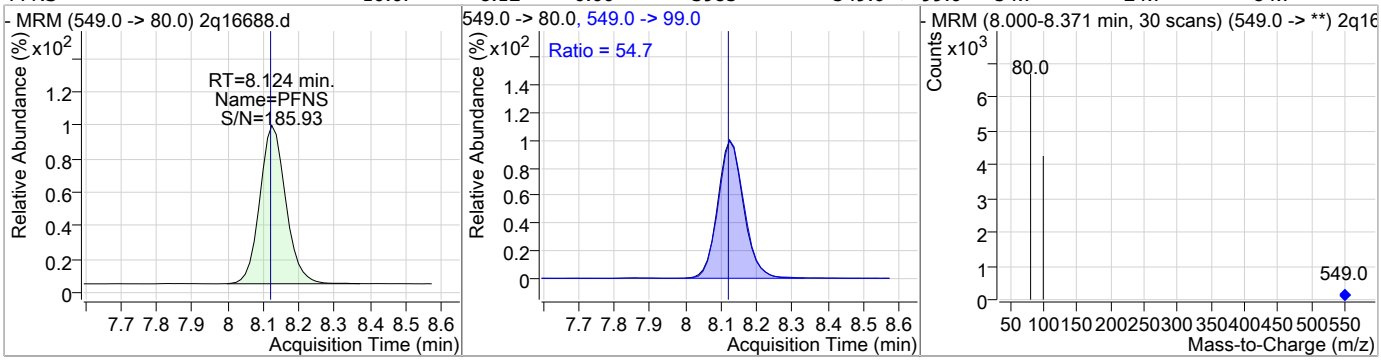




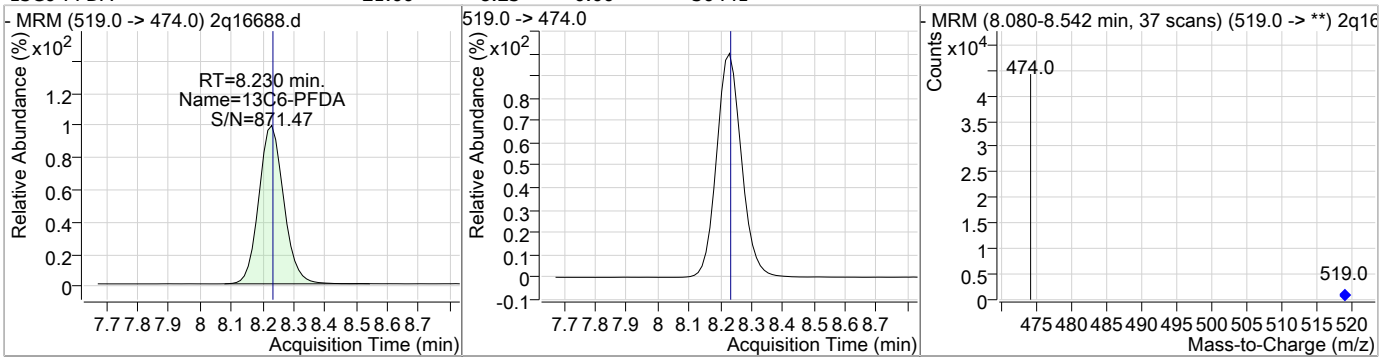


Perfluorinated Compounds by LC/MS/MS

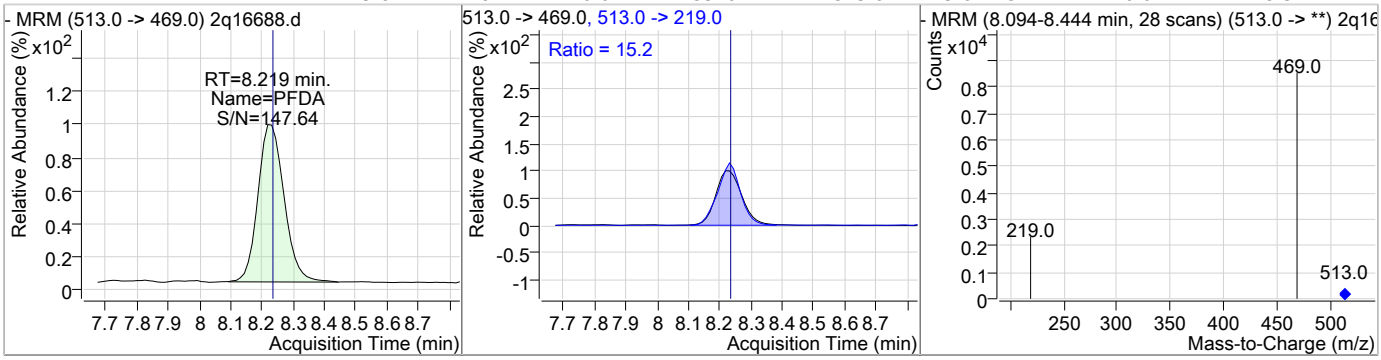
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	10.67	8.12	0.00	3985	549.0 -> 99.0	54.7	24.7	84.7



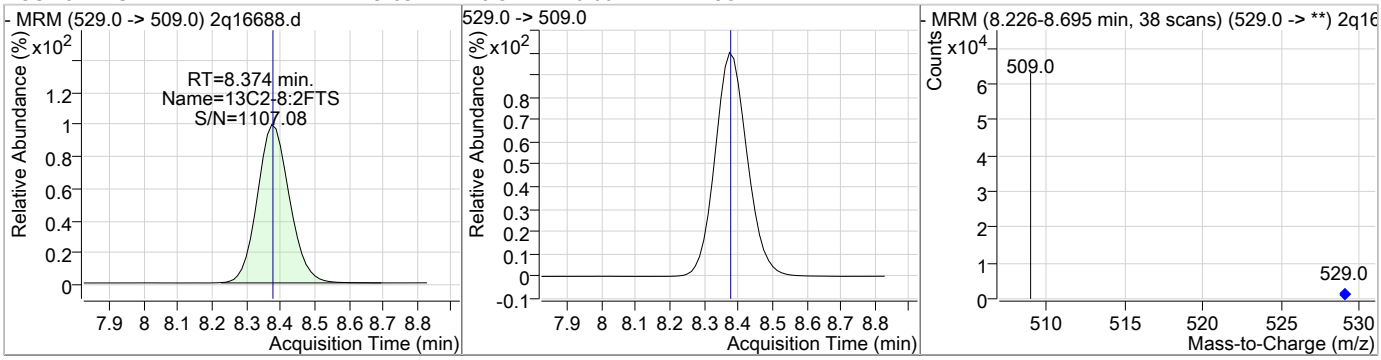
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.60	8.23	0.00	30441				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	9.84	8.22	-0.01	5320	513.0 -> 219.0	15.2	0.0	45.3

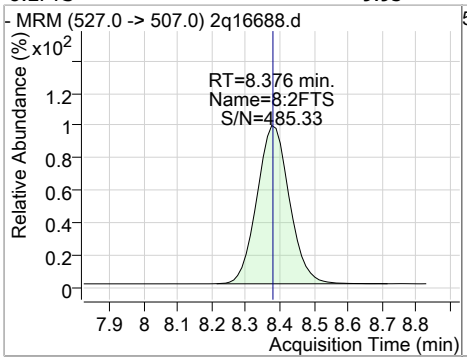


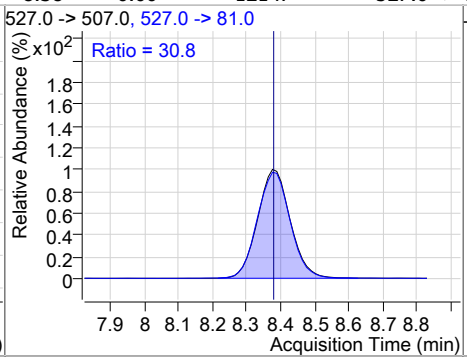
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.83	8.37	0.00	44951				

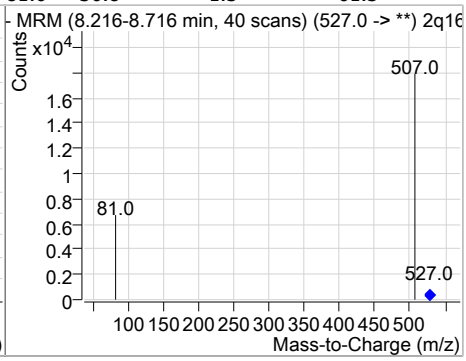


Perfluorinated Compounds by LC/MS/MS

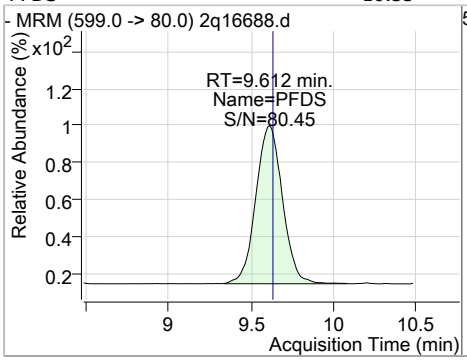
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	9.93	8.38	0.00	12147	527.0 -> 81.0	30.8	1.3	61.3

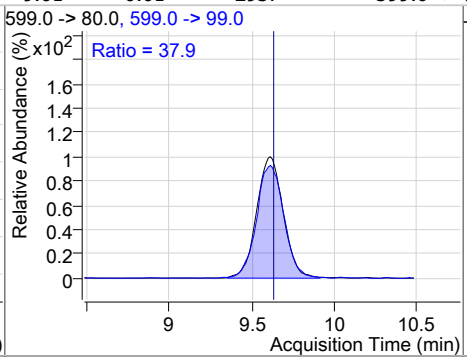


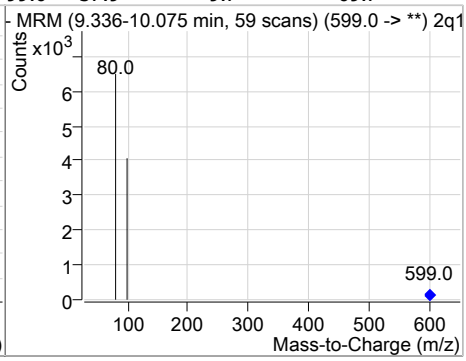




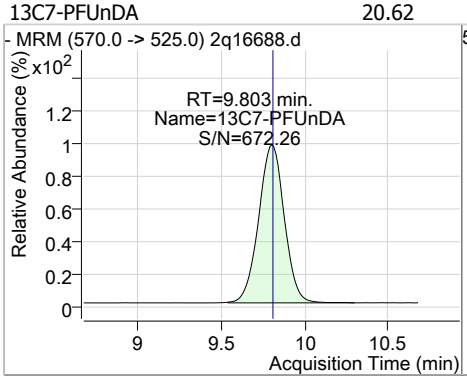
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	10.55	9.61	-0.01	2937	599.0 -> 99.0	37.9	9.7	69.7

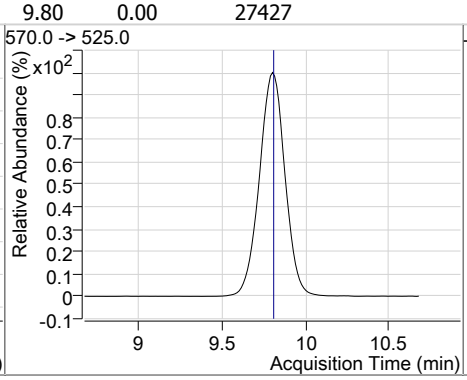


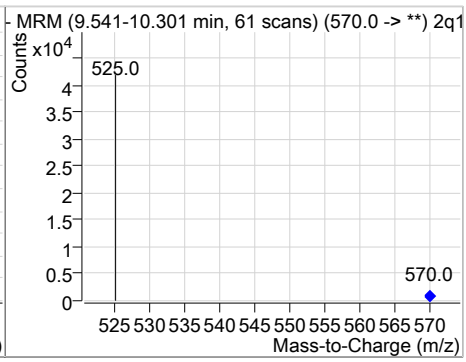




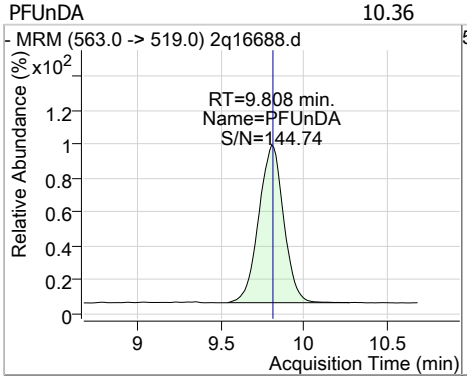
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.62	9.80	0.00	27427				

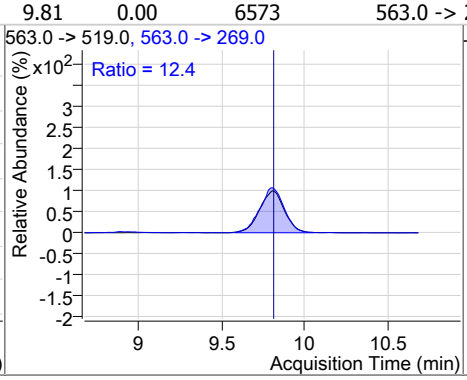


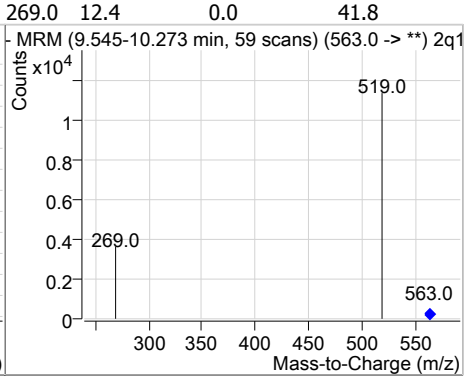




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	10.36	9.81	0.00	6573	563.0 -> 269.0	12.4	0.0	41.8

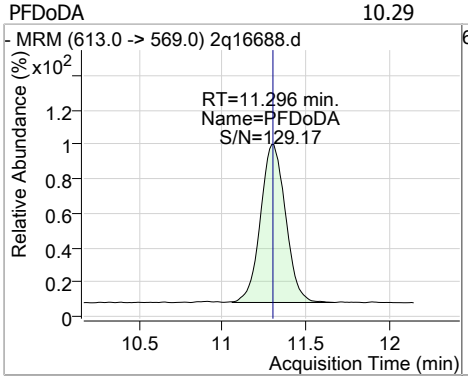


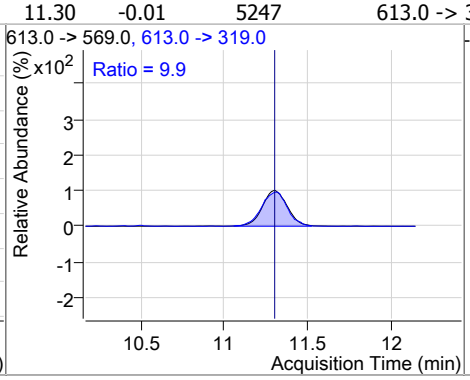


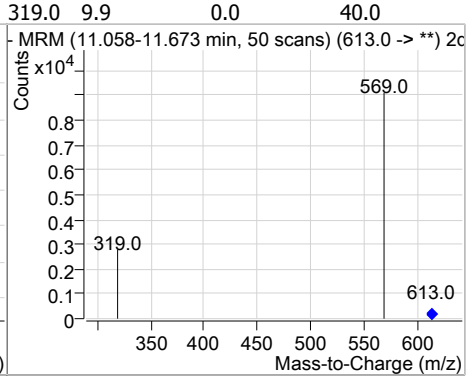


Perfluorinated Compounds by LC/MS/MS

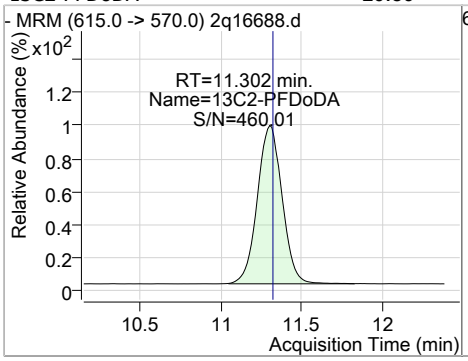
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	10.29	11.30	-0.01	5247	613.0 -> 319.0	9.9	0.0	40.0

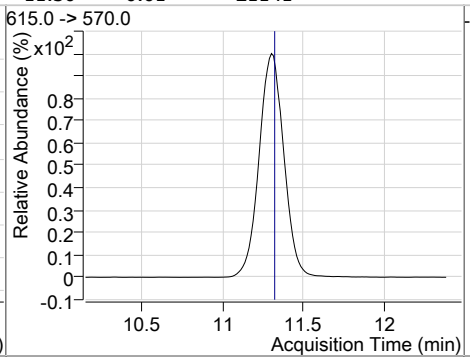


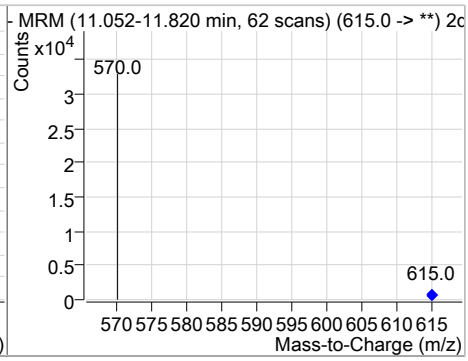




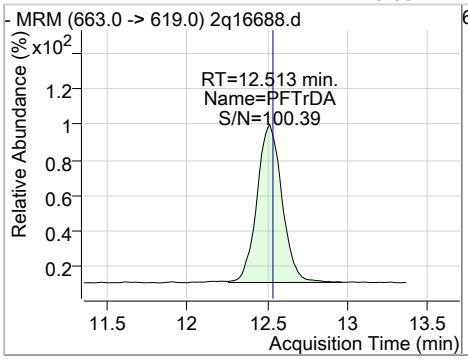
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.86	11.30	-0.01	21141				

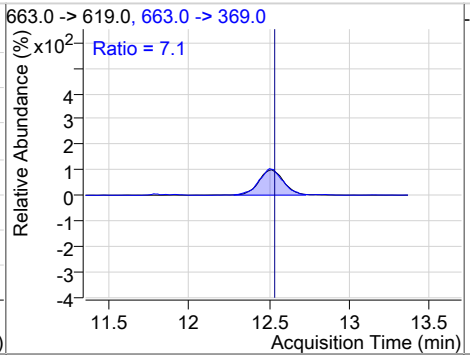


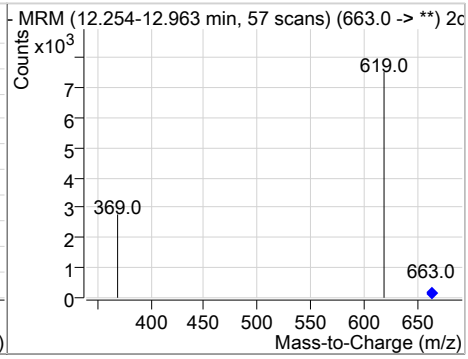




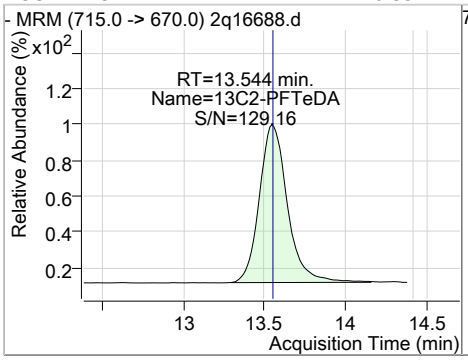
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	10.88	12.51	-0.01	3831	663.0 -> 369.0	7.1	0.0	37.1

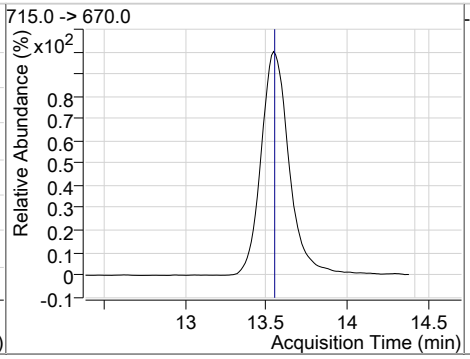


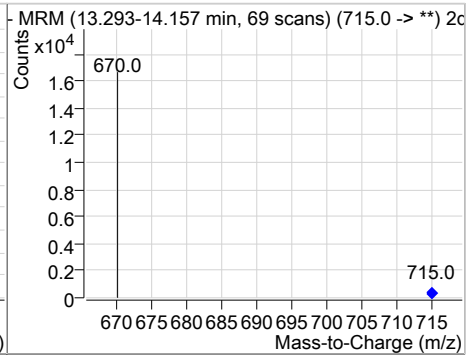




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.35	13.54	0.00	7960				

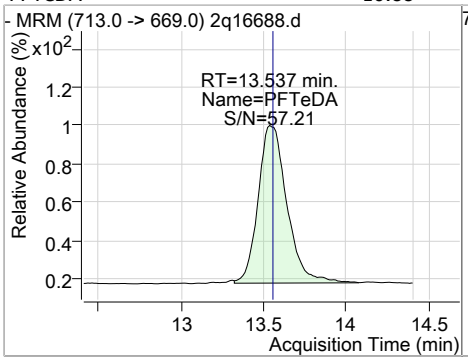


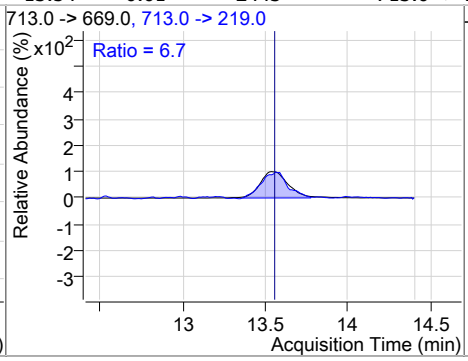


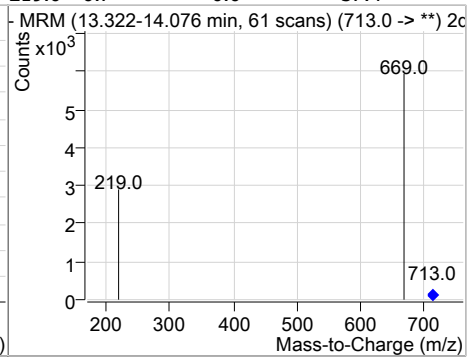


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	10.88	13.54	-0.01	2443	713.0 -> 219.0	6.7	0.0	37.4







Manual Integration Approval Summary

Sample Number:	S2Q292-IC292	**Method:**	EPA 537M QSM5.1 B-15
Lab FileID:	2Q16688.D	**Analyst approved:**	07/09/18 13:31 Natasha Gumtie
Injection Time:	07/07/18 10:05	**Supervisor approved:**	07/10/18 17:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.08	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.41	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/10/18 17:09

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16689.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/7/2018 10:24:54 AM
Sample Name : icc292-20
Vial : Vial 7
DA Method File : PFC_ID_070718_S2Q292.quantmethod.xml
Batch Name : s2q292.batch.bin
Sample Information : op70610,S2Q292,130,,,1.0,1,water

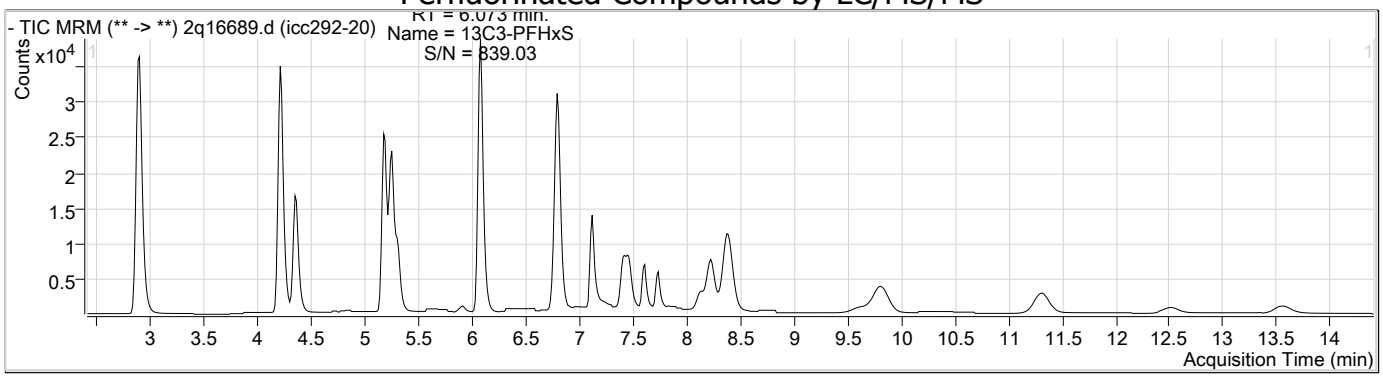
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.798	415.0 -> 370.0	15081	20.00	µg/L	0.000
13C4-PFOS	7.410	503.0 -> 80.0	8894	20.00	µg/L	0.000
M4-PFBA	2.891	217.0 -> 172.0	126365	20.00	µg/L	0.000
M5-PFPeA	4.212	268.0 -> 223.0	58595	20.00	µg/L	0.000
M5-PFHxA	5.253	318.0 -> 273.0	51659	20.00	µg/L	0.000
M4-PFHpA	6.079	367.0 -> 322.0	49399	20.00	µg/L	0.000
M8-PFOA	6.796	421.0 -> 376.0	23129	20.00	µg/L	0.000
M9-PFNA	7.462	472.0 -> 427.0	14737	20.00	µg/L	0.000
M6-PFDA	8.230	519.0 -> 474.0	26326	20.00	µg/L	0.000
M7-PFUnDA	9.803	570.0 -> 525.0	24640	20.00	µg/L	0.000
M2-PFDoDA	11.315	615.0 -> 570.0	18583	20.00	µg/L	0.000
M2-PFTeDA	13.544	715.0 -> 670.0	7155	20.00	µg/L	0.000
M8-FOSA	7.115	506.0 -> 78.0	24352	20.00	µg/L	0.000
M3-PFBS	4.355	302.0 -> 99.0	19165	20.00	µg/L	0.000
M3-PFHxS	6.073	402.0 -> 99.0	15660	20.00	µg/L	0.000
M8-PFOS	7.407	507.0 -> 99.0	7155	20.00	µg/L	0.000
M2-4:2FTS	5.172	329.0 -> 309.0	47746	20.00	µg/L	0.000
M2-6:2FTS	6.805	429.0 -> 409.0	31215	20.00	µg/L	0.000
M2-8:2FTS	8.374	529.0 -> 509.0	41883	20.00	µg/L	0.000
M3-MeFOSAA	7.607	573.0 -> 419.0	12104	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.172	329.0 -> 309.0	47797	18.24	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.2%		
13C2-6:2FTS	6.805	429.0 -> 409.0	31215	18.39	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.0%		
13C2-8:2FTS	8.374	529.0 -> 509.0	41909	18.49	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.4%		
13C2-PFDoDA	11.315	615.0 -> 570.0	18650	18.40	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.0%		
13C2-PFTeDA	13.544	715.0 -> 670.0	7308	18.68	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.4%		
13C3-PFBS	4.355	302.0 -> 99.0	19159	18.30	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.5%		
13C3-PFHxS	6.073	402.0 -> 99.0	15663	18.37	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.8%		
13C4-PFBA	2.891	217.0 -> 172.0	126291	18.34	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.7%		
13C4-PFHpA	6.079	367.0 -> 322.0	49401	18.34	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.7%		
13C5-PFHxA	5.253	318.0 -> 273.0	51665	18.23	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.2%		
13C5-PFPeA	4.212	268.0 -> 223.0	58576	18.41	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.0%		
13C6-PFDA	8.230	519.0 -> 474.0	26299	18.66	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.3%		

Perfluorinated Compounds by LC/MS/MS

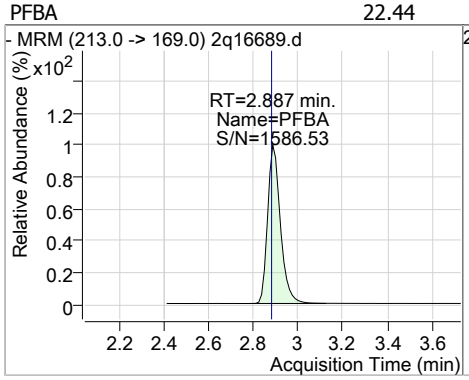
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	9.803	570.0 -> 525.0	24749	18.60	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.0%			
13C8-FOSA	7.115	506.0 -> 78.0	24350	18.36	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.8%			
13C8-PFOA	6.796	421.0 -> 376.0	23122	18.75	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.8%			
13C8-PFOS	7.407	507.0 -> 99.0	7154	18.12	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.6%			
13C9-PFNA	7.462	472.0 -> 427.0	14775	18.76	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.8%			
d3-MeFOSAA	7.607	573.0 -> 419.0	12104	18.33	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.6%			
M2-PFOA	6.798	415.0 -> 370.0	15085	20.01	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
M4-PFOS	7.410	503.0 -> 80.0	8893	20.00	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
Target Compounds							**QValue**
4:2FTS	5.175	327.0 -> 307.0	26415	22.15	µg/L		100
6:2FTS	6.807	427.0 -> 407.0	16762	22.09	µg/L		100
8:2FTS	8.376	527.0 -> 507.0	24225	21.88	µg/L		100
EtFOSAA	7.731	584.0 -> 419.0	4091	23.66	µg/L		100
FOSA	7.118	498.0 -> 78.0	13012	22.01	µg/L		100
MeFOSAA	7.608	570.0 -> 419.0	4890	22.42	µg/L		100
PFBA	2.887	213.0 -> 169.0	22313	22.44	µg/L		100
PFBS	4.346	299.0 -> 80.0	28434	22.20	µg/L		100
PFDA	8.231	513.0 -> 469.0	10658	22.77	µg/L		100
PFDoDA	11.308	613.0 -> 569.0	10262	22.90	µg/L		100
PFDS	9.624	599.0 -> 80.0	5787	23.04	µg/L		100
PFHpA	6.082	363.0 -> 319.0	39934	22.61	µg/L		100
PFHpS	6.766	449.0 -> 80.0	9042	22.27	µg/L		100
PFHxA	5.255	313.0 -> 269.0	19113	22.99	µg/L		100
PFHxS	6.076	399.0 -> 80.0	19208	22.08	µg/L	m	100
PFNA	7.463	463.0 -> 419.0	6198	22.35	µg/L		100
PFNS	8.124	549.0 -> 80.0	7763	23.69	µg/L		100
PFOA	6.799	413.0 -> 369.0	13564	23.20	µg/L		100
PFOS	7.410	499.0 -> 80.0	9906	23.21	µg/L	m	100
PFPeA	4.216	263.0 -> 219.0	65008	22.74	µg/L		100
PFPeS	5.295	349.0 -> 80.0	17196	22.53	µg/L		100
PFTeDA	13.550	713.0 -> 669.0	4792	23.69	µg/L		100
PFTrDA	12.525	663.0 -> 619.0	7451	23.49	µg/L		100
PFUnDA	9.808	563.0 -> 519.0	12899	22.54	µg/L		100

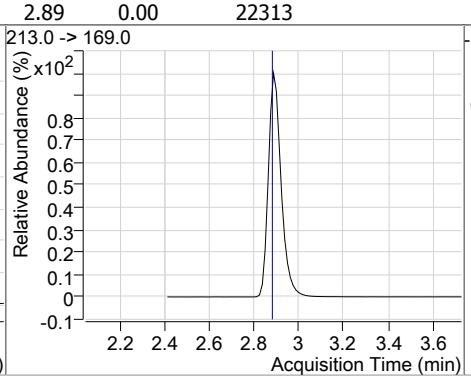
 # = Qualifier out of range, m = manually integrated, + = Area summed

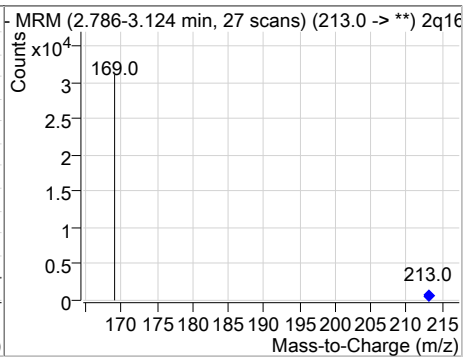
Perfluorinated Compounds by LC/MS/MS



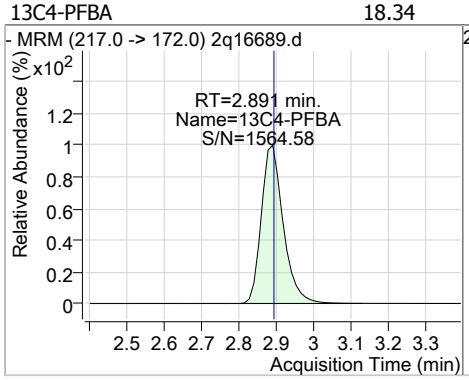
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	22.44	2.89	0.00	22313				

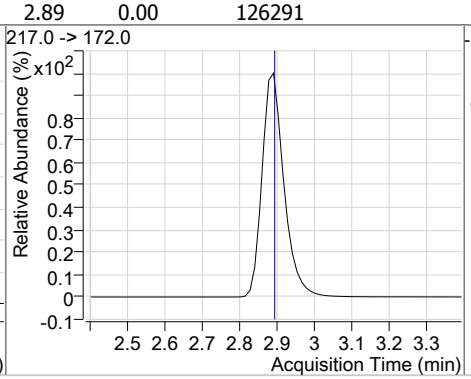


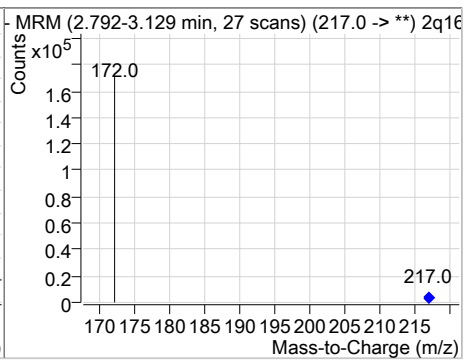




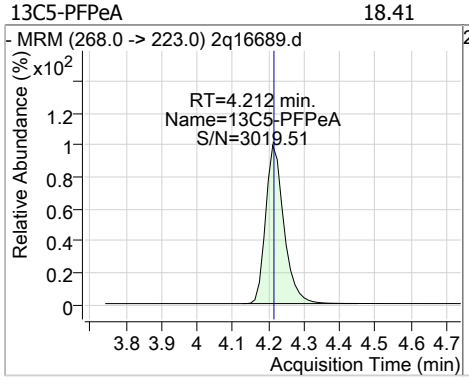
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.34	2.89	0.00	126291				

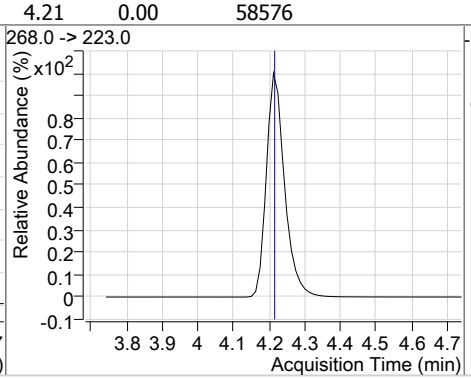


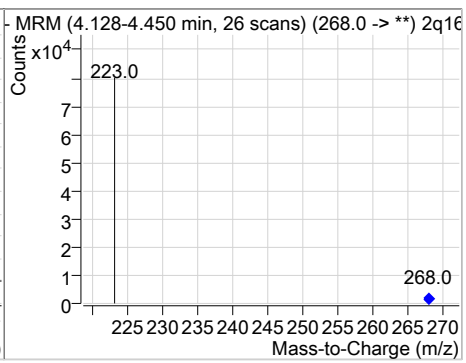




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.41	4.21	0.00	58576				

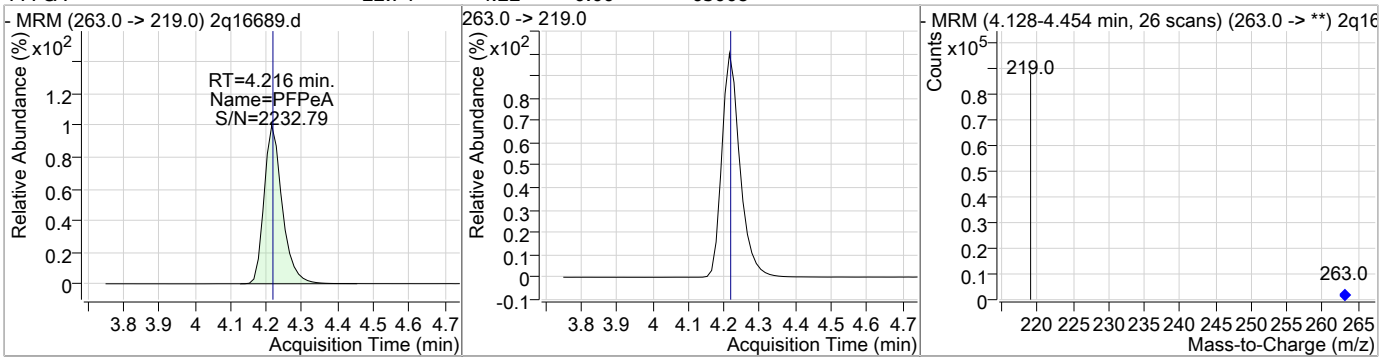




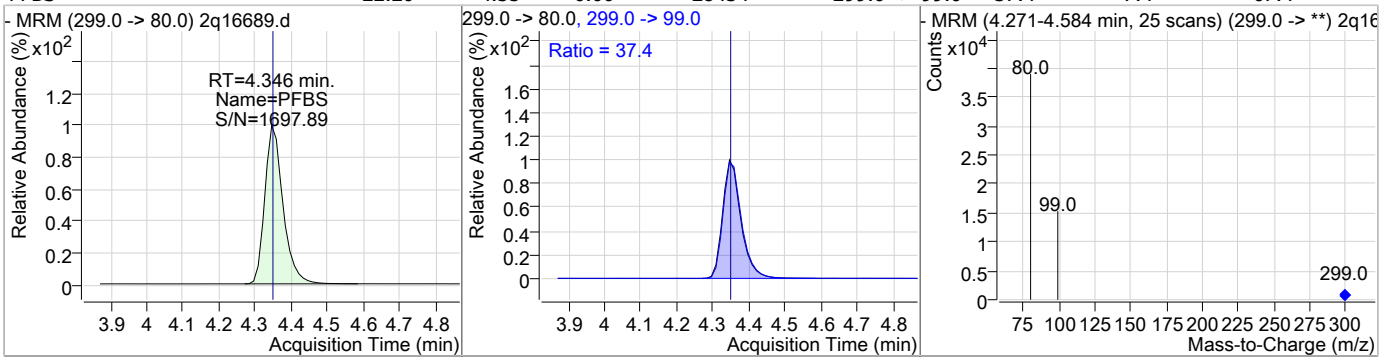


Perfluorinated Compounds by LC/MS/MS

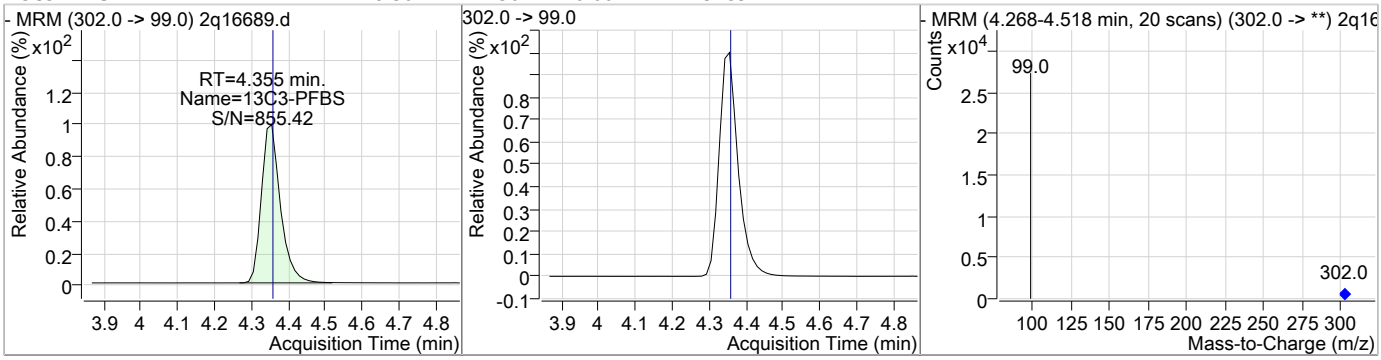
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	22.74	4.22	0.00	65008				



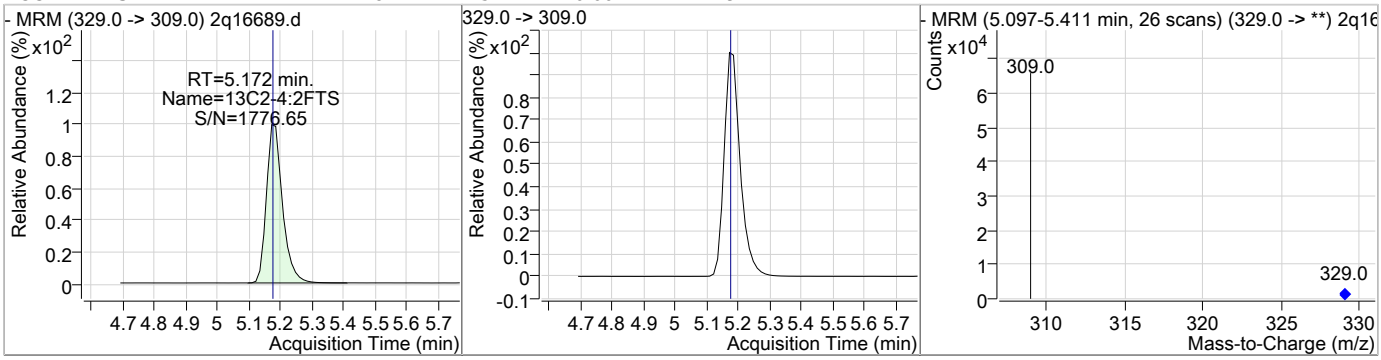
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	22.20	4.35	0.00	28434	299.0 -> 99.0	37.4	7.4	67.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.30	4.36	0.00	19159				

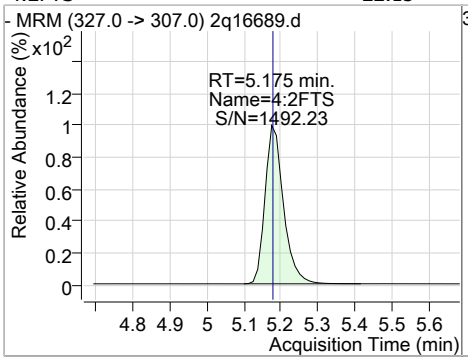


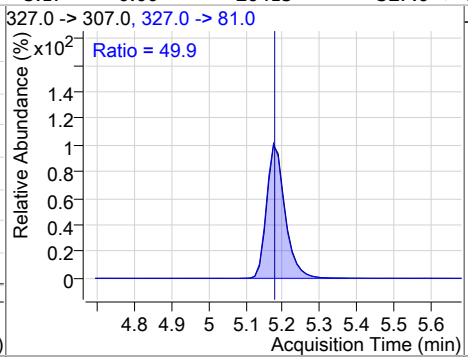
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.24	5.17	0.00	47797				

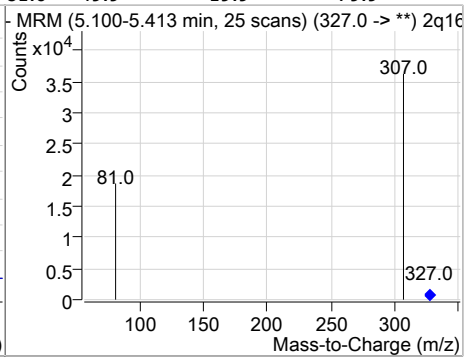


Perfluorinated Compounds by LC/MS/MS

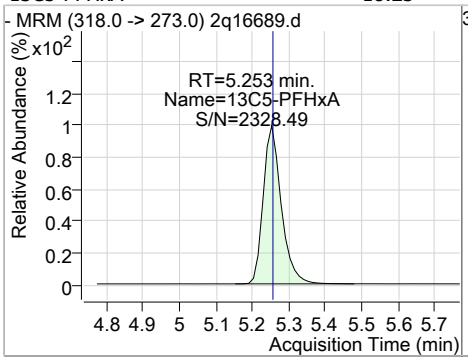
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	22.15	5.17	0.00	26415	327.0 -> 81.0	49.9	19.9	79.9

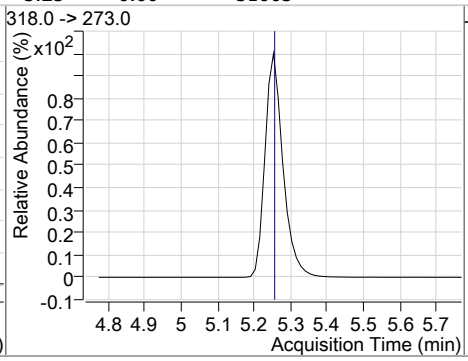


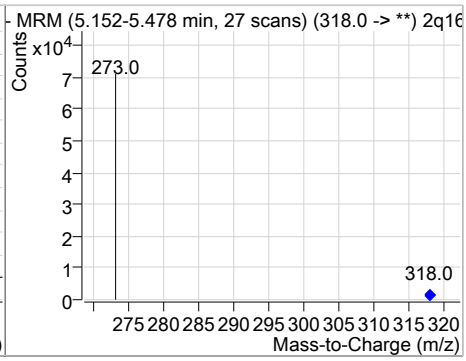




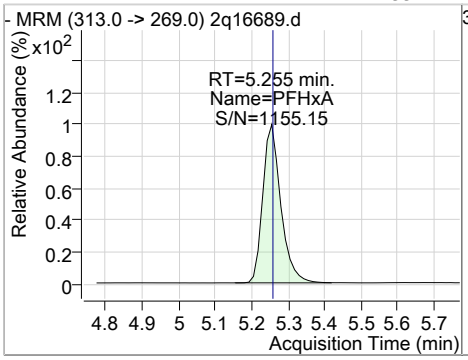
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.23	5.25	0.00	51665				

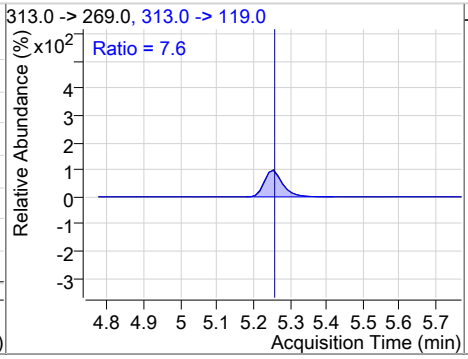


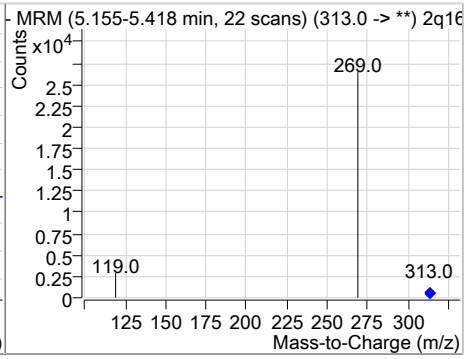




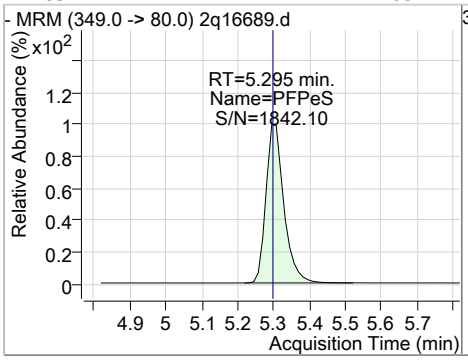
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	22.99	5.26	0.00	19113	313.0 -> 119.0	7.6	0.0	37.6

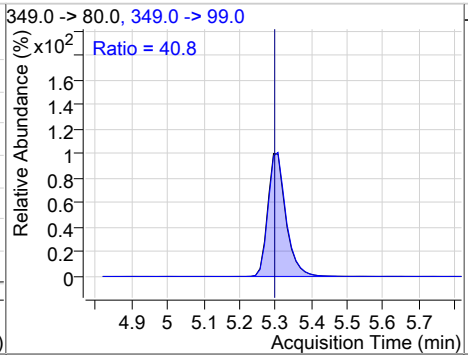


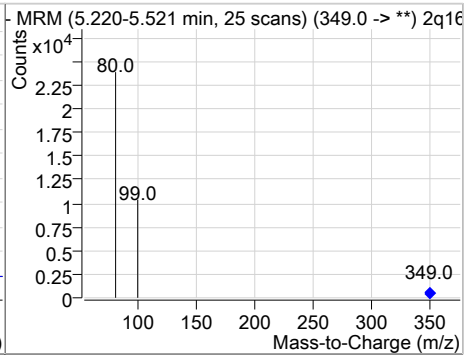




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	22.53	5.30	0.00	17196	349.0 -> 99.0	40.8	10.8	70.8

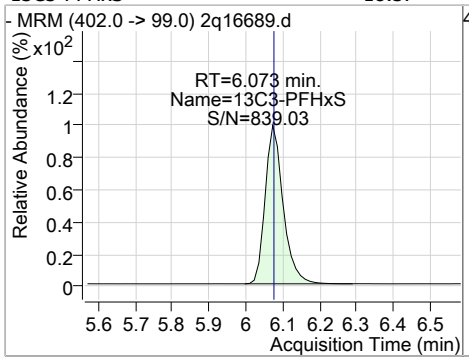


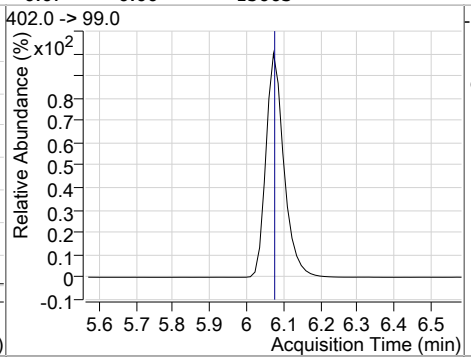


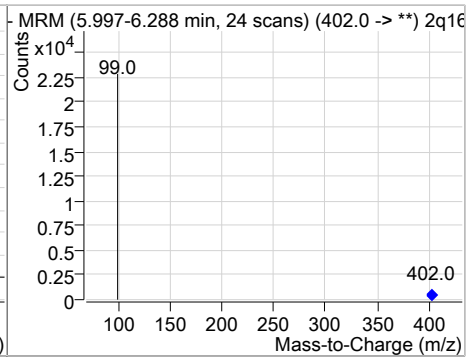


Perfluorinated Compounds by LC/MS/MS

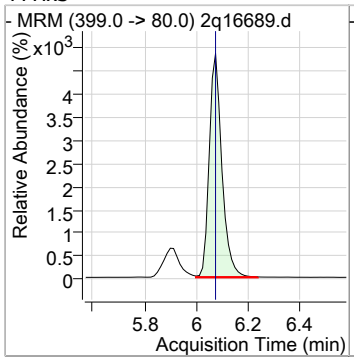
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.37	6.07	0.00	15663				

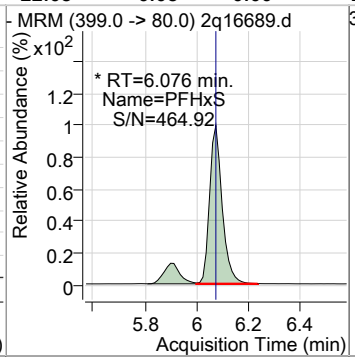


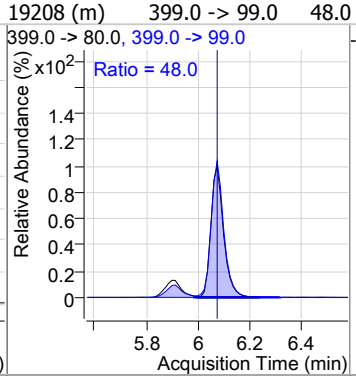


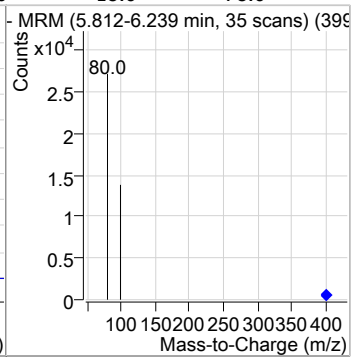


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	22.08	6.08	0.00	19208 (m)	399.0 -> 99.0	48.0	18.0	78.0

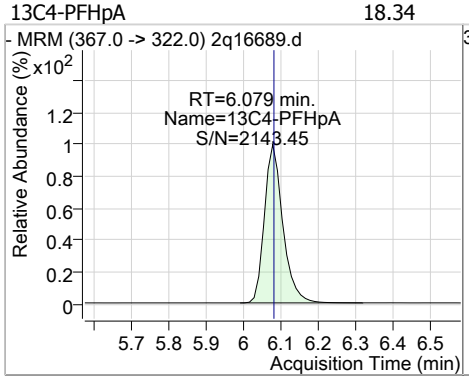


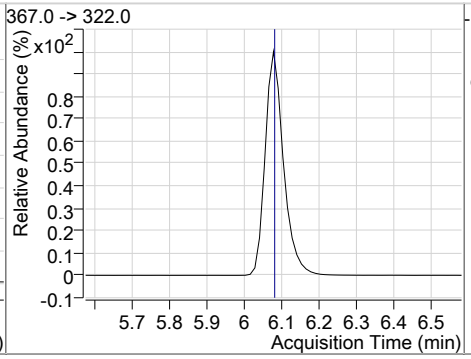


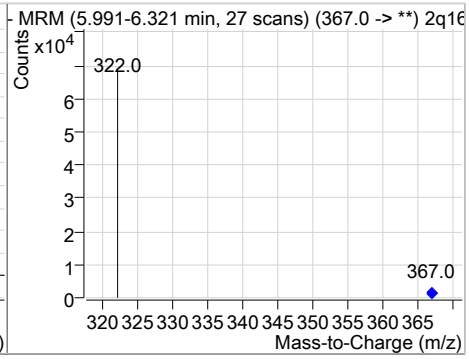




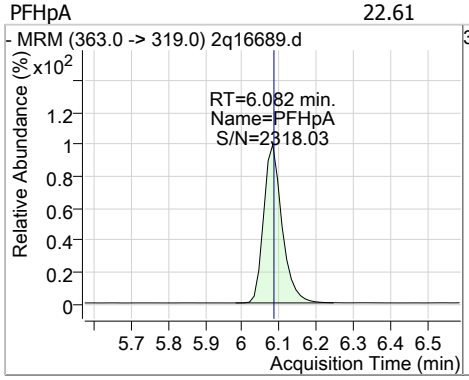
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.34	6.08	0.00	49401				

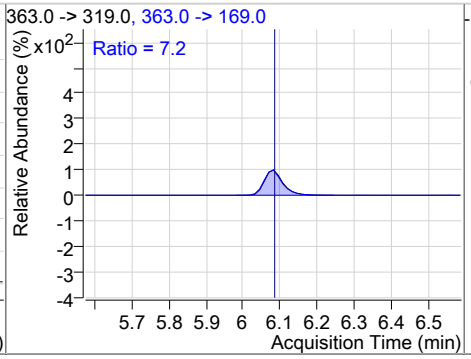


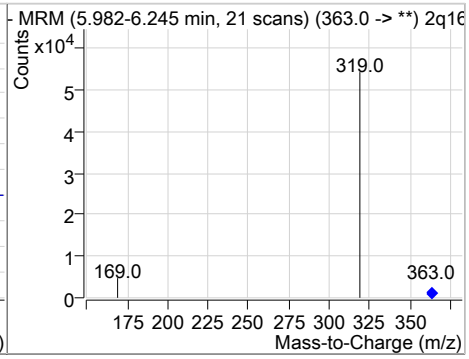




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	22.61	6.08	0.00	39934	363.0 -> 169.0	7.2	0.0	37.2

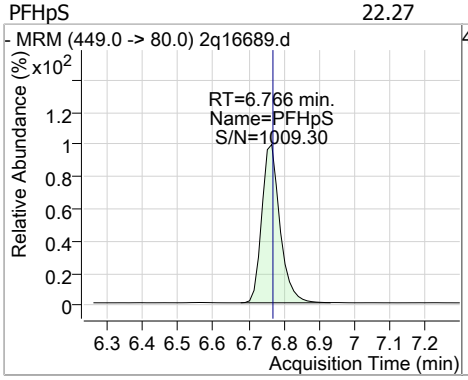


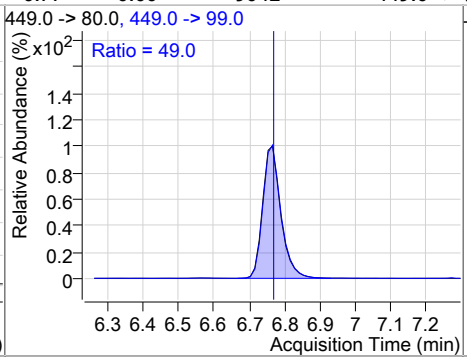


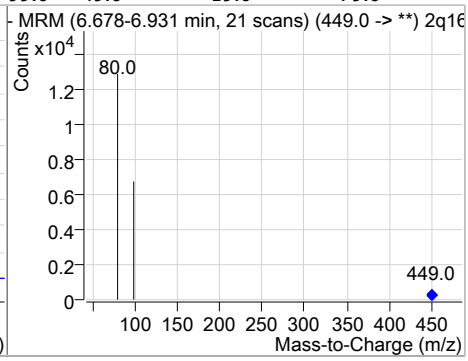


Perfluorinated Compounds by LC/MS/MS

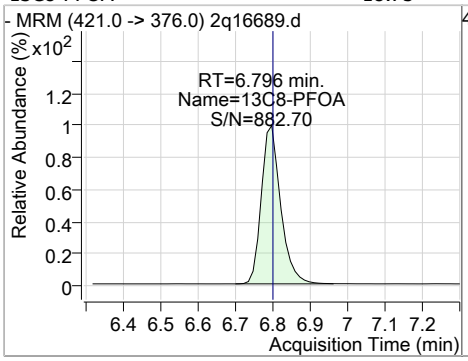
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	22.27	6.77	0.00	9042	449.0 -> 99.0	49.0	19.0	79.0

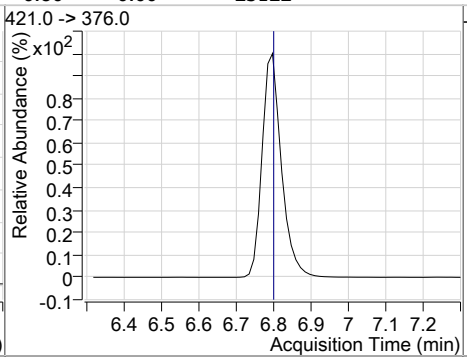


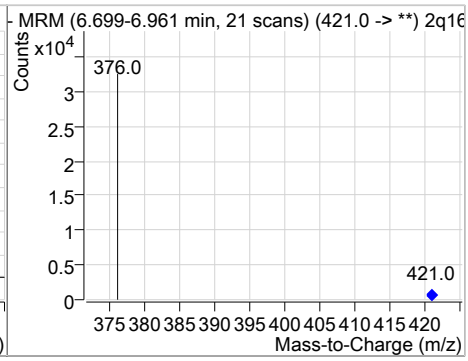




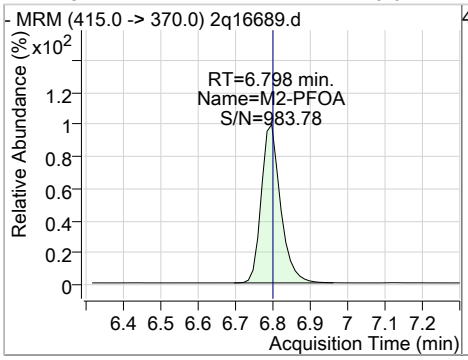
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	18.75	6.80	0.00	23122				

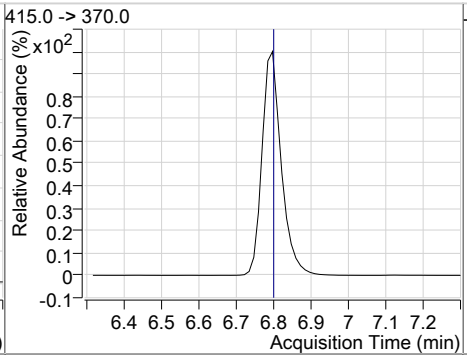


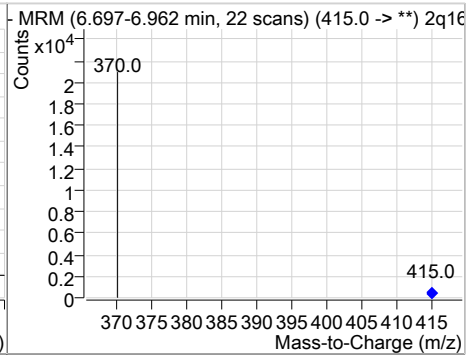




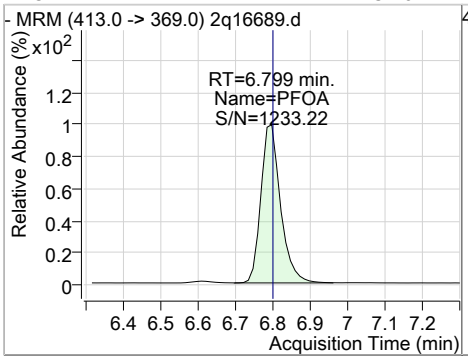
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.01	6.80	0.00	15085				

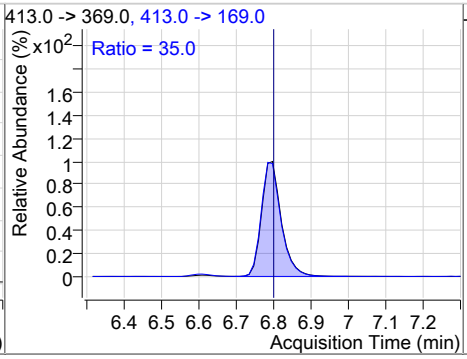


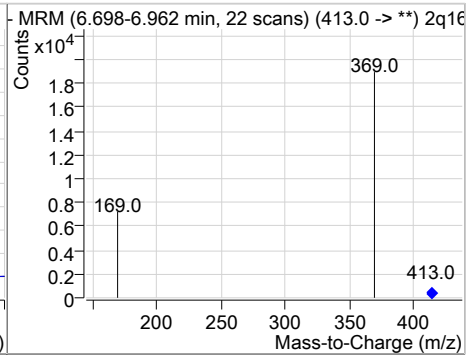




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	23.20	6.80	0.00	13564	413.0 -> 169.0	35.0	5.0	65.0

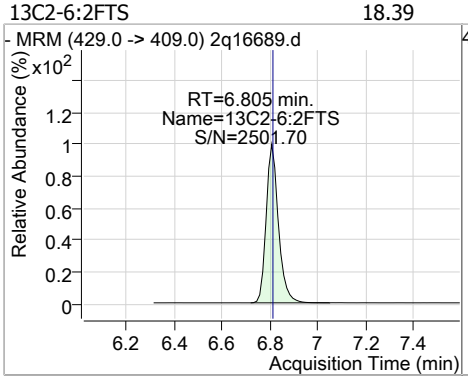


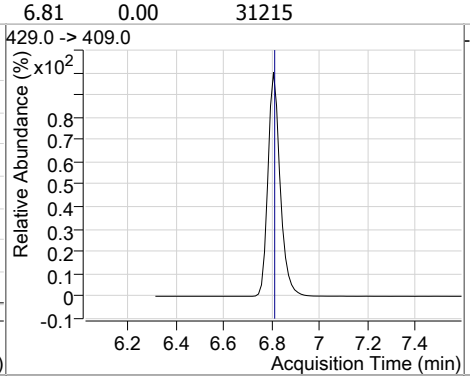


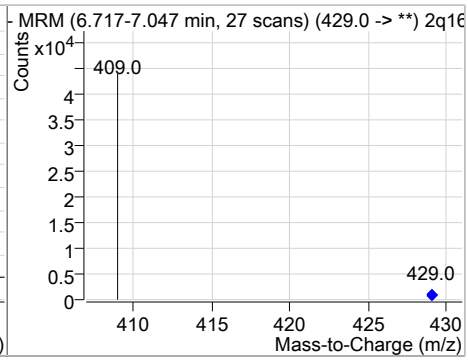


Perfluorinated Compounds by LC/MS/MS

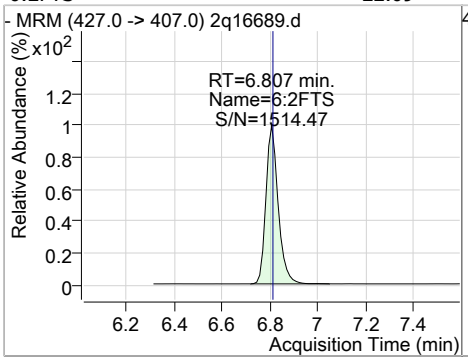
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.39	6.81	0.00	31215				

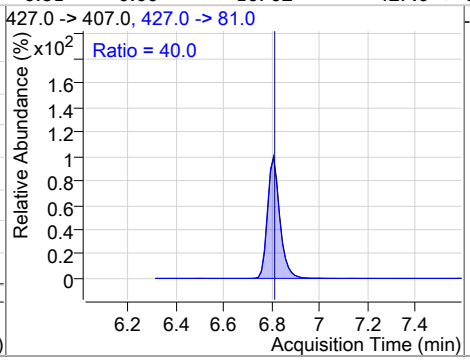


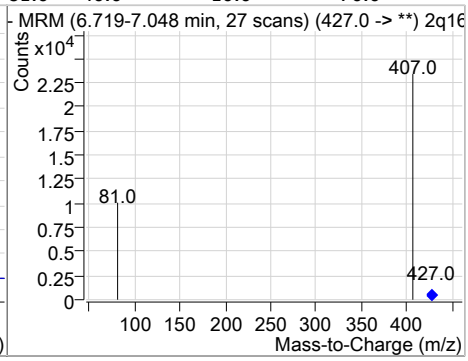




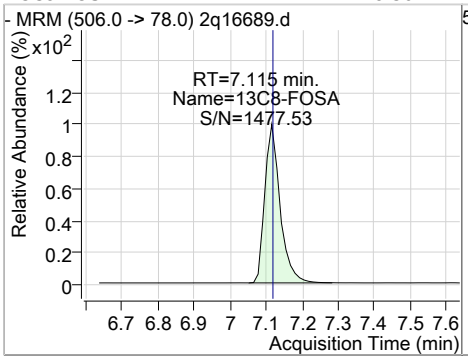
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	22.09	6.81	0.00	16762	427.0 -> 81.0	40.0	10.0	70.0

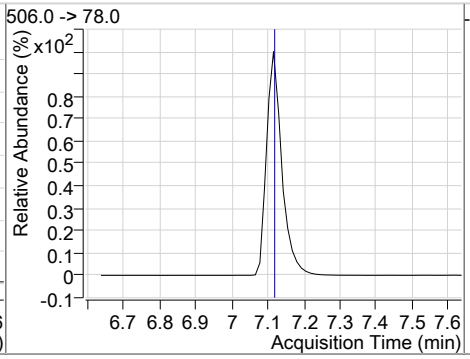


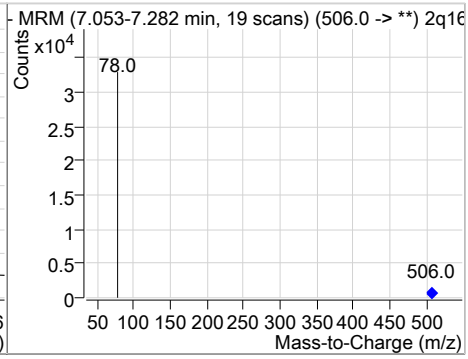




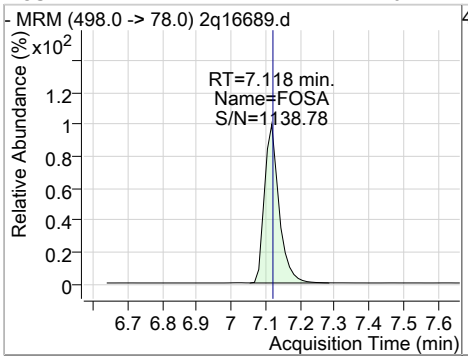
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.36	7.12	0.00	24350				

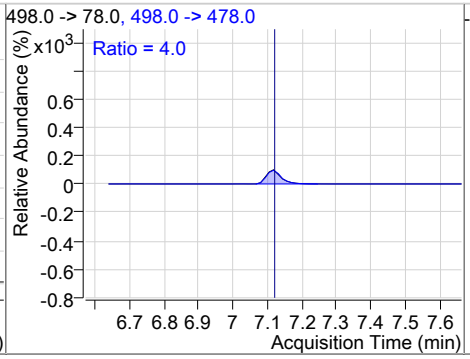


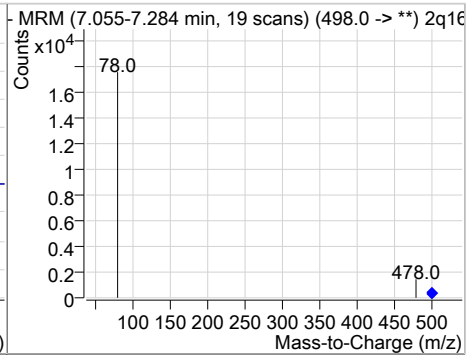




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	22.01	7.12	0.00	13012	498.0 -> 478.0	4.0	0.0	34.0

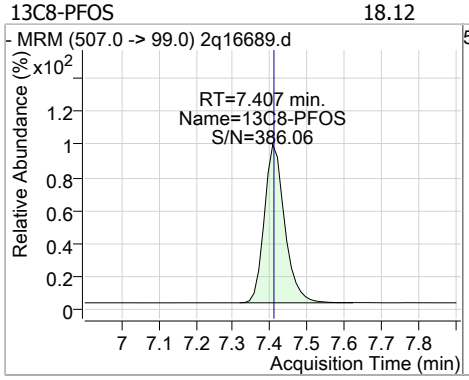


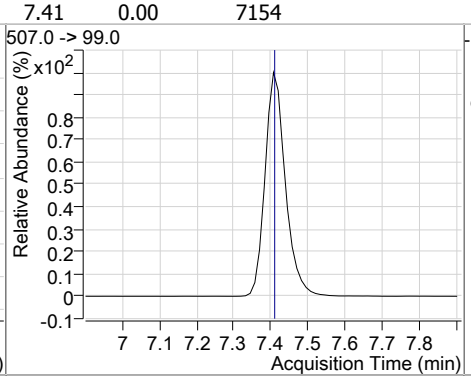


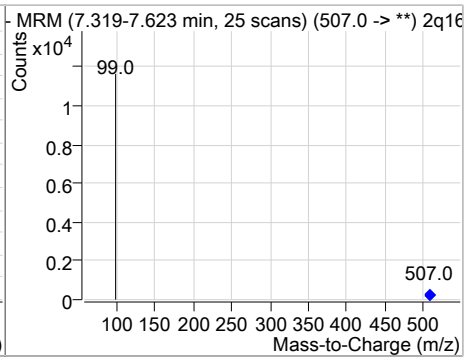


Perfluorinated Compounds by LC/MS/MS

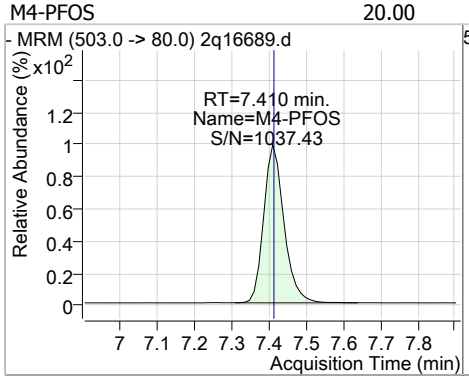
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.12	7.41	0.00	7154				

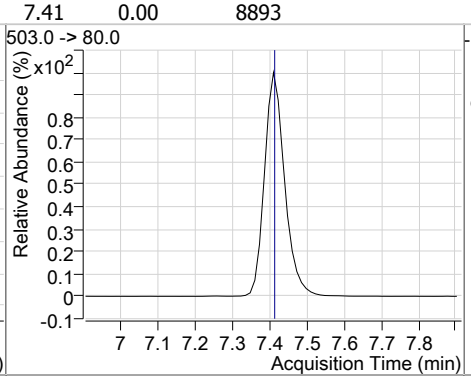


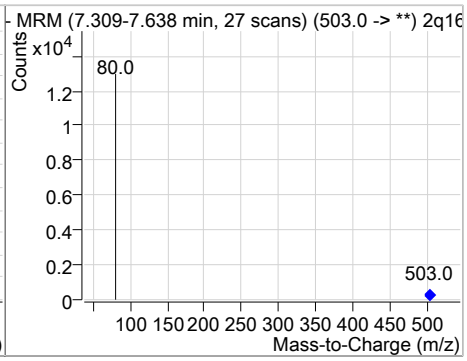




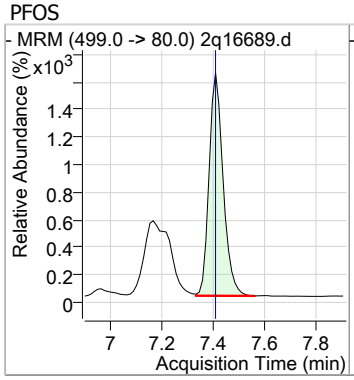
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.00	7.41	0.00	8893				

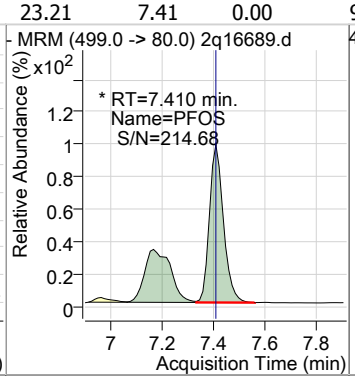


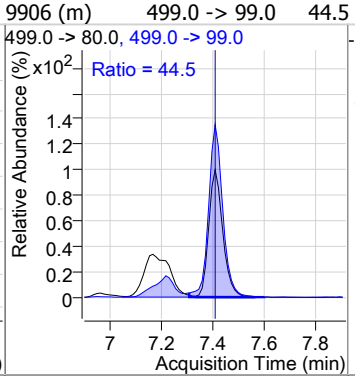


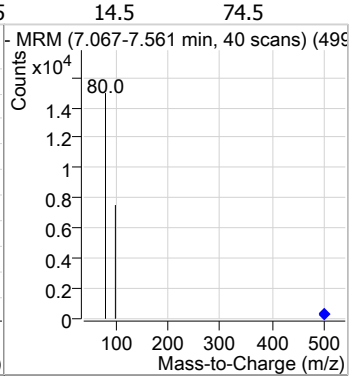


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	23.21	7.41	0.00	9906 (m)	499.0 -> 99.0	44.5	14.5	74.5

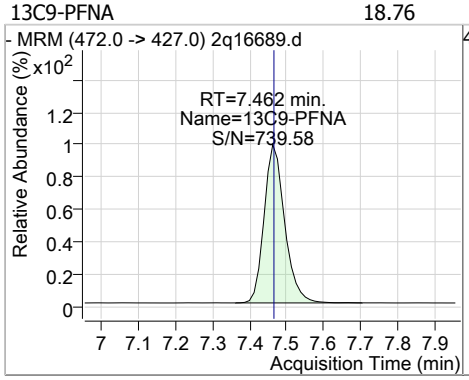


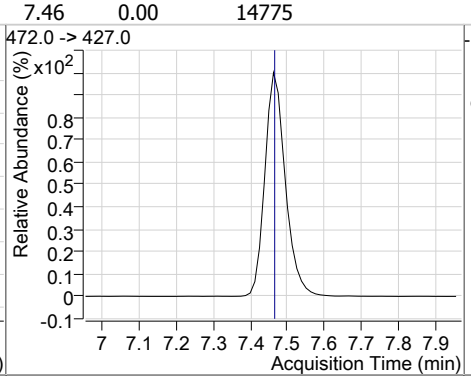


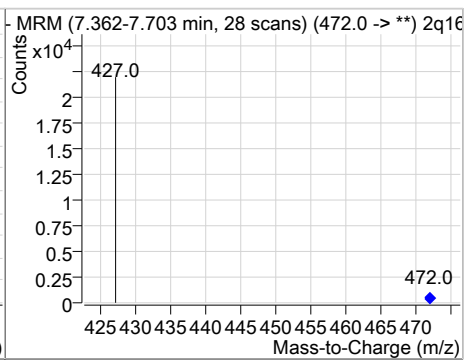




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.76	7.46	0.00	14775				

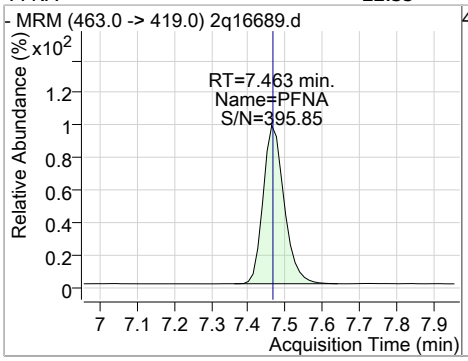


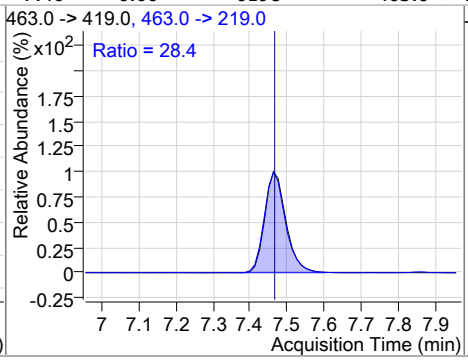


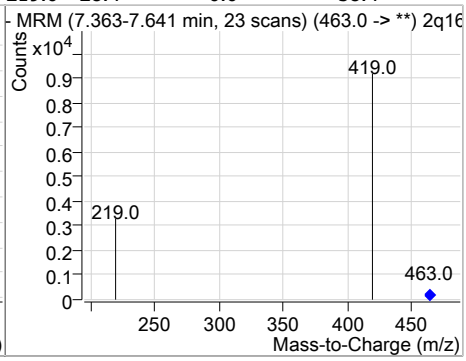


Perfluorinated Compounds by LC/MS/MS

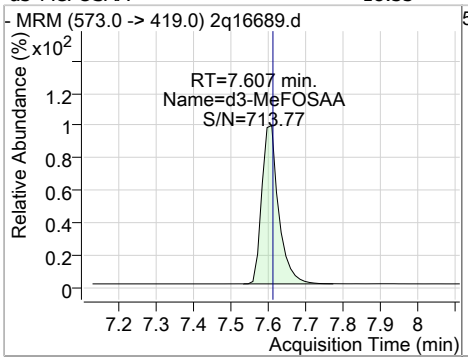
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	22.35	7.46	0.00	6198	463.0 -> 219.0	28.4	0.0	58.4

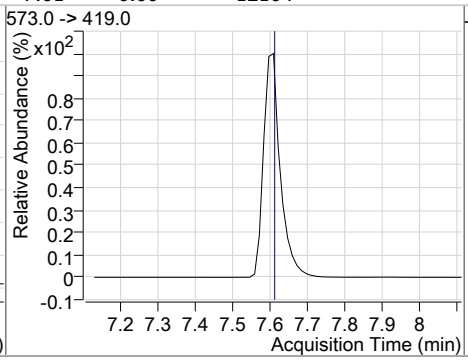


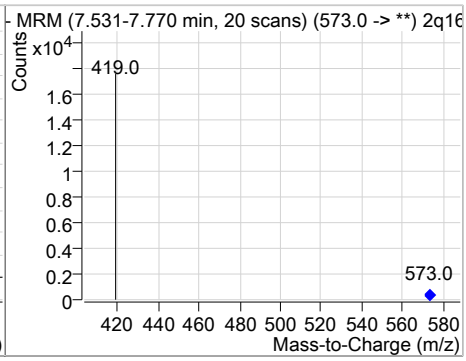




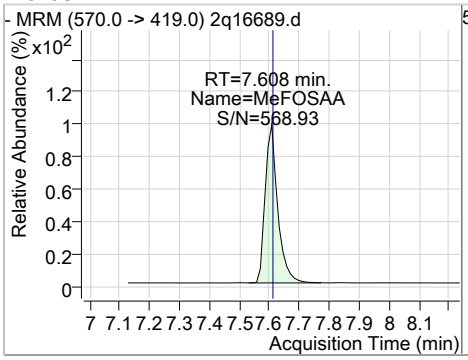
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.33	7.61	0.00	12104				

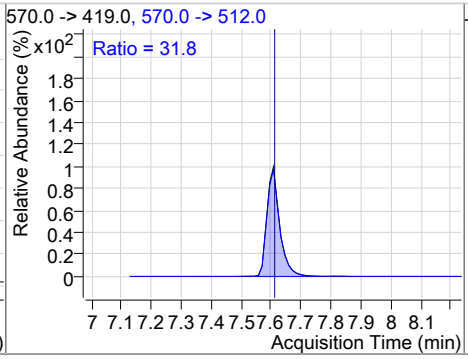


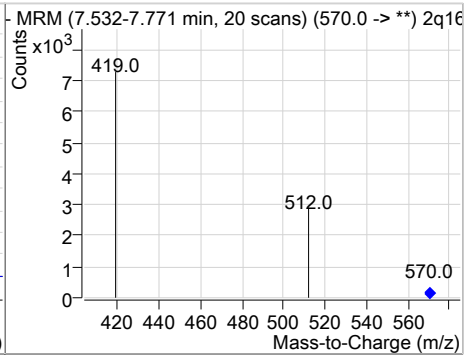




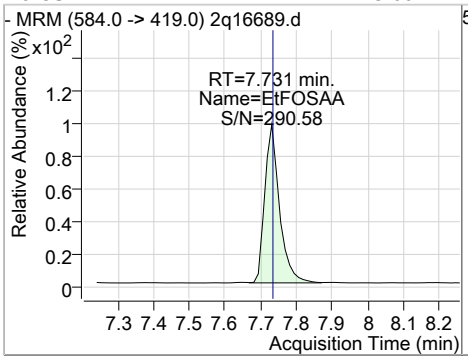
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	22.42	7.61	0.00	4890	570.0 -> 512.0	31.8	1.8	61.8

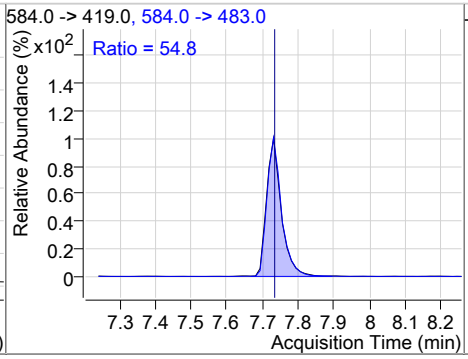


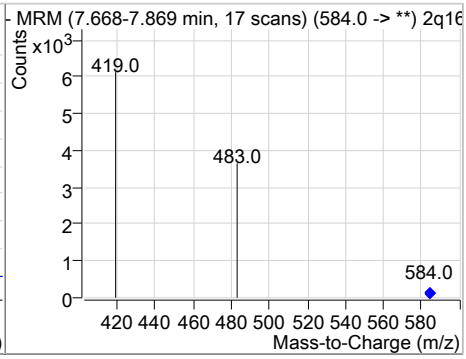




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	23.66	7.73	0.00	4091	584.0 -> 483.0	54.8	24.8	84.8

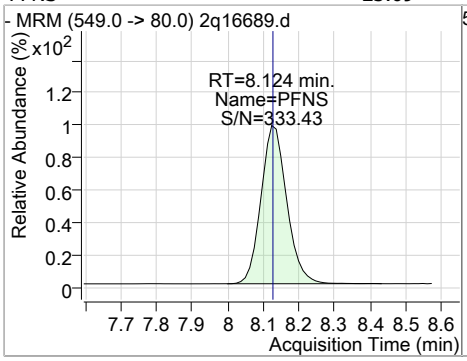


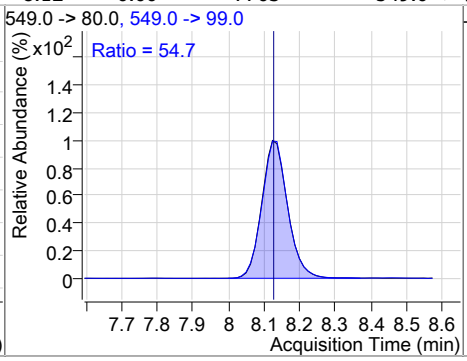


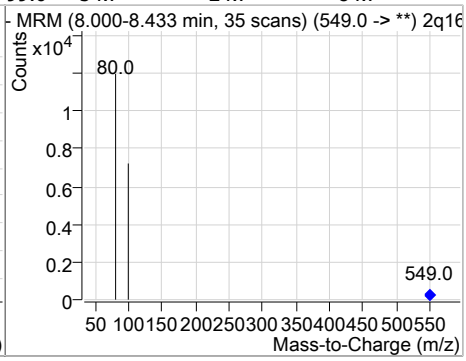


Perfluorinated Compounds by LC/MS/MS

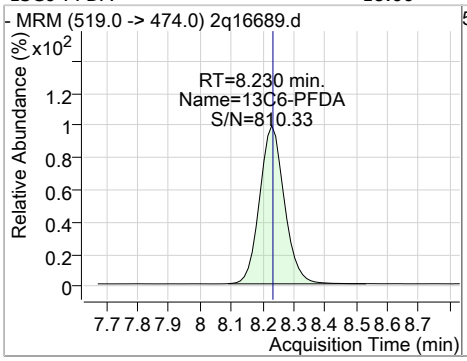
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	23.69	8.12	0.00	7763	549.0 -> 99.0	54.7	24.7	84.7

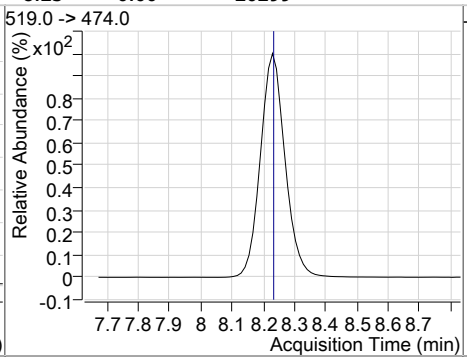


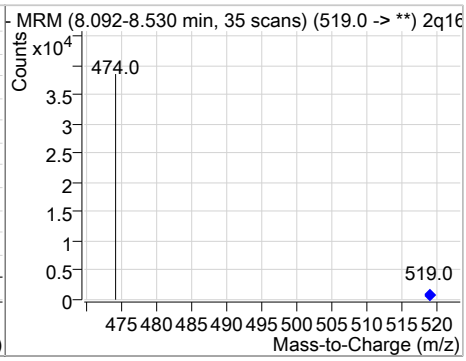




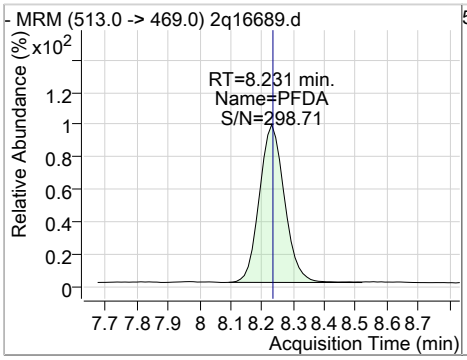
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	18.66	8.23	0.00	26299				

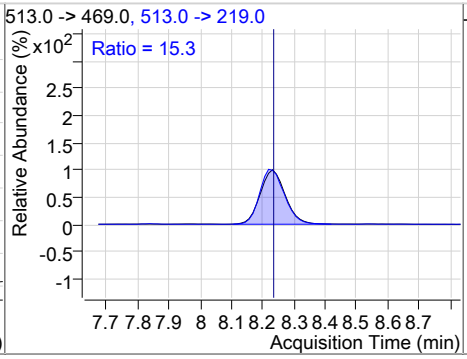


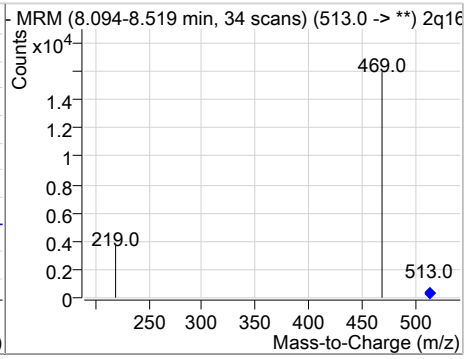




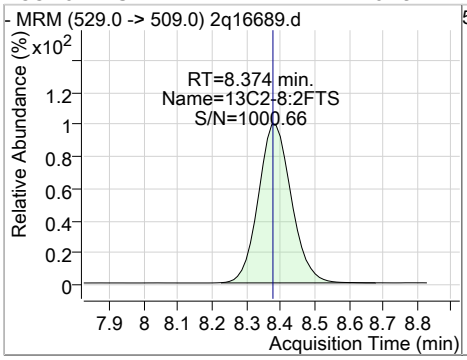
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	22.77	8.23	0.00	10658	513.0 -> 219.0	15.3	0.0	45.3

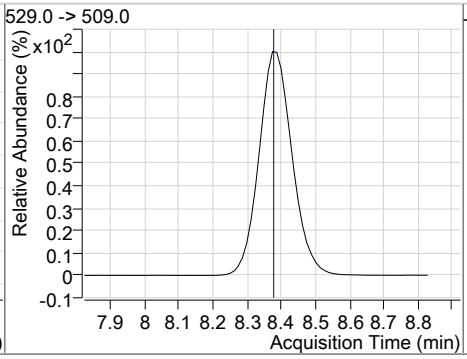


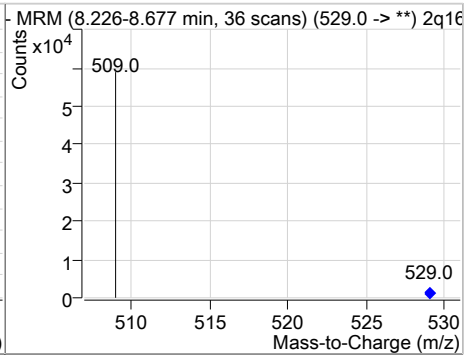




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.49	8.37	0.00	41909				

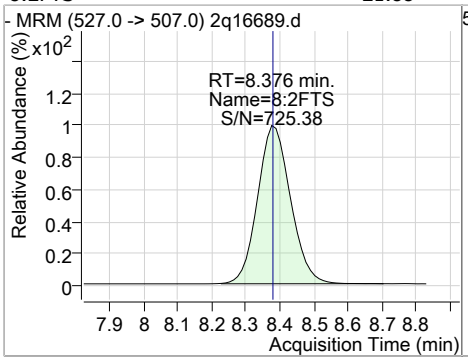


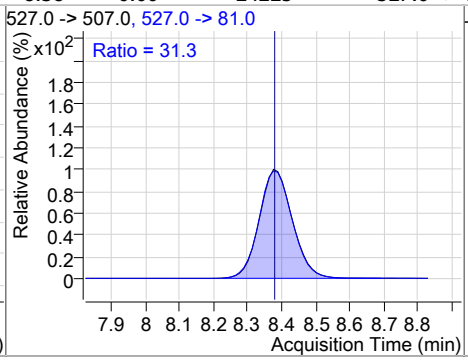


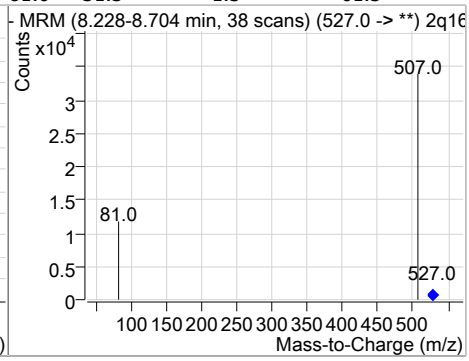


Perfluorinated Compounds by LC/MS/MS

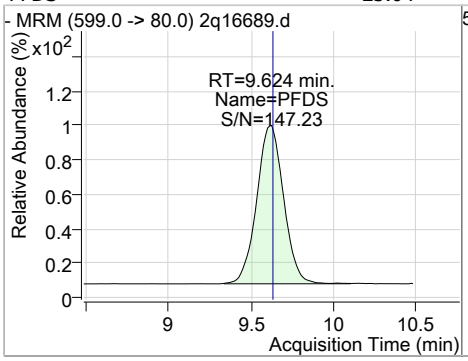
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	21.88	8.38	0.00	24225	527.0 -> 81.0	31.3	1.3	61.3

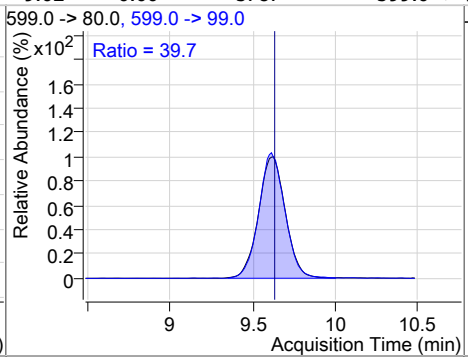


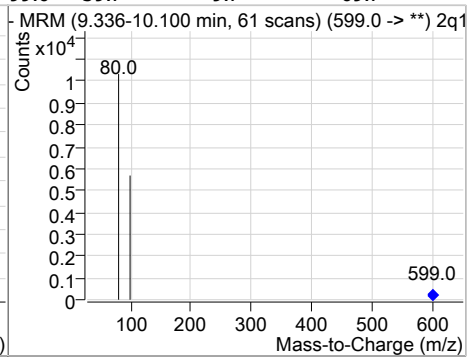




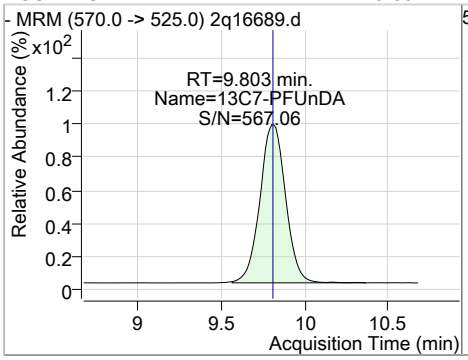
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	23.04	9.62	0.00	5787	599.0 -> 99.0	39.7	9.7	69.7

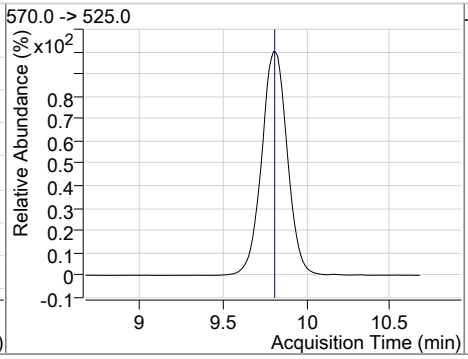


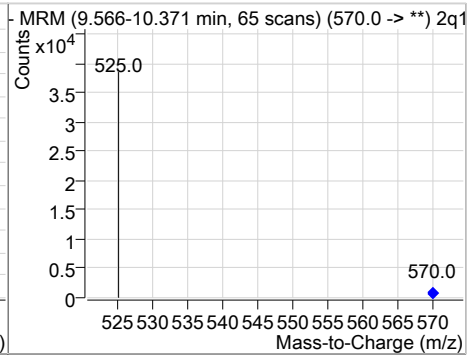




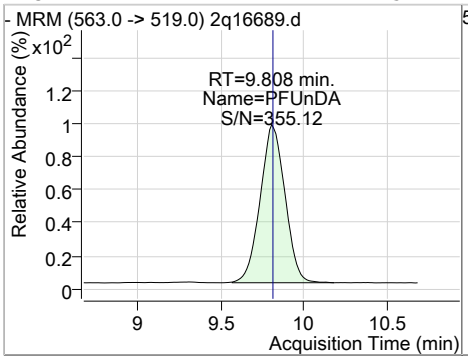
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.60	9.80	0.00	24749				

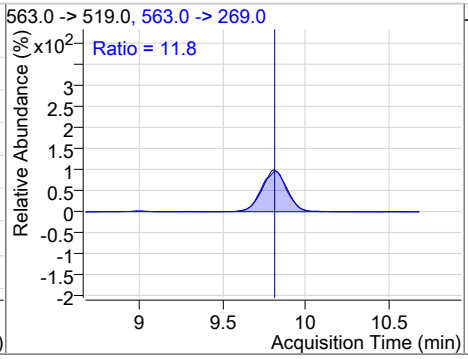


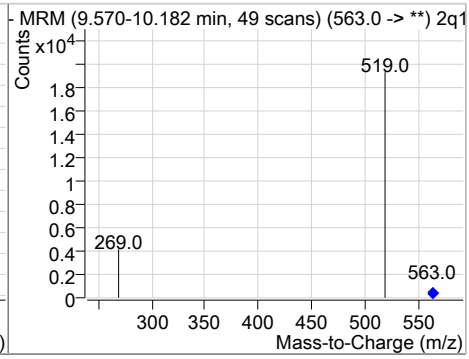




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	22.54	9.81	0.00	12899	563.0 -> 269.0	11.8	0.0	41.8

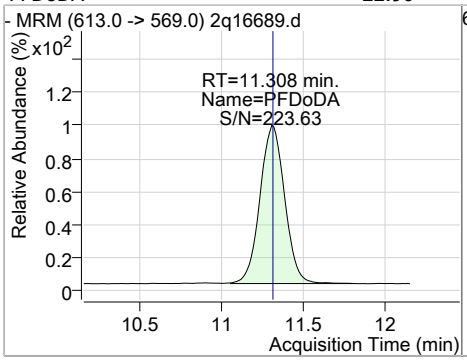


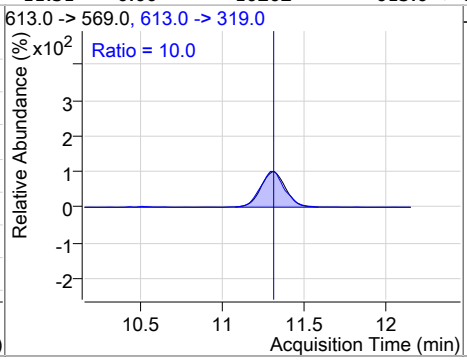


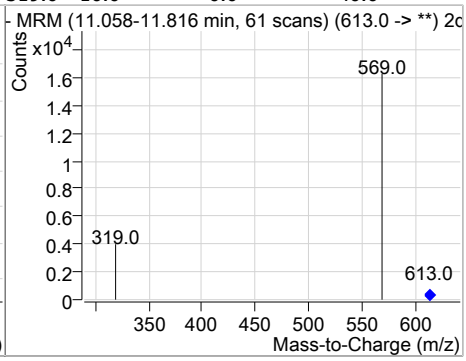


Perfluorinated Compounds by LC/MS/MS

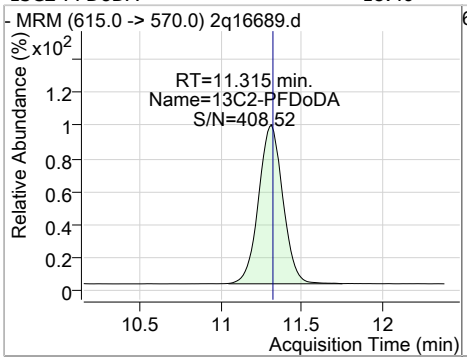
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	22.90	11.31	0.00	10262	613.0 -> 319.0	10.0	0.0	40.0

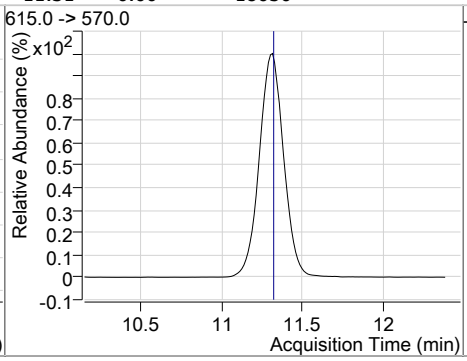


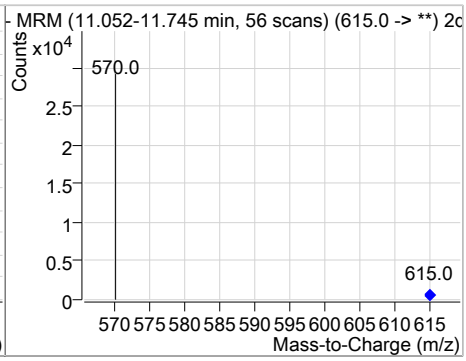




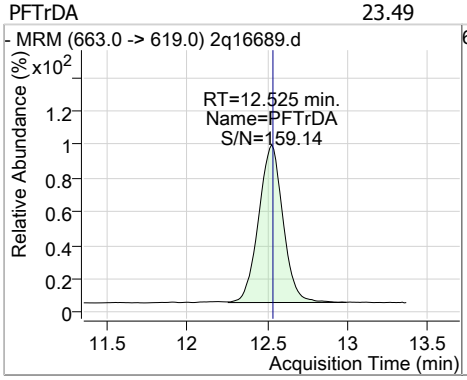
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.40	11.31	0.00	18650				

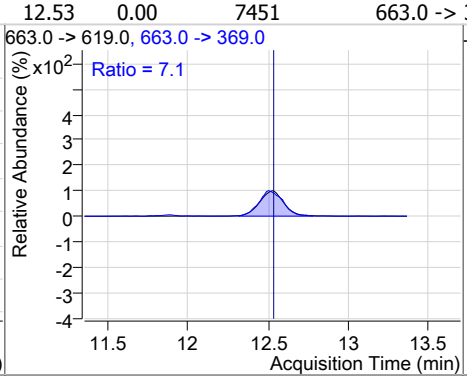


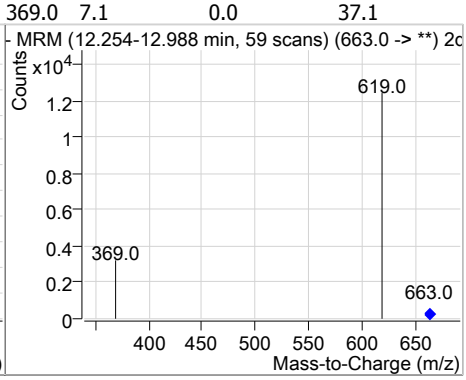




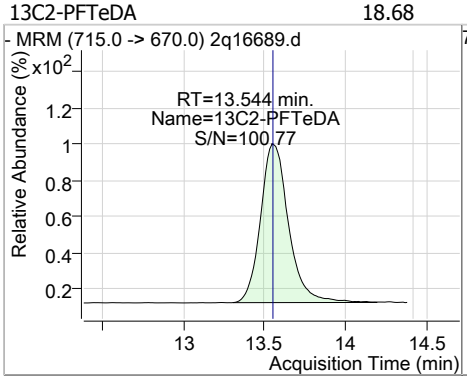
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	23.49	12.53	0.00	7451	663.0 -> 369.0	7.1	0.0	37.1

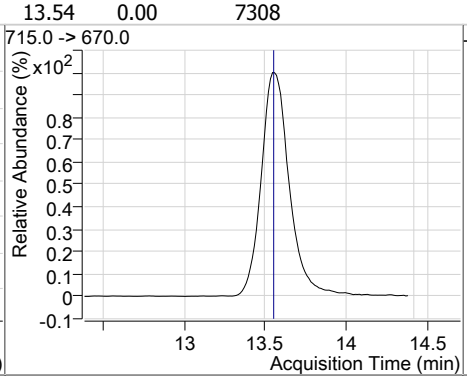


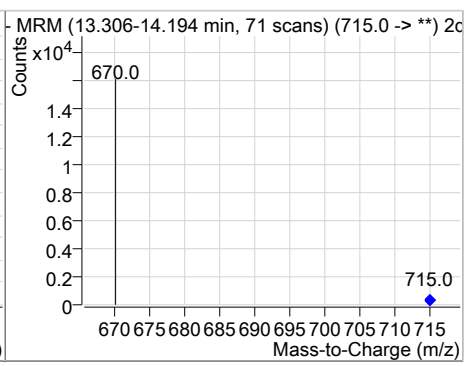




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	18.68	13.54	0.00	7308				

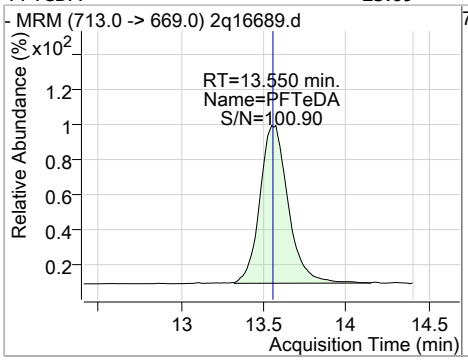


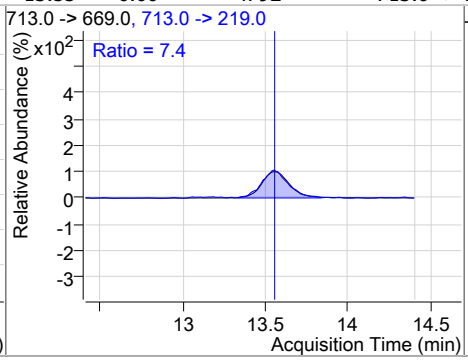


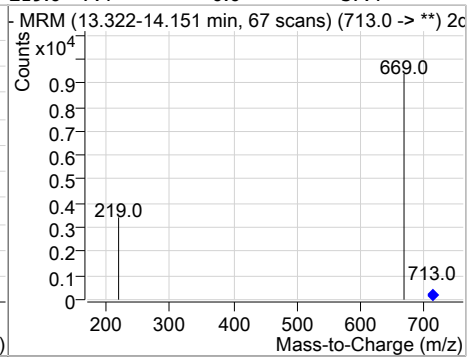


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	23.69	13.55	0.00	4792	713.0 -> 219.0	7.4	0.0	37.4







Manual Integration Approval Summary

Sample Number:	S2Q292-ICC292	**Method:**	EPA 537M QSM5.1 B-15
Lab FileID:	2Q16689.D	**Analyst approved:**	07/09/18 13:31 Natasha Gumtie
Injection Time:	07/07/18 10:24	**Supervisor approved:**	07/10/18 17:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.08	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.41	Split peak

2Q16690.D

Manual Integrations APPROVED (compounds with "m" flag)

Mike Eger 07/10/18 17:09

Perfluorinated Compounds by LC/MS/MS

Data File	:	2q16690.d
Operator	:	NATASHAG
Acq. Method	:	dMRM_ID_PFC.m
Acq. Date-Time	:	7/7/2018 10:44:39 AM
Sample Name	:	ic292-50
Vial	:	Vial 8
DA Method File	:	PFC_ID_070718_S2Q292.quantmethod.xml
Batch Name	:	s2q292.batch.bin
Sample Information	:	op70610,S2Q292,130,,,1.0,1,water

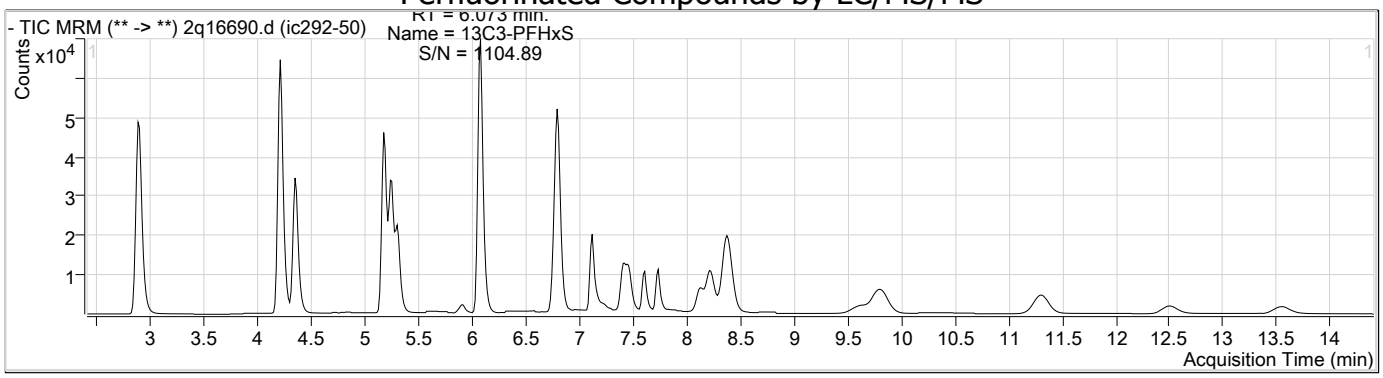
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.785	415.0 -> 370.0	17030	20.00	µg/L	-0.013
13C4-PFOS	7.410	503.0 -> 80.0	10355	20.00	µg/L	0.000
M4-PFBA	2.891	217.0 -> 172.0	142550	20.00	µg/L	0.000
M5-PFPeA	4.212	268.0 -> 223.0	66163	20.00	µg/L	0.000
M5-PFHxA	5.253	318.0 -> 273.0	57484	20.00	µg/L	0.000
M4-PFHpA	6.079	367.0 -> 322.0	55415	20.00	µg/L	0.000
M8-PFOA	6.796	421.0 -> 376.0	25881	20.00	µg/L	0.000
M9-PFNA	7.462	472.0 -> 427.0	16237	20.00	µg/L	0.000
M6-PFDA	8.217	519.0 -> 474.0	28122	20.00	µg/L	-0.013
M7-PFUnDA	9.803	570.0 -> 525.0	28068	20.00	µg/L	0.000
M2-PFDoDA	11.302	615.0 -> 570.0	21255	20.00	µg/L	-0.013
M2-PFTeDA	13.556	715.0 -> 670.0	8352	20.00	µg/L	0.012
M8-FOSA	7.115	506.0 -> 78.0	25565	20.00	µg/L	0.000
M3-PFBS	4.343	302.0 -> 99.0	21718	20.00	µg/L	-0.013
M3-PFHxS	6.073	402.0 -> 99.0	17839	20.00	µg/L	0.000
M8-PFOS	7.407	507.0 -> 99.0	8149	20.00	µg/L	0.000
M2-4:2FTS	5.172	329.0 -> 309.0	57536	20.00	µg/L	0.000
M2-6:2FTS	6.805	429.0 -> 409.0	37425	20.00	µg/L	0.000
M2-8:2FTS	8.374	529.0 -> 509.0	50785	20.00	µg/L	0.000
M3-MeFOSAA	7.607	573.0 -> 419.0	14033	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.172	329.0 -> 309.0	57595	21.98	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.9%		
13C2-6:2FTS	6.805	429.0 -> 409.0	37426	22.05	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.3%		
13C2-8:2FTS	8.374	529.0 -> 509.0	50742	22.39	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.9%		
13C2-PFDoDA	11.302	615.0 -> 570.0	21302	21.02	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.1%		
13C2-PFTeDA	13.556	715.0 -> 670.0	8302	21.22	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.1%		
13C3-PFBS	4.343	302.0 -> 99.0	21724	20.75	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.8%		
13C3-PFHxS	6.073	402.0 -> 99.0	17832	20.91	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.5%		
13C4-PFBA	2.891	217.0 -> 172.0	142523	20.70	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C4-PFHpA	6.079	367.0 -> 322.0	55438	20.58	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.9%		
13C5-PFHxA	5.253	318.0 -> 273.0	57497	20.29	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%		
13C5-PFPeA	4.212	268.0 -> 223.0	66179	20.79	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.0%		
13C6-PFDA	8.217	519.0 -> 474.0	28131	19.96	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%		

Perfluorinated Compounds by LC/MS/MS

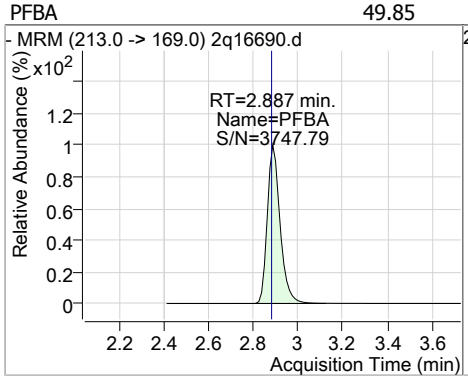
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	9.803	570.0 -> 525.0	28115	21.13	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.7%			
13C8-FOSA	7.115	506.0 -> 78.0	25563	19.27	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.4%			
13C8-PFOA	6.796	421.0 -> 376.0	25881	20.99	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.0%			
13C8-PFOS	7.407	507.0 -> 99.0	8161	20.67	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%			
13C9-PFNA	7.462	472.0 -> 427.0	16219	20.59	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.0%			
d3-MeFOSAA	7.607	573.0 -> 419.0	14064	21.29	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.5%			
M2-PFOA	6.785	415.0 -> 370.0	17025	20.00	ng/ml		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.410	503.0 -> 80.0	10350	19.99	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
Target Compounds							**QValue**
4:2FTS	5.175	327.0 -> 307.0	65629	48.58	µg/L		100
6:2FTS	6.807	427.0 -> 407.0	41495	48.51	µg/L		100
8:2FTS	8.376	527.0 -> 507.0	60941	48.61	µg/L		97
EtFOSAA	7.731	584.0 -> 419.0	9745	48.60	µg/L		99
FOSA	7.118	498.0 -> 78.0	29973	48.30	µg/L		99
MeFOSAA	7.608	570.0 -> 419.0	12275	48.54	µg/L		99
PFBA	2.887	213.0 -> 169.0	55924	49.85	µg/L		100
PFBS	4.346	299.0 -> 80.0	71293	49.11	µg/L		100
PFDA	8.231	513.0 -> 469.0	25067	50.12	µg/L		100
PFDoDA	11.308	613.0 -> 569.0	25848	50.43	µg/L		100
PFDS	9.611	599.0 -> 80.0	14333	50.09	µg/L		100
PFHpA	6.082	363.0 -> 319.0	99603	50.27	µg/L		100
PFHpS	6.766	449.0 -> 80.0	22311	48.24	µg/L		98
PFHxA	5.255	313.0 -> 269.0	46050	49.77	µg/L		99
PFHxS	6.076	399.0 -> 80.0	48114	48.56	µg/L	m	98
PFNA	7.463	463.0 -> 419.0	15629	51.16	µg/L		97
PFNS	8.124	549.0 -> 80.0	19210	51.48	µg/L		98
PFOA	6.786	413.0 -> 369.0	33313	50.92	µg/L		99
PFOS	7.410	499.0 -> 80.0	25008	51.45	µg/L	m	98
PFPeA	4.216	263.0 -> 219.0	161523	50.03	µg/L		100
PFPeS	5.295	349.0 -> 80.0	42905	49.60	µg/L		100
PFTeDA	13.562	713.0 -> 669.0	12047	51.02	µg/L		99
PFTrDA	12.513	663.0 -> 619.0	18741	50.61	µg/L		99
PFUnDA	9.808	563.0 -> 519.0	32578	49.98	µg/L		99

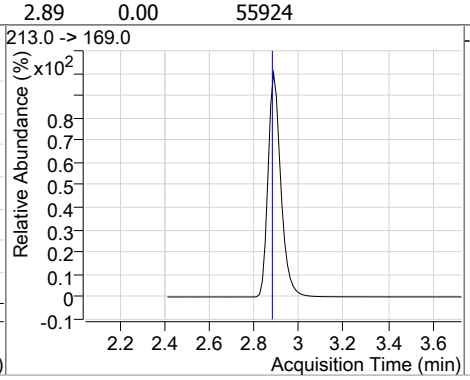
 # = Qualifier out of range, m = manually integrated, + = Area summed

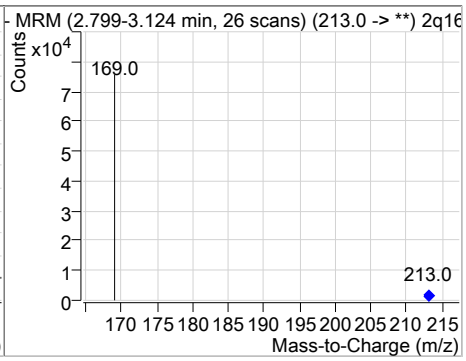
Perfluorinated Compounds by LC/MS/MS



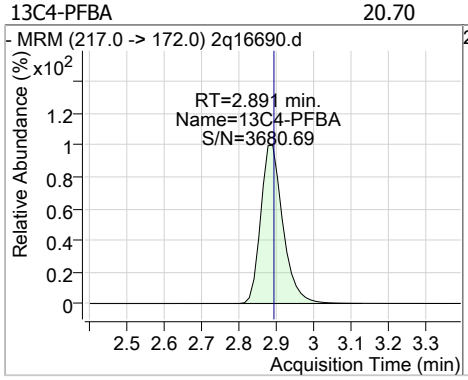
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	49.85	2.89	0.00	55924				

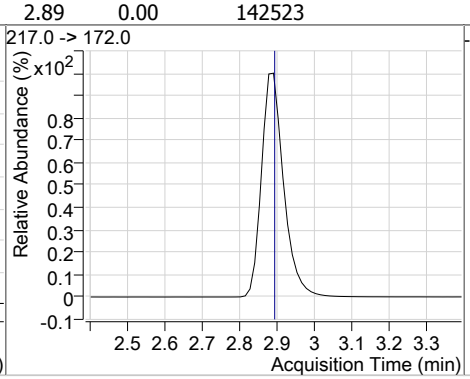


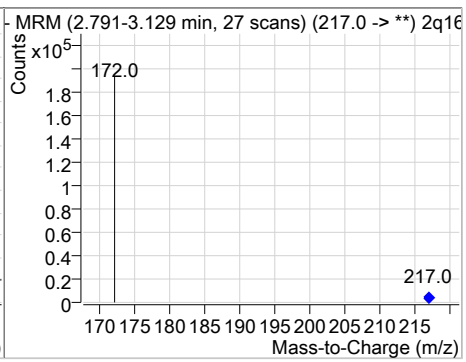




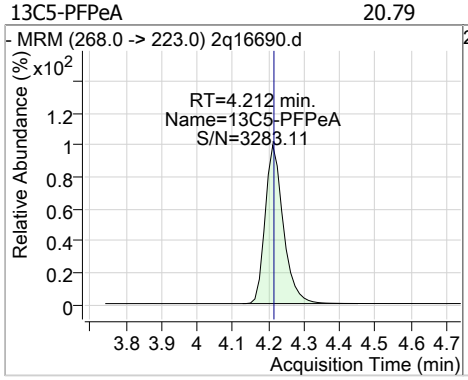
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.70	2.89	0.00	142523				

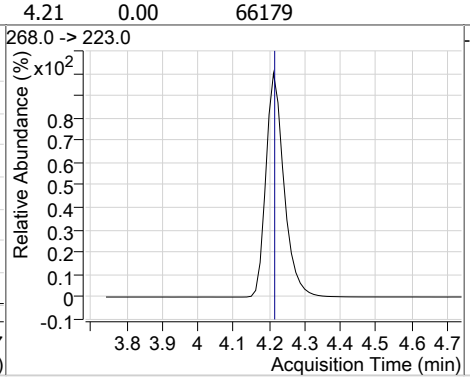


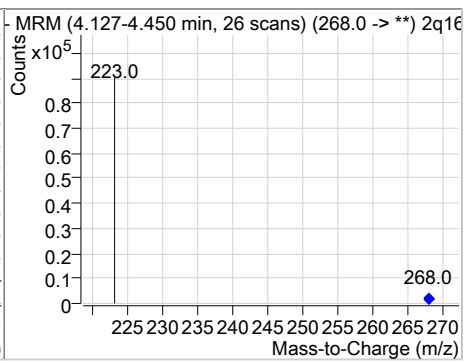




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.79	4.21	0.00	66179				

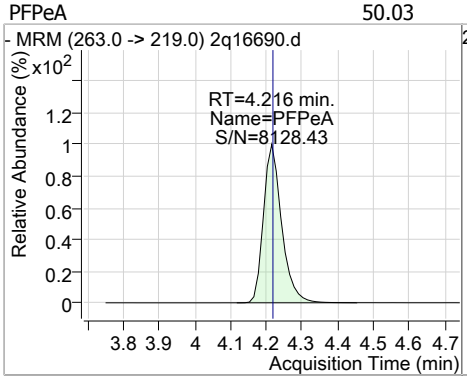


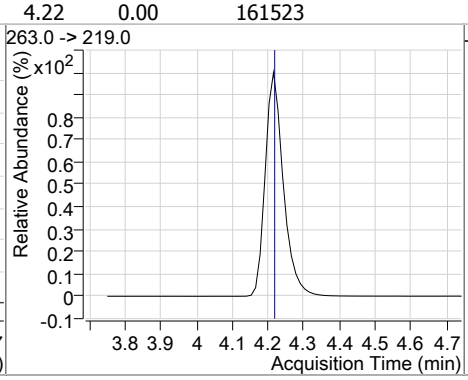


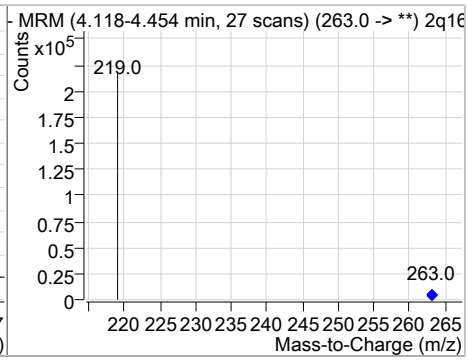


Perfluorinated Compounds by LC/MS/MS

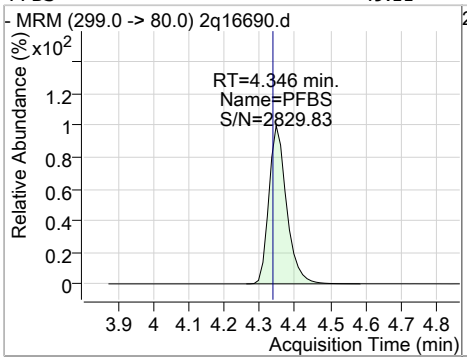
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	50.03	4.22	0.00	161523				

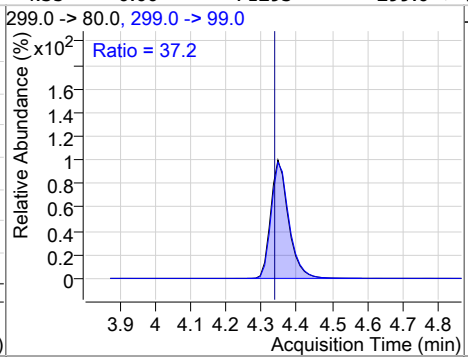


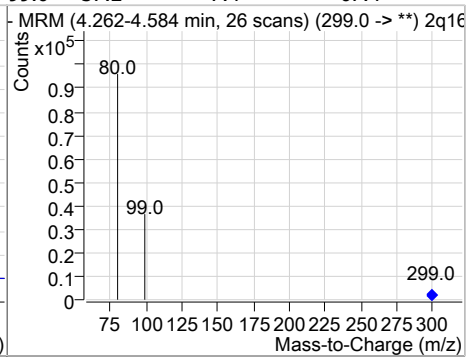




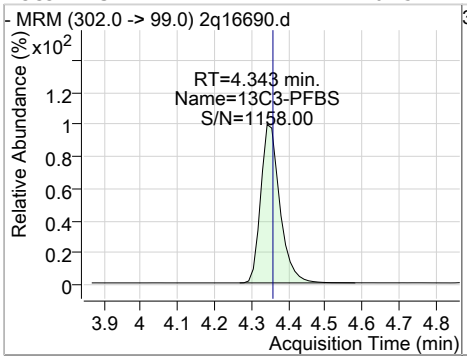
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	49.11	4.35	0.00	71293	299.0 -> 99.0	37.2	7.4	67.4

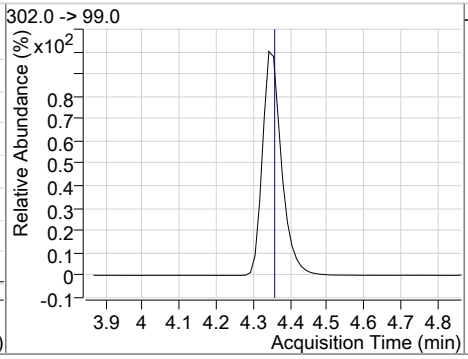


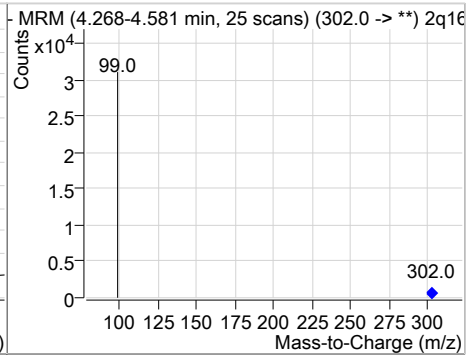




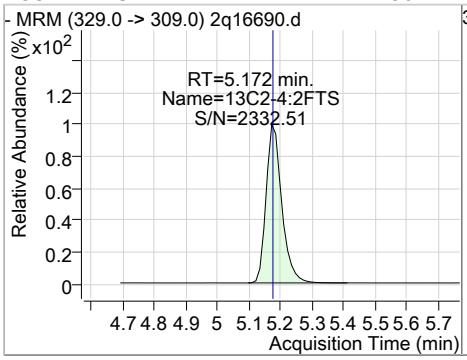
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.75	4.34	-0.01	21724				

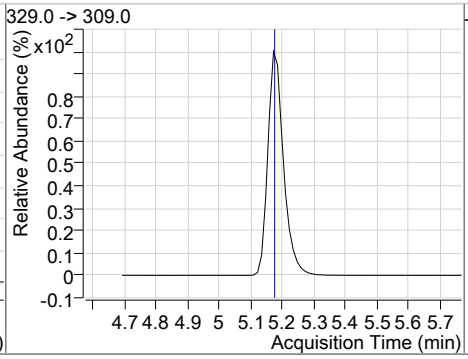


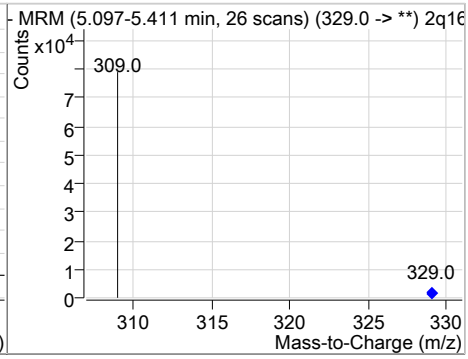




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	21.98	5.17	0.00	57595				

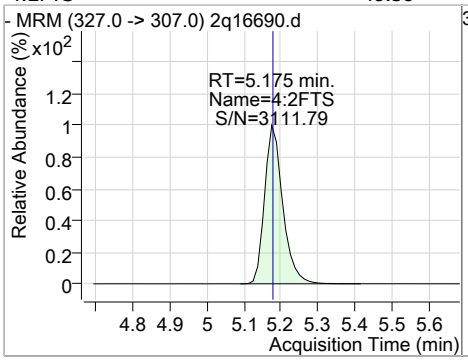


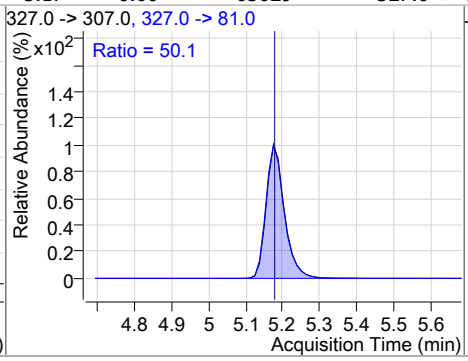


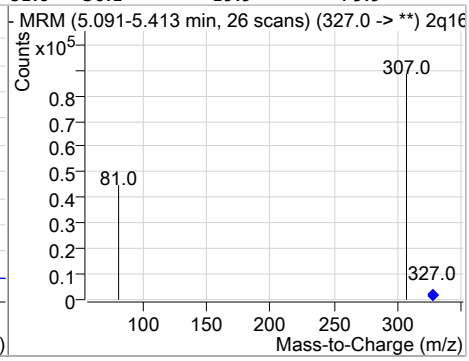


Perfluorinated Compounds by LC/MS/MS

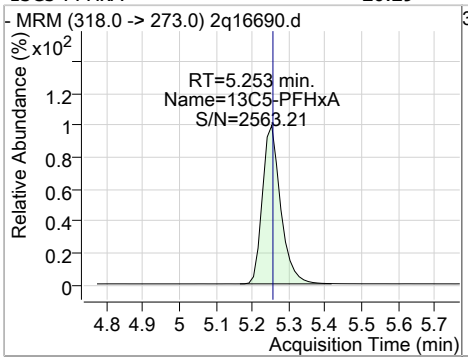
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	48.58	5.17	0.00	65629	327.0 -> 81.0	50.1	19.9	79.9

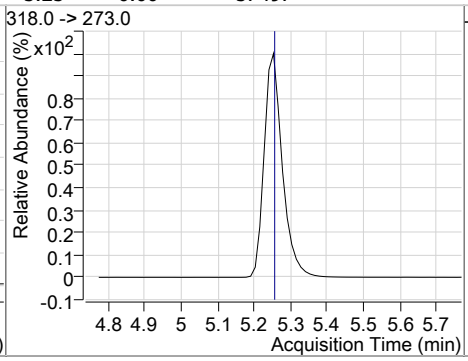


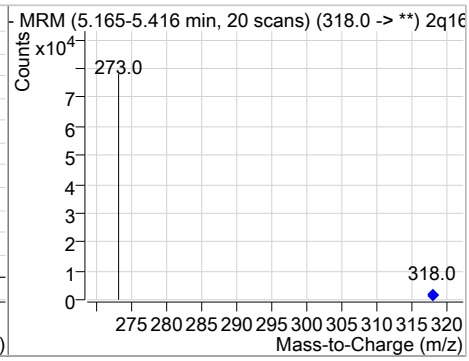




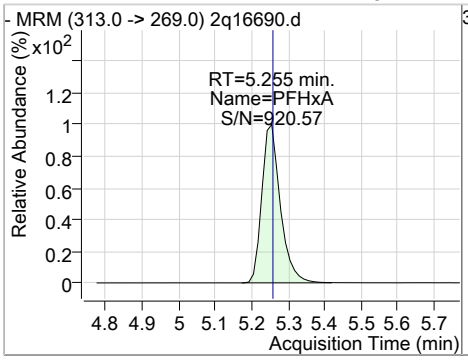
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.29	5.25	0.00	57497				

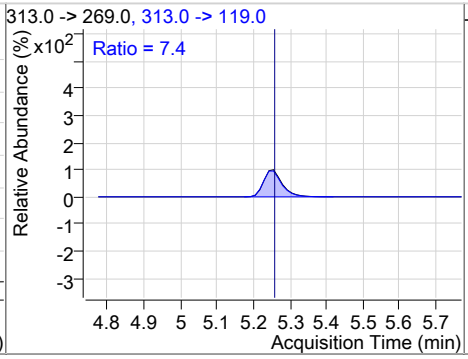


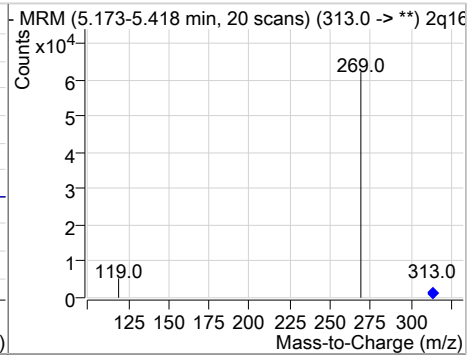




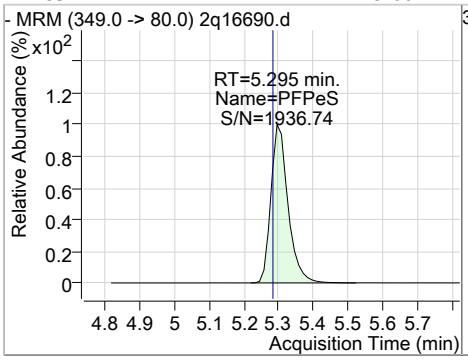
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	49.77	5.26	0.00	46050	313.0 -> 119.0	7.4	0.0	37.6

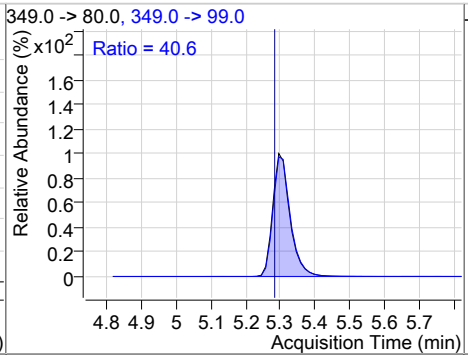


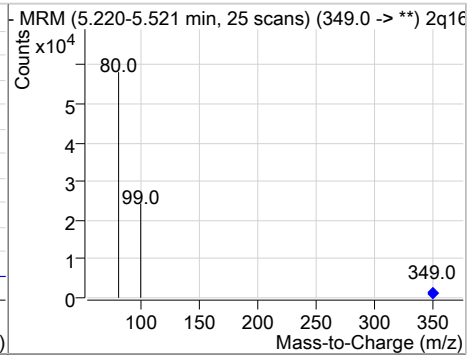




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	49.60	5.30	0.00	42905	349.0 -> 99.0	40.6	10.8	70.8

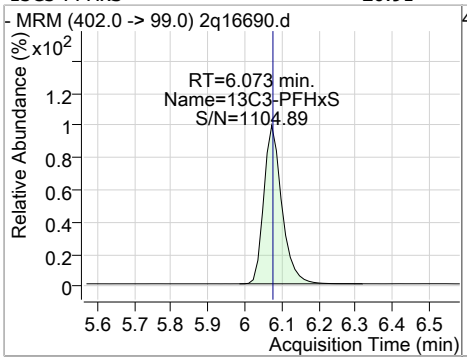


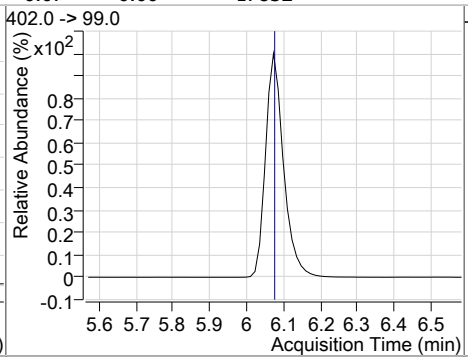


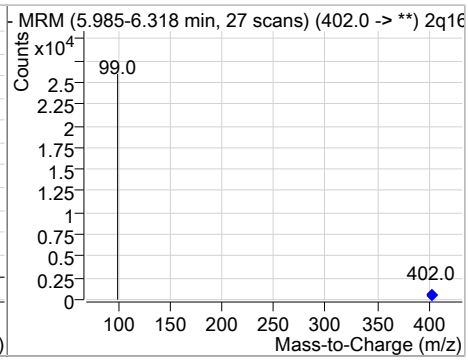


Perfluorinated Compounds by LC/MS/MS

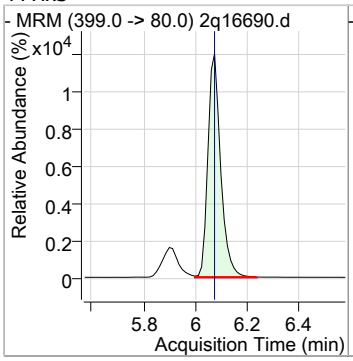
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.91	6.07	0.00	17832				

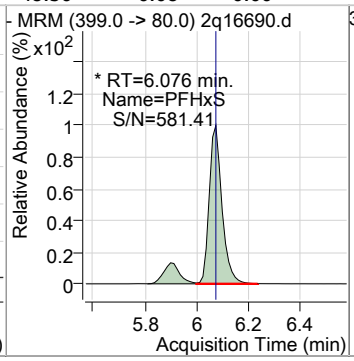


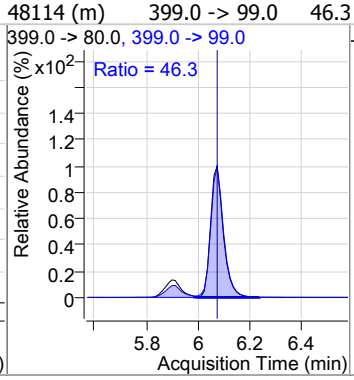


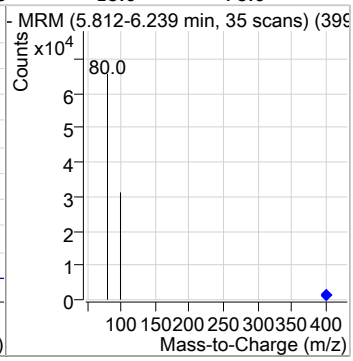


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	48.56	6.08	0.00	48114 (m)	399.0 -> 99.0	46.3	18.0	78.0

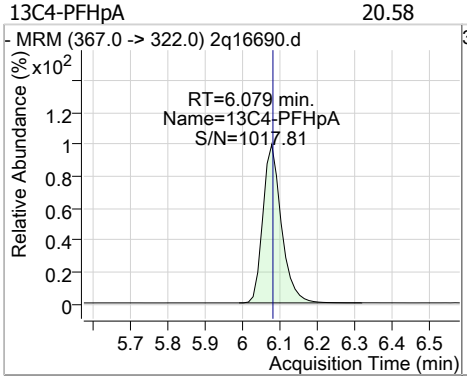


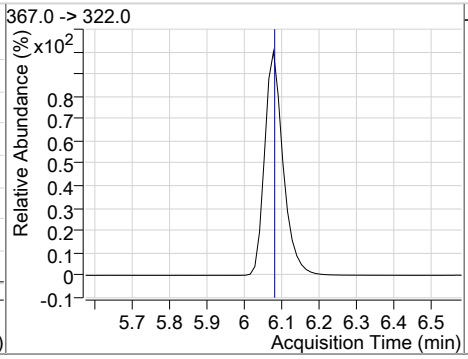


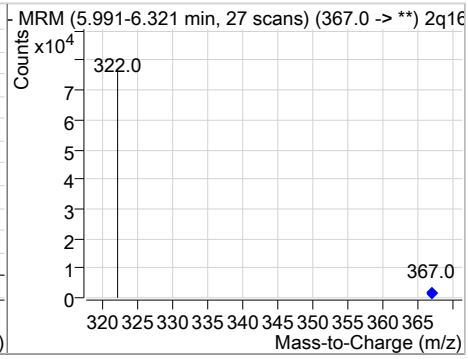




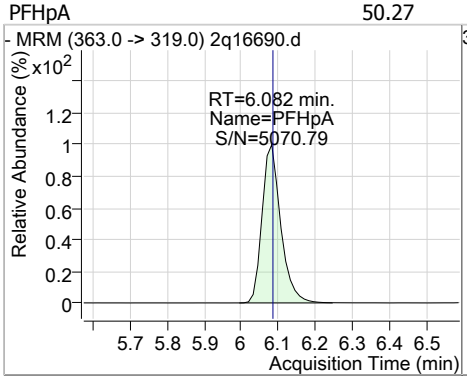
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.58	6.08	0.00	55438				

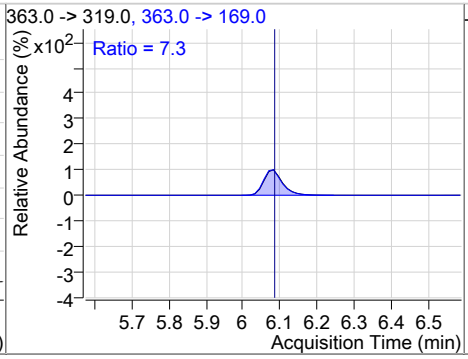


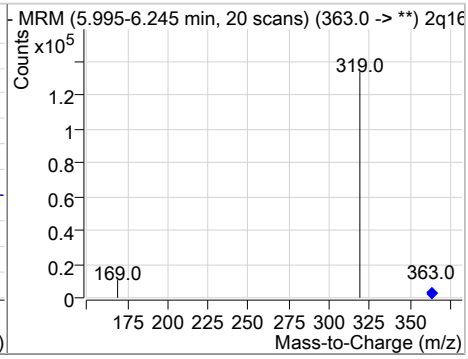




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	50.27	6.08	0.00	99603	363.0 -> 169.0	7.3	0.0	37.2

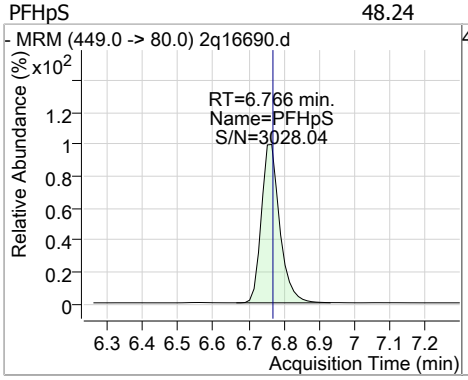


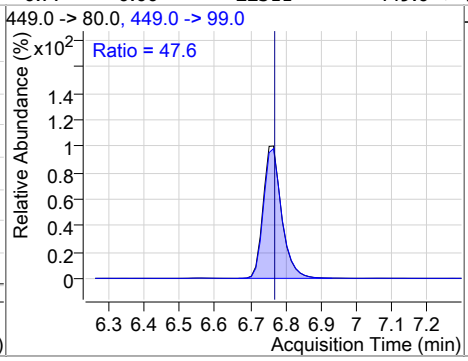


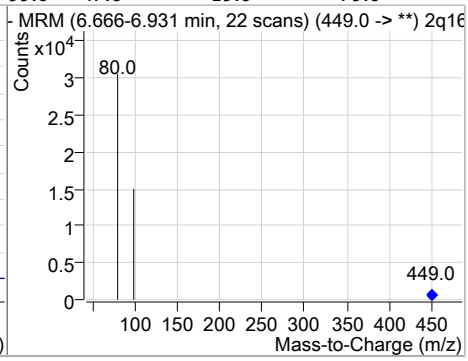


Perfluorinated Compounds by LC/MS/MS

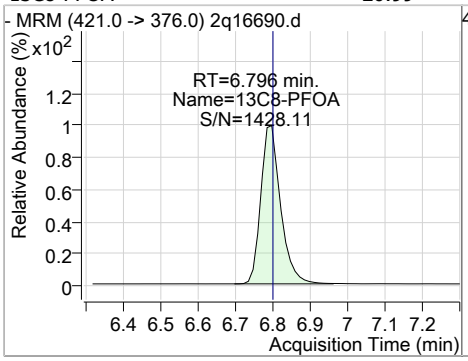
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	48.24	6.77	0.00	22311	449.0 -> 99.0	47.6	19.0	79.0

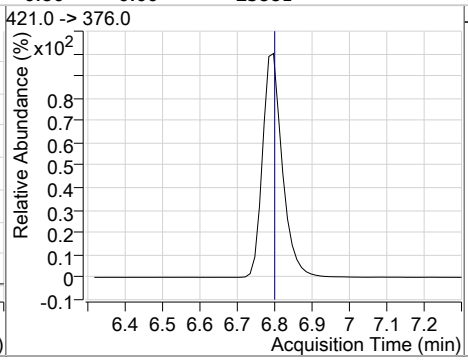


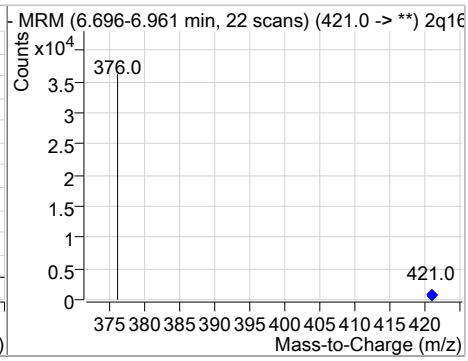




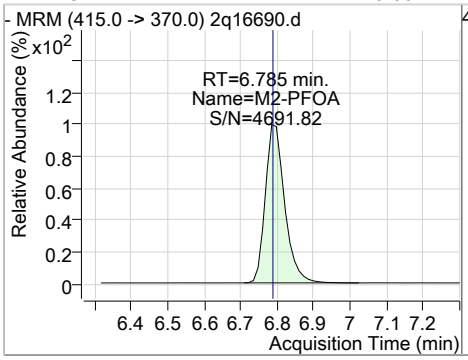
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.99	6.80	0.00	25881				

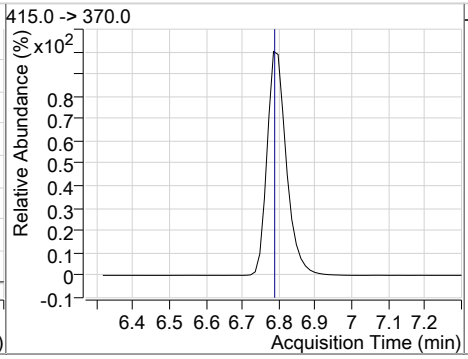


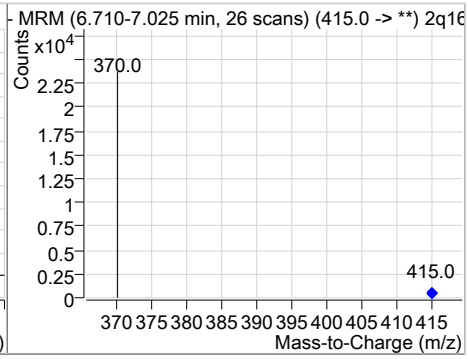




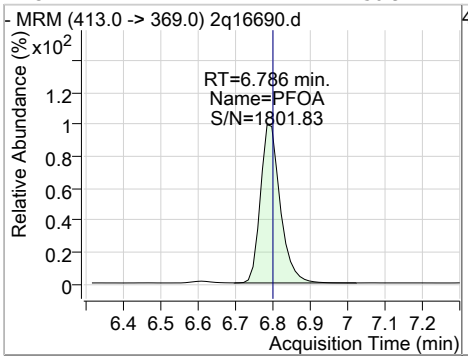
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.79	-0.01	17025				

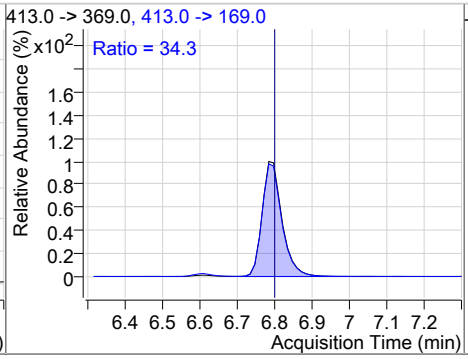


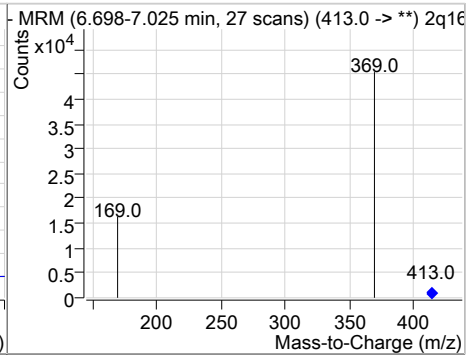




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	50.92	6.79	-0.01	33313	413.0 -> 169.0	34.3	5.0	65.0

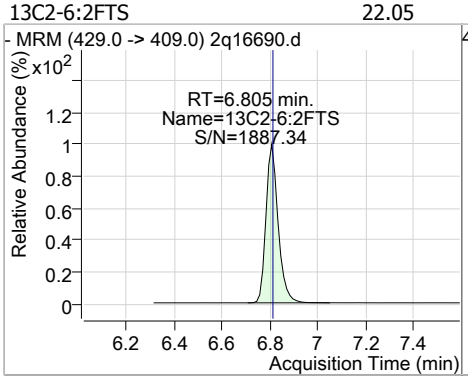


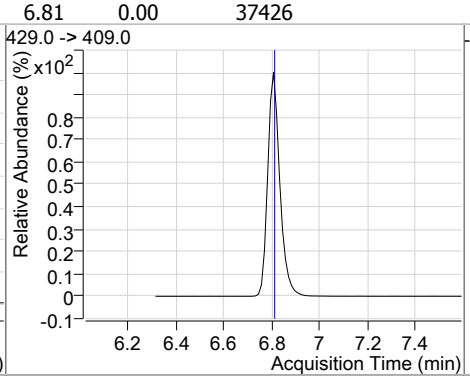


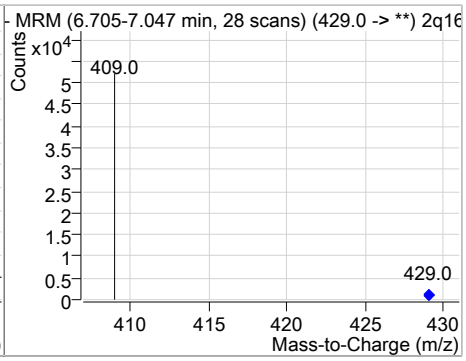


Perfluorinated Compounds by LC/MS/MS

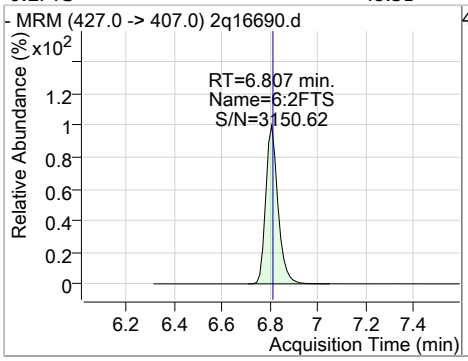
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	22.05	6.81	0.00	37426				

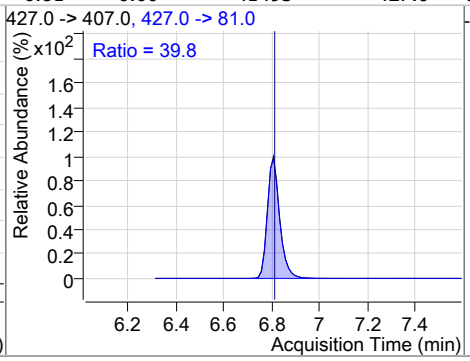


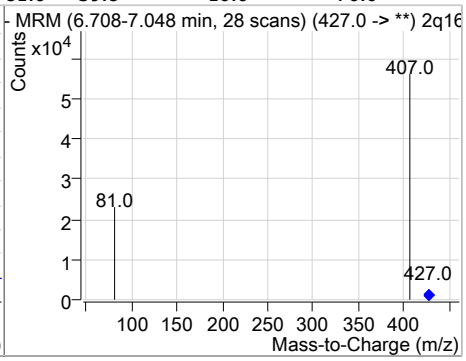




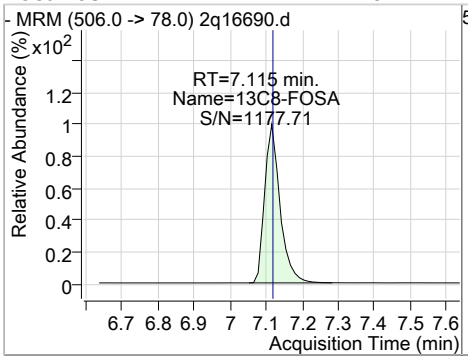
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	48.51	6.81	0.00	41495	427.0 -> 81.0	39.8	10.0	70.0

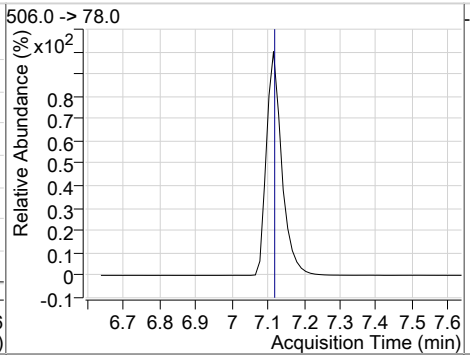


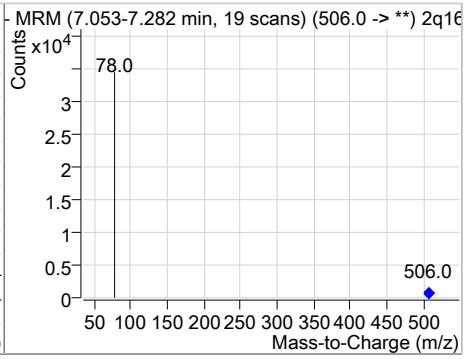




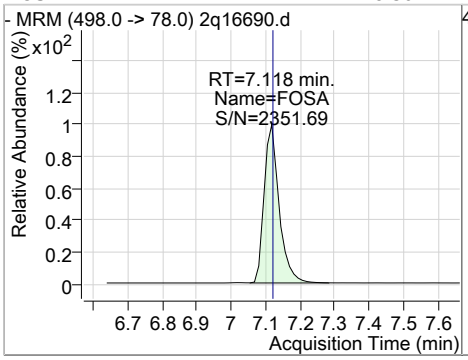
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.27	7.12	0.00	25563				

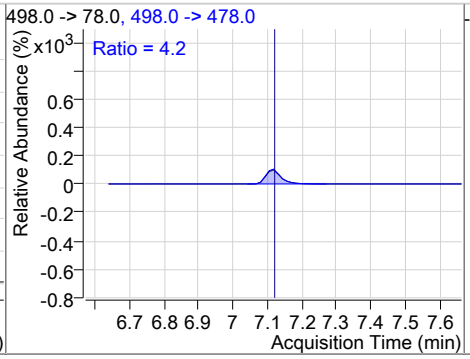


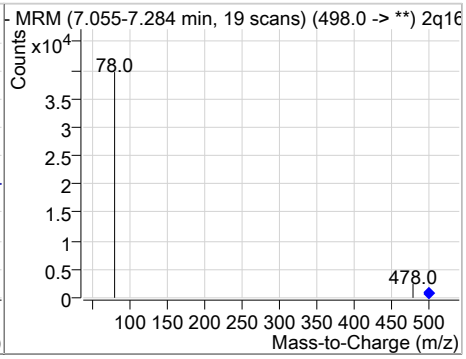




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	48.30	7.12	0.00	29973	498.0 -> 478.0	4.2	0.0	34.0

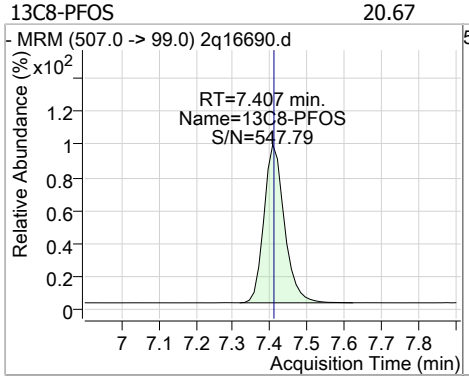


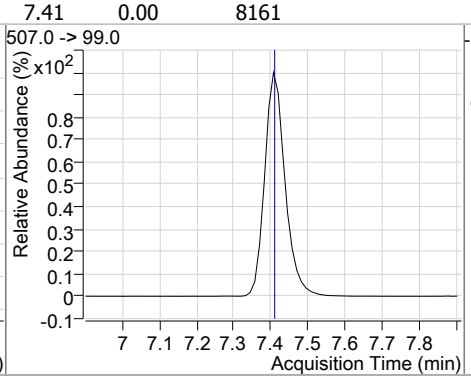


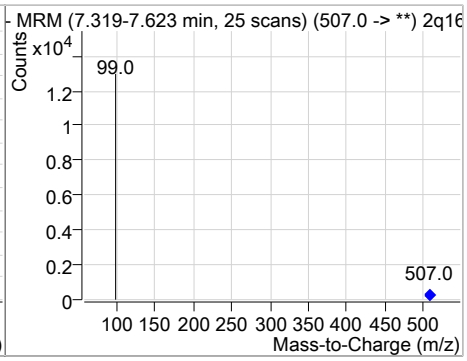


Perfluorinated Compounds by LC/MS/MS

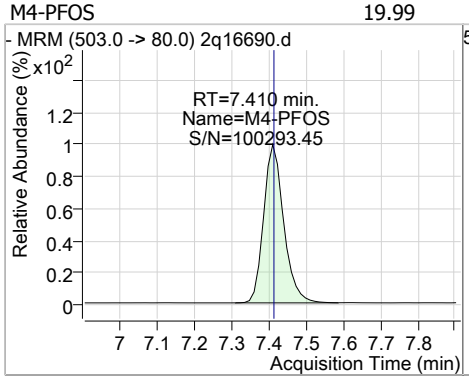
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.67	7.41	0.00	8161				

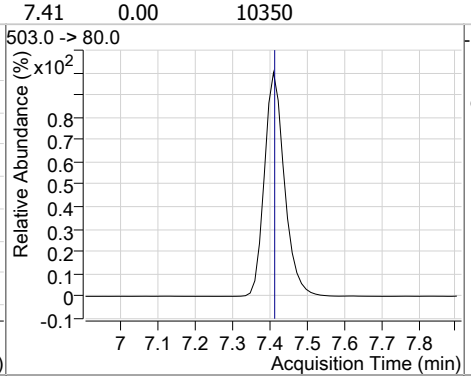


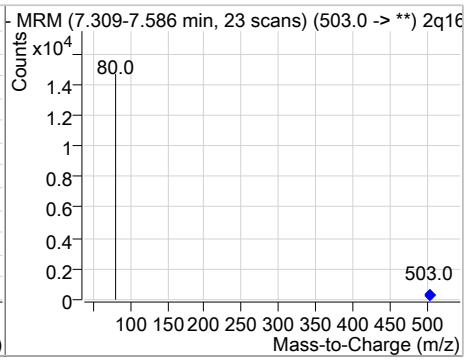




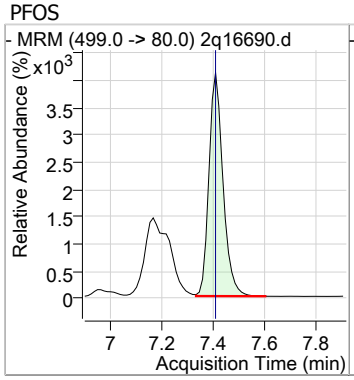
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	19.99	7.41	0.00	10350				

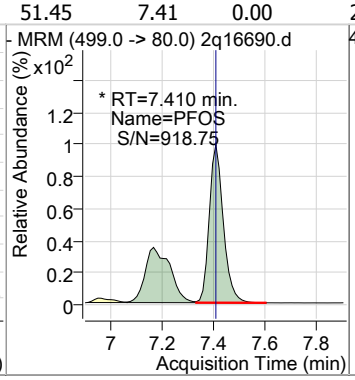


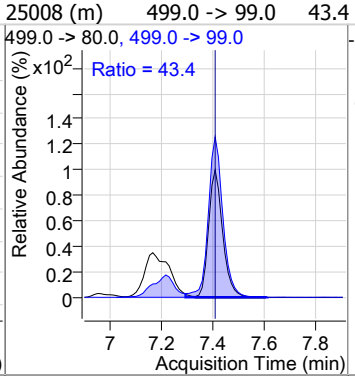


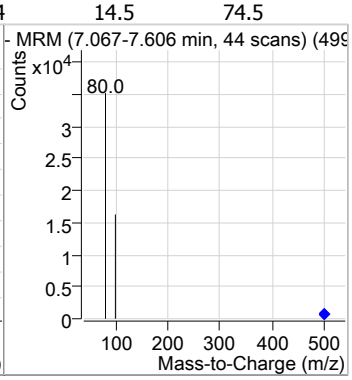


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	51.45	7.41	0.00	25008 (m)	499.0 -> 99.0	43.4	14.5	74.5

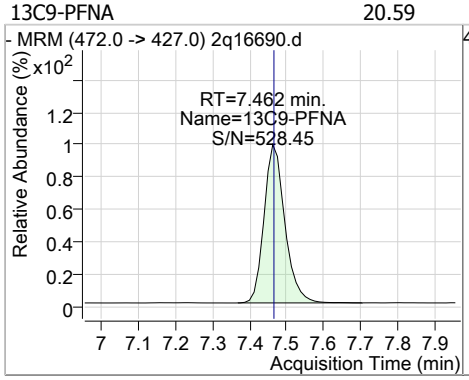


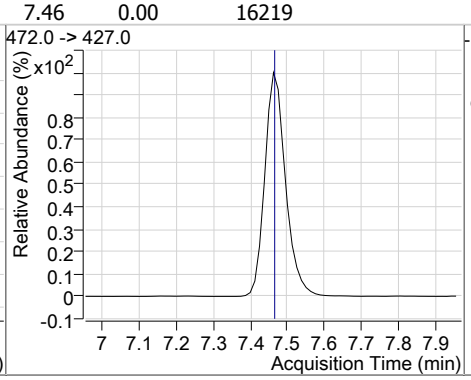


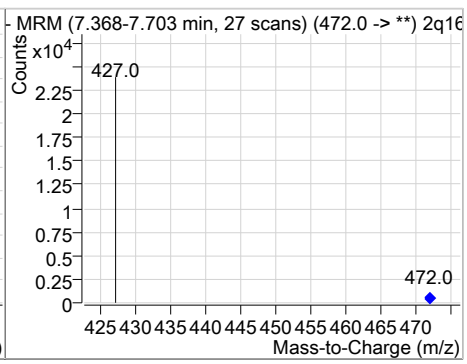




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.59	7.46	0.00	16219				

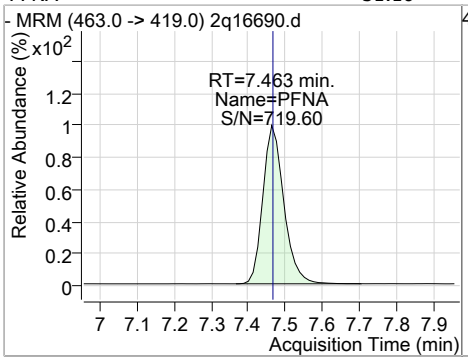


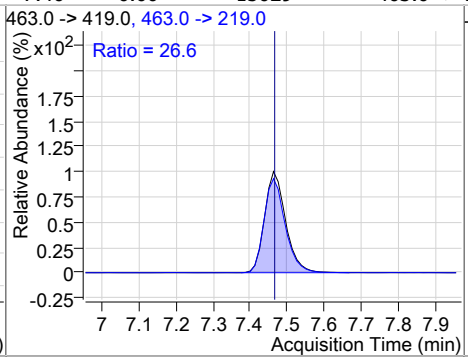


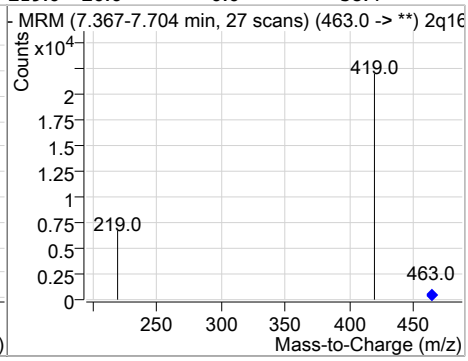


Perfluorinated Compounds by LC/MS/MS

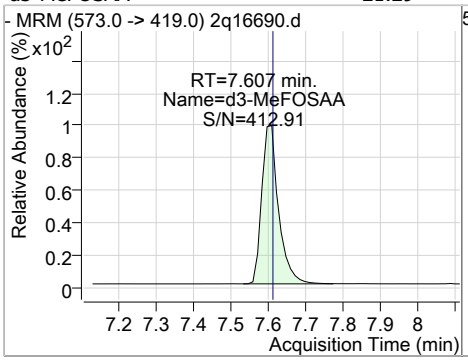
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	51.16	7.46	0.00	15629	463.0 -> 219.0	26.6	0.0	58.4

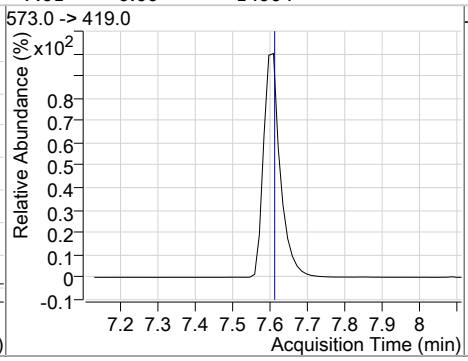


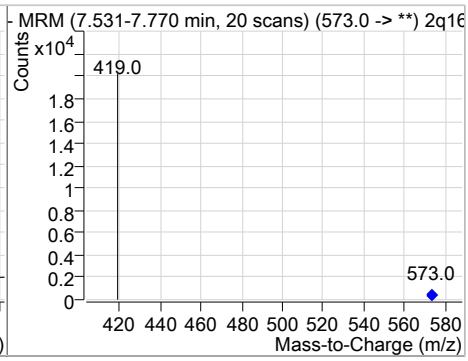




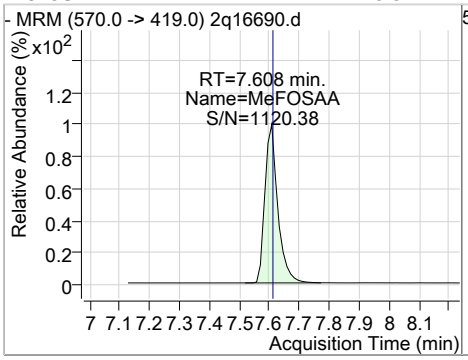
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.29	7.61	0.00	14064				

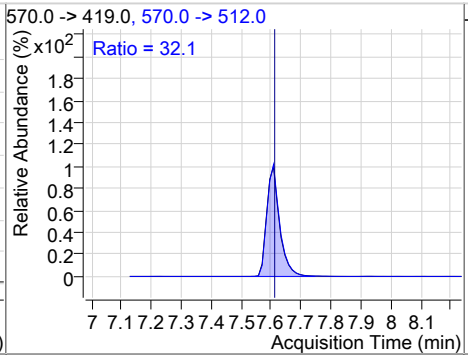


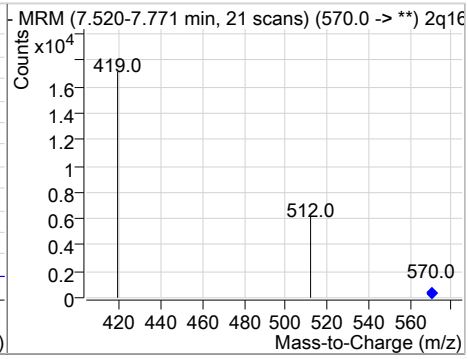




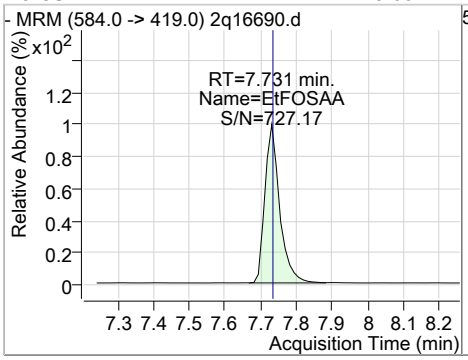
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	48.54	7.61	0.00	12275	570.0 -> 512.0	32.1	1.8	61.8

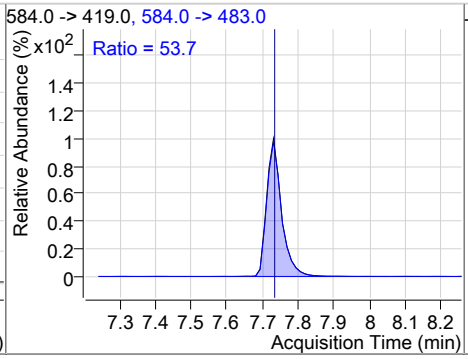


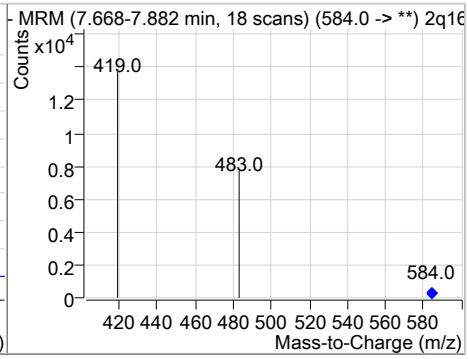




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	48.60	7.73	0.00	9745	584.0 -> 483.0	53.7	24.8	84.8

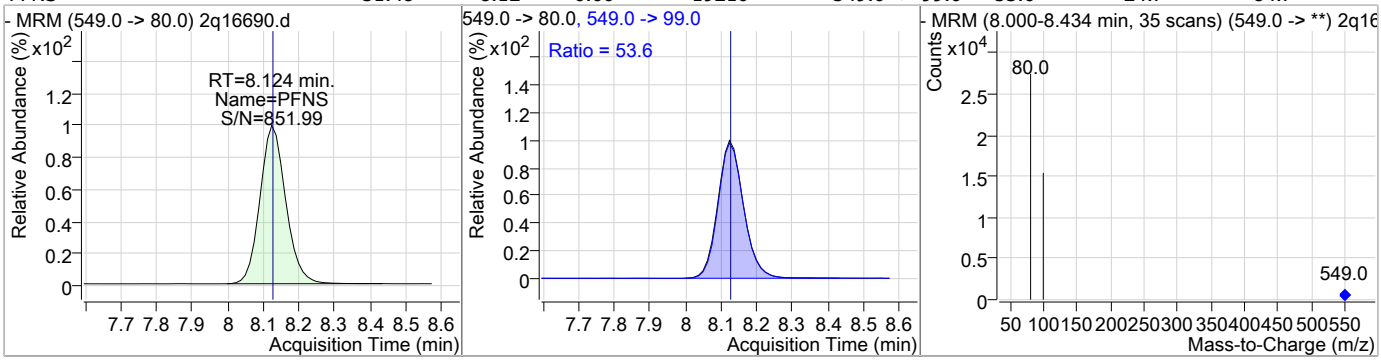




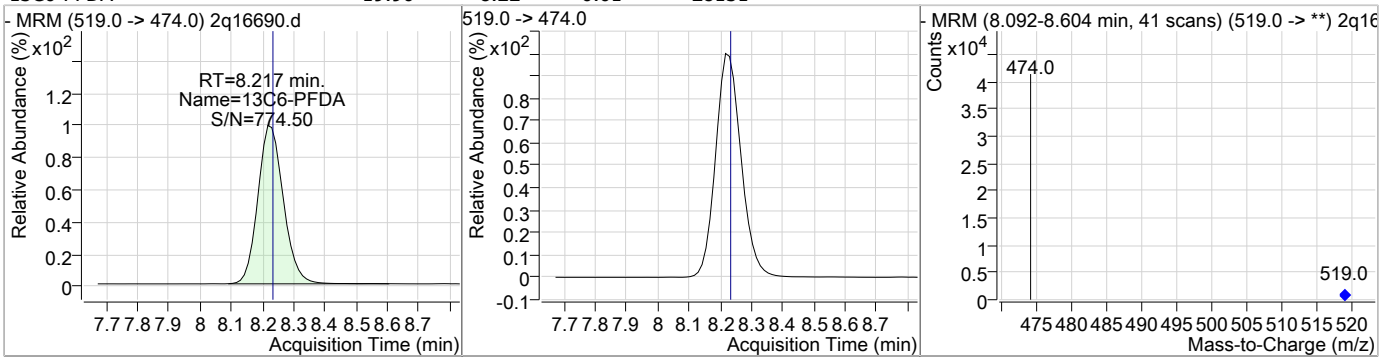


Perfluorinated Compounds by LC/MS/MS

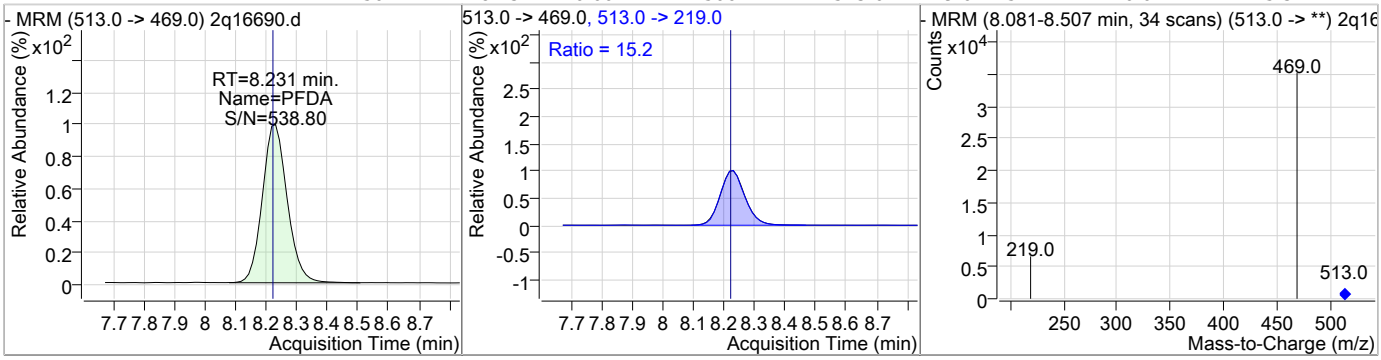
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	51.48	8.12	0.00	19210	549.0 -> 99.0	53.6	24.7	84.7



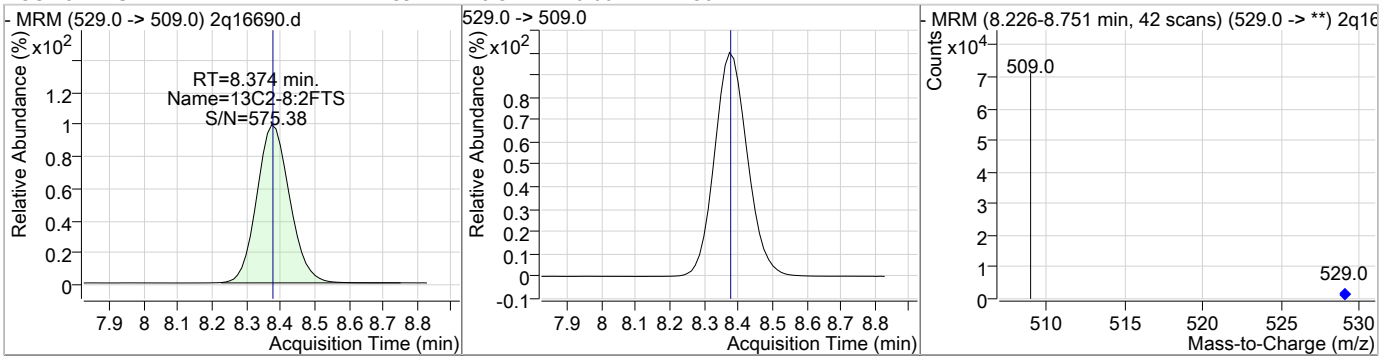
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.96	8.22	-0.01	28131				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	50.12	8.23	0.00	25067	513.0 -> 219.0	15.2	0.0	45.3

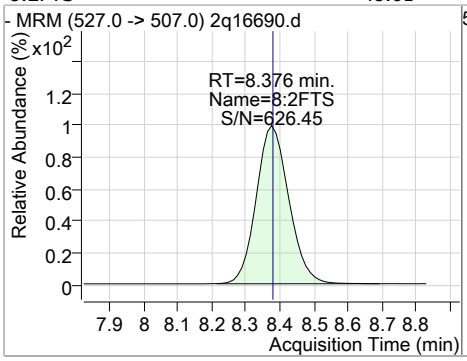


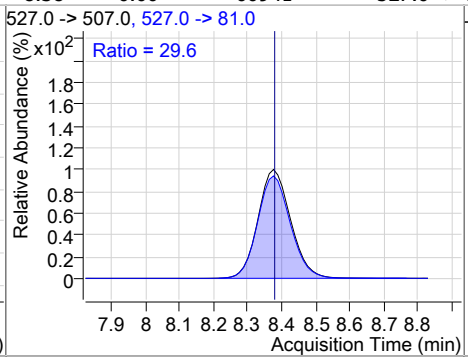
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	22.39	8.37	0.00	50742				

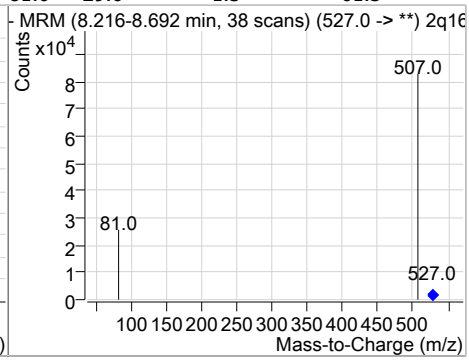


Perfluorinated Compounds by LC/MS/MS

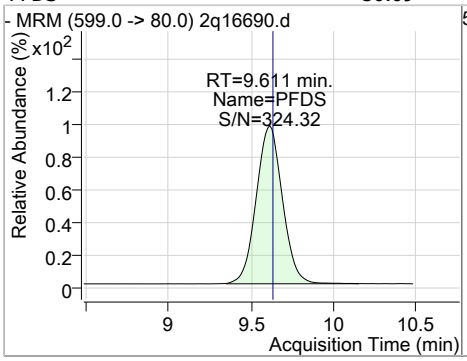
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	48.61	8.38	0.00	60941	527.0 -> 81.0	29.6	1.3	61.3

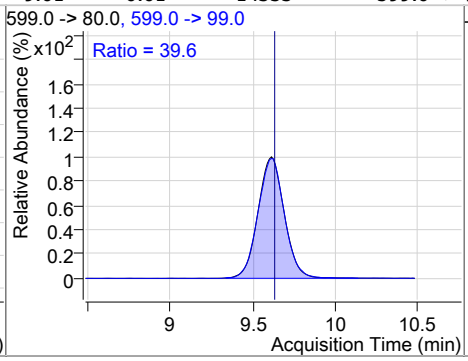


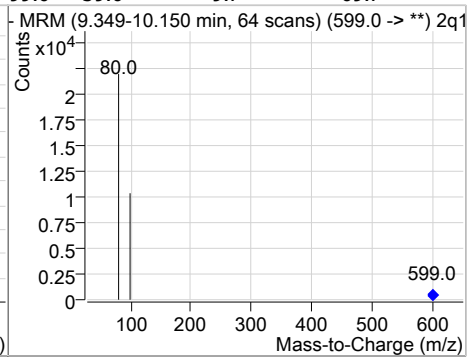




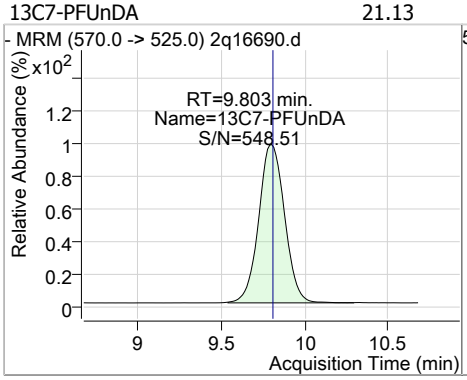
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	50.09	9.61	-0.01	14333	599.0 -> 99.0	39.6	9.7	69.7

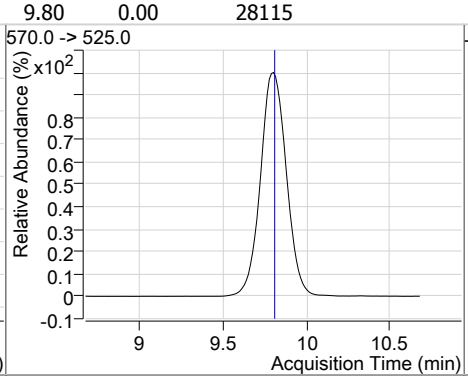


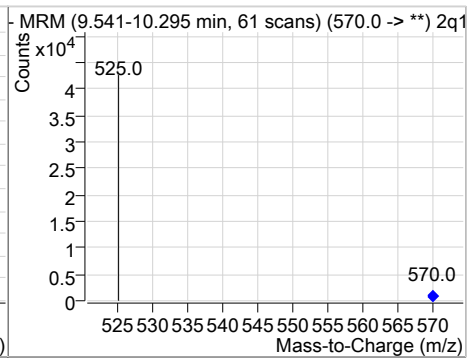




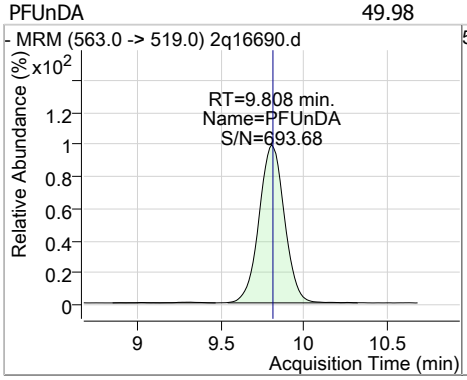
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.13	9.80	0.00	28115				

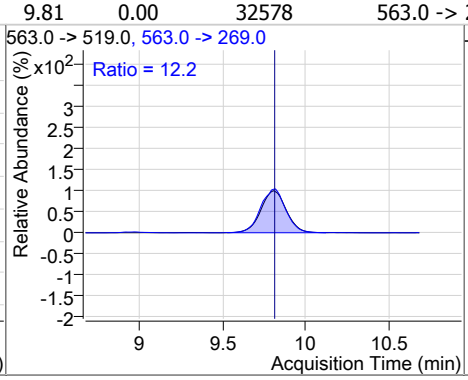


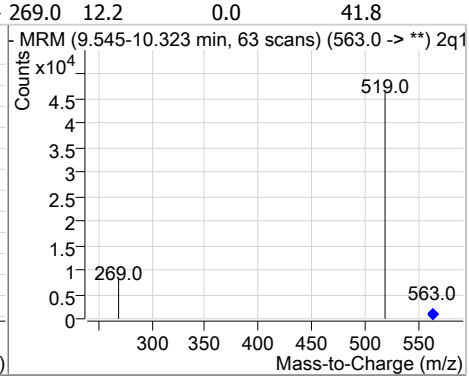




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	49.98	9.81	0.00	32578	563.0 -> 269.0	12.2	0.0	41.8

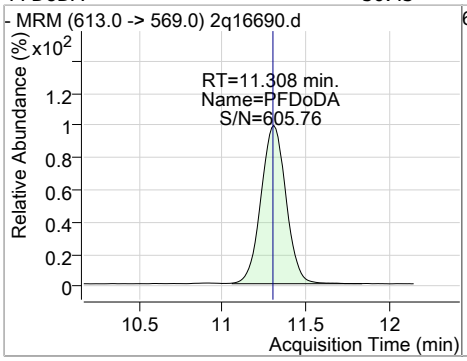


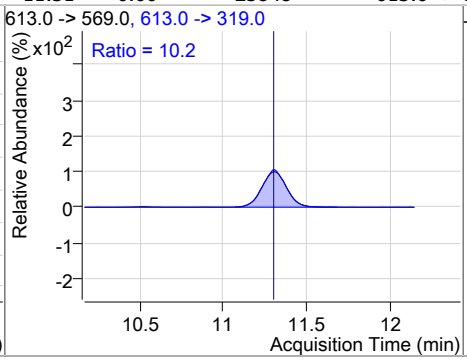


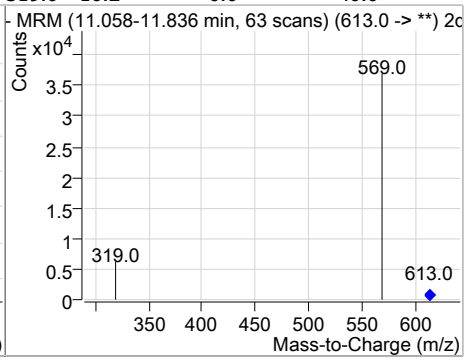


Perfluorinated Compounds by LC/MS/MS

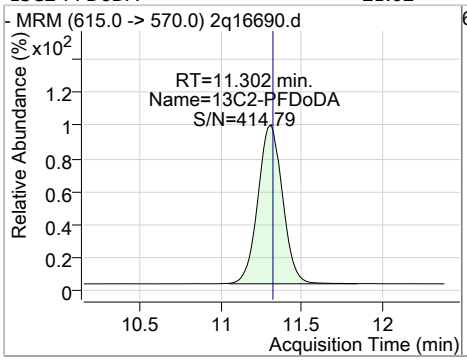
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	50.43	11.31	0.00	25848	613.0 -> 319.0	10.2	0.0	40.0

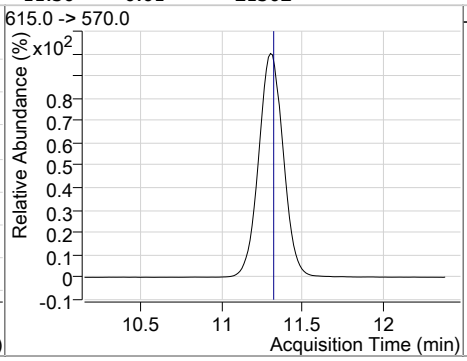


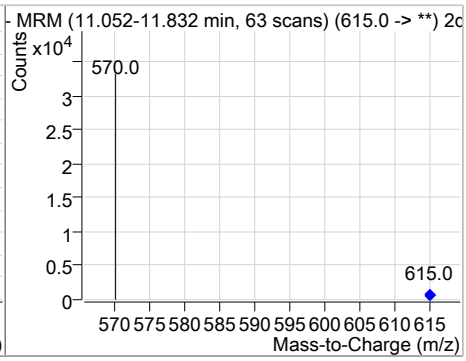




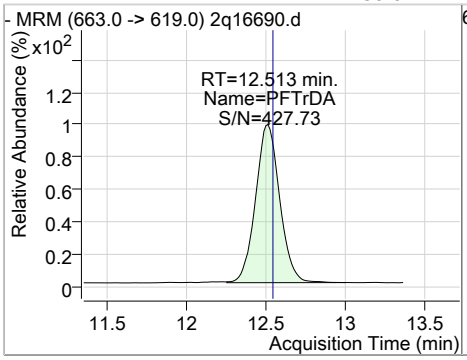
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.02	11.30	-0.01	21302				

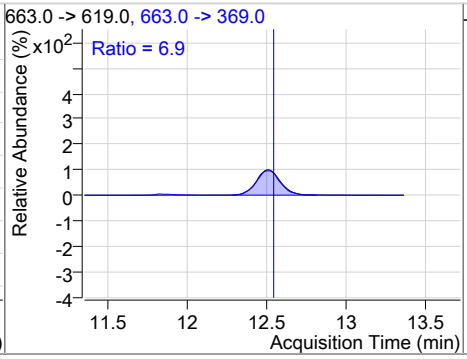


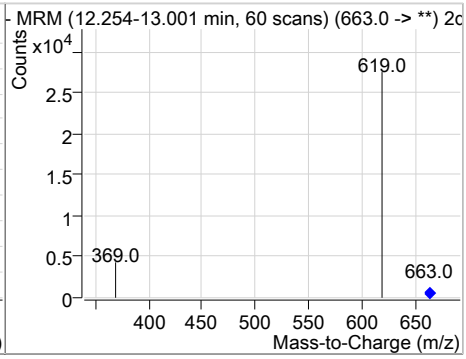




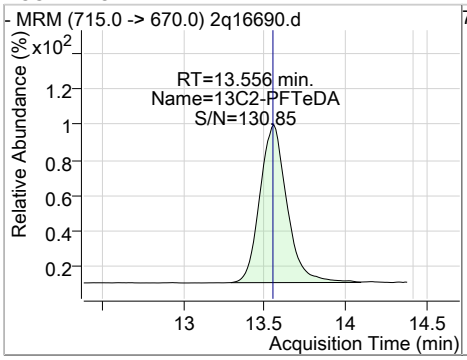
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	50.61	12.51	-0.01	18741	663.0 -> 369.0	6.9	0.0	37.1

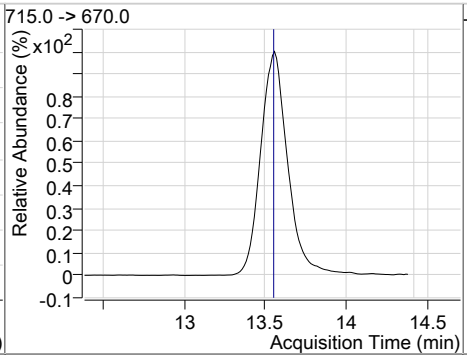


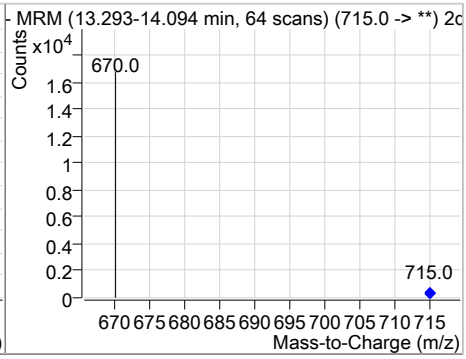




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.22	13.56	0.01	8302				

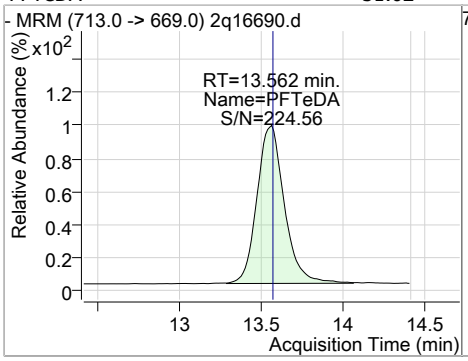


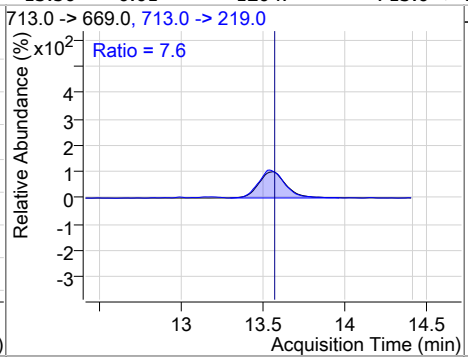


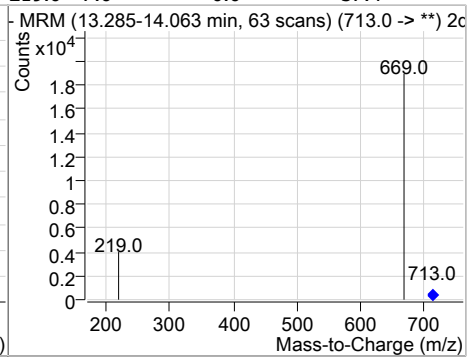


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	51.02	13.56	0.01	12047	713.0 -> 219.0	7.6	0.0	37.4







Manual Integration Approval Summary

Sample Number:	S2Q292-IC292	**Method:**	EPA 537M QSM5.1 B-15
Lab FileID:	2Q16690.D	**Analyst approved:**	07/09/18 13:31 Natasha Gumtie
Injection Time:	07/07/18 10:44	**Supervisor approved:**	07/10/18 17:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.08	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.41	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/10/18 17:09

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16691.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/7/2018 11:04:24 AM
Sample Name : ic292-100
Vial : Vial 9
DA Method File : PFC_ID_070718_S2Q292.quantmethod.xml
Batch Name : s2q292.batch.bin
Sample Information : op70610,S2Q292,130,,,1.0,1,water

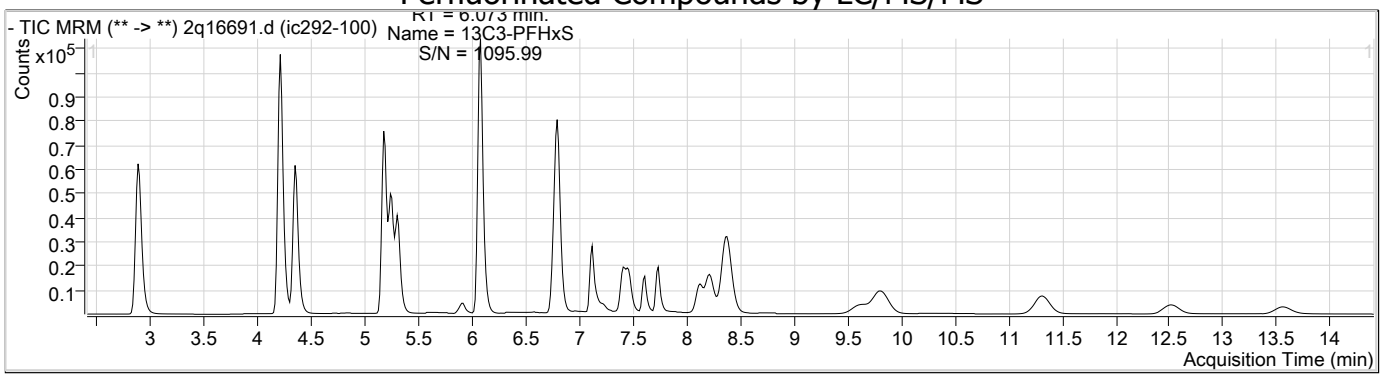
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-PFOA	6.785	415.0 -> 370.0	14851	20.00 µg/L	-0.013
13C4-PFOS	7.410	503.0 -> 80.0	9120	20.00 µg/L	0.000
M4-PFBA	2.878	217.0 -> 172.0	141321	20.00 µg/L	-0.013
M5-PFPeA	4.212	268.0 -> 223.0	65368	20.00 µg/L	0.000
M5-PFHxA	5.253	318.0 -> 273.0	56177	20.00 µg/L	0.000
M4-PFHpA	6.079	367.0 -> 322.0	53901	20.00 µg/L	0.000
M8-PFOA	6.784	421.0 -> 376.0	25013	20.00 µg/L	-0.013
M9-PFNA	7.462	472.0 -> 427.0	16780	20.00 µg/L	0.000
M6-PFDA	8.217	519.0 -> 474.0	28078	20.00 µg/L	-0.013
M7-PFUnDA	9.803	570.0 -> 525.0	27872	20.00 µg/L	0.000
M2-PFDoDA	11.315	615.0 -> 570.0	21741	20.00 µg/L	0.000
M2-PFTeDA	13.556	715.0 -> 670.0	8504	20.00 µg/L	0.013
M8-FOSA	7.115	506.0 -> 78.0	22732	20.00 µg/L	0.000
M3-PFBS	4.343	302.0 -> 99.0	21101	20.00 µg/L	-0.013
M3-PFHxS	6.073	402.0 -> 99.0	17117	20.00 µg/L	0.000
M8-PFOS	7.407	507.0 -> 99.0	8388	20.00 µg/L	0.000
M2-4:2FTS	5.172	329.0 -> 309.0	63474	20.00 µg/L	0.000
M2-6:2FTS	6.805	429.0 -> 409.0	41212	20.00 µg/L	0.000
M2-8:2FTS	8.374	529.0 -> 509.0	56879	20.00 µg/L	0.000
M3-MeFOSAA	7.594	573.0 -> 419.0	13191	20.00 µg/L	-0.013
System Monitoring Compounds					
13C2-4:2FTS	5.172	329.0 -> 309.0	63478	24.22 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.1%	
13C2-6:2FTS	6.805	429.0 -> 409.0	41207	24.28 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.4%	
13C2-8:2FTS	8.374	529.0 -> 509.0	56767	25.04 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 125.2%	
13C2-PFDoDA	11.315	615.0 -> 570.0	21767	21.48 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.4%	
13C2-PFTeDA	13.556	715.0 -> 670.0	8479	21.68 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.4%	
13C3-PFBS	4.343	302.0 -> 99.0	21091	20.15 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C3-PFHxS	6.073	402.0 -> 99.0	17118	20.07 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C4-PFBA	2.878	217.0 -> 172.0	141255	20.51 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C4-PFHpA	6.079	367.0 -> 322.0	53900	20.01 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C5-PFHxA	5.253	318.0 -> 273.0	56188	19.83 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C5-PFPeA	4.212	268.0 -> 223.0	65360	20.54 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C6-PFDA	8.217	519.0 -> 474.0	28070	19.92 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.6%	

Perfluorinated Compounds by LC/MS/MS

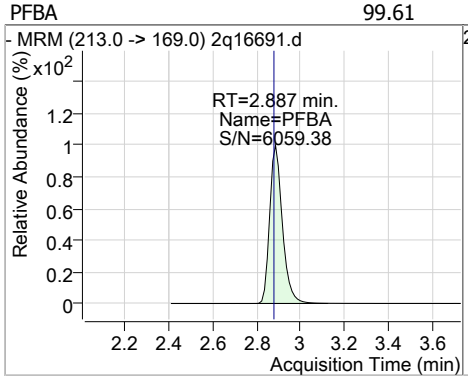
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	9.803	570.0 -> 525.0	27940	21.00	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.0%			
13C8-FOSA	7.115	506.0 -> 78.0	22751	17.15	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.8%			
13C8-PFOA	6.784	421.0 -> 376.0	25024	20.29	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%			
13C8-PFOS	7.407	507.0 -> 99.0	8388	21.24	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.2%			
13C9-PFNA	7.462	472.0 -> 427.0	16778	21.30	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.5%			
d3-MeFOSAA	7.594	573.0 -> 419.0	13198	19.98	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%			
M2-PFOA	6.785	415.0 -> 370.0	14850	20.00	ng/ml		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.410	503.0 -> 80.0	9125	20.02	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
Target Compounds							**QValue**
4:2FTS	5.175	327.0 -> 307.0	130967	100.36	µg/L		99
6:2FTS	6.807	427.0 -> 407.0	82743	100.38	µg/L		98
8:2FTS	8.376	527.0 -> 507.0	121632	100.38	µg/L		97
EtFOSAA	7.731	584.0 -> 419.0	18820	99.86	µg/L		99
FOSA	7.118	498.0 -> 78.0	55450	100.49	µg/L		100
MeFOSAA	7.608	570.0 -> 419.0	23837	100.28	µg/L		98
PFBA	2.887	213.0 -> 169.0	110789	99.61	µg/L		100
PFBS	4.346	299.0 -> 80.0	141086	100.02	µg/L		100
PFDA	8.219	513.0 -> 469.0	49634	99.40	µg/L		99
PFDoDA	11.321	613.0 -> 569.0	51984	99.15	µg/L		99
PFDS	9.611	599.0 -> 80.0	28208	99.28	µg/L		100
PFHpA	6.082	363.0 -> 319.0	191493	99.36	µg/L		100
PFHpS	6.753	449.0 -> 80.0	44576	100.45	µg/L		99
PFHxA	5.255	313.0 -> 269.0	90022	99.56	µg/L		99
PFHxS	6.076	399.0 -> 80.0	95392	100.34	µg/L	m	98
PFNA	7.463	463.0 -> 419.0	31243	98.95	µg/L		93
PFNS	8.124	549.0 -> 80.0	37812	98.45	µg/L		99
PFOA	6.786	413.0 -> 369.0	62496	98.84	µg/L		99
PFOS	7.410	499.0 -> 80.0	49340	98.61	µg/L	m	100
PFPeA	4.216	263.0 -> 219.0	317116	99.43	µg/L		100
PFPeS	5.295	349.0 -> 80.0	83795	99.71	µg/L		100
PFTeDA	13.562	713.0 -> 669.0	23721	98.66	µg/L		99
PFTrDA	12.525	663.0 -> 619.0	37290	98.91	µg/L		99
PFUnDA	9.820	563.0 -> 519.0	64372	99.46	µg/L		99

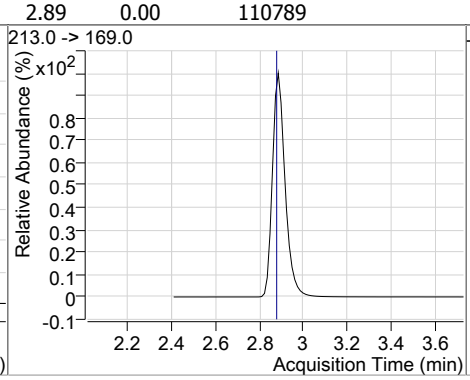
 # = Qualifier out of range, m = manually integrated, + = Area summed

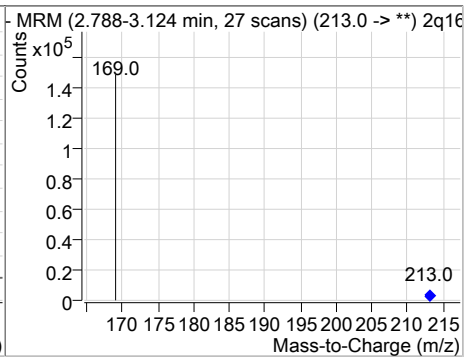
Perfluorinated Compounds by LC/MS/MS



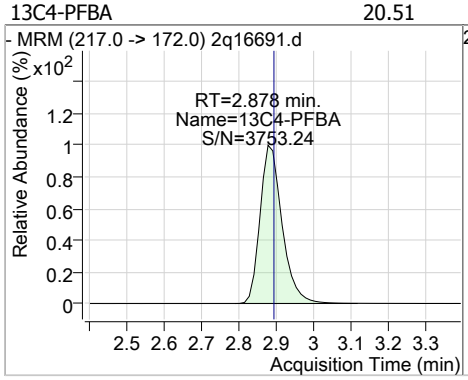
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	99.61	2.89	0.00	110789				

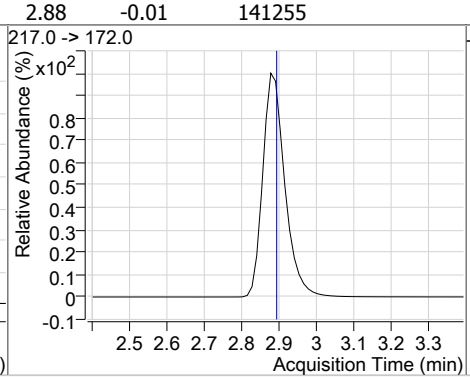


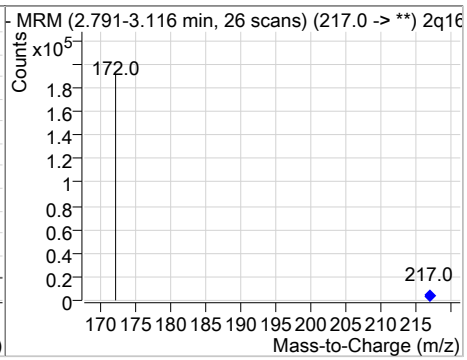




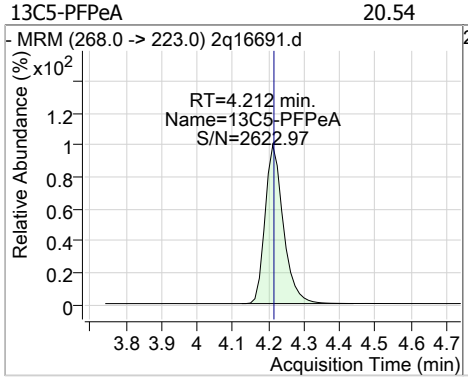
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.51	2.88	-0.01	141255				

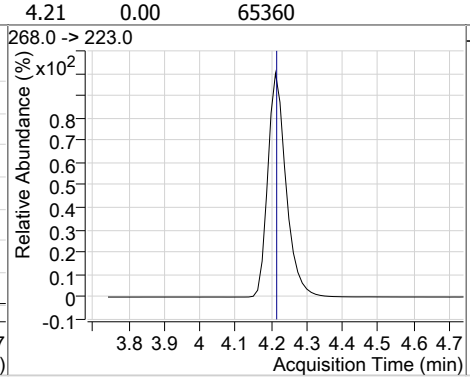


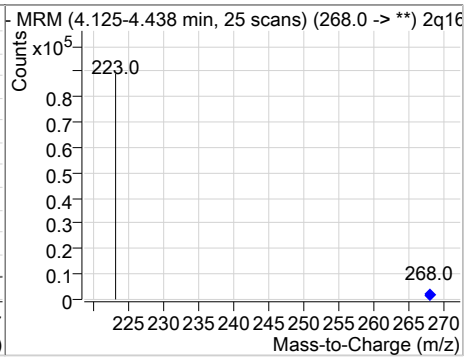




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.54	4.21	0.00	65360				

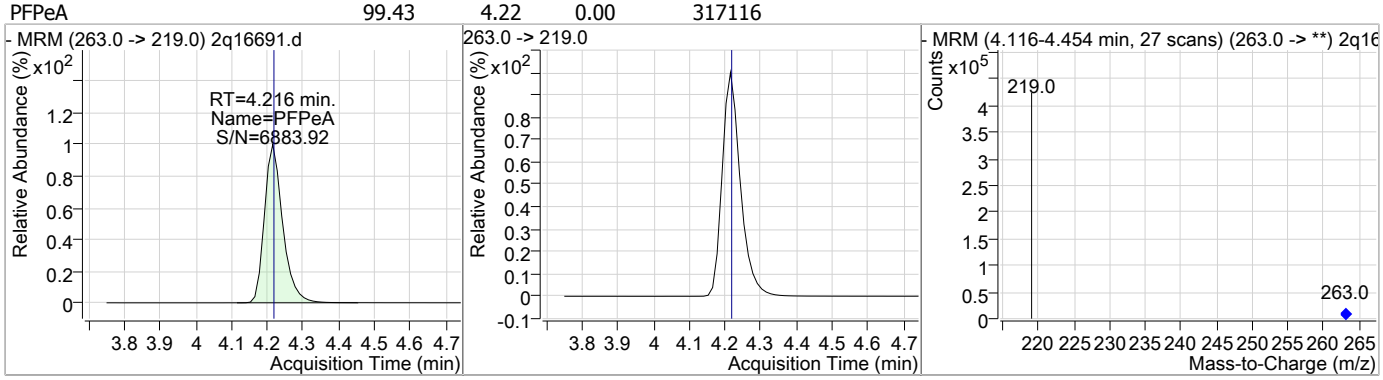




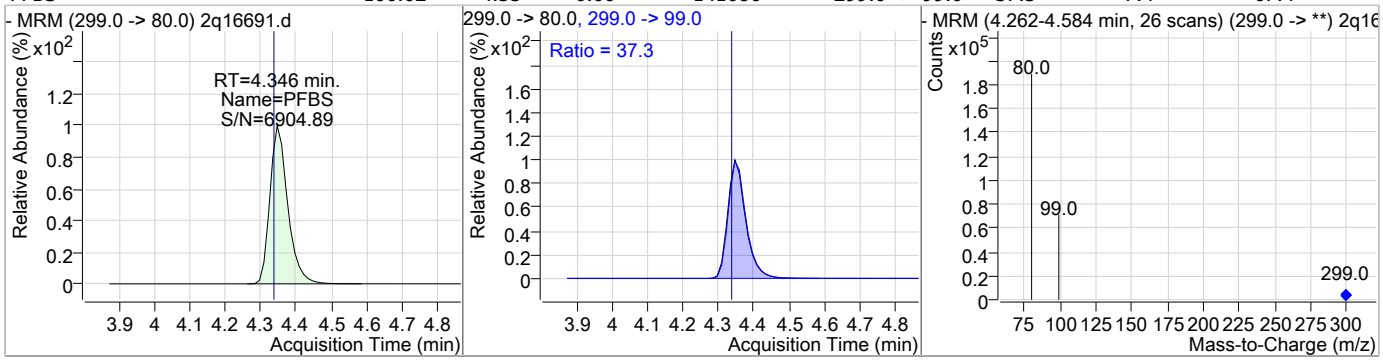


Perfluorinated Compounds by LC/MS/MS

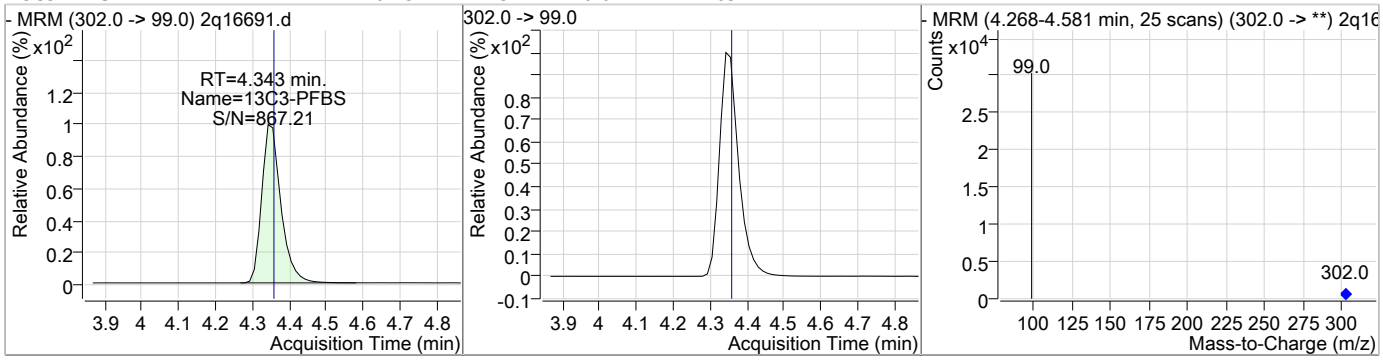
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	99.43	4.22	0.00	317116				



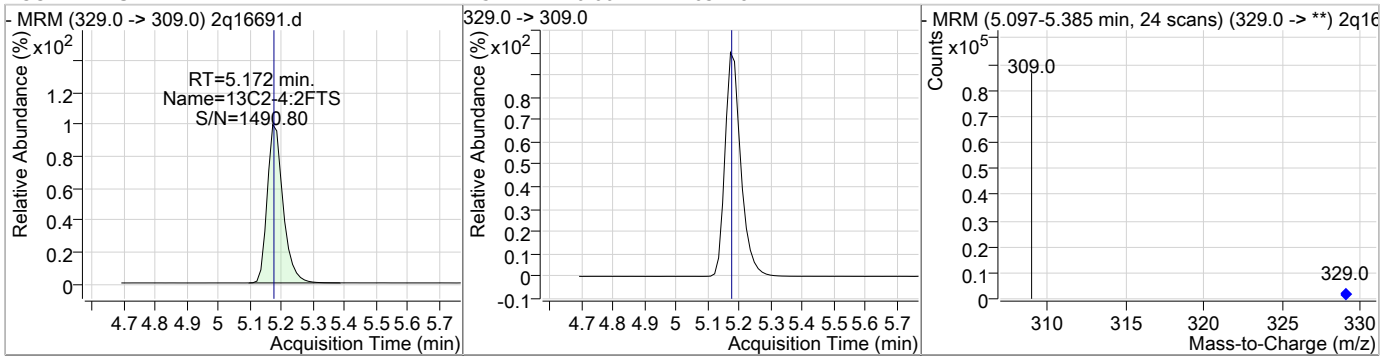
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	100.02	4.35	0.00	141086	299.0 -> 99.0	37.3	7.4	67.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.15	4.34	-0.01	21091				

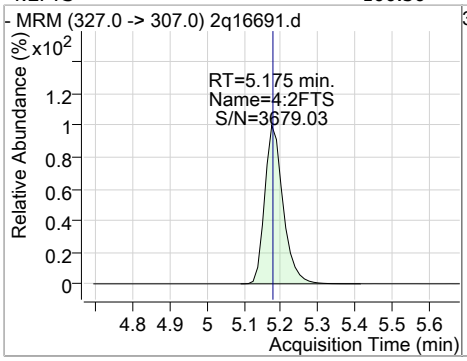


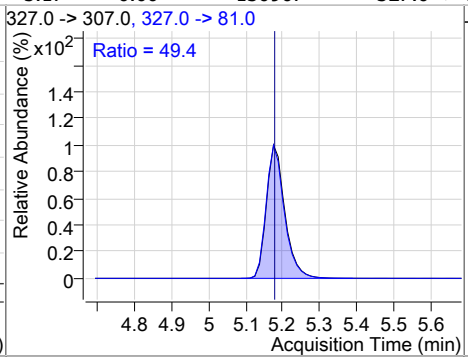
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	24.22	5.17	0.00	63478				

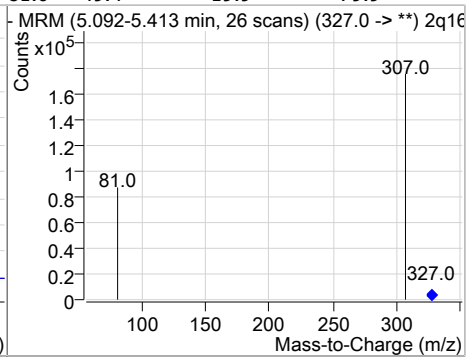


Perfluorinated Compounds by LC/MS/MS

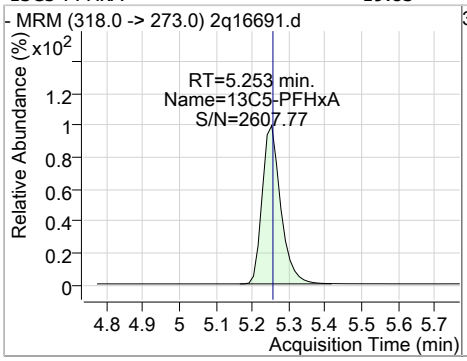
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	100.36	5.17	0.00	130967	327.0 -> 81.0	49.4	19.9	79.9

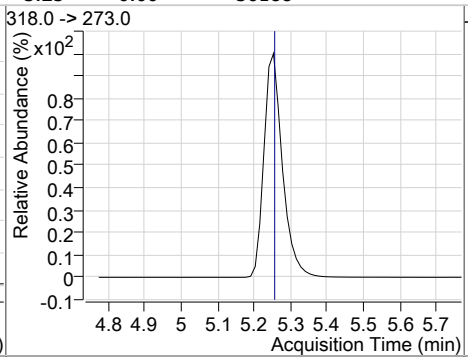


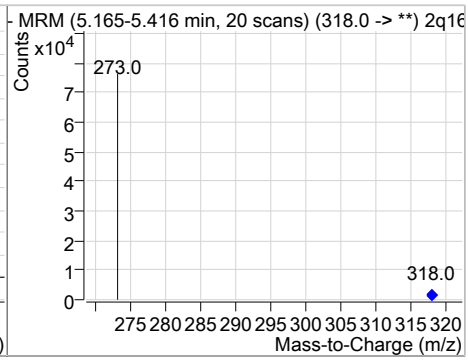




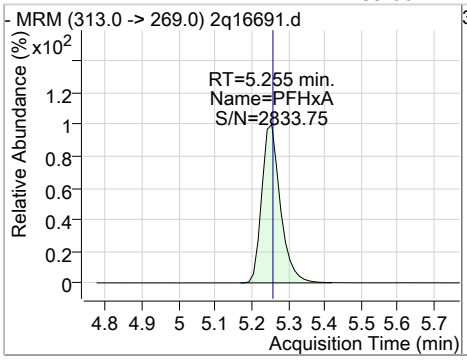
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.83	5.25	0.00	56188				

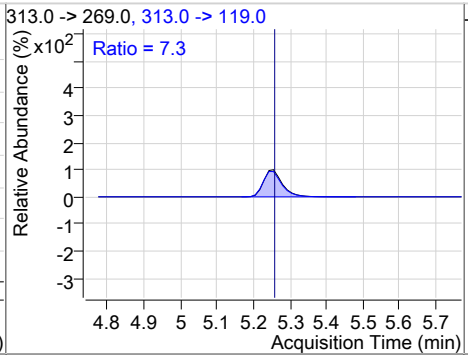


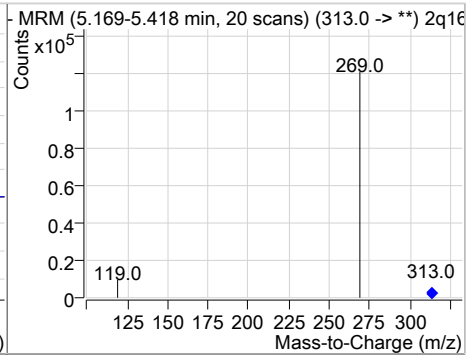




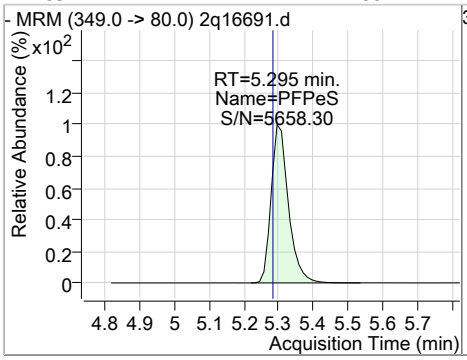
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	99.56	5.26	0.00	90022	313.0 -> 119.0	7.3	0.0	37.6

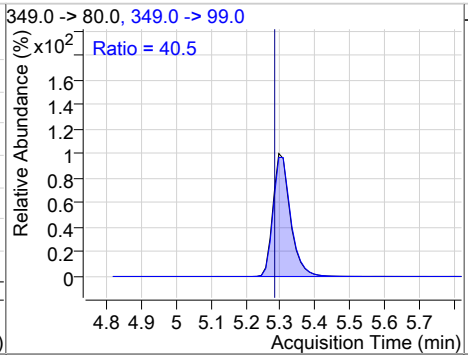


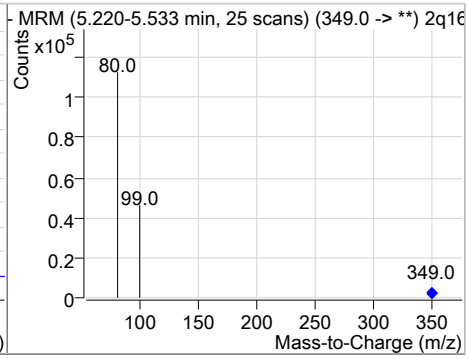




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	99.71	5.30	0.00	83795	349.0 -> 99.0	40.5	10.8	70.8

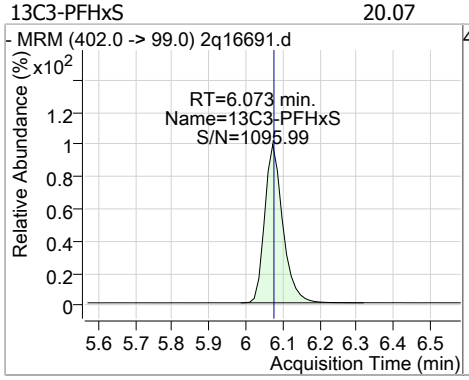


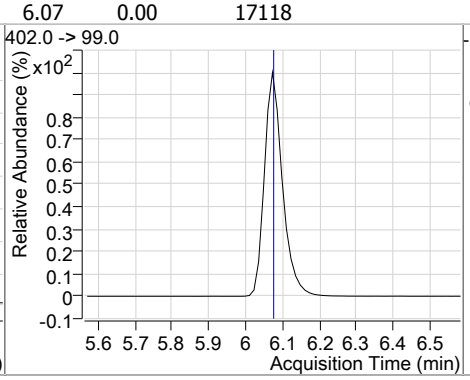


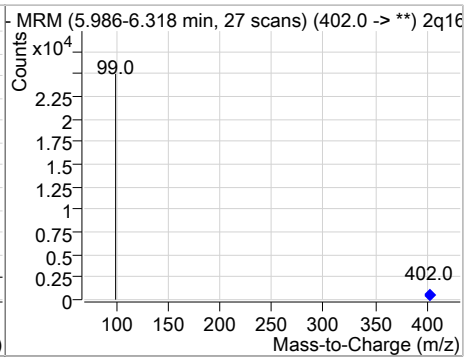


Perfluorinated Compounds by LC/MS/MS

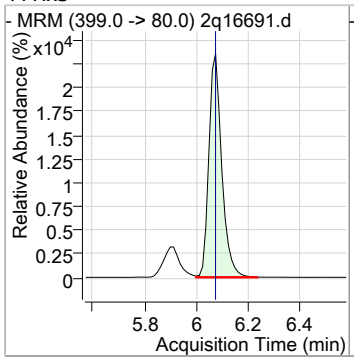
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.07	6.07	0.00	17118				

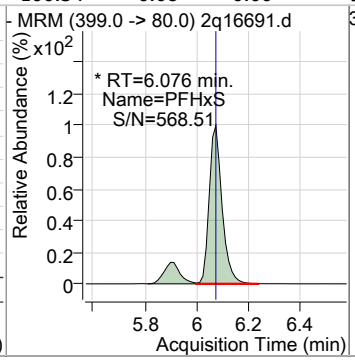


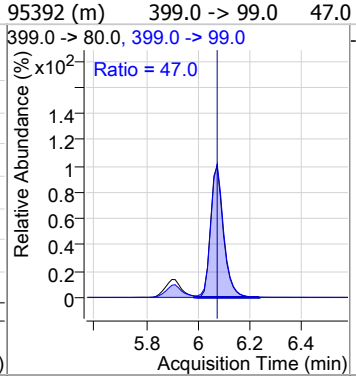


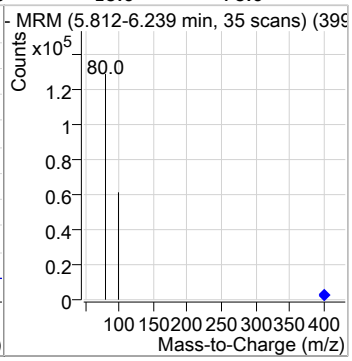


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	100.34	6.08	0.00	95392 (m)	399.0 -> 99.0	47.0	18.0	78.0

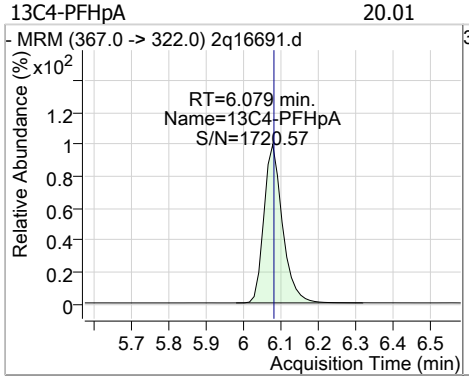


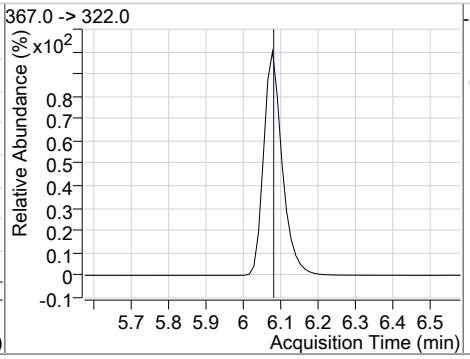


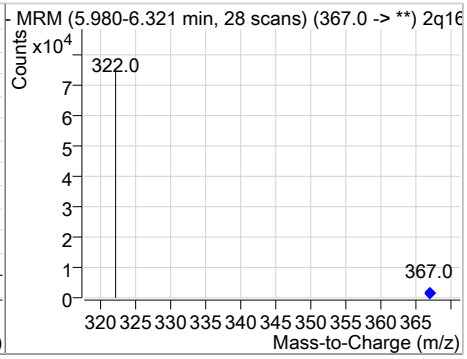




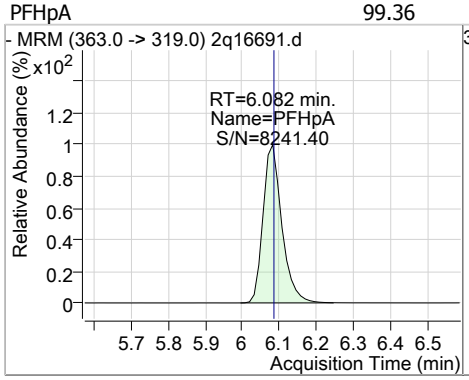
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.01	6.08	0.00	53900				

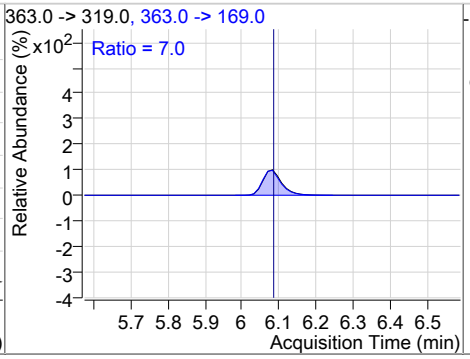


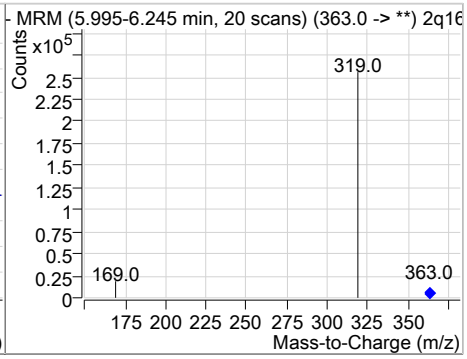




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	99.36	6.08	0.00	191493	363.0 -> 169.0	7.0	0.0	37.2

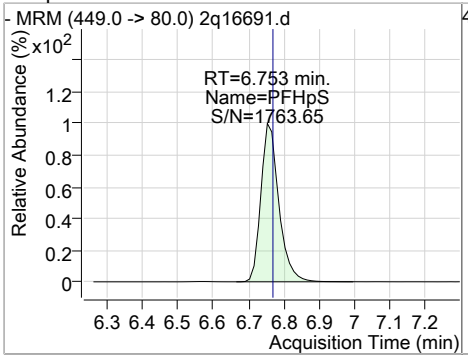


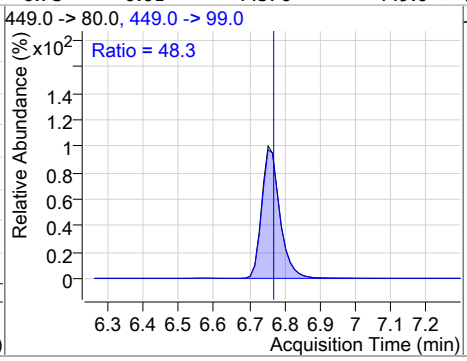


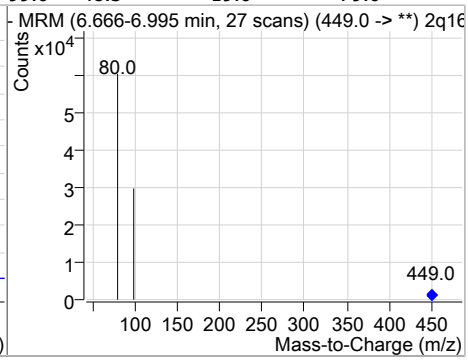


Perfluorinated Compounds by LC/MS/MS

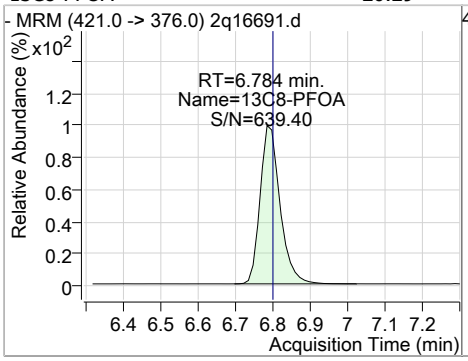
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	100.45	6.75	-0.01	44576	449.0 -> 99.0	48.3	19.0	79.0

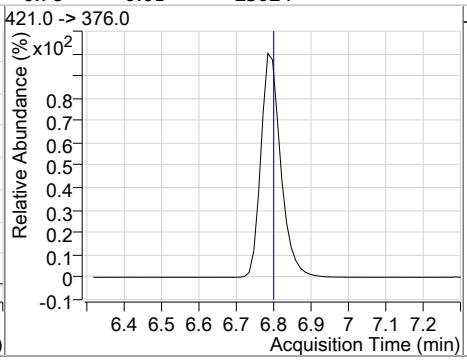


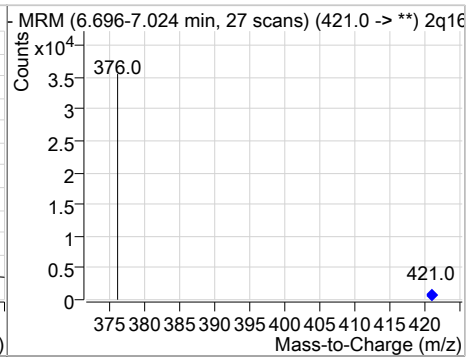




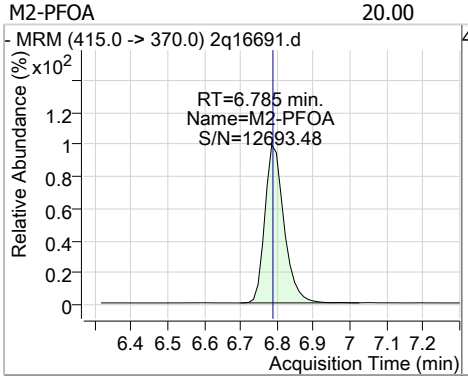
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.29	6.78	-0.01	25024				

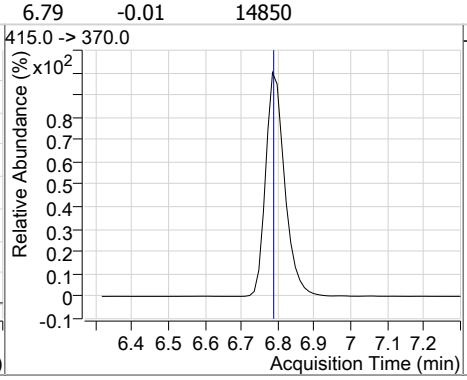


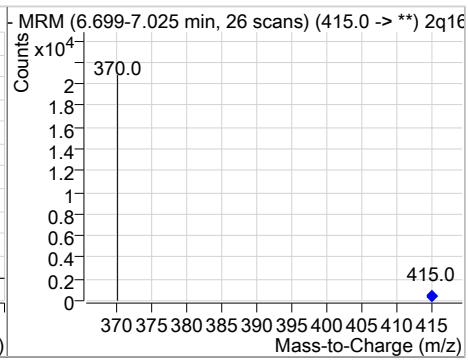




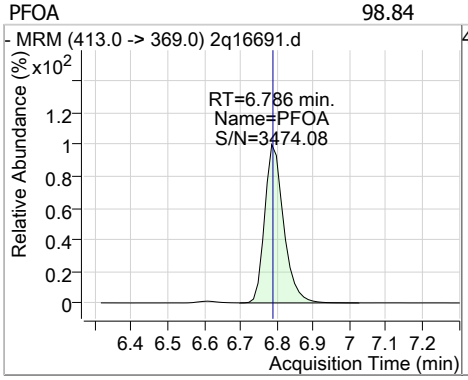
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.79	-0.01	14850				

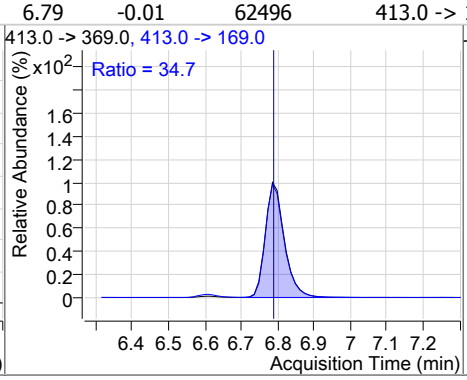


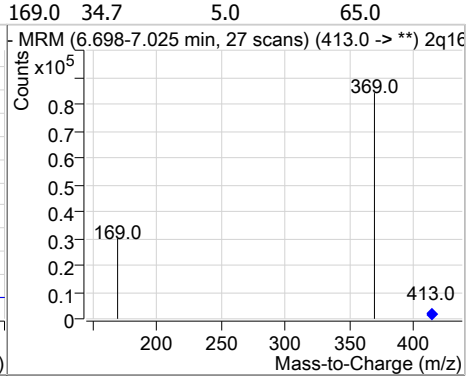




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	98.84	6.79	-0.01	62496	413.0 -> 169.0	34.7	5.0	65.0

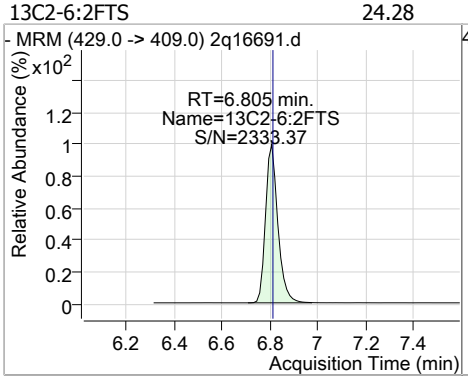


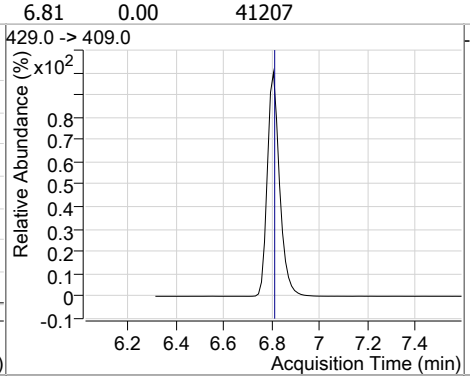


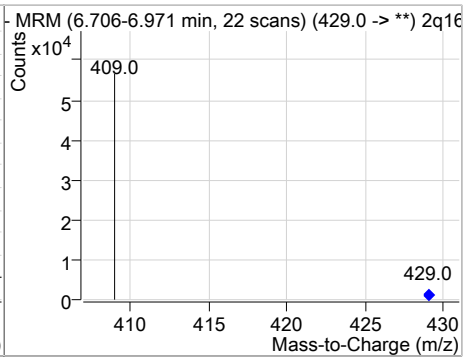


Perfluorinated Compounds by LC/MS/MS

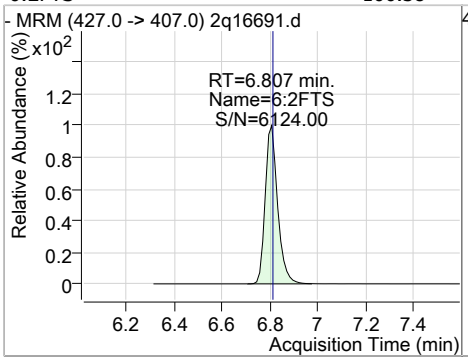
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	24.28	6.81	0.00	41207				

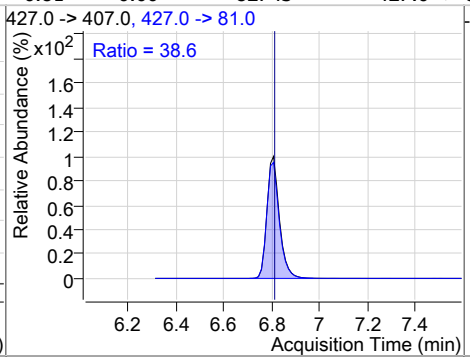


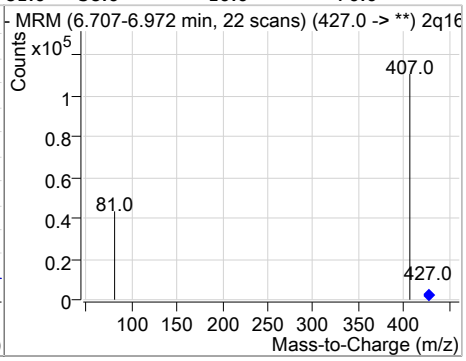




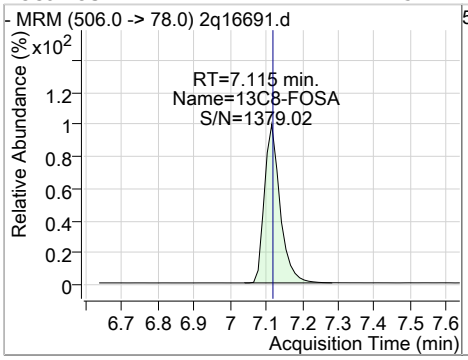
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	100.38	6.81	0.00	82743	427.0 -> 81.0	38.6	10.0	70.0

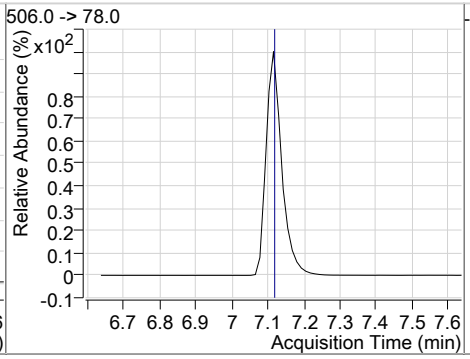


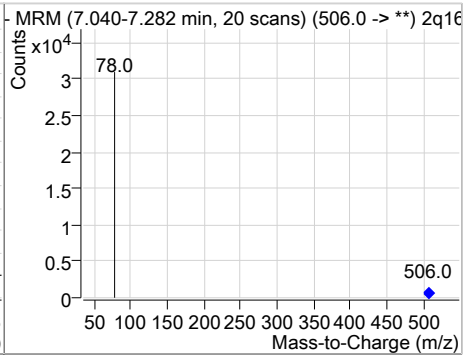




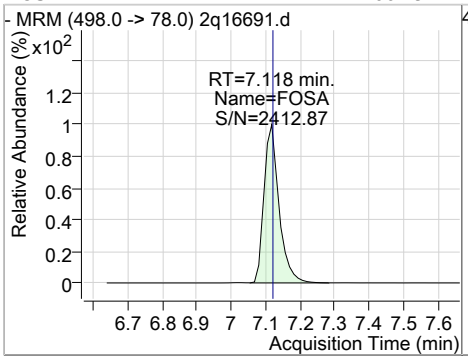
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	17.15	7.12	0.00	22751				

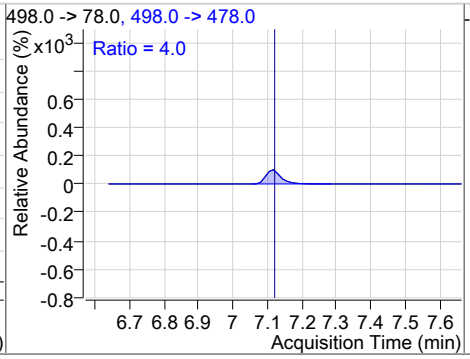


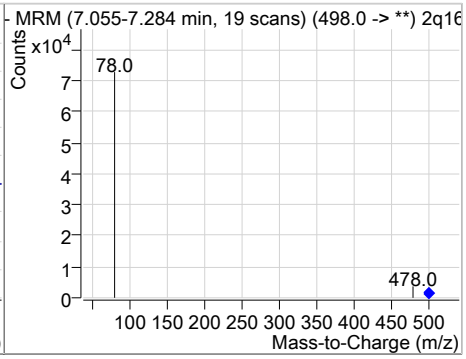




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	100.49	7.12	0.00	55450	498.0 -> 478.0	4.0	0.0	34.0

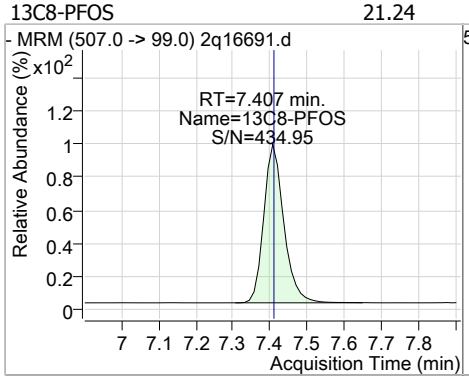


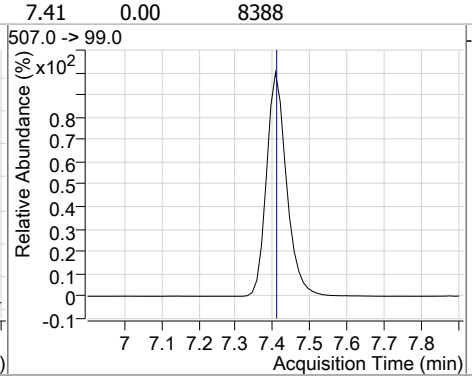


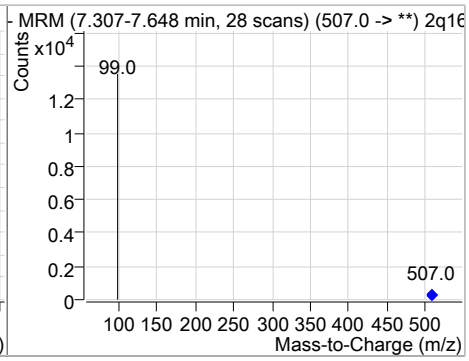


Perfluorinated Compounds by LC/MS/MS

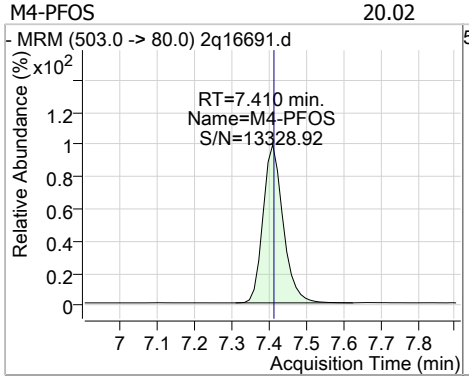
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	21.24	7.41	0.00	8388				

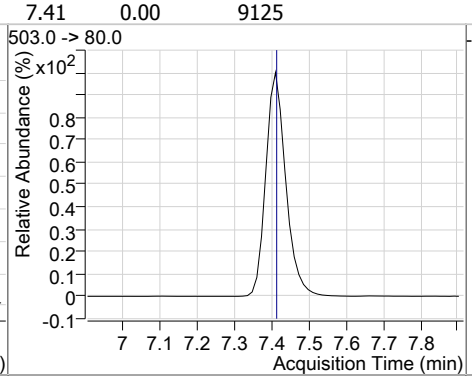


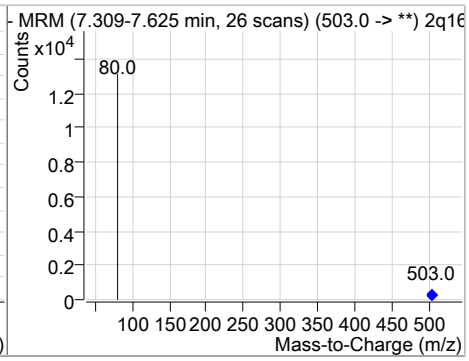




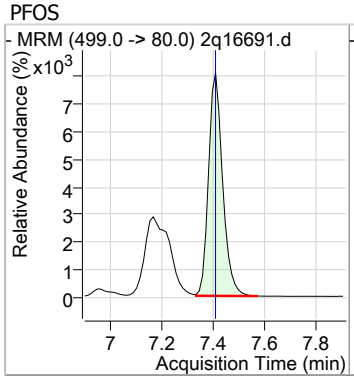
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.02	7.41	0.00	9125				

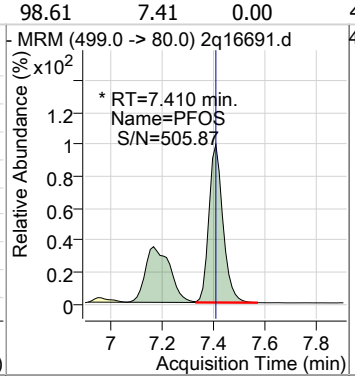


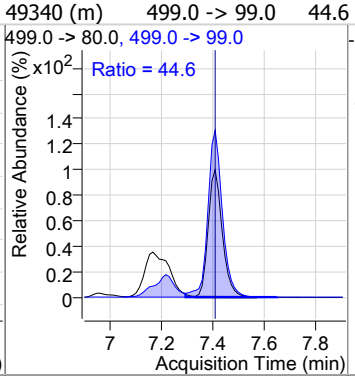


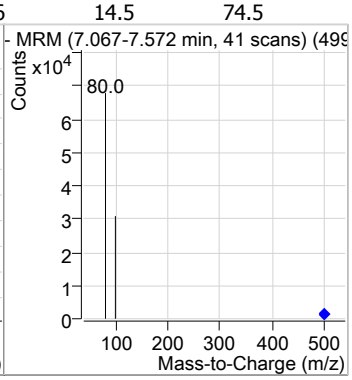


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	98.61	7.41	0.00	49340 (m)	499.0 -> 99.0	44.6	14.5	74.5

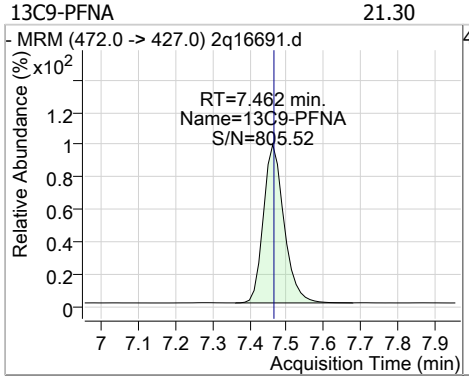


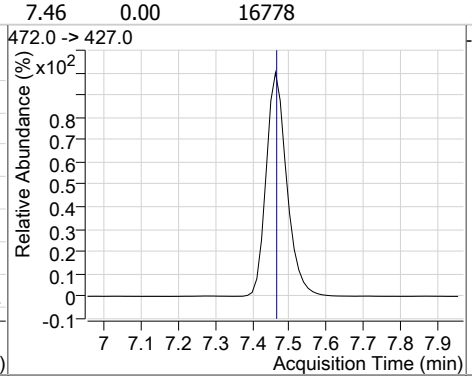


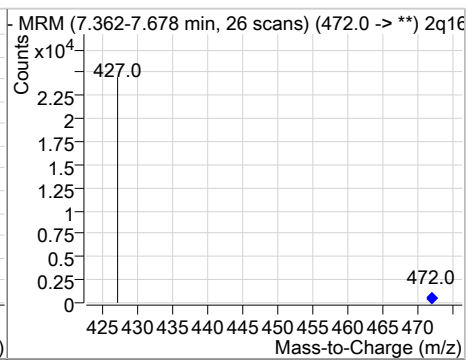




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.30	7.46	0.00	16778				

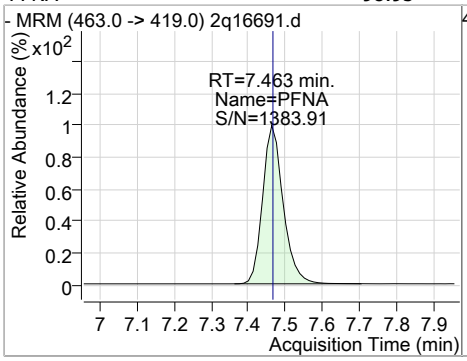


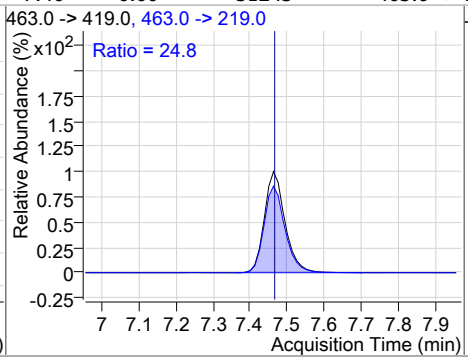


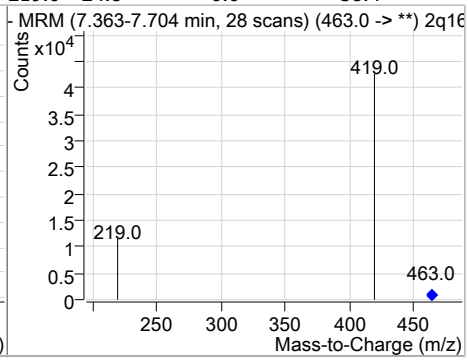


Perfluorinated Compounds by LC/MS/MS

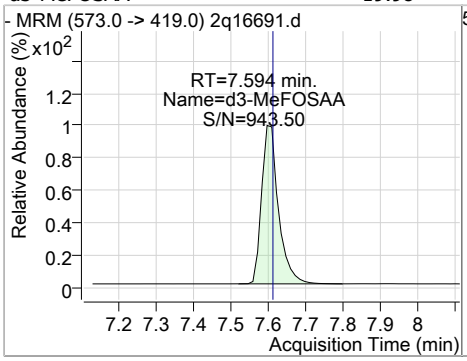
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	98.95	7.46	0.00	31243	463.0 -> 219.0	24.8	0.0	58.4

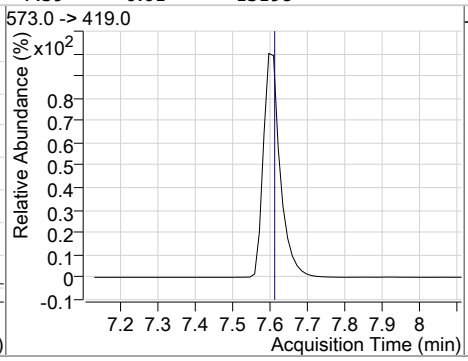


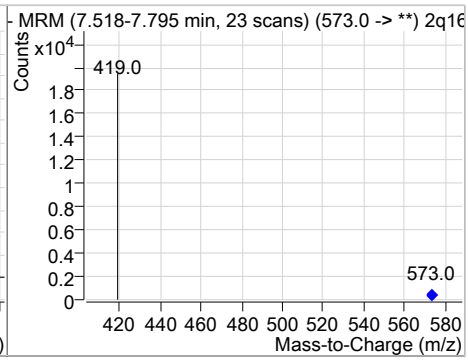




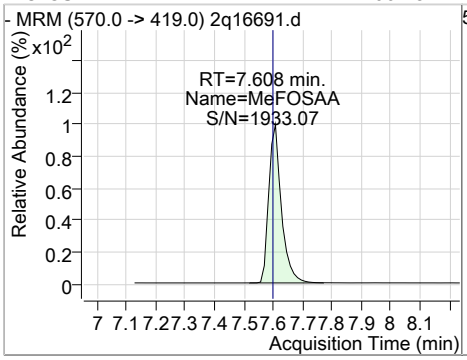
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.98	7.59	-0.01	13198				

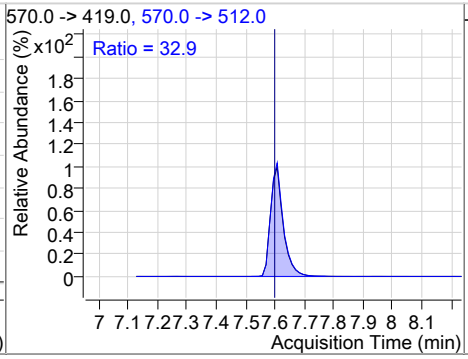


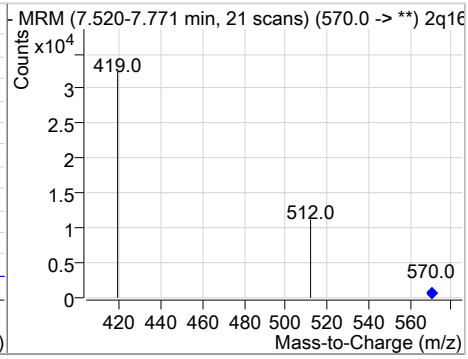




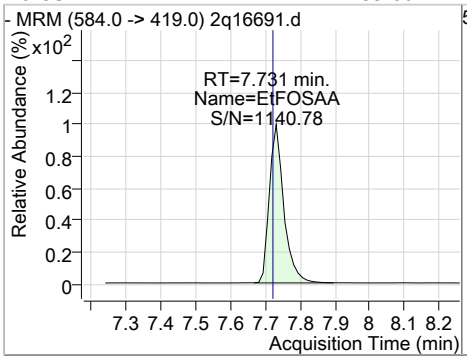
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	100.28	7.61	0.00	23837	570.0 -> 512.0	32.9	1.8	61.8

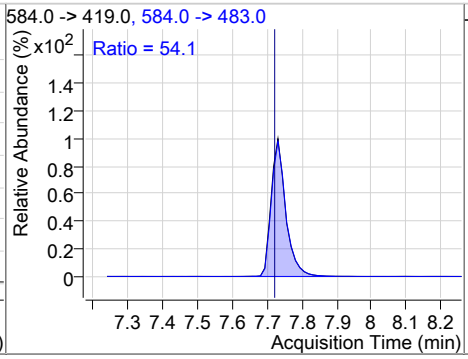


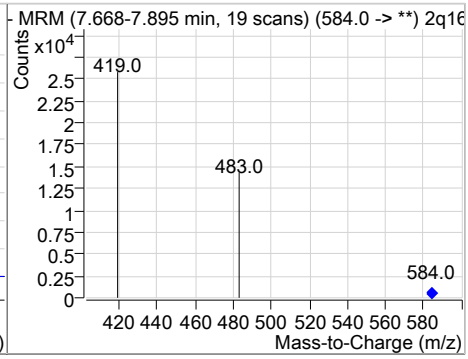




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	99.86	7.73	0.00	18820	584.0 -> 483.0	54.1	24.8	84.8

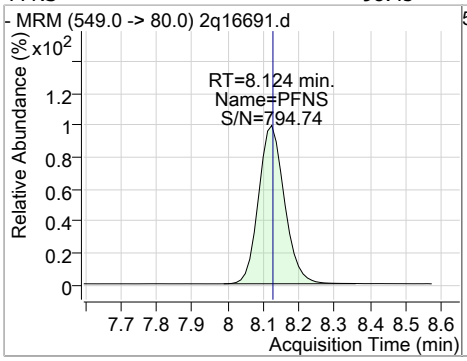


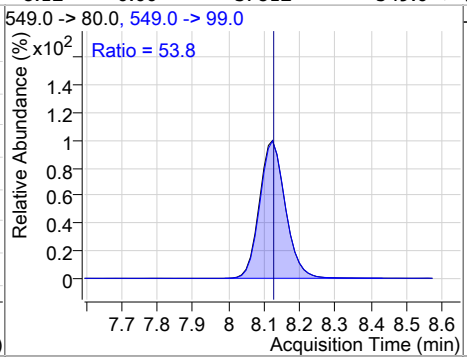


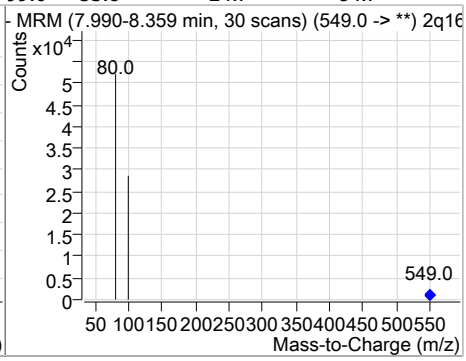


Perfluorinated Compounds by LC/MS/MS

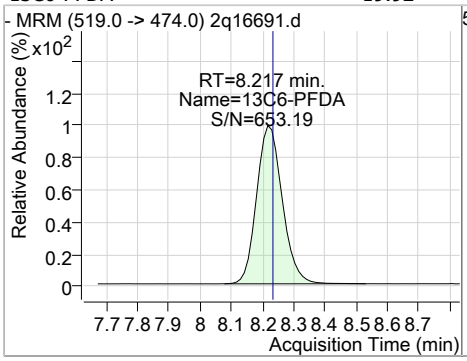
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	98.45	8.12	0.00	37812	549.0 -> 99.0	53.8	24.7	84.7

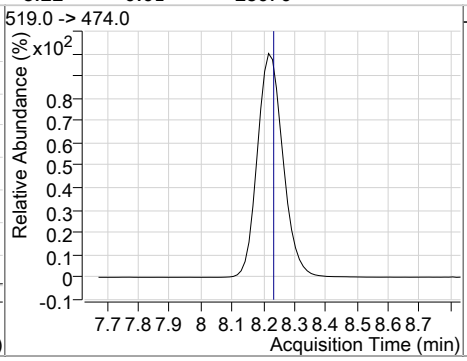


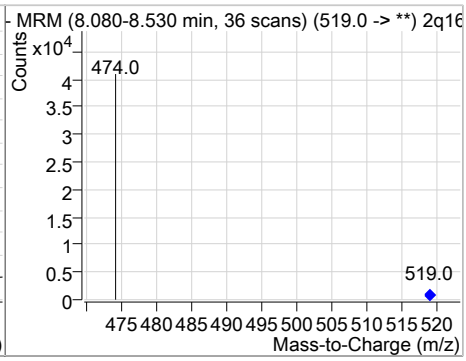




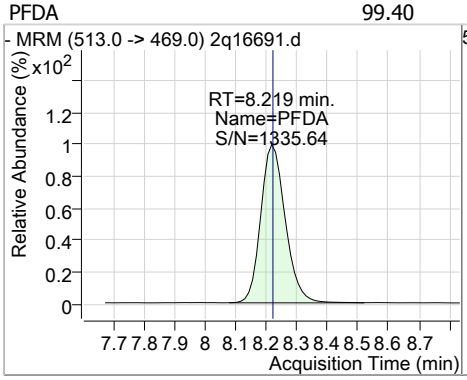
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.92	8.22	-0.01	28070				

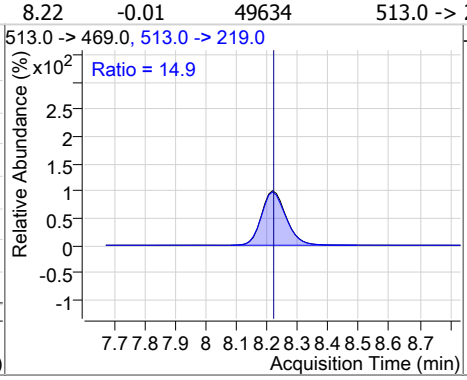


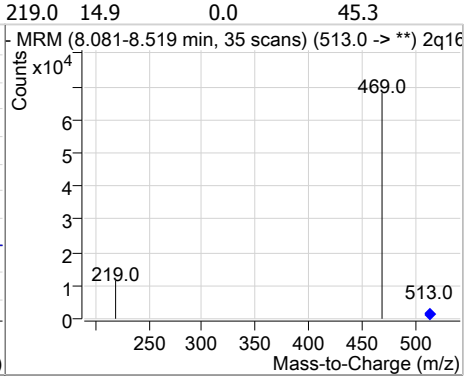




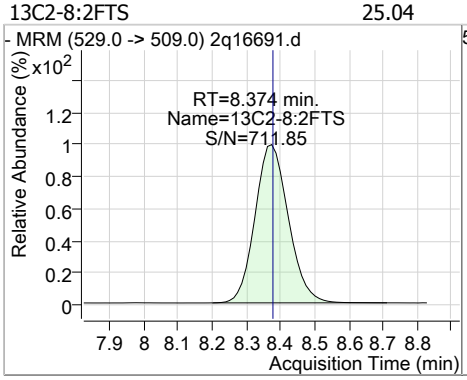
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	99.40	8.22	-0.01	49634	513.0 -> 219.0	14.9	0.0	45.3

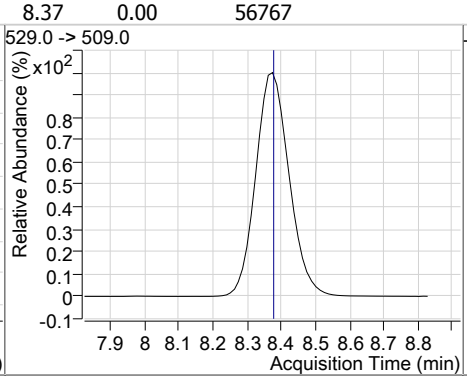


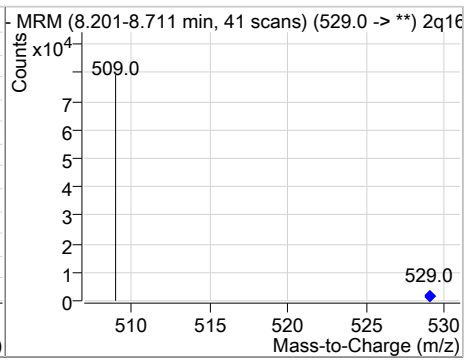




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	25.04	8.37	0.00	56767				

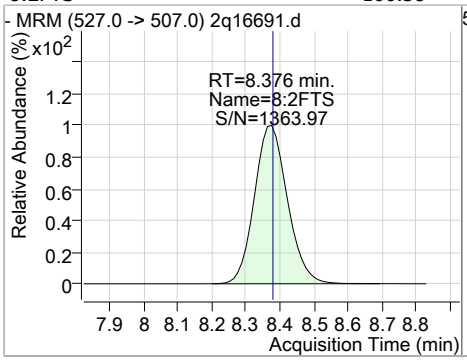


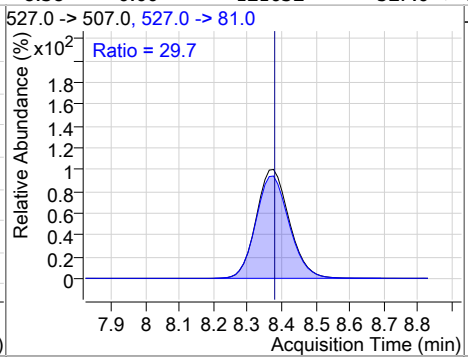


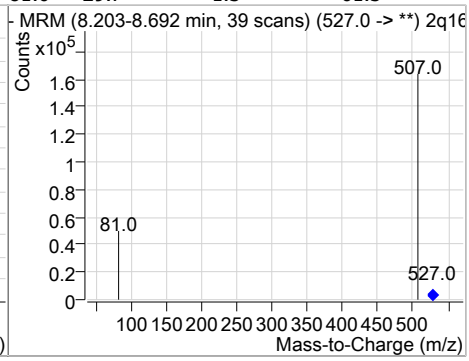


Perfluorinated Compounds by LC/MS/MS

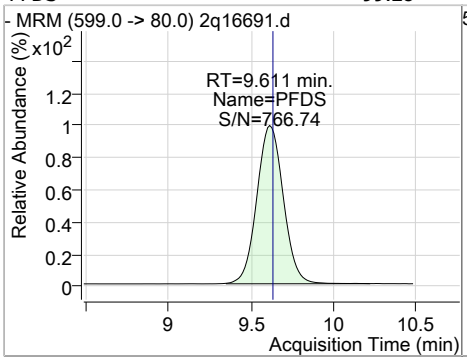
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	100.38	8.38	0.00	121632	527.0 -> 81.0	29.7	1.3	61.3

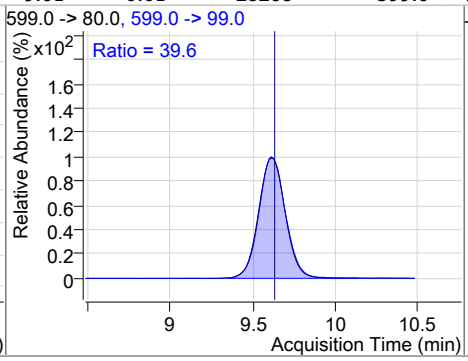


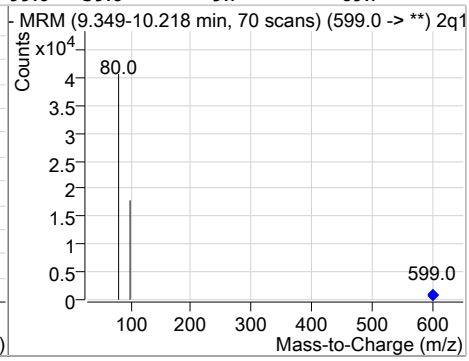




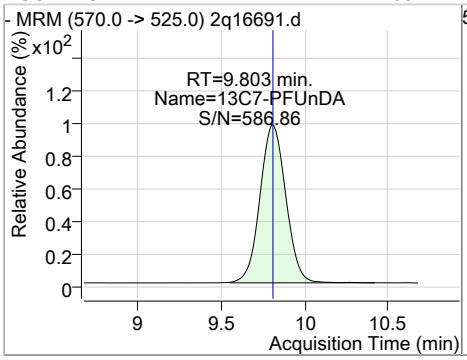
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	99.28	9.61	-0.01	28208	599.0 -> 99.0	39.6	9.7	69.7

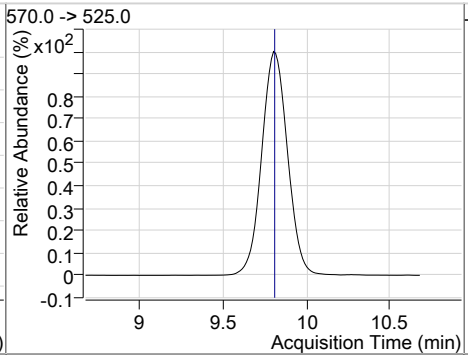


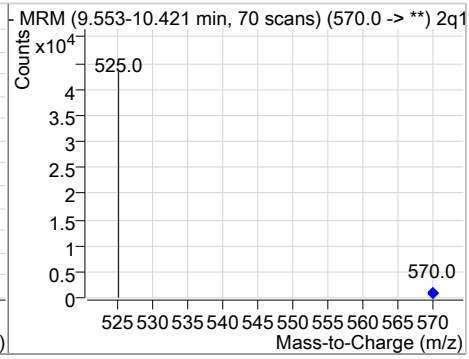




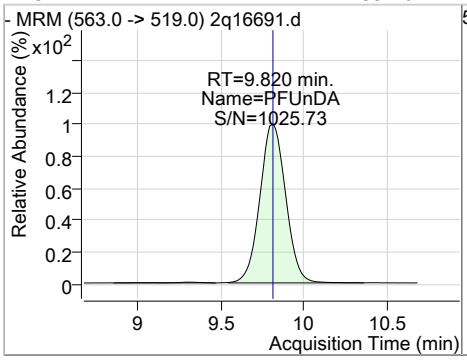
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.00	9.80	0.00	27940				

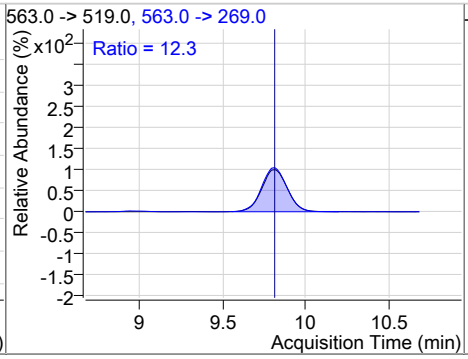


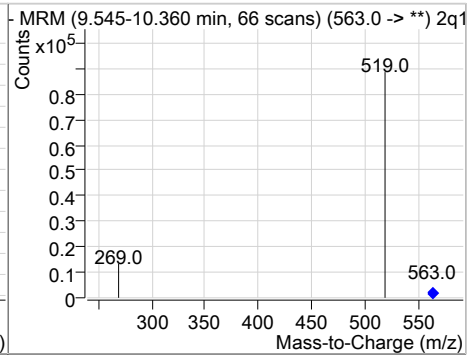




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	99.46	9.82	0.01	64372	563.0 -> 269.0	12.3	0.0	41.8

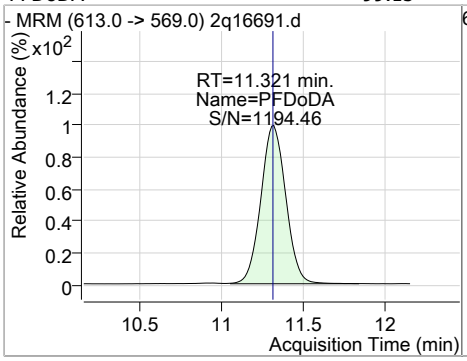


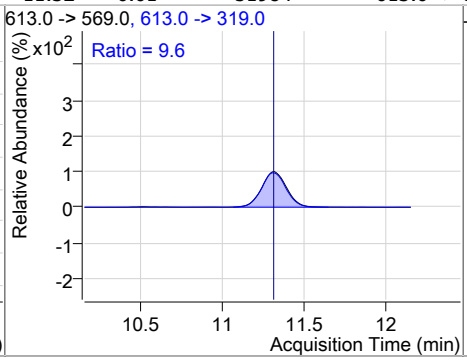


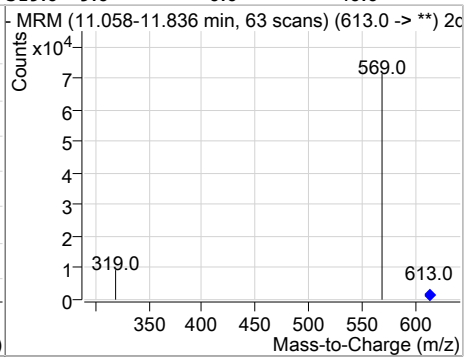


Perfluorinated Compounds by LC/MS/MS

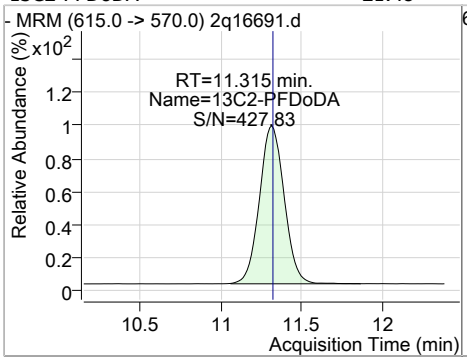
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	99.15	11.32	0.01	51984	613.0 -> 319.0	9.6	0.0	40.0

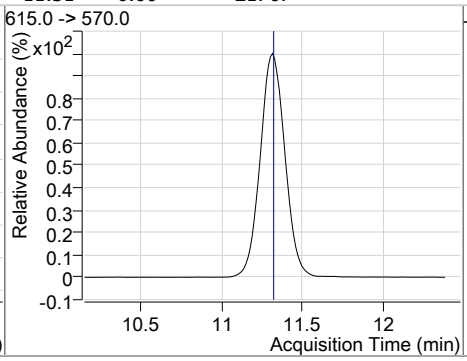


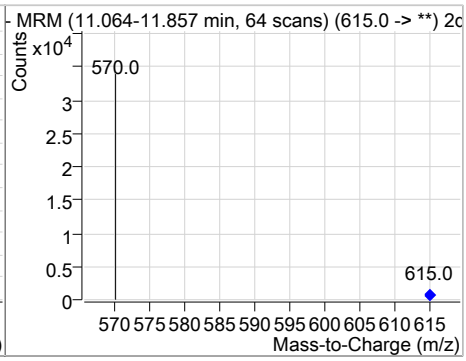




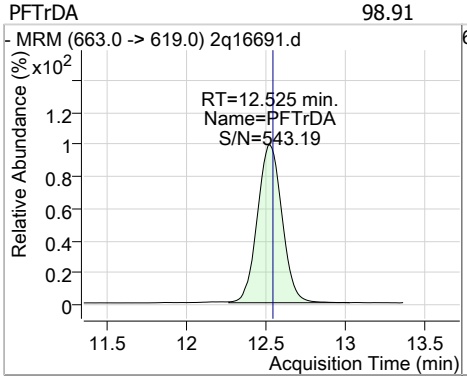
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.48	11.31	0.00	21767				

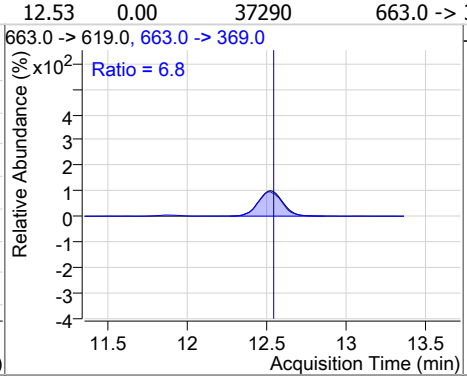


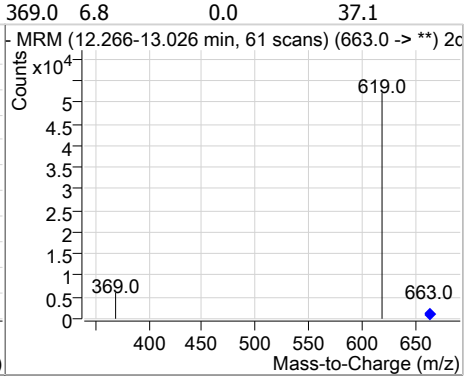




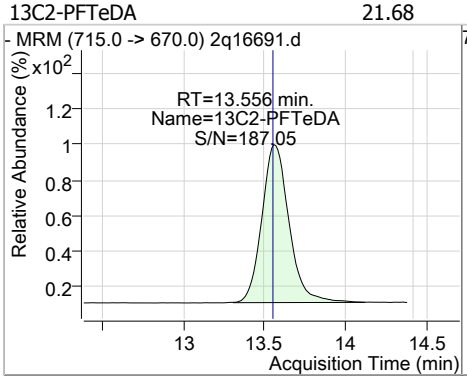
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	98.91	12.53	0.00	37290	663.0 -> 369.0	6.8	0.0	37.1

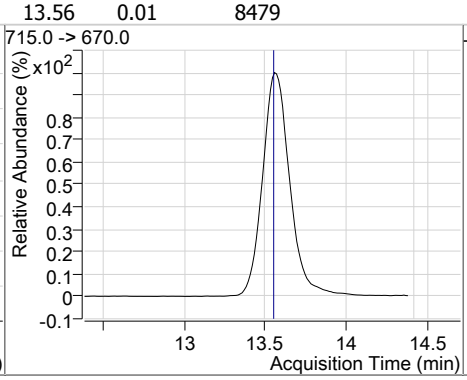


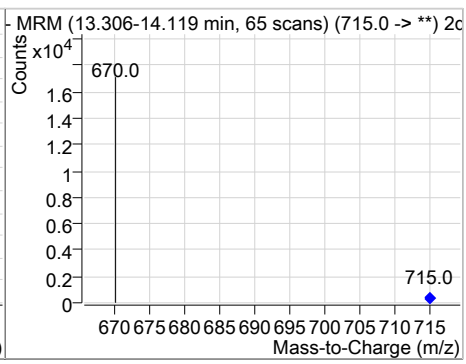




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.68	13.56	0.01	8479				

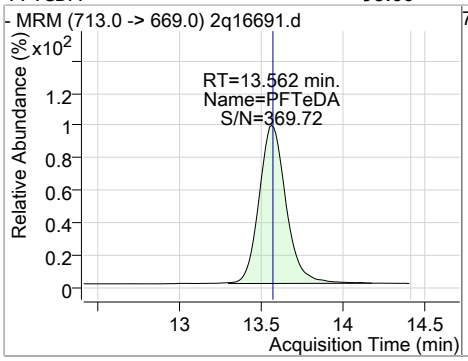


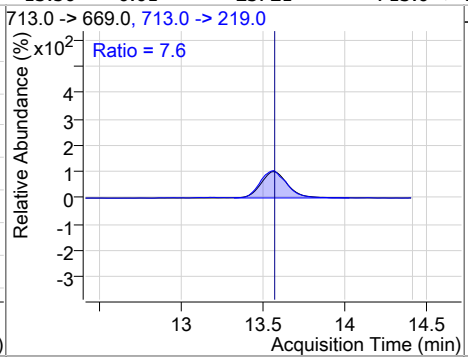


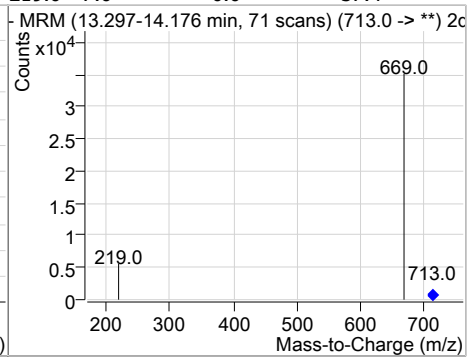


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	98.66	13.56	0.01	23721	713.0 -> 219.0	7.6	0.0	37.4







Manual Integration Approval Summary

Sample Number:	S2Q292-IC292	**Method:**	EPA 537M QSM5.1 B-15
Lab FileID:	2Q16691.D	**Analyst approved:**	07/09/18 13:31 Natasha Gumtie
Injection Time:	07/07/18 11:04	**Supervisor approved:**	07/10/18 17:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.08	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.41	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
07/10/18 17:09

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16693.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/7/2018 11:43:57 AM
Sample Name : icv292-20
Vial : Vial 10
DA Method File : PFC_ID_070718_S2Q292.quantmethod.xml
Batch Name : s2q292.batch.bin
Sample Information : op70610,S2Q292,130,,,1.0,1,water

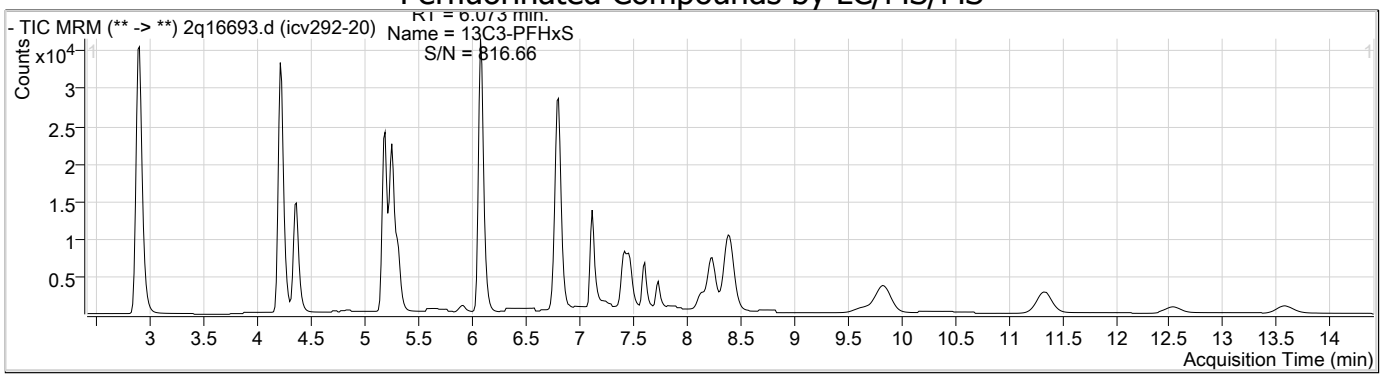
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.798	415.0 -> 370.0	13640	20.00	µg/L	0.000
13C4-PFOS	7.410	503.0 -> 80.0	7866	20.00	µg/L	0.000
M4-PFBA	2.891	217.0 -> 172.0	123962	20.00	µg/L	0.000
M5-PFPeA	4.212	268.0 -> 223.0	57736	20.00	µg/L	0.000
M5-PFHxA	5.253	318.0 -> 273.0	52381	20.00	µg/L	0.000
M4-PFHpA	6.079	367.0 -> 322.0	49252	20.00	µg/L	0.000
M8-PFOA	6.796	421.0 -> 376.0	22355	20.00	µg/L	0.000
M9-PFNA	7.475	472.0 -> 427.0	14198	20.00	µg/L	0.013
M6-PFDA	8.242	519.0 -> 474.0	27058	20.00	µg/L	0.013
M7-PFUnDA	9.829	570.0 -> 525.0	23849	20.00	µg/L	0.025
M2-PFDoDA	11.327	615.0 -> 570.0	18447	20.00	µg/L	0.013
M2-PFTeDA	13.569	715.0 -> 670.0	7243	20.00	µg/L	0.025
M8-FOSA	7.115	506.0 -> 78.0	24474	20.00	µg/L	0.000
M3-PFBS	4.355	302.0 -> 99.0	19017	20.00	µg/L	0.000
M3-PFHxS	6.073	402.0 -> 99.0	15431	20.00	µg/L	0.000
M8-PFOS	7.420	507.0 -> 99.0	7393	20.00	µg/L	0.013
M2-4:2FTS	5.185	329.0 -> 309.0	47320	20.00	µg/L	0.013
M2-6:2FTS	6.805	429.0 -> 409.0	31209	20.00	µg/L	0.000
M2-8:2FTS	8.386	529.0 -> 509.0	40681	20.00	µg/L	0.013
M3-MeFOSAA	7.607	573.0 -> 419.0	11822	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.185	329.0 -> 309.0	47323	18.06	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.3%		
13C2-6:2FTS	6.805	429.0 -> 409.0	31229	18.40	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.0%		
13C2-8:2FTS	8.386	529.0 -> 509.0	40624	17.92	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.6%		
13C2-PFDoDA	11.327	615.0 -> 570.0	18443	18.20	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.0%		
13C2-PFTeDA	13.569	715.0 -> 670.0	7210	18.43	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.2%		
13C3-PFBS	4.355	302.0 -> 99.0	19032	18.18	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.9%		
13C3-PFHxS	6.073	402.0 -> 99.0	15432	18.10	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.5%		
13C4-PFBA	2.891	217.0 -> 172.0	123865	17.99	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.9%		
13C4-PFHpA	6.079	367.0 -> 322.0	49285	18.29	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.5%		
13C5-PFHxA	5.253	318.0 -> 273.0	52373	18.48	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.4%		
13C5-PFPeA	4.212	268.0 -> 223.0	57729	18.14	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.7%		
13C6-PFDA	8.242	519.0 -> 474.0	27034	19.18	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.9%		

Perfluorinated Compounds by LC/MS/MS

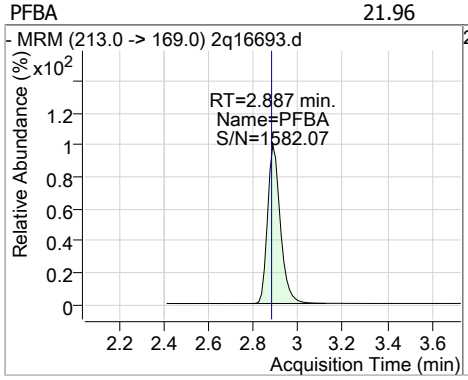
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	9.829	570.0 -> 525.0	23867	17.94	µg/L		0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.7%			
13C8-FOSA	7.115	506.0 -> 78.0	24470	18.45	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.2%			
13C8-PFOA	6.796	421.0 -> 376.0	22359	18.13	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.7%			
13C8-PFOS	7.420	507.0 -> 99.0	7393	18.72	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.6%			
13C9-PFNA	7.475	472.0 -> 427.0	14222	18.06	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.3%			
d3-MeFOSAA	7.607	573.0 -> 419.0	11822	17.90	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.5%			
M2-PFOA	6.798	415.0 -> 370.0	13647	20.02	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
M4-PFOS	7.410	503.0 -> 80.0	7861	19.99	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
Target Compounds							**QValue**
4:2FTS	5.187	327.0 -> 307.0	23516	19.79	µg/L		99
6:2FTS	6.807	427.0 -> 407.0	15426	20.25	µg/L		100
8:2FTS	8.389	527.0 -> 507.0	21456	19.85	µg/L		98
EtFOSAA	7.731	584.0 -> 419.0	3971	23.51	µg/L		96
FOSA	7.118	498.0 -> 78.0	12541	21.11	µg/L		99
MeFOSAA	7.608	570.0 -> 419.0	4548	21.35	µg/L		98
PFBA	2.887	213.0 -> 169.0	21423	21.96	µg/L		100
PFBS	4.346	299.0 -> 80.0	24094	18.95	µg/L		99
PFDA	8.244	513.0 -> 469.0	9733	20.23	µg/L		97
PFDoDA	11.333	613.0 -> 569.0	10345	23.25	µg/L		100
PFDS	9.624	599.0 -> 80.0	5067	20.84	µg/L		99
PFHpA	6.082	363.0 -> 319.0	38206	21.70	µg/L		100
PFHpS	6.766	449.0 -> 80.0	8266	20.66	µg/L		98
PFHxA	5.255	313.0 -> 269.0	16381	19.43	µg/L		99
PFHxS	6.076	399.0 -> 80.0	15988	18.65	µg/L	m	99
PFNA	7.476	463.0 -> 419.0	5932	22.20	µg/L		95
PFNS	8.137	549.0 -> 80.0	6996	20.66	µg/L		100
PFOA	6.799	413.0 -> 369.0	12148	21.50	µg/L		98
PFOS	7.410	499.0 -> 80.0	9508	21.56	µg/L	m	92
PFPeA	4.216	263.0 -> 219.0	61023	21.66	µg/L		100
PFPeS	5.308	349.0 -> 80.0	15288	20.19	µg/L		100
PFTeDA	13.587	713.0 -> 669.0	4262	20.81	µg/L		98
PFTrDA	12.538	663.0 -> 619.0	7731	24.08	µg/L		99
PFUnDA	9.833	563.0 -> 519.0	12581	22.72	µg/L		99

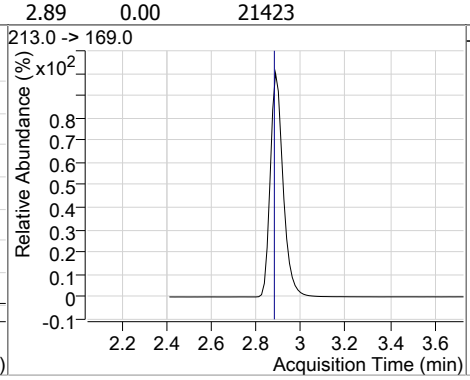
 # = Qualifier out of range, m = manually integrated, + = Area summed

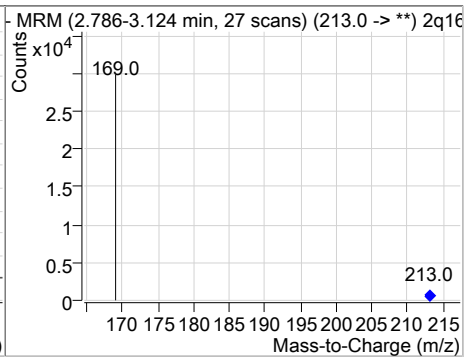
Perfluorinated Compounds by LC/MS/MS



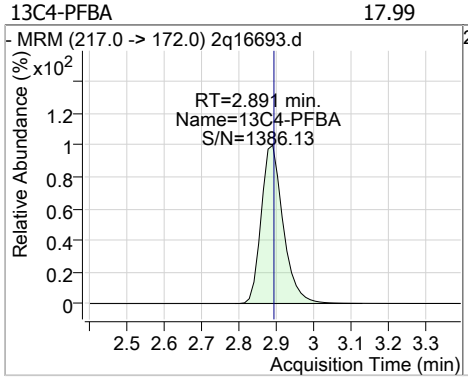
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	21.96	2.89	0.00	21423				

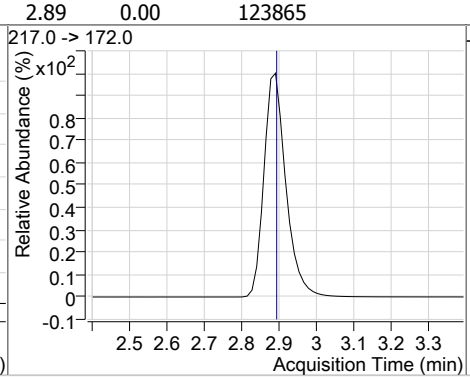


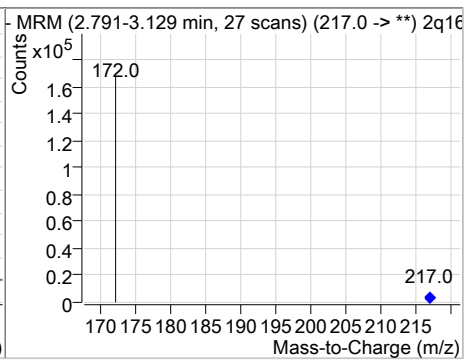




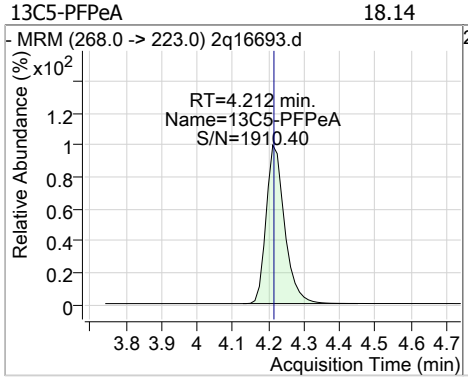
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	17.99	2.89	0.00	123865				

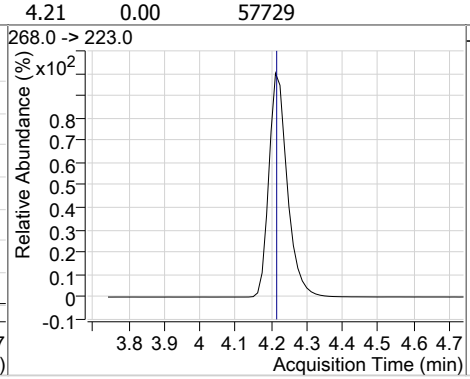


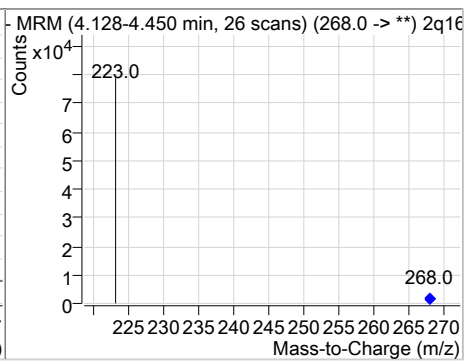




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.14	4.21	0.00	57729				

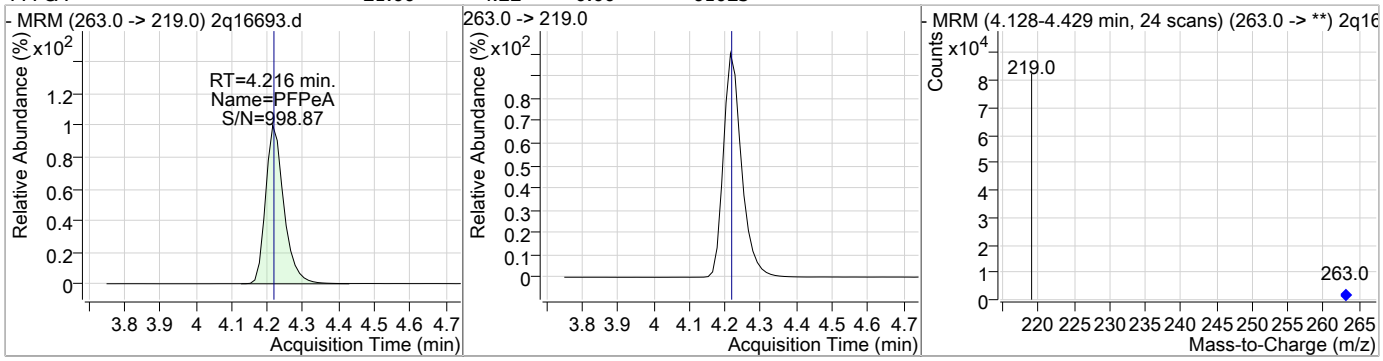




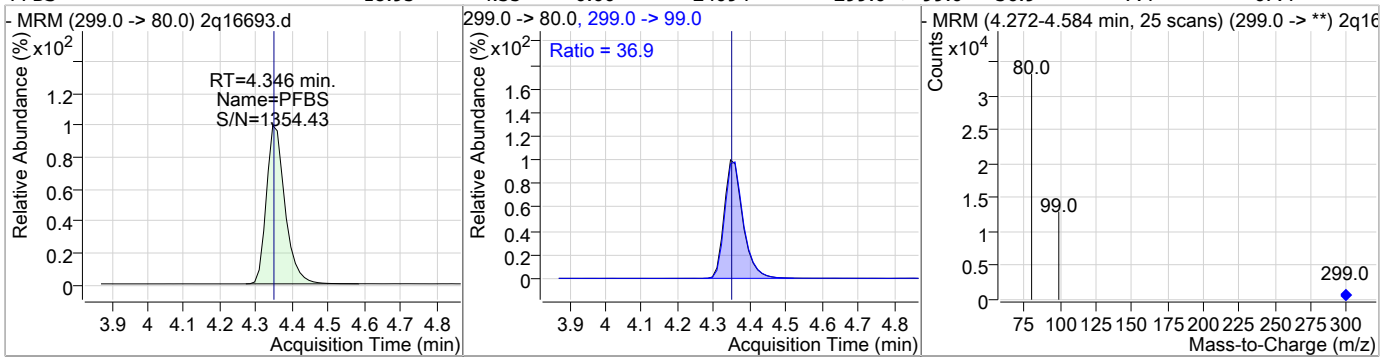


Perfluorinated Compounds by LC/MS/MS

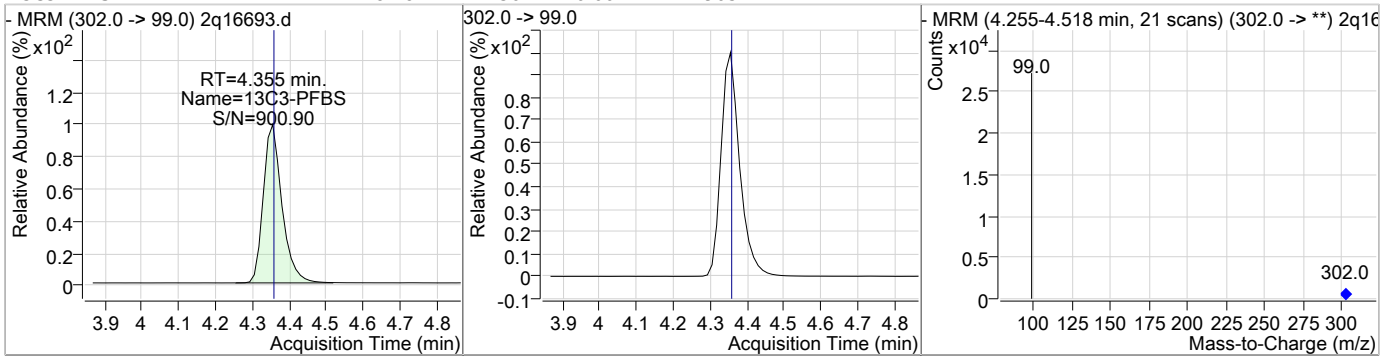
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	21.66	4.22	0.00	61023				



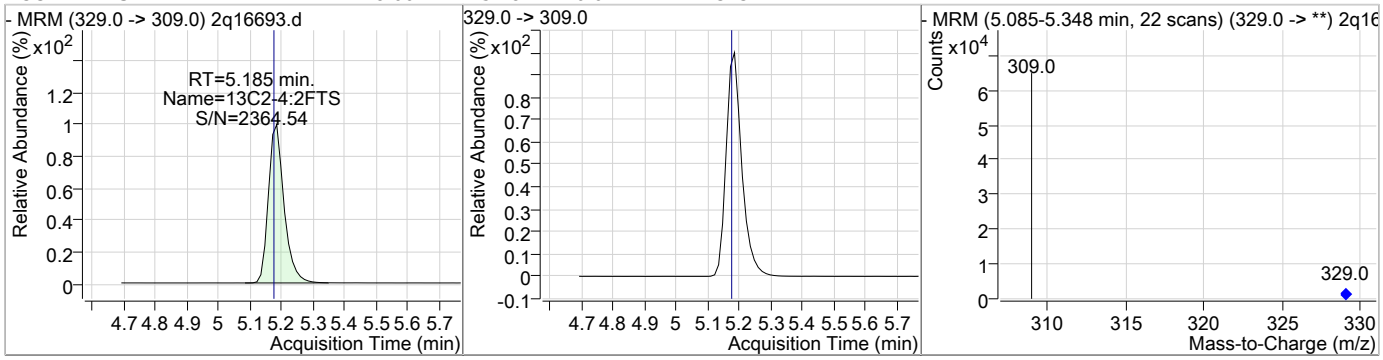
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	18.95	4.35	0.00	24094	299.0 -> 99.0	36.9	7.4	67.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.18	4.36	0.00	19032				

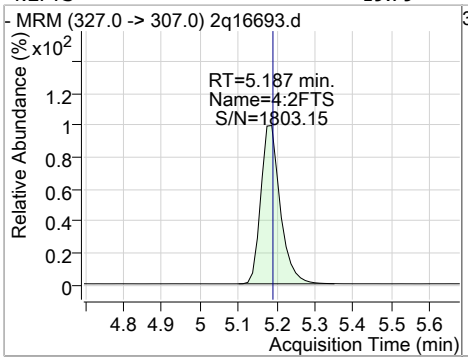


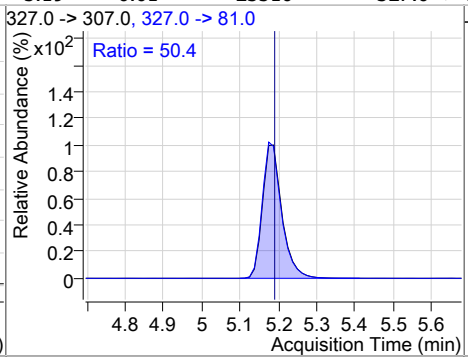
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.06	5.18	0.01	47323				

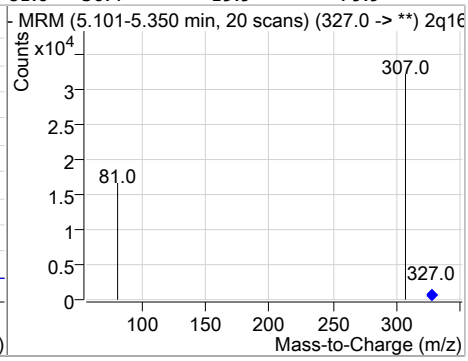


Perfluorinated Compounds by LC/MS/MS

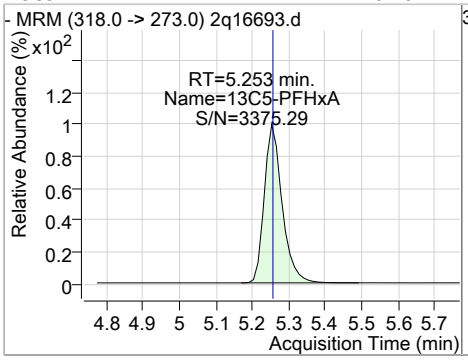
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.79	5.19	0.01	23516	327.0 -> 81.0	50.4	19.9	79.9

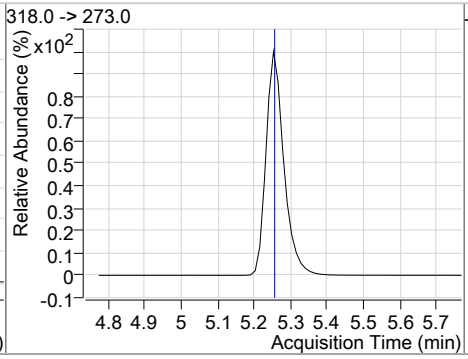


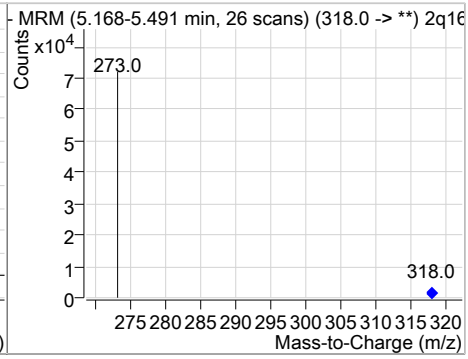




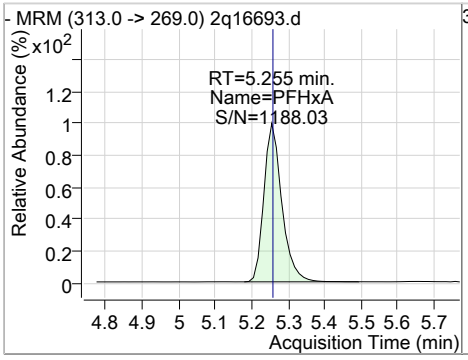
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.48	5.25	0.00	52373				

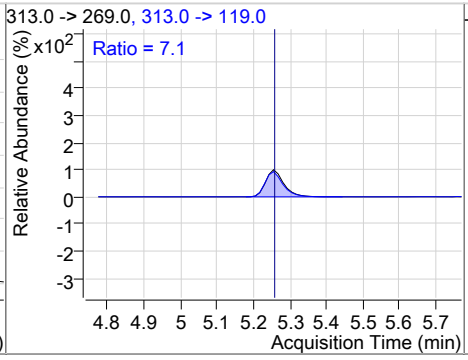


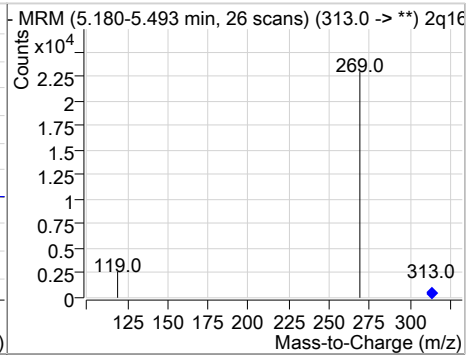




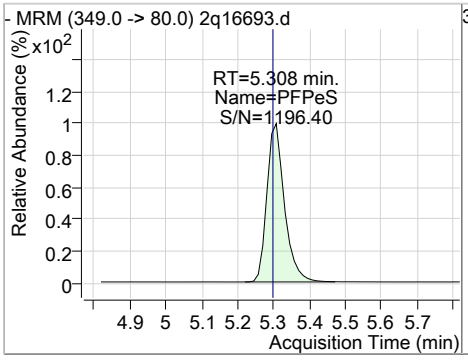
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.43	5.26	0.00	16381	313.0 -> 119.0	7.1	0.0	37.6

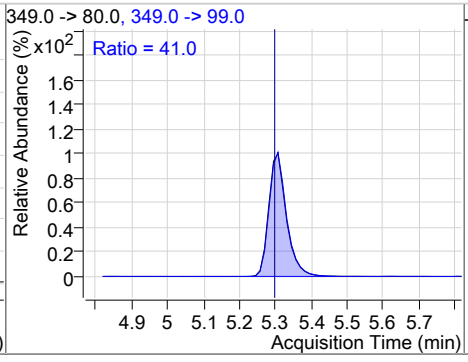


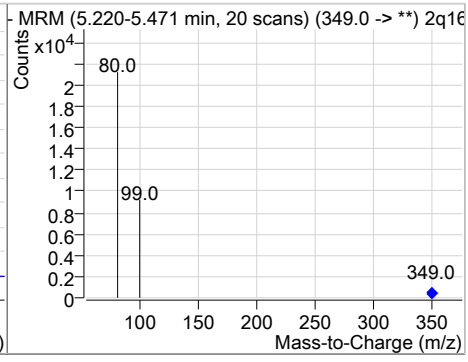




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	20.19	5.31	0.01	15288	349.0 -> 99.0	41.0	10.8	70.8

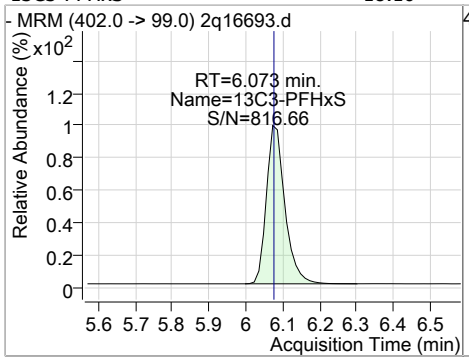


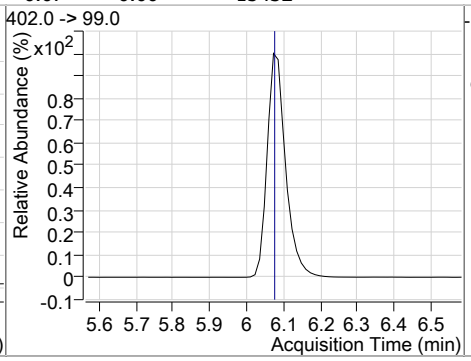


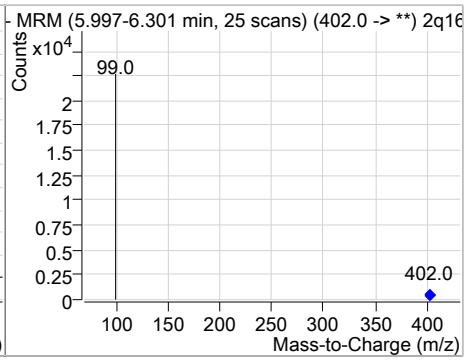


Perfluorinated Compounds by LC/MS/MS

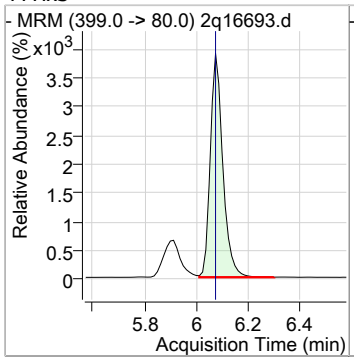
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.10	6.07	0.00	15432				

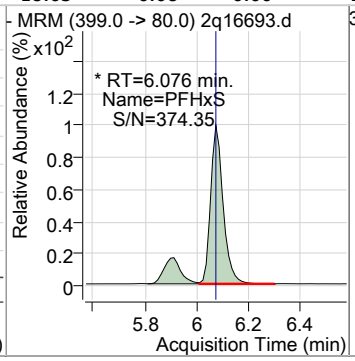


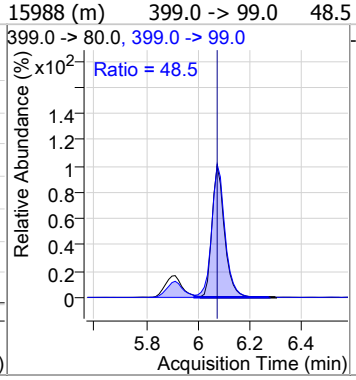


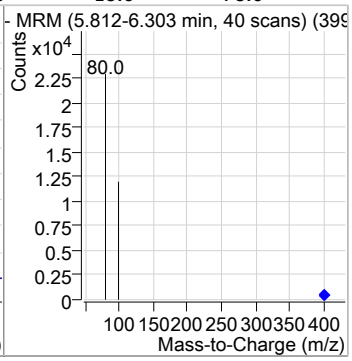


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	18.65	6.08	0.00	15988 (m)	399.0 -> 99.0	48.5	18.0	78.0

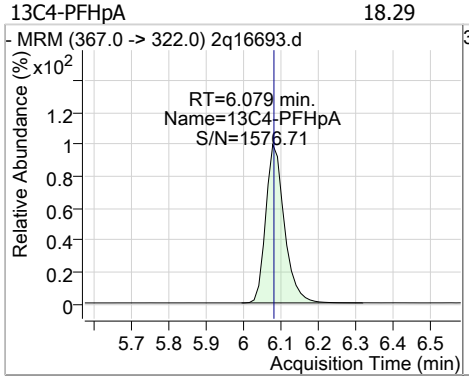


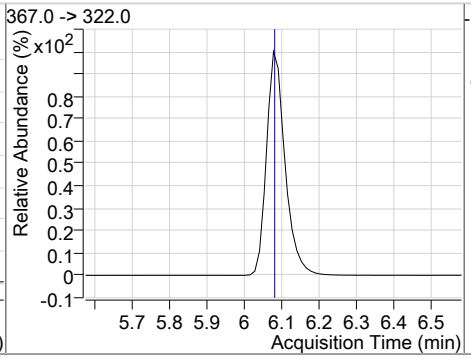


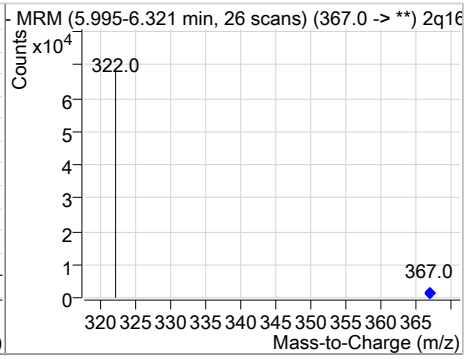




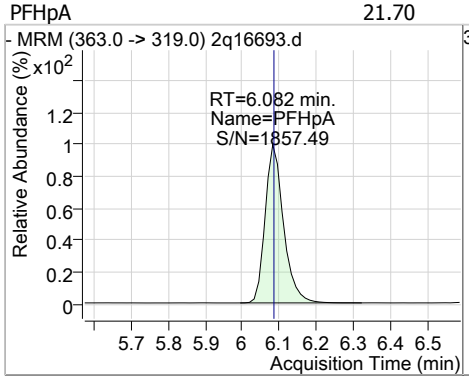
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.29	6.08	0.00	49285				

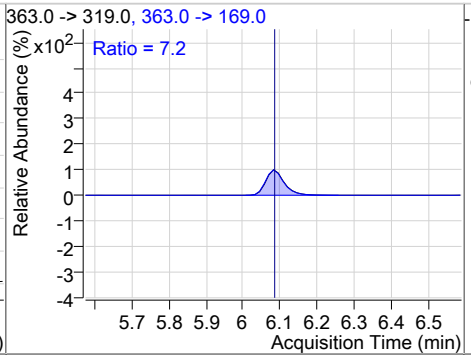


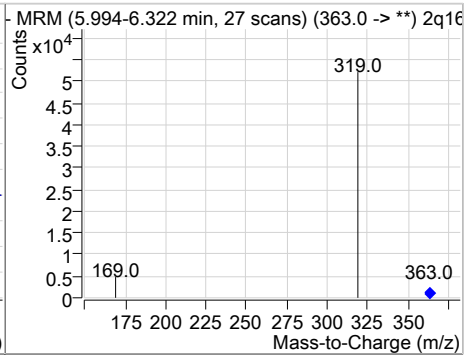




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	21.70	6.08	0.00	38206	363.0 -> 169.0	7.2	0.0	37.2

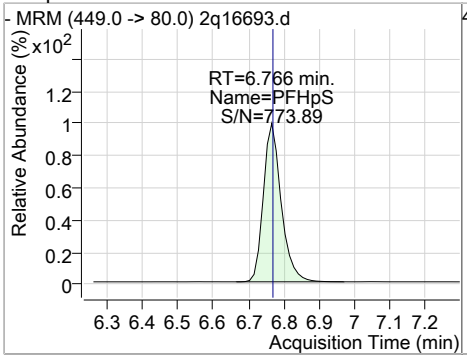


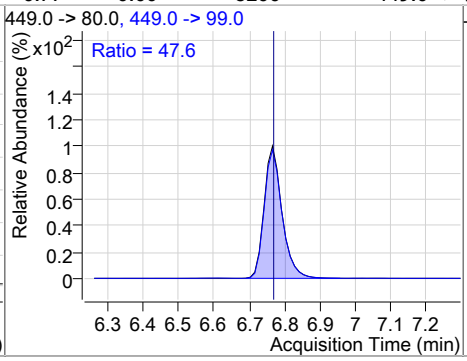


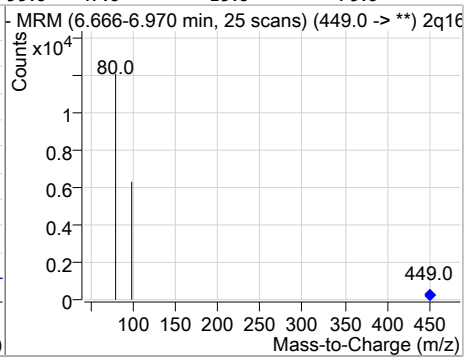


Perfluorinated Compounds by LC/MS/MS

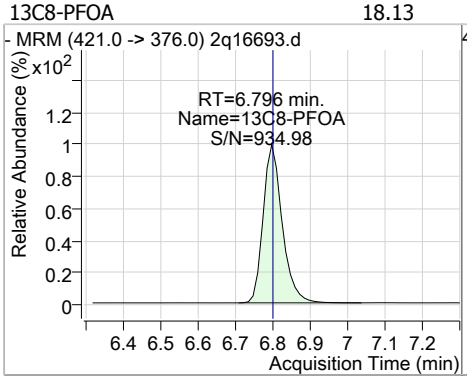
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.66	6.77	0.00	8266	449.0 -> 99.0	47.6	19.0	79.0

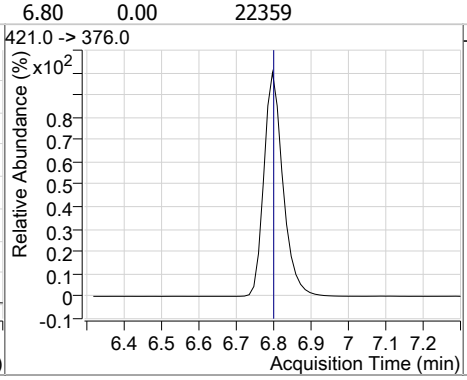


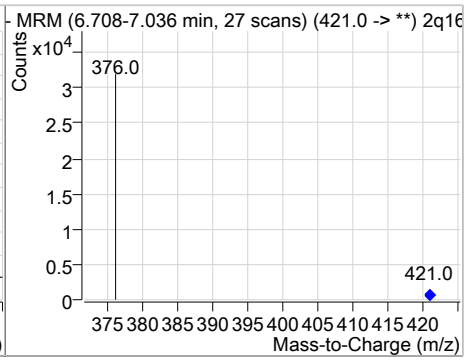




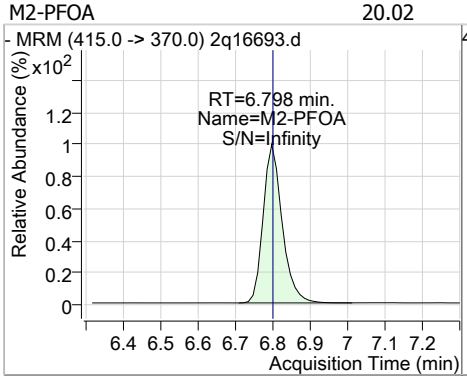
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	18.13	6.80	0.00	22359				

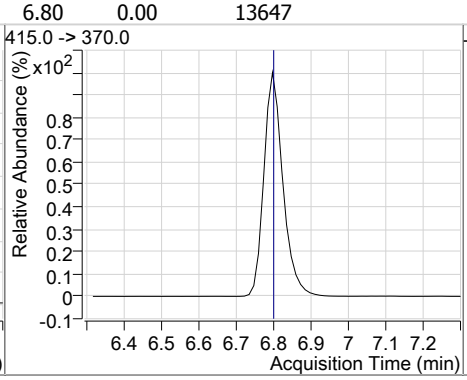


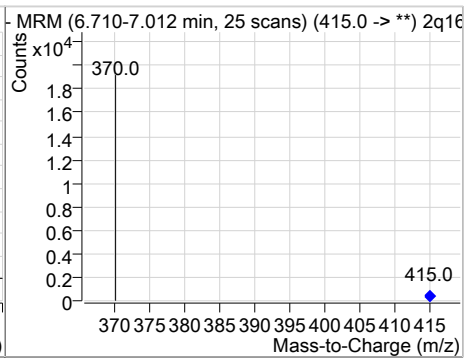




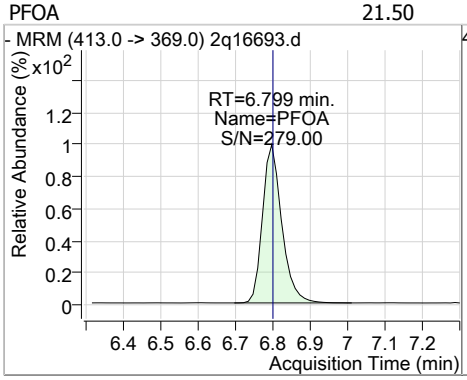
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.02	6.80	0.00	13647				

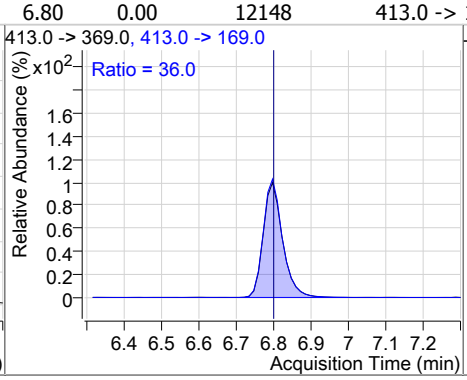


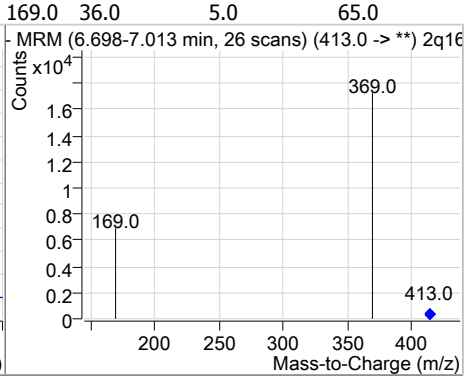




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	21.50	6.80	0.00	12148	413.0 -> 169.0	36.0	5.0	65.0

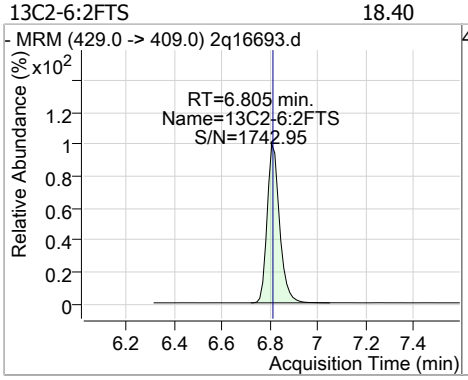


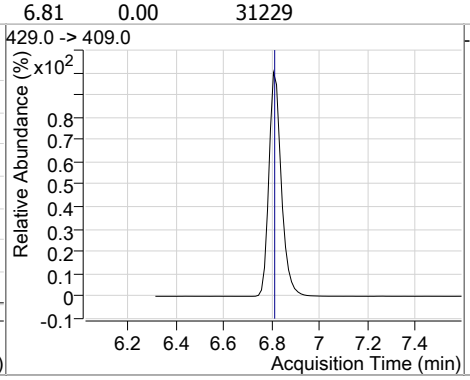


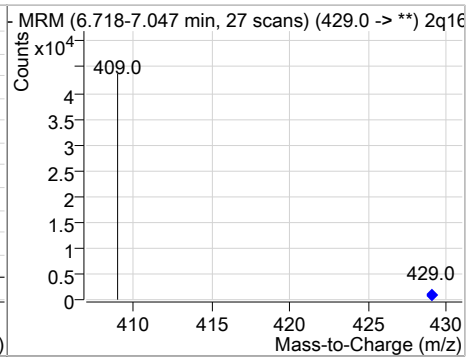


Perfluorinated Compounds by LC/MS/MS

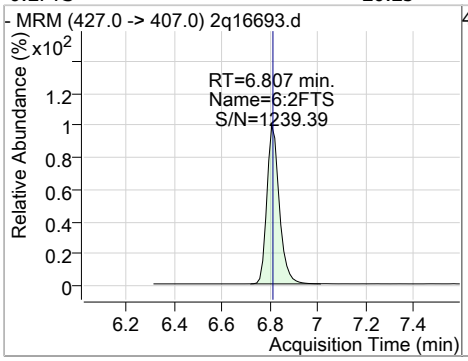
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.40	6.81	0.00	31229				

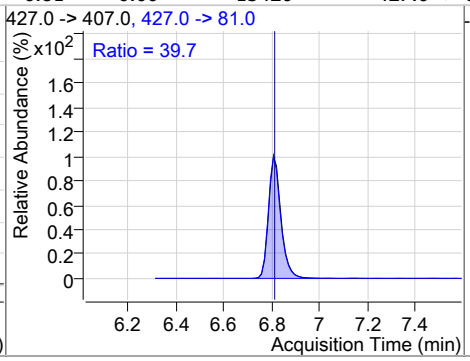


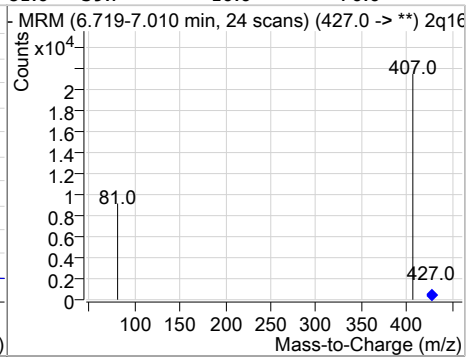




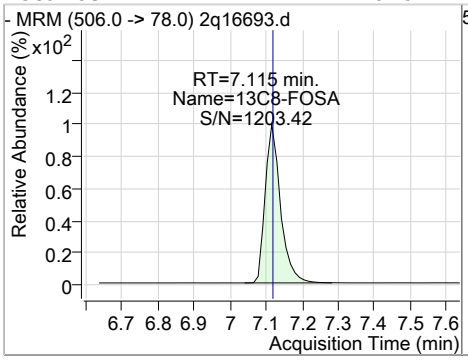
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.25	6.81	0.00	15426	427.0 -> 81.0	39.7	10.0	70.0

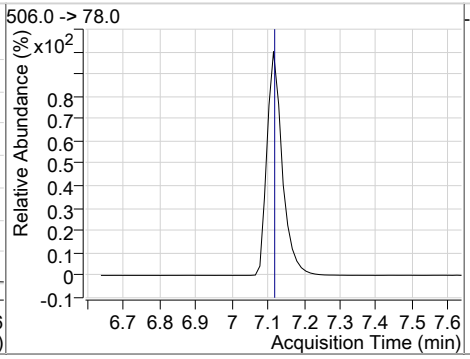


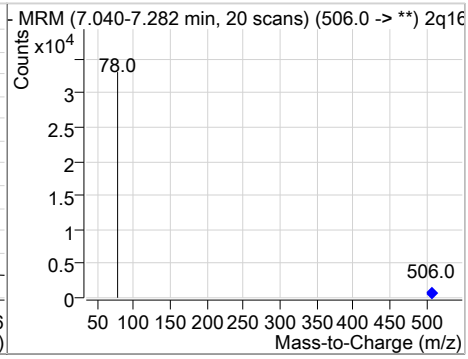




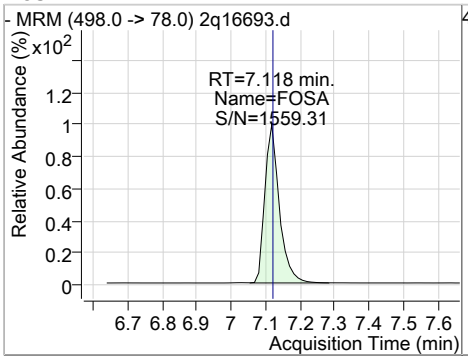
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.45	7.12	0.00	24470				

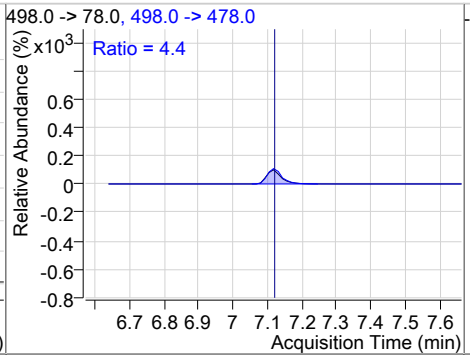


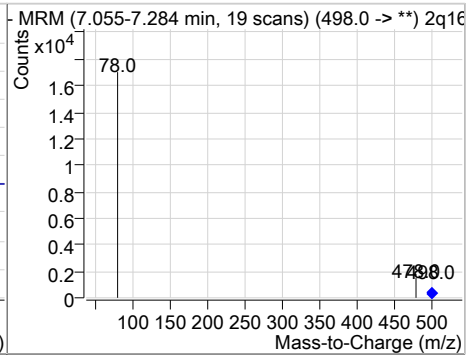




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	21.11	7.12	0.00	12541	498.0 -> 478.0	4.4	0.0	34.0

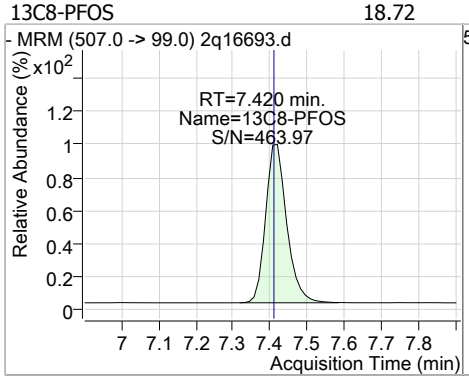


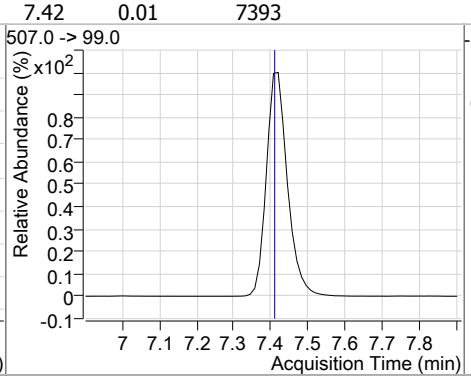


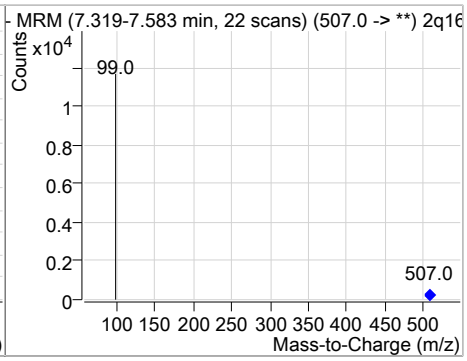


Perfluorinated Compounds by LC/MS/MS

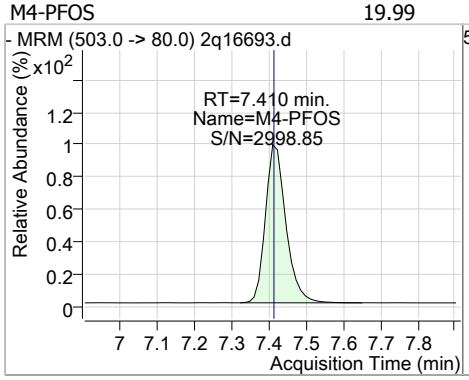
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.72	7.42	0.01	7393				

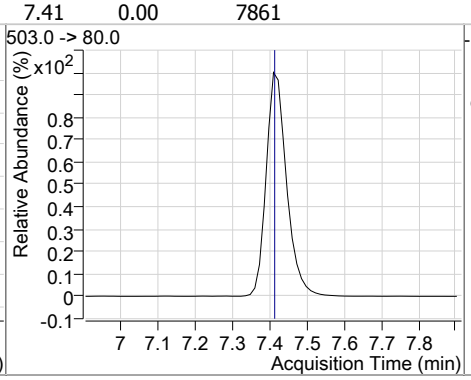


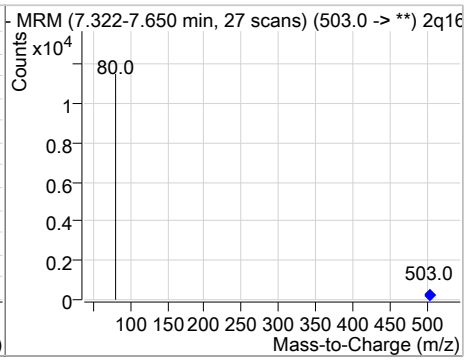




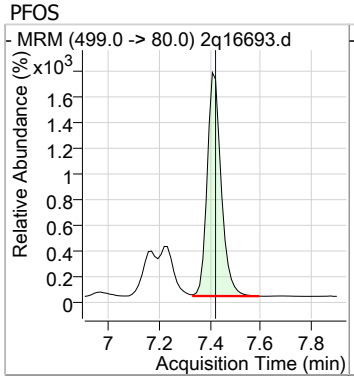
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	19.99	7.41	0.00	7861				

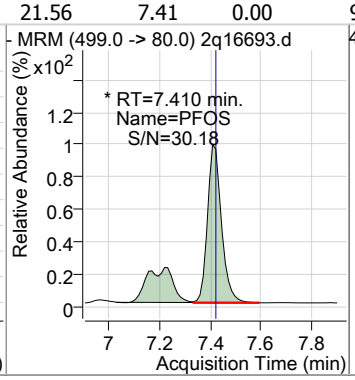


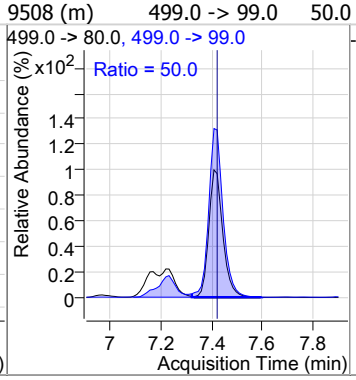


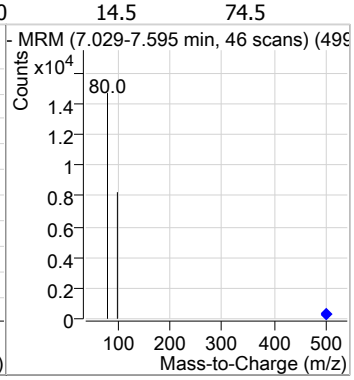


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	21.56	7.41	0.00	9508 (m)	499.0 -> 99.0	50.0	14.5	74.5

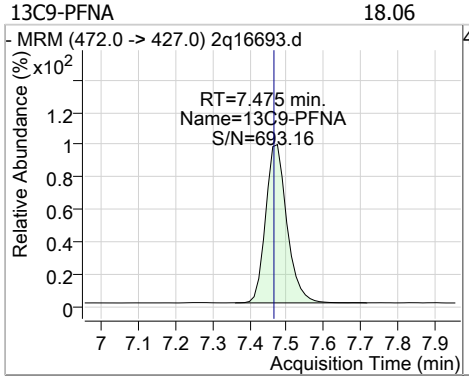


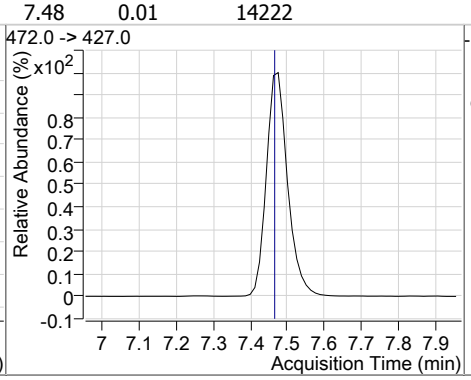


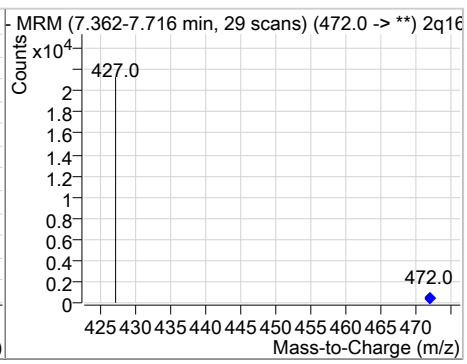




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.06	7.48	0.01	14222				

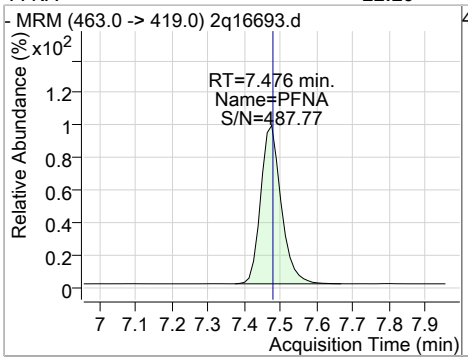


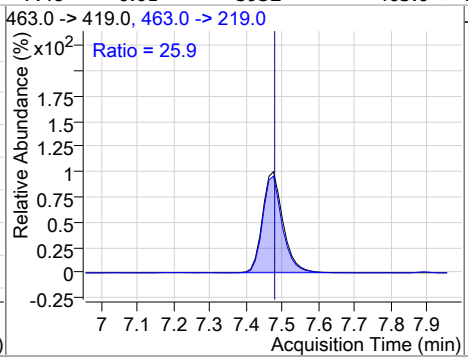


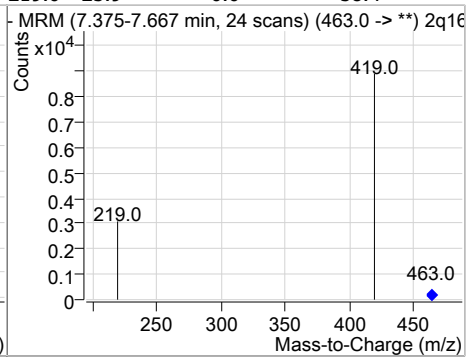


Perfluorinated Compounds by LC/MS/MS

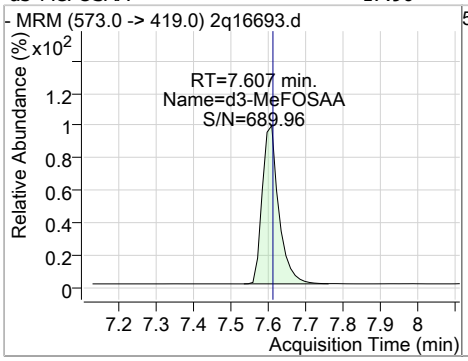
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	22.20	7.48	0.01	5932	463.0 -> 219.0	25.9	0.0	58.4

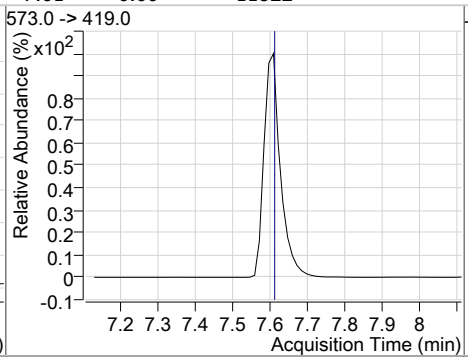


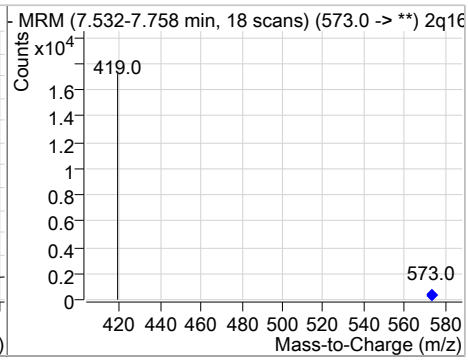




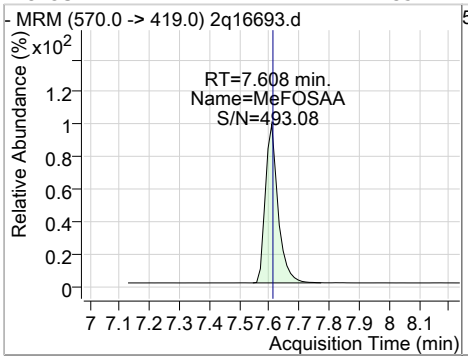
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	17.90	7.61	0.00	11822				

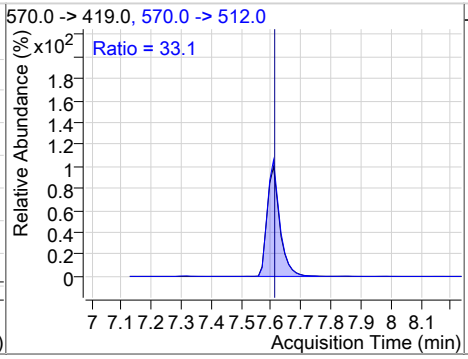


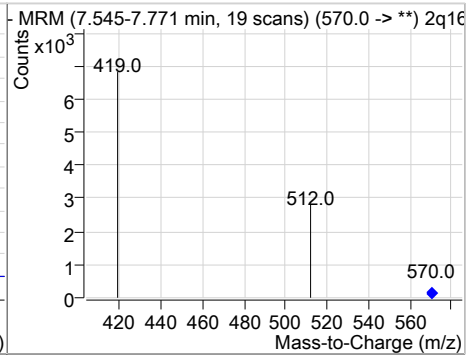




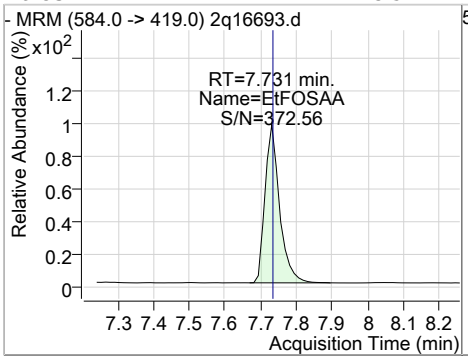
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	21.35	7.61	0.00	4548	570.0 -> 512.0	33.1	1.8	61.8

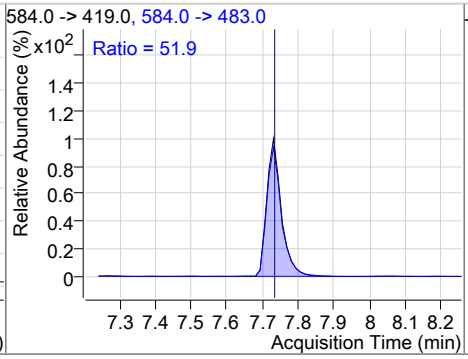


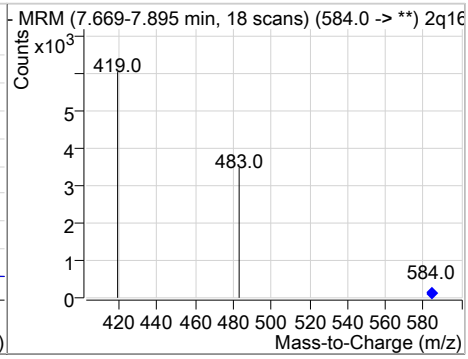




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	23.51	7.73	0.00	3971	584.0 -> 483.0	51.9	24.8	84.8

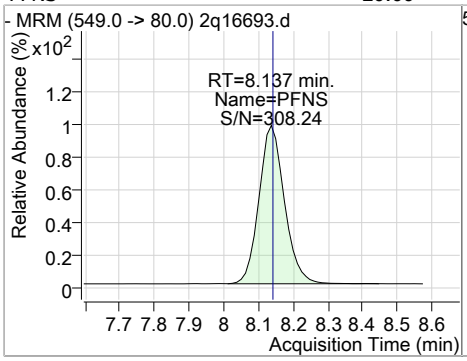


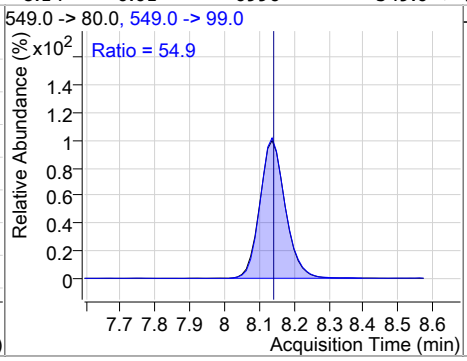


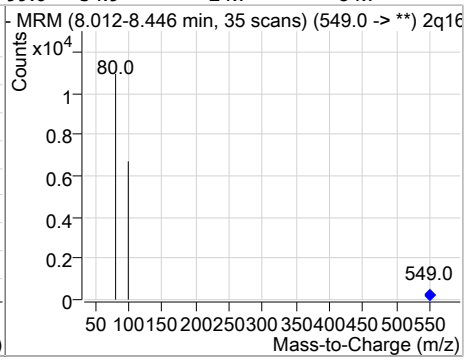


Perfluorinated Compounds by LC/MS/MS

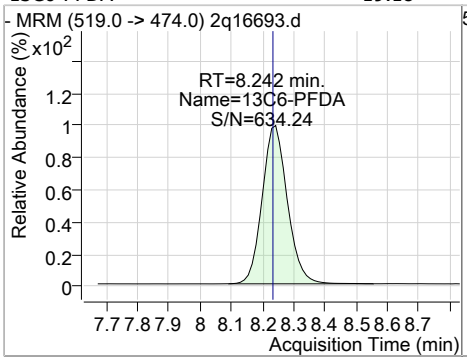
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	20.66	8.14	0.01	6996	549.0 -> 99.0	54.9	24.7	84.7

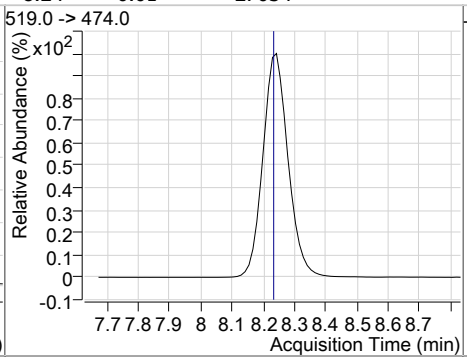


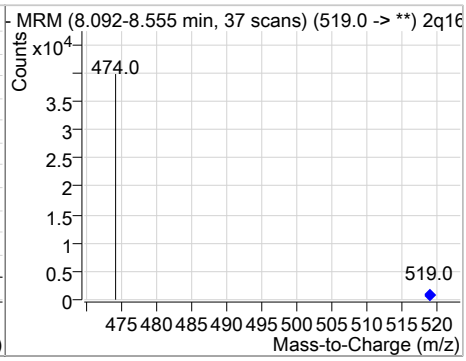




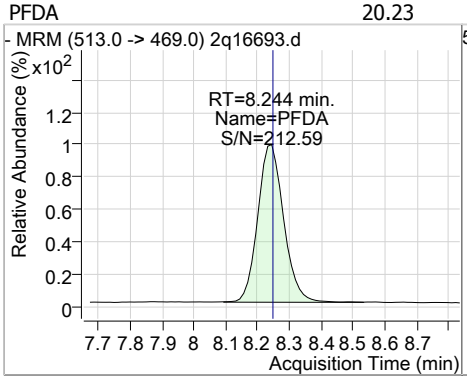
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.18	8.24	0.01	27034				

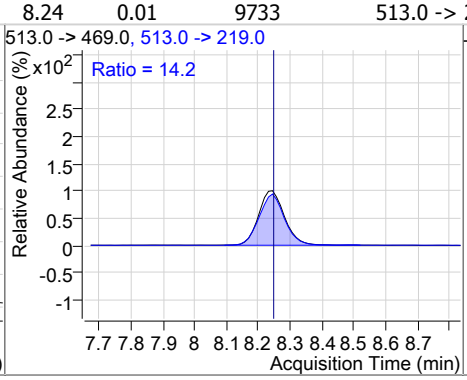


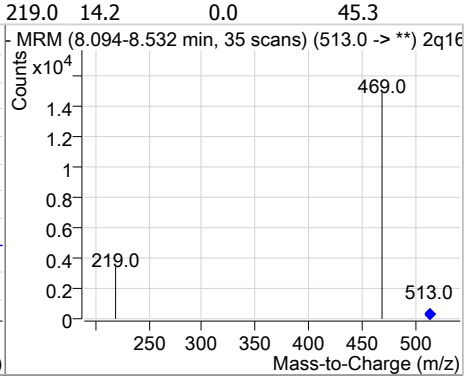




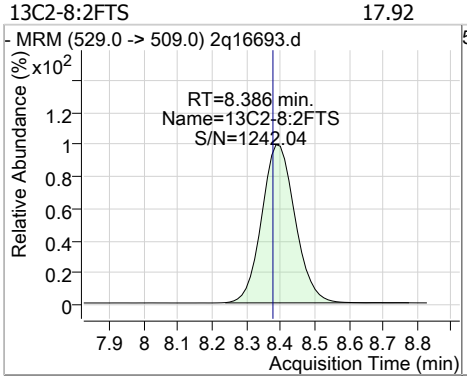
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.23	8.24	0.01	9733	513.0 -> 219.0	14.2	0.0	45.3

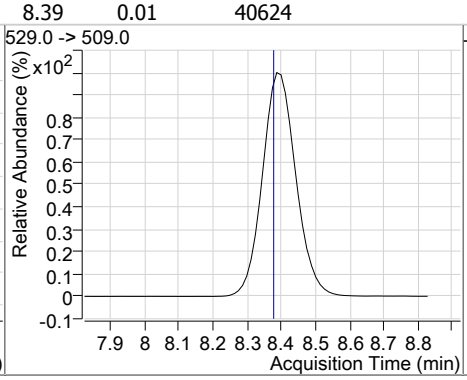


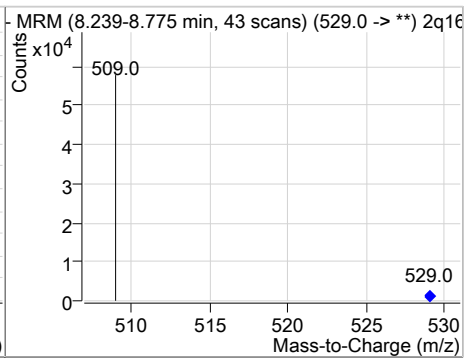




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	17.92	8.39	0.01	40624				

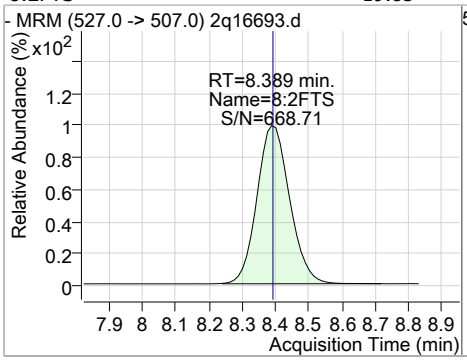


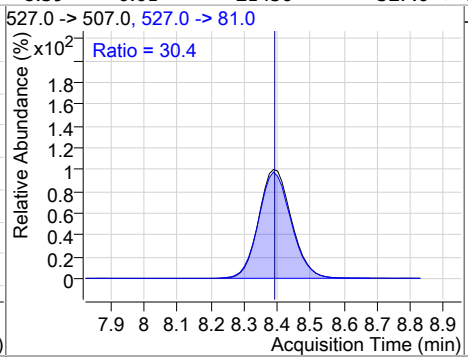


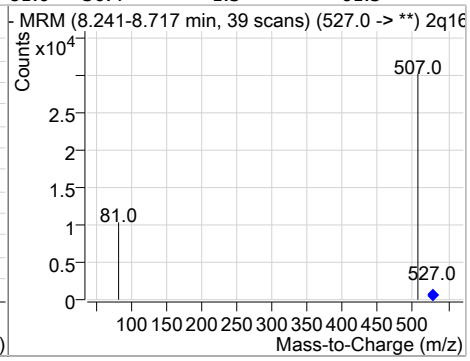


Perfluorinated Compounds by LC/MS/MS

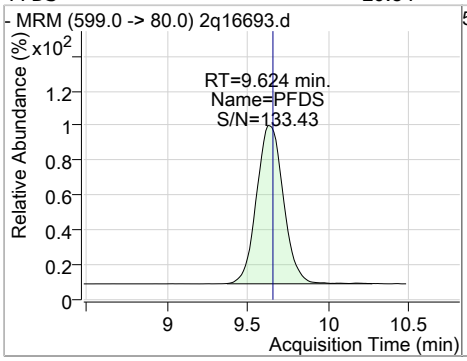
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.85	8.39	0.01	21456	527.0 -> 81.0	30.4	1.3	61.3

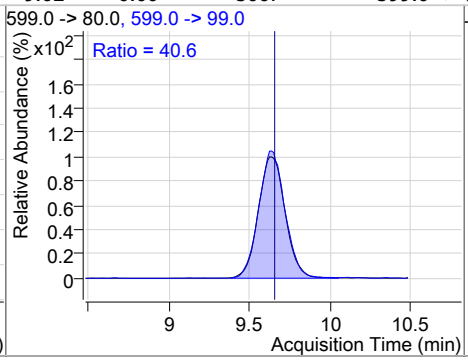


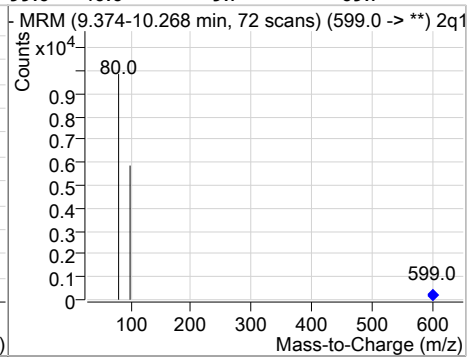




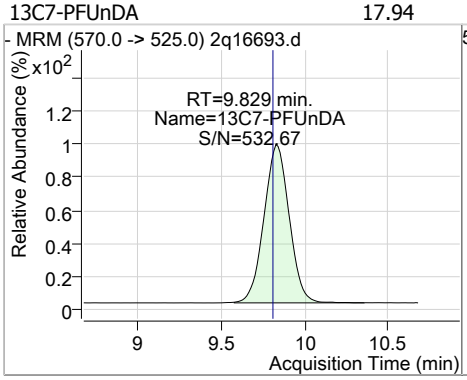
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	20.84	9.62	0.00	5067	599.0 -> 99.0	40.6	9.7	69.7

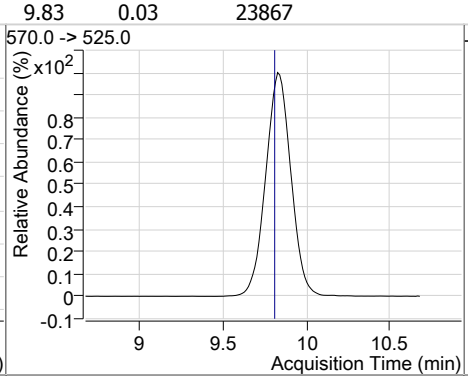


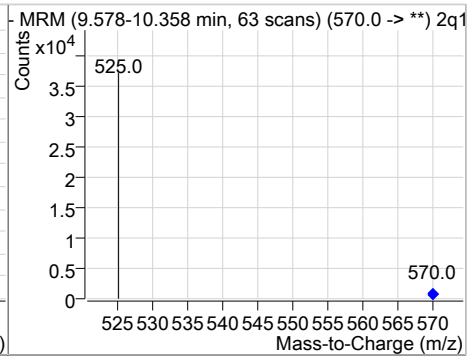




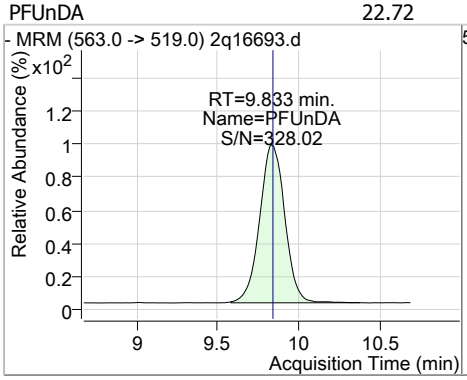
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	17.94	9.83	0.03	23867				

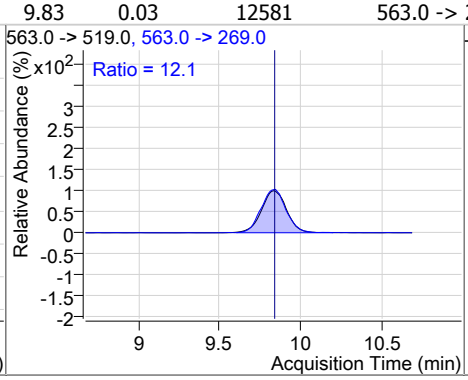


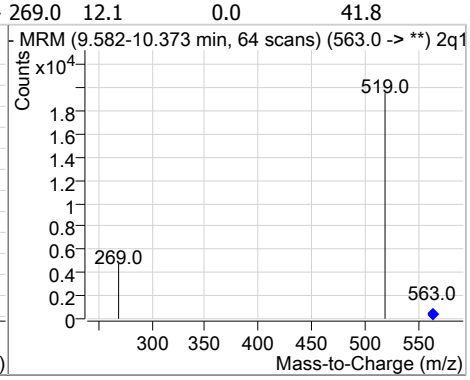




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	22.72	9.83	0.03	12581	563.0 -> 269.0	12.1	0.0	41.8

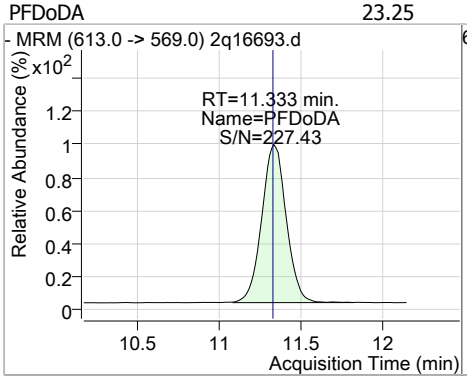


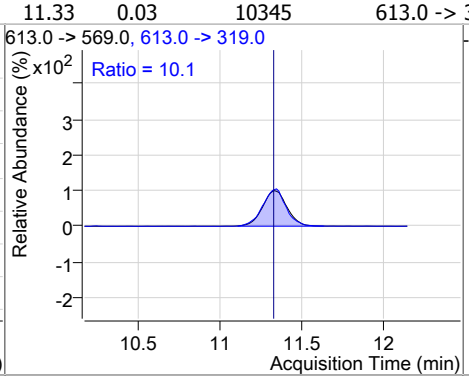


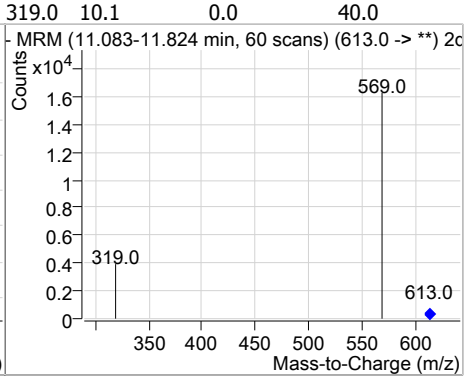


Perfluorinated Compounds by LC/MS/MS

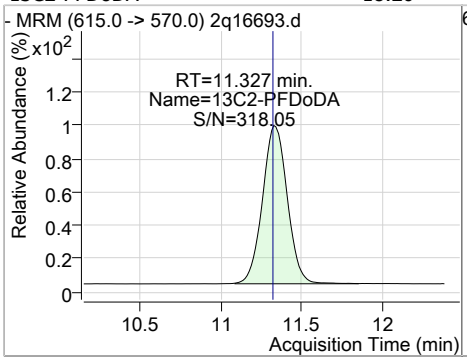
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	23.25	11.33	0.03	10345	613.0 -> 319.0	10.1	0.0	40.0

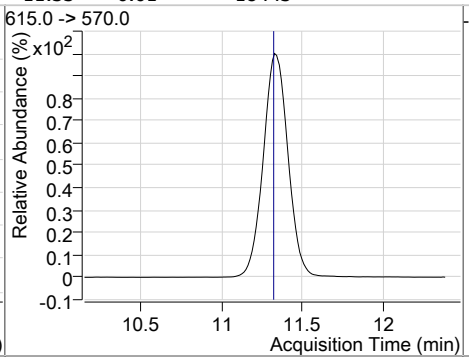


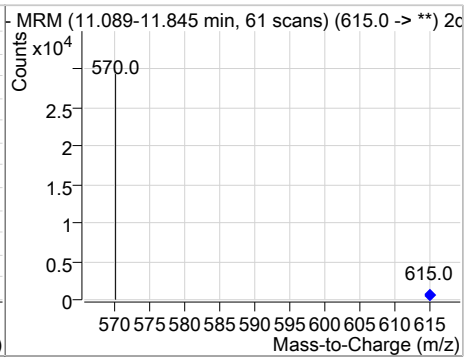




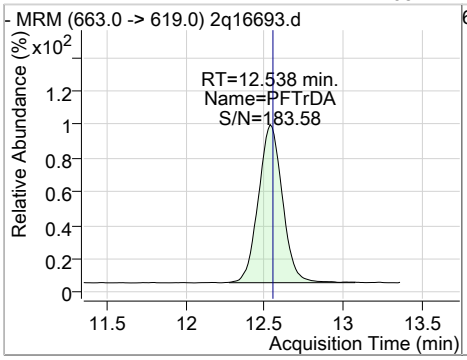
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.20	11.33	0.01	18443				

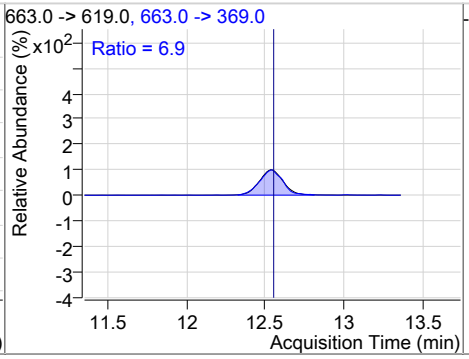


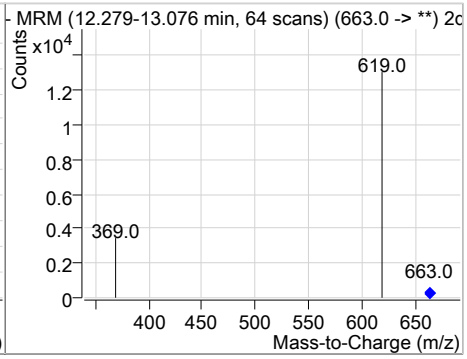




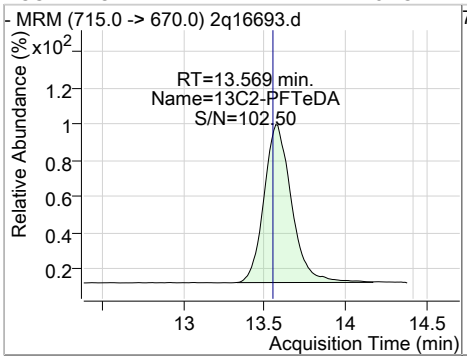
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	24.08	12.54	0.01	7731	663.0 -> 369.0	6.9	0.0	37.1

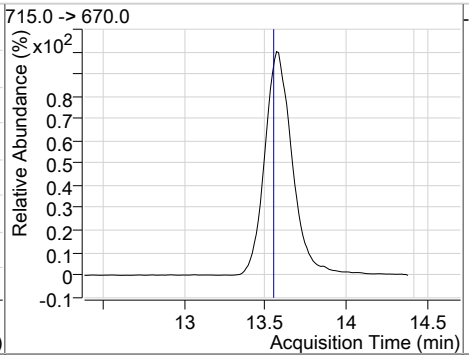


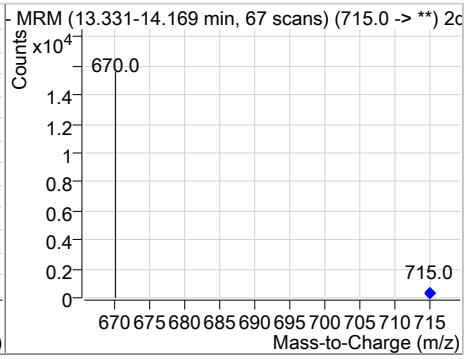




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	18.43	13.57	0.03	7210				

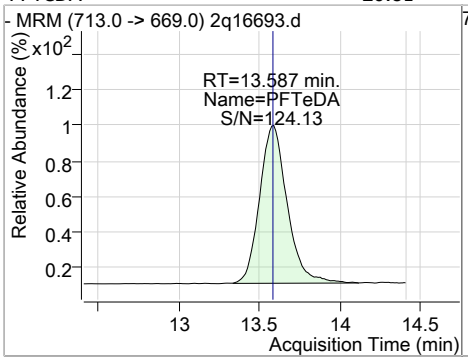


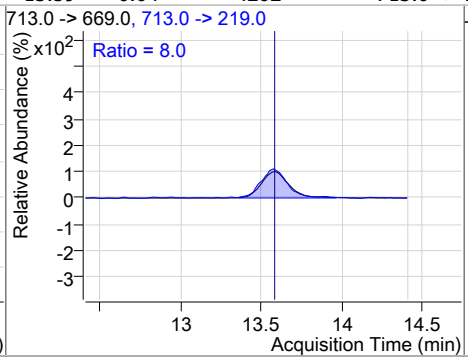


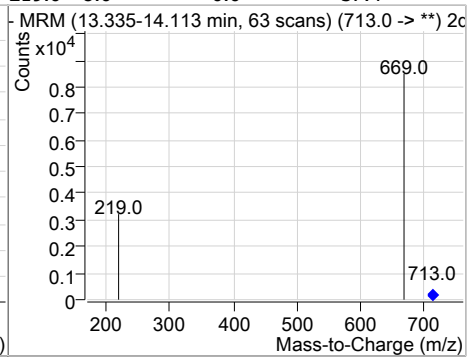


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.81	13.59	0.04	4262	713.0 -> 219.0	8.0	0.0	37.4







Manual Integration Approval Summary

Sample Number: S2Q292-ICV292
Lab FileID: 2Q16693.D
Injection Time: 07/07/18 11:43
Method: EPA 537M QSM5.1 B-15
Analyst approved: 07/09/18 13:31 Natasha Gumtie
Supervisor approved: 07/10/18 17:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.08	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.41	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/10/18 17:10

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16703.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/7/2018 3:01:15 PM
Sample Name : cc292-20
Vial : Vial 7
DA Method File : PFC_ID_070718_S2Q292.quantmethod.xml
Batch Name : s2q292.batch.bin
Sample Information : op70743,S2Q292,130,,,1.0,1,water

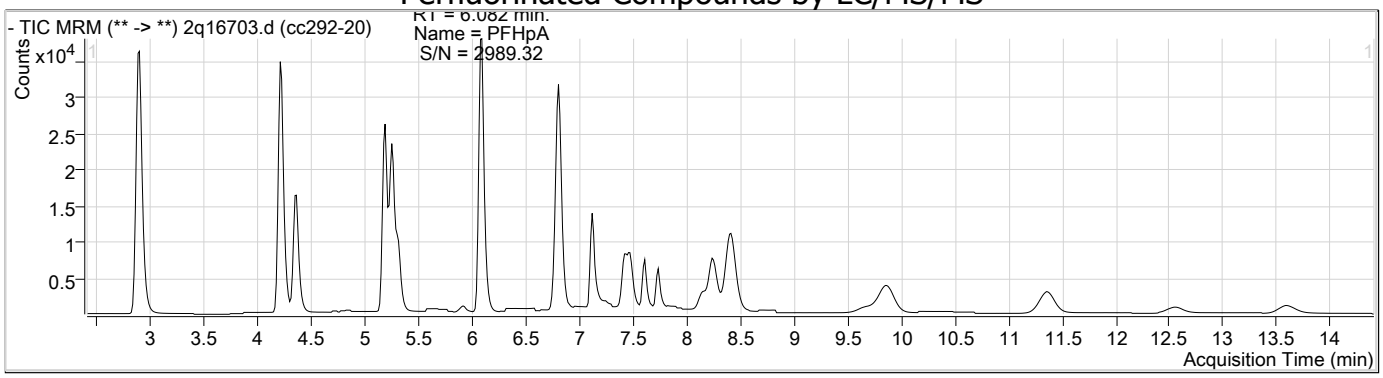
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.798	415.0 -> 370.0	15525	20.00	µg/L	0.000
13C4-PFOS	7.422	503.0 -> 80.0	8983	20.00	µg/L	0.013
M4-PFBA	2.891	217.0 -> 172.0	125911	20.00	µg/L	0.000
M5-PFPeA	4.212	268.0 -> 223.0	59757	20.00	µg/L	0.000
M5-PFHxA	5.253	318.0 -> 273.0	52792	20.00	µg/L	0.000
M4-PFHpA	6.091	367.0 -> 322.0	50505	20.00	µg/L	0.013
M8-PFOA	6.796	421.0 -> 376.0	23632	20.00	µg/L	0.000
M9-PFNA	7.475	472.0 -> 427.0	15589	20.00	µg/L	0.013
M6-PFDA	8.242	519.0 -> 474.0	27271	20.00	µg/L	0.013
M7-PFUnDA	9.866	570.0 -> 525.0	24798	20.00	µg/L	0.063
M2-PFDoDA	11.356	615.0 -> 570.0	19377	20.00	µg/L	0.042
M2-PFTeDA	13.594	715.0 -> 670.0	7467	20.00	µg/L	0.050
M8-FOSA	7.115	506.0 -> 78.0	24731	20.00	µg/L	0.000
M3-PFBS	4.355	302.0 -> 99.0	19155	20.00	µg/L	0.000
M3-PFHxS	6.085	402.0 -> 99.0	16071	20.00	µg/L	0.013
M8-PFOS	7.420	507.0 -> 99.0	7157	20.00	µg/L	0.013
M2-4:2FTS	5.185	329.0 -> 309.0	48490	20.00	µg/L	0.013
M2-6:2FTS	6.818	429.0 -> 409.0	32215	20.00	µg/L	0.013
M2-8:2FTS	8.411	529.0 -> 509.0	42079	20.00	µg/L	0.038
M3-MeFOSAA	7.607	573.0 -> 419.0	12898	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.185	329.0 -> 309.0	48483	18.50	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.5%		
13C2-6:2FTS	6.818	429.0 -> 409.0	32214	18.98	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.9%		
13C2-8:2FTS	8.411	529.0 -> 509.0	42054	18.55	µg/L	0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.8%		
13C2-PFDoDA	11.356	615.0 -> 570.0	19415	19.16	µg/L	0.042
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.8%		
13C2-PFTeDA	13.594	715.0 -> 670.0	7517	19.22	µg/L	0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.1%		
13C3-PFBS	4.355	302.0 -> 99.0	19167	18.31	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.6%		
13C3-PFHxS	6.085	402.0 -> 99.0	16083	18.86	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.3%		
13C4-PFBA	2.891	217.0 -> 172.0	125912	18.28	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.4%		
13C4-PFHpA	6.091	367.0 -> 322.0	50497	18.74	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.7%		
13C5-PFHxA	5.253	318.0 -> 273.0	52788	18.63	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.1%		
13C5-PFPeA	4.212	268.0 -> 223.0	59750	18.77	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.9%		
13C6-PFDA	8.242	519.0 -> 474.0	27263	19.34	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.7%		

Perfluorinated Compounds by LC/MS/MS

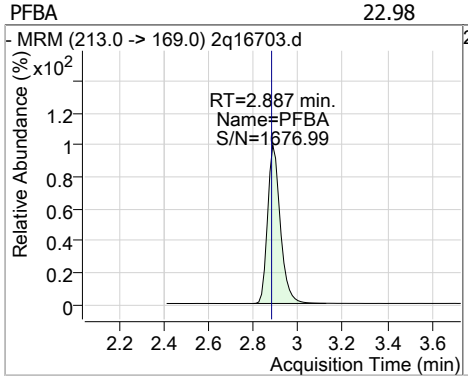
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	9.866	570.0 -> 525.0	24798	18.64	µg/L		0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.2%			
13C8-FOSA	7.115	506.0 -> 78.0	24737	18.65	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.2%			
13C8-PFOA	6.796	421.0 -> 376.0	23616	19.15	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.8%			
13C8-PFOS	7.420	507.0 -> 99.0	7163	18.14	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.7%			
13C9-PFNA	7.475	472.0 -> 427.0	15585	19.79	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.9%			
d3-MeFOSAA	7.607	573.0 -> 419.0	12888	19.51	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.6%			
M2-PFOA	6.798	415.0 -> 370.0	15524	20.00	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.422	503.0 -> 80.0	8984	20.01	ng/ml		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
Target Compounds							**QValue**
4:2FTS	5.187	327.0 -> 307.0	26353	21.74	µg/L		99
6:2FTS	6.819	427.0 -> 407.0	17150	21.89	µg/L		99
8:2FTS	8.401	527.0 -> 507.0	24849	22.37	µg/L		98
EtFOSAA	7.731	584.0 -> 419.0	4264	23.13	µg/L		99
FOSA	7.118	498.0 -> 78.0	13053	21.74	µg/L		99
MeFOSAA	7.608	570.0 -> 419.0	5023	21.61	µg/L		98
PFBA	2.887	213.0 -> 169.0	22775	22.98	µg/L		100
PFBS	4.346	299.0 -> 80.0	28286	22.09	µg/L		100
PFDA	8.244	513.0 -> 469.0	10974	22.63	µg/L		98
PFDoDA	11.361	613.0 -> 569.0	10530	22.53	µg/L		99
PFDS	9.674	599.0 -> 80.0	5824	23.04	µg/L		100
PFHpA	6.082	363.0 -> 319.0	40637	22.50	µg/L		100
PFHpS	6.766	449.0 -> 80.0	9176	22.02	µg/L		100
PFHxA	5.255	313.0 -> 269.0	18732	22.04	µg/L		100
PFHxS	6.076	399.0 -> 80.0	19612	21.97	µg/L	m	99
PFNA	7.476	463.0 -> 419.0	6616	22.56	µg/L		95
PFNS	8.150	549.0 -> 80.0	7878	24.04	µg/L		97
PFOA	6.799	413.0 -> 369.0	13899	23.27	µg/L		98
PFOS	7.423	499.0 -> 80.0	10275	24.07	µg/L	m	99
PFPeA	4.216	263.0 -> 219.0	64429	22.10	µg/L		100
PFPeS	5.308	349.0 -> 80.0	17427	22.84	µg/L		99
PFTeDA	13.587	713.0 -> 669.0	4950	23.45	µg/L		99
PFTrDA	12.563	663.0 -> 619.0	7777	23.49	µg/L		98
PFUnDA	9.858	563.0 -> 519.0	13222	22.96	µg/L		99

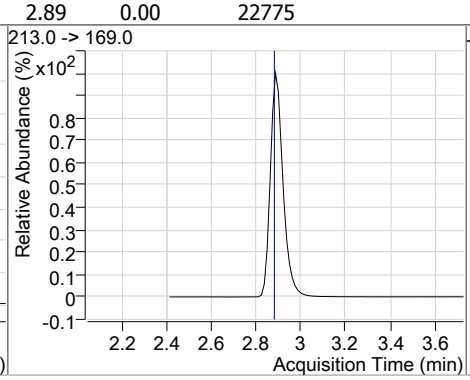
 # = Qualifier out of range, m = manually integrated, + = Area summed

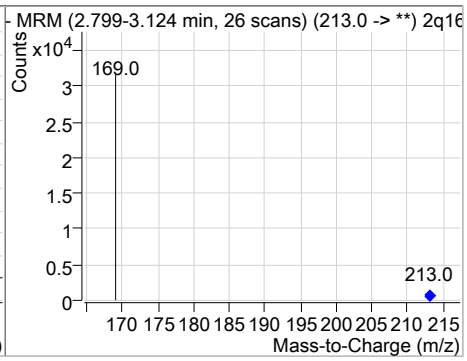
Perfluorinated Compounds by LC/MS/MS



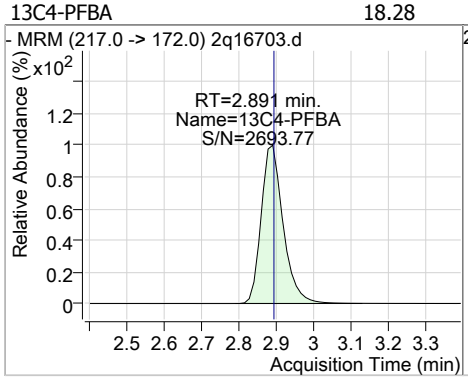
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	22.98	2.89	0.00	22775				

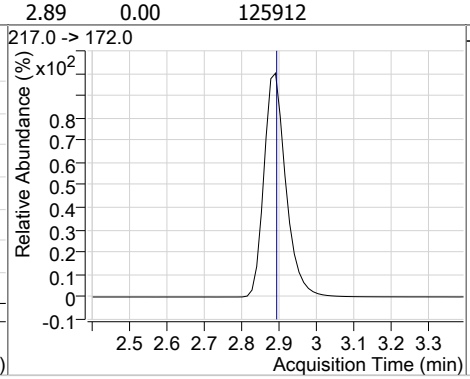


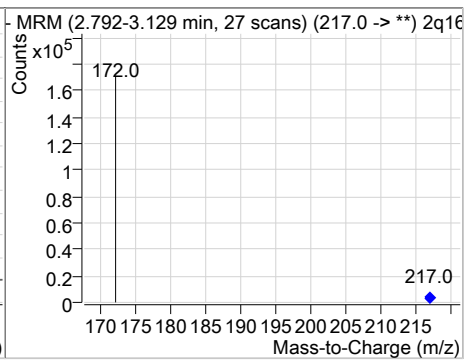




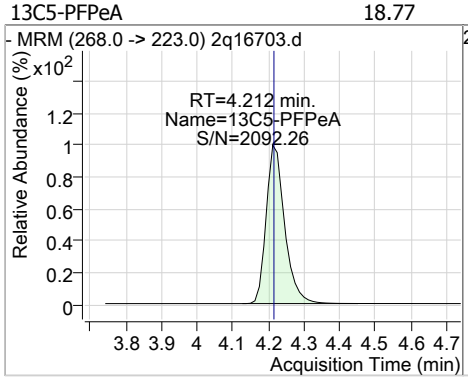
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.28	2.89	0.00	125912				

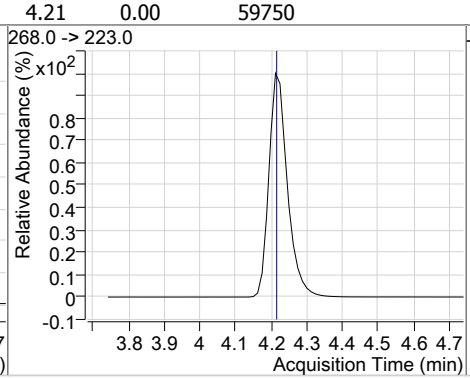


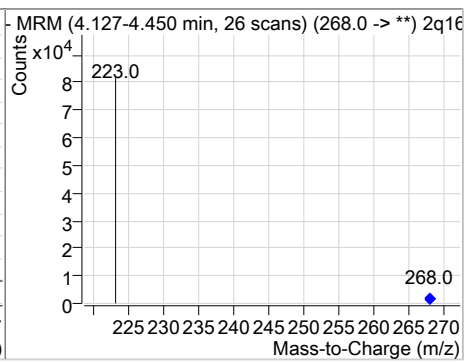




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.77	4.21	0.00	59750				

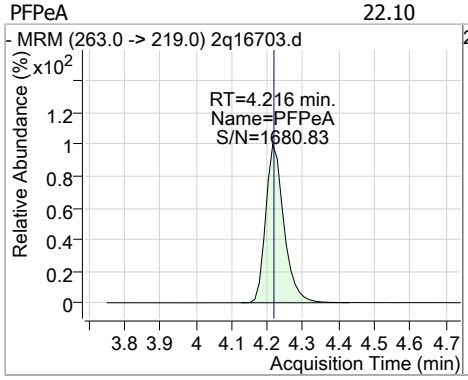


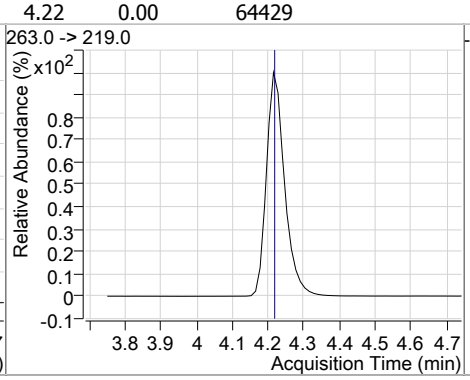


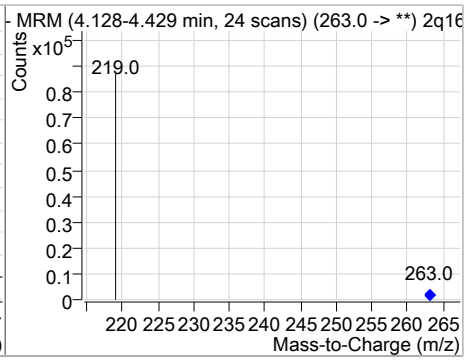


Perfluorinated Compounds by LC/MS/MS

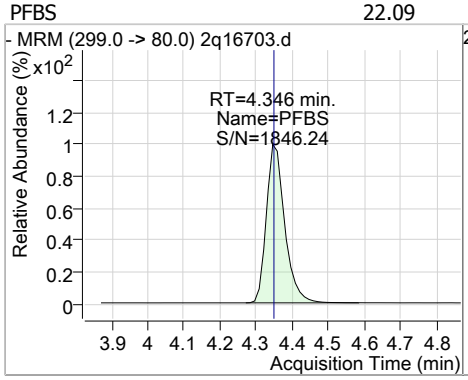
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	22.10	4.22	0.00	64429				

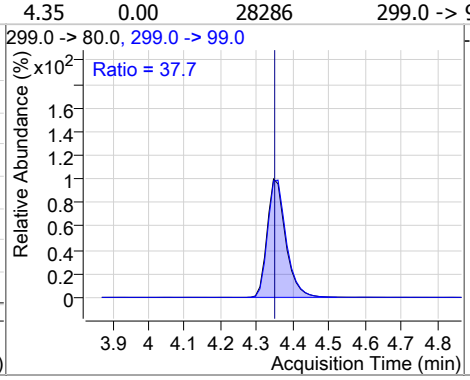


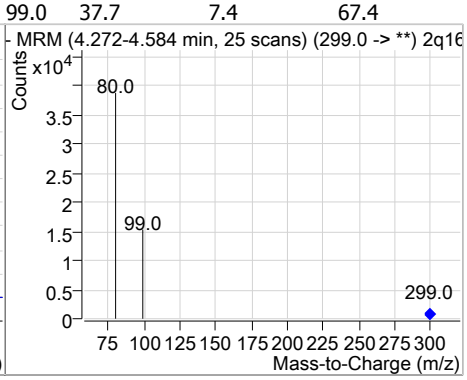




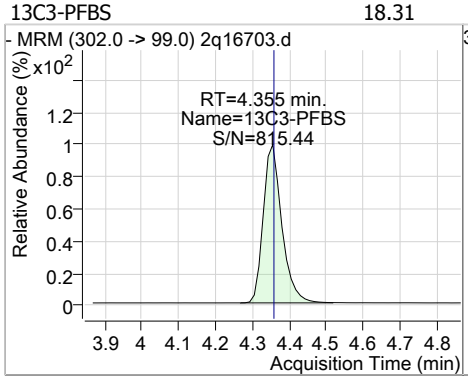
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	22.09	4.35	0.00	28286	299.0 -> 99.0	37.7	7.4	67.4

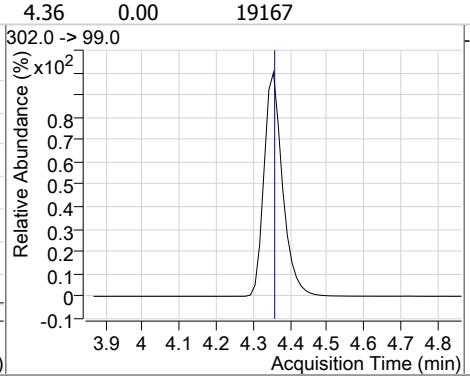


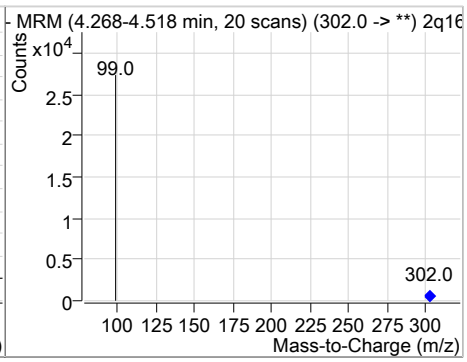




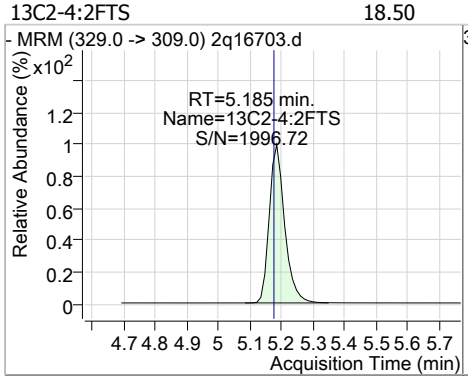
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.31	4.36	0.00	19167				

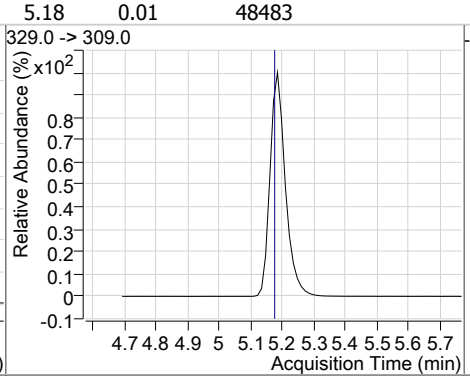


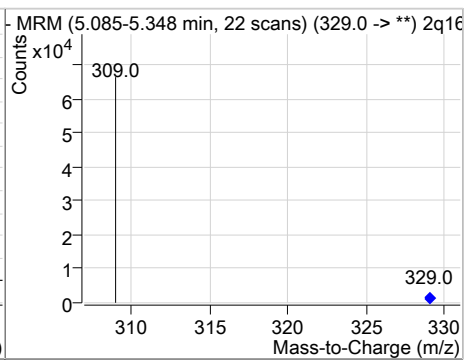




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.50	5.18	0.01	48483				

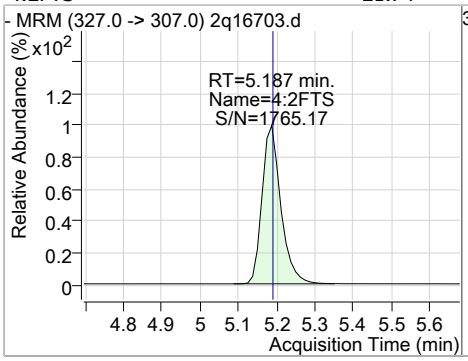


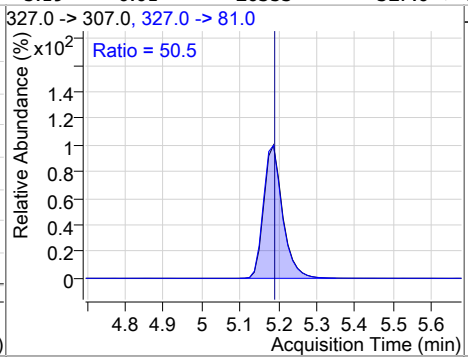


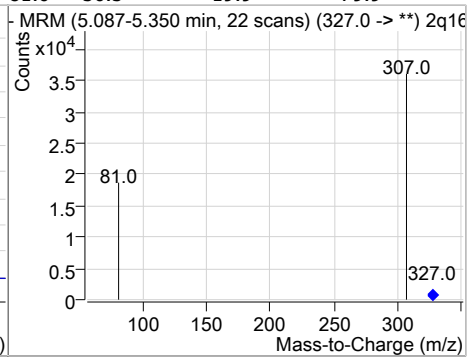


Perfluorinated Compounds by LC/MS/MS

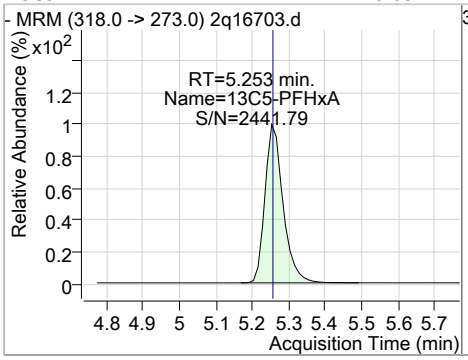
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	21.74	5.19	0.01	26353	327.0 -> 81.0	50.5	19.9	79.9

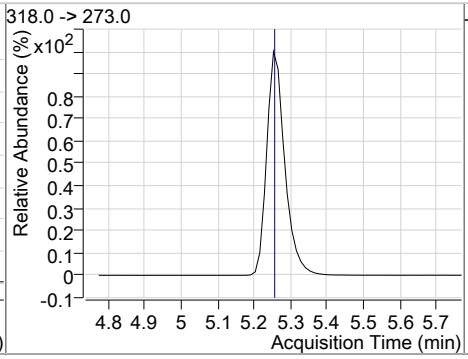


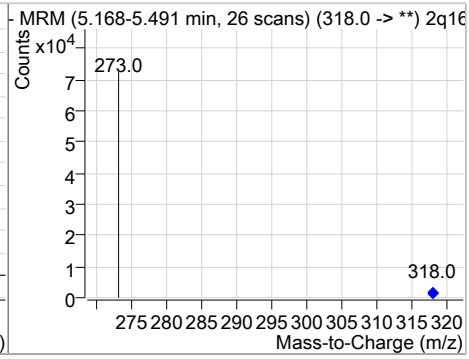




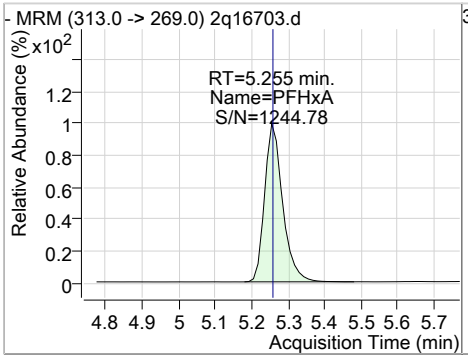
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.63	5.25	0.00	52788				

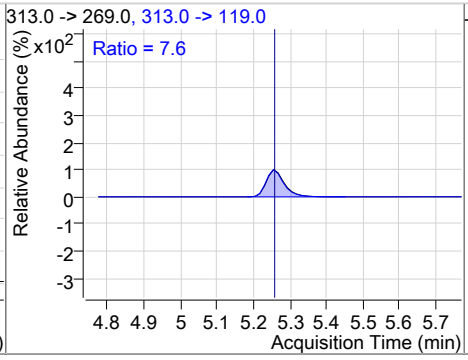


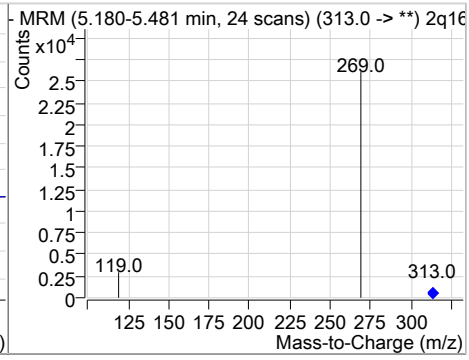




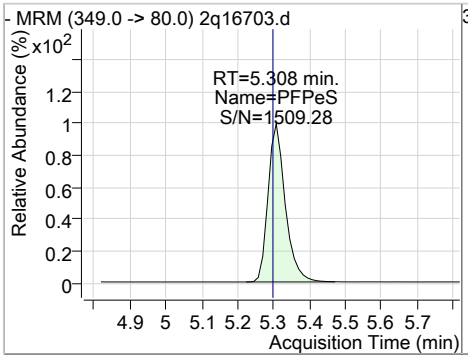
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	22.04	5.26	0.00	18732	313.0 -> 119.0	7.6	0.0	37.6

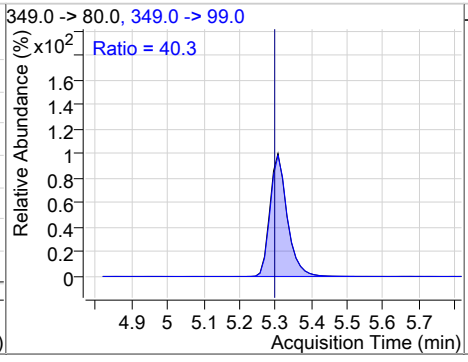


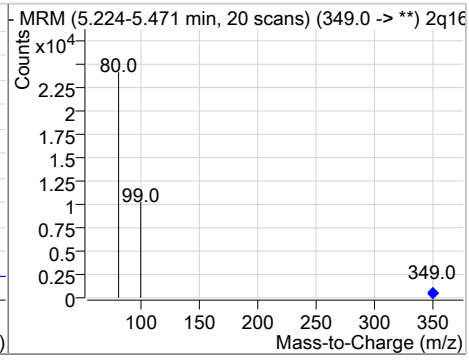




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	22.84	5.31	0.01	17427	349.0 -> 99.0	40.3	10.8	70.8

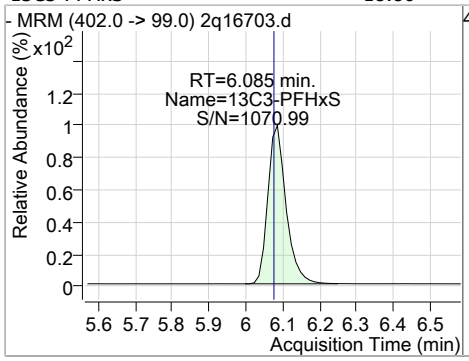


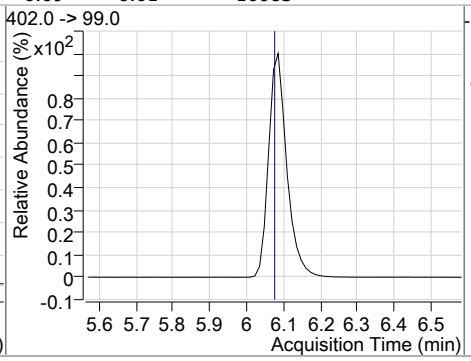


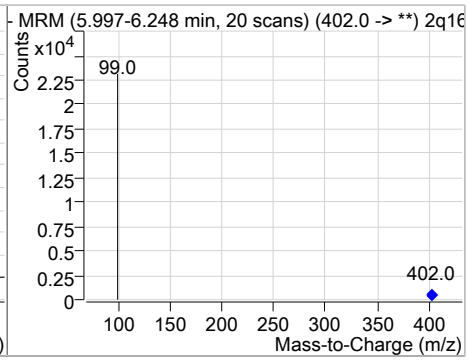


Perfluorinated Compounds by LC/MS/MS

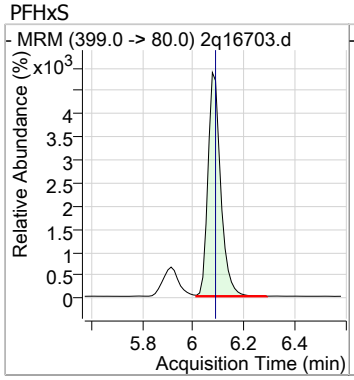
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.86	6.09	0.01	16083				

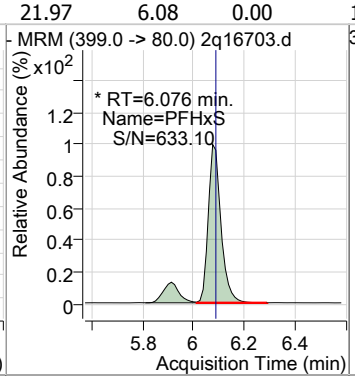


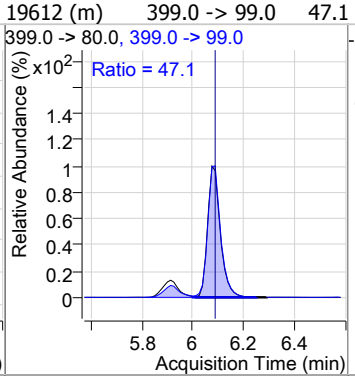


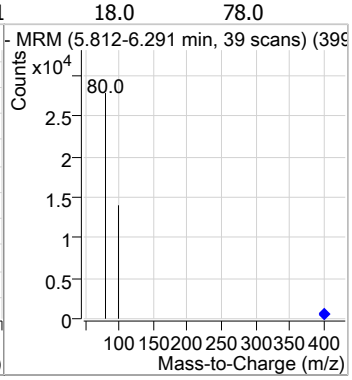


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	21.97	6.08	0.00	19612 (m)	399.0 -> 99.0	47.1	18.0	78.0

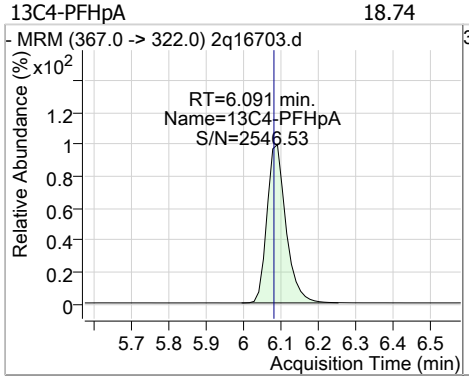


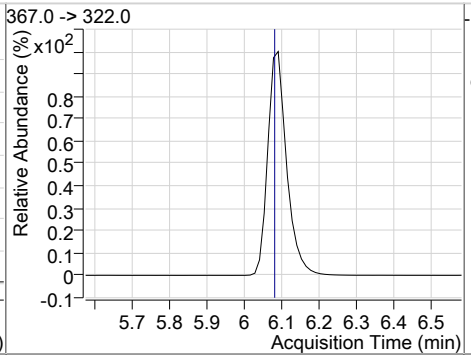


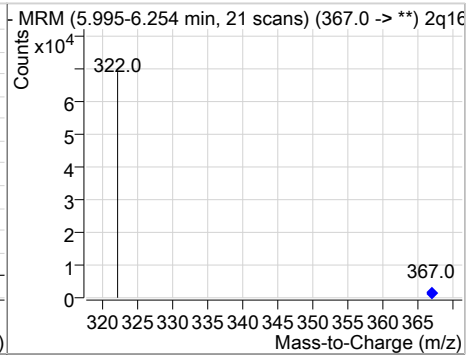




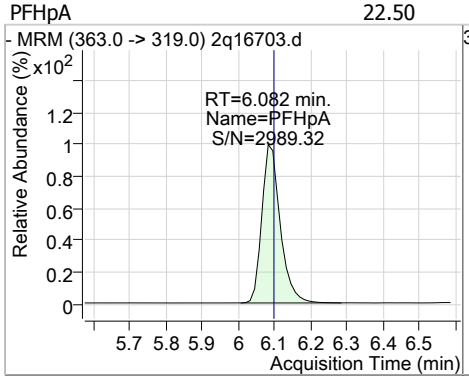
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.74	6.09	0.01	50497				

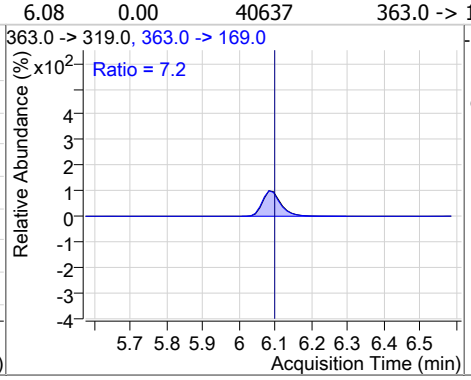


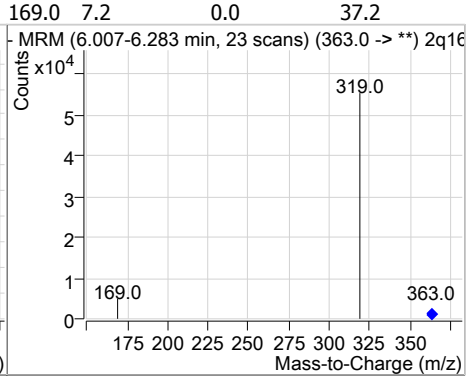




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	22.50	6.08	0.00	40637	363.0 -> 169.0	7.2	0.0	37.2

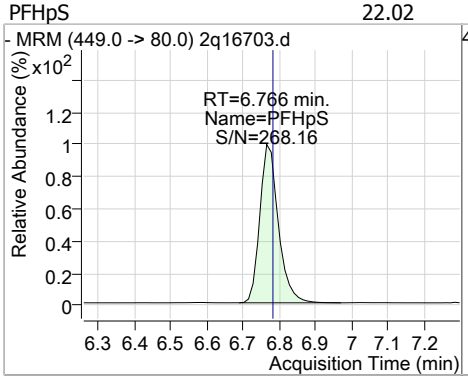


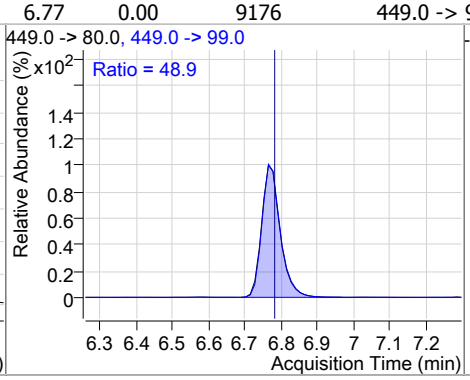


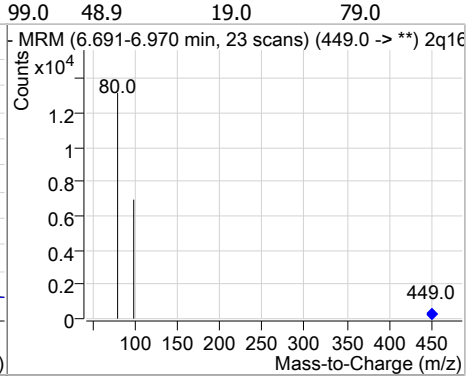


Perfluorinated Compounds by LC/MS/MS

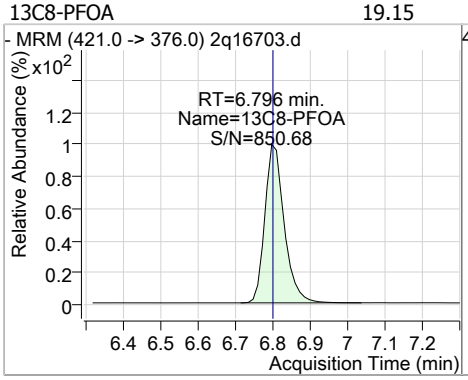
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	22.02	6.77	0.00	9176	449.0 -> 99.0	48.9	19.0	79.0

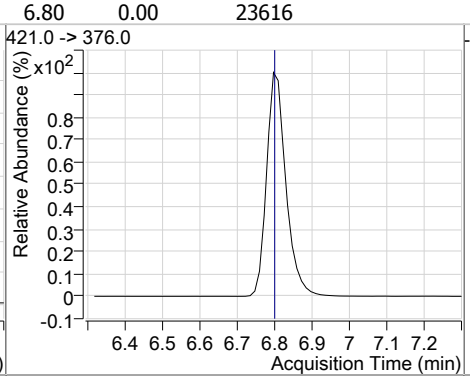


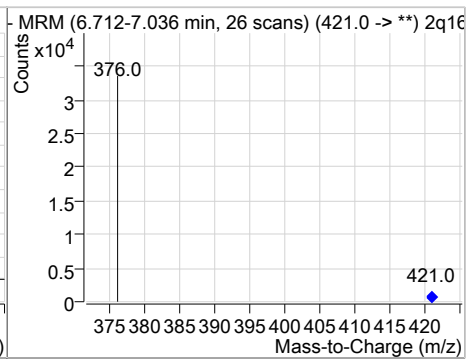




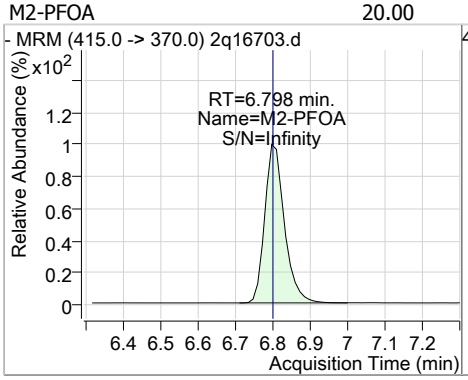
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.15	6.80	0.00	23616				

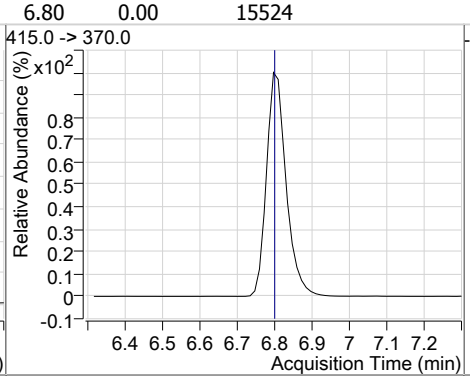


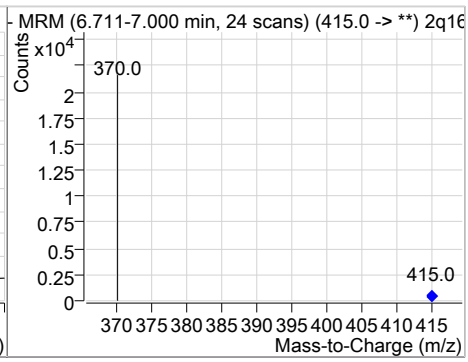




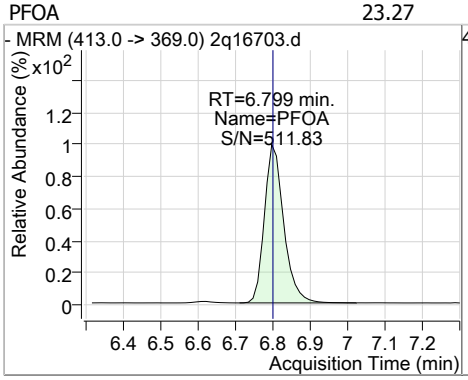
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.80	0.00	15524				

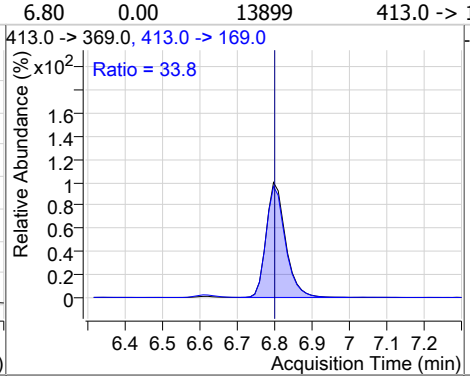


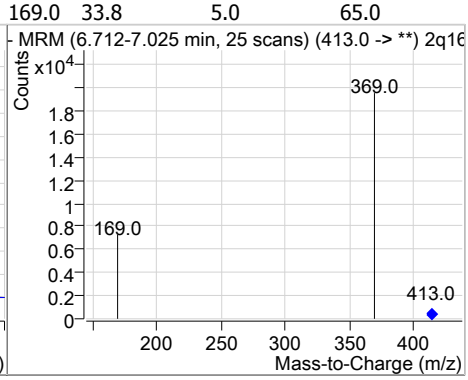




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	23.27	6.80	0.00	13899	413.0 -> 169.0	33.8	5.0	65.0

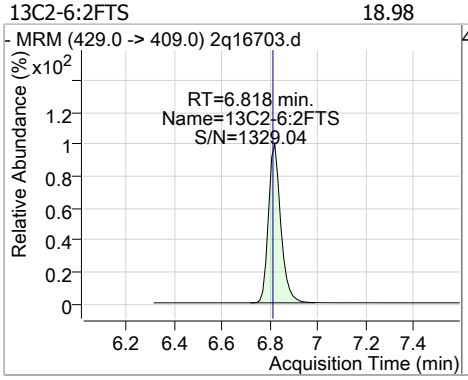


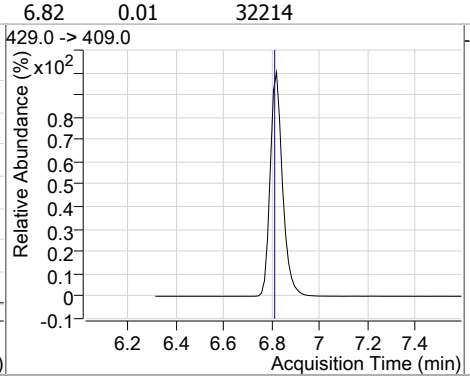


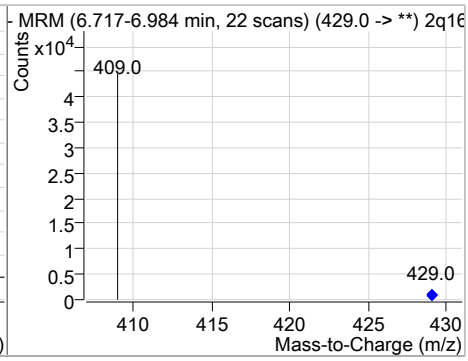


Perfluorinated Compounds by LC/MS/MS

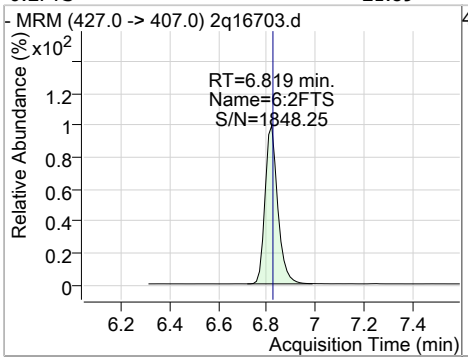
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.98	6.82	0.01	32214				

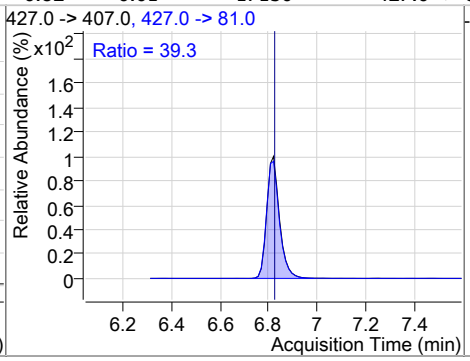


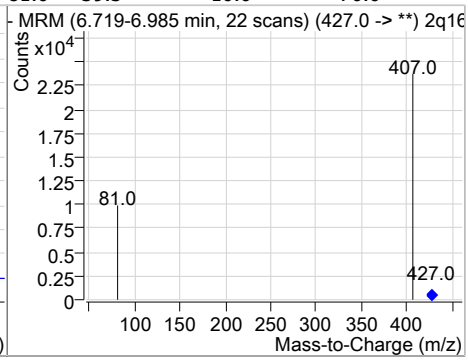




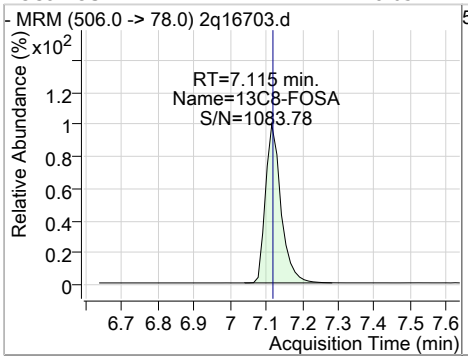
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	21.89	6.82	0.01	17150	427.0 -> 81.0	39.3	10.0	70.0

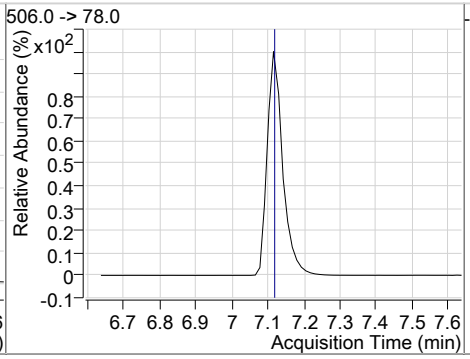


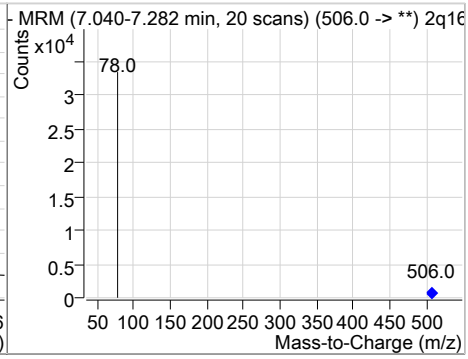




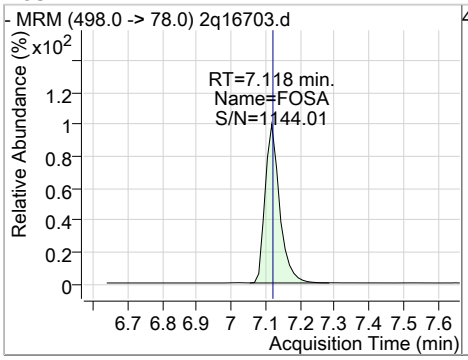
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.65	7.12	0.00	24737				

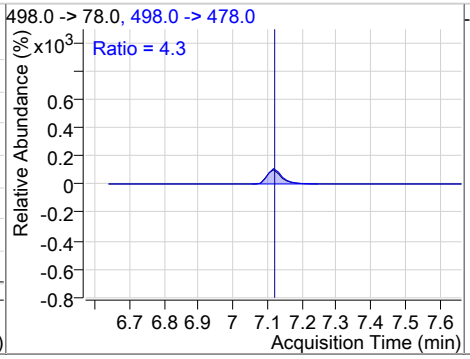


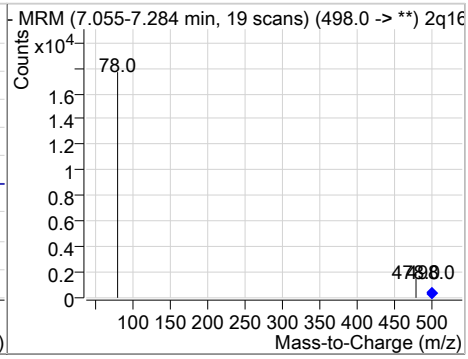




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	21.74	7.12	0.00	13053	498.0 -> 478.0	4.3	0.0	34.0

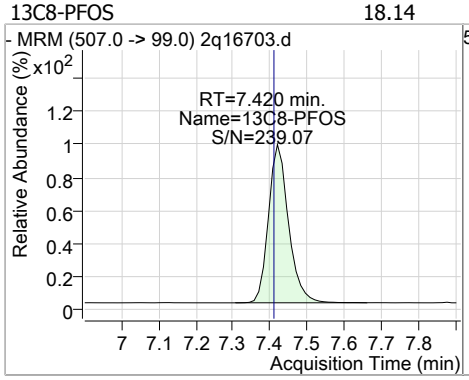


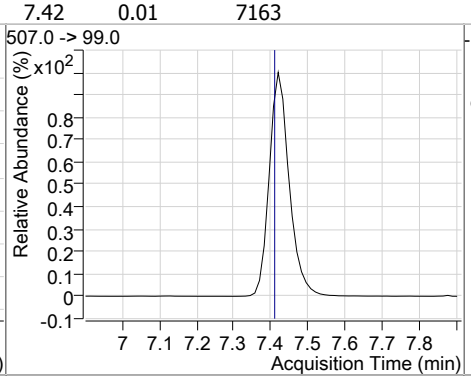


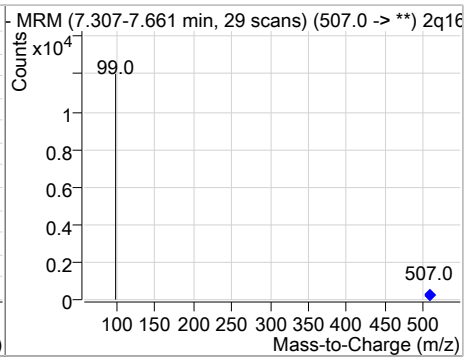


Perfluorinated Compounds by LC/MS/MS

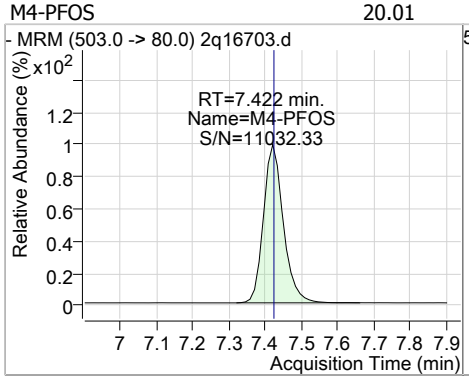
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.14	7.42	0.01	7163				

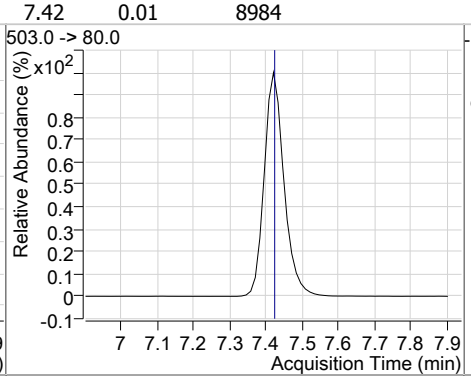


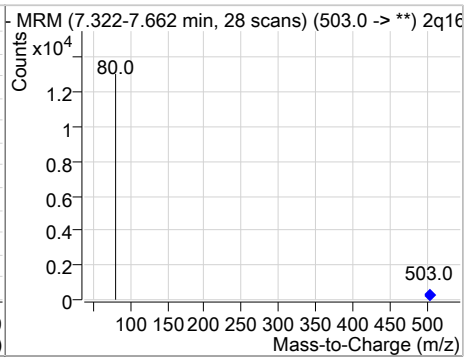




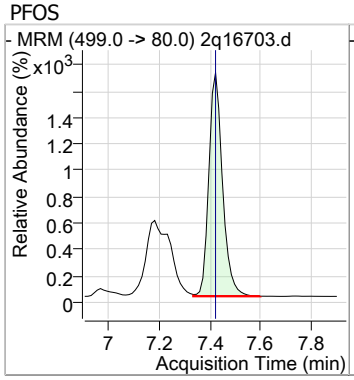
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.01	7.42	0.01	8984				

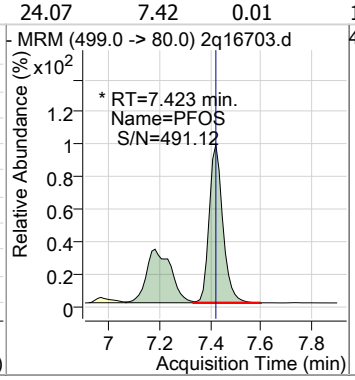


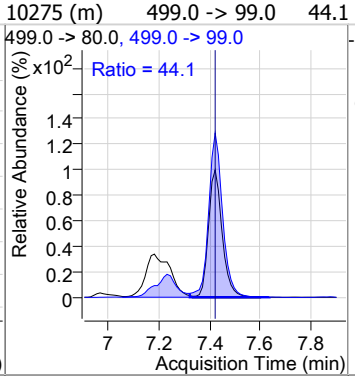


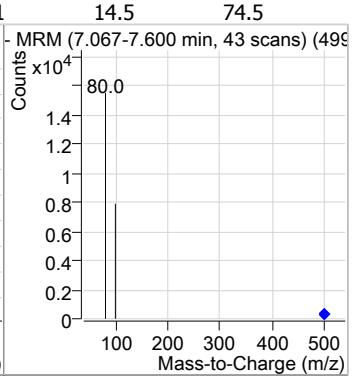


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	24.07	7.42	0.01	10275 (m)	499.0 -> 99.0	44.1	14.5	74.5

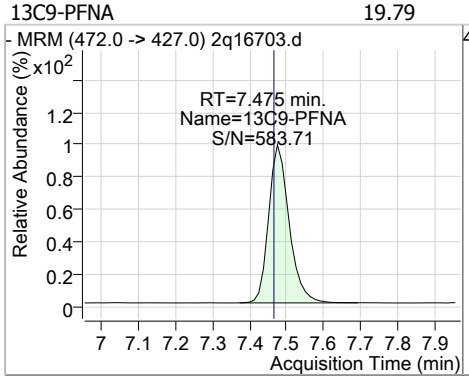


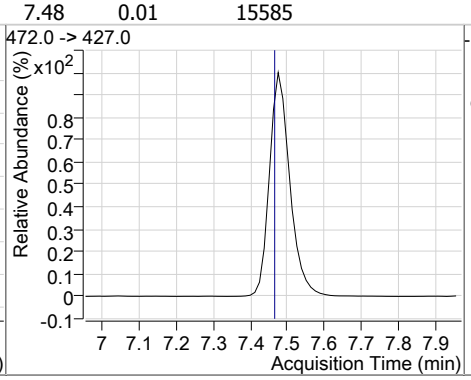


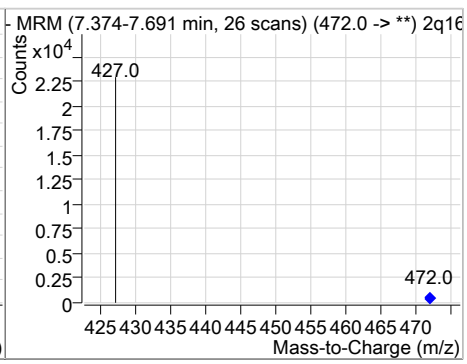




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.79	7.48	0.01	15585				

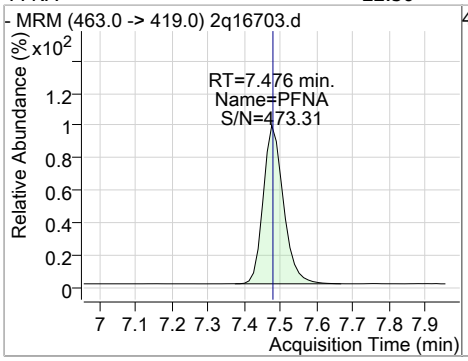


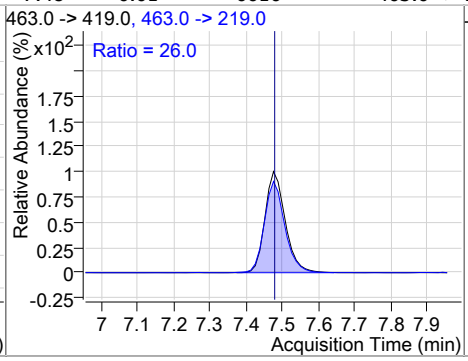


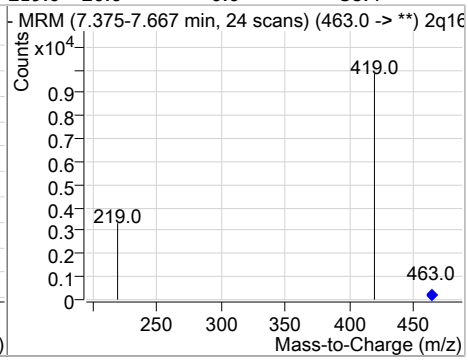


Perfluorinated Compounds by LC/MS/MS

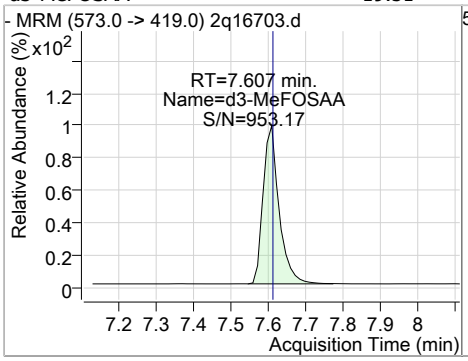
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	22.56	7.48	0.01	6616	463.0 -> 219.0	26.0	0.0	58.4

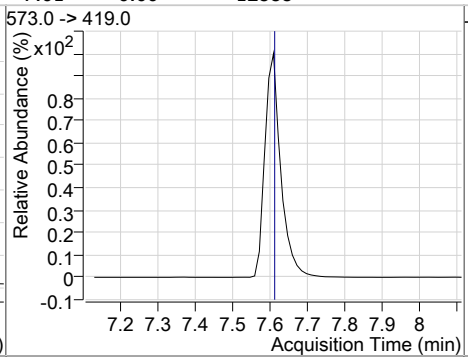


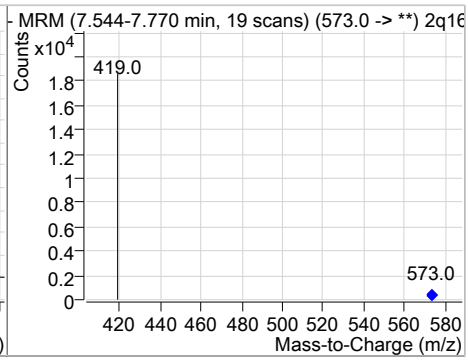




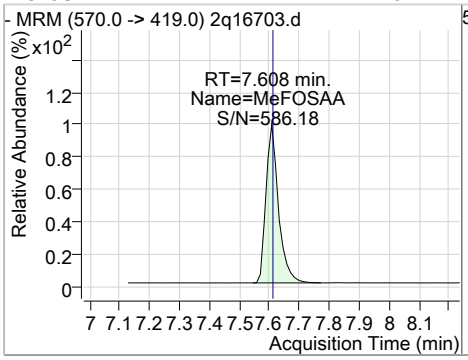
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.51	7.61	0.00	12888				

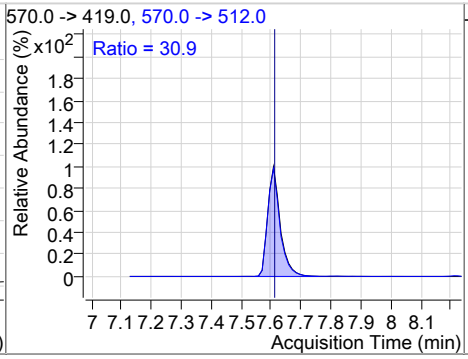


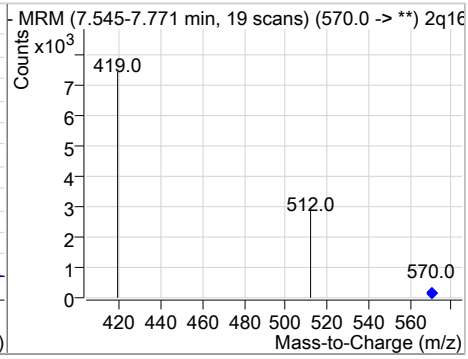




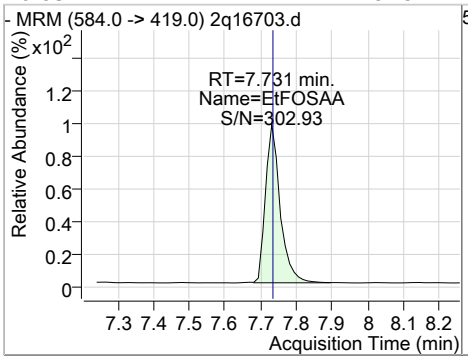
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	21.61	7.61	0.00	5023	570.0 -> 512.0	30.9	1.8	61.8

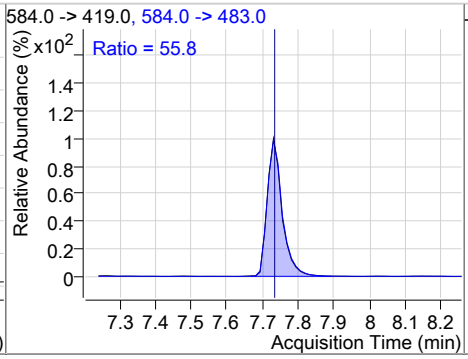


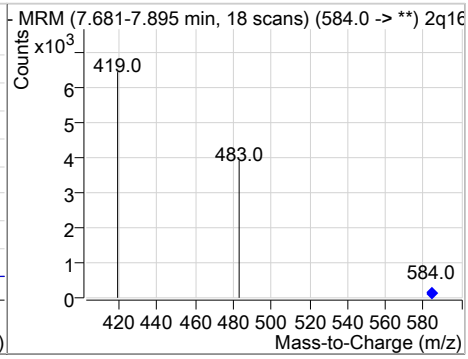




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	23.13	7.73	0.00	4264	584.0 -> 483.0	55.8	24.8	84.8

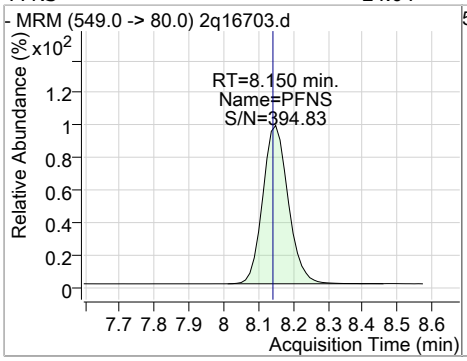


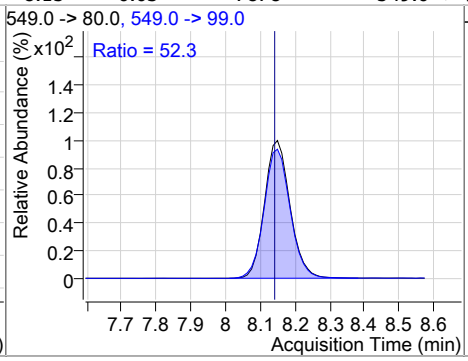


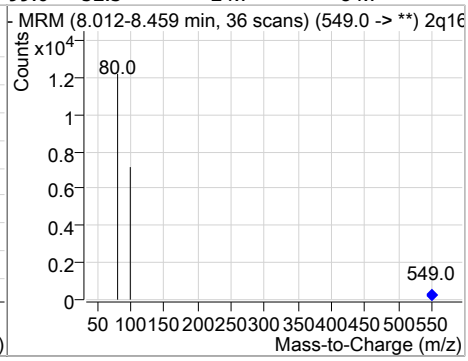


Perfluorinated Compounds by LC/MS/MS

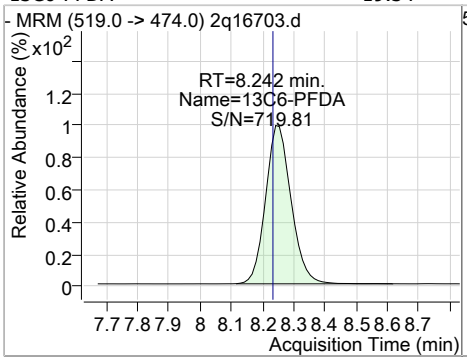
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	24.04	8.15	0.03	7878	549.0 -> 99.0	52.3	24.7	84.7

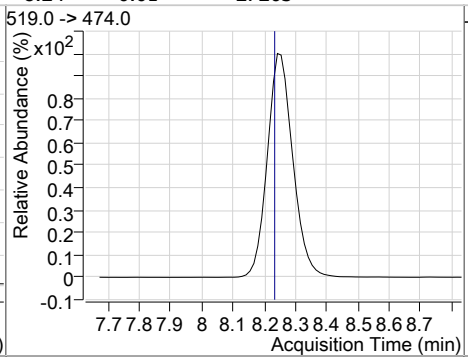


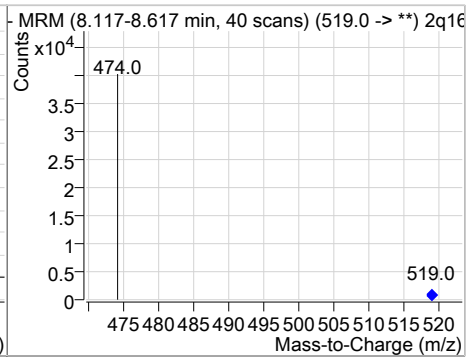




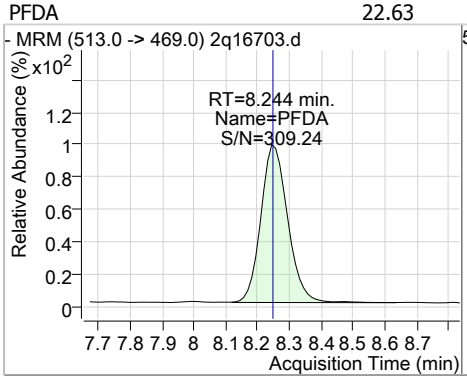
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.34	8.24	0.01	27263				

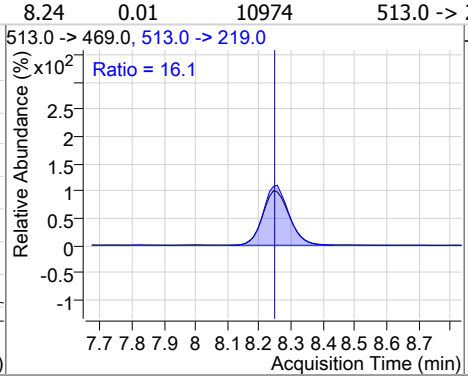


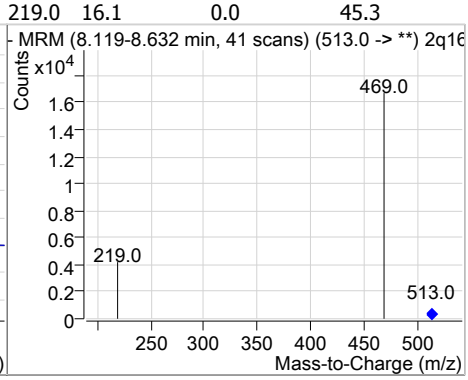




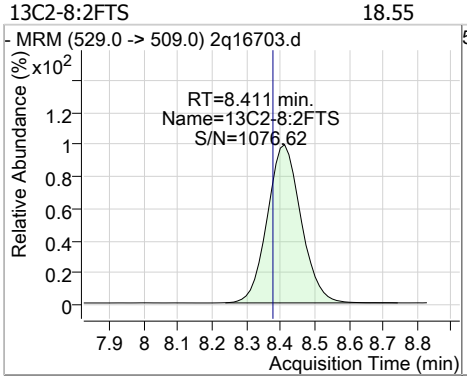
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	22.63	8.24	0.01	10974	513.0 -> 219.0	16.1	0.0	45.3

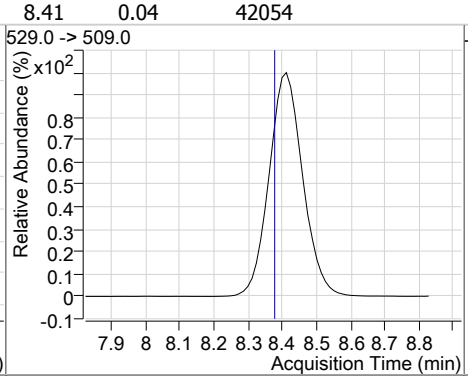


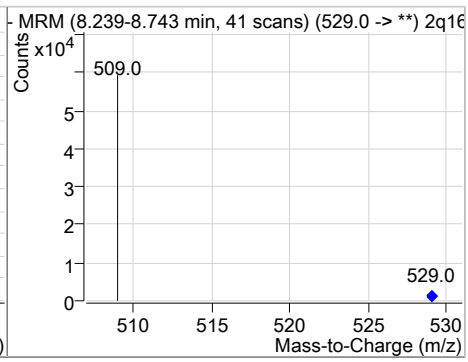




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.55	8.41	0.04	42054				

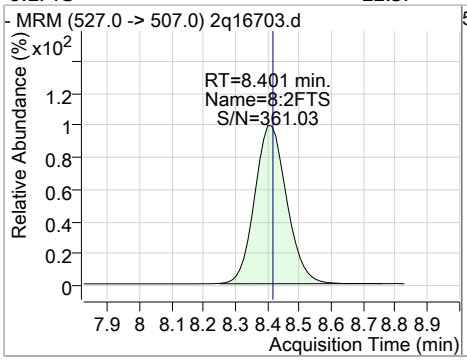


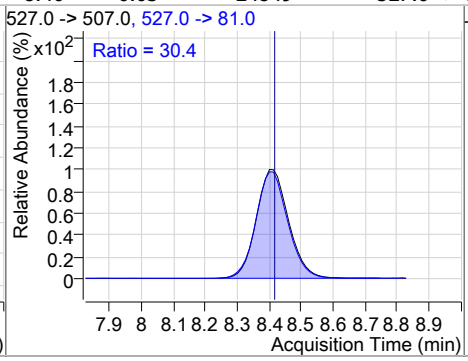


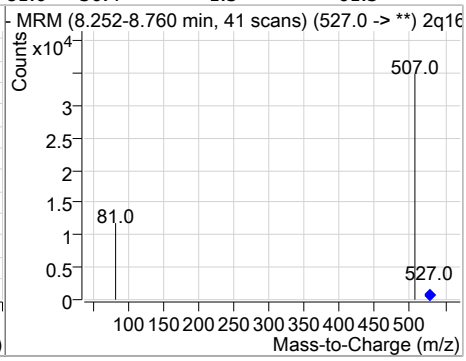


Perfluorinated Compounds by LC/MS/MS

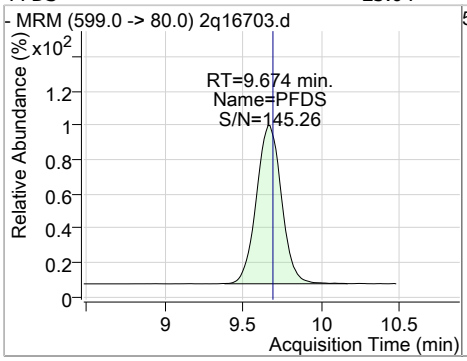
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	22.37	8.40	0.03	24849	527.0 -> 81.0	30.4	1.3	61.3

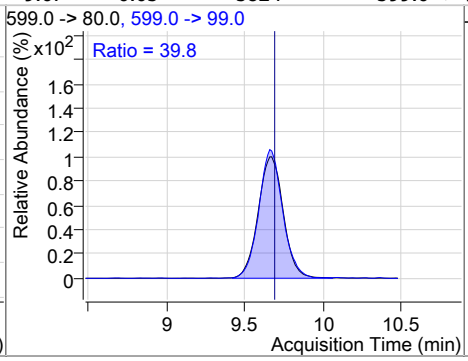


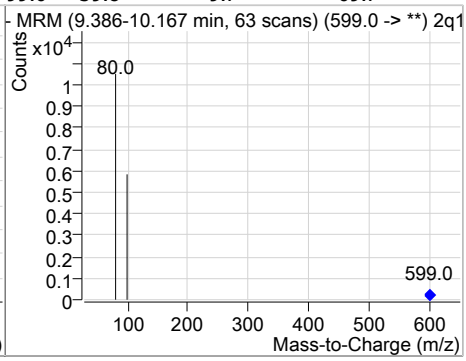




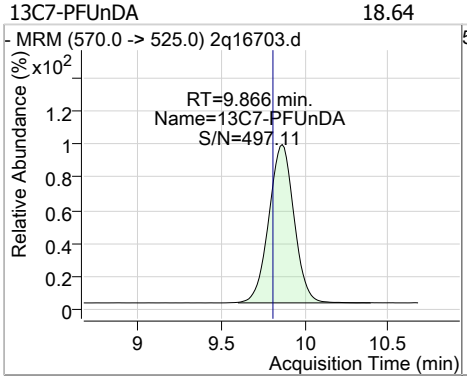
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	23.04	9.67	0.05	5824	599.0 -> 99.0	39.8	9.7	69.7

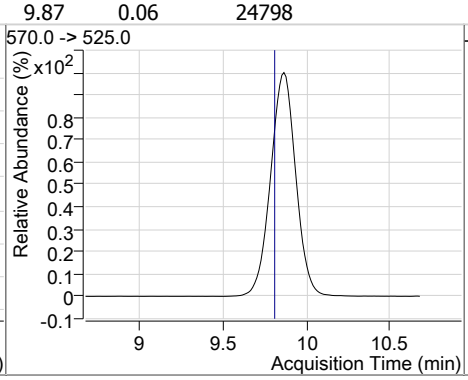


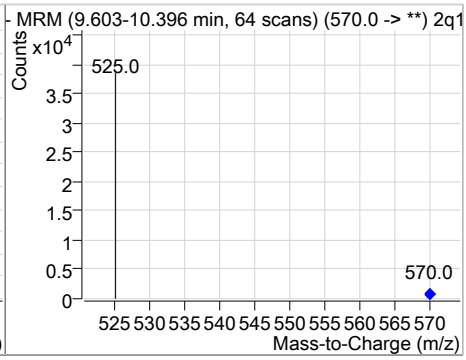




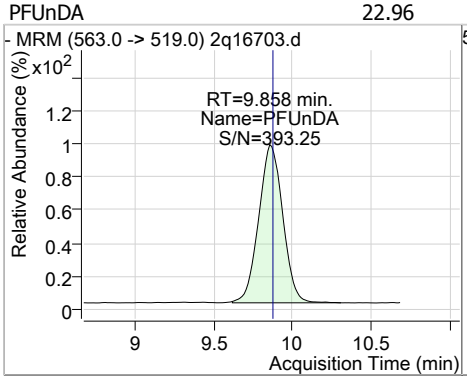
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.64	9.87	0.06	24798				

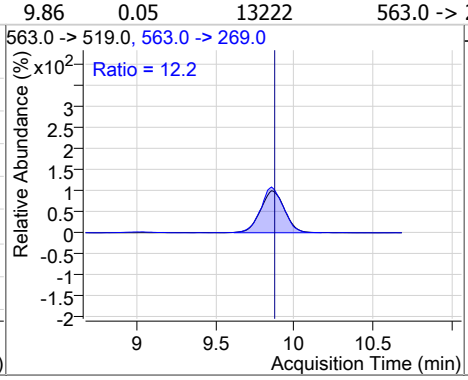


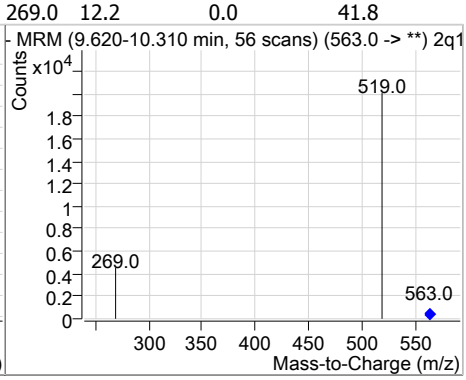




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	22.96	9.86	0.05	13222	563.0 -> 269.0	12.2	0.0	41.8

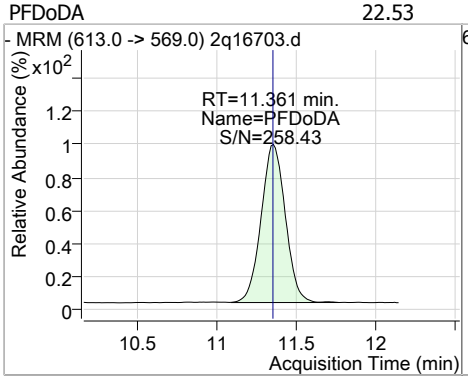


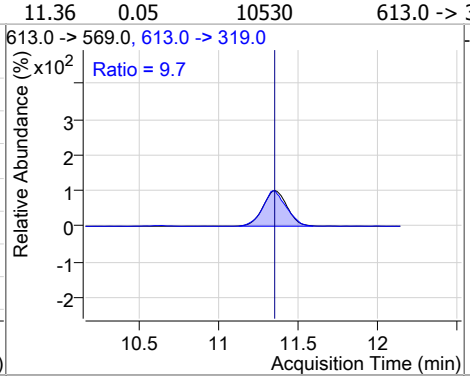


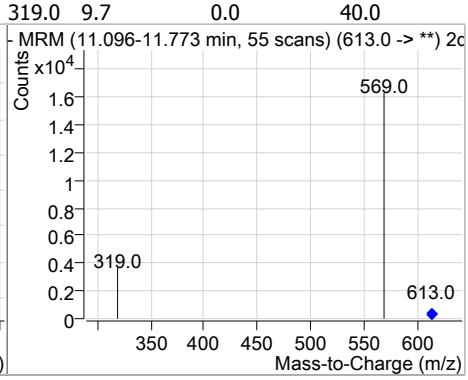


Perfluorinated Compounds by LC/MS/MS

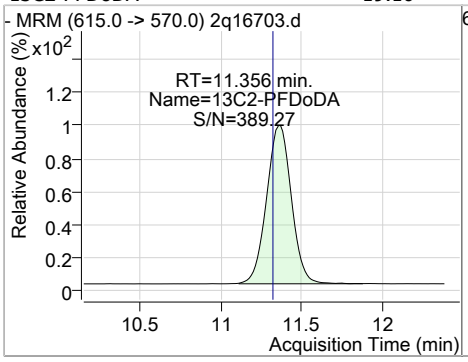
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	22.53	11.36	0.05	10530	613.0 -> 319.0	9.7	0.0	40.0

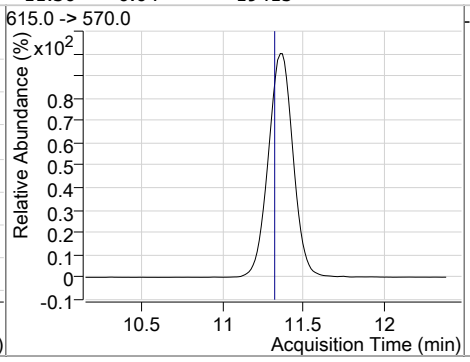


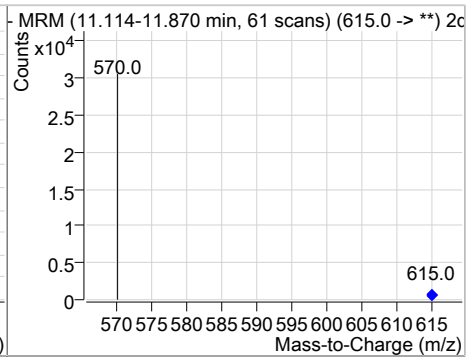




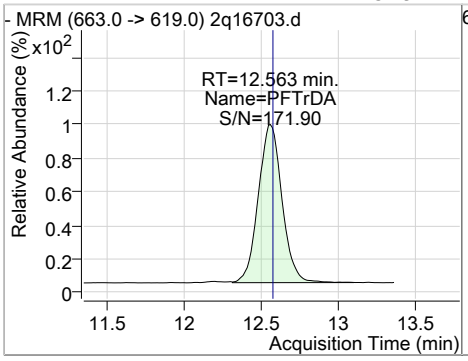
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.16	11.36	0.04	19415				

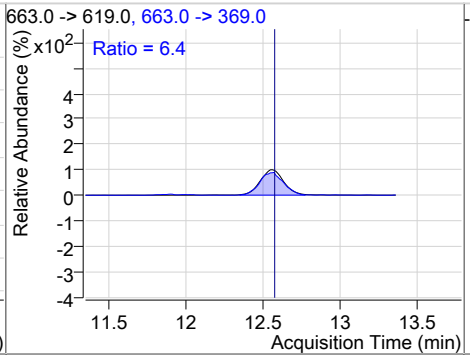


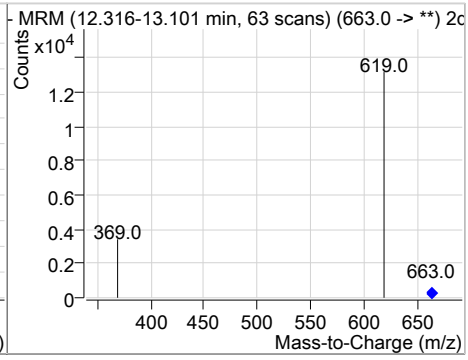




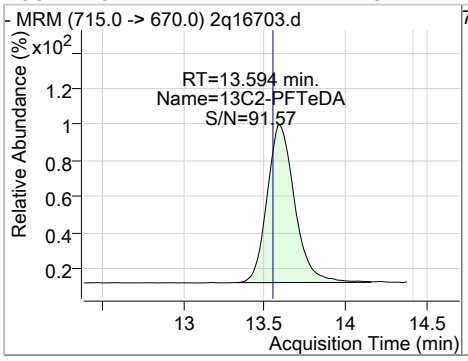
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	23.49	12.56	0.04	7777	663.0 -> 369.0	6.4	0.0	37.1

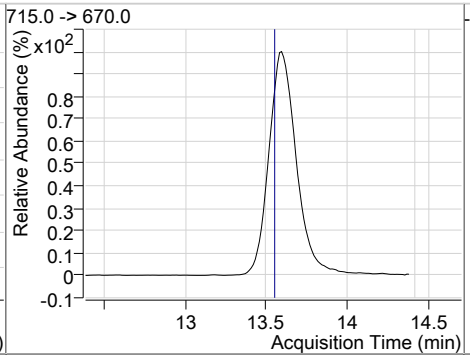


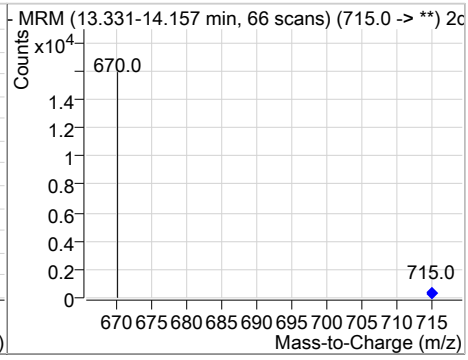




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.22	13.59	0.05	7517				

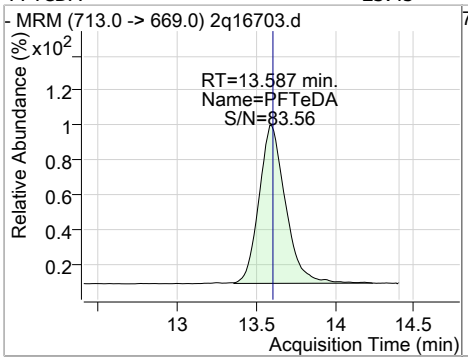


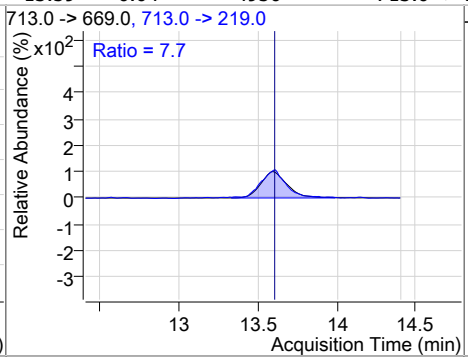


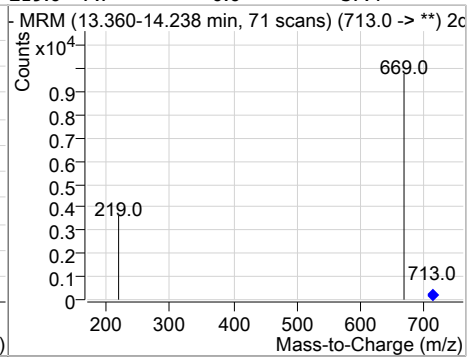


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	23.45	13.59	0.04	4950	713.0 -> 219.0	7.7	0.0	37.4







Manual Integration Approval Summary

Sample Number:	S2Q292-CC292	**Method:**	EPA 537M QSM5.1 B-15
Lab FileID:	2Q16703.D	**Analyst approved:**	07/09/18 13:31 Natasha Gumtie
Injection Time:	07/07/18 15:01	**Supervisor approved:**	07/10/18 17:10 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.08	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.42	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
07/11/18 16:54

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16888.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/10/2018 4:04:56 PM
Sample Name : ic294-0.5
Vial : Vial 2
DA Method File : PFC_ID_071018_S2Q294.quantmethod.xml
Batch Name : s2q294.batch.bin
Sample Information : op70743,S2Q294,130,,,1.0,1,water

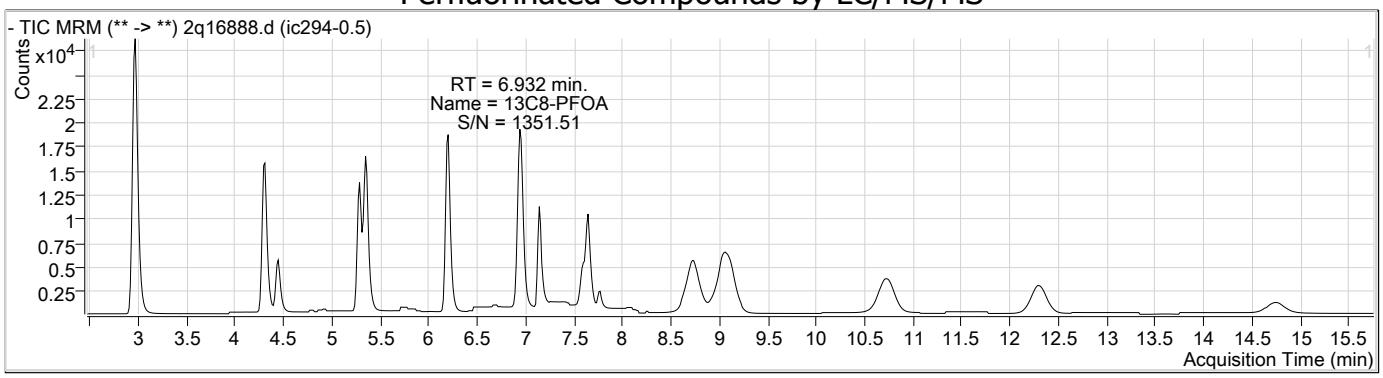
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.946	415.0 -> 370.0	15780	20.00	µg/L	0.000
13C4-PFOS	7.598	503.0 -> 80.0	8742	20.00	µg/L	-0.004
M4-PFBA	2.966	217.0 -> 172.0	113328	20.00	µg/L	-0.001
M5-PFPeA	4.312	268.0 -> 223.0	55210	20.00	µg/L	0.000
M5-PFHxA	5.353	318.0 -> 273.0	51299	20.00	µg/L	-0.008
M4-PFHpA	6.204	367.0 -> 322.0	48832	20.00	µg/L	-0.005
M8-PFOA	6.932	421.0 -> 376.0	24271	20.00	µg/L	-0.013
M9-PFNA	7.651	472.0 -> 427.0	16646	20.00	µg/L	-0.016
M6-PFDA	8.729	519.0 -> 474.0	50850	20.00	µg/L	-0.014
M7-PFUnDA	10.716	570.0 -> 525.0	41649	20.00	µg/L	-0.044
M2-PFDoDA	12.290	615.0 -> 570.0	33266	20.00	µg/L	-0.048
M2-PFTeDA	14.744	715.0 -> 670.0	15287	20.00	µg/L	-0.031
M8-FOSA	7.142	506.0 -> 78.0	29833	20.00	µg/L	-0.003
M3-PFBS	4.443	302.0 -> 99.0	17626	20.00	µg/L	0.006
M3-PFHxS	6.198	402.0 -> 99.0	14587	20.00	µg/L	0.002
M8-PFOS	7.596	507.0 -> 99.0	7345	20.00	µg/L	-0.006
M2-4:2FTS	5.285	329.0 -> 309.0	44361	20.00	µg/L	0.002
M2-6:2FTS	6.955	429.0 -> 409.0	34344	20.00	µg/L	-0.003
M2-8:2FTS	9.059	529.0 -> 509.0	72497	20.00	µg/L	-0.036
M3-MeFOSAA	7.644	573.0 -> 419.0	13572	20.00	µg/L	0.008
System Monitoring Compounds						
13C2-4:2FTS	5.285	329.0 -> 309.0	44357	16.55	µg/L	0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.7%		
13C2-6:2FTS	6.955	429.0 -> 409.0	34359	16.55	µg/L	-0.003
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.8%		
13C2-8:2FTS	9.059	529.0 -> 509.0	71864	16.36	µg/L	-0.036
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.8%		
13C2-PFDoDA	12.290	615.0 -> 570.0	33390	17.36	µg/L	-0.048
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.8%		
13C2-PFTeDA	14.744	715.0 -> 670.0	15412	17.57	µg/L	-0.031
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.9%		
13C3-PFBS	4.443	302.0 -> 99.0	17620	17.71	µg/L	0.006
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.6%		
13C3-PFHxS	6.198	402.0 -> 99.0	14587	17.58	µg/L	0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.9%		
13C4-PFBA	2.966	217.0 -> 172.0	113245	17.67	µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.4%		
13C4-PFHpA	6.204	367.0 -> 322.0	48866	17.97	µg/L	-0.005
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.9%		
13C5-PFHxA	5.353	318.0 -> 273.0	51307	18.09	µg/L	-0.008
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.5%		
13C5-PFPeA	4.312	268.0 -> 223.0	55208	17.65	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.2%		
13C6-PFDA	8.729	519.0 -> 474.0	50588	17.48	µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.4%		

Perfluorinated Compounds by LC/MS/MS

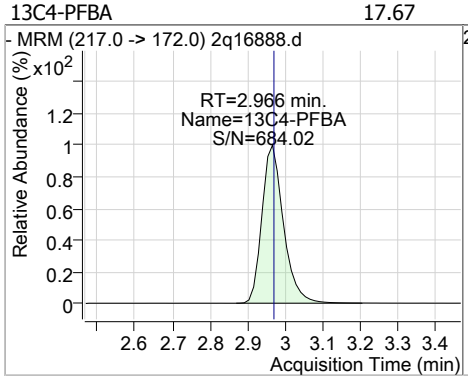
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.716	570.0 -> 525.0	41676	17.55	µg/L		-0.044
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.7%			
13C8-FOSA	7.142	506.0 -> 78.0	29850	19.04	µg/L		-0.003
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.2%			
13C8-PFOA	6.932	421.0 -> 376.0	24275	17.46	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.3%			
13C8-PFOS	7.596	507.0 -> 99.0	7347	17.02	µg/L		-0.006
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.1%			
13C9-PFNA	7.651	472.0 -> 427.0	16648	17.29	µg/L		-0.016
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.4%			
d3-MeFOSAA	7.644	573.0 -> 419.0	13584	17.95	µg/L		0.008
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.8%			
M2-PFOA	6.946	415.0 -> 370.0	15783	20.01	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.598	503.0 -> 80.0	8751	20.02	ng/ml		-0.004
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
Target Compounds							**QValue**
4:2FTS	5.288	327.0 -> 307.0	652	0.57	µg/L		66
6:2FTS	6.956	427.0 -> 407.0	396	0.46	µg/L		89
8:2FTS	9.088	527.0 -> 507.0	1105	0.57	µg/L		99
EtFOSAA	7.769	584.0 -> 419.0	116	0.50	µg/L		92
FOSA	7.145	498.0 -> 78.0	403	0.55	µg/L		93
MeFOSAA	7.645	570.0 -> 419.0	136	0.56	µg/L		99
PFBA	2.962	213.0 -> 169.0	453	0.51	µg/L		100
PFBS	4.434	299.0 -> 80.0	661	0.55	µg/L		96
PFDA	8.744	513.0 -> 469.0	535	0.58	µg/L		99
PFDoDA	12.321	613.0 -> 569.0	567	0.66	µg/L		98
PFDS	10.524	599.0 -> 80.0	201	0.57	µg/L		98
PFHpA	6.195	363.0 -> 319.0	993	0.56	µg/L		97
PFHpS	6.903	449.0 -> 80.0	254	0.57	µg/L		98
PFHxA	5.355	313.0 -> 269.0	517	0.59	µg/L		90
PFHxS	6.188	399.0 -> 80.0	477	0.55	µg/L	m	99
PFNA	7.652	463.0 -> 419.0	202	0.63	µg/L		74
PFNS	8.533	549.0 -> 80.0	308	0.54	µg/L		96
PFOA	6.947	413.0 -> 369.0	417	0.63	µg/L		98
PFOS	7.586	499.0 -> 80.0	258	0.56	µg/L	m	94
PFPeA	4.304	263.0 -> 219.0	1806	0.68	µg/L		100
PFPeS	5.408	349.0 -> 80.0	394	0.51	µg/L		99
PFTeDA	14.738	713.0 -> 669.0	306	0.65	µg/L		88
PFTrDA	13.605	663.0 -> 619.0	371	0.54	µg/L		98
PFUnDA	10.758	563.0 -> 519.0	572	0.57	µg/L		98

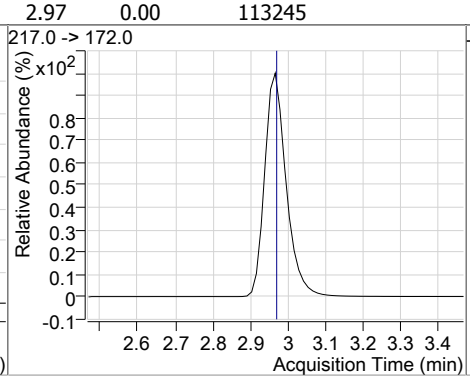
 # = Qualifier out of range, m = manually integrated, + = Area summed

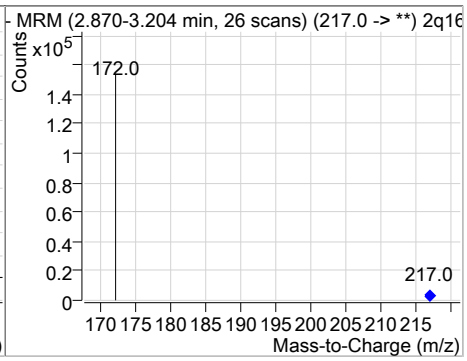
Perfluorinated Compounds by LC/MS/MS



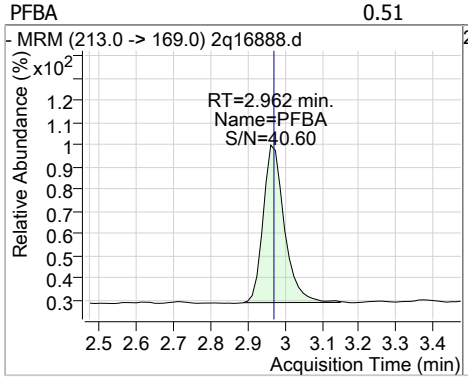
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	17.67	2.97	0.00	113245				

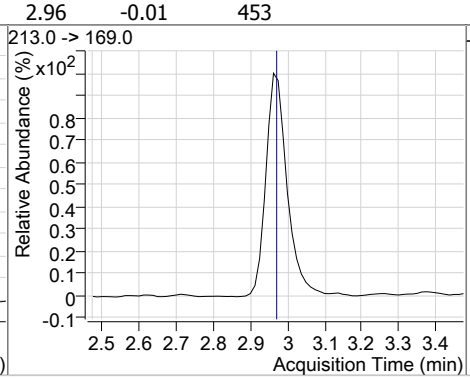


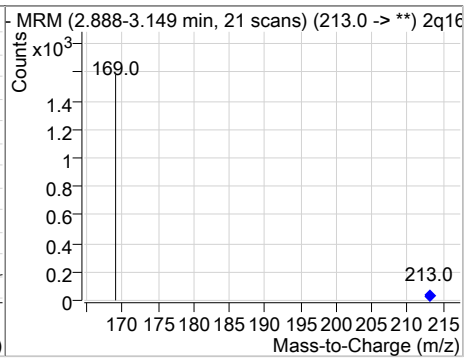




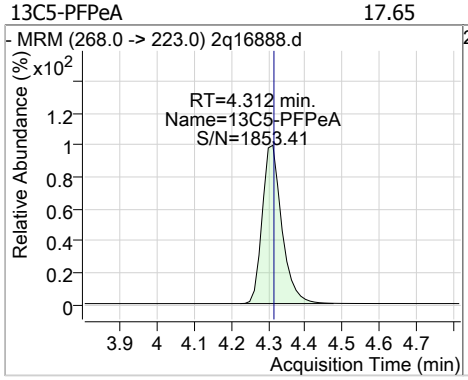
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.51	2.96	-0.01	453				

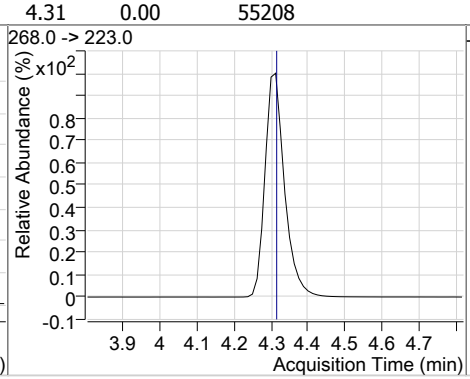


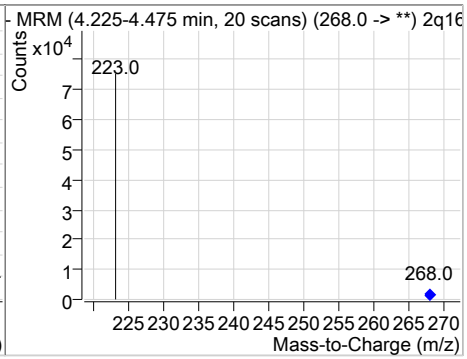




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	17.65	4.31	0.00	55208				

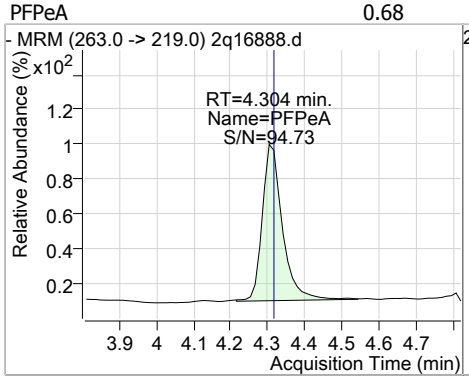


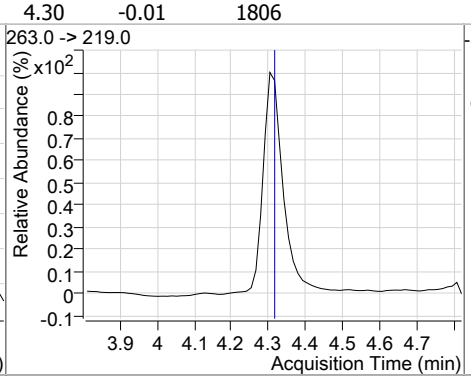


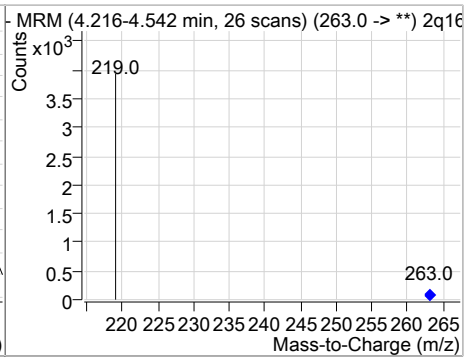


Perfluorinated Compounds by LC/MS/MS

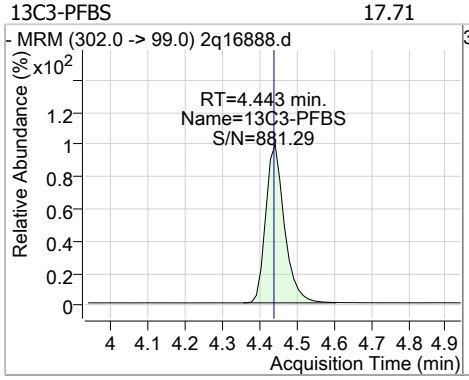
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.68	4.30	-0.01	1806				

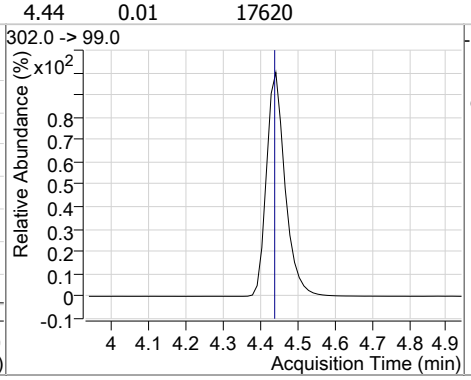


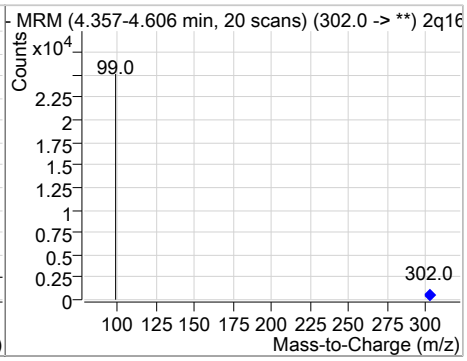




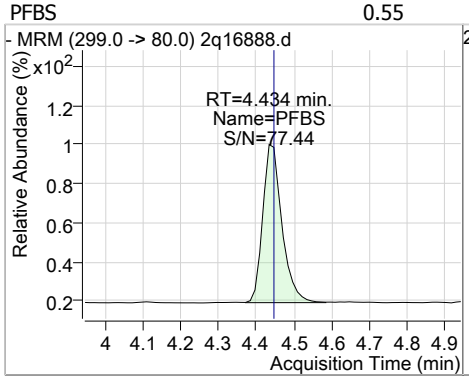
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	17.71	4.44	0.01	17620				

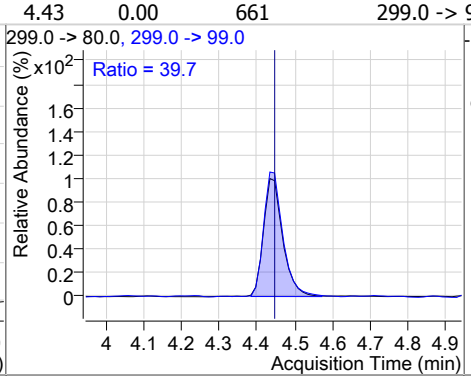


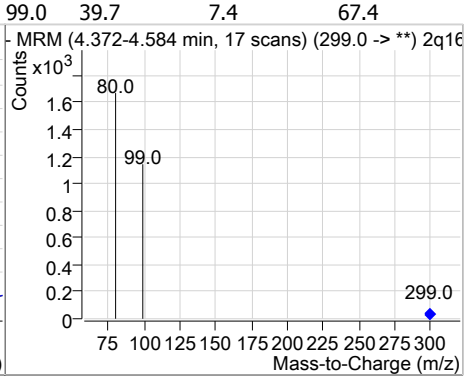




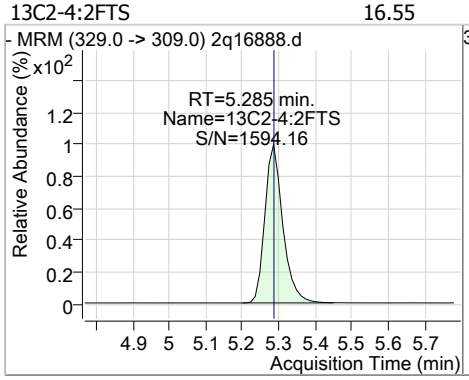
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.55	4.43	0.00	661	299.0 -> 99.0	39.7	7.4	67.4

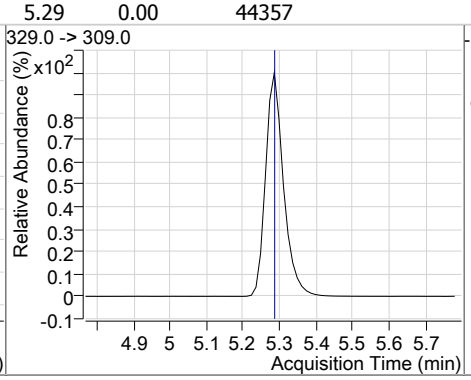


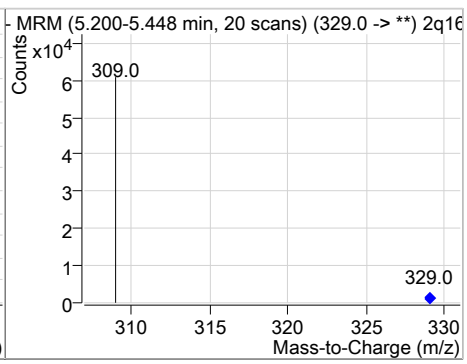




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	16.55	5.29	0.00	44357				

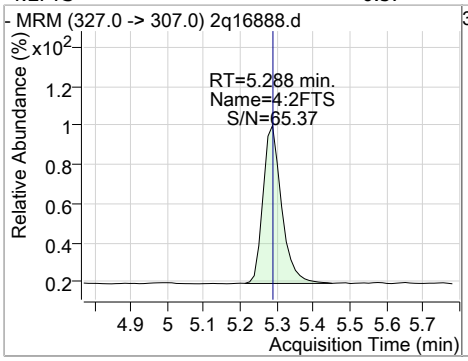


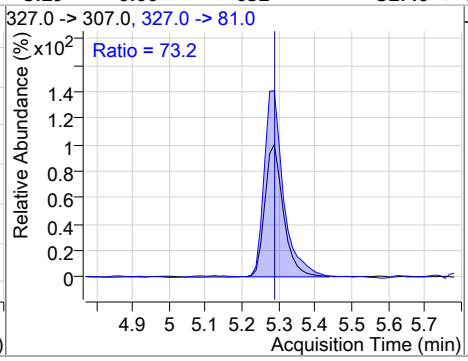


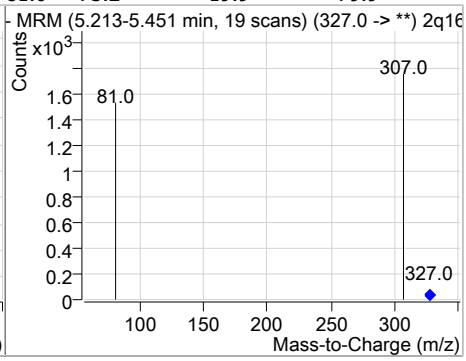


Perfluorinated Compounds by LC/MS/MS

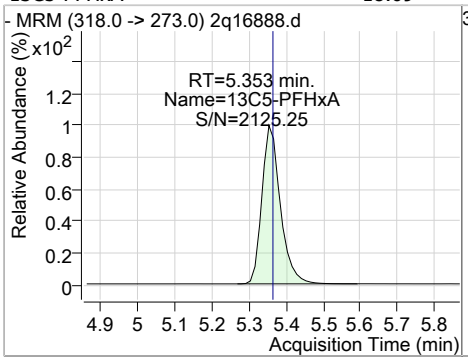
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.57	5.29	0.00	652	327.0 -> 81.0	73.2	19.9	79.9

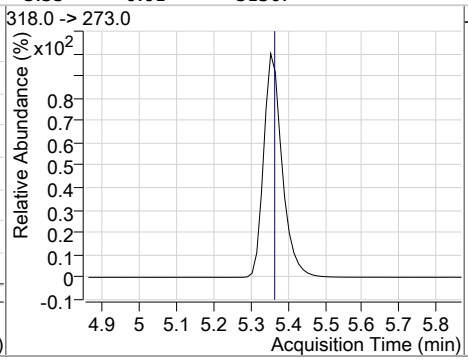


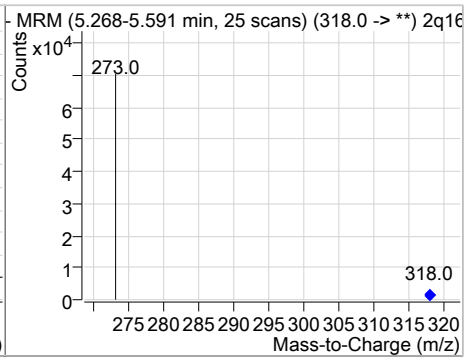




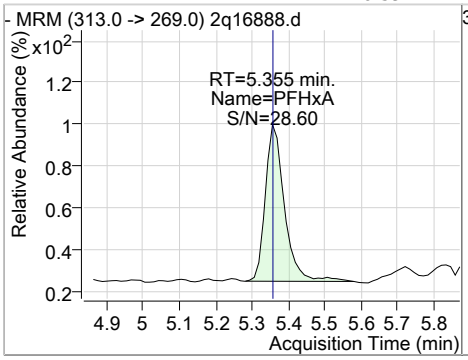
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.09	5.35	-0.01	51307				

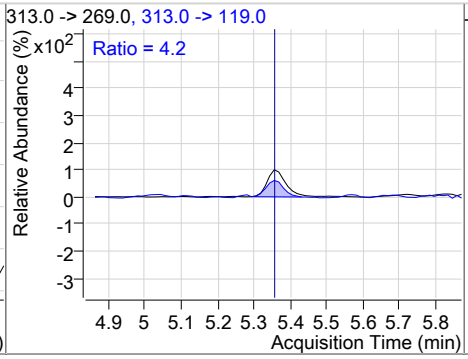


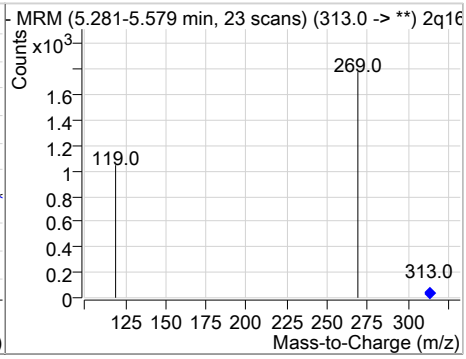




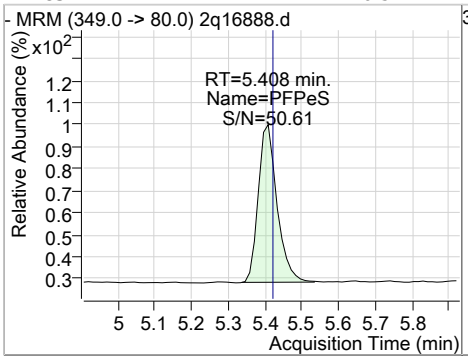
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.59	5.36	-0.01	517	313.0 -> 119.0	4.2	0.0	37.6

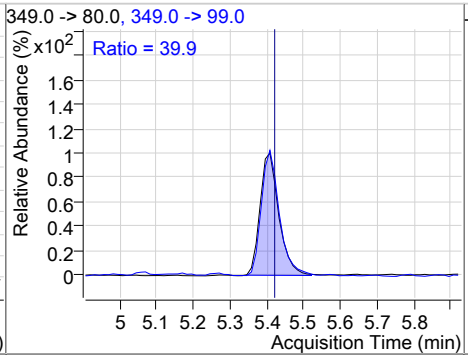


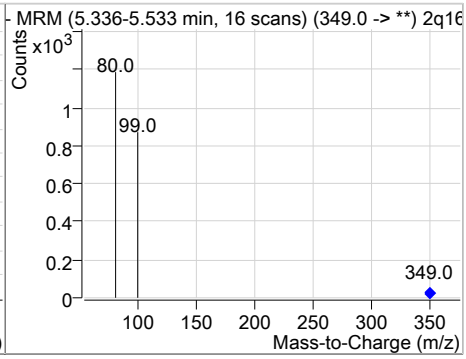




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.51	5.41	0.00	394	349.0 -> 99.0	39.9	10.8	70.8

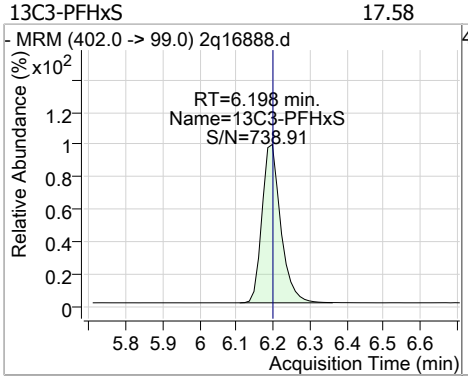


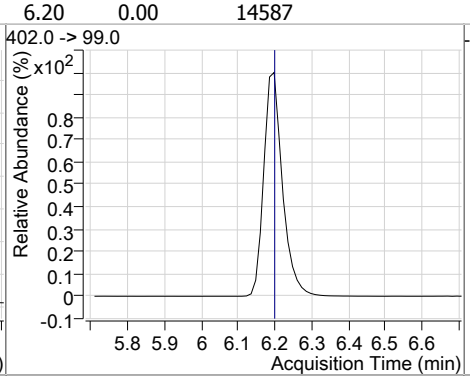


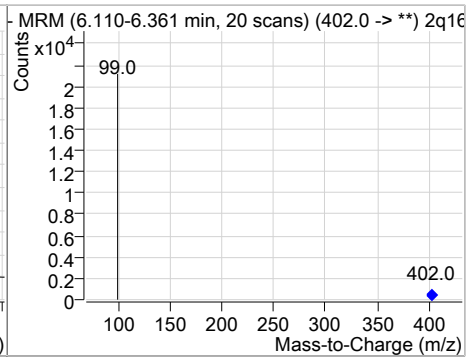


Perfluorinated Compounds by LC/MS/MS

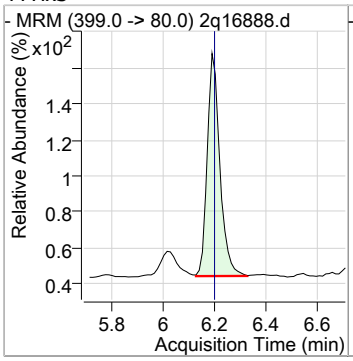
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	17.58	6.20	0.00	14587				

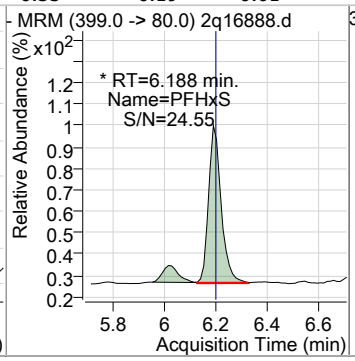


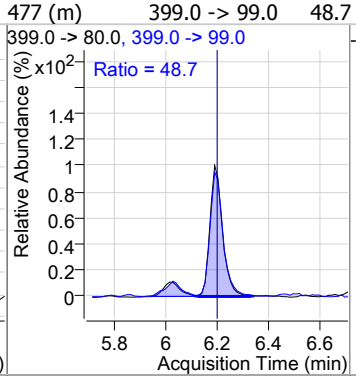


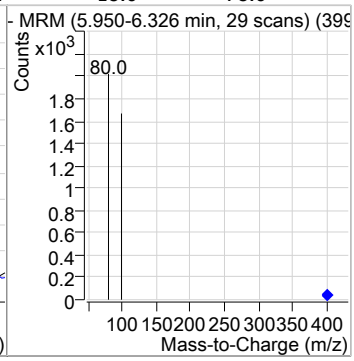


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.55	6.19	-0.01	477 (m)	399.0 -> 99.0	48.7	18.0	78.0

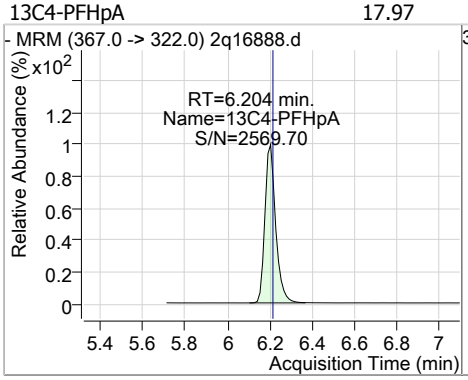


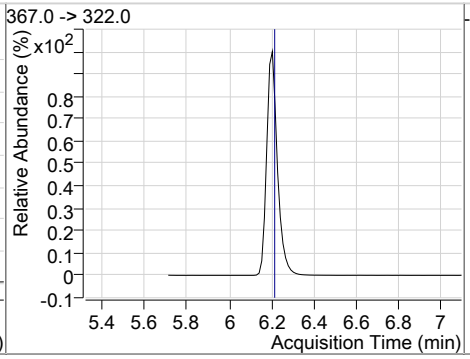


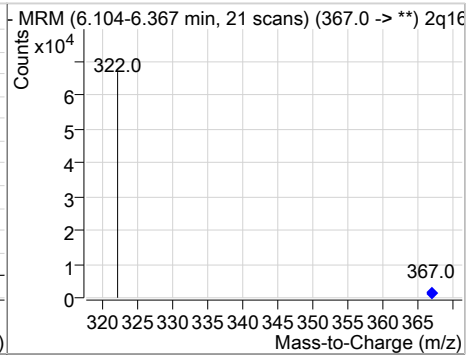




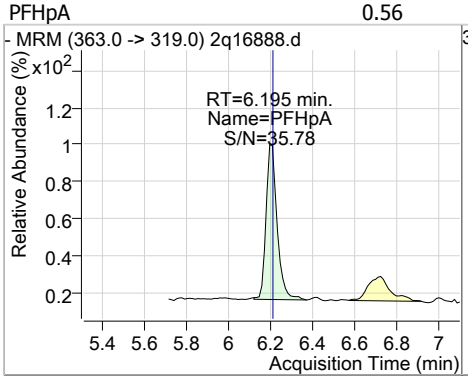
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	17.97	6.20	-0.01	48866				

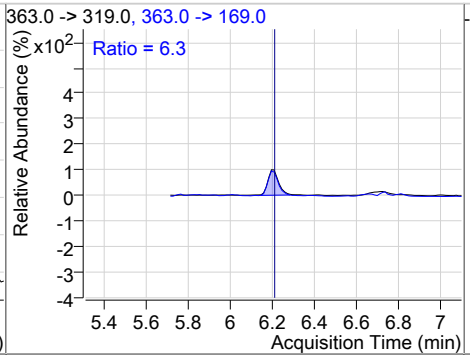


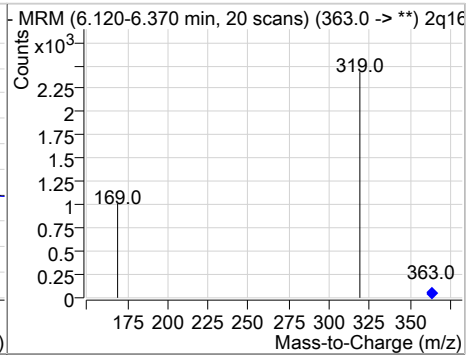




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.56	6.19	-0.02	993	363.0 -> 169.0	6.3	0.0	37.2

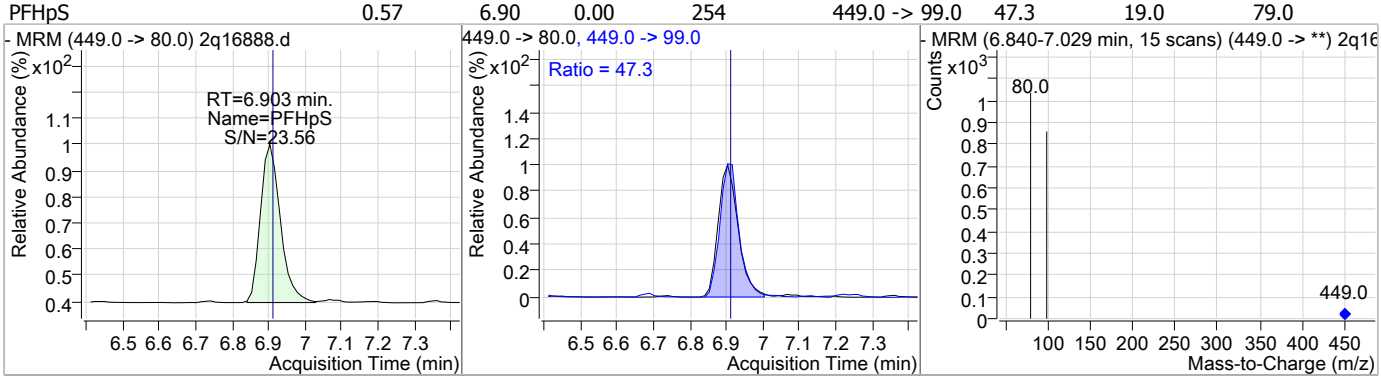




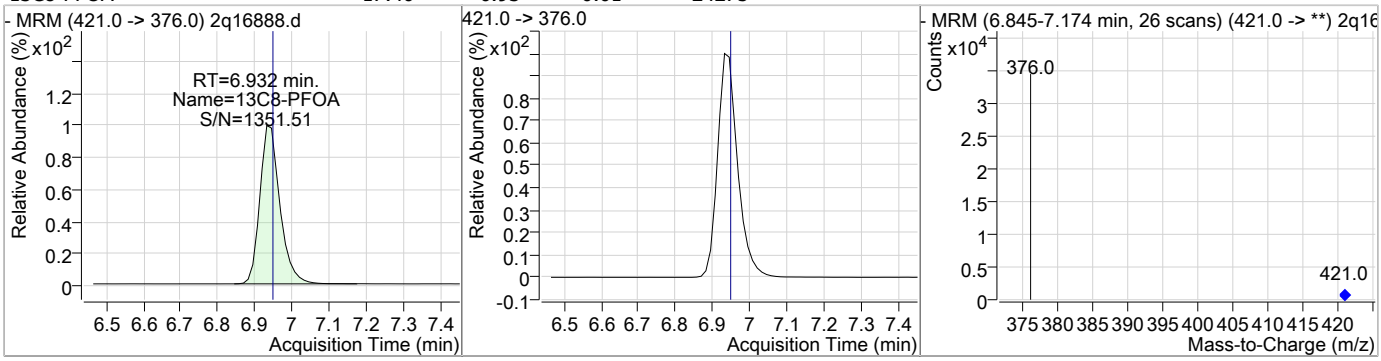


Perfluorinated Compounds by LC/MS/MS

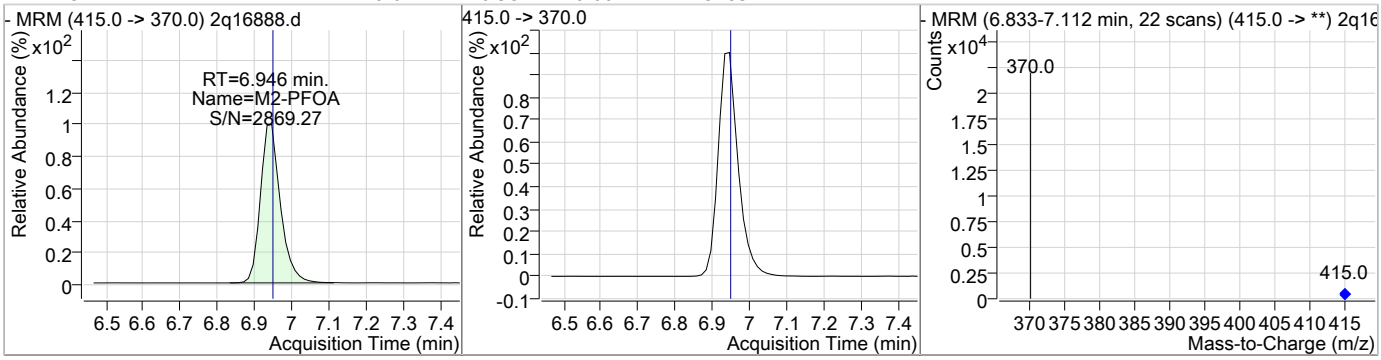
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.57	6.90	0.00	254	449.0 -> 99.0	47.3	19.0	79.0



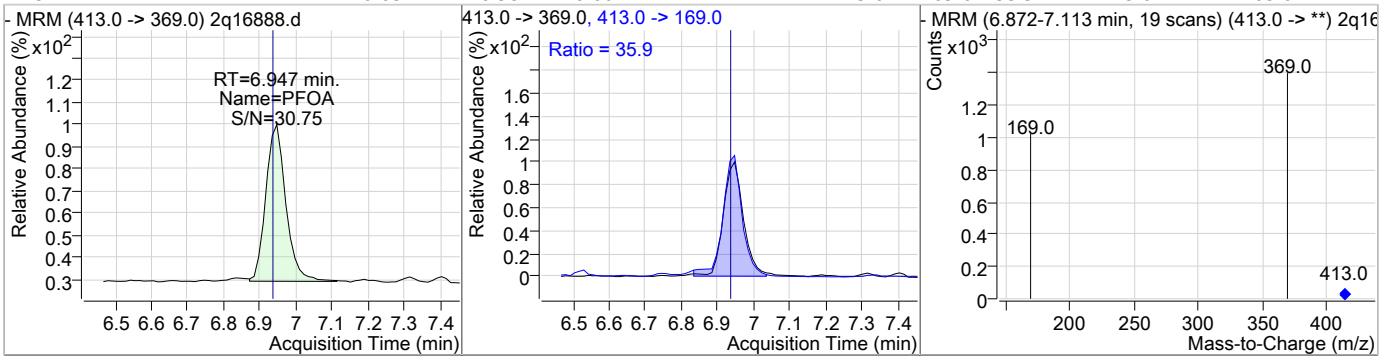
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	17.46	6.93	-0.01	24275				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.01	6.95	0.00	15783				

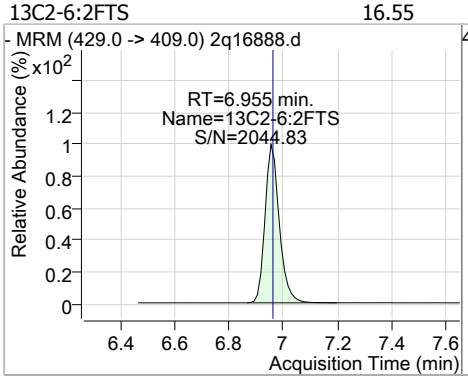


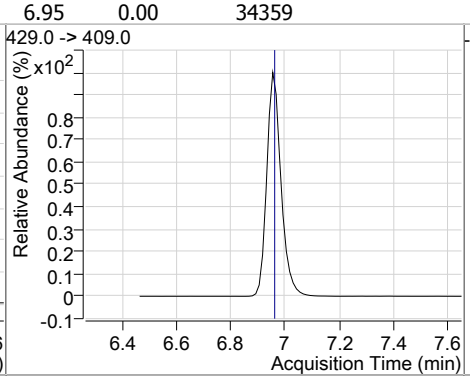
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.63	6.95	0.00	417	413.0 -> 169.0	35.9	5.0	65.0

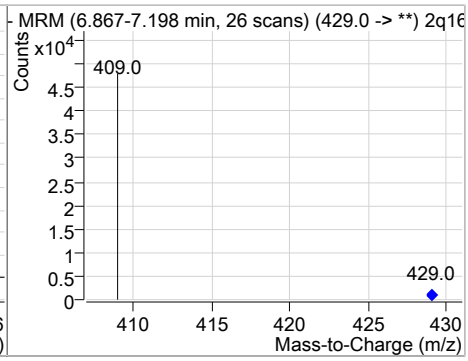


Perfluorinated Compounds by LC/MS/MS

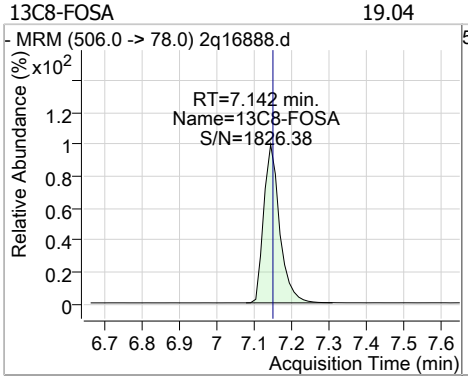
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	16.55	6.95	0.00	34359				

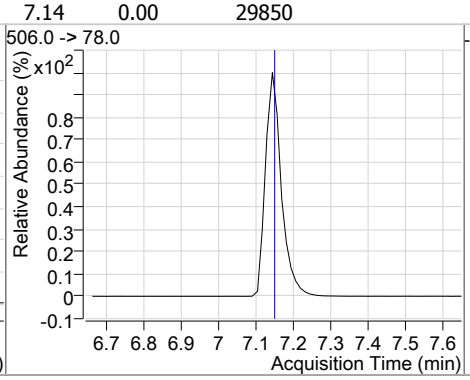


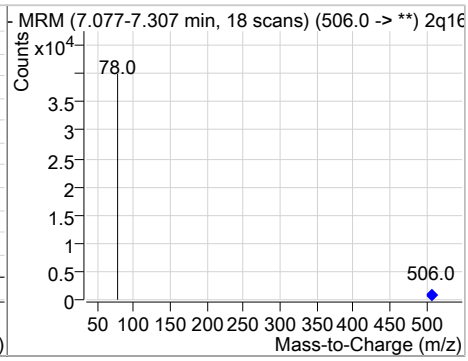




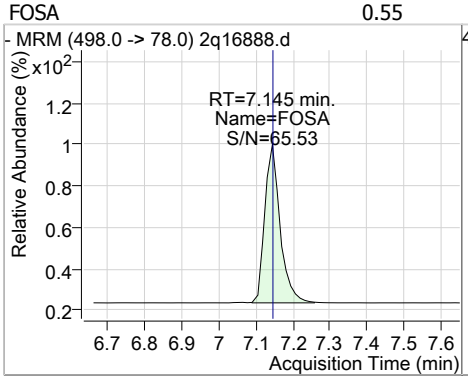
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.04	7.14	0.00	29850				

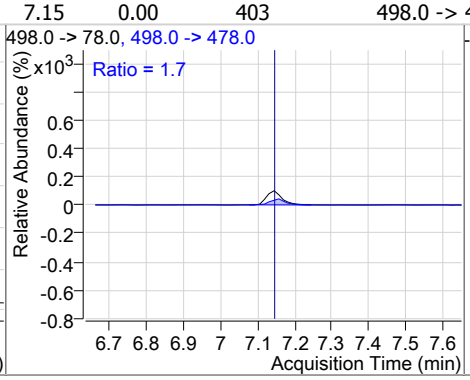


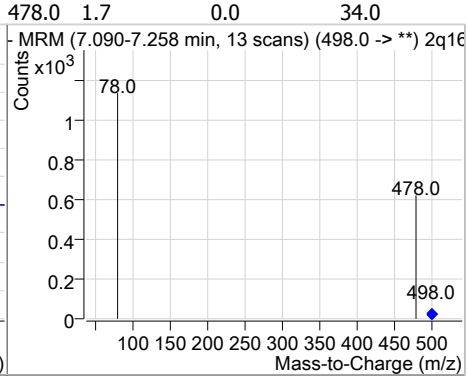




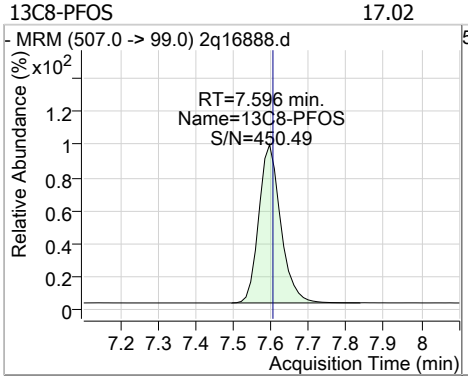
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.55	7.15	0.00	403	498.0 -> 478.0	1.7	0.0	34.0

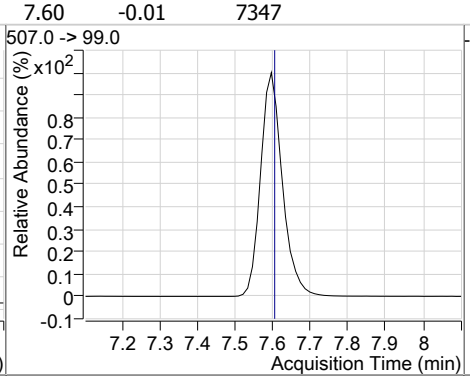


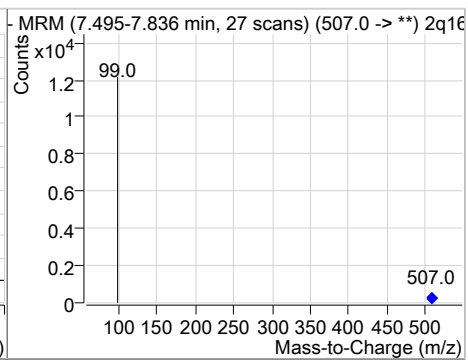




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	17.02	7.60	-0.01	7347				

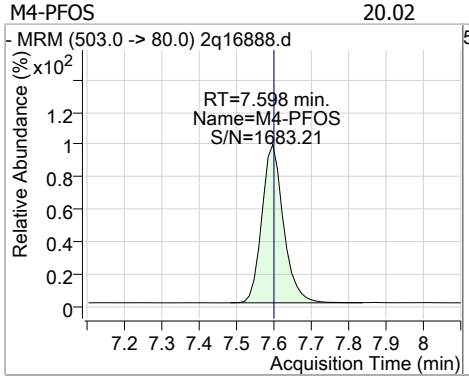


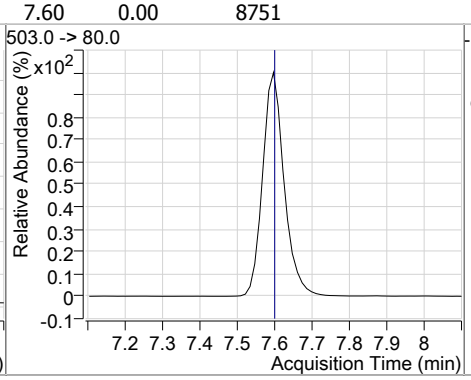


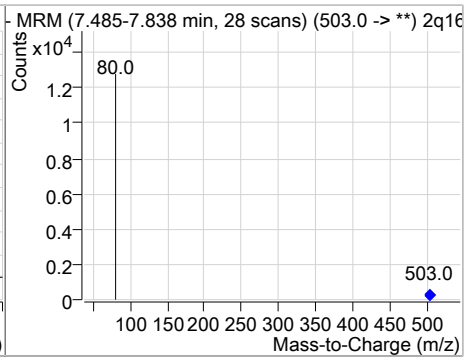


Perfluorinated Compounds by LC/MS/MS

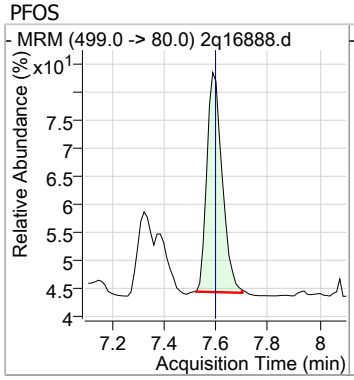
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.02	7.60	0.00	8751				

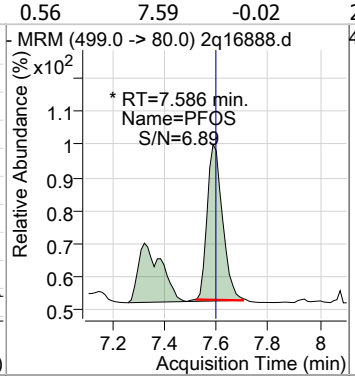


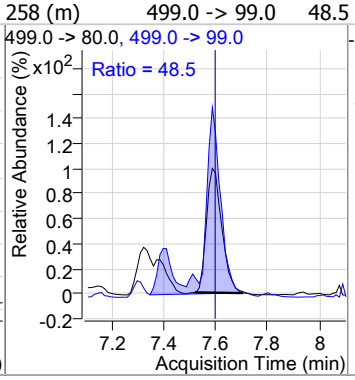


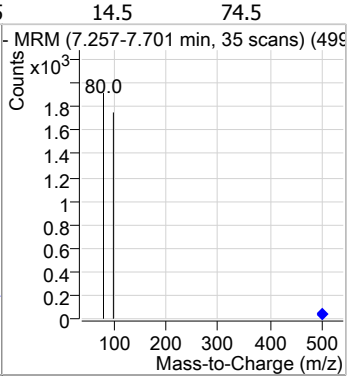


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.56	7.59	-0.02	258 (m)	499.0 -> 99.0	48.5	14.5	74.5

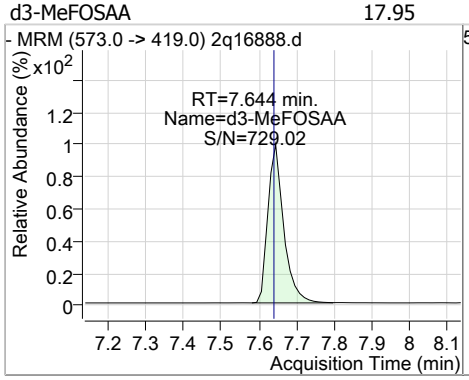


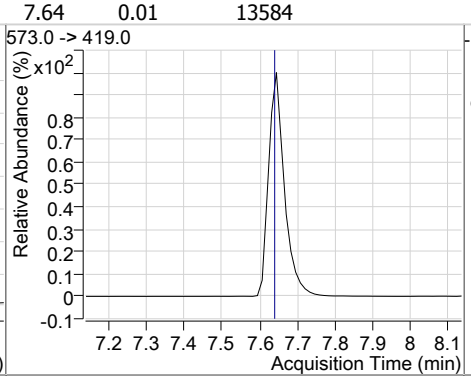


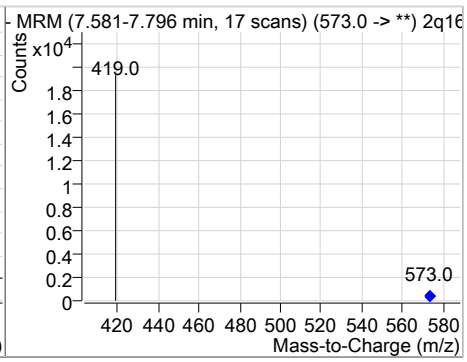




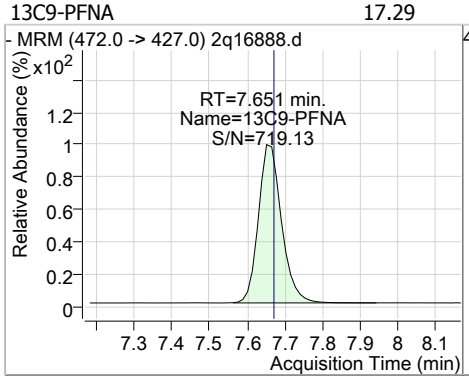
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	17.95	7.64	0.01	13584				

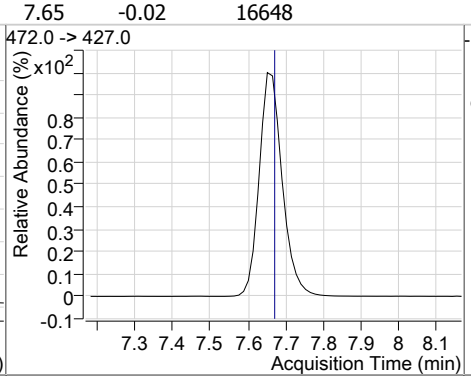


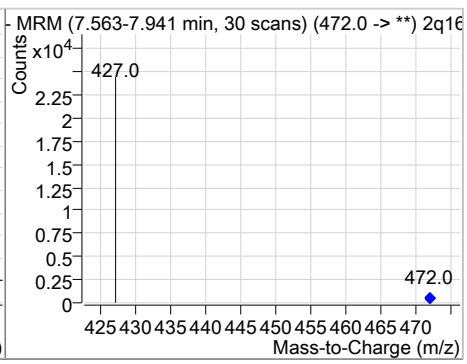




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	17.29	7.65	-0.02	16648				

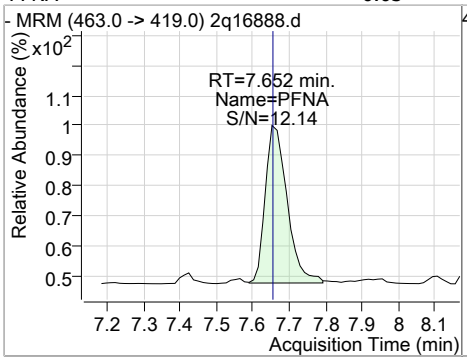


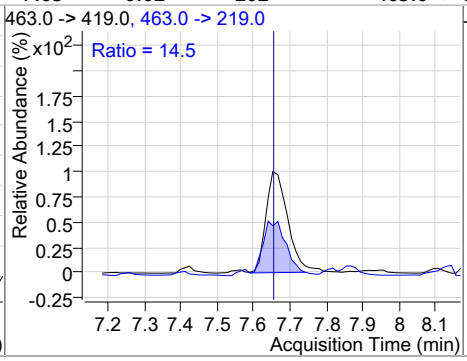


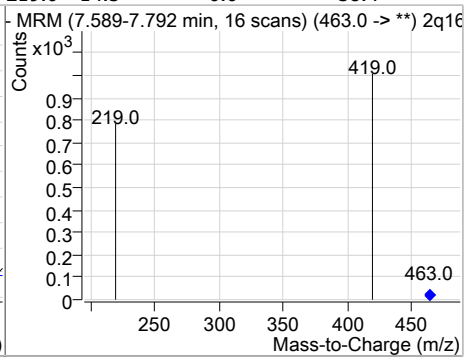


Perfluorinated Compounds by LC/MS/MS

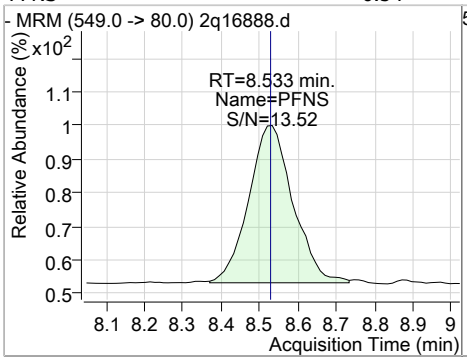
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.63	7.65	-0.02	202	463.0 -> 219.0	14.5	0.0	58.4

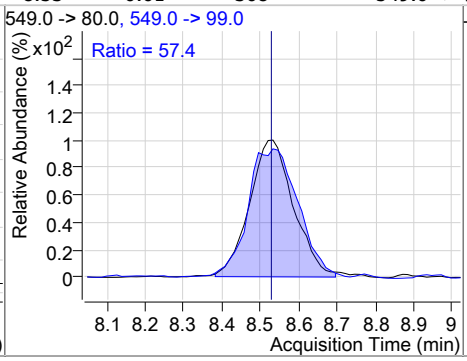


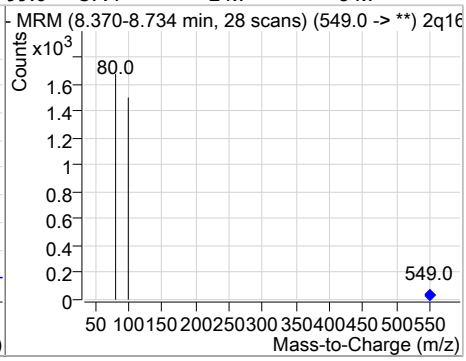




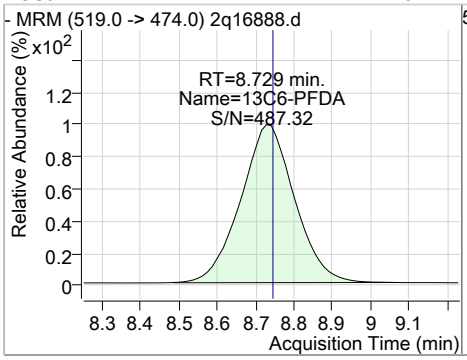
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.54	8.53	-0.01	308	549.0 -> 99.0	57.4	24.7	84.7

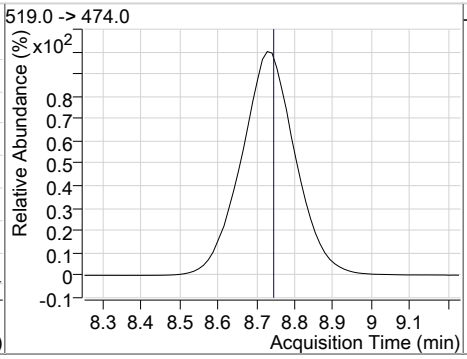


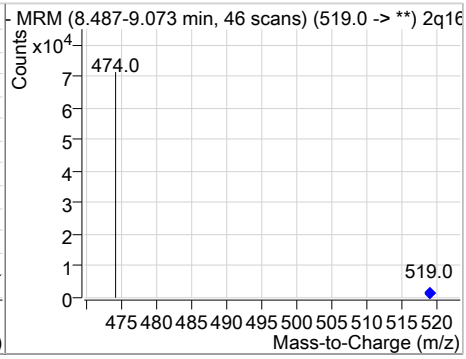




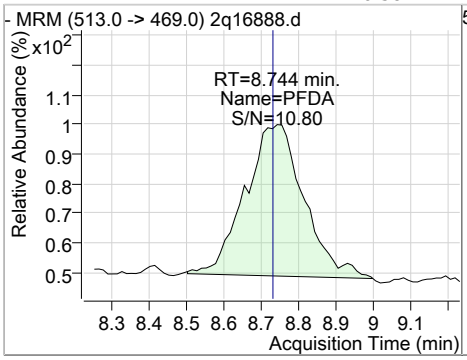
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	17.48	8.73	-0.01	50588				

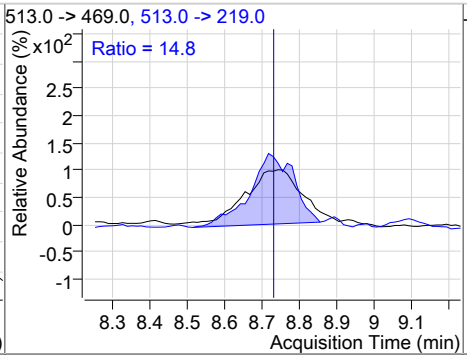


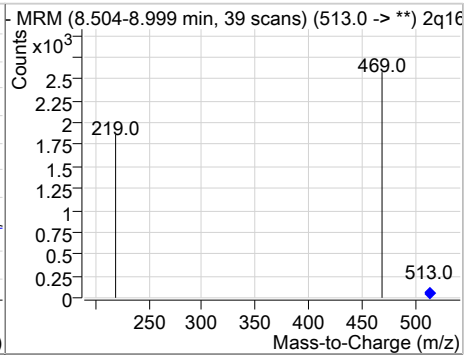




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.58	8.74	0.00	535	513.0 -> 219.0	14.8	0.0	45.3

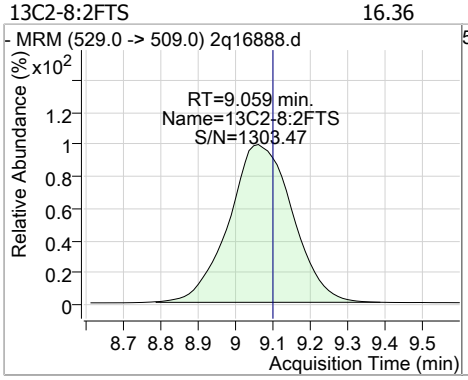


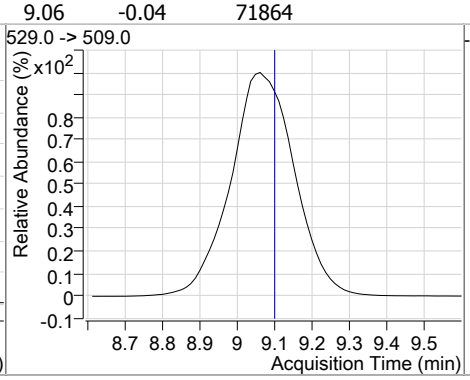


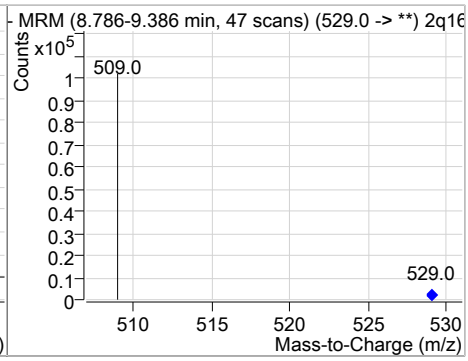


Perfluorinated Compounds by LC/MS/MS

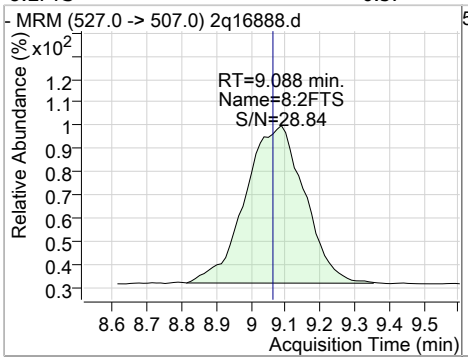
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	16.36	9.06	-0.04	71864				

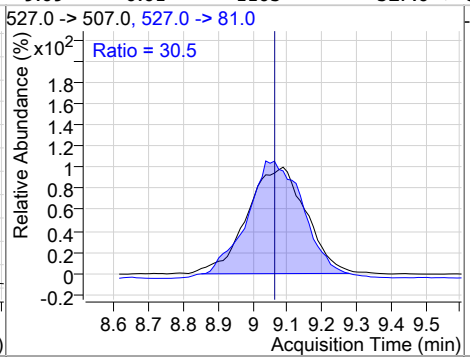


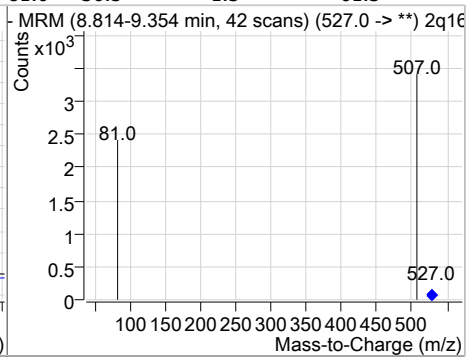




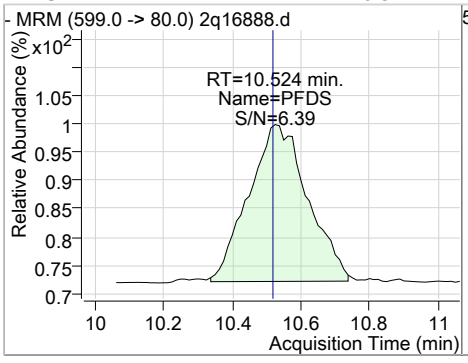
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.57	9.09	-0.01	1105	527.0 -> 81.0	30.5	1.3	61.3

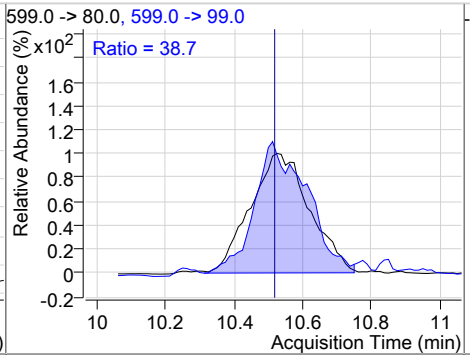


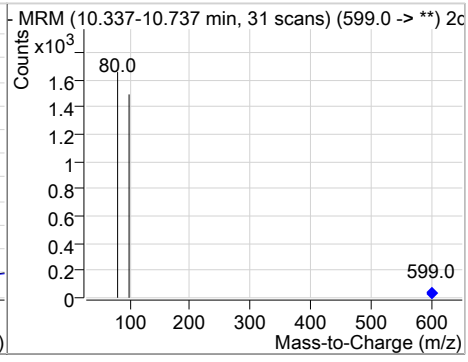




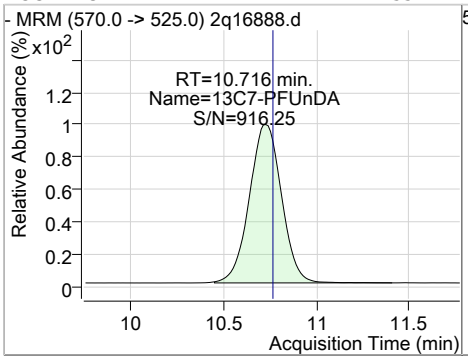
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.57	10.52	-0.03	201	599.0 -> 99.0	38.7	9.7	69.7

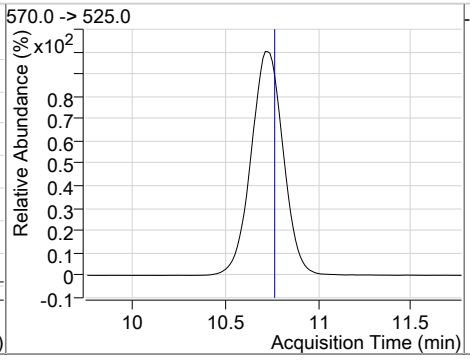


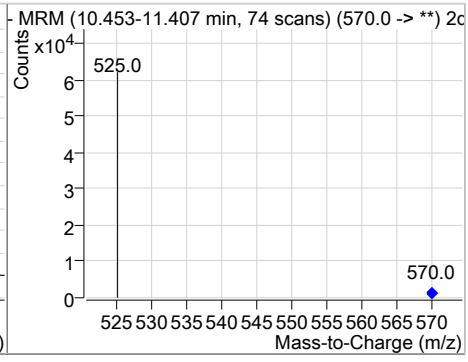




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	17.55	10.72	-0.04	41676				

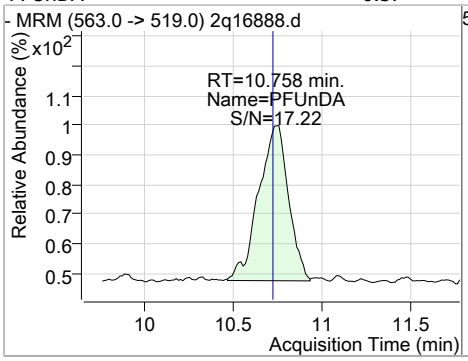


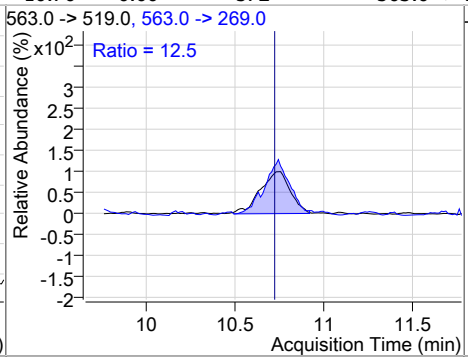


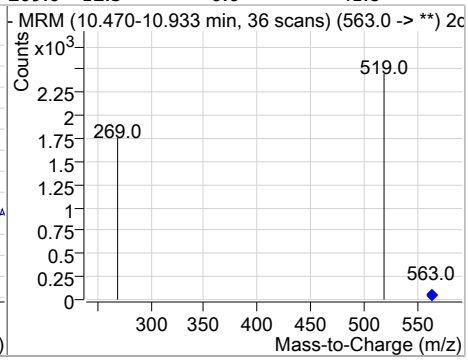


Perfluorinated Compounds by LC/MS/MS

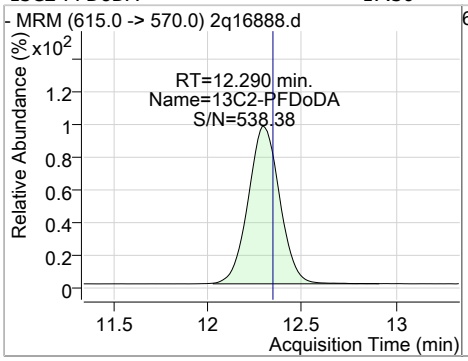
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.57	10.76	0.00	572	563.0 -> 269.0	12.5	0.0	41.8

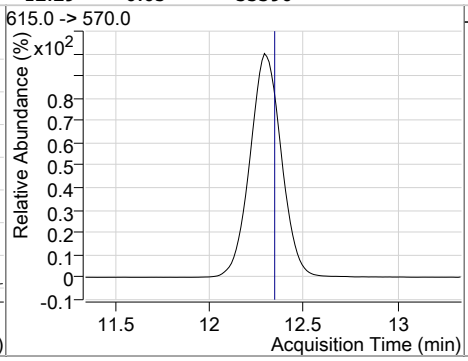


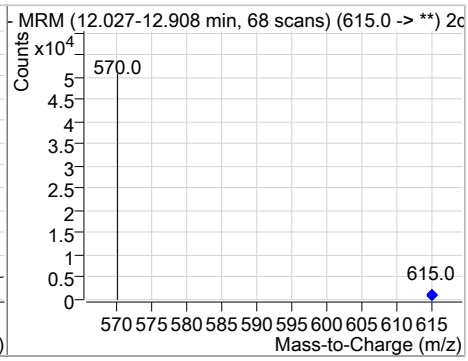




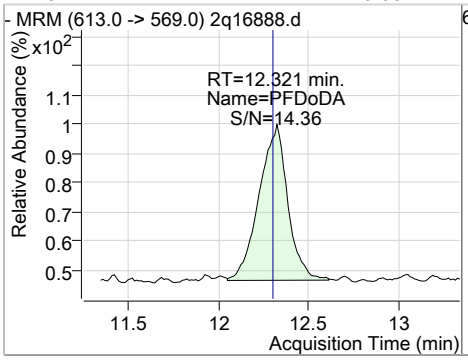
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	17.36	12.29	-0.05	33390				

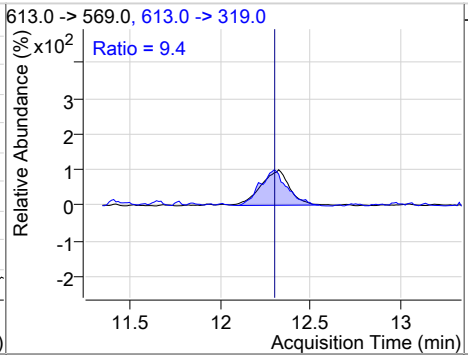


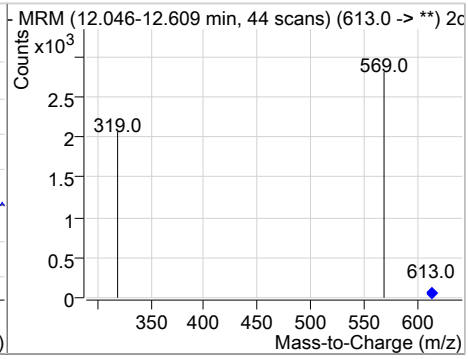




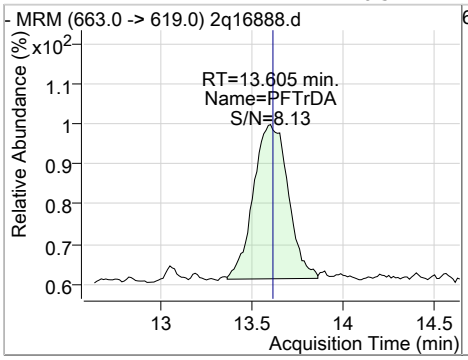
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.66	12.32	-0.02	567	613.0 -> 319.0	9.4	0.0	40.0

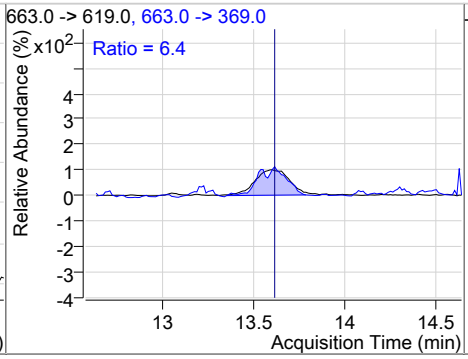


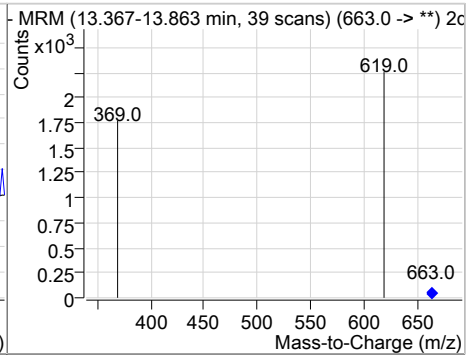




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.54	13.60	-0.03	371	663.0 -> 369.0	6.4	0.0	37.1

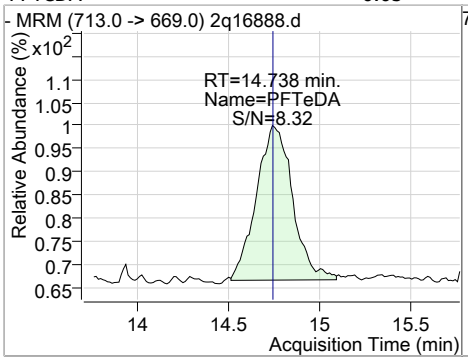


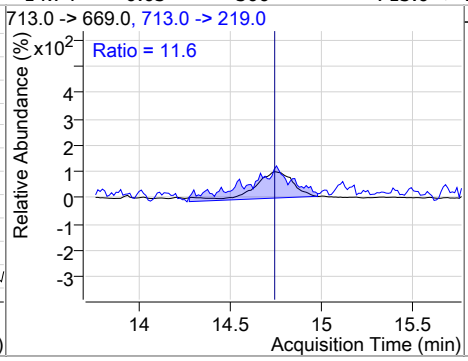


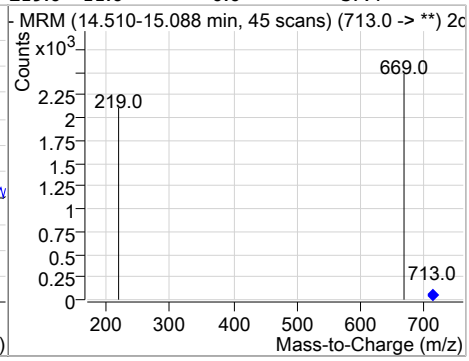


Perfluorinated Compounds by LC/MS/MS

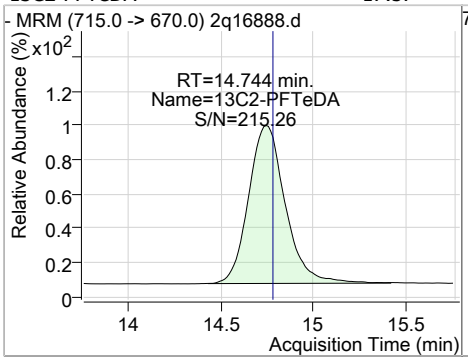
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.65	14.74	-0.03	306	713.0 -> 219.0	11.6	0.0	37.4

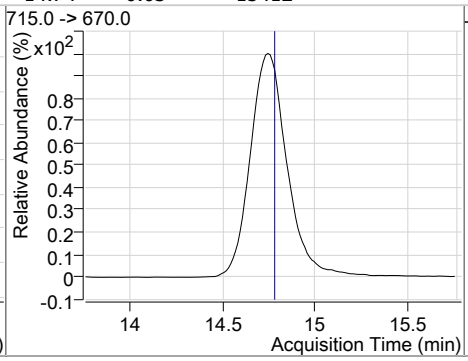


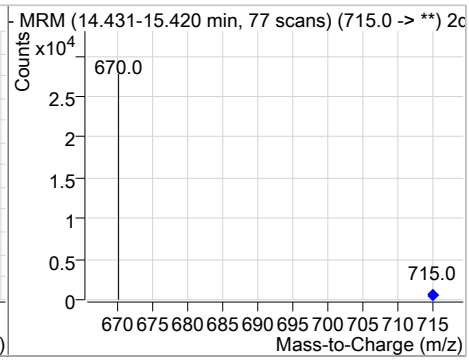




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	17.57	14.74	-0.03	15412				







Manual Integration Approval Summary

Sample Number:	S2Q294-IC294	**Method:**	EPA 537M QSM5.1 B-15
Lab FileID:	2Q16888.D	**Analyst approved:**	07/11/18 14:37 Natasha Gumtie
Injection Time:	07/10/18 16:04	**Supervisor approved:**	07/11/18 16:54 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.19	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.59	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/11/18 16:54

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16889.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/10/2018 4:31:22 PM
Sample Name : ic294-1
Vial : Vial 3
DA Method File : PFC_ID_071018_S2Q294.quantmethod.xml
Batch Name : s2q294.batch.bin
Sample Information : op70743,S2Q294,130,,,1.0,1,water

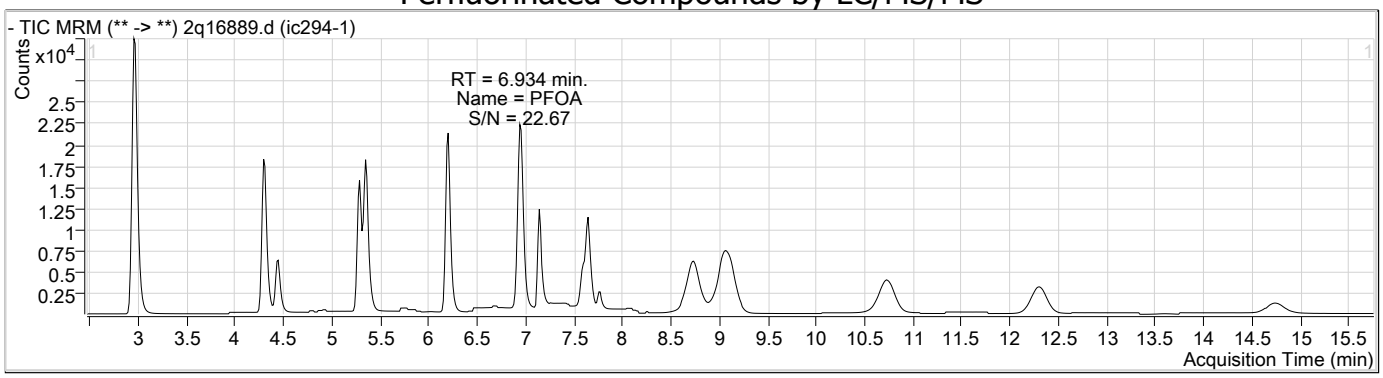
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.946	415.0 -> 370.0	18430	20.00	µg/L	0.000
13C4-PFOS	7.598	503.0 -> 80.0	9831	20.00	µg/L	-0.004
M4-PFBA	2.953	217.0 -> 172.0	129393	20.00	µg/L	-0.013
M5-PFPeA	4.300	268.0 -> 223.0	61971	20.00	µg/L	-0.012
M5-PFHxA	5.353	318.0 -> 273.0	56356	20.00	µg/L	-0.008
M4-PFHpA	6.204	367.0 -> 322.0	53358	20.00	µg/L	-0.005
M8-PFOA	6.945	421.0 -> 376.0	27826	20.00	µg/L	-0.001
M9-PFNA	7.665	472.0 -> 427.0	18380	20.00	µg/L	-0.003
M6-PFDA	8.741	519.0 -> 474.0	56361	20.00	µg/L	-0.001
M7-PFUnDA	10.729	570.0 -> 525.0	44440	20.00	µg/L	-0.032
M2-PFDoDA	12.303	615.0 -> 570.0	35927	20.00	µg/L	-0.036
M2-PFTeDA	14.731	715.0 -> 670.0	16186	20.00	µg/L	-0.043
M8-FOSA	7.142	506.0 -> 78.0	32843	20.00	µg/L	-0.003
M3-PFBS	4.443	302.0 -> 99.0	19855	20.00	µg/L	0.006
M3-PFHxS	6.198	402.0 -> 99.0	17205	20.00	µg/L	0.002
M8-PFOS	7.596	507.0 -> 99.0	8459	20.00	µg/L	-0.006
M2-4:2FTS	5.285	329.0 -> 309.0	50432	20.00	µg/L	0.002
M2-6:2FTS	6.955	429.0 -> 409.0	40177	20.00	µg/L	-0.003
M2-8:2FTS	9.059	529.0 -> 509.0	82208	20.00	µg/L	-0.036
M3-MeFOSAA	7.644	573.0 -> 419.0	15004	20.00	µg/L	0.008
System Monitoring Compounds						
13C2-4:2FTS	5.285	329.0 -> 309.0	50429	18.81	µg/L	0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.1%		
13C2-6:2FTS	6.955	429.0 -> 409.0	40172	19.35	µg/L	-0.003
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.8%		
13C2-8:2FTS	9.059	529.0 -> 509.0	81433	18.54	µg/L	-0.036
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.7%		
13C2-PFDoDA	12.303	615.0 -> 570.0	35986	18.71	µg/L	-0.036
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.6%		
13C2-PFTeDA	14.731	715.0 -> 670.0	16292	18.57	µg/L	-0.043
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.9%		
13C3-PFBS	4.443	302.0 -> 99.0	19868	19.97	µg/L	0.006
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%		
13C3-PFHxS	6.198	402.0 -> 99.0	17204	20.73	µg/L	0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.6%		
13C4-PFBA	2.953	217.0 -> 172.0	129293	20.18	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%		
13C4-PFHpA	6.204	367.0 -> 322.0	53359	19.62	µg/L	-0.005
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.1%		
13C5-PFHxA	5.353	318.0 -> 273.0	56341	19.87	µg/L	-0.008
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.3%		
13C5-PFPeA	4.300	268.0 -> 223.0	61955	19.81	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%		
13C6-PFDA	8.741	519.0 -> 474.0	56109	19.39	µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.9%		

Perfluorinated Compounds by LC/MS/MS

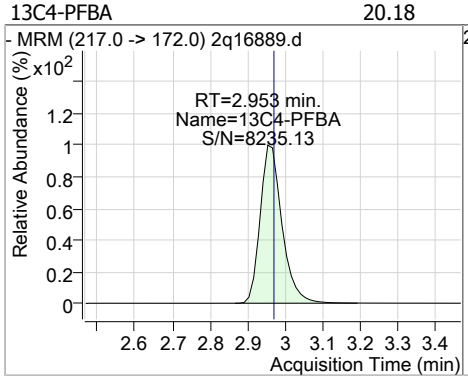
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.729	570.0 -> 525.0	44405	18.70	µg/L		-0.032
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.5%			
13C8-FOSA	7.142	506.0 -> 78.0	32838	20.95	µg/L		-0.003
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.7%			
13C8-PFOA	6.945	421.0 -> 376.0	27822	20.01	µg/L		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
13C8-PFOS	7.596	507.0 -> 99.0	8456	19.59	µg/L		-0.006
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.0%			
13C9-PFNA	7.665	472.0 -> 427.0	18386	19.09	µg/L		-0.003
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.4%			
d3-MeFOSAA	7.644	573.0 -> 419.0	14998	19.82	µg/L		0.008
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%			
M2-PFOA	6.946	415.0 -> 370.0	18434	20.01	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.598	503.0 -> 80.0	9847	20.04	ng/ml		-0.004
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.2%			
Target Compounds							**QValue**
4:2FTS	5.288	327.0 -> 307.0	1345	1.03	µg/L		79
6:2FTS	6.956	427.0 -> 407.0	1049	1.04	µg/L		98
8:2FTS	9.075	527.0 -> 507.0	2473	1.12	µg/L		96
EtFOSAA	7.769	584.0 -> 419.0	249	0.99	µg/L		100
FOSA	7.145	498.0 -> 78.0	820	1.02	µg/L		96
MeFOSAA	7.645	570.0 -> 419.0	290	1.08	µg/L		98
PFBA	2.962	213.0 -> 169.0	1043	1.03	µg/L		100
PFBS	4.434	299.0 -> 80.0	1370	1.01	µg/L		100
PFDA	8.744	513.0 -> 469.0	1130	1.10	µg/L		92
PFDoDA	12.296	613.0 -> 569.0	1058	1.14	µg/L		100
PFDS	10.537	599.0 -> 80.0	413	1.10	µg/L	m	98
PFHpA	6.207	363.0 -> 319.0	1980	1.01	µg/L		97
PFHpS	6.903	449.0 -> 80.0	547	1.04	µg/L		100
PFHxA	5.355	313.0 -> 269.0	1103	1.15	µg/L		99
PFHxS	6.188	399.0 -> 80.0	1035	1.01	µg/L	m	99
PFNA	7.666	463.0 -> 419.0	372	1.05	µg/L		92
PFNS	8.533	549.0 -> 80.0	710	1.08	µg/L		95
PFOA	6.934	413.0 -> 369.0	816	1.07	µg/L		98
PFOS	7.599	499.0 -> 80.0	576	1.09	µg/L	m	94
PFPeA	4.304	263.0 -> 219.0	3416	1.15	µg/L		100
PFPeS	5.408	349.0 -> 80.0	839	0.96	µg/L		96
PFTeDA	14.725	713.0 -> 669.0	560	1.13	µg/L		99
PFTrDA	13.592	663.0 -> 619.0	763	1.06	µg/L		96
PFUnDA	10.721	563.0 -> 519.0	1117	1.04	µg/L		96

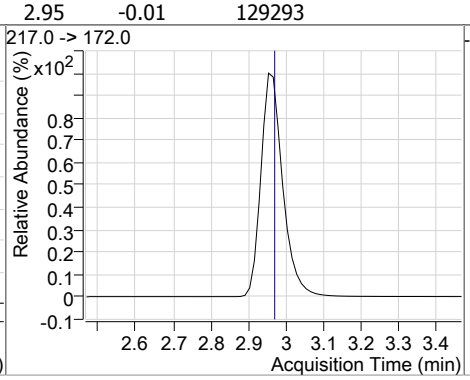
 # = Qualifier out of range, m = manually integrated, + = Area summed

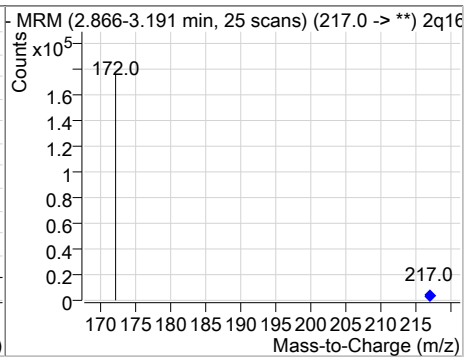
Perfluorinated Compounds by LC/MS/MS



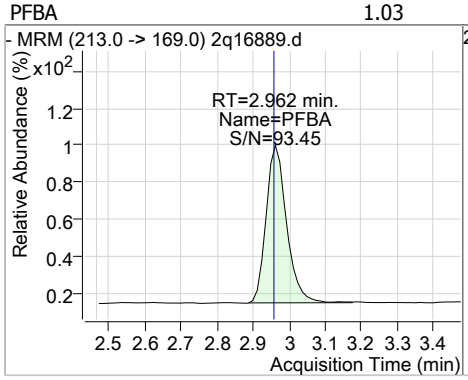
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.18	2.95	-0.01	129293				

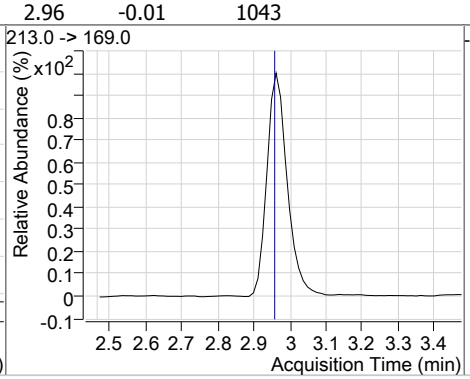


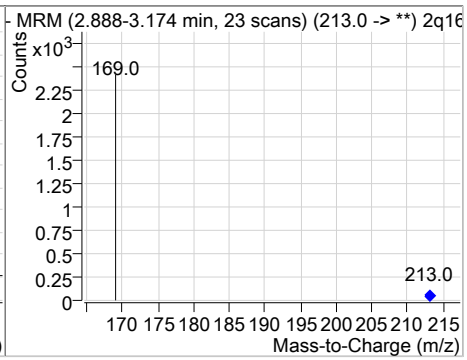




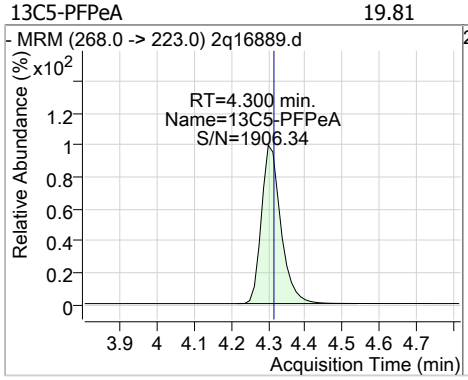
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.03	2.96	-0.01	1043				

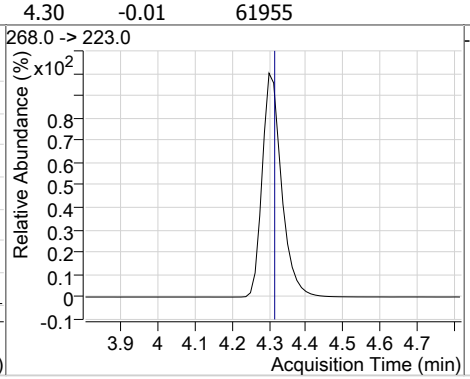


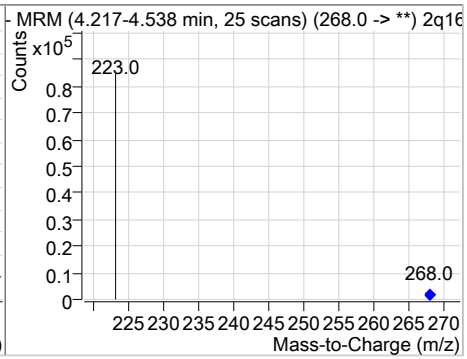




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.81	4.30	-0.01	61955				

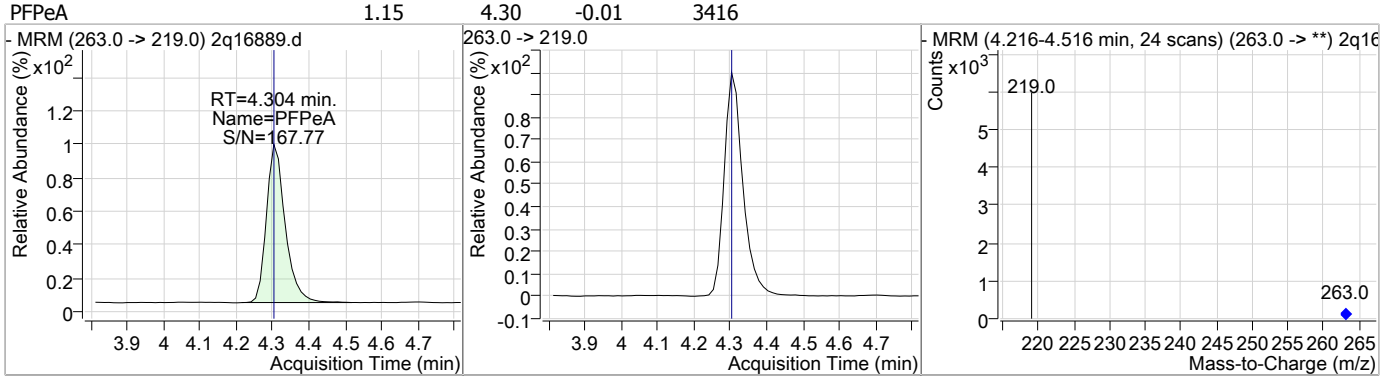




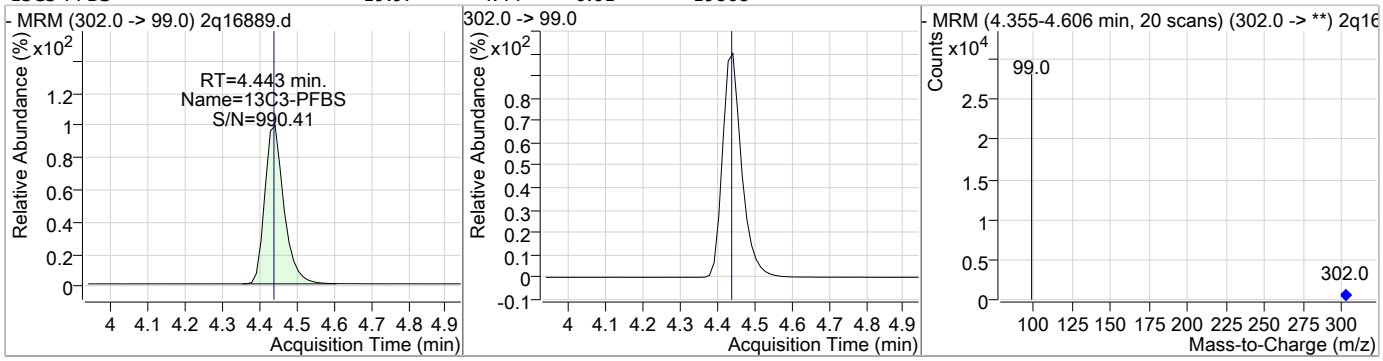


Perfluorinated Compounds by LC/MS/MS

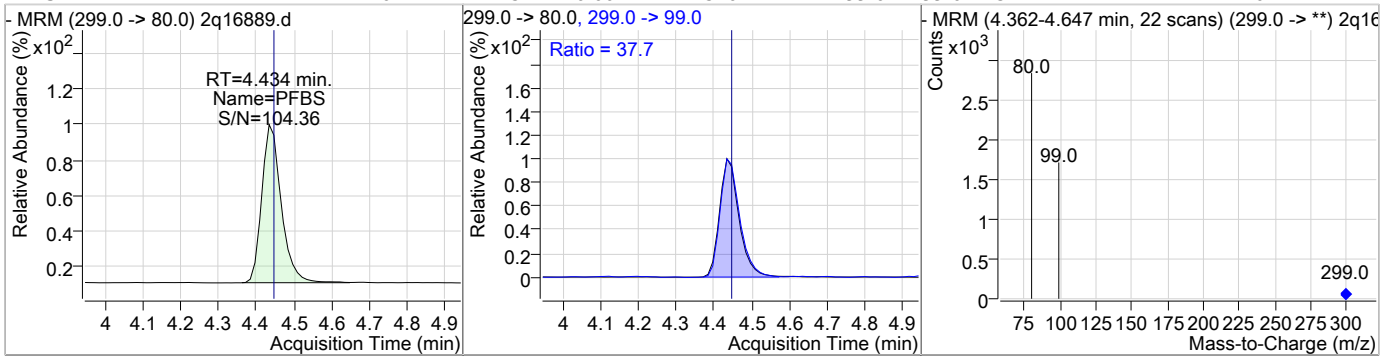
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.15	4.30	-0.01	3416				



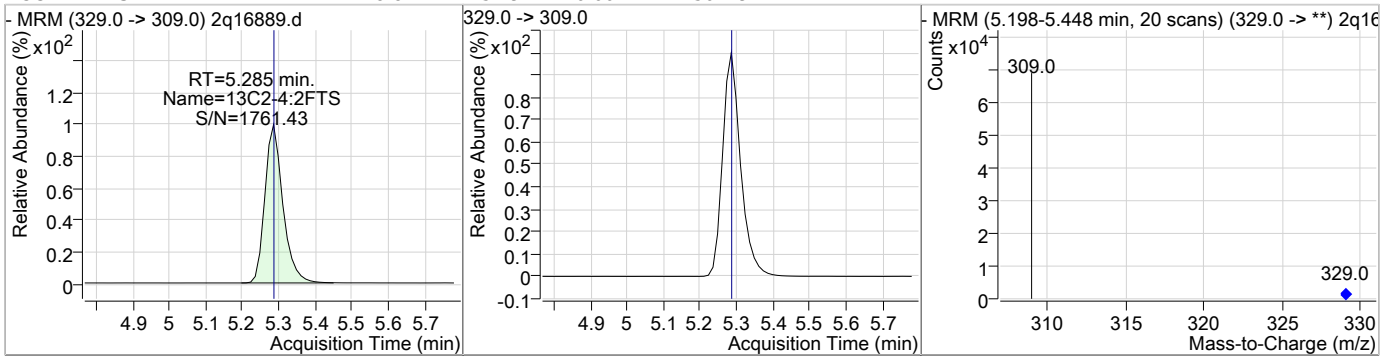
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.97	4.44	0.01	19868				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.01	4.43	0.00	1370	299.0 -> 99.0	37.7	7.4	67.4

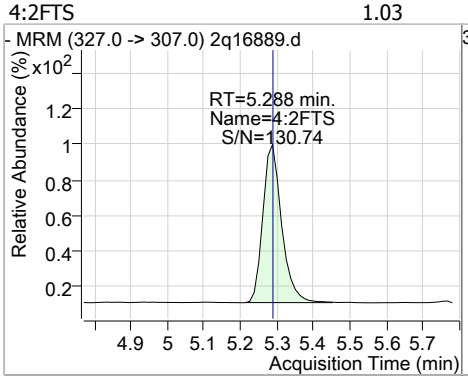


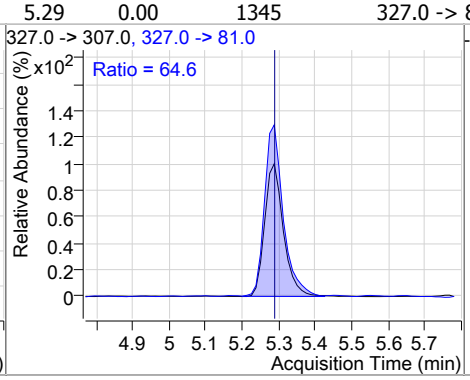
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.81	5.29	0.00	50429				

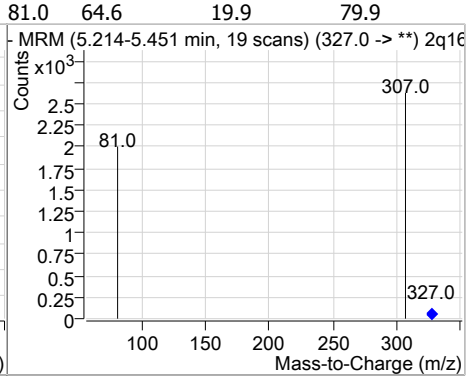


Perfluorinated Compounds by LC/MS/MS

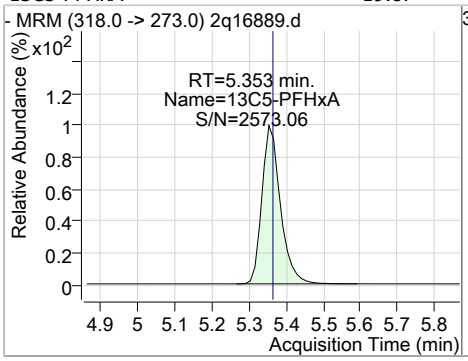
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.03	5.29	0.00	1345	327.0 -> 81.0	64.6	19.9	79.9

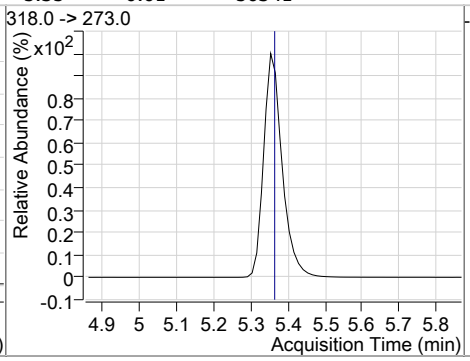


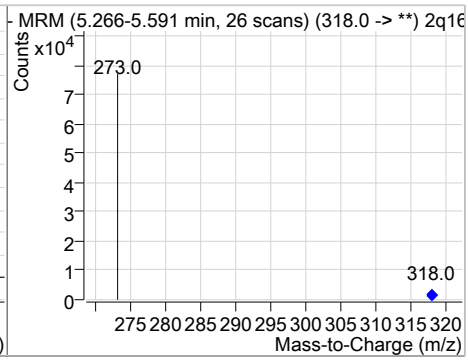




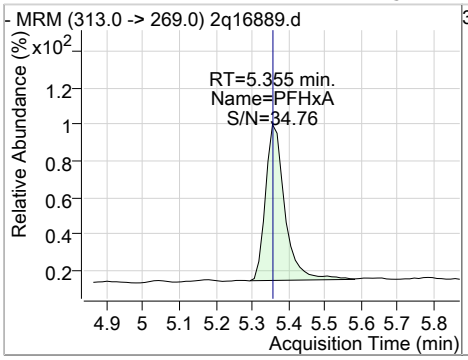
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.87	5.35	-0.01	56341				

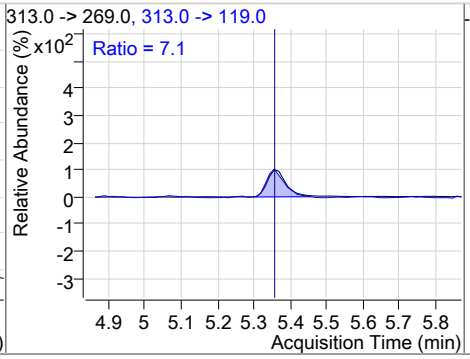


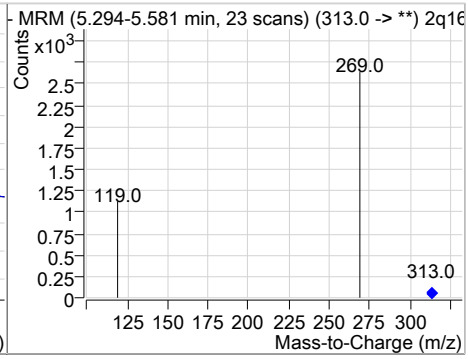




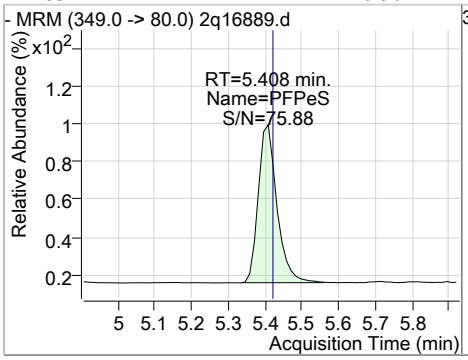
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.15	5.36	-0.01	1103	313.0 -> 119.0	7.1	0.0	37.6

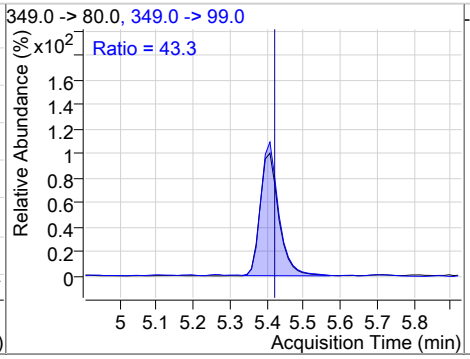


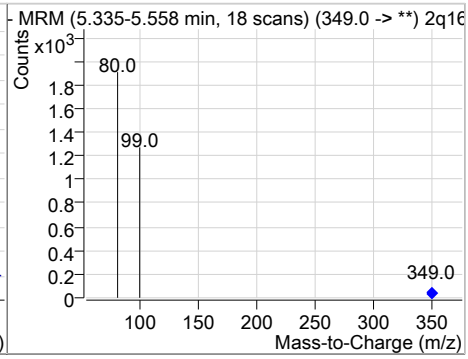




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.96	5.41	0.00	839	349.0 -> 99.0	43.3	10.8	70.8

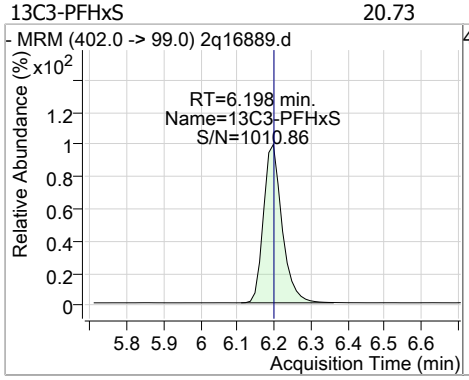


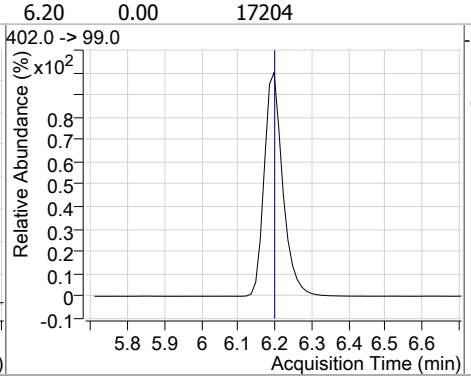


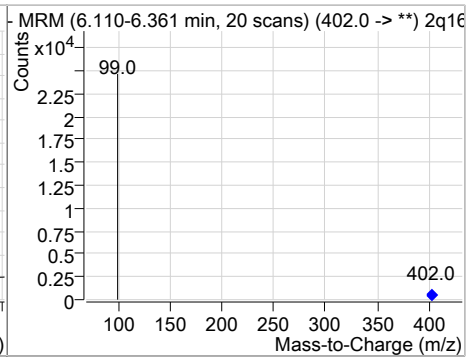


Perfluorinated Compounds by LC/MS/MS

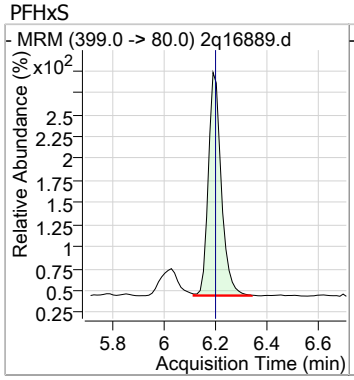
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.73	6.20	0.00	17204				

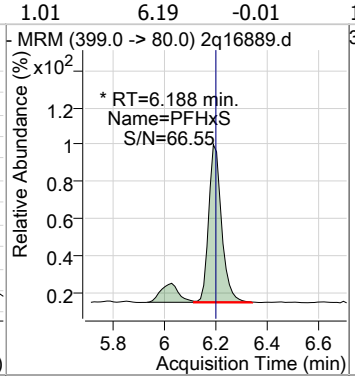


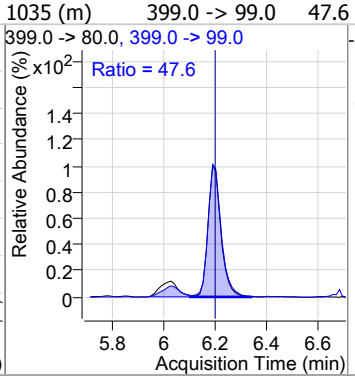


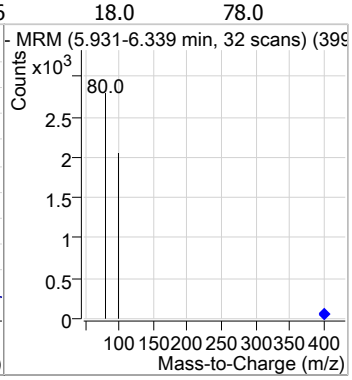


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.01	6.19	-0.01	1035 (m)	399.0 -> 99.0	47.6	18.0	78.0

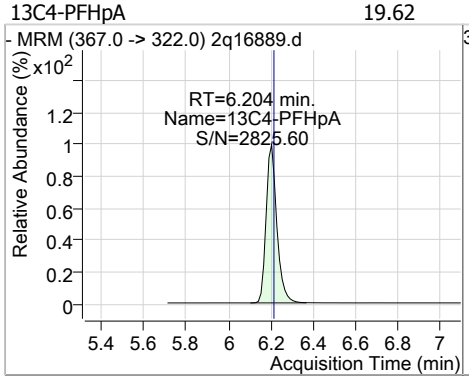


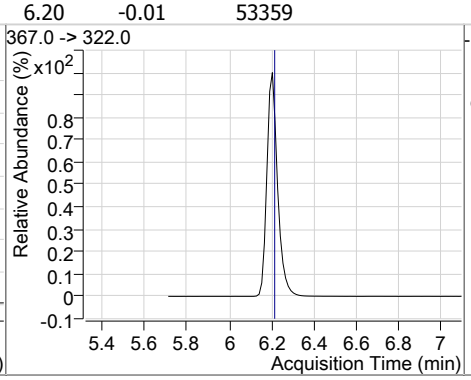


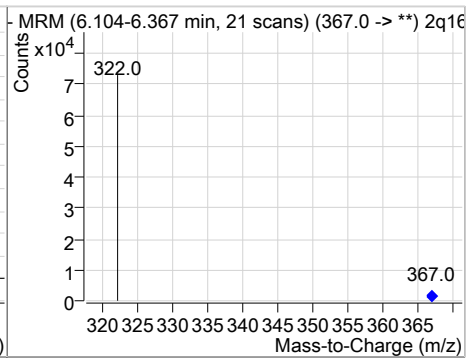




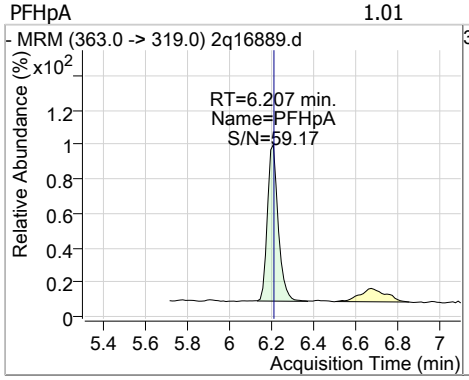
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.62	6.20	-0.01	53359				

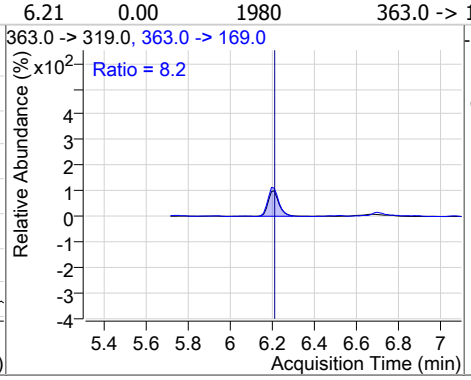


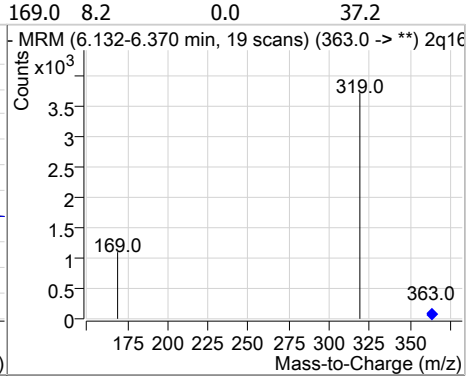




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.01	6.21	0.00	1980	363.0 -> 169.0	8.2	0.0	37.2

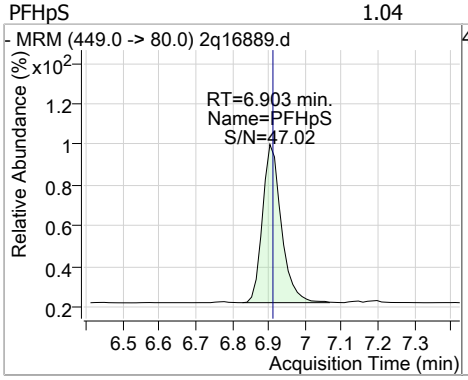


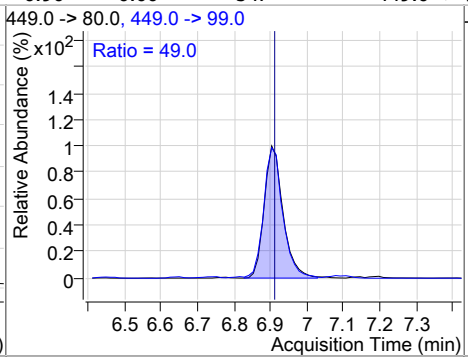


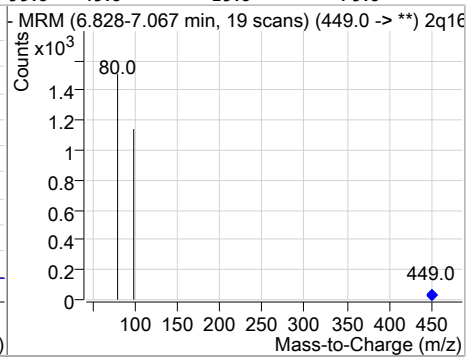


Perfluorinated Compounds by LC/MS/MS

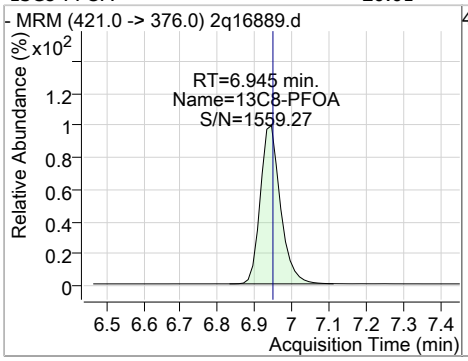
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.04	6.90	0.00	547	449.0 -> 99.0	49.0	19.0	79.0

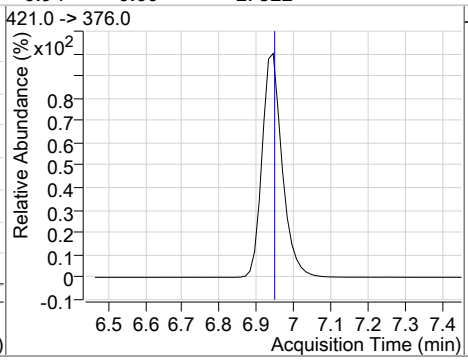


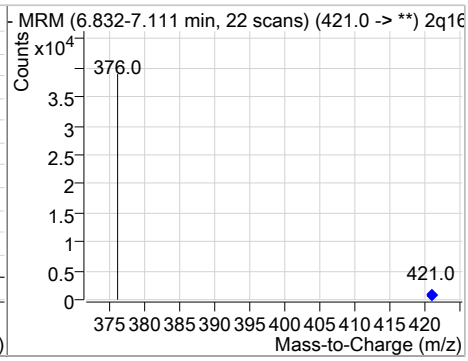




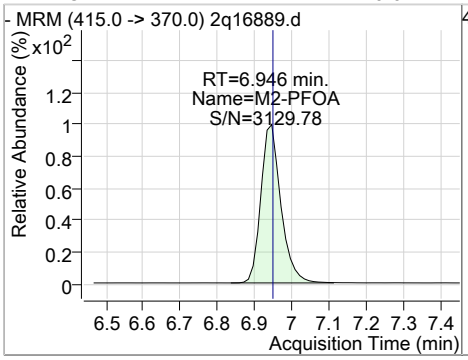
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.01	6.94	0.00	27822				

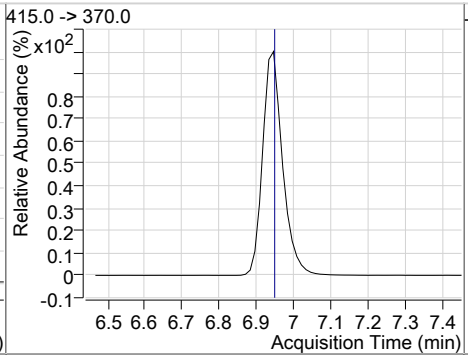


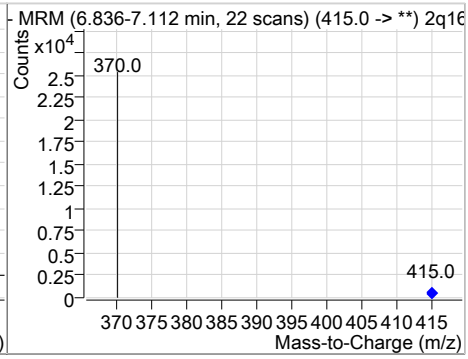




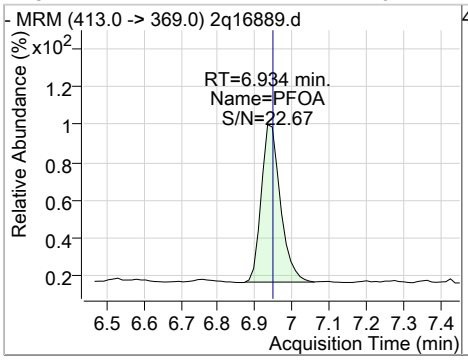
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.01	6.95	0.00	18434				

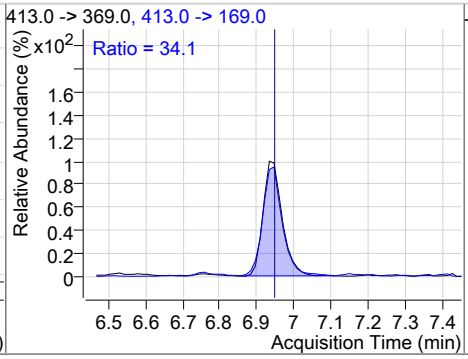


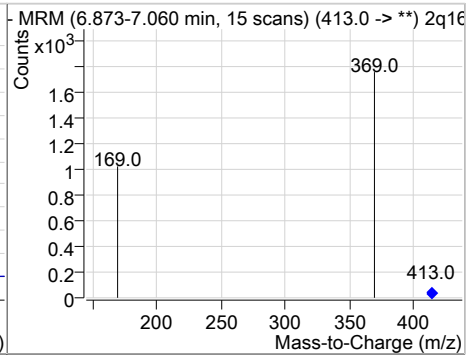




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.07	6.93	-0.01	816	413.0 -> 169.0	34.1	5.0	65.0

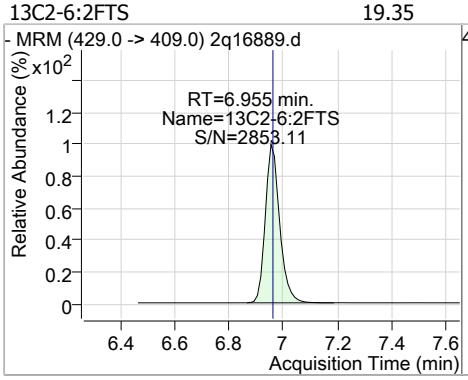


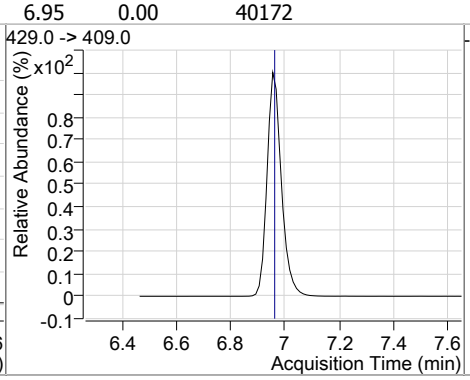


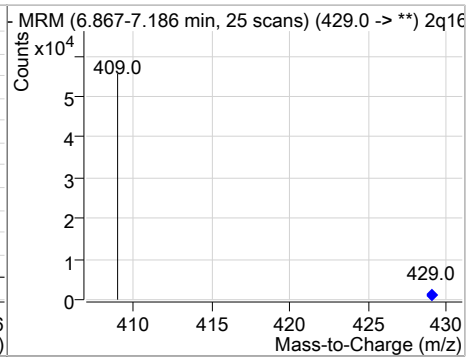


Perfluorinated Compounds by LC/MS/MS

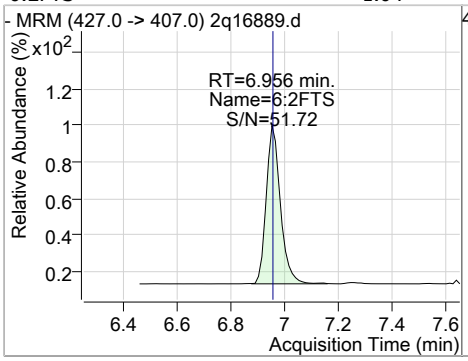
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.35	6.95	0.00	40172				

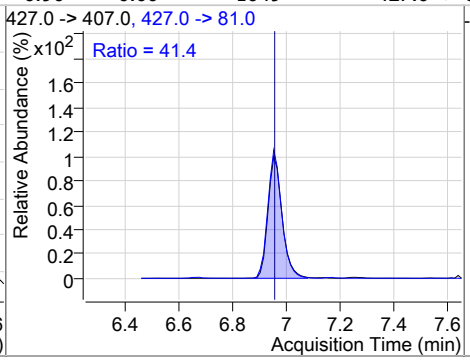


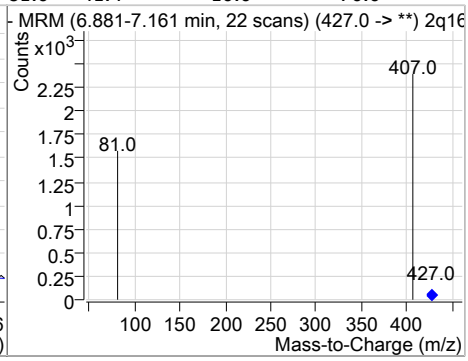




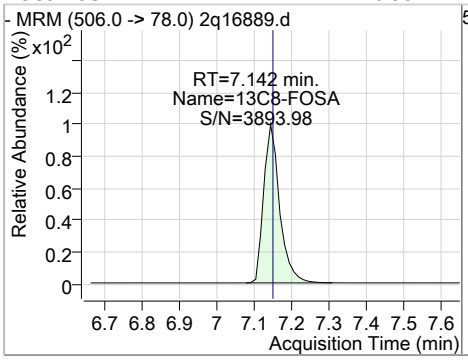
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.04	6.96	0.00	1049	427.0 -> 81.0	41.4	10.0	70.0

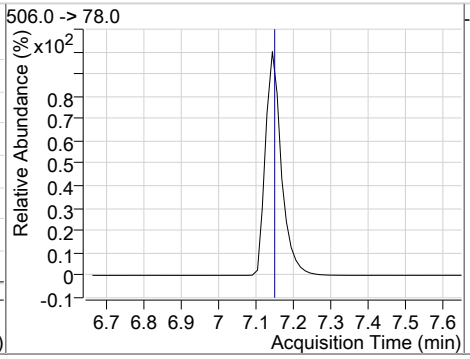


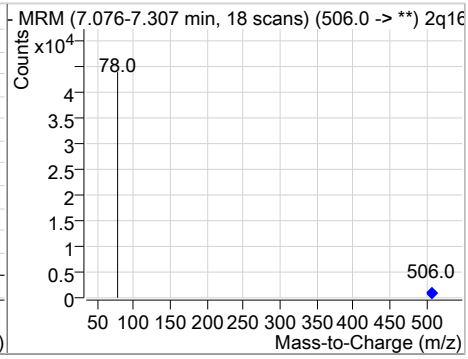




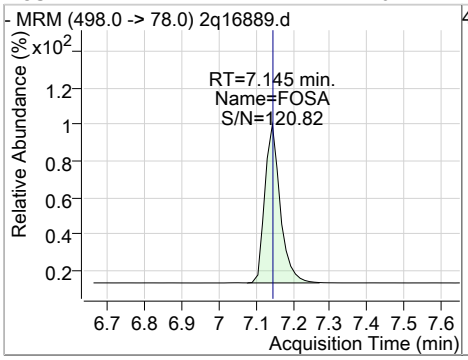
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.95	7.14	0.00	32838				

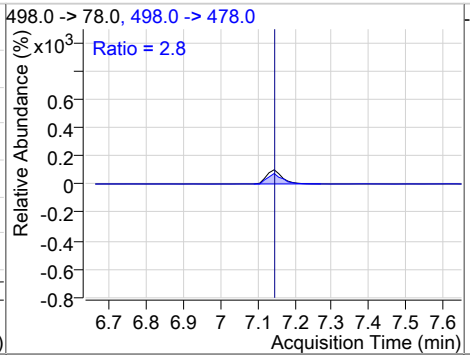


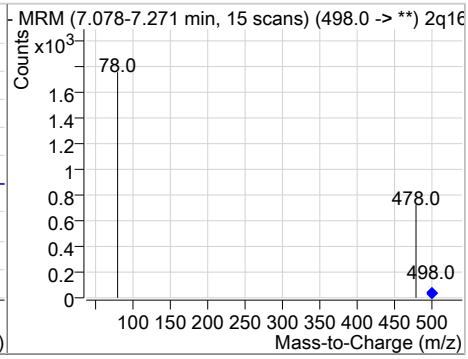




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.02	7.15	0.00	820	498.0 -> 478.0	2.8	0.0	34.0

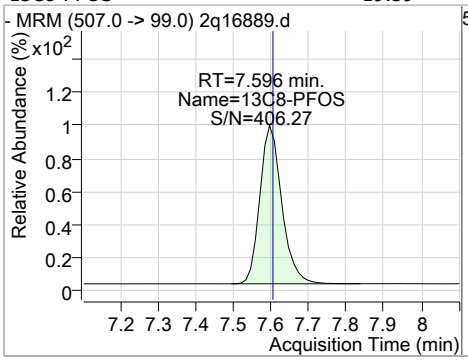


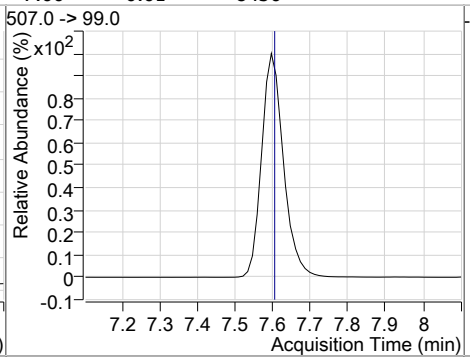


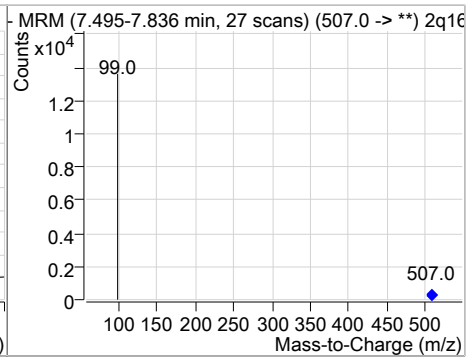


Perfluorinated Compounds by LC/MS/MS

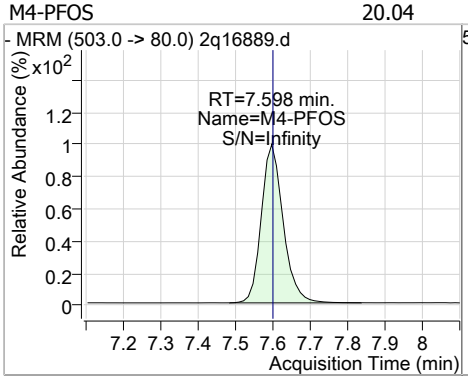
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.59	7.60	-0.01	8456				

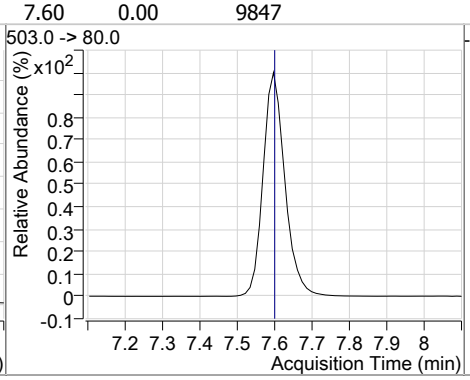


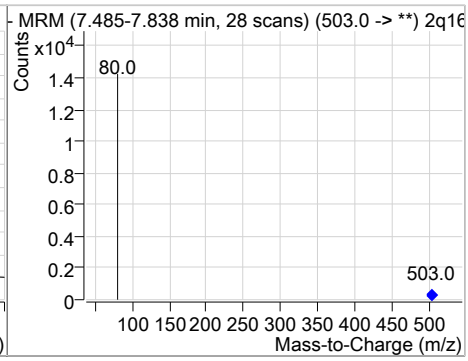




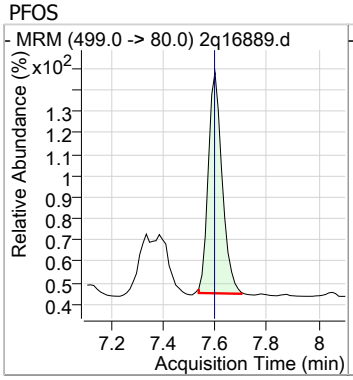
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.04	7.60	0.00	9847				

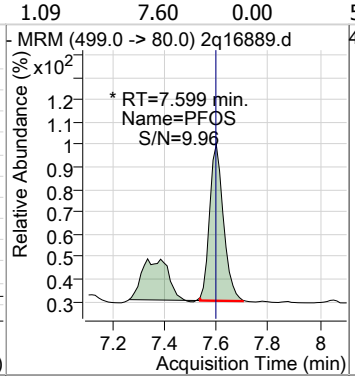


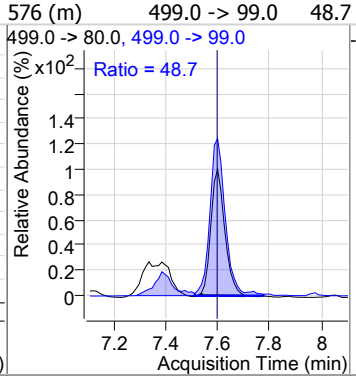


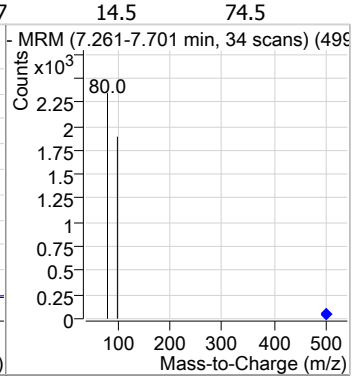


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.09	7.60	0.00	576 (m)	499.0 -> 99.0	48.7	14.5	74.5

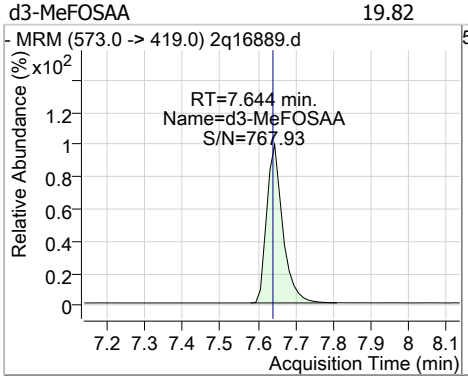


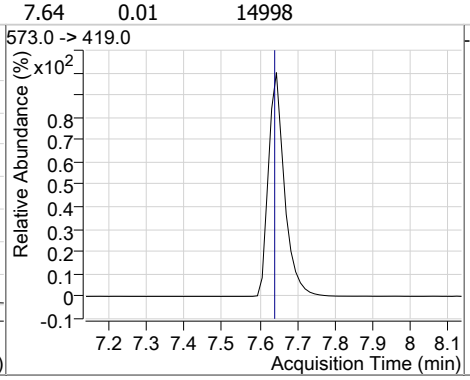


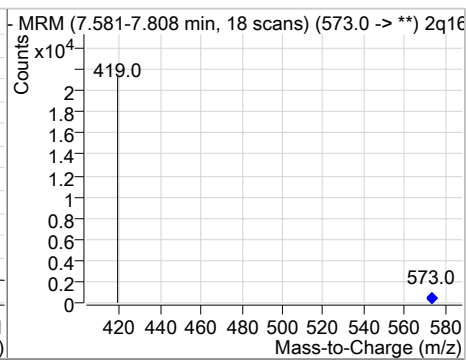




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.82	7.64	0.01	14998				

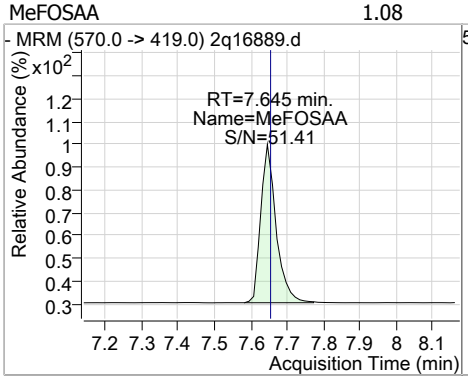


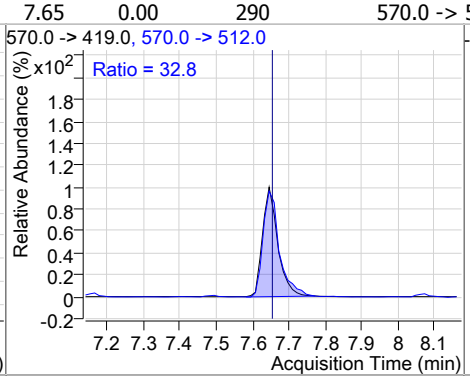


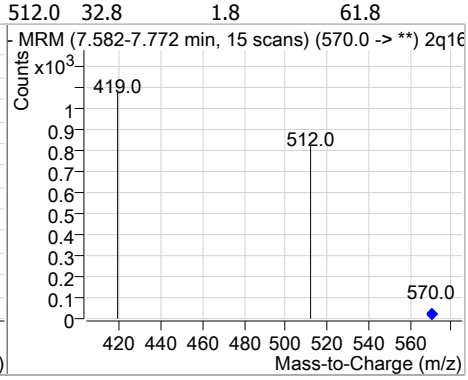


Perfluorinated Compounds by LC/MS/MS

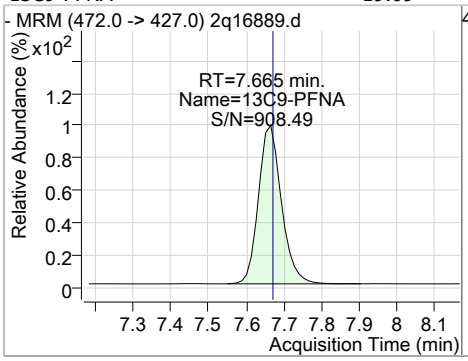
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	1.08	7.65	0.00	290	570.0 -> 512.0	32.8	1.8	61.8

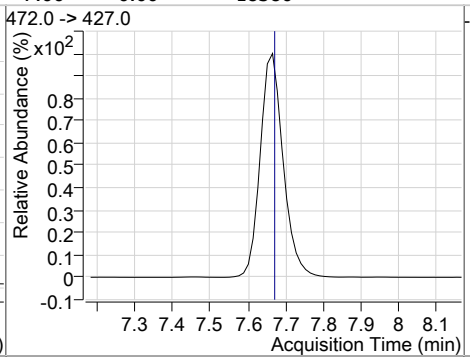


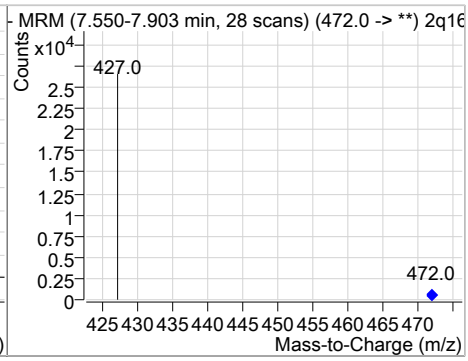




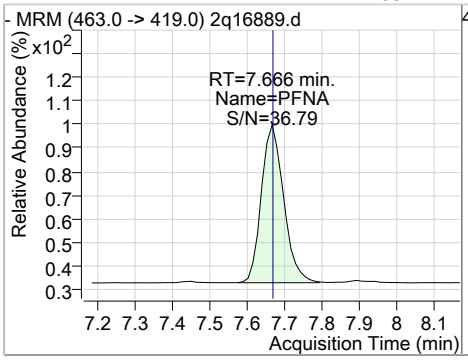
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.09	7.66	0.00	18386				

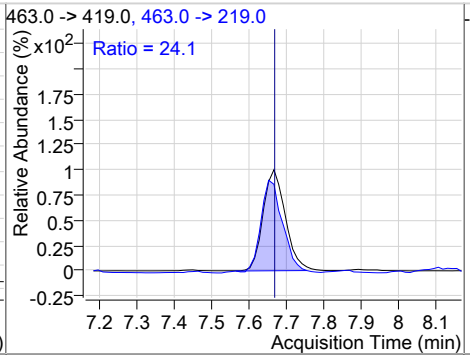


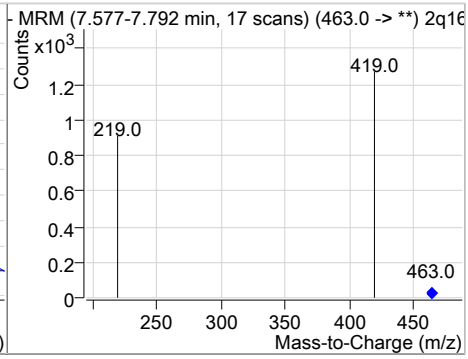




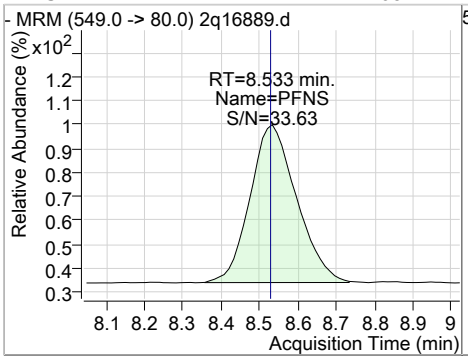
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.05	7.67	0.00	372	463.0 -> 219.0	24.1	0.0	58.4

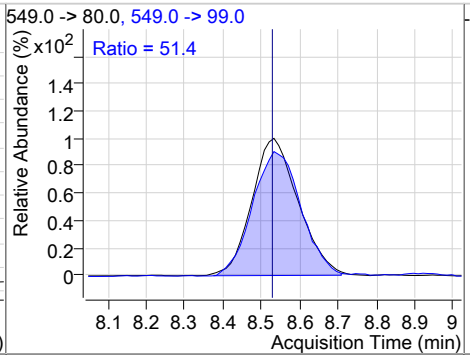


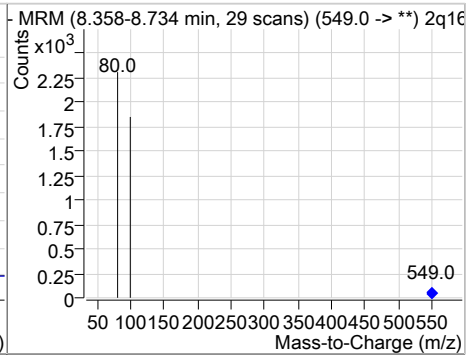




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	1.08	8.53	-0.01	710	549.0 -> 99.0	51.4	24.7	84.7

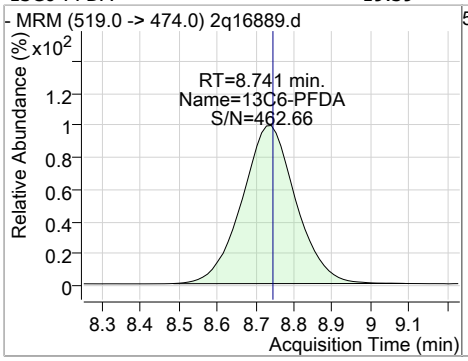


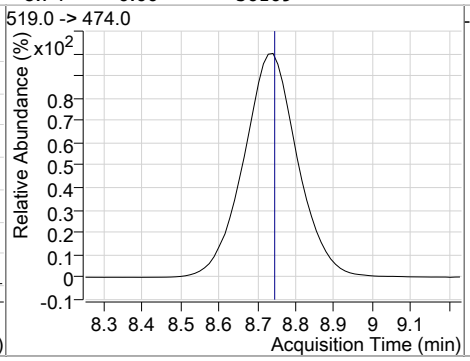


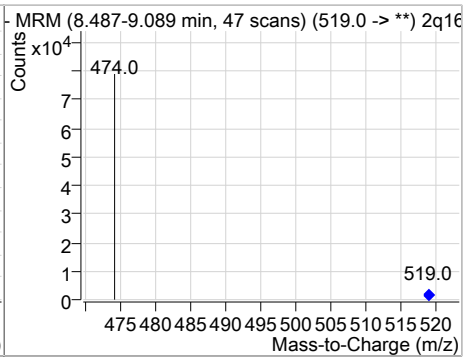


Perfluorinated Compounds by LC/MS/MS

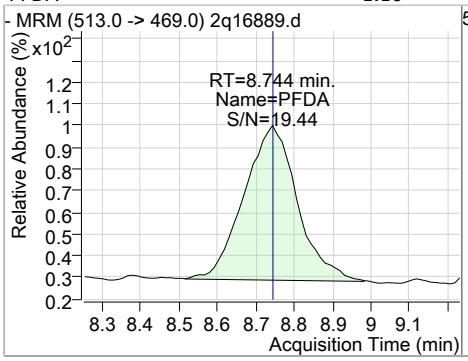
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.39	8.74	0.00	56109				

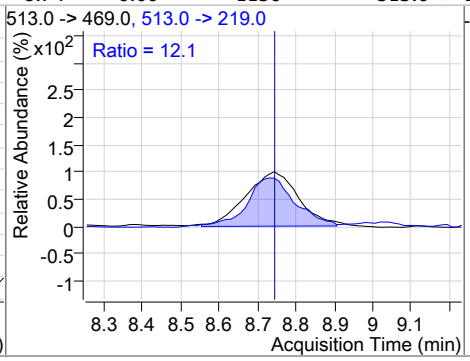


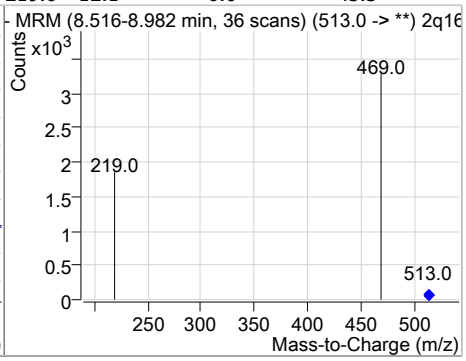




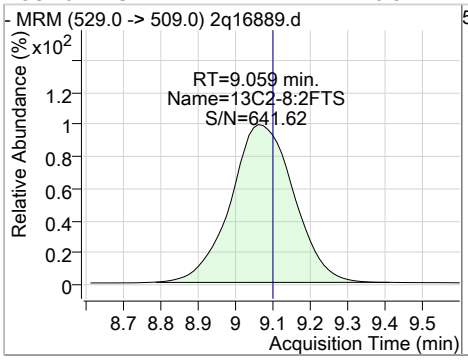
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	1.10	8.74	0.00	1130	513.0 -> 219.0	12.1	0.0	45.3

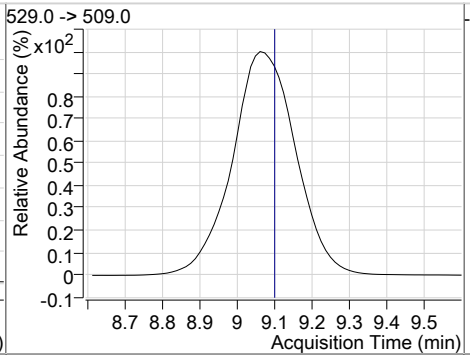


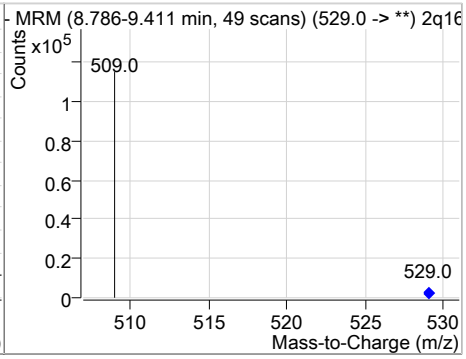




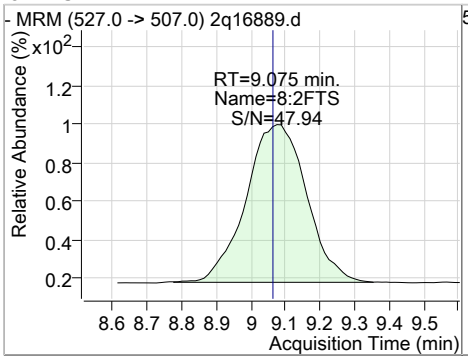
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.54	9.06	-0.04	81433				

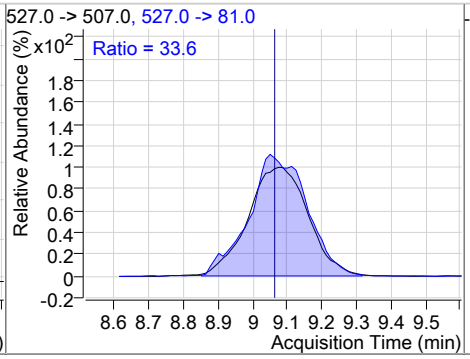


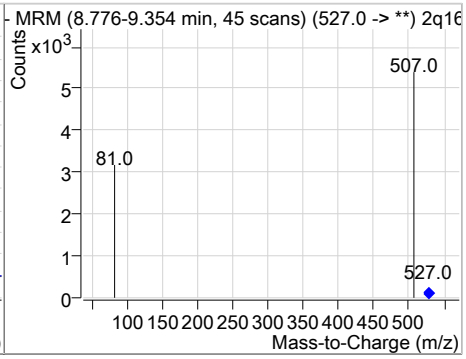




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.12	9.08	-0.02	2473	527.0 -> 81.0	33.6	1.3	61.3

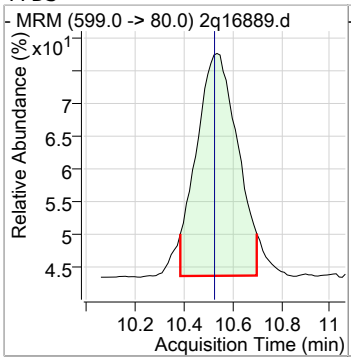


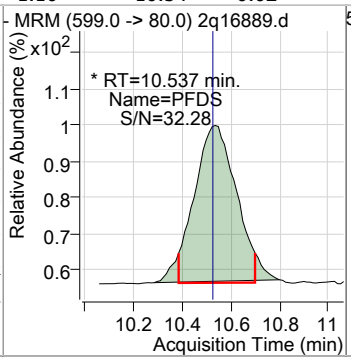


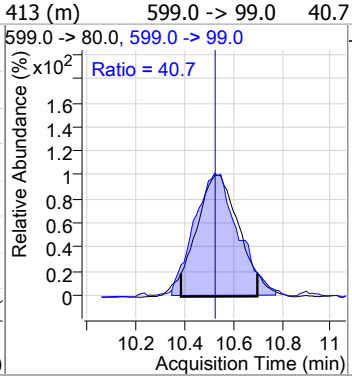


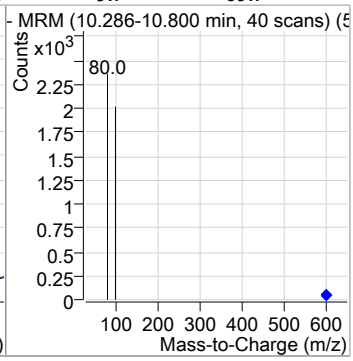
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	1.10	10.54	-0.02	413 (m)	599.0 -> 99.0	40.7	9.7	69.7

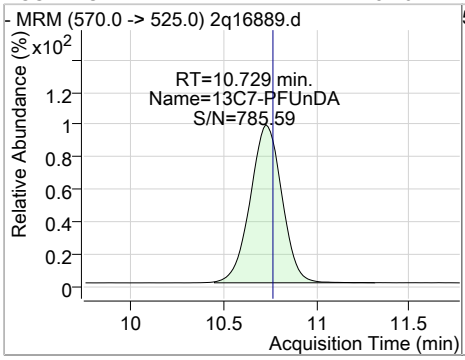


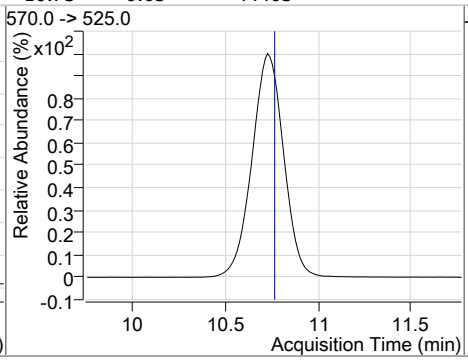


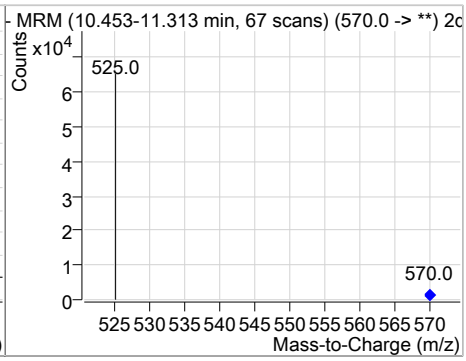




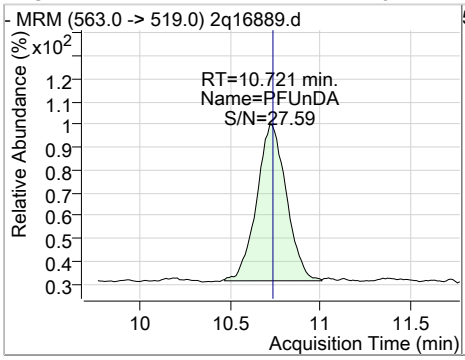
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.70	10.73	-0.03	44405				

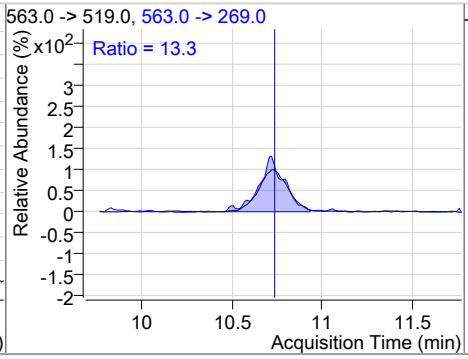


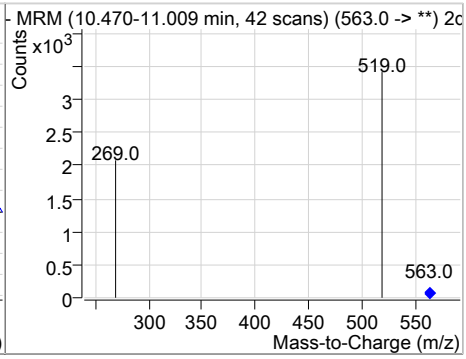




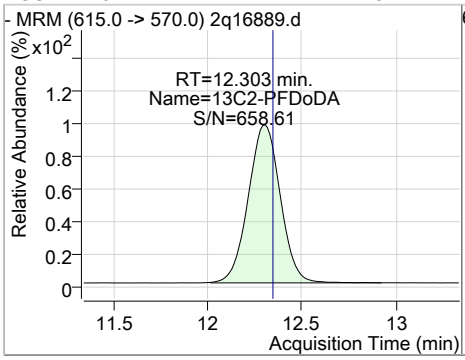
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	1.04	10.72	-0.04	1117	563.0 -> 269.0	13.3	0.0	41.8

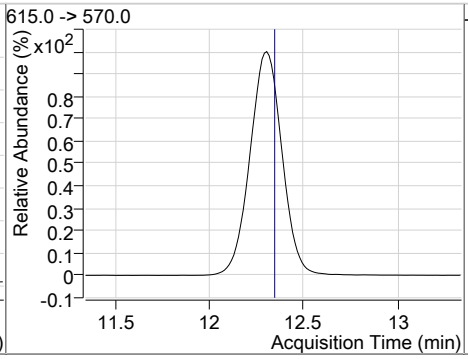


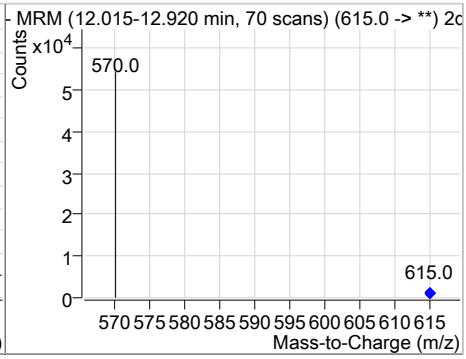




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.71	12.30	-0.04	35986				

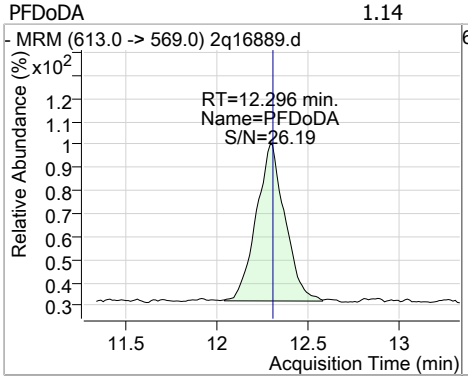


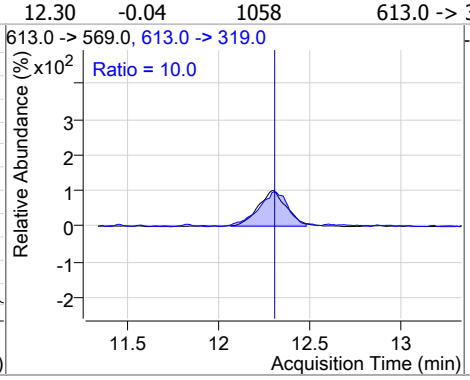


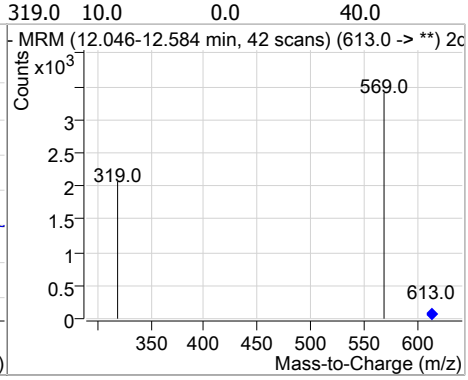


Perfluorinated Compounds by LC/MS/MS

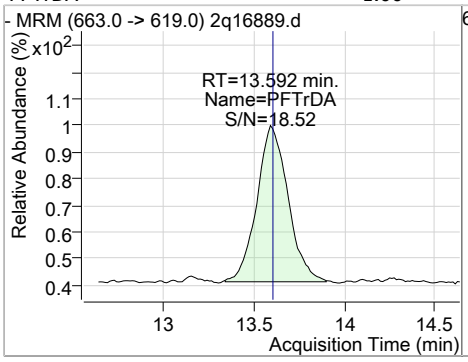
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	1.14	12.30	-0.04	1058	613.0 -> 319.0	10.0	0.0	40.0

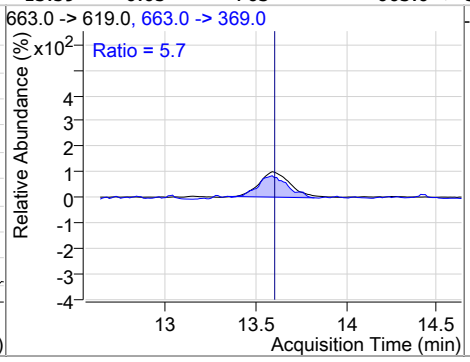


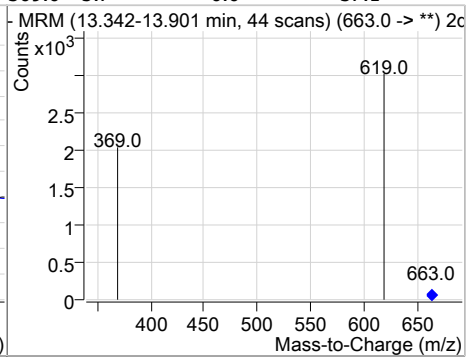




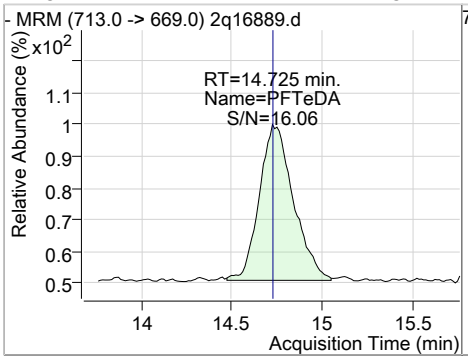
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	1.06	13.59	-0.05	763	663.0 -> 369.0	5.7	0.0	37.1

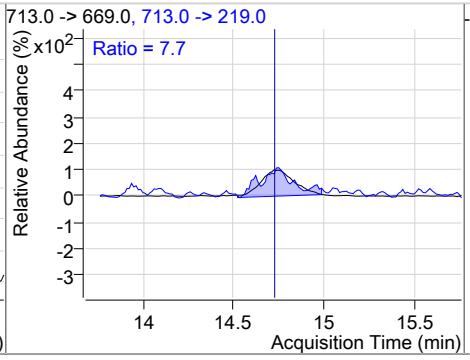


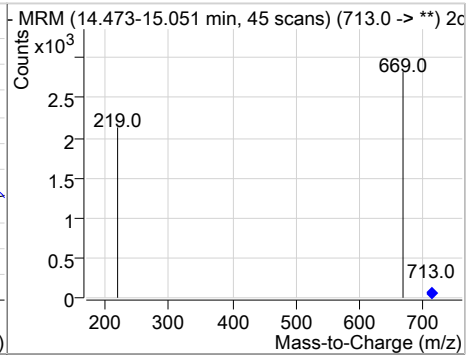




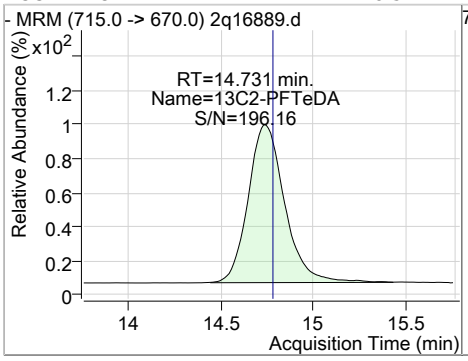
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.13	14.73	-0.04	560	713.0 -> 219.0	7.7	0.0	37.4

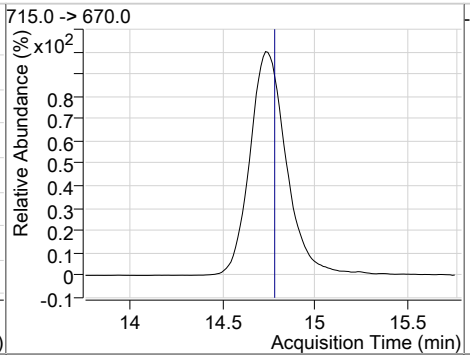


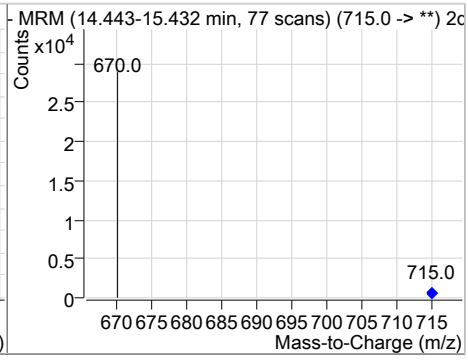




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	18.57	14.73	-0.04	16292				







Manual Integration Approval Summary

Sample Number:	S2Q294-IC294	**Method:**	EPA 537M QSM5.1 B-15
Lab FileID:	2Q16889.D	**Analyst approved:**	07/11/18 14:37 Natasha Gumtie
Injection Time:	07/10/18 16:31	**Supervisor approved:**	07/11/18 16:54 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.19	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.60	Split peak
Perfluorodecanesulfonic acid	335-77-3		10.54	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
07/11/18 16:54

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16890.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/10/2018 4:52:06 PM
Sample Name : ic294-2
Vial : Vial 4
DA Method File : PFC_ID_071018_S2Q294.quantmethod.xml
Batch Name : s2q294.batch.bin
Sample Information : op70743,S2Q294,130,,,1.0,1,water

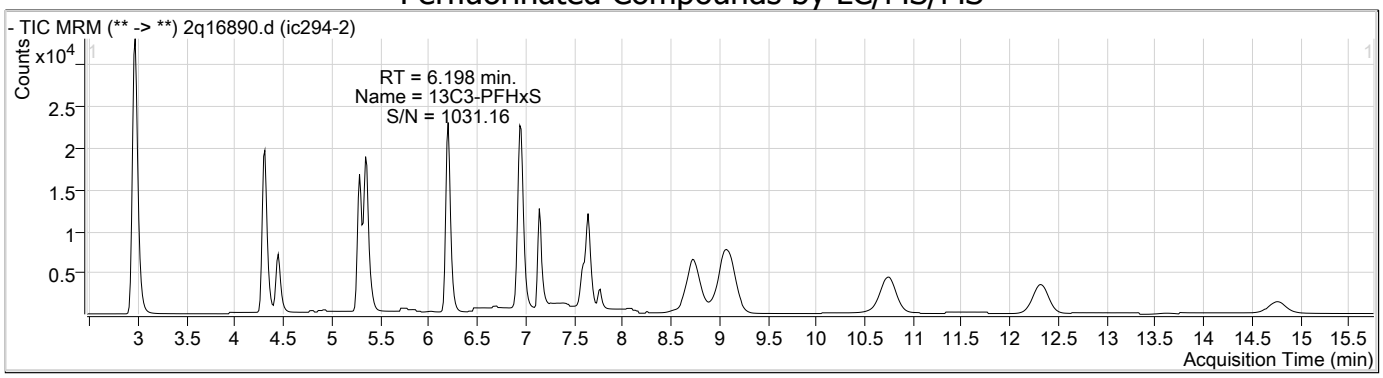
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.946	415.0 -> 370.0	17631	20.00	µg/L	0.000
13C4-PFOS	7.598	503.0 -> 80.0	9493	20.00	µg/L	-0.004
M4-PFBA	2.966	217.0 -> 172.0	129472	20.00	µg/L	-0.001
M5-PFPeA	4.312	268.0 -> 223.0	64164	20.00	µg/L	0.000
M5-PFHxA	5.353	318.0 -> 273.0	58151	20.00	µg/L	-0.008
M4-PFHpA	6.204	367.0 -> 322.0	55485	20.00	µg/L	-0.005
M8-PFOA	6.945	421.0 -> 376.0	28190	20.00	µg/L	-0.001
M9-PFNA	7.665	472.0 -> 427.0	18994	20.00	µg/L	-0.003
M6-PFDA	8.729	519.0 -> 474.0	59479	20.00	µg/L	-0.014
M7-PFUnDA	10.754	570.0 -> 525.0	48223	20.00	µg/L	-0.007
M2-PFDoDA	12.315	615.0 -> 570.0	38654	20.00	µg/L	-0.023
M2-PFTeDA	14.756	715.0 -> 670.0	17817	20.00	µg/L	-0.018
M8-FOSA	7.142	506.0 -> 78.0	33189	20.00	µg/L	-0.003
M3-PFBS	4.443	302.0 -> 99.0	20277	20.00	µg/L	0.006
M3-PFHxS	6.198	402.0 -> 99.0	16859	20.00	µg/L	0.002
M8-PFOS	7.596	507.0 -> 99.0	8704	20.00	µg/L	-0.006
M2-4:2FTS	5.285	329.0 -> 309.0	51685	20.00	µg/L	0.002
M2-6:2FTS	6.955	429.0 -> 409.0	38936	20.00	µg/L	-0.003
M2-8:2FTS	9.072	529.0 -> 509.0	83765	20.00	µg/L	-0.023
M3-MeFOSAA	7.644	573.0 -> 419.0	15333	20.00	µg/L	0.008
System Monitoring Compounds						
13C2-4:2FTS	5.285	329.0 -> 309.0	51684	19.28	µg/L	0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.4%		
13C2-6:2FTS	6.955	429.0 -> 409.0	38934	18.76	µg/L	-0.003
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.8%		
13C2-8:2FTS	9.072	529.0 -> 509.0	83034	18.90	µg/L	-0.023
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.5%		
13C2-PFDoDA	12.315	615.0 -> 570.0	38685	20.12	µg/L	-0.023
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%		
13C2-PFTeDA	14.756	715.0 -> 670.0	17793	20.28	µg/L	-0.018
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.4%		
13C3-PFBS	4.443	302.0 -> 99.0	20265	20.37	µg/L	0.006
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C3-PFHxS	6.198	402.0 -> 99.0	16857	20.31	µg/L	0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
13C4-PFBA	2.966	217.0 -> 172.0	129392	20.19	µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%		
13C4-PFHpA	6.204	367.0 -> 322.0	55483	20.41	µg/L	-0.005
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.0%		
13C5-PFHxA	5.353	318.0 -> 273.0	58147	20.50	µg/L	-0.008
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%		
13C5-PFPeA	4.312	268.0 -> 223.0	64137	20.50	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%		
13C6-PFDA	8.729	519.0 -> 474.0	59194	20.45	µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%		

Perfluorinated Compounds by LC/MS/MS

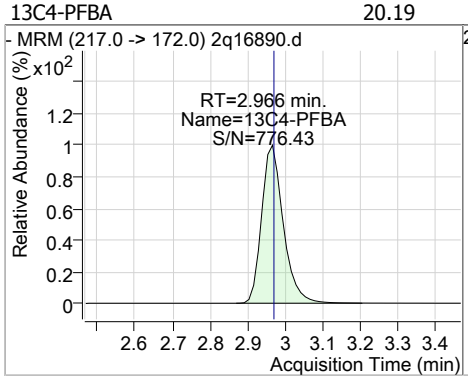
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.754	570.0 -> 525.0	48215	20.30	µg/L		-0.007
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%			
13C8-FOSA	7.142	506.0 -> 78.0	33180	21.17	µg/L		-0.003
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.8%			
13C8-PFOA	6.945	421.0 -> 376.0	28184	20.27	µg/L		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.4%			
13C8-PFOS	7.596	507.0 -> 99.0	8715	20.19	µg/L		-0.006
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%			
13C9-PFNA	7.665	472.0 -> 427.0	18989	19.72	µg/L		-0.003
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.6%			
d3-MeFOSAA	7.644	573.0 -> 419.0	15334	20.27	µg/L		0.008
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.3%			
M2-PFOA	6.946	415.0 -> 370.0	17631	20.00	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.598	503.0 -> 80.0	9476	19.97	ng/ml		-0.004
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%			
Target Compounds							**QValue**
4:2FTS	5.288	327.0 -> 307.0	2671	2.00	µg/L		88
6:2FTS	6.956	427.0 -> 407.0	2125	2.19	µg/L		97
8:2FTS	9.063	527.0 -> 507.0	4805	2.15	µg/L		99
EtFOSAA	7.769	584.0 -> 419.0	554	2.14	µg/L		95
FOSA	7.145	498.0 -> 78.0	1577	1.93	µg/L		97
MeFOSAA	7.645	570.0 -> 419.0	539	1.97	µg/L		79
PFBA	2.962	213.0 -> 169.0	2009	1.99	µg/L		100
PFBS	4.447	299.0 -> 80.0	2694	1.95	µg/L		98
PFDA	8.744	513.0 -> 469.0	2108	1.95	µg/L		99
PFDoDA	12.334	613.0 -> 569.0	2114	2.12	µg/L		95
PFDS	10.574	599.0 -> 80.0	846	2.07	µg/L		96
PFHpA	6.207	363.0 -> 319.0	4011	1.98	µg/L		99
PFHpS	6.903	449.0 -> 80.0	1021	1.98	µg/L		95
PFHxA	5.355	313.0 -> 269.0	2007	2.03	µg/L		98
PFHxS	6.188	399.0 -> 80.0	1951	1.94	µg/L	m	100
PFNA	7.666	463.0 -> 419.0	812	2.22	µg/L		92
PFNS	8.533	549.0 -> 80.0	1430	2.11	µg/L		99
PFOA	6.947	413.0 -> 369.0	1604	2.07	µg/L		100
PFOS	7.599	499.0 -> 80.0	1089	2.01	µg/L	m	99
PFPeA	4.304	263.0 -> 219.0	6401	2.09	µg/L		100
PFPeS	5.408	349.0 -> 80.0	1788	2.01	µg/L		99
PFTeDA	14.800	713.0 -> 669.0	1184	2.17	µg/L		95
PFTrDA	13.605	663.0 -> 619.0	1591	2.01	µg/L		98
PFUnDA	10.758	563.0 -> 519.0	2247	1.92	µg/L		95

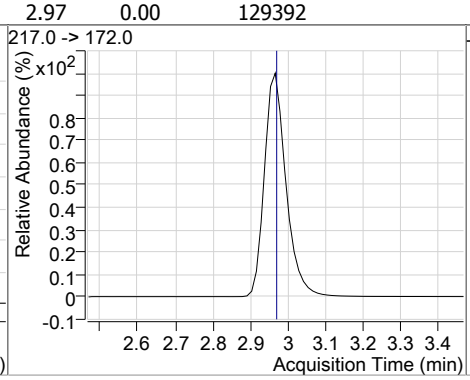
 # = Qualifier out of range, m = manually integrated, + = Area summed

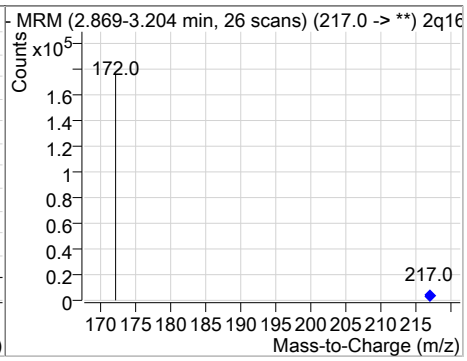
Perfluorinated Compounds by LC/MS/MS



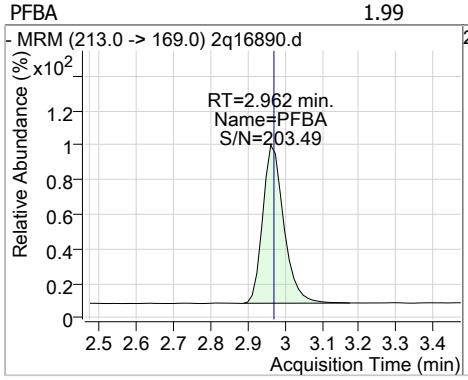
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.19	2.97	0.00	129392				

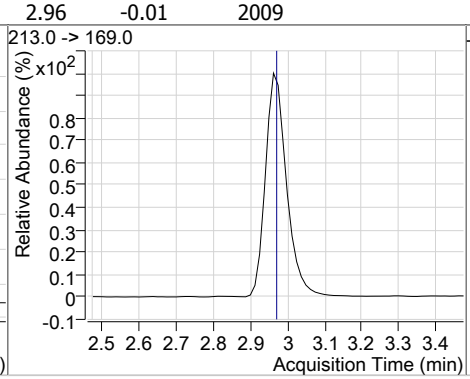


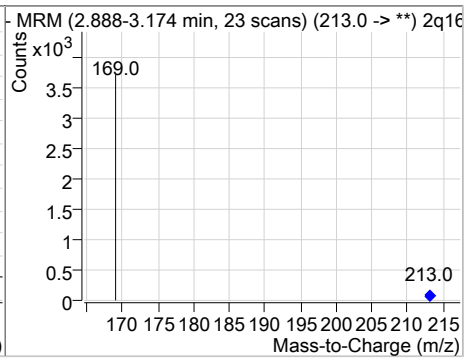




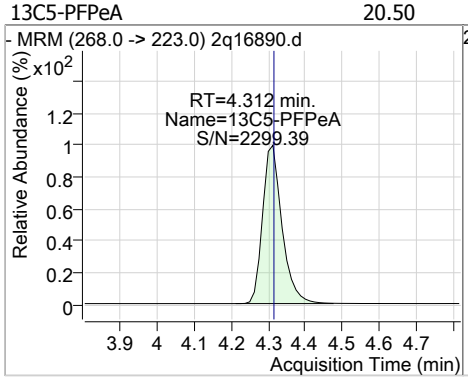
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.99	2.96	-0.01	2009				

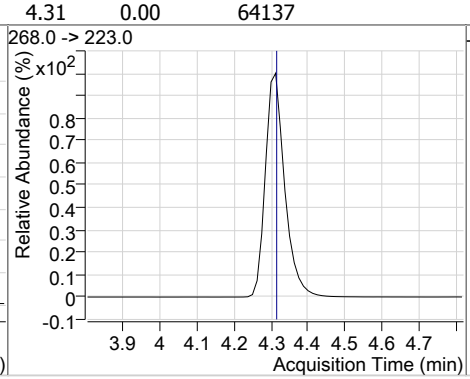


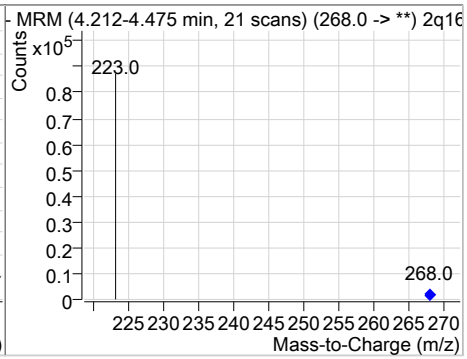




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.50	4.31	0.00	64137				

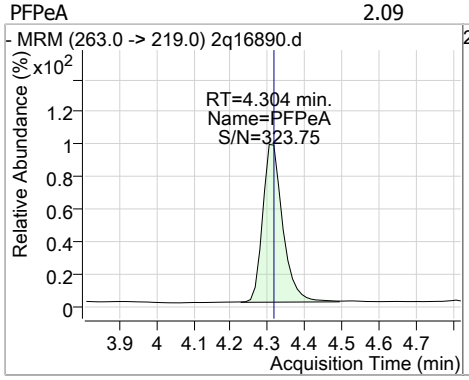


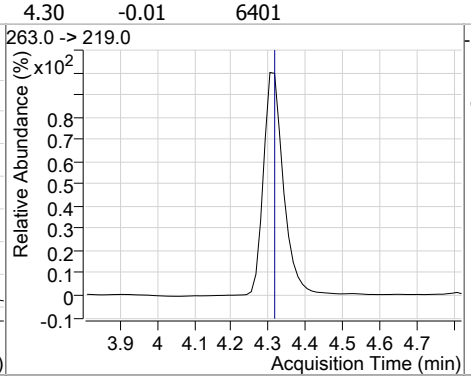


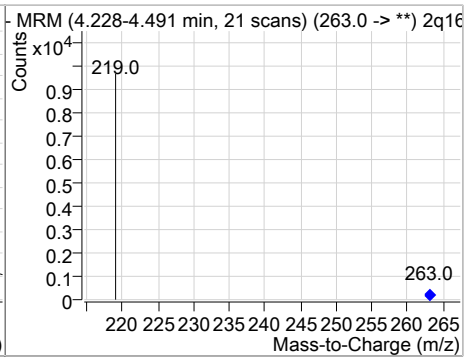


Perfluorinated Compounds by LC/MS/MS

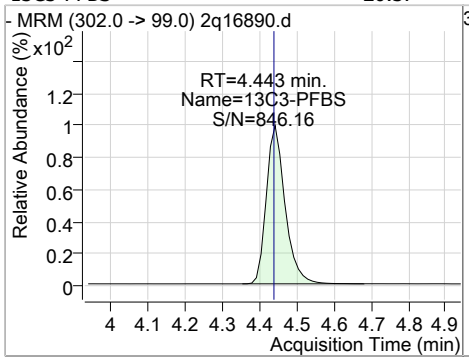
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	2.09	4.30	-0.01	6401				

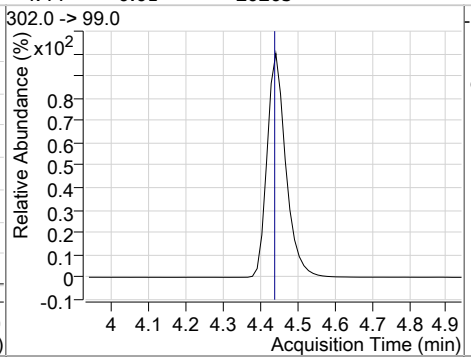


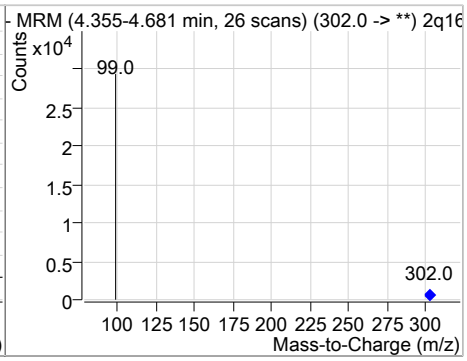




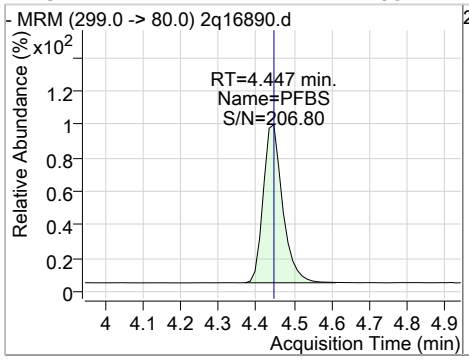
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.37	4.44	0.01	20265				

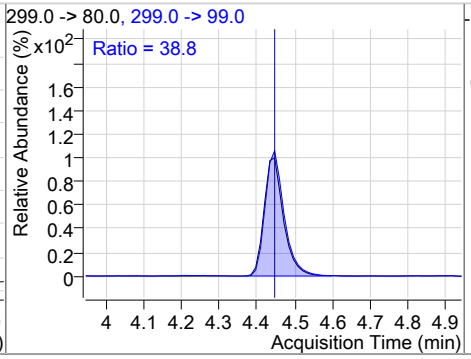


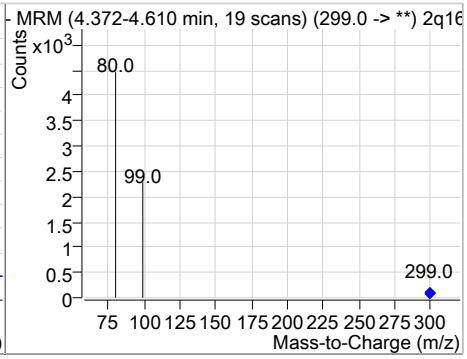




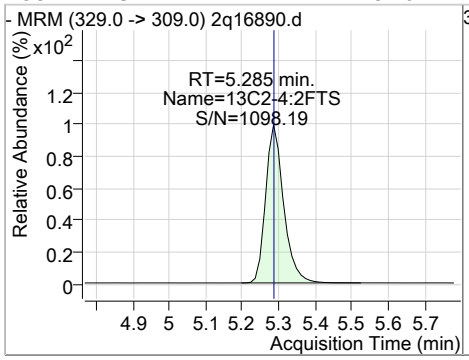
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.95	4.45	0.01	2694	299.0 -> 99.0	38.8	7.4	67.4

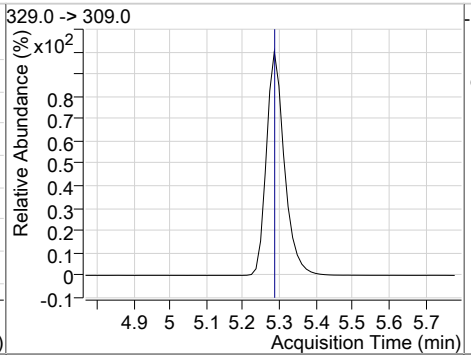


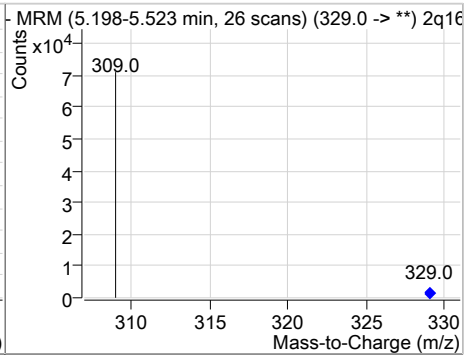




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.28	5.29	0.00	51684				

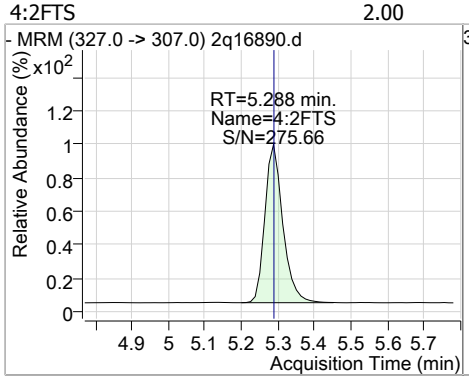


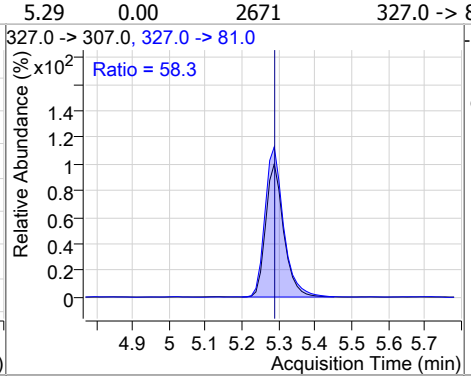


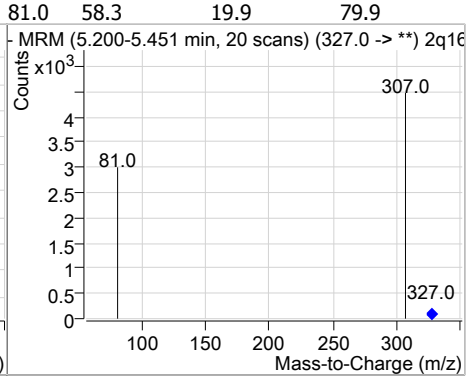


Perfluorinated Compounds by LC/MS/MS

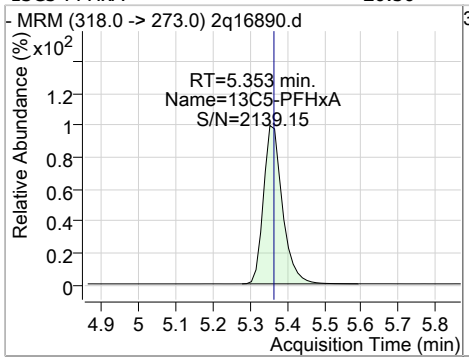
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	2.00	5.29	0.00	2671	327.0 -> 81.0	58.3	19.9	79.9

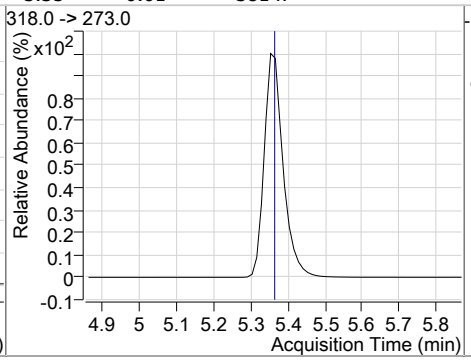


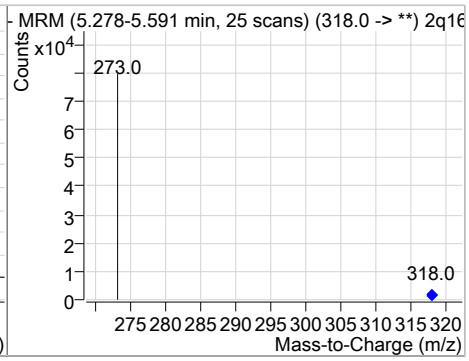




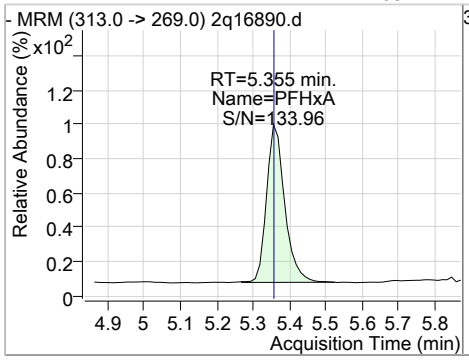
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.50	5.35	-0.01	58147				

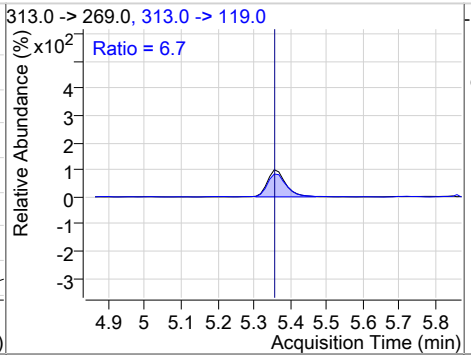


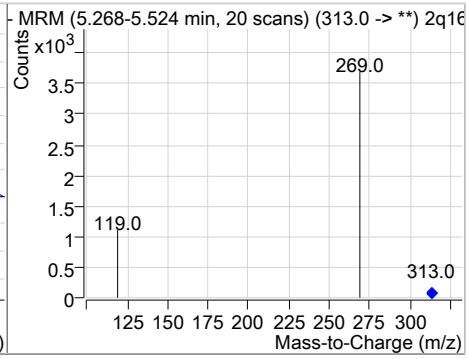




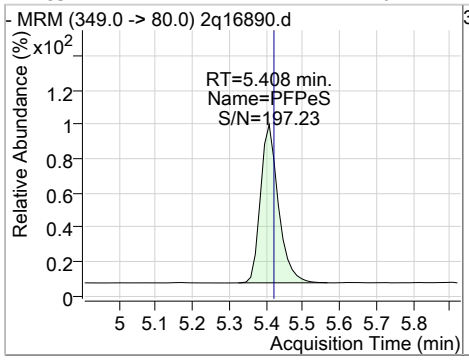
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.03	5.36	-0.01	2007	313.0 -> 119.0	6.7	0.0	37.6

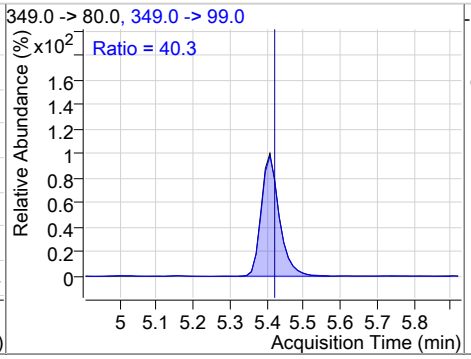


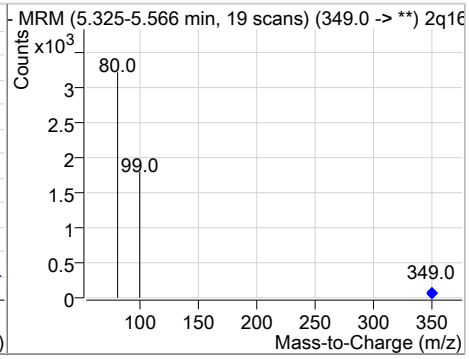




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.01	5.41	0.00	1788	349.0 -> 99.0	40.3	10.8	70.8

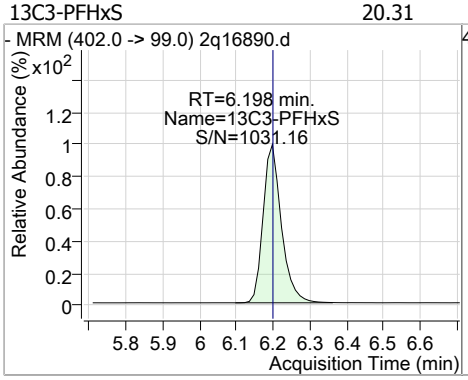


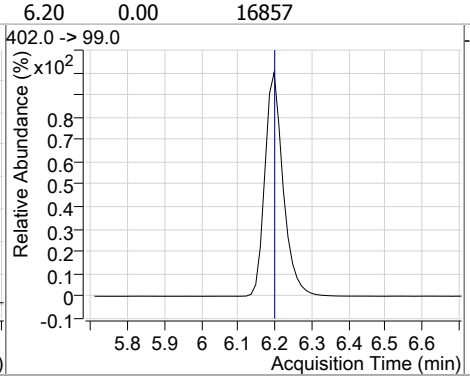


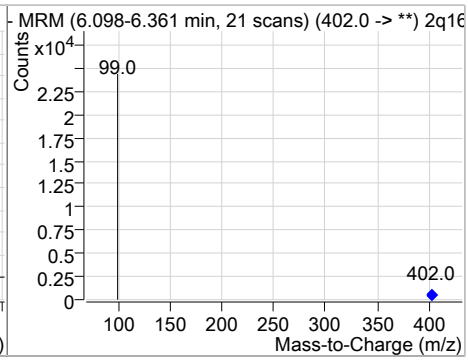


Perfluorinated Compounds by LC/MS/MS

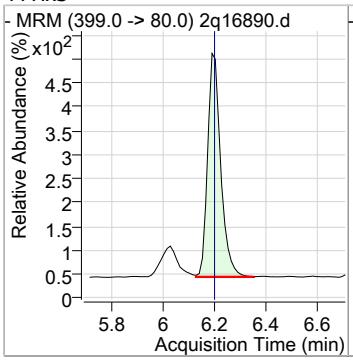
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.31	6.20	0.00	16857				

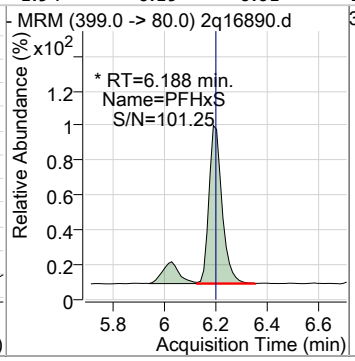


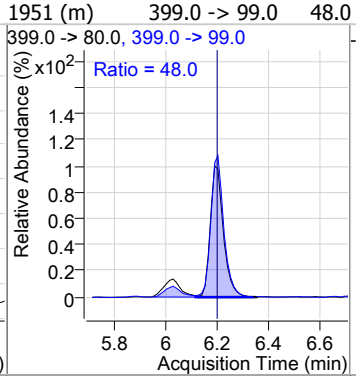


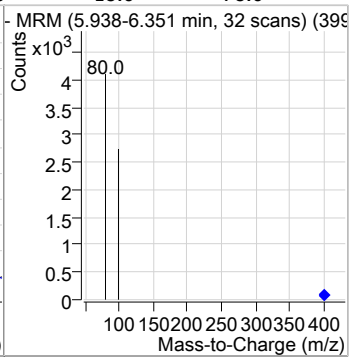


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.94	6.19	-0.01	1951 (m)	399.0 -> 99.0	48.0	18.0	78.0

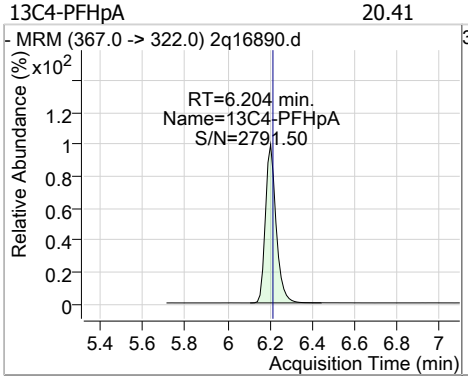


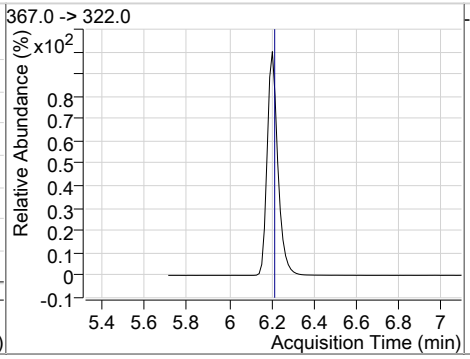


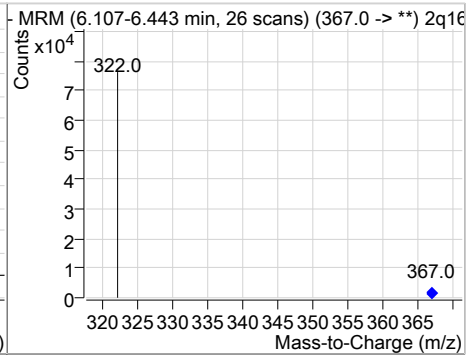




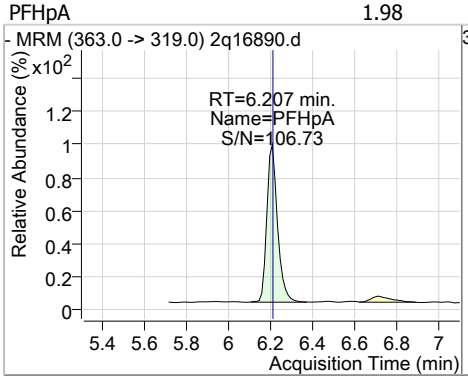
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.41	6.20	-0.01	55483				

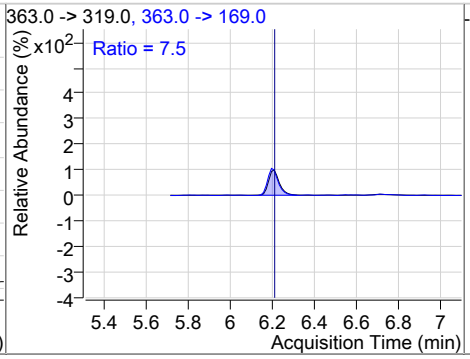


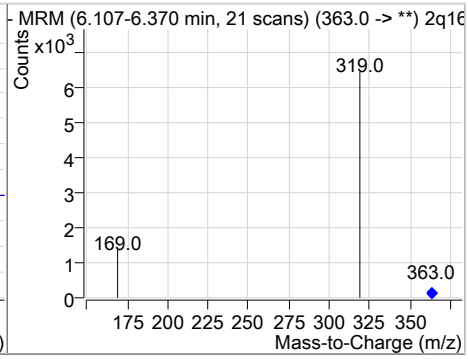




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.98	6.21	0.00	4011	363.0 -> 169.0	7.5	0.0	37.2

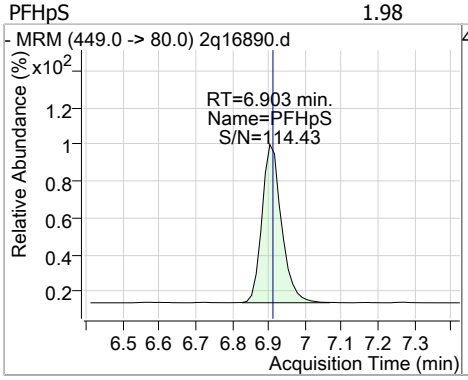


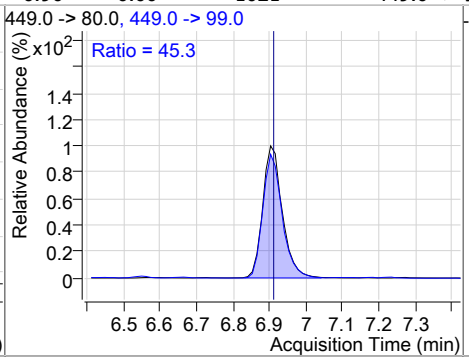


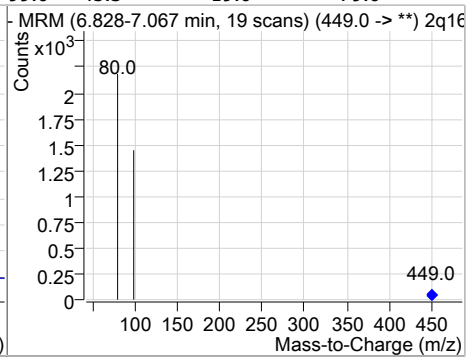


Perfluorinated Compounds by LC/MS/MS

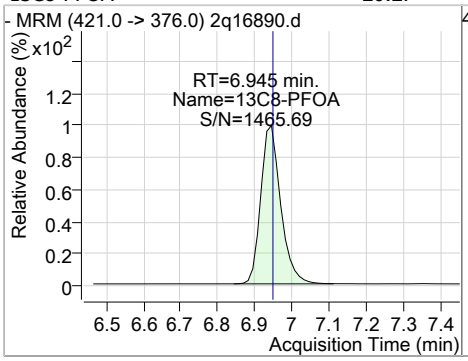
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.98	6.90	0.00	1021	449.0 -> 99.0	45.3	19.0	79.0

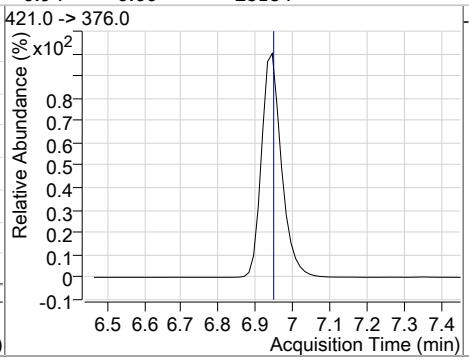


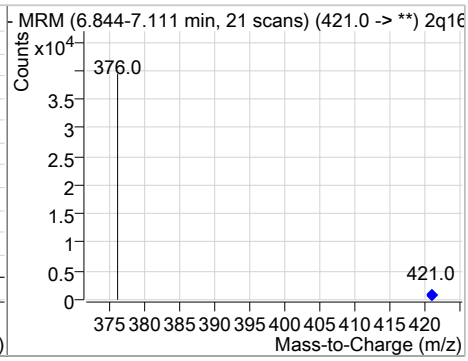




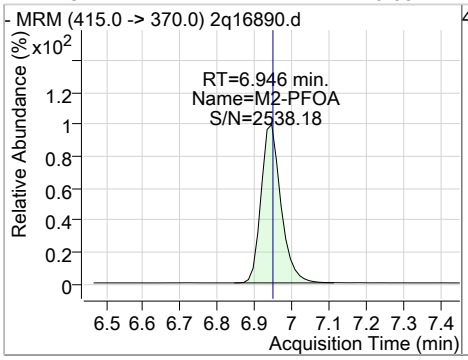
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.27	6.94	0.00	28184				

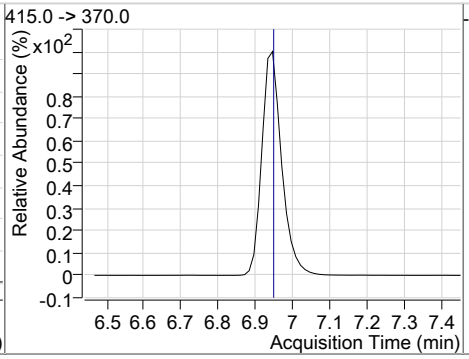


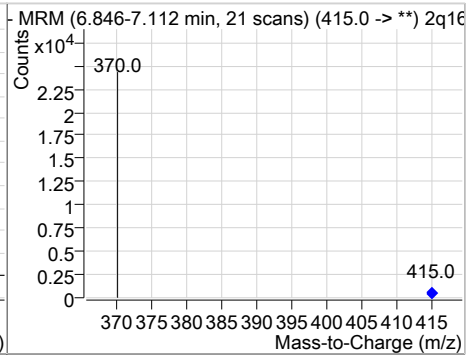




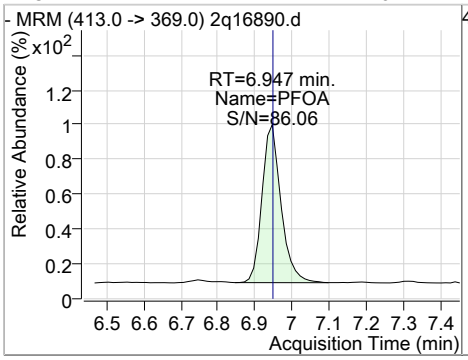
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.95	0.00	17631				

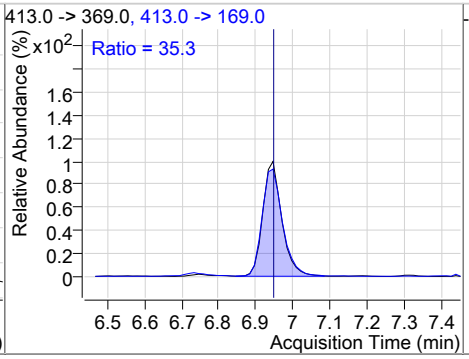


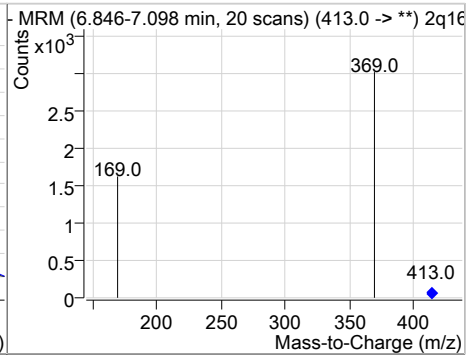




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.07	6.95	0.00	1604	413.0 -> 169.0	35.3	5.0	65.0

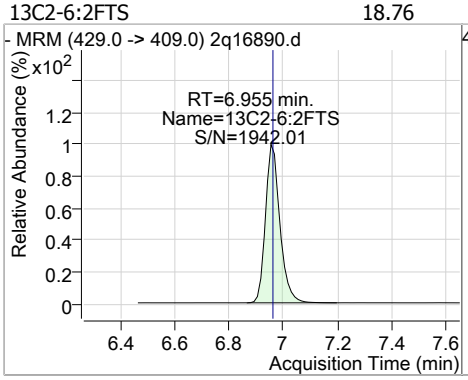


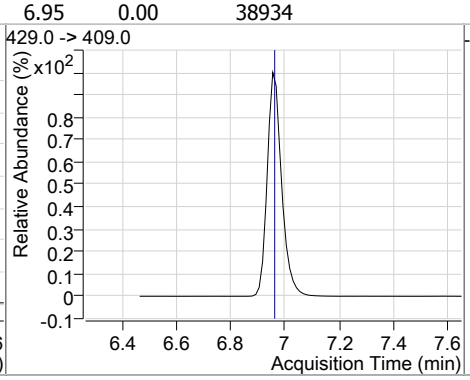


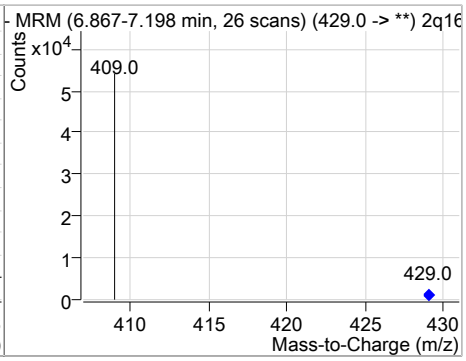


Perfluorinated Compounds by LC/MS/MS

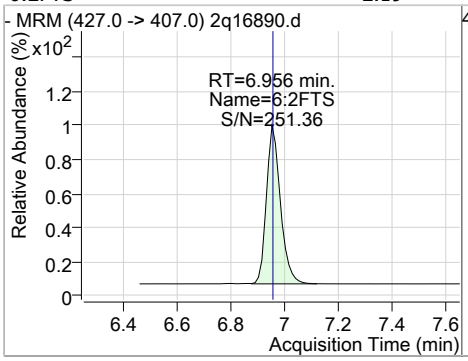
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.76	6.95	0.00	38934				

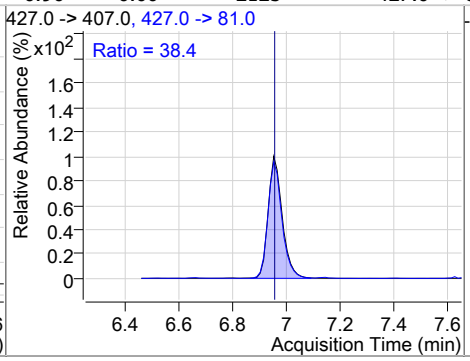


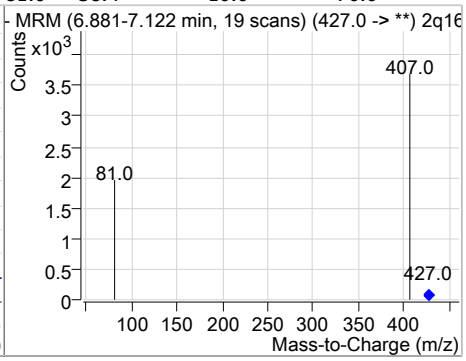




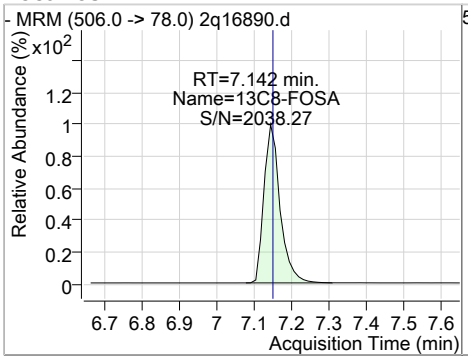
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	2.19	6.96	0.00	2125	427.0 -> 81.0	38.4	10.0	70.0

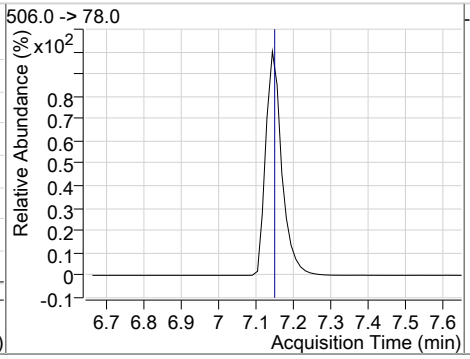


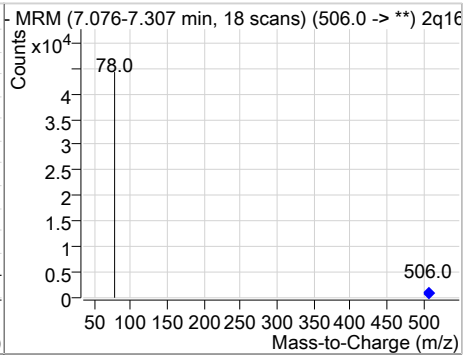




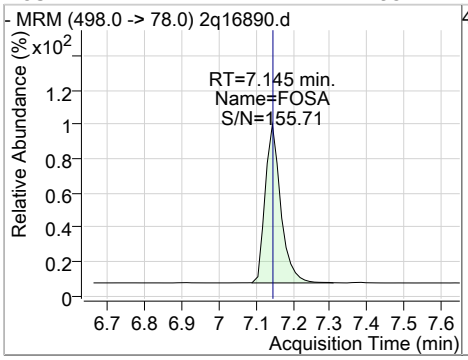
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.17	7.14	0.00	33180				

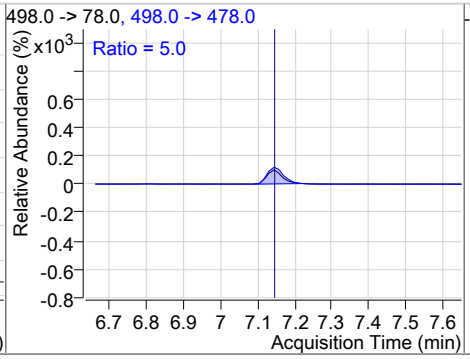


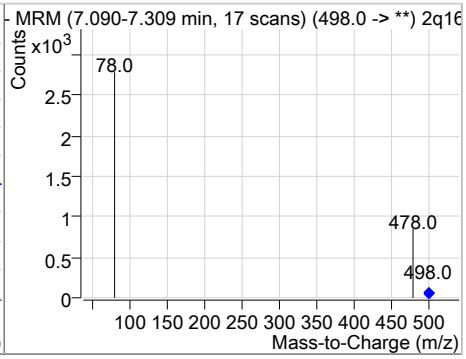




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.93	7.15	0.00	1577	498.0 -> 478.0	5.0	0.0	34.0

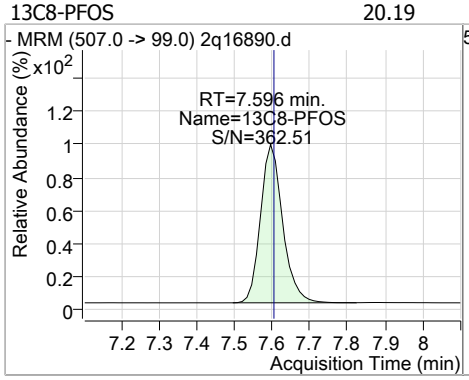


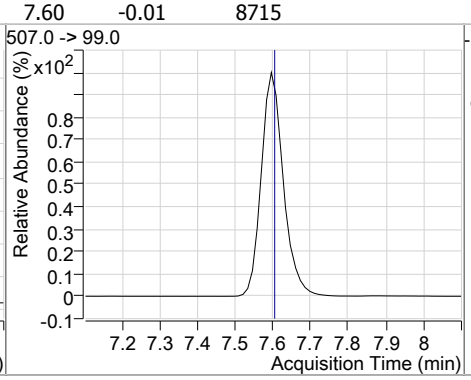


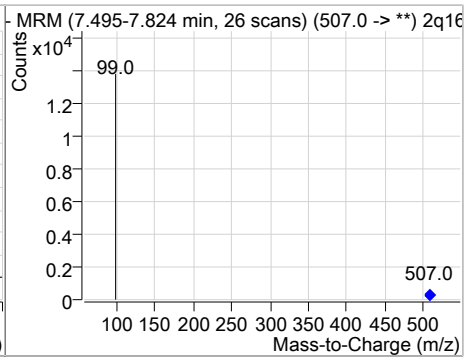


Perfluorinated Compounds by LC/MS/MS

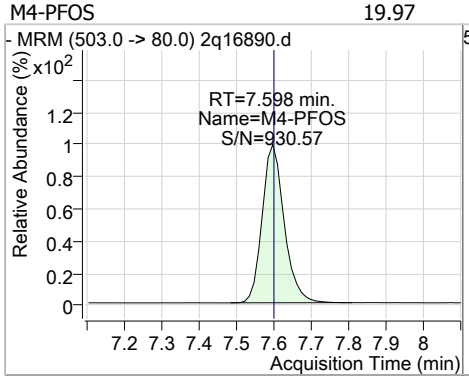
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.19	7.60	-0.01	8715				

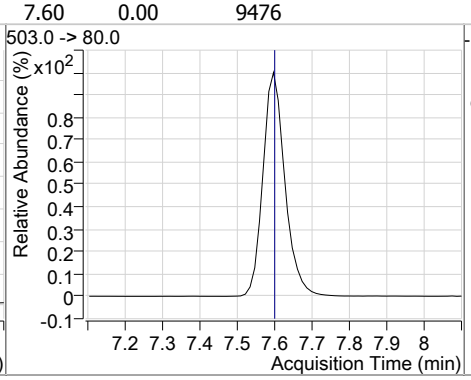


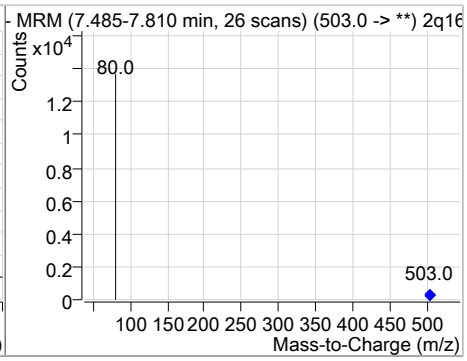




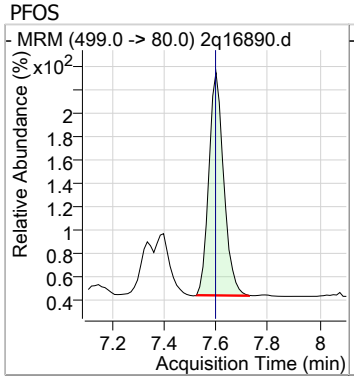
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	19.97	7.60	0.00	9476				

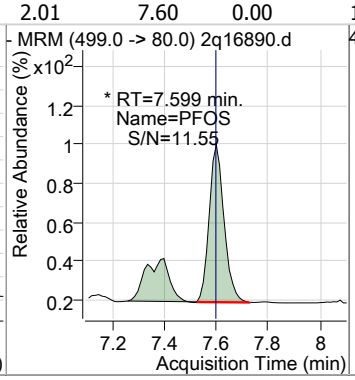


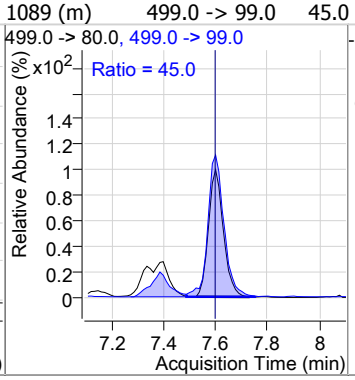


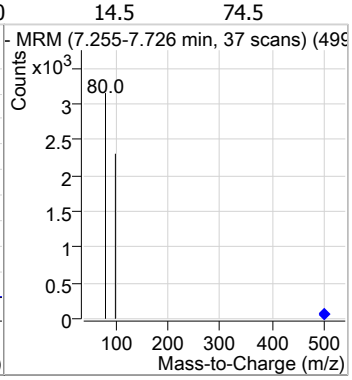


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.01	7.60	0.00	1089 (m)	499.0 -> 99.0	45.0	14.5	74.5

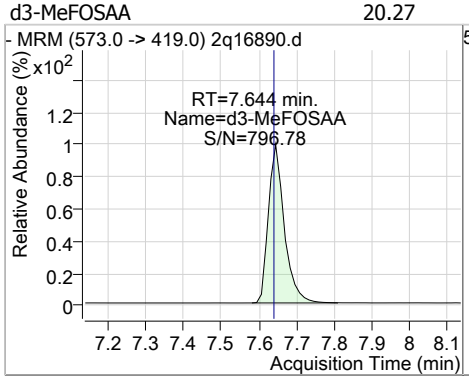


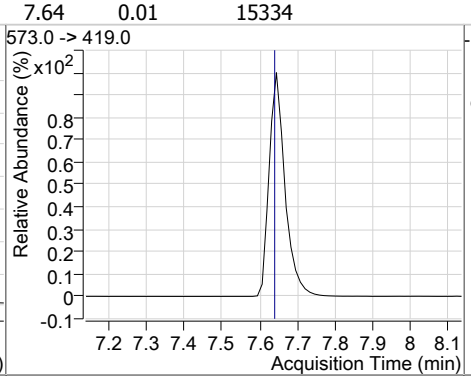


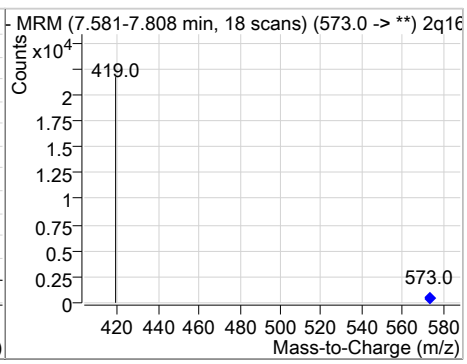




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.27	7.64	0.01	15334				

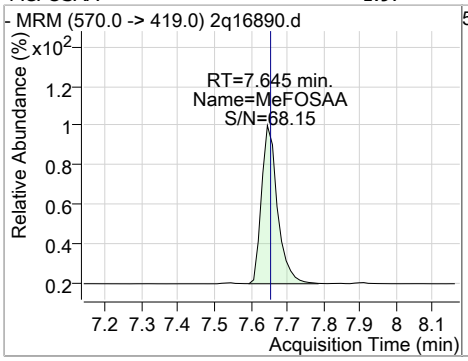


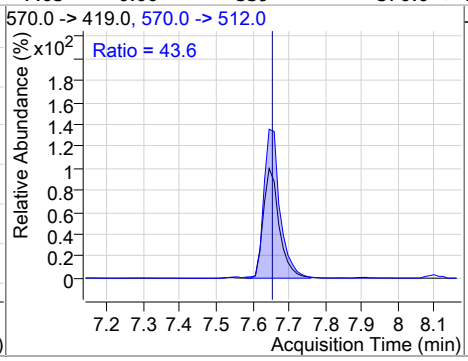


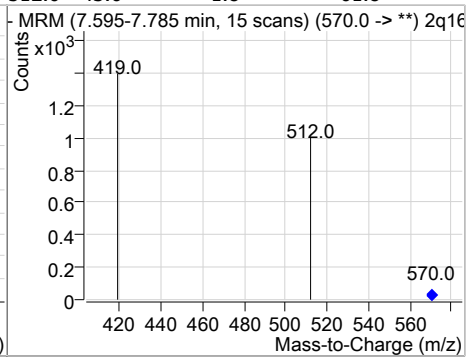


Perfluorinated Compounds by LC/MS/MS

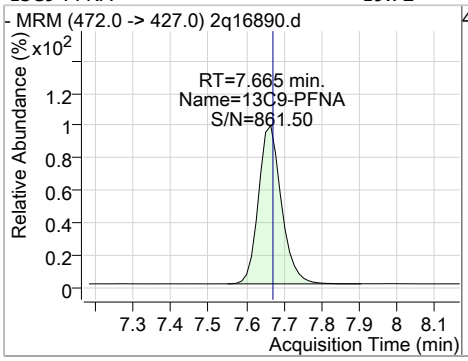
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	1.97	7.65	0.00	539	570.0 -> 512.0	43.6	1.8	61.8

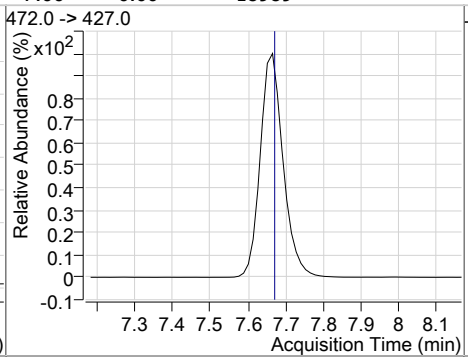


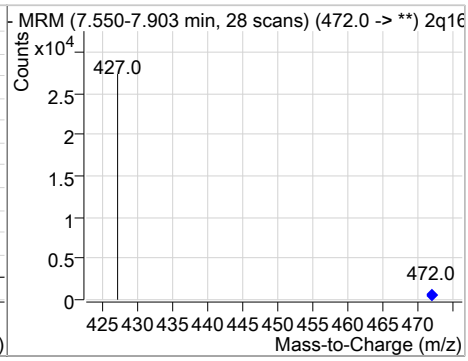




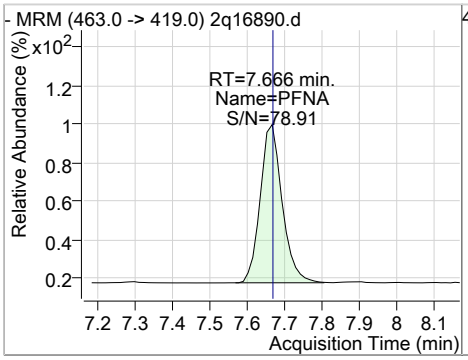
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.72	7.66	0.00	18989				

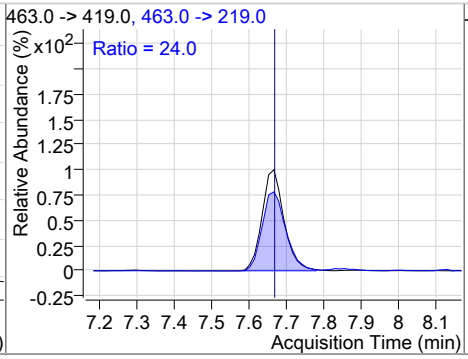


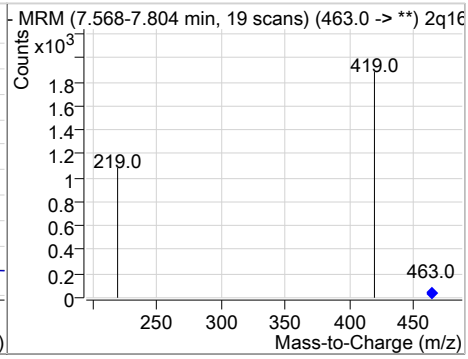




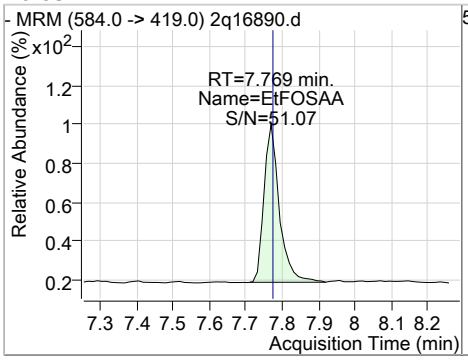
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.22	7.67	0.00	812	463.0 -> 219.0	24.0	0.0	58.4

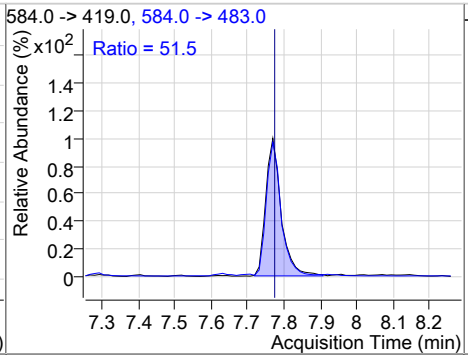


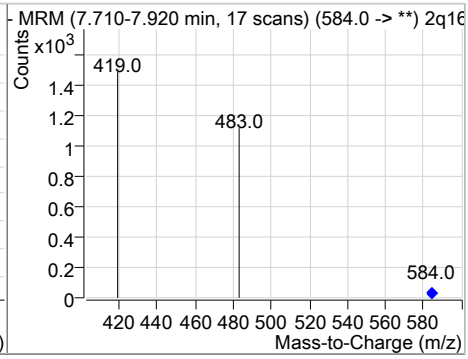




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.14	7.77	0.01	554	584.0 -> 483.0	51.5	24.8	84.8

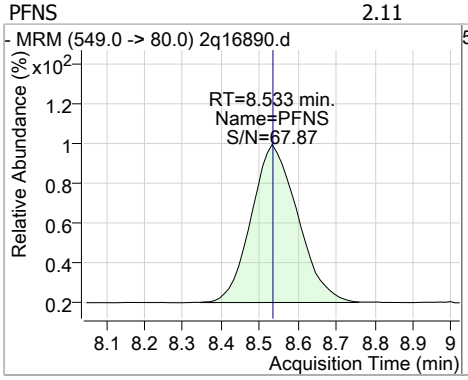


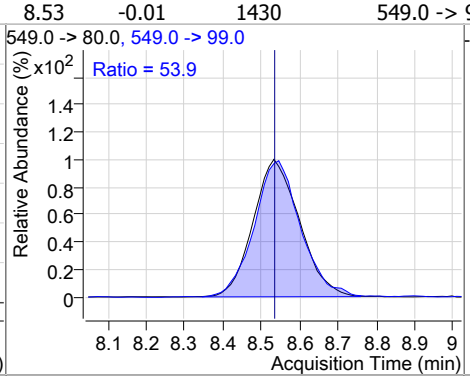


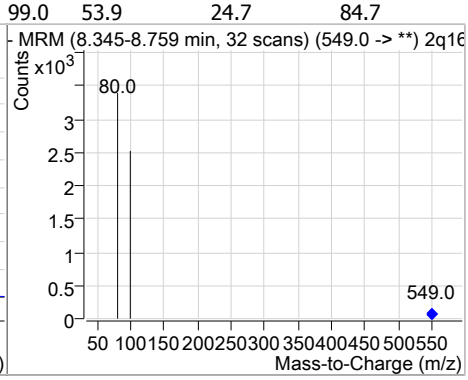


Perfluorinated Compounds by LC/MS/MS

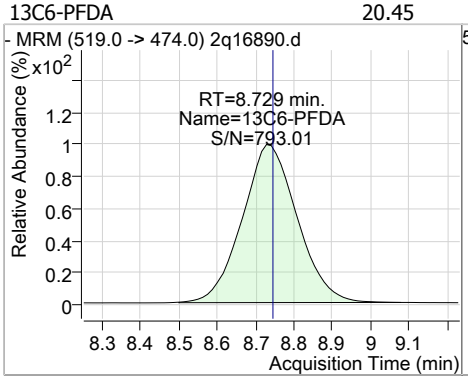
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.11	8.53	-0.01	1430	549.0 -> 99.0	53.9	24.7	84.7

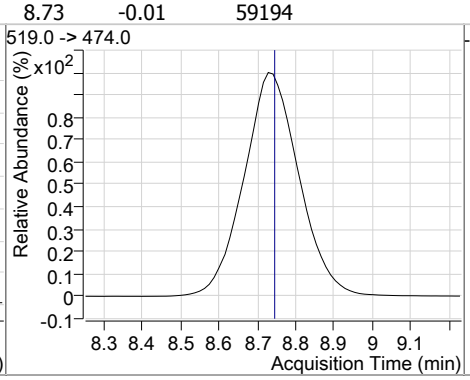


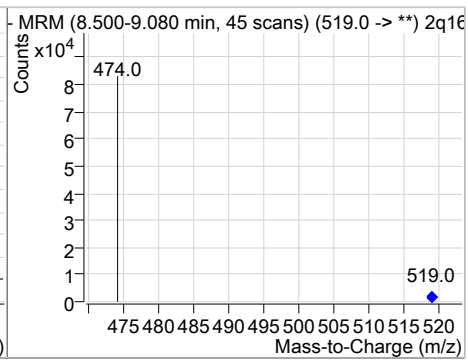




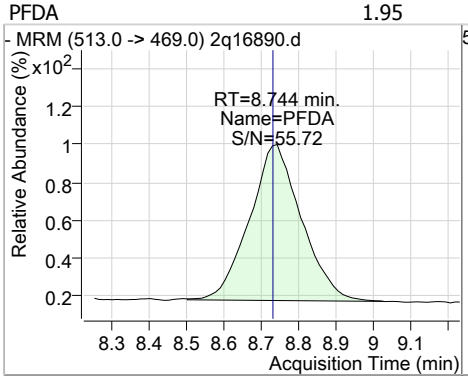
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.45	8.73	-0.01	59194				

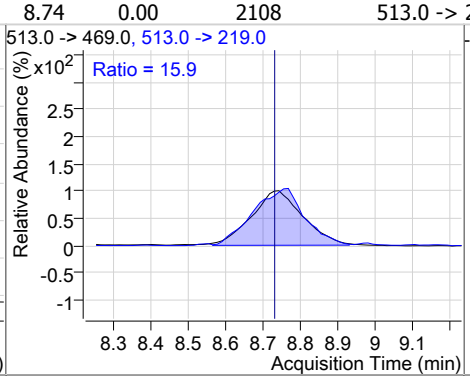


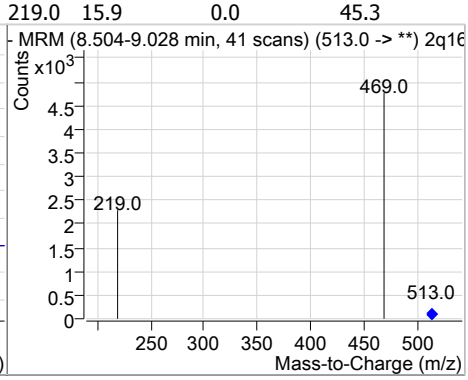




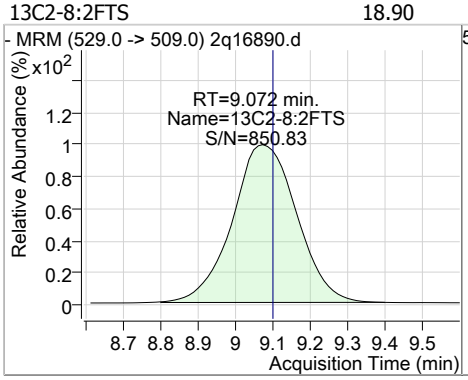
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	1.95	8.74	0.00	2108	513.0 -> 219.0	15.9	0.0	45.3

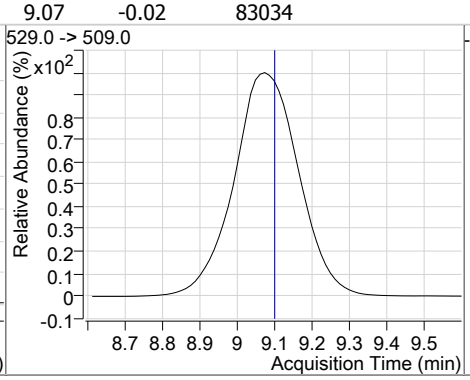


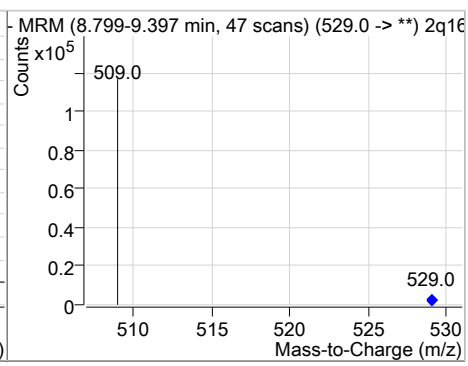




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.90	9.07	-0.02	83034				

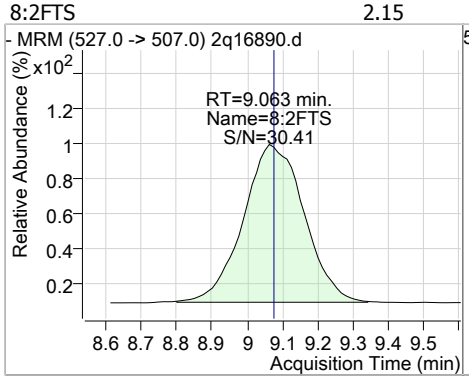


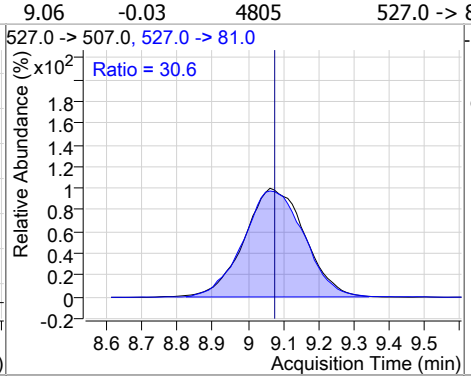


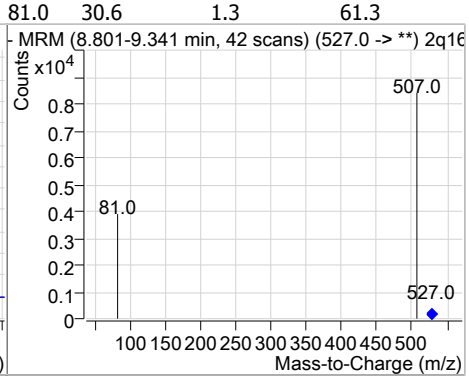


Perfluorinated Compounds by LC/MS/MS

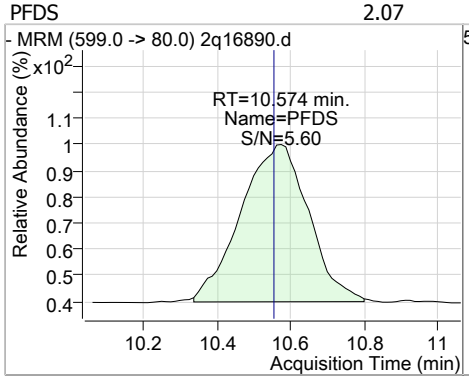
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	2.15	9.06	-0.03	4805	527.0 -> 81.0	30.6	1.3	61.3

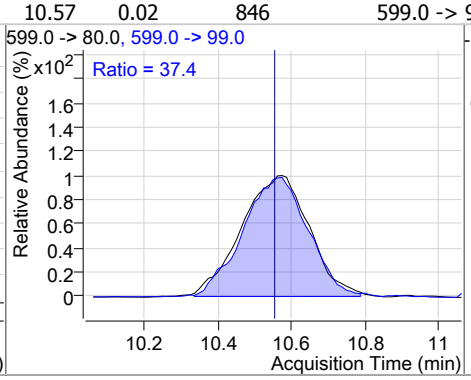


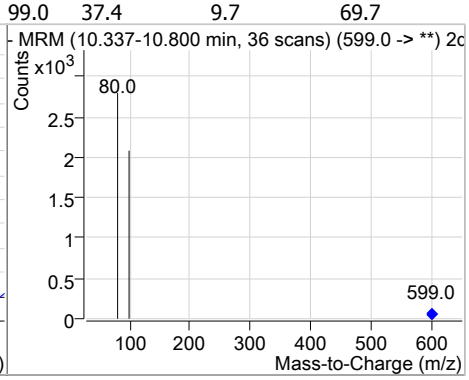




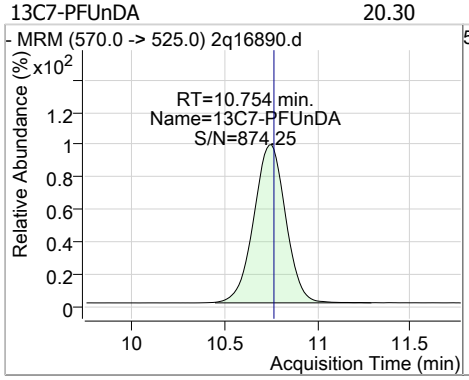
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.07	10.57	0.02	846	599.0 -> 99.0	37.4	9.7	69.7

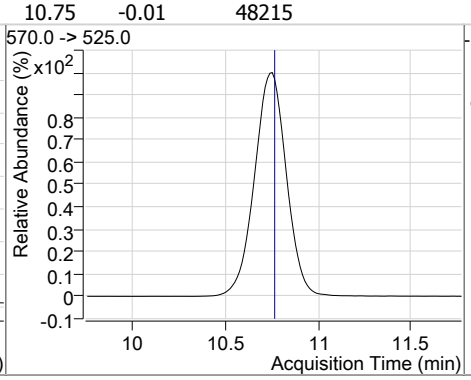


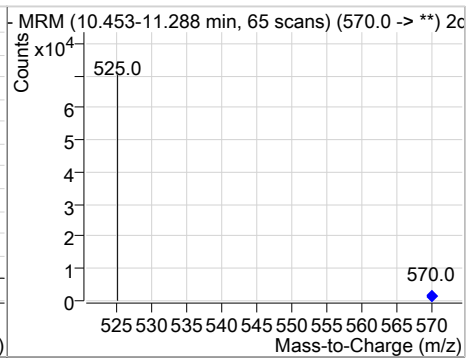




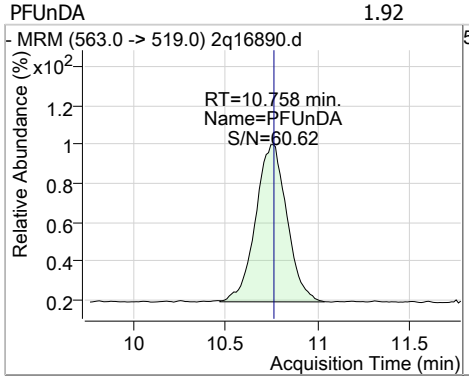
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.30	10.75	-0.01	48215				

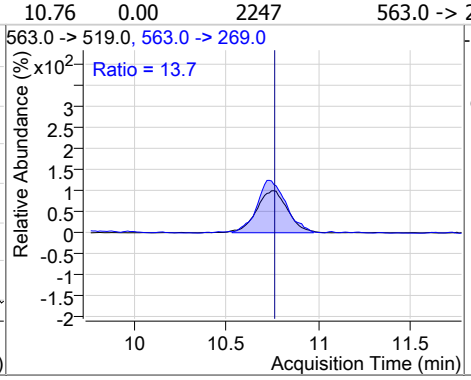


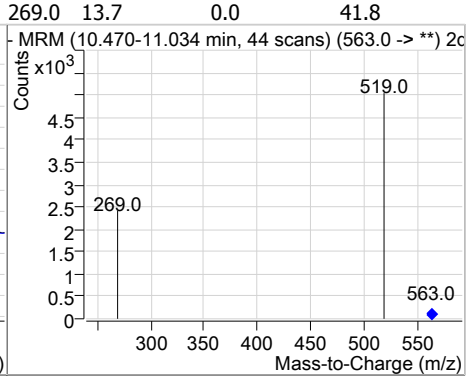




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	1.92	10.76	0.00	2247	563.0 -> 269.0	13.7	0.0	41.8

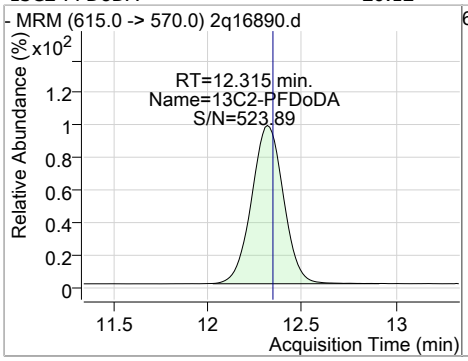


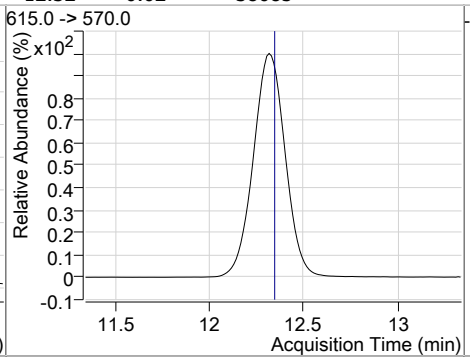


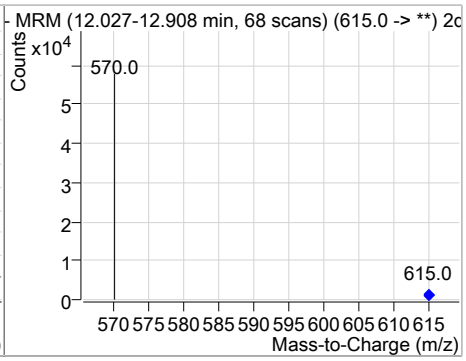


Perfluorinated Compounds by LC/MS/MS

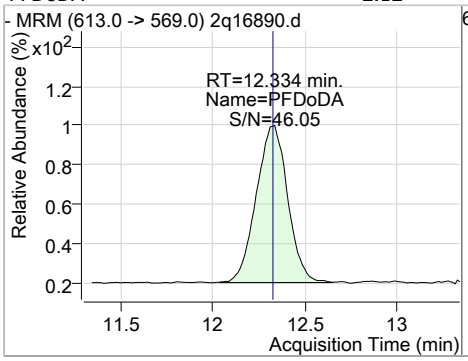
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.12	12.32	-0.02	38685				

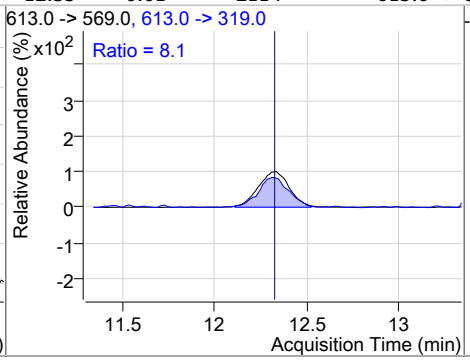


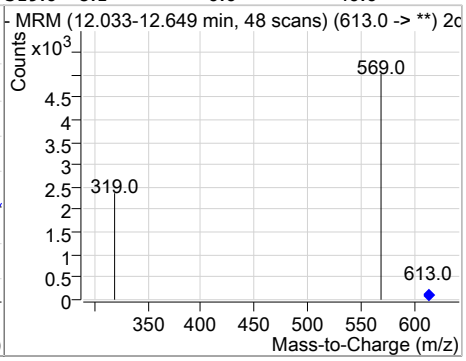




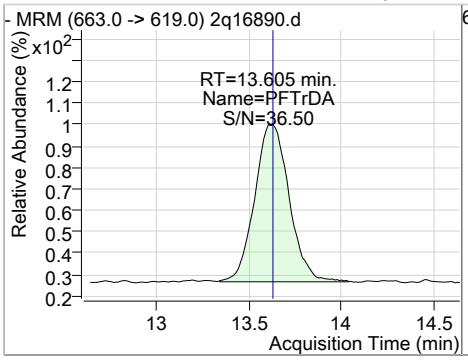
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.12	12.33	-0.01	2114	613.0 -> 319.0	8.1	0.0	40.0

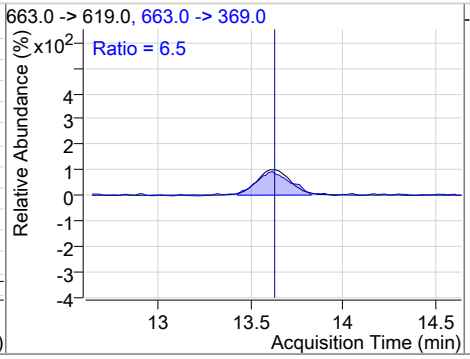


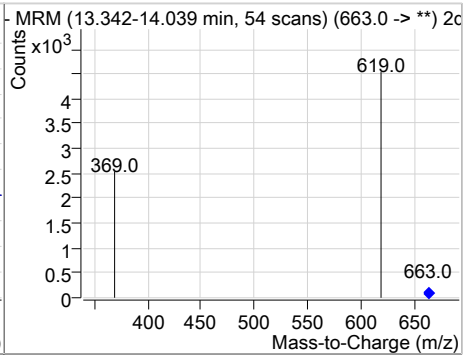




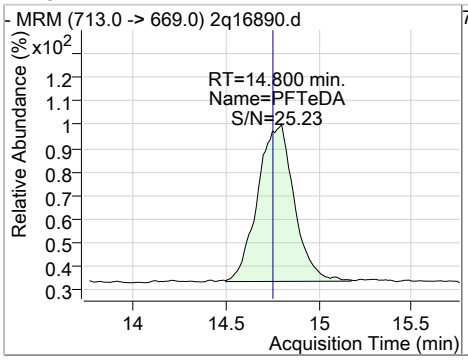
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.01	13.60	-0.03	1591	663.0 -> 369.0	6.5	0.0	37.1

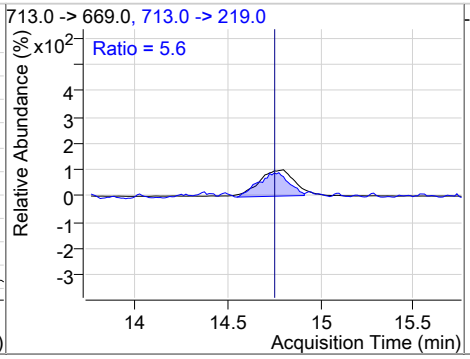


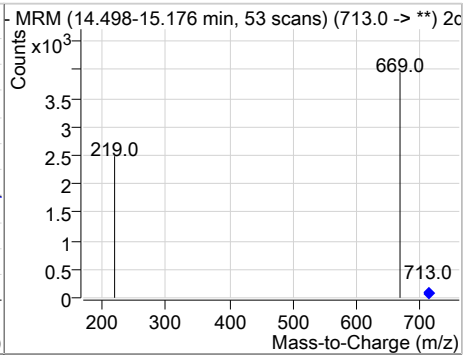




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.17	14.80	0.04	1184	713.0 -> 219.0	5.6	0.0	37.4

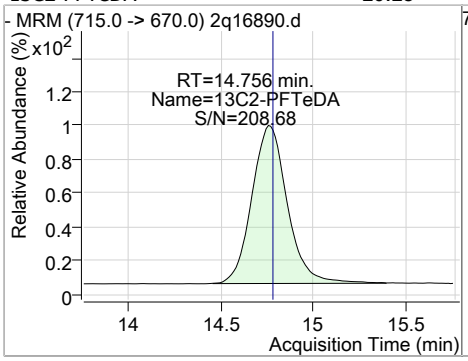


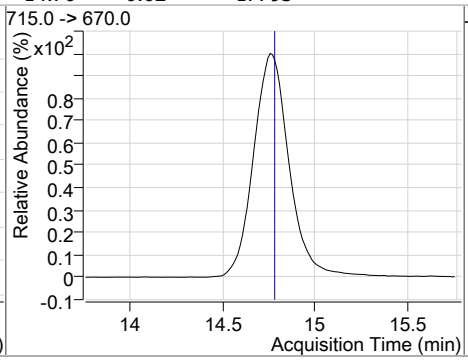


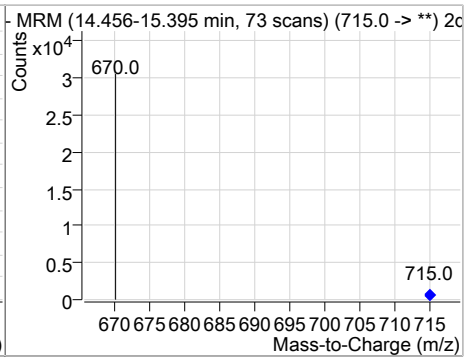


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.28	14.76	-0.02	17793				







Manual Integration Approval Summary

Sample Number:	S2Q294-IC294	**Method:**	EPA 537M QSM5.1 B-15
Lab FileID:	2Q16890.D	**Analyst approved:**	07/11/18 14:37 Natasha Gumtie
Injection Time:	07/10/18 16:52	**Supervisor approved:**	07/11/18 16:54 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.19	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.60	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/11/18 16:54

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16891.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/10/2018 5:12:50 PM
Sample Name : ic294-5
Vial : Vial 5
DA Method File : PFC_ID_071018_S2Q294.quantmethod.xml
Batch Name : s2q294.batch.bin
Sample Information : op70743,S2Q294,130,,,1.0,1,water

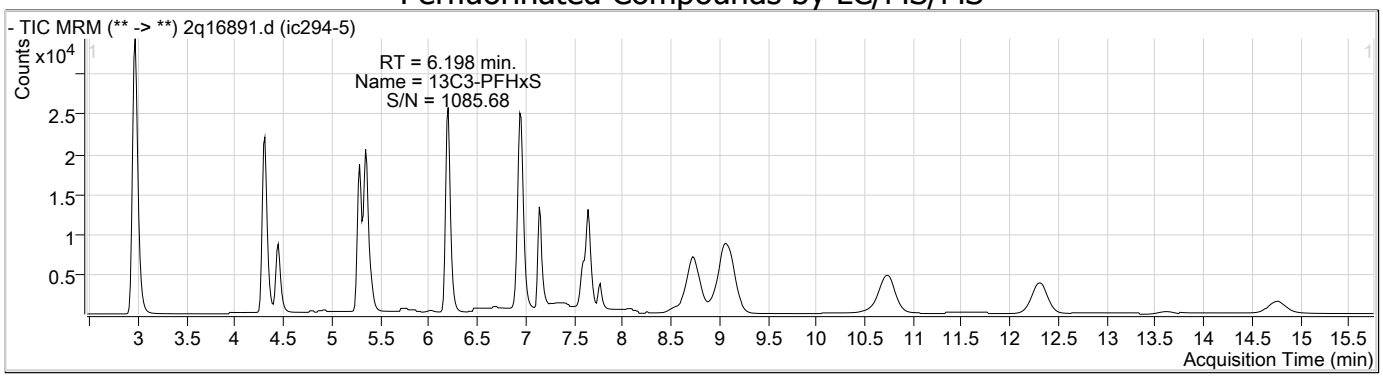
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-PFOA	6.946	415.0 -> 370.0	18400	20.00 µg/L	0.000
13C4-PFOS	7.598	503.0 -> 80.0	9841	20.00 µg/L	-0.004
M4-PFBA	2.966	217.0 -> 172.0	131281	20.00 µg/L	-0.001
M5-PFPeA	4.312	268.0 -> 223.0	64206	20.00 µg/L	0.000
M5-PFHxA	5.353	318.0 -> 273.0	59639	20.00 µg/L	-0.008
M4-PFHpA	6.204	367.0 -> 322.0	56096	20.00 µg/L	-0.005
M8-PFOA	6.945	421.0 -> 376.0	28318	20.00 µg/L	-0.001
M9-PFNA	7.665	472.0 -> 427.0	20015	20.00 µg/L	-0.003
M6-PFDA	8.729	519.0 -> 474.0	60331	20.00 µg/L	-0.014
M7-PFUnDA	10.741	570.0 -> 525.0	49482	20.00 µg/L	-0.019
M2-PFDoDA	12.303	615.0 -> 570.0	39557	20.00 µg/L	-0.036
M2-PFTeDA	14.769	715.0 -> 670.0	17901	20.00 µg/L	-0.006
M8-FOSA	7.142	506.0 -> 78.0	33531	20.00 µg/L	-0.003
M3-PFBS	4.443	302.0 -> 99.0	20452	20.00 µg/L	0.006
M3-PFHxS	6.198	402.0 -> 99.0	16926	20.00 µg/L	0.002
M8-PFOS	7.596	507.0 -> 99.0	9011	20.00 µg/L	-0.006
M2-4:2FTS	5.285	329.0 -> 309.0	52531	20.00 µg/L	0.002
M2-6:2FTS	6.955	429.0 -> 409.0	40752	20.00 µg/L	-0.003
M2-8:2FTS	9.059	529.0 -> 509.0	85549	20.00 µg/L	-0.036
M3-MeFOSAA	7.644	573.0 -> 419.0	15474	20.00 µg/L	0.008
System Monitoring Compounds					
13C2-4:2FTS	5.285	329.0 -> 309.0	52528	19.60 µg/L	0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.0%	
13C2-6:2FTS	6.955	429.0 -> 409.0	40749	19.63 µg/L	-0.003
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.2%	
13C2-8:2FTS	9.059	529.0 -> 509.0	85433	19.45 µg/L	-0.036
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.2%	
13C2-PFDoDA	12.303	615.0 -> 570.0	39571	20.58 µg/L	-0.036
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.9%	
13C2-PFTeDA	14.769	715.0 -> 670.0	17987	20.51 µg/L	-0.006
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C3-PFBS	4.443	302.0 -> 99.0	20436	20.54 µg/L	0.006
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C3-PFHxS	6.198	402.0 -> 99.0	16930	20.40 µg/L	0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.0%	
13C4-PFBA	2.966	217.0 -> 172.0	131236	20.48 µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C4-PFHpA	6.204	367.0 -> 322.0	56156	20.65 µg/L	-0.005
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%	
13C5-PFHxA	5.353	318.0 -> 273.0	59625	21.03 µg/L	-0.008
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.1%	
13C5-PFPeA	4.312	268.0 -> 223.0	64239	20.54 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C6-PFDA	8.729	519.0 -> 474.0	59999	20.73 µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.7%	

Perfluorinated Compounds by LC/MS/MS

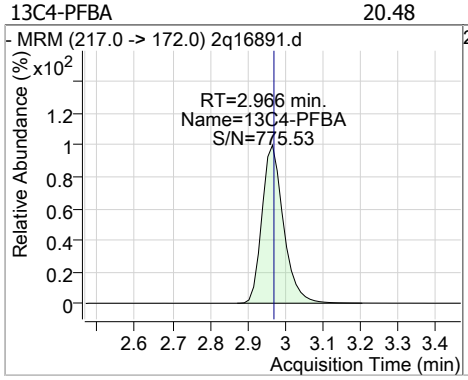
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.741	570.0 -> 525.0	49459	20.82	µg/L		-0.019
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.1%			
13C8-FOSA	7.142	506.0 -> 78.0	33532	21.39	µg/L		-0.003
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.9%			
13C8-PFOA	6.945	421.0 -> 376.0	28322	20.37	µg/L		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%			
13C8-PFOS	7.596	507.0 -> 99.0	9006	20.87	µg/L		-0.006
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.3%			
13C9-PFNA	7.665	472.0 -> 427.0	20016	20.78	µg/L		-0.003
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.9%			
d3-MeFOSAA	7.644	573.0 -> 419.0	15485	20.47	µg/L		0.008
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%			
M2-PFOA	6.946	415.0 -> 370.0	18402	20.01	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.598	503.0 -> 80.0	9848	20.02	ng/ml		-0.004
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
Target Compounds							**QValue**
4:2FTS	5.288	327.0 -> 307.0	6819	5.05	µg/L		98
6:2FTS	6.956	427.0 -> 407.0	4885	4.83	µg/L		98
8:2FTS	9.063	527.0 -> 507.0	11900	5.23	µg/L		97
EtFOSAA	7.769	584.0 -> 419.0	1216	4.66	µg/L		96
FOSA	7.145	498.0 -> 78.0	3996	4.85	µg/L		100
MeFOSAA	7.645	570.0 -> 419.0	1469	5.31	µg/L		94
PFBA	2.962	213.0 -> 169.0	4939	4.82	µg/L		100
PFBS	4.447	299.0 -> 80.0	6676	4.78	µg/L		100
PFDA	8.731	513.0 -> 469.0	5403	4.93	µg/L		100
PFDoDA	12.309	613.0 -> 569.0	5074	4.97	µg/L		98
PFDS	10.537	599.0 -> 80.0	2042	4.88	µg/L		99
PFHpA	6.207	363.0 -> 319.0	9919	4.83	µg/L		100
PFHpS	6.903	449.0 -> 80.0	2538	4.90	µg/L		98
PFHxA	5.355	313.0 -> 269.0	4930	4.87	µg/L		97
PFHxS	6.188	399.0 -> 80.0	4915	4.86	µg/L	m	99
PFNA	7.666	463.0 -> 419.0	1935	5.02	µg/L		89
PFNS	8.533	549.0 -> 80.0	3427	4.89	µg/L		99
PFOA	6.947	413.0 -> 369.0	3925	5.05	µg/L		96
PFOS	7.599	499.0 -> 80.0	2528	4.51	µg/L	m	92
PFPeA	4.316	263.0 -> 219.0	15197	4.95	µg/L		100
PFPeS	5.408	349.0 -> 80.0	4256	4.75	µg/L		99
PFTeDA	14.763	713.0 -> 669.0	2701	4.93	µg/L		98
PFTrDA	13.617	663.0 -> 619.0	3932	4.94	µg/L		97
PFUnDA	10.733	563.0 -> 519.0	5731	4.78	µg/L		98

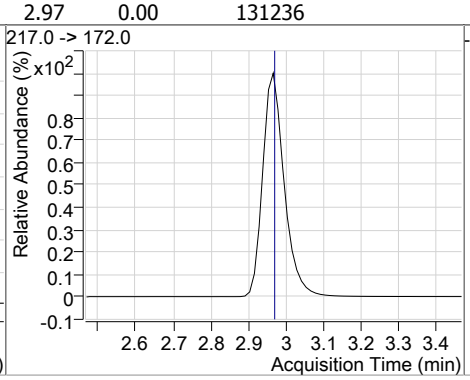
 # = Qualifier out of range, m = manually integrated, + = Area summed

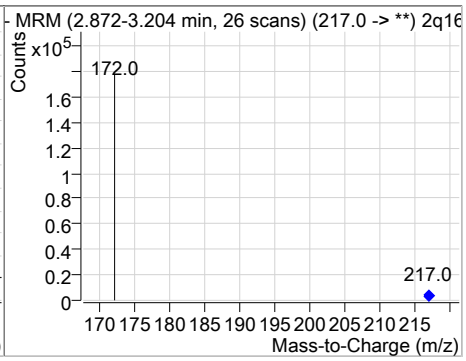
Perfluorinated Compounds by LC/MS/MS



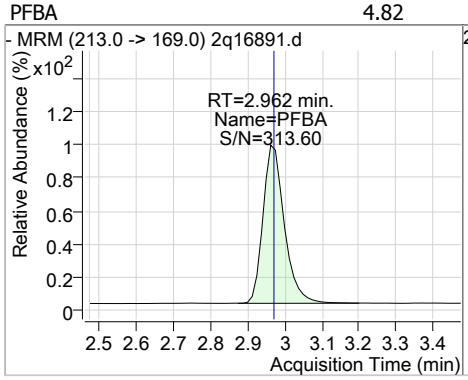
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.48	2.97	0.00	131236				

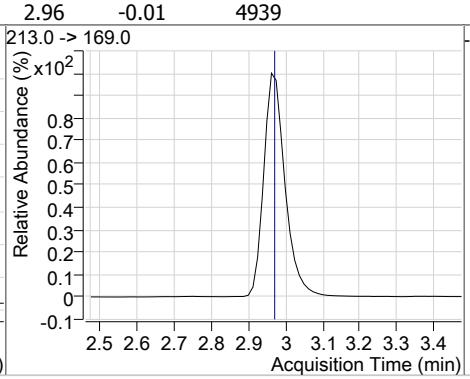


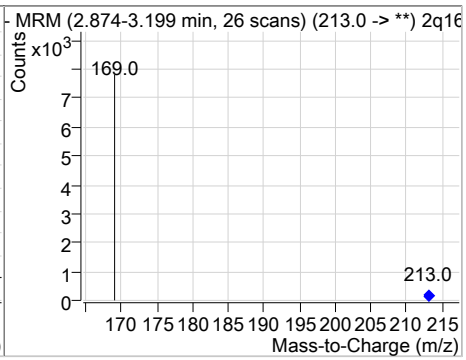




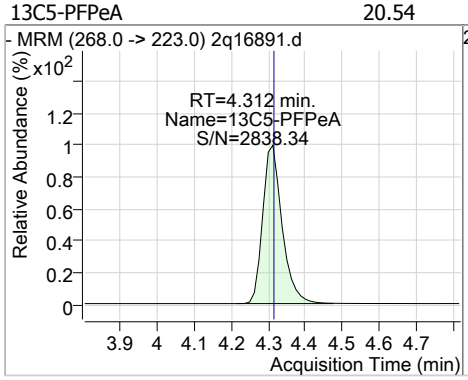
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	4.82	2.96	-0.01	4939				

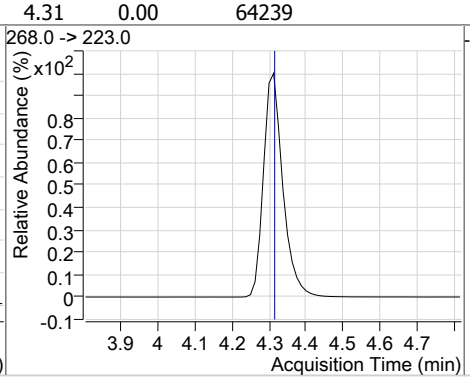


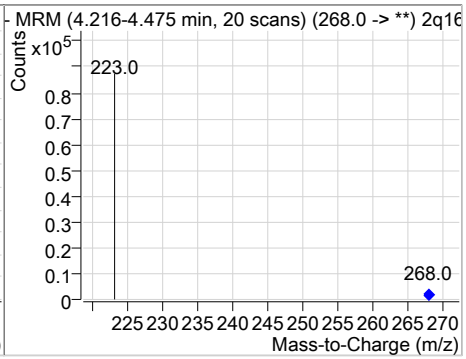




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.54	4.31	0.00	64239				

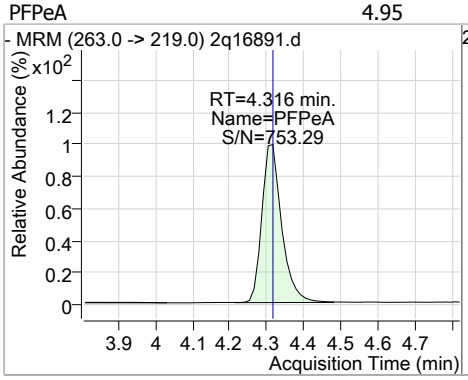


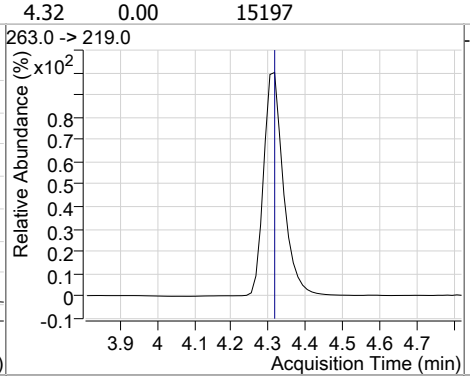


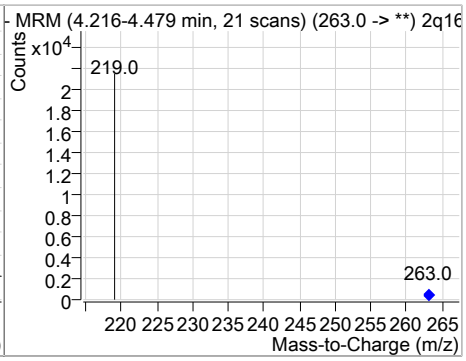


Perfluorinated Compounds by LC/MS/MS

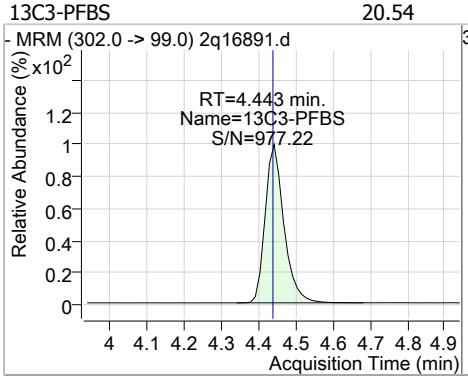
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.95	4.32	0.00	15197				

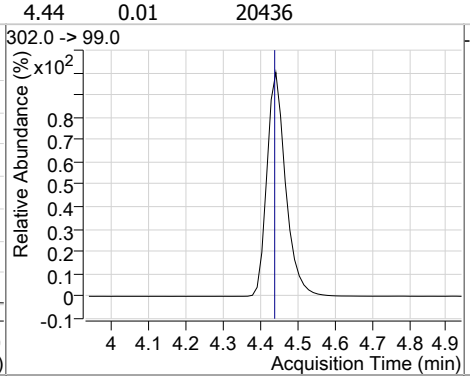


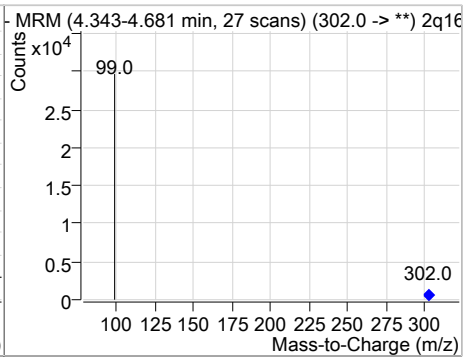




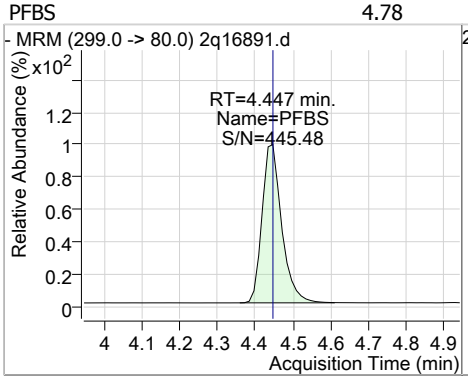
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.54	4.44	0.01	20436				

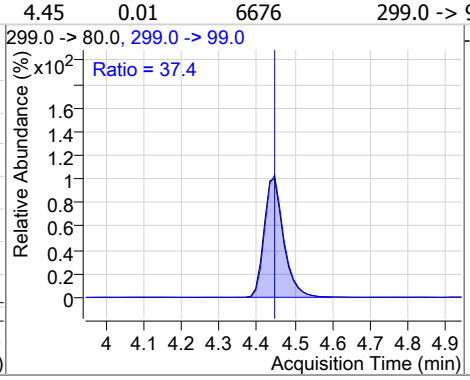


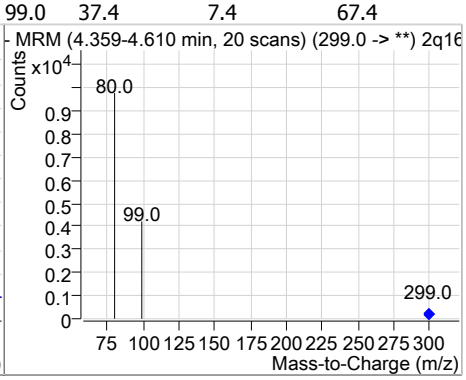




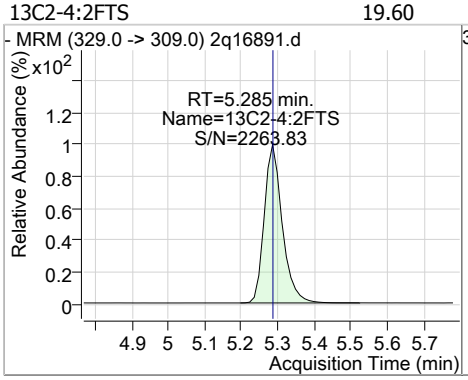
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	4.78	4.45	0.01	6676	299.0 -> 99.0	37.4	7.4	67.4

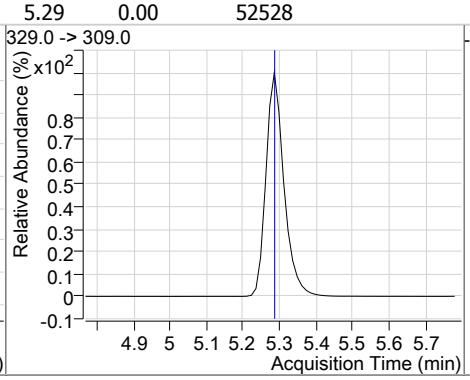


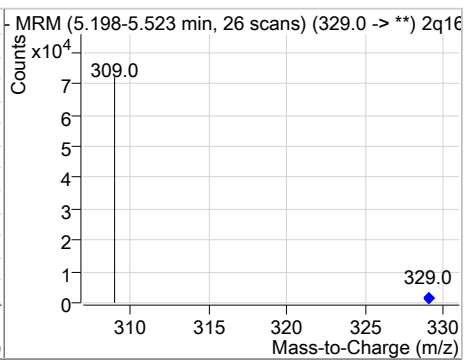




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.60	5.29	0.00	52528				

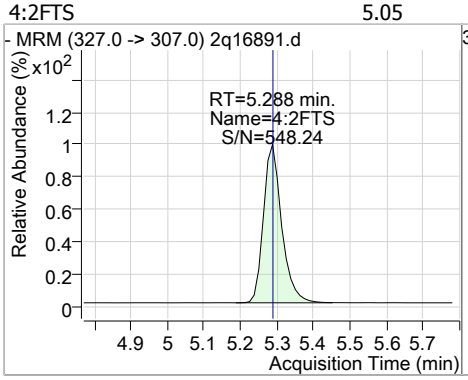


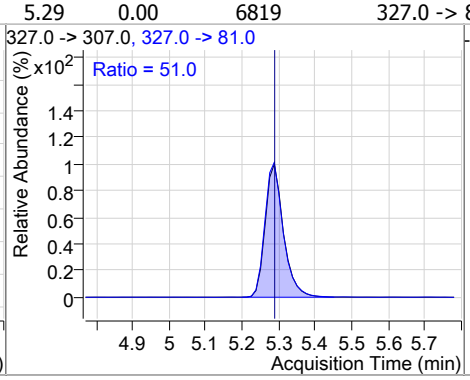


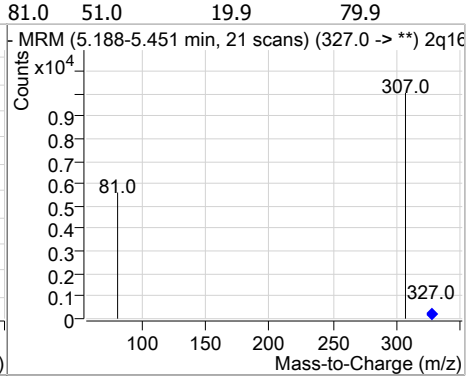


Perfluorinated Compounds by LC/MS/MS

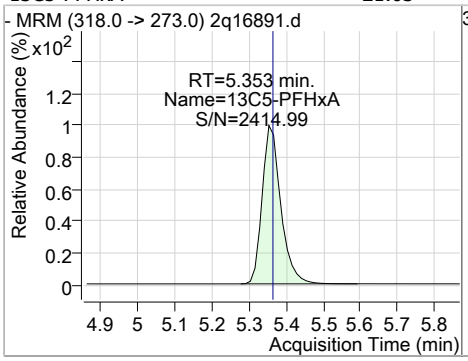
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	5.05	5.29	0.00	6819	327.0 -> 81.0	51.0	19.9	79.9

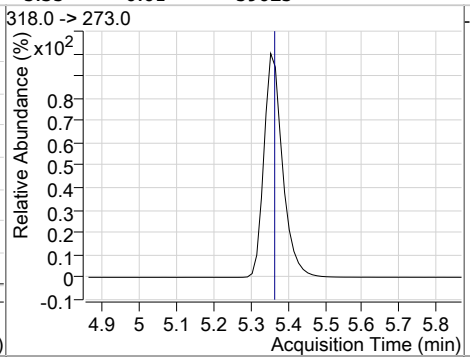


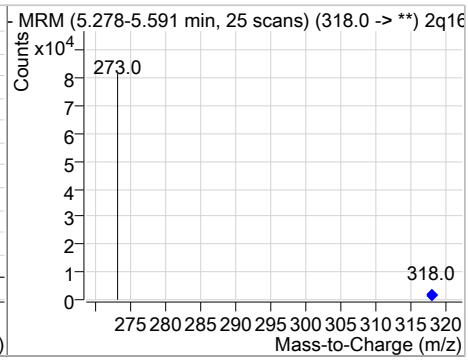




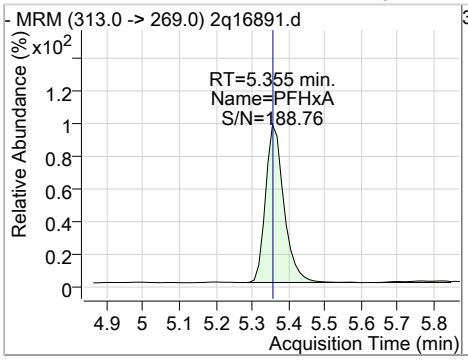
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.03	5.35	-0.01	59625				

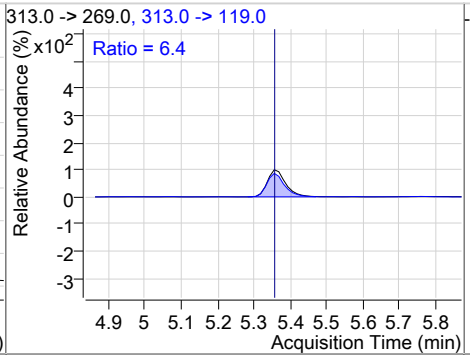


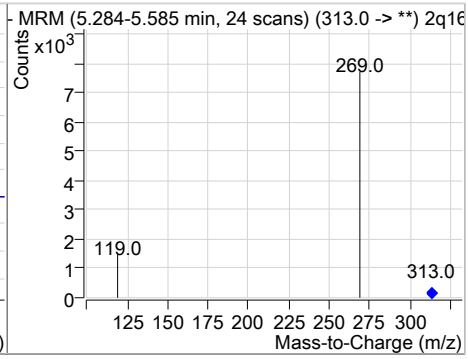




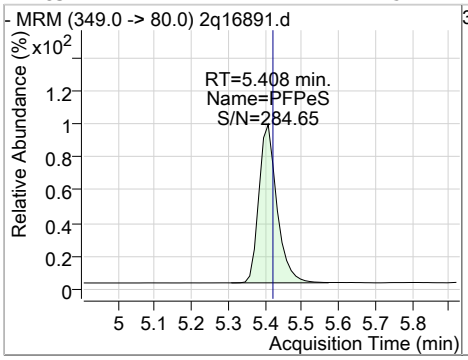
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	4.87	5.36	-0.01	4930	313.0 -> 119.0	6.4	0.0	37.6

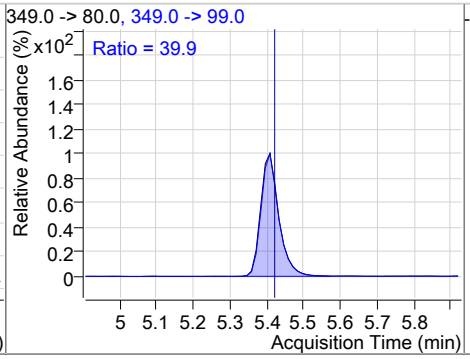


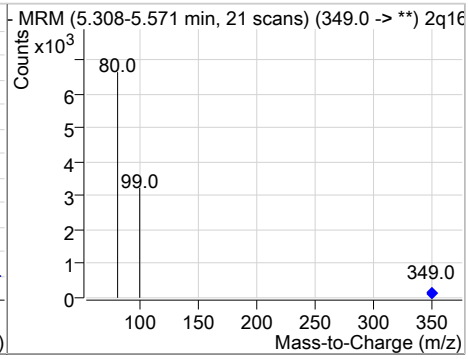




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	4.75	5.41	0.00	4256	349.0 -> 99.0	39.9	10.8	70.8

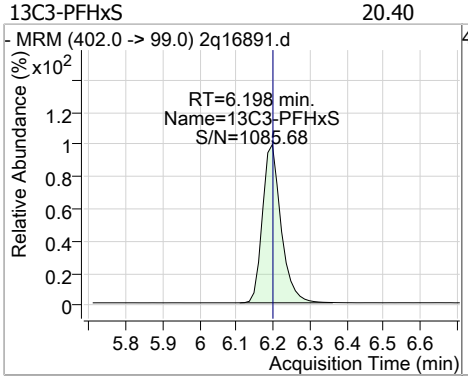


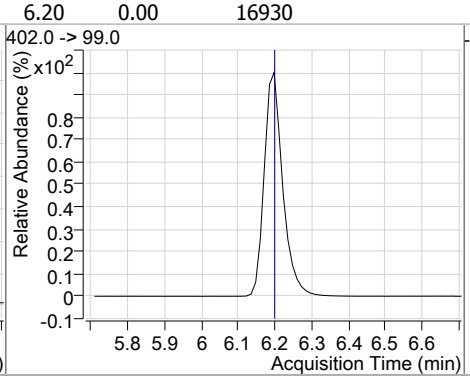


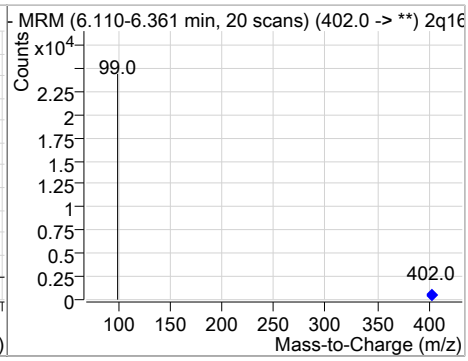


Perfluorinated Compounds by LC/MS/MS

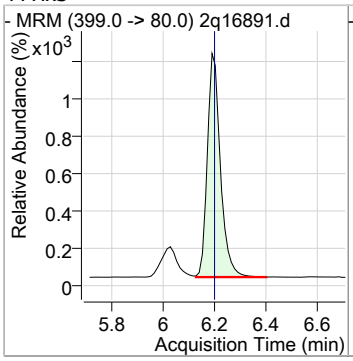
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.40	6.20	0.00	16930				

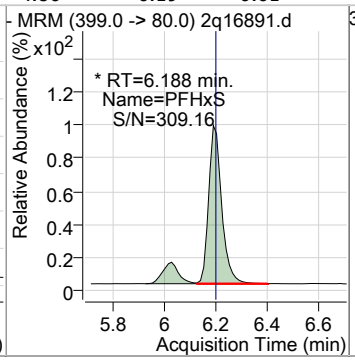


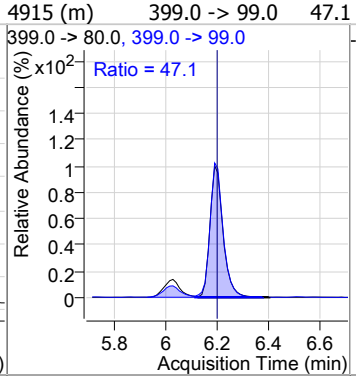


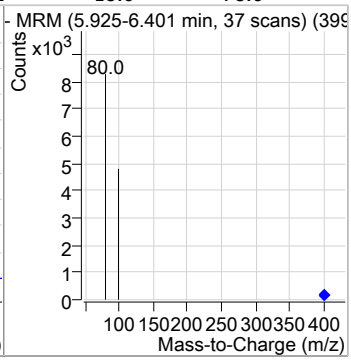


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	4.86	6.19	-0.01	4915 (m)	399.0 -> 99.0	47.1	18.0	78.0

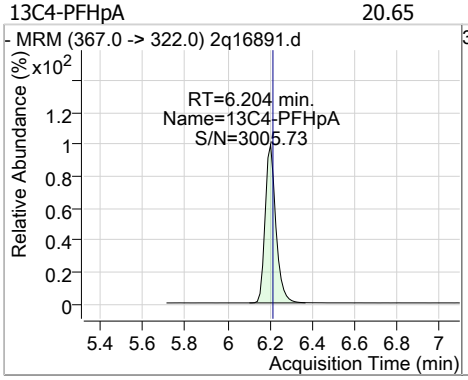


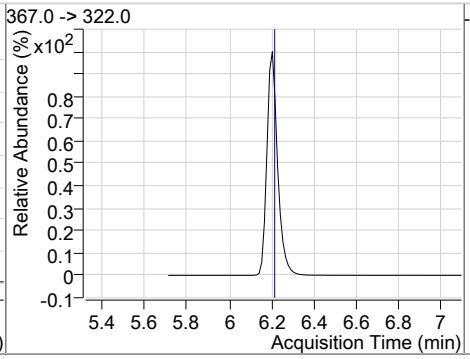


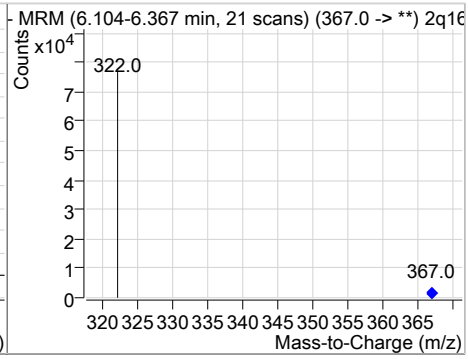




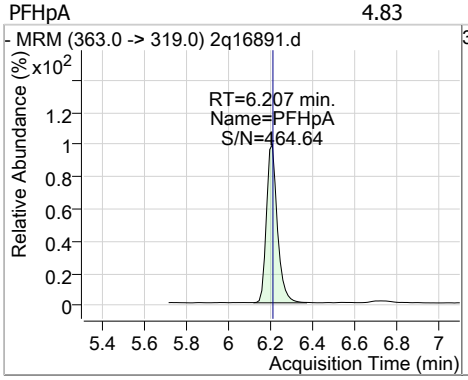
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.65	6.20	-0.01	56156				

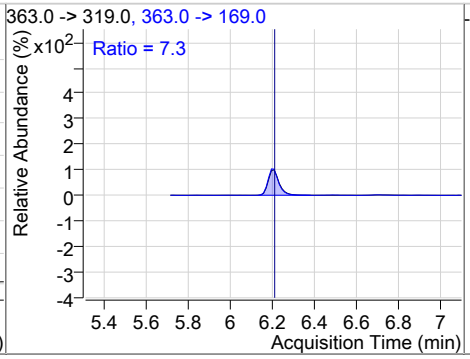


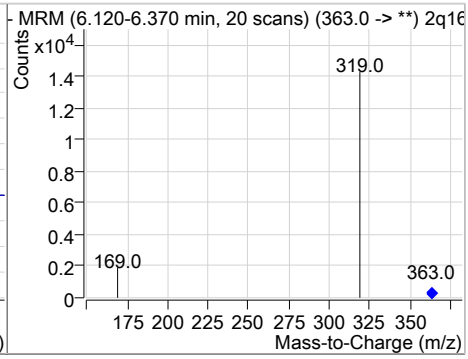




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	4.83	6.21	0.00	9919	363.0 -> 169.0	7.3	0.0	37.2

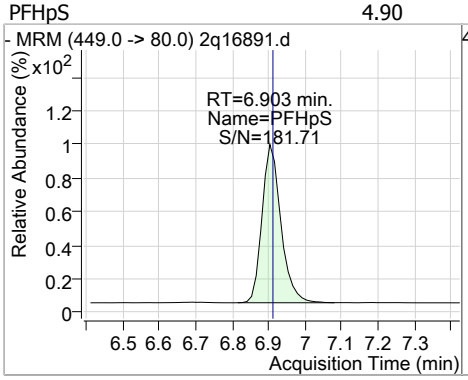


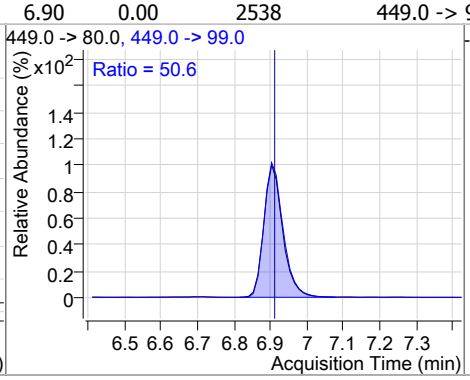


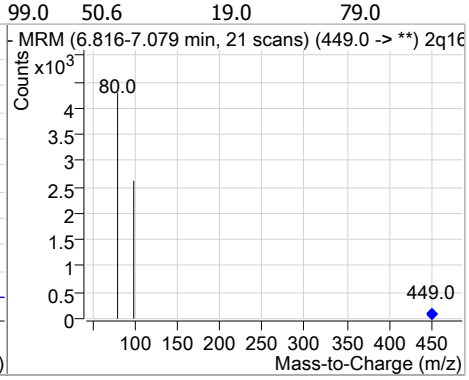


Perfluorinated Compounds by LC/MS/MS

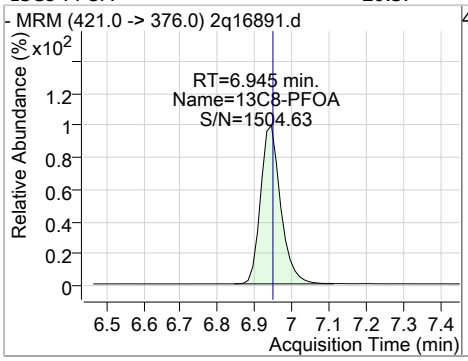
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	4.90	6.90	0.00	2538	449.0 -> 99.0	50.6	19.0	79.0

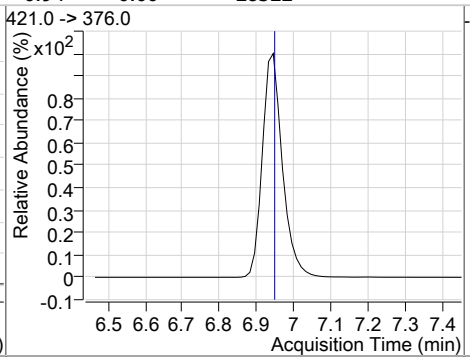


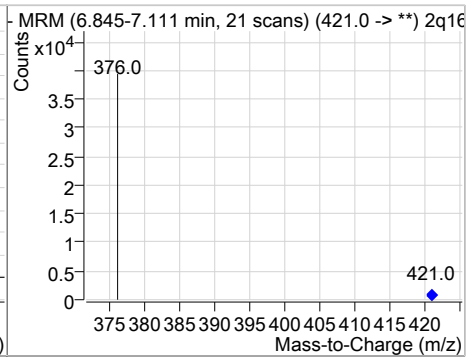




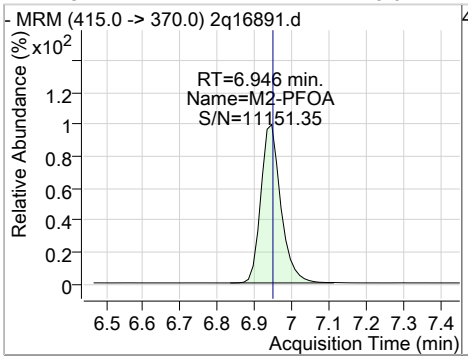
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.37	6.94	0.00	28322				

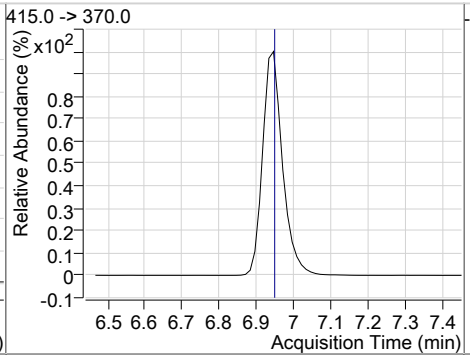


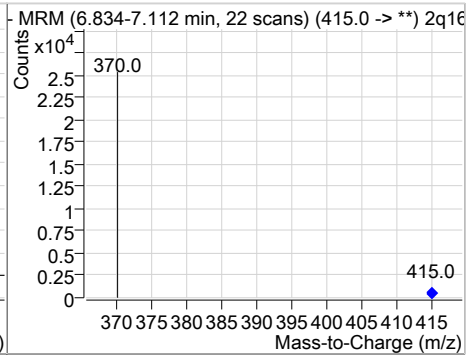




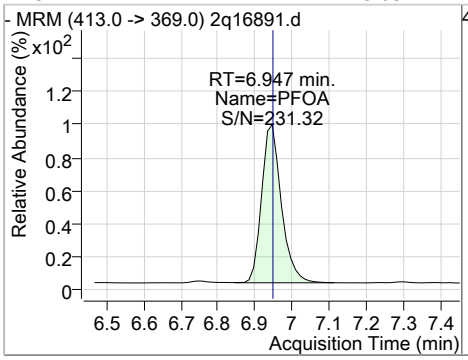
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.01	6.95	0.00	18402				

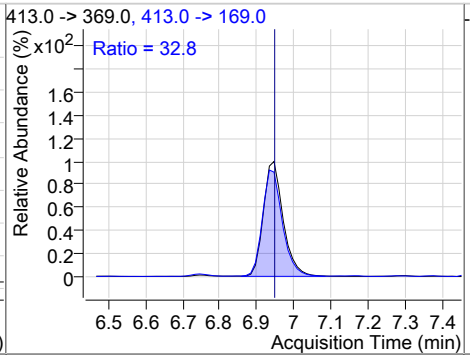


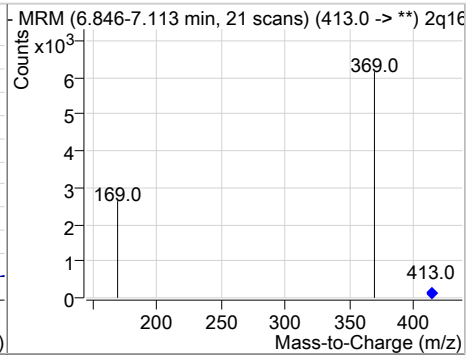




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	5.05	6.95	0.00	3925	413.0 -> 169.0	32.8	5.0	65.0

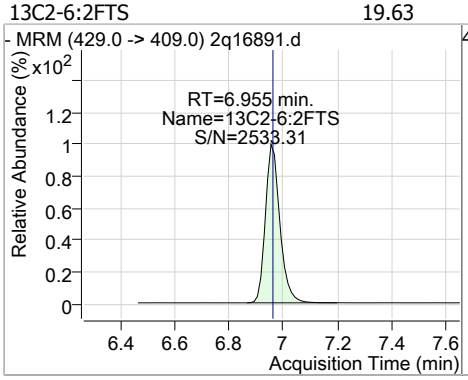


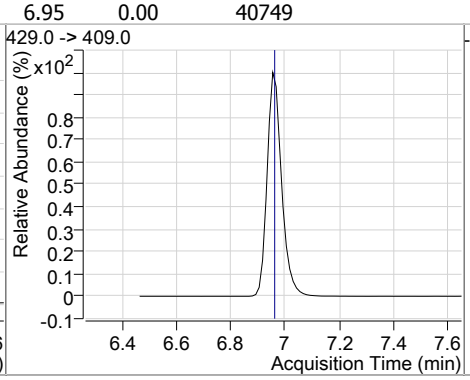


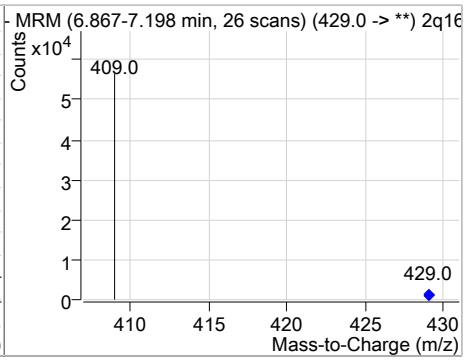


Perfluorinated Compounds by LC/MS/MS

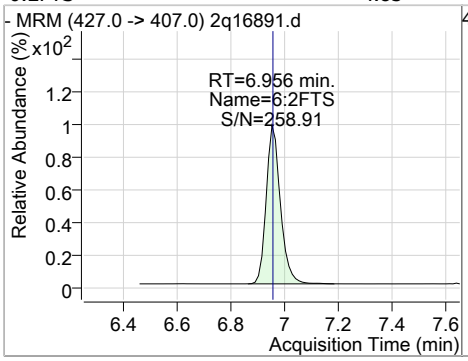
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.63	6.95	0.00	40749				

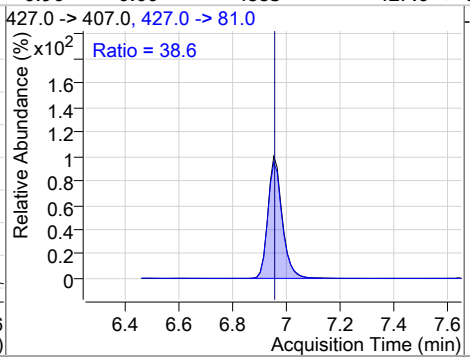


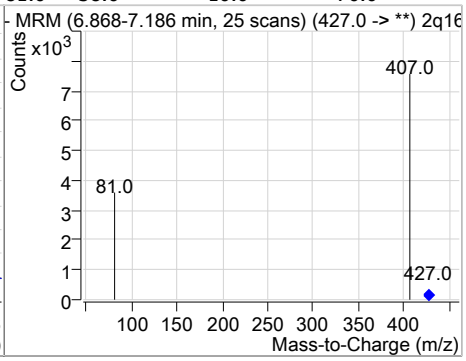




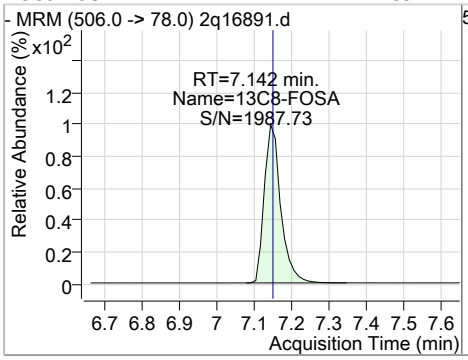
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	4.83	6.96	0.00	4885	427.0 -> 81.0	38.6	10.0	70.0

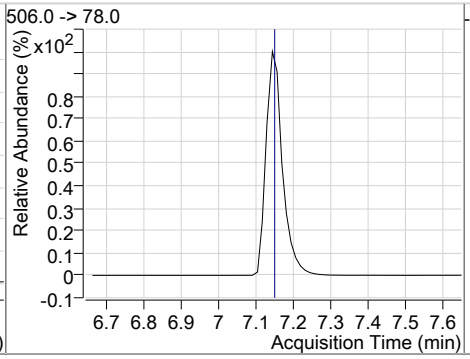


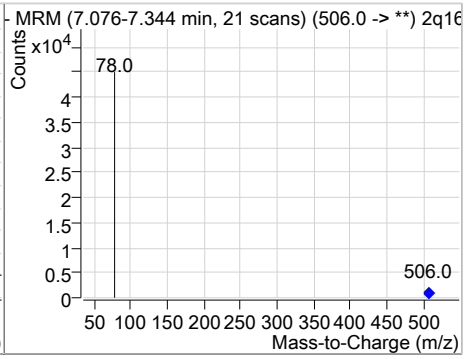




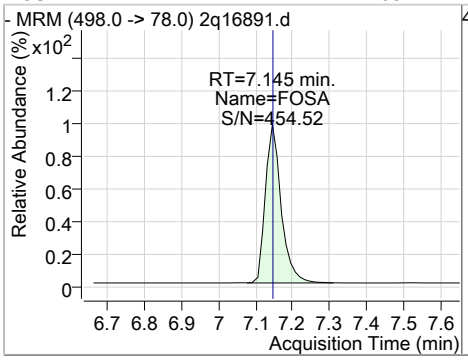
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.39	7.14	0.00	33532				

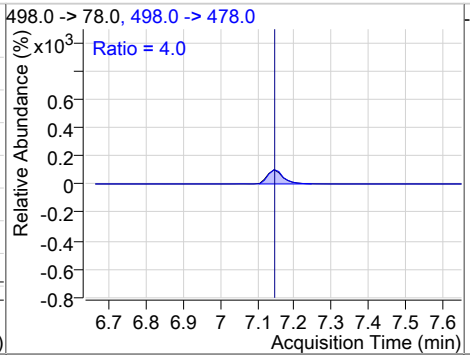


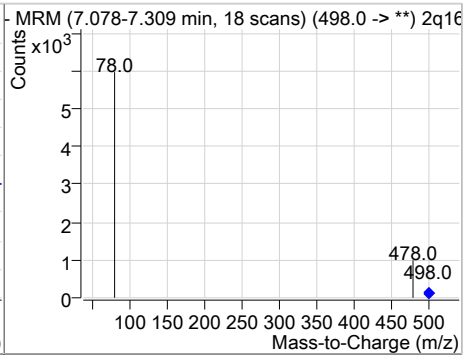




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	4.85	7.15	0.00	3996	498.0 -> 478.0	4.0	0.0	34.0

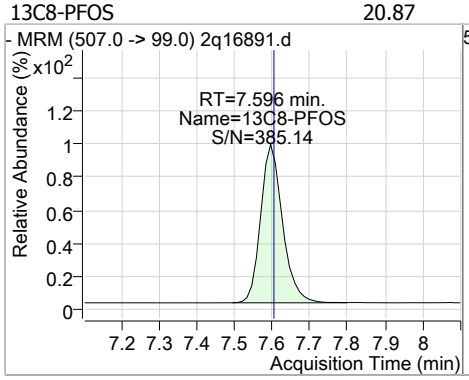


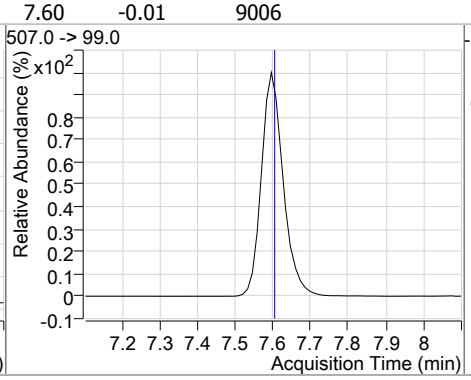


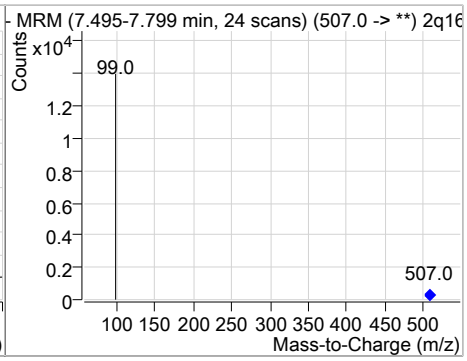


Perfluorinated Compounds by LC/MS/MS

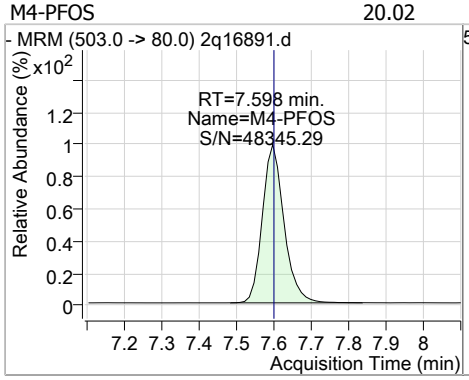
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.87	7.60	-0.01	9006				

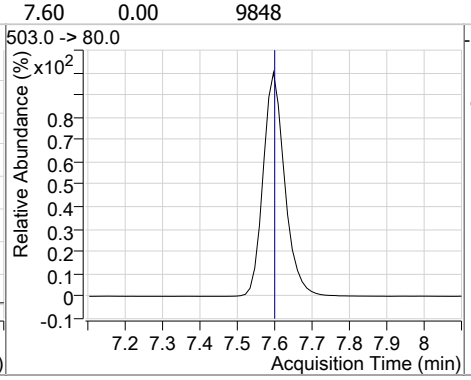


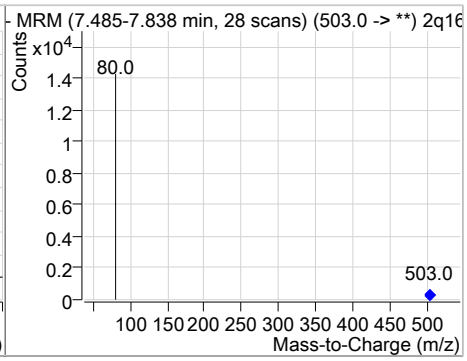




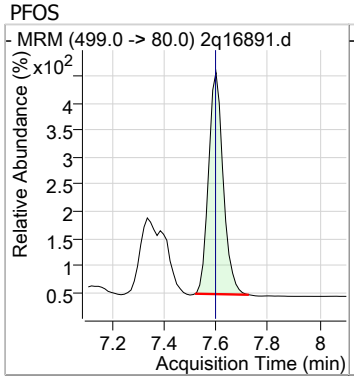
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.02	7.60	0.00	9848				

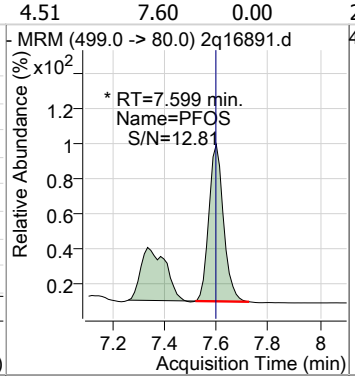


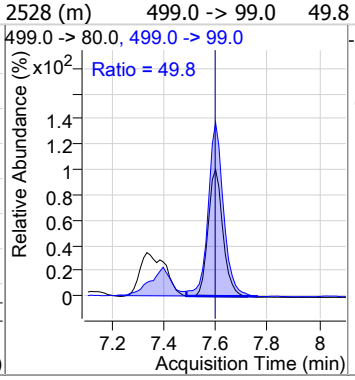


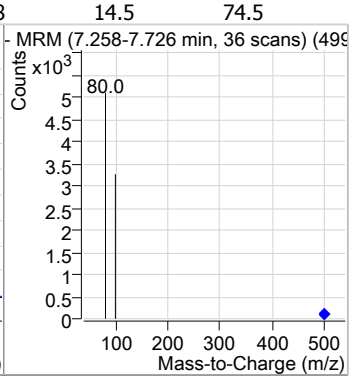


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	4.51	7.60	0.00	2528 (m)	499.0 -> 99.0	49.8	14.5	74.5

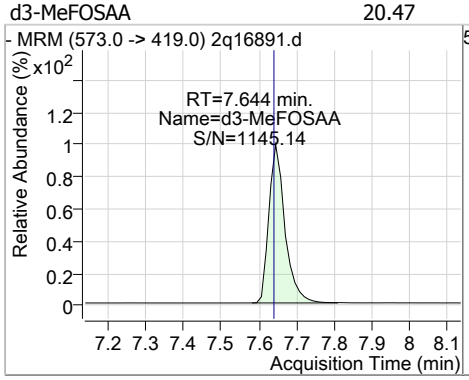


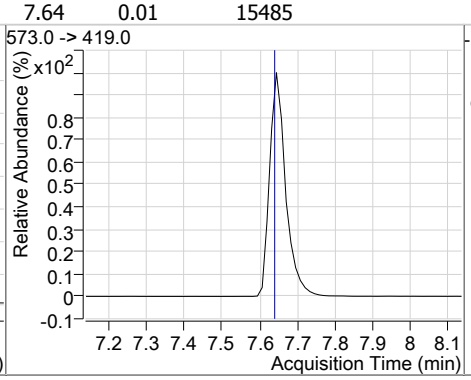


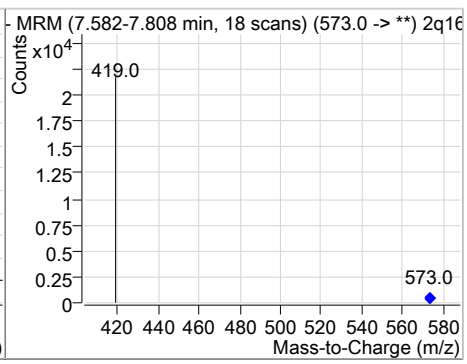




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.47	7.64	0.01	15485				

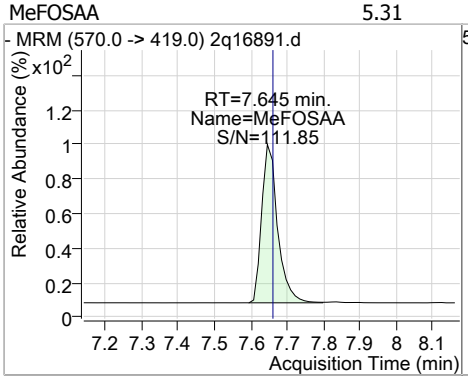


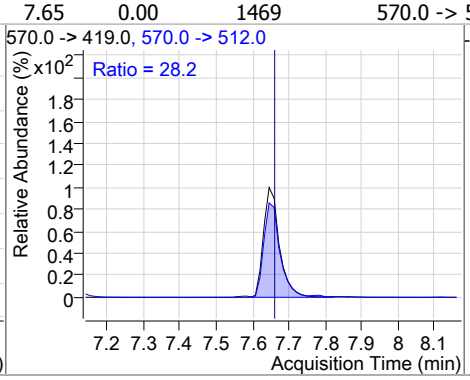


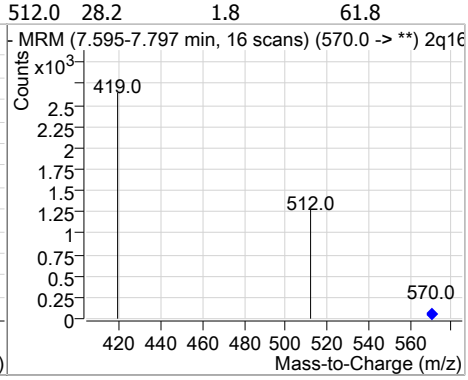


Perfluorinated Compounds by LC/MS/MS

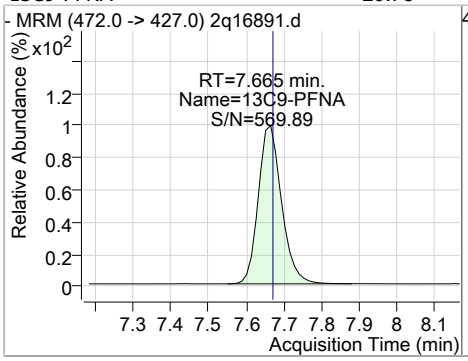
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	5.31	7.65	0.00	1469	570.0 -> 512.0	28.2	1.8	61.8

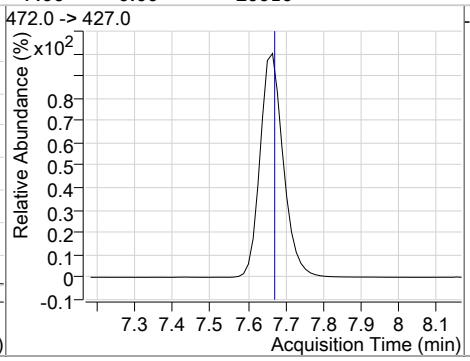


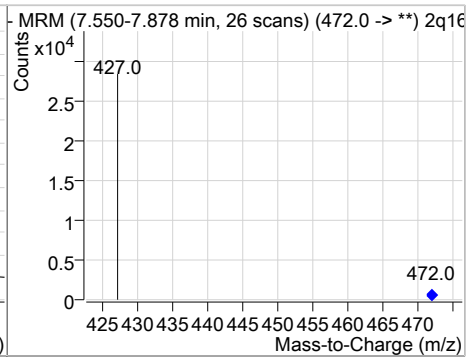




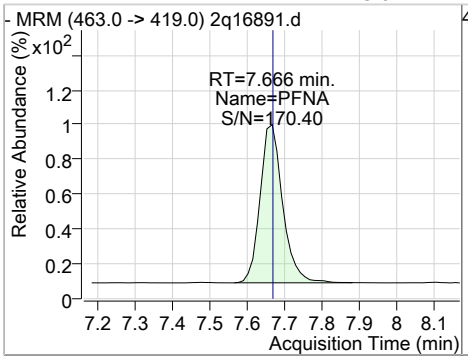
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.78	7.66	0.00	20016				

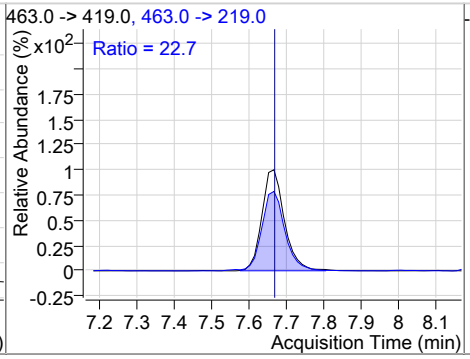


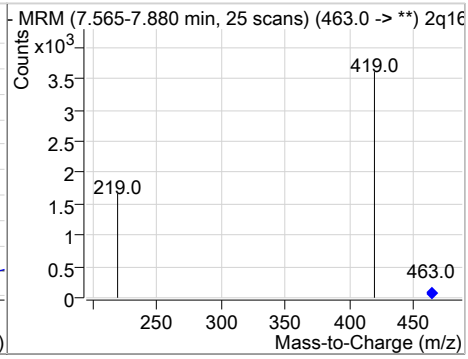




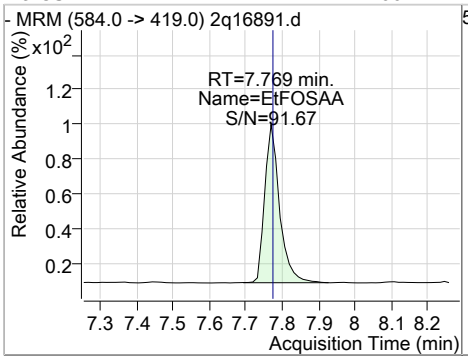
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	5.02	7.67	0.00	1935	463.0 -> 219.0	22.7	0.0	58.4

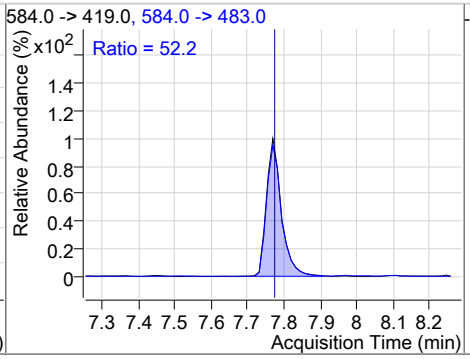


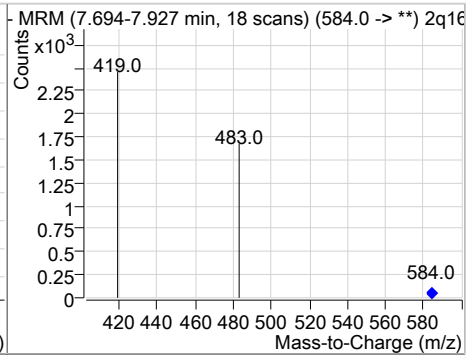




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	4.66	7.77	0.01	1216	584.0 -> 483.0	52.2	24.8	84.8

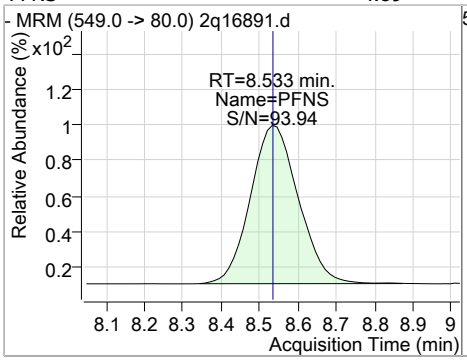


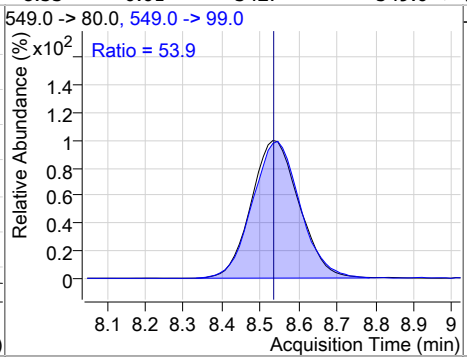


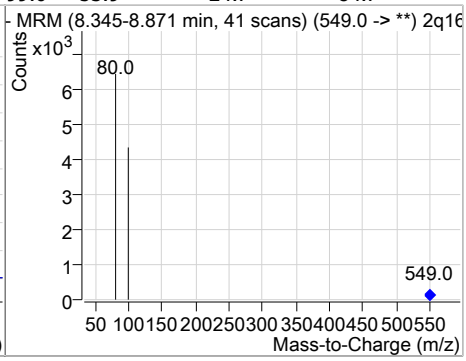


Perfluorinated Compounds by LC/MS/MS

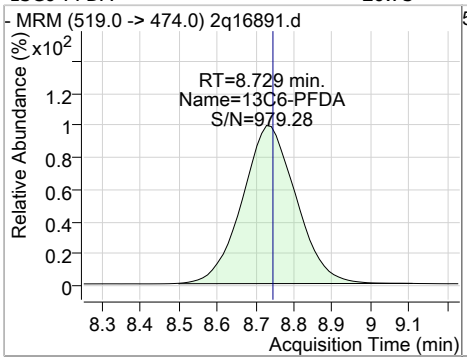
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	4.89	8.53	-0.01	3427	549.0 -> 99.0	53.9	24.7	84.7

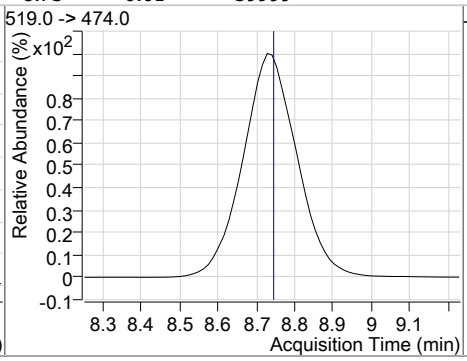


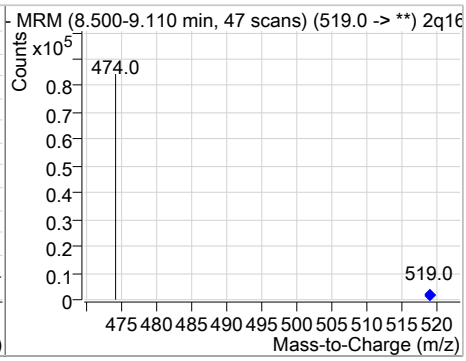




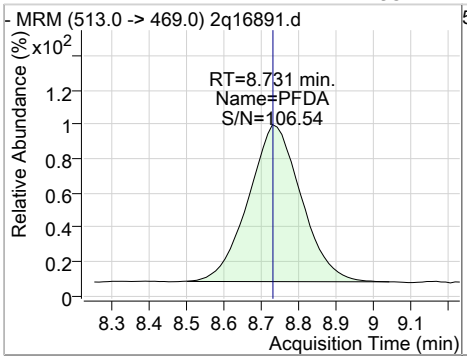
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.73	8.73	-0.01	59999				

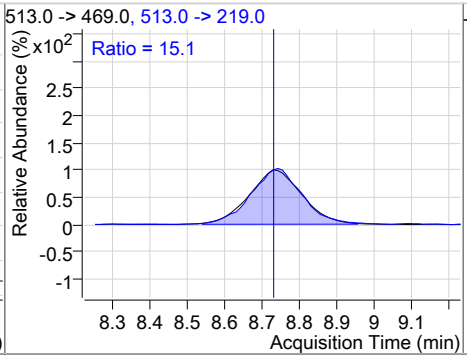


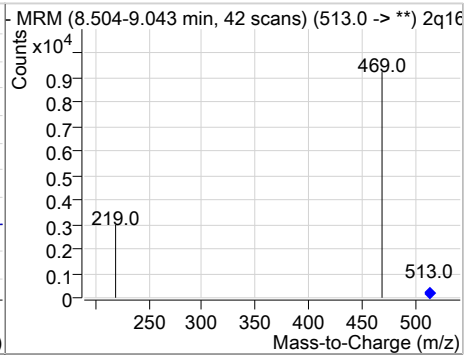




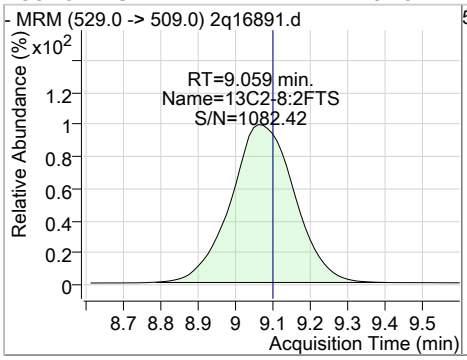
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	4.93	8.73	-0.01	5403	513.0 -> 219.0	15.1	0.0	45.3

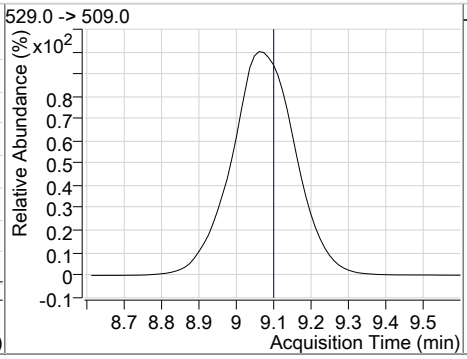


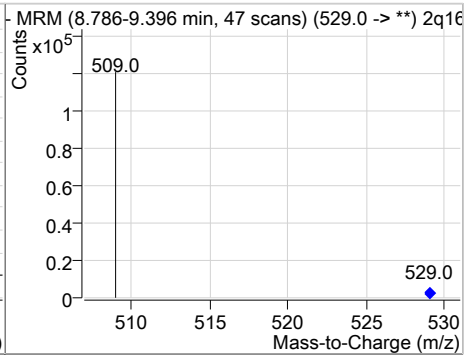




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.45	9.06	-0.04	85433				

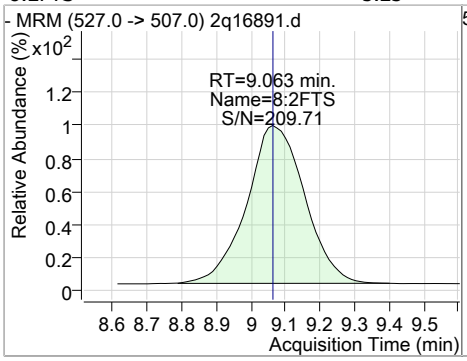


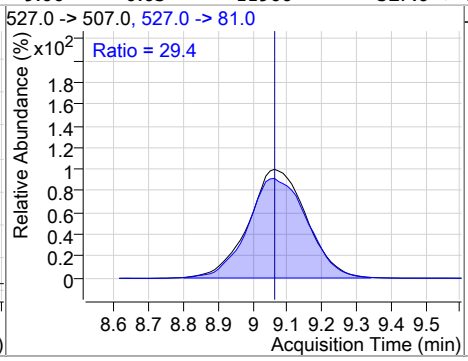


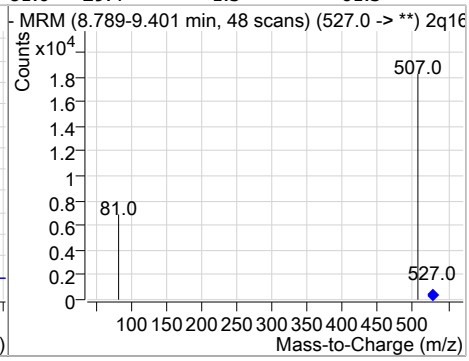


Perfluorinated Compounds by LC/MS/MS

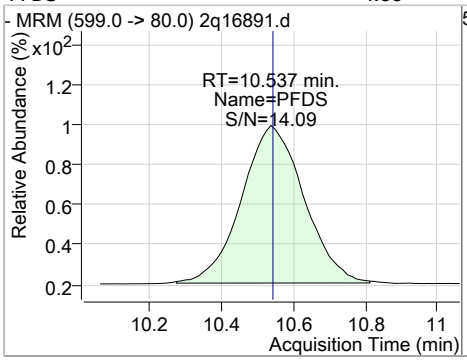
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	5.23	9.06	-0.03	11900	527.0 -> 81.0	29.4	1.3	61.3

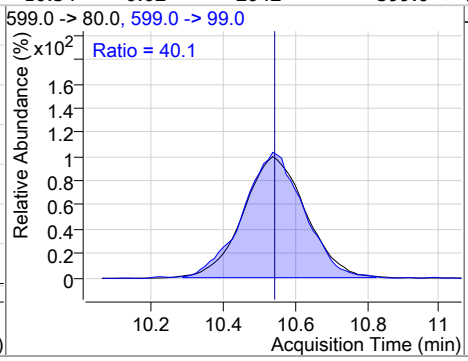


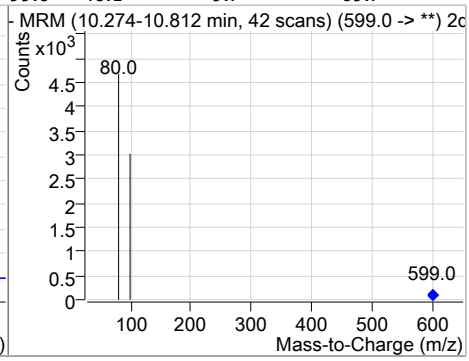




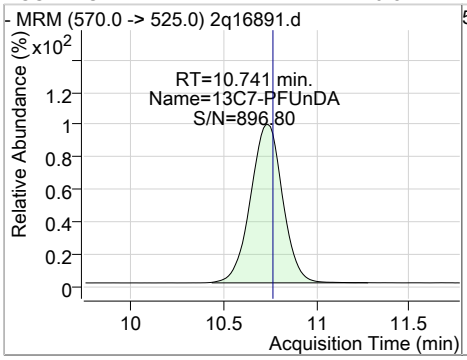
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	4.88	10.54	-0.02	2042	599.0 -> 99.0	40.1	9.7	69.7

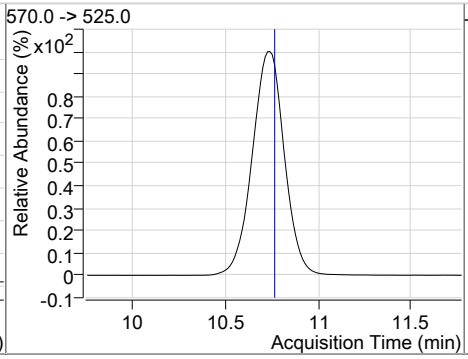


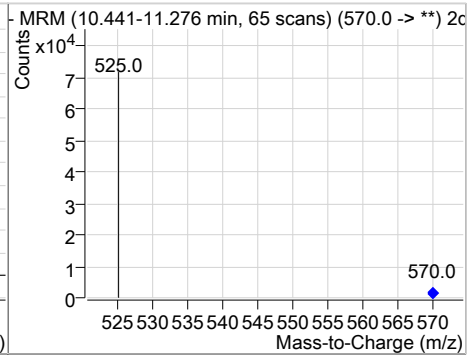




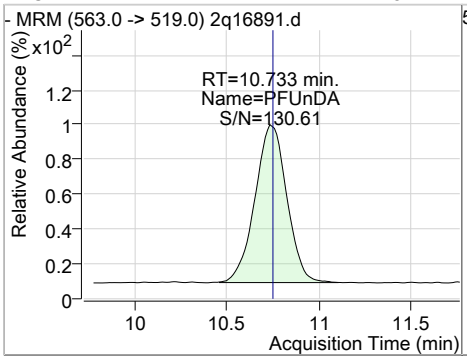
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.82	10.74	-0.02	49459				

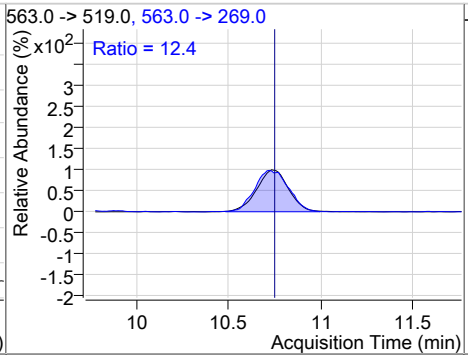


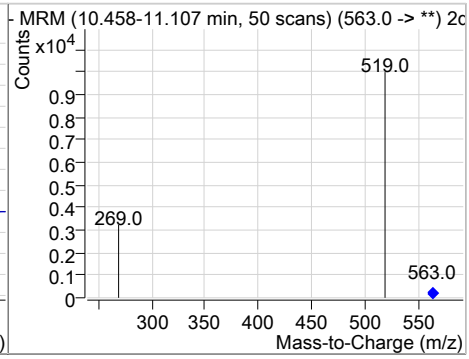




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	4.78	10.73	-0.03	5731	563.0 -> 269.0	12.4	0.0	41.8

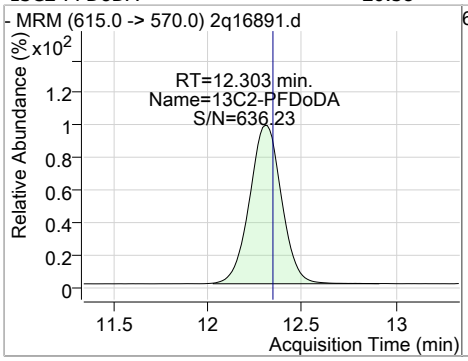


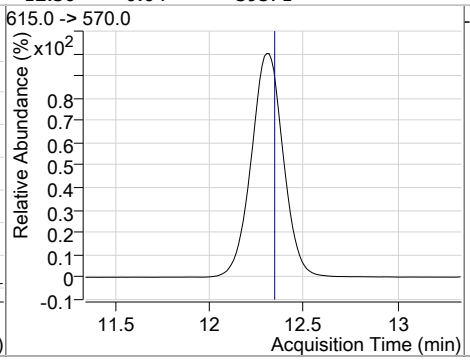


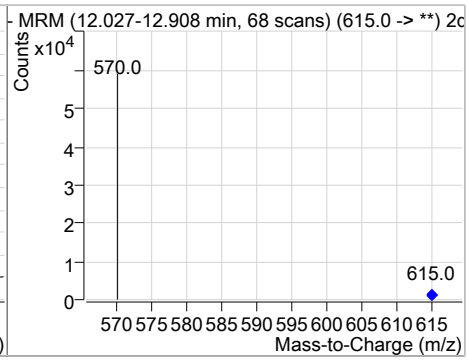


Perfluorinated Compounds by LC/MS/MS

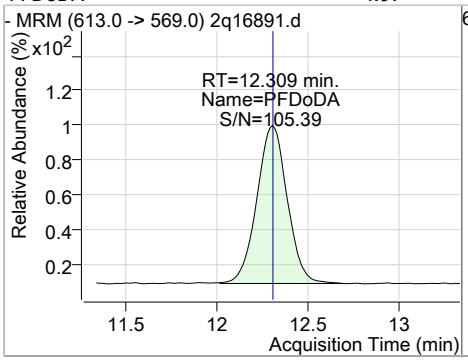
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.58	12.30	-0.04	39571				

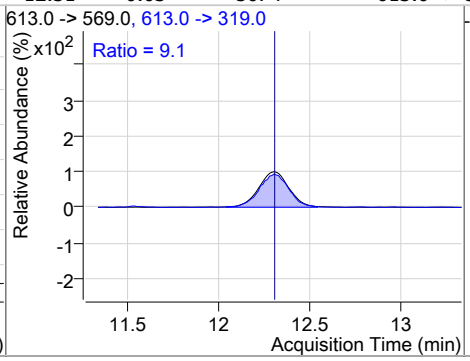


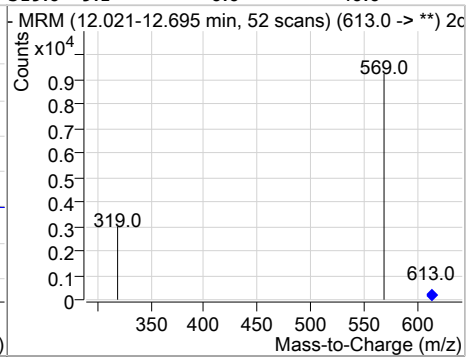




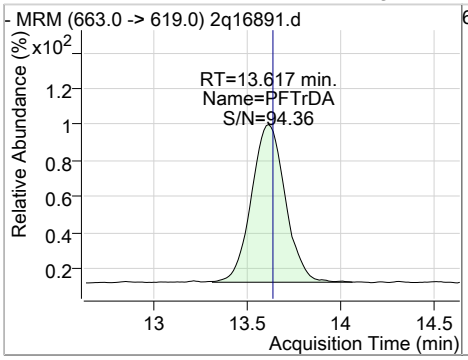
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	4.97	12.31	-0.03	5074	613.0 -> 319.0	9.1	0.0	40.0

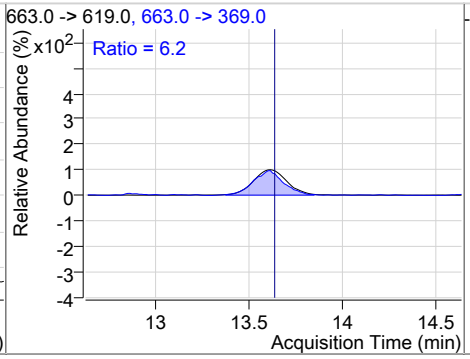


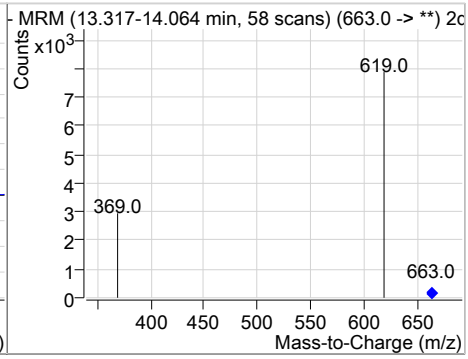




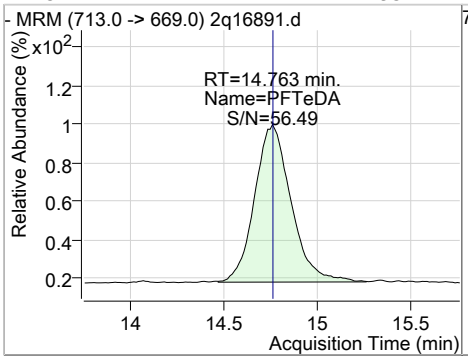
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	4.94	13.62	-0.02	3932	663.0 -> 369.0	6.2	0.0	37.1

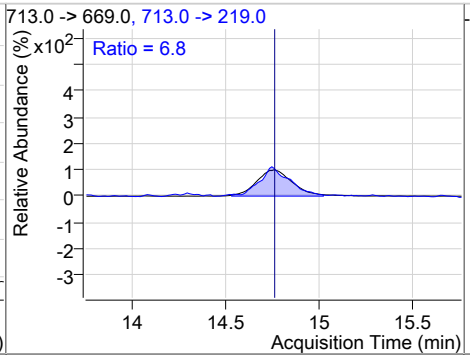


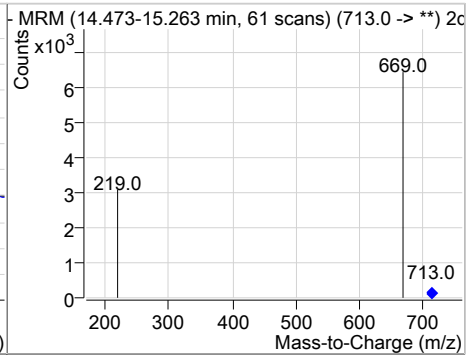




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	4.93	14.76	0.00	2701	713.0 -> 219.0	6.8	0.0	37.4

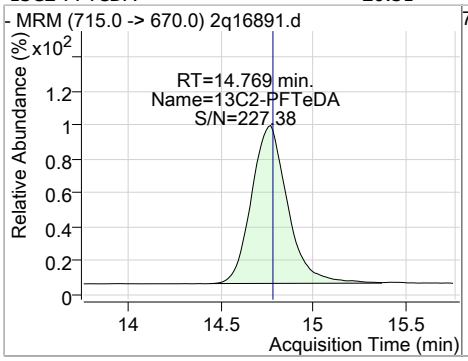


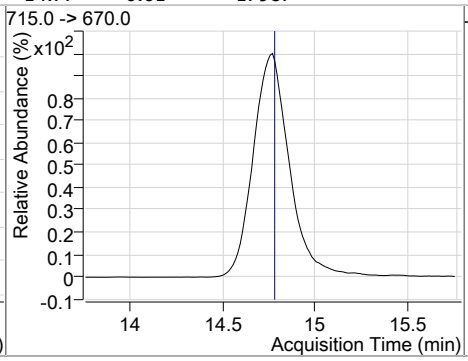


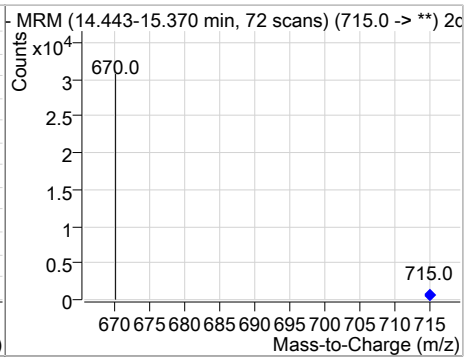


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.51	14.77	-0.01	17987				







7.5.27

7

Manual Integration Approval Summary

Sample Number:	S2Q294-IC294	**Method:**	EPA 537M QSM5.1 B-15
Lab FileID:	2Q16891.D	**Analyst approved:**	07/11/18 14:37 Natasha Gumtie
Injection Time:	07/10/18 17:12	**Supervisor approved:**	07/11/18 16:54 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.19	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.60	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/11/18 16:54

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16892.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/10/2018 5:33:36 PM
Sample Name : ic294-10
Vial : Vial 6
DA Method File : PFC_ID_071018_S2Q294.quantmethod.xml
Batch Name : s2q294.batch.bin
Sample Information : op70743,S2Q294,130,,,1.0,1,water

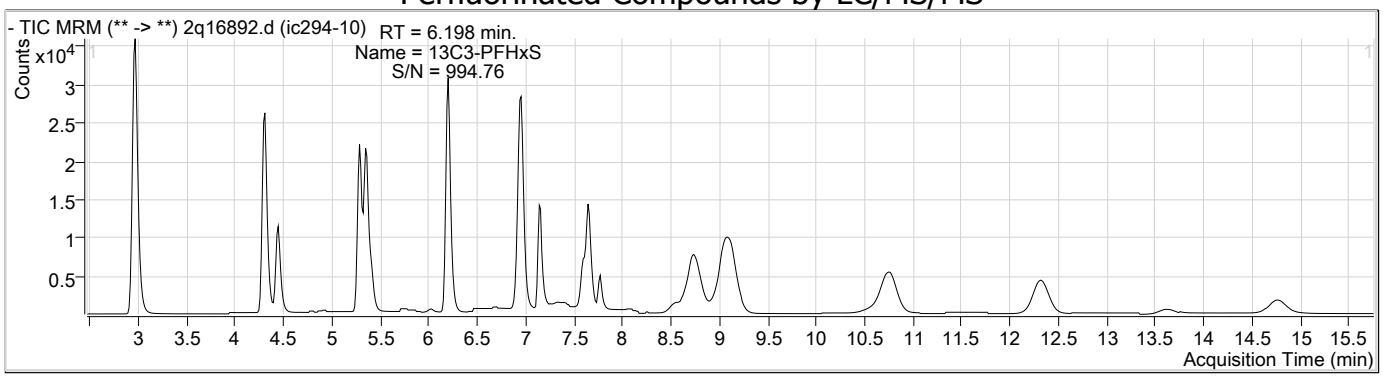
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.946	415.0 -> 370.0	18147	20.00	µg/L	0.000
13C4-PFOS	7.598	503.0 -> 80.0	10122	20.00	µg/L	-0.004
M4-PFBA	2.966	217.0 -> 172.0	133535	20.00	µg/L	-0.001
M5-PFPeA	4.312	268.0 -> 223.0	65399	20.00	µg/L	0.000
M5-PFHxA	5.353	318.0 -> 273.0	59235	20.00	µg/L	-0.008
M4-PFHpA	6.204	367.0 -> 322.0	56228	20.00	µg/L	-0.005
M8-PFOA	6.945	421.0 -> 376.0	29332	20.00	µg/L	-0.001
M9-PFNA	7.665	472.0 -> 427.0	20306	20.00	µg/L	-0.003
M6-PFDA	8.741	519.0 -> 474.0	62005	20.00	µg/L	-0.001
M7-PFUnDA	10.754	570.0 -> 525.0	50539	20.00	µg/L	-0.007
M2-PFDoDA	12.315	615.0 -> 570.0	40364	20.00	µg/L	-0.023
M2-PFTeDA	14.756	715.0 -> 670.0	18206	20.00	µg/L	-0.018
M8-FOSA	7.142	506.0 -> 78.0	33643	20.00	µg/L	-0.003
M3-PFBS	4.443	302.0 -> 99.0	20919	20.00	µg/L	0.006
M3-PFHxS	6.198	402.0 -> 99.0	17163	20.00	µg/L	0.002
M8-PFOS	7.596	507.0 -> 99.0	9013	20.00	µg/L	-0.006
M2-4:2FTS	5.285	329.0 -> 309.0	54262	20.00	µg/L	0.002
M2-6:2FTS	6.967	429.0 -> 409.0	41610	20.00	µg/L	0.010
M2-8:2FTS	9.084	529.0 -> 509.0	88693	20.00	µg/L	-0.011
M3-MeFOSAA	7.644	573.0 -> 419.0	16060	20.00	µg/L	0.008
System Monitoring Compounds						
13C2-4:2FTS	5.285	329.0 -> 309.0	54259	20.24	µg/L	0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.2%		
13C2-6:2FTS	6.967	429.0 -> 409.0	41616	20.05	µg/L	0.010
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C2-8:2FTS	9.084	529.0 -> 509.0	87979	20.03	µg/L	-0.011
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%		
13C2-PFDoDA	12.315	615.0 -> 570.0	40356	20.99	µg/L	-0.023
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.9%		
13C2-PFTeDA	14.756	715.0 -> 670.0	18393	20.97	µg/L	-0.018
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.8%		
13C3-PFBS	4.443	302.0 -> 99.0	20914	21.02	µg/L	0.006
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.1%		
13C3-PFHxS	6.198	402.0 -> 99.0	17172	20.69	µg/L	0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C4-PFBA	2.966	217.0 -> 172.0	133438	20.83	µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.1%		
13C4-PFHpA	6.204	367.0 -> 322.0	56215	20.67	µg/L	-0.005
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.4%		
13C5-PFHxA	5.353	318.0 -> 273.0	59220	20.88	µg/L	-0.008
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.4%		
13C5-PFPeA	4.312	268.0 -> 223.0	65403	20.91	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.5%		
13C6-PFDA	8.741	519.0 -> 474.0	61727	21.33	µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.6%		

Perfluorinated Compounds by LC/MS/MS

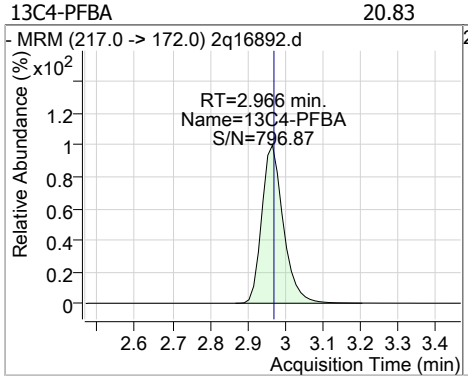
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.754	570.0 -> 525.0	50584	21.30	µg/L		-0.007
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.5%			
13C8-FOSA	7.142	506.0 -> 78.0	33637	21.46	µg/L		-0.003
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.3%			
13C8-PFOA	6.945	421.0 -> 376.0	29326	21.09	µg/L		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.5%			
13C8-PFOS	7.596	507.0 -> 99.0	9010	20.88	µg/L		-0.006
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.4%			
13C9-PFNA	7.665	472.0 -> 427.0	20298	21.07	µg/L		-0.003
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.4%			
d3-MeFOSAA	7.644	573.0 -> 419.0	16061	21.23	µg/L		0.008
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.1%			
M2-PFOA	6.946	415.0 -> 370.0	18159	20.02	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
M4-PFOS	7.598	503.0 -> 80.0	10123	20.01	ng/ml		-0.004
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
Target Compounds							**QValue**
4:2FTS	5.288	327.0 -> 307.0	13435	9.71	µg/L		99
6:2FTS	6.956	427.0 -> 407.0	9901	9.65	µg/L		98
8:2FTS	9.075	527.0 -> 507.0	23156	9.90	µg/L		96
EtFOSAA	7.769	584.0 -> 419.0	2576	9.51	µg/L		99
FOSA	7.145	498.0 -> 78.0	7290	8.82	µg/L		98
MeFOSAA	7.645	570.0 -> 419.0	2685	9.35	µg/L		95
PFBA	2.962	213.0 -> 169.0	9627	9.24	µg/L		100
PFBS	4.447	299.0 -> 80.0	13071	9.16	µg/L		98
PFDA	8.744	513.0 -> 469.0	10567	9.38	µg/L		99
PFDoDA	12.321	613.0 -> 569.0	9997	9.60	µg/L		97
PFDS	10.562	599.0 -> 80.0	4031	9.42	µg/L		97
PFHpA	6.207	363.0 -> 319.0	19690	9.57	µg/L		99
PFHpS	6.903	449.0 -> 80.0	4950	9.43	µg/L		98
PFHxA	5.355	313.0 -> 269.0	9212	9.17	µg/L		100
PFHxS	6.201	399.0 -> 80.0	9486	9.25	µg/L	m	98
PFNA	7.666	463.0 -> 419.0	3864	9.87	µg/L		92
PFNS	8.546	549.0 -> 80.0	6701	9.55	µg/L		100
PFOA	6.947	413.0 -> 369.0	7625	9.48	µg/L		96
PFOS	7.599	499.0 -> 80.0	5199	9.27	µg/L	m	97
PFPeA	4.316	263.0 -> 219.0	29244	9.36	µg/L		100
PFPeS	5.408	349.0 -> 80.0	8407	9.17	µg/L		98
PFTeDA	14.775	713.0 -> 669.0	5401	9.73	µg/L		98
PFTrDA	13.617	663.0 -> 619.0	7661	9.50	µg/L		99
PFUnDA	10.758	563.0 -> 519.0	11511	9.40	µg/L		100

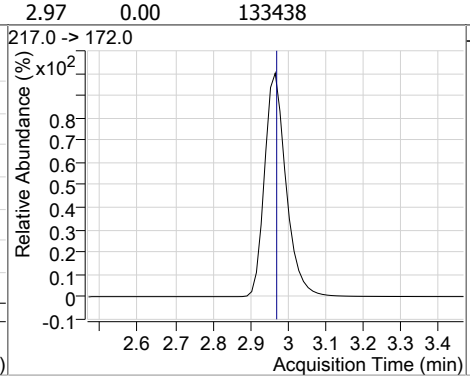
 # = Qualifier out of range, m = manually integrated, + = Area summed

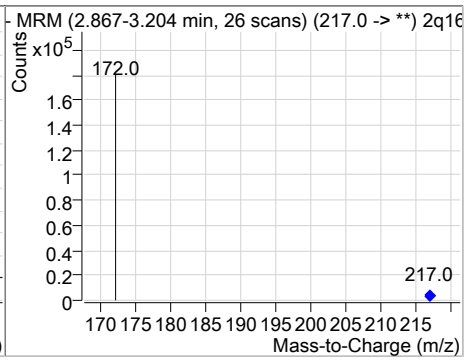
Perfluorinated Compounds by LC/MS/MS



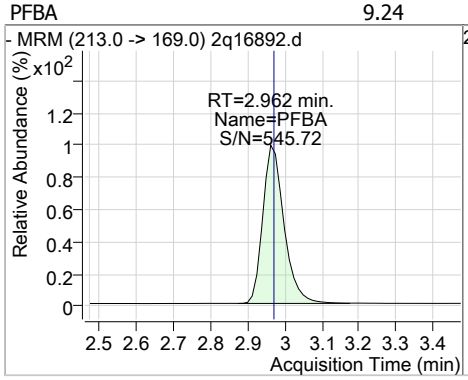
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.83	2.97	0.00	133438				

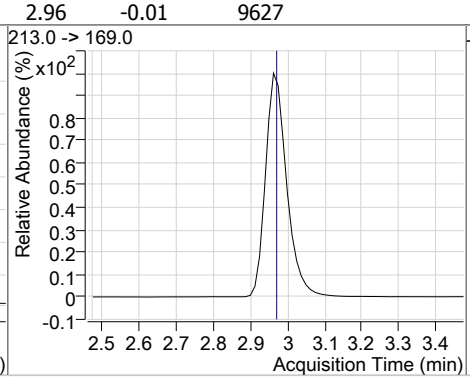


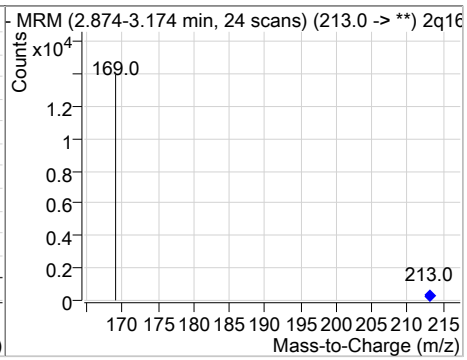




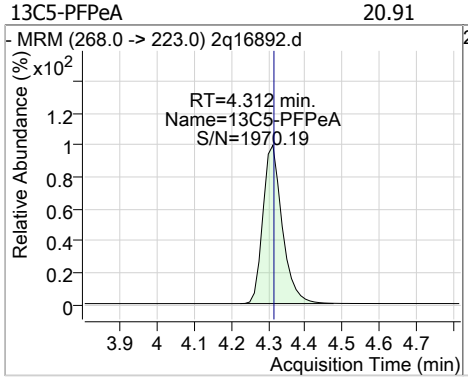
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	9.24	2.96	-0.01	9627				

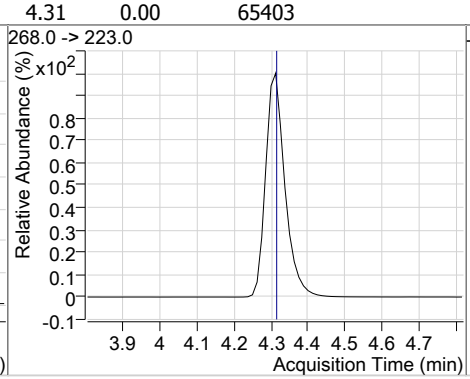


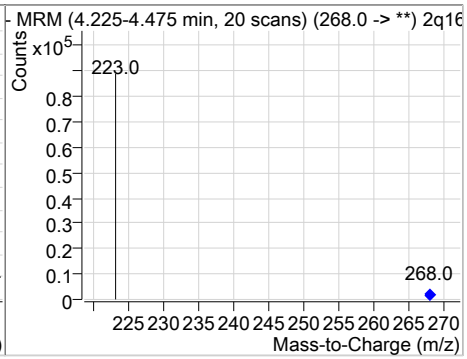




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.91	4.31	0.00	65403				

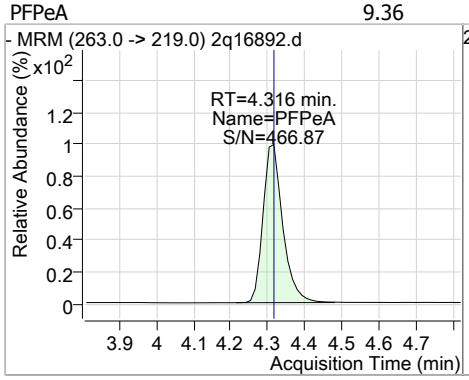


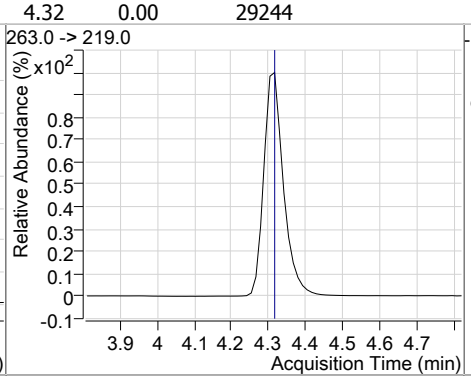


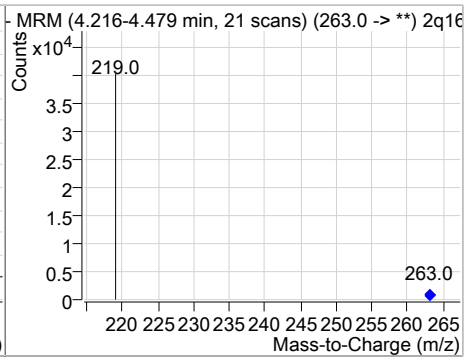


Perfluorinated Compounds by LC/MS/MS

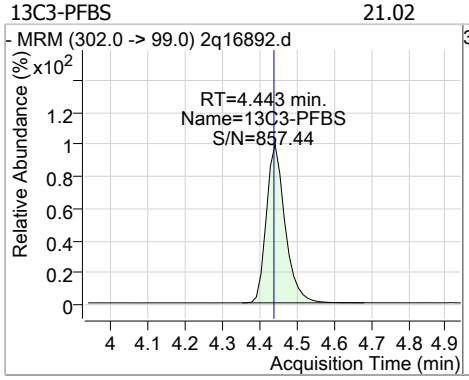
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	9.36	4.32	0.00	29244				

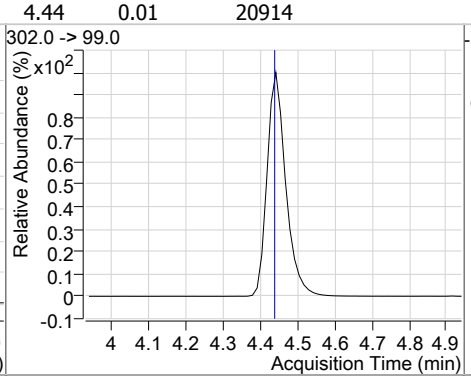


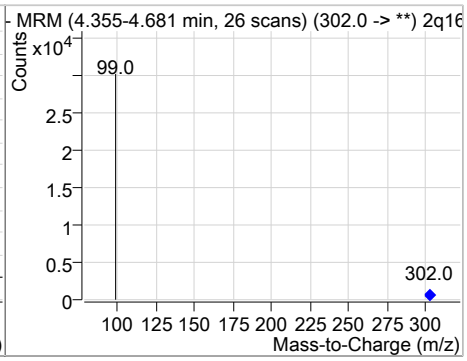




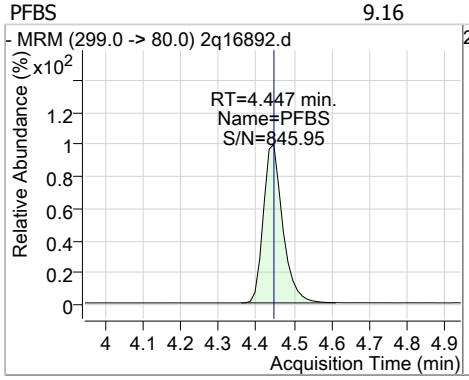
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.02	4.44	0.01	20914				

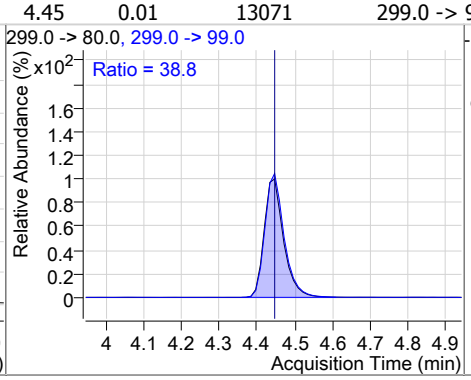


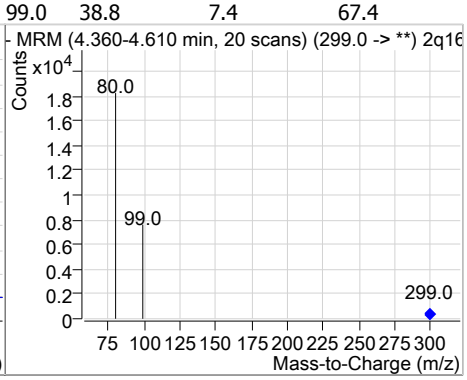




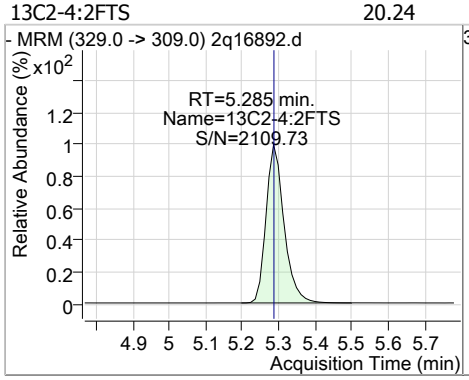
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	9.16	4.45	0.01	13071	299.0 -> 99.0	38.8	7.4	67.4

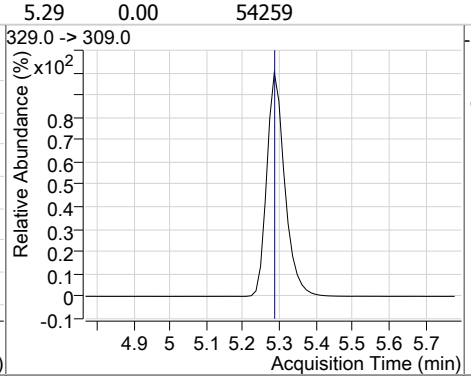


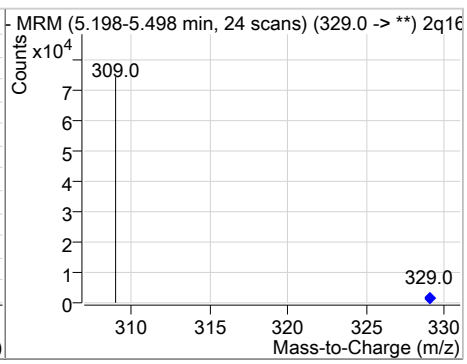




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.24	5.29	0.00	54259				

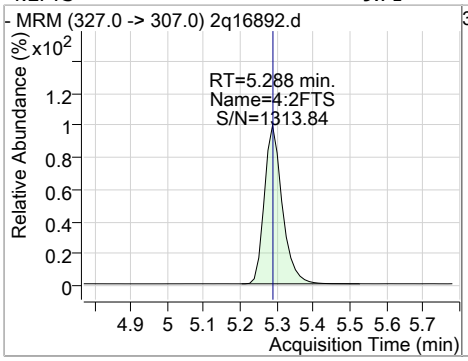


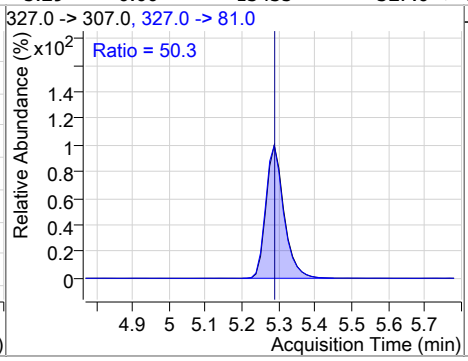


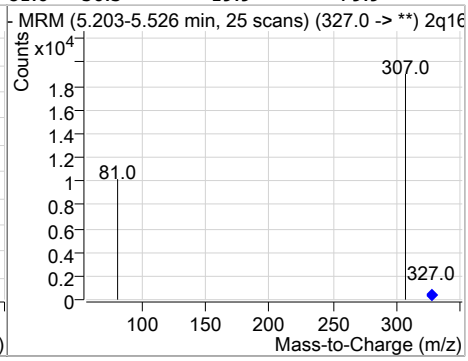


Perfluorinated Compounds by LC/MS/MS

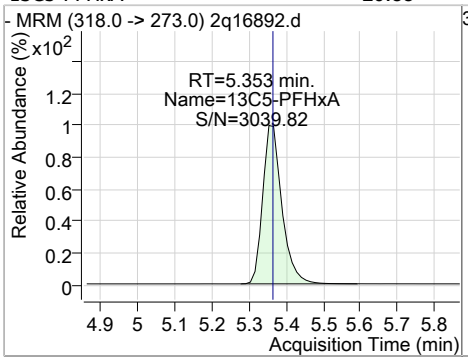
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	9.71	5.29	0.00	13435	327.0 -> 81.0	50.3	19.9	79.9

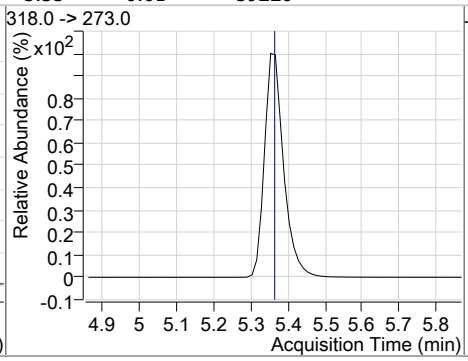


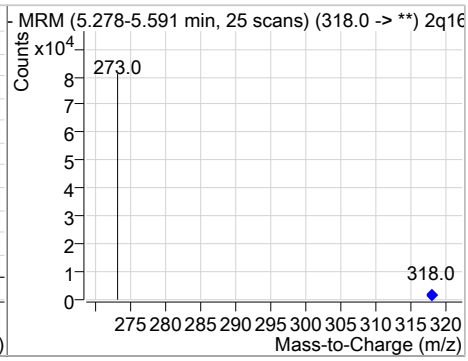




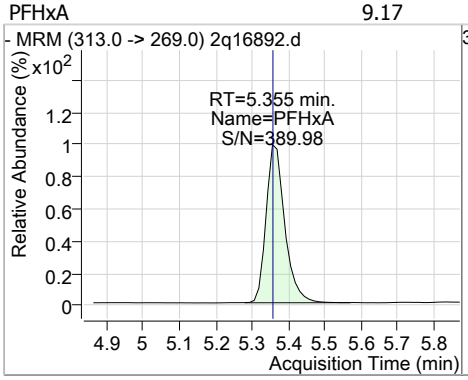
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.88	5.35	-0.01	59220				

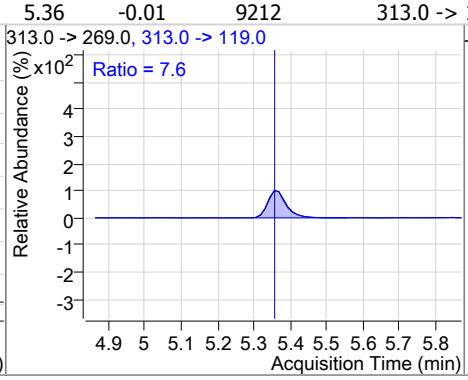


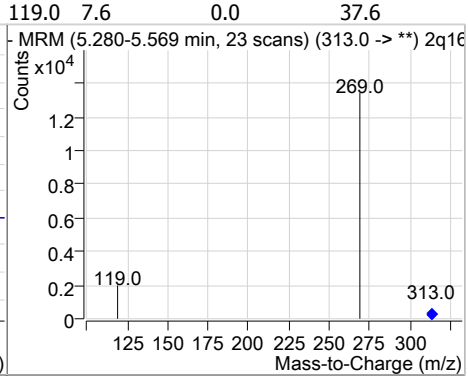




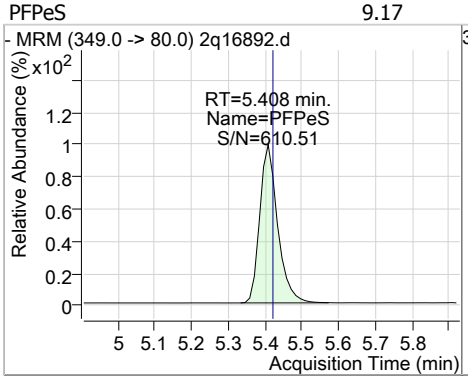
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	9.17	5.36	-0.01	9212	313.0 -> 119.0	7.6	0.0	37.6

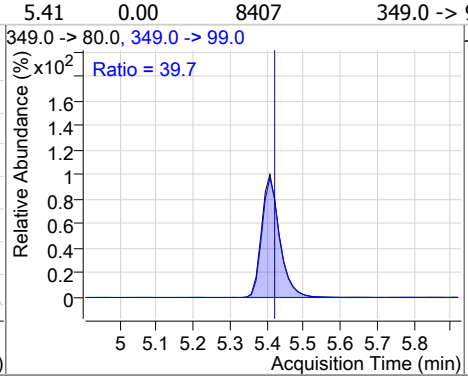


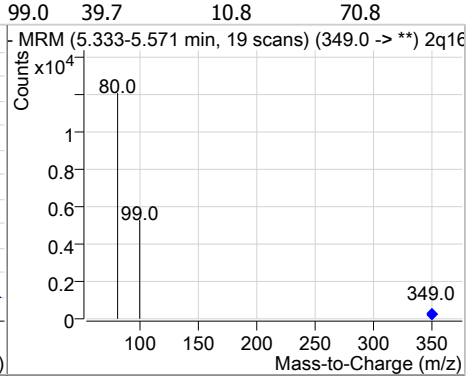




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	9.17	5.41	0.00	8407	349.0 -> 99.0	39.7	10.8	70.8

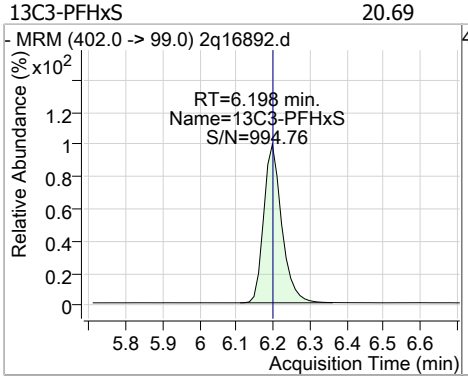


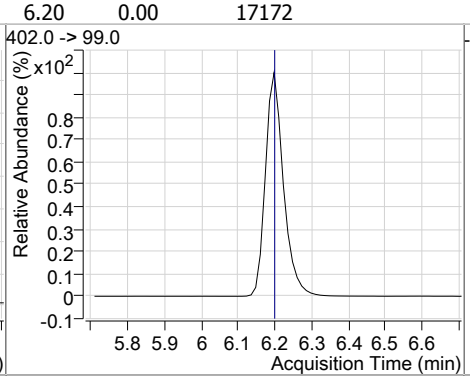


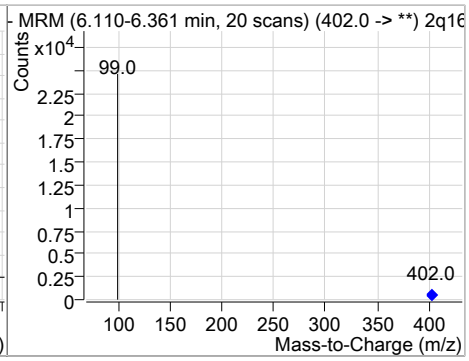


Perfluorinated Compounds by LC/MS/MS

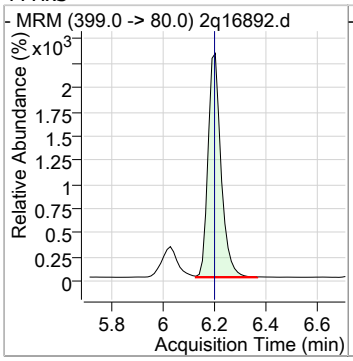
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.69	6.20	0.00	17172				

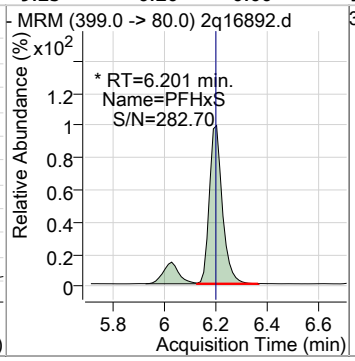


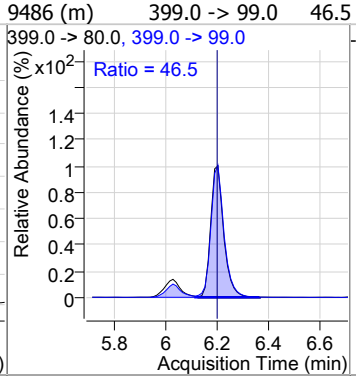


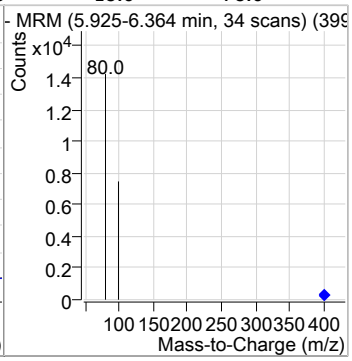


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	9.25	6.20	0.00	9486 (m)	399.0 -> 99.0	46.5	18.0	78.0

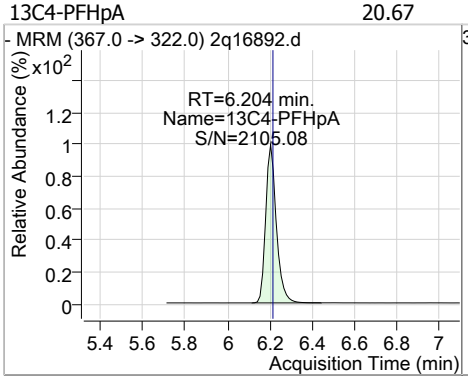


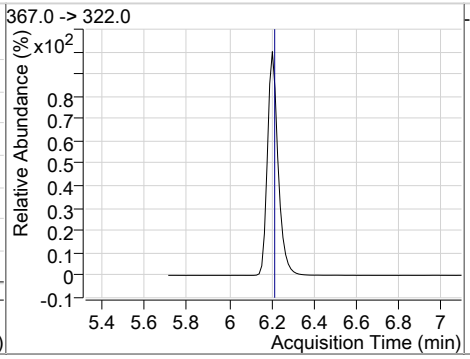


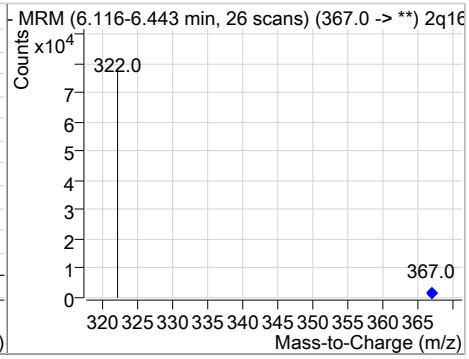




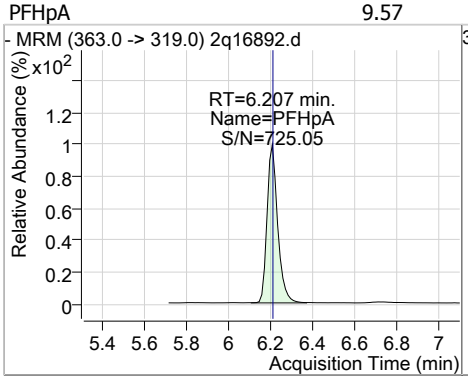
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.67	6.20	-0.01	56215				

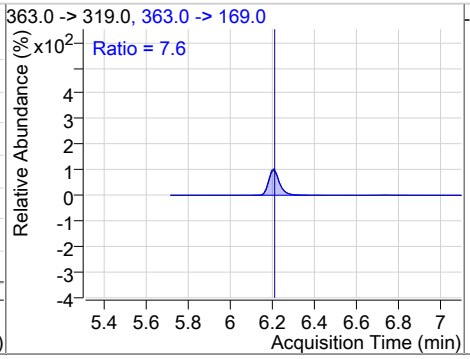


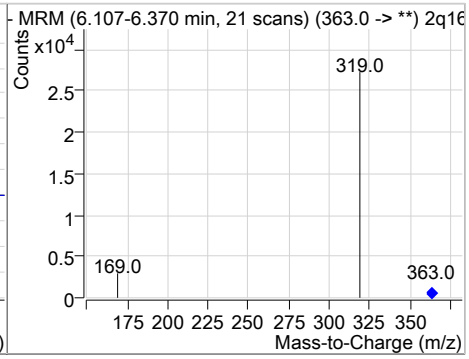




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	9.57	6.21	0.00	19690	363.0 -> 169.0	7.6	0.0	37.2

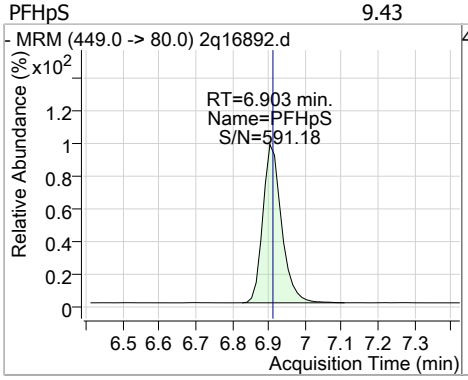


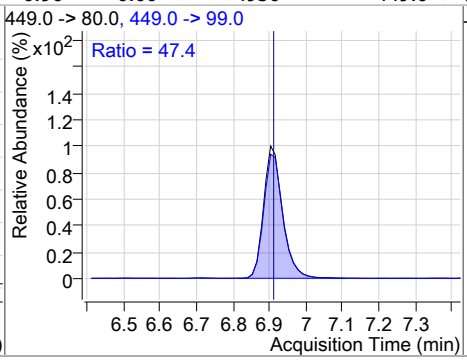


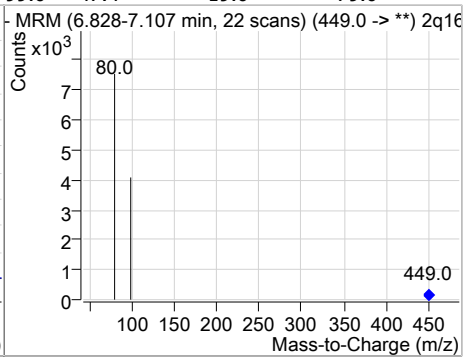


Perfluorinated Compounds by LC/MS/MS

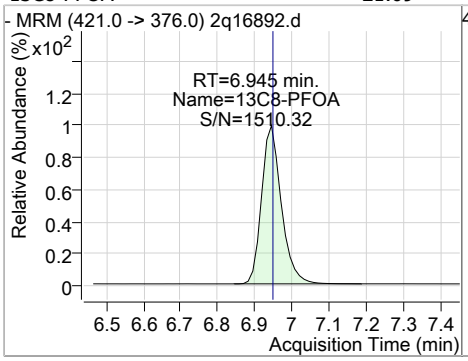
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	9.43	6.90	0.00	4950	449.0 -> 99.0	47.4	19.0	79.0

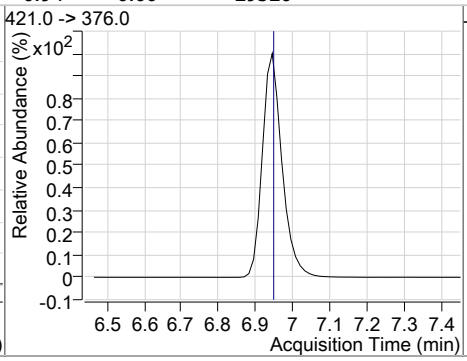


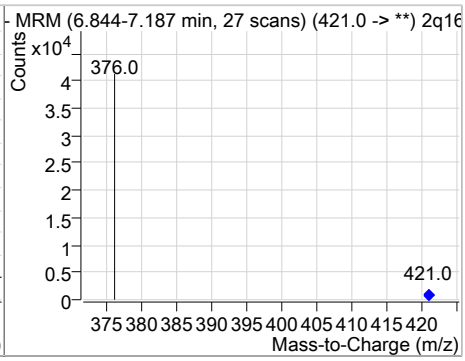




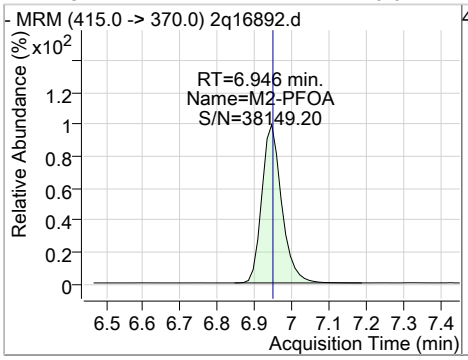
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.09	6.94	0.00	29326				

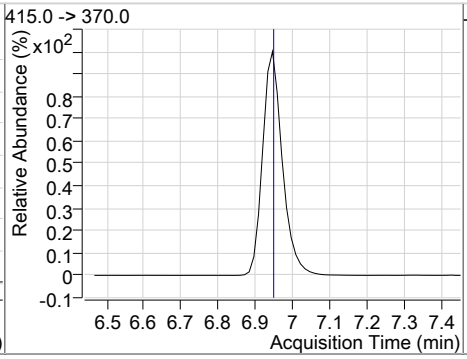


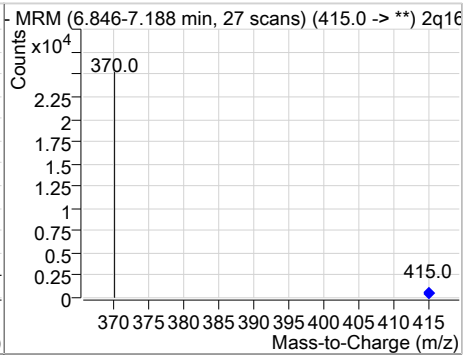




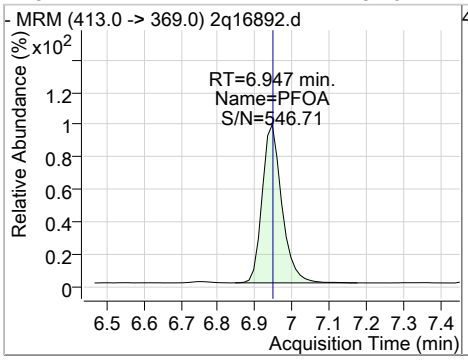
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.02	6.95	0.00	18159				

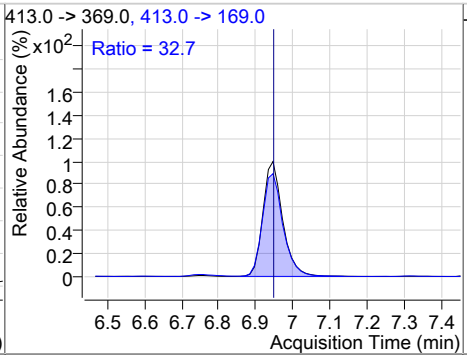


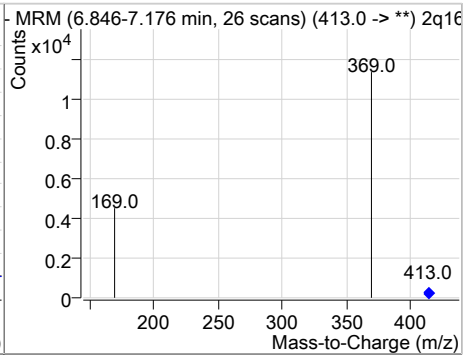




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	9.48	6.95	0.00	7625	413.0 -> 169.0	32.7	5.0	65.0

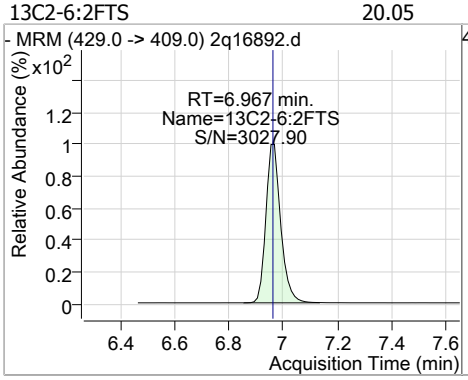


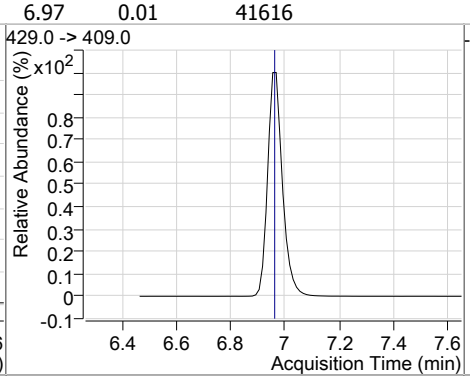


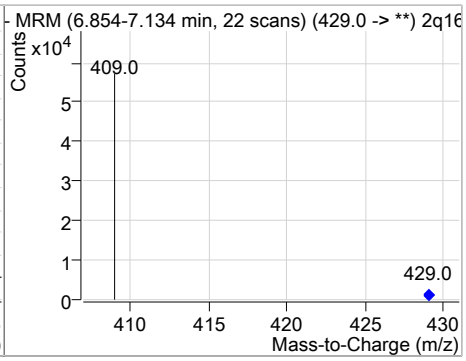


Perfluorinated Compounds by LC/MS/MS

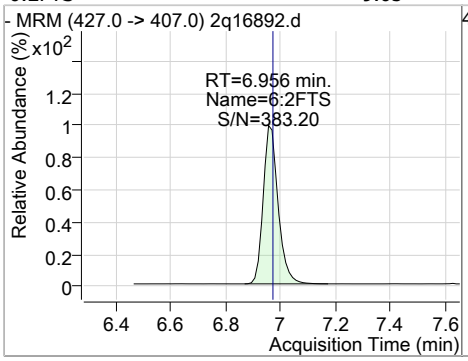
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.05	6.97	0.01	41616				

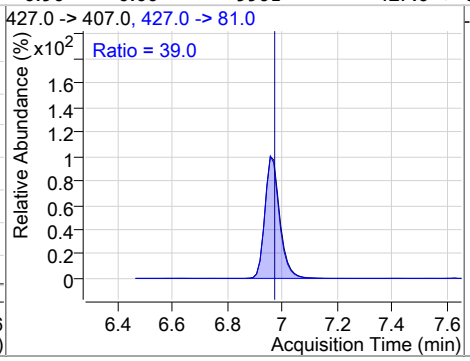


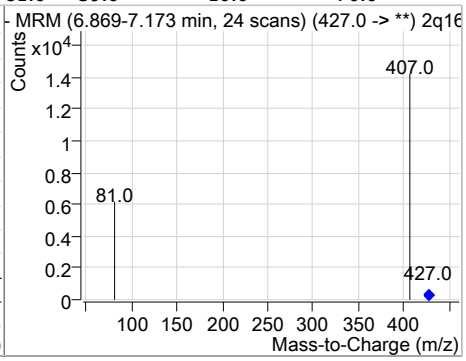




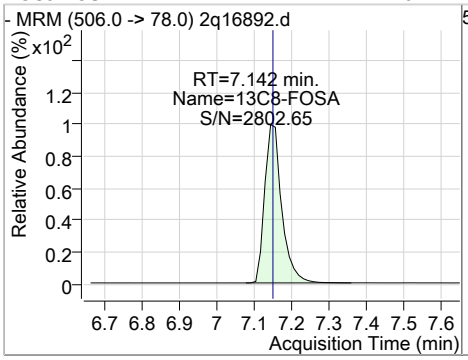
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	9.65	6.96	0.00	9901	427.0 -> 81.0	39.0	10.0	70.0

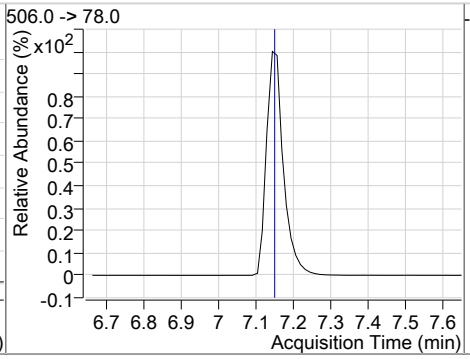


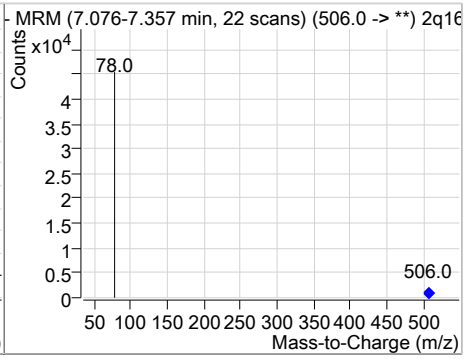




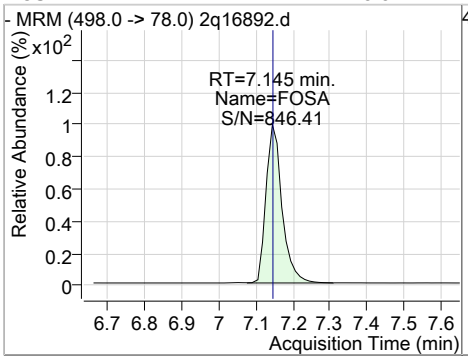
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.46	7.14	0.00	33637				

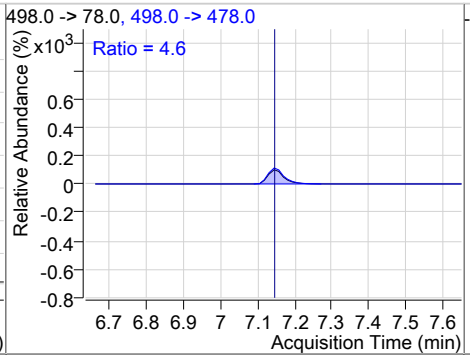


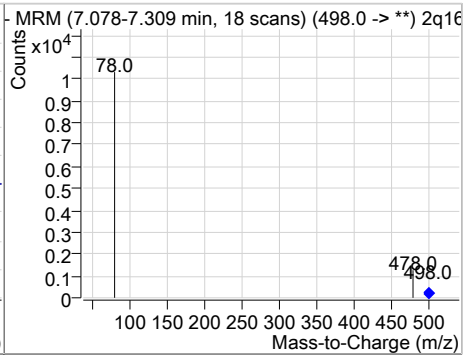




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	8.82	7.15	0.00	7290	498.0 -> 478.0	4.6	0.0	34.0

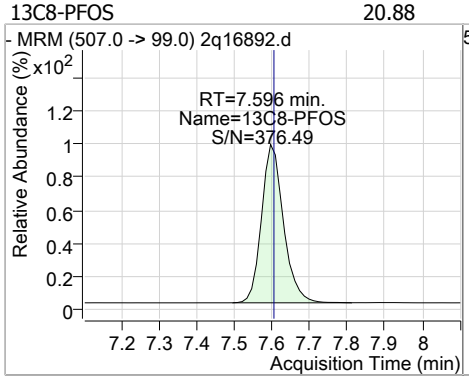


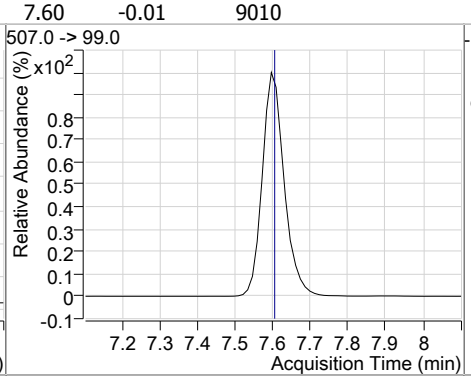


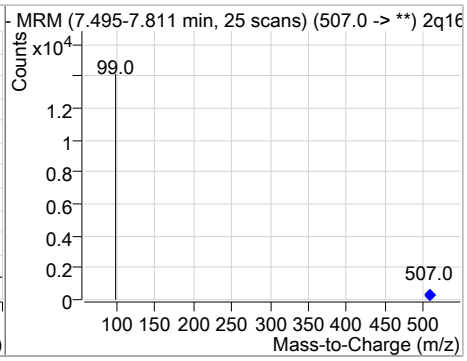


Perfluorinated Compounds by LC/MS/MS

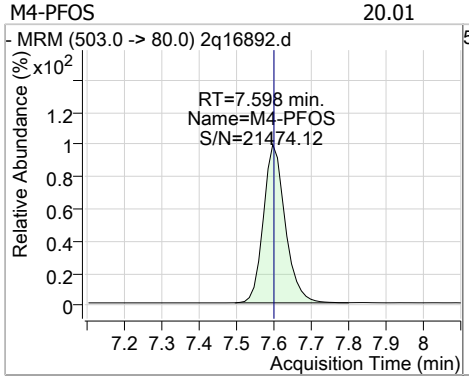
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.88	7.60	-0.01	9010				

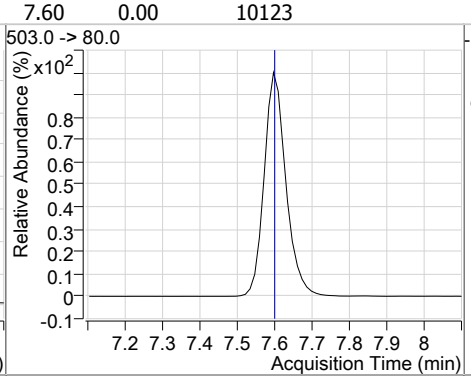


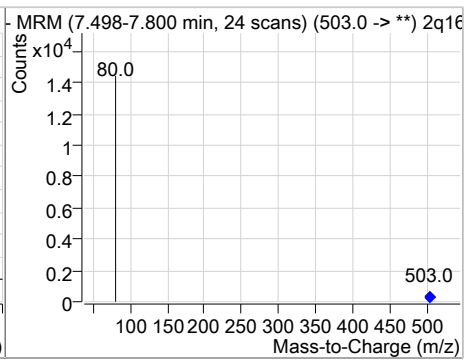




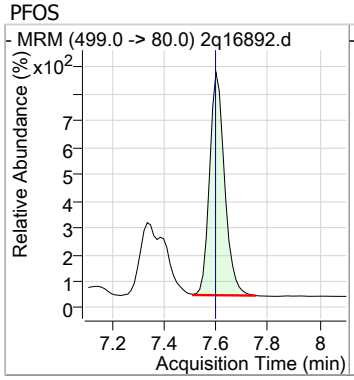
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.01	7.60	0.00	10123				

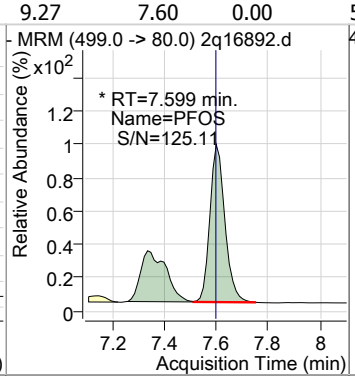


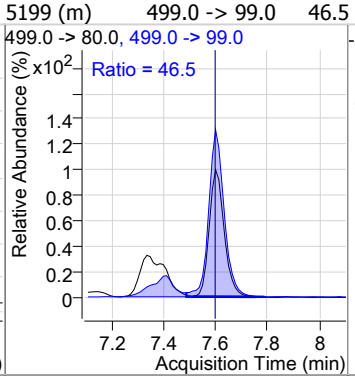


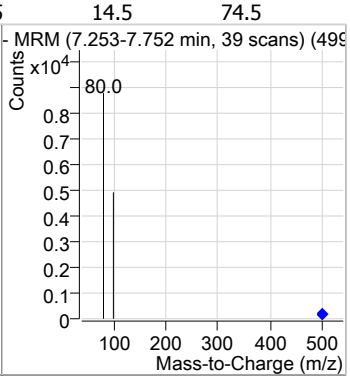


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	9.27	7.60	0.00	5199 (m)	499.0 -> 99.0	46.5	14.5	74.5

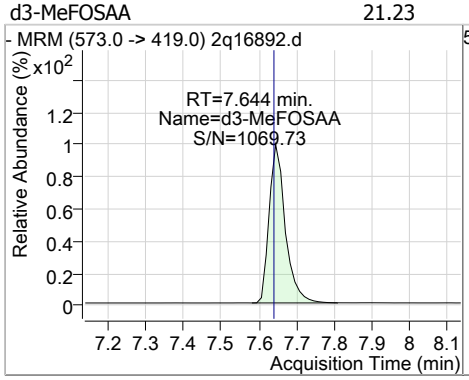


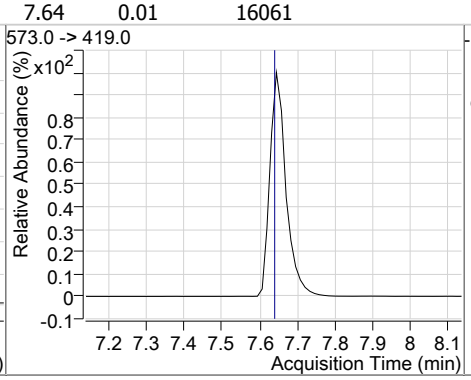


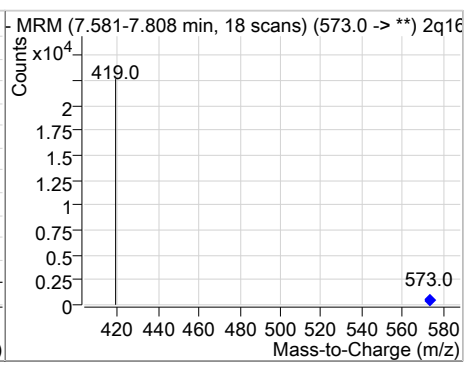




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.23	7.64	0.01	16061				

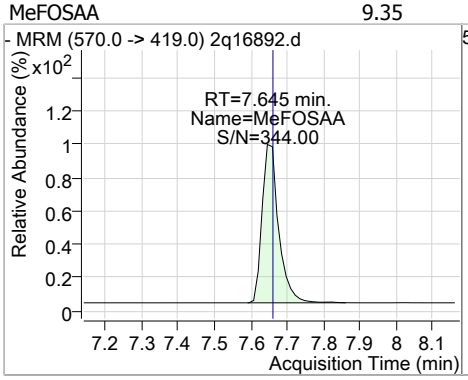


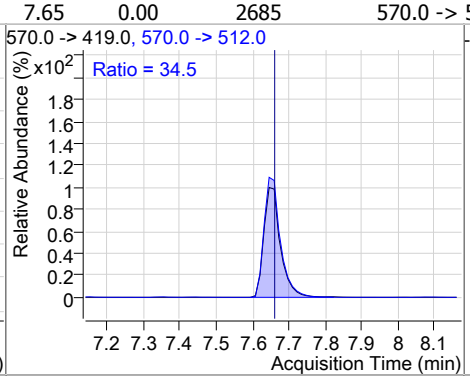


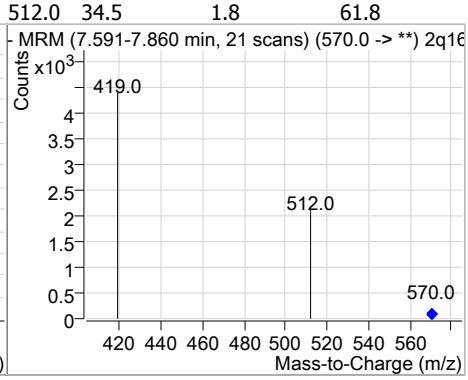


Perfluorinated Compounds by LC/MS/MS

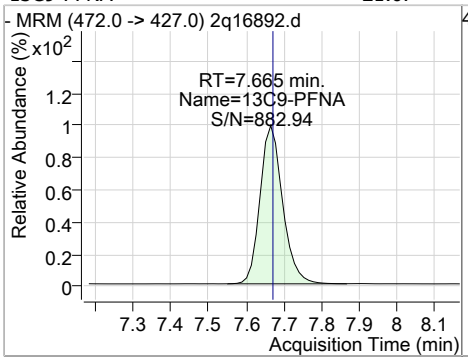
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	9.35	7.65	0.00	2685	570.0 -> 512.0	34.5	1.8	61.8

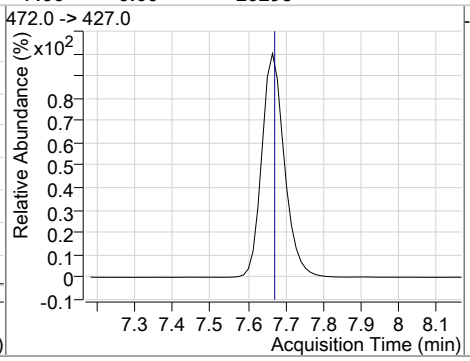


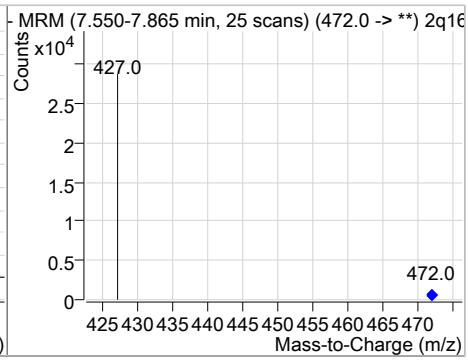




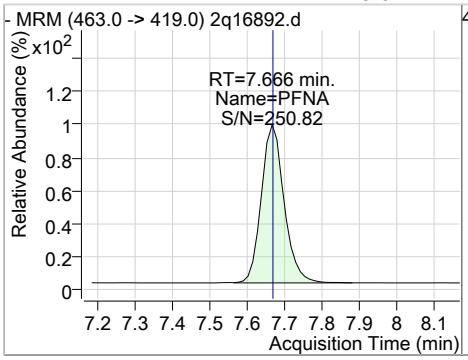
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.07	7.66	0.00	20298				

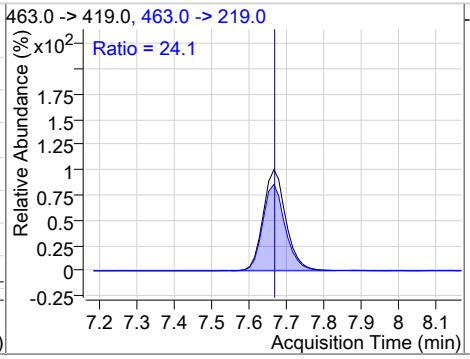


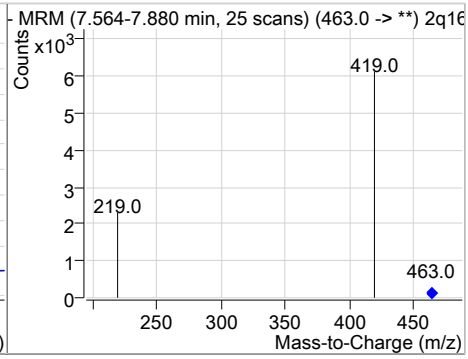




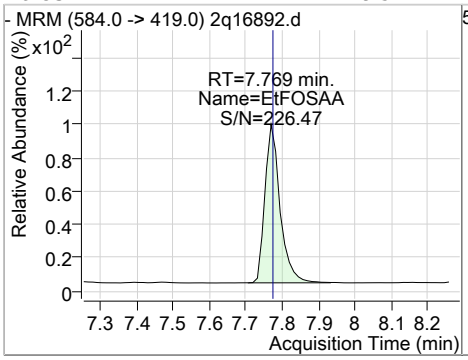
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	9.87	7.67	0.00	3864	463.0 -> 219.0	24.1	0.0	58.4

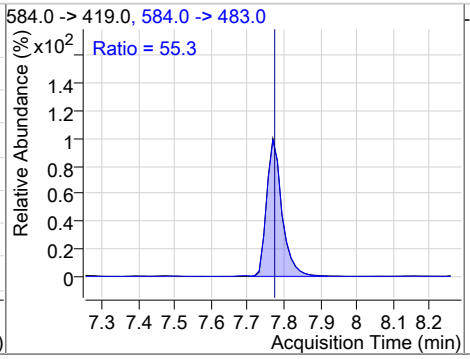


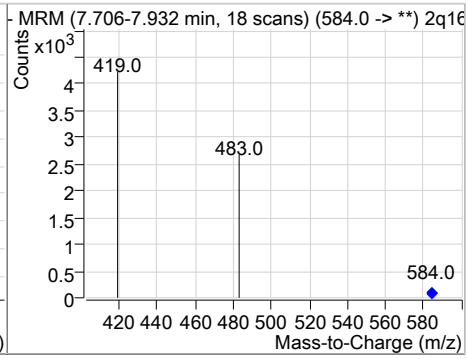




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	9.51	7.77	0.01	2576	584.0 -> 483.0	55.3	24.8	84.8

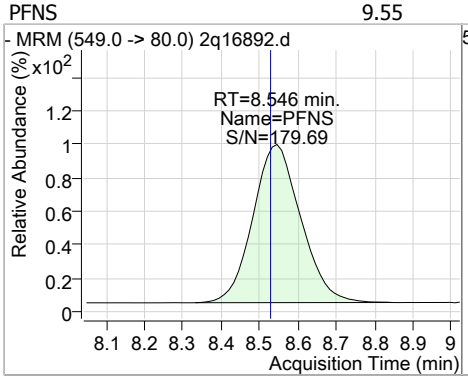


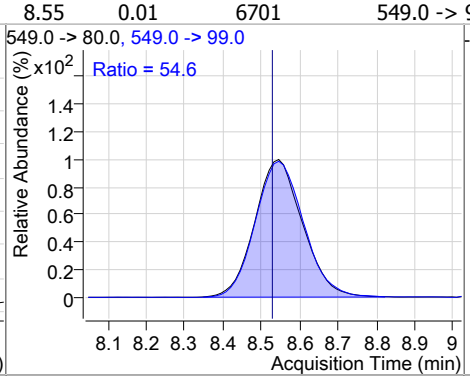


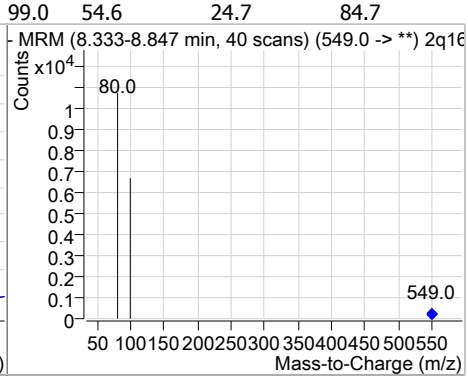


Perfluorinated Compounds by LC/MS/MS

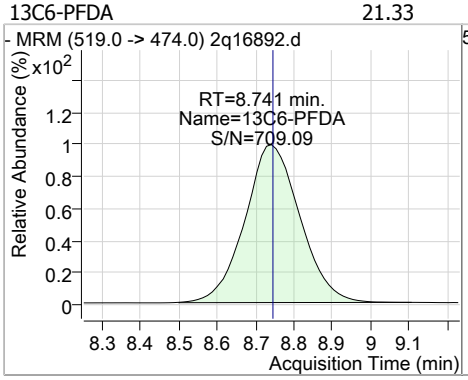
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	9.55	8.55	0.01	6701	549.0 -> 99.0	54.6	24.7	84.7

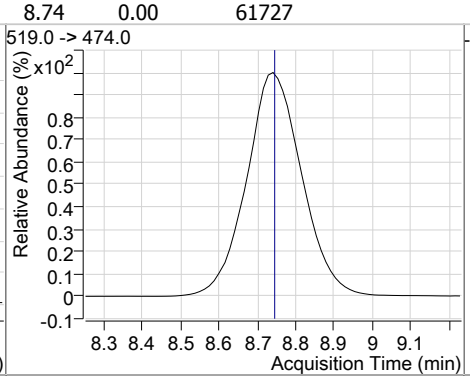


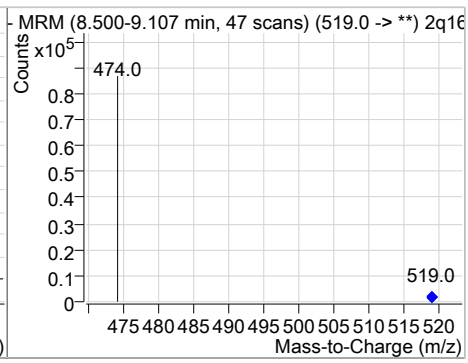




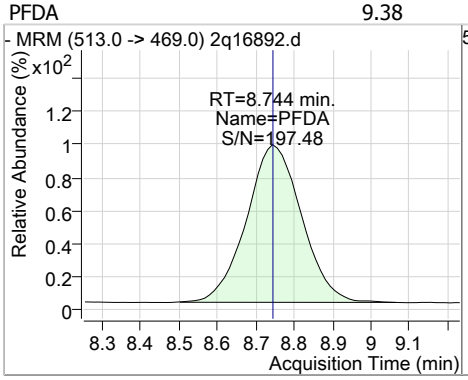
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.33	8.74	0.00	61727				

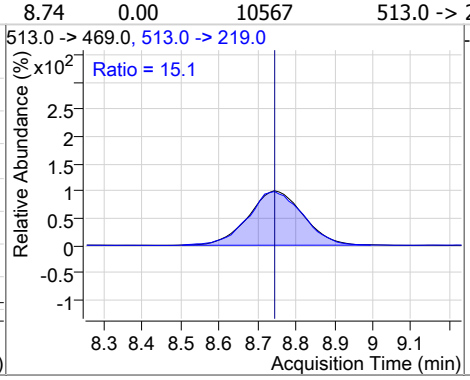


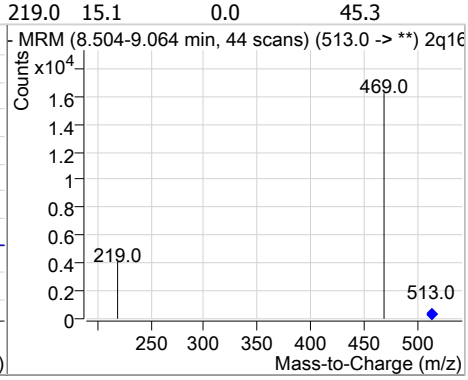




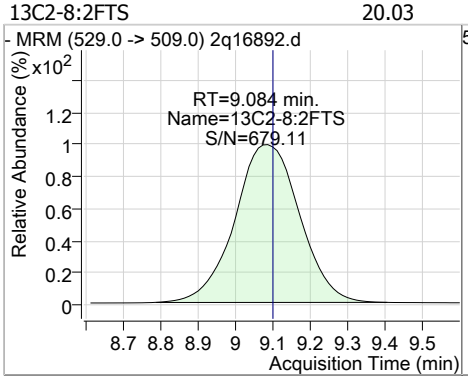
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	9.38	8.74	0.00	10567	513.0 -> 219.0	15.1	0.0	45.3

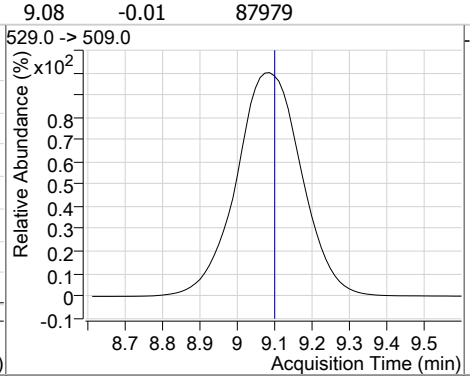


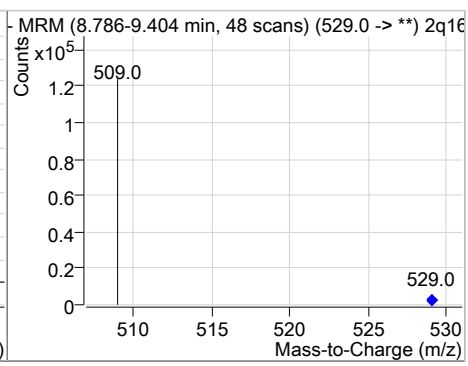




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.03	9.08	-0.01	87979				

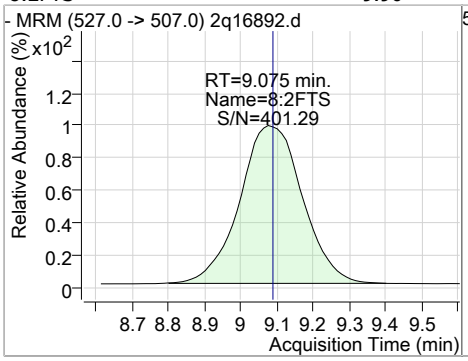


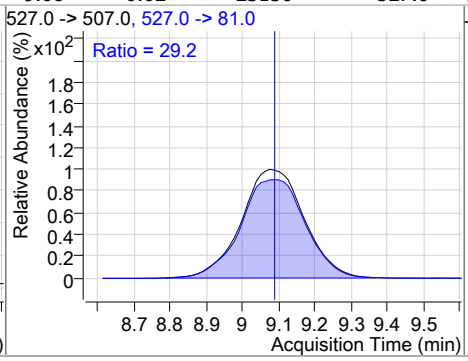


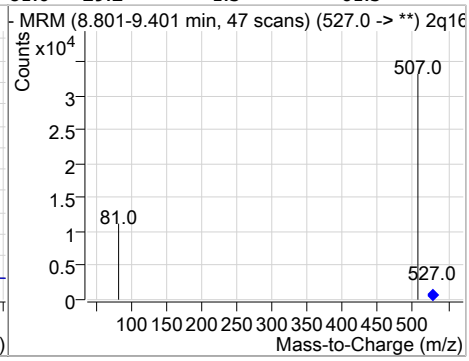


Perfluorinated Compounds by LC/MS/MS

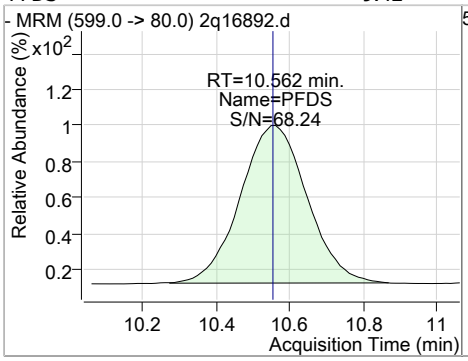
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	9.90	9.08	-0.02	23156	527.0 -> 81.0	29.2	1.3	61.3

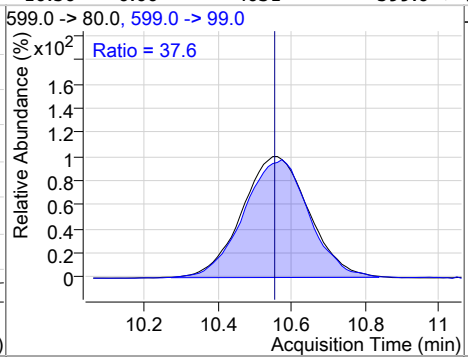


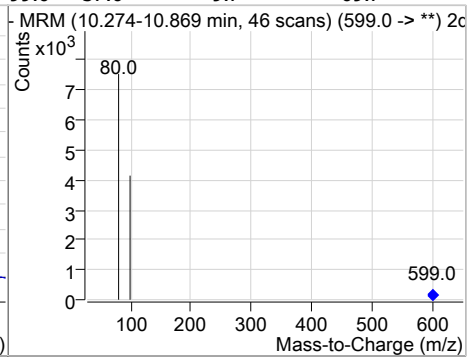




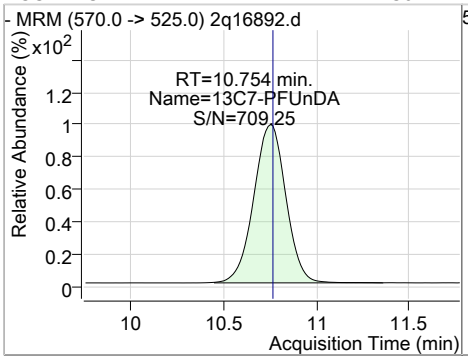
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	9.42	10.56	0.00	4031	599.0 -> 99.0	37.6	9.7	69.7

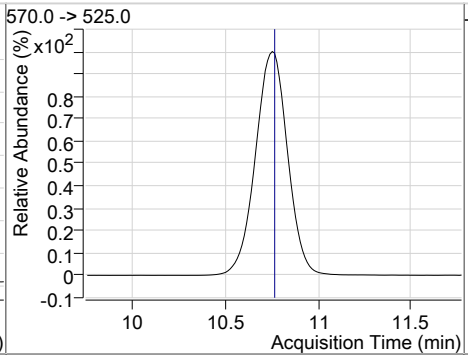


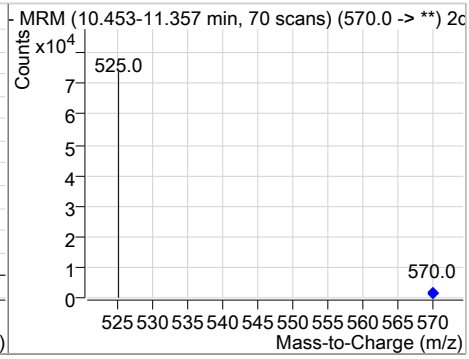




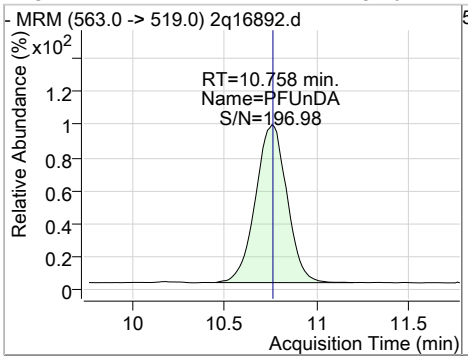
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.30	10.75	-0.01	50584				

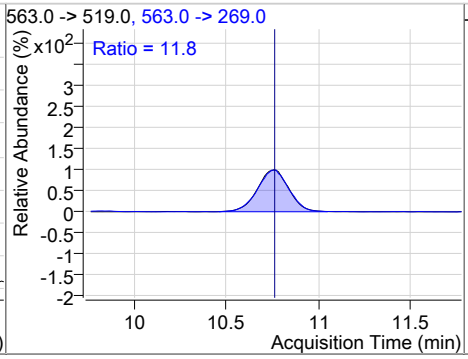


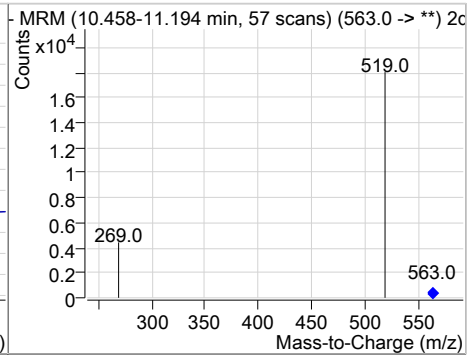




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	9.40	10.76	0.00	11511	563.0 -> 269.0	11.8	0.0	41.8

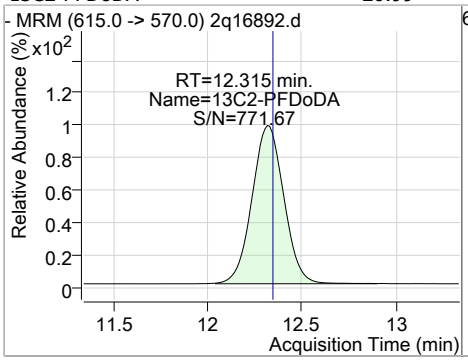


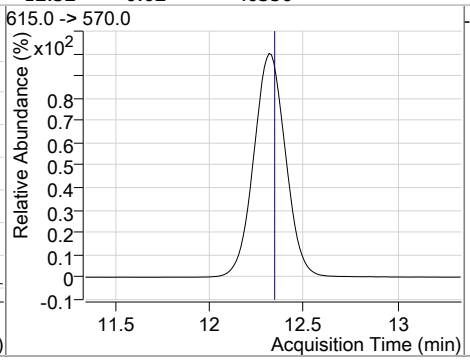


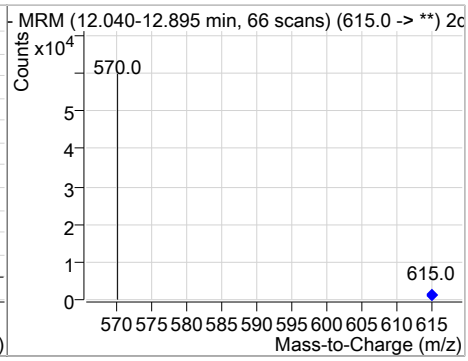


Perfluorinated Compounds by LC/MS/MS

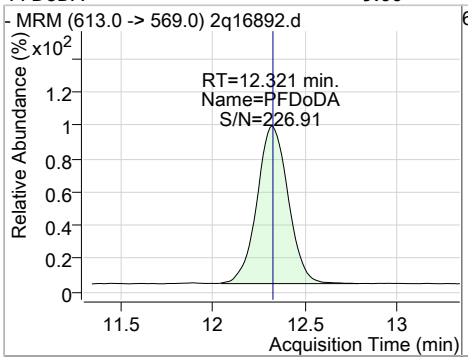
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.99	12.32	-0.02	40356				

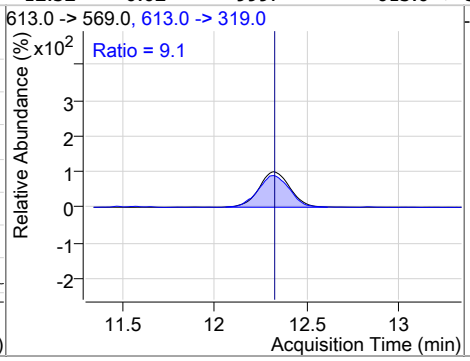


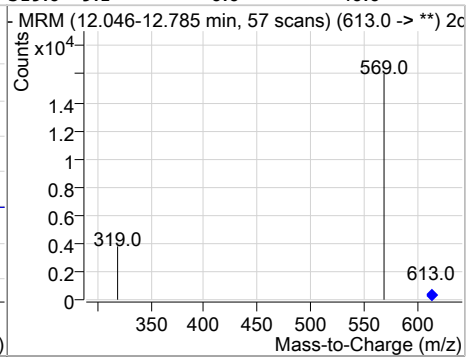




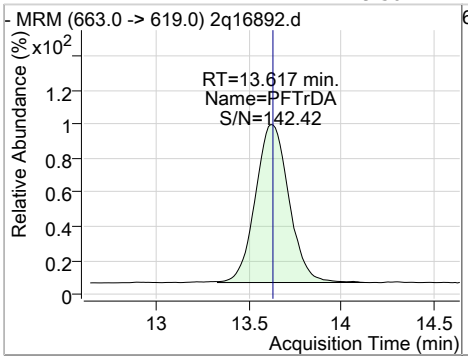
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	9.60	12.32	-0.02	9997	613.0 -> 319.0	9.1	0.0	40.0

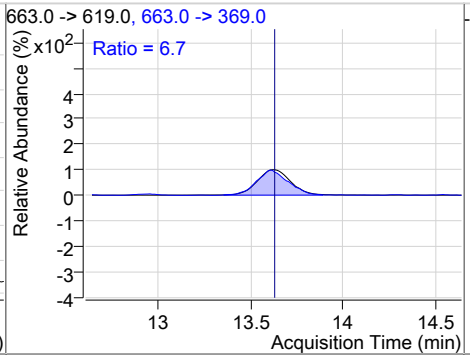


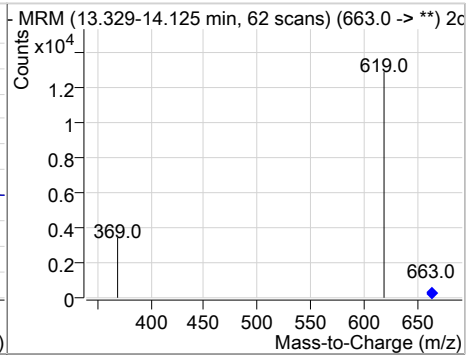




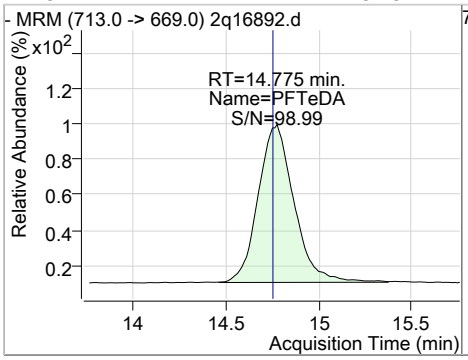
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	9.50	13.62	-0.02	7661	663.0 -> 369.0	6.7	0.0	37.1

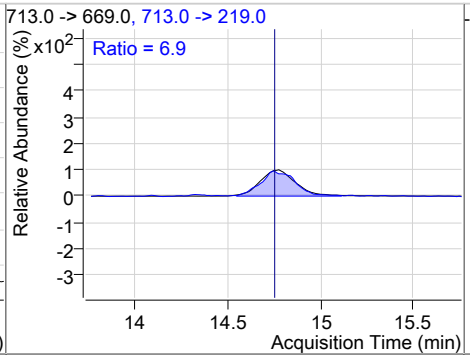


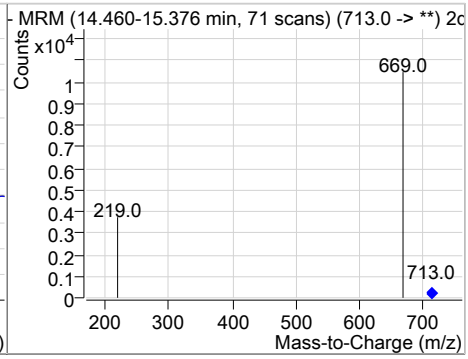




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	9.73	14.78	0.01	5401	713.0 -> 219.0	6.9	0.0	37.4

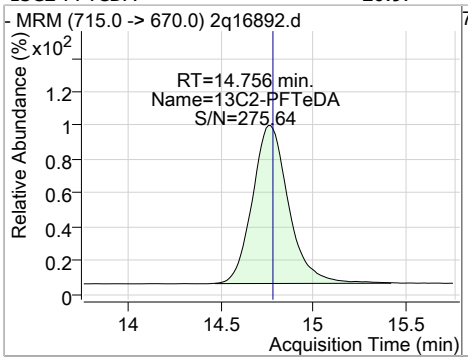


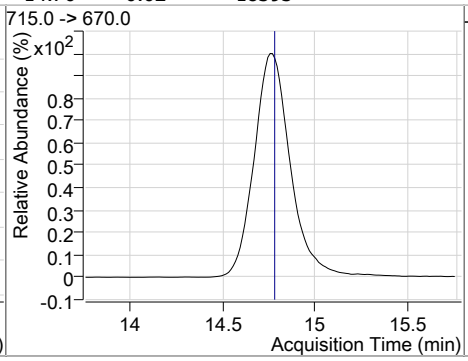


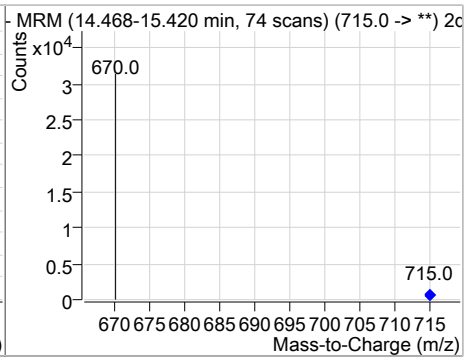


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.97	14.76	-0.02	18393				







Manual Integration Approval Summary

Sample Number:	S2Q294-IC294	**Method:**	EPA 537M QSM5.1 B-15
Lab FileID:	2Q16892.D	**Analyst approved:**	07/11/18 14:37 Natasha Gumtie
Injection Time:	07/10/18 17:33	**Supervisor approved:**	07/11/18 16:54 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.60	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/11/18 16:54

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16893.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/10/2018 5:54:21 PM
Sample Name : icc294-20
Vial : Vial 7
DA Method File : PFC_ID_071018_S2Q294.quantmethod.xml
Batch Name : s2q294.batch.bin
Sample Information : op70743,S2Q294,130,,,1.0,1,water

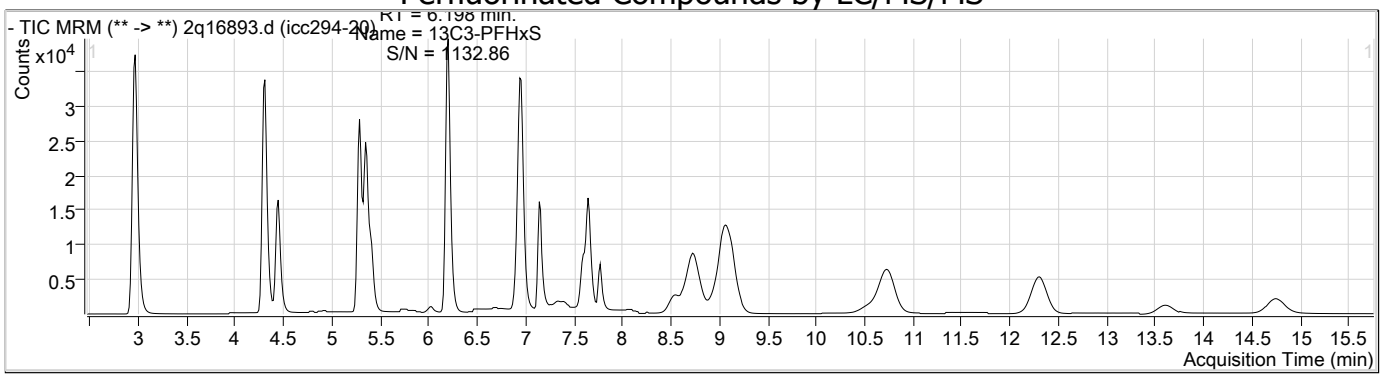
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.946	415.0 -> 370.0	18288	20.00	µg/L	0.000
13C4-PFOS	7.598	503.0 -> 80.0	9552	20.00	µg/L	-0.004
M4-PFBA	2.966	217.0 -> 172.0	129894	20.00	µg/L	-0.001
M5-PFPeA	4.312	268.0 -> 223.0	63597	20.00	µg/L	0.000
M5-PFHxA	5.353	318.0 -> 273.0	57697	20.00	µg/L	-0.008
M4-PFHpA	6.204	367.0 -> 322.0	55738	20.00	µg/L	-0.005
M8-PFOA	6.945	421.0 -> 376.0	27666	20.00	µg/L	-0.001
M9-PFNA	7.665	472.0 -> 427.0	20052	20.00	µg/L	-0.003
M6-PFDA	8.729	519.0 -> 474.0	59261	20.00	µg/L	-0.014
M7-PFUnDA	10.729	570.0 -> 525.0	48278	20.00	µg/L	-0.032
M2-PFDoDA	12.303	615.0 -> 570.0	39530	20.00	µg/L	-0.036
M2-PFTeDA	14.744	715.0 -> 670.0	17452	20.00	µg/L	-0.031
M8-FOSA	7.142	506.0 -> 78.0	31227	20.00	µg/L	-0.003
M3-PFBS	4.443	302.0 -> 99.0	20136	20.00	µg/L	0.006
M3-PFHxS	6.198	402.0 -> 99.0	16797	20.00	µg/L	0.002
M8-PFOS	7.596	507.0 -> 99.0	8811	20.00	µg/L	-0.006
M2-4:2FTS	5.285	329.0 -> 309.0	54305	20.00	µg/L	0.002
M2-6:2FTS	6.955	429.0 -> 409.0	41214	20.00	µg/L	-0.003
M2-8:2FTS	9.059	529.0 -> 509.0	89156	20.00	µg/L	-0.036
M3-MeFOSAA	7.644	573.0 -> 419.0	15645	20.00	µg/L	0.008
System Monitoring Compounds						
13C2-4:2FTS	5.285	329.0 -> 309.0	54305	20.26	µg/L	0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.3%		
13C2-6:2FTS	6.955	429.0 -> 409.0	41220	19.86	µg/L	-0.003
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.3%		
13C2-8:2FTS	9.059	529.0 -> 509.0	88360	20.11	µg/L	-0.036
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%		
13C2-PFDoDA	12.303	615.0 -> 570.0	39535	20.56	µg/L	-0.036
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.8%		
13C2-PFTeDA	14.744	715.0 -> 670.0	17945	20.46	µg/L	-0.031
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%		
13C3-PFBS	4.443	302.0 -> 99.0	20138	20.24	µg/L	0.006
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.2%		
13C3-PFHxS	6.198	402.0 -> 99.0	16805	20.25	µg/L	0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.2%		
13C4-PFBA	2.966	217.0 -> 172.0	129843	20.26	µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.3%		
13C4-PFHpA	6.204	367.0 -> 322.0	55725	20.49	µg/L	-0.005
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%		
13C5-PFHxA	5.353	318.0 -> 273.0	57691	20.34	µg/L	-0.008
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.7%		
13C5-PFPeA	4.312	268.0 -> 223.0	63575	20.32	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
13C6-PFDA	8.729	519.0 -> 474.0	59007	20.39	µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%		

Perfluorinated Compounds by LC/MS/MS

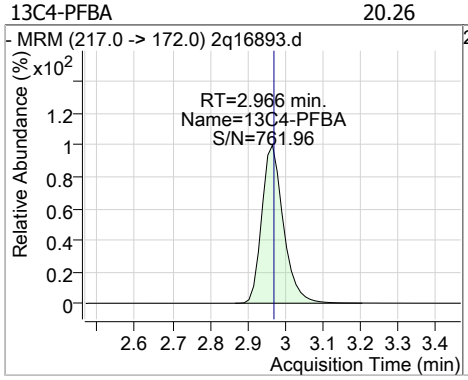
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.729	570.0 -> 525.0	48390	20.37	µg/L		-0.032
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%			
13C8-FOSA	7.142	506.0 -> 78.0	31229	19.92	µg/L		-0.003
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.6%			
13C8-PFOA	6.945	421.0 -> 376.0	27665	19.90	µg/L		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%			
13C8-PFOS	7.596	507.0 -> 99.0	8808	20.41	µg/L		-0.006
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.0%			
13C9-PFNA	7.665	472.0 -> 427.0	20046	20.81	µg/L		-0.003
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.1%			
d3-MeFOSAA	7.644	573.0 -> 419.0	15638	20.67	µg/L		0.008
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%			
M2-PFOA	6.946	415.0 -> 370.0	18290	20.01	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.598	503.0 -> 80.0	9527	19.95	ng/ml		-0.004
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%			
Target Compounds							**QValue**
4:2FTS	5.288	327.0 -> 307.0	26678	19.60	µg/L		100
6:2FTS	6.956	427.0 -> 407.0	19948	19.97	µg/L		96
8:2FTS	9.063	527.0 -> 507.0	46019	19.92	µg/L		96
EtFOSAA	7.769	584.0 -> 419.0	4968	18.83	µg/L		98
FOSA	7.145	498.0 -> 78.0	14545	18.96	µg/L		99
MeFOSAA	7.645	570.0 -> 419.0	5064	18.10	µg/L		96
PFBA	2.962	213.0 -> 169.0	19229	18.96	µg/L		100
PFBS	4.447	299.0 -> 80.0	26450	19.26	µg/L		100
PFDA	8.731	513.0 -> 469.0	21056	19.56	µg/L		99
PFDoDA	12.309	613.0 -> 569.0	19964	19.60	µg/L		98
PFDS	10.537	599.0 -> 80.0	7977	19.53	µg/L		99
PFHpA	6.207	363.0 -> 319.0	39438	19.33	µg/L		99
PFHpS	6.903	449.0 -> 80.0	9543	18.57	µg/L		99
PFHxA	5.355	313.0 -> 269.0	18071	18.47	µg/L		99
PFHxS	6.188	399.0 -> 80.0	18858	18.79	µg/L	m	99
PFNA	7.666	463.0 -> 419.0	7714	19.96	µg/L		93
PFNS	8.533	549.0 -> 80.0	13542	19.74	µg/L		98
PFOA	6.947	413.0 -> 369.0	14732	19.41	µg/L		98
PFOS	7.599	499.0 -> 80.0	10508	19.16	µg/L	m	96
PFPeA	4.316	263.0 -> 219.0	58225	19.16	µg/L		100
PFPeS	5.408	349.0 -> 80.0	16961	19.22	µg/L		98
PFTeDA	14.750	713.0 -> 669.0	10656	20.12	µg/L		99
PFTrDA	13.604	663.0 -> 619.0	15225	19.80	µg/L		99
PFUnDA	10.733	563.0 -> 519.0	22816	19.50	µg/L		100

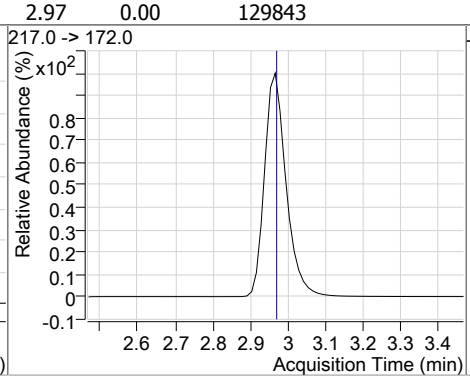
 # = Qualifier out of range, m = manually integrated, + = Area summed

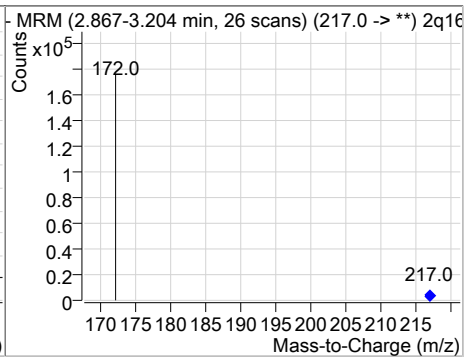
Perfluorinated Compounds by LC/MS/MS



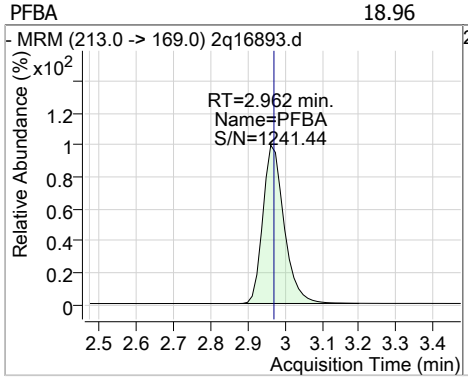
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.26	2.97	0.00	129843				

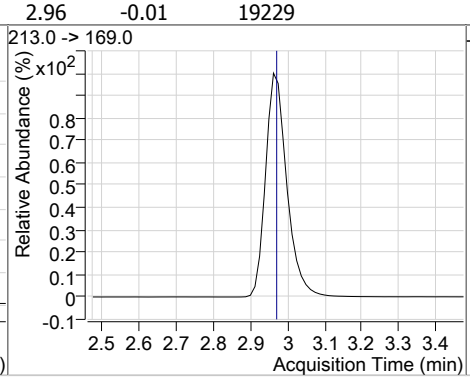


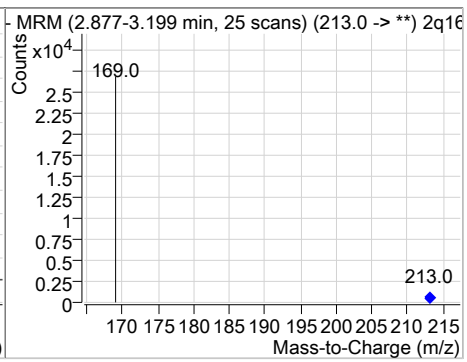




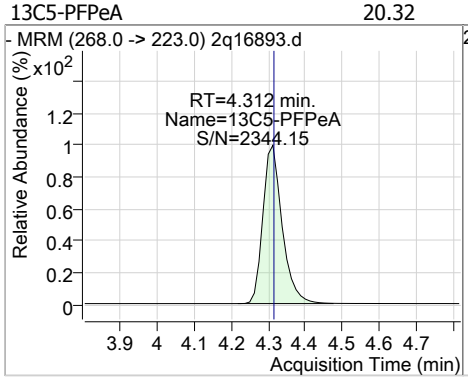
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	18.96	2.96	-0.01	19229				

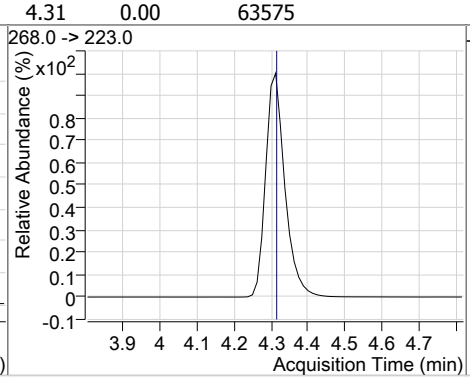


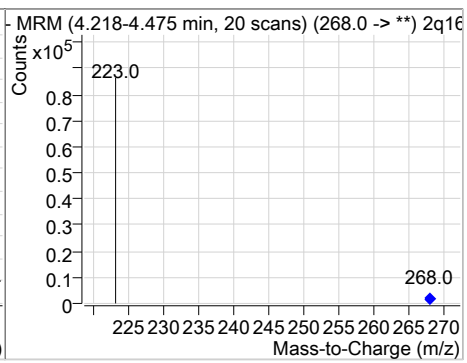




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.32	4.31	0.00	63575				

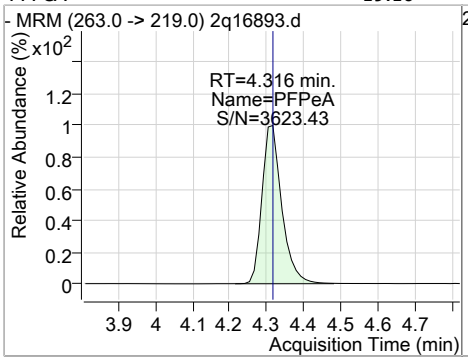


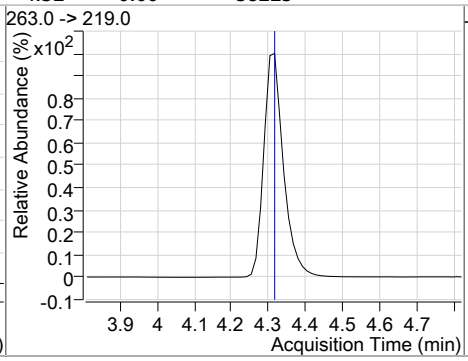


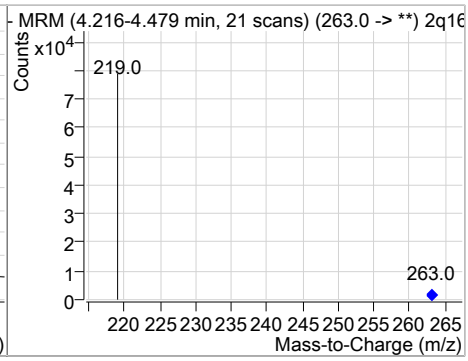


Perfluorinated Compounds by LC/MS/MS

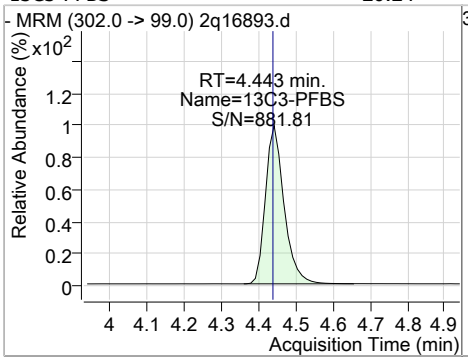
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.16	4.32	0.00	58225				

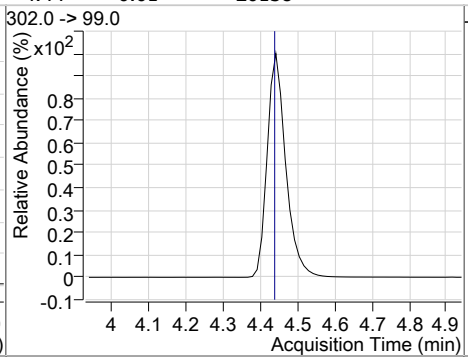


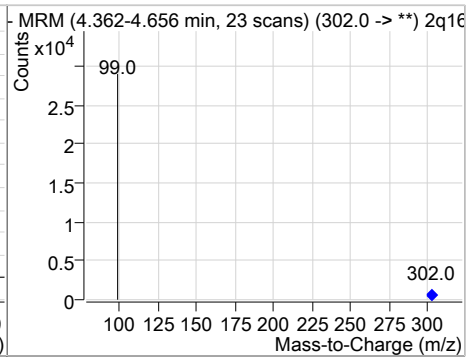




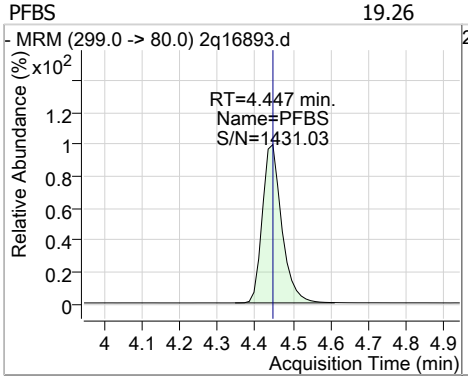
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.24	4.44	0.01	20138				

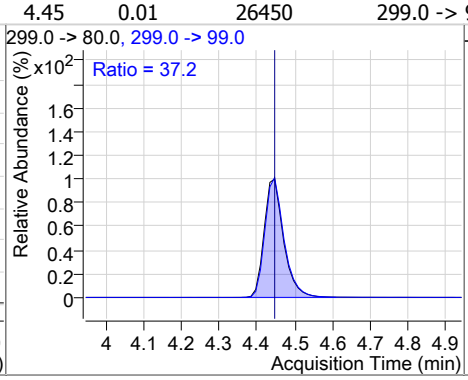


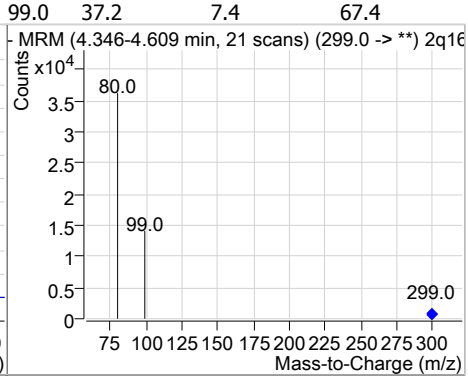




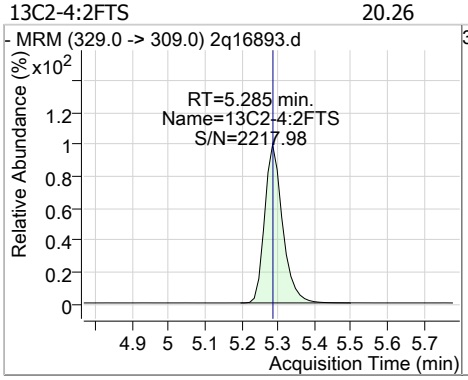
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.26	4.45	0.01	26450	299.0 -> 99.0	37.2	7.4	67.4

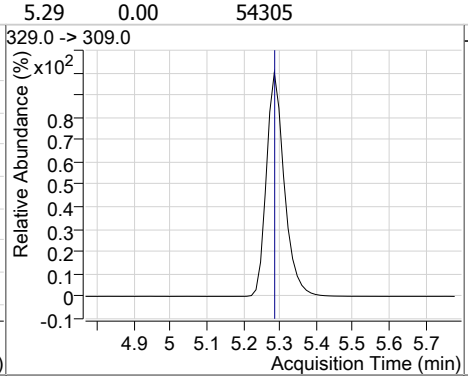


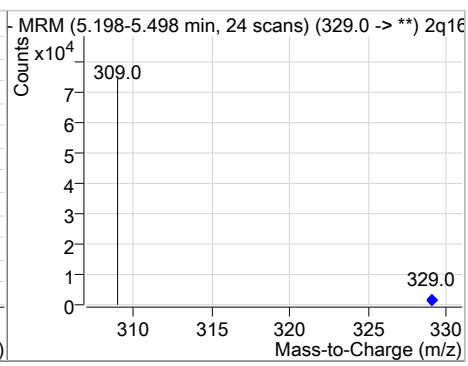




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.26	5.29	0.00	54305				

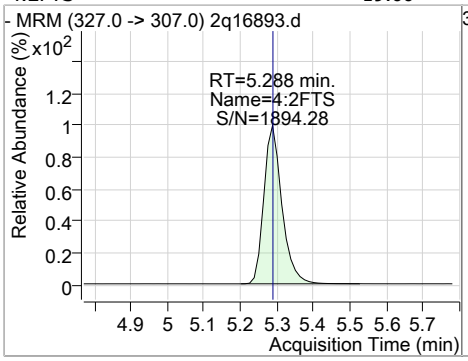


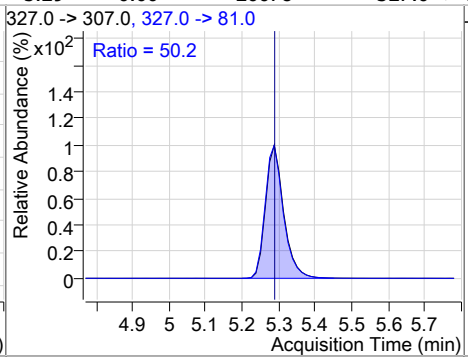


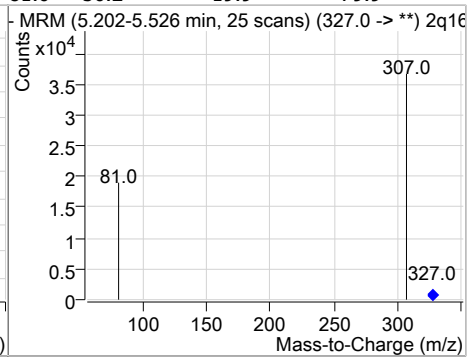


Perfluorinated Compounds by LC/MS/MS

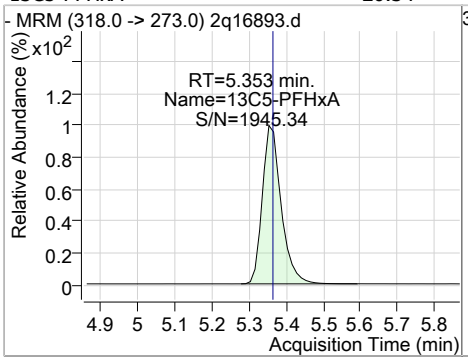
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.60	5.29	0.00	26678	327.0 -> 81.0	50.2	19.9	79.9

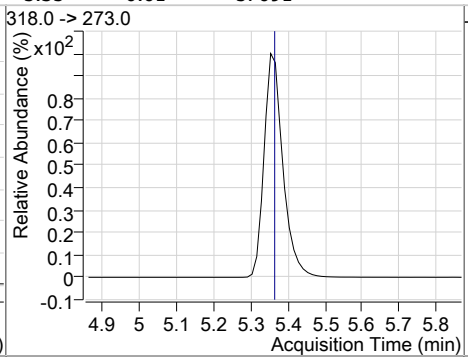


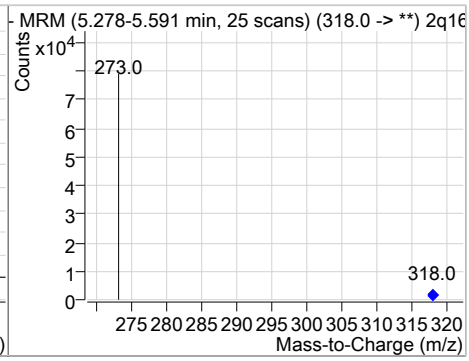




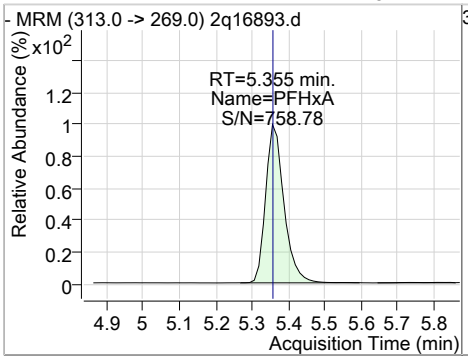
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.34	5.35	-0.01	57691				

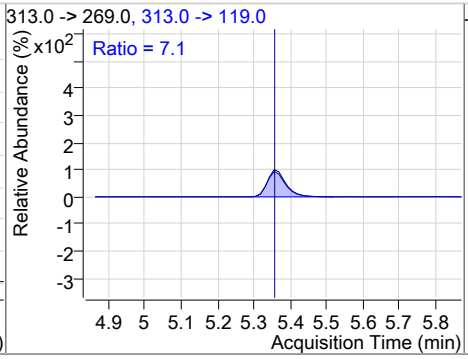


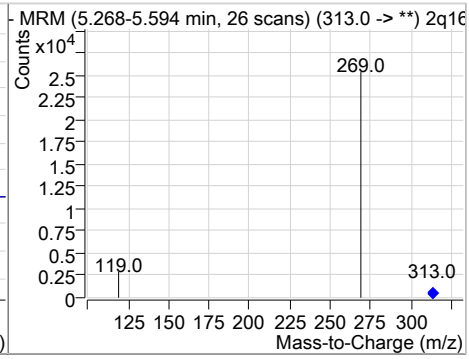




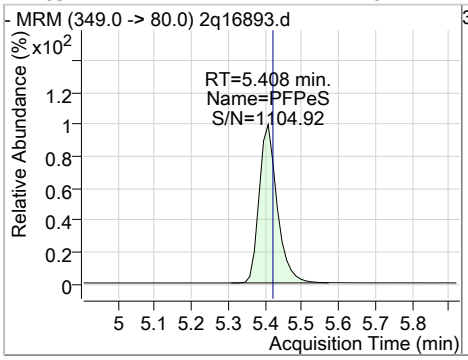
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	18.47	5.36	-0.01	18071	313.0 -> 119.0	7.1	0.0	37.6

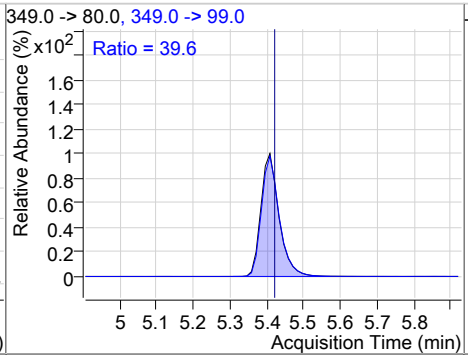


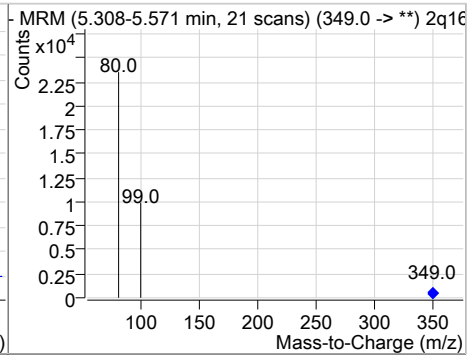




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.22	5.41	0.00	16961	349.0 -> 99.0	39.6	10.8	70.8

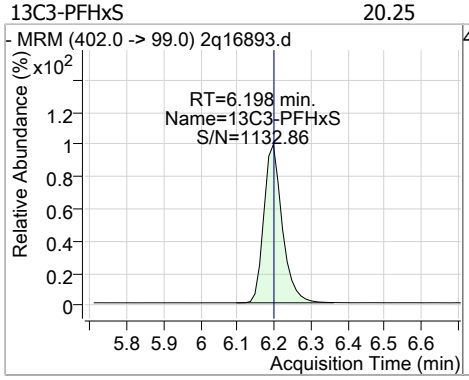


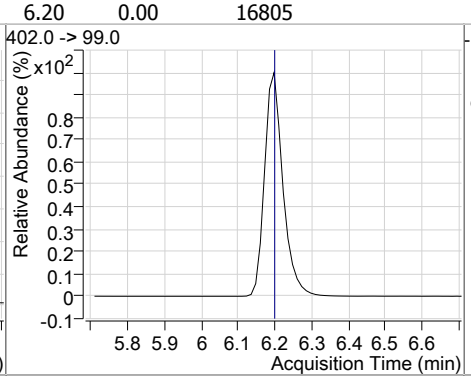


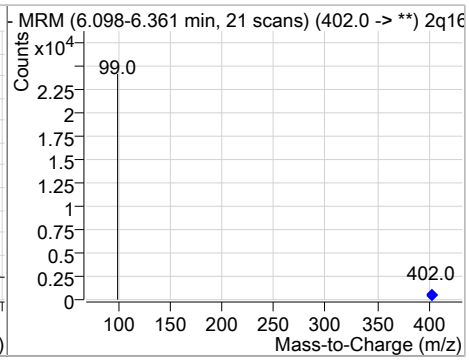


Perfluorinated Compounds by LC/MS/MS

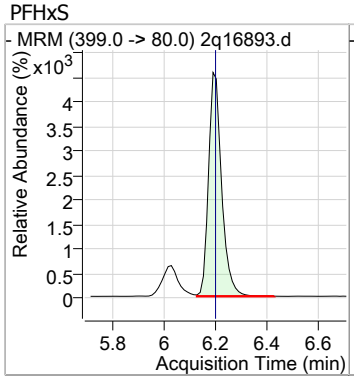
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.25	6.20	0.00	16805				

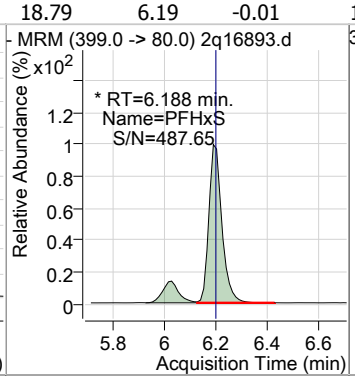


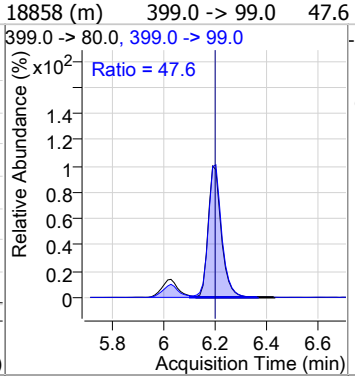


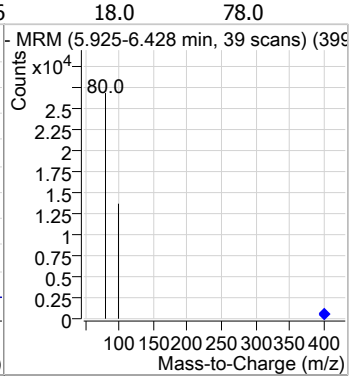


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	18.79	6.19	-0.01	18858 (m)	399.0 -> 99.0	47.6	18.0	78.0

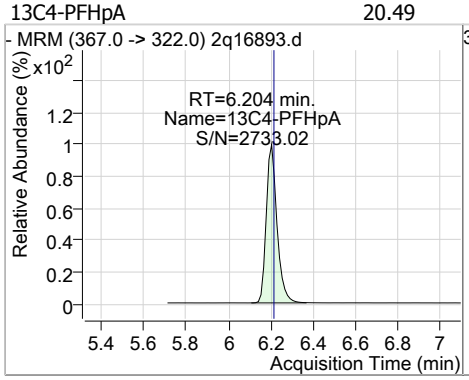


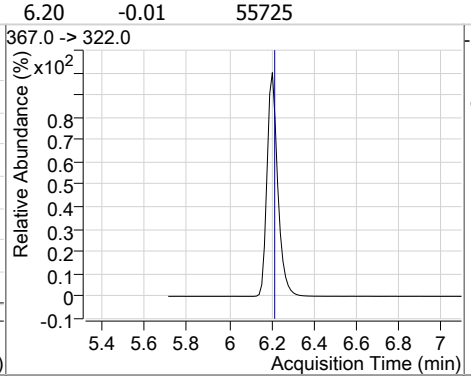


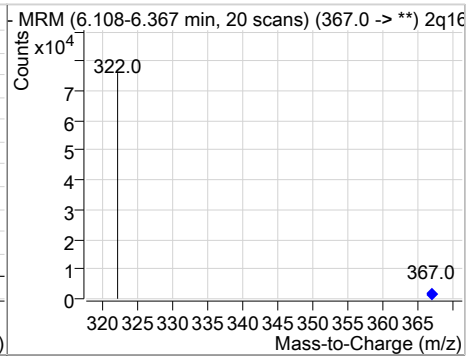




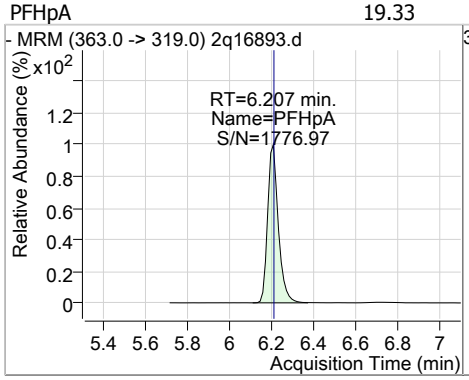
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.49	6.20	-0.01	55725				

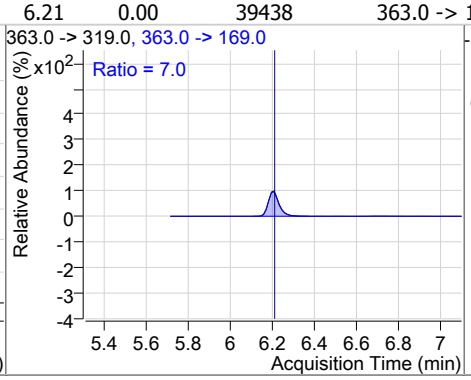


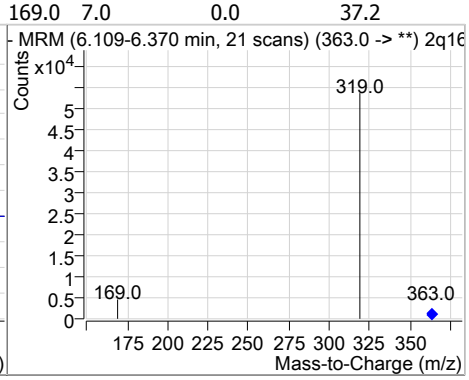




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.33	6.21	0.00	39438	363.0 -> 169.0	7.0	0.0	37.2

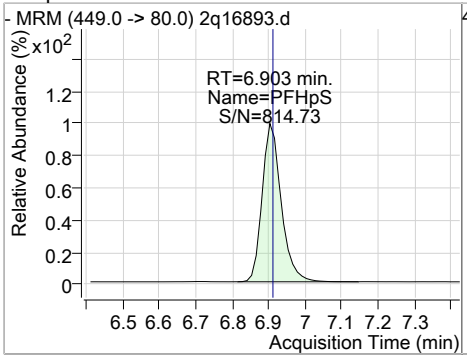


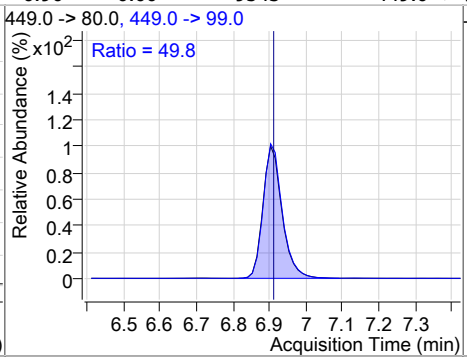


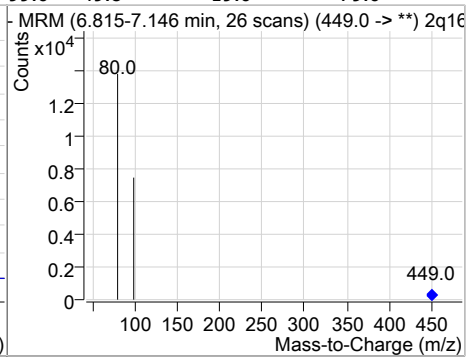


Perfluorinated Compounds by LC/MS/MS

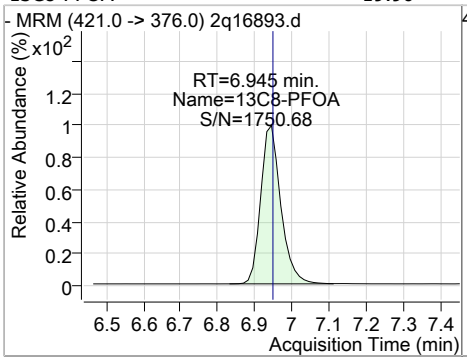
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	18.57	6.90	0.00	9543	449.0 -> 99.0	49.8	19.0	79.0

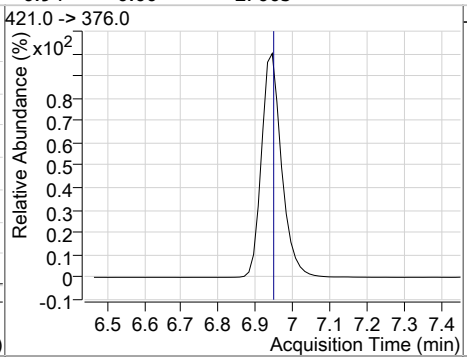


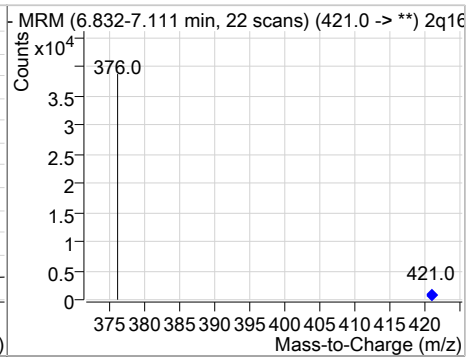




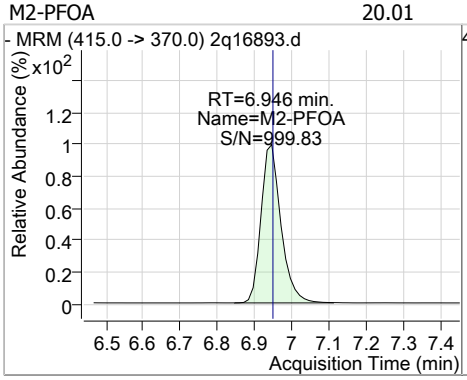
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.90	6.94	0.00	27665				

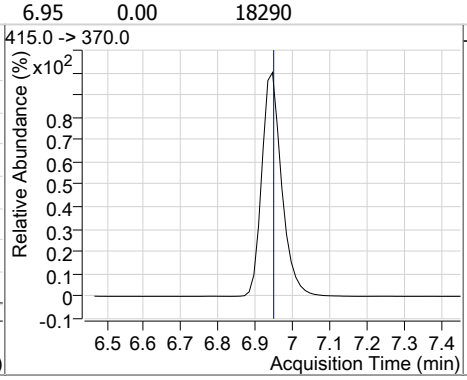


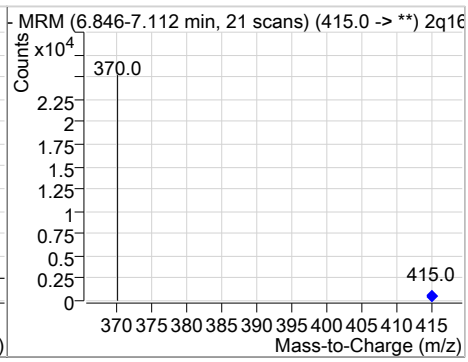




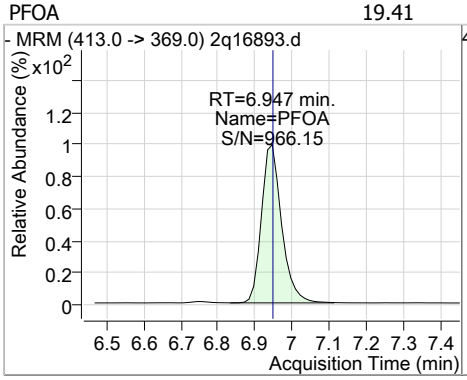
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.01	6.95	0.00	18290				

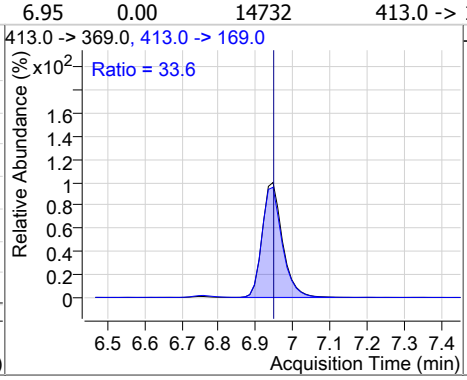


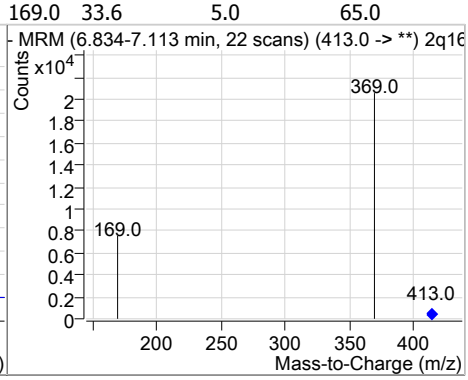




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.41	6.95	0.00	14732	413.0 -> 169.0	33.6	5.0	65.0

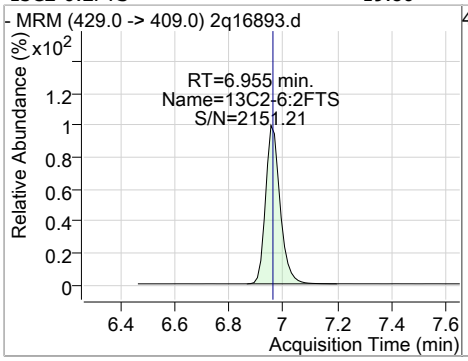


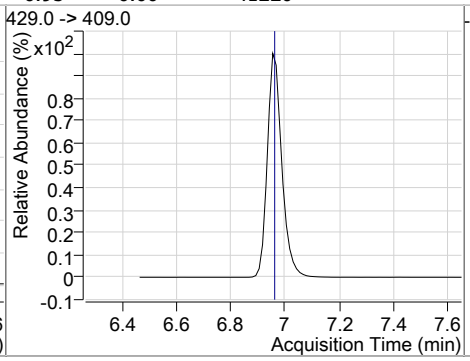


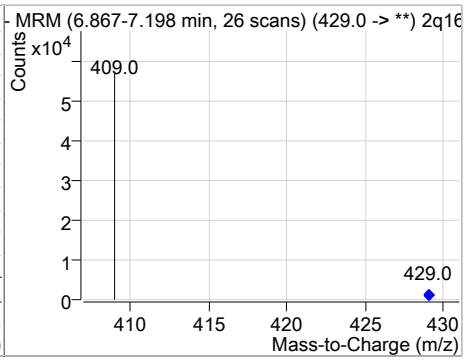


Perfluorinated Compounds by LC/MS/MS

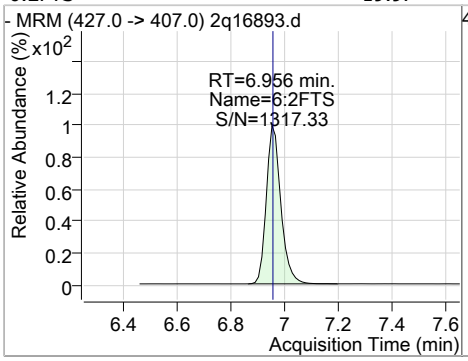
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.86	6.95	0.00	41220				

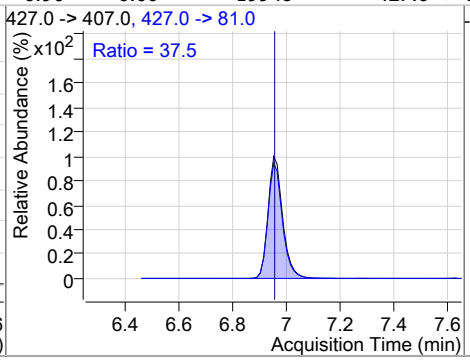


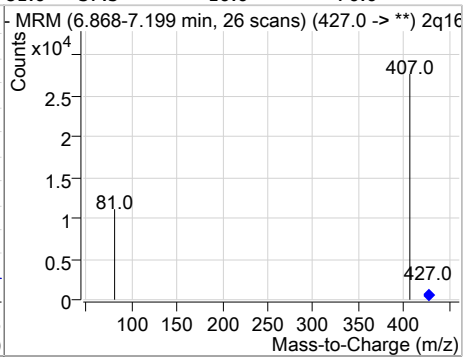




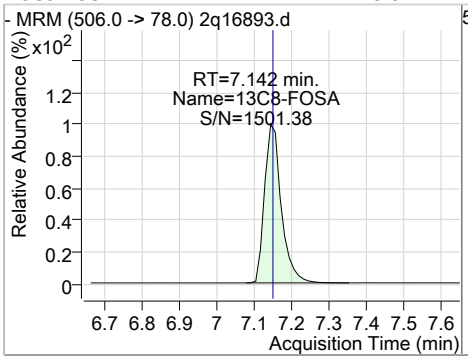
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.97	6.96	0.00	19948	427.0 -> 81.0	37.5	10.0	70.0

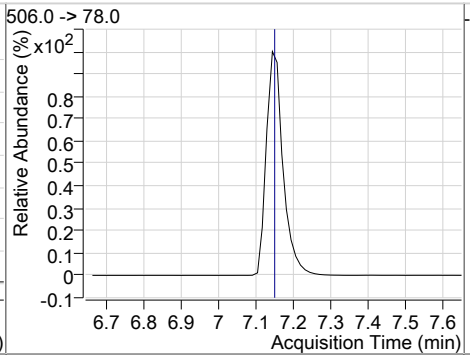


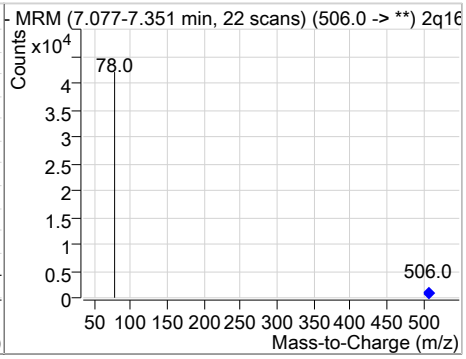




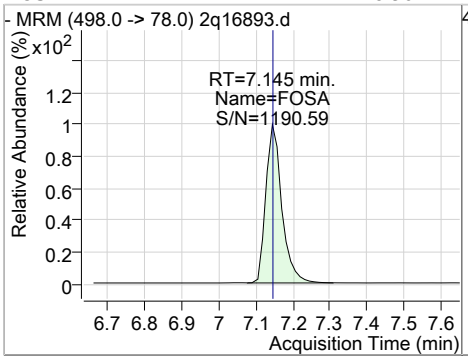
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.92	7.14	0.00	31229				

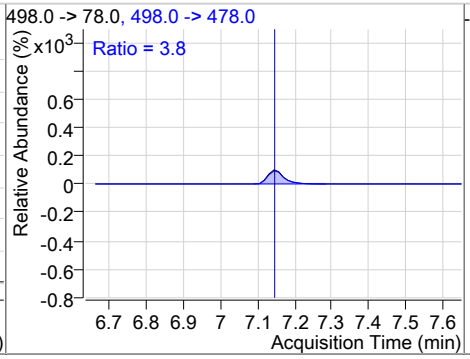


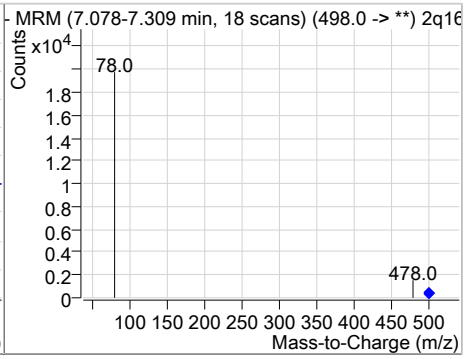




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	18.96	7.15	0.00	14545	498.0 -> 478.0	3.8	0.0	34.0

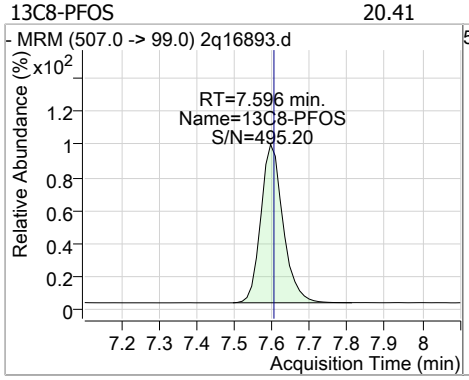


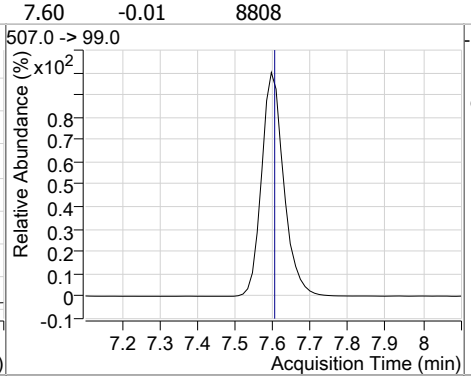


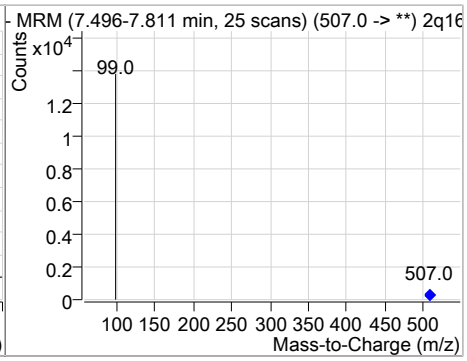


Perfluorinated Compounds by LC/MS/MS

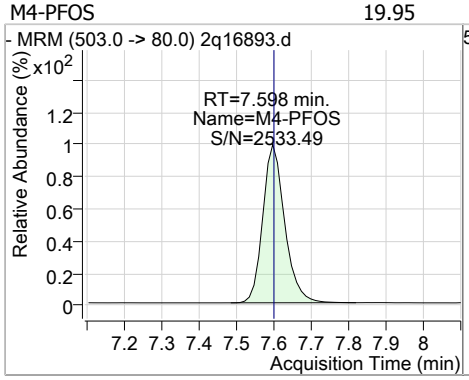
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.41	7.60	-0.01	8808				

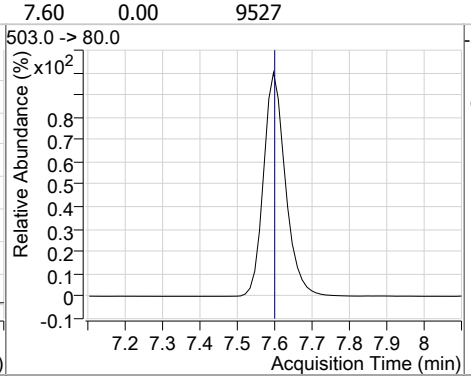


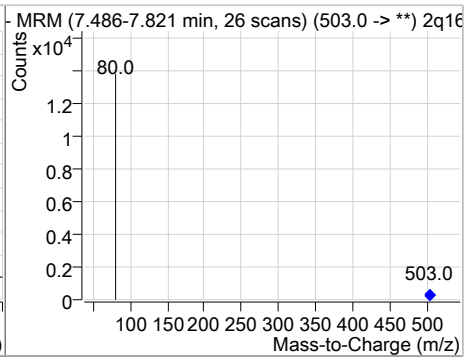




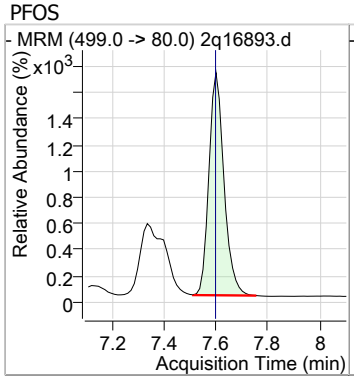
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	19.95	7.60	0.00	9527				

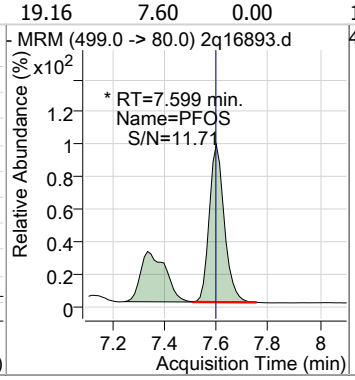


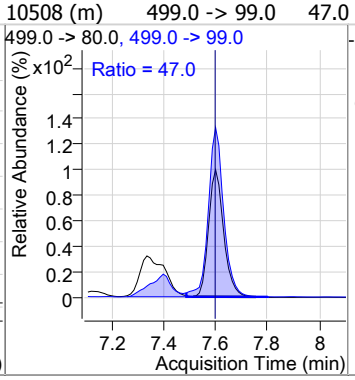


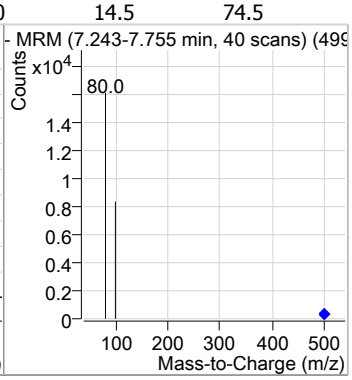


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.16	7.60	0.00	10508 (m)	499.0 -> 99.0	47.0	14.5	74.5

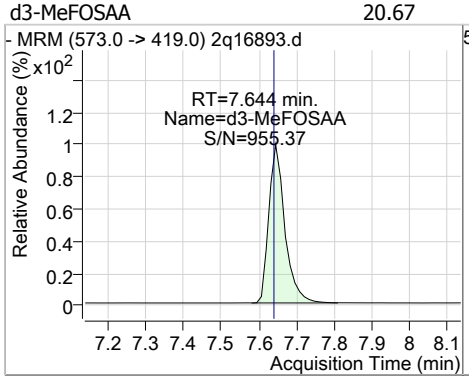


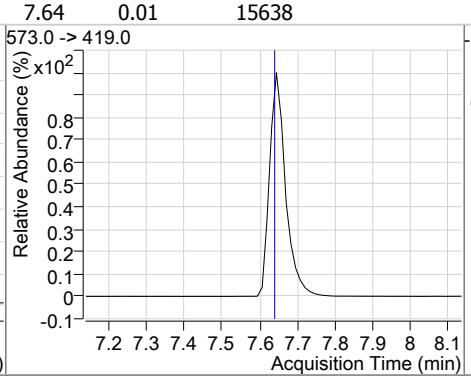


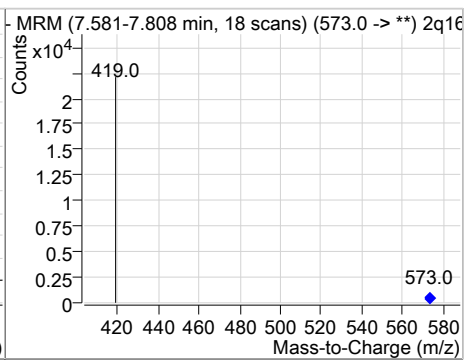




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.67	7.64	0.01	15638				

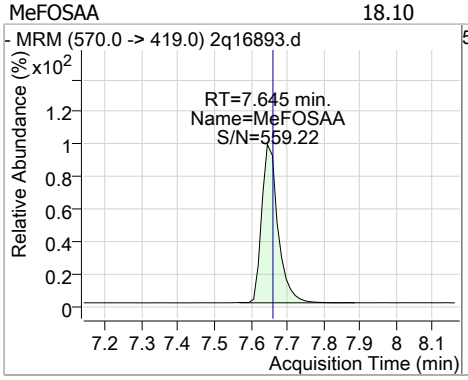


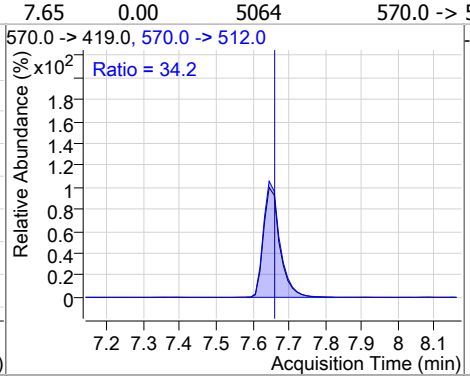


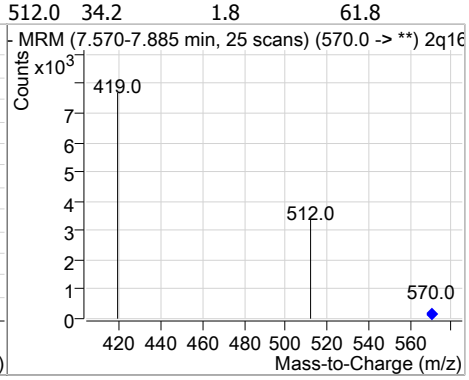


Perfluorinated Compounds by LC/MS/MS

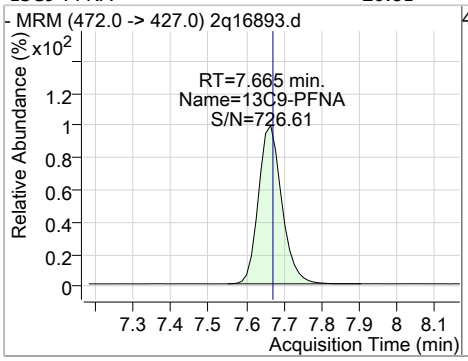
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	18.10	7.65	0.00	5064	570.0 -> 512.0	34.2	1.8	61.8

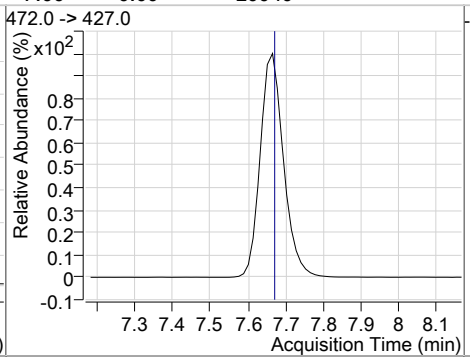


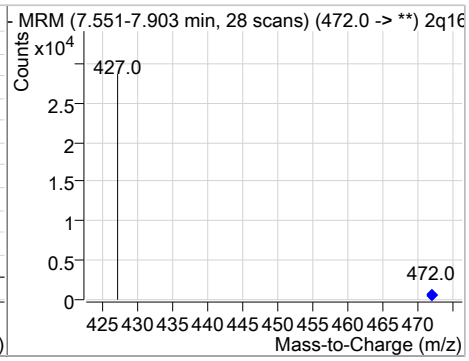




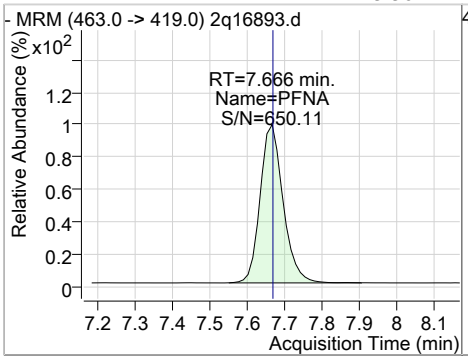
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.81	7.66	0.00	20046				

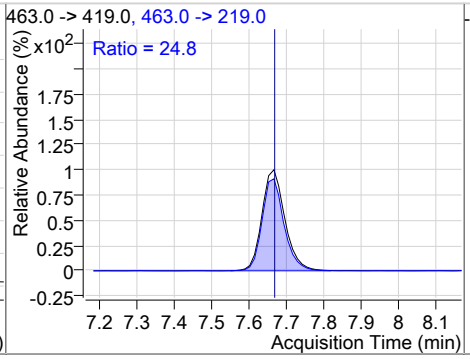


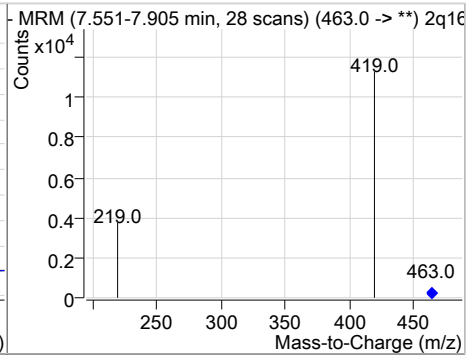




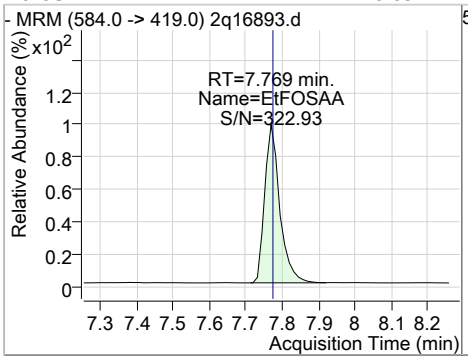
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.96	7.67	0.00	7714	463.0 -> 219.0	24.8	0.0	58.4

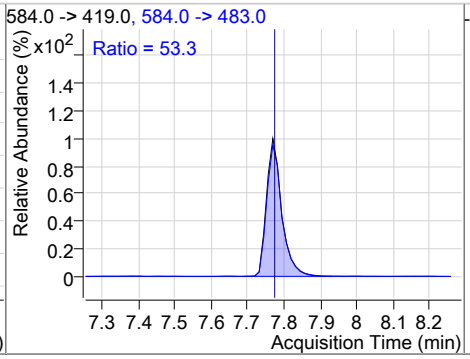


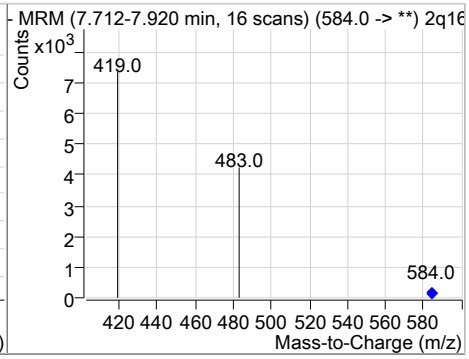




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	18.83	7.77	0.01	4968	584.0 -> 483.0	53.3	24.8	84.8

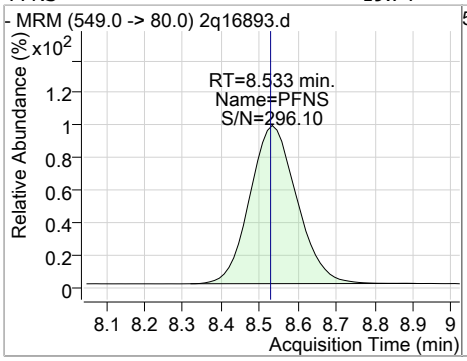


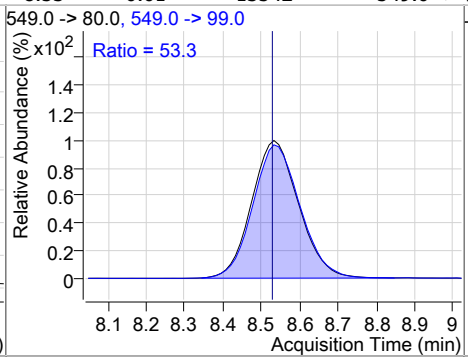


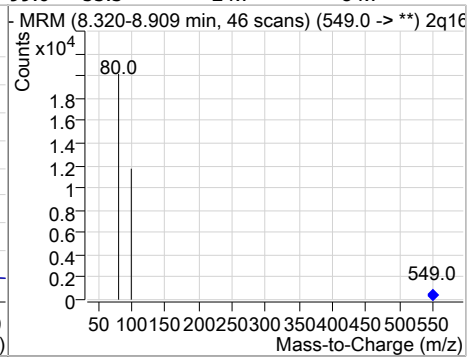


Perfluorinated Compounds by LC/MS/MS

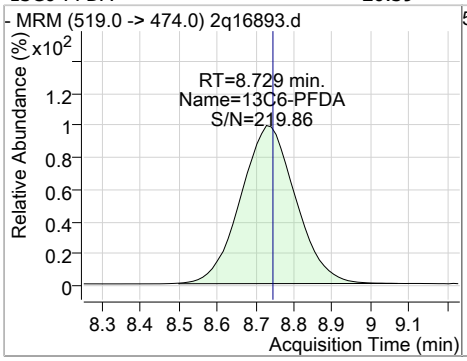
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.74	8.53	-0.01	13542	549.0 -> 99.0	53.3	24.7	84.7

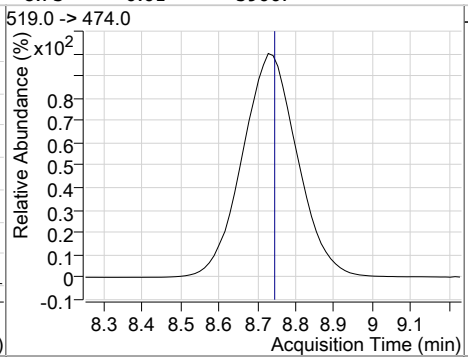


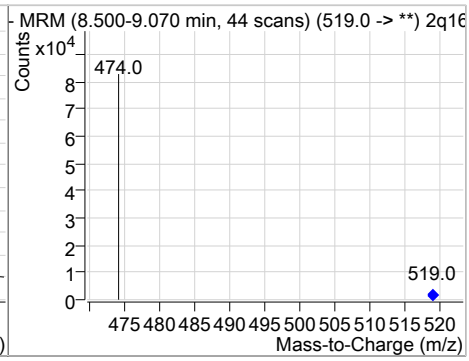




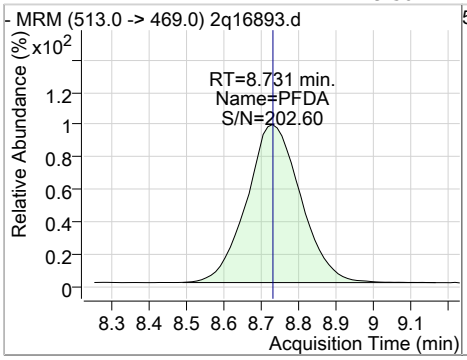
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.39	8.73	-0.01	59007				

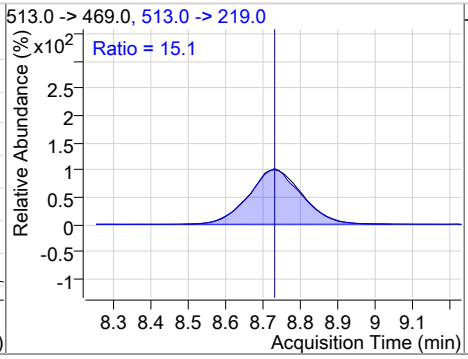


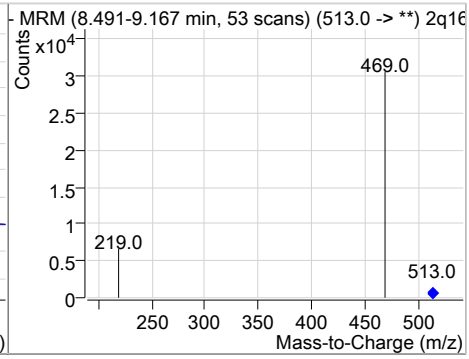




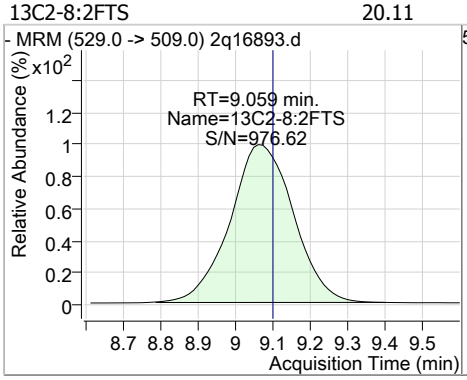
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.56	8.73	-0.01	21056	513.0 -> 219.0	15.1	0.0	45.3

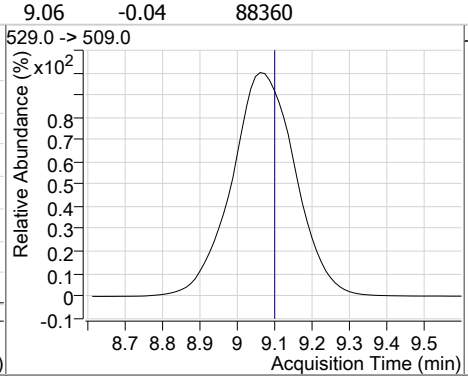


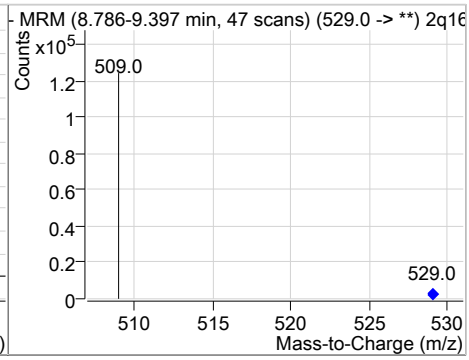




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.11	9.06	-0.04	88360				

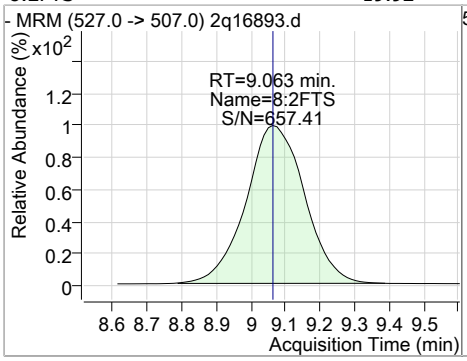


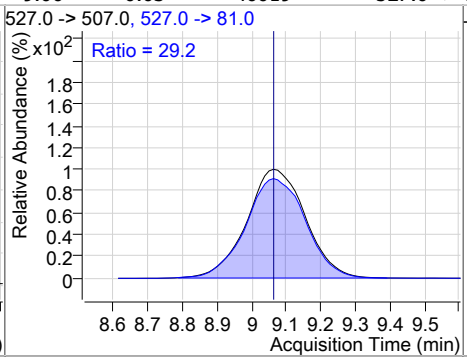


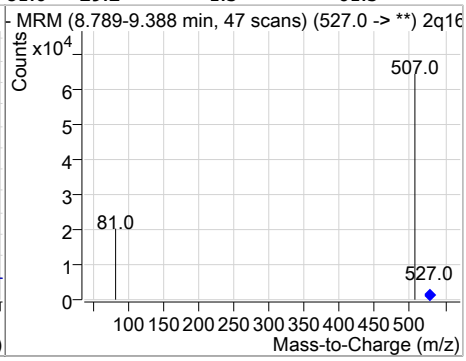


Perfluorinated Compounds by LC/MS/MS

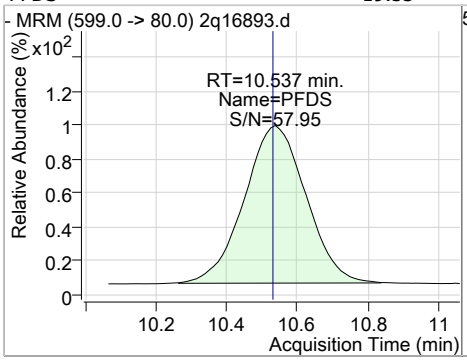
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.92	9.06	-0.03	46019	527.0 -> 81.0	29.2	1.3	61.3

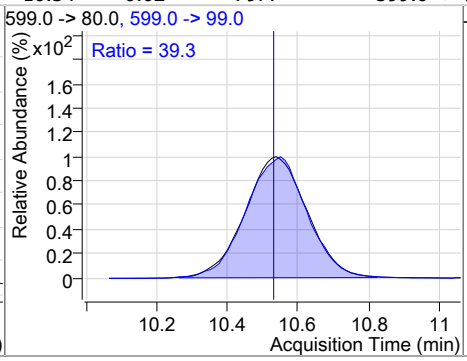


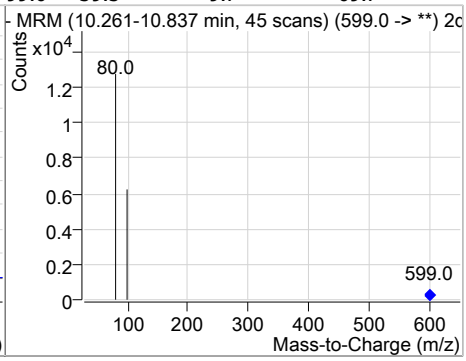




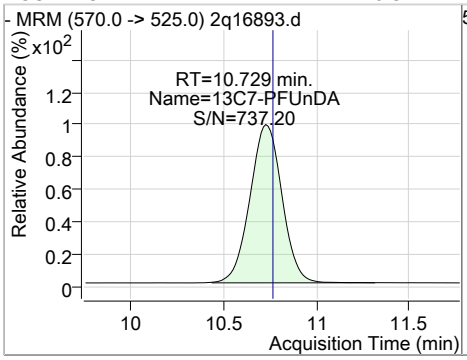
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.53	10.54	-0.02	7977	599.0 -> 99.0	39.3	9.7	69.7

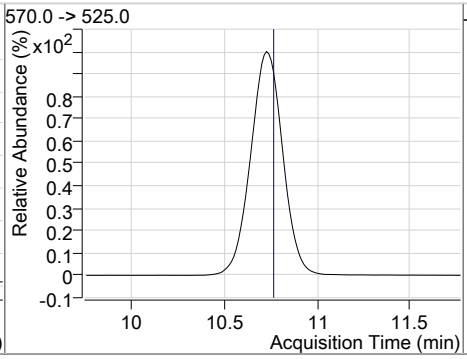


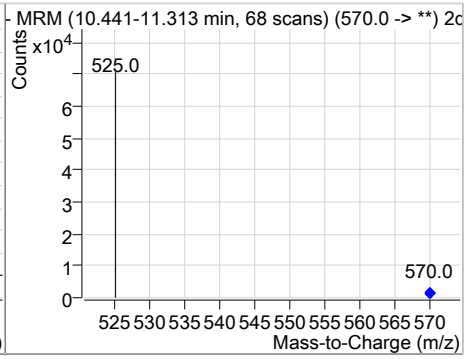




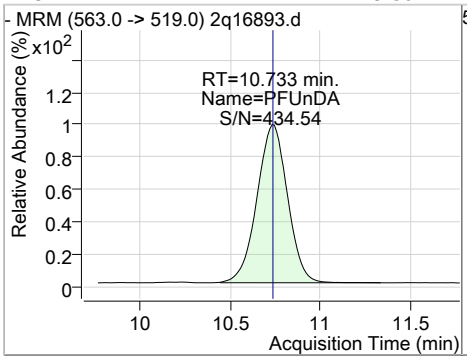
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.37	10.73	-0.03	48390				

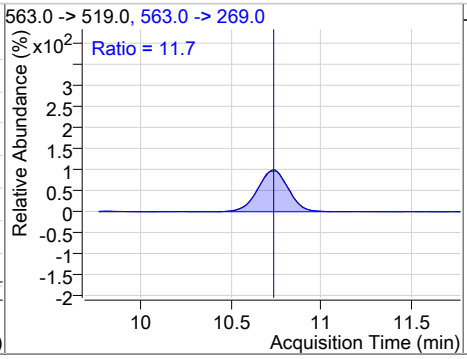


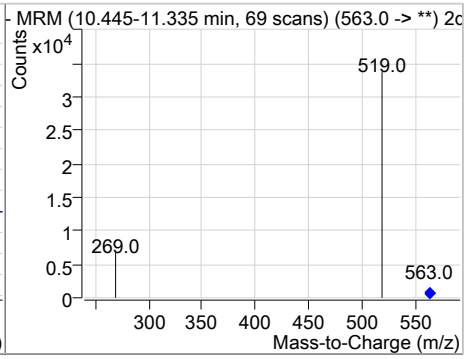




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.50	10.73	-0.03	22816	563.0 -> 269.0	11.7	0.0	41.8

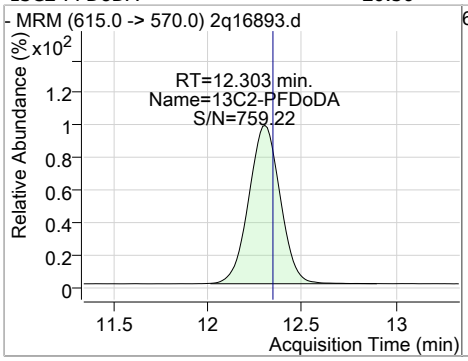


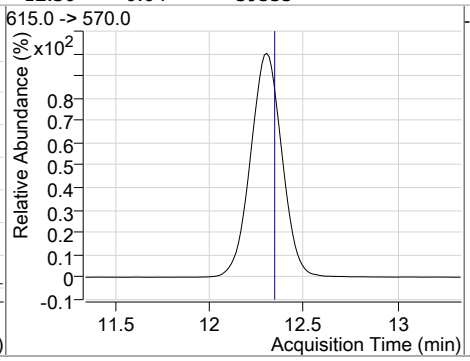


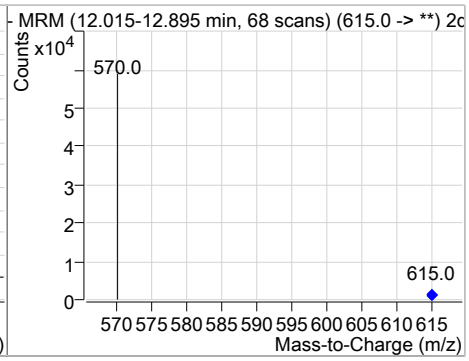


Perfluorinated Compounds by LC/MS/MS

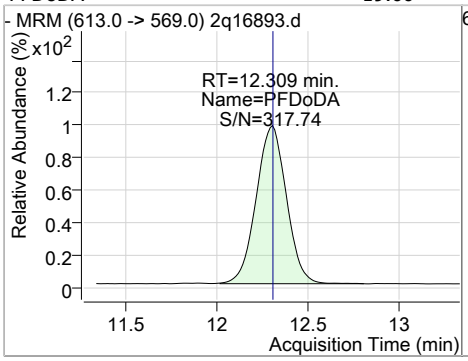
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.56	12.30	-0.04	39535				

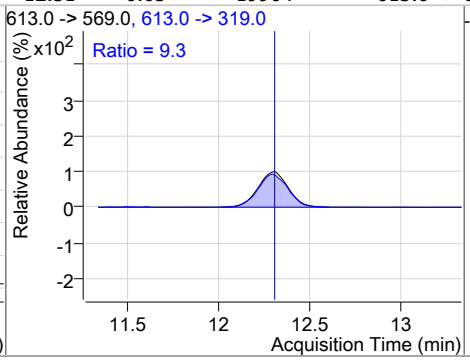


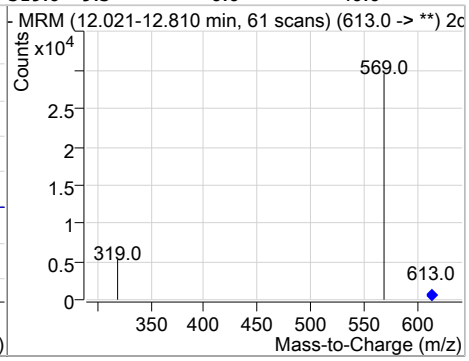




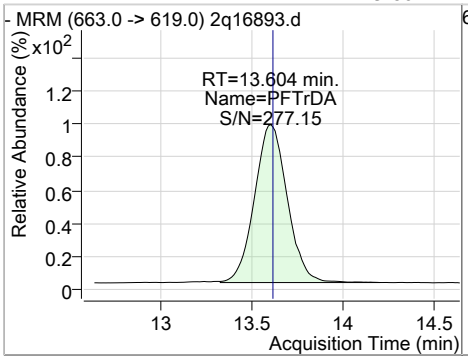
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.60	12.31	-0.03	19964	613.0 -> 319.0	9.3	0.0	40.0

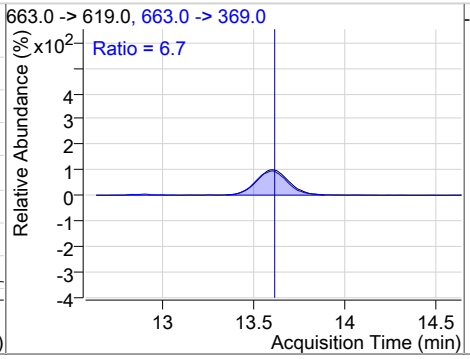


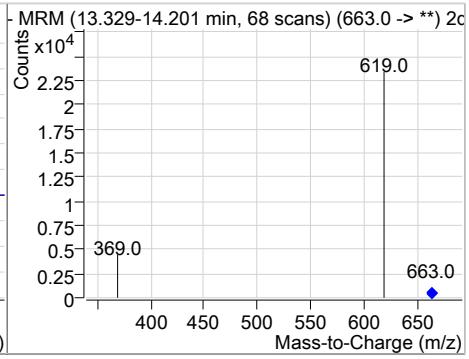




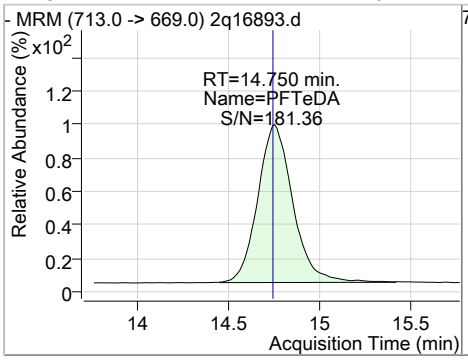
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	19.80	13.60	-0.03	15225	663.0 -> 369.0	6.7	0.0	37.1

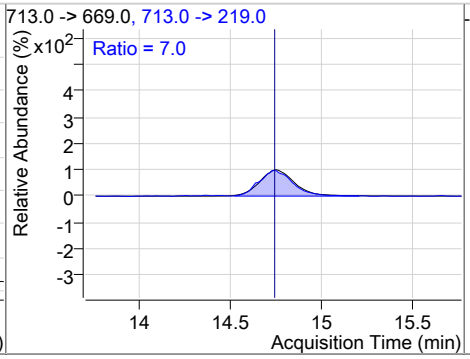


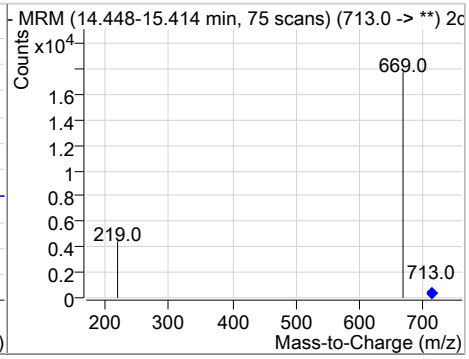




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.12	14.75	-0.01	10656	713.0 -> 219.0	7.0	0.0	37.4

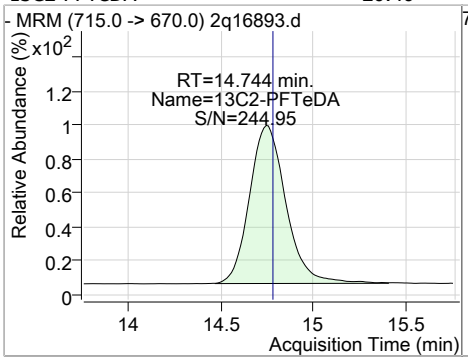


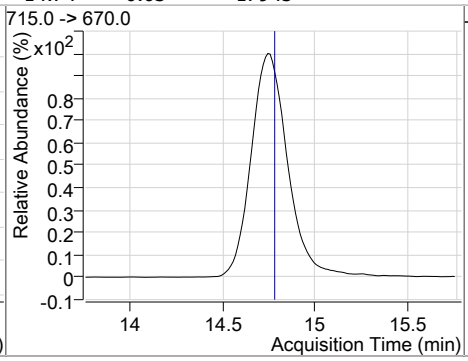


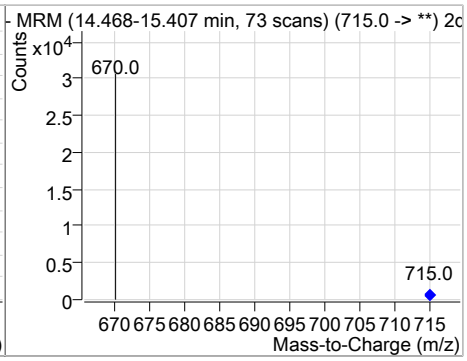


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.46	14.74	-0.03	17945				







Manual Integration Approval Summary

Sample Number:	S2Q294-ICC294	**Method:**	EPA 537M QSM5.1 B-15
Lab FileID:	2Q16893.D	**Analyst approved:**	07/11/18 14:37 Natasha Gumtie
Injection Time:	07/10/18 17:54	**Supervisor approved:**	07/11/18 16:54 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.19	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.60	Split peak

2Q16894.D

Manual Integrations APPROVED (compounds with "m" flag)

Mike Eger 07/11/18 16:54

Perfluorinated Compounds by LC/MS/MS

Data File	:	2q16894.d
Operator	:	NATASHAG
Acq. Method	:	dMRM_ID_PFC.m
Acq. Date-Time	:	7/10/2018 6:15:06 PM
Sample Name	:	ic294-50
Vial	:	Vial 8
DA Method File	:	PFC_ID_071018_S2Q294.quantmethod.xml
Batch Name	:	s2q294.batch.bin
Sample Information	:	op70743,S2Q294,130,,,1.0,1,water

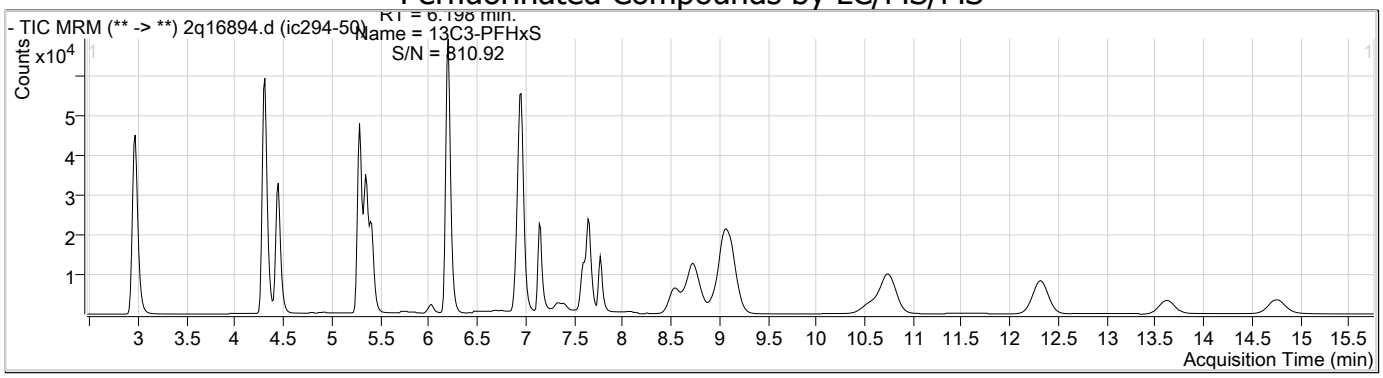
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.946	415.0 -> 370.0	18828	20.00	µg/L	0.000
13C4-PFOS	7.598	503.0 -> 80.0	10310	20.00	µg/L	-0.004
M4-PFBA	2.966	217.0 -> 172.0	130598	20.00	µg/L	-0.001
M5-PFPeA	4.312	268.0 -> 223.0	63736	20.00	µg/L	0.000
M5-PFHxA	5.353	318.0 -> 273.0	57253	20.00	µg/L	-0.008
M4-PFHpA	6.204	367.0 -> 322.0	55697	20.00	µg/L	-0.005
M8-PFOA	6.945	421.0 -> 376.0	28882	20.00	µg/L	-0.001
M9-PFNA	7.665	472.0 -> 427.0	19420	20.00	µg/L	-0.003
M6-PFDA	8.729	519.0 -> 474.0	59700	20.00	µg/L	-0.014
M7-PFUnDA	10.741	570.0 -> 525.0	49687	20.00	µg/L	-0.019
M2-PFDoDA	12.315	615.0 -> 570.0	40398	20.00	µg/L	-0.024
M2-PFTeDA	14.756	715.0 -> 670.0	18292	20.00	µg/L	-0.018
M8-FOSA	7.155	506.0 -> 78.0	29819	20.00	µg/L	0.010
M3-PFBS	4.443	302.0 -> 99.0	20275	20.00	µg/L	0.006
M3-PFHxS	6.198	402.0 -> 99.0	16782	20.00	µg/L	0.002
M8-PFOS	7.596	507.0 -> 99.0	8953	20.00	µg/L	-0.006
M2-4:2FTS	5.285	329.0 -> 309.0	58409	20.00	µg/L	0.002
M2-6:2FTS	6.955	429.0 -> 409.0	45385	20.00	µg/L	-0.003
M2-8:2FTS	9.072	529.0 -> 509.0	99007	20.00	µg/L	-0.023
M3-MeFOSAA	7.644	573.0 -> 419.0	15411	20.00	µg/L	0.008
System Monitoring Compounds						
13C2-4:2FTS	5.285	329.0 -> 309.0	58377	21.78	µg/L	0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.9%		
13C2-6:2FTS	6.955	429.0 -> 409.0	45382	21.86	µg/L	-0.003
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.3%		
13C2-8:2FTS	9.072	529.0 -> 509.0	97790	22.26	µg/L	-0.023
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.3%		
13C2-PFDoDA	12.315	615.0 -> 570.0	40413	21.02	µg/L	-0.024
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.1%		
13C2-PFTeDA	14.756	715.0 -> 670.0	18236	20.79	µg/L	-0.018
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.0%		
13C3-PFBS	4.443	302.0 -> 99.0	20269	20.38	µg/L	0.006
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C3-PFHxS	6.198	402.0 -> 99.0	16793	20.23	µg/L	0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.2%		
13C4-PFBA	2.966	217.0 -> 172.0	130534	20.37	µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C4-PFHpA	6.204	367.0 -> 322.0	55695	20.48	µg/L	-0.005
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.4%		
13C5-PFHxA	5.353	318.0 -> 273.0	57280	20.20	µg/L	-0.008
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%		
13C5-PFPeA	4.312	268.0 -> 223.0	63740	20.38	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C6-PFDA	8.729	519.0 -> 474.0	59459	20.54	µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.7%		

Perfluorinated Compounds by LC/MS/MS

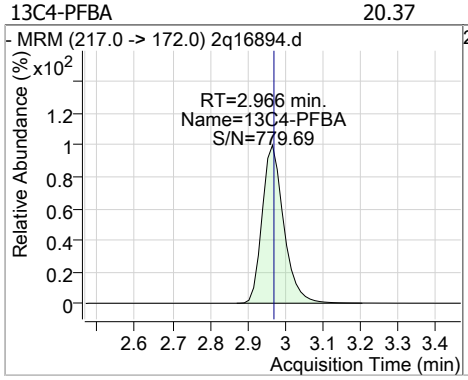
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.741	570.0 -> 525.0	49628	20.89	µg/L		-0.019
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.5%			
13C8-FOSA	7.155	506.0 -> 78.0	29807	19.01	µg/L		0.010
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.1%			
13C8-PFOA	6.945	421.0 -> 376.0	28911	20.80	µg/L		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.0%			
13C8-PFOS	7.596	507.0 -> 99.0	8956	20.75	µg/L		-0.006
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.8%			
13C9-PFNA	7.665	472.0 -> 427.0	19412	20.16	µg/L		-0.003
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.8%			
d3-MeFOSAA	7.644	573.0 -> 419.0	15411	20.37	µg/L		0.008
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.8%			
M2-PFOA	6.946	415.0 -> 370.0	18822	20.00	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.598	503.0 -> 80.0	10297	19.98	ng/ml		-0.004
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%			
Target Compounds							QValue
4:2FTS	5.288	327.0 -> 307.0	69847	50.40	µg/L		99
6:2FTS	6.956	427.0 -> 407.0	52461	50.18	µg/L		96
8:2FTS	9.063	527.0 -> 507.0	121497	50.03	µg/L		95
EtFOSAA	7.769	584.0 -> 419.0	12910	49.67	µg/L		98
FOSA	7.145	498.0 -> 78.0	36196	49.42	µg/L		100
MeFOSAA	7.659	570.0 -> 419.0	14154	51.36	µg/L		98
PFBA	2.962	213.0 -> 169.0	50885	49.91	µg/L		100
PFBS	4.447	299.0 -> 80.0	68776	49.72	µg/L		100
PFDA	8.731	513.0 -> 469.0	54830	50.56	µg/L		100
PFDoDA	12.321	613.0 -> 569.0	52180	50.39	µg/L		98
PFDS	10.549	599.0 -> 80.0	20706	49.25	µg/L		99
PFHpA	6.207	363.0 -> 319.0	100432	49.27	µg/L		100
PFHpS	6.903	449.0 -> 80.0	25812	50.26	µg/L		98
PFHxA	5.355	313.0 -> 269.0	47929	49.35	µg/L		98
PFHxS	6.201	399.0 -> 80.0	49906	49.76	µg/L	m	98
PFNA	7.666	463.0 -> 419.0	18693	49.94	µg/L		95
PFNS	8.533	549.0 -> 80.0	35020	50.25	µg/L		99
PFOA	6.947	413.0 -> 369.0	39596	49.98	µg/L		95
PFOS	7.599	499.0 -> 80.0	27125	48.69	µg/L	m	97
PFPeA	4.316	263.0 -> 219.0	151873	49.88	µg/L		100
PFPeS	5.408	349.0 -> 80.0	44198	49.73	µg/L		98
PFTeDA	14.763	713.0 -> 669.0	27343	50.01	µg/L		99
PFTrDA	13.617	663.0 -> 619.0	39900	50.33	µg/L		99
PFUnDA	10.746	563.0 -> 519.0	59214	49.19	µg/L		99

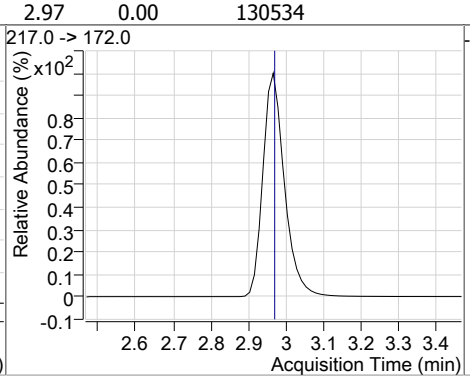
 # = Qualifier out of range, m = manually integrated, + = Area summed

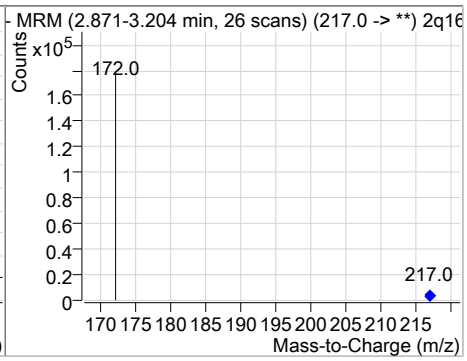
Perfluorinated Compounds by LC/MS/MS



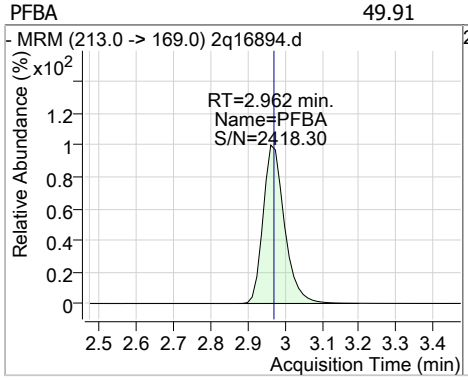
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.37	2.97	0.00	130534				

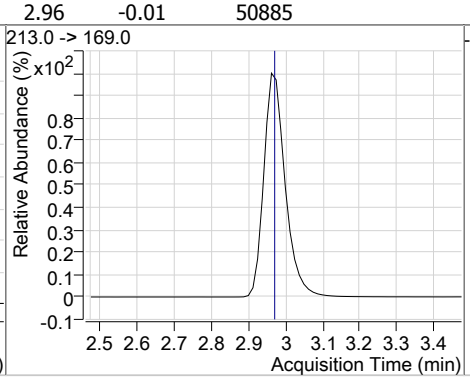


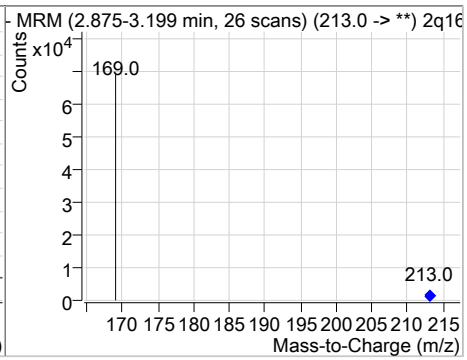




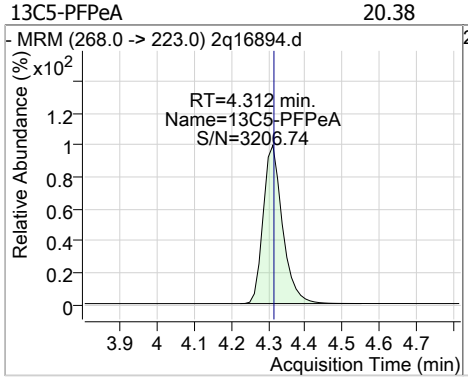
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	49.91	2.96	-0.01	50885				

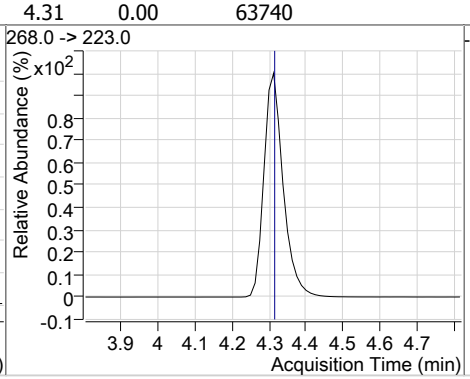


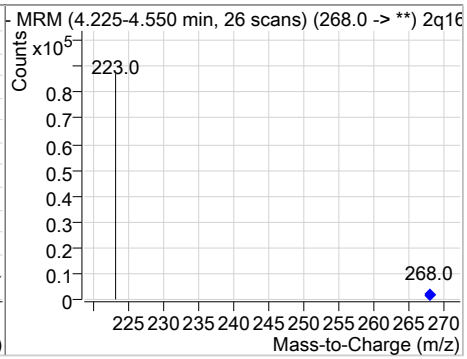




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.38	4.31	0.00	63740				

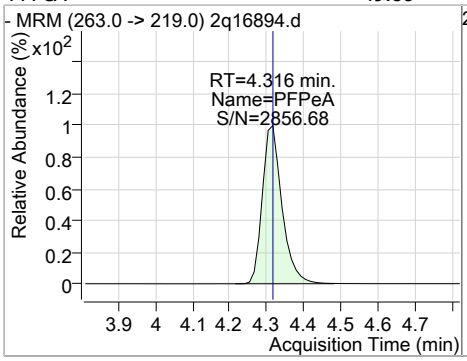


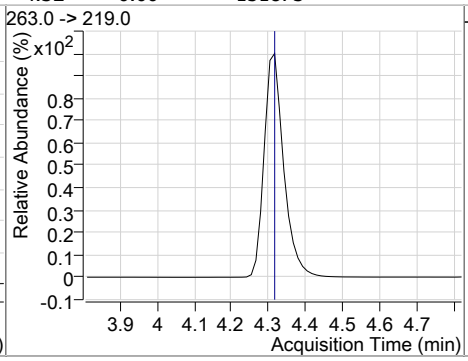


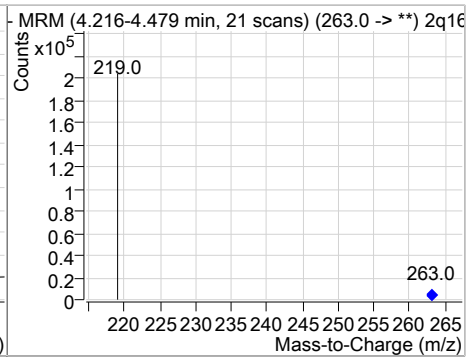


Perfluorinated Compounds by LC/MS/MS

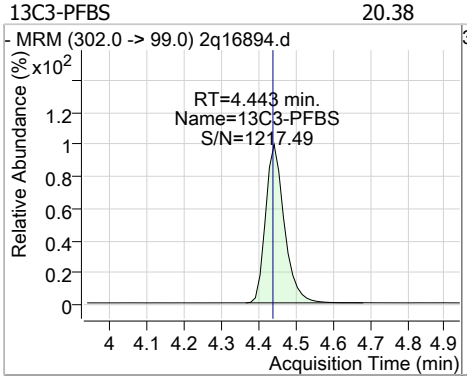
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	49.88	4.32	0.00	151873				

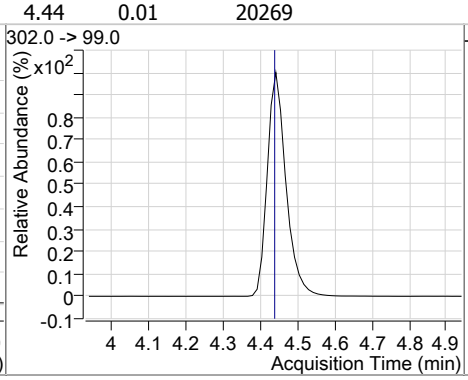


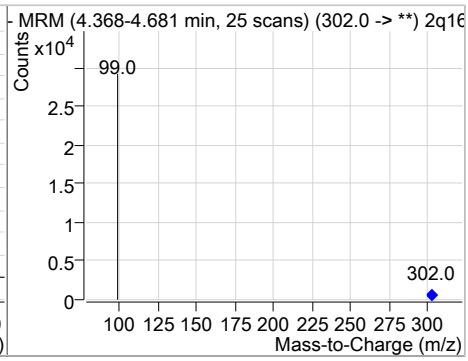




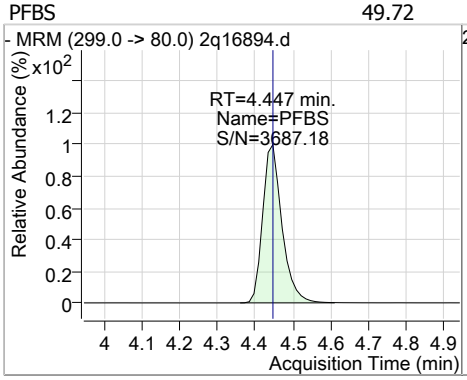
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.38	4.44	0.01	20269				

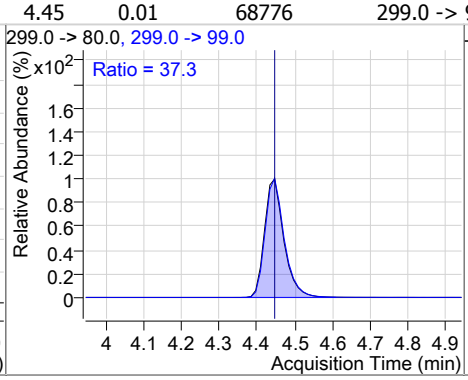


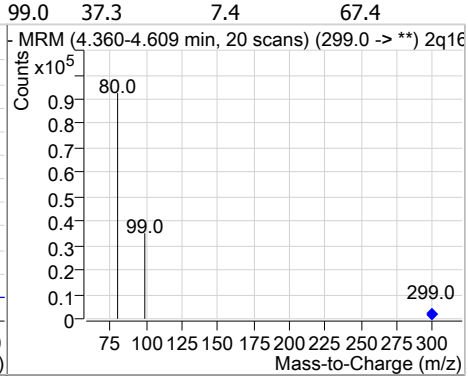




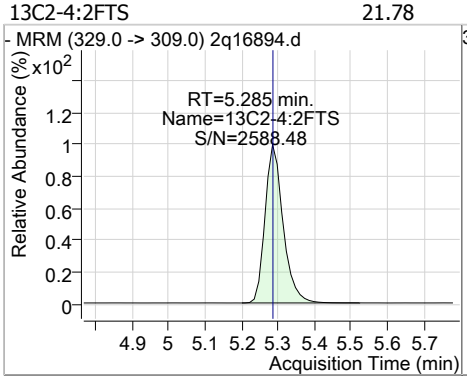
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	49.72	4.45	0.01	68776	299.0 -> 99.0	37.3	7.4	67.4

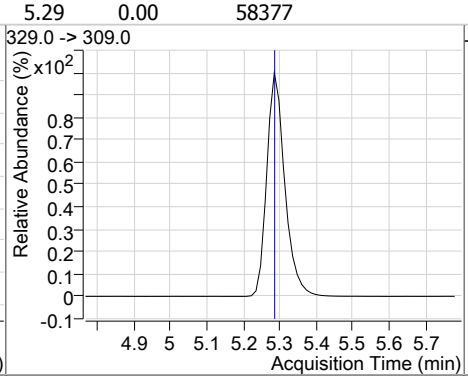


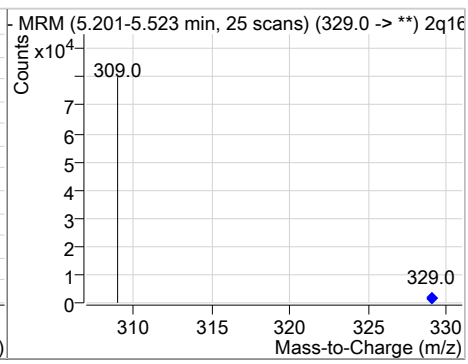




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	21.78	5.29	0.00	58377				

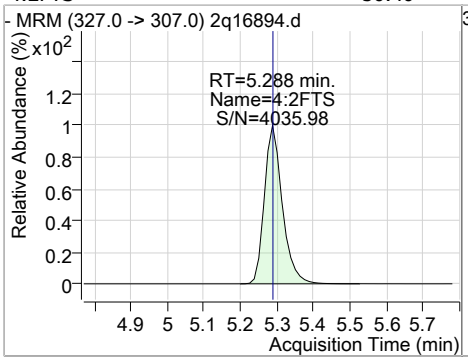


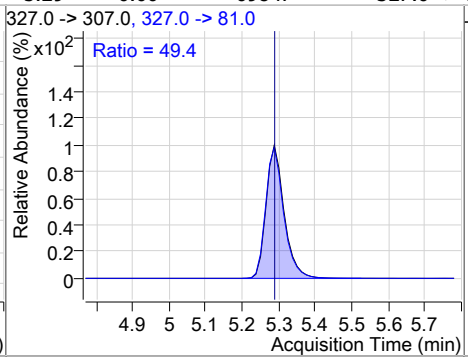


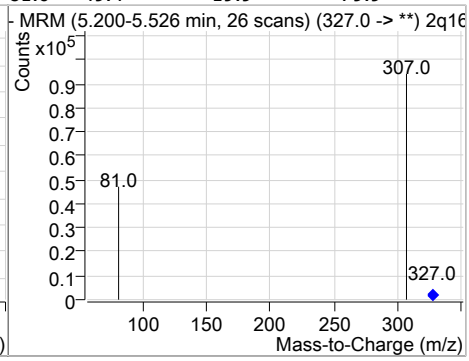


Perfluorinated Compounds by LC/MS/MS

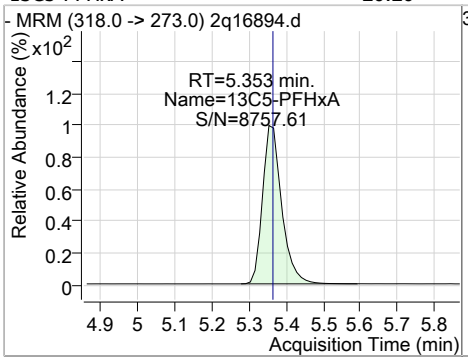
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	50.40	5.29	0.00	69847	327.0 -> 81.0	49.4	19.9	79.9

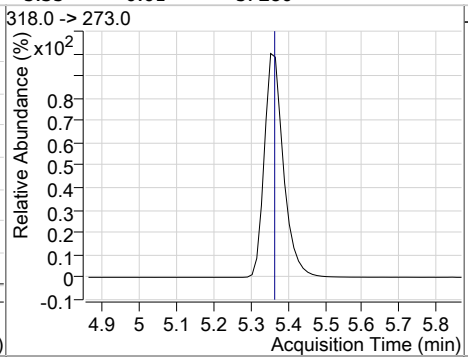


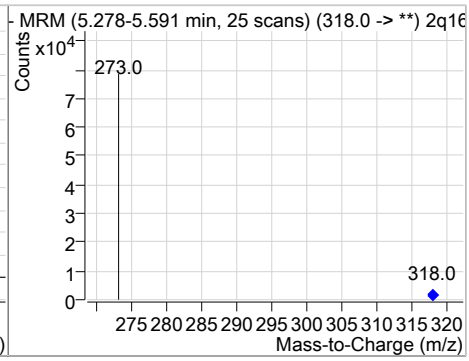




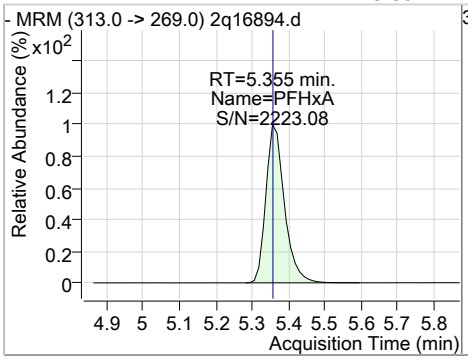
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.20	5.35	-0.01	57280				

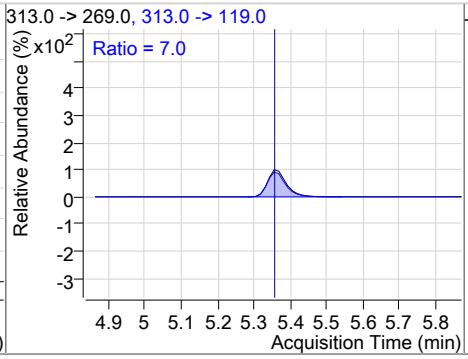


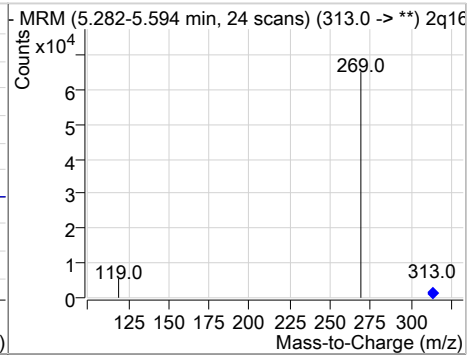




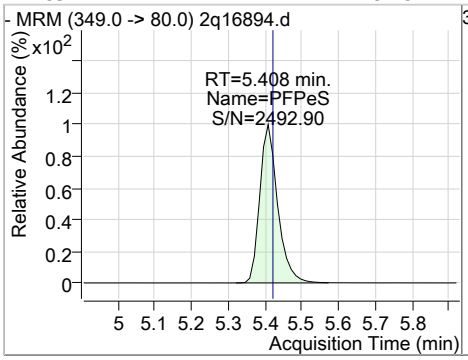
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	49.35	5.36	-0.01	47929	313.0 -> 119.0	7.0	0.0	37.6

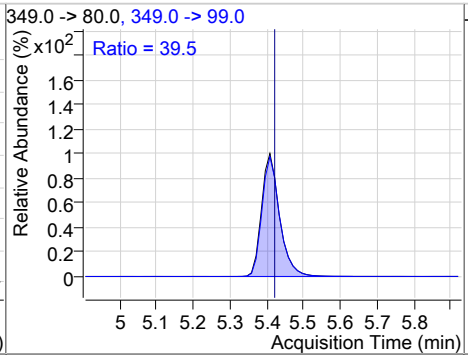


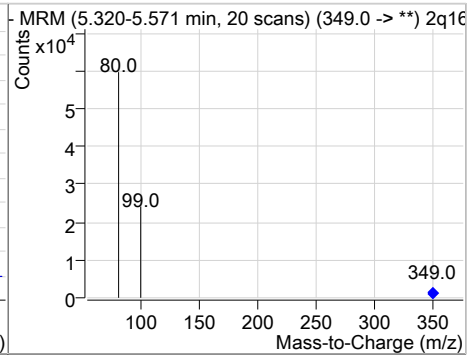




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	49.73	5.41	0.00	44198	349.0 -> 99.0	39.5	10.8	70.8

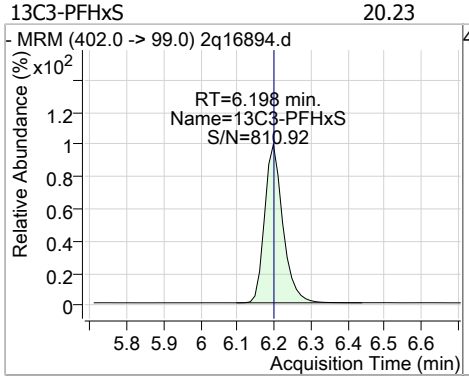


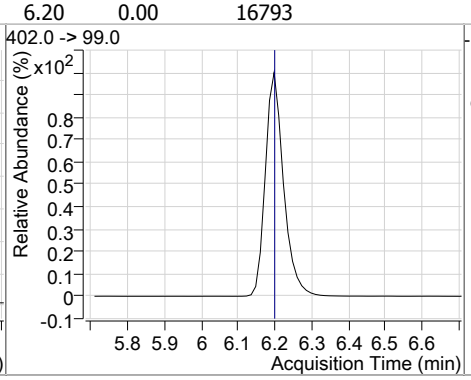


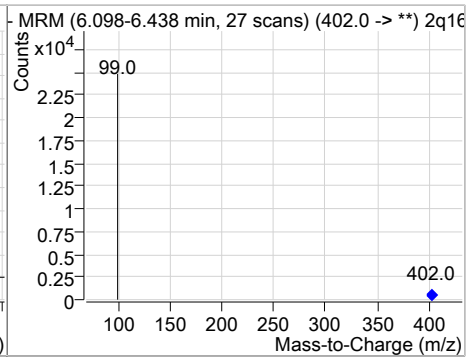


Perfluorinated Compounds by LC/MS/MS

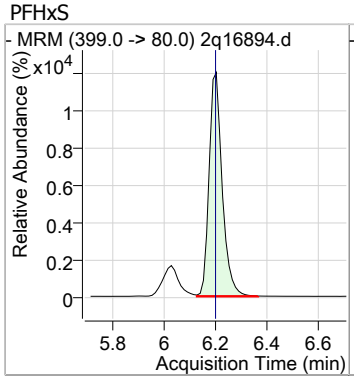
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.23	6.20	0.00	16793				

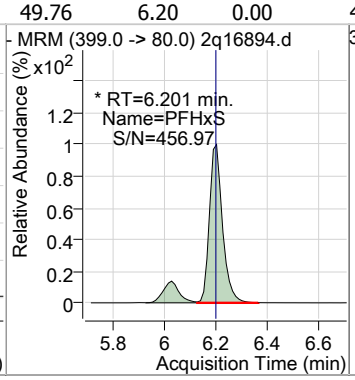


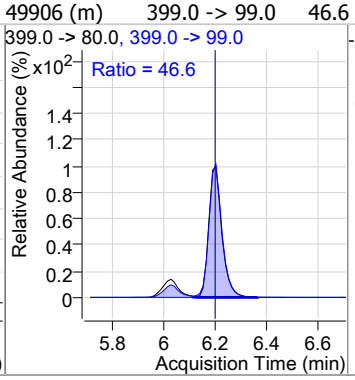


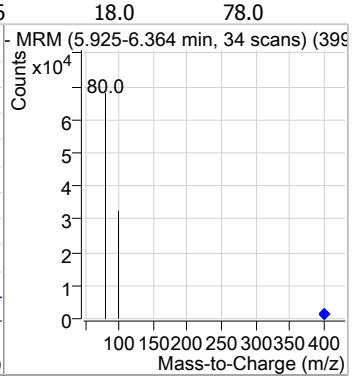


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	49.76	6.20	0.00	49906 (m)	399.0 -> 99.0	46.6	18.0	78.0

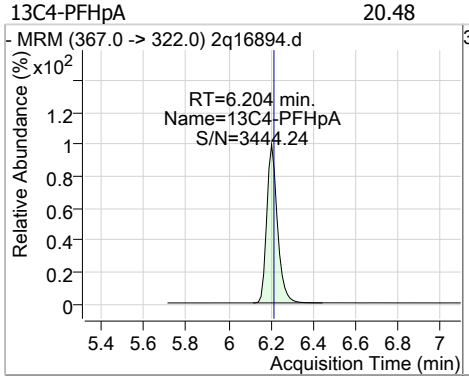


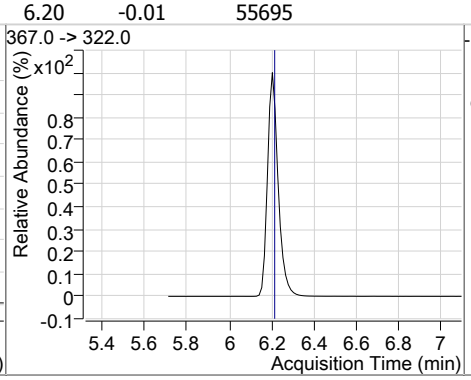


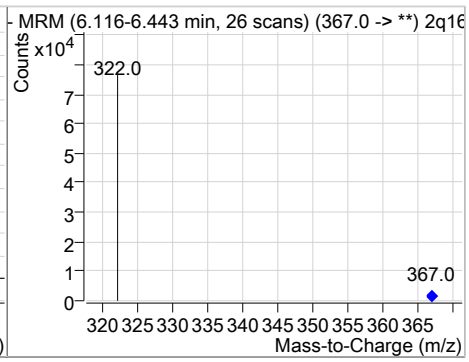




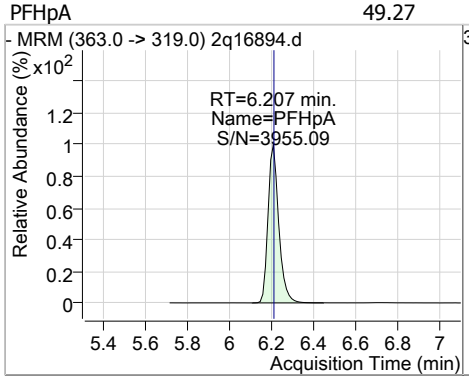
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.48	6.20	-0.01	55695				

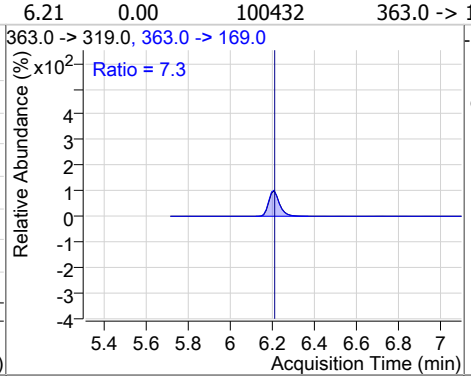


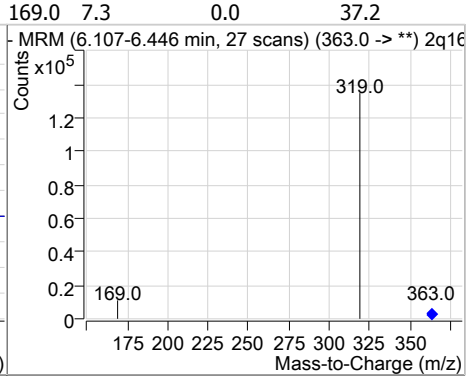




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	49.27	6.21	0.00	100432	363.0 -> 169.0	7.3	0.0	37.2

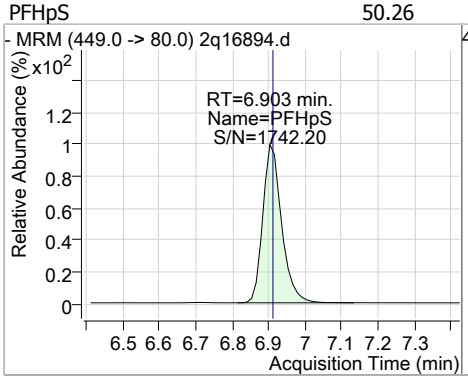


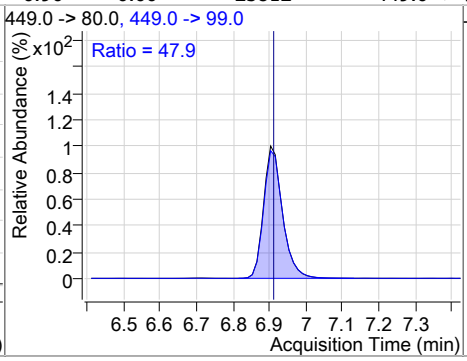


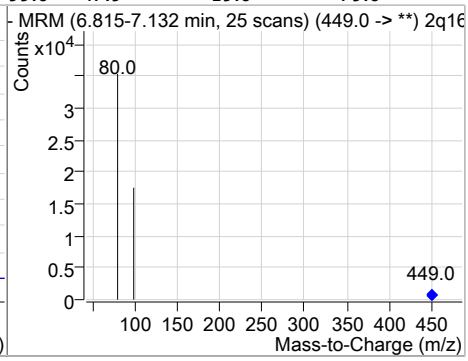


Perfluorinated Compounds by LC/MS/MS

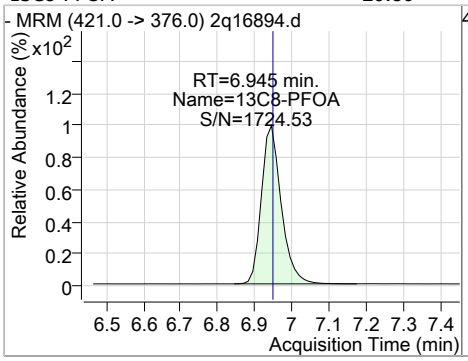
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	50.26	6.90	0.00	25812	449.0 -> 99.0	47.9	19.0	79.0

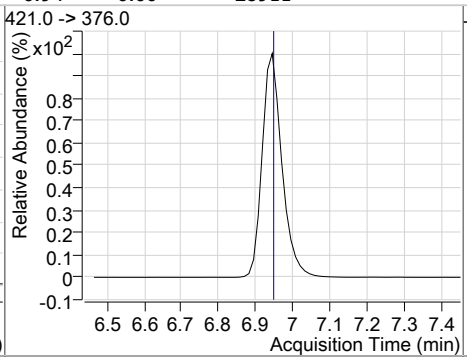


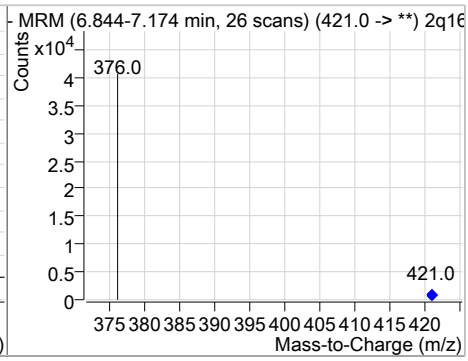




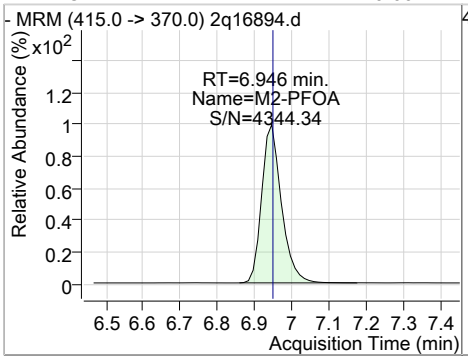
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.80	6.94	0.00	28911				

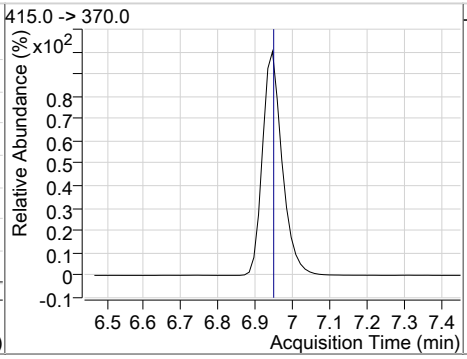


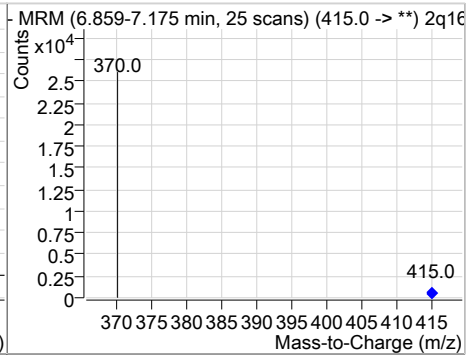




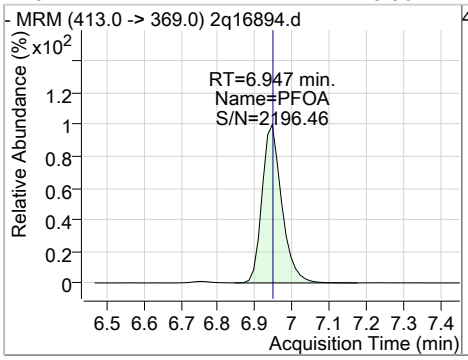
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.95	0.00	18822				

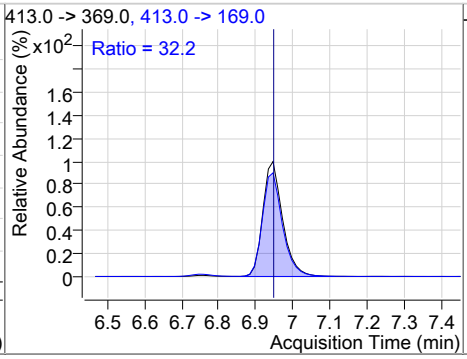


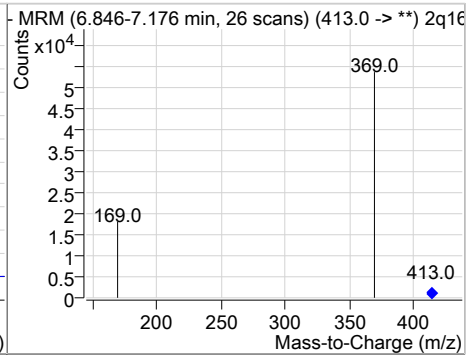




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	49.98	6.95	0.00	39596	413.0 -> 169.0	32.2	5.0	65.0

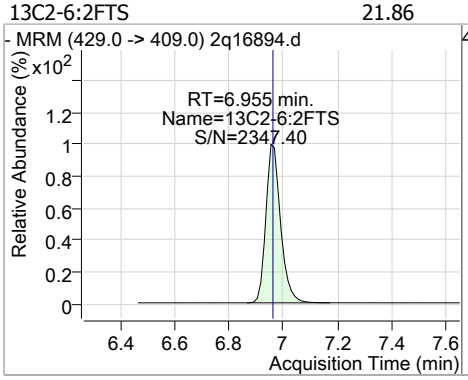


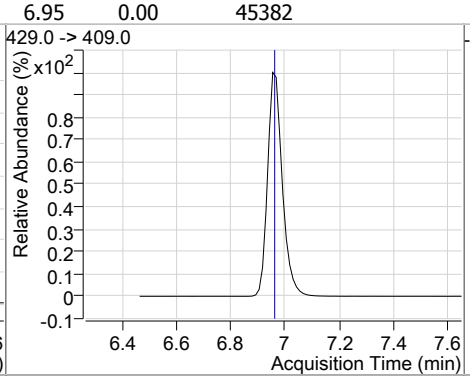


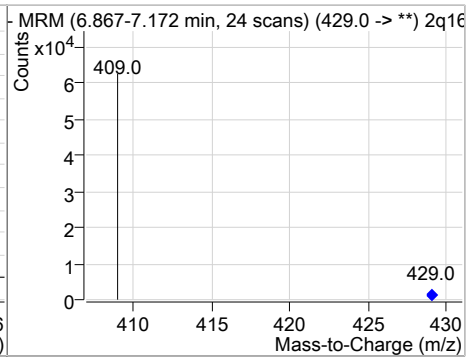


Perfluorinated Compounds by LC/MS/MS

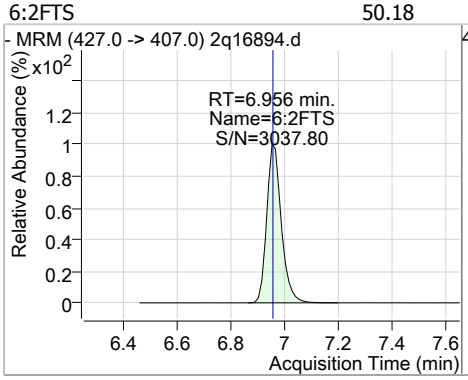
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	21.86	6.95	0.00	45382				

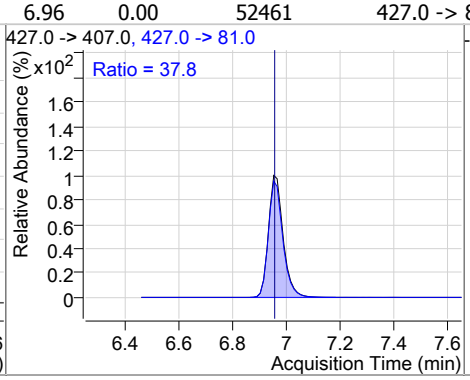


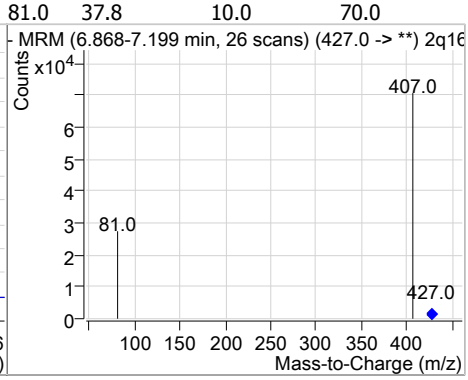




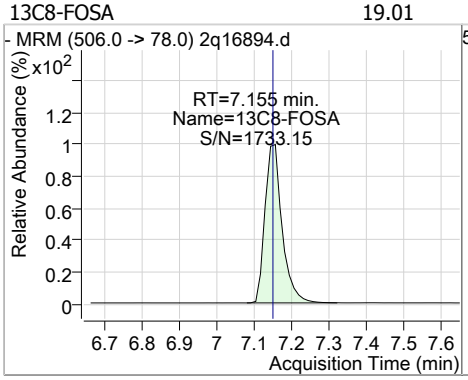
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	50.18	6.96	0.00	52461	427.0 -> 81.0	37.8	10.0	70.0

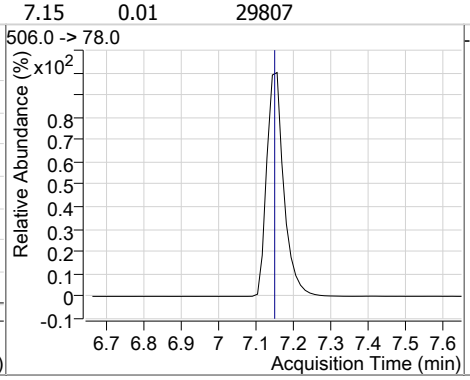


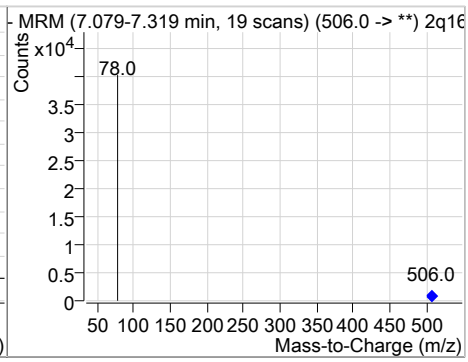




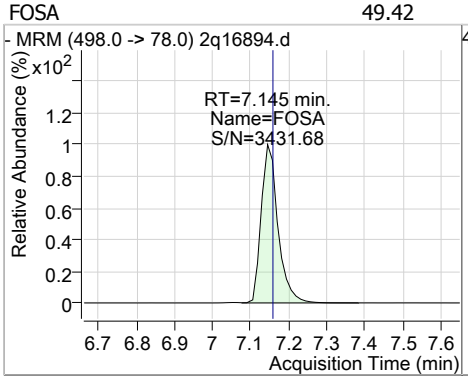
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.01	7.15	0.01	29807				

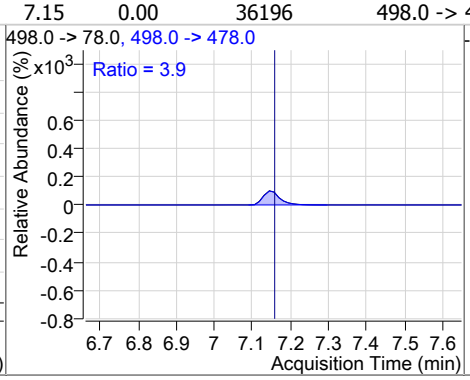


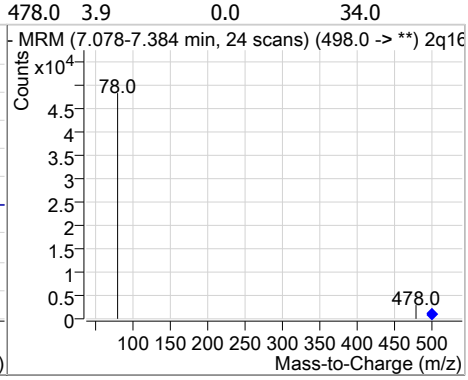




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	49.42	7.15	0.00	36196	498.0 -> 478.0	3.9	0.0	34.0

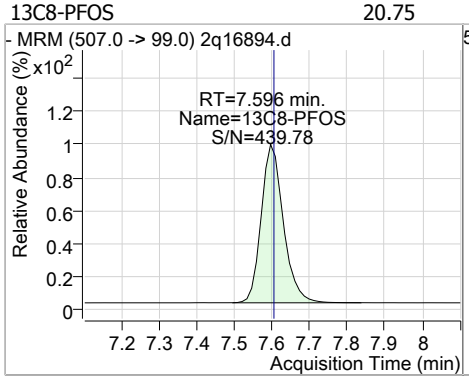


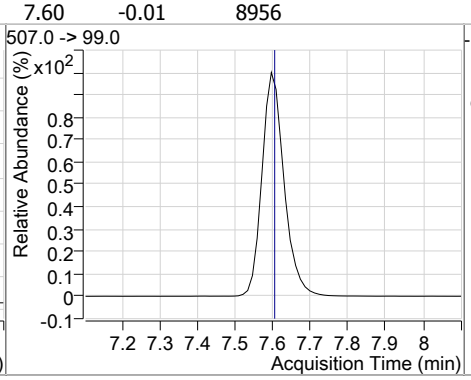


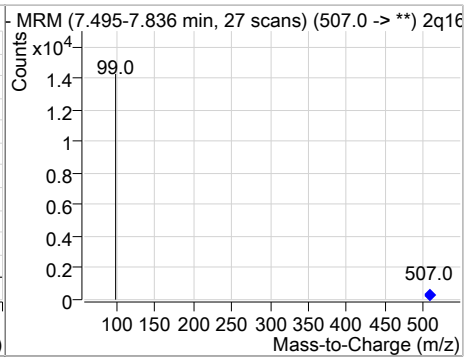


Perfluorinated Compounds by LC/MS/MS

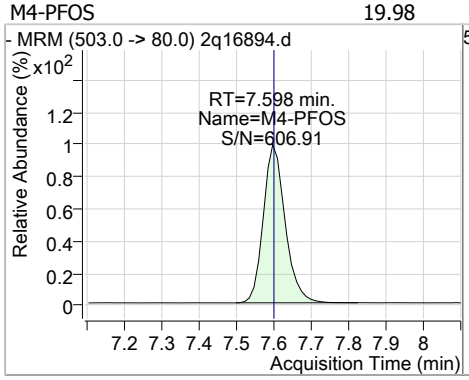
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.75	7.60	-0.01	8956				

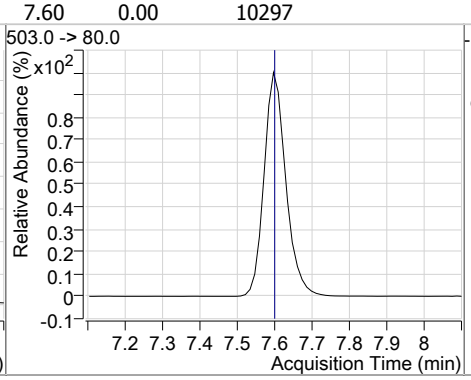


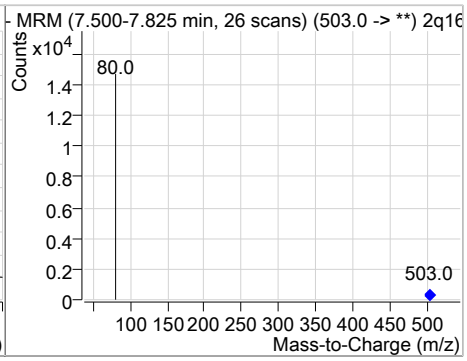




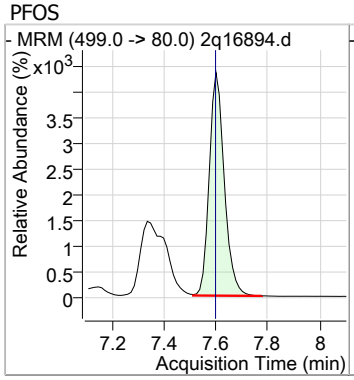
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	19.98	7.60	0.00	10297				

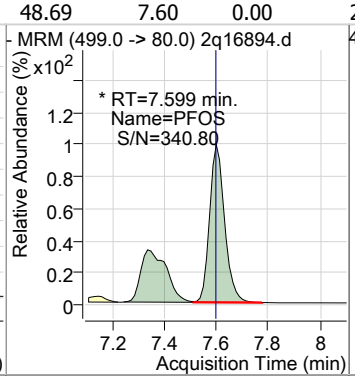


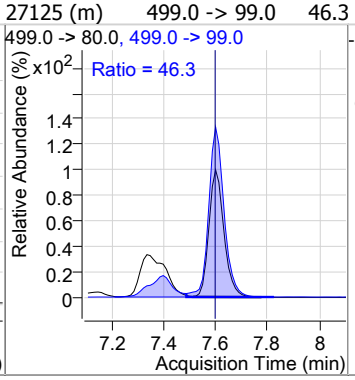


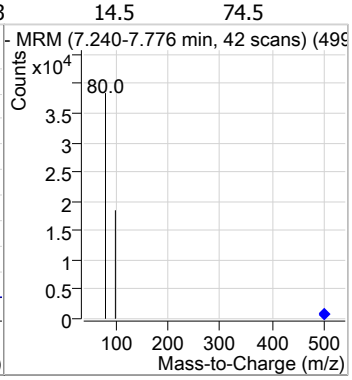


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	48.69	7.60	0.00	27125 (m)	499.0 -> 99.0	46.3	14.5	74.5

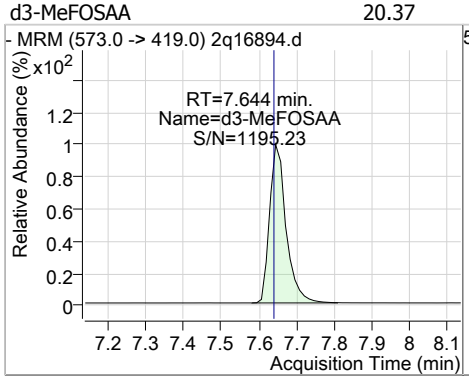


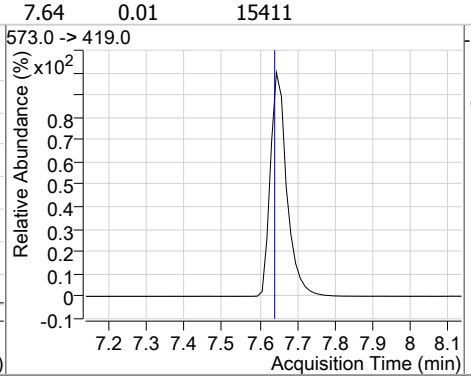


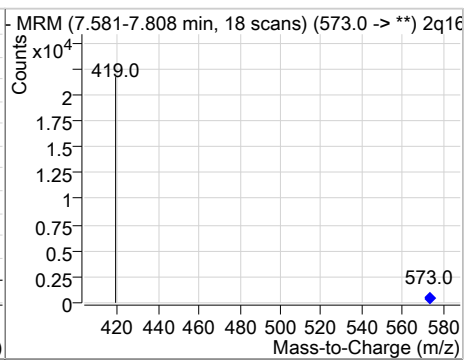




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.37	7.64	0.01	15411				

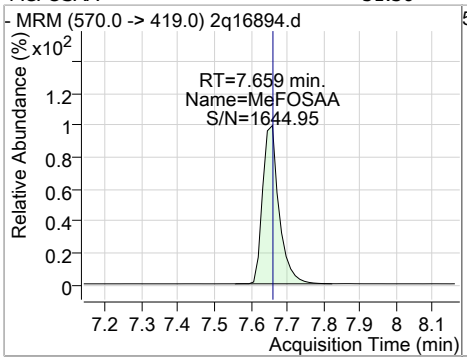


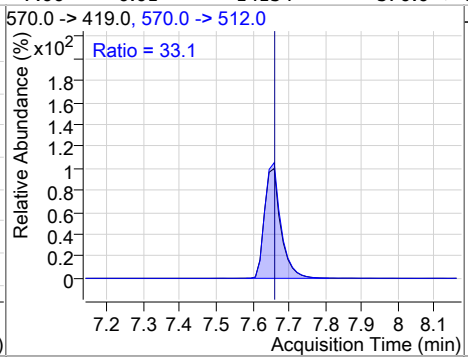


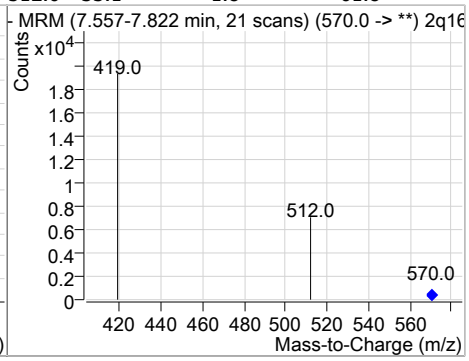


Perfluorinated Compounds by LC/MS/MS

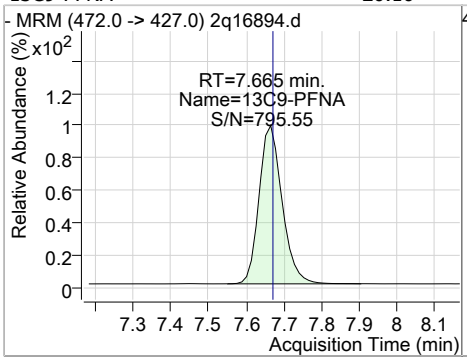
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	51.36	7.66	0.01	14154	570.0 -> 512.0	33.1	1.8	61.8

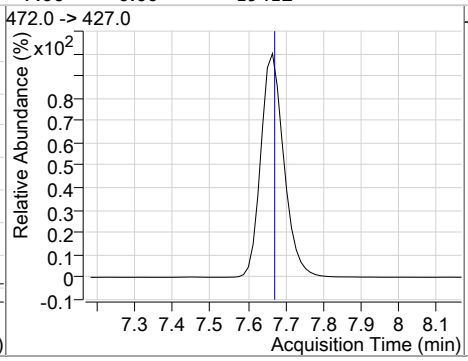


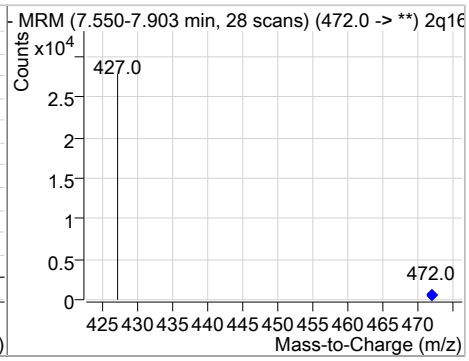




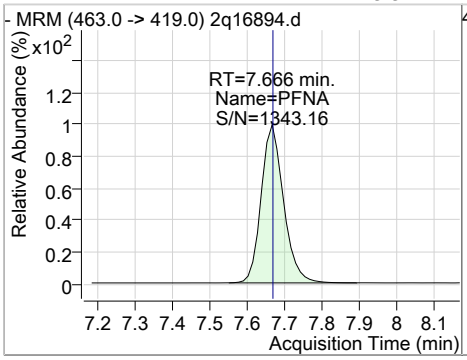
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.16	7.66	0.00	19412				

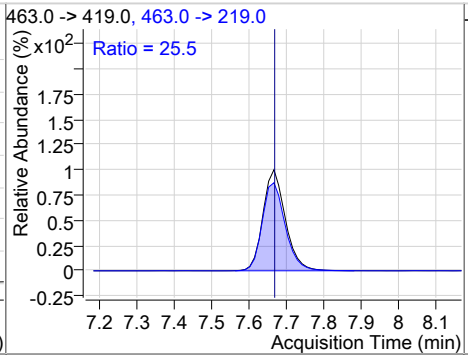


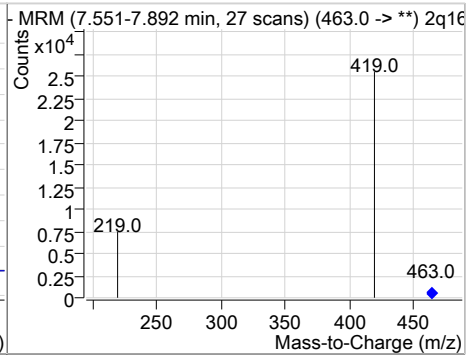




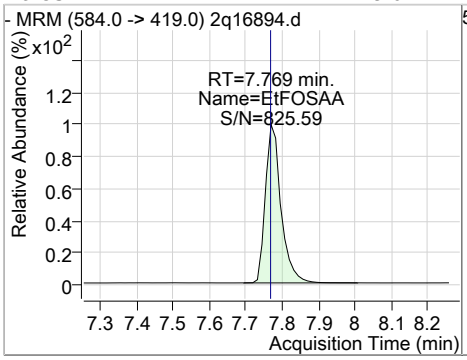
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	49.94	7.67	0.00	18693	463.0 -> 219.0	25.5	0.0	58.4

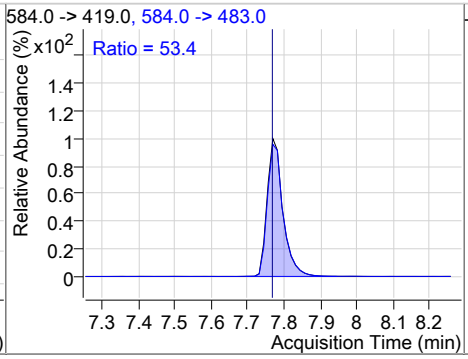


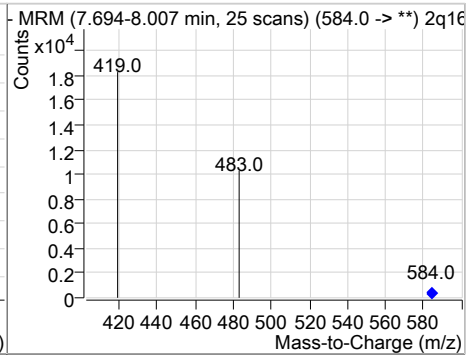




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	49.67	7.77	0.01	12910	584.0 -> 483.0	53.4	24.8	84.8

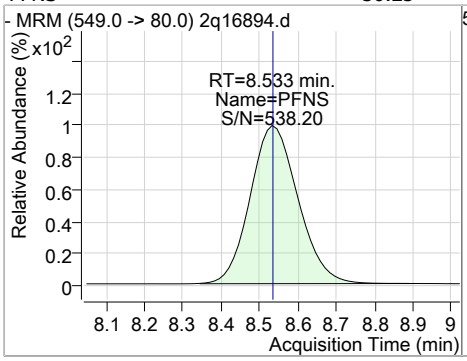


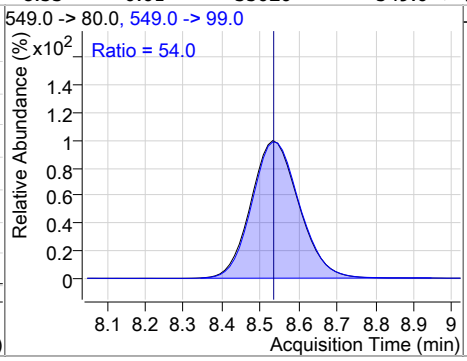


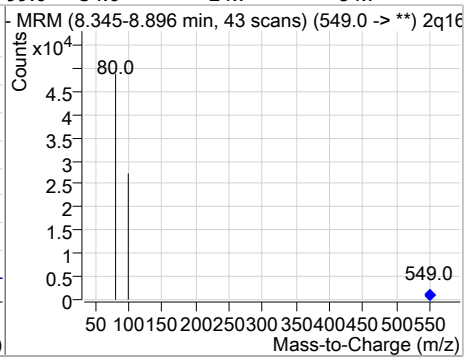


Perfluorinated Compounds by LC/MS/MS

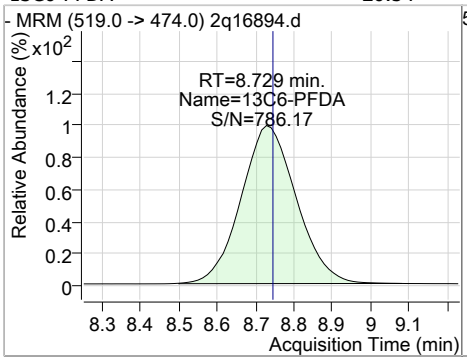
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	50.25	8.53	-0.01	35020	549.0 -> 99.0	54.0	24.7	84.7

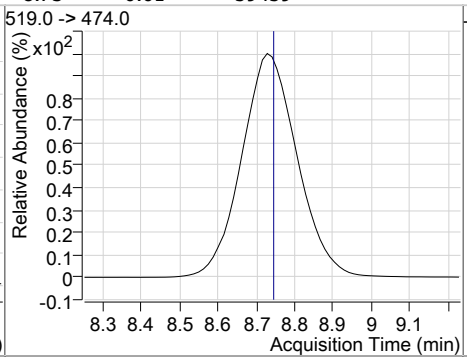


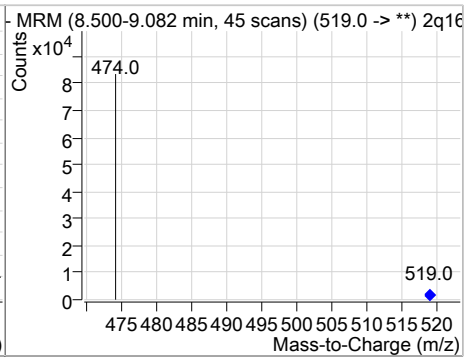




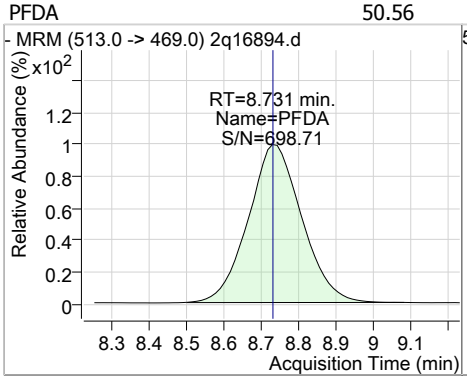
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.54	8.73	-0.01	59459				

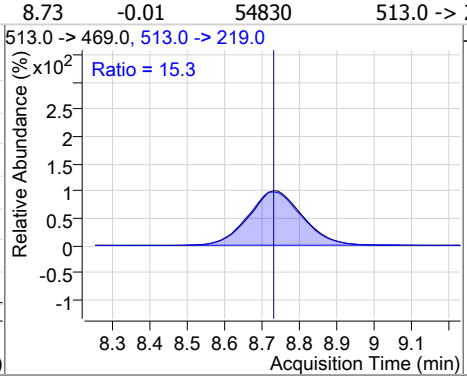


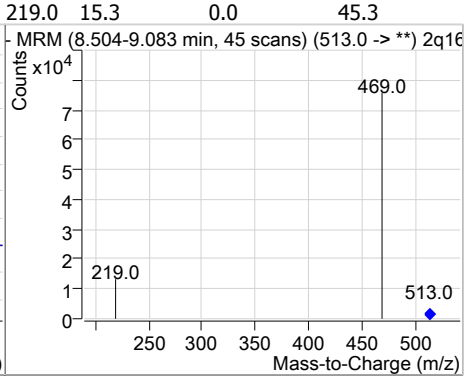




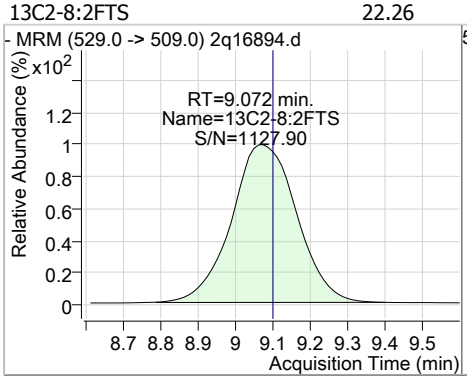
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	50.56	8.73	-0.01	54830	513.0 -> 219.0	15.3	0.0	45.3

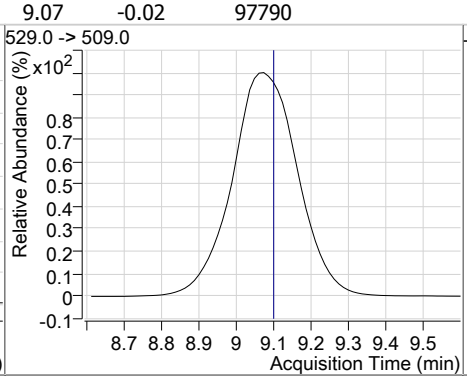


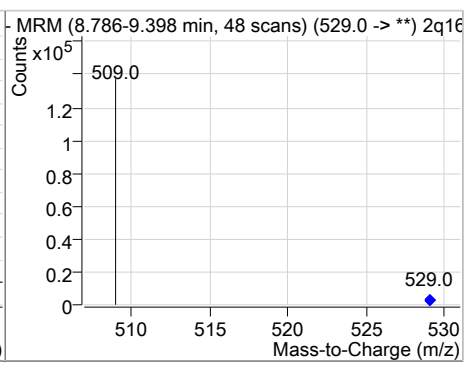




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	22.26	9.07	-0.02	97790				

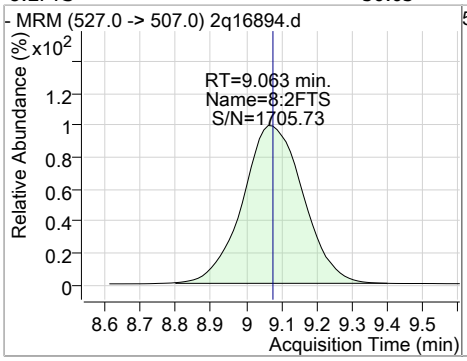


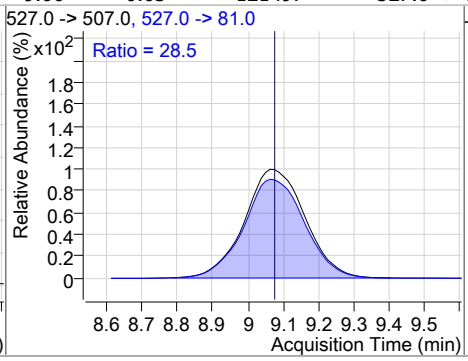


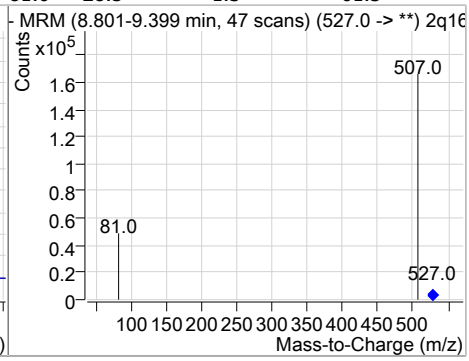


Perfluorinated Compounds by LC/MS/MS

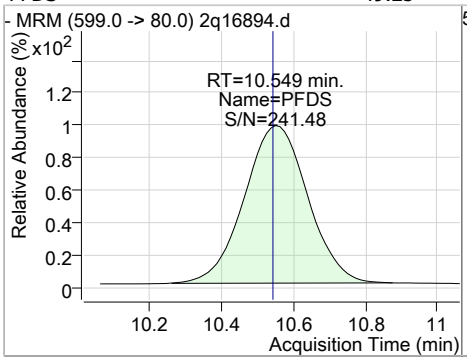
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	50.03	9.06	-0.03	121497	527.0 -> 81.0	28.5	1.3	61.3

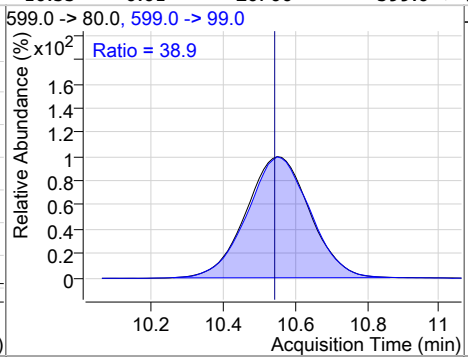


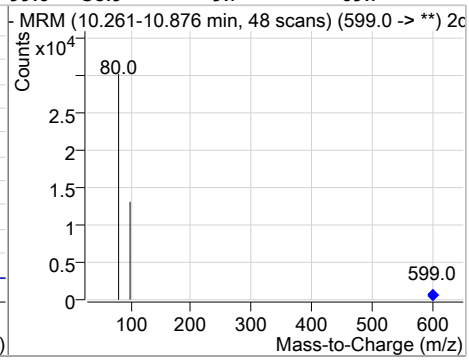




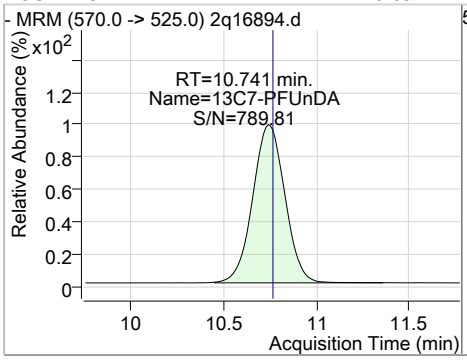
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	49.25	10.55	-0.01	20706	599.0 -> 99.0	38.9	9.7	69.7

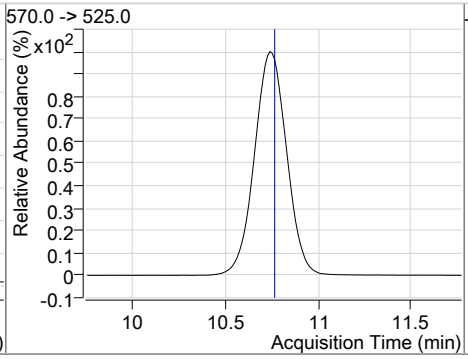


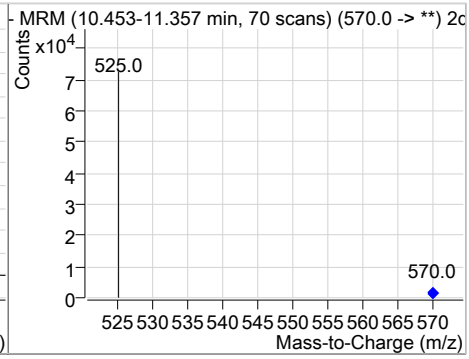




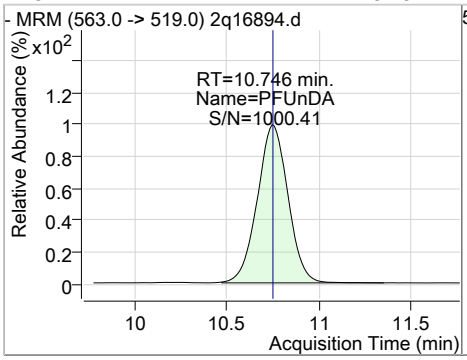
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.89	10.74	-0.02	49628				

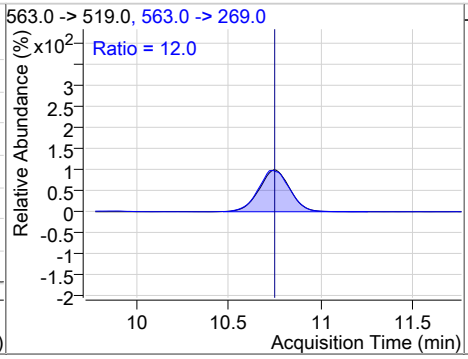


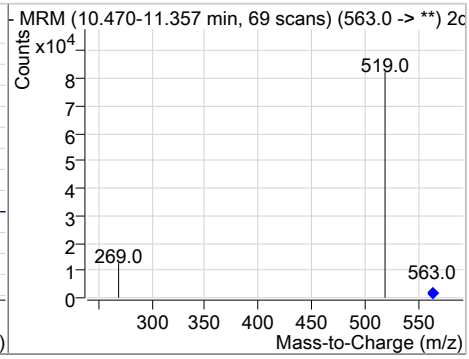




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	49.19	10.75	-0.02	59214	563.0 -> 269.0	12.0	0.0	41.8

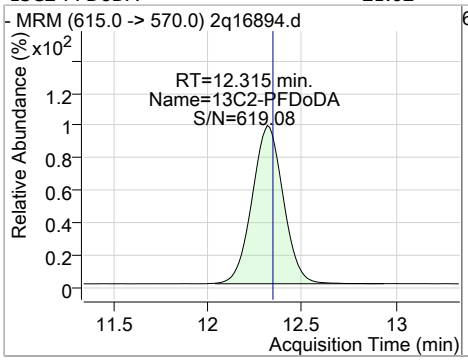


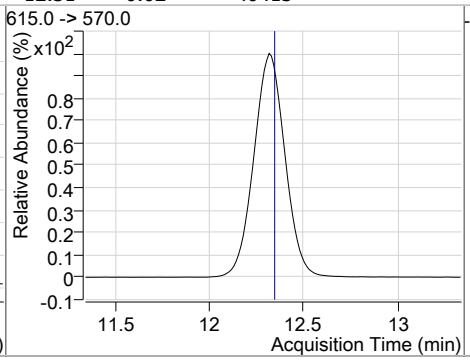


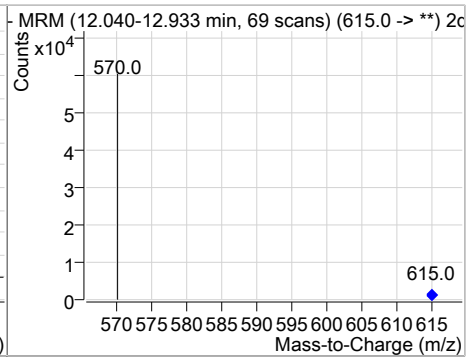


Perfluorinated Compounds by LC/MS/MS

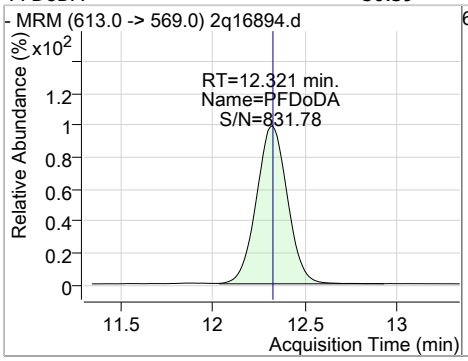
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.02	12.31	-0.02	40413				

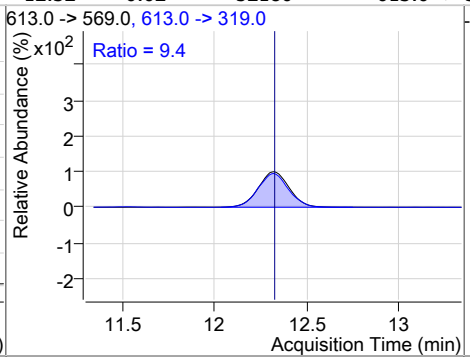


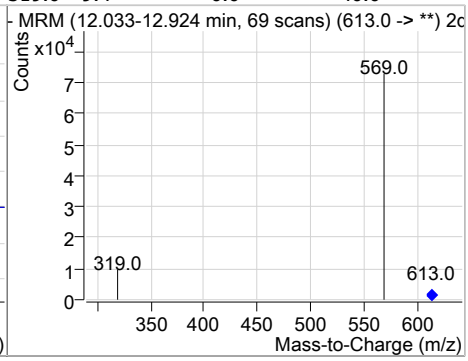




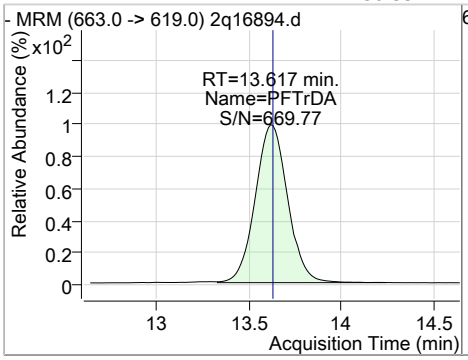
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	50.39	12.32	-0.02	52180	613.0 -> 319.0	9.4	0.0	40.0

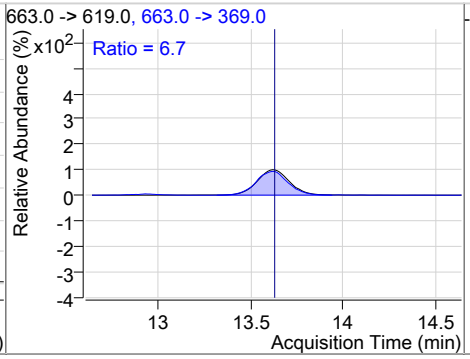


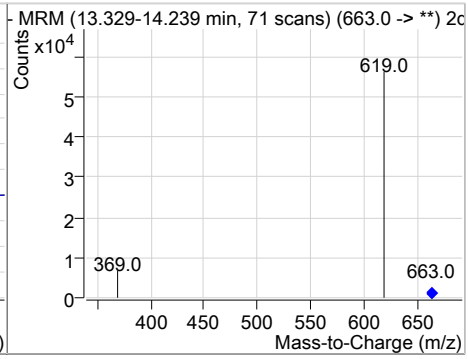




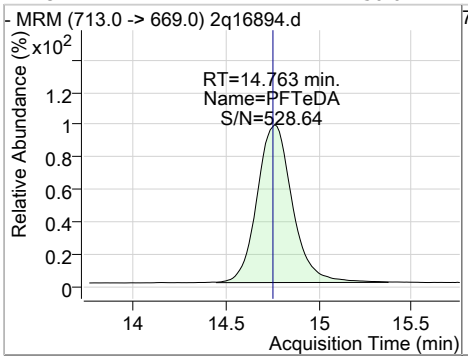
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	50.33	13.62	-0.02	39900	663.0 -> 369.0	6.7	0.0	37.1

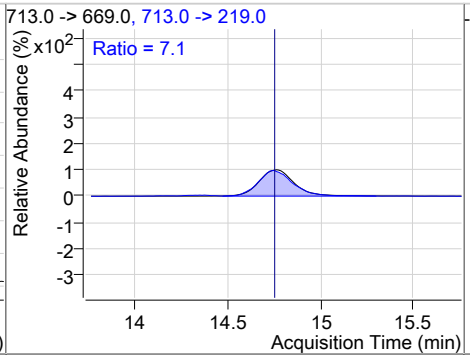


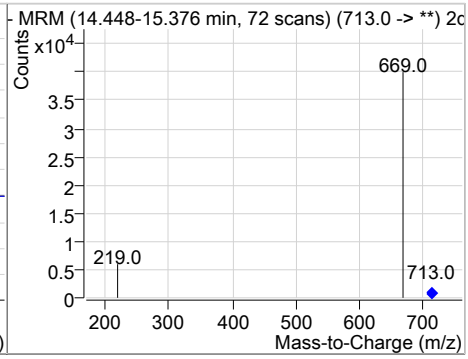




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	50.01	14.76	0.00	27343	713.0 -> 219.0	7.1	0.0	37.4

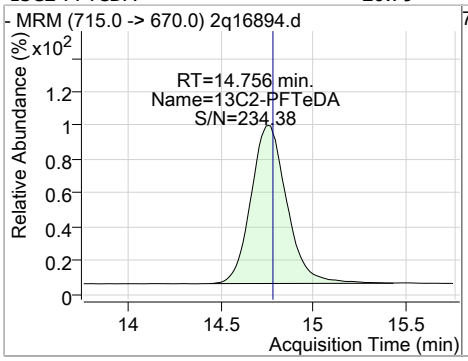


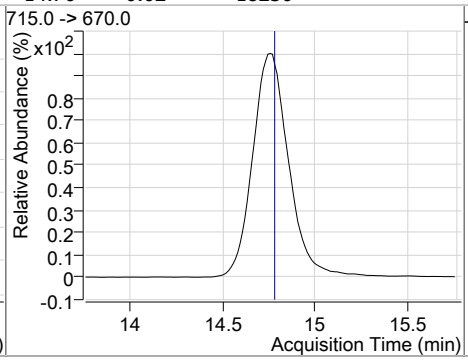


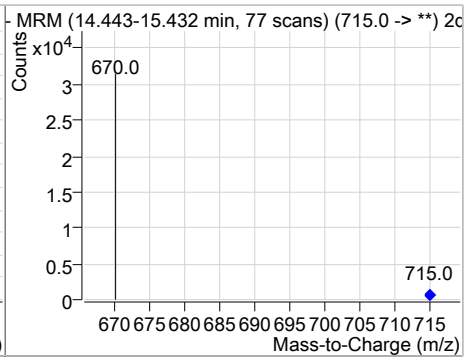


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.79	14.76	-0.02	18236				







Manual Integration Approval Summary

Sample Number: S2Q294-IC294
Lab FileID: 2Q16894.D
Injection Time: 07/10/18 18:15
Method: EPA 537M QSM5.1 B-15
Analyst approved: 07/11/18 14:37 Natasha Gumtie
Supervisor approved: 07/11/18 16:54 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.60	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/11/18 16:54

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16895.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/10/2018 6:35:51 PM
Sample Name : ic294-100
Vial : Vial 9
DA Method File : PFC_ID_071018_S2Q294.quantmethod.xml
Batch Name : s2q294.batch.bin
Sample Information : op70743,S2Q294,130,,,1.0,1,water

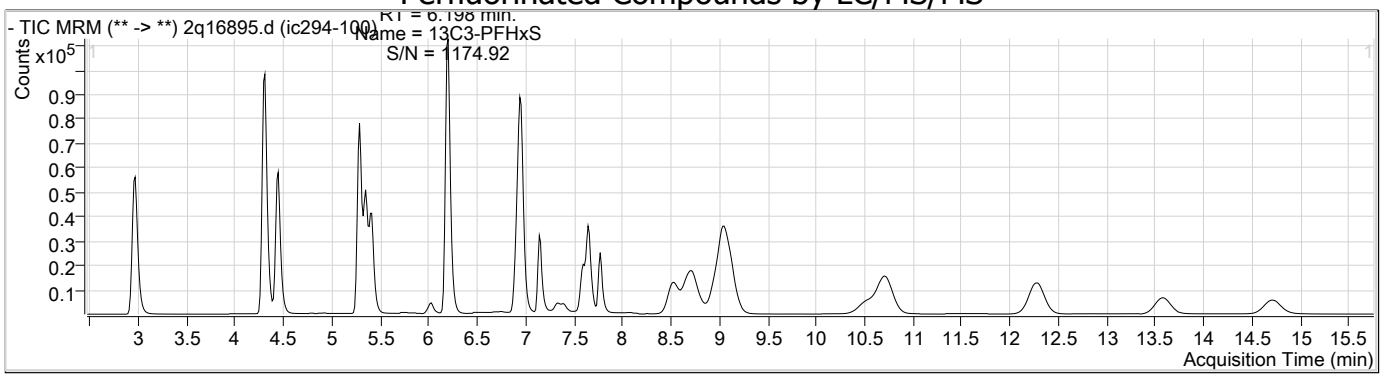
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-PFOA	6.934	415.0 -> 370.0	17865	20.00 µg/L	-0.012
13C4-PFOS	7.598	503.0 -> 80.0	10049	20.00 µg/L	-0.004
M4-PFBA	2.966	217.0 -> 172.0	128258	20.00 µg/L	-0.001
M5-PFPeA	4.312	268.0 -> 223.0	62254	20.00 µg/L	0.000
M5-PFHxA	5.353	318.0 -> 273.0	54106	20.00 µg/L	-0.008
M4-PFHpA	6.204	367.0 -> 322.0	53550	20.00 µg/L	-0.005
M8-PFOA	6.932	421.0 -> 376.0	27937	20.00 µg/L	-0.013
M9-PFNA	7.665	472.0 -> 427.0	20301	20.00 µg/L	-0.003
M6-PFDA	8.716	519.0 -> 474.0	57283	20.00 µg/L	-0.026
M7-PFUnDA	10.716	570.0 -> 525.0	47716	20.00 µg/L	-0.045
M2-PFDoDA	12.277	615.0 -> 570.0	39723	20.00 µg/L	-0.061
M2-PFTeDA	14.706	715.0 -> 670.0	18345	20.00 µg/L	-0.068
M8-FOSA	7.142	506.0 -> 78.0	26746	20.00 µg/L	-0.003
M3-PFBS	4.443	302.0 -> 99.0	19654	20.00 µg/L	0.006
M3-PFHxS	6.198	402.0 -> 99.0	16424	20.00 µg/L	0.002
M8-PFOS	7.596	507.0 -> 99.0	8752	20.00 µg/L	-0.006
M2-4:2FTS	5.285	329.0 -> 309.0	62945	20.00 µg/L	0.002
M2-6:2FTS	6.955	429.0 -> 409.0	49627	20.00 µg/L	-0.003
M2-8:2FTS	9.047	529.0 -> 509.0	108004	20.00 µg/L	-0.048
M3-MeFOSAA	7.644	573.0 -> 419.0	14540	20.00 µg/L	0.008
System Monitoring Compounds					
13C2-4:2FTS	5.285	329.0 -> 309.0	62943	23.48 µg/L	0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 117.4%	
13C2-6:2FTS	6.955	429.0 -> 409.0	49680	23.93 µg/L	-0.003
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 119.7%	
13C2-8:2FTS	9.047	529.0 -> 509.0	106980	24.35 µg/L	-0.048
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.8%	
13C2-PFDoDA	12.277	615.0 -> 570.0	39732	20.66 µg/L	-0.061
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%	
13C2-PFTeDA	14.706	715.0 -> 670.0	18285	20.85 µg/L	-0.068
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.2%	
13C3-PFBS	4.443	302.0 -> 99.0	19655	19.76 µg/L	0.006
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.8%	
13C3-PFHxS	6.198	402.0 -> 99.0	16437	19.81 µg/L	0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C4-PFBA	2.966	217.0 -> 172.0	128179	20.01 µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C4-PFHpA	6.204	367.0 -> 322.0	53547	19.69 µg/L	-0.005
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.5%	
13C5-PFHxA	5.353	318.0 -> 273.0	54112	19.08 µg/L	-0.008
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.4%	
13C5-PFPeA	4.312	268.0 -> 223.0	62252	19.90 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C6-PFDA	8.716	519.0 -> 474.0	57009	19.70 µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.5%	

Perfluorinated Compounds by LC/MS/MS

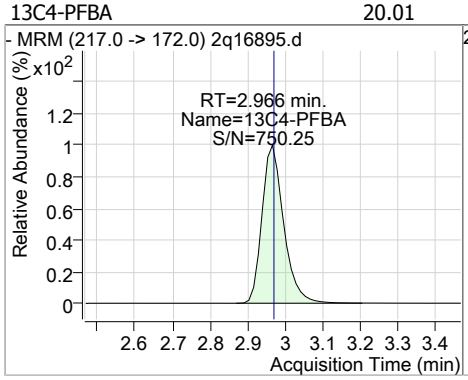
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.716	570.0 -> 525.0	47679	20.07	µg/L		-0.045
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.4%			
13C8-FOSA	7.142	506.0 -> 78.0	26750	17.06	µg/L		-0.003
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.3%			
13C8-PFOA	6.932	421.0 -> 376.0	27929	20.09	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.4%			
13C8-PFOS	7.596	507.0 -> 99.0	8753	20.28	µg/L		-0.006
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.4%			
13C9-PFNA	7.665	472.0 -> 427.0	20308	21.09	µg/L		-0.003
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.4%			
d3-MeFOSAA	7.644	573.0 -> 419.0	14543	19.22	µg/L		0.008
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.1%			
M2-PFOA	6.934	415.0 -> 370.0	17828	19.96	ng/ml		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%			
M4-PFOS	7.598	503.0 -> 80.0	10054	20.01	ng/ml		-0.004
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
Target Compounds							**QValue**
4:2FTS	5.288	327.0 -> 307.0	135642	99.90	µg/L		100
6:2FTS	6.956	427.0 -> 407.0	104422	99.95	µg/L		97
8:2FTS	9.037	527.0 -> 507.0	240075	100.00	µg/L		94
EtFOSAA	7.769	584.0 -> 419.0	24638	100.46	µg/L		98
FOSA	7.145	498.0 -> 78.0	66109	100.63	µg/L		100
MeFOSAA	7.645	570.0 -> 419.0	25936	99.75	µg/L		97
PFBA	2.962	213.0 -> 169.0	100455	100.34	µg/L		100
PFBS	4.447	299.0 -> 80.0	134588	100.38	µg/L		100
PFDA	8.718	513.0 -> 469.0	103934	99.88	µg/L		100
PFDoDA	12.271	613.0 -> 569.0	100870	99.92	µg/L		99
PFDS	10.512	599.0 -> 80.0	40594	100.53	µg/L		98
PFHpA	6.207	363.0 -> 319.0	197052	100.55	µg/L		100
PFHpS	6.903	449.0 -> 80.0	50372	100.22	µg/L		98
PFHxA	5.355	313.0 -> 269.0	92430	100.72	µg/L		98
PFHxS	6.188	399.0 -> 80.0	98590	100.45	µg/L	m	98
PFNA	7.666	463.0 -> 419.0	39146	100.05	µg/L		93
PFNS	8.521	549.0 -> 80.0	68119	99.98	µg/L		99
PFOA	6.934	413.0 -> 369.0	76771	100.18	µg/L		96
PFOS	7.599	499.0 -> 80.0	54964	100.92	µg/L	m	97
PFPeA	4.316	263.0 -> 219.0	298268	100.29	µg/L		100
PFPeS	5.408	349.0 -> 80.0	86484	100.39	µg/L		98
PFTeDA	14.713	713.0 -> 669.0	53433	99.99	µg/L		99
PFTrDA	13.579	663.0 -> 619.0	77272	99.93	µg/L		99
PFUnDA	10.708	563.0 -> 519.0	116283	100.58	µg/L		100

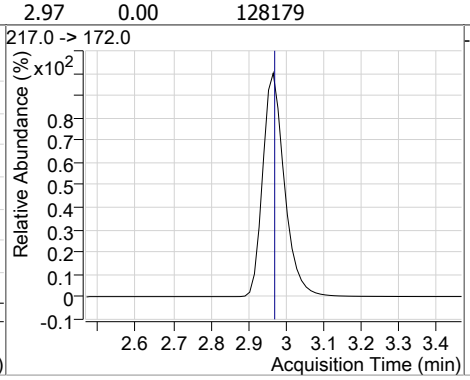
 # = Qualifier out of range, m = manually integrated, + = Area summed

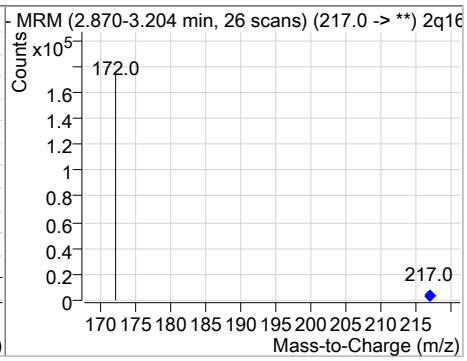
Perfluorinated Compounds by LC/MS/MS



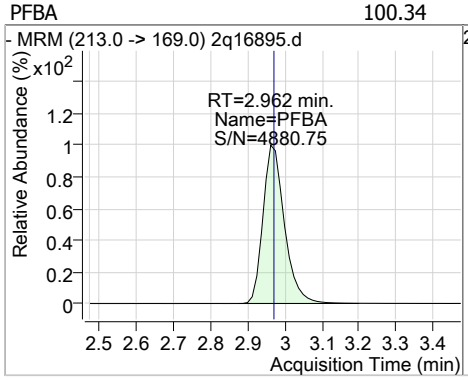
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.01	2.97	0.00	128179				

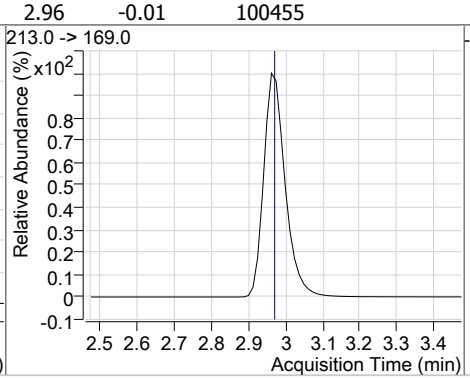


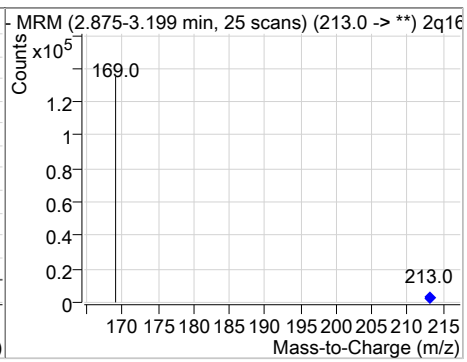




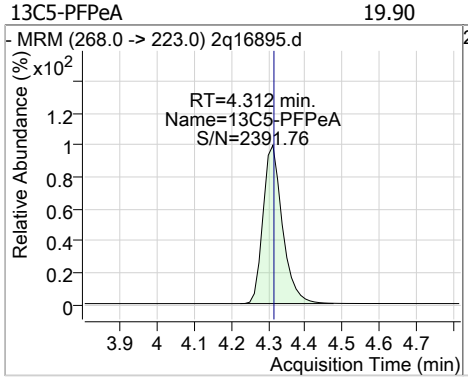
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	100.34	2.96	-0.01	100455				

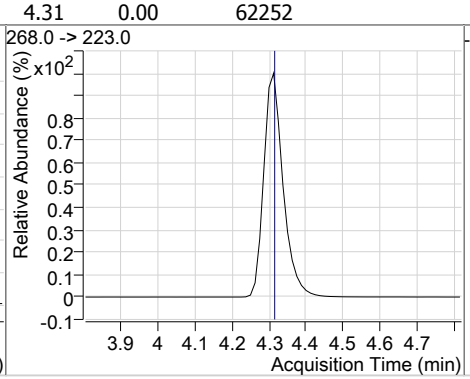


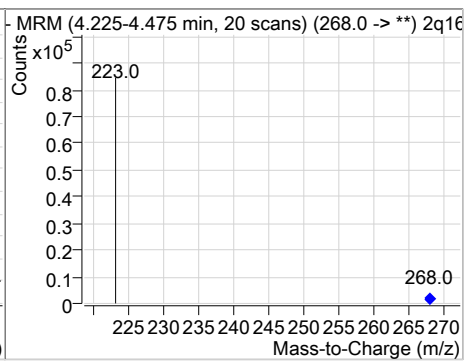




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.90	4.31	0.00	62252				

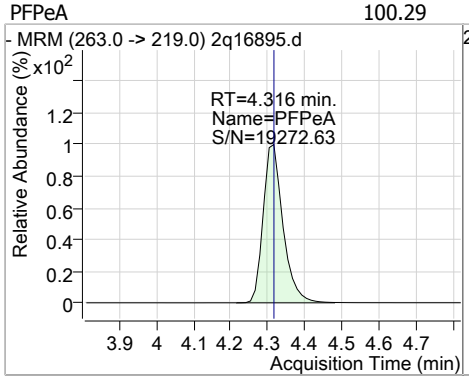


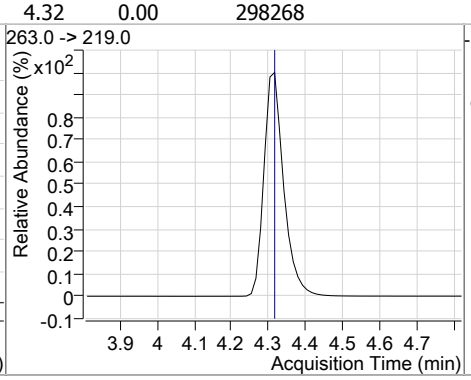


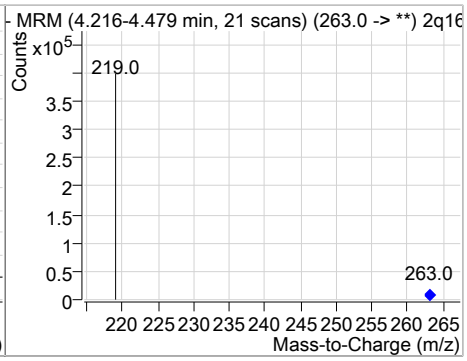


Perfluorinated Compounds by LC/MS/MS

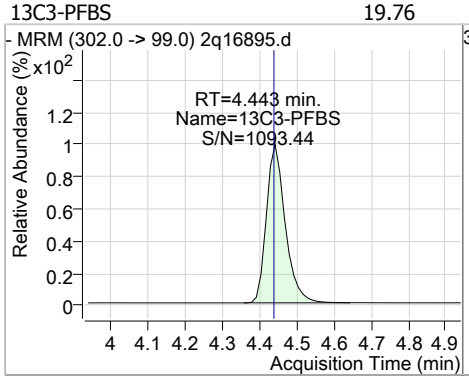
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	100.29	4.32	0.00	298268				

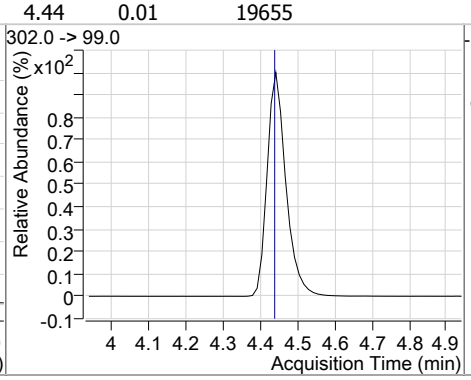


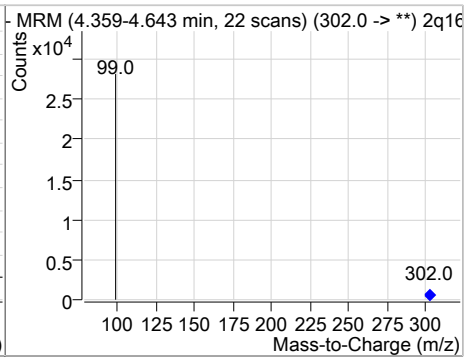




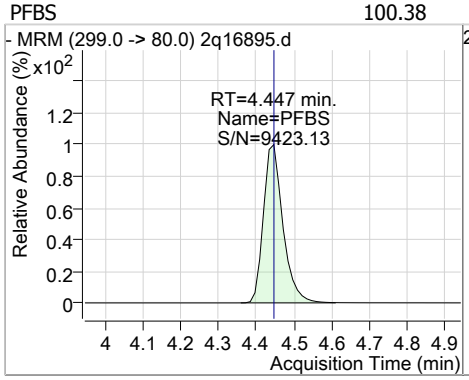
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.76	4.44	0.01	19655				

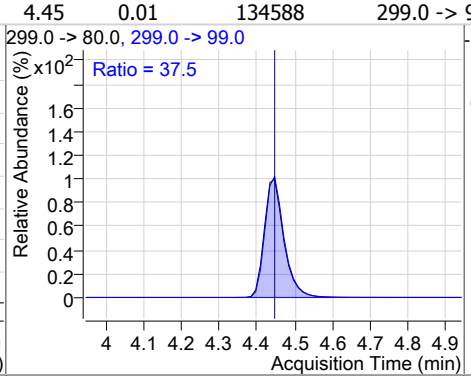


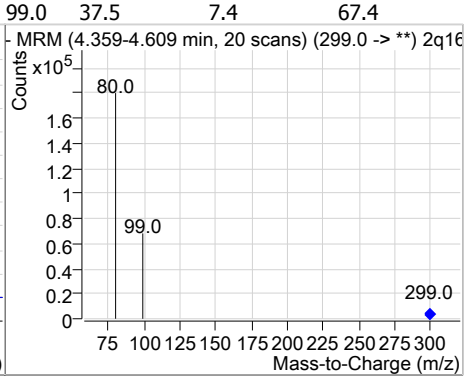




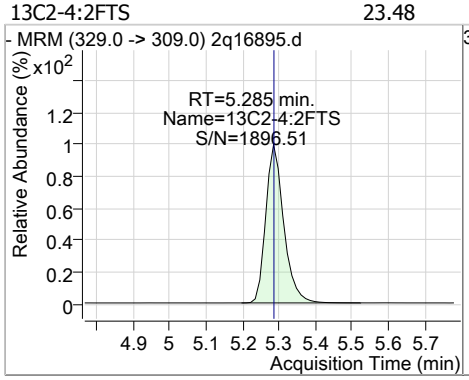
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	100.38	4.45	0.01	134588	299.0 -> 99.0	37.5	7.4	67.4

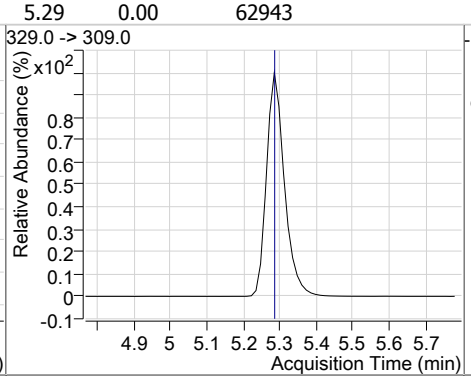


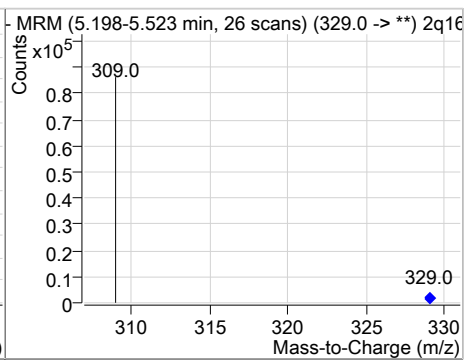




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	23.48	5.29	0.00	62943				

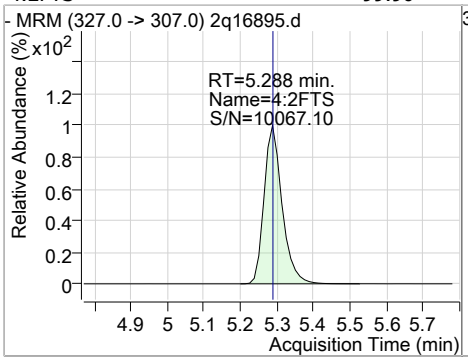


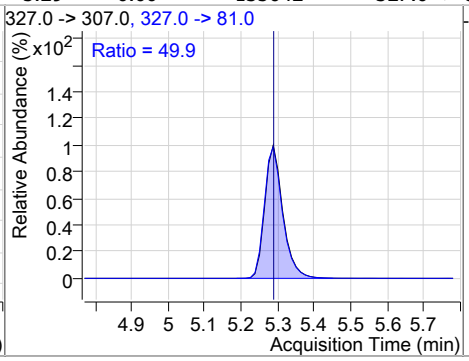


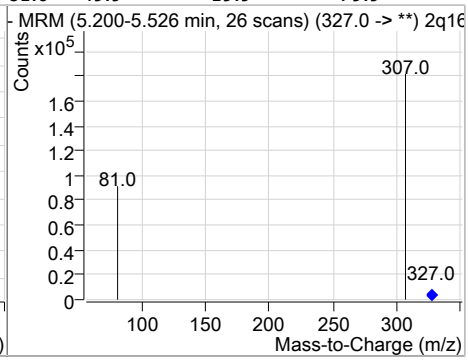


Perfluorinated Compounds by LC/MS/MS

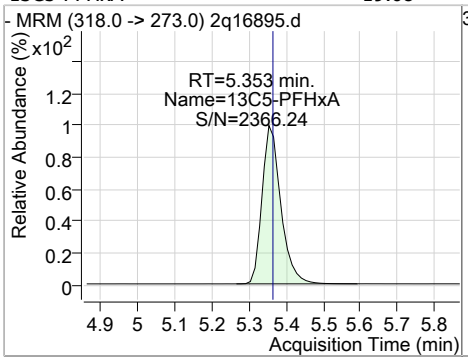
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	99.90	5.29	0.00	135642	327.0 -> 81.0	49.9	19.9	79.9

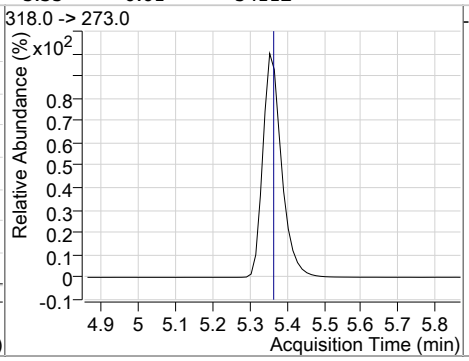


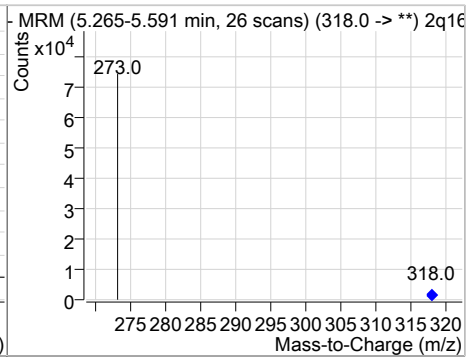




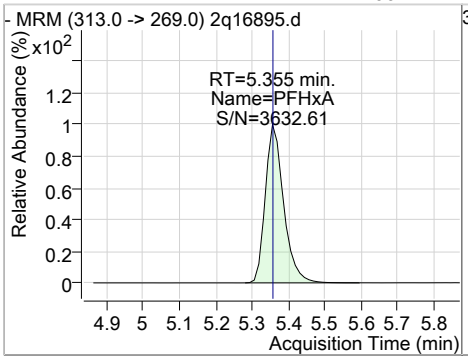
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.08	5.35	-0.01	54112				

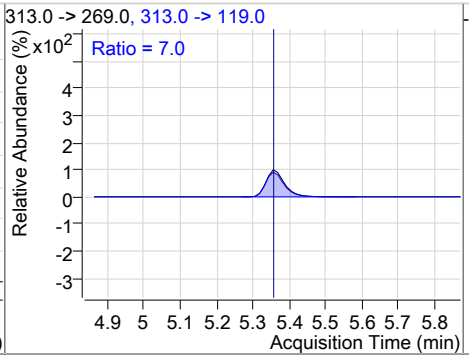


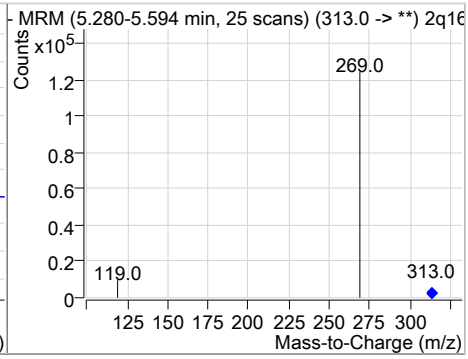




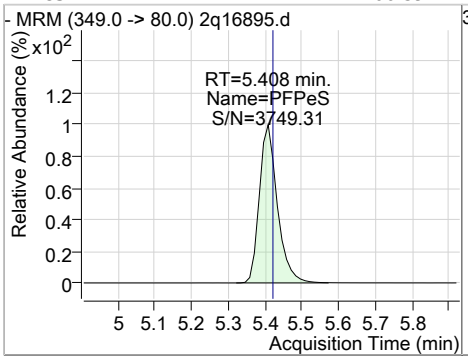
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	100.72	5.36	-0.01	92430	313.0 -> 119.0	7.0	0.0	37.6

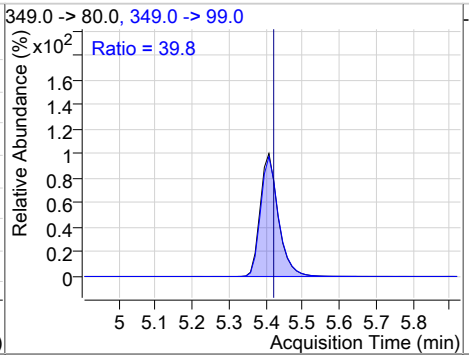


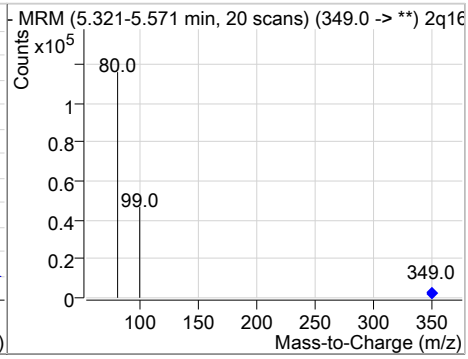




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	100.39	5.41	0.00	86484	349.0 -> 99.0	39.8	10.8	70.8

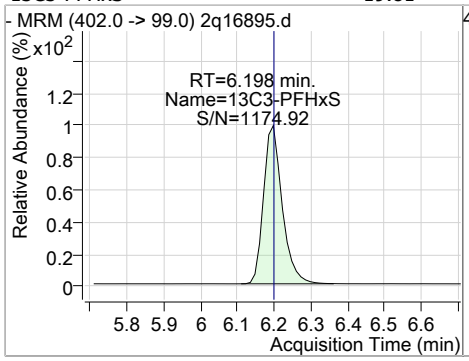


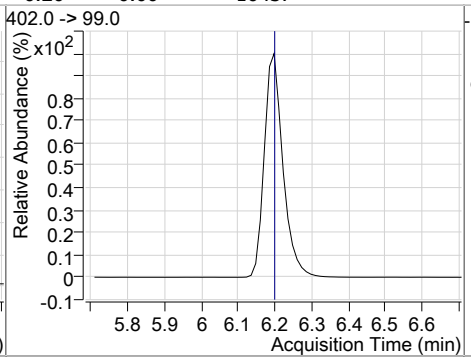


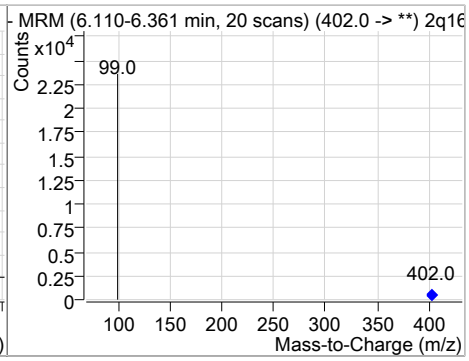


Perfluorinated Compounds by LC/MS/MS

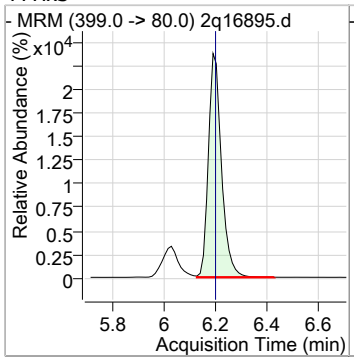
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.81	6.20	0.00	16437				

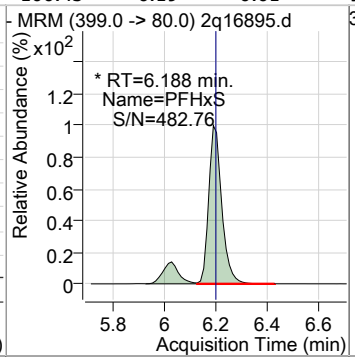


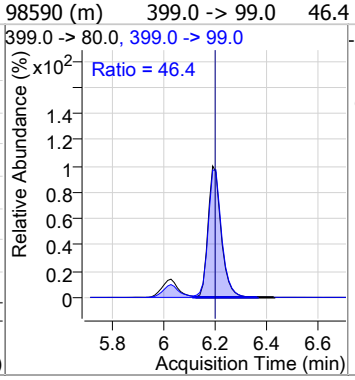


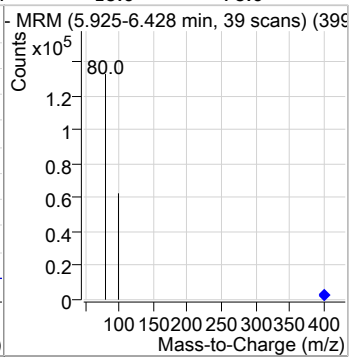


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	100.45	6.19	-0.01	98590 (m)	399.0 -> 99.0	46.4	18.0	78.0

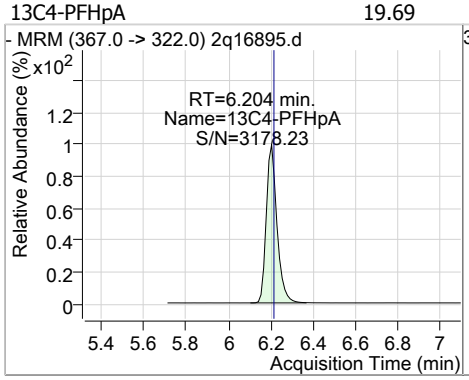


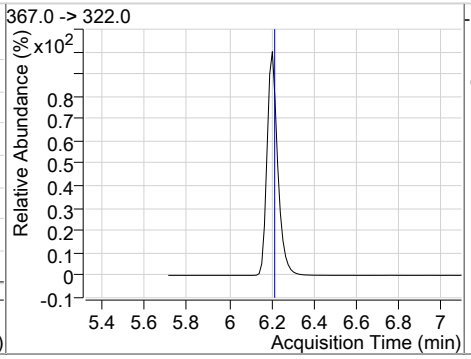


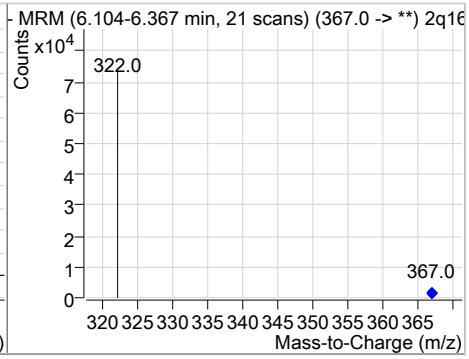




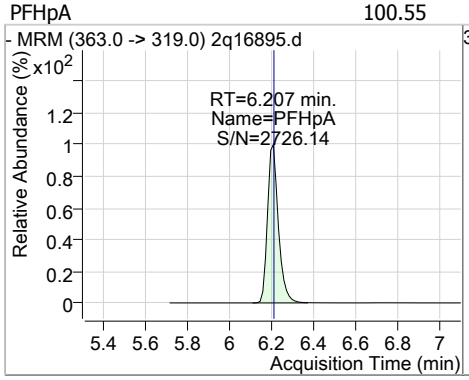
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.69	6.20	-0.01	53547				

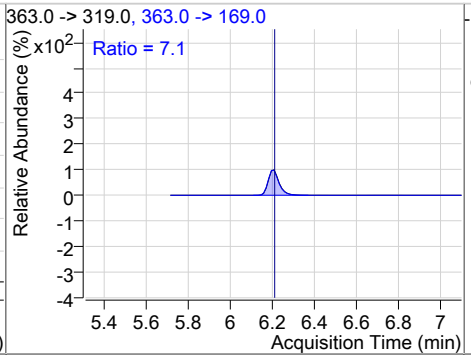


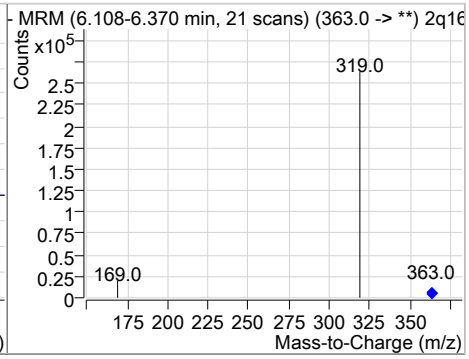




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	100.55	6.21	0.00	197052	363.0 -> 169.0	7.1	0.0	37.2

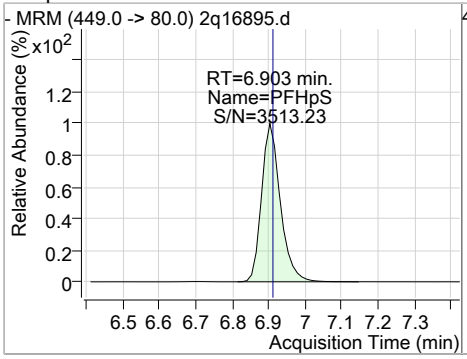


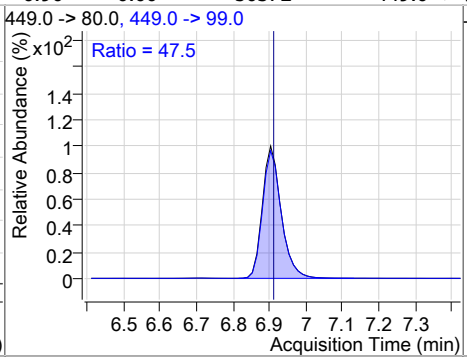


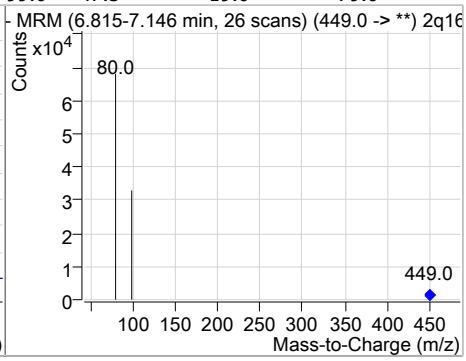


Perfluorinated Compounds by LC/MS/MS

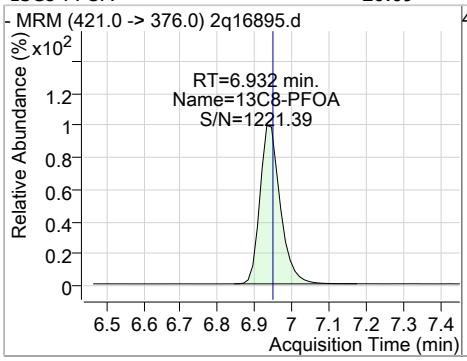
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	100.22	6.90	0.00	50372	449.0 -> 99.0	47.5	19.0	79.0

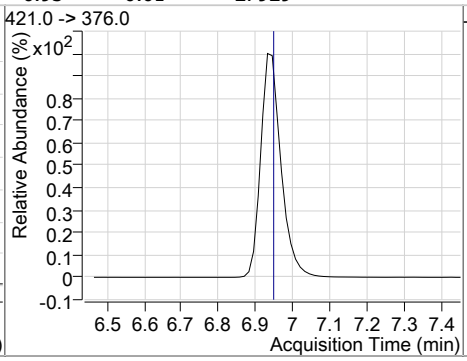


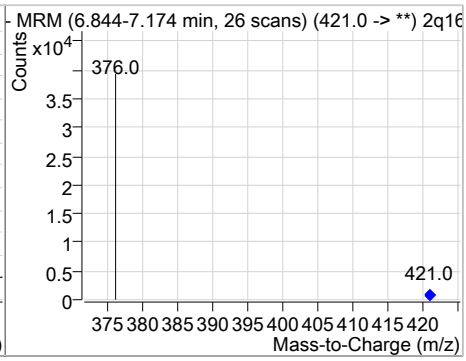




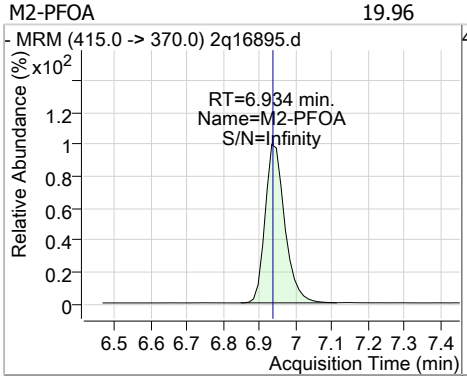
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.09	6.93	-0.01	27929				

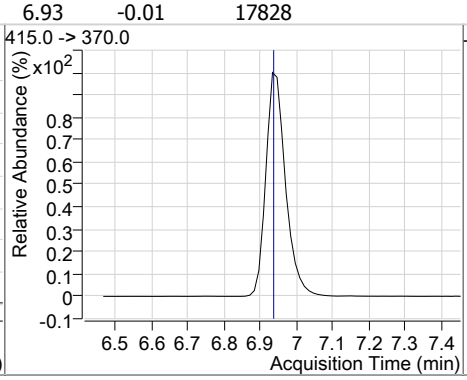


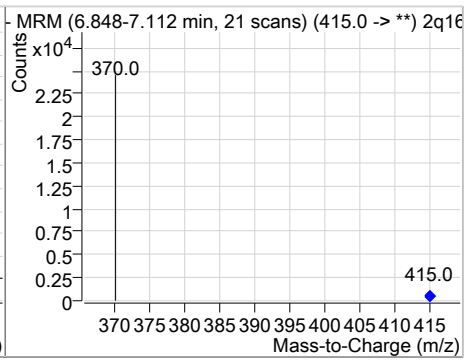




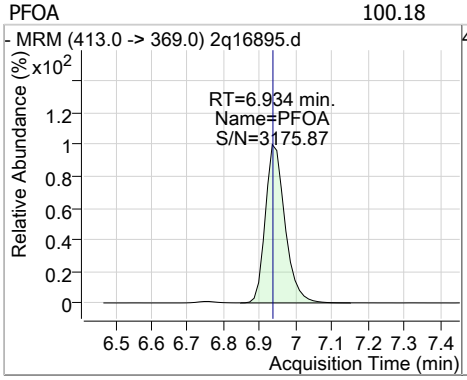
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	19.96	6.93	-0.01	17828				

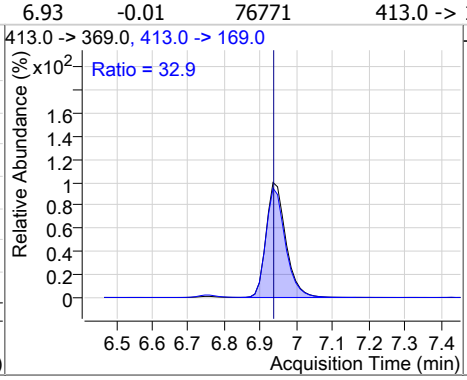


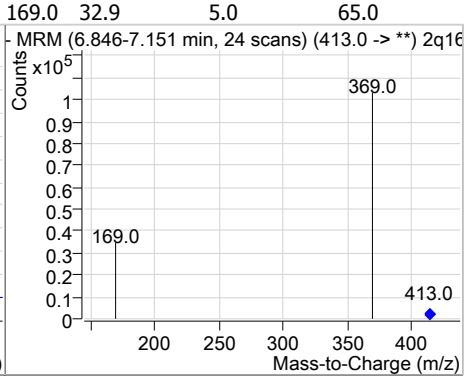




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	100.18	6.93	-0.01	76771	413.0 -> 169.0	32.9	5.0	65.0

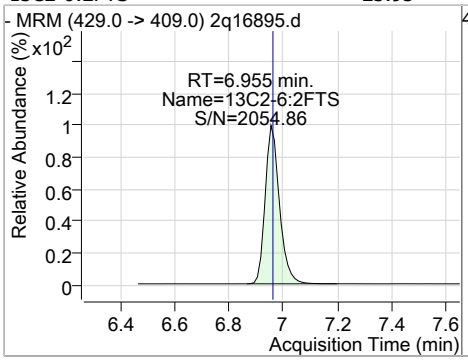


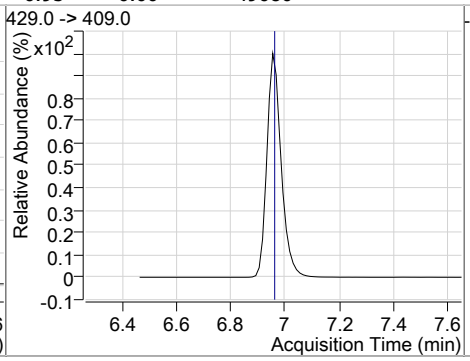


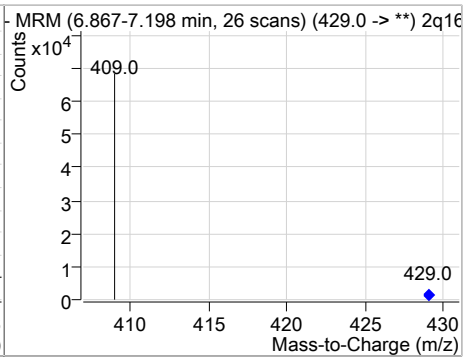


Perfluorinated Compounds by LC/MS/MS

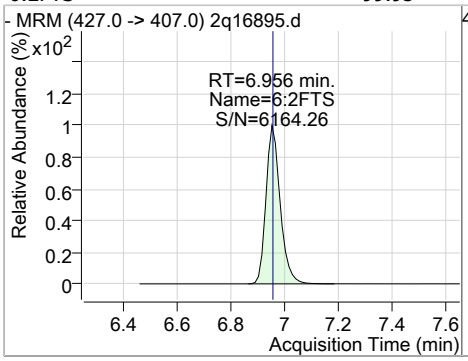
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	23.93	6.95	0.00	49680				

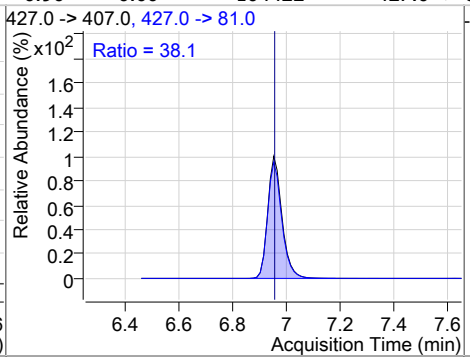


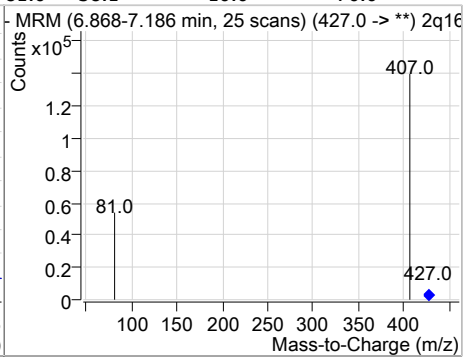




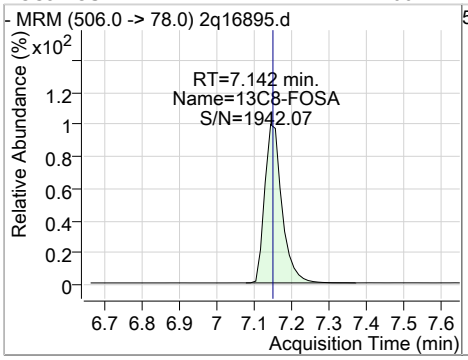
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	99.95	6.96	0.00	104422	427.0 -> 81.0	38.1	10.0	70.0

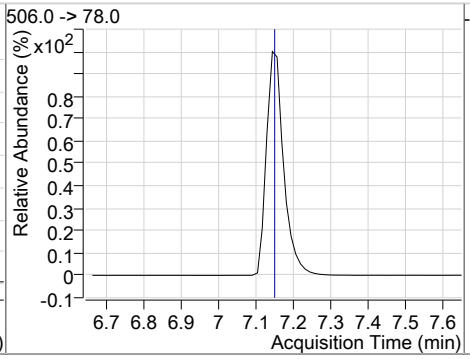


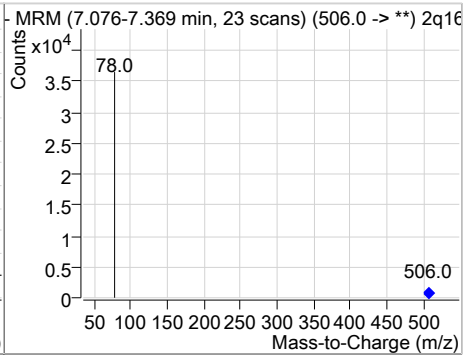




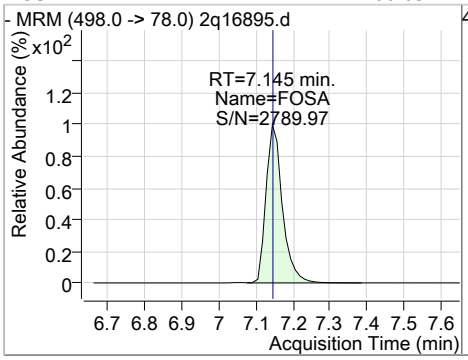
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	17.06	7.14	0.00	26750				

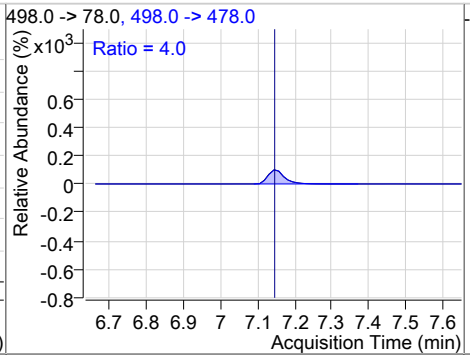


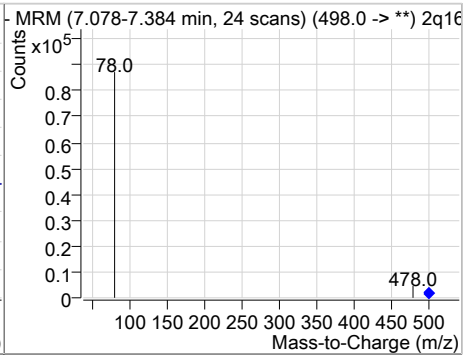




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	100.63	7.15	0.00	66109	498.0 -> 478.0	4.0	0.0	34.0

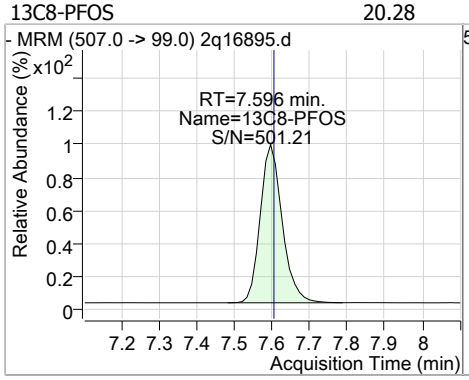


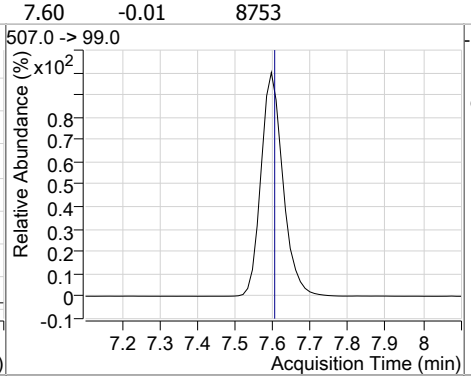


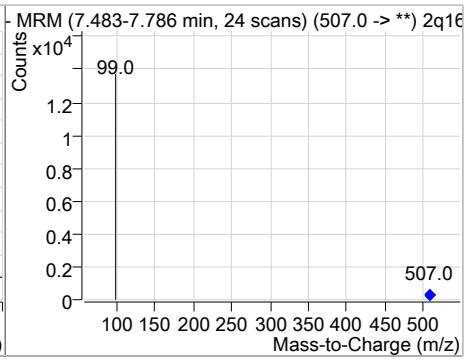


Perfluorinated Compounds by LC/MS/MS

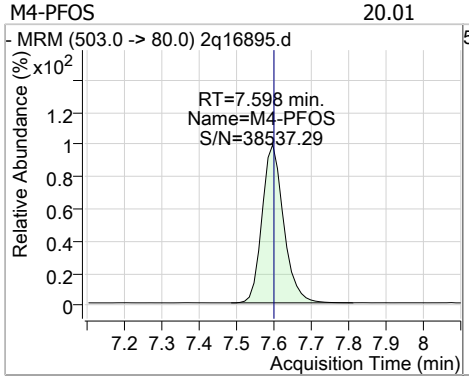
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.28	7.60	-0.01	8753				

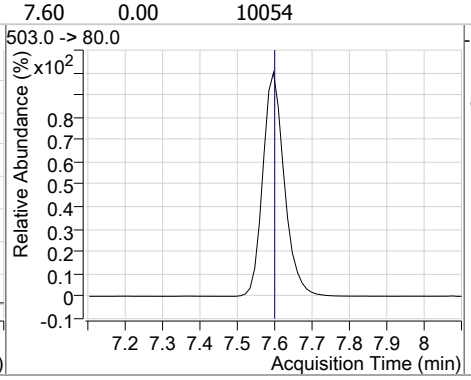


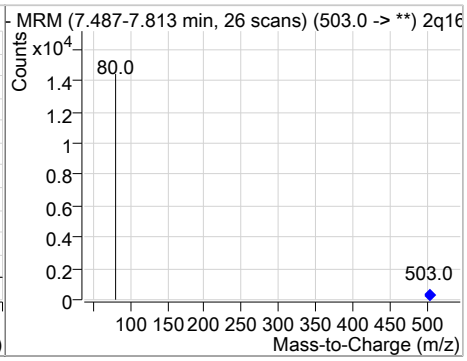




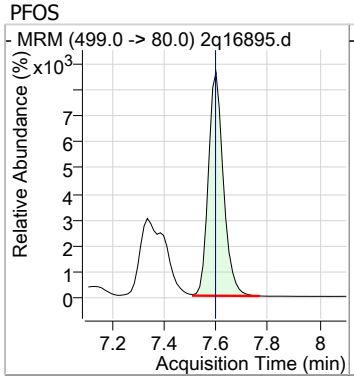
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.01	7.60	0.00	10054				

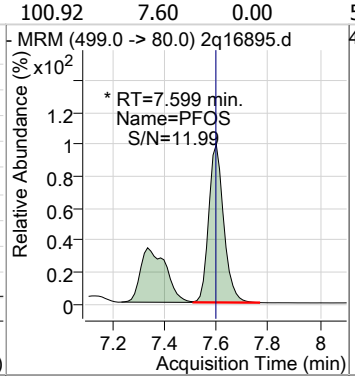


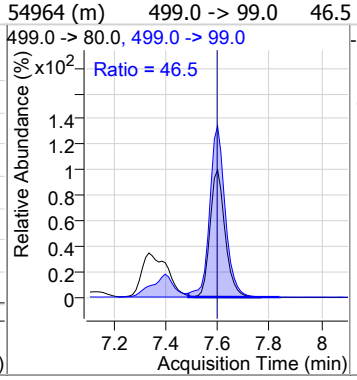


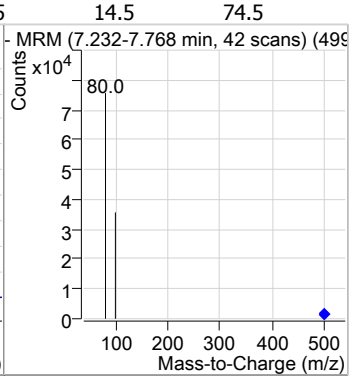


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	100.92	7.60	0.00	54964 (m)	499.0 -> 99.0	46.5	14.5	74.5

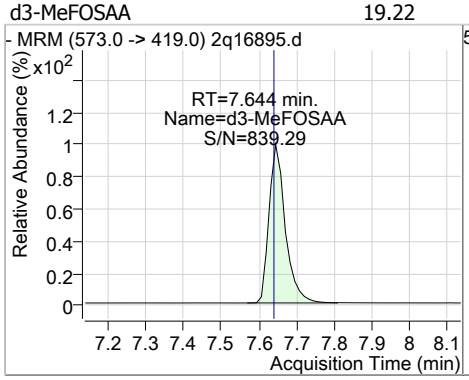


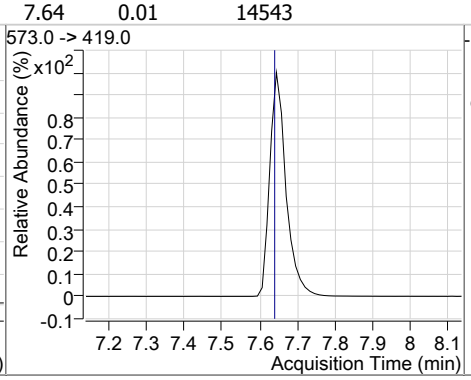


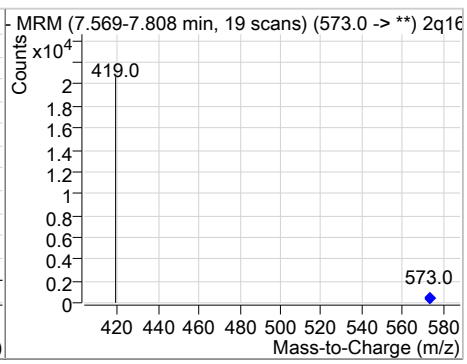




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.22	7.64	0.01	14543				

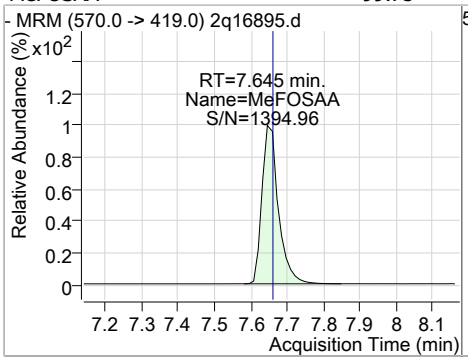


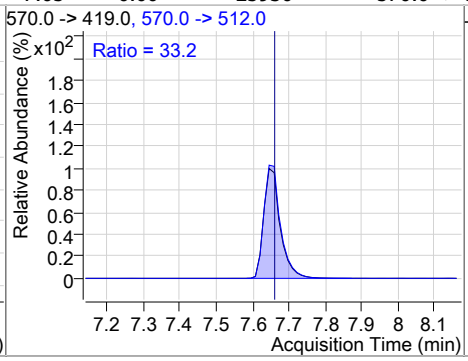


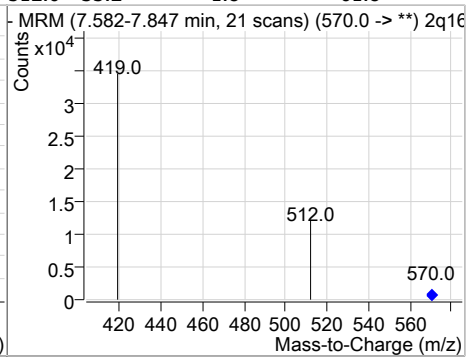


Perfluorinated Compounds by LC/MS/MS

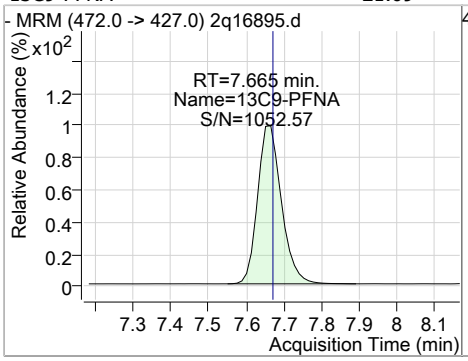
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	99.75	7.65	0.00	25936	570.0 -> 512.0	33.2	1.8	61.8

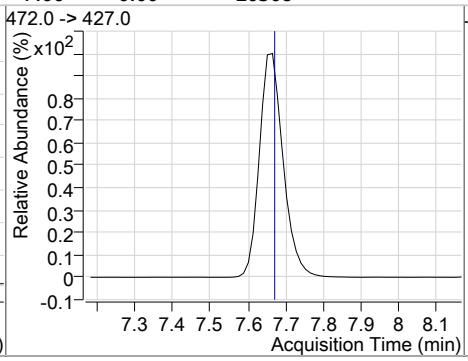


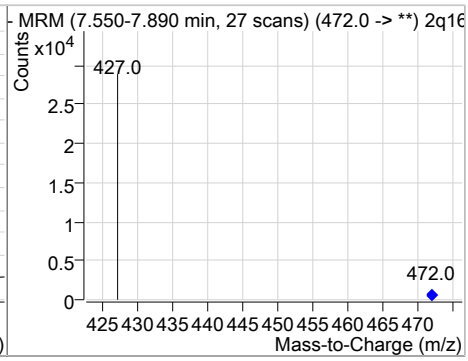




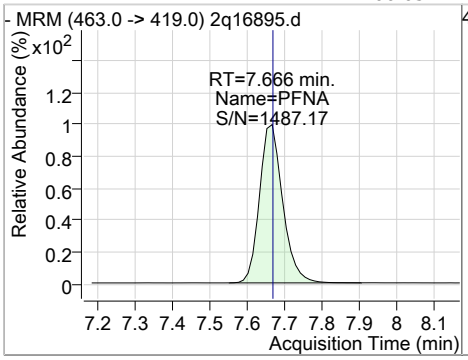
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.09	7.66	0.00	20308				

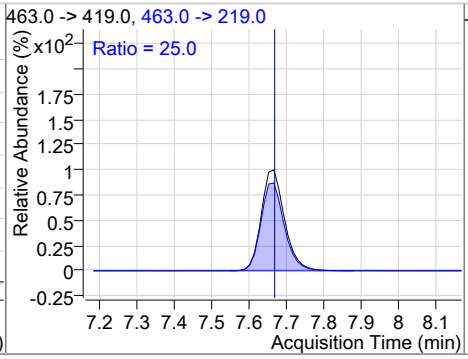


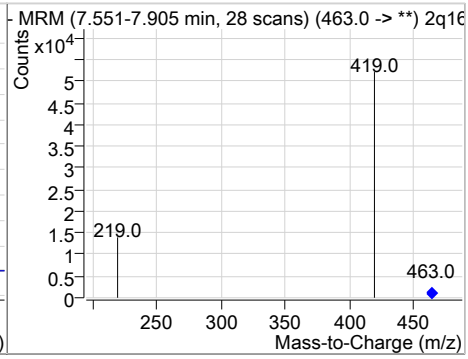




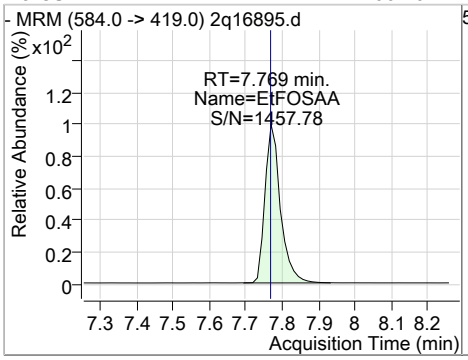
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	100.05	7.67	0.00	39146	463.0 -> 219.0	25.0	0.0	58.4

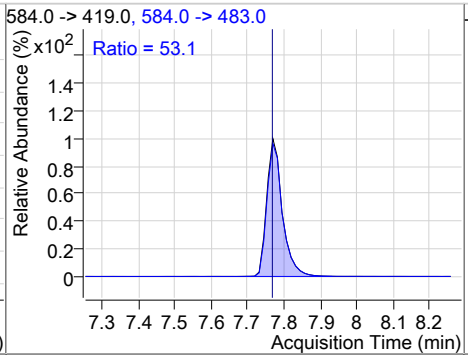


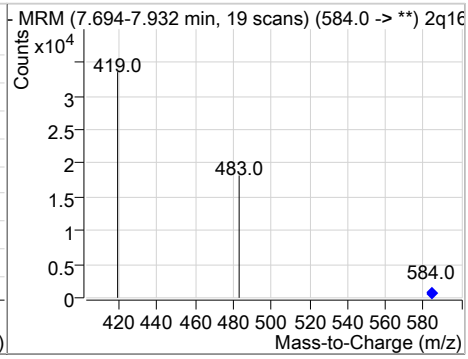




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	100.46	7.77	0.01	24638	584.0 -> 483.0	53.1	24.8	84.8

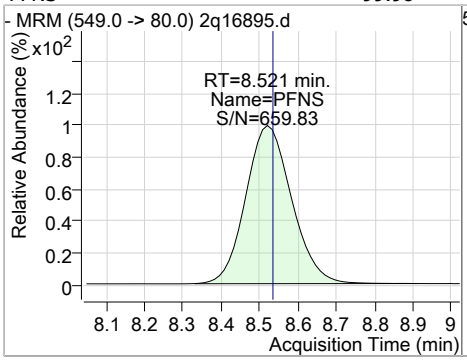


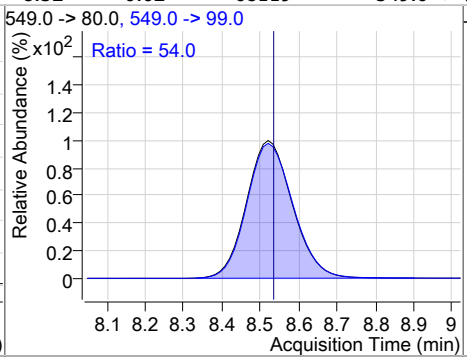


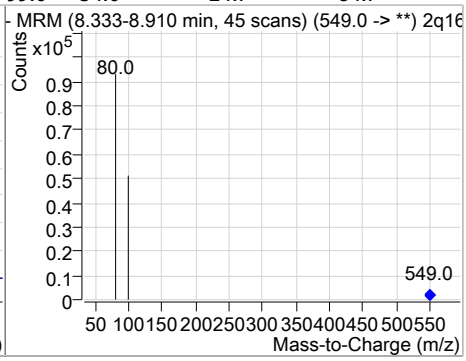


Perfluorinated Compounds by LC/MS/MS

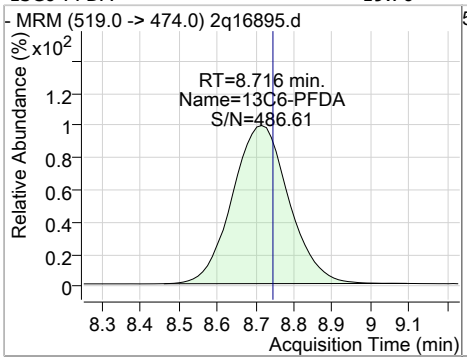
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	99.98	8.52	-0.02	68119	549.0 -> 99.0	54.0	24.7	84.7

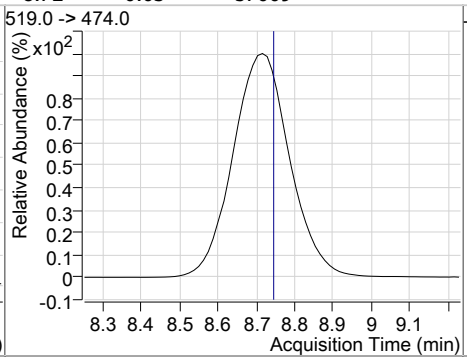


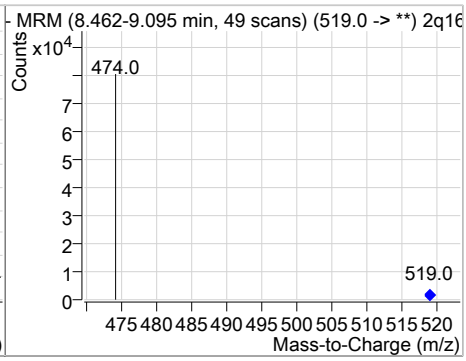




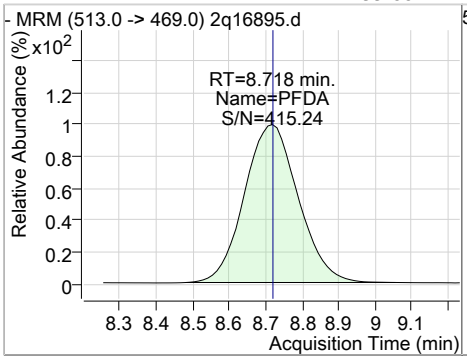
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.70	8.72	-0.03	57009				

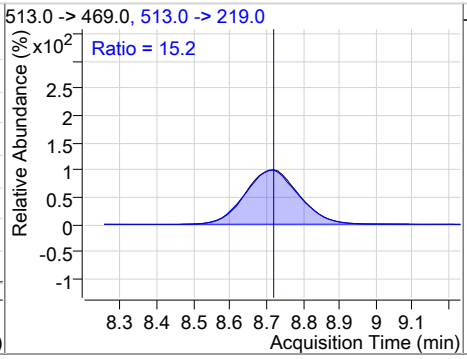


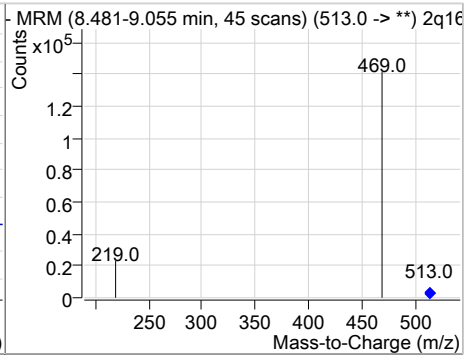




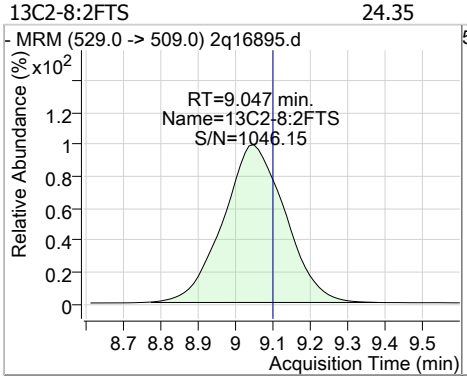
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	99.88	8.72	-0.02	103934	513.0 -> 219.0	15.2	0.0	45.3

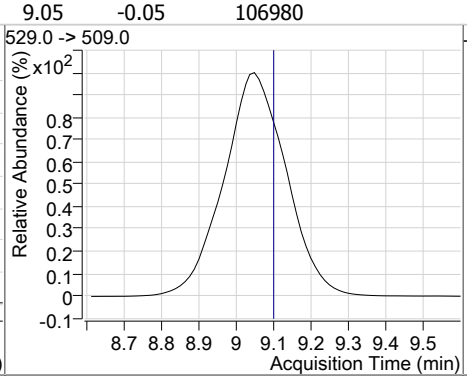


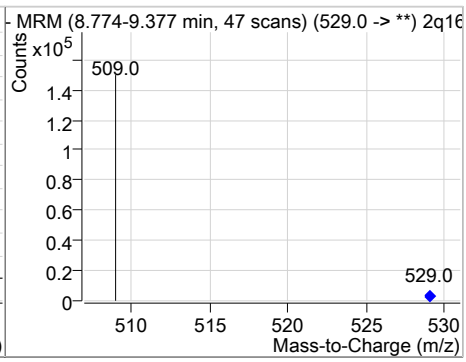




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	24.35	9.05	-0.05	106980				

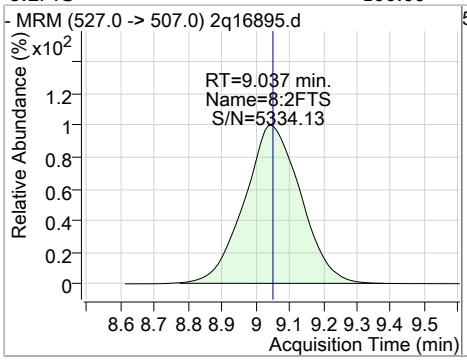


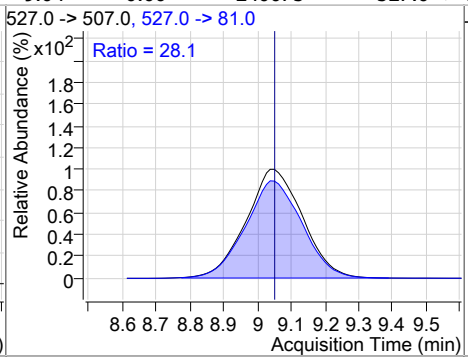


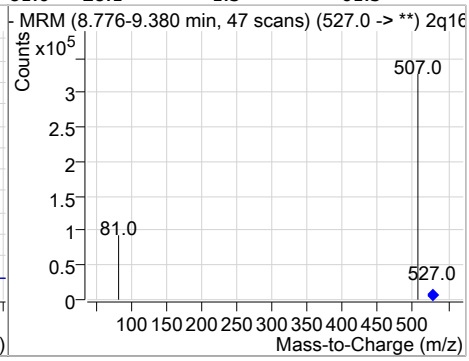


Perfluorinated Compounds by LC/MS/MS

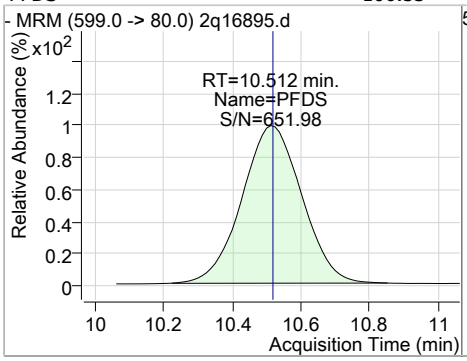
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	100.00	9.04	-0.06	240075	527.0 -> 81.0	28.1	1.3	61.3

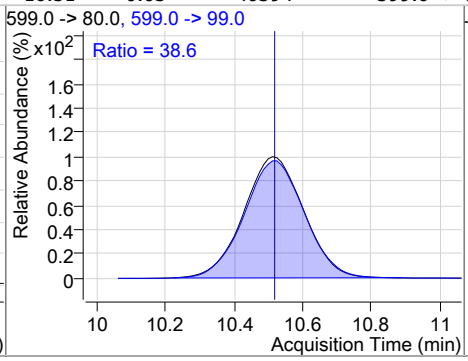


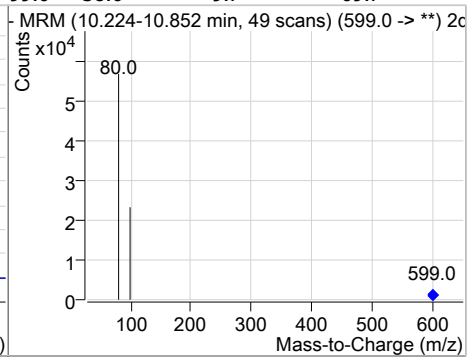




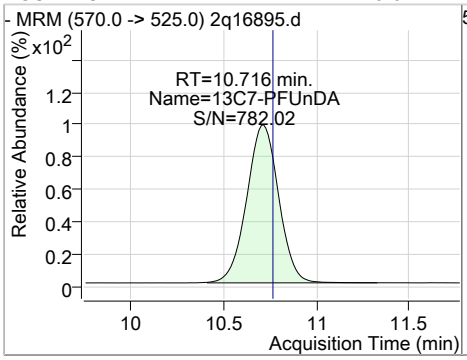
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	100.53	10.51	-0.05	40594	599.0 -> 99.0	38.6	9.7	69.7

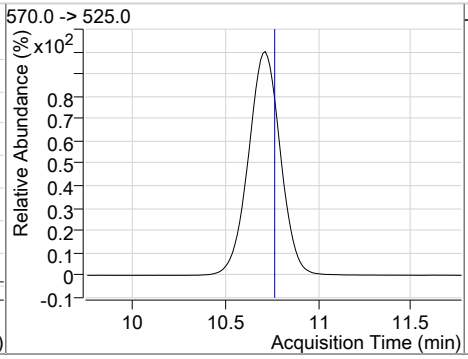


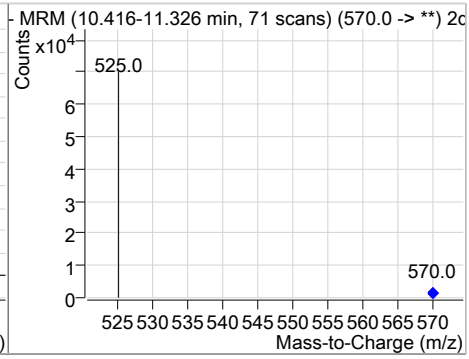




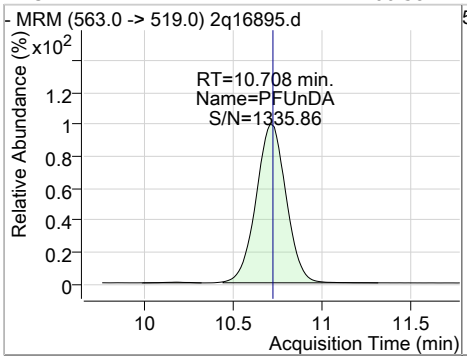
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.07	10.72	-0.04	47679				

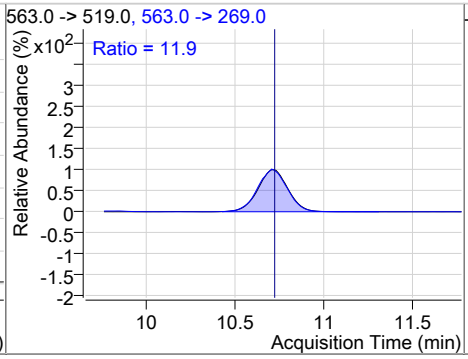


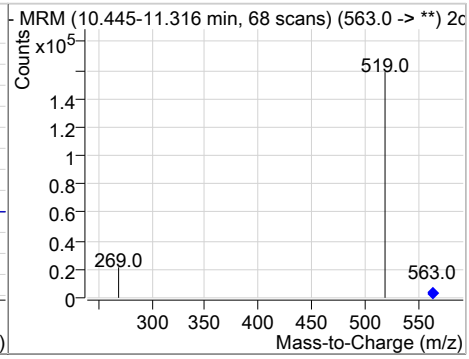




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	100.58	10.71	-0.05	116283	563.0 -> 269.0	11.9	0.0	41.8

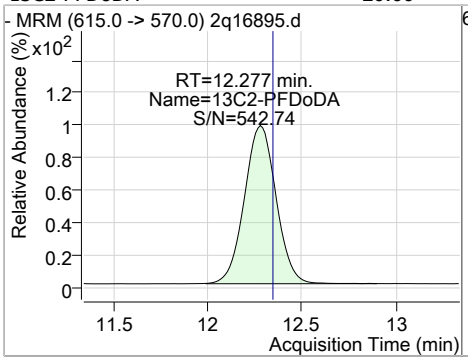


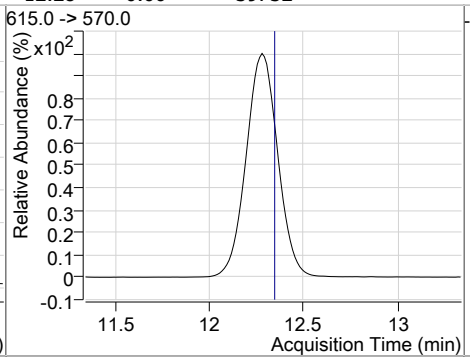


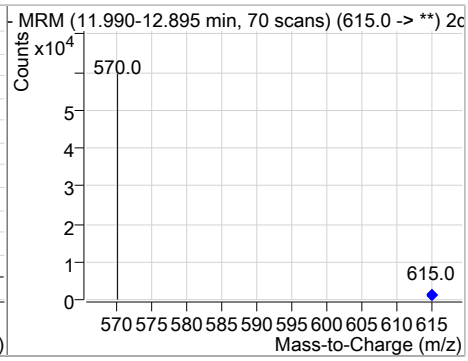


Perfluorinated Compounds by LC/MS/MS

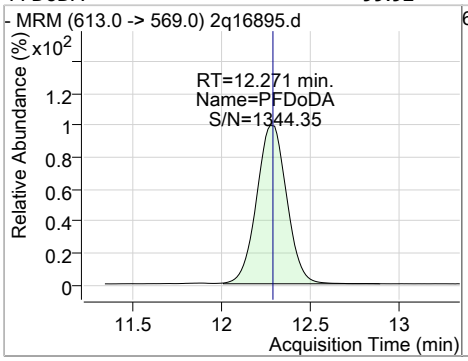
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.66	12.28	-0.06	39732				

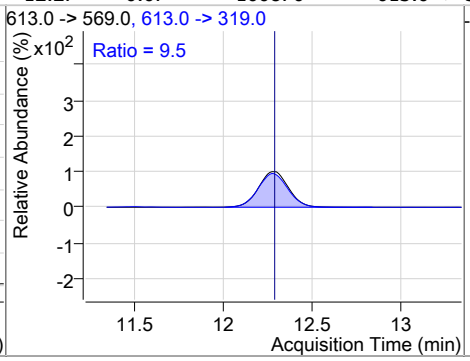


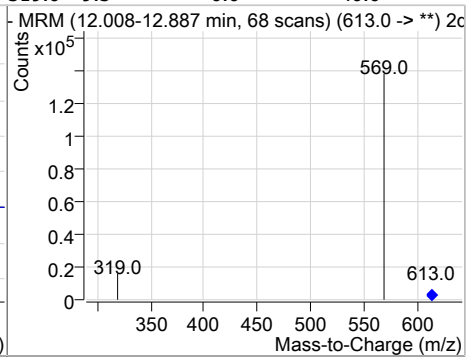




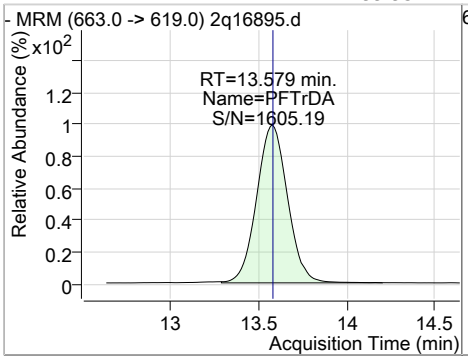
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	99.92	12.27	-0.07	100870	613.0 -> 319.0	9.5	0.0	40.0

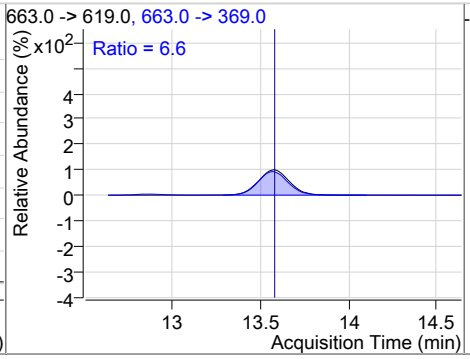


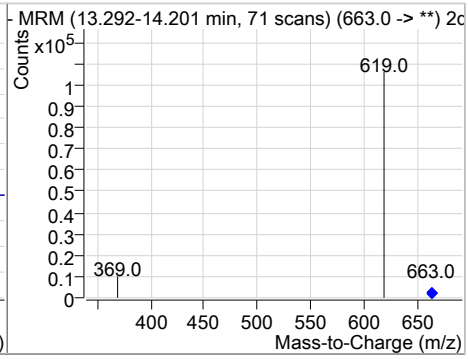




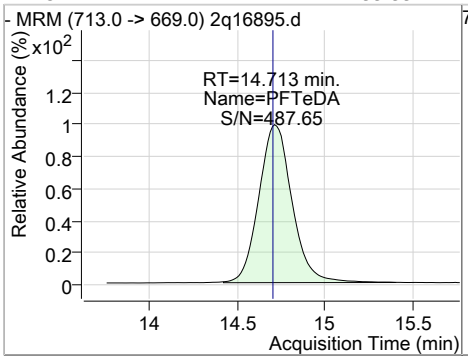
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	99.93	13.58	-0.06	77272	663.0 -> 369.0	6.6	0.0	37.1

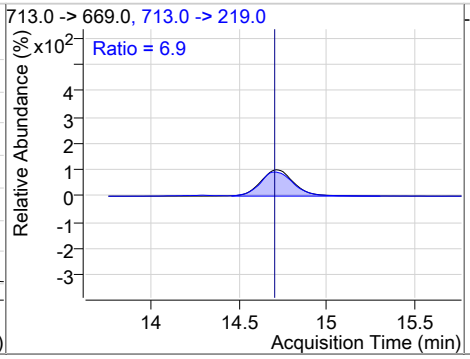


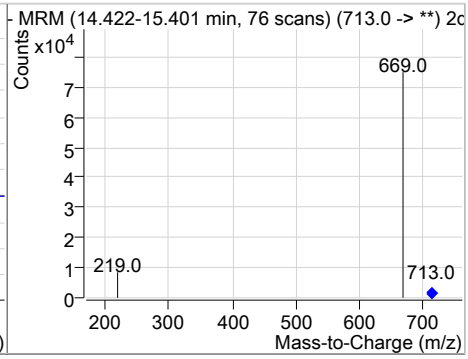




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	99.99	14.71	-0.05	53433	713.0 -> 219.0	6.9	0.0	37.4

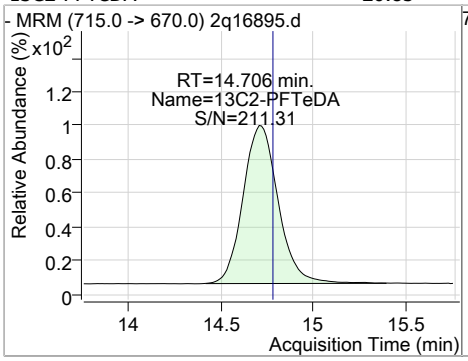


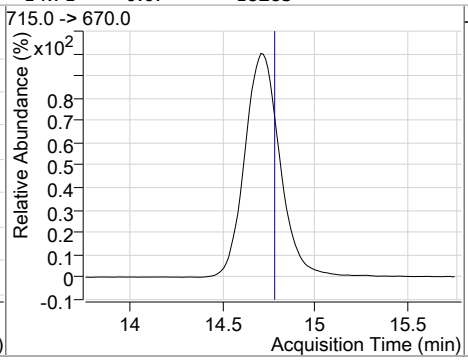


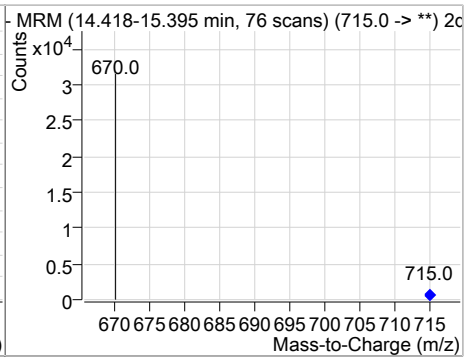


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.85	14.71	-0.07	18285				







7.5.31

7

Manual Integration Approval Summary

Sample Number: S2Q294-IC294
Lab FileID: 2Q16895.D
Injection Time: 07/10/18 18:35
Method: EPA 537M QSM5.1 B-15
Analyst approved: 07/11/18 14:37 Natasha Gumtie
Supervisor approved: 07/11/18 16:54 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.19	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.60	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/11/18 16:54

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16897.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/10/2018 7:17:20 PM
Sample Name : icv294-20
Vial : Vial 10
DA Method File : PFC_ID_071018_S2Q294.quantmethod.xml
Batch Name : s2q294.batch.bin
Sample Information : op70743,S2Q294,130,,,1.0,1,water

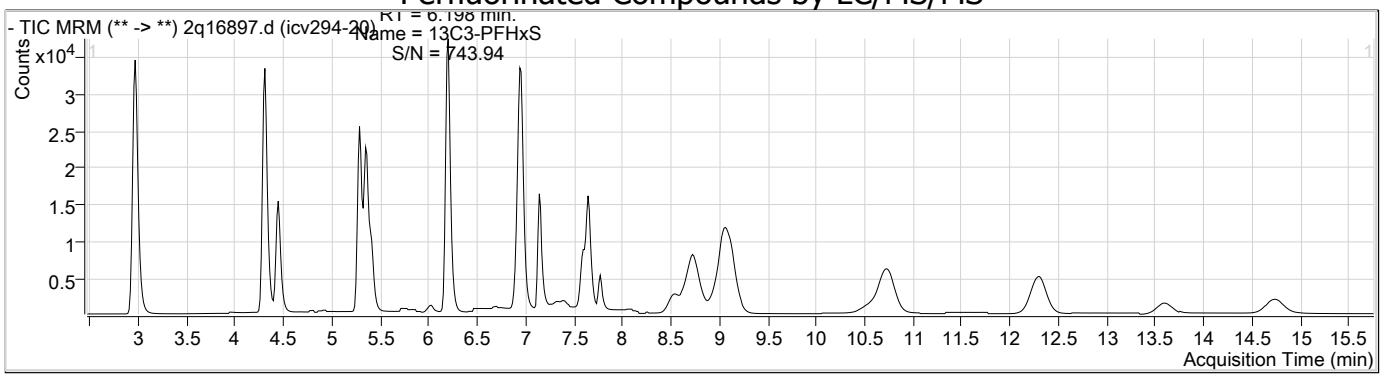
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.946	415.0 -> 370.0	16727	20.00	µg/L	0.000
13C4-PFOS	7.598	503.0 -> 80.0	9139	20.00	µg/L	-0.004
M4-PFBA	2.966	217.0 -> 172.0	116443	20.00	µg/L	-0.001
M5-PFPeA	4.312	268.0 -> 223.0	56910	20.00	µg/L	0.000
M5-PFHxA	5.365	318.0 -> 273.0	52135	20.00	µg/L	0.005
M4-PFHpA	6.204	367.0 -> 322.0	49847	20.00	µg/L	-0.005
M8-PFOA	6.945	421.0 -> 376.0	26654	20.00	µg/L	-0.001
M9-PFNA	7.665	472.0 -> 427.0	19027	20.00	µg/L	-0.003
M6-PFDA	8.729	519.0 -> 474.0	52845	20.00	µg/L	-0.014
M7-PFUnDA	10.729	570.0 -> 525.0	43516	20.00	µg/L	-0.032
M2-PFDoDA	12.302	615.0 -> 570.0	35226	20.00	µg/L	-0.036
M2-PFTeDA	14.731	715.0 -> 670.0	15981	20.00	µg/L	-0.043
M8-FOSA	7.142	506.0 -> 78.0	28968	20.00	µg/L	-0.003
M3-PFBS	4.443	302.0 -> 99.0	18346	20.00	µg/L	0.006
M3-PFHxS	6.198	402.0 -> 99.0	15102	20.00	µg/L	0.002
M8-PFOS	7.596	507.0 -> 99.0	8066	20.00	µg/L	-0.006
M2-4:2FTS	5.285	329.0 -> 309.0	47330	20.00	µg/L	0.002
M2-6:2FTS	6.955	429.0 -> 409.0	38726	20.00	µg/L	-0.003
M2-8:2FTS	9.059	529.0 -> 509.0	79099	20.00	µg/L	-0.036
M3-MeFOSAA	7.644	573.0 -> 419.0	13635	20.00	µg/L	0.008
System Monitoring Compounds						
13C2-4:2FTS	5.285	329.0 -> 309.0	47335	17.66	µg/L	0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.3%		
13C2-6:2FTS	6.955	429.0 -> 409.0	38728	18.66	µg/L	-0.003
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.3%		
13C2-8:2FTS	9.059	529.0 -> 509.0	78400	17.85	µg/L	-0.036
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.2%		
13C2-PFDoDA	12.302	615.0 -> 570.0	35233	18.32	µg/L	-0.036
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.6%		
13C2-PFTeDA	14.731	715.0 -> 670.0	16054	18.30	µg/L	-0.043
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.5%		
13C3-PFBS	4.443	302.0 -> 99.0	18347	18.44	µg/L	0.006
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.2%		
13C3-PFHxS	6.198	402.0 -> 99.0	15101	18.20	µg/L	0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.0%		
13C4-PFBA	2.966	217.0 -> 172.0	116410	18.17	µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.8%		
13C4-PFHpA	6.204	367.0 -> 322.0	49844	18.33	µg/L	-0.005
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.7%		
13C5-PFHxA	5.365	318.0 -> 273.0	52136	18.39	µg/L	0.005
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.9%		
13C5-PFPeA	4.312	268.0 -> 223.0	56915	18.19	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.0%		
13C6-PFDA	8.729	519.0 -> 474.0	52539	18.15	µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.8%		

Perfluorinated Compounds by LC/MS/MS

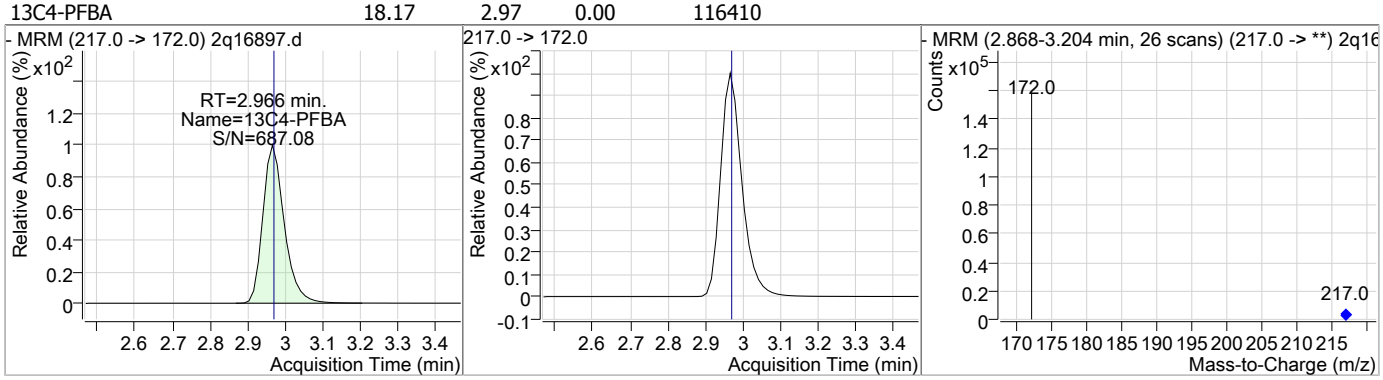
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.729	570.0 -> 525.0	43489	18.31	µg/L		-0.032
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.5%			
13C8-FOSA	7.142	506.0 -> 78.0	28972	18.48	µg/L		-0.003
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.4%			
13C8-PFOA	6.945	421.0 -> 376.0	26658	19.18	µg/L		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.9%			
13C8-PFOS	7.596	507.0 -> 99.0	8072	18.70	µg/L		-0.006
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.5%			
13C9-PFNA	7.665	472.0 -> 427.0	19014	19.74	µg/L		-0.003
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.7%			
d3-MeFOSAA	7.644	573.0 -> 419.0	13632	18.02	µg/L		0.008
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.1%			
M2-PFOA	6.946	415.0 -> 370.0	16723	20.00	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.598	503.0 -> 80.0	9149	20.03	ng/ml		-0.004
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
Target Compounds							QValue
4:2FTS	5.288	327.0 -> 307.0	25500	21.56	µg/L		98
6:2FTS	6.956	427.0 -> 407.0	20827	22.27	µg/L		97
8:2FTS	9.063	527.0 -> 507.0	44475	21.77	µg/L		96
EtFOSAA	7.769	584.0 -> 419.0	5440	23.66	µg/L		100
FOSA	7.145	498.0 -> 78.0	16816	23.63	µg/L		99
MeFOSAA	7.645	570.0 -> 419.0	5678	23.29	µg/L		97
PFBA	2.974	213.0 -> 169.0	20642	22.71	µg/L		100
PFBS	4.447	299.0 -> 80.0	24546	19.61	µg/L		99
PFDA	8.731	513.0 -> 469.0	20641	21.50	µg/L		99
PFDoDA	12.309	613.0 -> 569.0	21846	24.09	µg/L		99
PFDS	10.537	599.0 -> 80.0	7815	21.22	µg/L		100
PFHpA	6.207	363.0 -> 319.0	42268	23.17	µg/L		100
PFHpS	6.903	449.0 -> 80.0	9946	21.52	µg/L		99
PFHxA	5.355	313.0 -> 269.0	18410	20.82	µg/L		100
PFHxS	6.188	399.0 -> 80.0	17732	19.65	µg/L	m	100
PFNA	7.666	463.0 -> 419.0	7753	21.14	µg/L		95
PFNS	8.533	549.0 -> 80.0	13745	21.89	µg/L		99
PFOA	6.934	413.0 -> 369.0	16237	22.21	µg/L		97
PFOS	7.599	499.0 -> 80.0	11529	22.97	µg/L	m	95
PFPeA	4.316	263.0 -> 219.0	61707	22.70	µg/L		100
PFPeS	5.408	349.0 -> 80.0	16684	20.75	µg/L		99
PFTeDA	14.750	713.0 -> 669.0	10417	21.50	µg/L		99
PFTrDA	13.592	663.0 -> 619.0	17578	25.03	µg/L		98
PFUnDA	10.733	563.0 -> 519.0	24427	23.17	µg/L		100

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

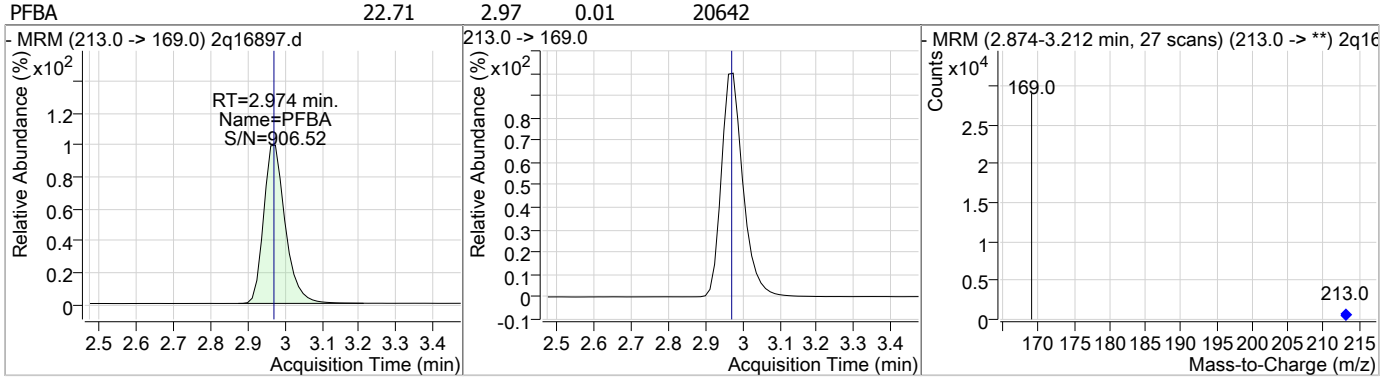
Perfluorinated Compounds by LC/MS/MS



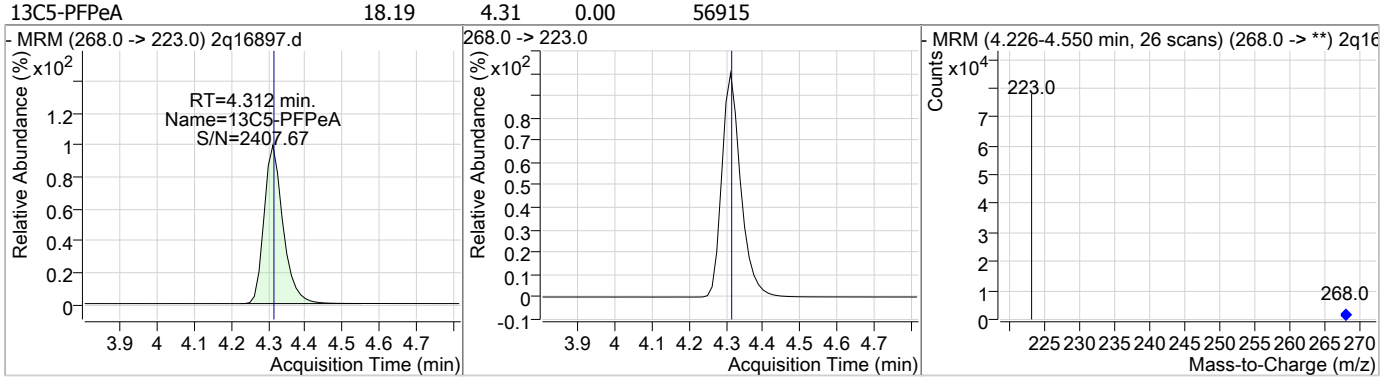
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.17	2.97	0.00	116410				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	22.71	2.97	0.01	20642				

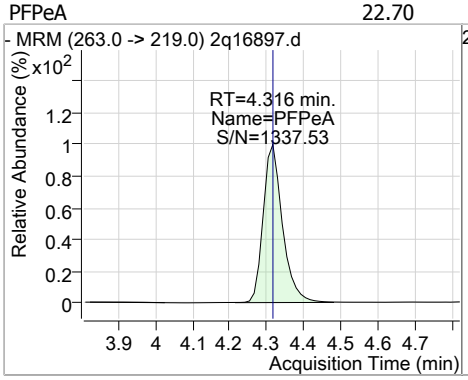


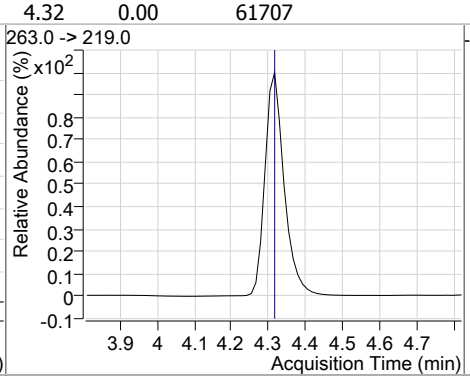
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.19	4.31	0.00	56915				

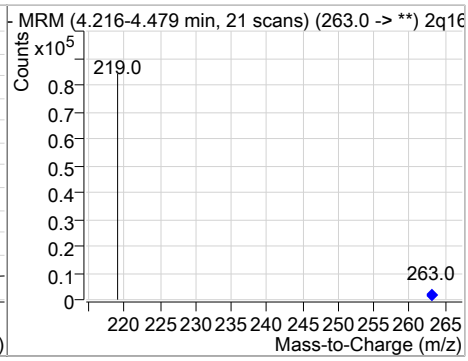


Perfluorinated Compounds by LC/MS/MS

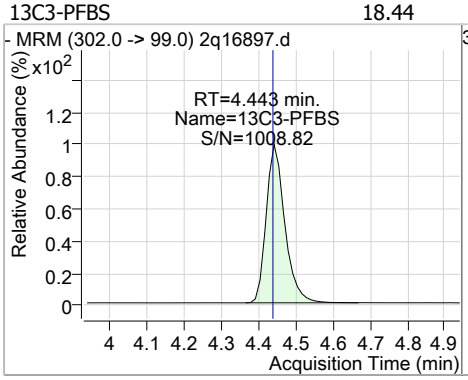
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	22.70	4.32	0.00	61707				

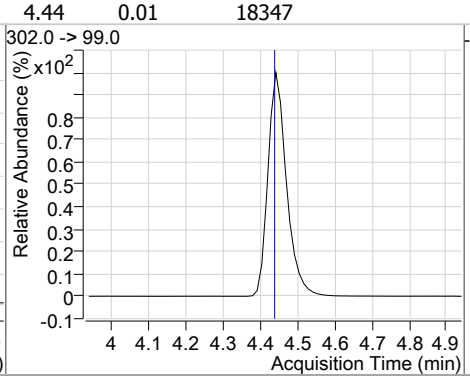


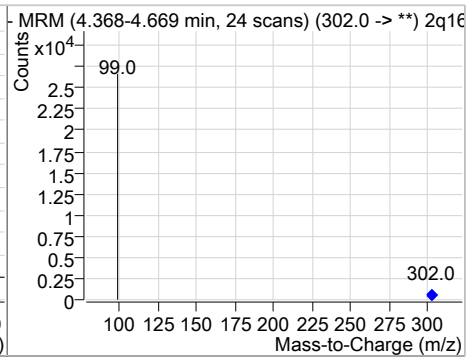




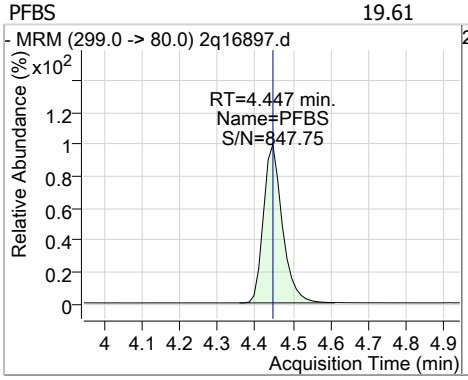
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.44	4.44	0.01	18347				

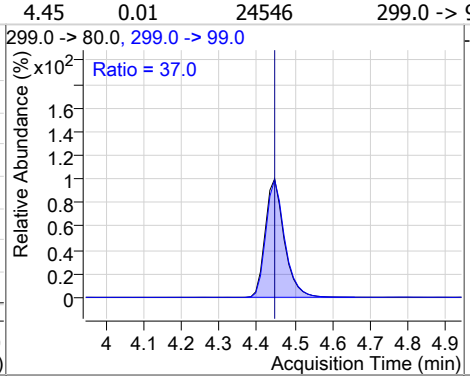


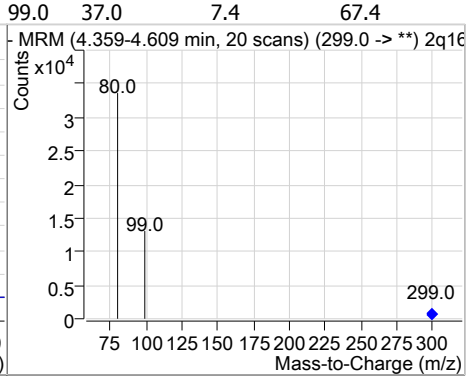




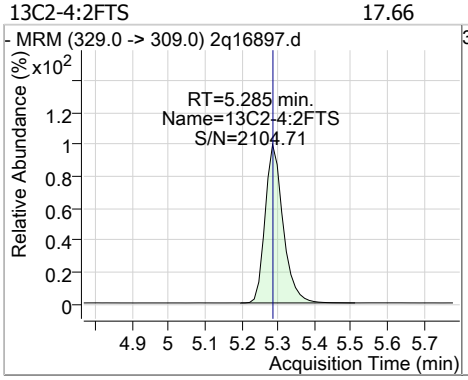
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.61	4.45	0.01	24546	299.0 -> 99.0	37.0	7.4	67.4

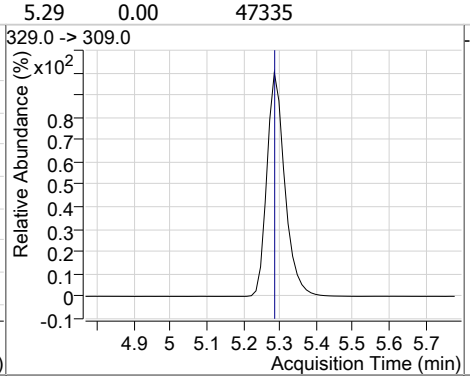


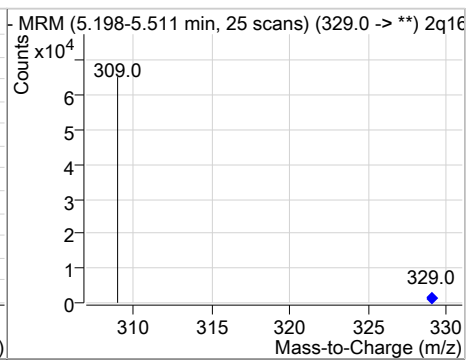




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	17.66	5.29	0.00	47335				

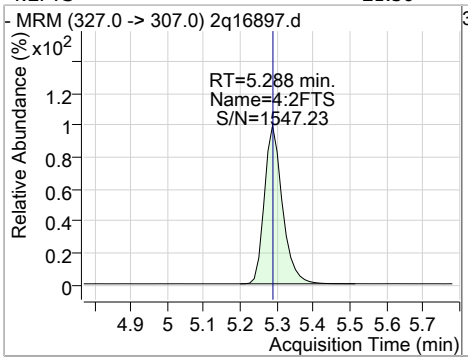


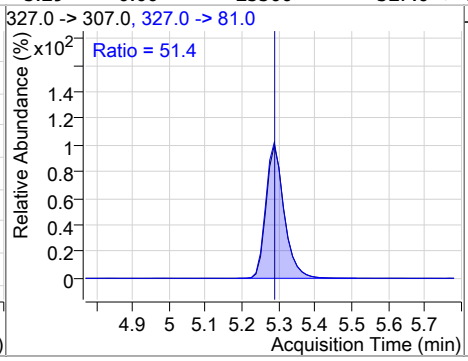


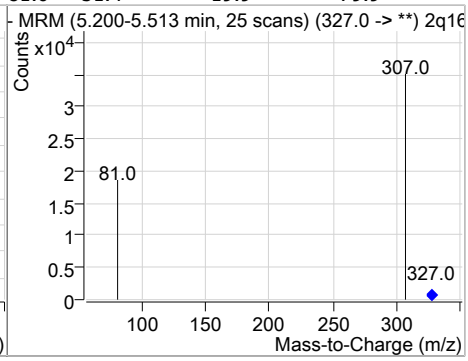


Perfluorinated Compounds by LC/MS/MS

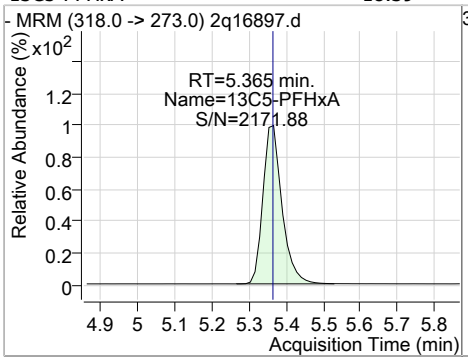
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	21.56	5.29	0.00	25500	327.0 -> 81.0	51.4	19.9	79.9

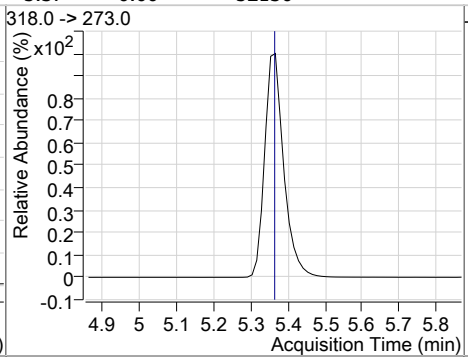


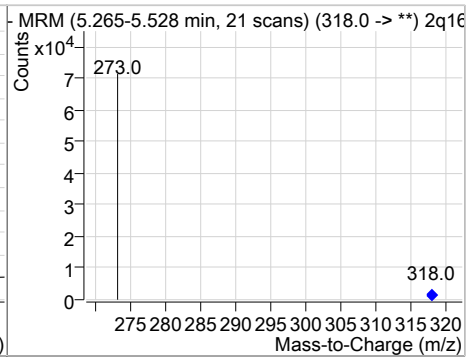




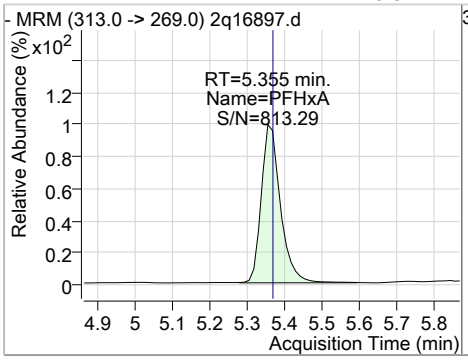
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.39	5.37	0.00	52136				

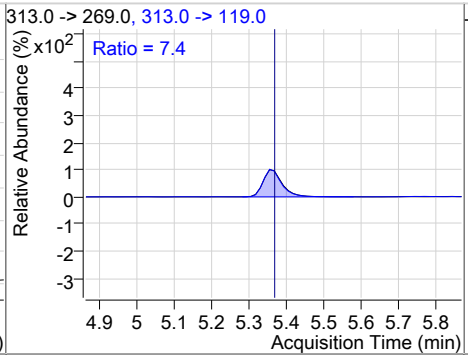


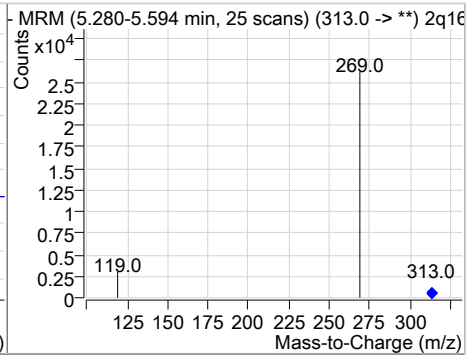




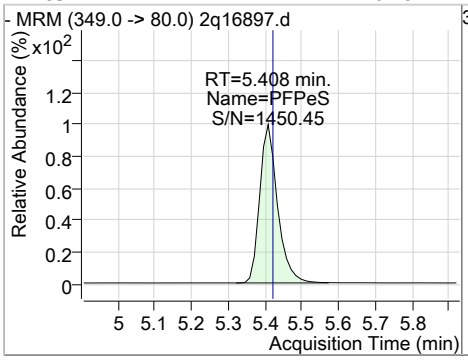
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.82	5.36	-0.01	18410	313.0 -> 119.0	7.4	0.0	37.6

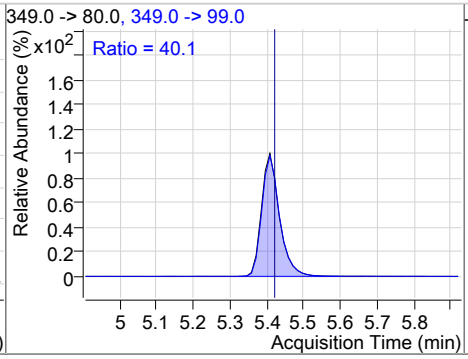


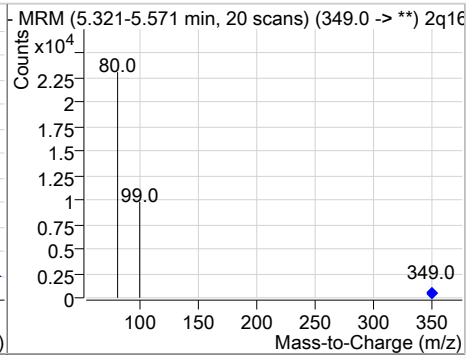




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	20.75	5.41	0.00	16684	349.0 -> 99.0	40.1	10.8	70.8

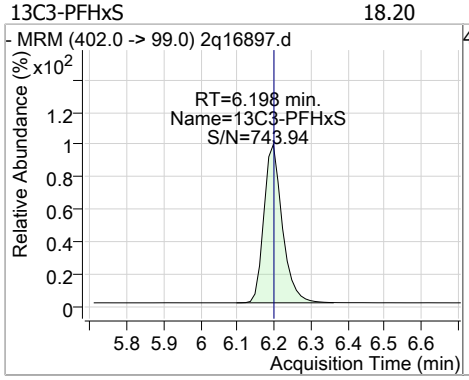


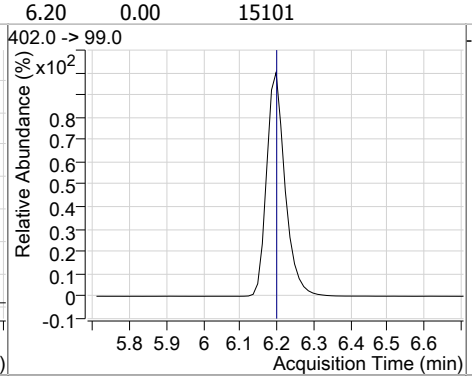


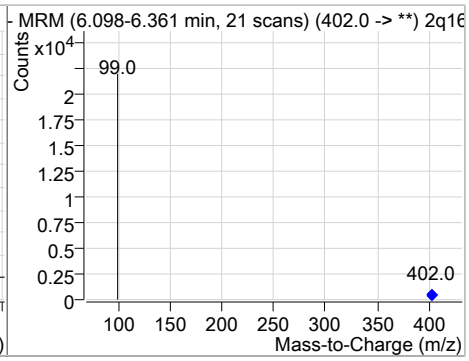


Perfluorinated Compounds by LC/MS/MS

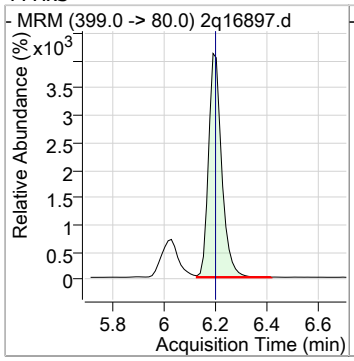
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.20	6.20	0.00	15101				

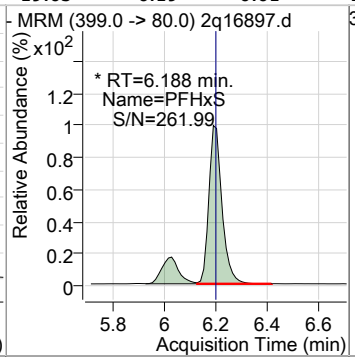


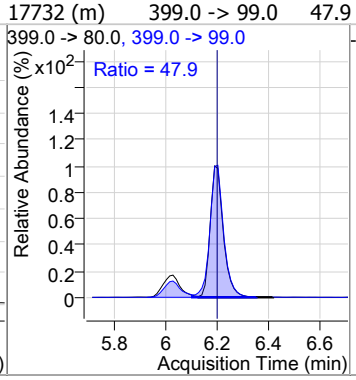


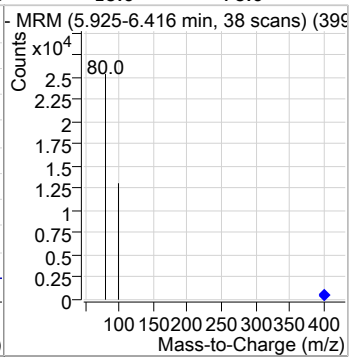


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.65	6.19	-0.01	17732 (m)	399.0 -> 99.0	47.9	18.0	78.0

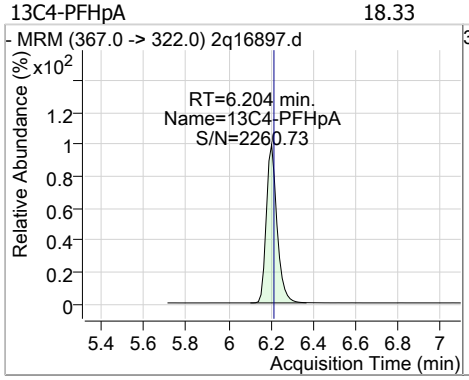


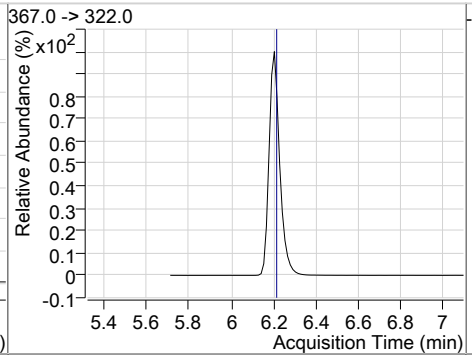


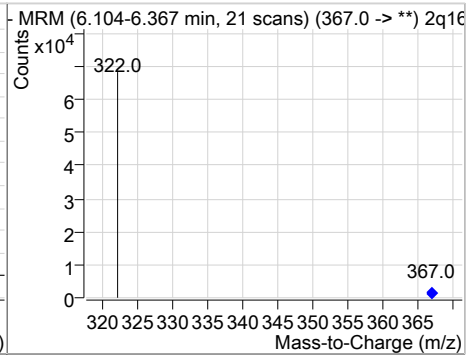




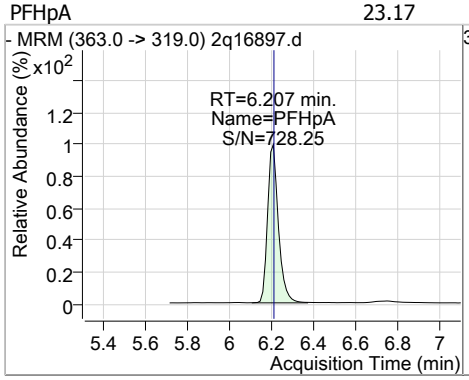
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.33	6.20	-0.01	49844				

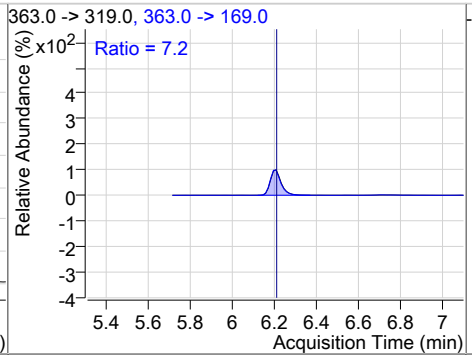


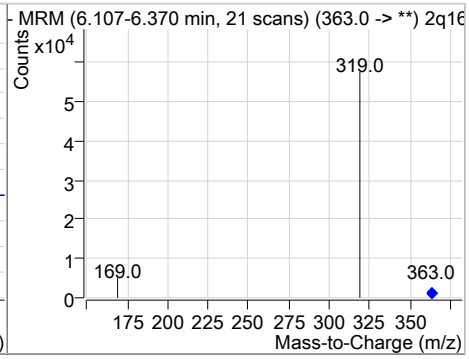




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	23.17	6.21	0.00	42268	363.0 -> 169.0	7.2	0.0	37.2

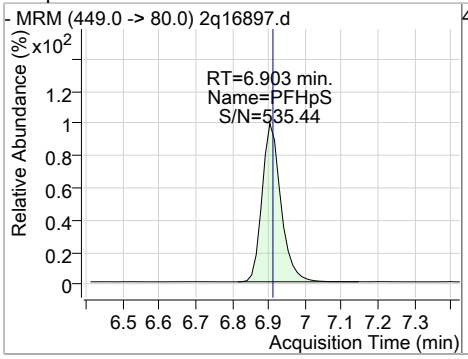


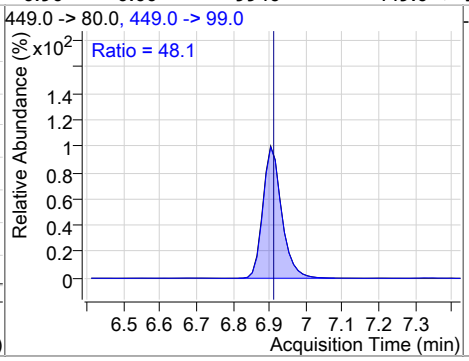


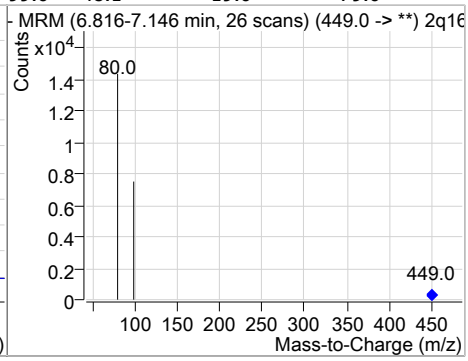


Perfluorinated Compounds by LC/MS/MS

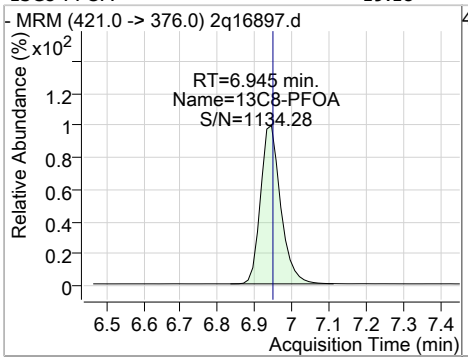
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.52	6.90	0.00	9946	449.0 -> 99.0	48.1	19.0	79.0

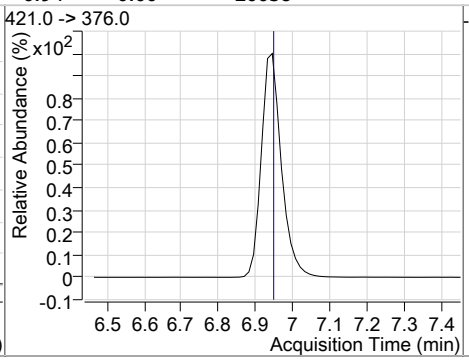


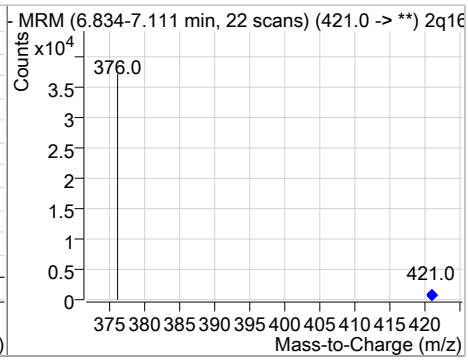




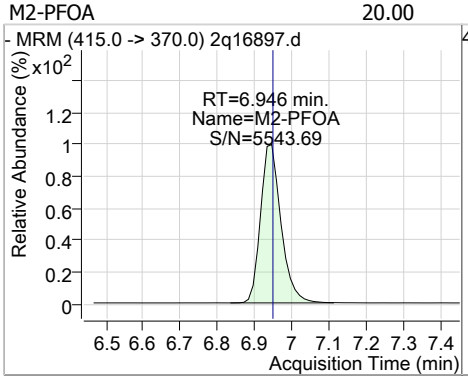
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.18	6.94	0.00	26658				

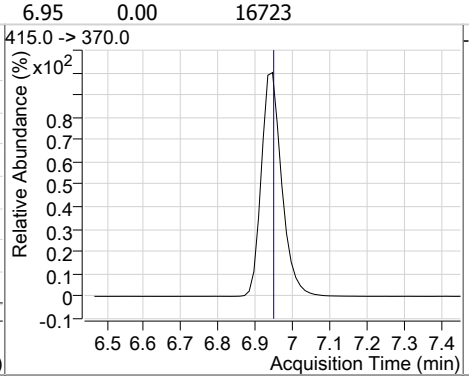


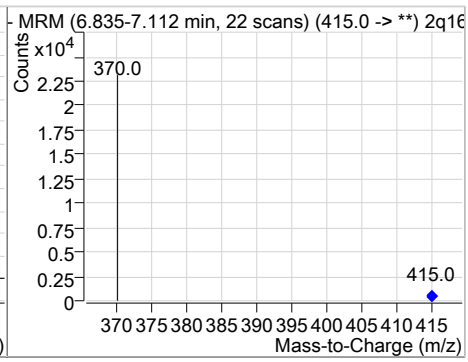




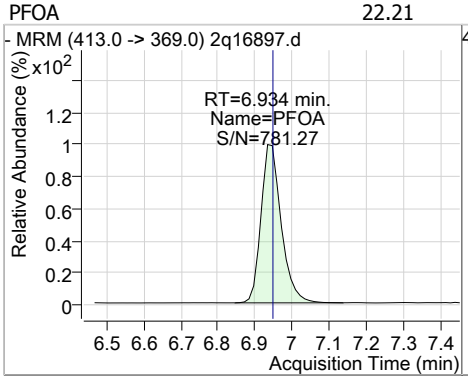
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.95	0.00	16723				

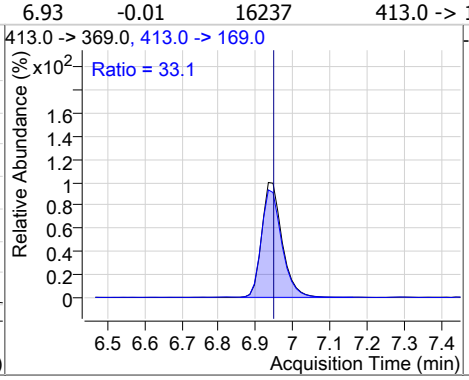


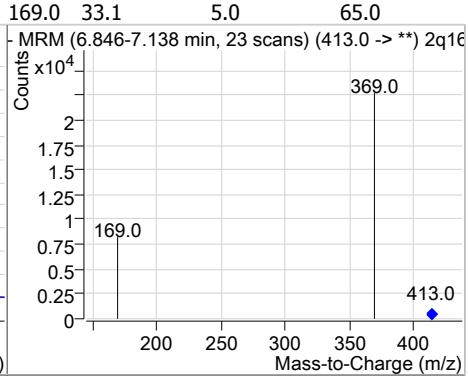




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	22.21	6.93	-0.01	16237	413.0 -> 169.0	33.1	5.0	65.0

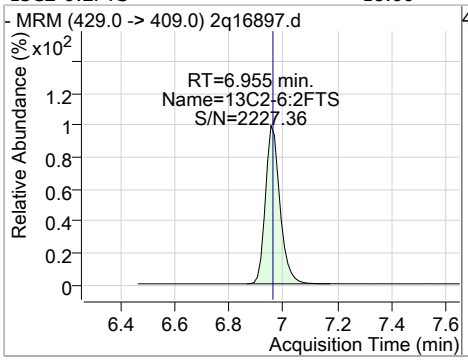


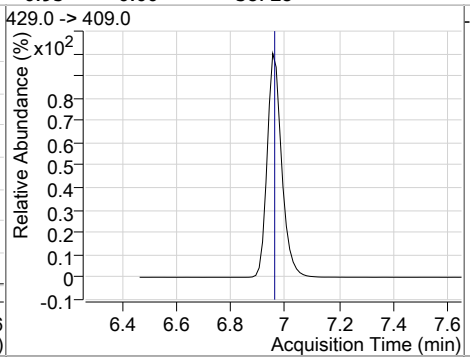


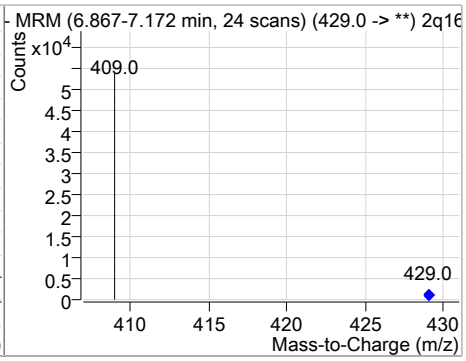


Perfluorinated Compounds by LC/MS/MS

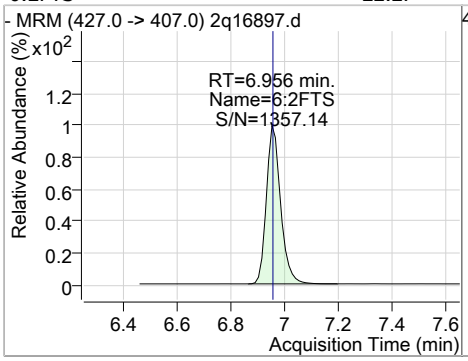
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.66	6.95	0.00	38728				

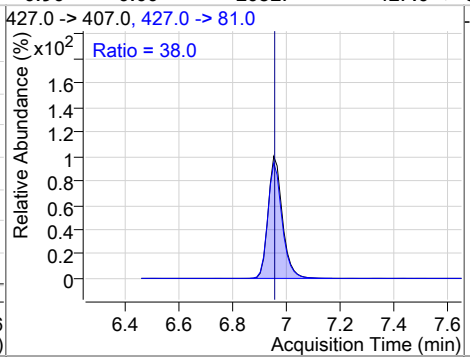


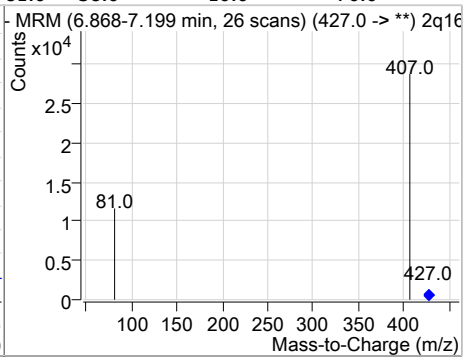




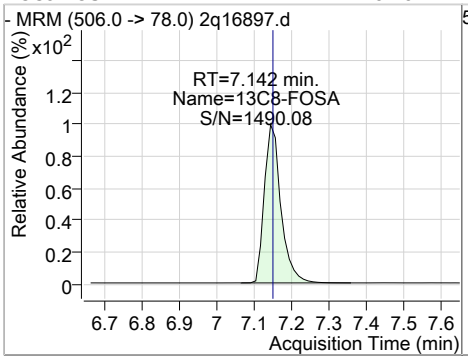
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	22.27	6.96	0.00	20827	427.0 -> 81.0	38.0	10.0	70.0

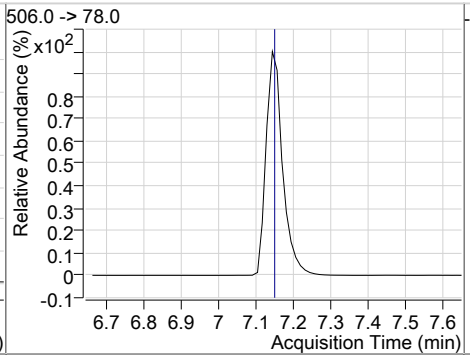


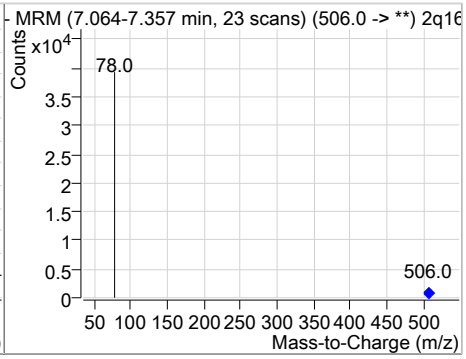




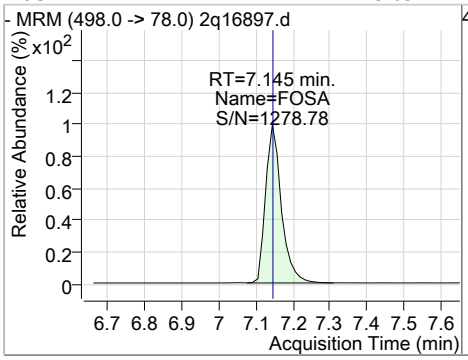
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.48	7.14	0.00	28972				

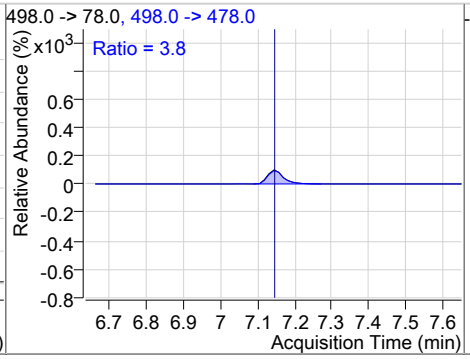


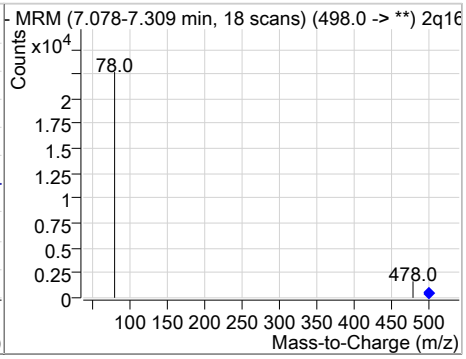




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	23.63	7.15	0.00	16816	498.0 -> 478.0	3.8	0.0	34.0

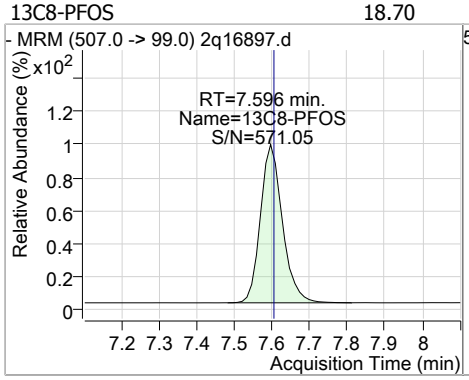


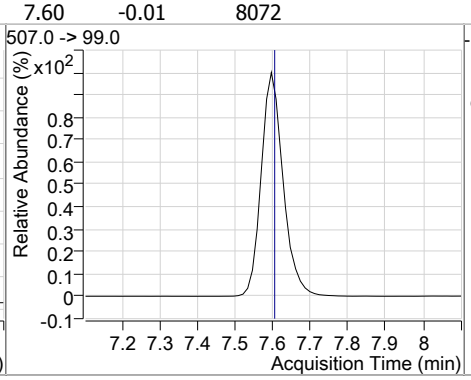


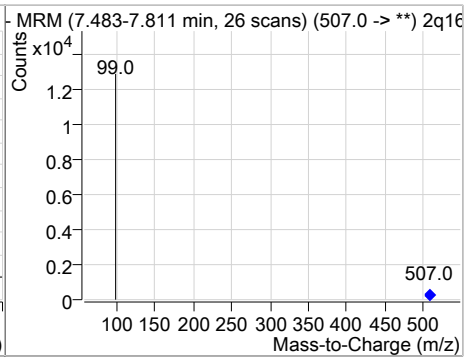


Perfluorinated Compounds by LC/MS/MS

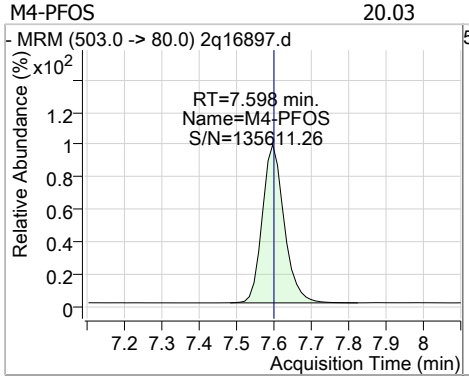
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.70	7.60	-0.01	8072				

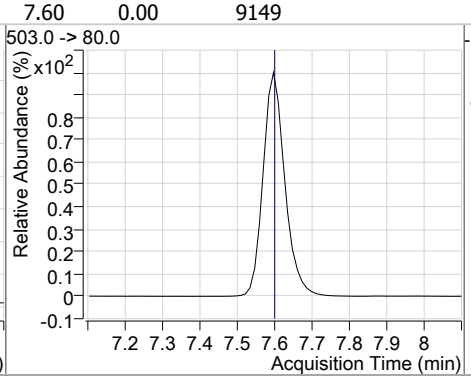


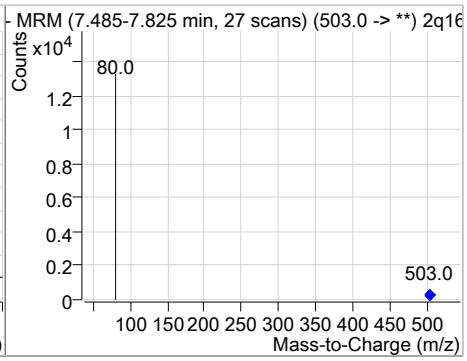




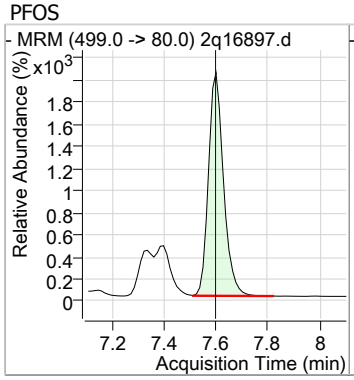
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.03	7.60	0.00	9149				

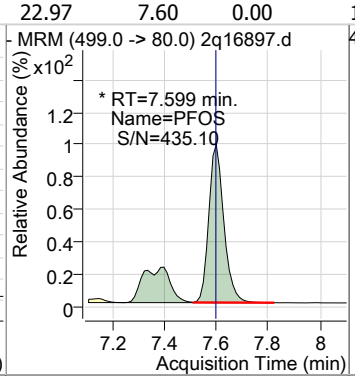


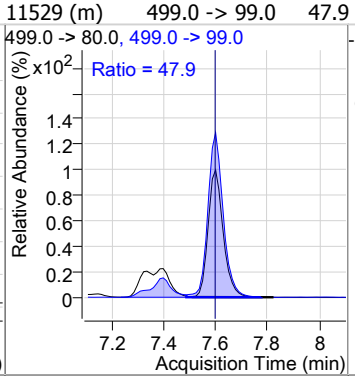


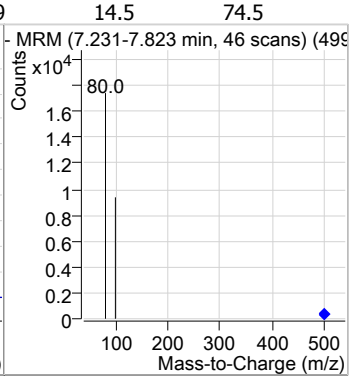


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	22.97	7.60	0.00	11529 (m)	499.0 -> 99.0	47.9	14.5	74.5

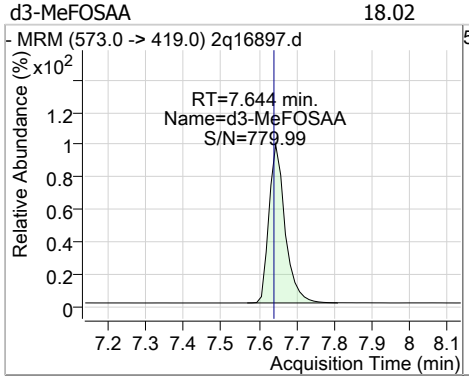


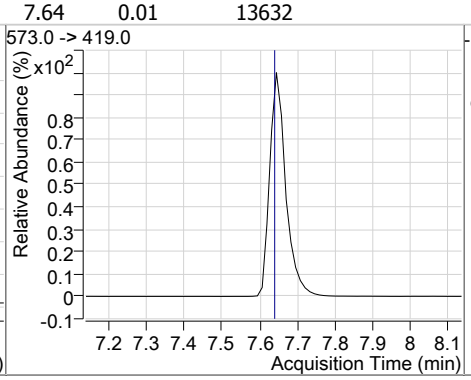


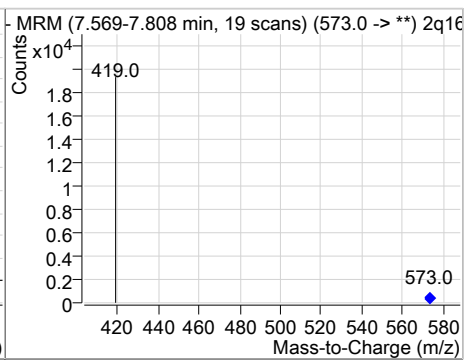




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.02	7.64	0.01	13632				

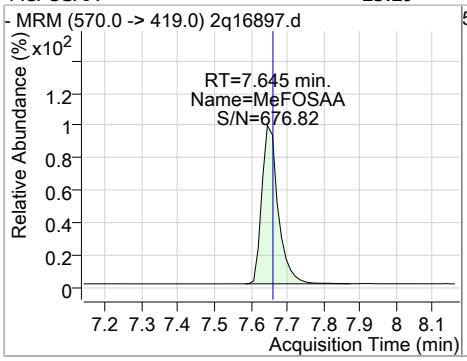


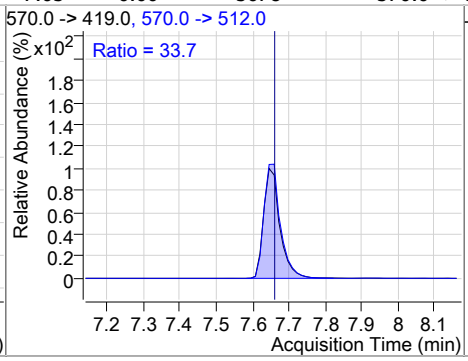


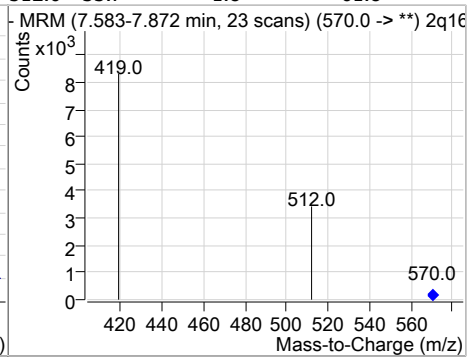


Perfluorinated Compounds by LC/MS/MS

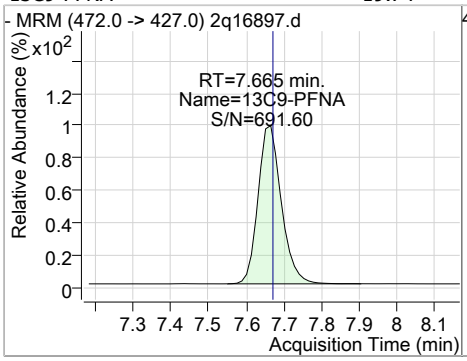
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	23.29	7.65	0.00	5678	570.0 -> 512.0	33.7	1.8	61.8

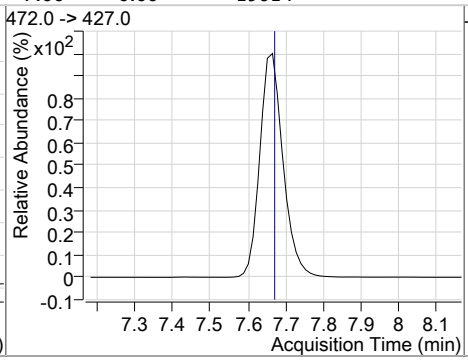


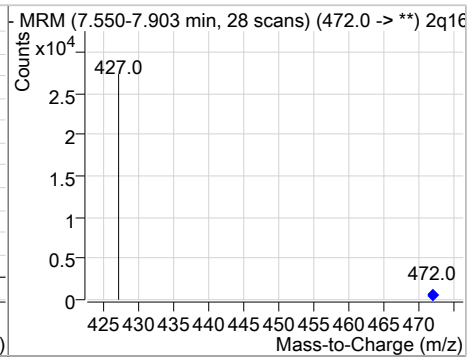




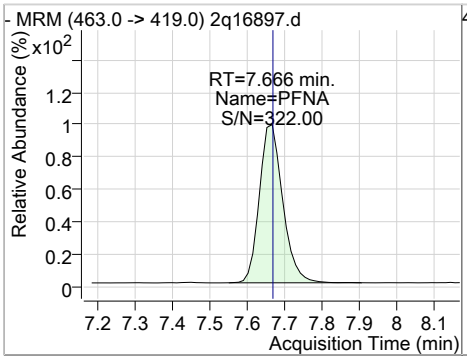
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.74	7.66	0.00	19014				

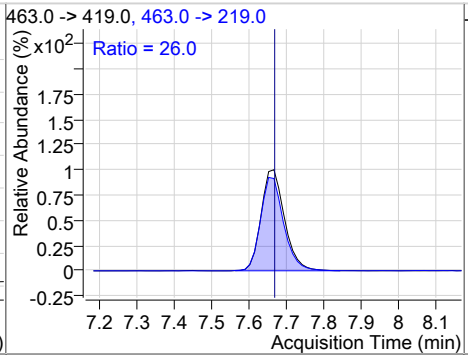


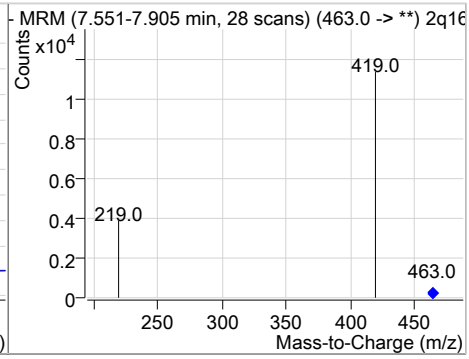




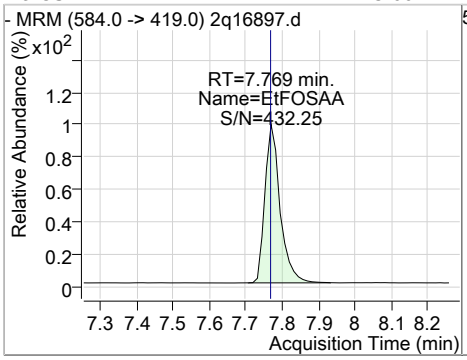
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	21.14	7.67	0.00	7753	463.0 -> 219.0	26.0	0.0	58.4

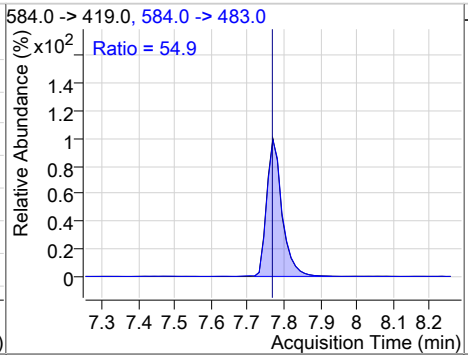


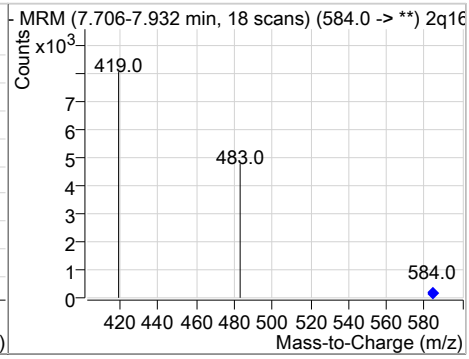




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	23.66	7.77	0.01	5440	584.0 -> 483.0	54.9	24.8	84.8

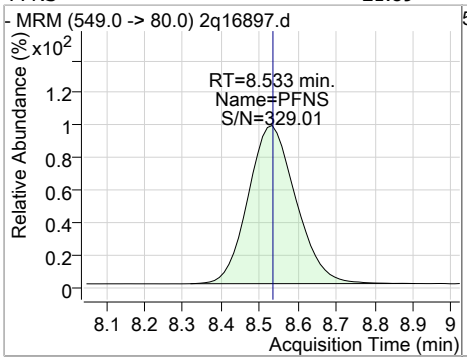


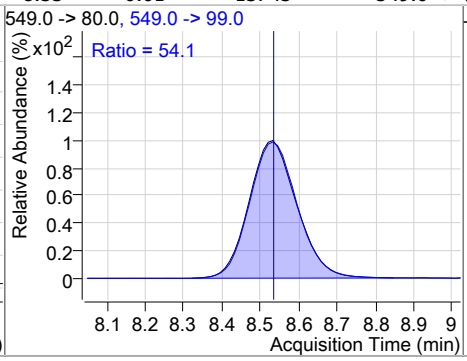


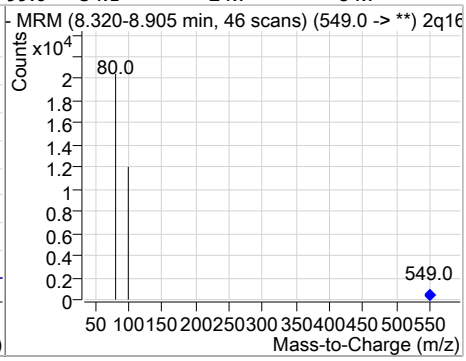


Perfluorinated Compounds by LC/MS/MS

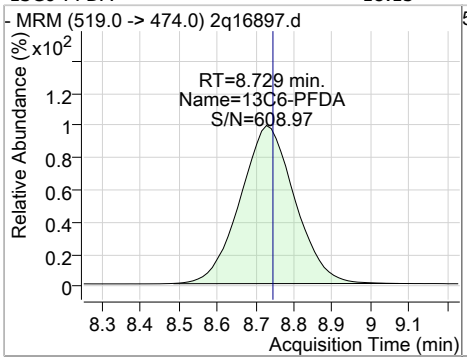
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	21.89	8.53	-0.01	13745	549.0 -> 99.0	54.1	24.7	84.7

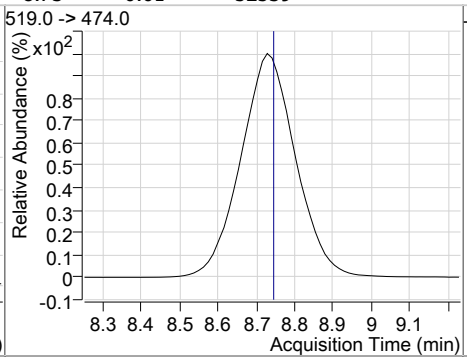


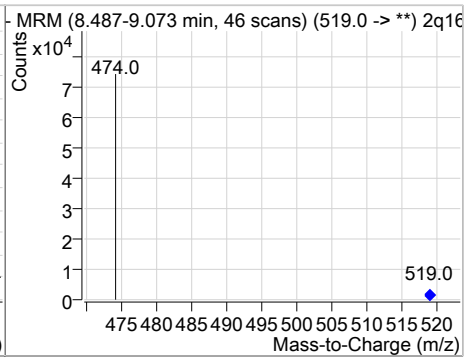




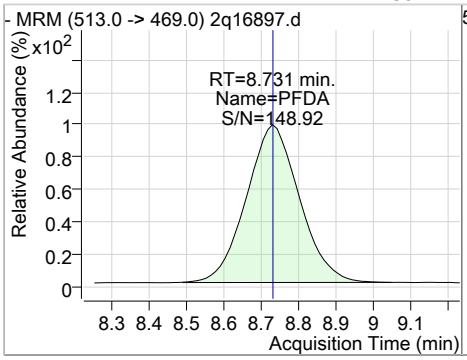
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	18.15	8.73	-0.01	52539				

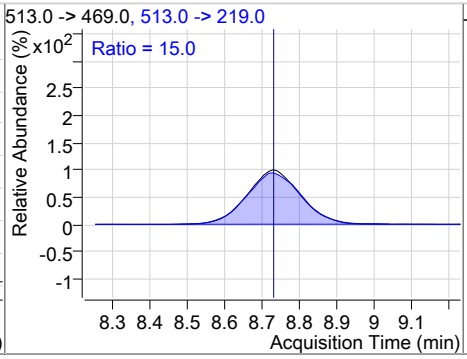


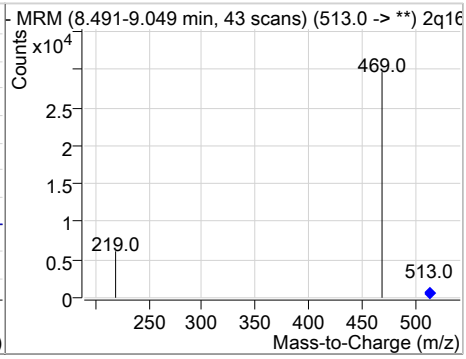




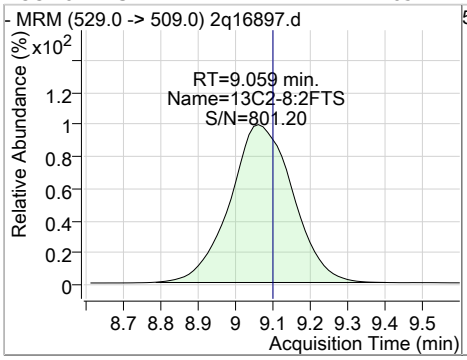
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	21.50	8.73	-0.01	20641	513.0 -> 219.0	15.0	0.0	45.3

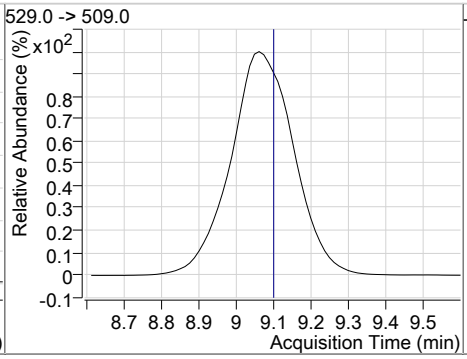


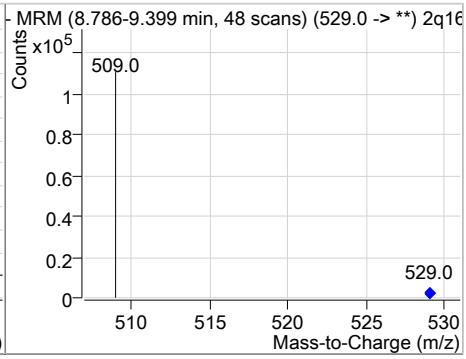




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	17.85	9.06	-0.04	78400				

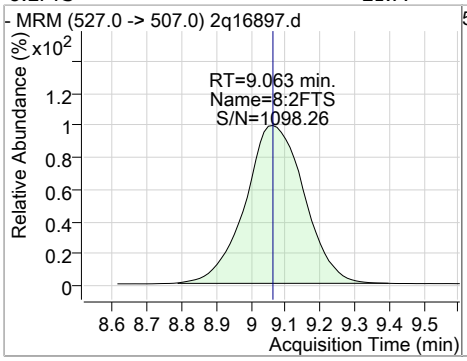


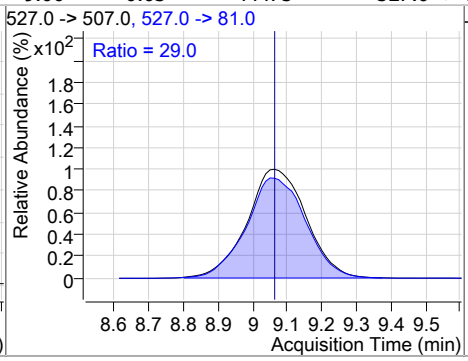


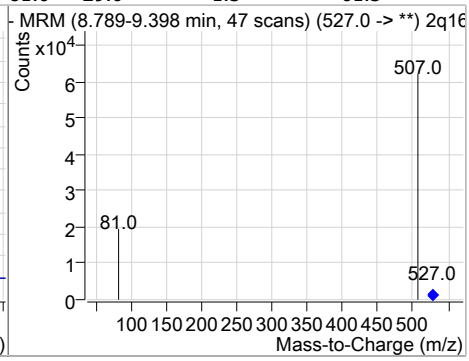


Perfluorinated Compounds by LC/MS/MS

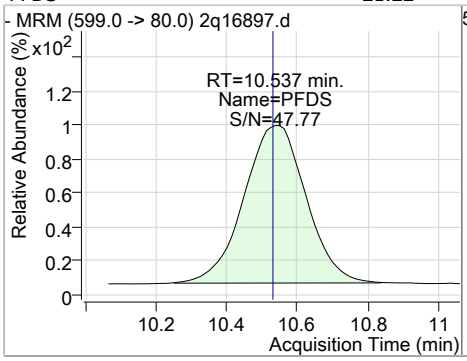
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	21.77	9.06	-0.03	44475	527.0 -> 81.0	29.0	1.3	61.3

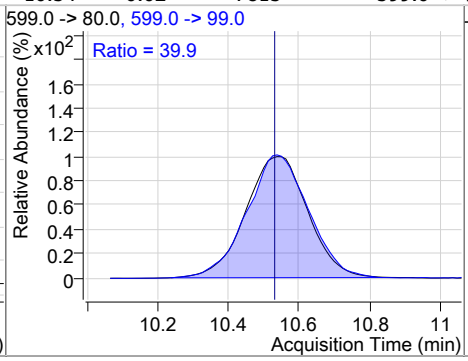


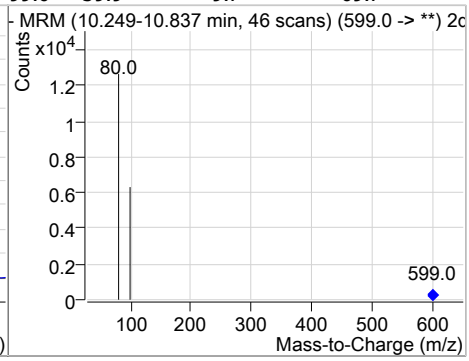




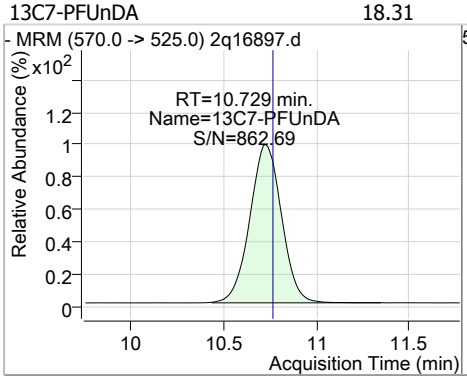
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	21.22	10.54	-0.02	7815	599.0 -> 99.0	39.9	9.7	69.7

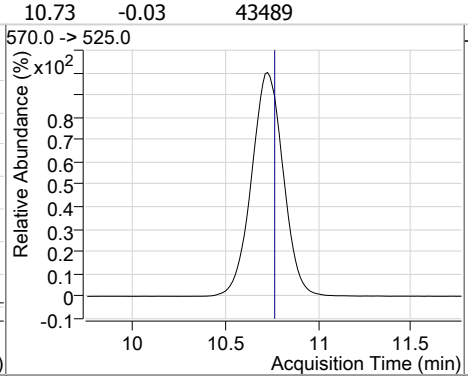


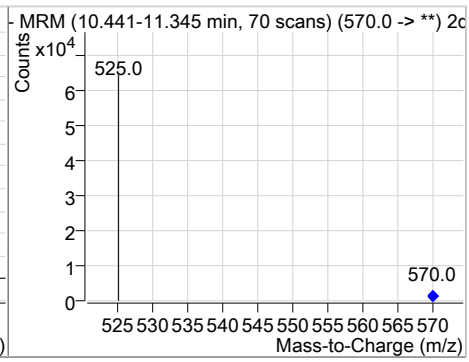




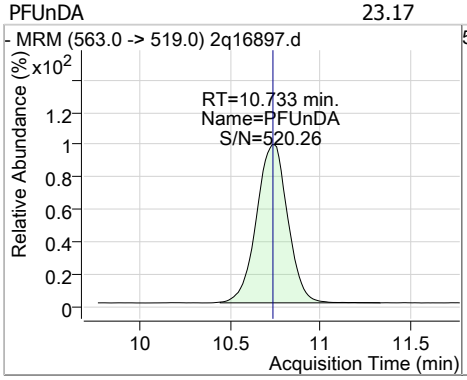
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.31	10.73	-0.03	43489				

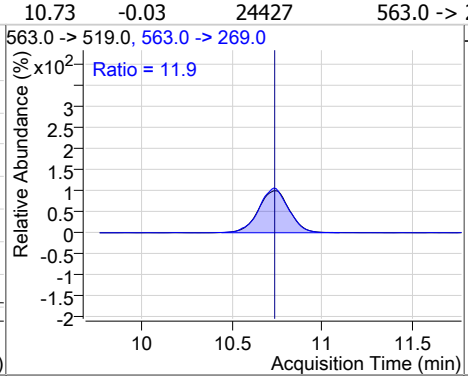


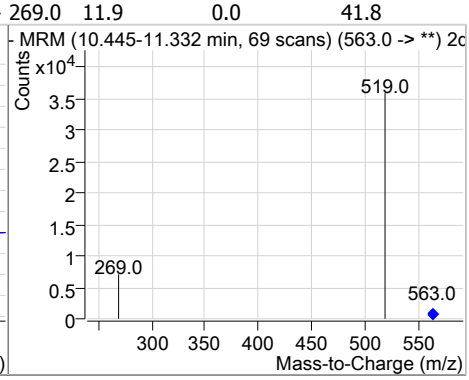




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	23.17	10.73	-0.03	24427	563.0 -> 269.0	11.9	0.0	41.8

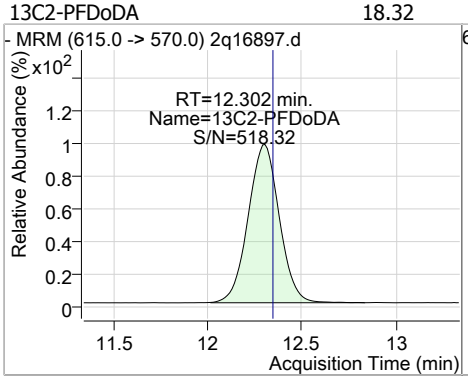


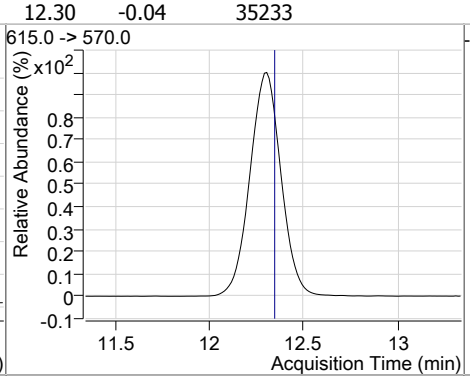


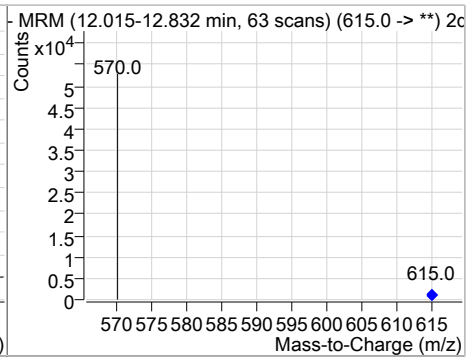


Perfluorinated Compounds by LC/MS/MS

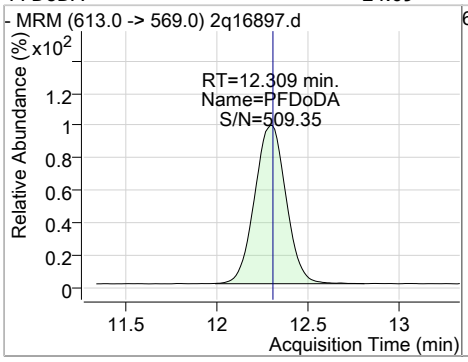
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.32	12.30	-0.04	35233				

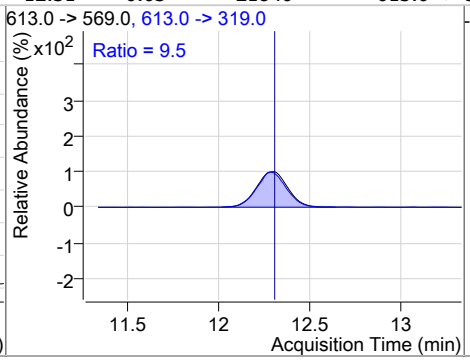


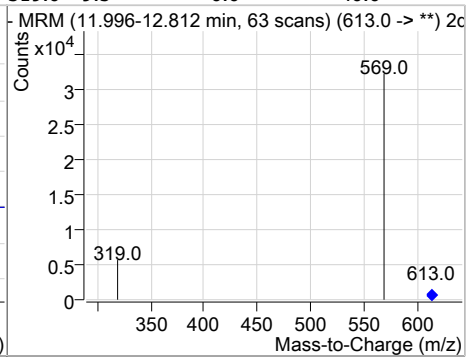




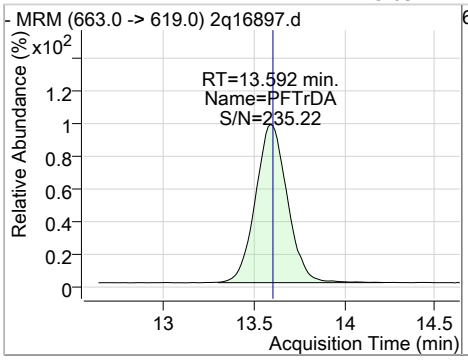
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	24.09	12.31	-0.03	21846	613.0 -> 319.0	9.5	0.0	40.0

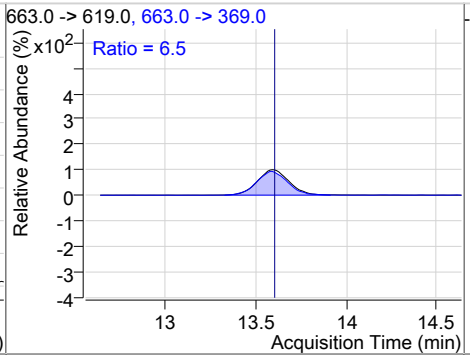


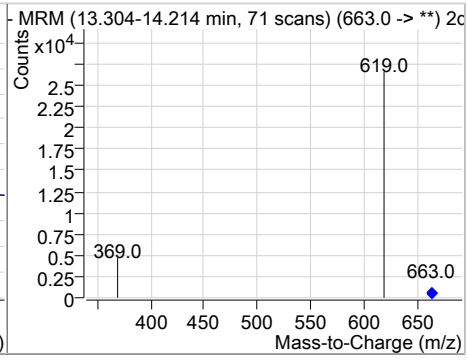




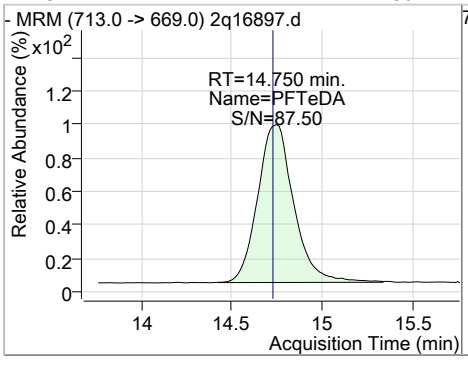
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	25.03	13.59	-0.05	17578	663.0 -> 369.0	6.5	0.0	37.1

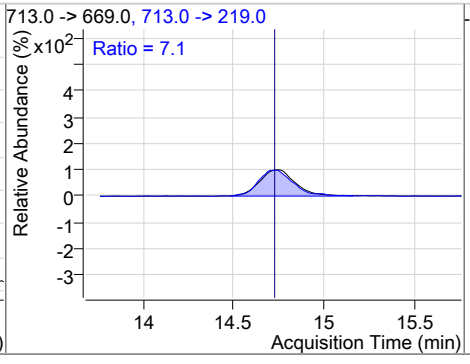


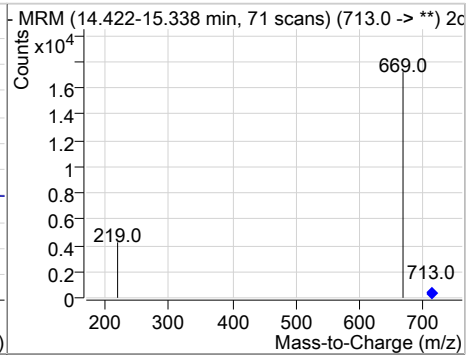




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	21.50	14.75	-0.01	10417	713.0 -> 219.0	7.1	0.0	37.4

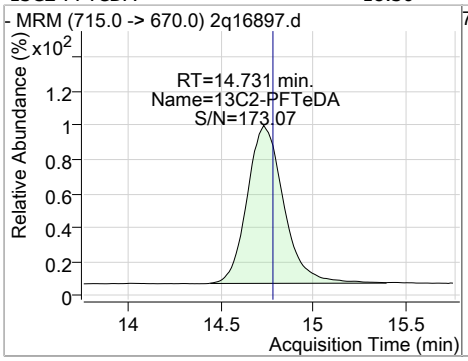


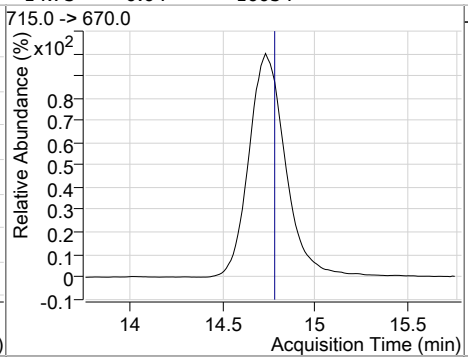


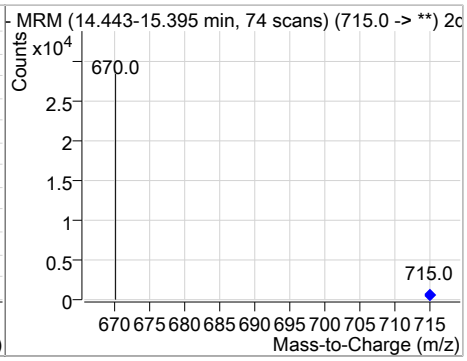


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	18.30	14.73	-0.04	16054				







Manual Integration Approval Summary

Sample Number:	S2Q294-ICV294	**Method:**	EPA 537M QSM5.1 B-15
Lab FileID:	2Q16897.D	**Analyst approved:**	07/11/18 14:37 Natasha Gumtie
Injection Time:	07/10/18 19:17	**Supervisor approved:**	07/11/18 16:54 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.19	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.60	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/11/18 16:54

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16908.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/10/2018 11:05:29 PM
Sample Name : cc294-20
Vial : Vial 7
DA Method File : PFC_ID_071018_S2Q294.quantmethod.xml
Batch Name : s2q294.batch.bin
Sample Information : op70790,S2Q294,1.99,,,1.0,1,soil

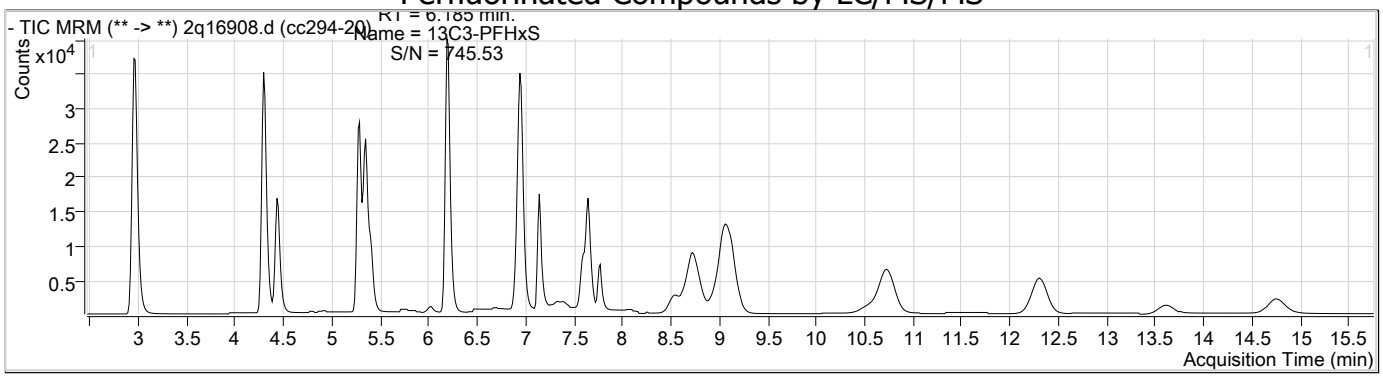
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.934	415.0 -> 370.0	17426	20.00	µg/L	-0.012
13C4-PFOS	7.598	503.0 -> 80.0	9812	20.00	µg/L	-0.004
M4-PFBA	2.966	217.0 -> 172.0	132544	20.00	µg/L	-0.001
M5-PFPeA	4.300	268.0 -> 223.0	64913	20.00	µg/L	-0.012
M5-PFHxA	5.353	318.0 -> 273.0	59452	20.00	µg/L	-0.008
M4-PFHpA	6.204	367.0 -> 322.0	57319	20.00	µg/L	-0.005
M8-PFOA	6.932	421.0 -> 376.0	28530	20.00	µg/L	-0.013
M9-PFNA	7.665	472.0 -> 427.0	20168	20.00	µg/L	-0.003
M6-PFDA	8.729	519.0 -> 474.0	59420	20.00	µg/L	-0.014
M7-PFUnDA	10.729	570.0 -> 525.0	48631	20.00	µg/L	-0.032
M2-PFDoDA	12.302	615.0 -> 570.0	38649	20.00	µg/L	-0.036
M2-PFTeDA	14.756	715.0 -> 670.0	17651	20.00	µg/L	-0.018
M8-FOSA	7.142	506.0 -> 78.0	32477	20.00	µg/L	-0.003
M3-PFBS	4.431	302.0 -> 99.0	20832	20.00	µg/L	-0.006
M3-PFHxS	6.185	402.0 -> 99.0	17202	20.00	µg/L	-0.011
M8-PFOS	7.596	507.0 -> 99.0	9001	20.00	µg/L	-0.006
M2-4:2FTS	5.285	329.0 -> 309.0	55474	20.00	µg/L	0.002
M2-6:2FTS	6.955	429.0 -> 409.0	42306	20.00	µg/L	-0.003
M2-8:2FTS	9.059	529.0 -> 509.0	90627	20.00	µg/L	-0.036
M3-MeFOSAA	7.644	573.0 -> 419.0	15622	20.00	µg/L	0.008
System Monitoring Compounds						
13C2-4:2FTS	5.285	329.0 -> 309.0	55470	20.69	µg/L	0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C2-6:2FTS	6.955	429.0 -> 409.0	42319	20.39	µg/L	-0.003
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C2-8:2FTS	9.059	529.0 -> 509.0	89837	20.45	µg/L	-0.036
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%		
13C2-PFDoDA	12.302	615.0 -> 570.0	38746	20.15	µg/L	-0.036
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%		
13C2-PFTeDA	14.756	715.0 -> 670.0	17591	20.05	µg/L	-0.018
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C3-PFBS	4.431	302.0 -> 99.0	20834	20.94	µg/L	-0.006
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.7%		
13C3-PFHxS	6.185	402.0 -> 99.0	17204	20.73	µg/L	-0.011
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.7%		
13C4-PFBA	2.966	217.0 -> 172.0	132451	20.67	µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.4%		
13C4-PFHpA	6.204	367.0 -> 322.0	57327	21.08	µg/L	-0.005
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.4%		
13C5-PFHxA	5.353	318.0 -> 273.0	59450	20.96	µg/L	-0.008
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.8%		
13C5-PFPeA	4.300	268.0 -> 223.0	64870	20.74	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.7%		
13C6-PFDA	8.729	519.0 -> 474.0	59236	20.47	µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%		

Perfluorinated Compounds by LC/MS/MS

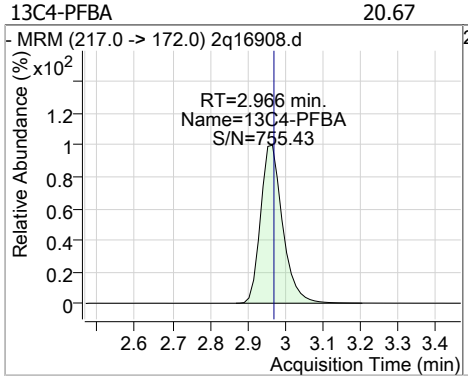
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.729	570.0 -> 525.0	48622	20.47	µg/L		-0.032
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.4%			
13C8-FOSA	7.142	506.0 -> 78.0	32508	20.74	µg/L		-0.003
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.7%			
13C8-PFOA	6.932	421.0 -> 376.0	28528	20.52	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.6%			
13C8-PFOS	7.596	507.0 -> 99.0	8991	20.83	µg/L		-0.006
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.2%			
13C9-PFNA	7.665	472.0 -> 427.0	20168	20.94	µg/L		-0.003
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.7%			
d3-MeFOSAA	7.644	573.0 -> 419.0	15619	20.64	µg/L		0.008
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.2%			
M2-PFOA	6.934	415.0 -> 370.0	17423	20.00	ng/ml		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.598	503.0 -> 80.0	9813	20.01	ng/ml		-0.004
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
Target Compounds							**QValue**
4:2FTS	5.288	327.0 -> 307.0	27521	19.80	µg/L		98
6:2FTS	6.956	427.0 -> 407.0	20121	19.61	µg/L		99
8:2FTS	9.063	527.0 -> 507.0	46819	19.94	µg/L		95
EtFOSAA	7.769	584.0 -> 419.0	5220	19.81	µg/L		96
FOSA	7.145	498.0 -> 78.0	15293	19.17	µg/L		100
MeFOSAA	7.645	570.0 -> 419.0	5284	18.91	µg/L		94
PFBA	2.962	213.0 -> 169.0	19250	18.61	µg/L		100
PFBS	4.434	299.0 -> 80.0	27113	19.08	µg/L		99
PFDA	8.731	513.0 -> 469.0	21329	19.76	µg/L		100
PFDoDA	12.309	613.0 -> 569.0	19445	19.53	µg/L		99
PFDS	10.537	599.0 -> 80.0	8154	19.81	µg/L		98
PFHpA	6.195	363.0 -> 319.0	40676	19.39	µg/L		100
PFHpS	6.903	449.0 -> 80.0	9750	18.52	µg/L		98
PFHxA	5.355	313.0 -> 269.0	18916	18.76	µg/L		99
PFHxS	6.188	399.0 -> 80.0	19516	18.98	µg/L	m	98
PFNA	7.666	463.0 -> 419.0	7574	19.48	µg/L		97
PFNS	8.533	549.0 -> 80.0	13502	19.27	µg/L		100
PFOA	6.934	413.0 -> 369.0	14944	19.10	µg/L		98
PFOS	7.599	499.0 -> 80.0	10424	18.61	µg/L	m	97
PFPeA	4.304	263.0 -> 219.0	60516	19.51	µg/L		100
PFPeS	5.396	349.0 -> 80.0	17073	18.70	µg/L		100
PFTeDA	14.750	713.0 -> 669.0	10521	19.64	µg/L		99
PFTrDA	13.604	663.0 -> 619.0	15128	19.45	µg/L		99
PFUnDA	10.733	563.0 -> 519.0	22312	18.94	µg/L		98

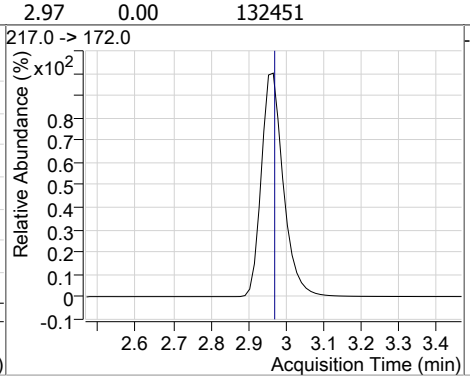
 # = Qualifier out of range, m = manually integrated, + = Area summed

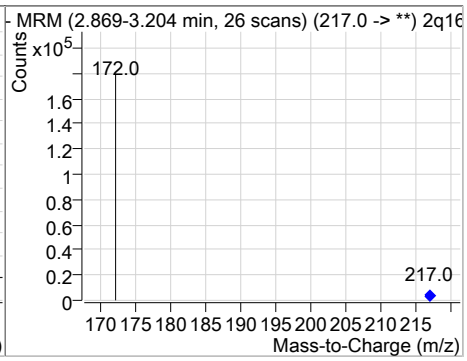
Perfluorinated Compounds by LC/MS/MS



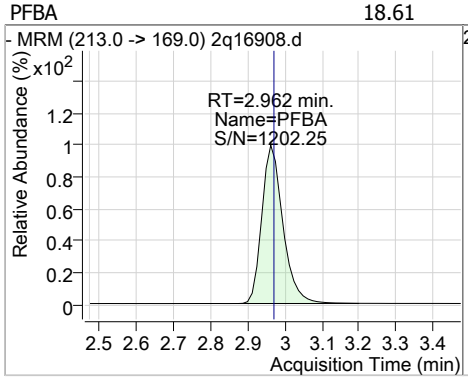
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.67	2.97	0.00	132451				

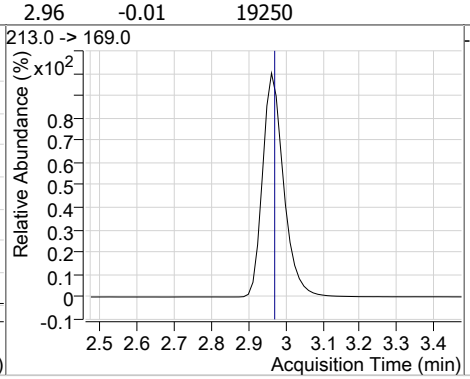


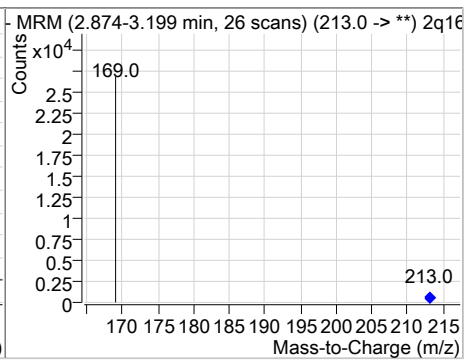




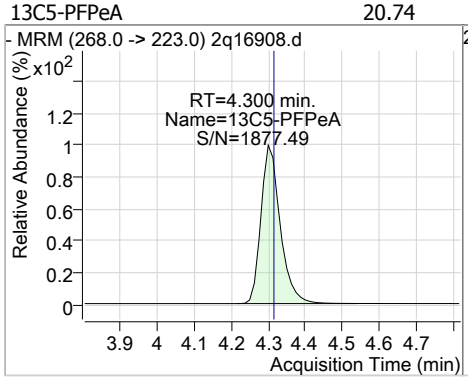
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	18.61	2.96	-0.01	19250				

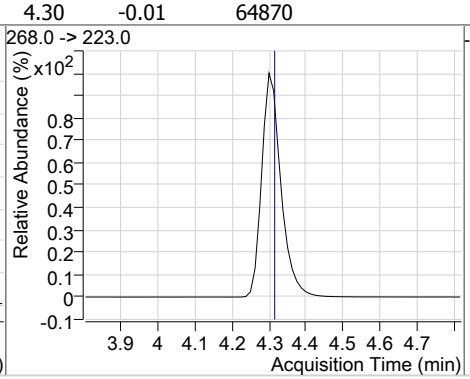


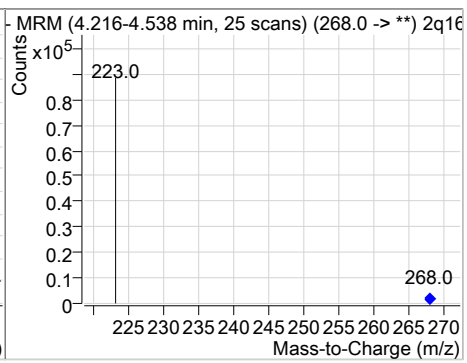




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.74	4.30	-0.01	64870				

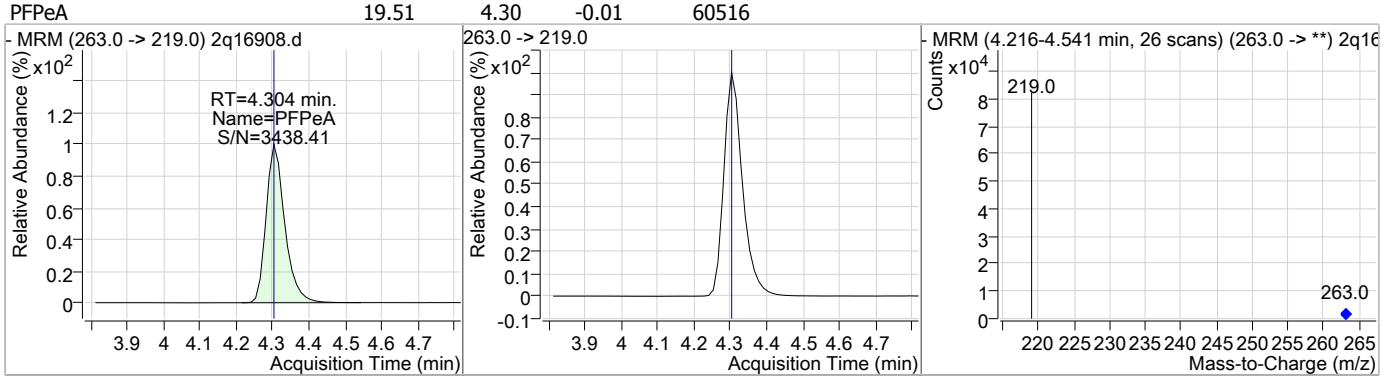




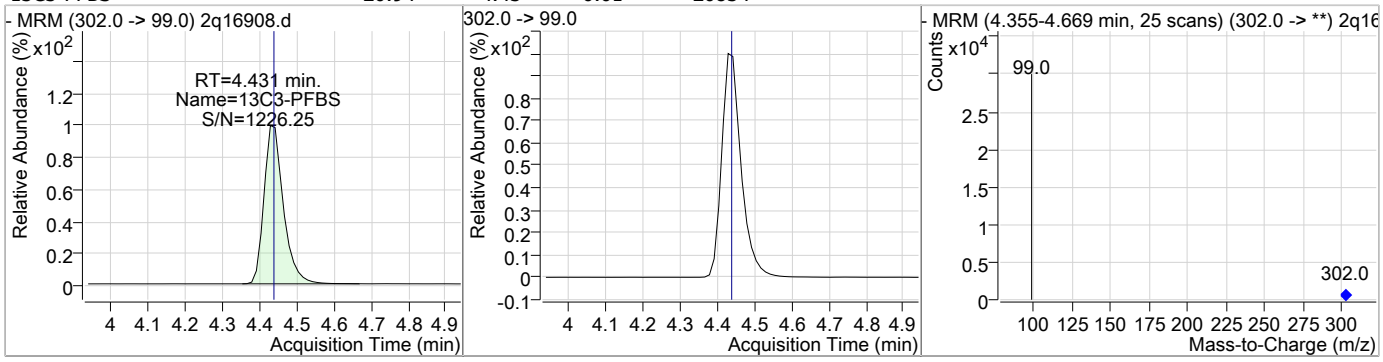


Perfluorinated Compounds by LC/MS/MS

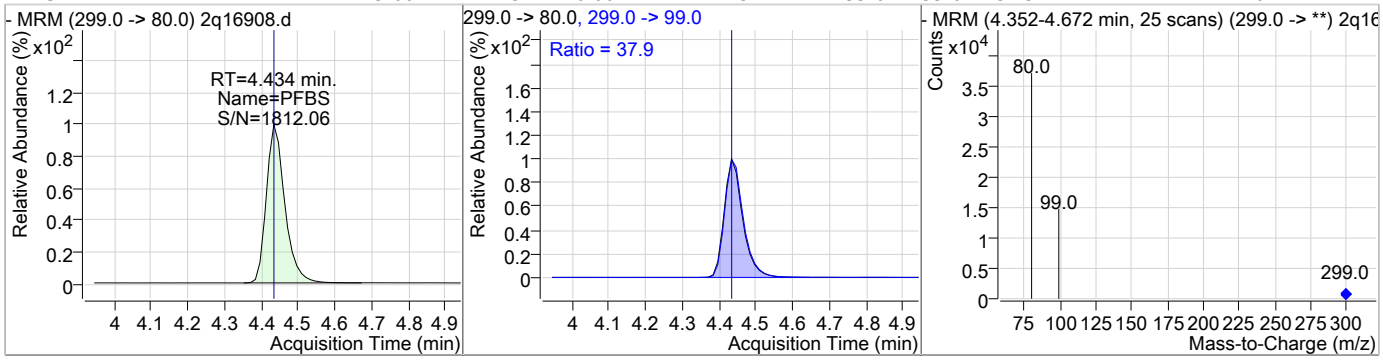
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.51	4.30	-0.01	60516				



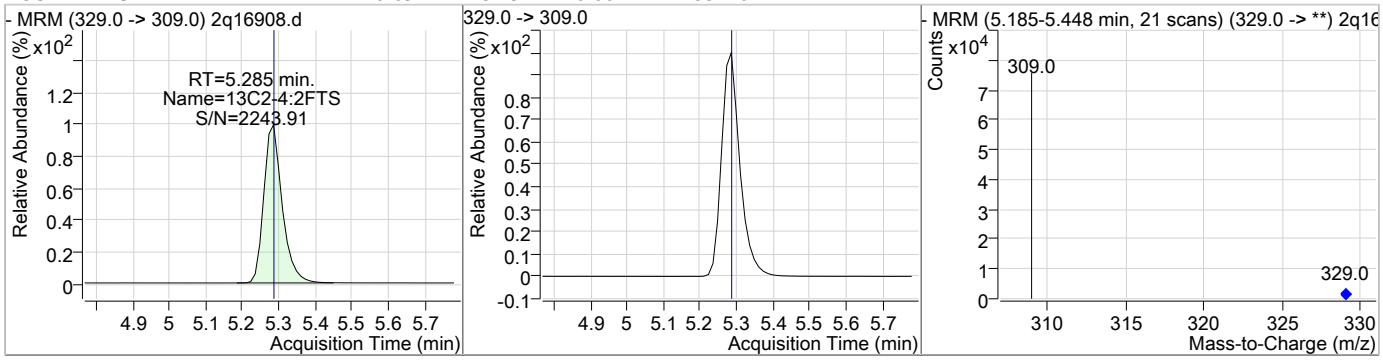
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.94	4.43	-0.01	20834				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.08	4.43	0.00	27113	299.0 -> 99.0	37.9	7.4	67.4

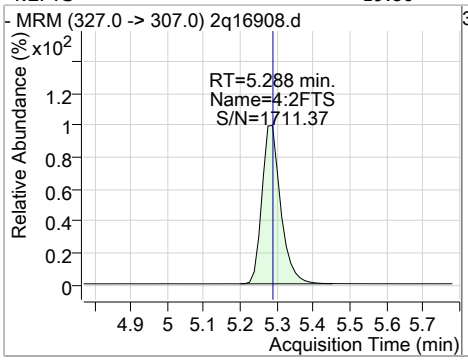


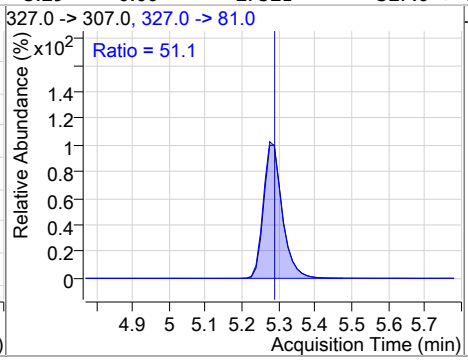
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.69	5.29	0.00	55470				

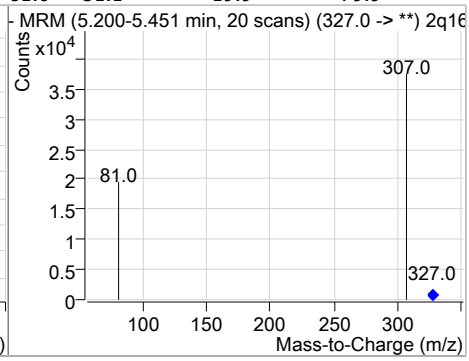


Perfluorinated Compounds by LC/MS/MS

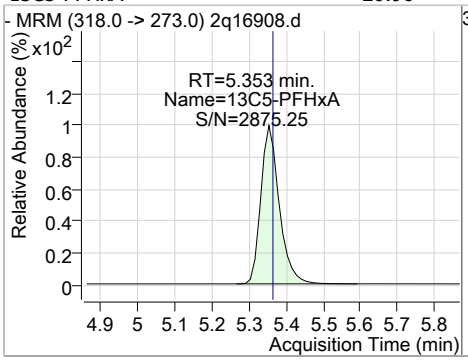
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.80	5.29	0.00	27521	327.0 -> 81.0	51.1	19.9	79.9

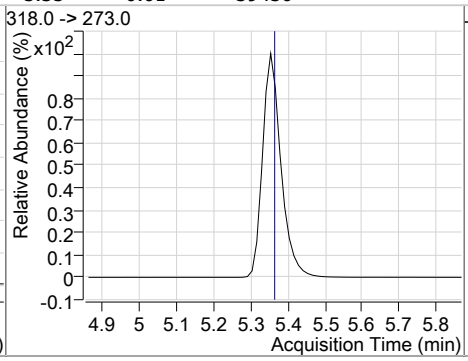


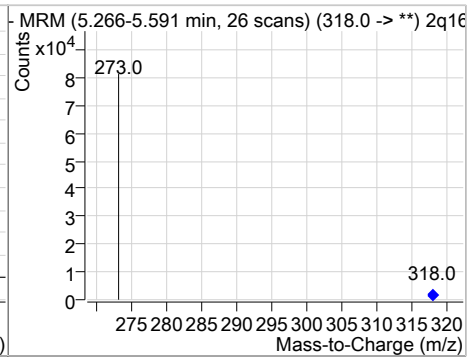




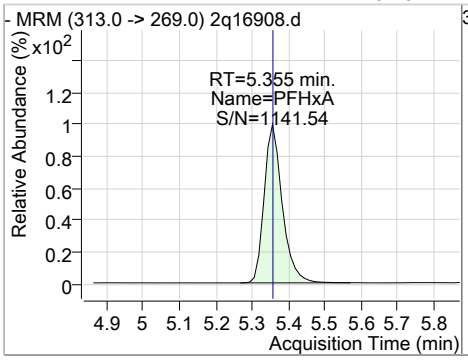
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.96	5.35	-0.01	59450				

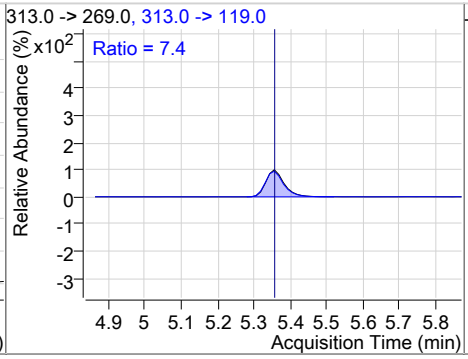


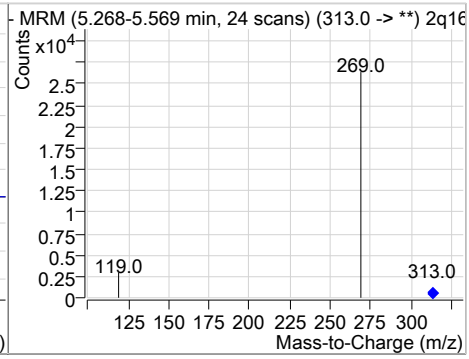




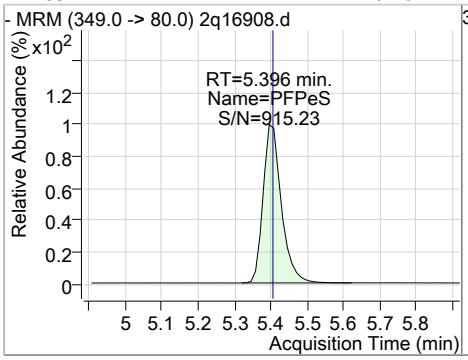
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	18.76	5.36	-0.01	18916	313.0 -> 119.0	7.4	0.0	37.6

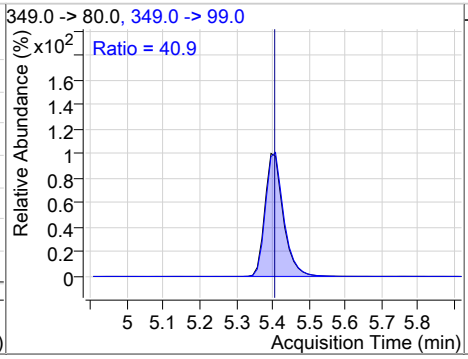


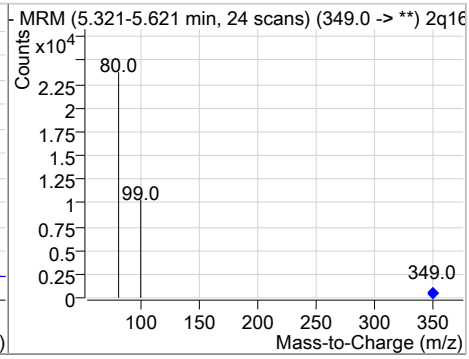




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	18.70	5.40	-0.01	17073	349.0 -> 99.0	40.9	10.8	70.8

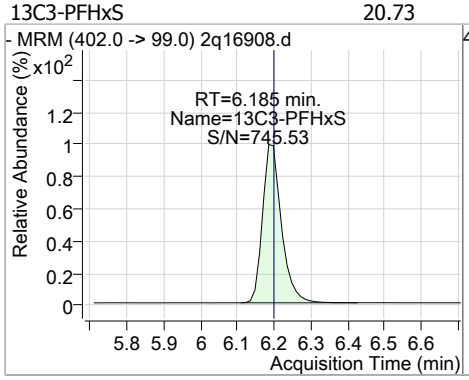


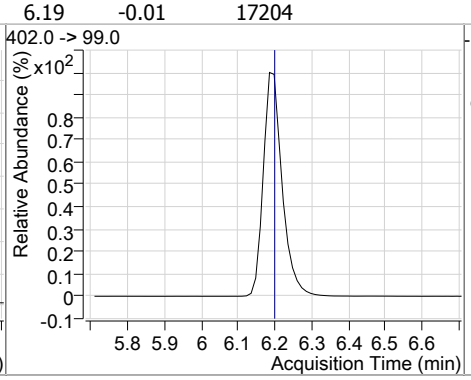


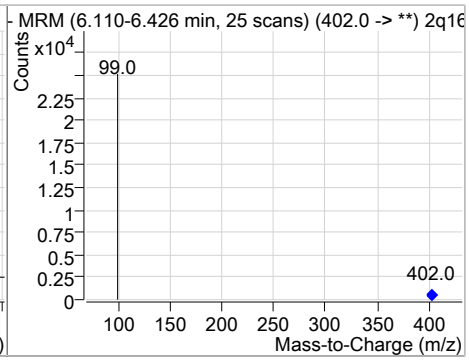


Perfluorinated Compounds by LC/MS/MS

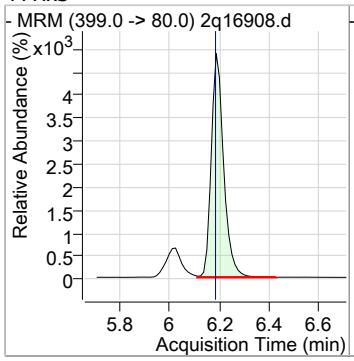
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.73	6.19	-0.01	17204				

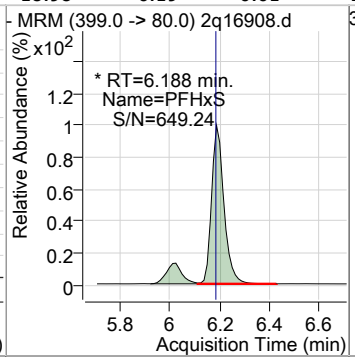


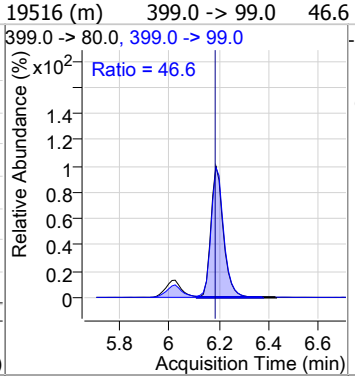


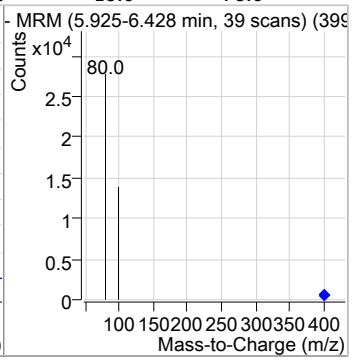


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	18.98	6.19	-0.01	19516 (m)	399.0 -> 99.0	46.6	18.0	78.0

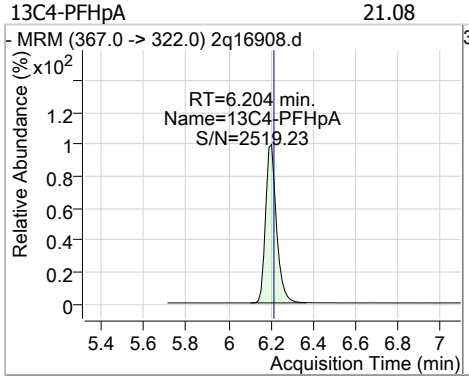


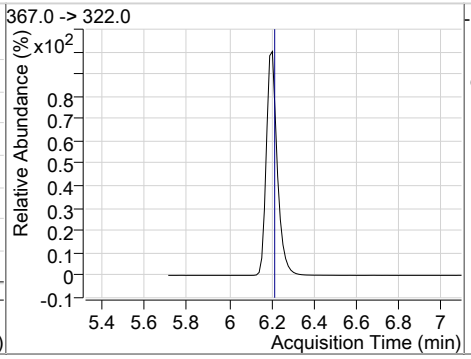


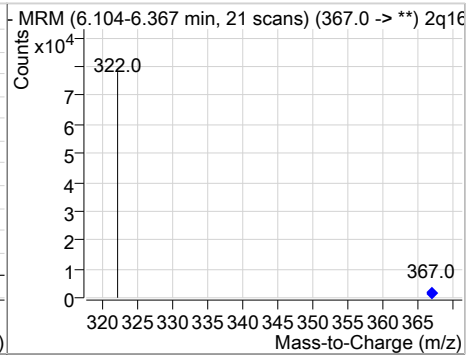




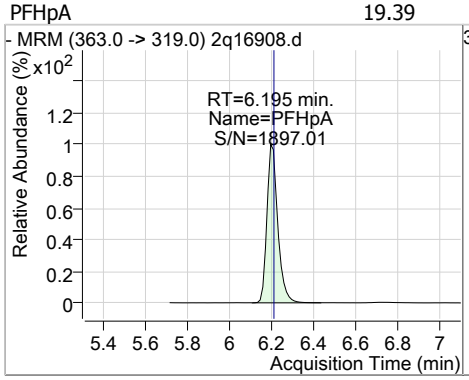
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.08	6.20	-0.01	57327				

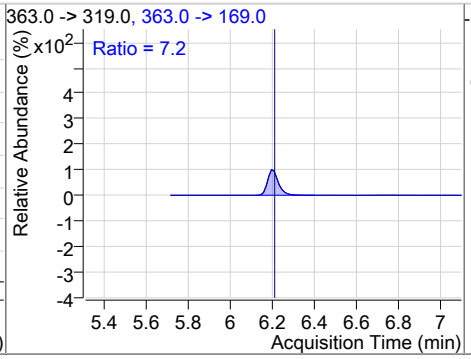


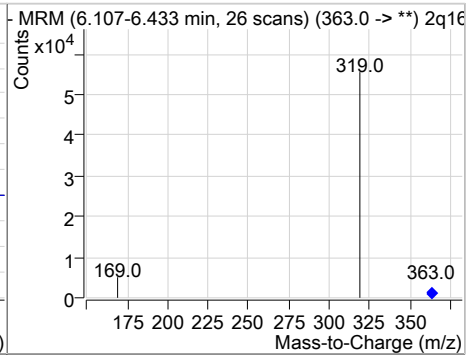




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.39	6.19	-0.02	40676	363.0 -> 169.0	7.2	0.0	37.2

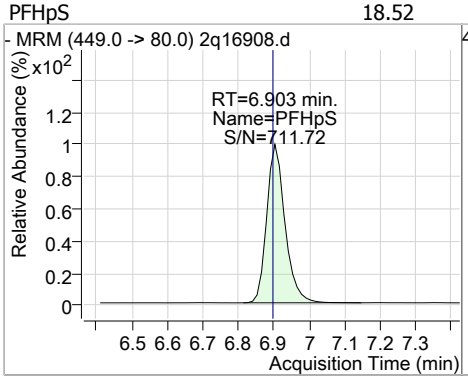


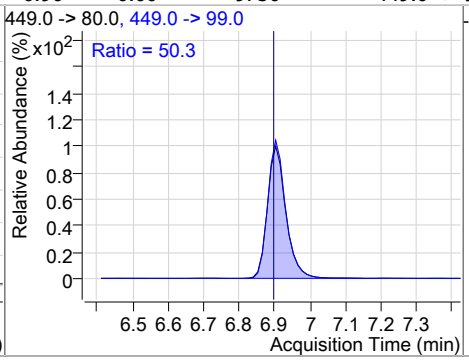


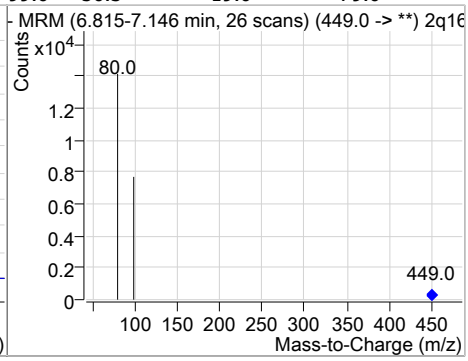


Perfluorinated Compounds by LC/MS/MS

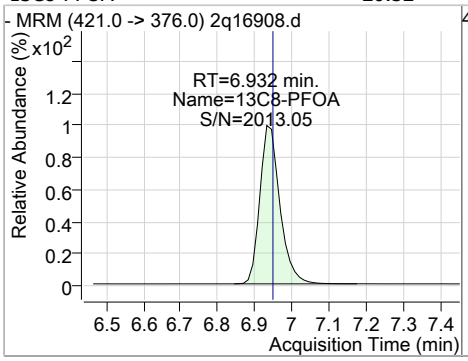
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	18.52	6.90	0.00	9750	449.0 -> 99.0	50.3	19.0	79.0

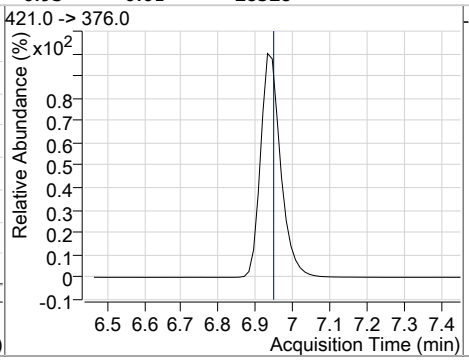


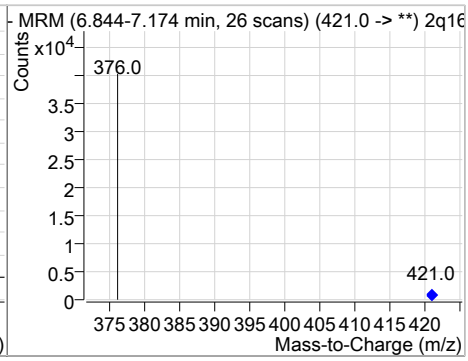




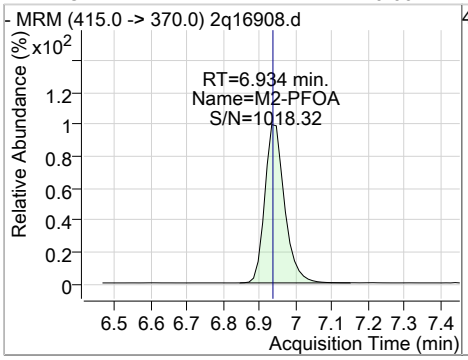
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.52	6.93	-0.01	28528				

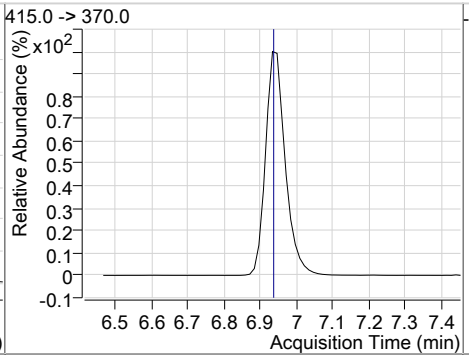


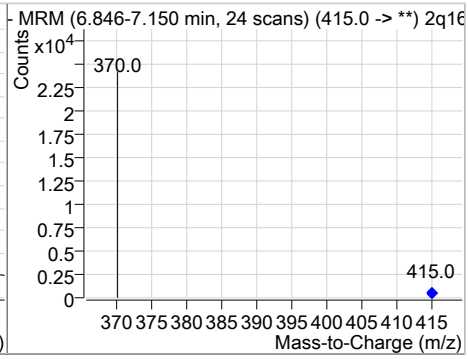




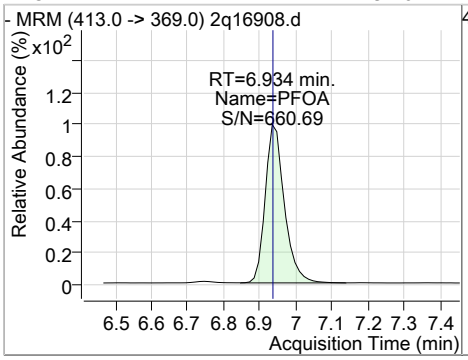
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.93	-0.01	17423				

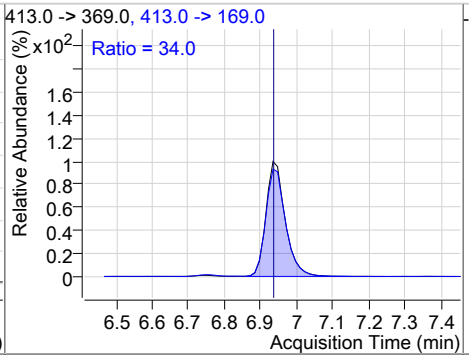


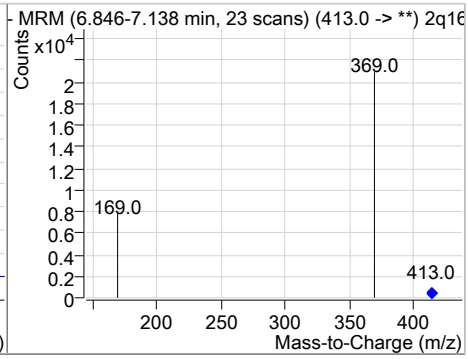




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.10	6.93	-0.01	14944	413.0 -> 169.0	34.0	5.0	65.0

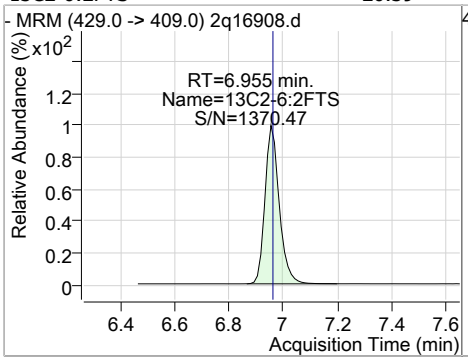


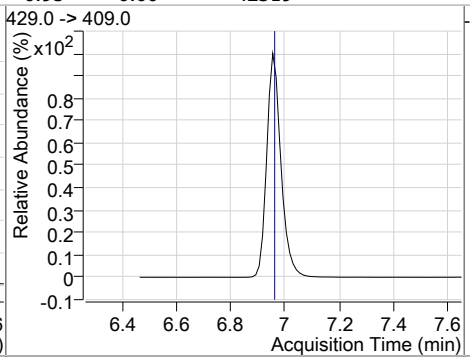


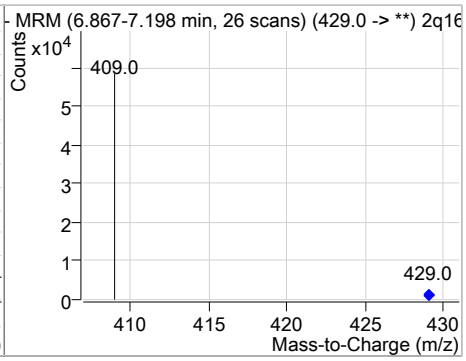


Perfluorinated Compounds by LC/MS/MS

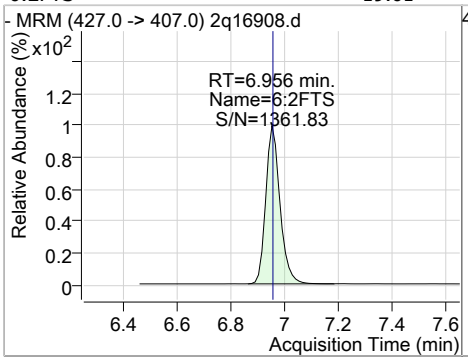
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.39	6.95	0.00	42319				

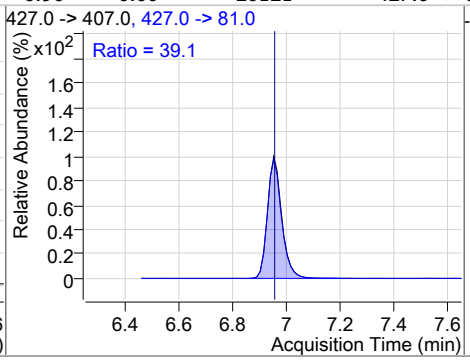


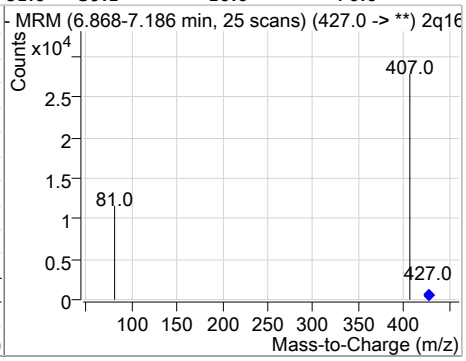




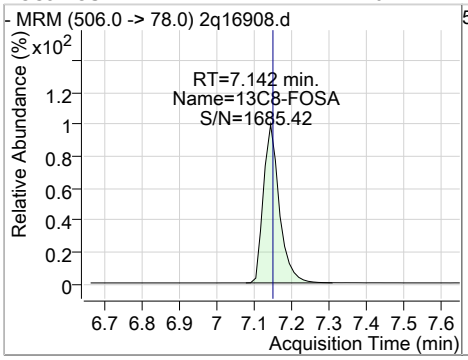
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.61	6.96	0.00	20121	427.0 -> 81.0	39.1	10.0	70.0

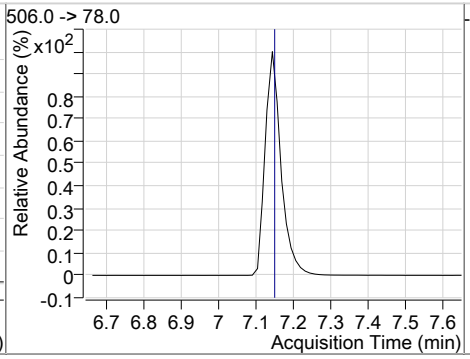


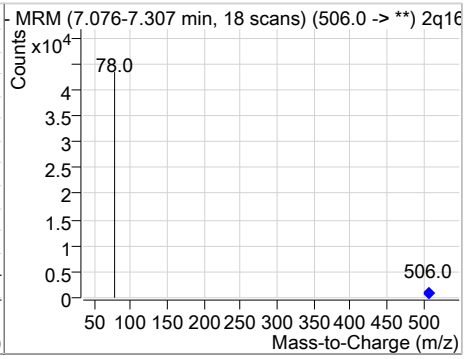




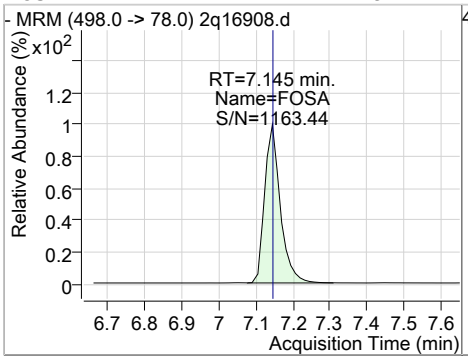
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.74	7.14	0.00	32508				

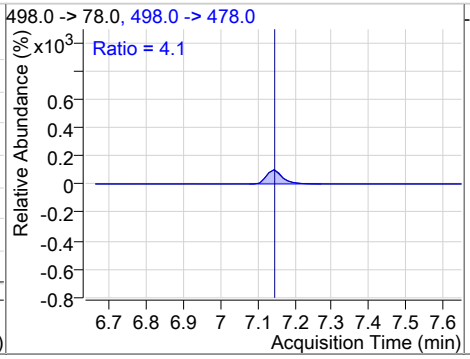


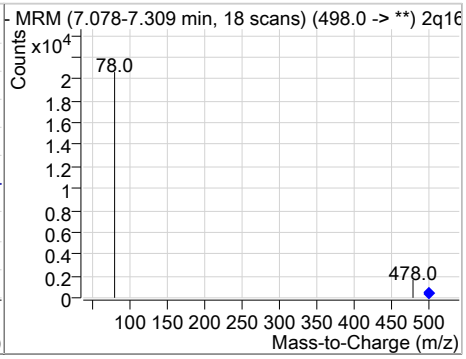




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.17	7.15	0.00	15293	498.0 -> 478.0	4.1	0.0	34.0

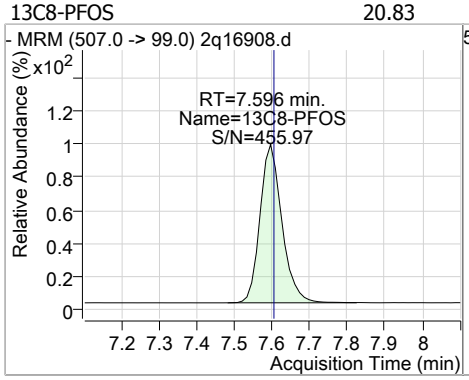


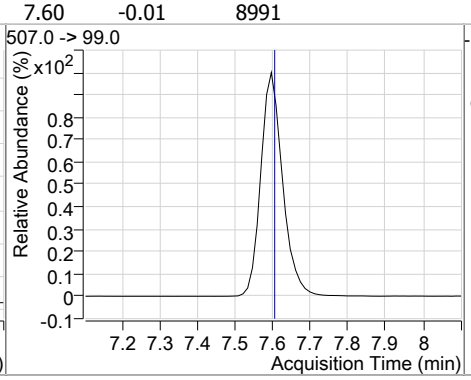


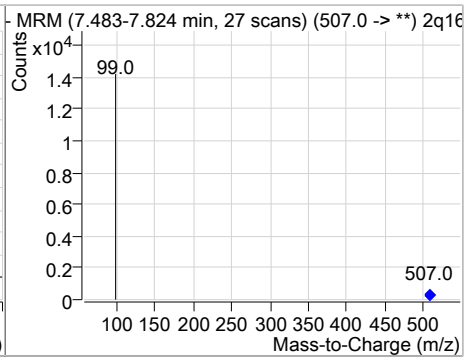


Perfluorinated Compounds by LC/MS/MS

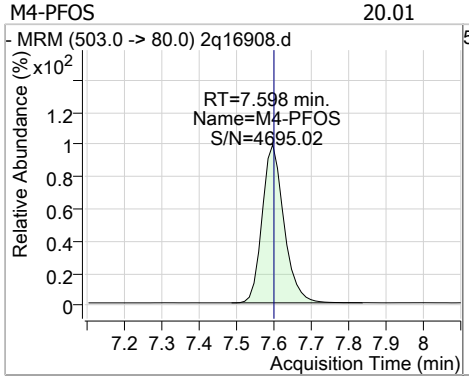
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.83	7.60	-0.01	8991				

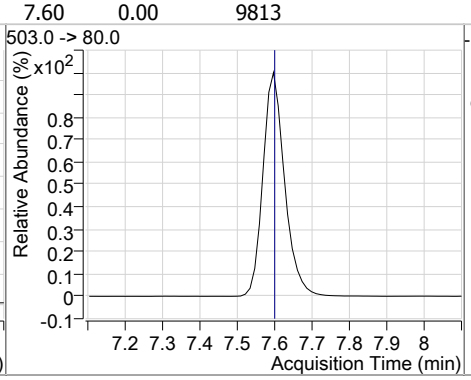


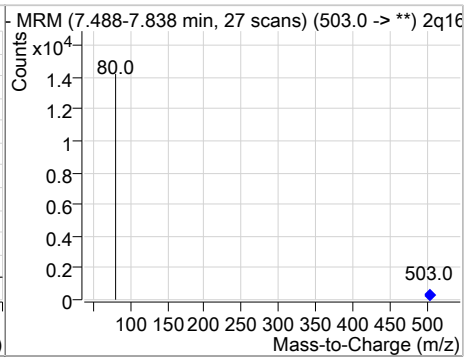




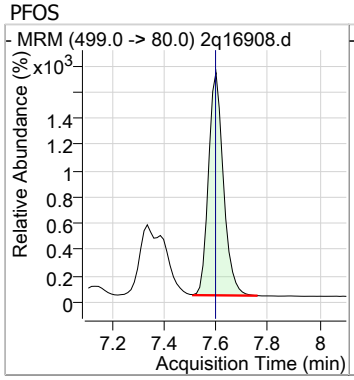
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.01	7.60	0.00	9813				

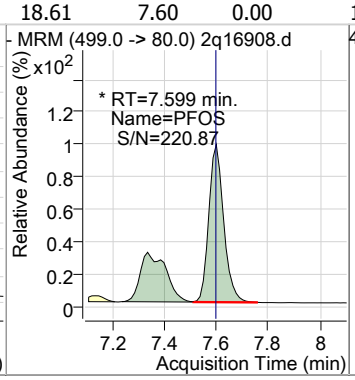


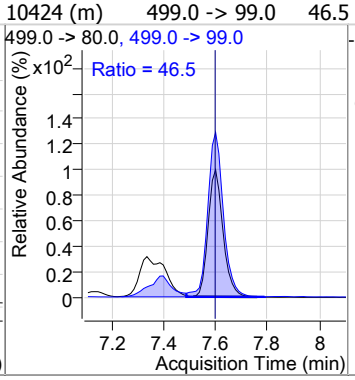


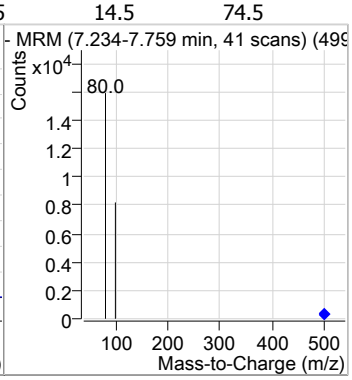


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.61	7.60	0.00	10424 (m)	499.0 -> 99.0	46.5	14.5	74.5

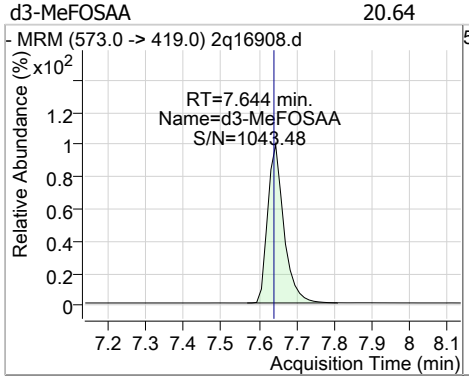


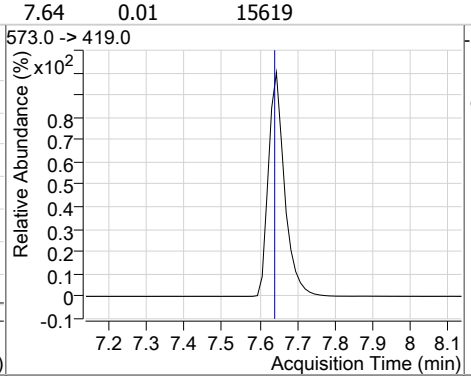


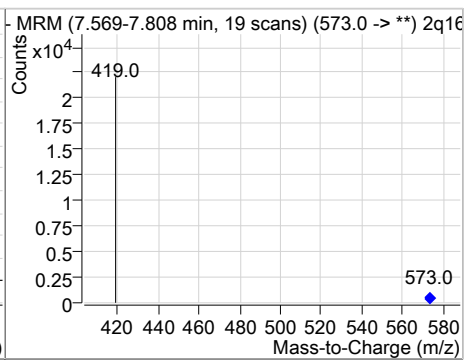




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.64	7.64	0.01	15619				

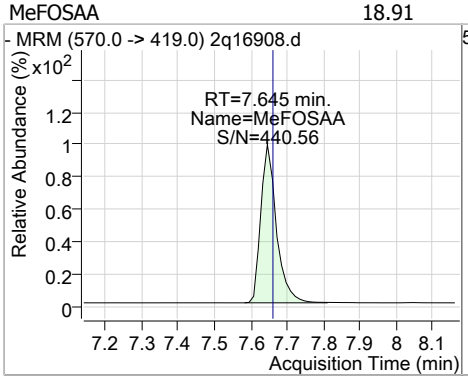


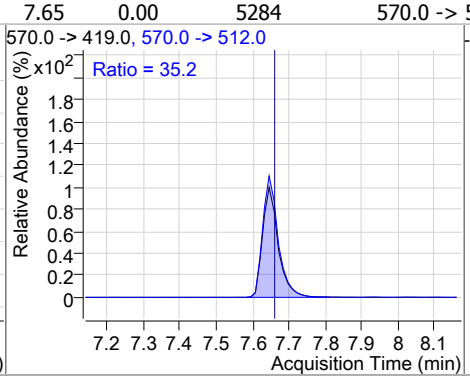


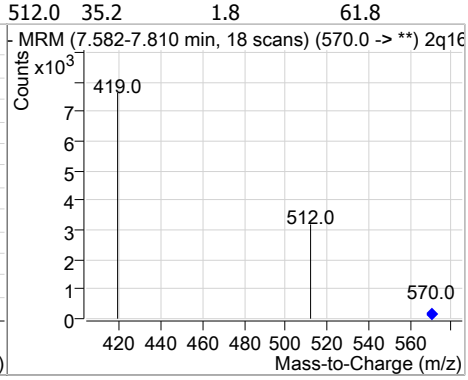


Perfluorinated Compounds by LC/MS/MS

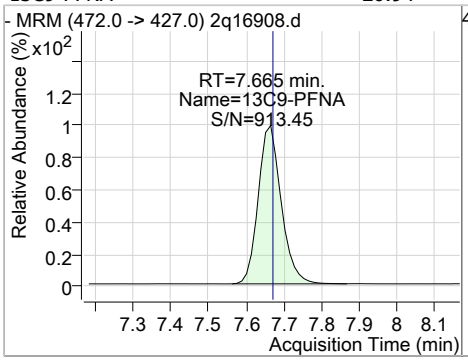
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	18.91	7.65	0.00	5284	570.0 -> 512.0	35.2	1.8	61.8

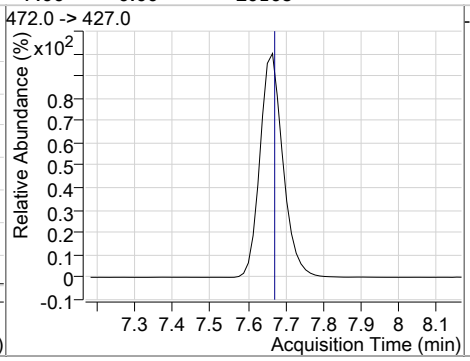


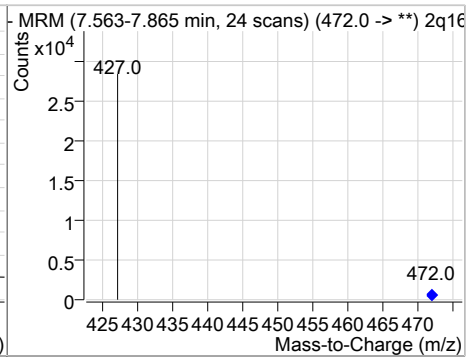




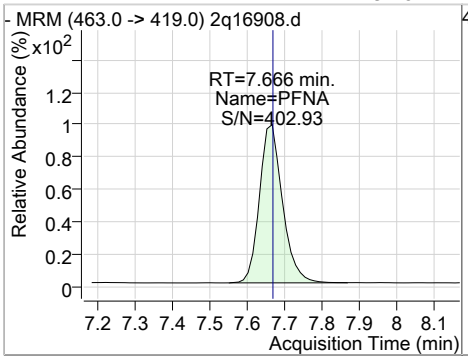
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.94	7.66	0.00	20168				

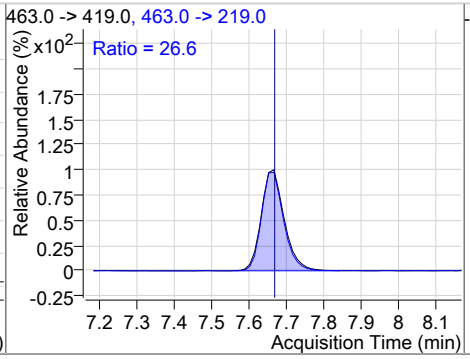


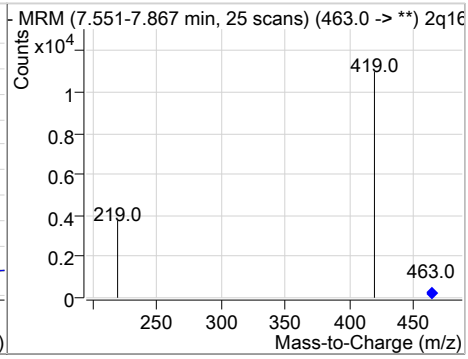




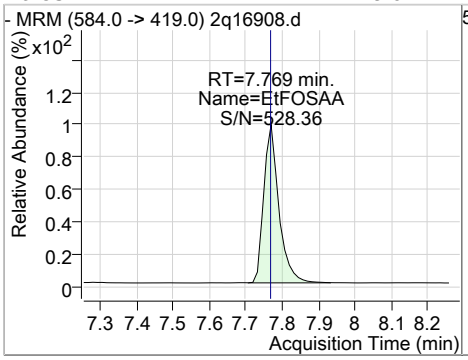
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.48	7.67	0.00	7574	463.0 -> 219.0	26.6	0.0	58.4

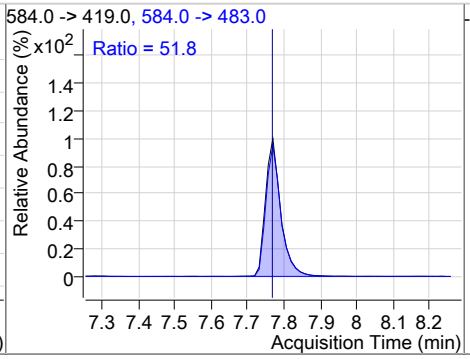


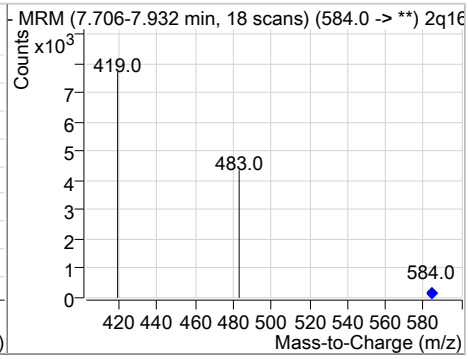




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.81	7.77	0.01	5220	584.0 -> 483.0	51.8	24.8	84.8

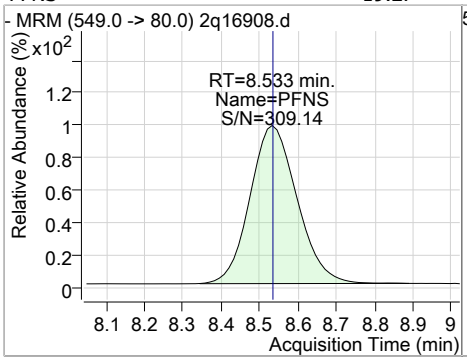


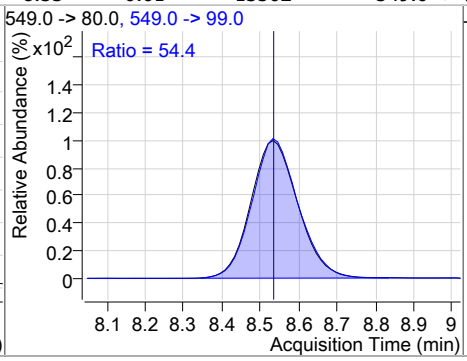


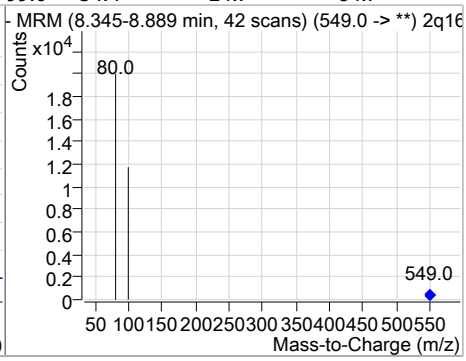


Perfluorinated Compounds by LC/MS/MS

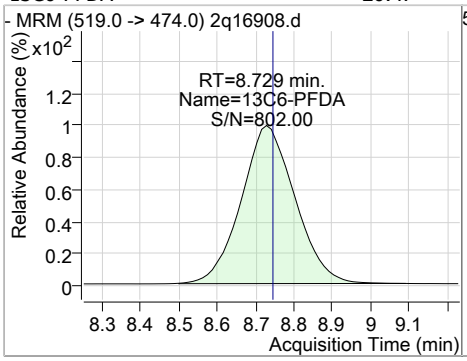
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.27	8.53	-0.01	13502	549.0 -> 99.0	54.4	24.7	84.7

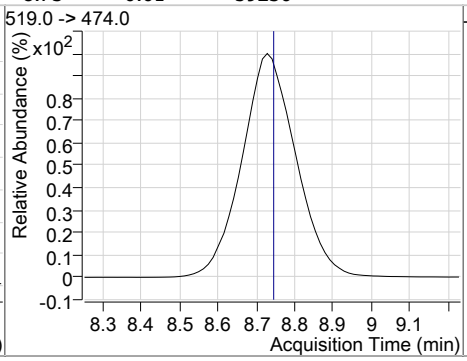


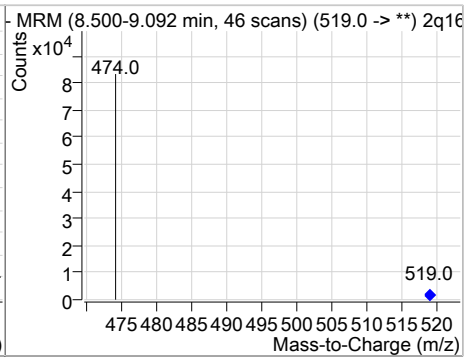




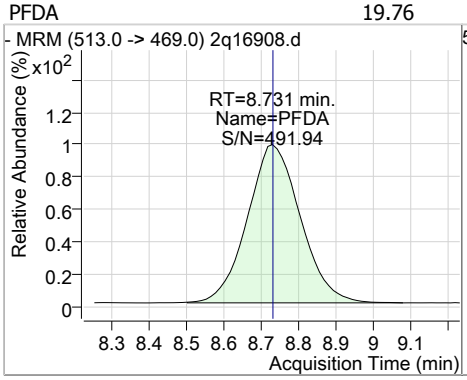
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.47	8.73	-0.01	59236				

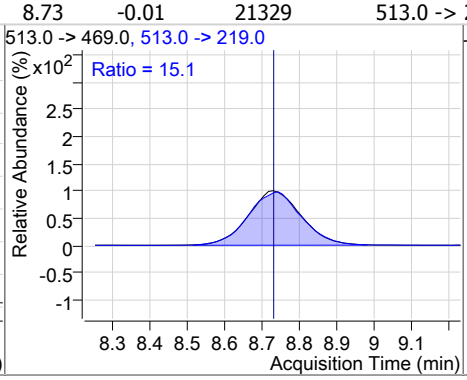


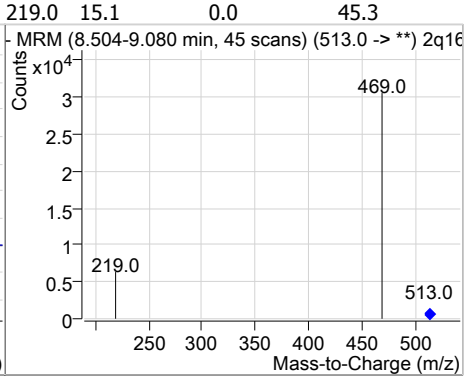




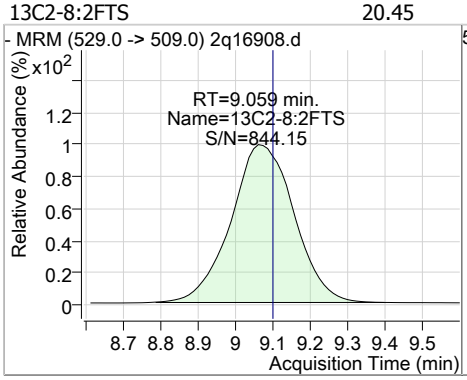
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.76	8.73	-0.01	21329	513.0 -> 219.0	15.1	0.0	45.3

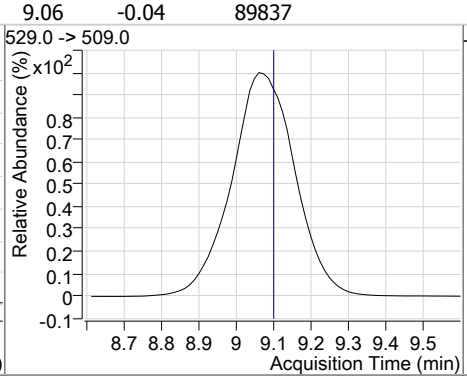


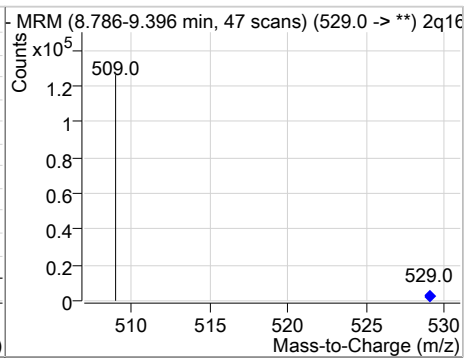




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.45	9.06	-0.04	89837				

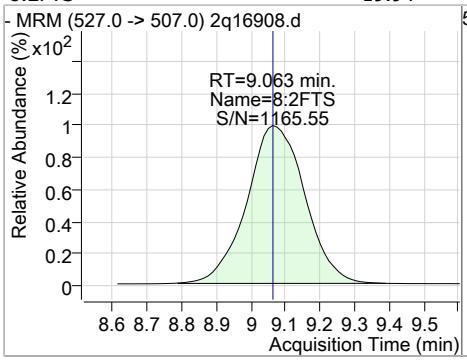


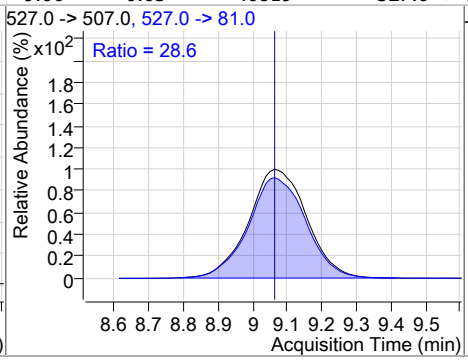


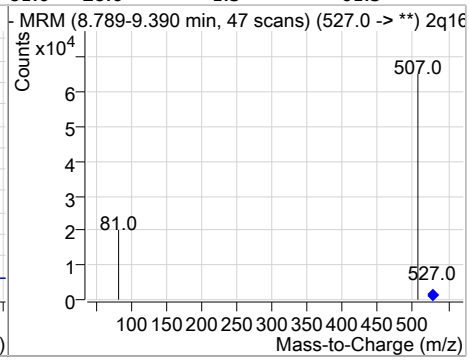


Perfluorinated Compounds by LC/MS/MS

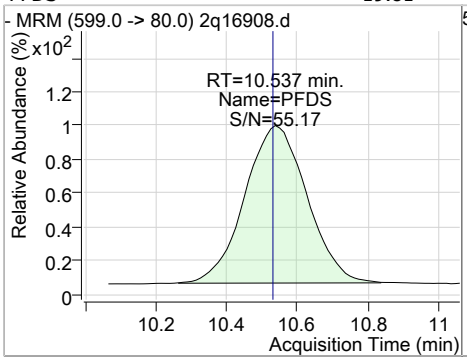
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.94	9.06	-0.03	46819	527.0 -> 81.0	28.6	1.3	61.3

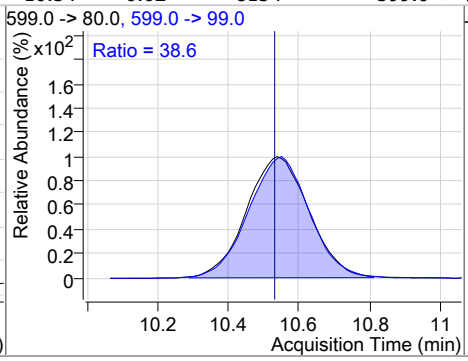


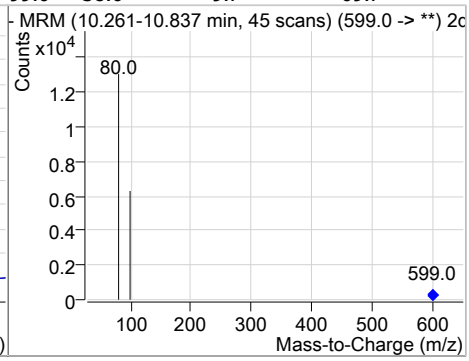




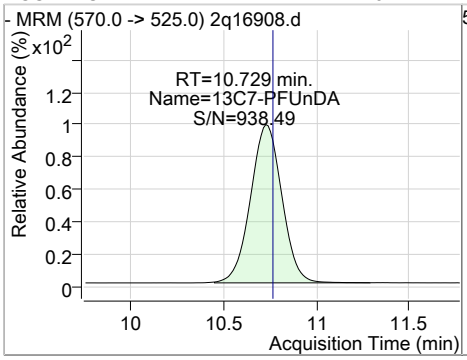
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.81	10.54	-0.02	8154	599.0 -> 99.0	38.6	9.7	69.7

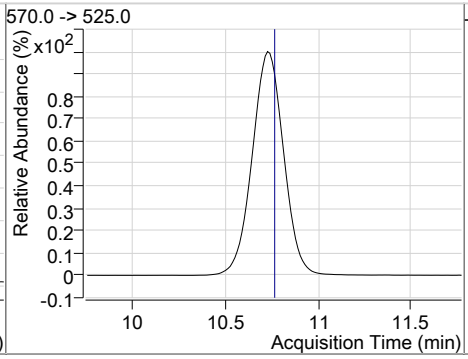


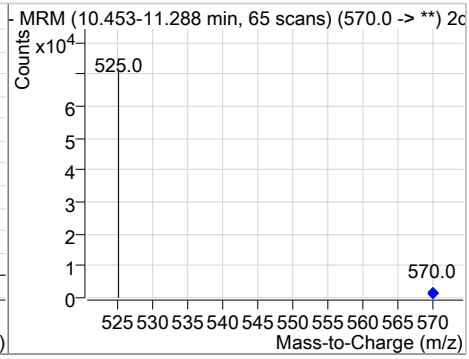




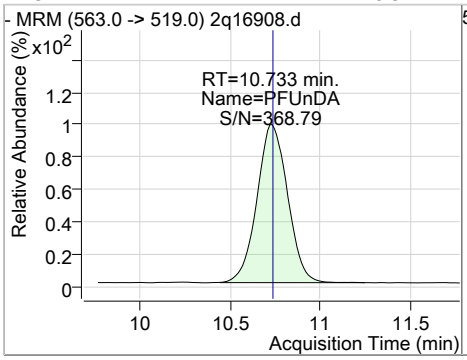
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.47	10.73	-0.03	48622				

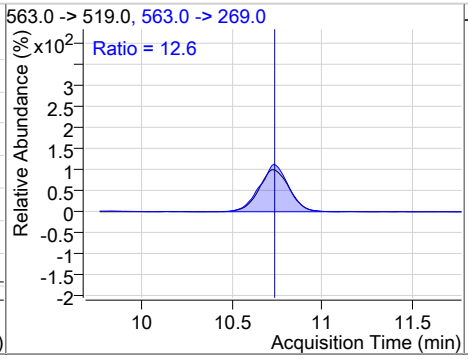


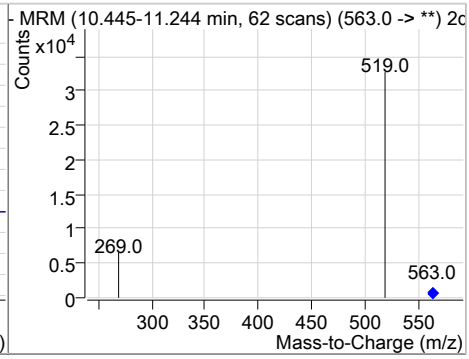




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	18.94	10.73	-0.03	22312	563.0 -> 269.0	12.6	0.0	41.8

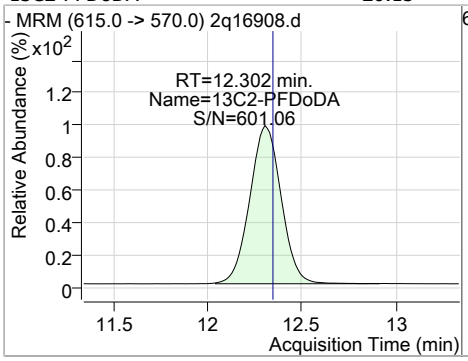


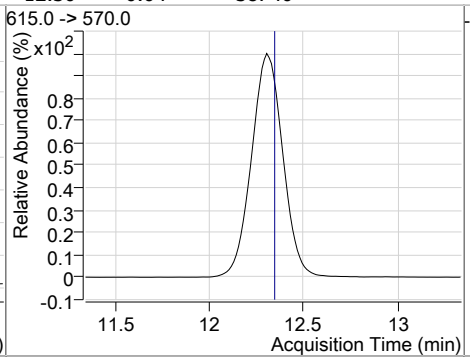


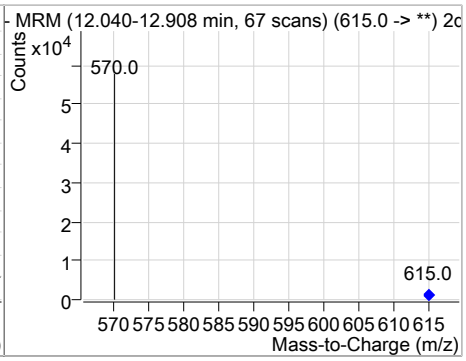


Perfluorinated Compounds by LC/MS/MS

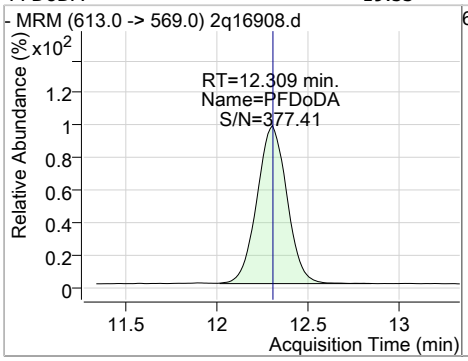
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.15	12.30	-0.04	38746				

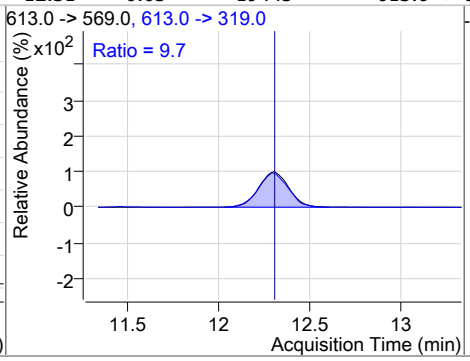


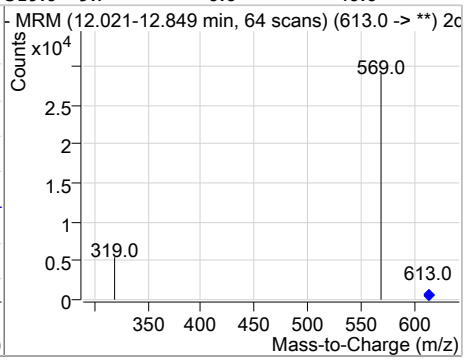




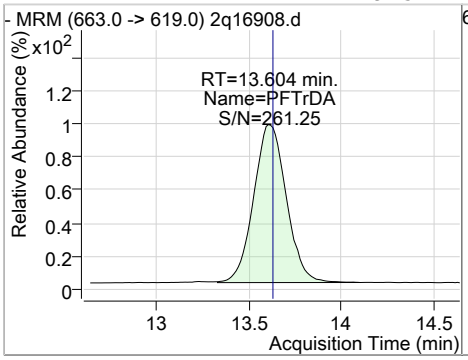
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.53	12.31	-0.03	19445	613.0 -> 319.0	9.7	0.0	40.0

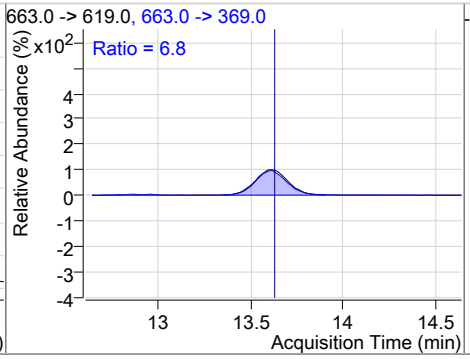


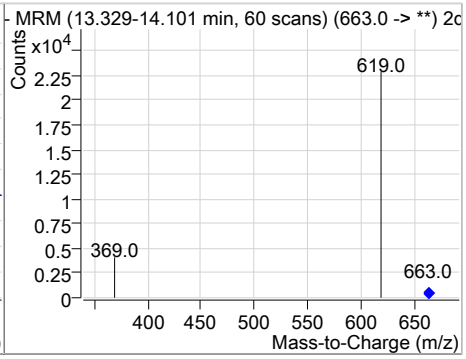




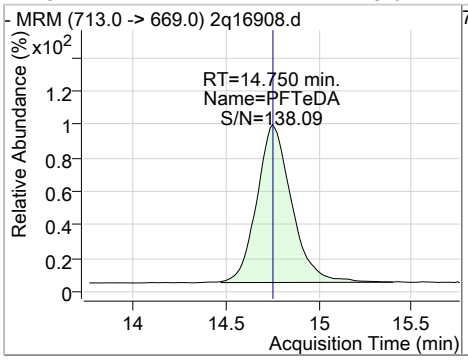
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	19.45	13.60	-0.03	15128	663.0 -> 369.0	6.8	0.0	37.1

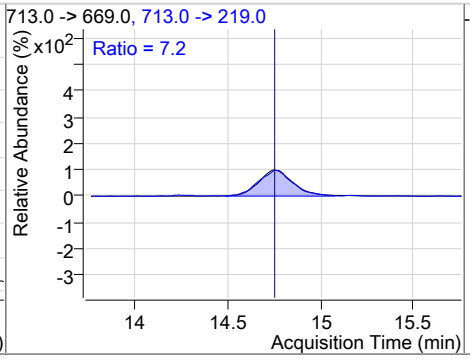


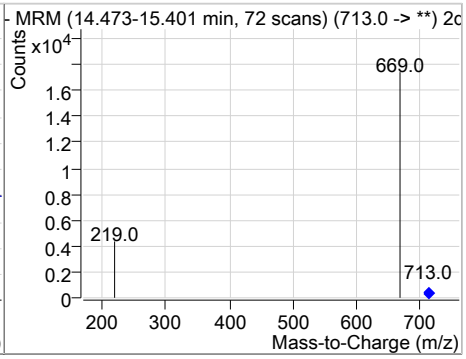




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.64	14.75	-0.01	10521	713.0 -> 219.0	7.2	0.0	37.4

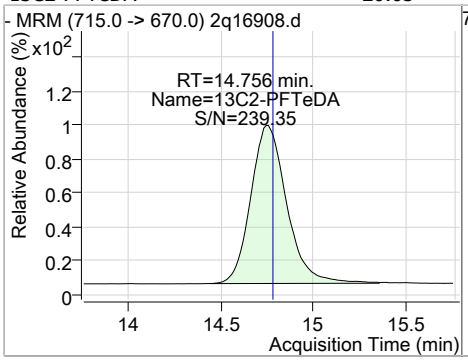


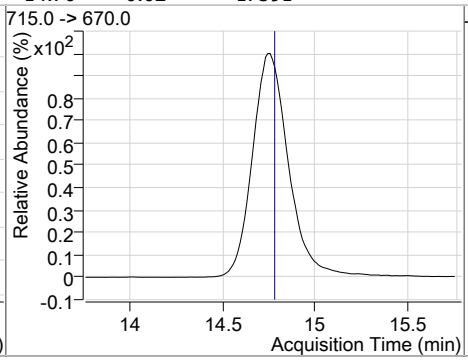


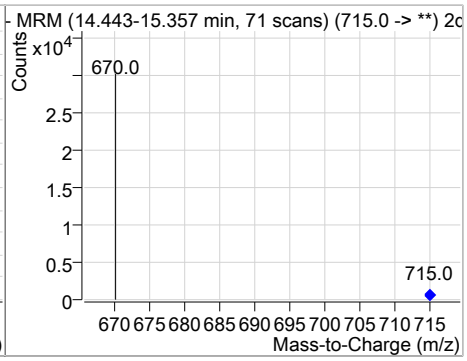


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.05	14.76	-0.02	17591				







Manual Integration Approval Summary

Sample Number:	S2Q294-CC294	**Method:**	EPA 537M BY ID
Lab FileID:	2Q16908.D	**Analyst approved:**	07/11/18 14:37 Natasha Gumtie
Injection Time:	07/10/18 23:05	**Supervisor approved:**	07/11/18 16:54 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.19	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.60	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
07/11/18 16:54

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16912.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/11/2018 12:28:26 AM
Sample Name : cc294-20
Vial : Vial 7
DA Method File : PFC_ID_071018_S2Q294.quantmethod.xml
Batch Name : s2q294.batch.bin
Sample Information : op70790,S2Q294,1.99,,,1.0,1,soil

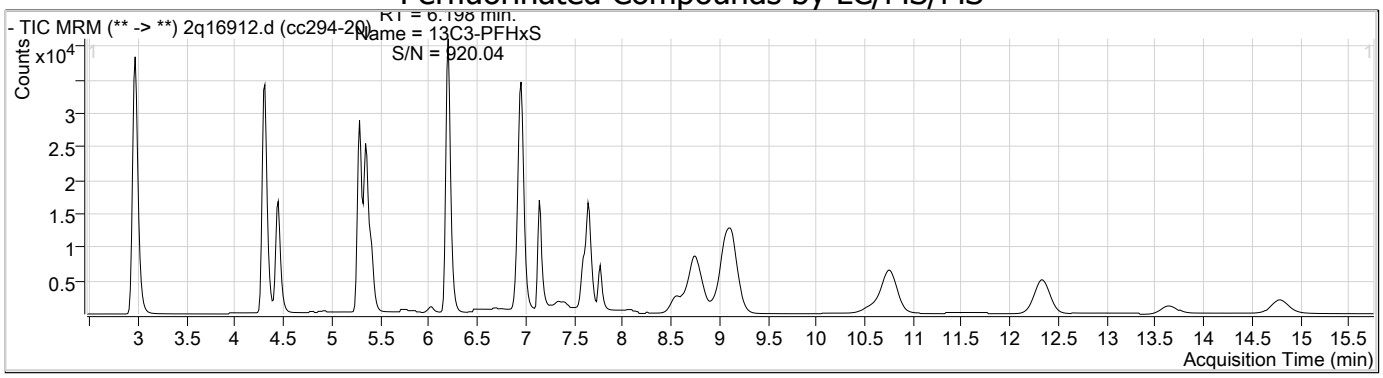
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.946	415.0 -> 370.0	18168	20.00	µg/L	0.000
13C4-PFOS	7.598	503.0 -> 80.0	10056	20.00	µg/L	-0.004
M4-PFBA	2.966	217.0 -> 172.0	132872	20.00	µg/L	-0.001
M5-PFPeA	4.312	268.0 -> 223.0	64442	20.00	µg/L	0.000
M5-PFHxA	5.353	318.0 -> 273.0	59221	20.00	µg/L	-0.008
M4-PFHpA	6.204	367.0 -> 322.0	56765	20.00	µg/L	-0.005
M8-PFOA	6.945	421.0 -> 376.0	27880	20.00	µg/L	-0.001
M9-PFNA	7.665	472.0 -> 427.0	19652	20.00	µg/L	-0.003
M6-PFDA	8.754	519.0 -> 474.0	59061	20.00	µg/L	0.011
M7-PFUnDA	10.754	570.0 -> 525.0	48608	20.00	µg/L	-0.007
M2-PFDoDA	12.328	615.0 -> 570.0	38154	20.00	µg/L	-0.011
M2-PFTeDA	14.794	715.0 -> 670.0	17259	20.00	µg/L	0.019
M8-FOSA	7.142	506.0 -> 78.0	32632	20.00	µg/L	-0.003
M3-PFBS	4.443	302.0 -> 99.0	20999	20.00	µg/L	0.006
M3-PFHxS	6.198	402.0 -> 99.0	17097	20.00	µg/L	0.002
M8-PFOS	7.609	507.0 -> 99.0	9001	20.00	µg/L	0.007
M2-4:2FTS	5.285	329.0 -> 309.0	56011	20.00	µg/L	0.002
M2-6:2FTS	6.967	429.0 -> 409.0	42458	20.00	µg/L	0.010
M2-8:2FTS	9.110	529.0 -> 509.0	89869	20.00	µg/L	0.014
M3-MeFOSAA	7.644	573.0 -> 419.0	15578	20.00	µg/L	0.008
System Monitoring Compounds						
13C2-4:2FTS	5.285	329.0 -> 309.0	56017	20.90	µg/L	0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.5%		
13C2-6:2FTS	6.967	429.0 -> 409.0	42460	20.46	µg/L	0.010
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%		
13C2-8:2FTS	9.110	529.0 -> 509.0	89192	20.30	µg/L	0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%		
13C2-PFDoDA	12.328	615.0 -> 570.0	38124	19.83	µg/L	-0.011
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%		
13C2-PFTeDA	14.794	715.0 -> 670.0	17163	19.57	µg/L	0.019
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.8%		
13C3-PFBS	4.443	302.0 -> 99.0	21002	21.11	µg/L	0.006
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.6%		
13C3-PFHxS	6.198	402.0 -> 99.0	17098	20.60	µg/L	0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.0%		
13C4-PFBA	2.966	217.0 -> 172.0	132784	20.72	µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.6%		
13C4-PFHpA	6.204	367.0 -> 322.0	56762	20.88	µg/L	-0.005
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.4%		
13C5-PFHxA	5.353	318.0 -> 273.0	59209	20.88	µg/L	-0.008
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.4%		
13C5-PFPeA	4.312	268.0 -> 223.0	64429	20.60	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.0%		
13C6-PFDA	8.754	519.0 -> 474.0	58757	20.30	µg/L	0.011
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%		

Perfluorinated Compounds by LC/MS/MS

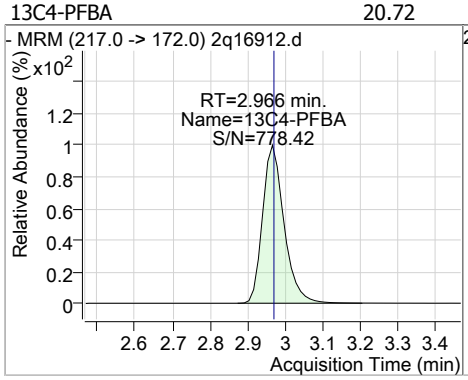
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.754	570.0 -> 525.0	48592	20.46	µg/L		-0.007
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%			
13C8-FOSA	7.142	506.0 -> 78.0	32662	20.83	µg/L		-0.003
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.2%			
13C8-PFOA	6.945	421.0 -> 376.0	27883	20.06	µg/L		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.3%			
13C8-PFOS	7.609	507.0 -> 99.0	8990	20.83	µg/L		0.007
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.2%			
13C9-PFNA	7.665	472.0 -> 427.0	19651	20.40	µg/L		-0.003
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.0%			
d3-MeFOSAA	7.644	573.0 -> 419.0	15582	20.60	µg/L		0.008
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.0%			
M2-PFOA	6.946	415.0 -> 370.0	18171	20.01	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.598	503.0 -> 80.0	10054	20.00	ng/ml		-0.004
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
Target Compounds							**QValue**
4:2FTS	5.288	327.0 -> 307.0	27526	19.60	µg/L		99
6:2FTS	6.969	427.0 -> 407.0	20268	19.69	µg/L		98
8:2FTS	9.100	527.0 -> 507.0	46482	19.96	µg/L		95
EtFOSAA	7.769	584.0 -> 419.0	5086	19.36	µg/L		94
FOSA	7.145	498.0 -> 78.0	14919	18.61	µg/L		99
MeFOSAA	7.645	570.0 -> 419.0	5446	19.55	µg/L		95
PFBA	2.962	213.0 -> 169.0	19510	18.81	µg/L		100
PFBS	4.447	299.0 -> 80.0	27271	19.04	µg/L		100
PFDA	8.756	513.0 -> 469.0	20952	19.53	µg/L		99
PFDoDA	12.334	613.0 -> 569.0	19066	19.39	µg/L		99
PFDS	10.562	599.0 -> 80.0	7979	19.40	µg/L		98
PFHpA	6.207	363.0 -> 319.0	40606	19.55	µg/L		100
PFHpS	6.903	449.0 -> 80.0	9784	18.70	µg/L		99
PFHxA	5.355	313.0 -> 269.0	19212	19.13	µg/L		98
PFHxS	6.201	399.0 -> 80.0	19568	19.15	µg/L	m	98
PFNA	7.666	463.0 -> 419.0	7954	21.00	µg/L		91
PFNS	8.558	549.0 -> 80.0	13783	19.67	µg/L		98
PFOA	6.947	413.0 -> 369.0	14379	18.80	µg/L		98
PFOS	7.599	499.0 -> 80.0	10732	19.16	µg/L	m	96
PFPeA	4.304	263.0 -> 219.0	60638	19.70	µg/L		100
PFPeS	5.408	349.0 -> 80.0	17067	18.54	µg/L		100
PFTeDA	14.788	713.0 -> 669.0	10161	19.40	µg/L		99
PFTrDA	13.642	663.0 -> 619.0	14545	19.12	µg/L		99
PFUnDA	10.758	563.0 -> 519.0	22464	19.07	µg/L		99

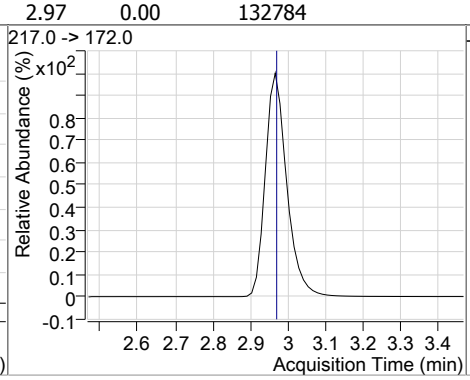
 # = Qualifier out of range, m = manually integrated, + = Area summed

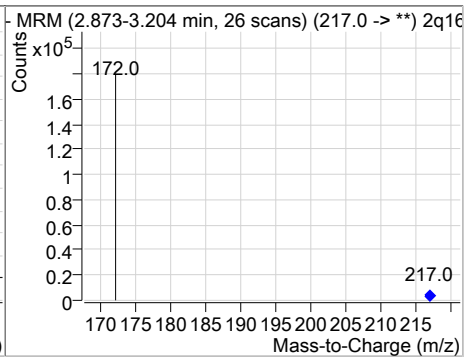
Perfluorinated Compounds by LC/MS/MS



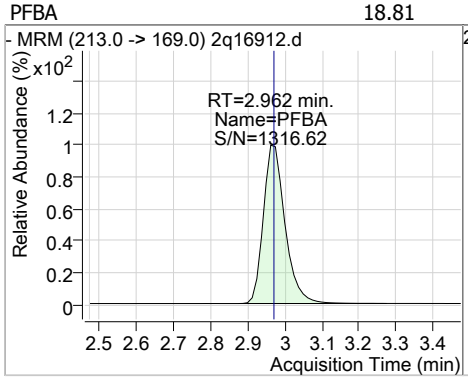
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.72	2.97	0.00	132784				

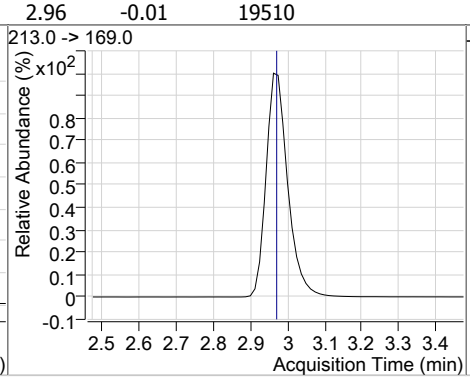


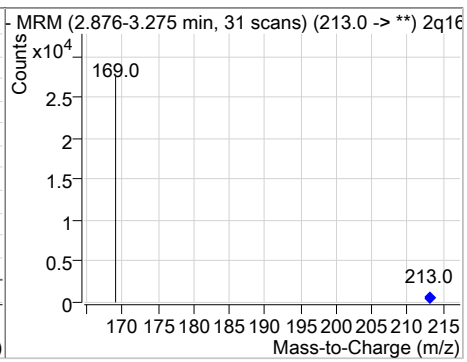




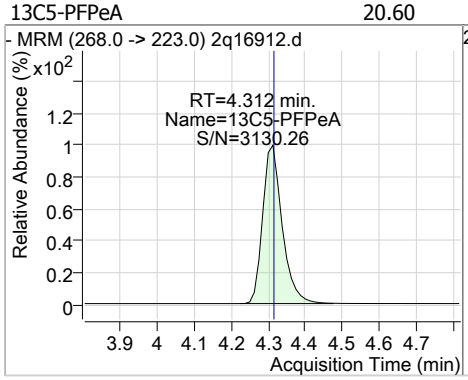
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	18.81	2.96	-0.01	19510				

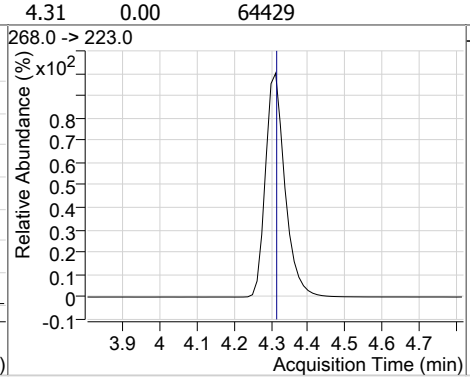


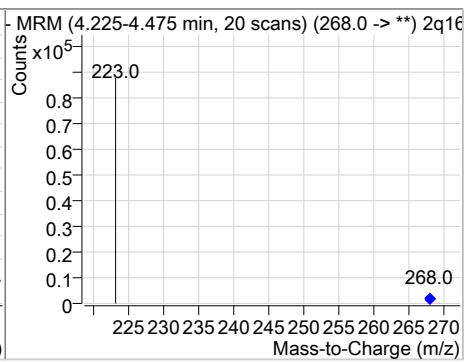




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.60	4.31	0.00	64429				

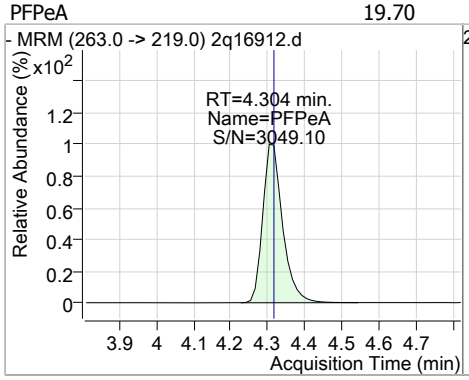


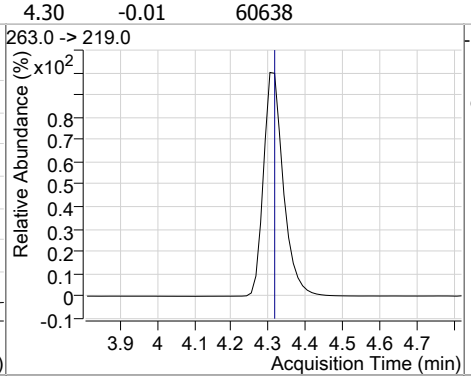


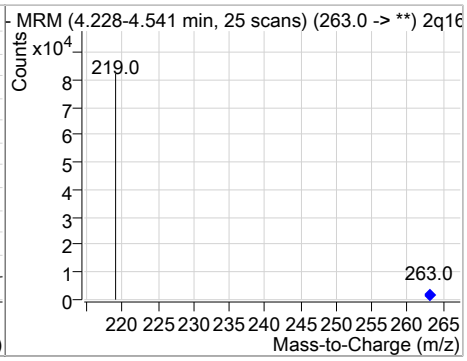


Perfluorinated Compounds by LC/MS/MS

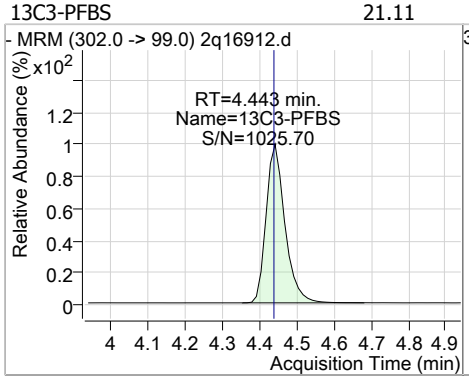
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.70	4.30	-0.01	60638				

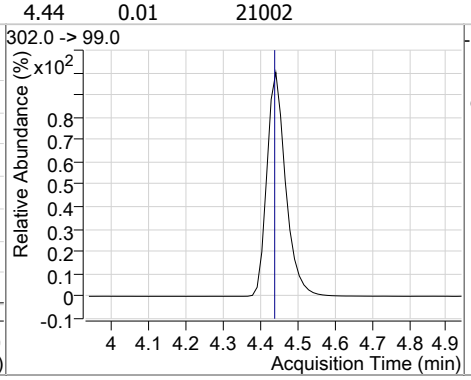


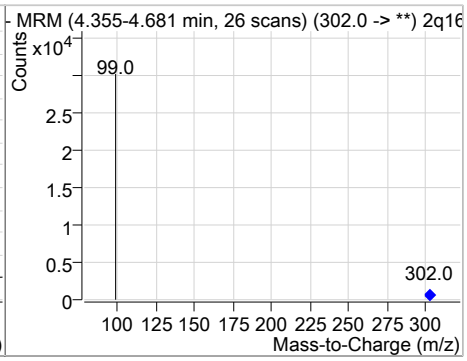




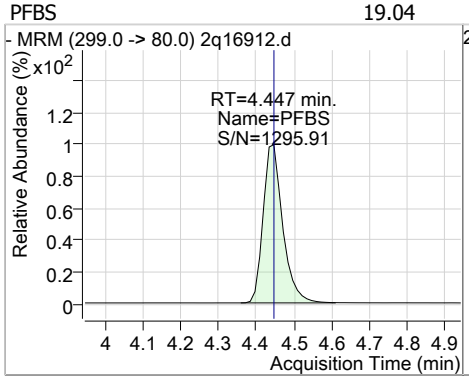
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.11	4.44	0.01	21002				

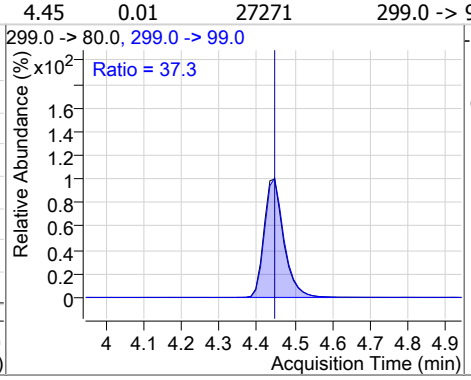


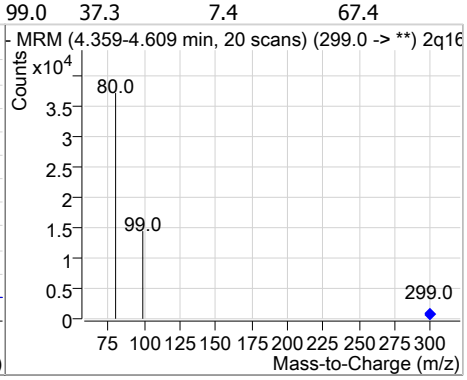




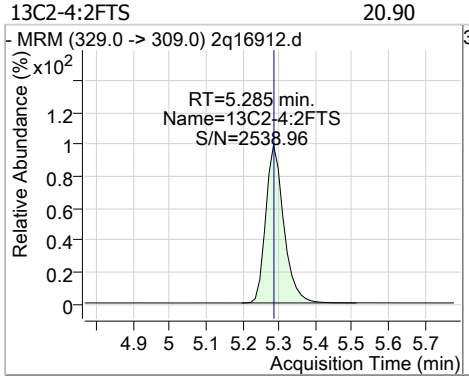
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.04	4.45	0.01	27271	299.0 -> 99.0	37.3	7.4	67.4

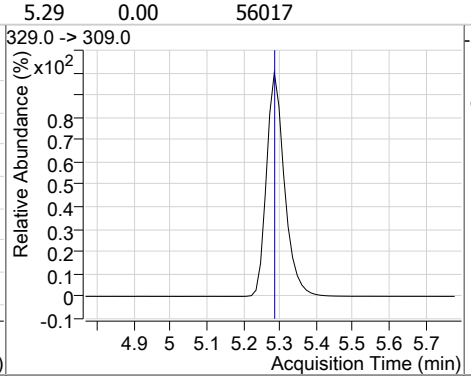


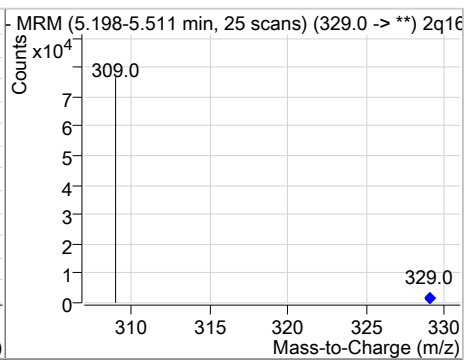




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.90	5.29	0.00	56017				

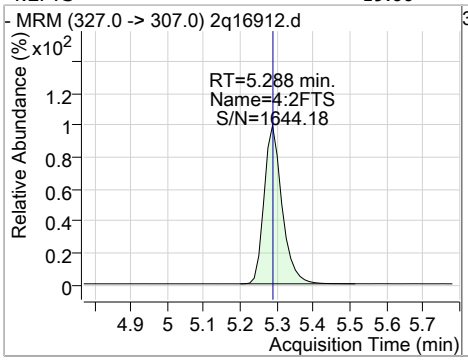


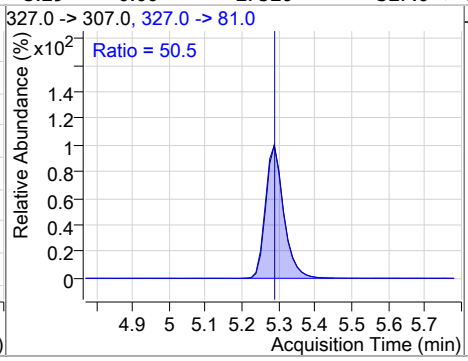


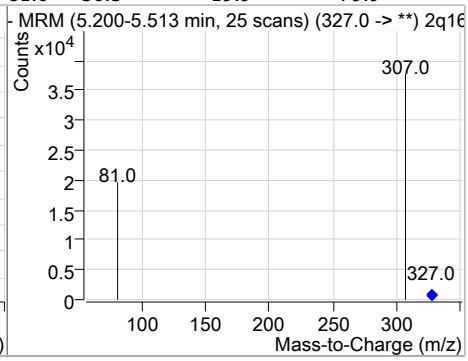


Perfluorinated Compounds by LC/MS/MS

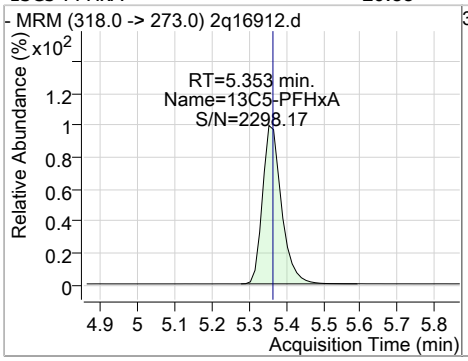
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.60	5.29	0.00	27526	327.0 -> 81.0	50.5	19.9	79.9

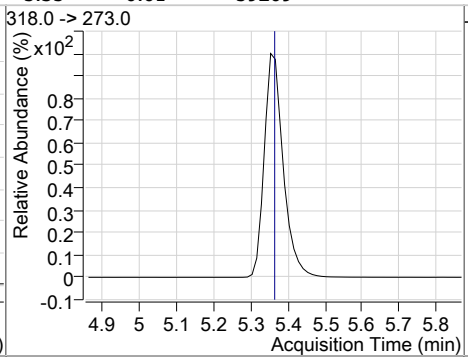


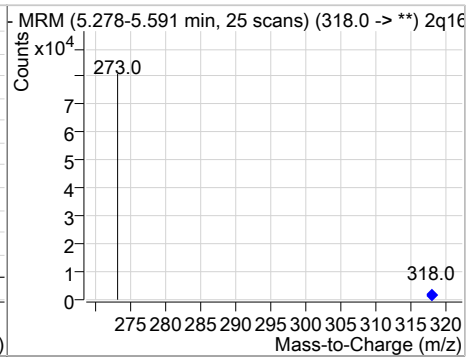




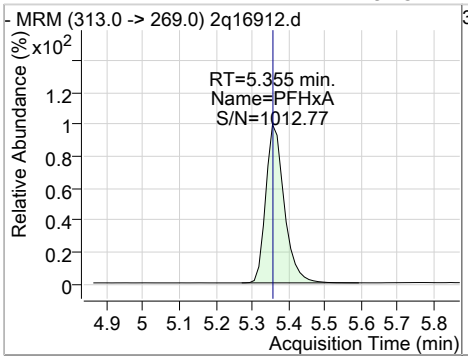
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.88	5.35	-0.01	59209				

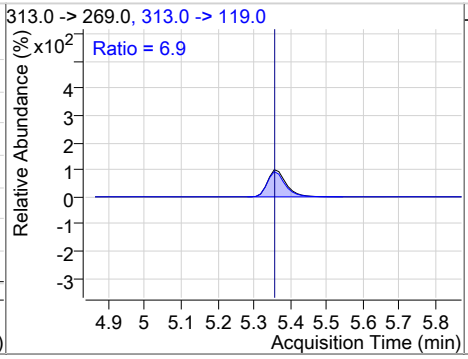


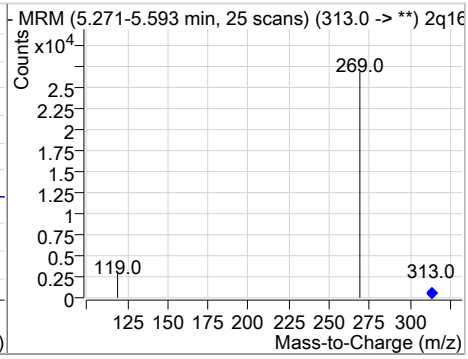




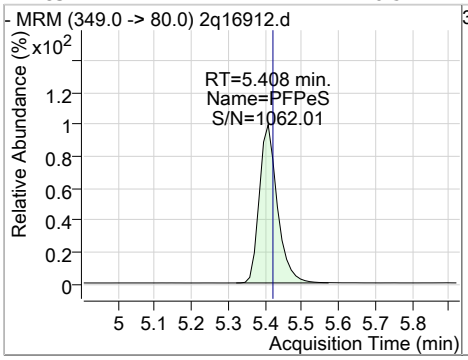
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.13	5.36	-0.01	19212	313.0 -> 119.0	6.9	0.0	37.6

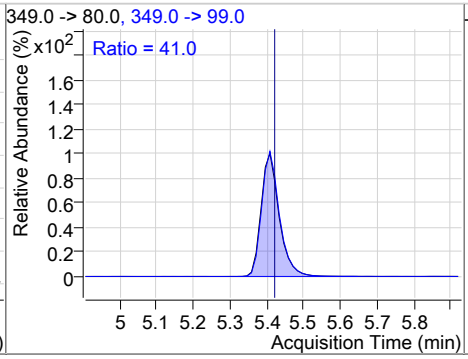


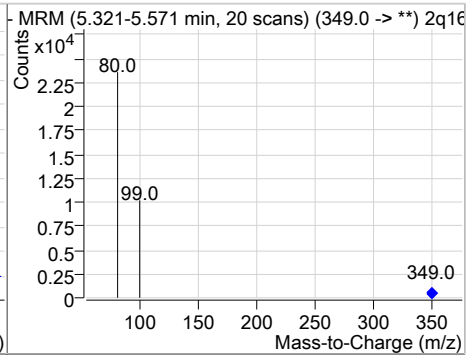




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	18.54	5.41	0.00	17067	349.0 -> 99.0	41.0	10.8	70.8

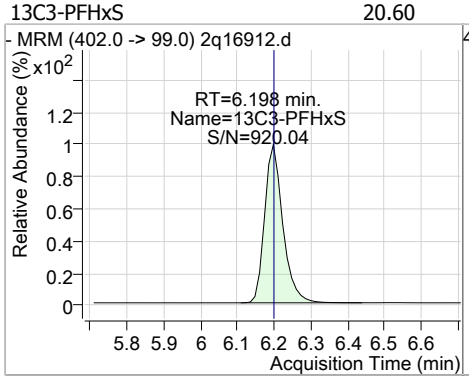


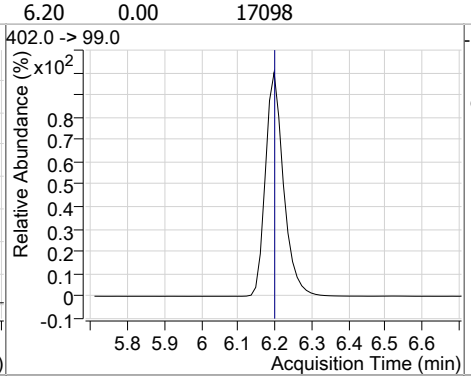


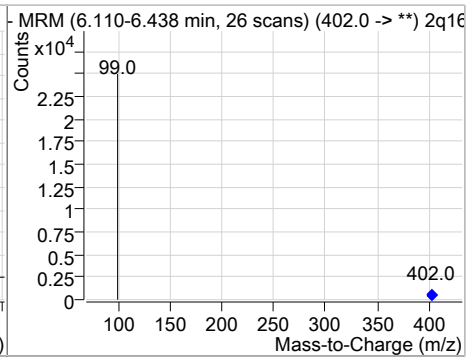


Perfluorinated Compounds by LC/MS/MS

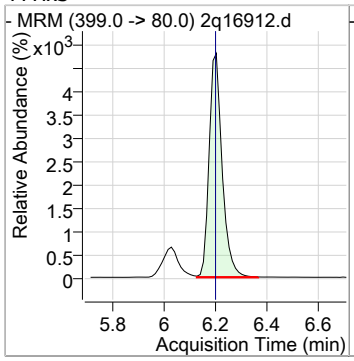
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.60	6.20	0.00	17098				

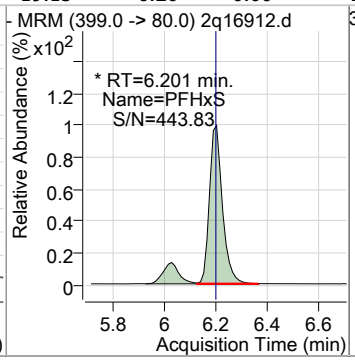


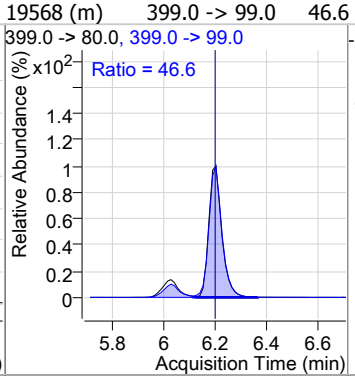


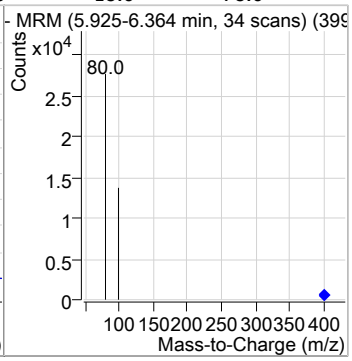


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.15	6.20	0.00	19568 (m)	399.0 -> 99.0	46.6	18.0	78.0

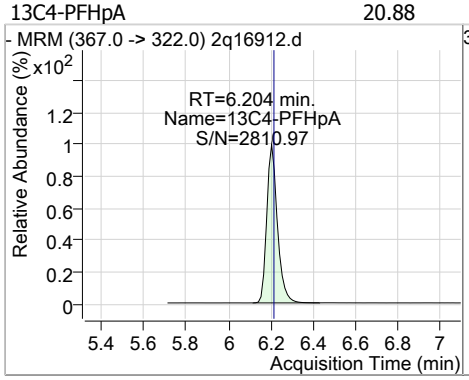


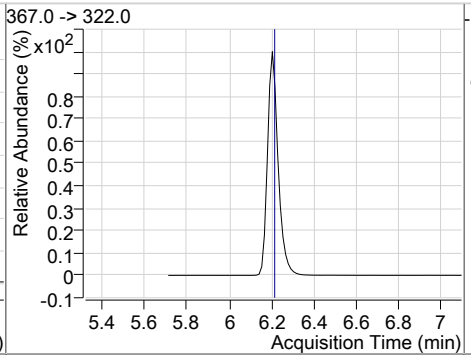


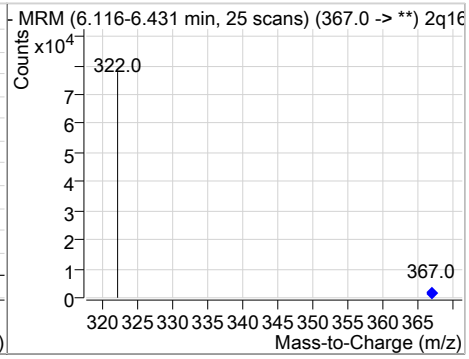




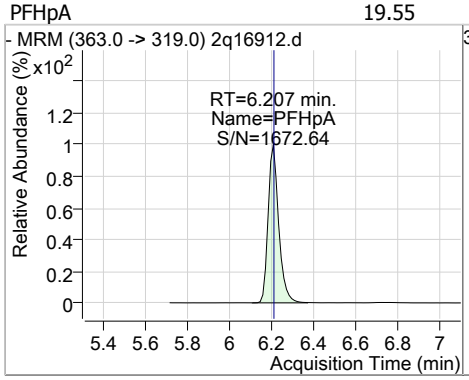
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.88	6.20	-0.01	56762				

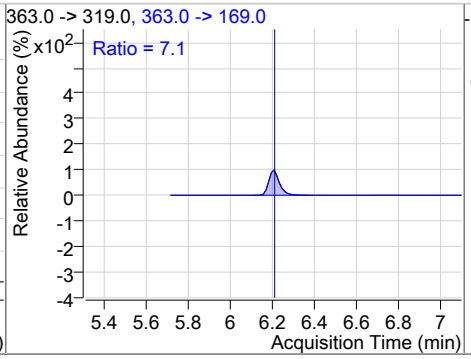


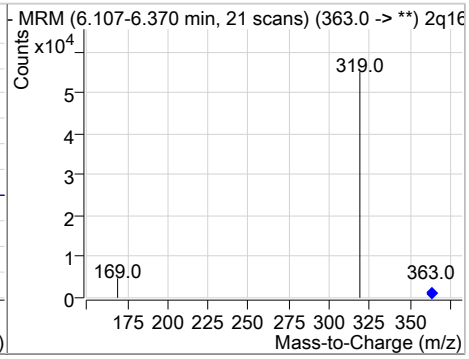




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.55	6.21	0.00	40606	363.0 -> 169.0	7.1	0.0	37.2

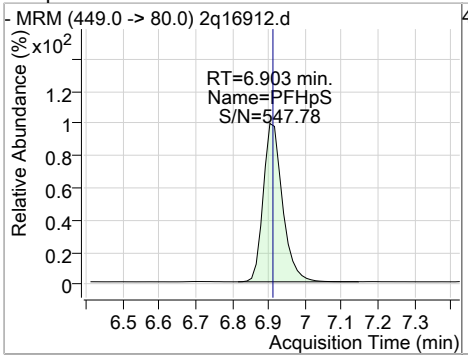


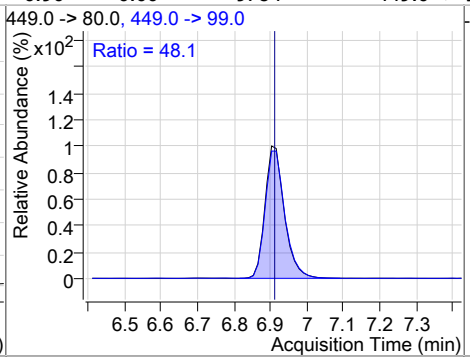


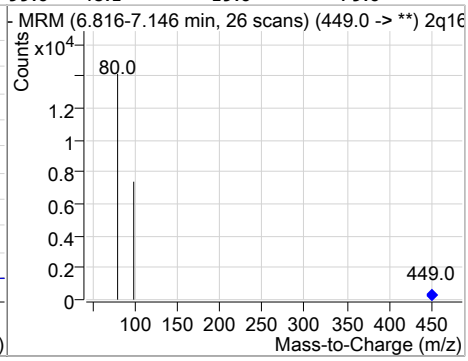


Perfluorinated Compounds by LC/MS/MS

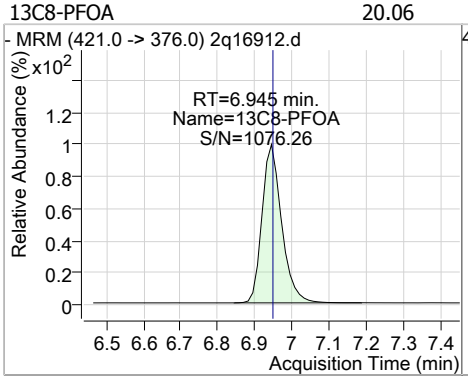
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	18.70	6.90	0.00	9784	449.0 -> 99.0	48.1	19.0	79.0

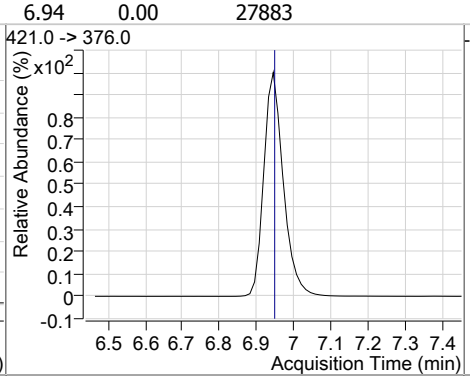


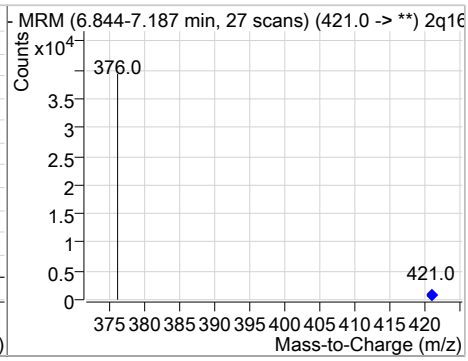




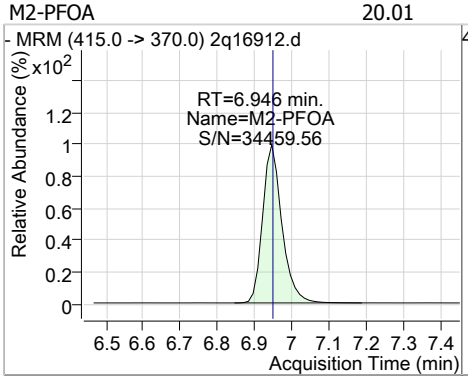
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.06	6.94	0.00	27883				

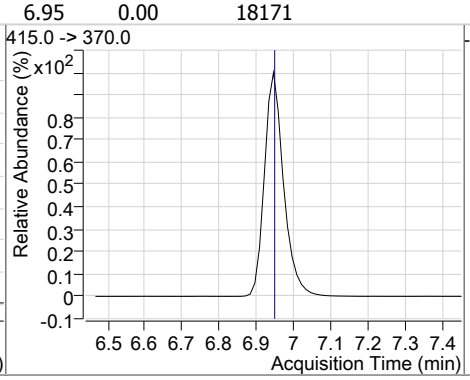


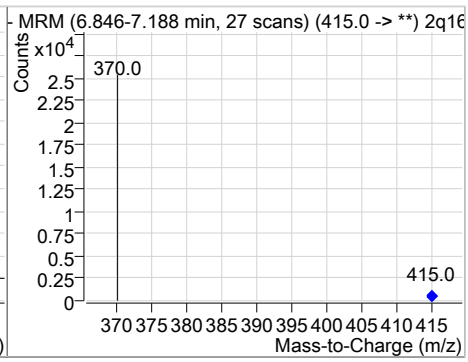




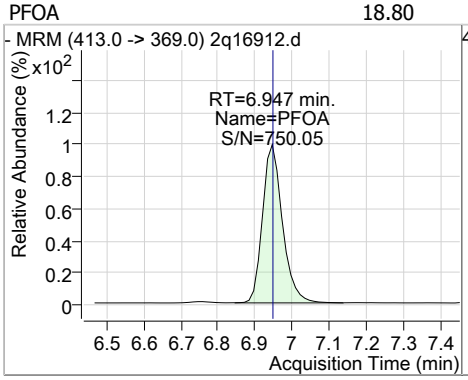
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.01	6.95	0.00	18171				

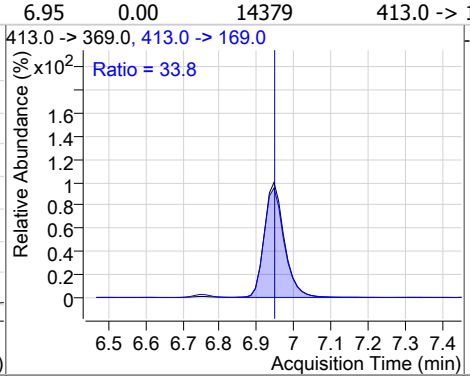


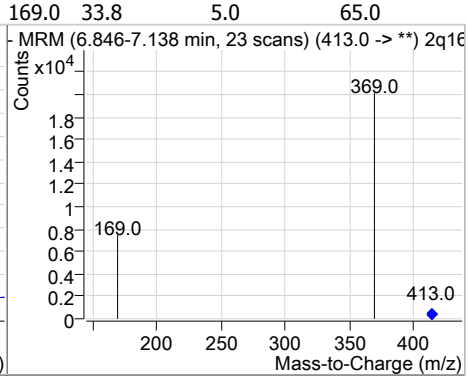




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	18.80	6.95	0.00	14379	413.0 -> 169.0	33.8	5.0	65.0

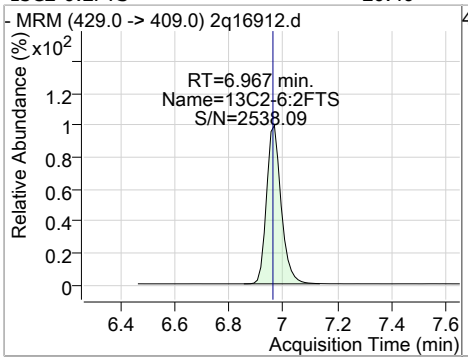


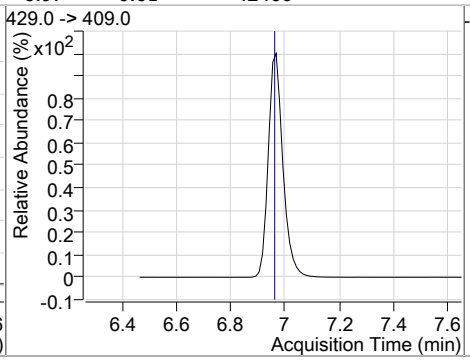


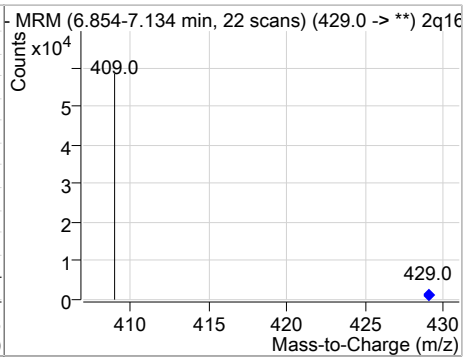


Perfluorinated Compounds by LC/MS/MS

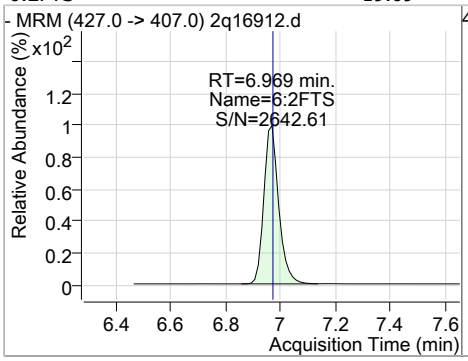
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.46	6.97	0.01	42460				

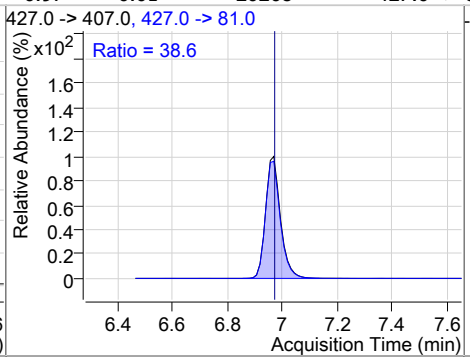


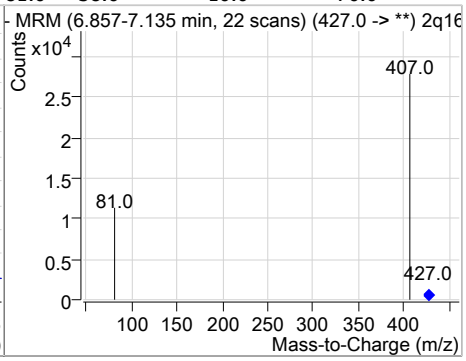




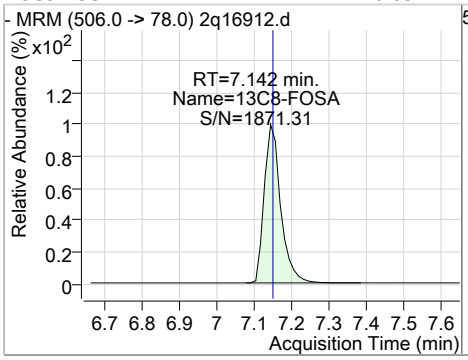
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.69	6.97	0.01	20268	427.0 -> 81.0	38.6	10.0	70.0

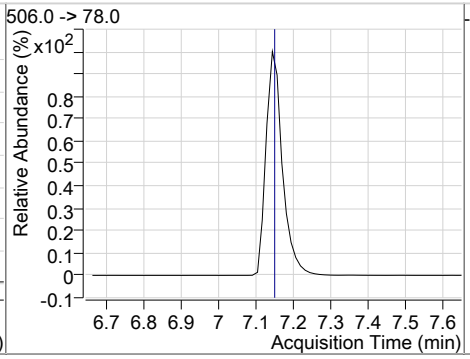


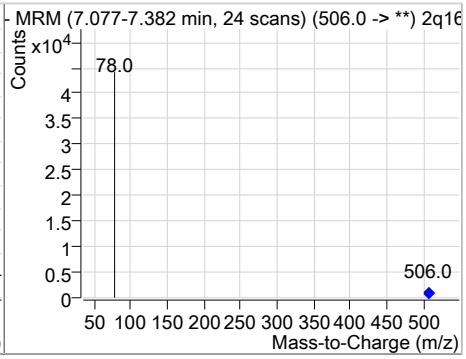




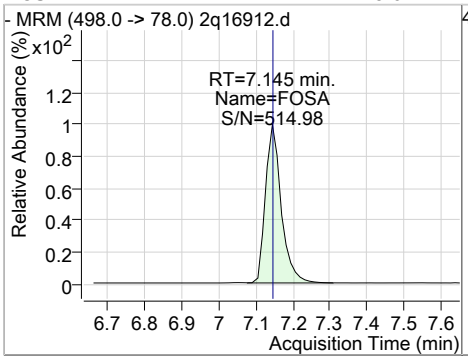
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.83	7.14	0.00	32662				

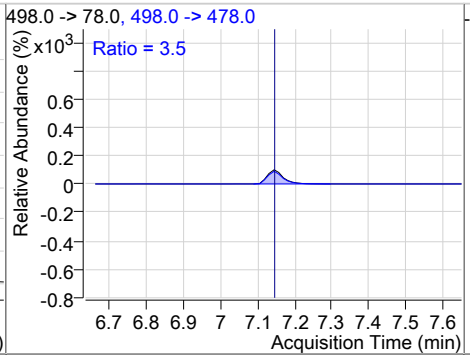


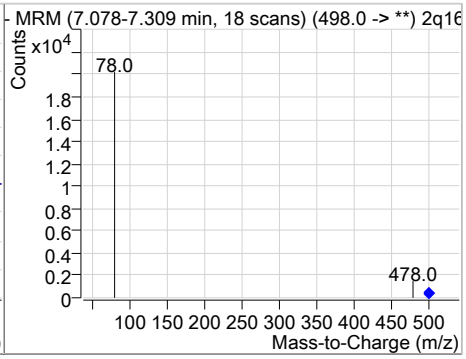




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	18.61	7.15	0.00	14919	498.0 -> 478.0	3.5	0.0	34.0

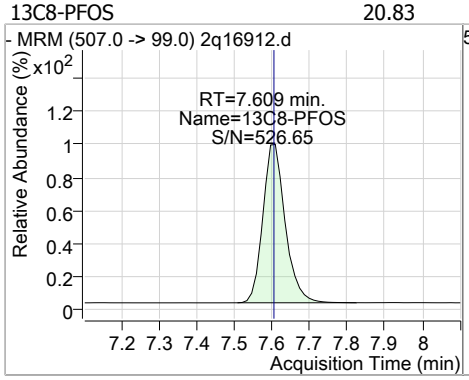


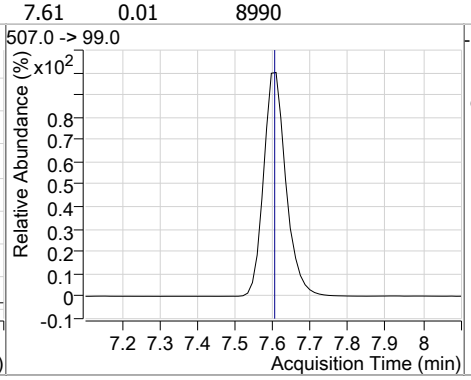


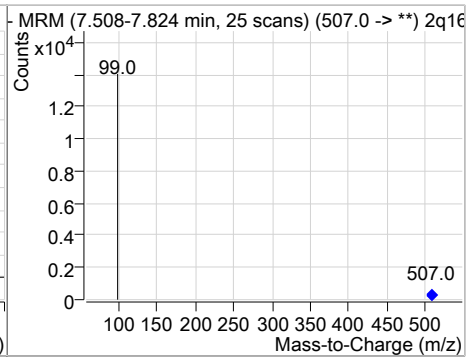


Perfluorinated Compounds by LC/MS/MS

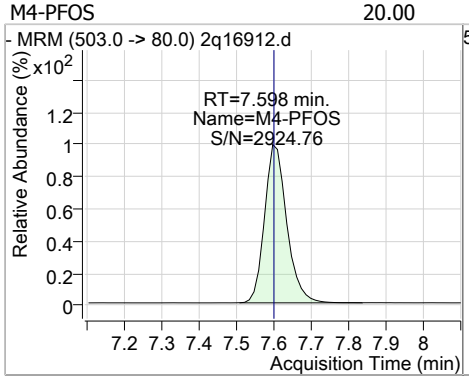
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.83	7.61	0.01	8990				

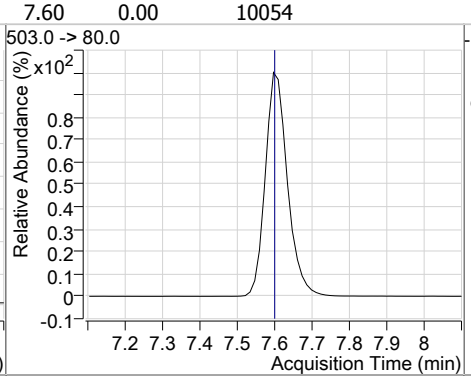


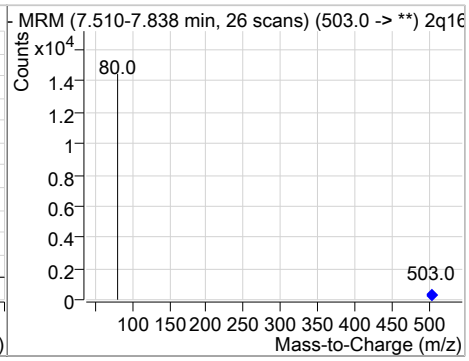




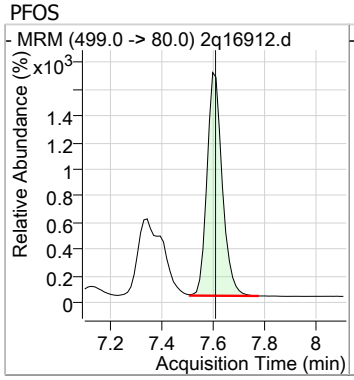
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.00	7.60	0.00	10054				

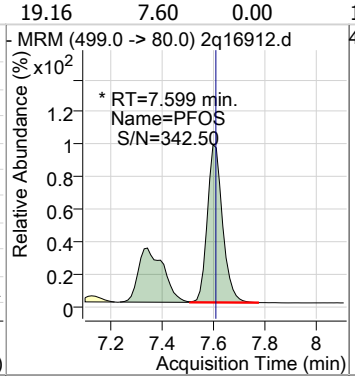


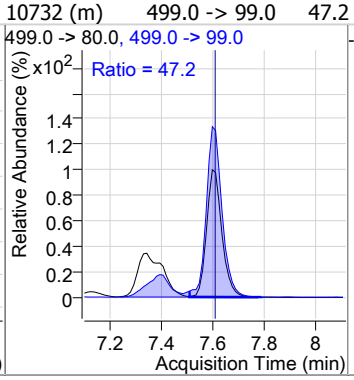


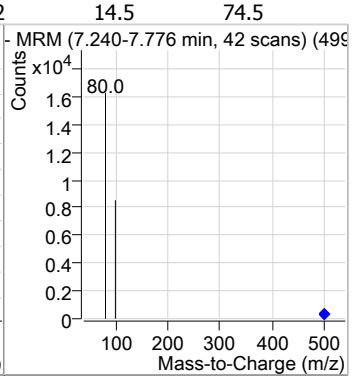


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.16	7.60	0.00	10732 (m)	499.0 -> 99.0	47.2	14.5	74.5

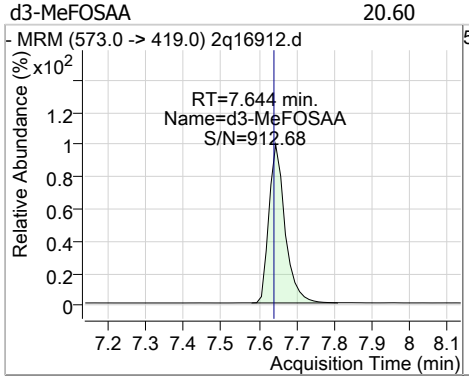


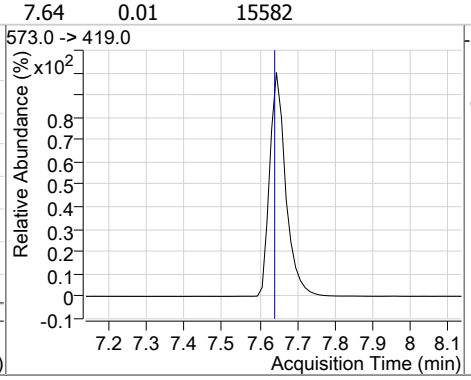


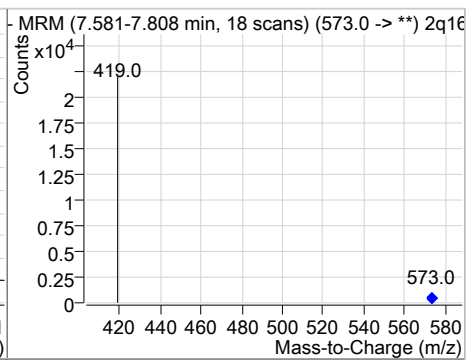




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.60	7.64	0.01	15582				

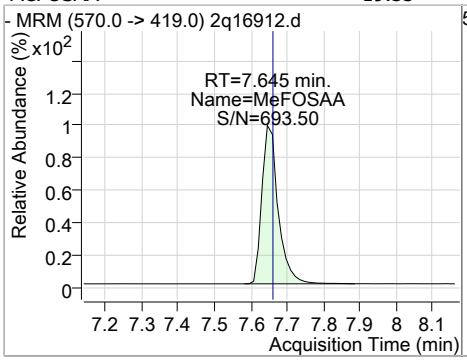


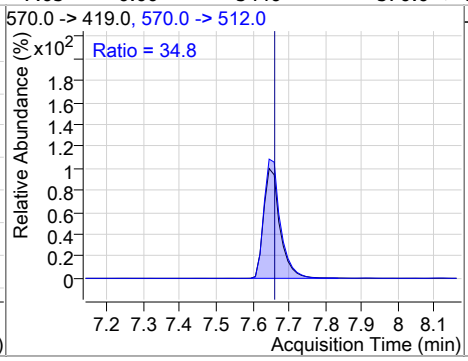


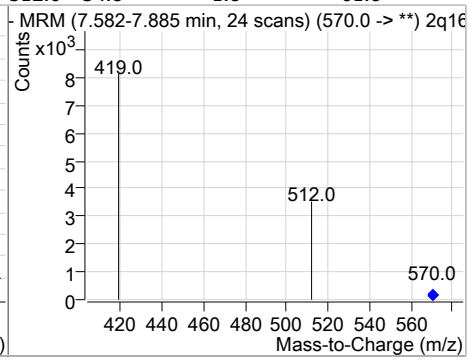


Perfluorinated Compounds by LC/MS/MS

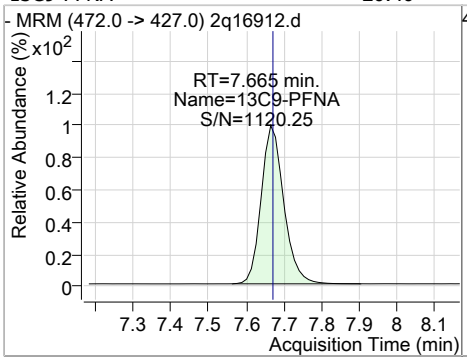
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.55	7.65	0.00	5446	570.0 -> 512.0	34.8	1.8	61.8

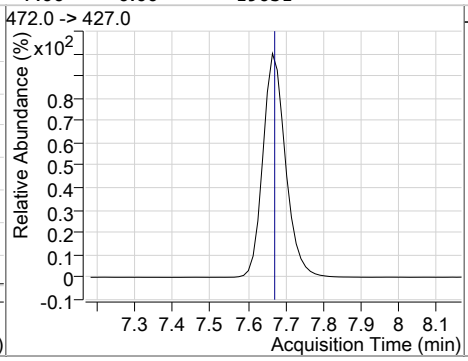


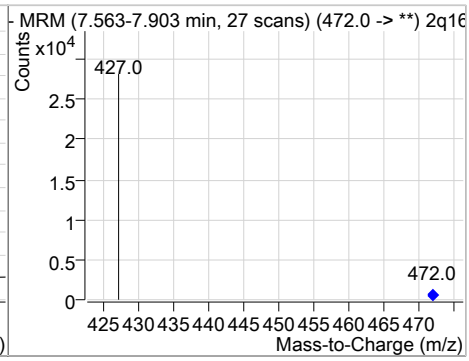




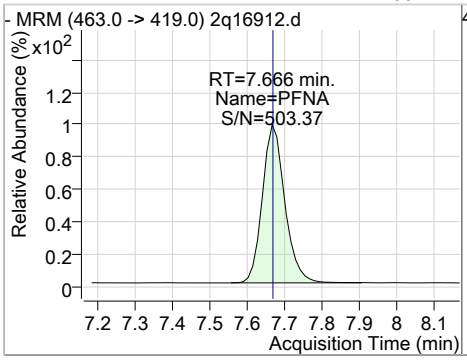
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.40	7.66	0.00	19651				

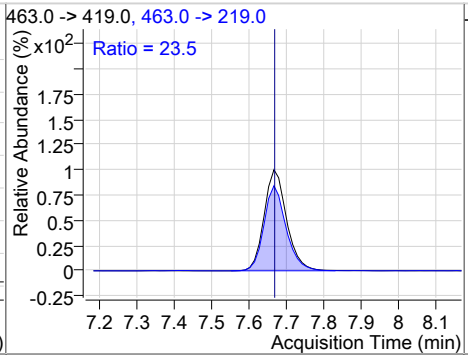


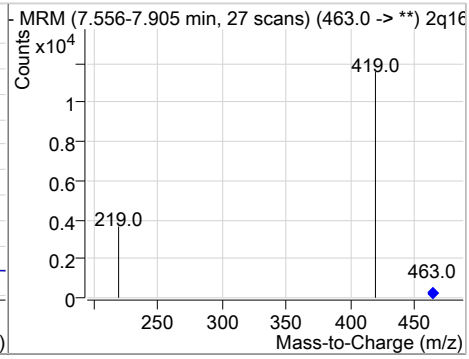




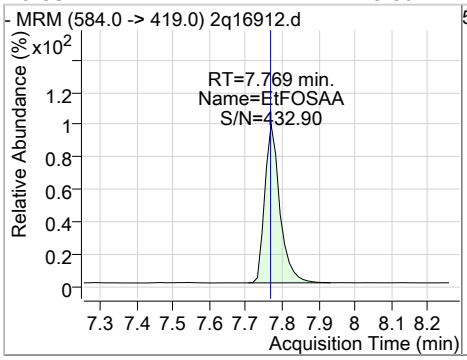
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	21.00	7.67	0.00	7954	463.0 -> 219.0	23.5	0.0	58.4

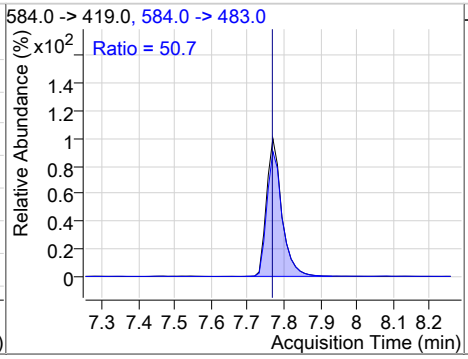


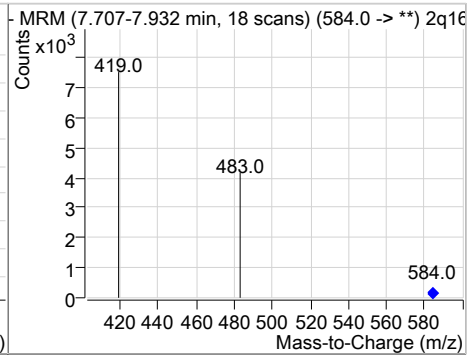




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.36	7.77	0.01	5086	584.0 -> 483.0	50.7	24.8	84.8

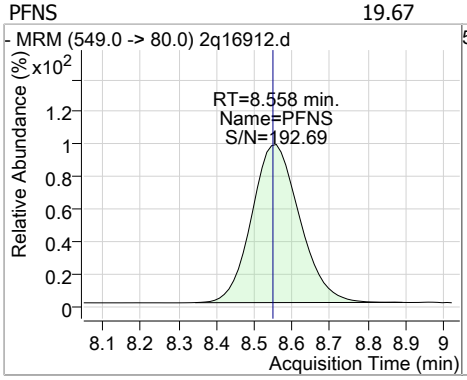


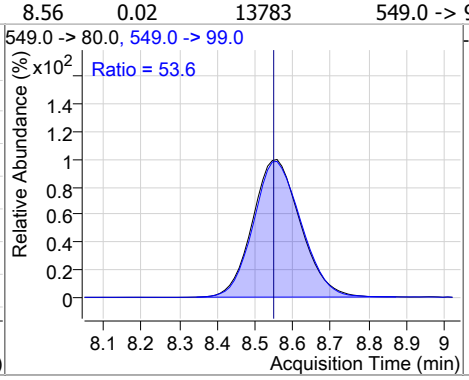


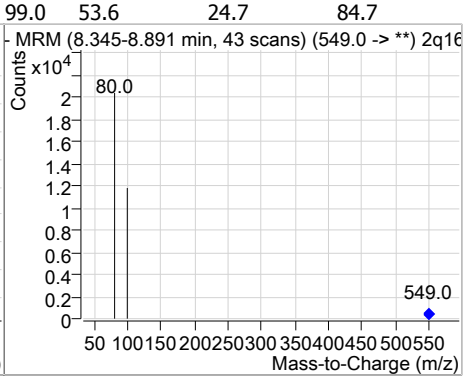


Perfluorinated Compounds by LC/MS/MS

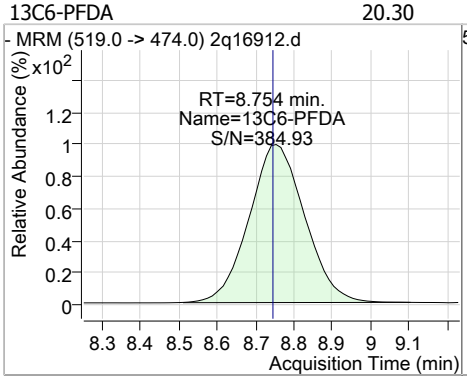
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.67	8.56	0.02	13783	549.0 -> 99.0	53.6	24.7	84.7

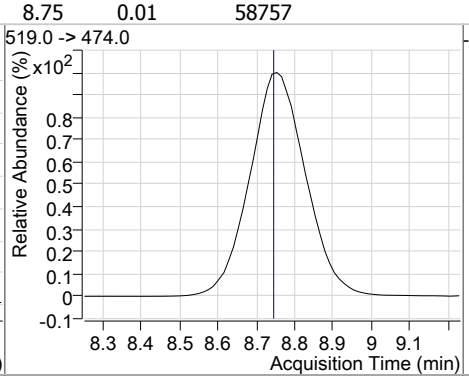


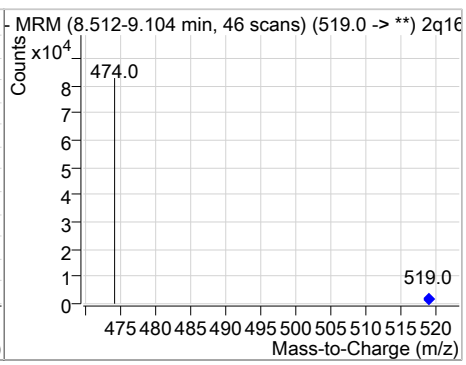




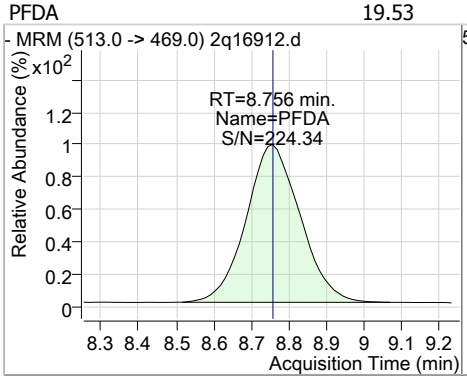
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.30	8.75	0.01	58757				

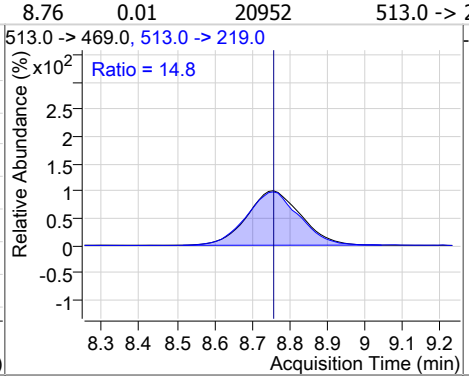


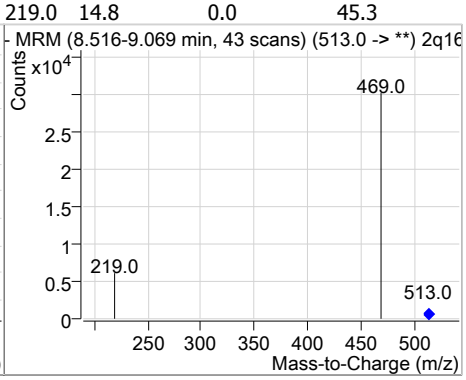




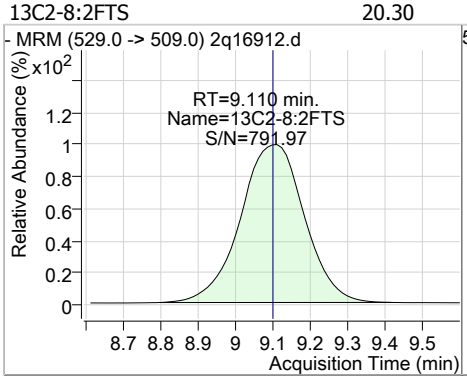
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.53	8.76	0.01	20952	513.0 -> 219.0	14.8	0.0	45.3

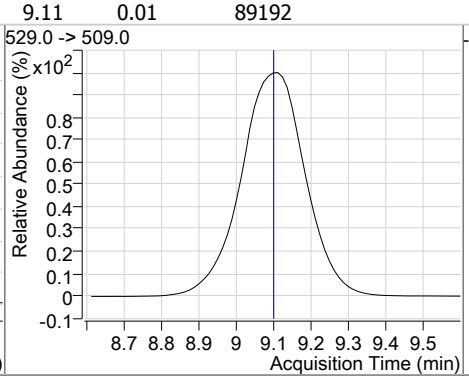


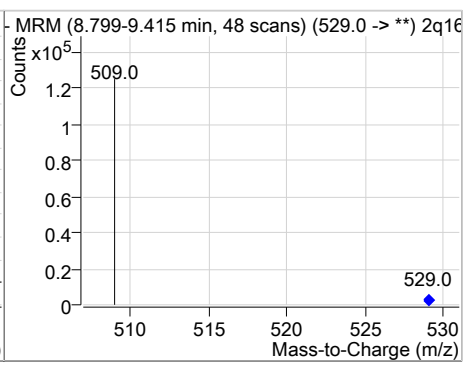




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.30	9.11	0.01	89192				

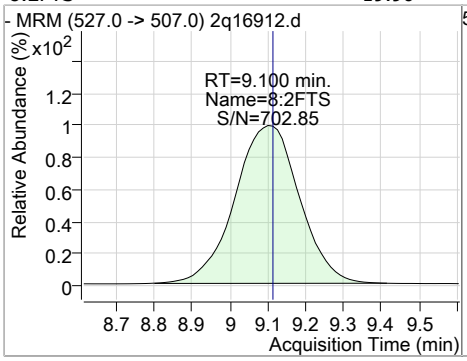


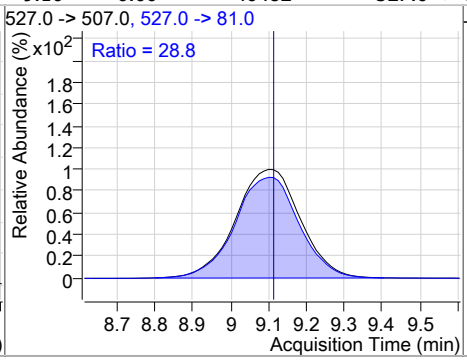


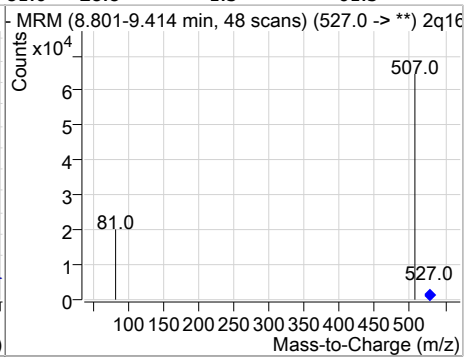


Perfluorinated Compounds by LC/MS/MS

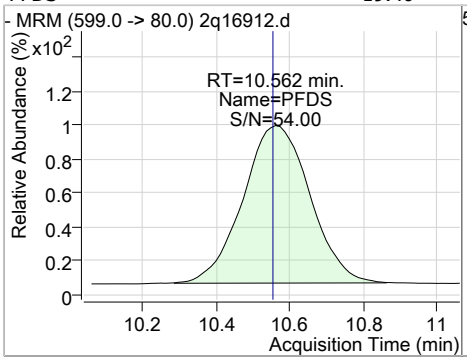
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.96	9.10	0.00	46482	527.0 -> 81.0	28.8	1.3	61.3

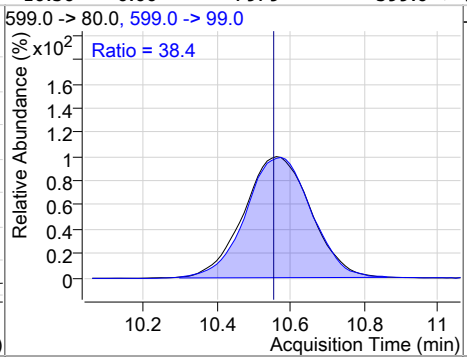


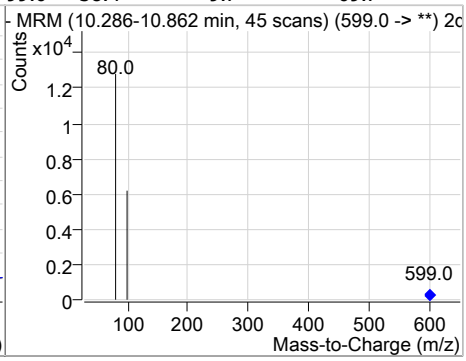




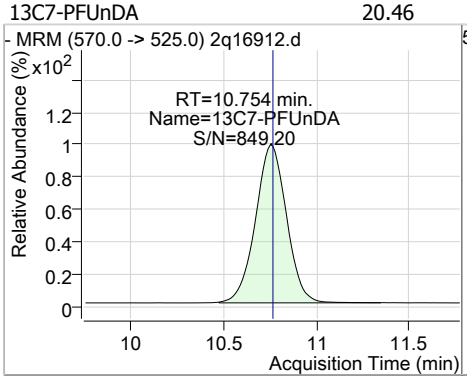
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.40	10.56	0.00	7979	599.0 -> 99.0	38.4	9.7	69.7

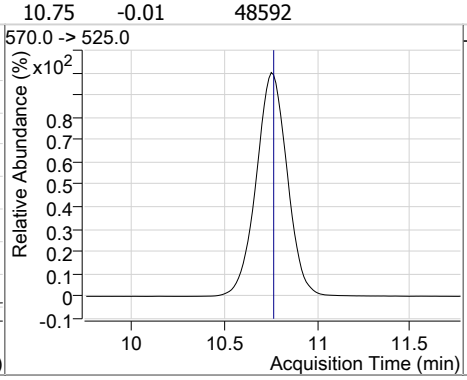


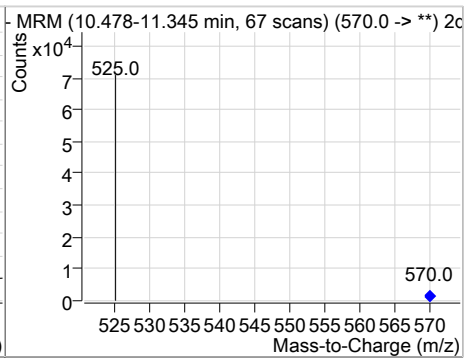




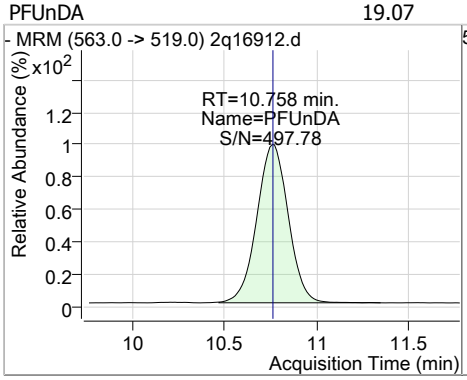
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.46	10.75	-0.01	48592				

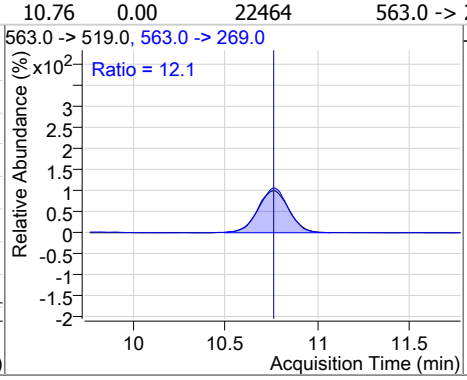


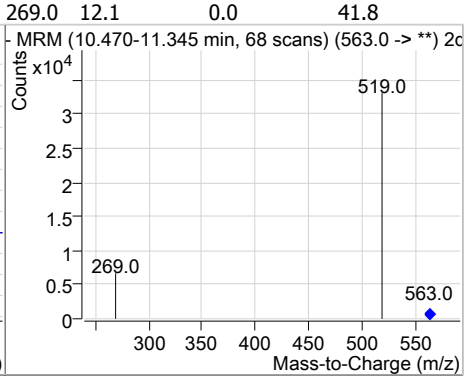




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.07	10.76	0.00	22464	563.0 -> 269.0	12.1	0.0	41.8

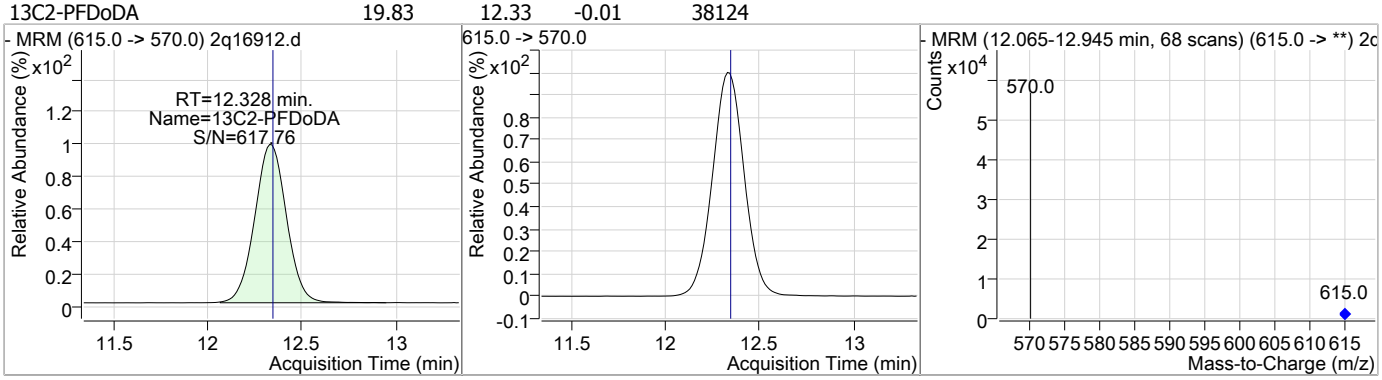




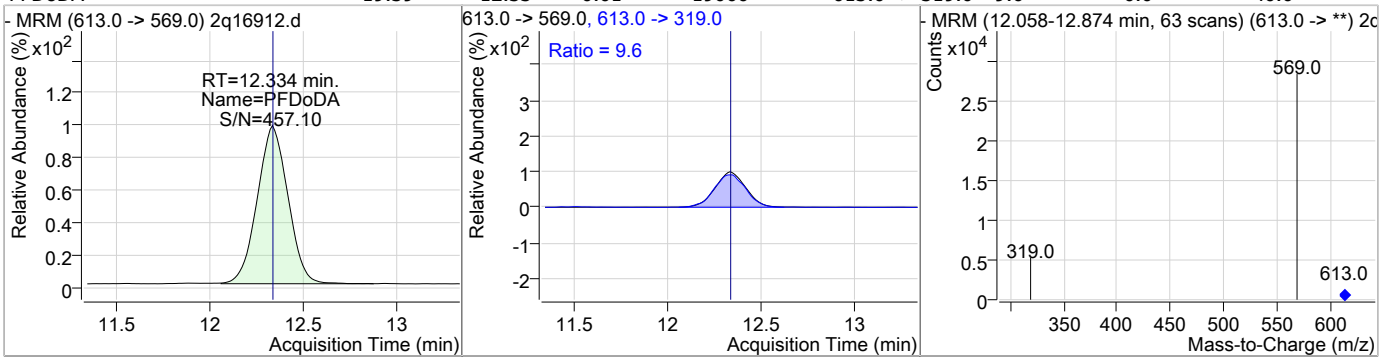


Perfluorinated Compounds by LC/MS/MS

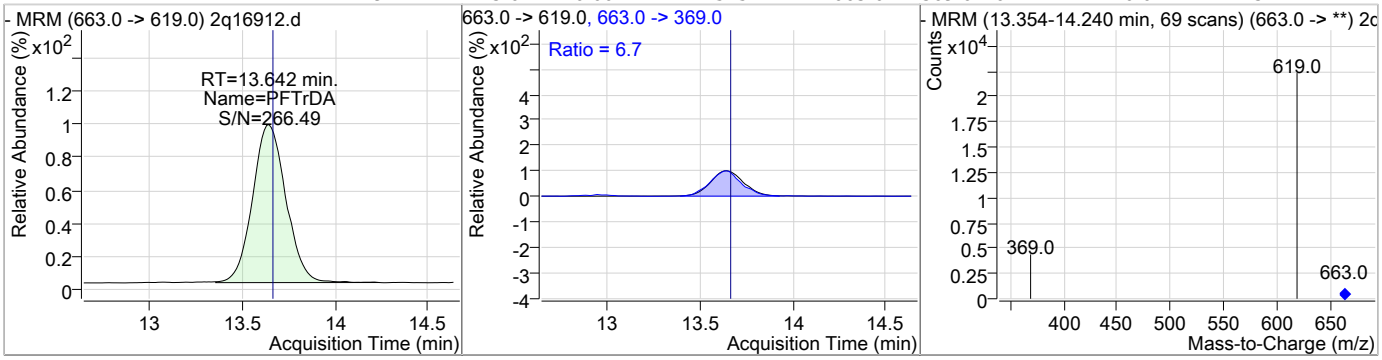
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.83	12.33	-0.01	38124				



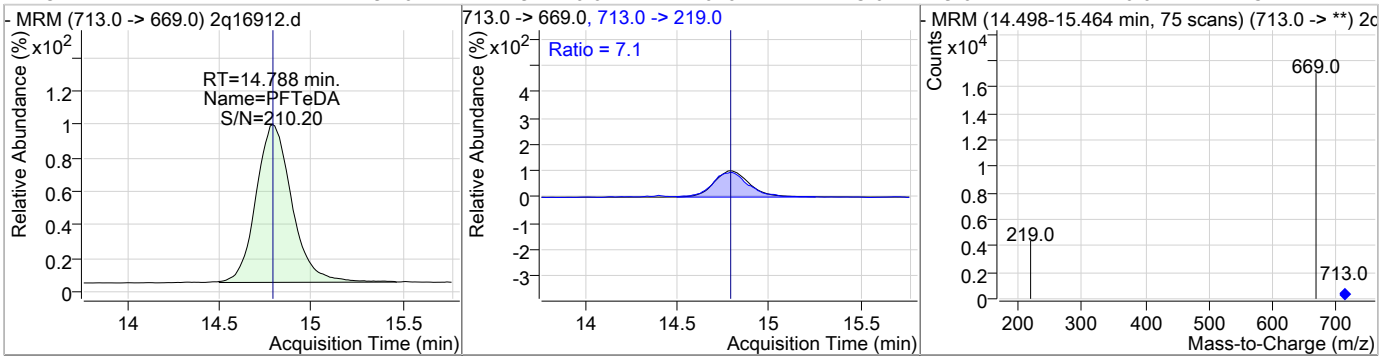
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.39	12.33	-0.01	19066	613.0 -> 319.0	9.6	0.0	40.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	19.12	13.64	0.00	14545	663.0 -> 369.0	6.7	0.0	37.1

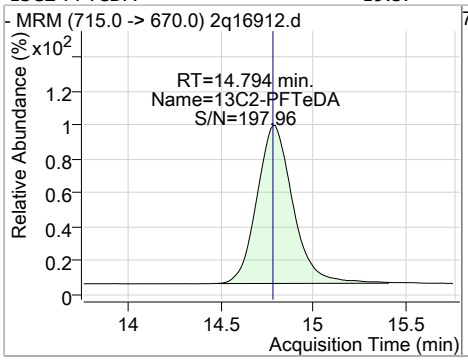


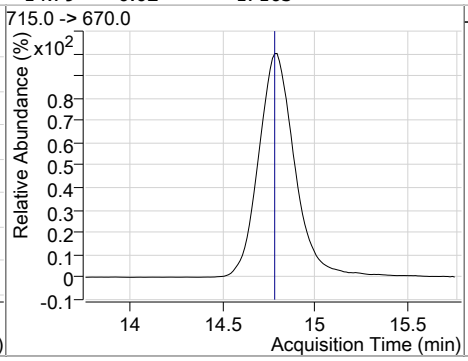
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.40	14.79	0.02	10161	713.0 -> 219.0	7.1	0.0	37.4

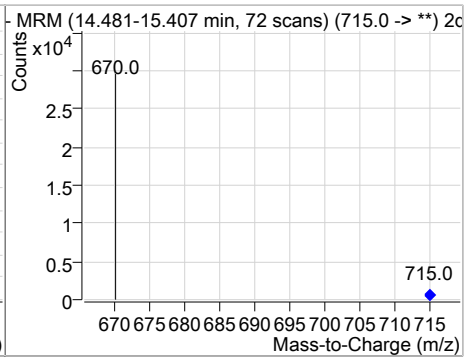


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.57	14.79	0.02	17163				







Manual Integration Approval Summary

Sample Number:	S2Q294-CC294	**Method:**	EPA 537M BY ID
Lab FileID:	2Q16912.D	**Analyst approved:**	07/11/18 14:37 Natasha Gumtie
Injection Time:	07/11/18 00:28	**Supervisor approved:**	07/11/18 16:54 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.60	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/11/18 16:54

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16957.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/11/2018 4:01:47 PM
Sample Name : cc294-20
Vial : Vial 7
DA Method File : PFC_ID_071018_S2Q294.quantmethod.xml
Batch Name : s2q294.batch.bin
Sample Information : op70790,S2Q294,1.99,,,1.0,1,soil

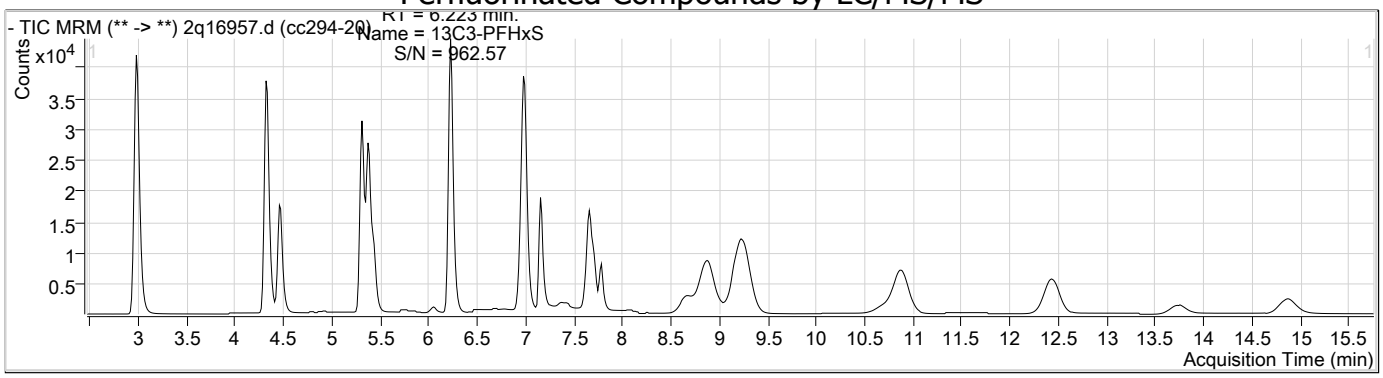
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.971	415.0 -> 370.0	19720	20.00	µg/L	0.025
13C4-PFOS	7.636	503.0 -> 80.0	10738	20.00	µg/L	0.033
M4-PFBA	2.978	217.0 -> 172.0	143642	20.00	µg/L	0.012
M5-PFPeA	4.325	268.0 -> 223.0	71434	20.00	µg/L	0.013
M5-PFHxA	5.378	318.0 -> 273.0	64918	20.00	µg/L	0.017
M4-PFHpA	6.229	367.0 -> 322.0	62709	20.00	µg/L	0.020
M8-PFOA	6.970	421.0 -> 376.0	32409	20.00	µg/L	0.024
M9-PFNA	7.715	472.0 -> 427.0	21553	20.00	µg/L	0.048
M6-PFDA	8.879	519.0 -> 474.0	65223	20.00	µg/L	0.137
M7-PFUnDA	10.879	570.0 -> 525.0	52708	20.00	µg/L	0.118
M2-PFDoDA	12.428	615.0 -> 570.0	42134	20.00	µg/L	0.089
M2-PFTeDA	14.869	715.0 -> 670.0	19592	20.00	µg/L	0.094
M8-FOSA	7.155	506.0 -> 78.0	35636	20.00	µg/L	0.010
M3-PFBS	4.468	302.0 -> 99.0	22191	20.00	µg/L	0.031
M3-PFHxS	6.223	402.0 -> 99.0	18520	20.00	µg/L	0.027
M8-PFOS	7.634	507.0 -> 99.0	9557	20.00	µg/L	0.032
M2-4:2FTS	5.310	329.0 -> 309.0	60581	20.00	µg/L	0.027
M2-6:2FTS	6.992	429.0 -> 409.0	47812	20.00	µg/L	0.035
M2-8:2FTS	9.235	529.0 -> 509.0	89649	20.00	µg/L	0.140
M3-MeFOSAA	7.658	573.0 -> 419.0	17227	20.00	µg/L	0.021
System Monitoring Compounds						
13C2-4:2FTS	5.310	329.0 -> 309.0	60570	22.60	µg/L	0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.0%		
13C2-6:2FTS	6.992	429.0 -> 409.0	47817	23.04	µg/L	0.035
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.2%		
13C2-8:2FTS	9.235	529.0 -> 509.0	88186	20.07	µg/L	0.140
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.4%		
13C2-PFDoDA	12.428	615.0 -> 570.0	42164	21.93	µg/L	0.089
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.6%		
13C2-PFTeDA	14.869	715.0 -> 670.0	19510	22.24	µg/L	0.094
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.2%		
13C3-PFBS	4.468	302.0 -> 99.0	22186	22.30	µg/L	0.031
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.5%		
13C3-PFHxS	6.223	402.0 -> 99.0	18536	22.34	µg/L	0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.7%		
13C4-PFBA	2.978	217.0 -> 172.0	143558	22.41	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.0%		
13C4-PFHpA	6.229	367.0 -> 322.0	62703	23.06	µg/L	0.020
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.3%		
13C5-PFHxA	5.378	318.0 -> 273.0	64920	22.89	µg/L	0.017
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.5%		
13C5-PFPeA	4.325	268.0 -> 223.0	71429	22.83	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.2%		
13C6-PFDA	8.879	519.0 -> 474.0	64304	22.22	µg/L	0.137
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.1%		

Perfluorinated Compounds by LC/MS/MS

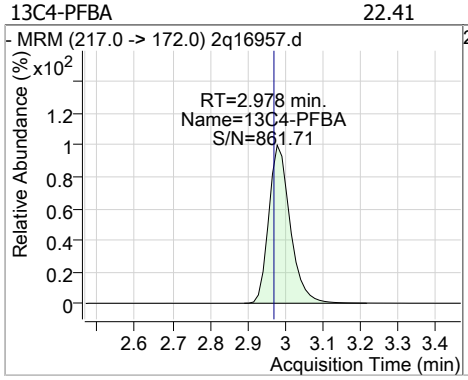
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.879	570.0 -> 525.0	52751	22.21	µg/L		0.118
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.0%			
13C8-FOSA	7.155	506.0 -> 78.0	35681	22.76	µg/L		0.010
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.8%			
13C8-PFOA	6.970	421.0 -> 376.0	32395	23.30	µg/L		0.024
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.5%			
13C8-PFOS	7.634	507.0 -> 99.0	9560	22.15	µg/L		0.032
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.8%			
13C9-PFNA	7.715	472.0 -> 427.0	21560	22.39	µg/L		0.048
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.9%			
d3-MeFOSAA	7.658	573.0 -> 419.0	17244	22.79	µg/L		0.021
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.0%			
M2-PFOA	6.971	415.0 -> 370.0	19720	20.00	ng/ml		0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.636	503.0 -> 80.0	10730	19.99	ng/ml		0.033
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%			
Target Compounds							**QValue**
4:2FTS	5.313	327.0 -> 307.0	30250	19.93	µg/L		100
6:2FTS	6.994	427.0 -> 407.0	22672	19.55	µg/L		97
8:2FTS	9.241	527.0 -> 507.0	46087	19.83	µg/L		95
EtFOSAA	7.781	584.0 -> 419.0	5246	18.06	µg/L		98
FOSA	7.158	498.0 -> 78.0	16724	19.10	µg/L		99
MeFOSAA	7.659	570.0 -> 419.0	6172	20.04	µg/L		94
PFBA	2.987	213.0 -> 169.0	21809	19.45	µg/L		100
PFBS	4.459	299.0 -> 80.0	28652	18.93	µg/L		100
PFDA	8.894	513.0 -> 469.0	23086	19.48	µg/L		99
PFDoDA	12.434	613.0 -> 569.0	21365	19.68	µg/L		98
PFDS	10.687	599.0 -> 80.0	8634	19.36	µg/L		99
PFHpA	6.232	363.0 -> 319.0	43727	19.05	µg/L		99
PFHpS	6.941	449.0 -> 80.0	10453	18.44	µg/L		99
PFHxA	5.381	313.0 -> 269.0	21140	19.20	µg/L		97
PFHxS	6.226	399.0 -> 80.0	20838	18.83	µg/L	m	99
PFNA	7.704	463.0 -> 419.0	8113	19.53	µg/L		96
PFNS	8.658	549.0 -> 80.0	15727	21.14	µg/L		100
PFOA	6.972	413.0 -> 369.0	17578	19.77	µg/L		95
PFOS	7.636	499.0 -> 80.0	11054	18.59	µg/L	m	96
PFPeA	4.329	263.0 -> 219.0	64431	18.88	µg/L		100
PFPeS	5.433	349.0 -> 80.0	18658	19.18	µg/L		99
PFTeDA	14.875	713.0 -> 669.0	11622	19.54	µg/L		99
PFTrDA	13.730	663.0 -> 619.0	16664	19.30	µg/L		98
PFUnDA	10.871	563.0 -> 519.0	24485	19.17	µg/L		99

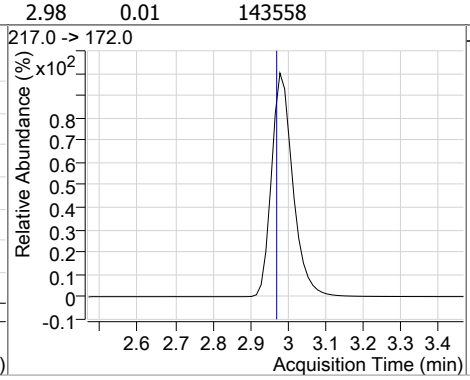
 # = Qualifier out of range, m = manually integrated, + = Area summed

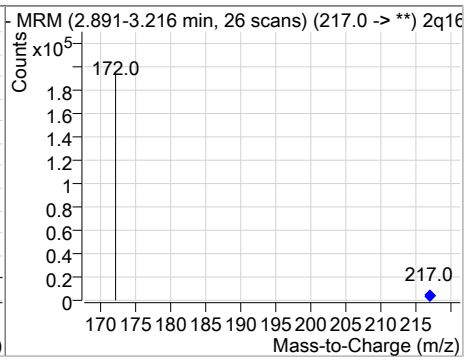
Perfluorinated Compounds by LC/MS/MS



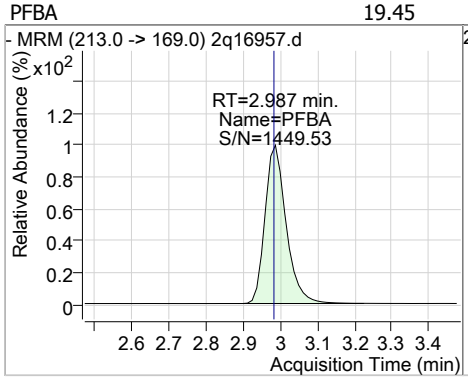
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	22.41	2.98	0.01	143558				

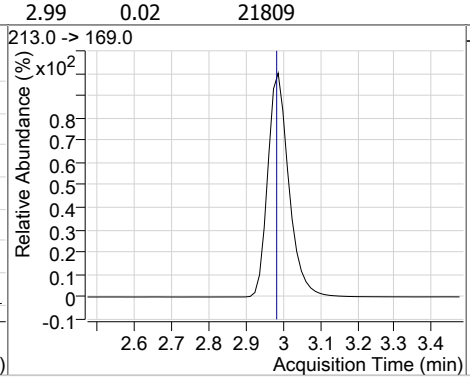


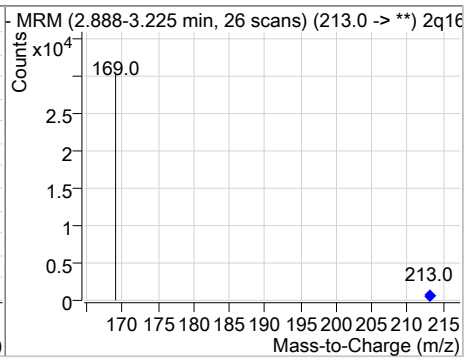




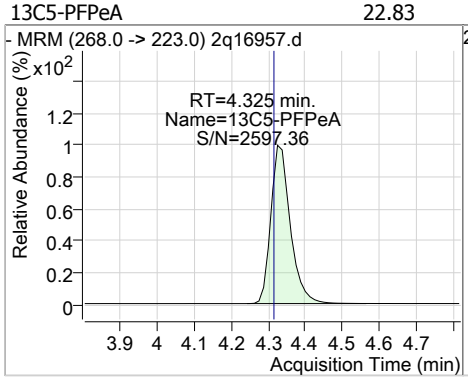
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.45	2.99	0.02	21809				

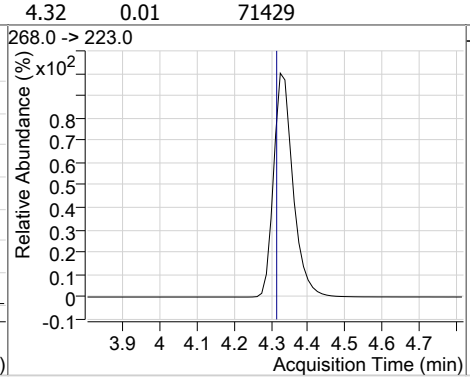


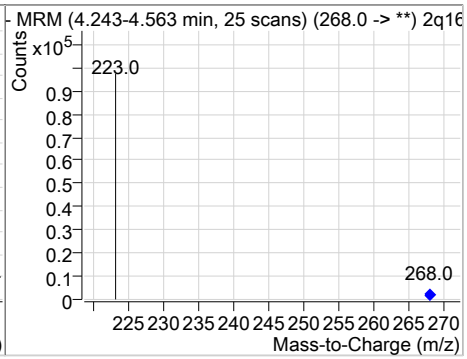




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	22.83	4.32	0.01	71429				

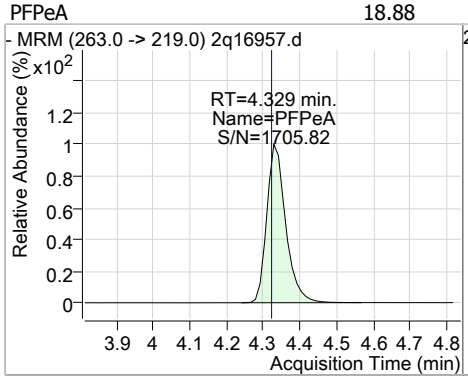


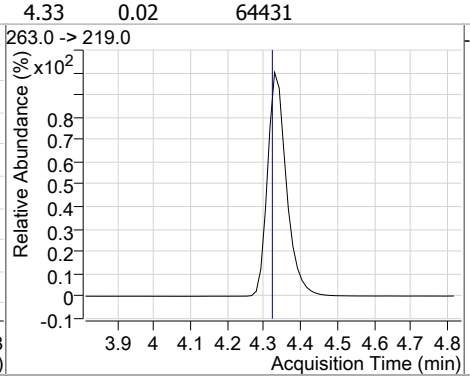


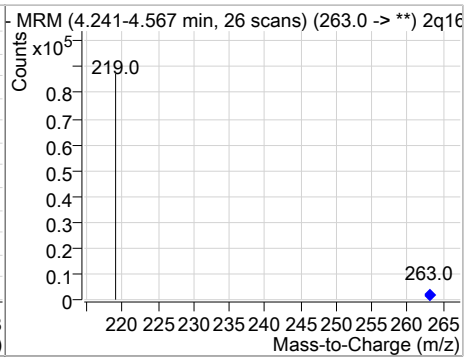


Perfluorinated Compounds by LC/MS/MS

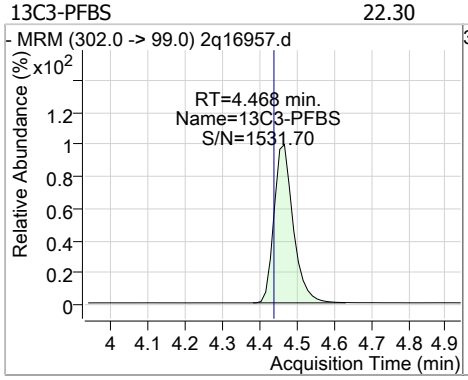
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	18.88	4.33	0.02	64431				

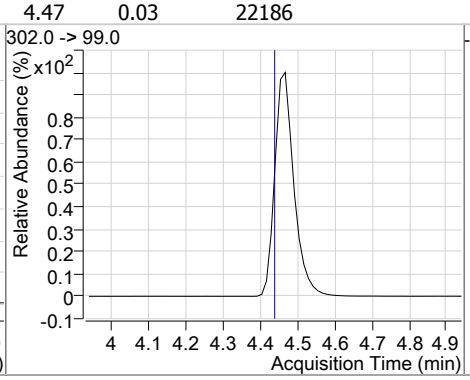


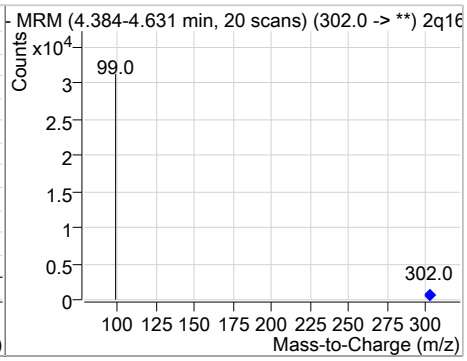




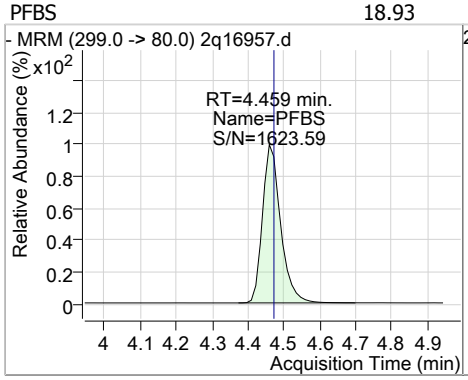
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	22.30	4.47	0.03	22186				

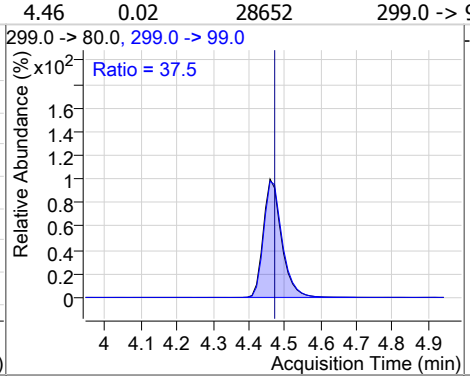


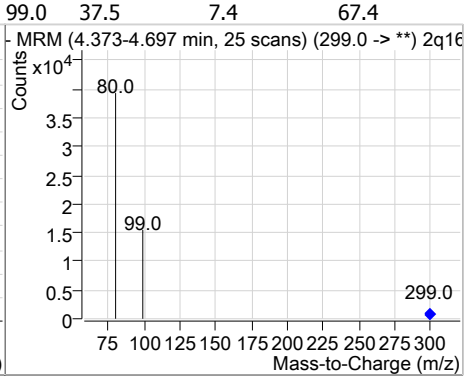




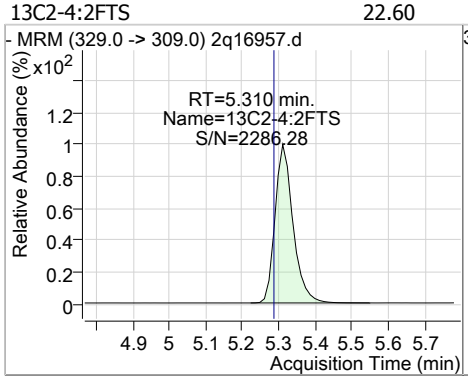
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	18.93	4.46	0.02	28652	299.0 -> 99.0	37.5	7.4	67.4

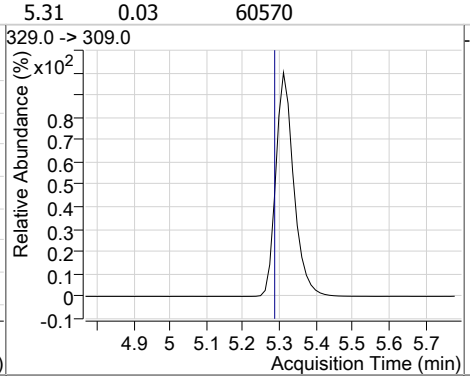


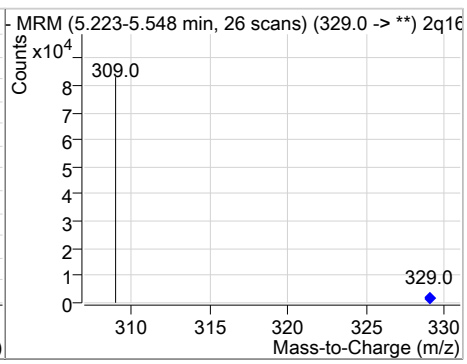




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	22.60	5.31	0.03	60570				

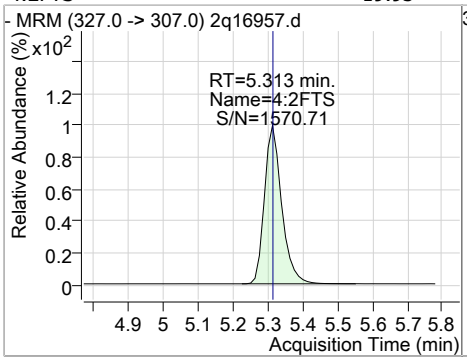


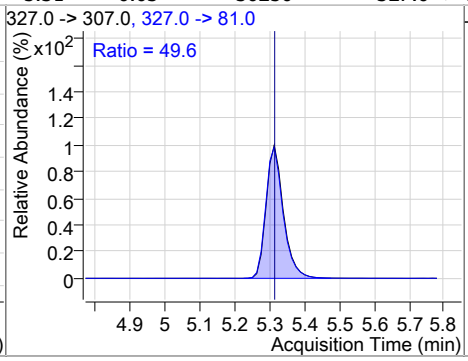


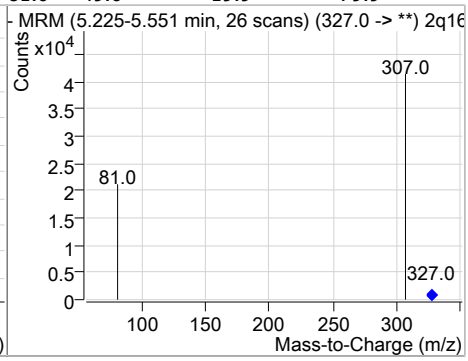


Perfluorinated Compounds by LC/MS/MS

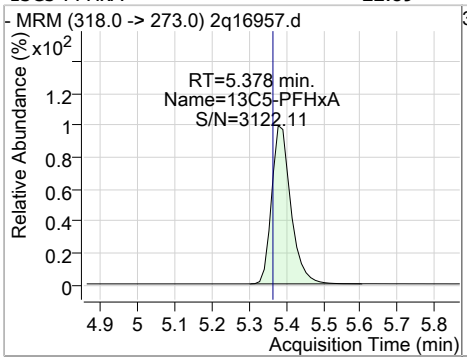
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.93	5.31	0.03	30250	327.0 -> 81.0	49.6	19.9	79.9

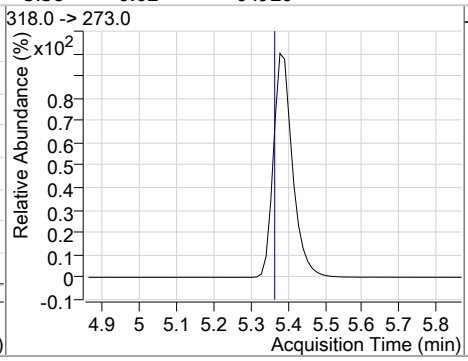


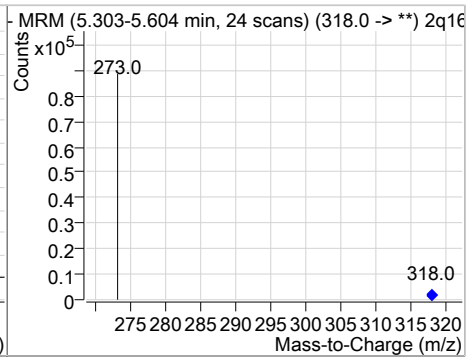




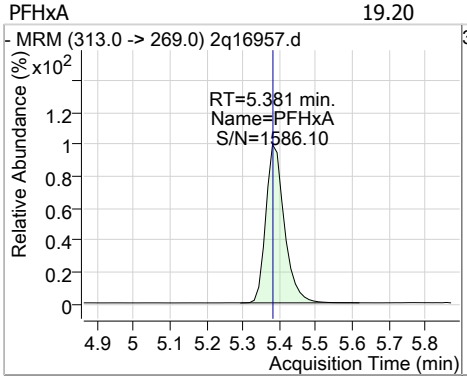
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	22.89	5.38	0.02	64920				

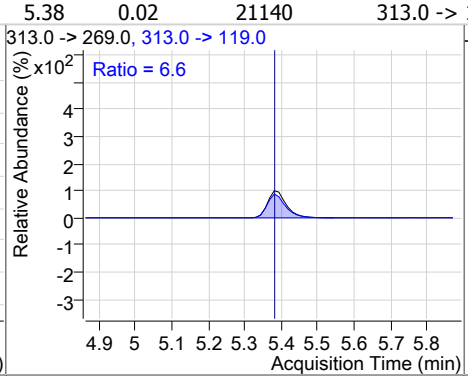


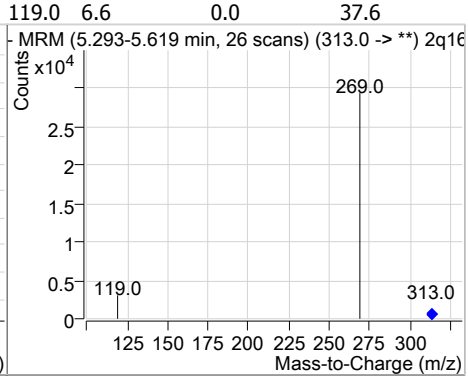




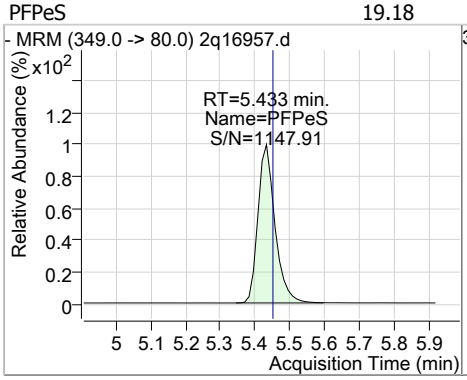
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.20	5.38	0.02	21140	313.0 -> 119.0	6.6	0.0	37.6

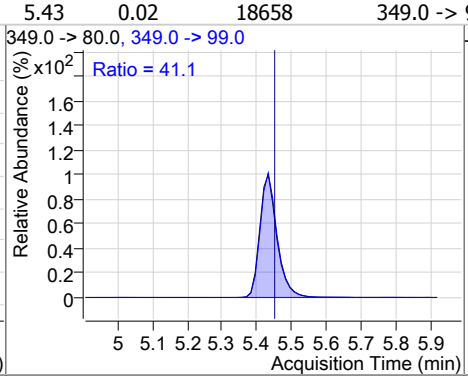


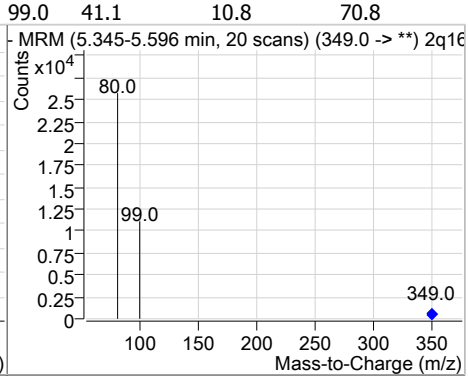




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.18	5.43	0.02	18658	349.0 -> 99.0	41.1	10.8	70.8

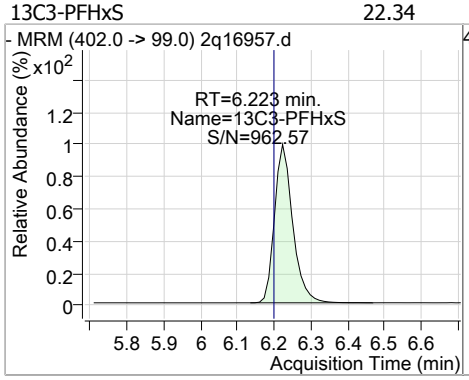


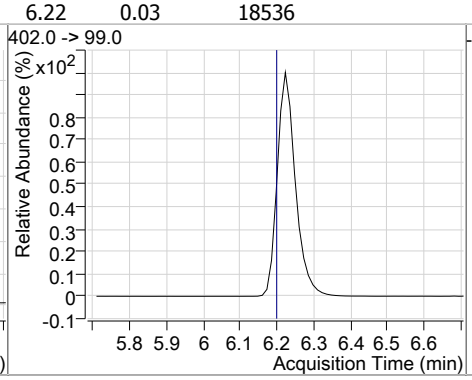


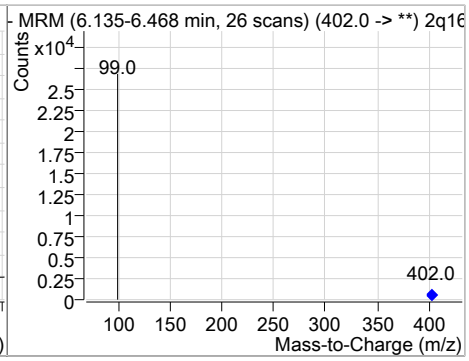


Perfluorinated Compounds by LC/MS/MS

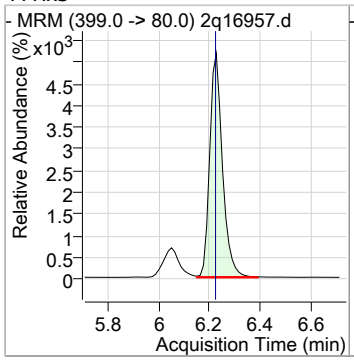
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	22.34	6.22	0.03	18536				

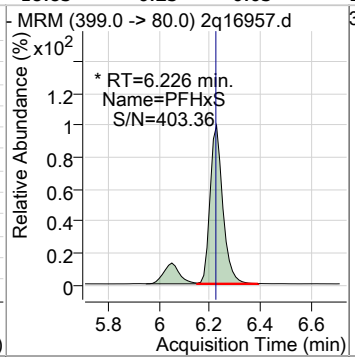


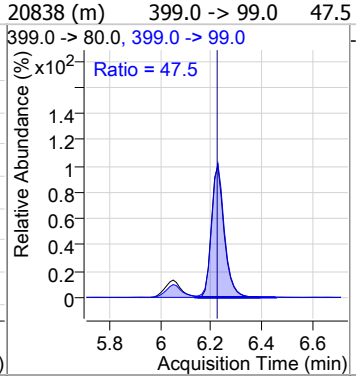


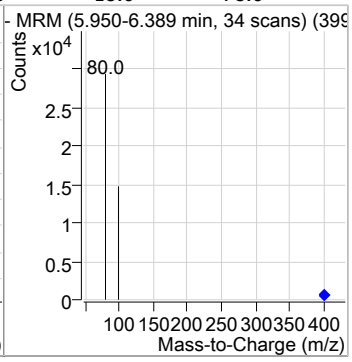


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	18.83	6.23	0.03	20838 (m)	399.0 -> 99.0	47.5	18.0	78.0

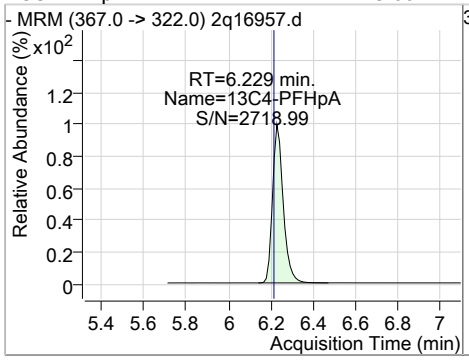


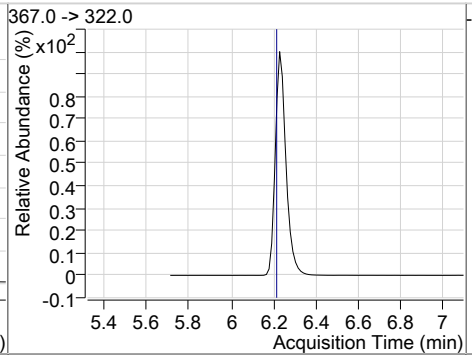


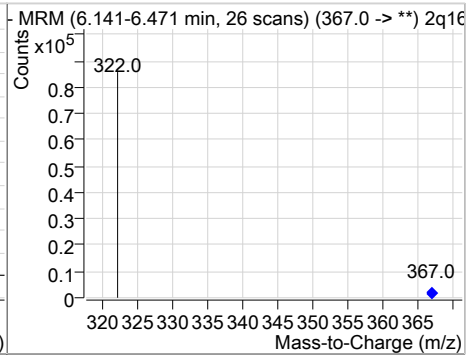




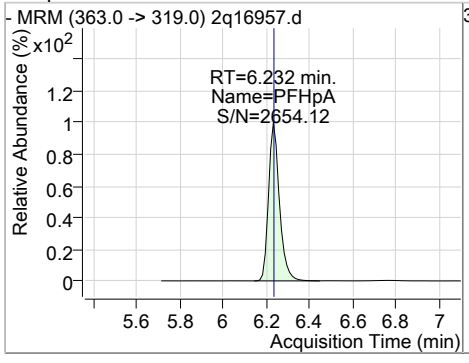
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	23.06	6.23	0.02	62703				

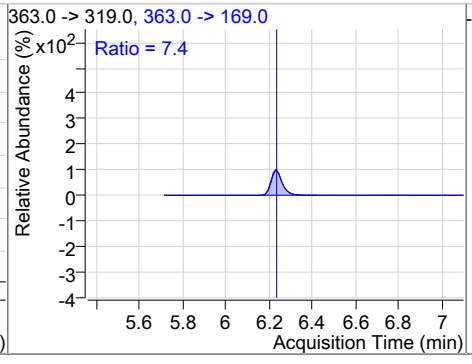


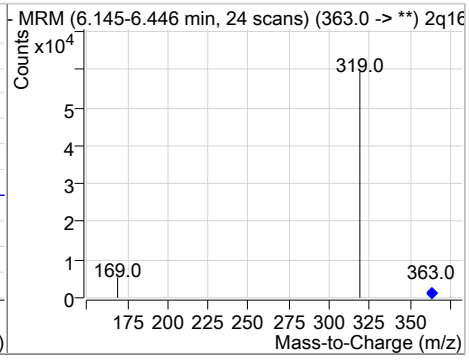




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.05	6.23	0.02	43727	363.0 -> 169.0	7.4	0.0	37.2

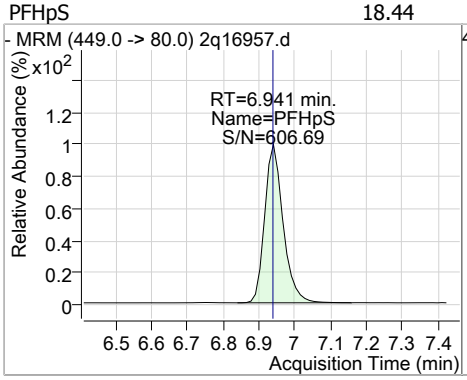


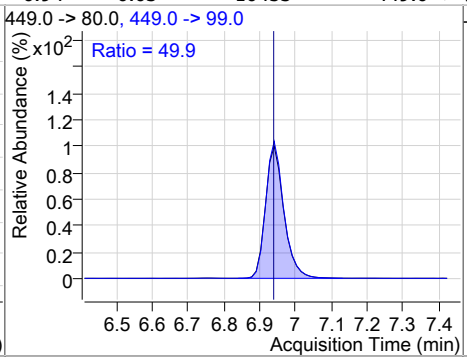


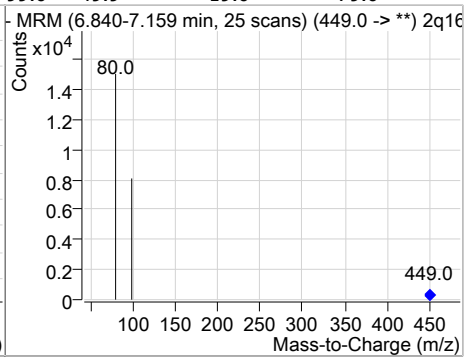


Perfluorinated Compounds by LC/MS/MS

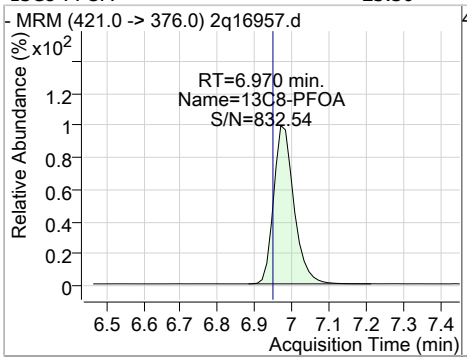
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	18.44	6.94	0.03	10453	449.0 -> 99.0	49.9	19.0	79.0

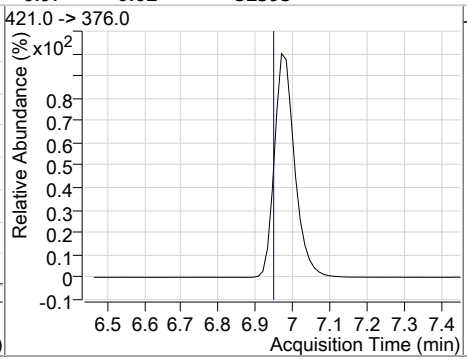


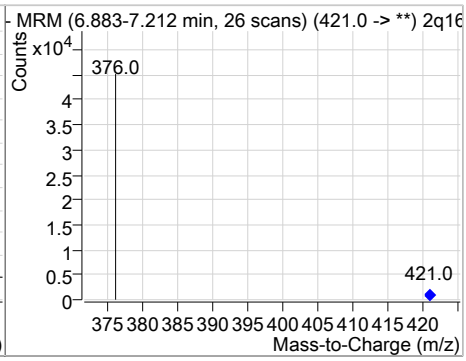




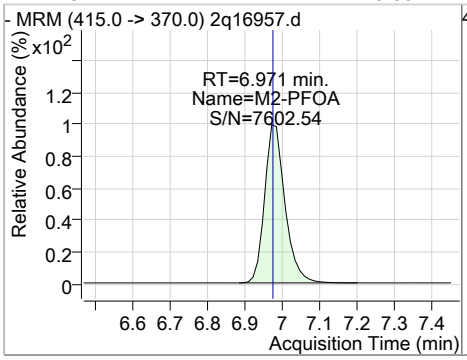
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	23.30	6.97	0.02	32395				

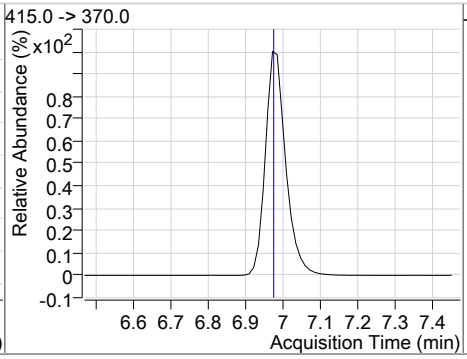


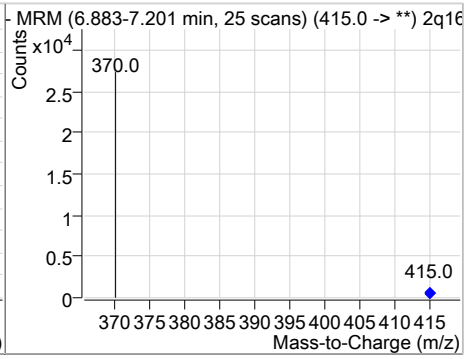




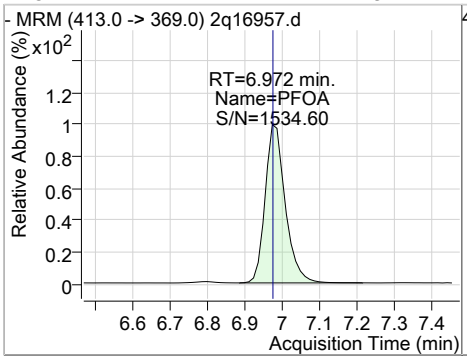
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.97	0.03	19720				

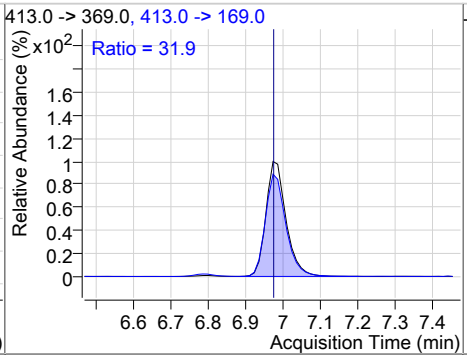


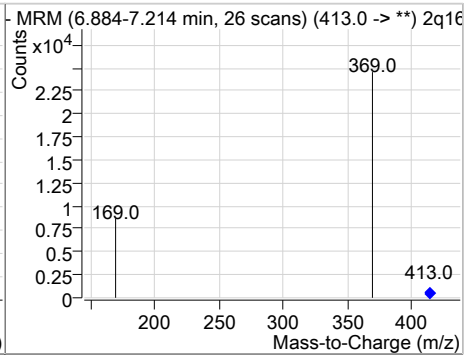




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.77	6.97	0.03	17578	413.0 -> 169.0	31.9	5.0	65.0

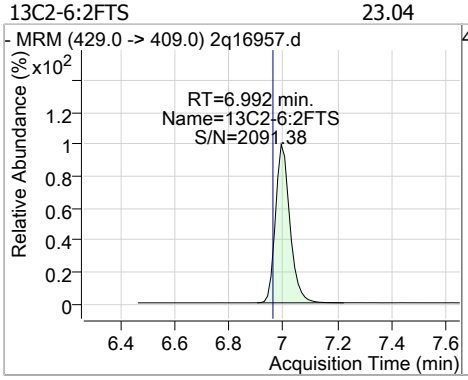


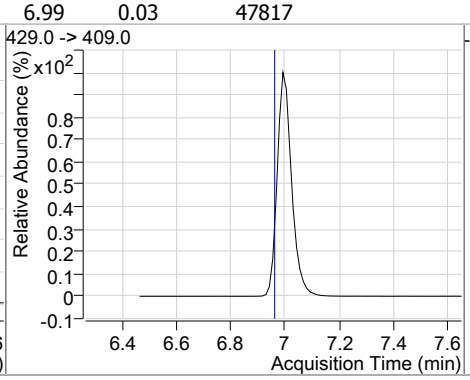


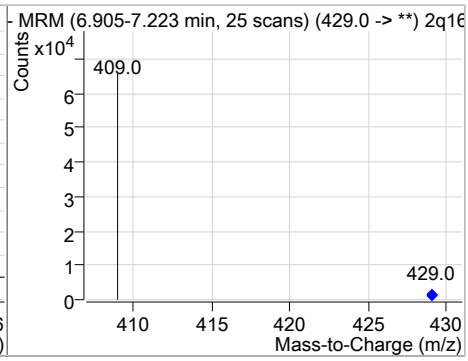


Perfluorinated Compounds by LC/MS/MS

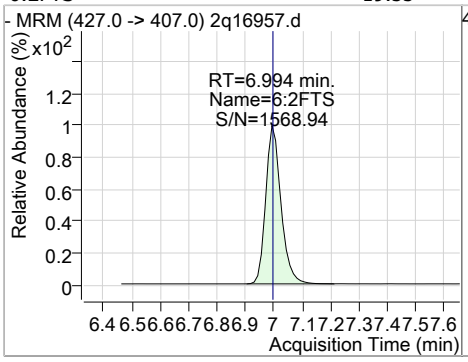
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	23.04	6.99	0.03	47817				

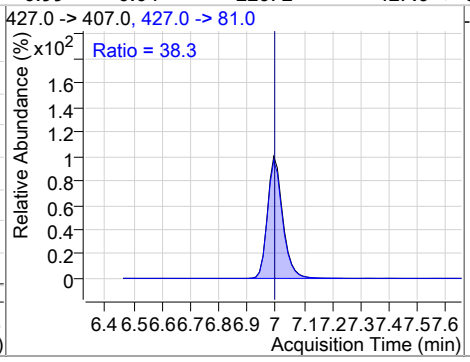


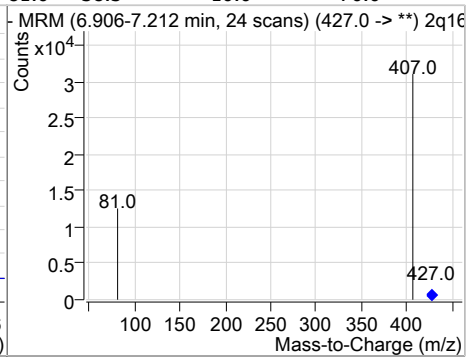




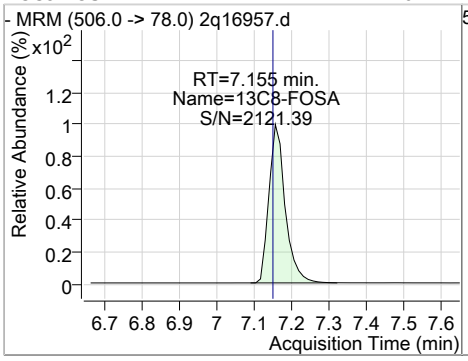
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.55	6.99	0.04	22672	427.0 -> 81.0	38.3	10.0	70.0

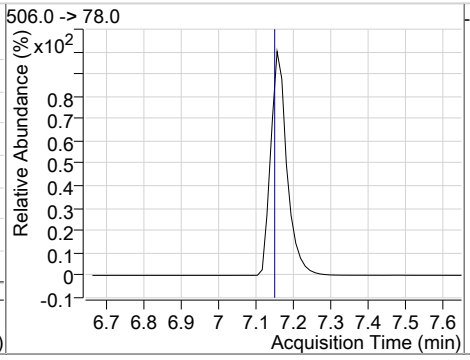


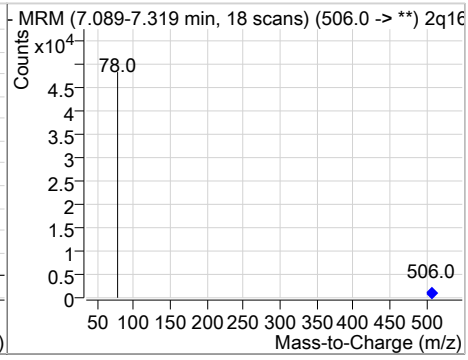




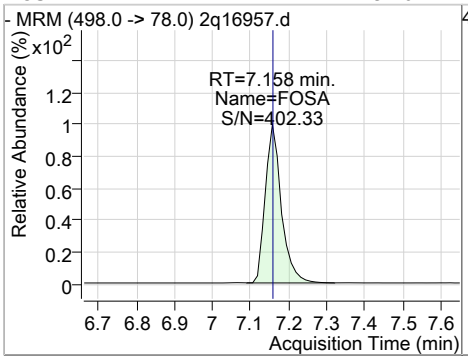
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	22.76	7.15	0.01	35681				

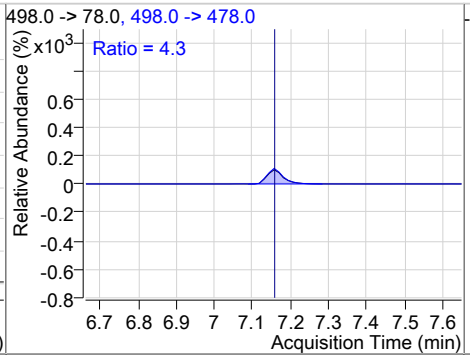


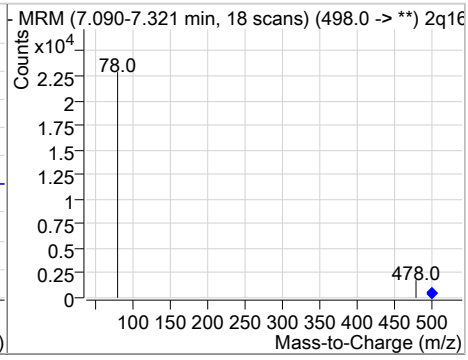




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.10	7.16	0.01	16724	498.0 -> 478.0	4.3	0.0	34.0

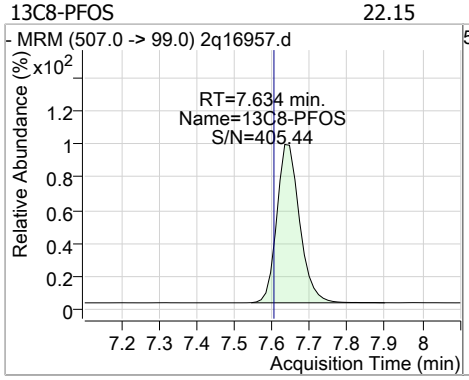


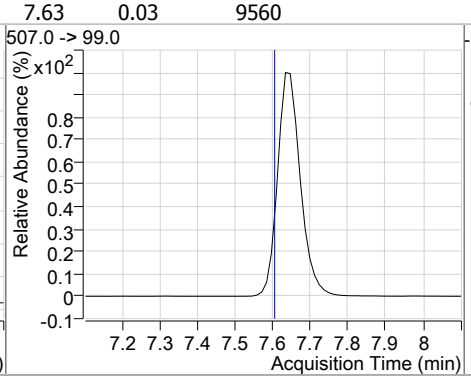


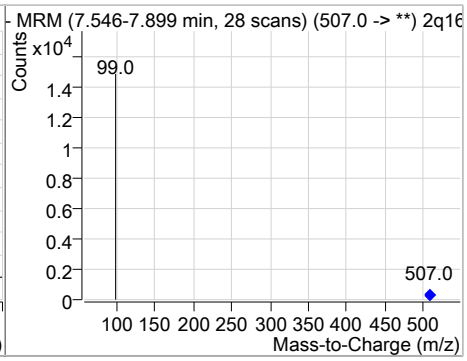


Perfluorinated Compounds by LC/MS/MS

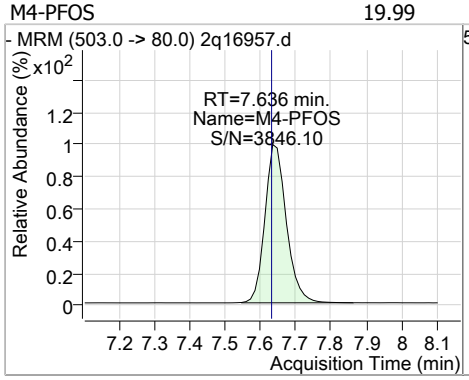
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	22.15	7.63	0.03	9560				

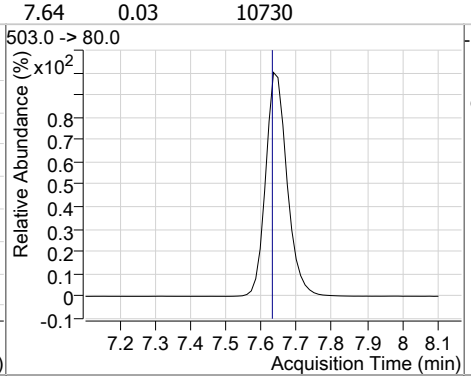


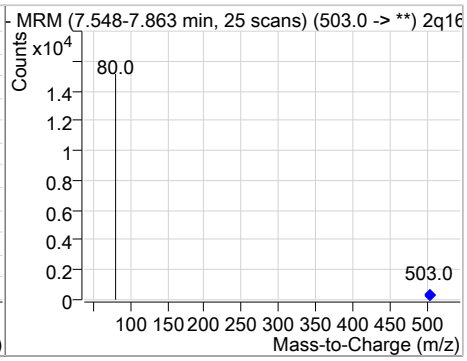




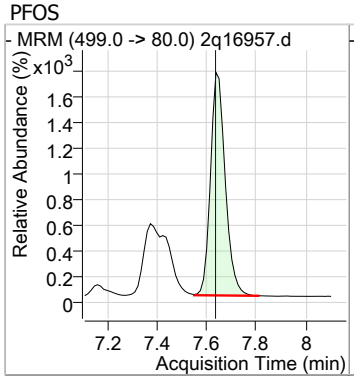
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	19.99	7.64	0.03	10730				

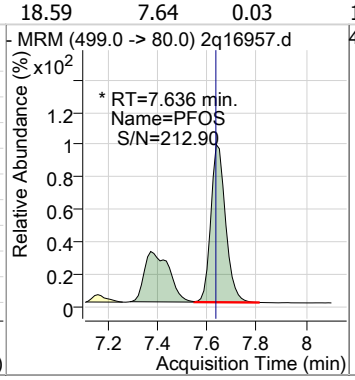


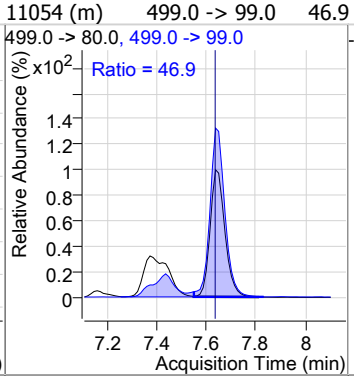


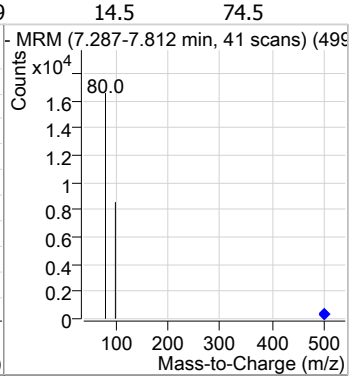


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.59	7.64	0.03	11054 (m)	499.0 -> 99.0	46.9	14.5	74.5

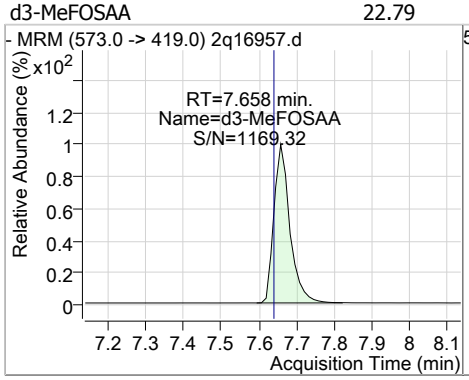


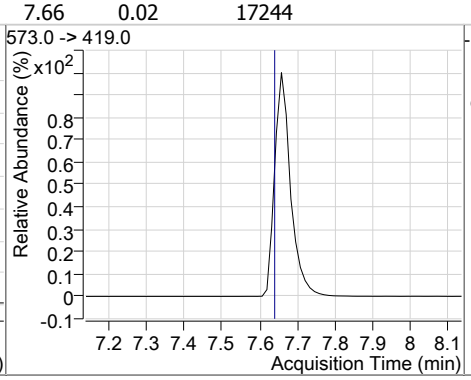


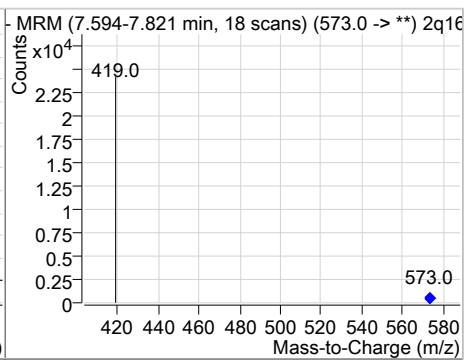




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	22.79	7.66	0.02	17244				

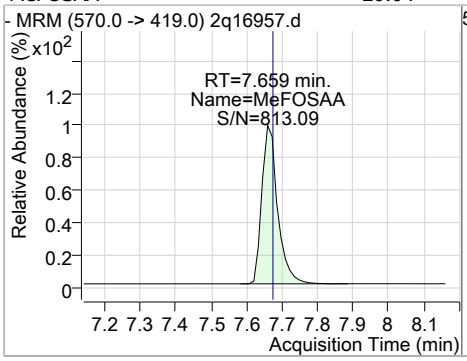


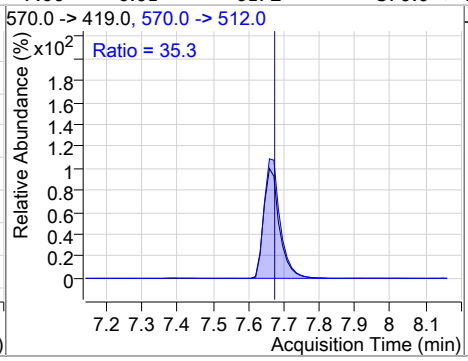


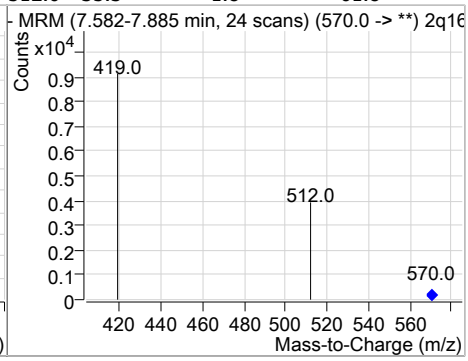


Perfluorinated Compounds by LC/MS/MS

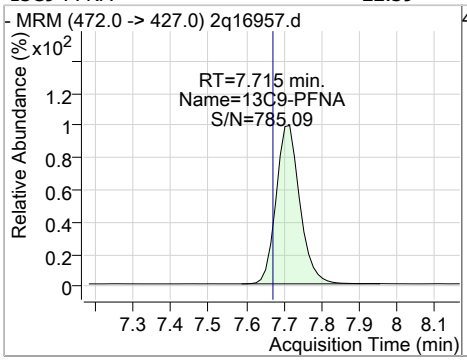
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.04	7.66	0.01	6172	570.0 -> 512.0	35.3	1.8	61.8

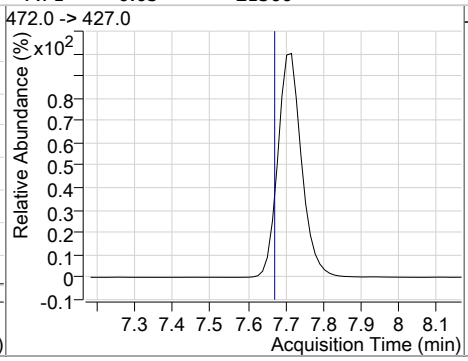


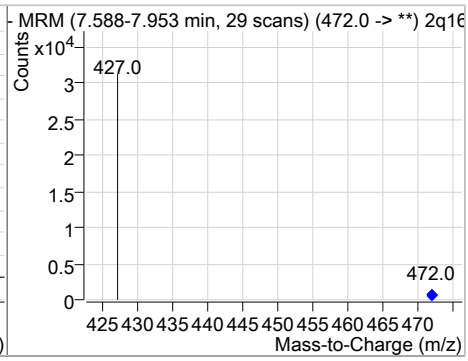




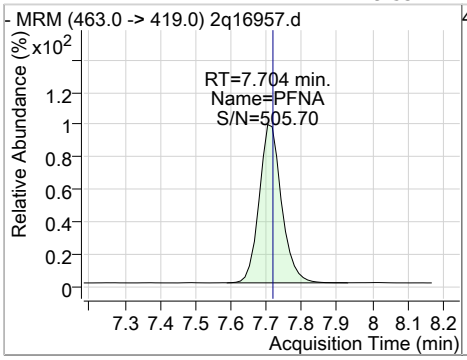
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	22.39	7.71	0.05	21560				

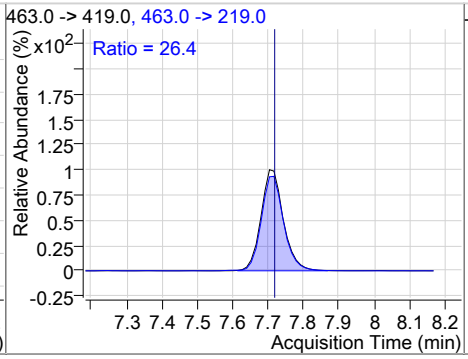


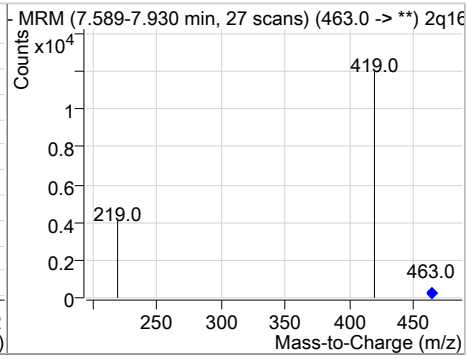




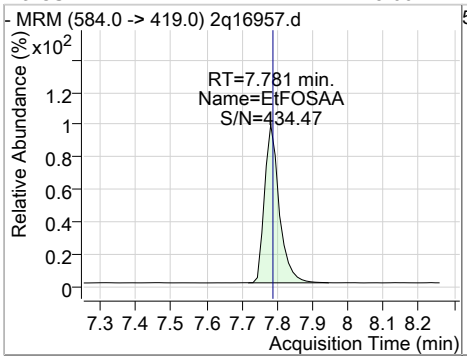
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.53	7.70	0.04	8113	463.0 -> 219.0	26.4	0.0	58.4

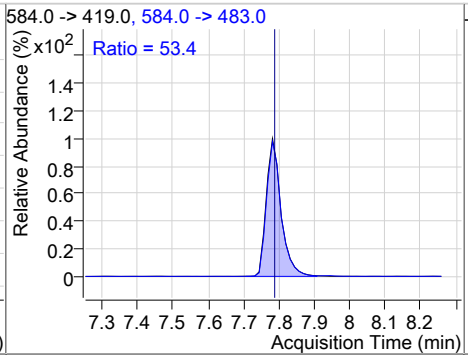


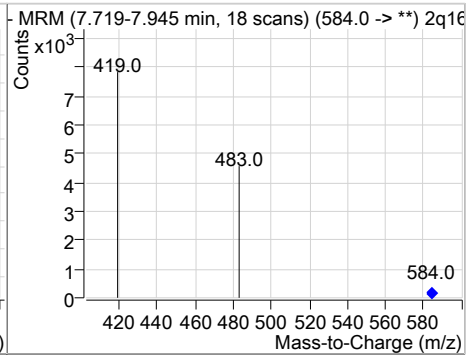




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	18.06	7.78	0.02	5246	584.0 -> 483.0	53.4	24.8	84.8

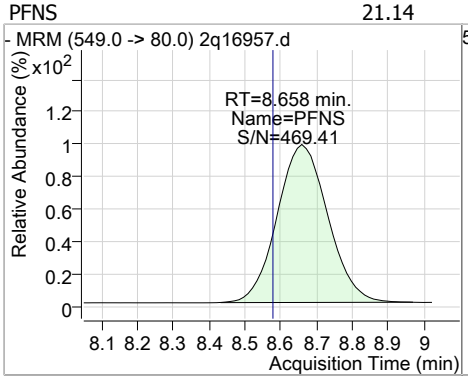


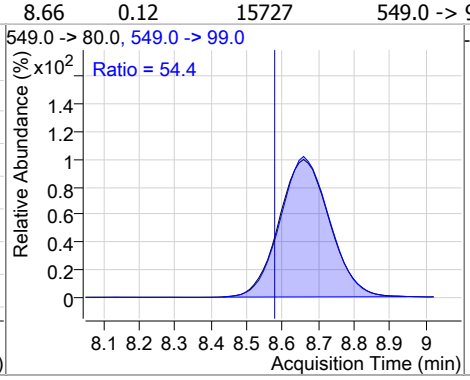


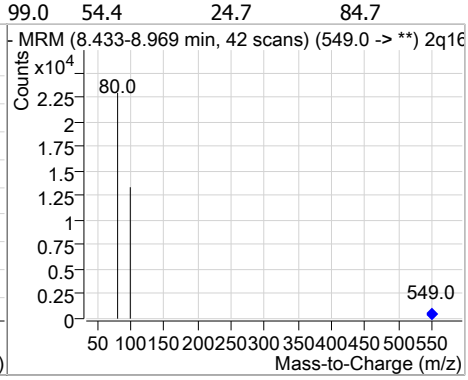


Perfluorinated Compounds by LC/MS/MS

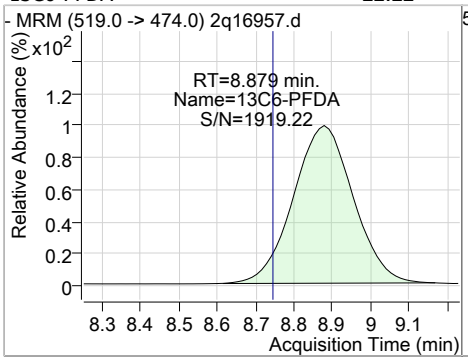
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	21.14	8.66	0.12	15727	549.0 -> 99.0	54.4	24.7	84.7

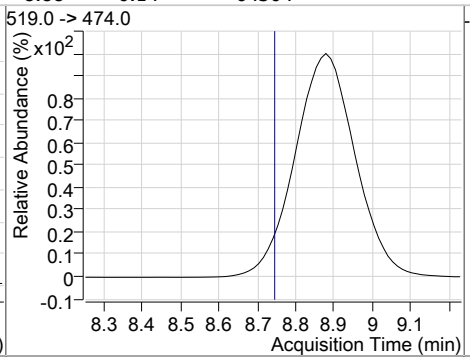


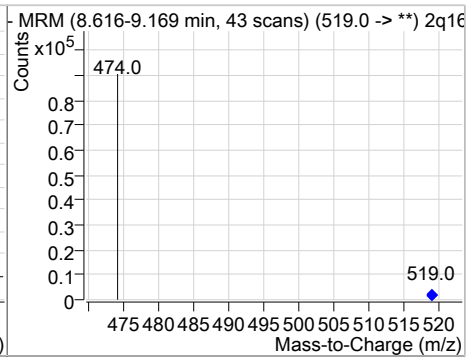




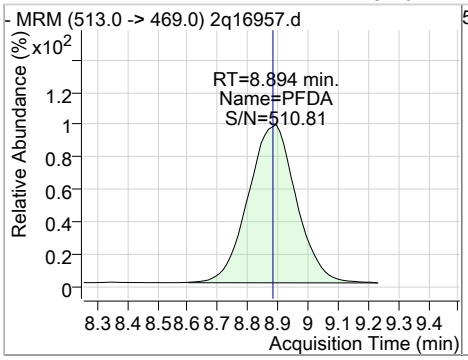
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	22.22	8.88	0.14	64304				

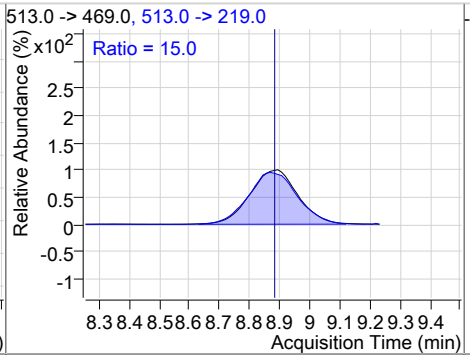


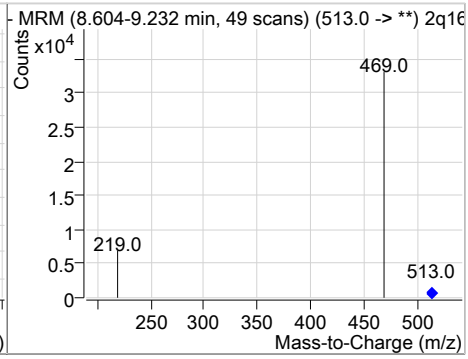




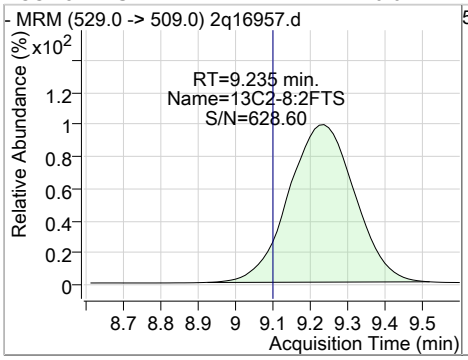
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.48	8.89	0.15	23086	513.0 -> 219.0	15.0	0.0	45.3

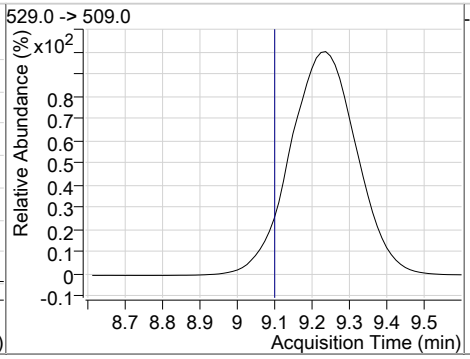


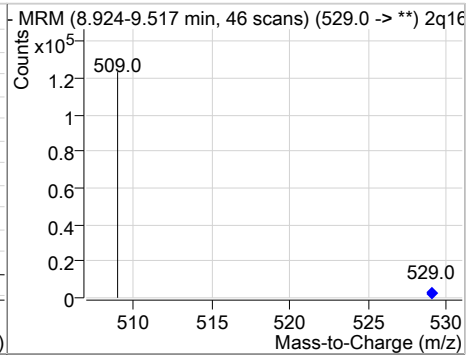




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.07	9.23	0.14	88186				

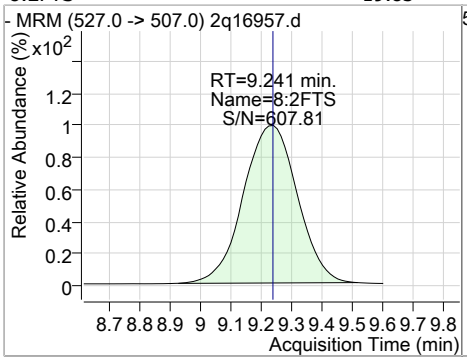


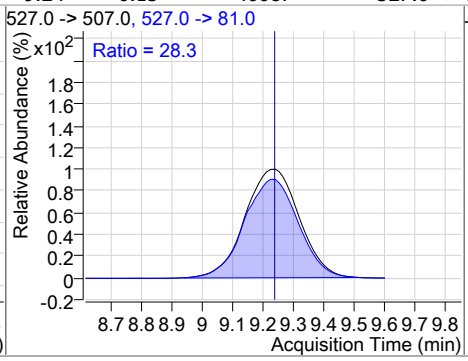


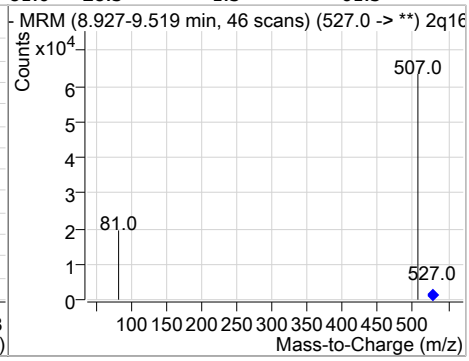


Perfluorinated Compounds by LC/MS/MS

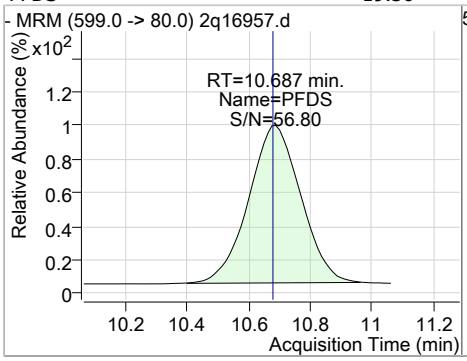
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.83	9.24	0.15	46087	527.0 -> 81.0	28.3	1.3	61.3

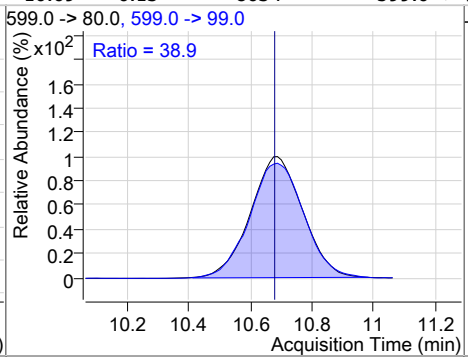


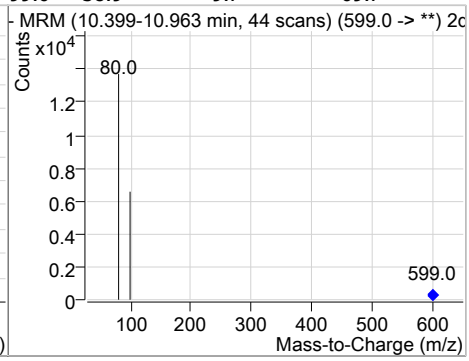




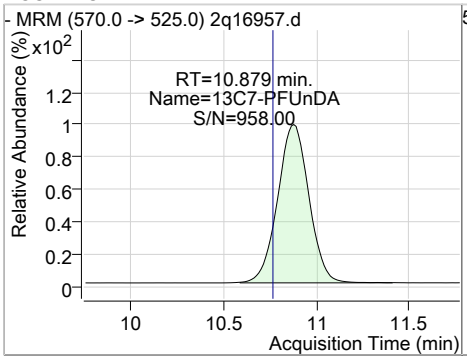
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.36	10.69	0.13	8634	599.0 -> 99.0	38.9	9.7	69.7

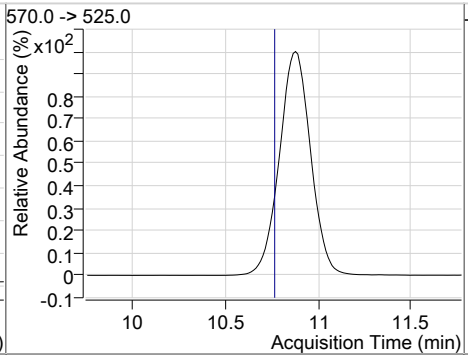


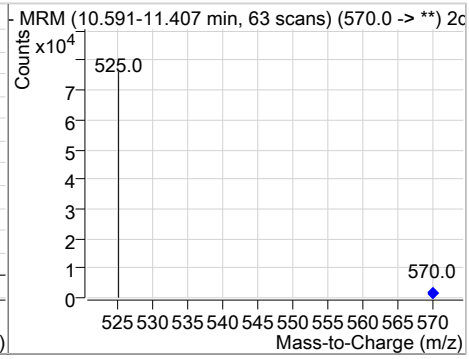




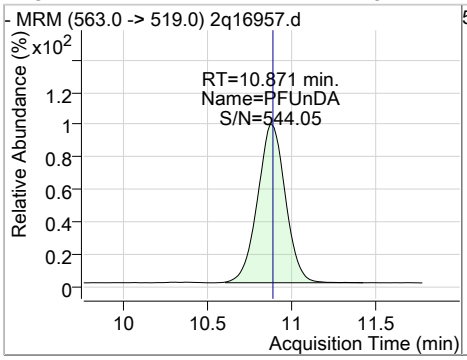
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	22.21	10.88	0.12	52751				

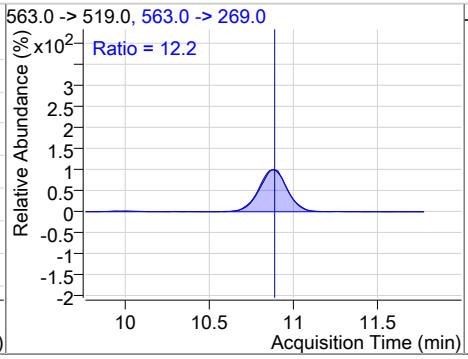


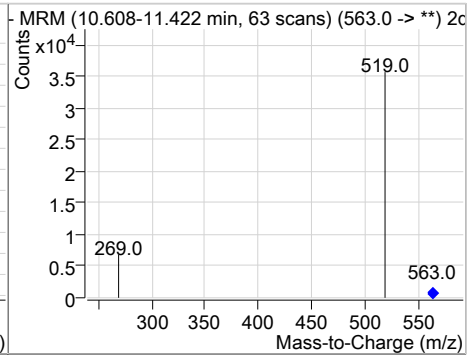




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.17	10.87	0.11	24485	563.0 -> 269.0	12.2	0.0	41.8

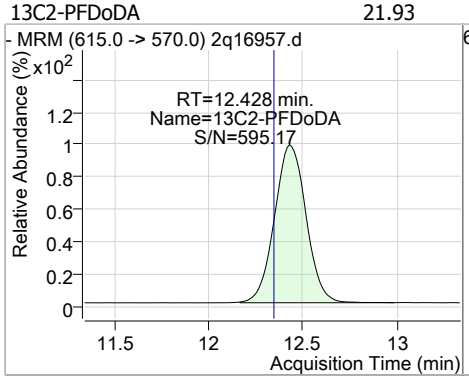


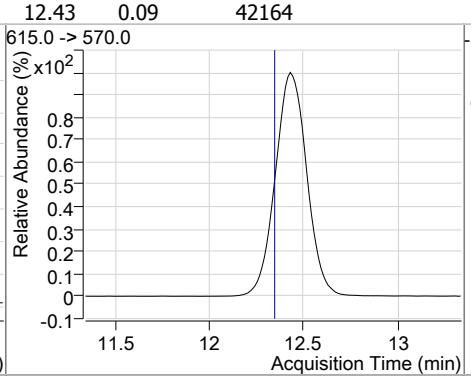


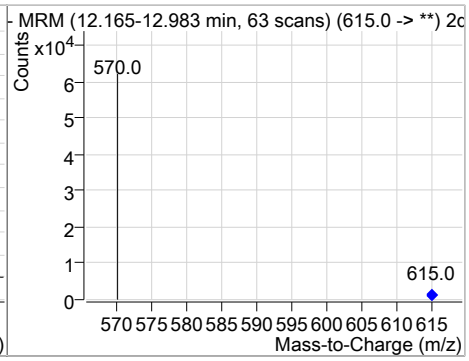


Perfluorinated Compounds by LC/MS/MS

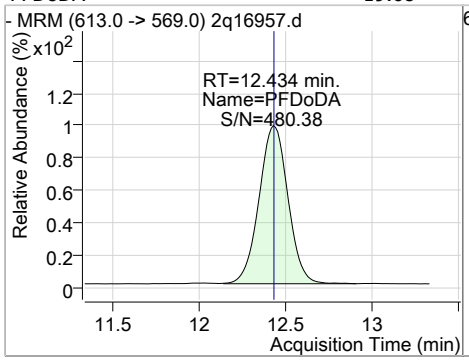
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.93	12.43	0.09	42164				

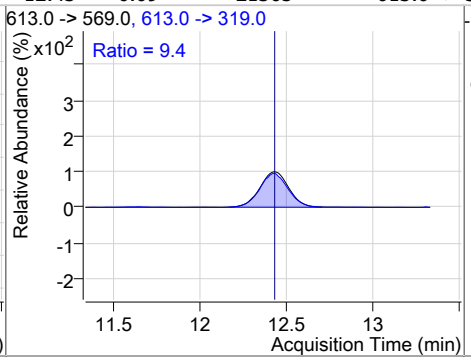


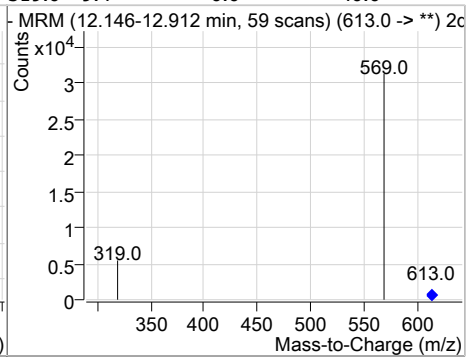




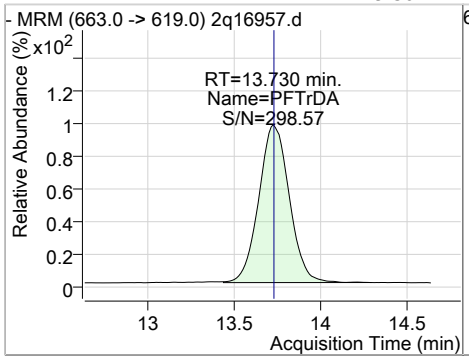
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.68	12.43	0.09	21365	613.0 -> 319.0	9.4	0.0	40.0

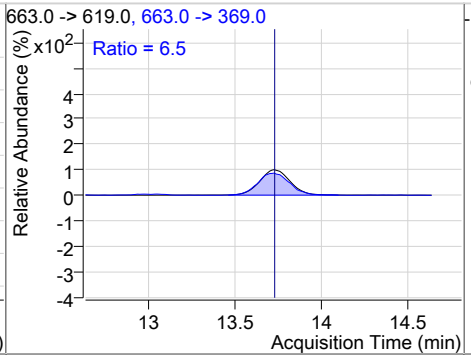


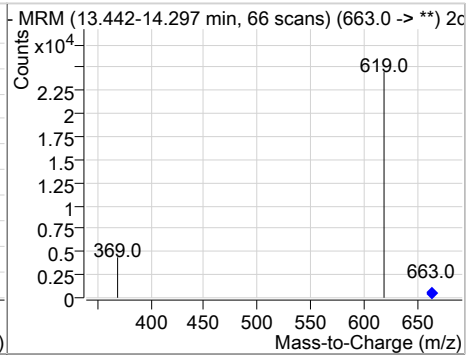




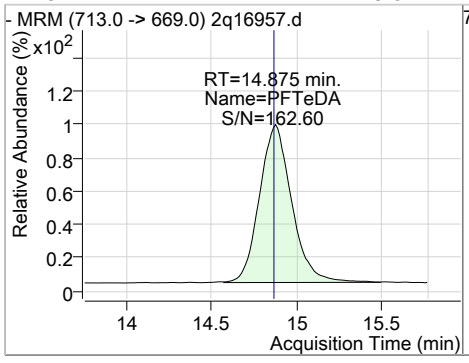
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	19.30	13.73	0.09	16664	663.0 -> 369.0	6.5	0.0	37.1

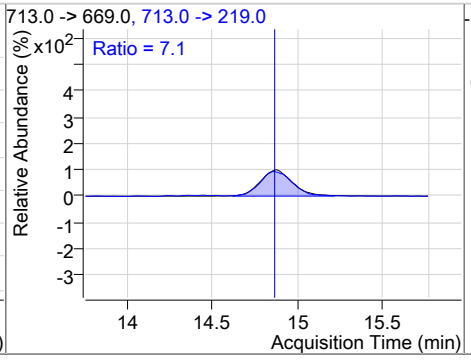


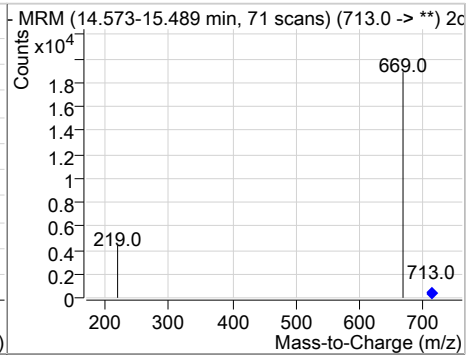




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.54	14.88	0.11	11622	713.0 -> 219.0	7.1	0.0	37.4

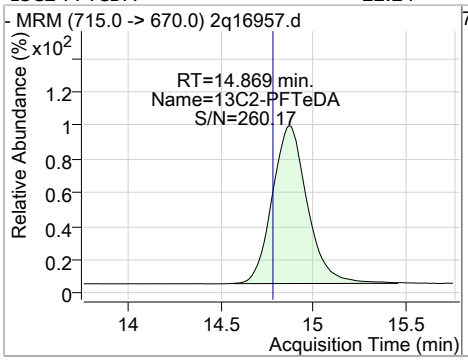


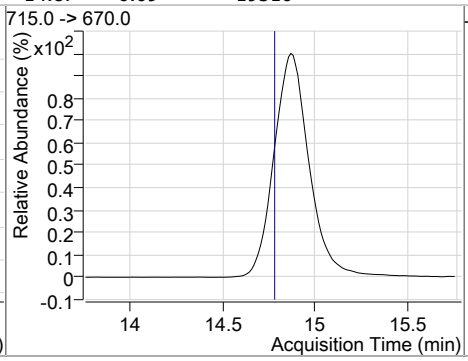


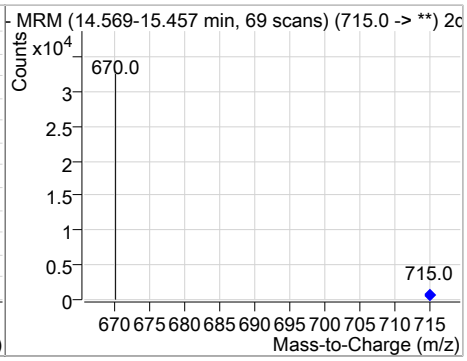


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	22.24	14.87	0.09	19510				







Manual Integration Approval Summary

Sample Number:	S2Q294-CC294	**Method:**	EPA 537M BY ID
Lab FileID:	2Q16957.D	**Analyst approved:**	07/11/18 16:51 Natasha Gumtie
Injection Time:	07/11/18 16:01	**Supervisor approved:**	07/11/18 16:54 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.23	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.64	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 07/12/18 14:31

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16969.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/11/2018 8:08:35 PM
Sample Name : cc294-1
Vial : Vial 3
DA Method File : PFC_ID_071018_S2Q294.quantmethod.xml
Batch Name : s2q294.batch.bin
Sample Information : op70743,S2Q294,130,,,1.0,1,water

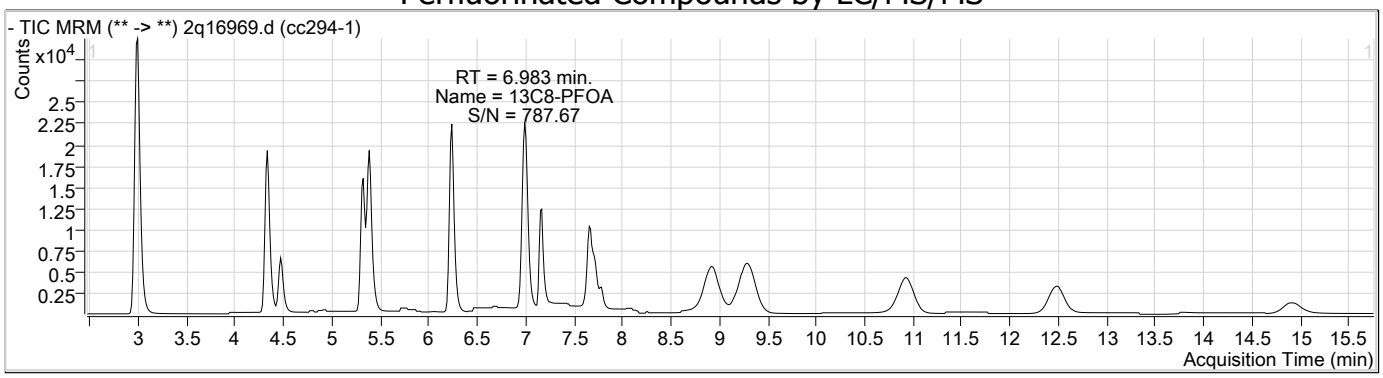
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.984	415.0 -> 370.0	18657	20.00	µg/L	0.038
13C4-PFOS	7.648	503.0 -> 80.0	9754	20.00	µg/L	0.046
M4-PFBA	2.991	217.0 -> 172.0	129970	20.00	µg/L	0.024
M5-PFPeA	4.338	268.0 -> 223.0	64422	20.00	µg/L	0.025
M5-PFHxA	5.391	318.0 -> 273.0	60344	20.00	µg/L	0.030
M4-PFHpA	6.242	367.0 -> 322.0	56935	20.00	µg/L	0.032
M8-PFOA	6.983	421.0 -> 376.0	30015	20.00	µg/L	0.037
M9-PFNA	7.715	472.0 -> 427.0	19860	20.00	µg/L	0.048
M6-PFDA	8.929	519.0 -> 474.0	57655	20.00	µg/L	0.187
M7-PFUnDA	10.929	570.0 -> 525.0	46749	20.00	µg/L	0.168
M2-PFDoDA	12.478	615.0 -> 570.0	36688	20.00	µg/L	0.139
M2-PFTeDA	14.919	715.0 -> 670.0	17396	20.00	µg/L	0.144
M8-FOSA	7.168	506.0 -> 78.0	34251	20.00	µg/L	0.022
M3-PFBS	4.468	302.0 -> 99.0	20072	20.00	µg/L	0.031
M3-PFHxS	6.235	402.0 -> 99.0	16892	20.00	µg/L	0.039
M8-PFOS	7.661	507.0 -> 99.0	8567	20.00	µg/L	0.059
M2-4:2FTS	5.323	329.0 -> 309.0	52012	20.00	µg/L	0.040
M2-6:2FTS	7.005	429.0 -> 409.0	40043	20.00	µg/L	0.047
M2-8:2FTS	9.285	529.0 -> 509.0	70717	20.00	µg/L	0.190
M3-MeFOSAA	7.658	573.0 -> 419.0	15049	20.00	µg/L	0.021
System Monitoring Compounds						
13C2-4:2FTS	5.323	329.0 -> 309.0	52038	19.41	µg/L	0.040
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.1%		
13C2-6:2FTS	7.005	429.0 -> 409.0	40041	19.29	µg/L	0.047
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.5%		
13C2-8:2FTS	9.285	529.0 -> 509.0	69089	15.73	µg/L	0.190
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.6%		
13C2-PFDoDA	12.478	615.0 -> 570.0	36805	19.14	µg/L	0.139
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.7%		
13C2-PFTeDA	14.919	715.0 -> 670.0	17158	19.56	µg/L	0.144
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.8%		
13C3-PFBS	4.468	302.0 -> 99.0	20063	20.17	µg/L	0.031
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.8%		
13C3-PFHxS	6.235	402.0 -> 99.0	16888	20.35	µg/L	0.039
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.7%		
13C4-PFBA	2.991	217.0 -> 172.0	129863	20.27	µg/L	0.024
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.3%		
13C4-PFHpA	6.242	367.0 -> 322.0	56938	20.94	µg/L	0.032
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.7%		
13C5-PFHxA	5.391	318.0 -> 273.0	60340	21.28	µg/L	0.030
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.4%		
13C5-PFPeA	4.338	268.0 -> 223.0	64401	20.59	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.9%		
13C6-PFDA	8.929	519.0 -> 474.0	56619	19.56	µg/L	0.187
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.8%		

Perfluorinated Compounds by LC/MS/MS

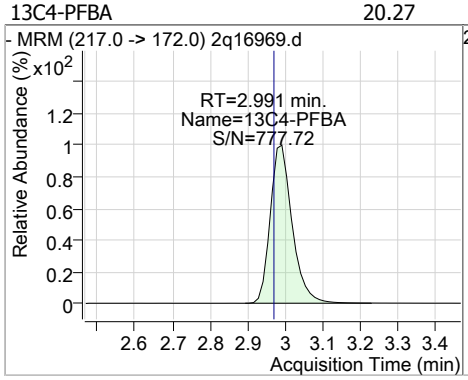
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.929	570.0 -> 525.0	46689	19.66	µg/L		0.168
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.3%			
13C8-FOSA	7.168	506.0 -> 78.0	34284	21.87	µg/L		0.022
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.3%			
13C8-PFOA	6.983	421.0 -> 376.0	30003	21.58	µg/L		0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.9%			
13C8-PFOS	7.661	507.0 -> 99.0	8575	19.87	µg/L		0.059
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.3%			
13C9-PFNA	7.715	472.0 -> 427.0	19852	20.61	µg/L		0.048
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.1%			
d3-MeFOSAA	7.658	573.0 -> 419.0	15046	19.89	µg/L		0.021
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.4%			
M2-PFOA	6.984	415.0 -> 370.0	18624	19.97	ng/ml		0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%			
M4-PFOS	7.648	503.0 -> 80.0	9741	19.98	ng/ml		0.046
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%			
Target Compounds							**QValue**
4:2FTS	5.325	327.0 -> 307.0	1433	1.06	µg/L		86
6:2FTS	7.006	427.0 -> 407.0	1194	1.19	µg/L		91
8:2FTS	9.279	527.0 -> 507.0	2146	1.13	µg/L		99
EtFOSAA	7.781	584.0 -> 419.0	292	1.15	µg/L		83
FOSA	7.158	498.0 -> 78.0	857	1.02	µg/L		100
MeFOSAA	7.672	570.0 -> 419.0	271	1.01	µg/L		84
PFBA	2.987	213.0 -> 169.0	1065	1.05	µg/L		100
PFBS	4.472	299.0 -> 80.0	1395	1.02	µg/L		98
PFDA	8.932	513.0 -> 469.0	1118	1.07	µg/L		95
PFDoDA	12.496	613.0 -> 569.0	1122	1.18	µg/L		99
PFDS	10.762	599.0 -> 80.0	429	1.08	µg/L		97
PFHpA	6.245	363.0 -> 319.0	2108	1.01	µg/L		99
PFHpS	6.953	449.0 -> 80.0	540	1.05	µg/L		94
PFHxA	5.393	313.0 -> 269.0	1029	1.01	µg/L		96
PFHxS	6.226	399.0 -> 80.0	1037	1.03	µg/L	m	100
PFNA	7.716	463.0 -> 419.0	398	1.04	µg/L		95
PFNS	8.708	549.0 -> 80.0	777	1.16	µg/L		96
PFOA	6.985	413.0 -> 369.0	787	0.96	µg/L		98
PFOS	7.649	499.0 -> 80.0	542	1.02	µg/L	m	100
PFPeA	4.341	263.0 -> 219.0	3615	1.17	µg/L		100
PFPeS	5.433	349.0 -> 80.0	923	1.05	µg/L		100
PFTeDA	14.913	713.0 -> 669.0	609	1.14	µg/L		98
PFTrDA	13.801	663.0 -> 619.0	752	0.97	µg/L		93
PFUnDA	10.933	563.0 -> 519.0	1186	1.05	µg/L		99

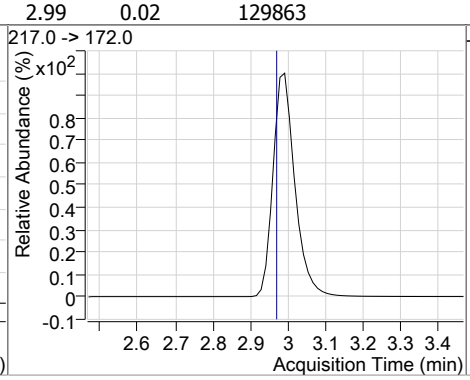
 # = Qualifier out of range, m = manually integrated, + = Area summed

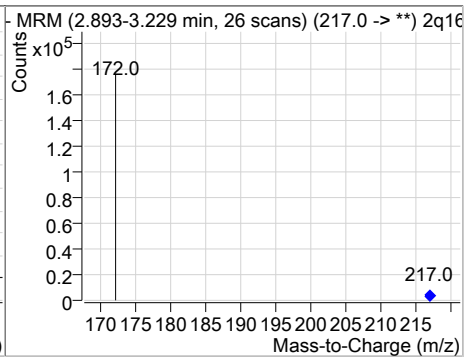
Perfluorinated Compounds by LC/MS/MS



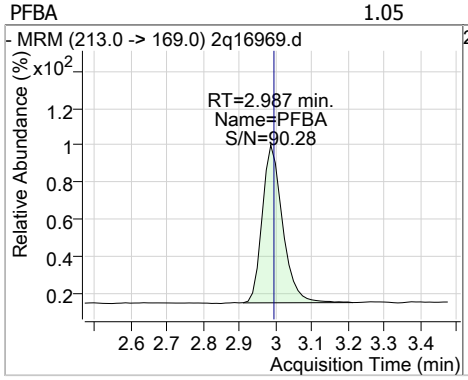
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.27	2.99	0.02	129863				

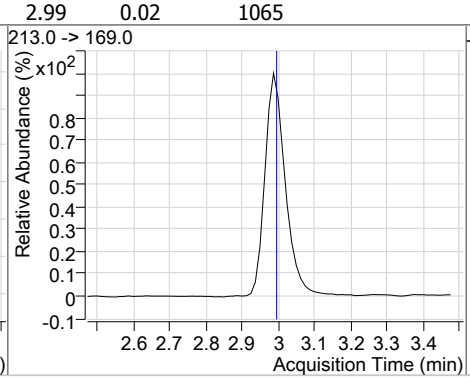


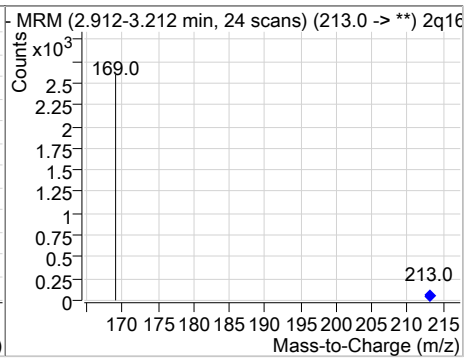




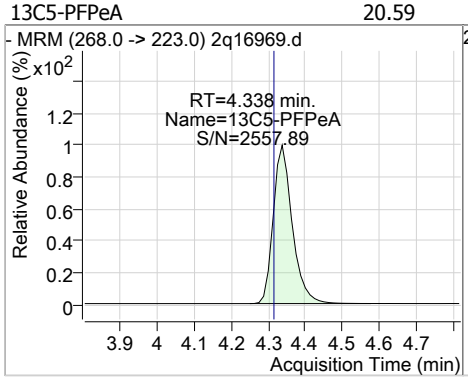
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.05	2.99	0.02	1065				

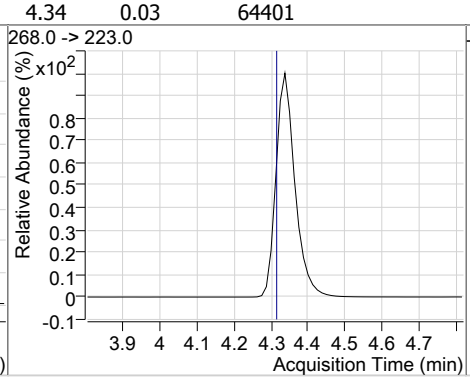


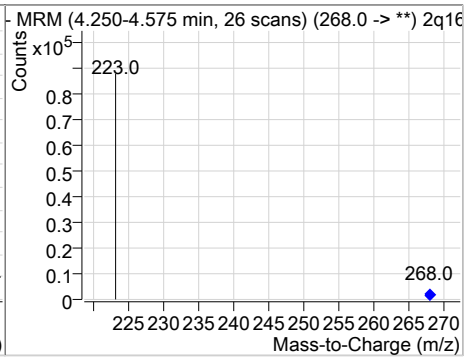




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.59	4.34	0.03	64401				

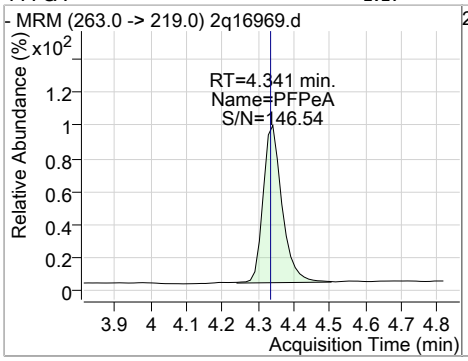


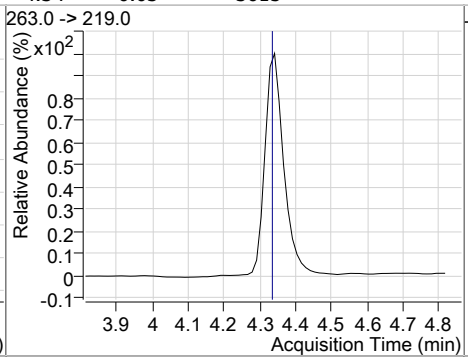


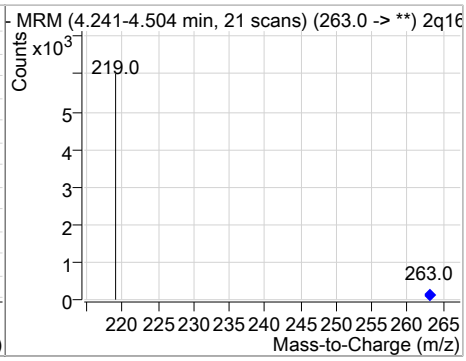


Perfluorinated Compounds by LC/MS/MS

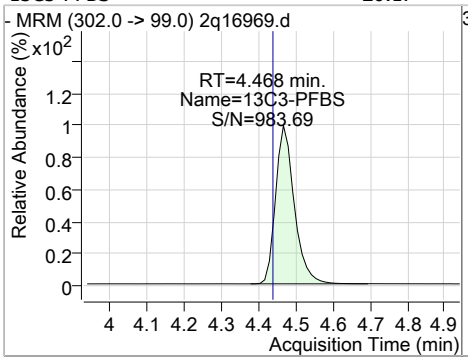
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.17	4.34	0.03	3615				

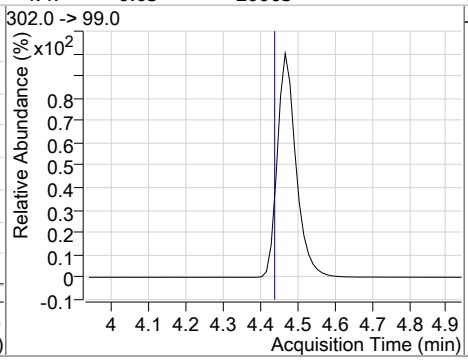


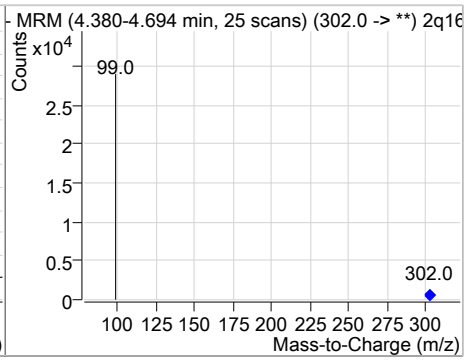




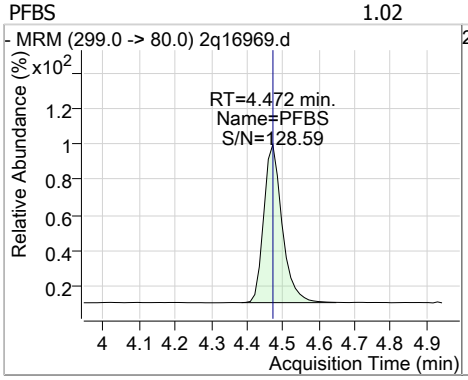
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.17	4.47	0.03	20063				

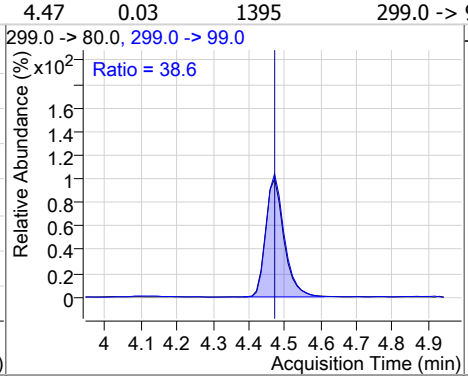


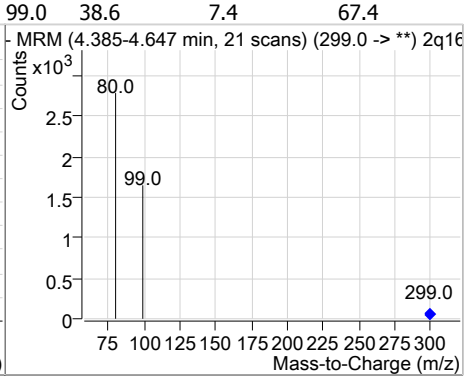




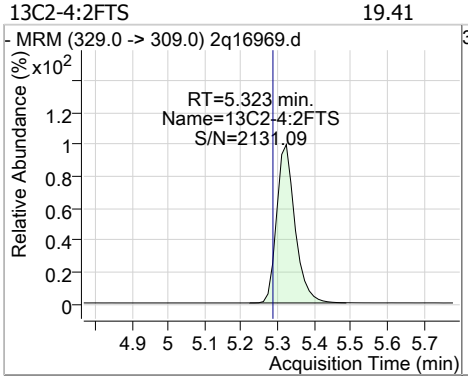
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.02	4.47	0.03	1395	299.0 -> 99.0	38.6	7.4	67.4

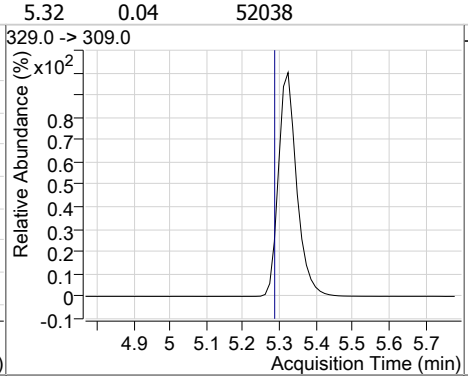


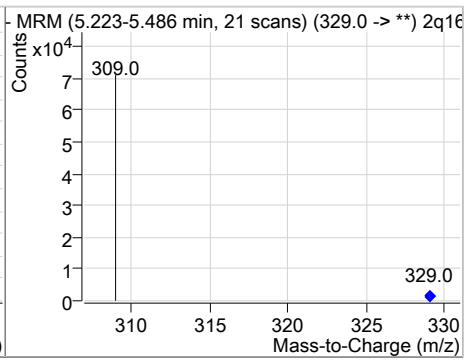




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.41	5.32	0.04	52038				

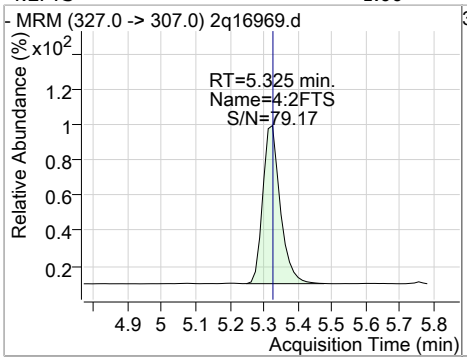


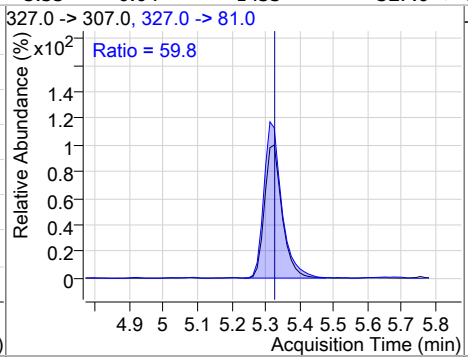


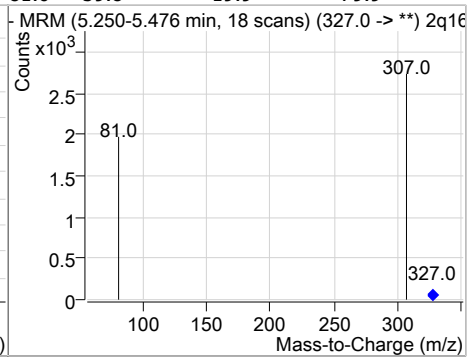


Perfluorinated Compounds by LC/MS/MS

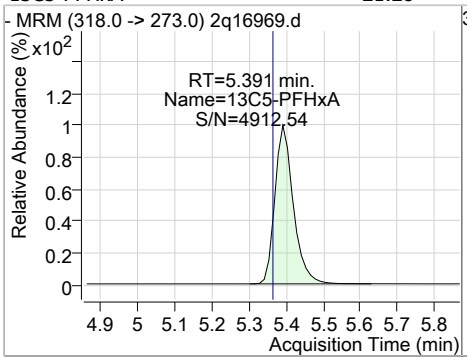
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.06	5.33	0.04	1433	327.0 -> 81.0	59.8	19.9	79.9

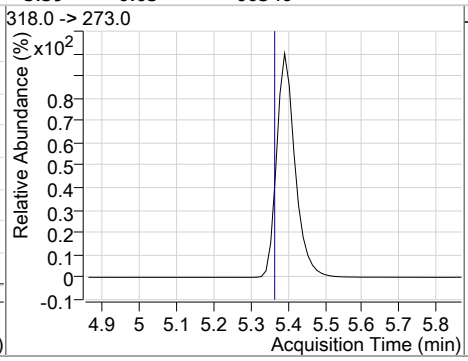


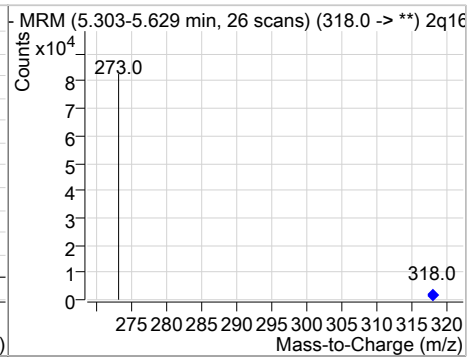




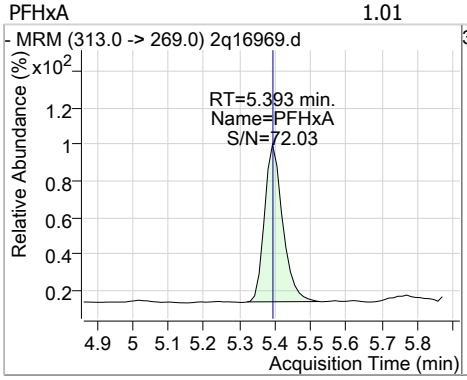
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.28	5.39	0.03	60340				

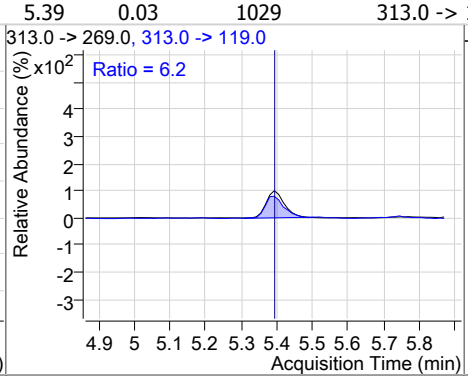


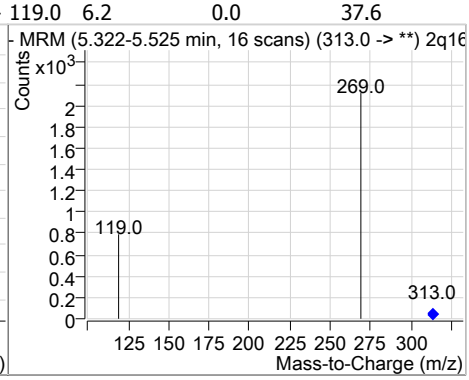




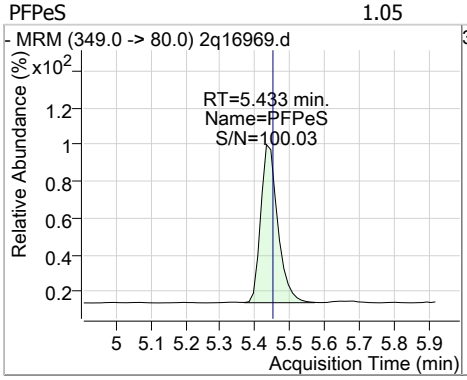
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.01	5.39	0.03	1029	313.0 -> 119.0	6.2	0.0	37.6

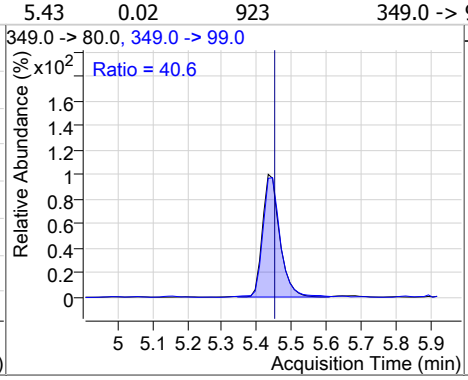


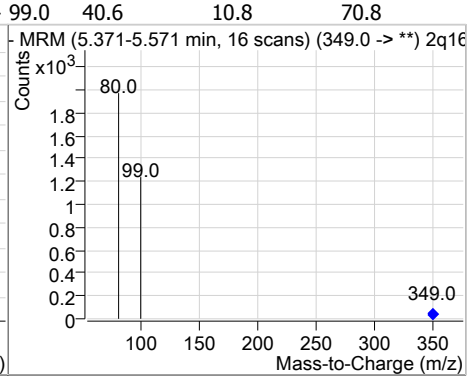




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.05	5.43	0.02	923	349.0 -> 99.0	40.6	10.8	70.8

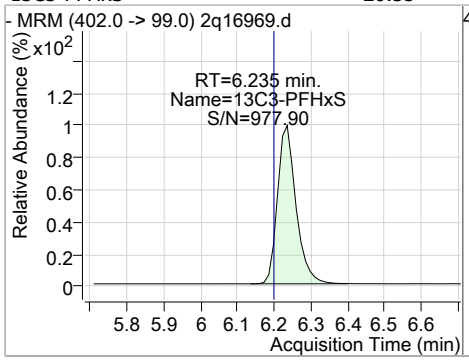


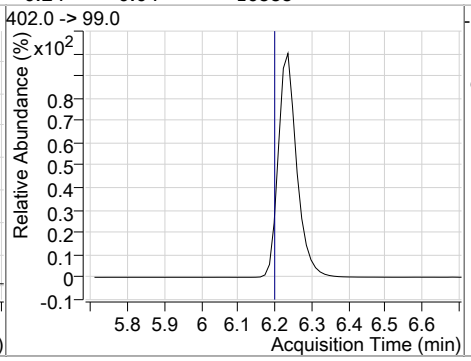


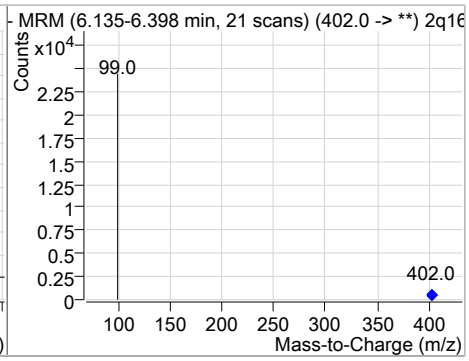


Perfluorinated Compounds by LC/MS/MS

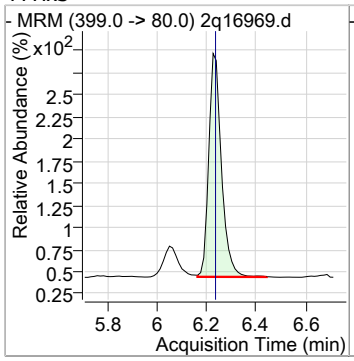
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.35	6.24	0.04	16888				

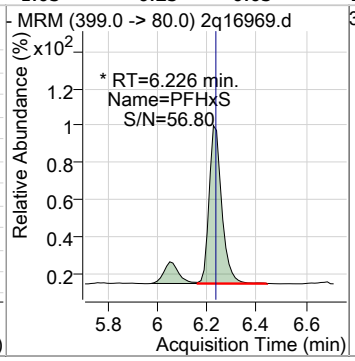


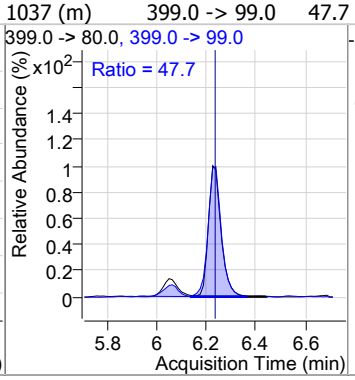


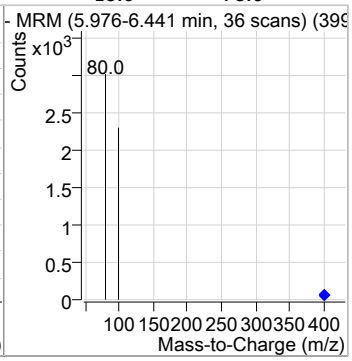


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.03	6.23	0.03	1037 (m)	399.0 -> 99.0	47.7	18.0	78.0

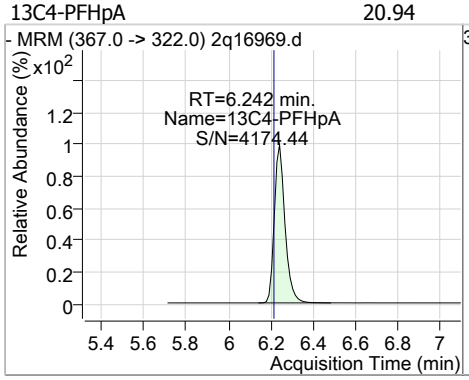


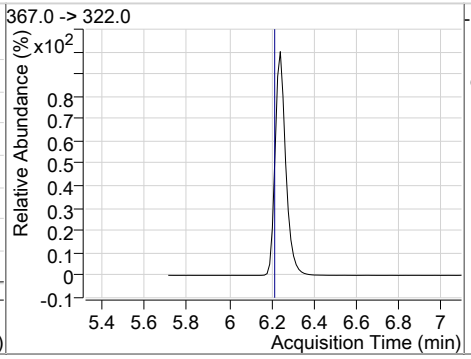


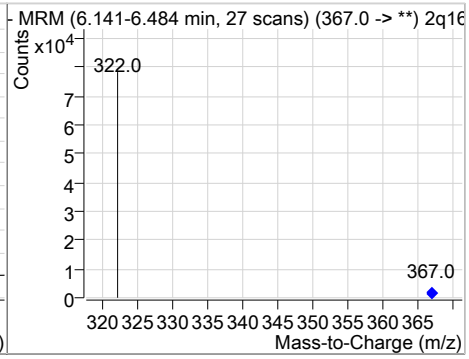




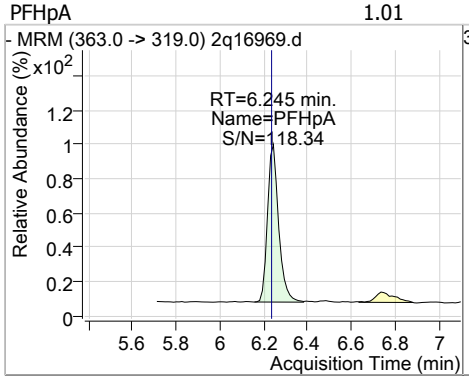
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.94	6.24	0.03	56938				

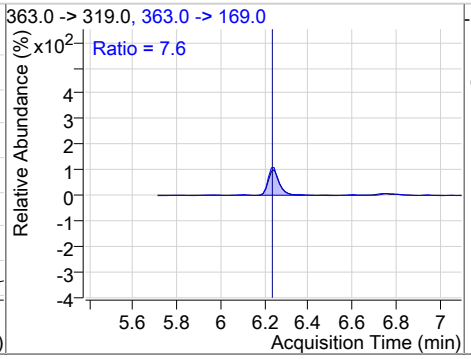


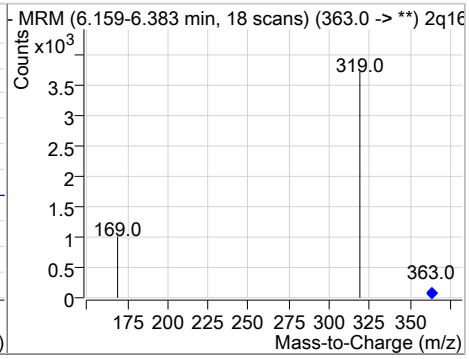




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.01	6.24	0.03	2108	363.0 -> 169.0	7.6	0.0	37.2

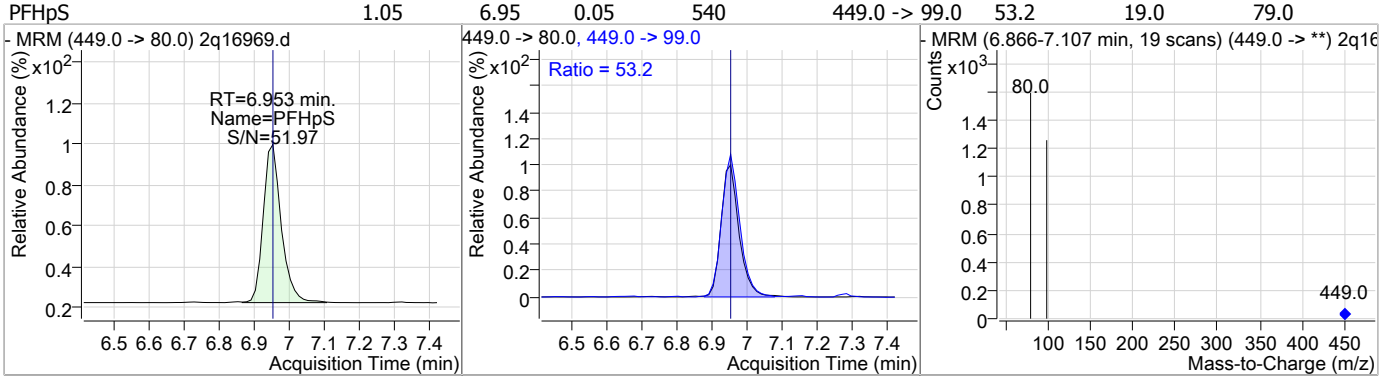




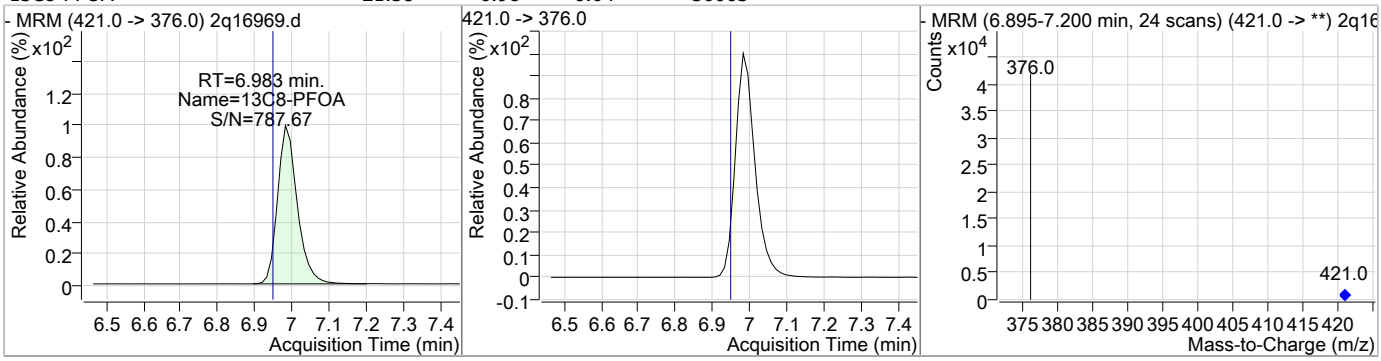


Perfluorinated Compounds by LC/MS/MS

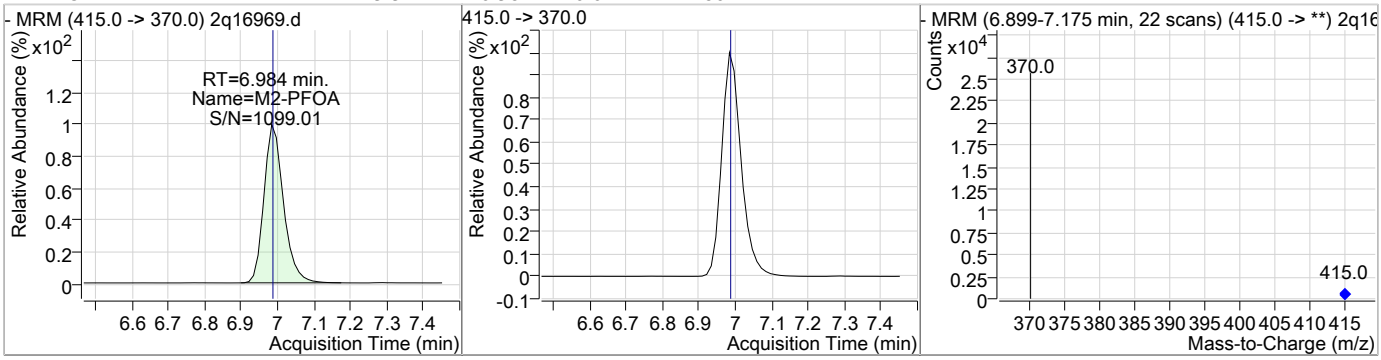
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.05	6.95	0.05	540	449.0 -> 99.0	53.2	19.0	79.0



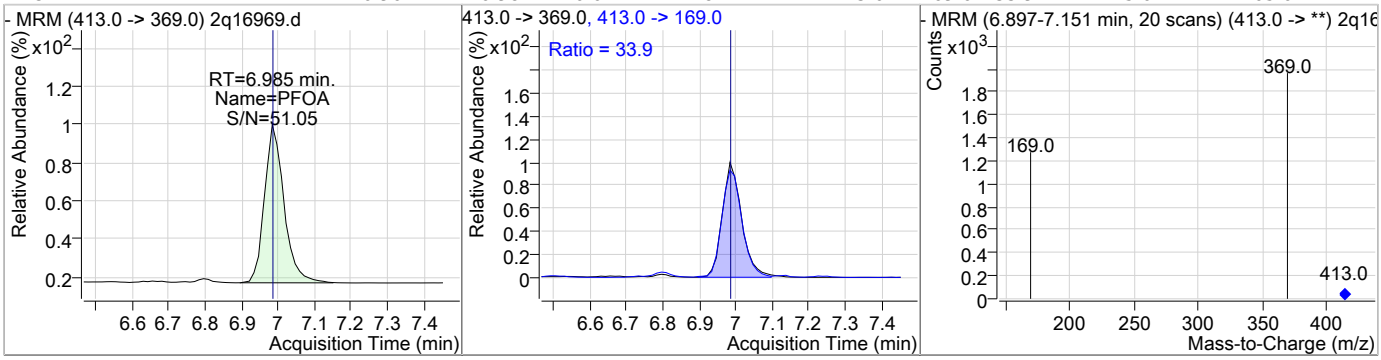
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.58	6.98	0.04	30003				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	19.97	6.98	0.04	18624				

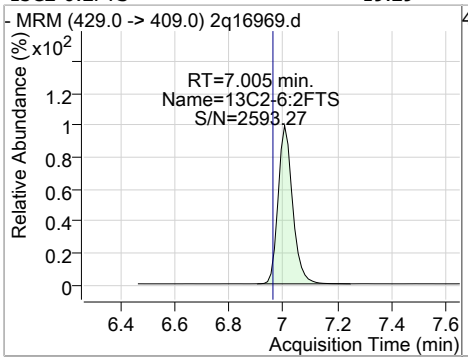


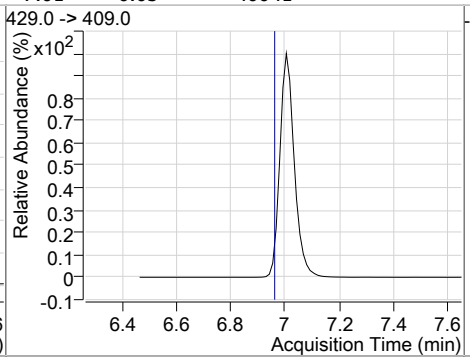
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.96	6.98	0.04	787	413.0 -> 169.0	33.9	5.0	65.0

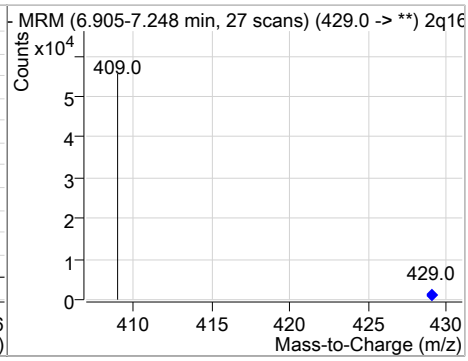


Perfluorinated Compounds by LC/MS/MS

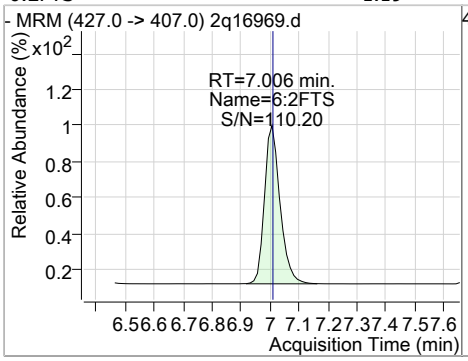
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.29	7.01	0.05	40041				

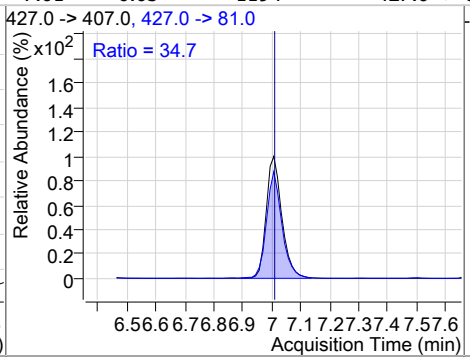


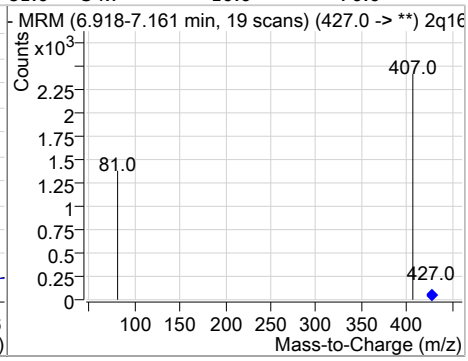




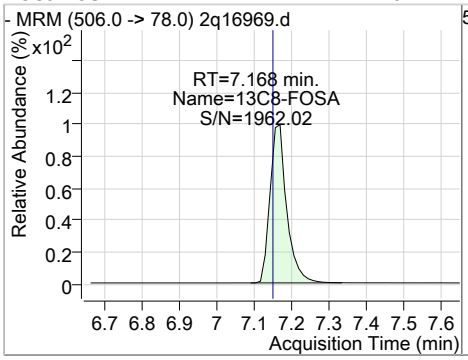
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.19	7.01	0.05	1194	427.0 -> 81.0	34.7	10.0	70.0

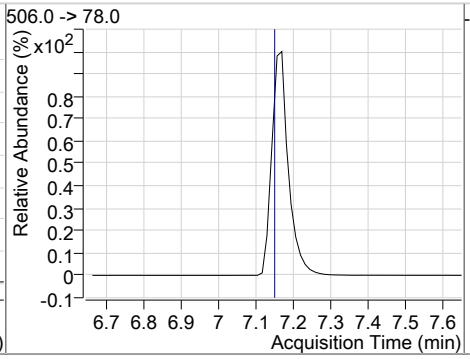


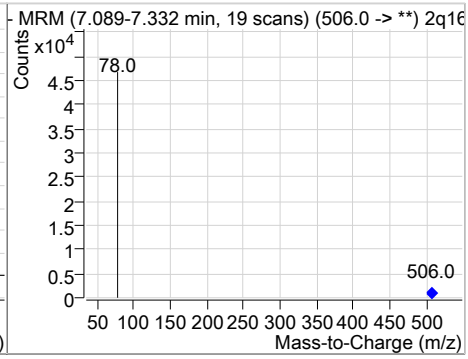




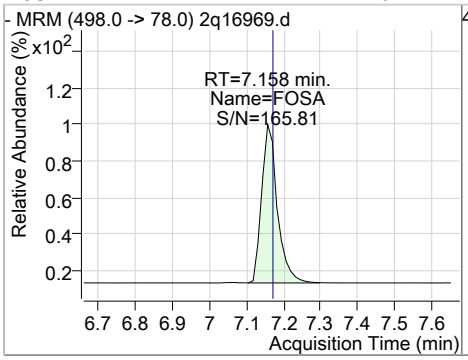
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.87	7.17	0.02	34284				

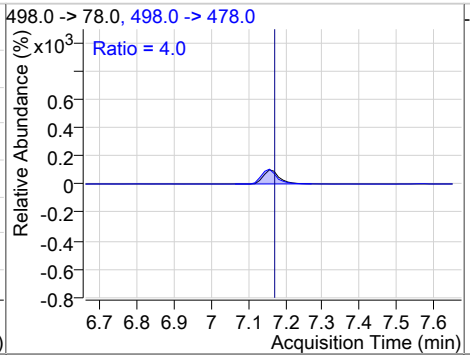


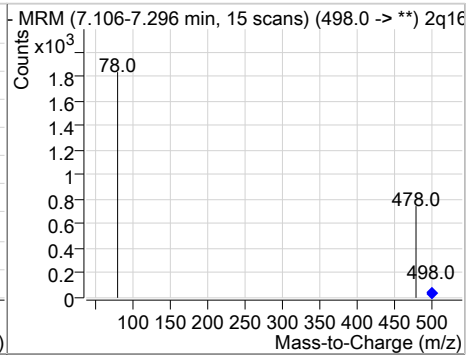




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.02	7.16	0.01	857	498.0 -> 478.0	4.0	0.0	34.0

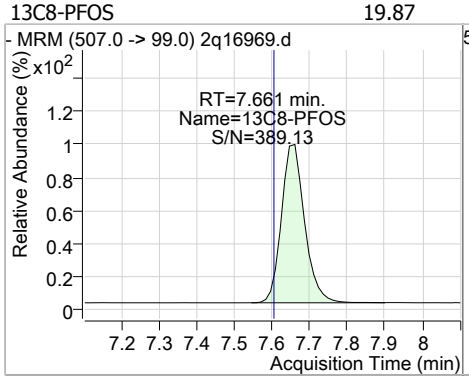


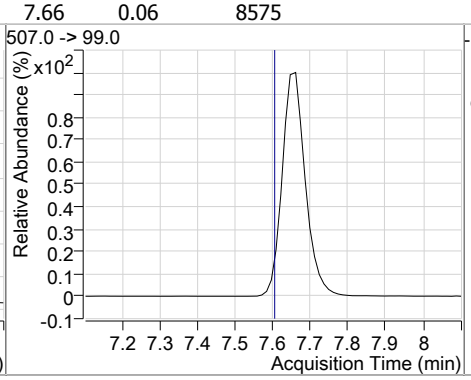


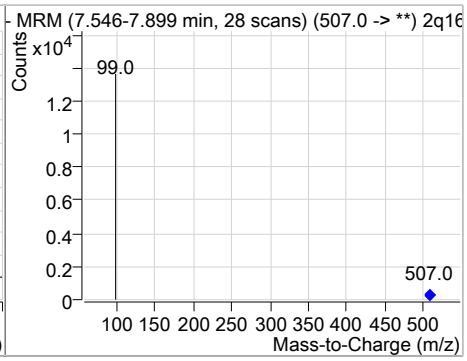


Perfluorinated Compounds by LC/MS/MS

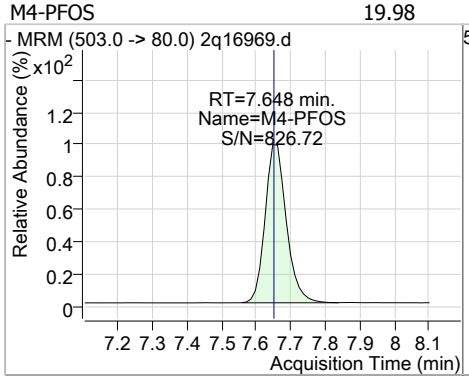
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.87	7.66	0.06	8575				

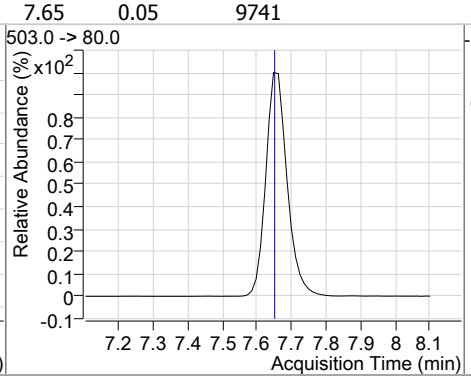


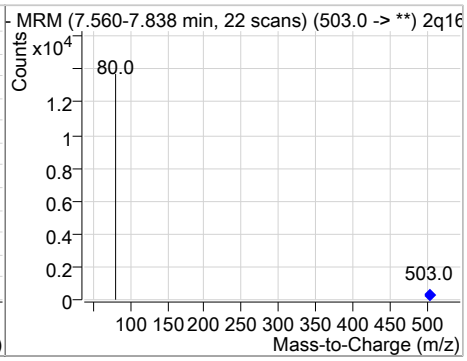




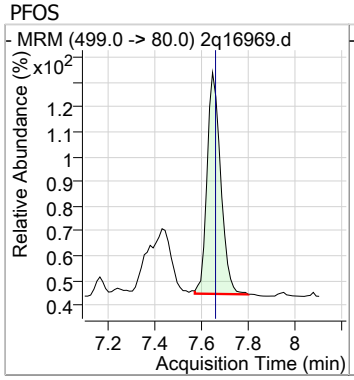
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	19.98	7.65	0.05	9741				

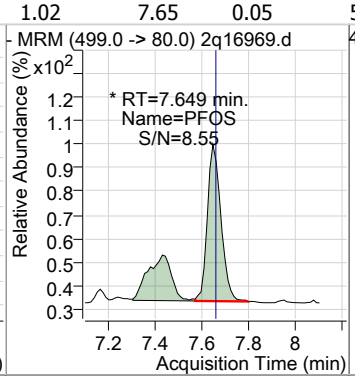


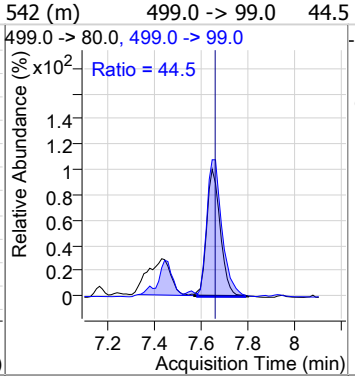


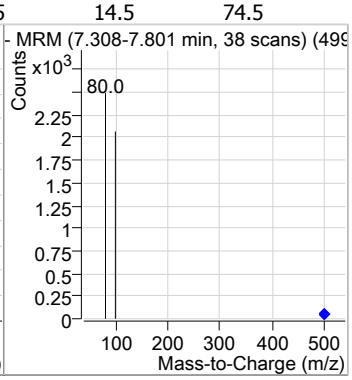


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.02	7.65	0.05	542 (m)	499.0 -> 99.0	44.5	14.5	74.5

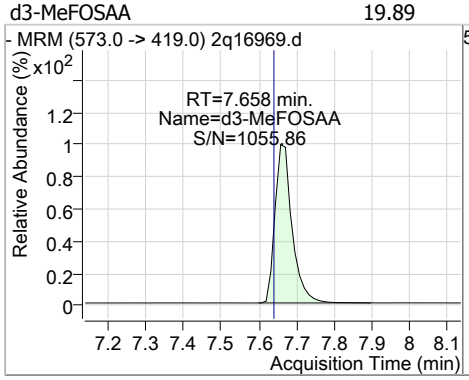


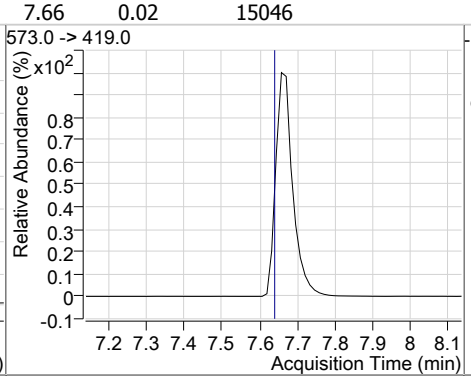


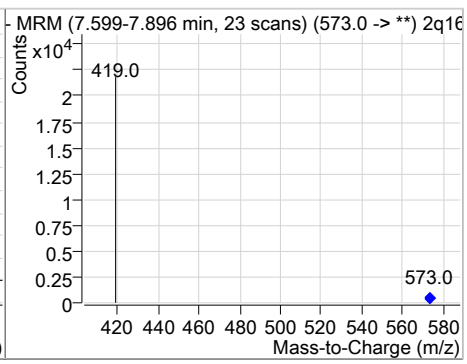




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.89	7.66	0.02	15046				

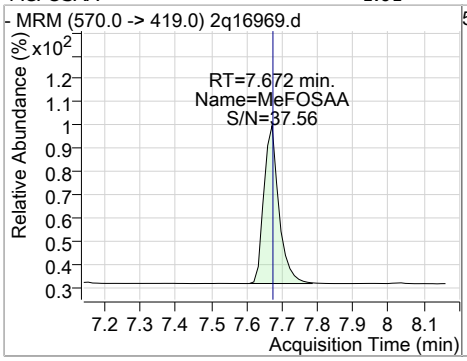


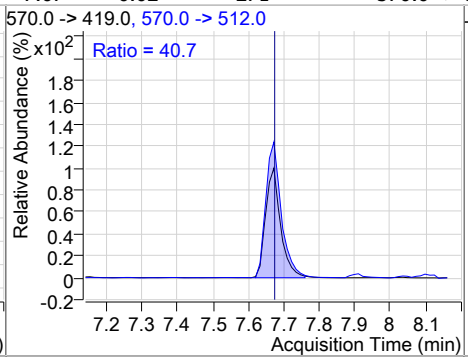


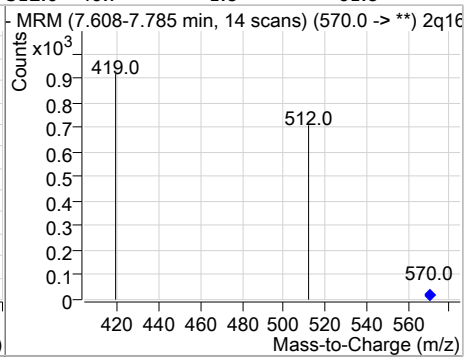


Perfluorinated Compounds by LC/MS/MS

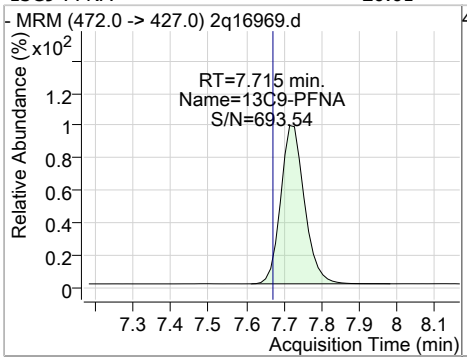
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	1.01	7.67	0.02	271	570.0 -> 512.0	40.7	1.8	61.8

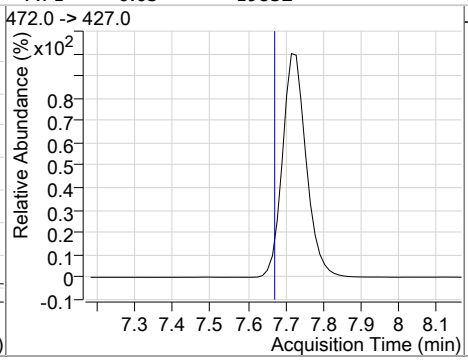


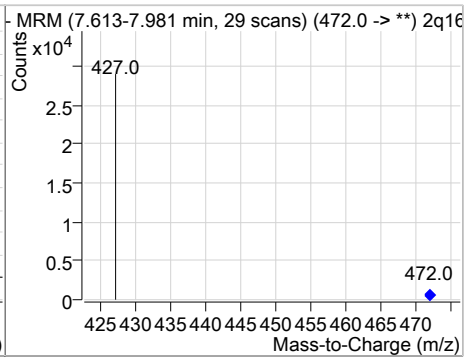




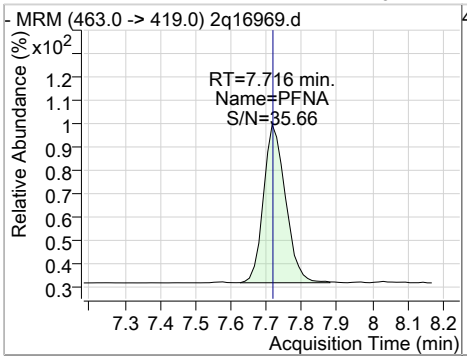
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.61	7.71	0.05	19852				

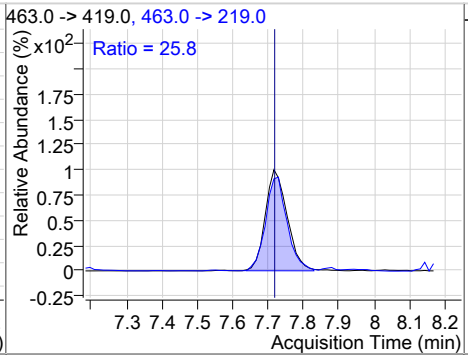


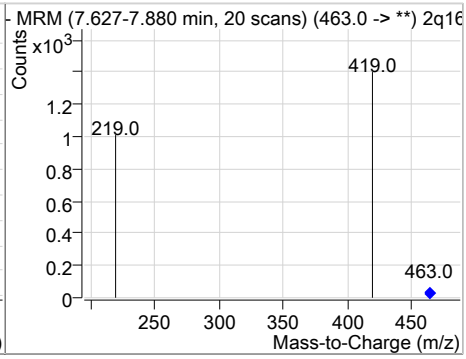




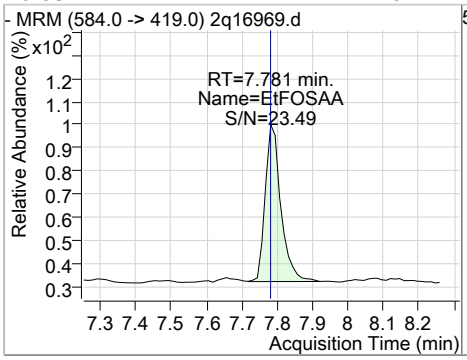
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.04	7.72	0.05	398	463.0 -> 219.0	25.8	0.0	58.4

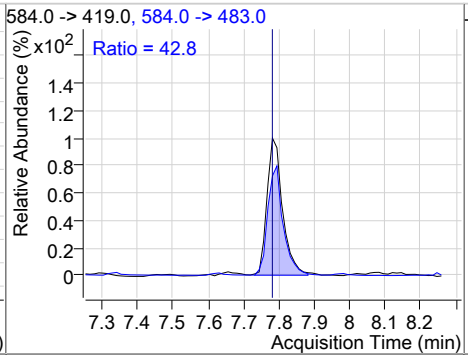


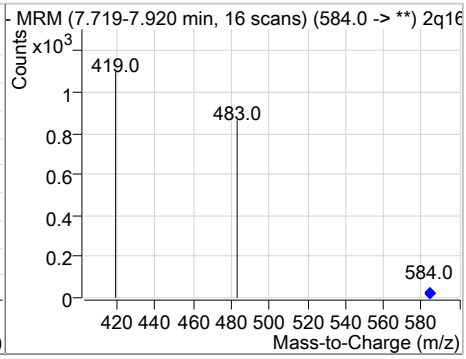




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.15	7.78	0.02	292	584.0 -> 483.0	42.8	24.8	84.8

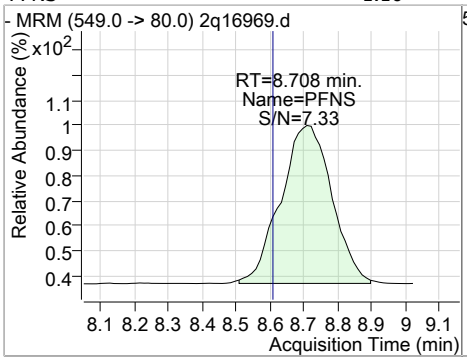


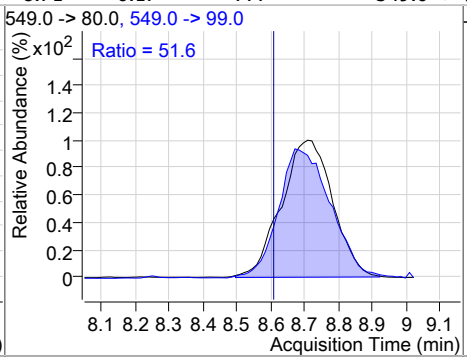


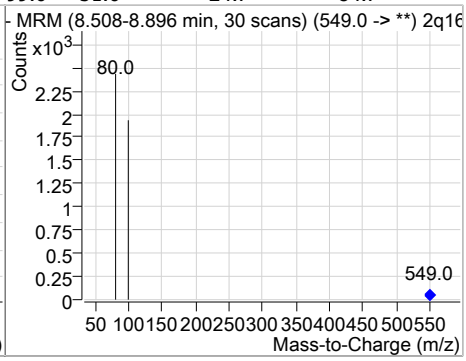


Perfluorinated Compounds by LC/MS/MS

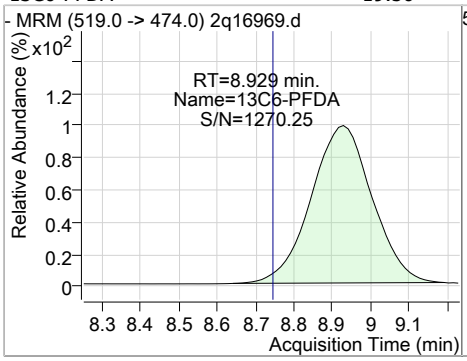
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	1.16	8.71	0.17	777	549.0 -> 99.0	51.6	24.7	84.7

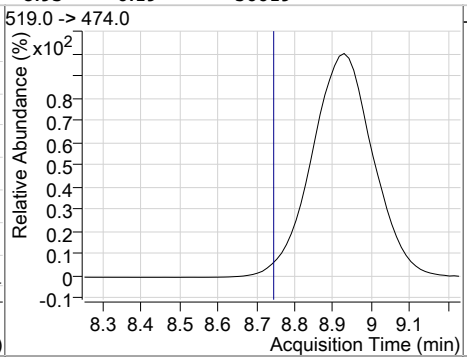


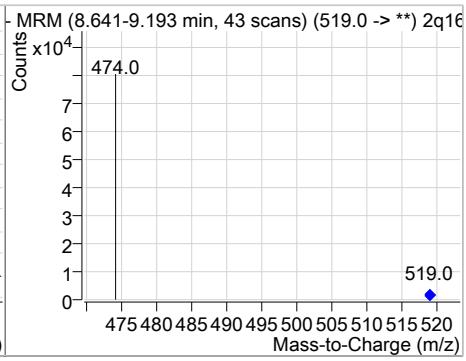




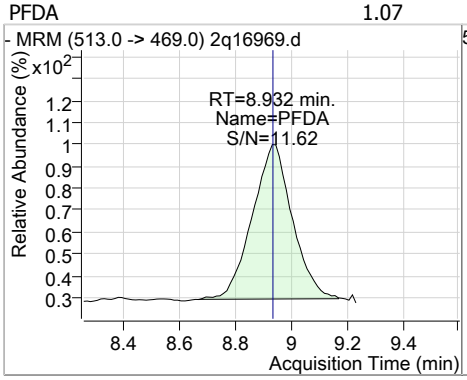
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.56	8.93	0.19	56619				

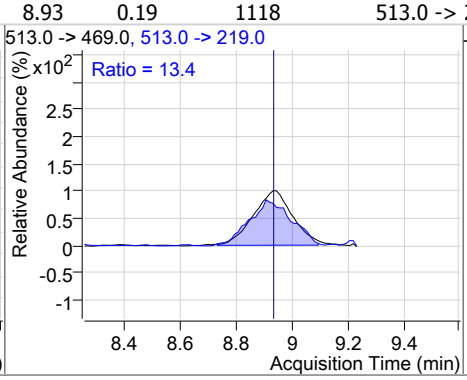


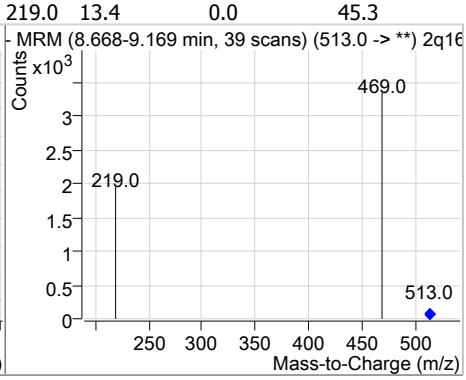




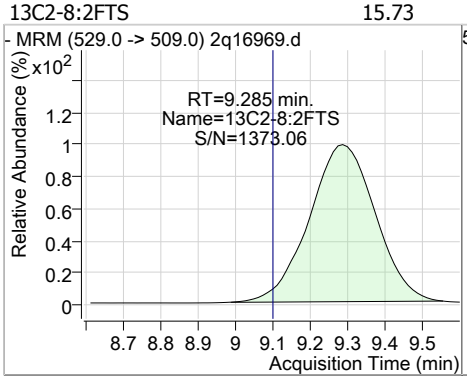
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	1.07	8.93	0.19	1118	513.0 -> 219.0	13.4	0.0	45.3

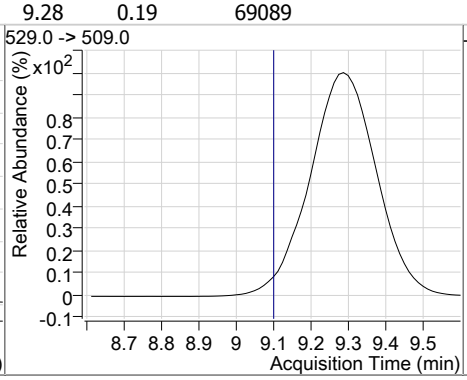


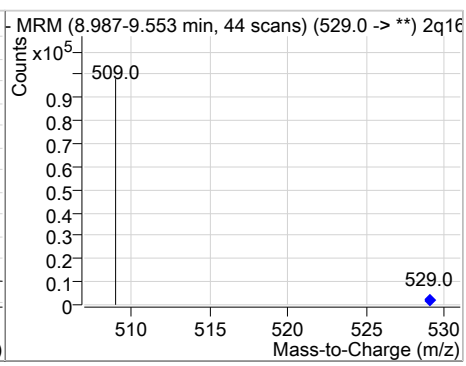




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	15.73	9.28	0.19	69089				

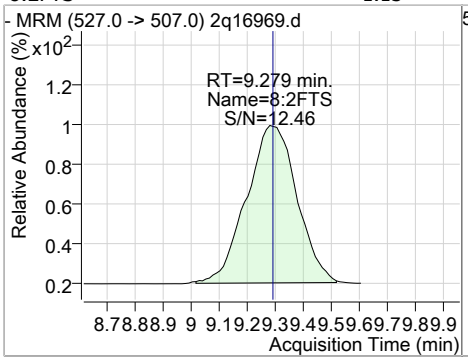


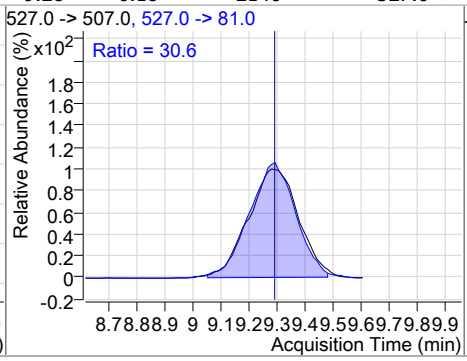


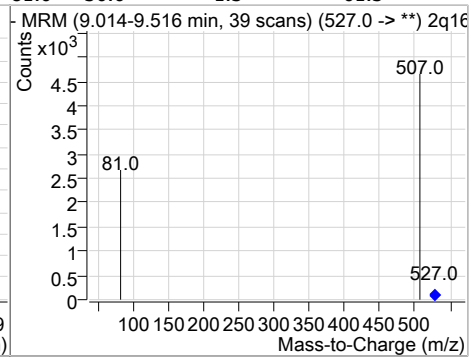


Perfluorinated Compounds by LC/MS/MS

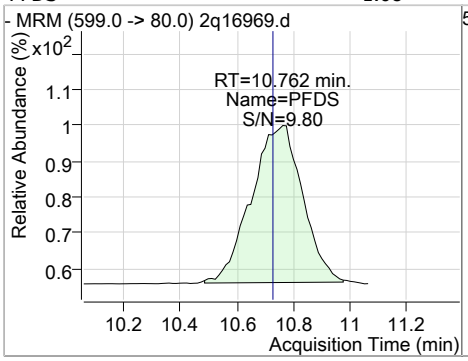
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.13	9.28	0.18	2146	527.0 -> 81.0	30.6	1.3	61.3

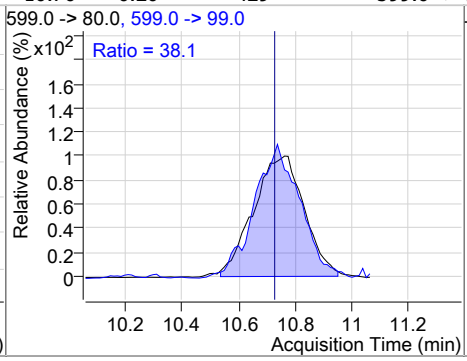


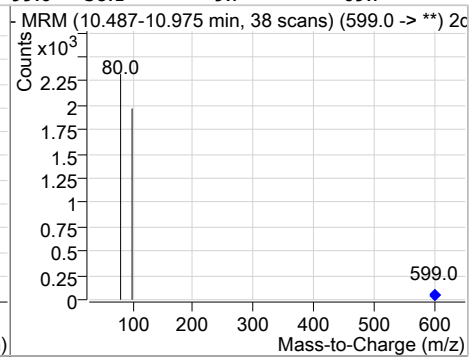




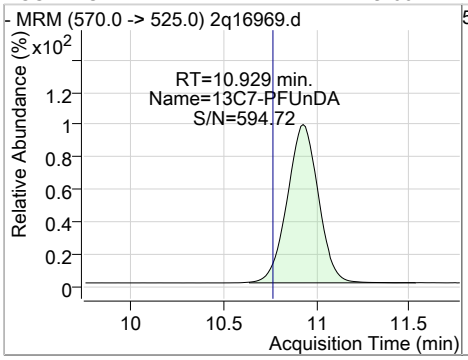
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	1.08	10.76	0.20	429	599.0 -> 99.0	38.1	9.7	69.7

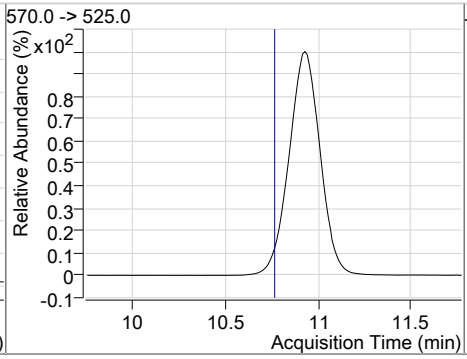


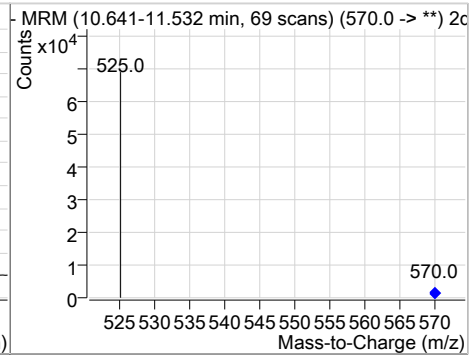




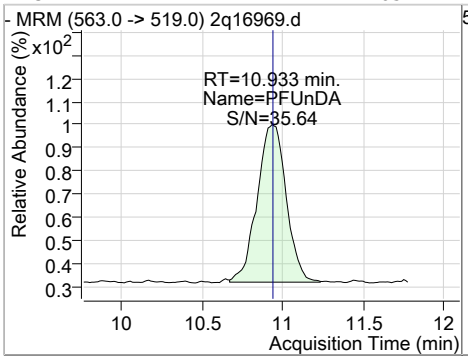
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.66	10.93	0.17	46689				

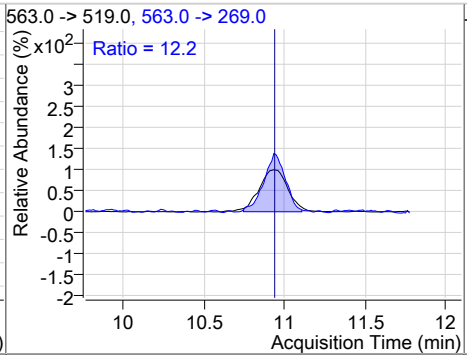


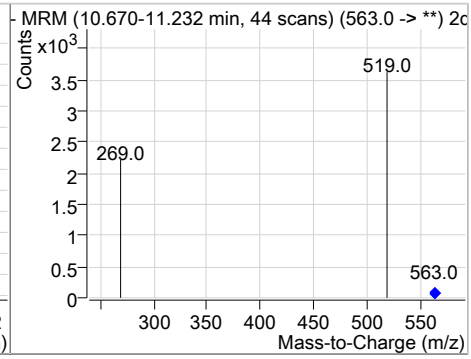




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	1.05	10.93	0.17	1186	563.0 -> 269.0	12.2	0.0	41.8

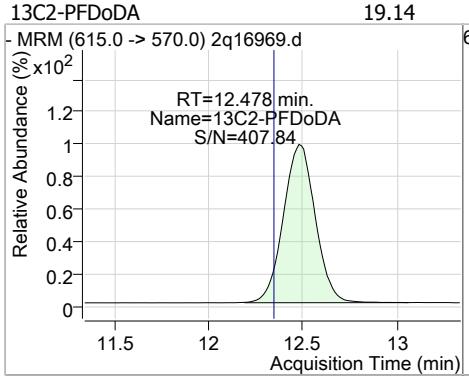


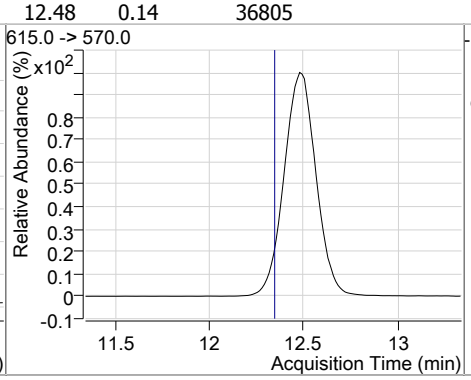


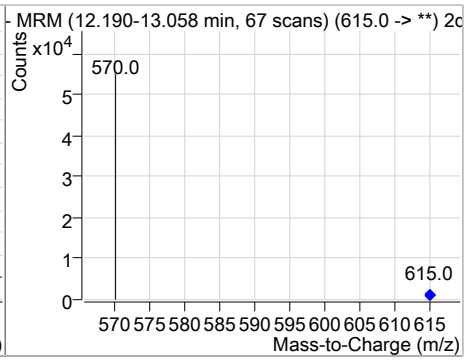


Perfluorinated Compounds by LC/MS/MS

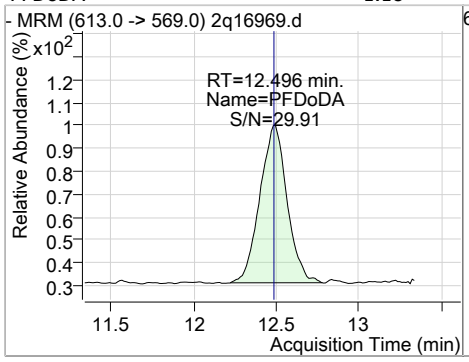
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.14	12.48	0.14	36805				

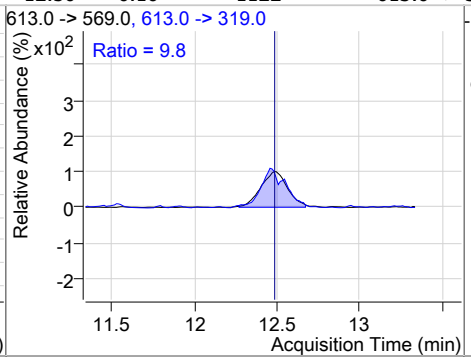


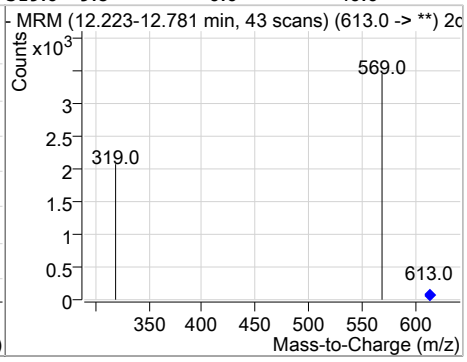




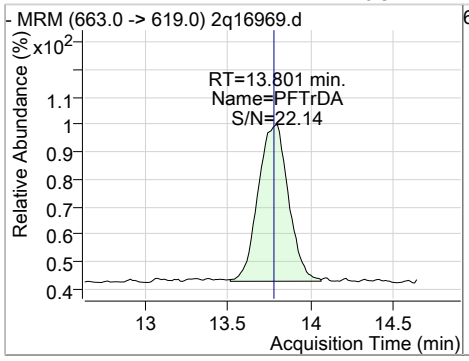
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	1.18	12.50	0.16	1122	613.0 -> 319.0	9.8	0.0	40.0

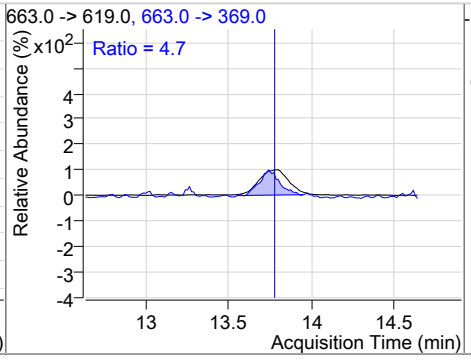


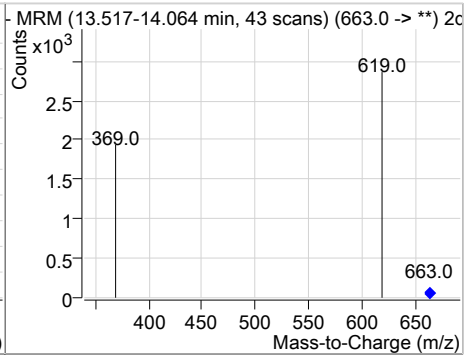




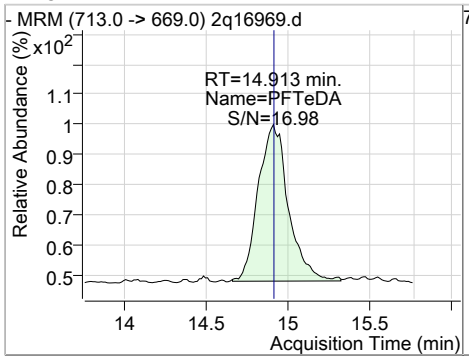
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.97	13.80	0.16	752	663.0 -> 369.0	4.7	0.0	37.1

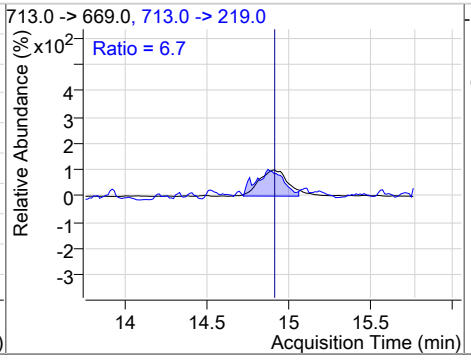


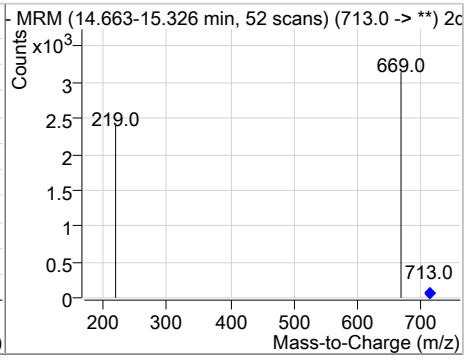




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.14	14.91	0.15	609	713.0 -> 219.0	6.7	0.0	37.4

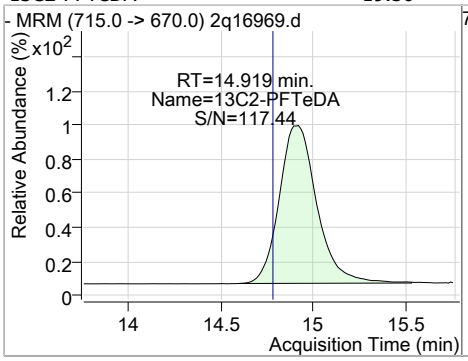


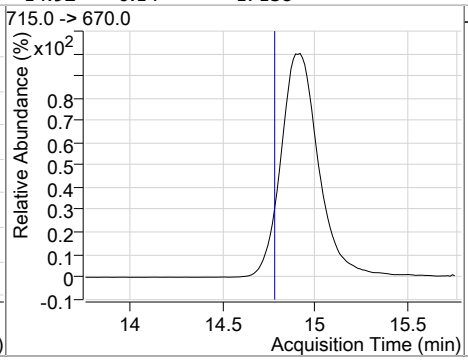


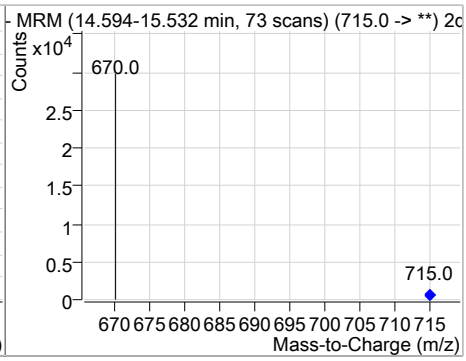


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.56	14.92	0.14	17158				







Manual Integration Approval Summary

Sample Number:	S2Q294-CC294	**Method:**	EPA 537M QSM5.1 B-15
Lab FileID:	2Q16969.D	**Analyst approved:**	07/12/18 09:45 Nancy Saunders
Injection Time:	07/11/18 20:08	**Supervisor approved:**	07/12/18 14:31 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.23	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.65	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 07/12/18 14:31

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16970.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/11/2018 8:29:20 PM
Sample Name : cc294-20
Vial : Vial 7
DA Method File : PFC_ID_071018_S2Q294.quantmethod.xml
Batch Name : s2q294.batch.bin
Sample Information : op70790,S2Q294,1.99,,,1.0,1,soil

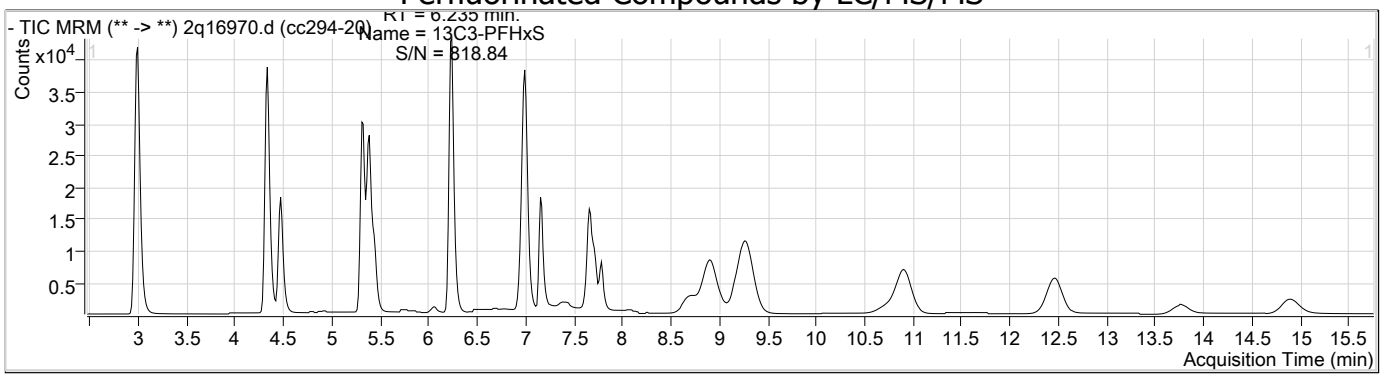
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.984	415.0 -> 370.0	20099	20.00	µg/L	0.038
13C4-PFOS	7.648	503.0 -> 80.0	10527	20.00	µg/L	0.046
M4-PFBA	2.991	217.0 -> 172.0	146822	20.00	µg/L	0.024
M5-PFPeA	4.338	268.0 -> 223.0	72889	20.00	µg/L	0.025
M5-PFHxA	5.391	318.0 -> 273.0	66620	20.00	µg/L	0.030
M4-PFHpA	6.242	367.0 -> 322.0	63292	20.00	µg/L	0.032
M8-PFOA	6.983	421.0 -> 376.0	32128	20.00	µg/L	0.037
M9-PFNA	7.715	472.0 -> 427.0	21776	20.00	µg/L	0.048
M6-PFDA	8.904	519.0 -> 474.0	63781	20.00	µg/L	0.162
M7-PFUnDA	10.904	570.0 -> 525.0	51874	20.00	µg/L	0.143
M2-PFDoDA	12.465	615.0 -> 570.0	42451	20.00	µg/L	0.127
M2-PFTeDA	14.894	715.0 -> 670.0	19309	20.00	µg/L	0.119
M8-FOSA	7.155	506.0 -> 78.0	35816	20.00	µg/L	0.010
M3-PFBS	4.468	302.0 -> 99.0	22654	20.00	µg/L	0.031
M3-PFHxS	6.235	402.0 -> 99.0	18895	20.00	µg/L	0.039
M8-PFOS	7.646	507.0 -> 99.0	9676	20.00	µg/L	0.045
M2-4:2FTS	5.323	329.0 -> 309.0	61235	20.00	µg/L	0.040
M2-6:2FTS	7.005	429.0 -> 409.0	46806	20.00	µg/L	0.047
M2-8:2FTS	9.260	529.0 -> 509.0	85262	20.00	µg/L	0.165
M3-MeFOSAA	7.658	573.0 -> 419.0	16686	20.00	µg/L	0.021
System Monitoring Compounds						
13C2-4:2FTS	5.323	329.0 -> 309.0	61261	22.85	µg/L	0.040
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.3%		
13C2-6:2FTS	7.005	429.0 -> 409.0	46809	22.55	µg/L	0.047
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.8%		
13C2-8:2FTS	9.260	529.0 -> 509.0	83508	19.01	µg/L	0.165
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.0%		
13C2-PFDoDA	12.465	615.0 -> 570.0	42486	22.09	µg/L	0.127
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.5%		
13C2-PFTeDA	14.894	715.0 -> 670.0	19340	22.05	µg/L	0.119
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.2%		
13C3-PFBS	4.468	302.0 -> 99.0	22672	22.79	µg/L	0.031
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.0%		
13C3-PFHxS	6.235	402.0 -> 99.0	18909	22.78	µg/L	0.039
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.9%		
13C4-PFBA	2.991	217.0 -> 172.0	146674	22.89	µg/L	0.024
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.5%		
13C4-PFHpA	6.242	367.0 -> 322.0	63310	23.28	µg/L	0.032
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.4%		
13C5-PFHxA	5.391	318.0 -> 273.0	66620	23.49	µg/L	0.030
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 117.5%		
13C5-PFPeA	4.338	268.0 -> 223.0	72879	23.30	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.5%		
13C6-PFDA	8.904	519.0 -> 474.0	62846	21.71	µg/L	0.162
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.6%		

Perfluorinated Compounds by LC/MS/MS

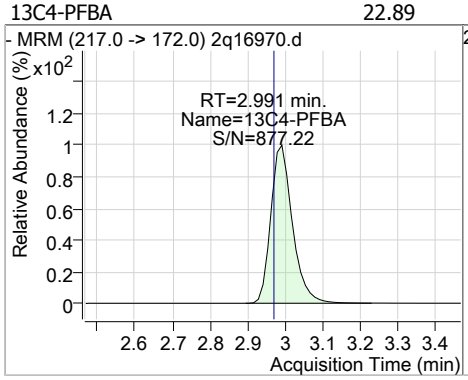
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.904	570.0 -> 525.0	51965	21.88	µg/L		0.143
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.4%			
13C8-FOSA	7.155	506.0 -> 78.0	35806	22.84	µg/L		0.010
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.2%			
13C8-PFOA	6.983	421.0 -> 376.0	32136	23.12	µg/L		0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.6%			
13C8-PFOS	7.646	507.0 -> 99.0	9669	22.40	µg/L		0.045
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.0%			
13C9-PFNA	7.715	472.0 -> 427.0	21769	22.60	µg/L		0.048
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.0%			
d3-MeFOSAA	7.658	573.0 -> 419.0	16673	22.04	µg/L		0.021
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.2%			
M2-PFOA	6.984	415.0 -> 370.0	20103	20.01	ng/ml		0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.648	503.0 -> 80.0	10524	20.00	ng/ml		0.046
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
Target Compounds							**QValue**
4:2FTS	5.313	327.0 -> 307.0	30073	19.59	µg/L		100
6:2FTS	7.006	427.0 -> 407.0	22676	19.99	µg/L		98
8:2FTS	9.266	527.0 -> 507.0	43674	19.76	µg/L		95
EtFOSAA	7.781	584.0 -> 419.0	5443	19.34	µg/L		99
FOSA	7.158	498.0 -> 78.0	16480	18.73	µg/L		99
MeFOSAA	7.672	570.0 -> 419.0	6293	21.09	µg/L		98
PFBA	2.987	213.0 -> 169.0	22291	19.45	µg/L		100
PFBS	4.472	299.0 -> 80.0	29029	18.78	µg/L		98
PFDA	8.906	513.0 -> 469.0	22828	19.70	µg/L		99
PFDoDA	12.459	613.0 -> 569.0	21171	19.35	µg/L		99
PFDS	10.725	599.0 -> 80.0	8581	19.55	µg/L		99
PFHpA	6.245	363.0 -> 319.0	44191	19.08	µg/L		100
PFHpS	6.941	449.0 -> 80.0	11228	19.42	µg/L		97
PFHxA	5.393	313.0 -> 269.0	21245	18.80	µg/L		98
PFHxS	6.226	399.0 -> 80.0	21343	18.90	µg/L	m	98
PFNA	7.716	463.0 -> 419.0	8030	19.13	µg/L		96
PFNS	8.683	549.0 -> 80.0	15759	20.92	µg/L		99
PFOA	6.985	413.0 -> 369.0	17106	19.41	µg/L		95
PFOS	7.649	499.0 -> 80.0	11530	19.15	µg/L	m	99
PFPeA	4.341	263.0 -> 219.0	65794	18.89	µg/L		100
PFPeS	5.433	349.0 -> 80.0	19144	19.28	µg/L		99
PFTeDA	14.900	713.0 -> 669.0	11403	19.46	µg/L		99
PFTrDA	13.763	663.0 -> 619.0	16355	19.22	µg/L		99
PFUnDA	10.908	563.0 -> 519.0	24381	19.40	µg/L		100

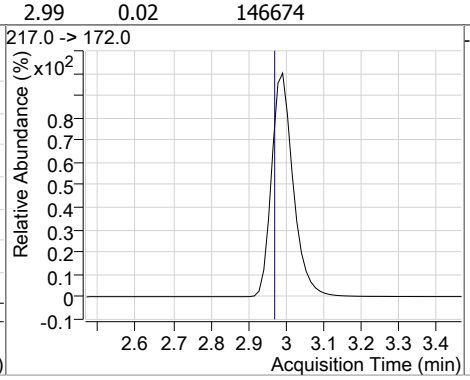
 # = Qualifier out of range, m = manually integrated, + = Area summed

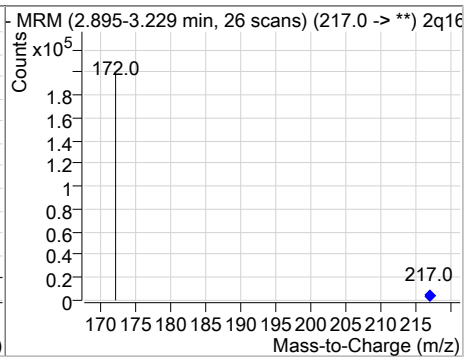
Perfluorinated Compounds by LC/MS/MS



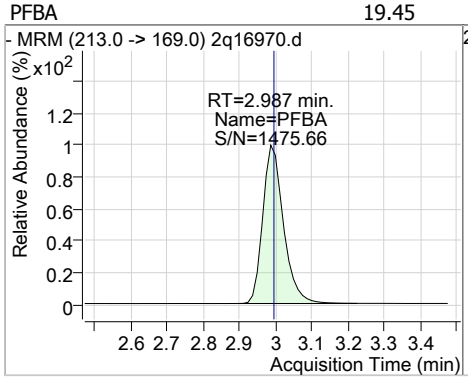
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	22.89	2.99	0.02	146674				

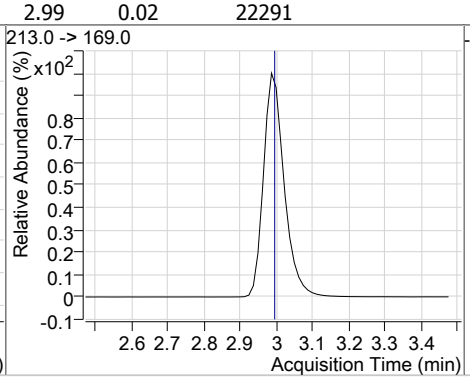


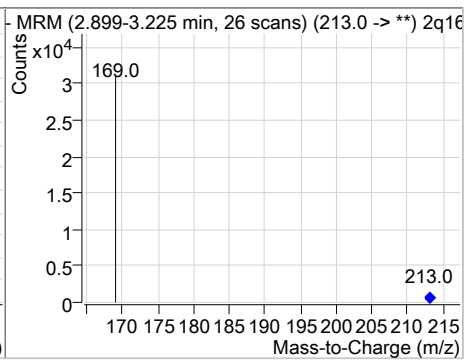




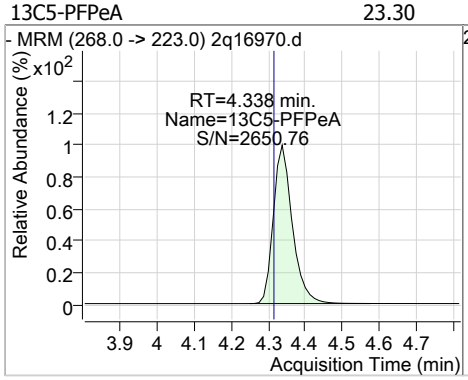
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.45	2.99	0.02	22291				

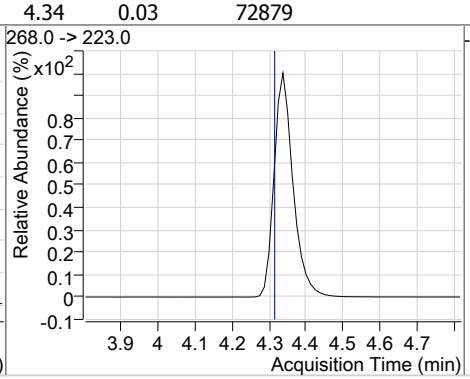


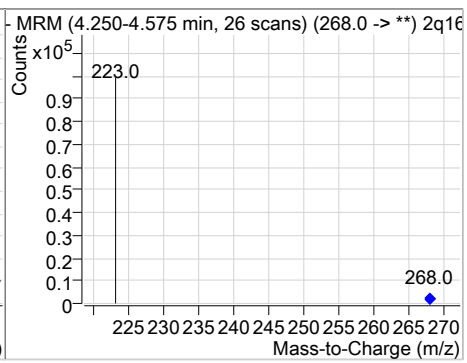




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	23.30	4.34	0.03	72879				

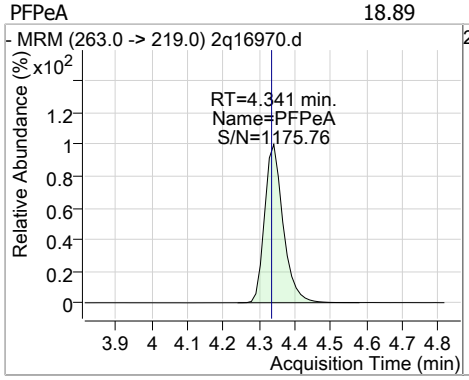


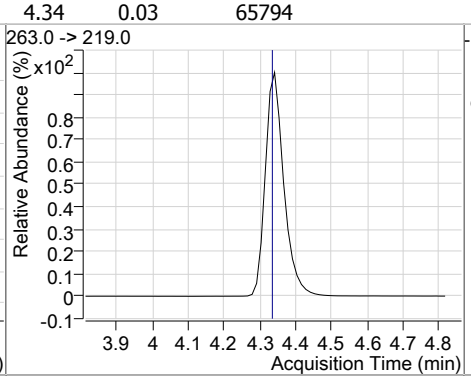


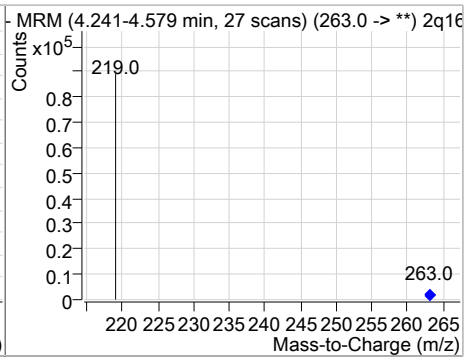


Perfluorinated Compounds by LC/MS/MS

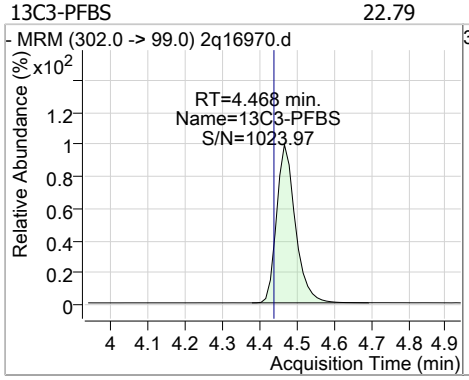
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	18.89	4.34	0.03	65794				

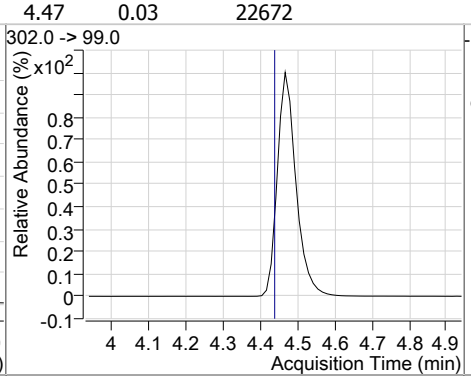


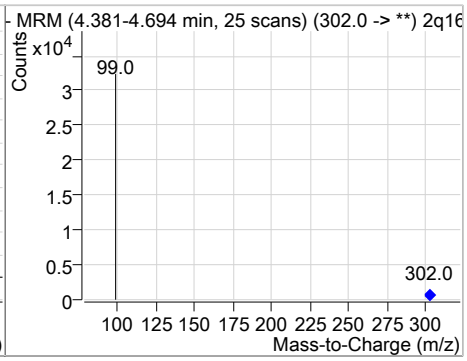




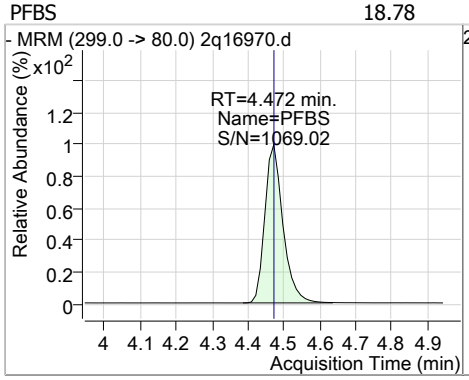
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	22.79	4.47	0.03	22672				

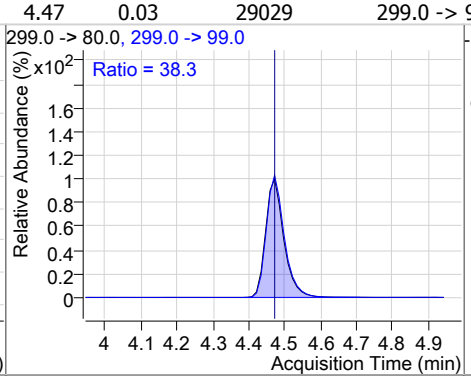


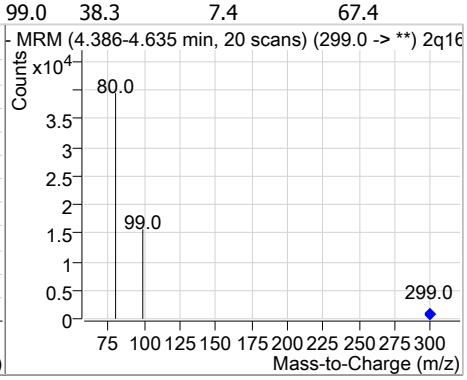




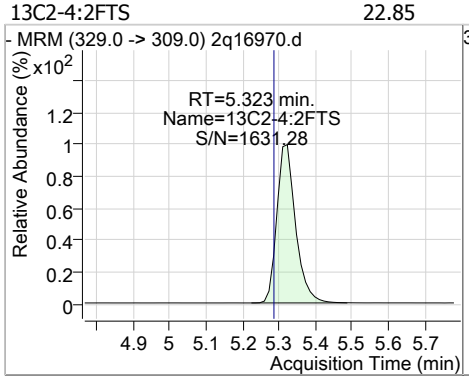
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	18.78	4.47	0.03	29029	299.0 -> 99.0	38.3	7.4	67.4

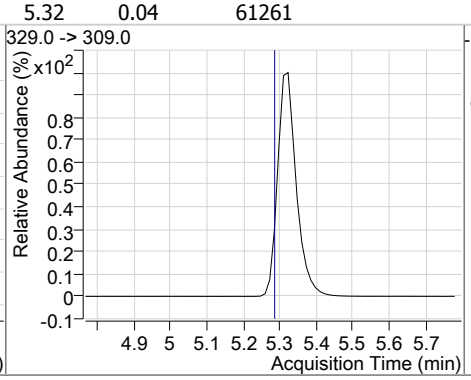


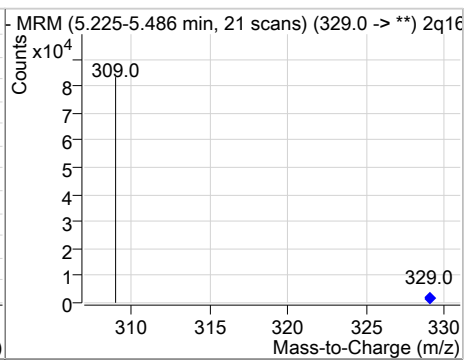




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	22.85	5.32	0.04	61261				

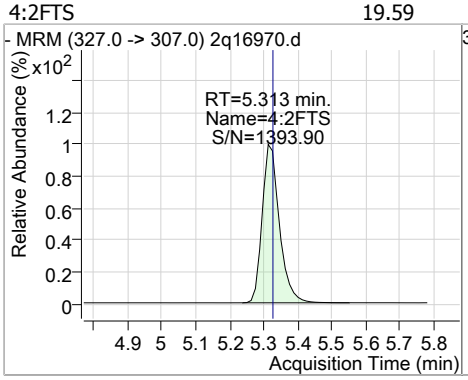


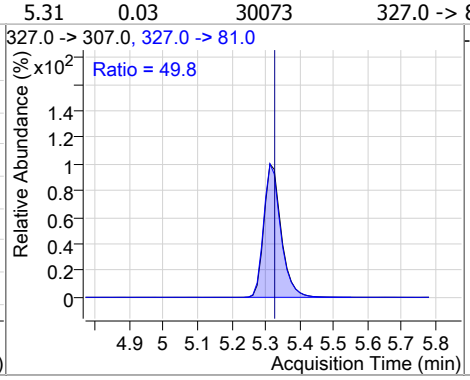


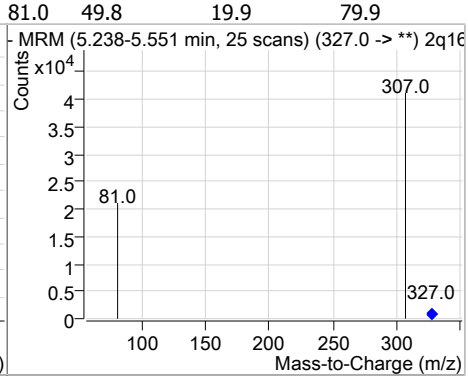


Perfluorinated Compounds by LC/MS/MS

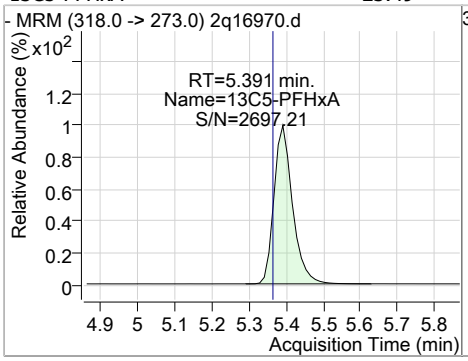
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.59	5.31	0.03	30073	327.0 -> 81.0	49.8	19.9	79.9

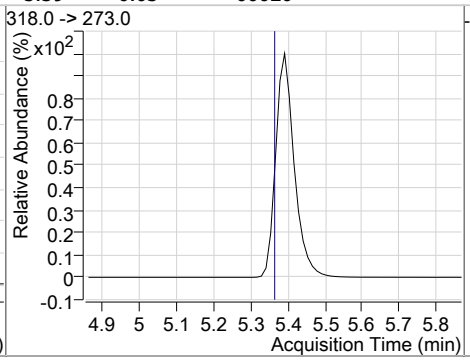


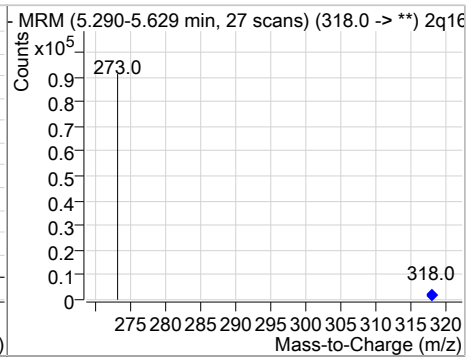




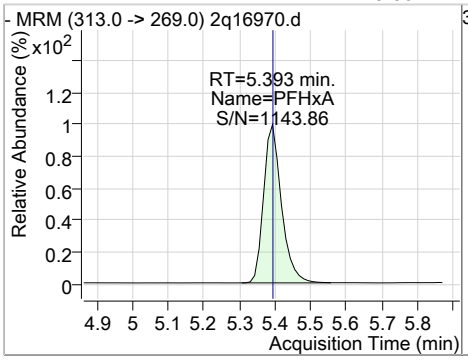
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	23.49	5.39	0.03	66620				

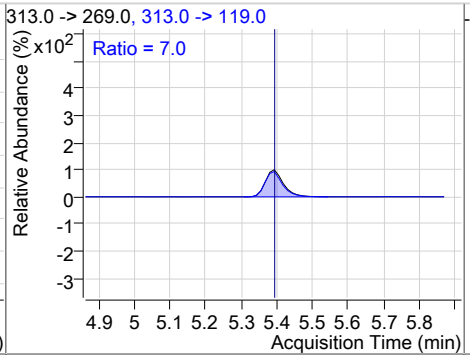


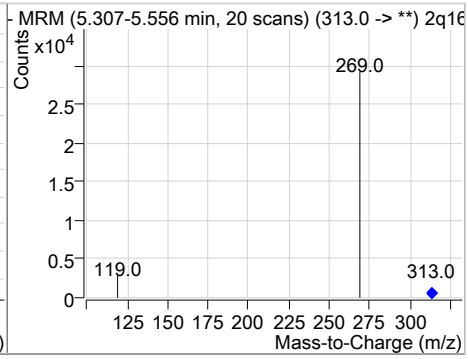




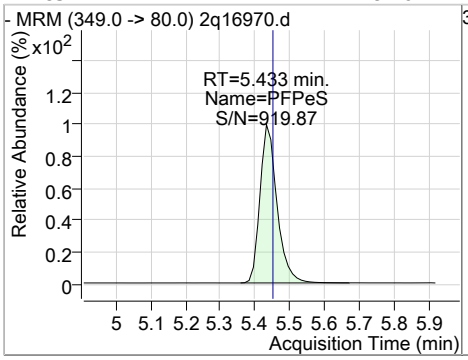
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	18.80	5.39	0.03	21245	313.0 -> 119.0	7.0	0.0	37.6

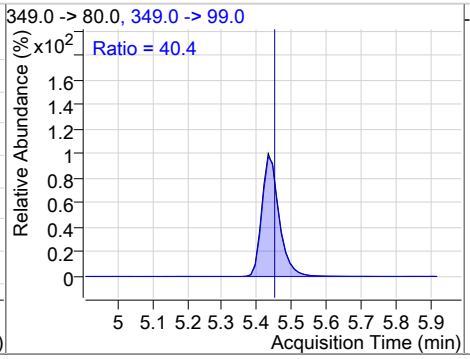


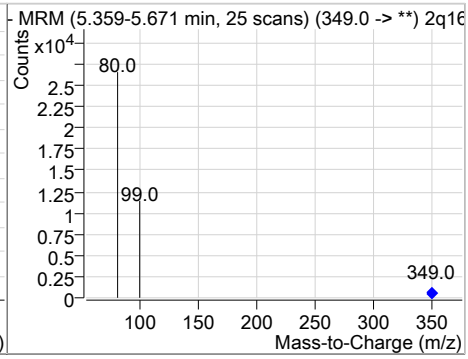




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.28	5.43	0.02	19144	349.0 -> 99.0	40.4	10.8	70.8

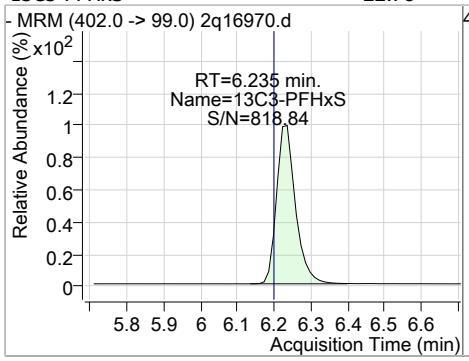


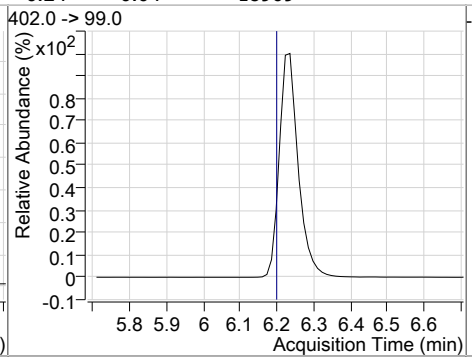


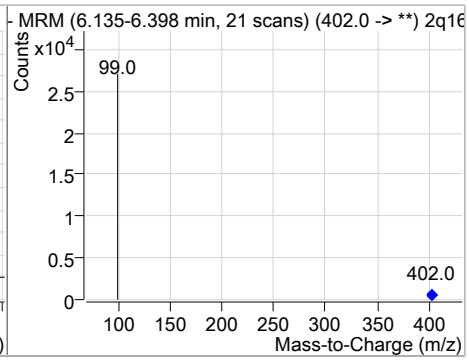


Perfluorinated Compounds by LC/MS/MS

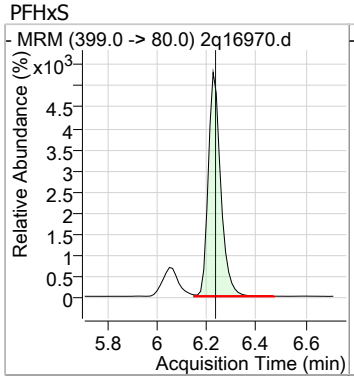
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	22.78	6.24	0.04	18909				

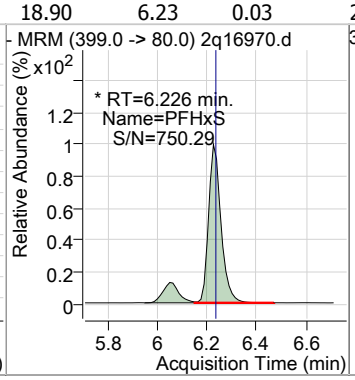


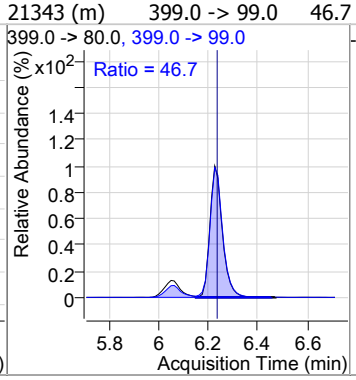


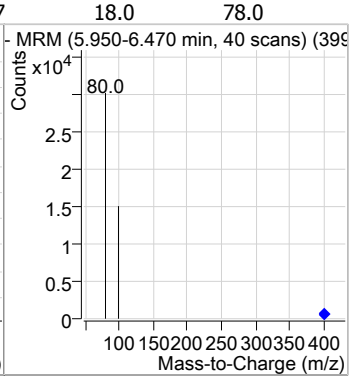


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	18.90	6.23	0.03	21343 (m)	399.0 -> 99.0	46.7	18.0	78.0

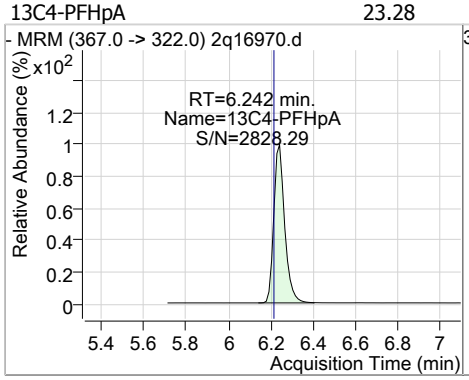


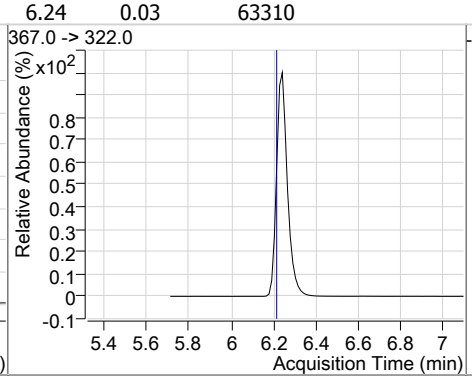


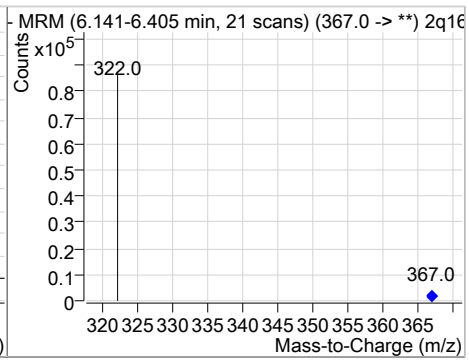




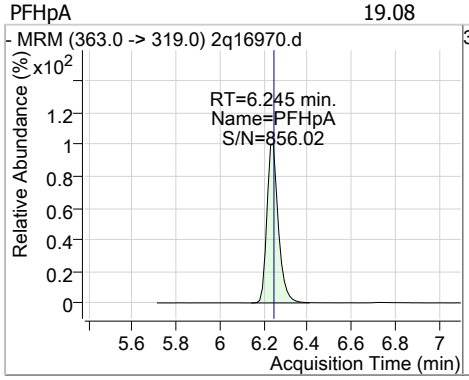
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	23.28	6.24	0.03	63310				

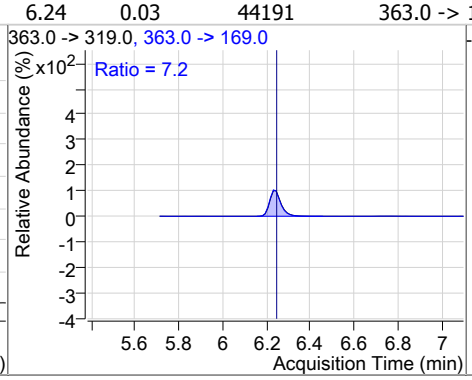


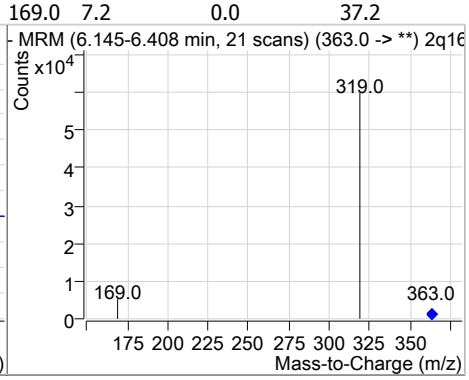




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.08	6.24	0.03	44191	363.0 -> 169.0	7.2	0.0	37.2

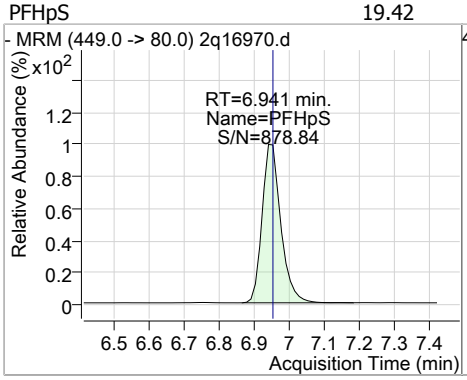


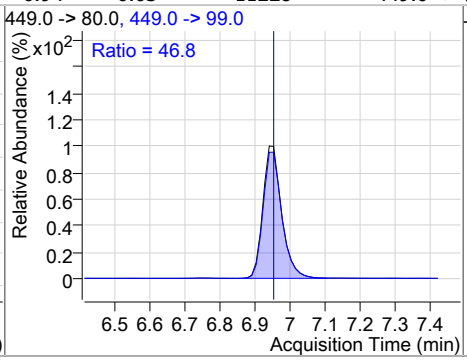


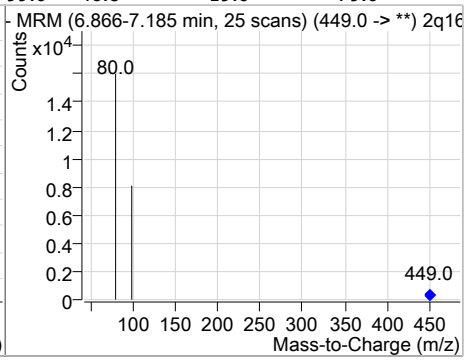


Perfluorinated Compounds by LC/MS/MS

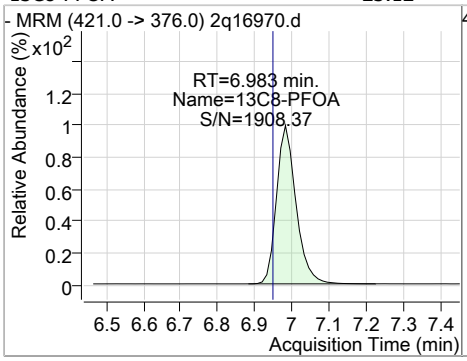
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	19.42	6.94	0.03	11228	449.0 -> 99.0	46.8	19.0	79.0

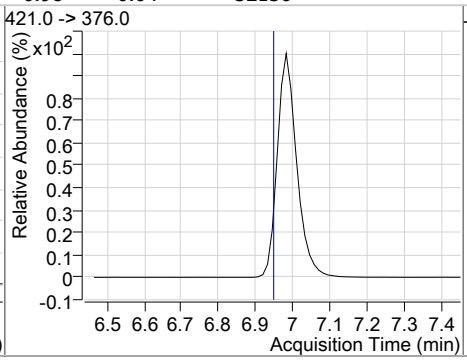


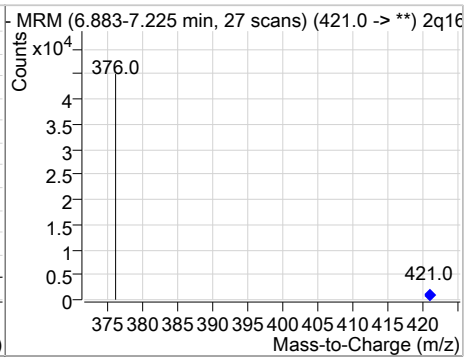




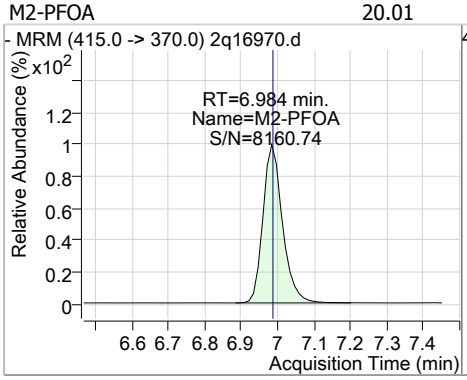
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	23.12	6.98	0.04	32136				

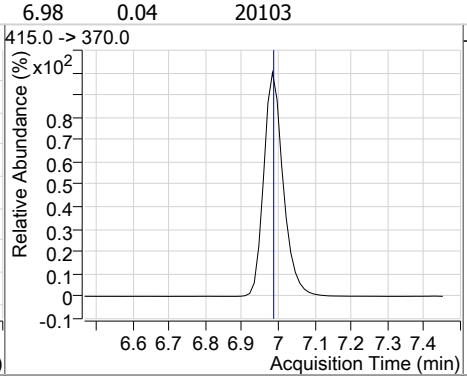


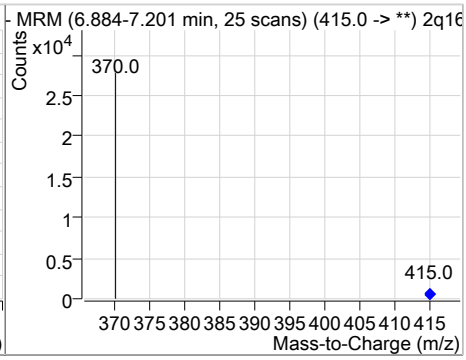




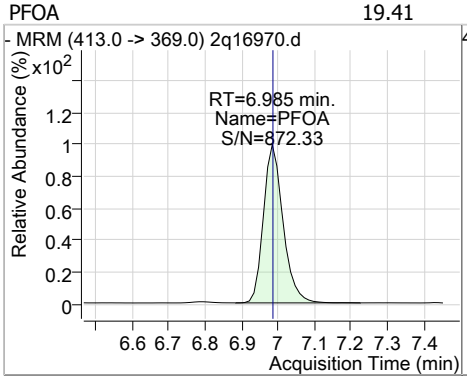
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.01	6.98	0.04	20103				

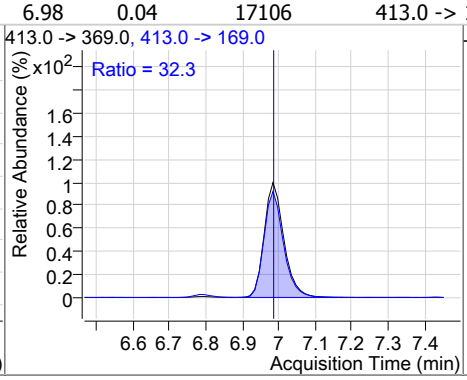


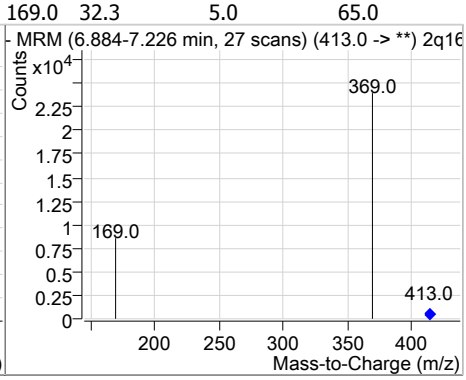




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.41	6.98	0.04	17106	413.0 -> 169.0	32.3	5.0	65.0

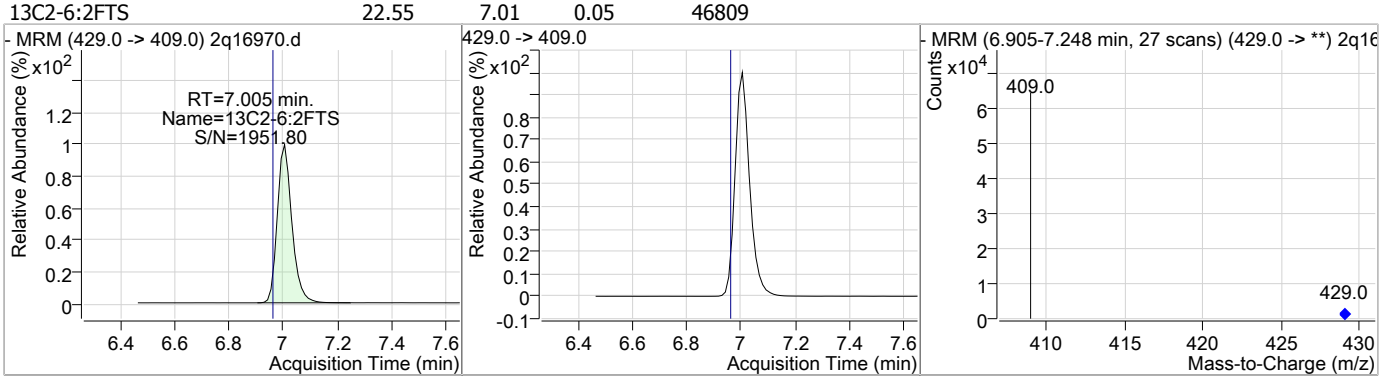




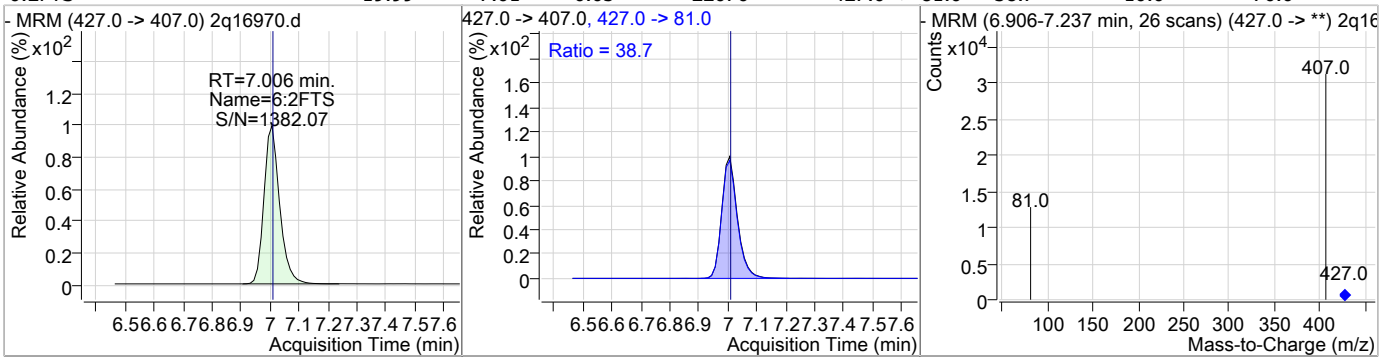


Perfluorinated Compounds by LC/MS/MS

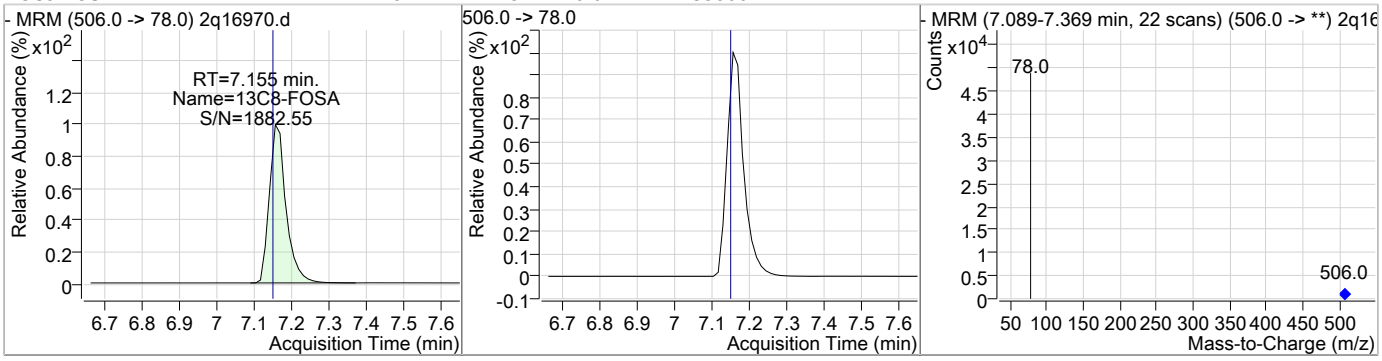
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	22.55	7.01	0.05	46809				



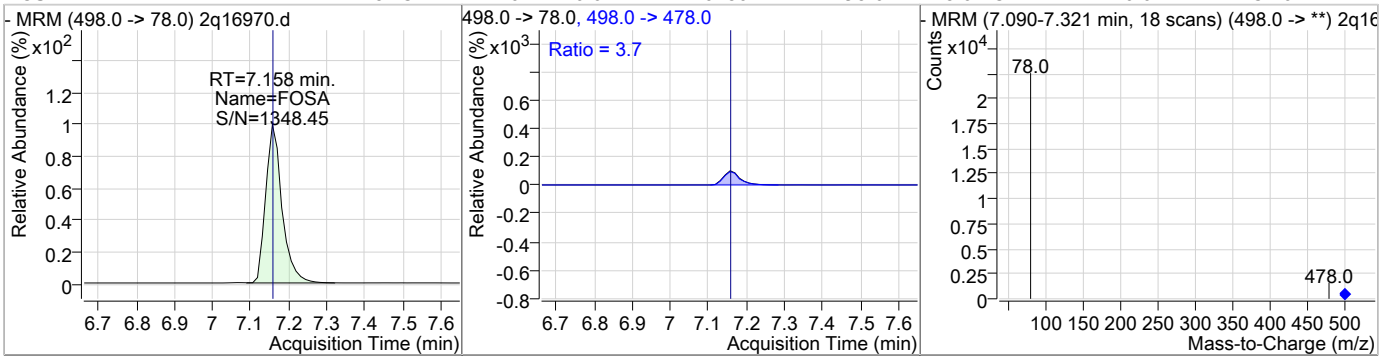
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.99	7.01	0.05	22676	427.0 -> 81.0	38.7	10.0	70.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	22.84	7.15	0.01	35806				

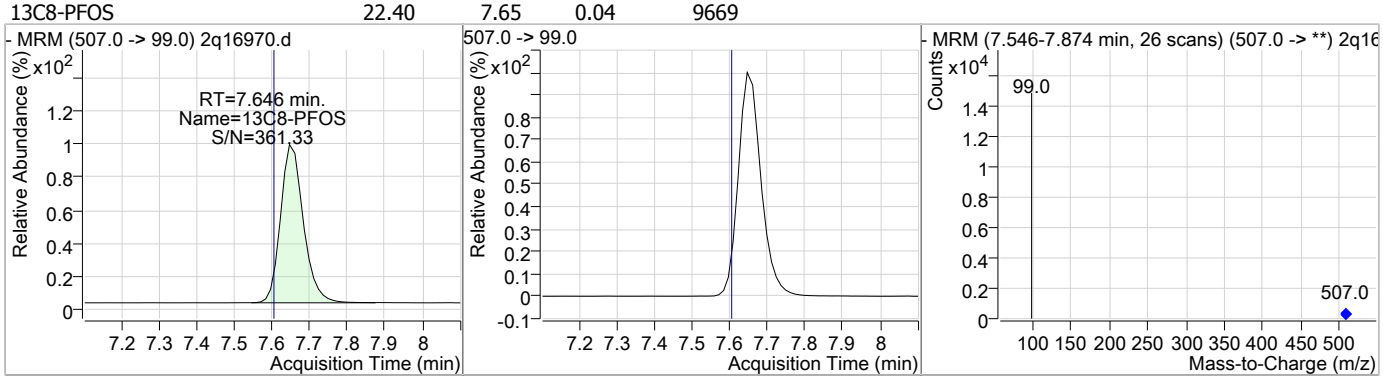


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	18.73	7.16	0.01	16480	498.0 -> 478.0	3.7	0.0	34.0

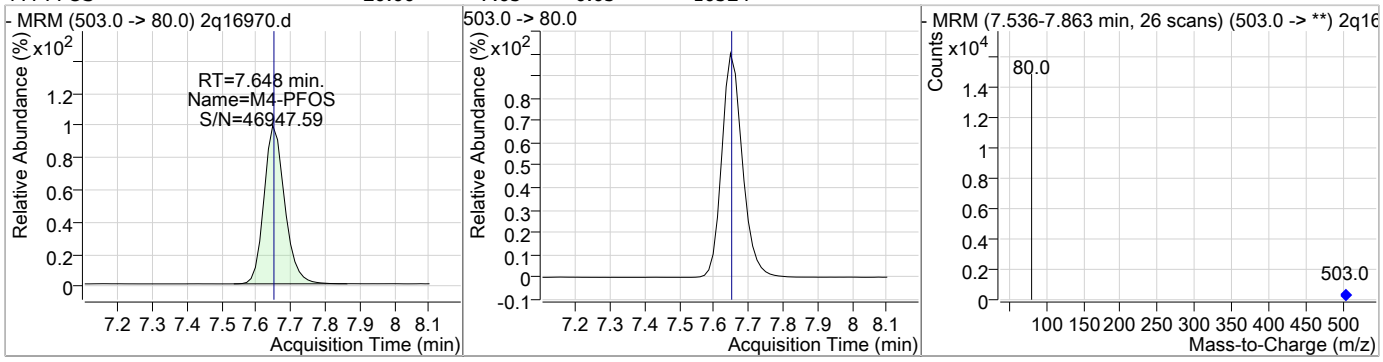


Perfluorinated Compounds by LC/MS/MS

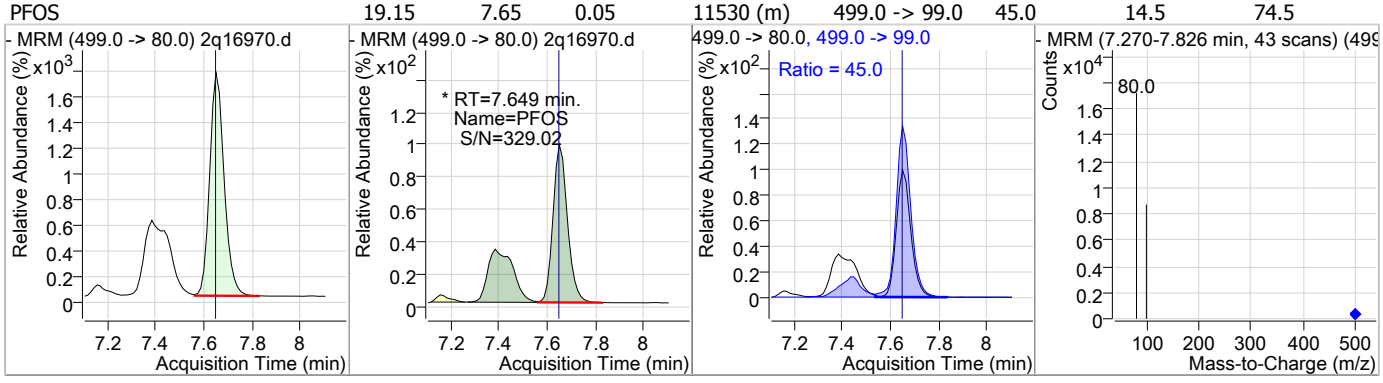
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	22.40	7.65	0.04	9669				



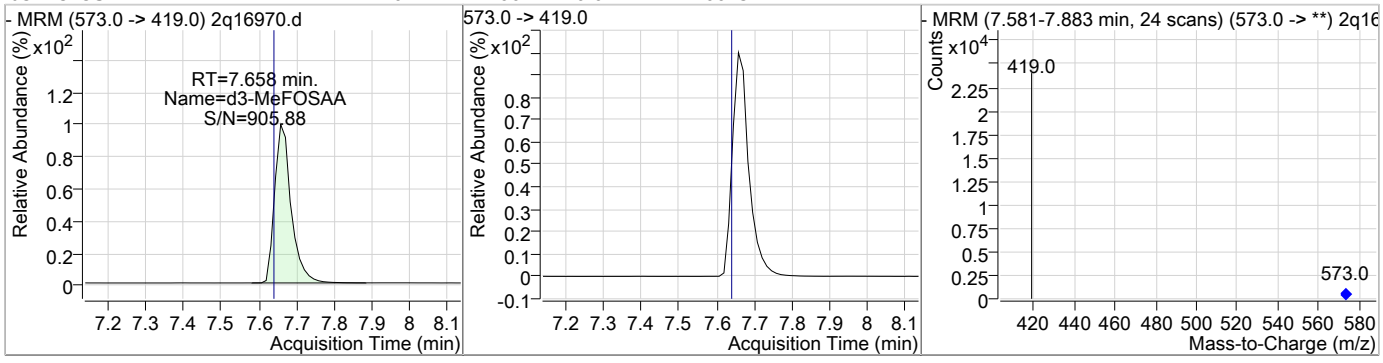
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.00	7.65	0.05	10524				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.15	7.65	0.05	11530 (m)	499.0 -> 99.0	45.0	14.5	74.5

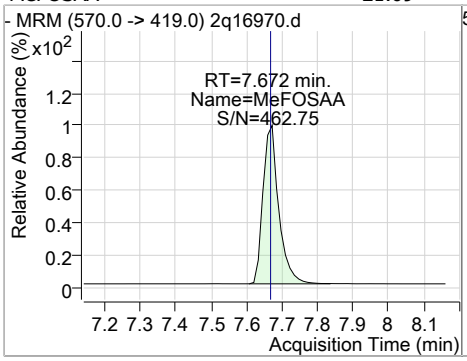


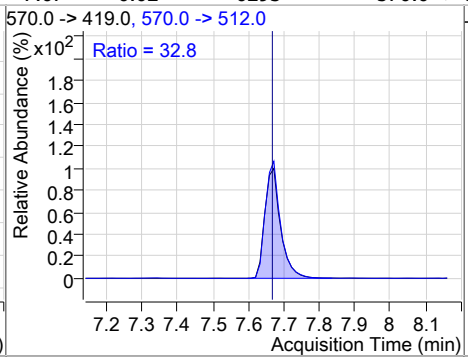
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	22.04	7.66	0.02	16673				

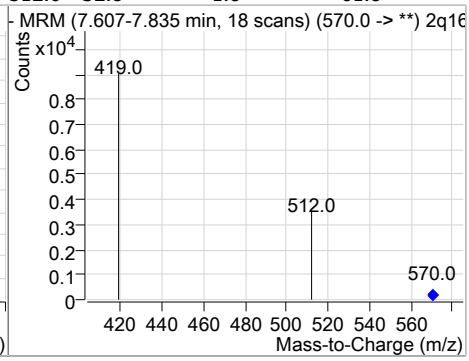


Perfluorinated Compounds by LC/MS/MS

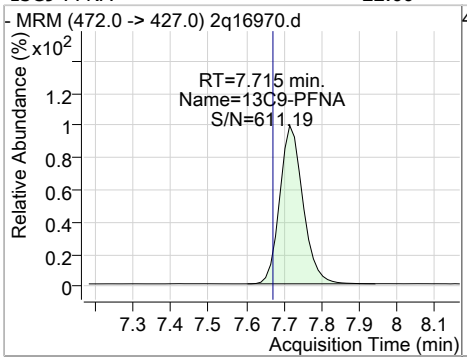
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	21.09	7.67	0.02	6293	570.0 -> 512.0	32.8	1.8	61.8

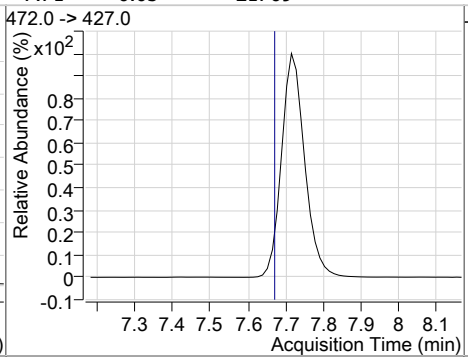


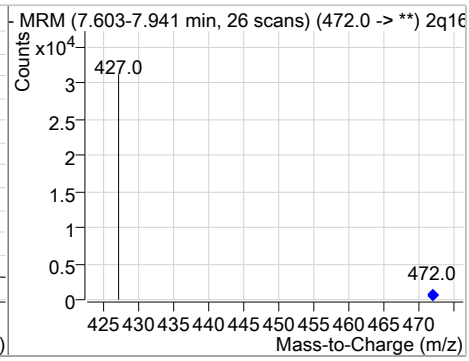




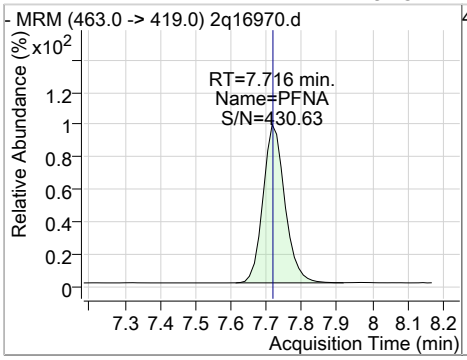
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	22.60	7.71	0.05	21769				

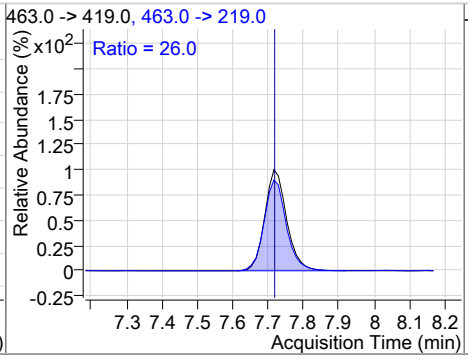


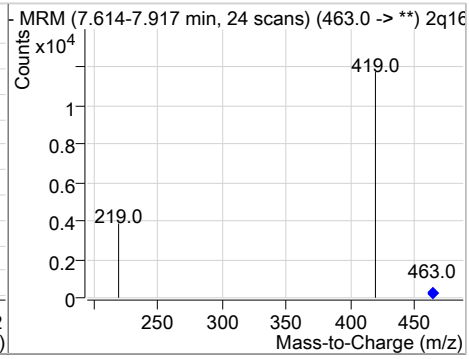




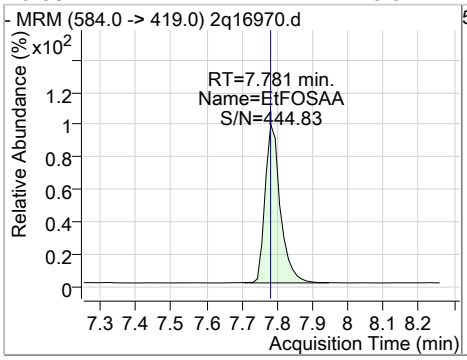
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.13	7.72	0.05	8030	463.0 -> 219.0	26.0	0.0	58.4

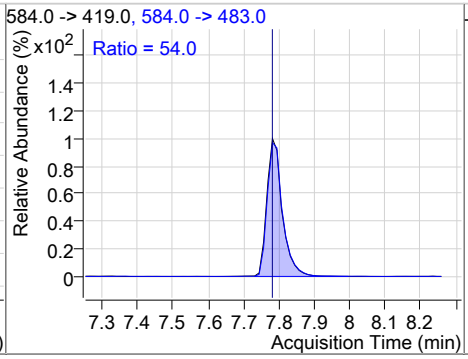


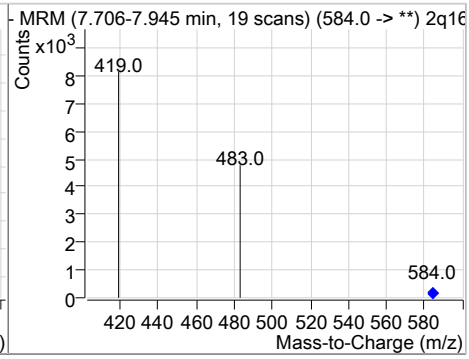




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.34	7.78	0.02	5443	584.0 -> 483.0	54.0	24.8	84.8

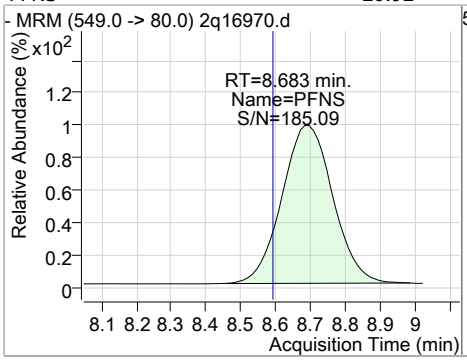


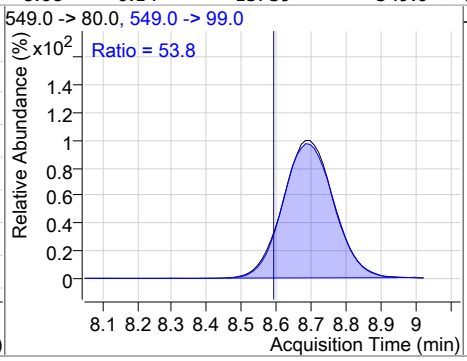


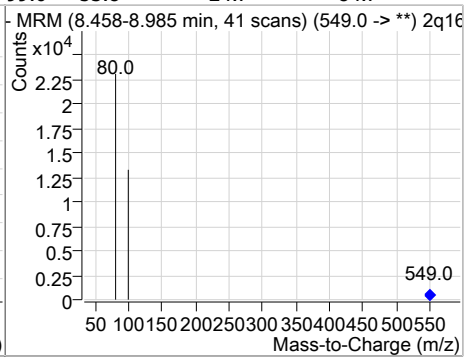


Perfluorinated Compounds by LC/MS/MS

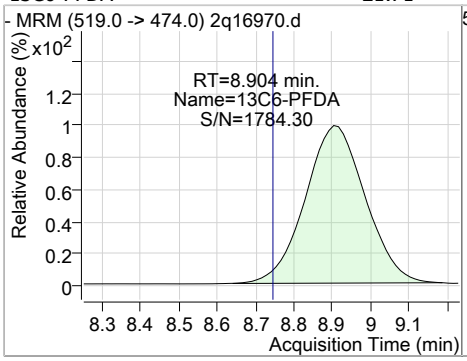
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	20.92	8.68	0.14	15759	549.0 -> 99.0	53.8	24.7	84.7

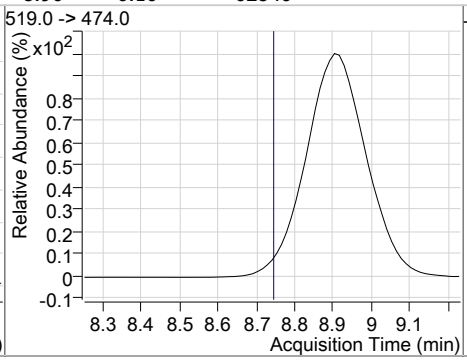


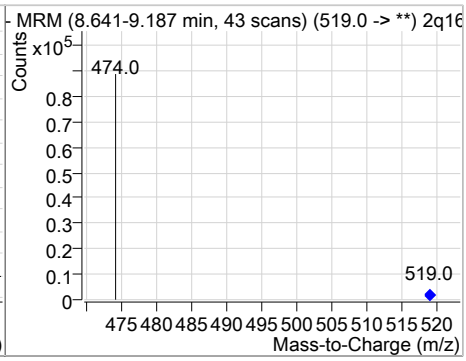




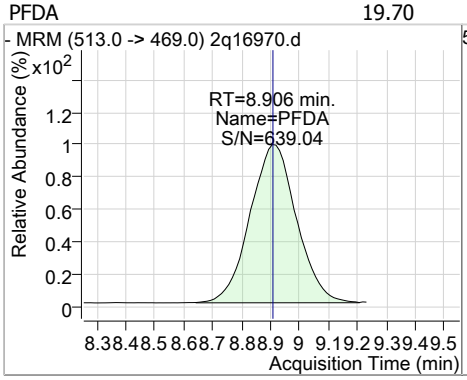
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.71	8.90	0.16	62846				

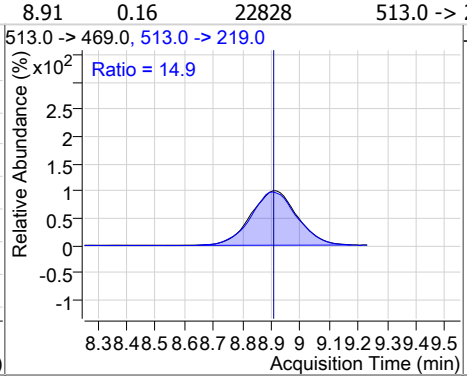


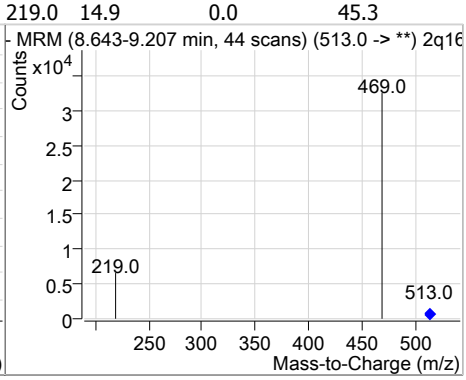




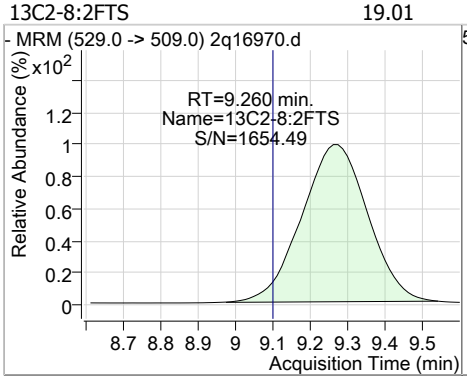
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.70	8.91	0.16	22828	513.0 -> 219.0	14.9	0.0	45.3

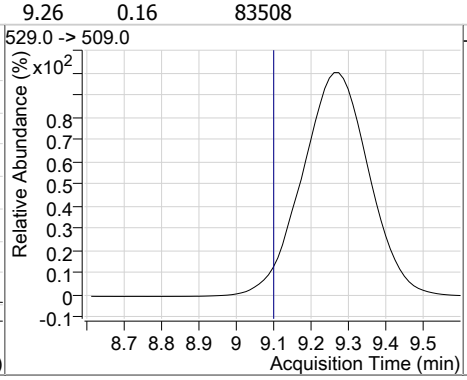


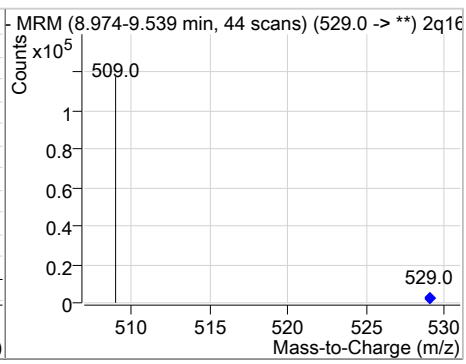




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.01	9.26	0.16	83508				

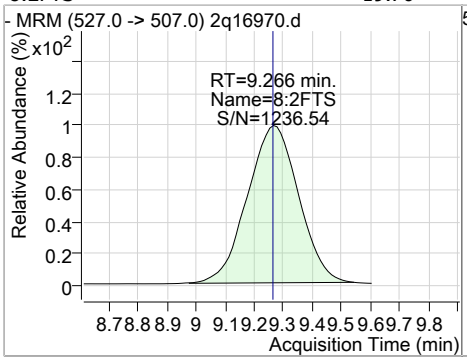


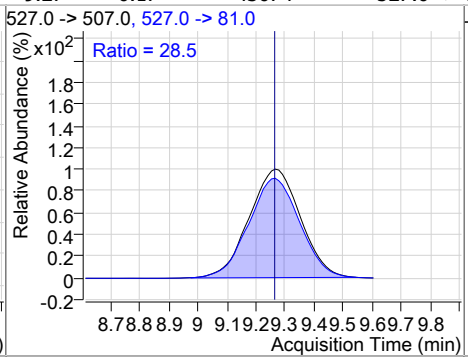


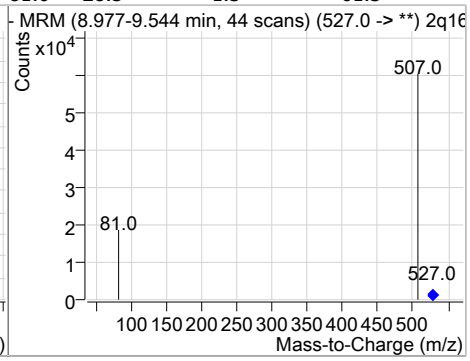


Perfluorinated Compounds by LC/MS/MS

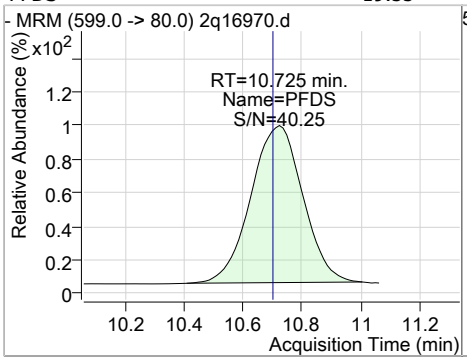
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.76	9.27	0.17	43674	527.0 -> 81.0	28.5	1.3	61.3

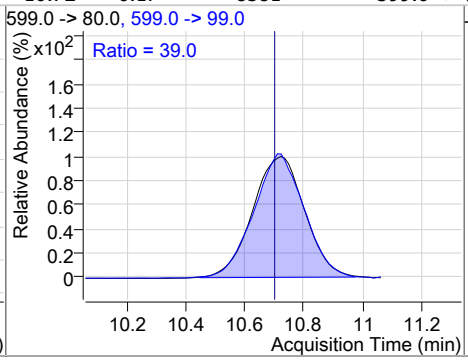


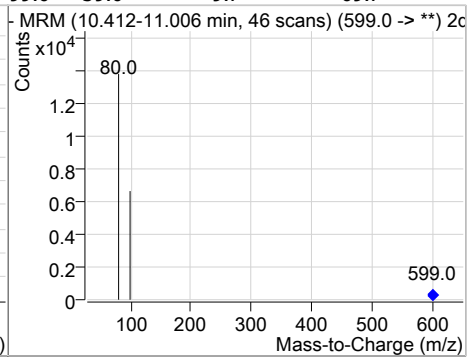




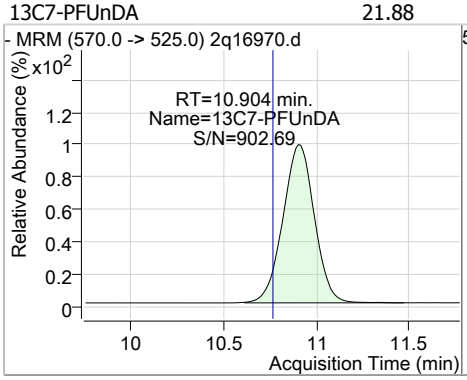
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.55	10.72	0.17	8581	599.0 -> 99.0	39.0	9.7	69.7

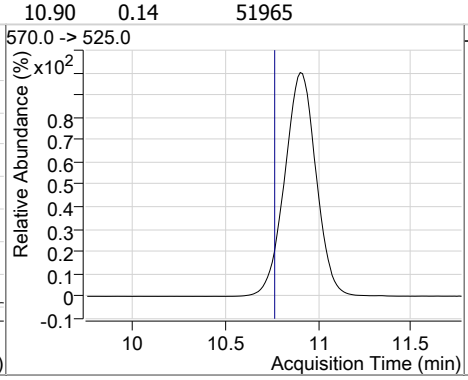


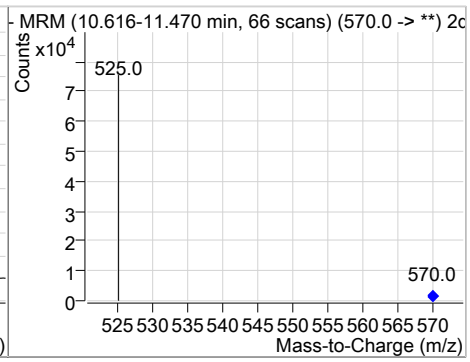




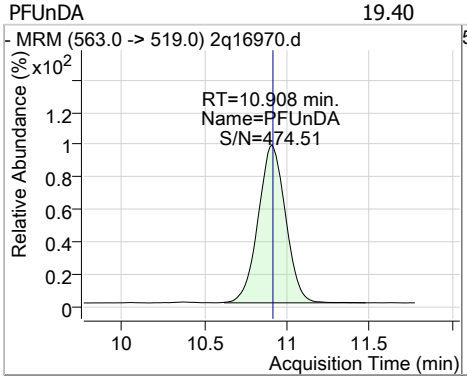
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.88	10.90	0.14	51965				

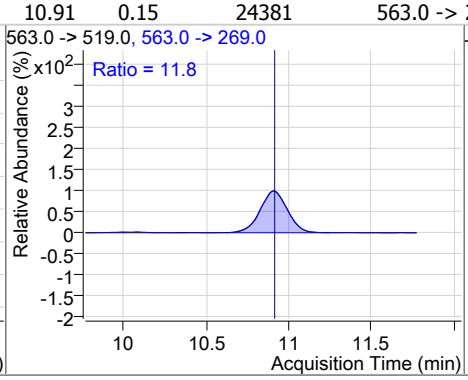


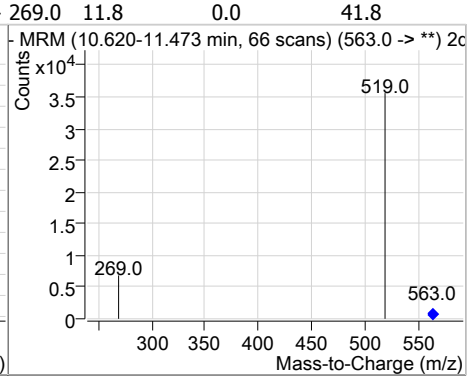




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.40	10.91	0.15	24381	563.0 -> 269.0	11.8	0.0	41.8

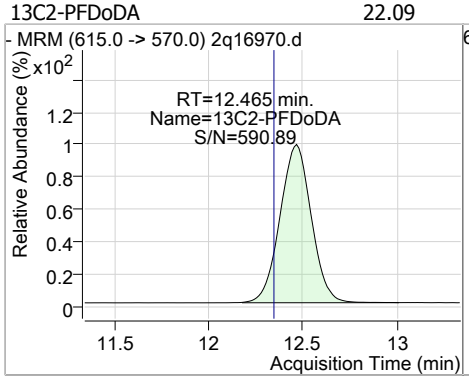


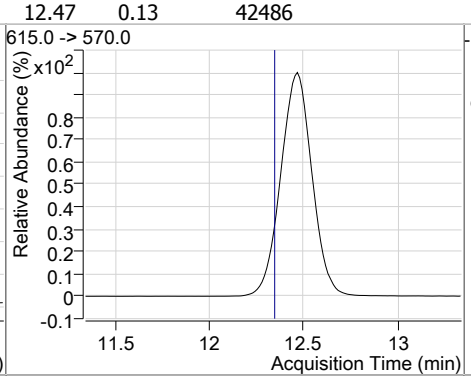


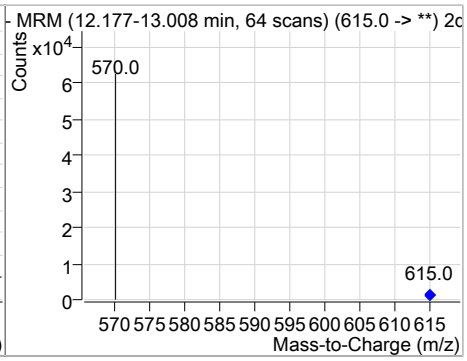


Perfluorinated Compounds by LC/MS/MS

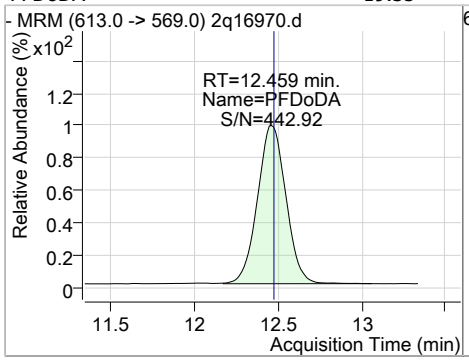
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	22.09	12.47	0.13	42486				

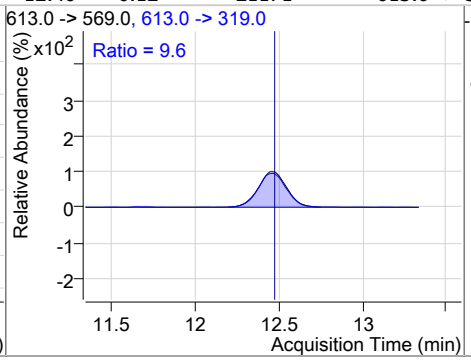


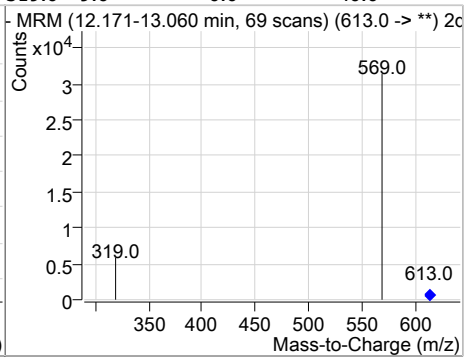




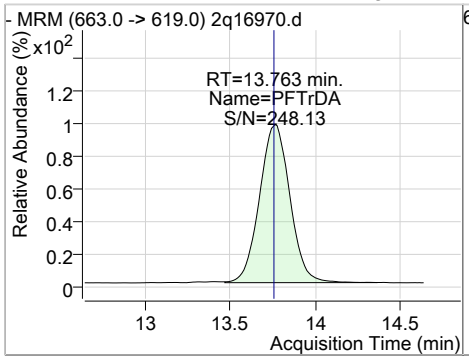
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.35	12.46	0.12	21171	613.0 -> 319.0	9.6	0.0	40.0

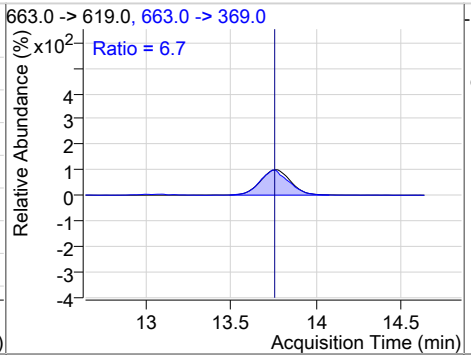


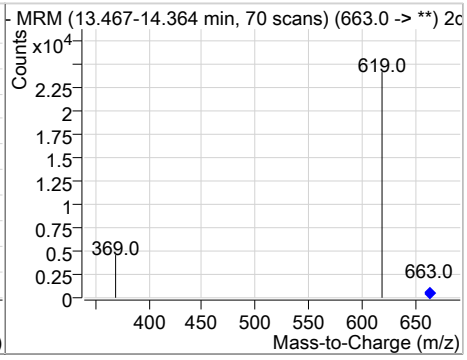




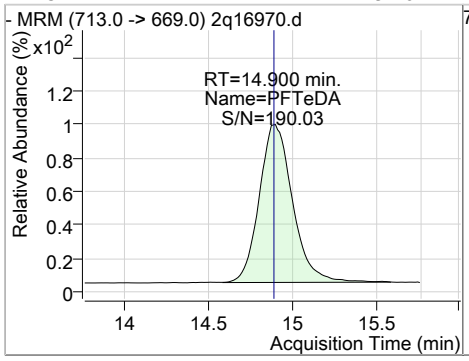
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	19.22	13.76	0.12	16355	663.0 -> 369.0	6.7	0.0	37.1

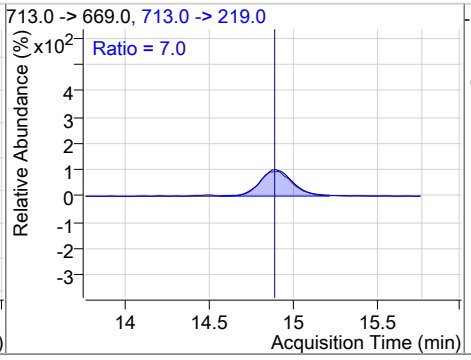


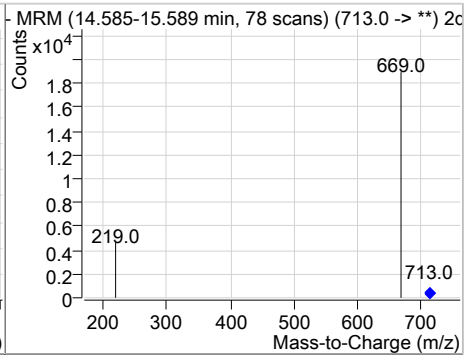




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.46	14.90	0.14	11403	713.0 -> 219.0	7.0	0.0	37.4

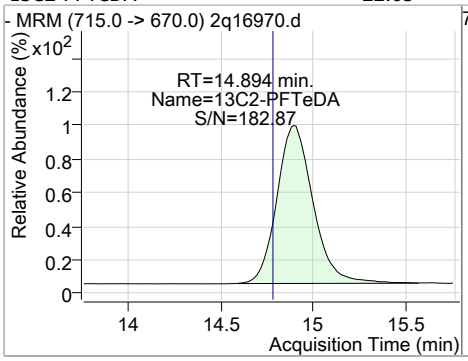


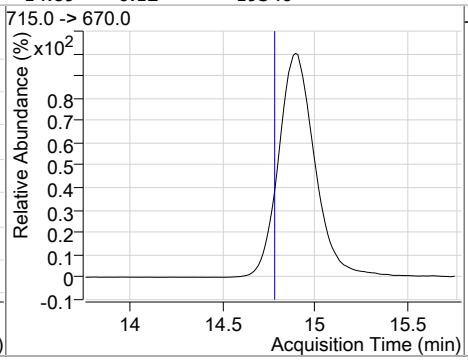


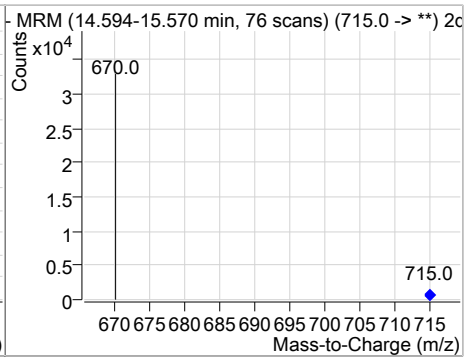


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	22.05	14.89	0.12	19340				







Manual Integration Approval Summary

Sample Number: S2Q294-CC294
Lab FileID: 2Q16970.D
Injection Time: 07/11/18 20:29

Method: EPA 537M BY ID
Analyst approved: 07/12/18 09:45 Nancy Saunders
Supervisor approved: 07/12/18 14:31 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.23	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.65	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 07/12/18 14:31

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16982.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/12/2018 12:38:16 AM
Sample Name : cc294-1
Vial : Vial 3
DA Method File : PFC_ID_071018_S2Q294.quantmethod.xml
Batch Name : s2q294.batch.bin
Sample Information : op70743,S2Q294,130,,,1.0,1,water

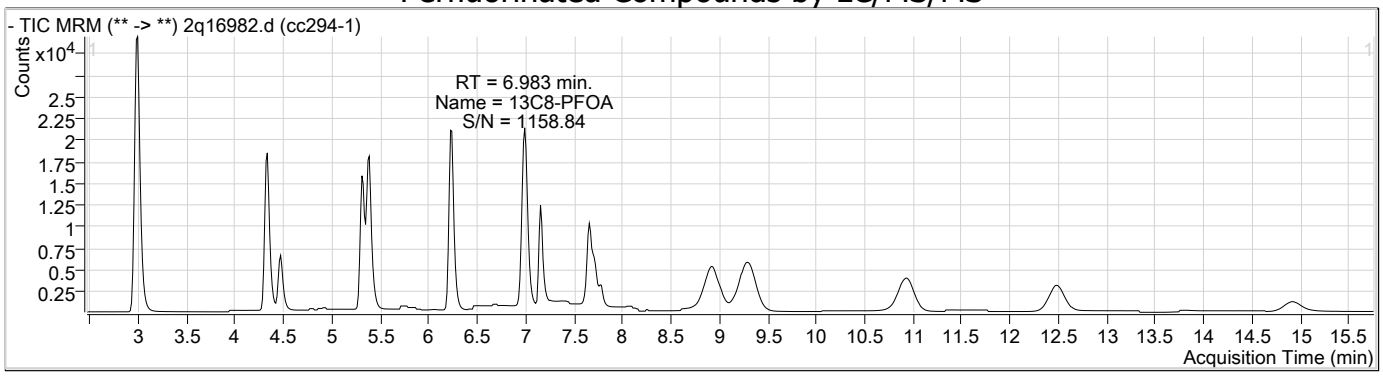
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.984	415.0 -> 370.0	17398	20.00	µg/L	0.038
13C4-PFOS	7.648	503.0 -> 80.0	9442	20.00	µg/L	0.046
M4-PFBA	2.991	217.0 -> 172.0	128384	20.00	µg/L	0.024
M5-PFPeA	4.338	268.0 -> 223.0	62612	20.00	µg/L	0.025
M5-PFHxA	5.391	318.0 -> 273.0	57855	20.00	µg/L	0.030
M4-PFHpA	6.242	367.0 -> 322.0	55788	20.00	µg/L	0.032
M8-PFOA	6.983	421.0 -> 376.0	27855	20.00	µg/L	0.037
M9-PFNA	7.715	472.0 -> 427.0	18403	20.00	µg/L	0.048
M6-PFDA	8.929	519.0 -> 474.0	54453	20.00	µg/L	0.187
M7-PFUnDA	10.929	570.0 -> 525.0	43371	20.00	µg/L	0.168
M2-PFDoDA	12.478	615.0 -> 570.0	34357	20.00	µg/L	0.139
M2-PFTeDA	14.907	715.0 -> 670.0	14947	20.00	µg/L	0.132
M8-FOSA	7.155	506.0 -> 78.0	33025	20.00	µg/L	0.010
M3-PFBS	4.468	302.0 -> 99.0	20042	20.00	µg/L	0.031
M3-PFHxS	6.223	402.0 -> 99.0	16308	20.00	µg/L	0.027
M8-PFOS	7.646	507.0 -> 99.0	8178	20.00	µg/L	0.045
M2-4:2FTS	5.310	329.0 -> 309.0	51464	20.00	µg/L	0.027
M2-6:2FTS	7.005	429.0 -> 409.0	38553	20.00	µg/L	0.047
M2-8:2FTS	9.285	529.0 -> 509.0	68683	20.00	µg/L	0.190
M3-MeFOSAA	7.658	573.0 -> 419.0	14667	20.00	µg/L	0.021
System Monitoring Compounds						
13C2-4:2FTS	5.310	329.0 -> 309.0	51466	19.20	µg/L	0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.0%		
13C2-6:2FTS	7.005	429.0 -> 409.0	38547	18.57	µg/L	0.047
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.9%		
13C2-8:2FTS	9.285	529.0 -> 509.0	66842	15.22	µg/L	0.190
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.1%		
13C2-PFDoDA	12.478	615.0 -> 570.0	34371	17.87	µg/L	0.139
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.4%		
13C2-PFTeDA	14.907	715.0 -> 670.0	15108	17.22	µg/L	0.132
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.1%		
13C3-PFBS	4.468	302.0 -> 99.0	20042	20.15	µg/L	0.031
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%		
13C3-PFHxS	6.223	402.0 -> 99.0	16314	19.66	µg/L	0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.3%		
13C4-PFBA	2.991	217.0 -> 172.0	128374	20.04	µg/L	0.024
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C4-PFHpA	6.242	367.0 -> 322.0	55788	20.52	µg/L	0.032
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.6%		
13C5-PFHxA	5.391	318.0 -> 273.0	57897	20.42	µg/L	0.030
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.1%		
13C5-PFPeA	4.338	268.0 -> 223.0	62609	20.01	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%		
13C6-PFDA	8.929	519.0 -> 474.0	53638	18.53	µg/L	0.187
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.7%		

Perfluorinated Compounds by LC/MS/MS

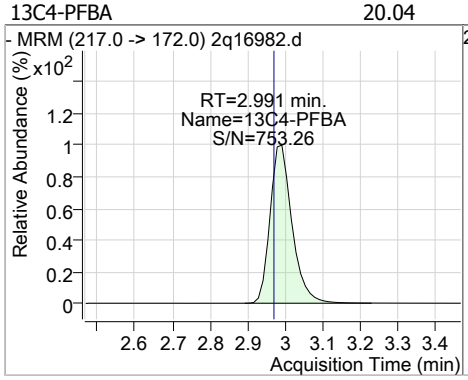
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.929	570.0 -> 525.0	43421	18.28	µg/L		0.168
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.4%			
13C8-FOSA	7.155	506.0 -> 78.0	33019	21.06	µg/L		0.010
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.3%			
13C8-PFOA	6.983	421.0 -> 376.0	27852	20.03	µg/L		0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.2%			
13C8-PFOS	7.646	507.0 -> 99.0	8175	18.94	µg/L		0.045
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.7%			
13C9-PFNA	7.715	472.0 -> 427.0	18418	19.12	µg/L		0.048
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.6%			
d3-MeFOSAA	7.658	573.0 -> 419.0	14666	19.38	µg/L		0.021
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.9%			
M2-PFOA	6.984	415.0 -> 370.0	17401	20.01	ng/ml		0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.648	503.0 -> 80.0	9438	20.00	ng/ml		0.046
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
Target Compounds							**QValue**
4:2FTS	5.313	327.0 -> 307.0	1449	1.09	µg/L		85
6:2FTS	7.006	427.0 -> 407.0	1019	1.06	µg/L		92
8:2FTS	9.279	527.0 -> 507.0	2014	1.09	µg/L		98
EtFOSAA	7.781	584.0 -> 419.0	220	0.89	µg/L		99
FOSA	7.158	498.0 -> 78.0	821	1.01	µg/L		99
MeFOSAA	7.659	570.0 -> 419.0	307	1.17	µg/L		92
PFBA	2.987	213.0 -> 169.0	1023	1.02	µg/L		100
PFBS	4.472	299.0 -> 80.0	1428	1.04	µg/L		97
PFDA	8.932	513.0 -> 469.0	1030	1.04	µg/L		95
PFDoDA	12.484	613.0 -> 569.0	1078	1.21	µg/L		93
PFDS	10.737	599.0 -> 80.0	398	1.09	µg/L		93
PFHpA	6.232	363.0 -> 319.0	2121	1.04	µg/L		99
PFHpS	6.953	449.0 -> 80.0	509	1.02	µg/L		99
PFHxA	5.393	313.0 -> 269.0	975	0.99	µg/L		99
PFHxS	6.226	399.0 -> 80.0	1073	1.10	µg/L	m	96
PFNA	7.716	463.0 -> 419.0	406	1.15	µg/L		92
PFNS	8.721	549.0 -> 80.0	757	1.19	µg/L		97
PFOA	6.985	413.0 -> 369.0	855	1.12	µg/L		89
PFOS	7.649	499.0 -> 80.0	562	1.10	µg/L	m	96
PFPeA	4.341	263.0 -> 219.0	3581	1.20	µg/L		100
PFPeS	5.433	349.0 -> 80.0	913	1.04	µg/L		98
PFTeDA	14.938	713.0 -> 669.0	547	1.19	µg/L		97
PFTrDA	13.826	663.0 -> 619.0	746	1.12	µg/L		97
PFUnDA	10.946	563.0 -> 519.0	1148	1.09	µg/L		98

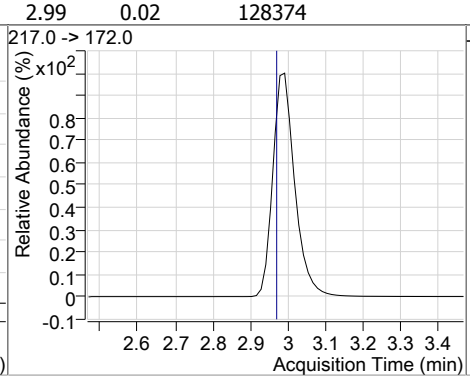
 # = Qualifier out of range, m = manually integrated, + = Area summed

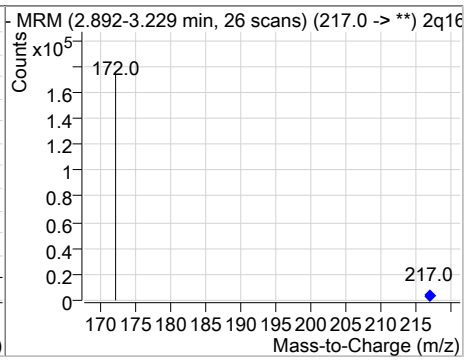
Perfluorinated Compounds by LC/MS/MS



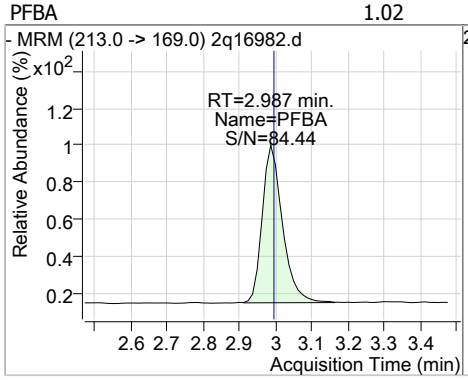
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.04	2.99	0.02	128374				

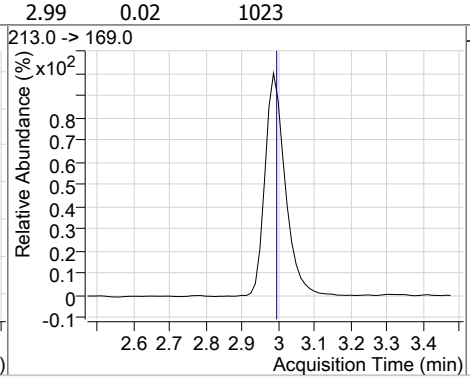


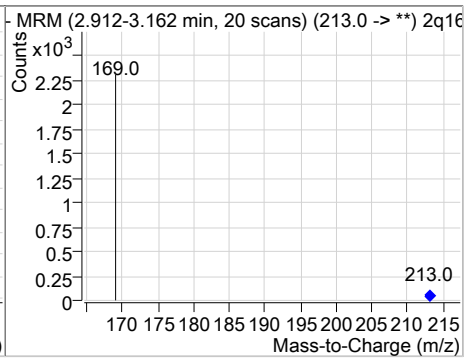




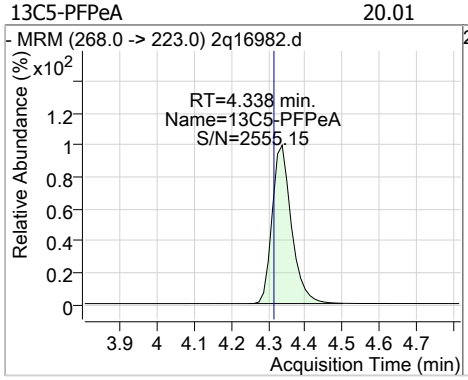
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.02	2.99	0.02	1023				

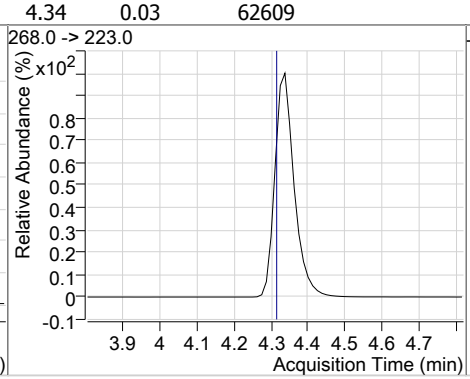


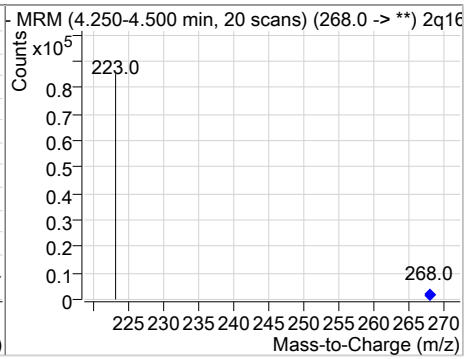




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.01	4.34	0.03	62609				

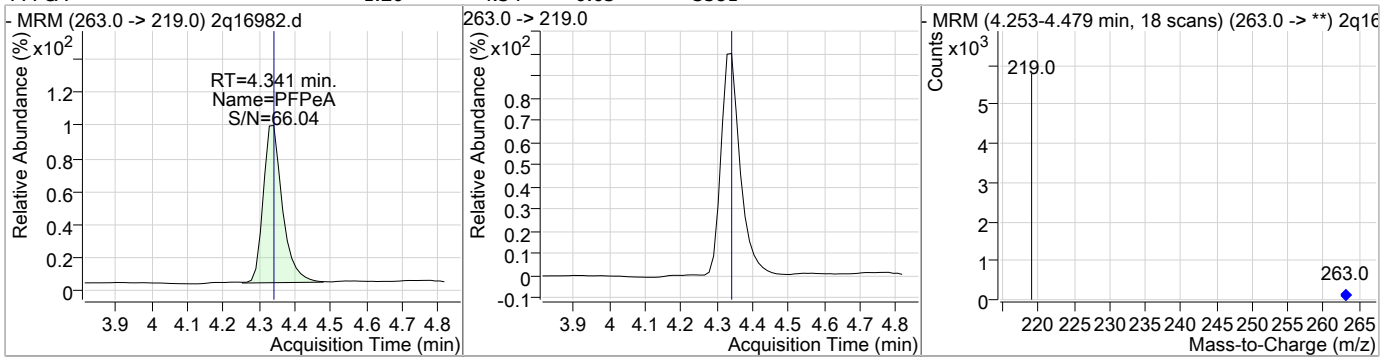




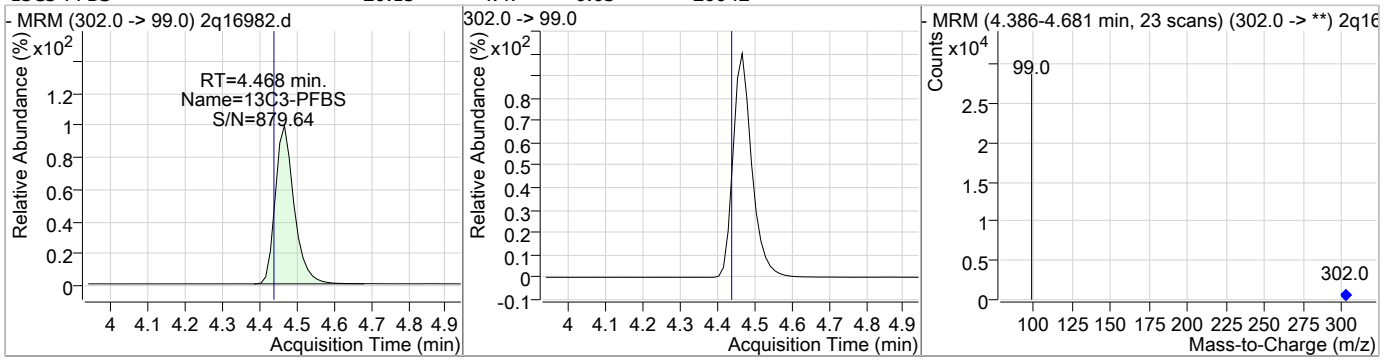


Perfluorinated Compounds by LC/MS/MS

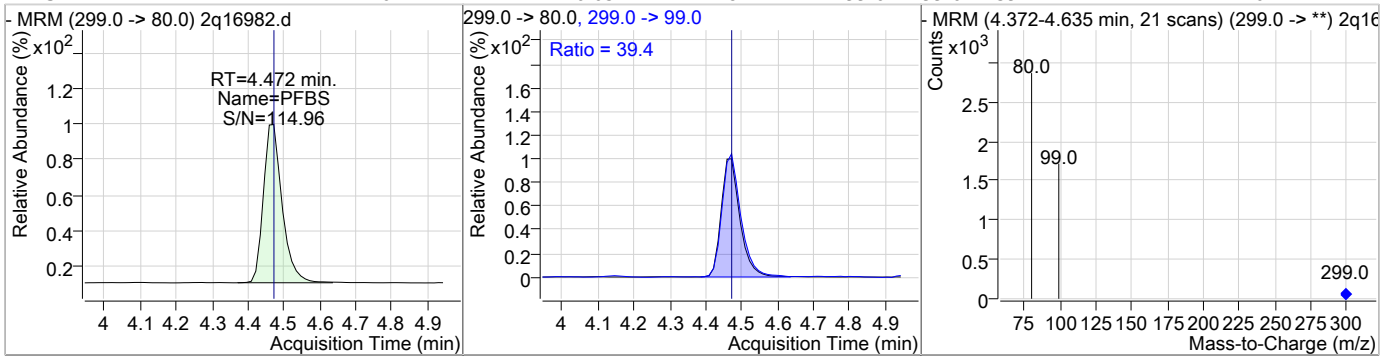
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.20	4.34	0.03	3581				



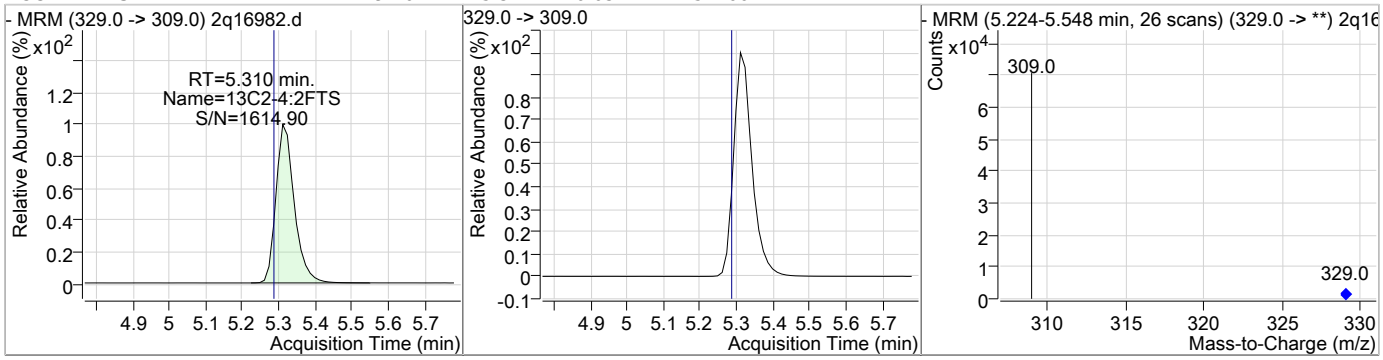
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.15	4.47	0.03	20042				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.04	4.47	0.03	1428	299.0 -> 99.0	39.4	7.4	67.4

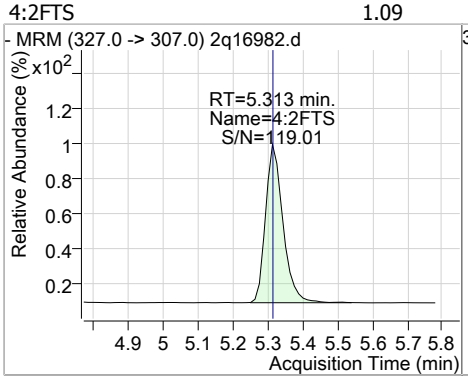


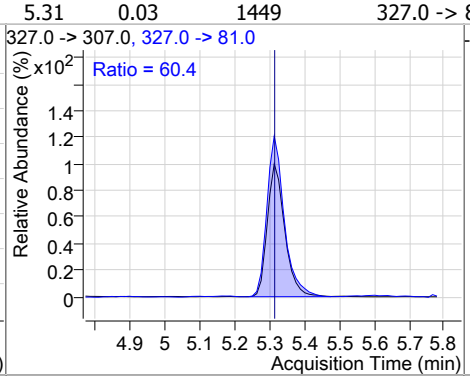
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.20	5.31	0.03	51466				

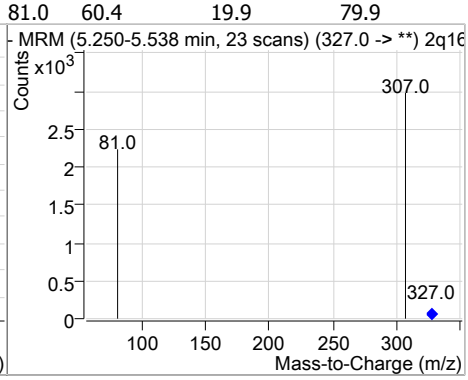


Perfluorinated Compounds by LC/MS/MS

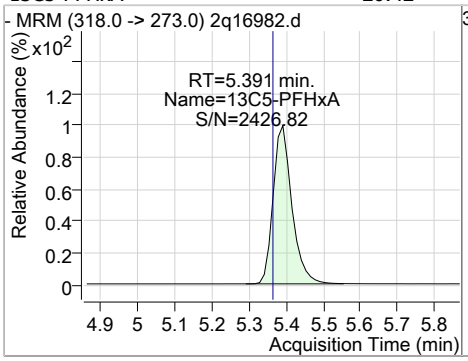
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.09	5.31	0.03	1449	327.0 -> 81.0	60.4	19.9	79.9

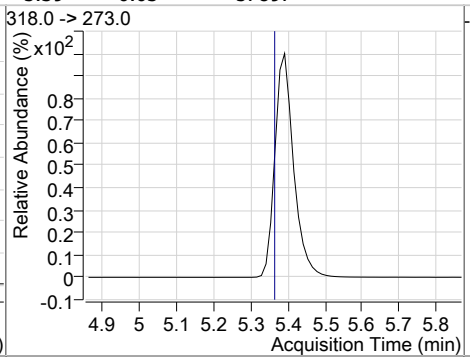


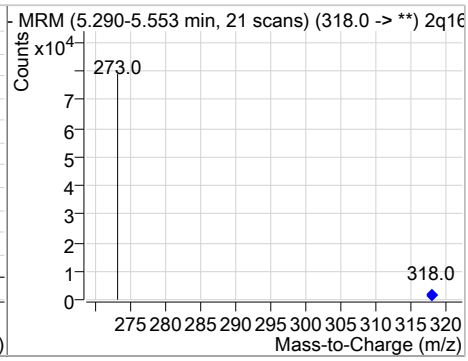




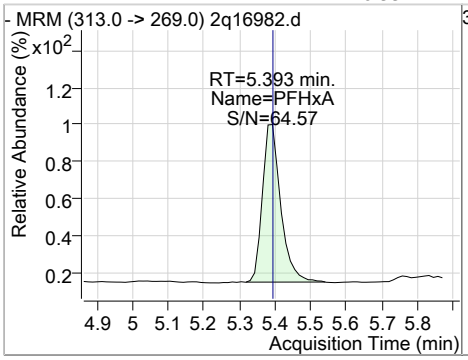
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.42	5.39	0.03	57897				

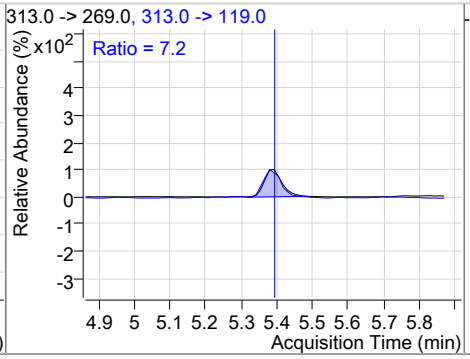


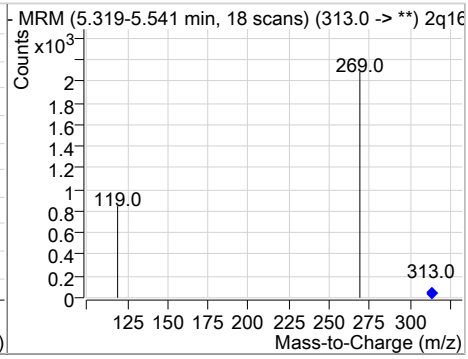




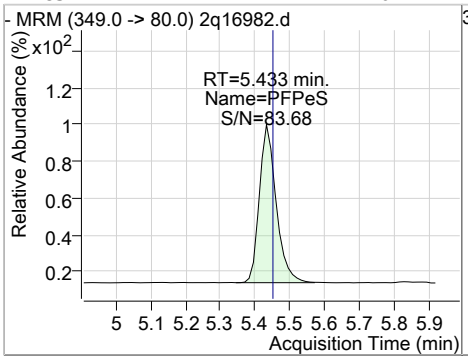
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.99	5.39	0.03	975	313.0 -> 119.0	7.2	0.0	37.6

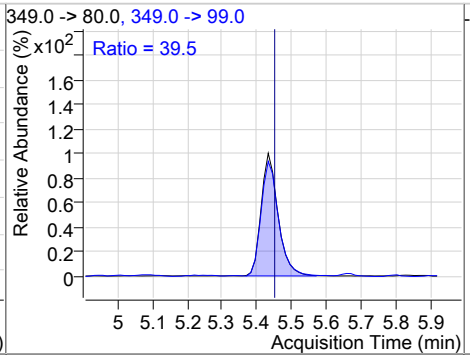


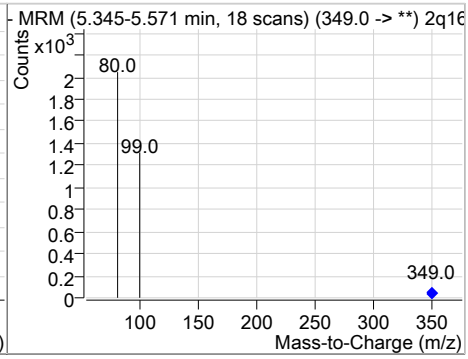




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.04	5.43	0.02	913	349.0 -> 99.0	39.5	10.8	70.8

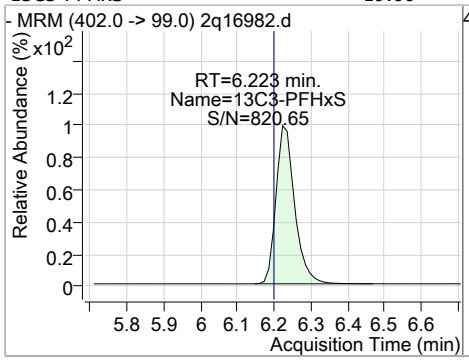


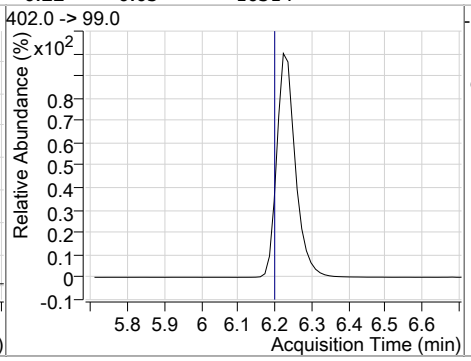


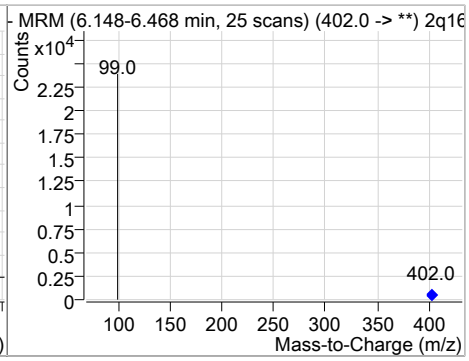


Perfluorinated Compounds by LC/MS/MS

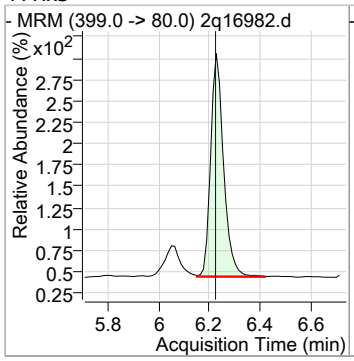
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.66	6.22	0.03	16314				

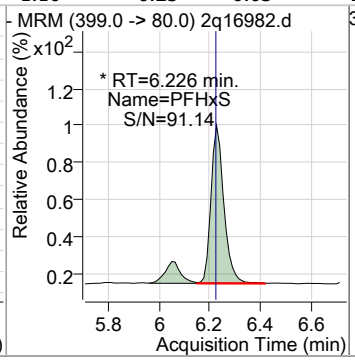


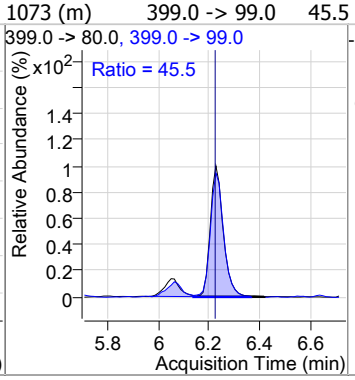


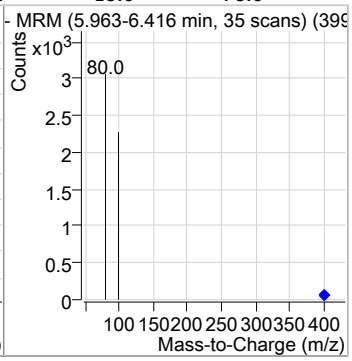


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.10	6.23	0.03	1073 (m)	399.0 -> 99.0	45.5	18.0	78.0

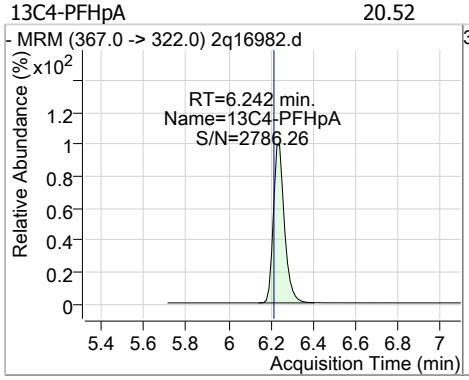


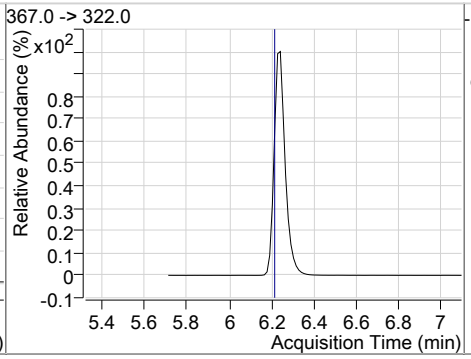


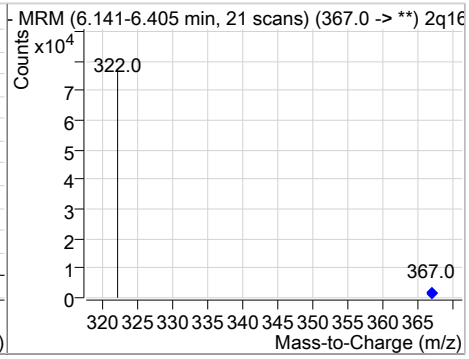




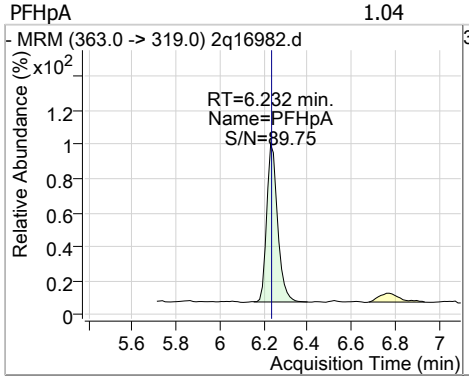
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.52	6.24	0.03	55788				

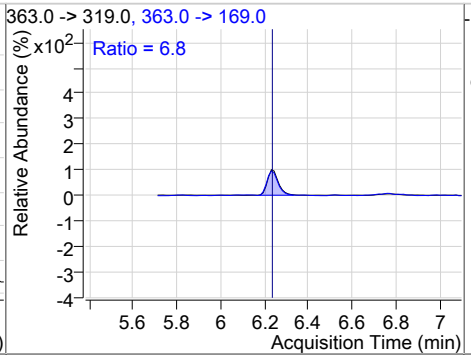


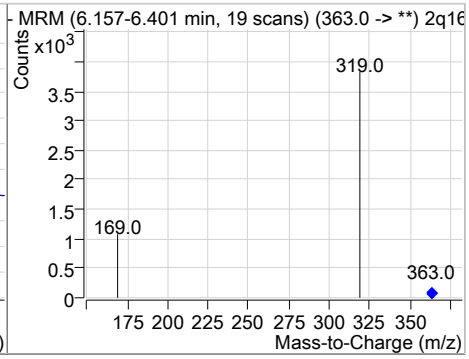




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.04	6.23	0.02	2121	363.0 -> 169.0	6.8	0.0	37.2

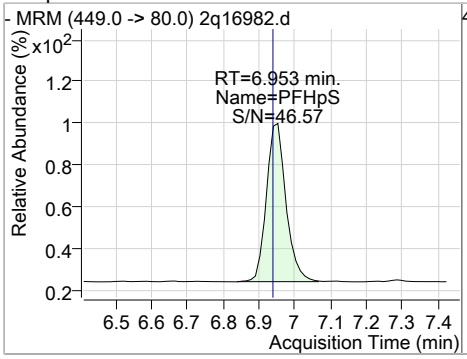


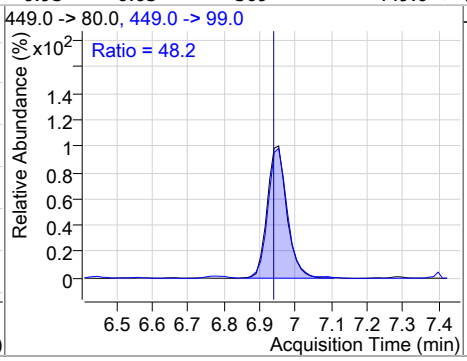


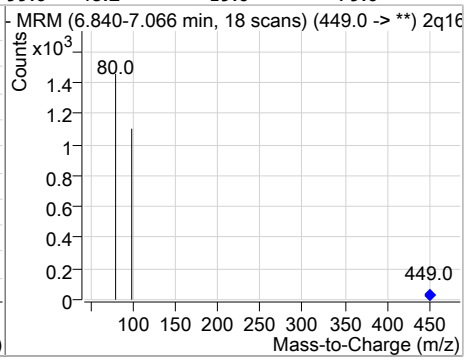


Perfluorinated Compounds by LC/MS/MS

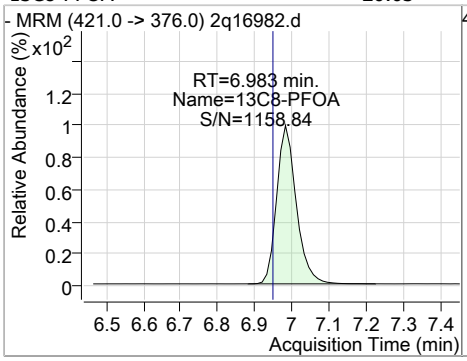
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.02	6.95	0.05	509	449.0 -> 99.0	48.2	19.0	79.0

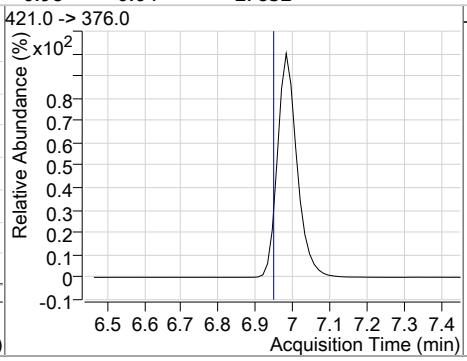


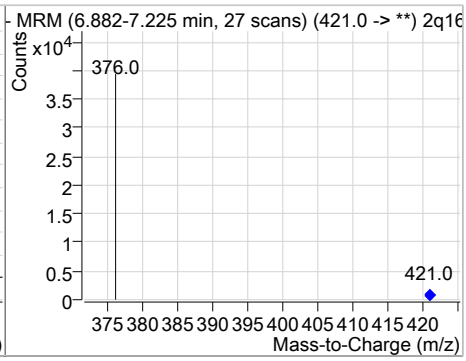




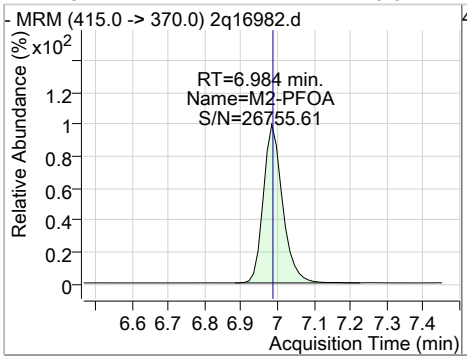
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.03	6.98	0.04	27852				

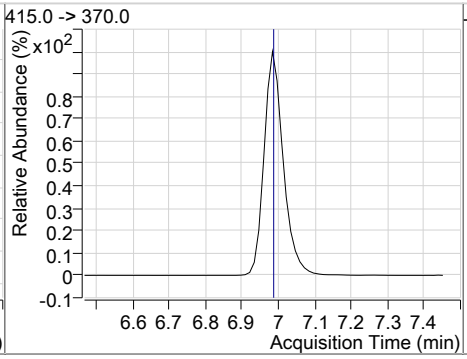


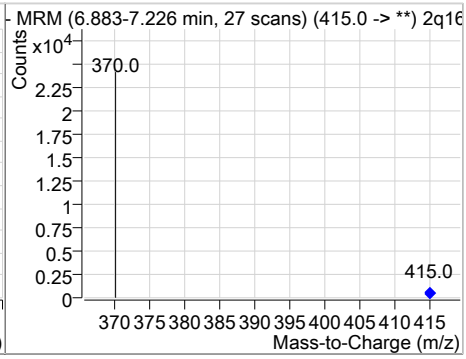




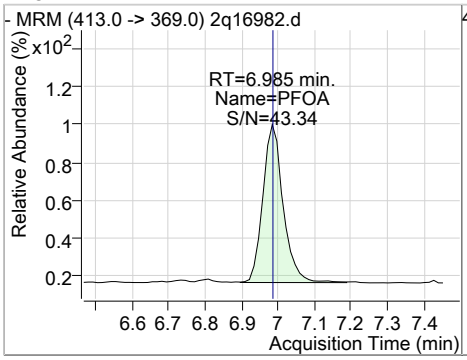
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.01	6.98	0.04	17401				

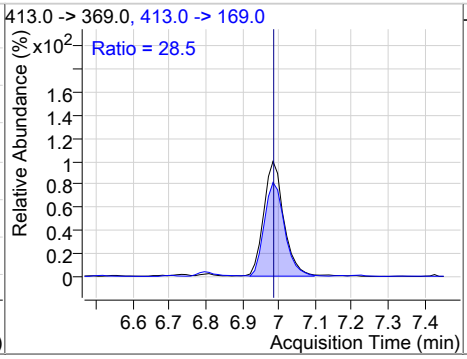


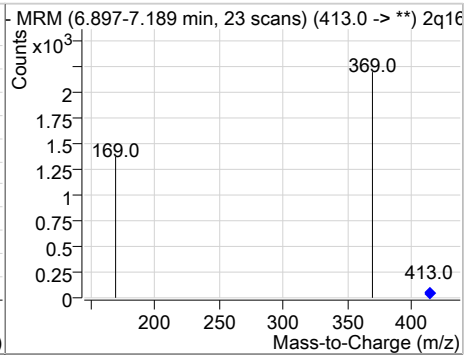




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.12	6.98	0.04	855	413.0 -> 169.0	28.5	5.0	65.0

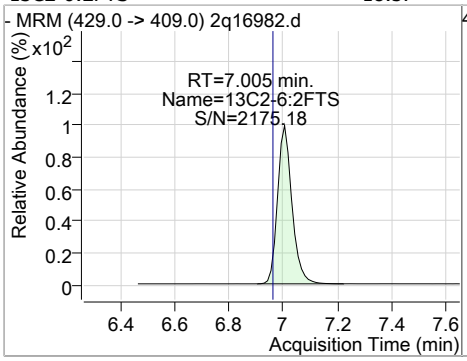


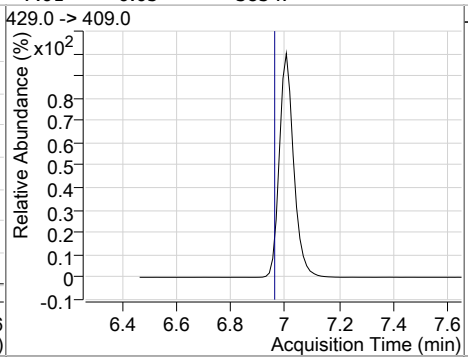


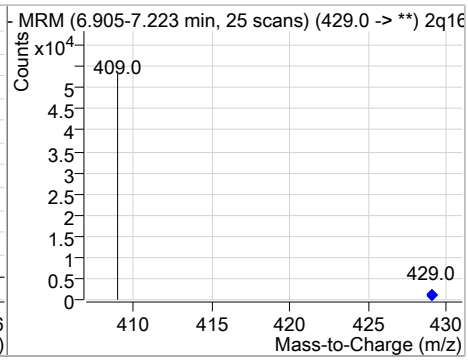


Perfluorinated Compounds by LC/MS/MS

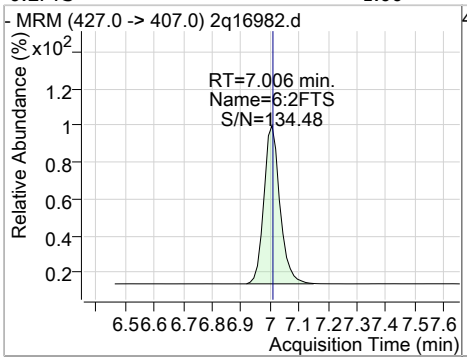
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.57	7.01	0.05	38547				

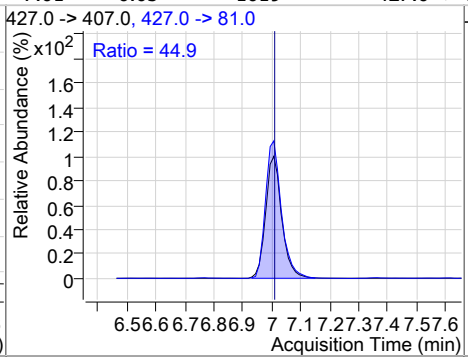


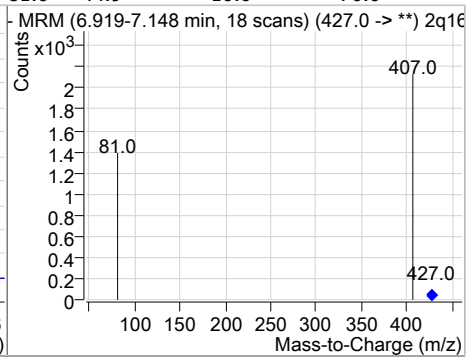




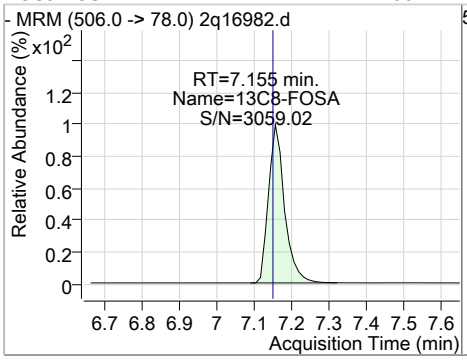
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.06	7.01	0.05	1019	427.0 -> 81.0	44.9	10.0	70.0

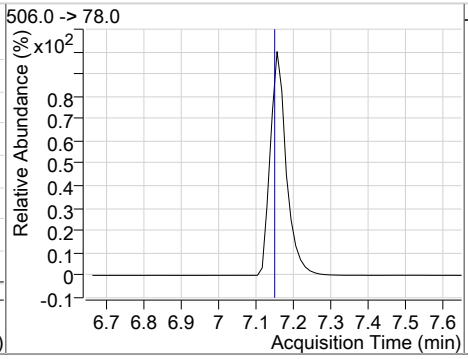


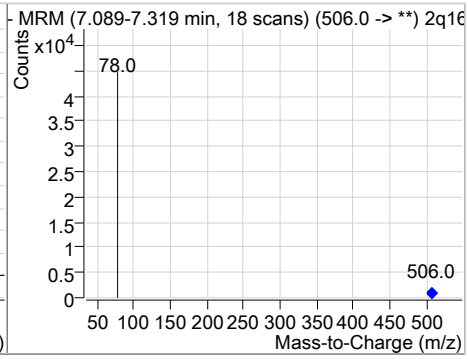




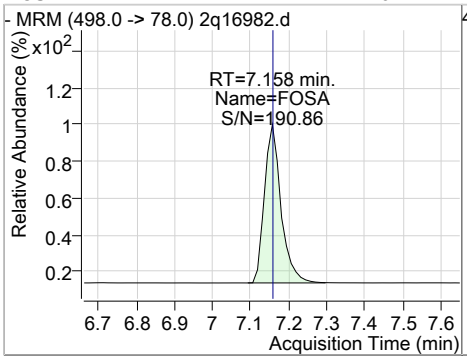
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.06	7.15	0.01	33019				

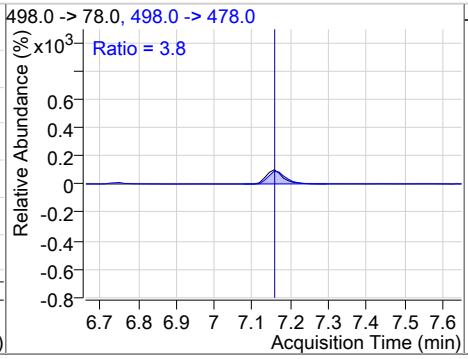


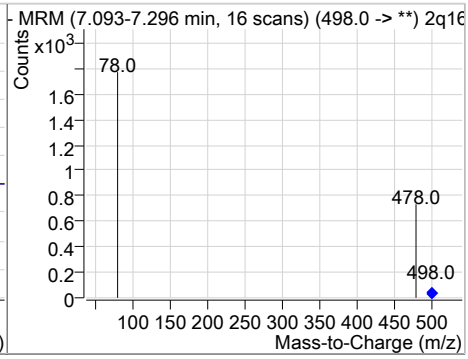




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.01	7.16	0.01	821	498.0 -> 478.0	3.8	0.0	34.0

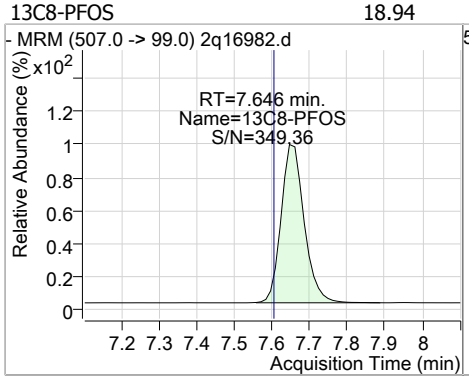


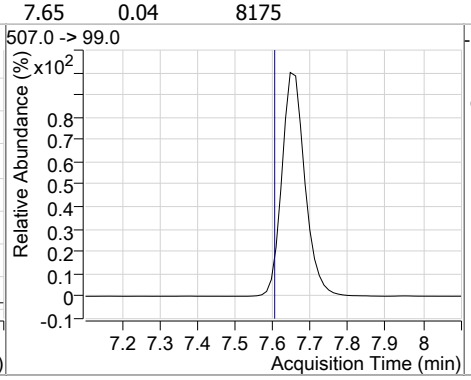


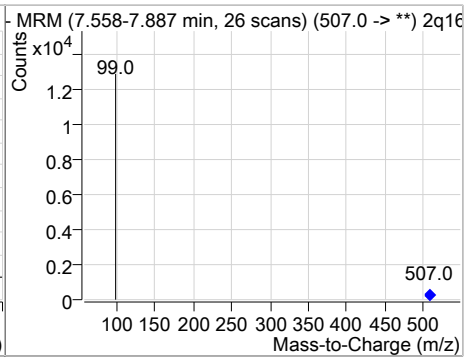


Perfluorinated Compounds by LC/MS/MS

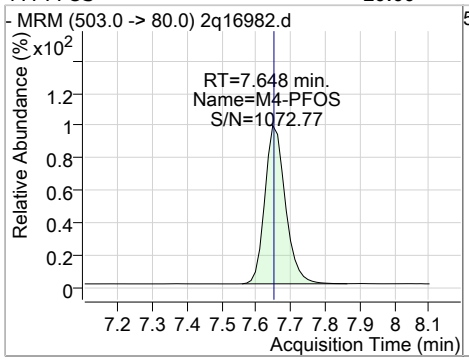
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.94	7.65	0.04	8175				

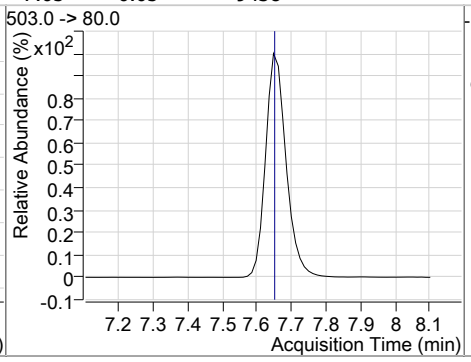


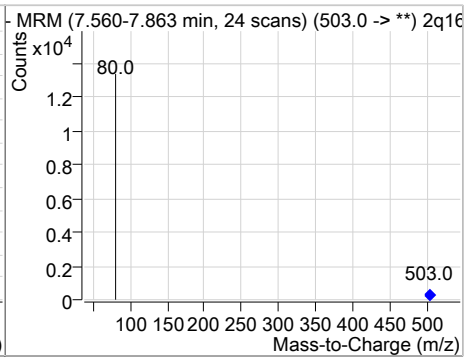




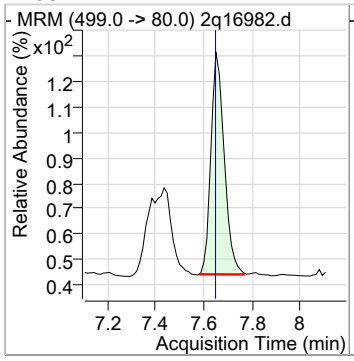
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.00	7.65	0.05	9438				

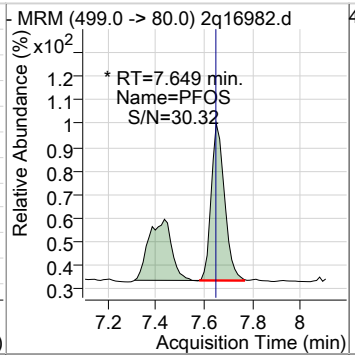


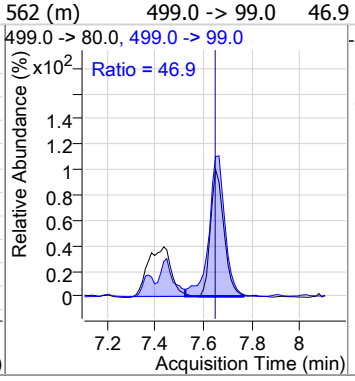


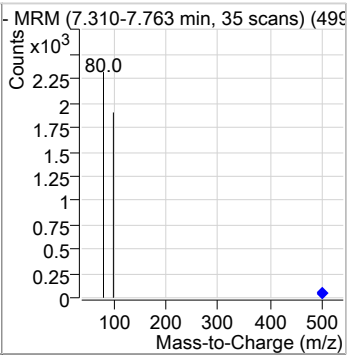


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.10	7.65	0.05	562 (m)	499.0 -> 99.0	46.9	14.5	74.5

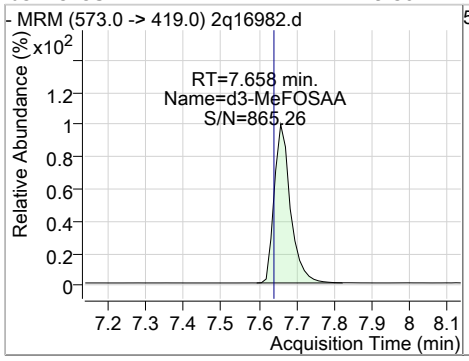


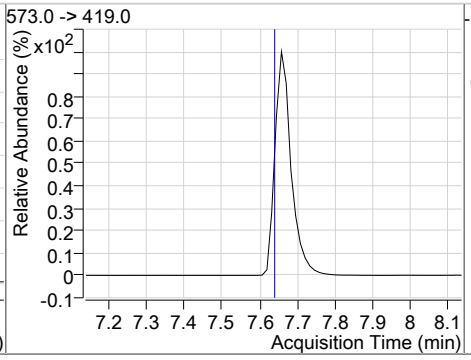


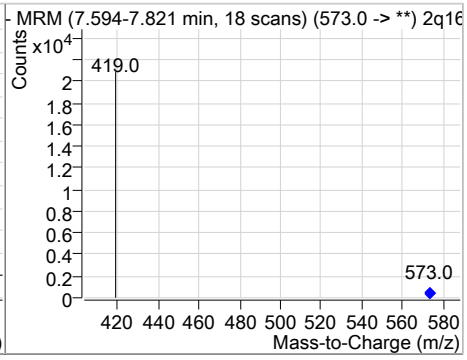




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.38	7.66	0.02	14666				

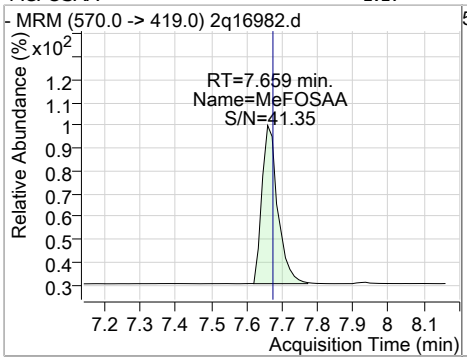


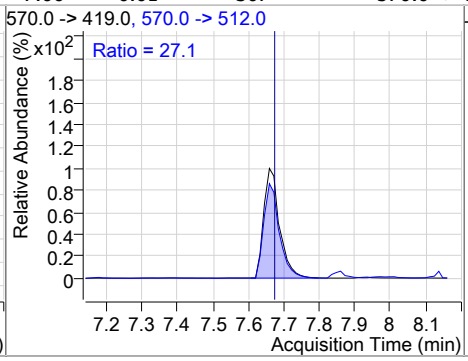


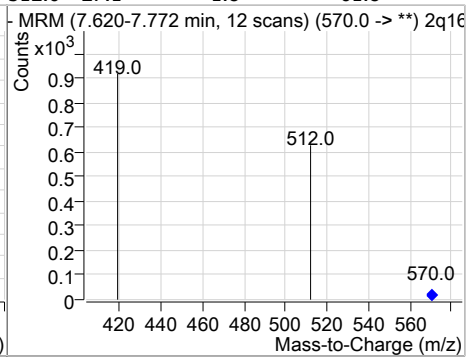


Perfluorinated Compounds by LC/MS/MS

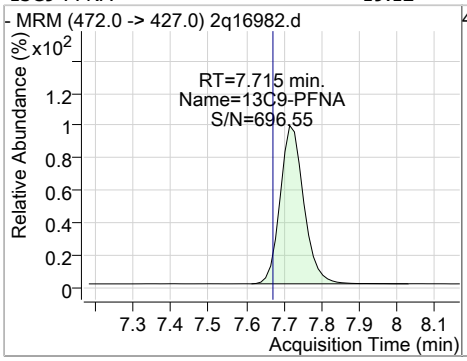
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	1.17	7.66	0.01	307	570.0 -> 512.0	27.1	1.8	61.8

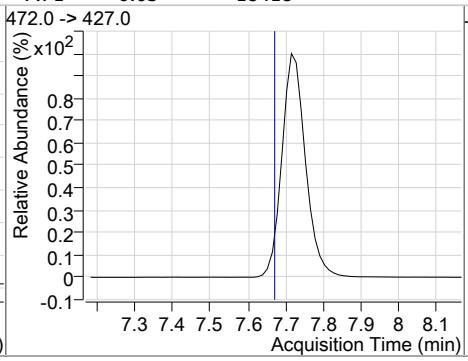


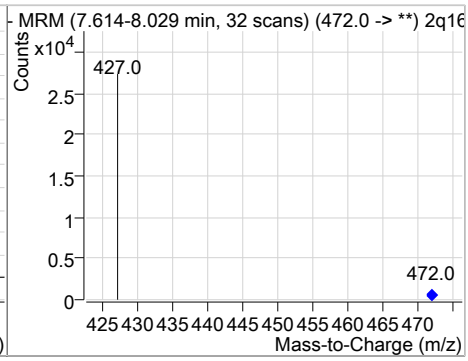




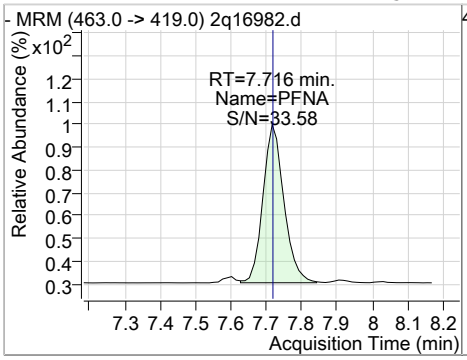
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.12	7.71	0.05	18418				

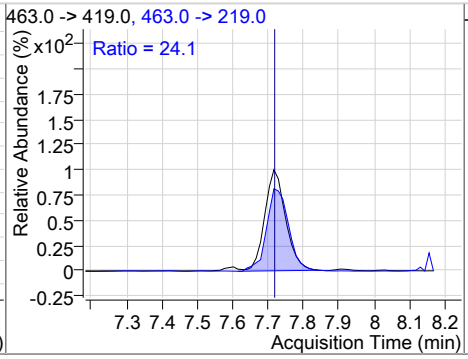


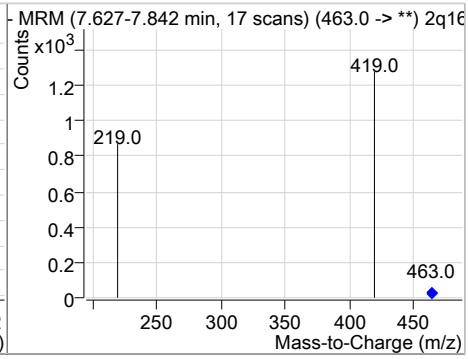




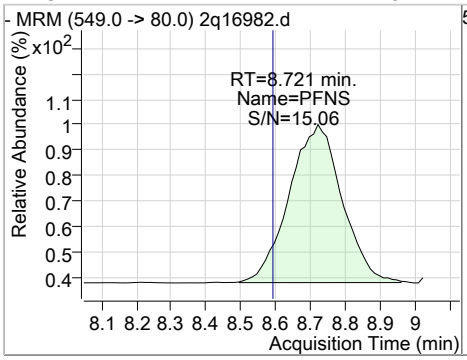
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.15	7.72	0.05	406	463.0 -> 219.0	24.1	0.0	58.4

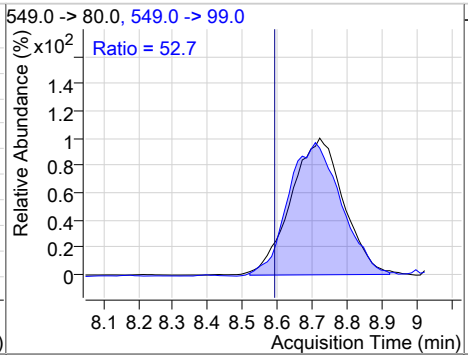


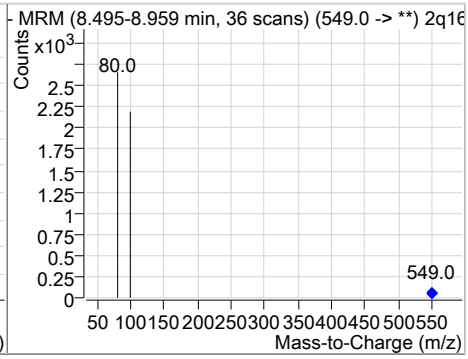




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	1.19	8.72	0.18	757	549.0 -> 99.0	52.7	24.7	84.7

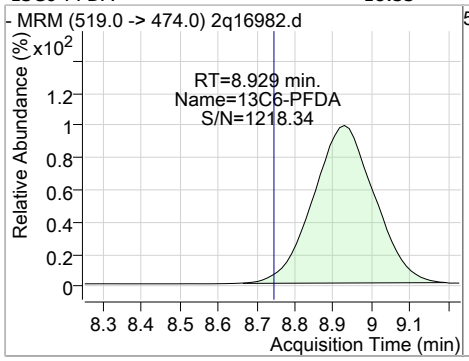


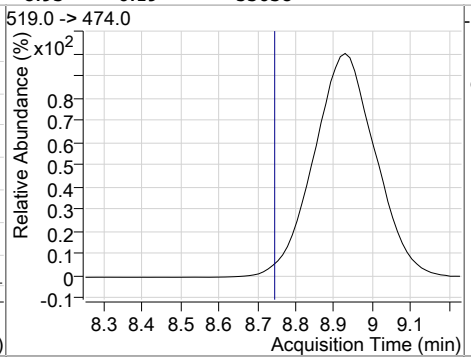


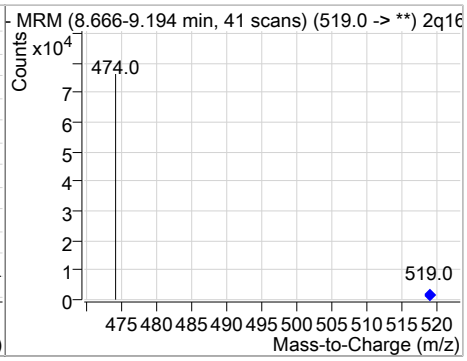


Perfluorinated Compounds by LC/MS/MS

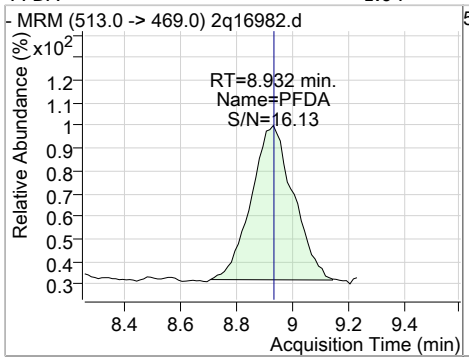
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	18.53	8.93	0.19	53638				

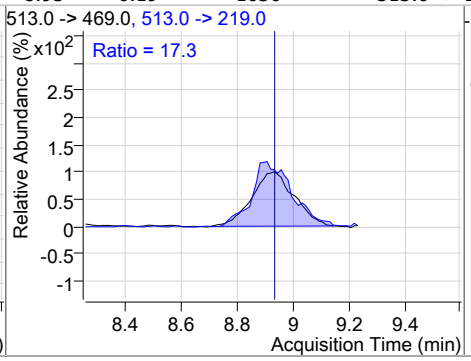


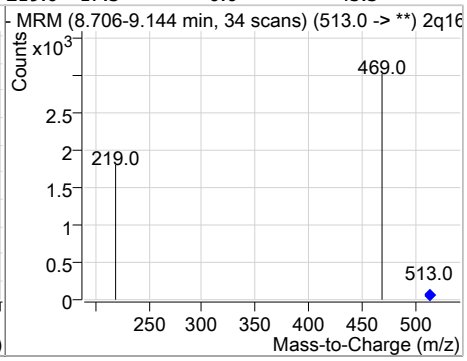




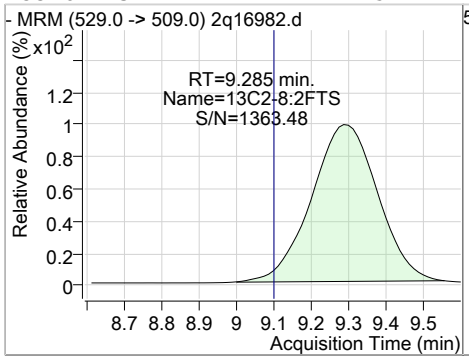
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	1.04	8.93	0.19	1030	513.0 -> 219.0	17.3	0.0	45.3

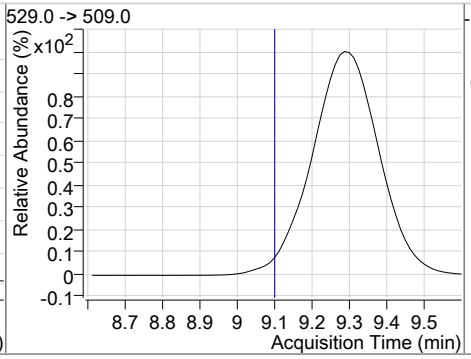


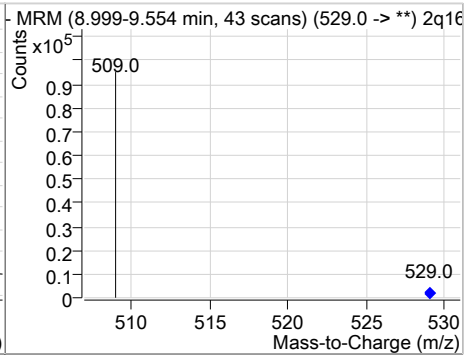




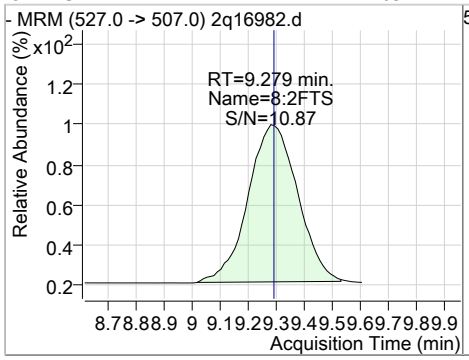
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	15.22	9.28	0.19	66842				

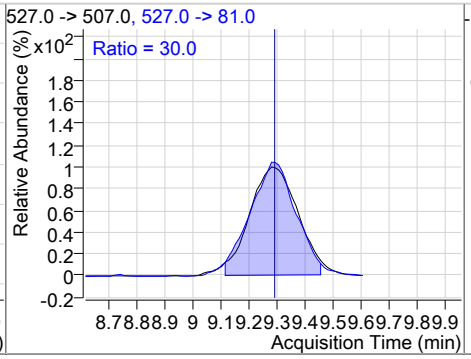


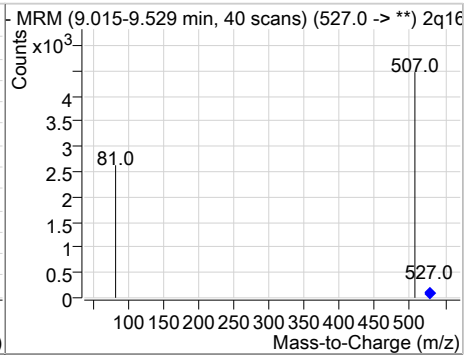




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.09	9.28	0.18	2014	527.0 -> 81.0	30.0	1.3	61.3

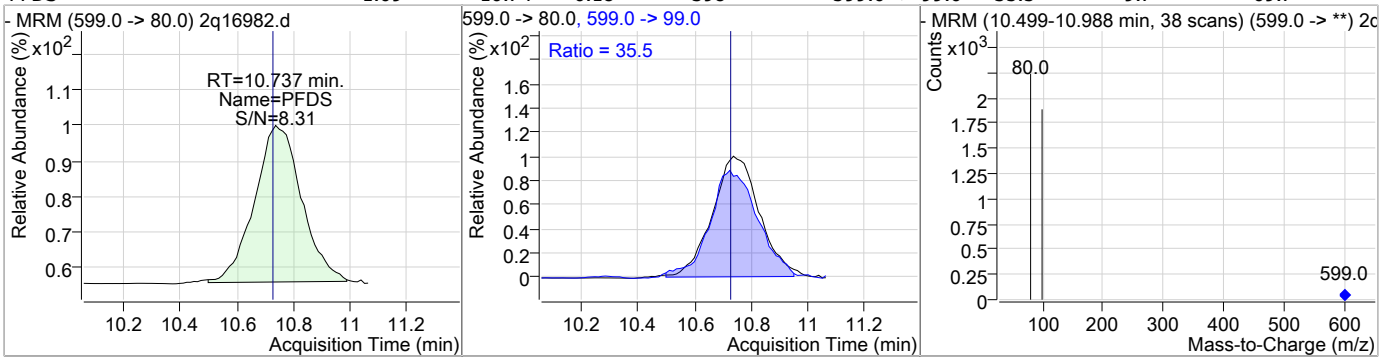




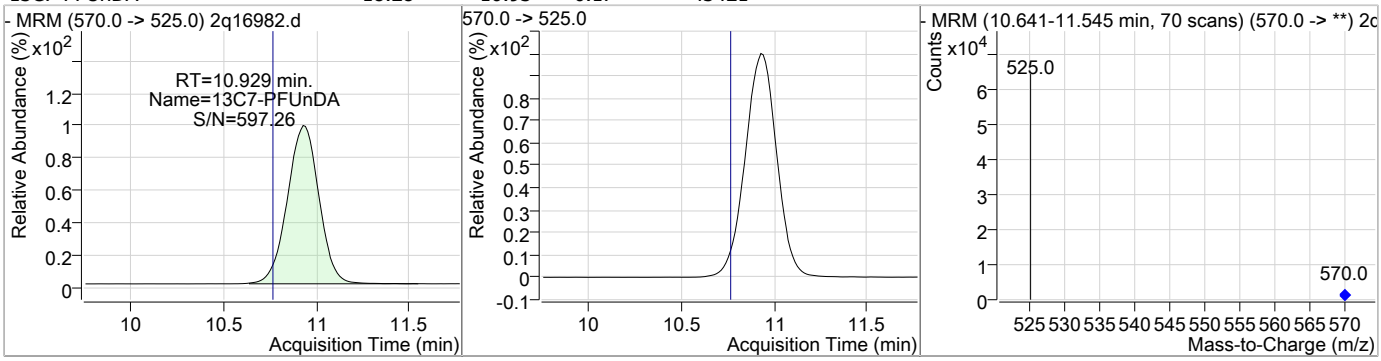


Perfluorinated Compounds by LC/MS/MS

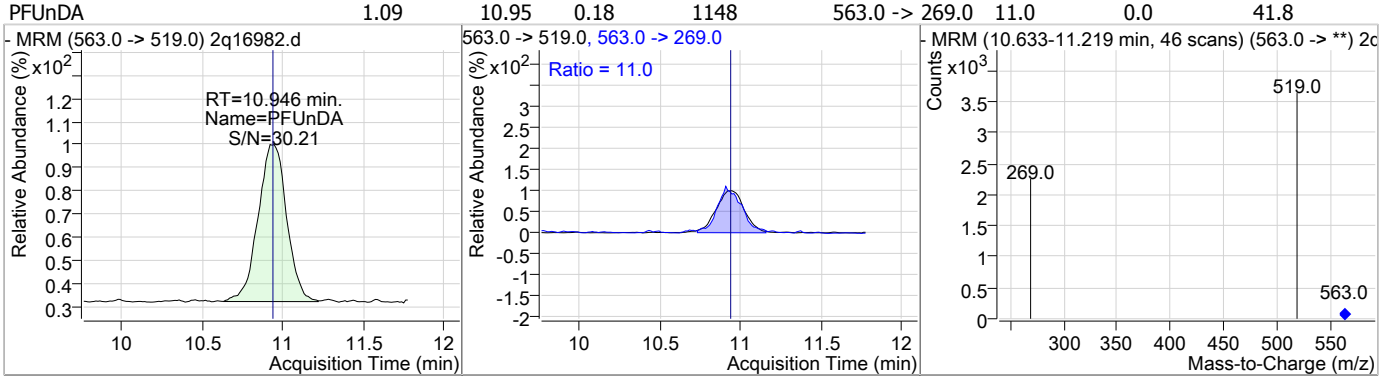
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	1.09	10.74	0.18	398	599.0 -> 99.0	35.5	9.7	69.7



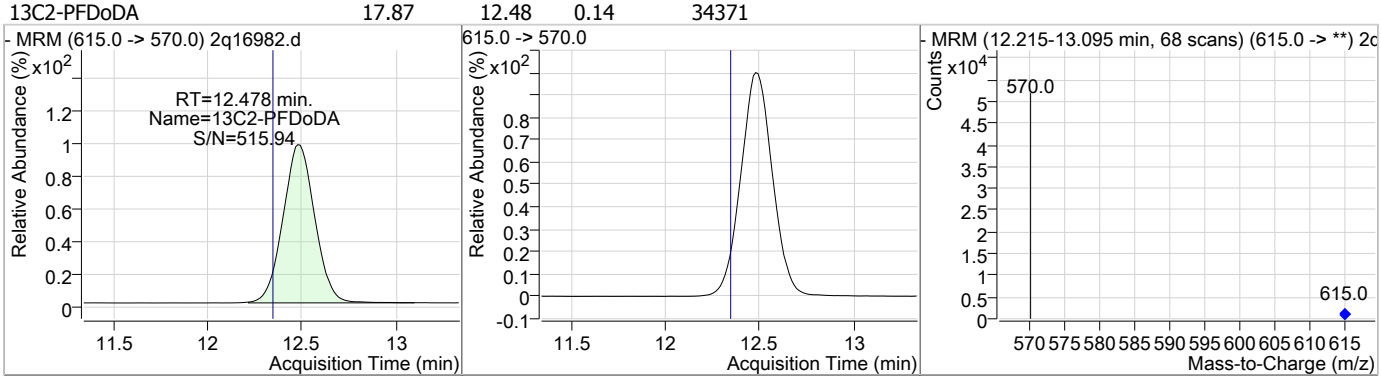
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.28	10.93	0.17	43421				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	1.09	10.95	0.18	1148	563.0 -> 269.0	11.0	0.0	41.8

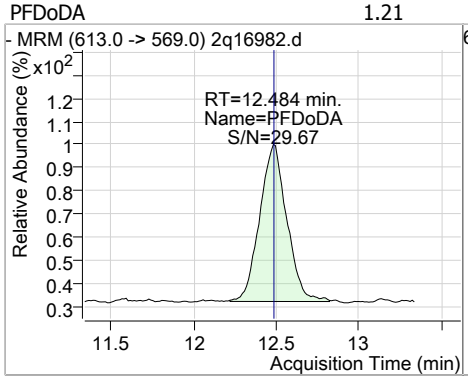


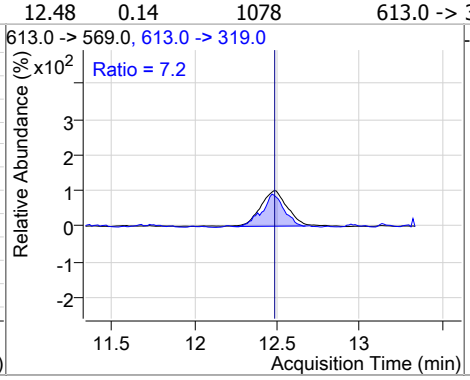
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	17.87	12.48	0.14	34371				

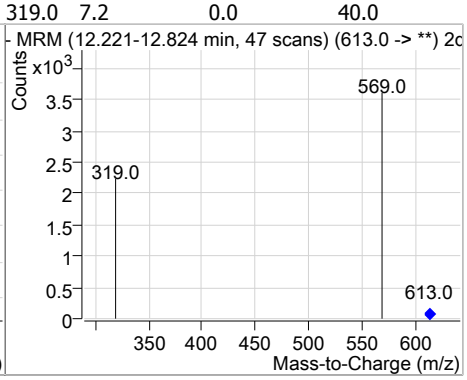


Perfluorinated Compounds by LC/MS/MS

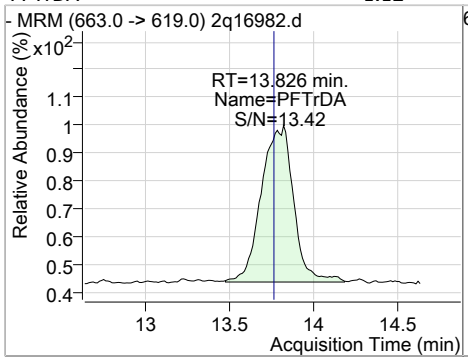
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	1.21	12.48	0.14	1078	613.0 -> 319.0	7.2	0.0	40.0

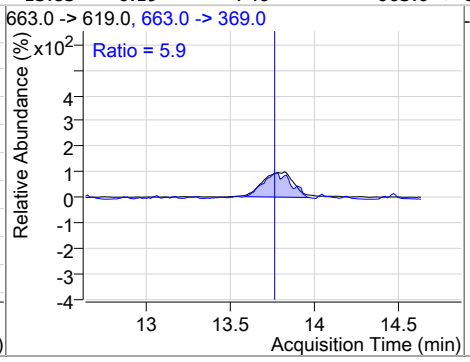


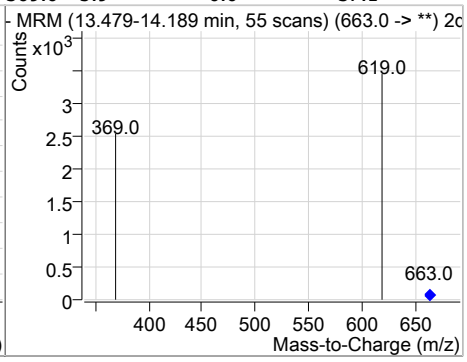




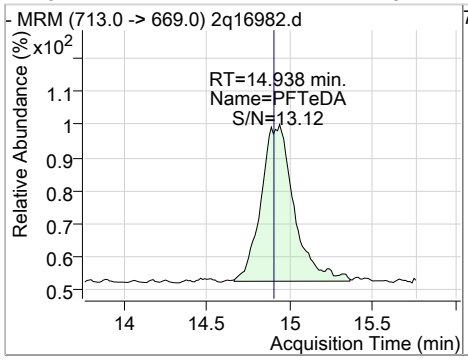
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	1.12	13.83	0.19	746	663.0 -> 369.0	5.9	0.0	37.1

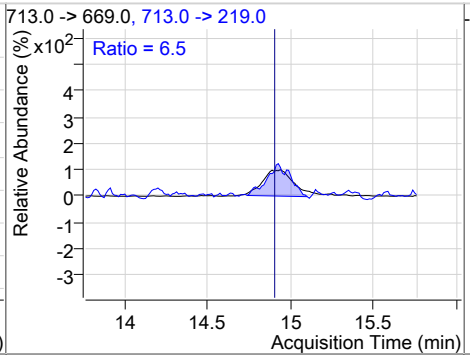


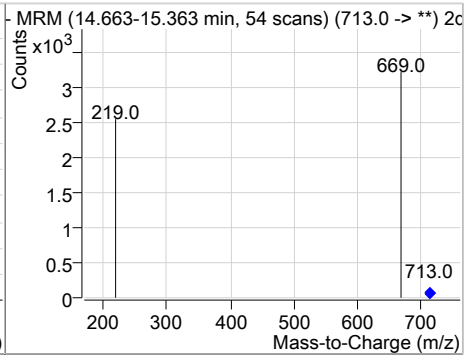




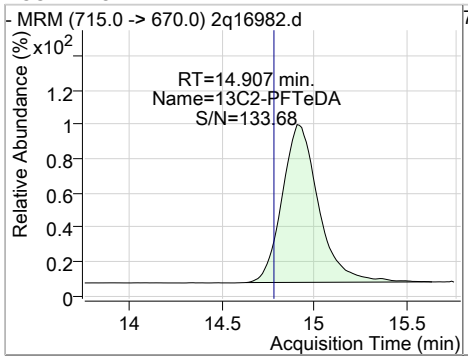
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.19	14.94	0.17	547	713.0 -> 219.0	6.5	0.0	37.4

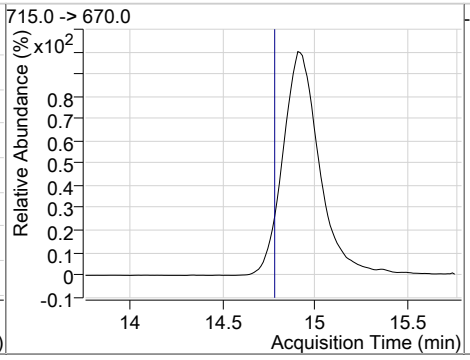


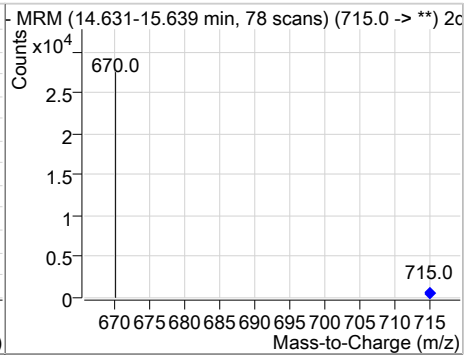




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	17.22	14.91	0.13	15108				







Manual Integration Approval Summary

Sample Number:	S2Q294-CC294	**Method:**	EPA 537M QSM5.1 B-15
Lab FileID:	2Q16982.D	**Analyst approved:**	07/12/18 09:45 Nancy Saunders
Injection Time:	07/12/18 00:38	**Supervisor approved:**	07/12/18 14:31 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.23	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.65	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 07/13/18 17:24

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16994.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/12/2018 9:19:49 AM
Sample Name : ic295-0.5
Vial : Vial 2
DA Method File : PFC_ID_071218_S2Q295.quantmethod.xml
Batch Name : s2q295.batch.bin
Sample Information : op70790,S2Q295,1.99,,,1.0,1,soil

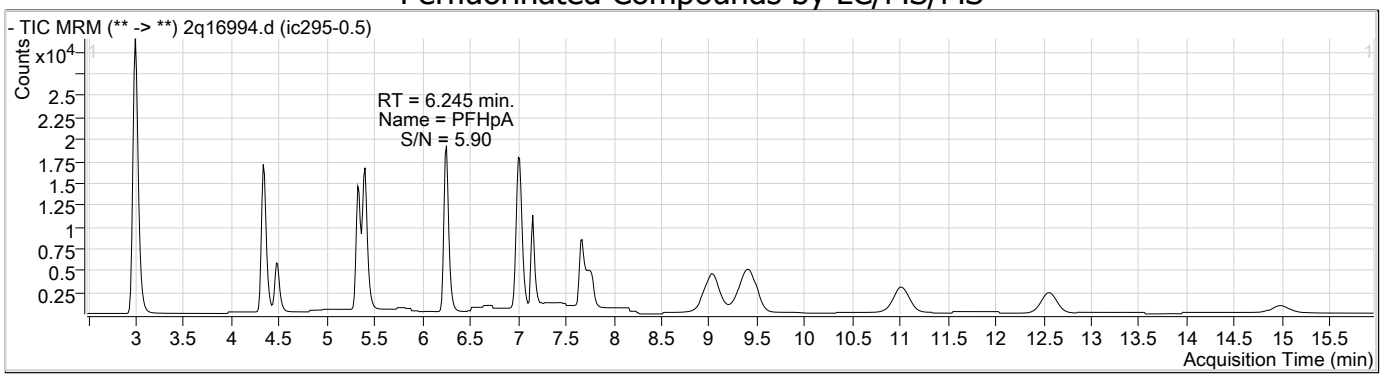
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	7.010	415.0 -> 370.0	15932	20.00	µg/L	0.014
13C4-PFOS	7.687	503.0 -> 80.0	8970	20.00	µg/L	0.012
M4-PFBA	2.991	217.0 -> 172.0	124080	20.00	µg/L	0.000
M5-PFPeA	4.337	268.0 -> 223.0	59242	20.00	µg/L	0.000
M5-PFHxA	5.401	318.0 -> 273.0	52657	20.00	µg/L	0.011
M4-PFHpA	6.255	367.0 -> 322.0	50699	20.00	µg/L	0.001
M8-PFOA	7.009	421.0 -> 376.0	23809	20.00	µg/L	0.014
M9-PFNA	7.753	472.0 -> 427.0	15145	20.00	µg/L	0.001
M6-PFDA	9.029	519.0 -> 474.0	48086	20.00	µg/L	0.013
M7-PFUnDA	11.005	570.0 -> 525.0	34340	20.00	µg/L	-0.025
M2-PFDoDA	12.553	615.0 -> 570.0	27653	20.00	µg/L	-0.012
M2-PFTeDA	14.970	715.0 -> 670.0	11949	20.00	µg/L	0.001
M8-FOSA	7.155	506.0 -> 78.0	29996	20.00	µg/L	0.013
M3-PFBS	4.468	302.0 -> 99.0	19213	20.00	µg/L	0.000
M3-PFHxS	6.249	402.0 -> 99.0	15627	20.00	µg/L	0.013
M8-PFOS	7.685	507.0 -> 99.0	7571	20.00	µg/L	0.012
M2-4:2FTS	5.322	329.0 -> 309.0	48342	20.00	µg/L	-0.001
M2-6:2FTS	7.018	429.0 -> 409.0	34271	20.00	µg/L	0.001
M2-8:2FTS	9.398	529.0 -> 509.0	62061	20.00	µg/L	0.000
M3-MeFOSAA	7.658	573.0 -> 419.0	13870	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.322	329.0 -> 309.0	48342	17.13	µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.7%		
13C2-6:2FTS	7.018	429.0 -> 409.0	34278	17.56	µg/L	0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.8%		
13C2-8:2FTS	9.398	529.0 -> 509.0	61405	16.69	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.5%		
13C2-PFDoDA	12.553	615.0 -> 570.0	27643	16.42	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.1%		
13C2-PFTeDA	14.970	715.0 -> 670.0	11949	16.44	µg/L	0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.2%		
13C3-PFBS	4.468	302.0 -> 99.0	19212	18.43	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.1%		
13C3-PFHxS	6.249	402.0 -> 99.0	15648	18.75	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.7%		
13C4-PFBA	2.991	217.0 -> 172.0	124063	18.67	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.3%		
13C4-PFHpA	6.255	367.0 -> 322.0	50703	17.92	µg/L	0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.6%		
13C5-PFHxA	5.401	318.0 -> 273.0	52677	17.76	µg/L	0.011
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.8%		
13C5-PFPeA	4.337	268.0 -> 223.0	59227	18.05	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.3%		
13C6-PFDA	9.029	519.0 -> 474.0	47753	17.23	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.1%		

Perfluorinated Compounds by LC/MS/MS

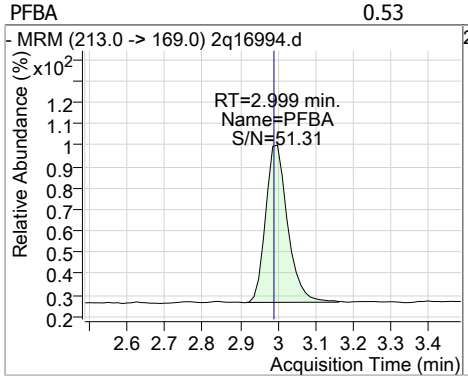
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	11.005	570.0 -> 525.0	34371	16.68	µg/L		-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.4%			
13C8-FOSA	7.155	506.0 -> 78.0	30016	18.66	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.3%			
13C8-PFOA	7.009	421.0 -> 376.0	23825	18.14	µg/L		0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.7%			
13C8-PFOS	7.685	507.0 -> 99.0	7569	18.25	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.2%			
13C9-PFNA	7.753	472.0 -> 427.0	15154	17.19	µg/L		0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.9%			
d3-MeFOSAA	7.658	573.0 -> 419.0	13868	17.85	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.3%			
M2-PFOA	7.010	415.0 -> 370.0	15927	19.99	ng/ml		0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.687	503.0 -> 80.0	8973	20.01	ng/ml		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
Target Compounds							**QValue**
4:2FTS	5.324	327.0 -> 307.0	626	0.50	µg/L		59
6:2FTS	7.020	427.0 -> 407.0	505	0.58	µg/L		97
8:2FTS	9.401	527.0 -> 507.0	1009	0.61	µg/L		97
EtFOSAA	7.782	584.0 -> 419.0	93	0.42	µg/L		99
FOSA	7.158	498.0 -> 78.0	351	0.48	µg/L		92
MeFOSAA	7.672	570.0 -> 419.0	139	0.55	µg/L		90
PFBA	2.999	213.0 -> 169.0	518	0.53	µg/L		100
PFBS	4.472	299.0 -> 80.0	670	0.51	µg/L		99
PFDA	9.044	513.0 -> 469.0	495	0.55	µg/L		98
PFDoDA	12.547	613.0 -> 569.0	421	0.60	µg/L		97
PFDS	10.813	599.0 -> 80.0	152	0.52	µg/L		98
PFHpA	6.245	363.0 -> 319.0	1001	0.53	µg/L		100
PFHpS	6.967	449.0 -> 80.0	238	0.54	µg/L		92
PFHxA	5.403	313.0 -> 269.0	537	0.61	µg/L		92
PFHxS	6.239	399.0 -> 80.0	486	0.52	µg/L	m	100
PFNA	7.755	463.0 -> 419.0	177	0.59	µg/L		95
PFNS	8.821	549.0 -> 80.0	341	0.49	µg/L		99
PFOA	7.011	413.0 -> 369.0	376	0.59	µg/L		87
PFOS	7.688	499.0 -> 80.0	301	0.64	µg/L	m	85
PFPeA	4.341	263.0 -> 219.0	1881	0.68	µg/L		100
PFPeS	5.446	349.0 -> 80.0	422	0.50	µg/L		95
PFTeDA	14.964	713.0 -> 669.0	214	0.60	µg/L		94
PFTrDA	13.843	663.0 -> 619.0	301	0.58	µg/L		97
PFUnDA	11.034	563.0 -> 519.0	469	0.56	µg/L		93

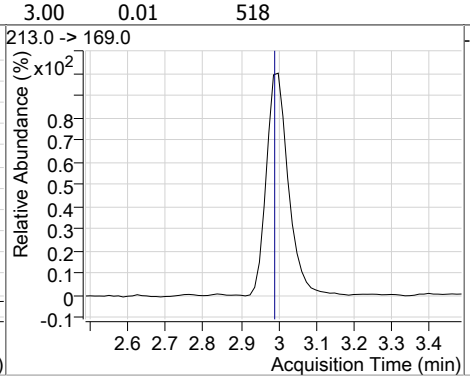
 # = Qualifier out of range, m = manually integrated, + = Area summed

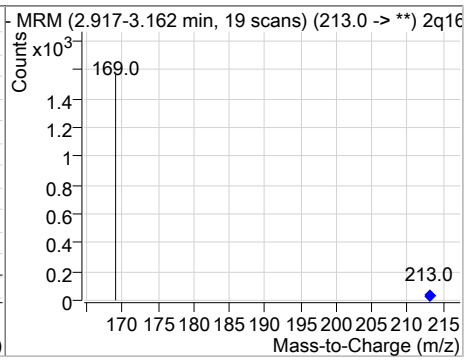
Perfluorinated Compounds by LC/MS/MS



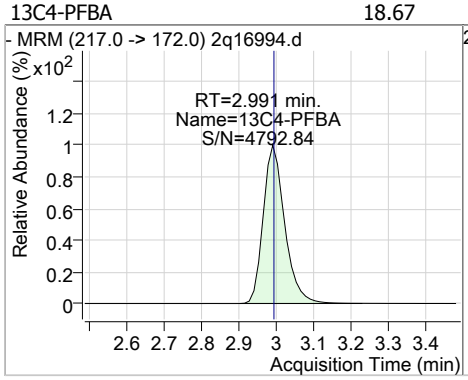
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.53	3.00	0.01	518				

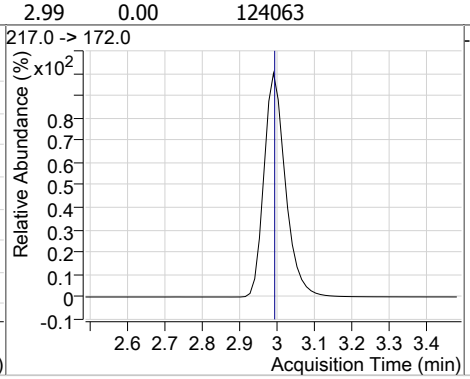


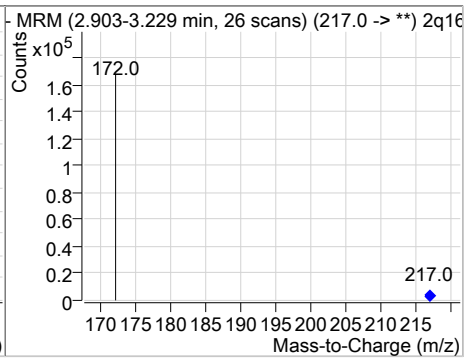




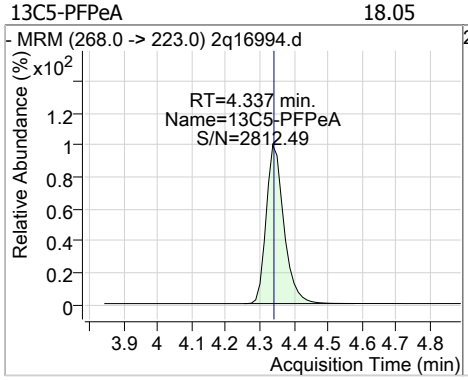
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.67	2.99	0.00	124063				

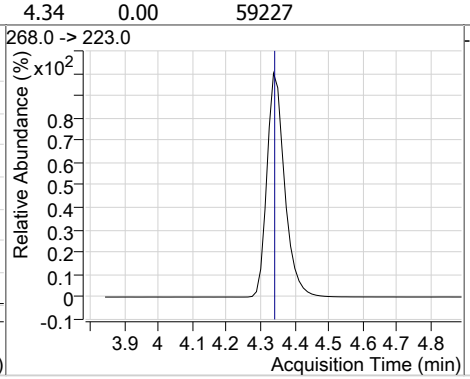


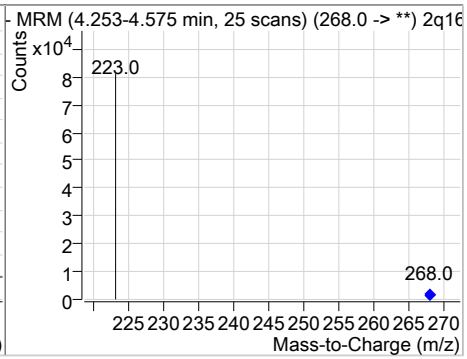




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.05	4.34	0.00	59227				

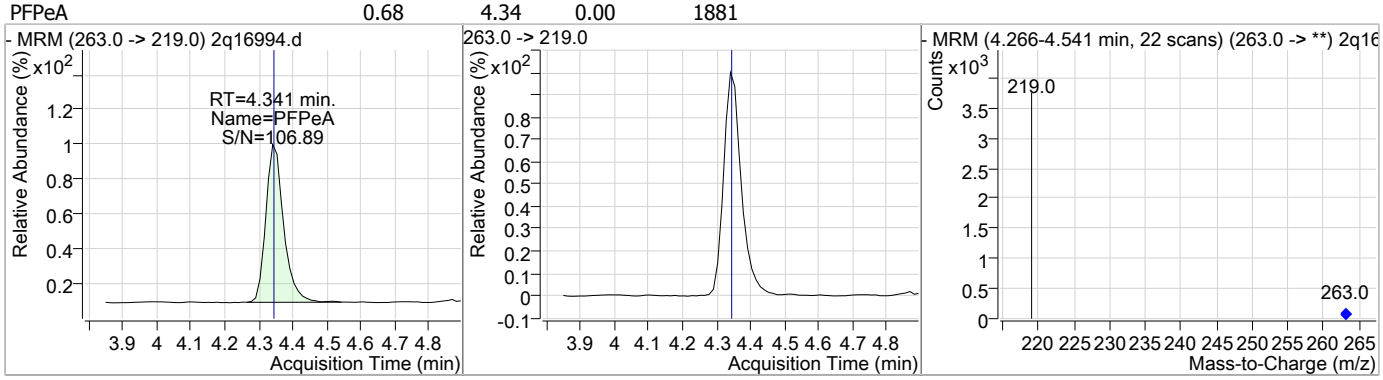




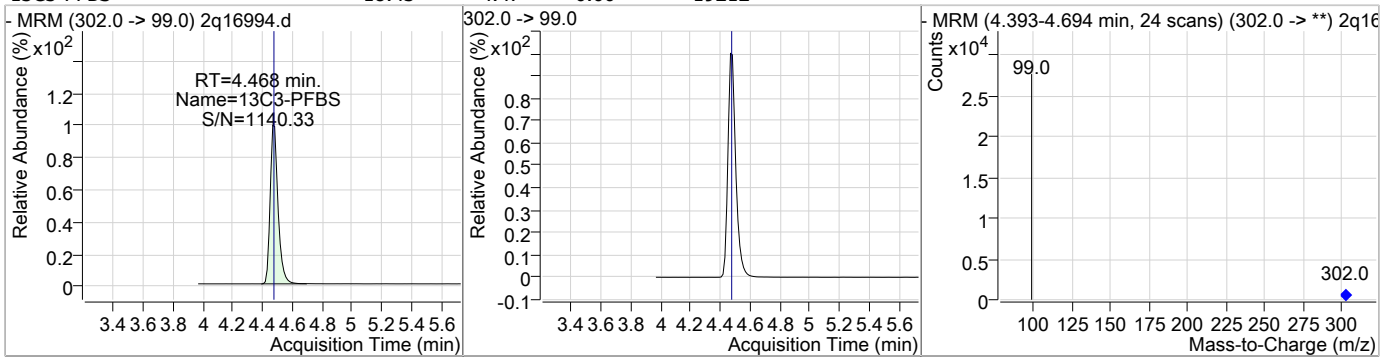


Perfluorinated Compounds by LC/MS/MS

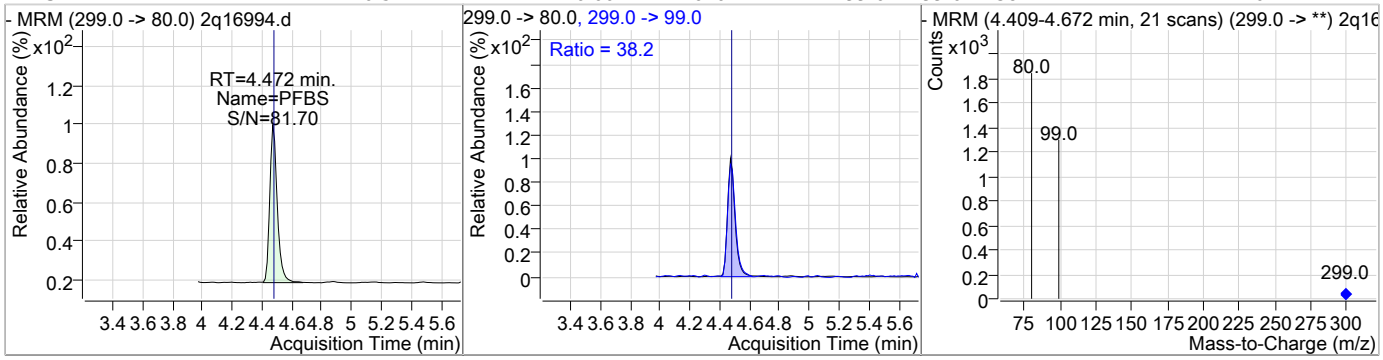
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.68	4.34	0.00	1881				



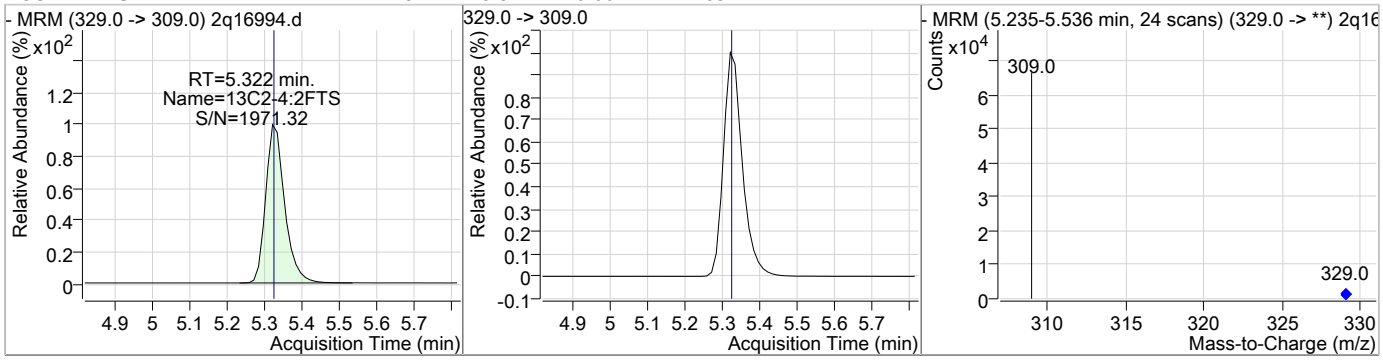
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.43	4.47	0.00	19212				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.51	4.47	0.00	670	299.0 -> 99.0	38.2	7.4	67.4

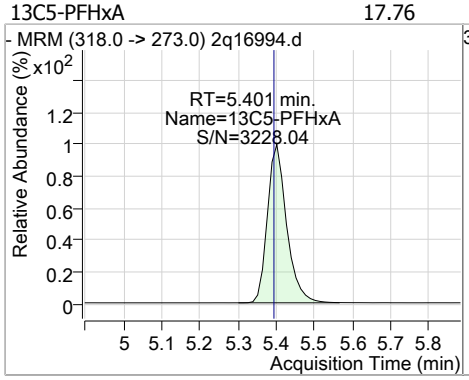


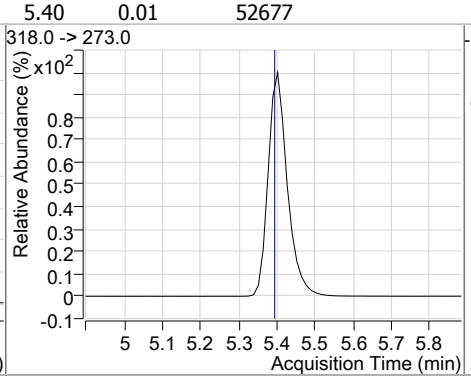
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	17.13	5.32	0.00	48342				

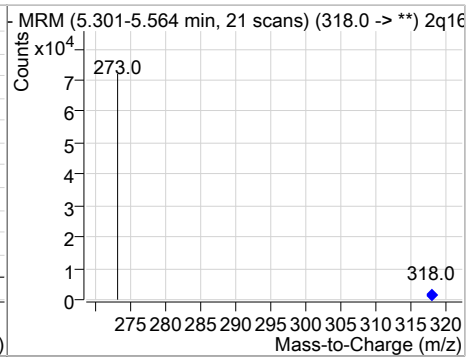


Perfluorinated Compounds by LC/MS/MS

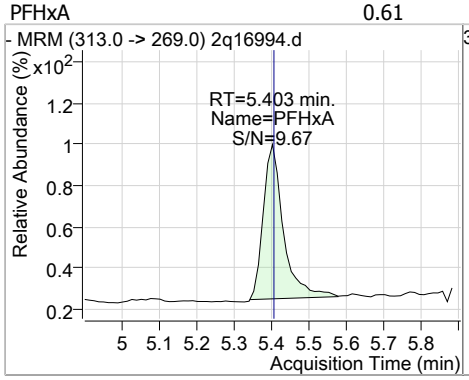
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	17.76	5.40	0.01	52677				

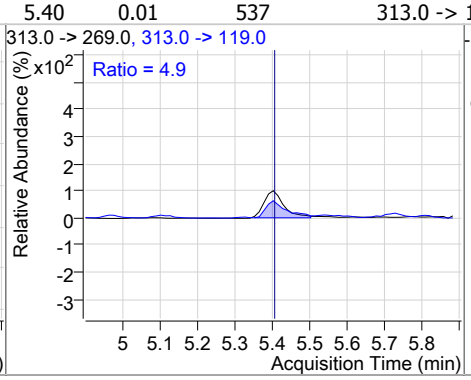


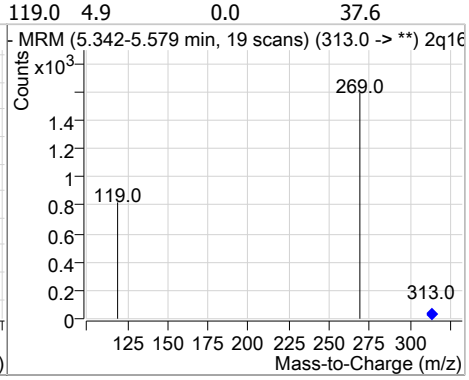




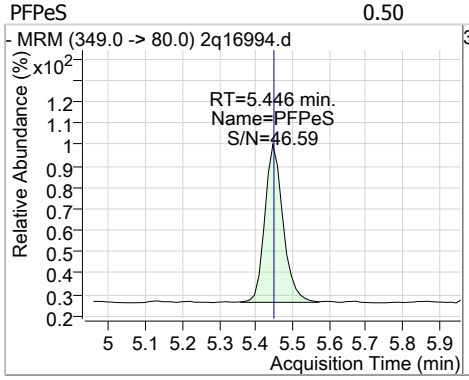
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.61	5.40	0.01	537	313.0 -> 119.0	4.9	0.0	37.6

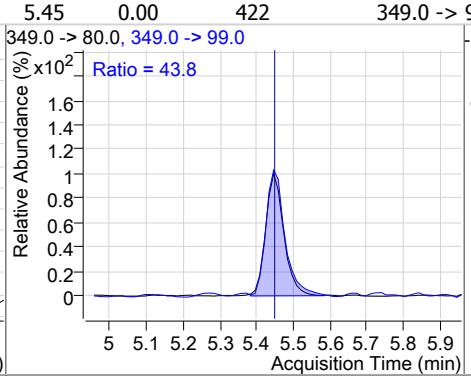


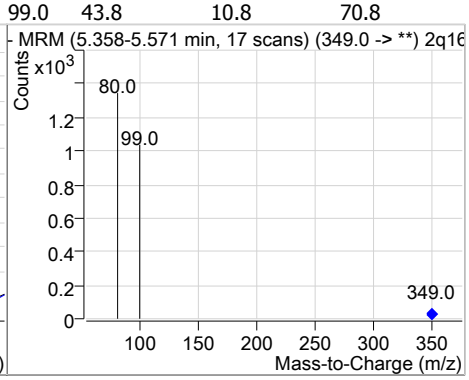




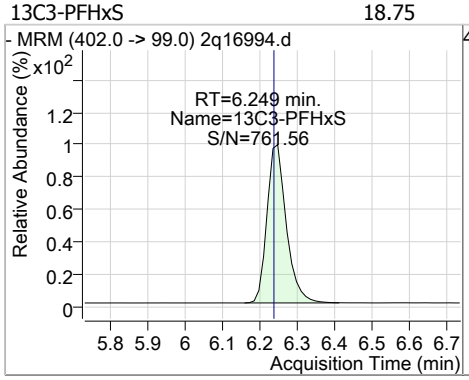
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.50	5.45	0.00	422	349.0 -> 99.0	43.8	10.8	70.8

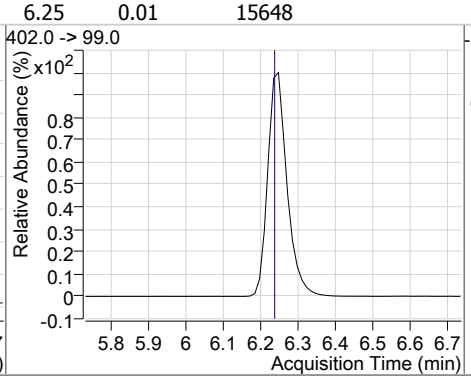


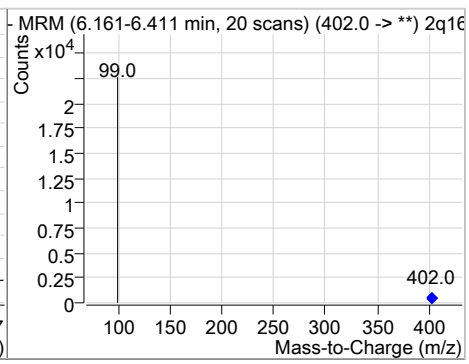




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.75	6.25	0.01	15648				

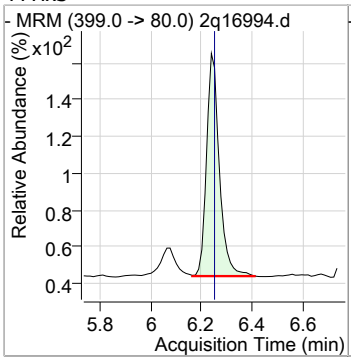


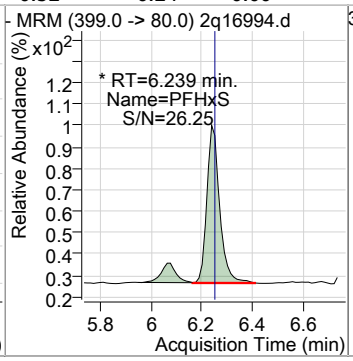


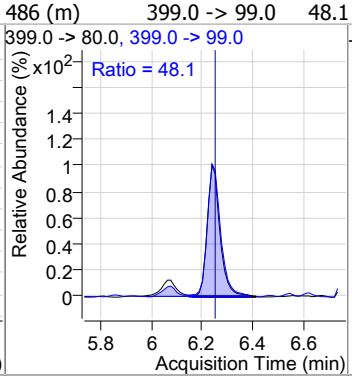


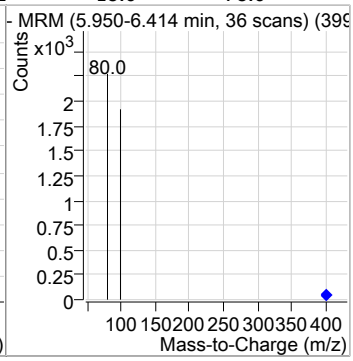
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.52	6.24	0.00	486 (m)	399.0 -> 99.0	48.1	18.0	78.0

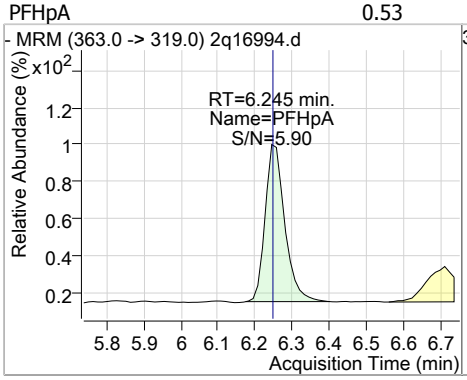


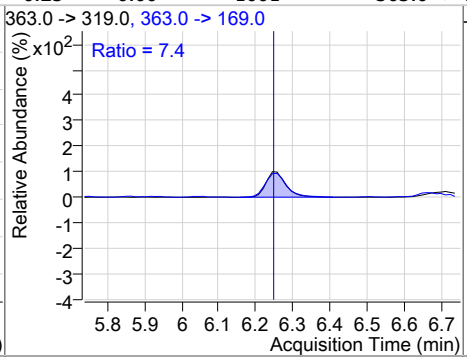


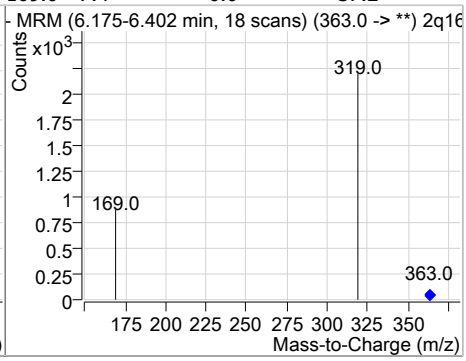




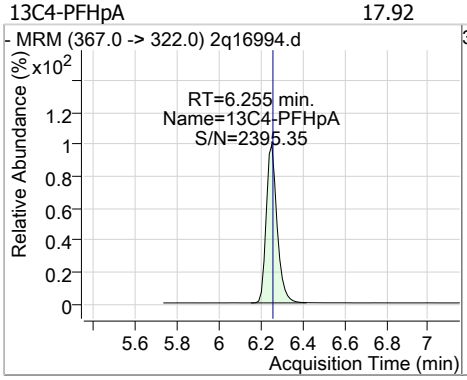
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.53	6.25	0.00	1001	363.0 -> 169.0	7.4	0.0	37.2

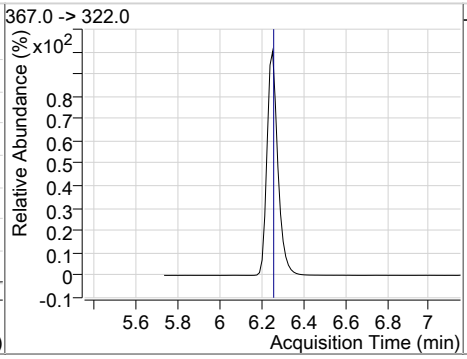


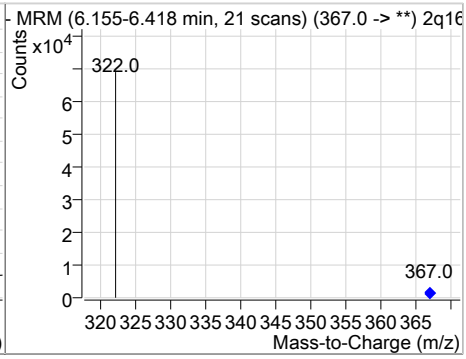




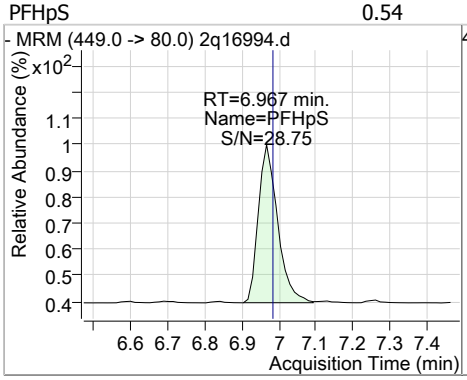
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	17.92	6.25	0.00	50703				

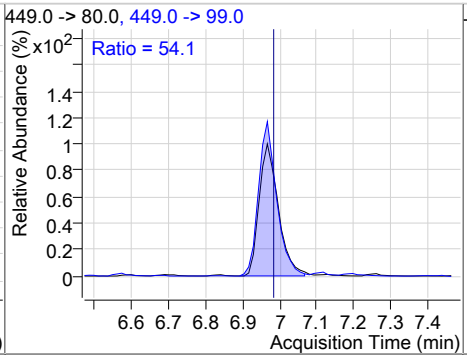


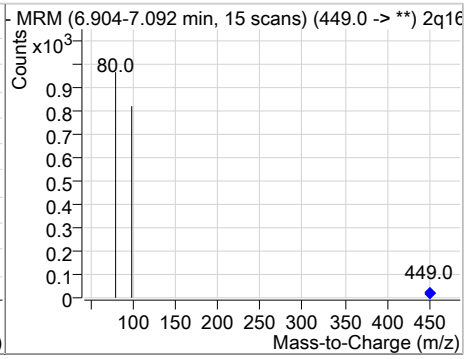




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.54	6.97	0.00	238	449.0 -> 99.0	54.1	19.0	79.0

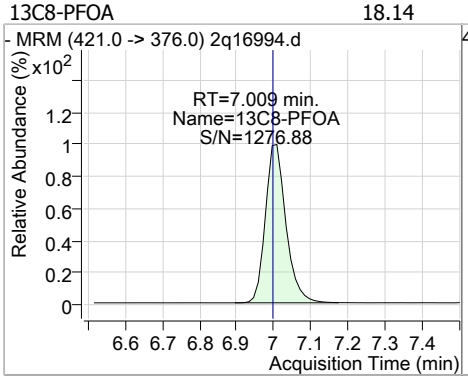


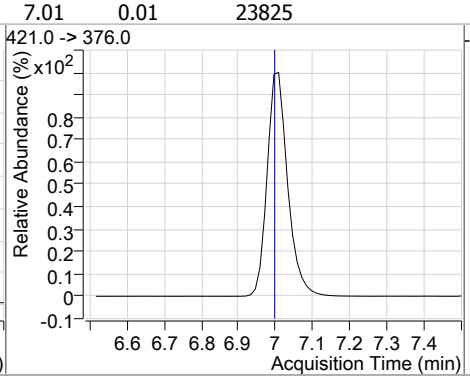


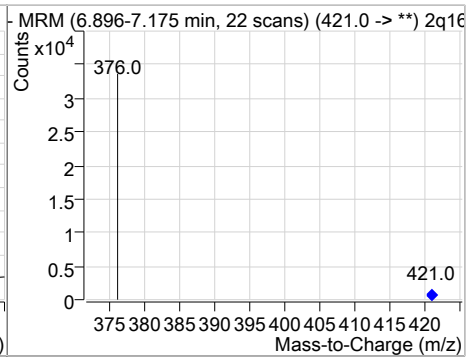


Perfluorinated Compounds by LC/MS/MS

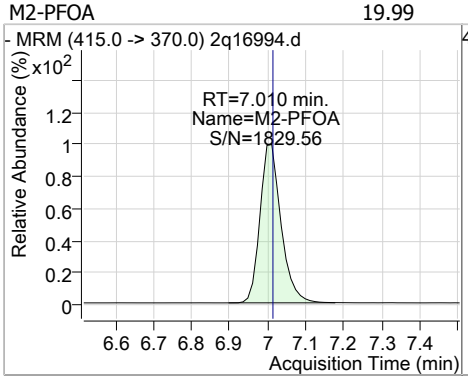
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	18.14	7.01	0.01	23825				

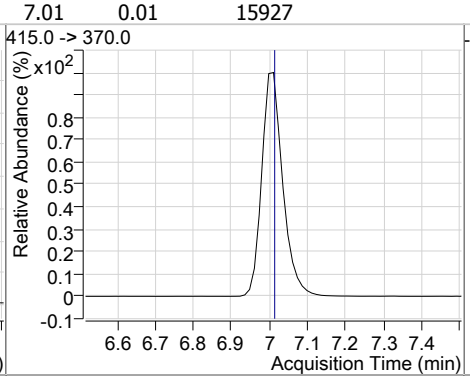


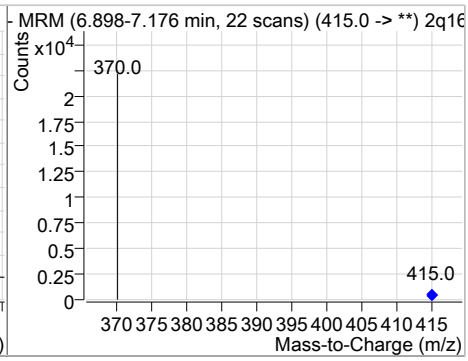




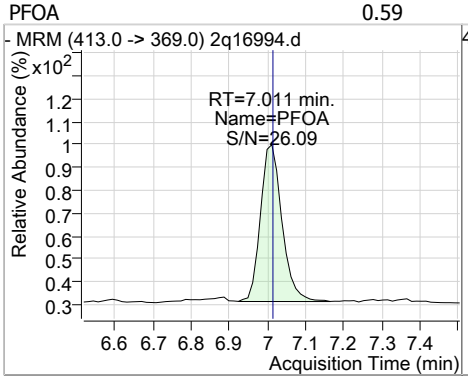
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	19.99	7.01	0.01	15927				

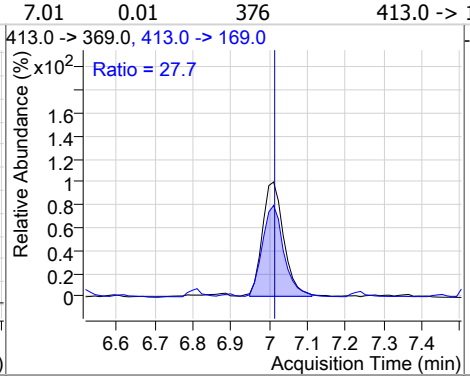


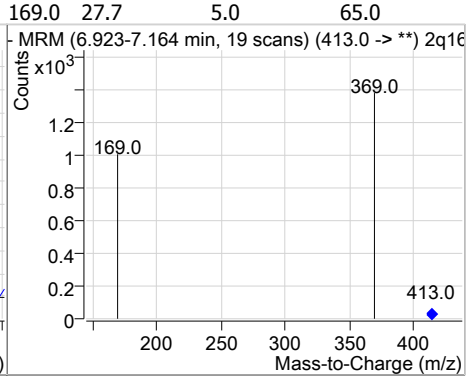




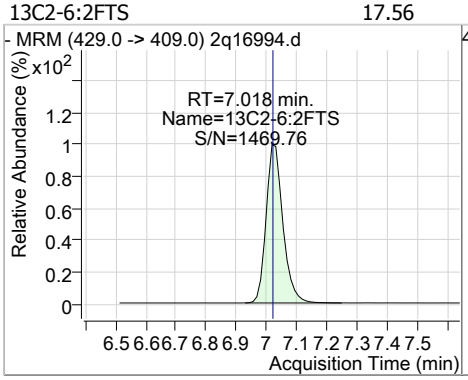
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.59	7.01	0.01	376	413.0 -> 169.0	27.7	5.0	65.0

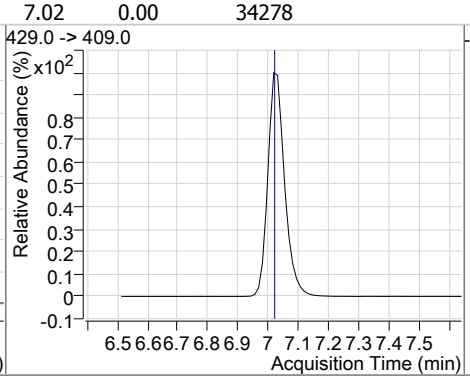


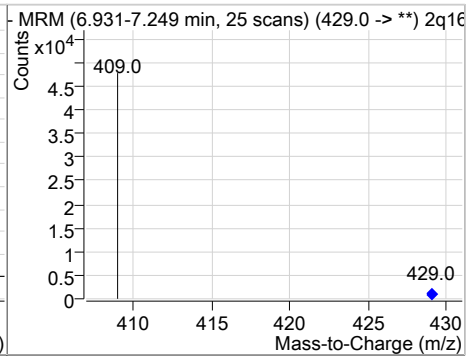




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	17.56	7.02	0.00	34278				

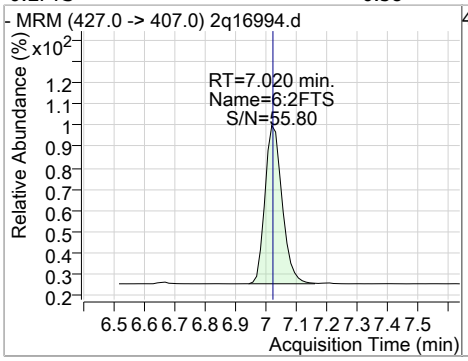


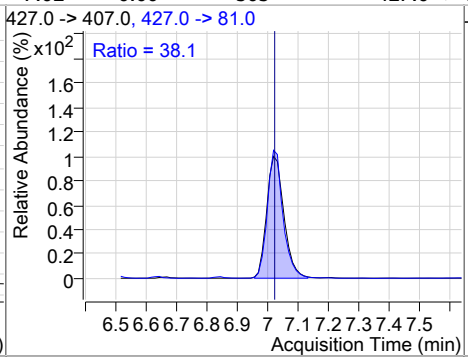


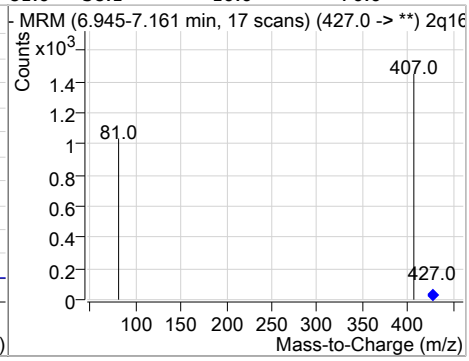


Perfluorinated Compounds by LC/MS/MS

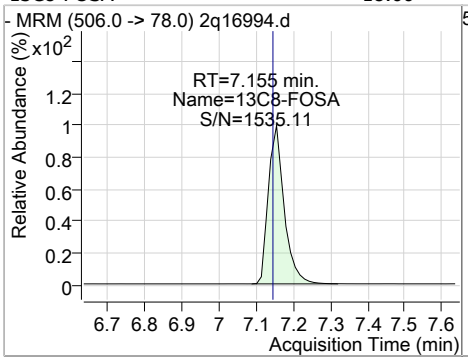
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.58	7.02	0.00	505	427.0 -> 81.0	38.1	10.0	70.0

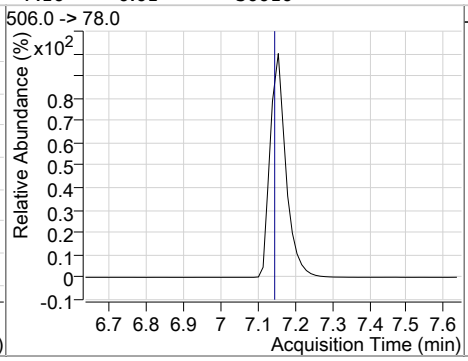


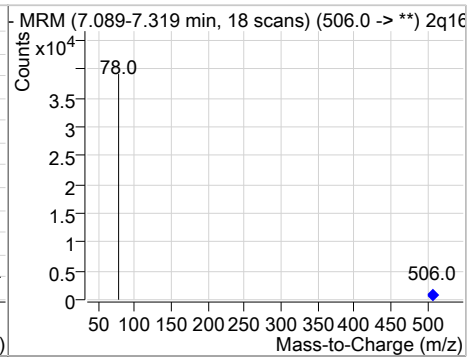




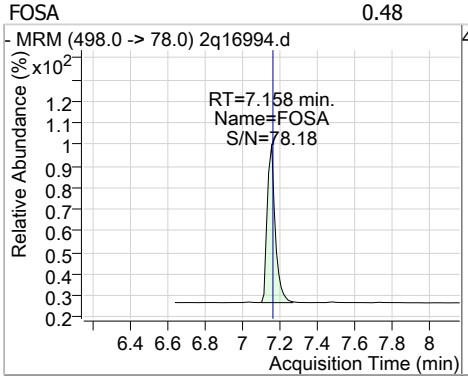
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.66	7.16	0.01	30016				

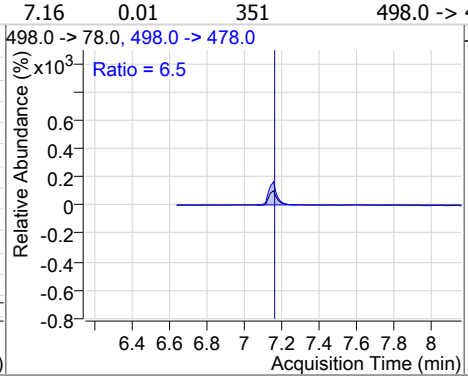


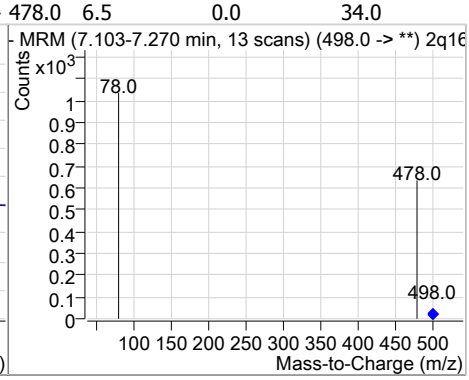




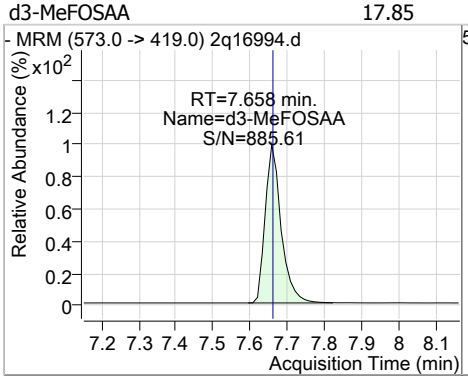
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.48	7.16	0.01	351	498.0 -> 478.0	6.5	0.0	34.0

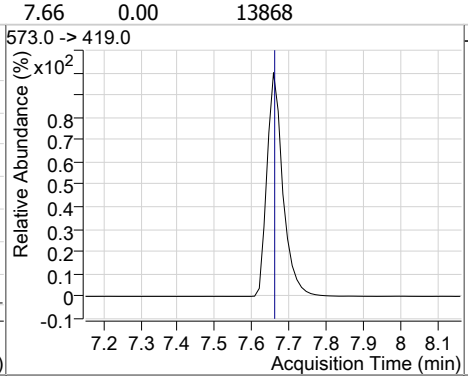


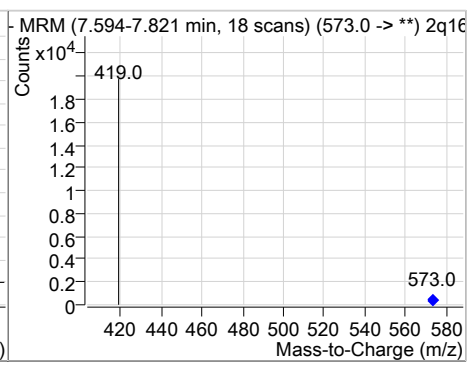




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	17.85	7.66	0.00	13868				

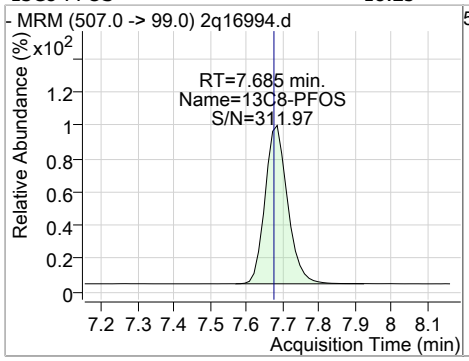


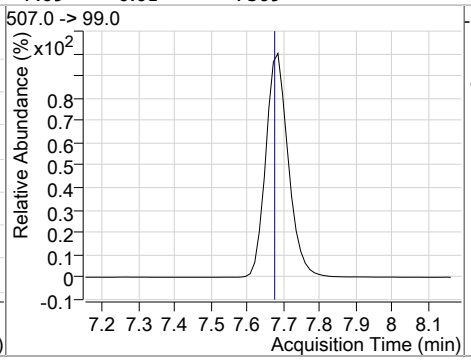


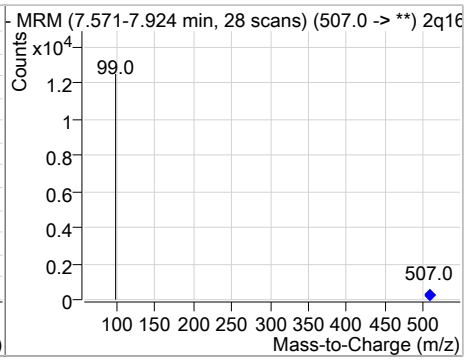


Perfluorinated Compounds by LC/MS/MS

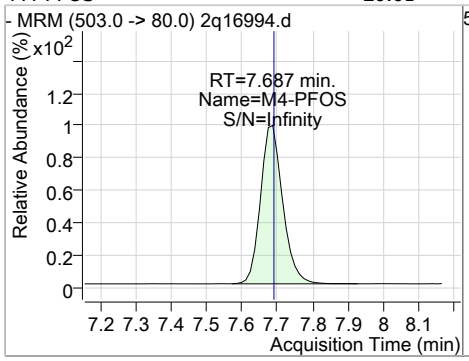
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.25	7.69	0.01	7569				

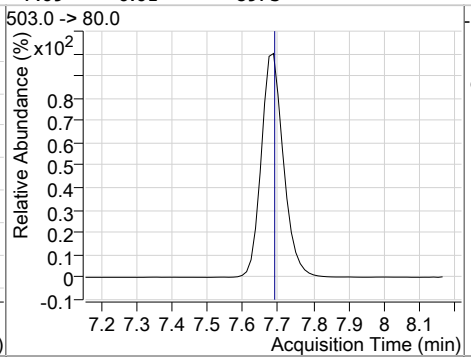


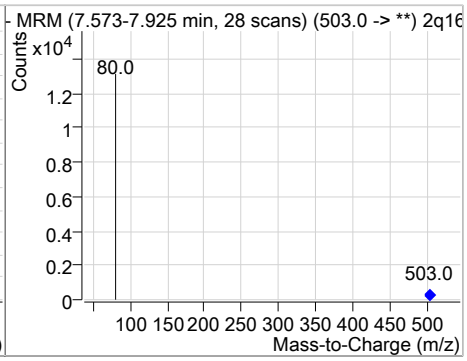




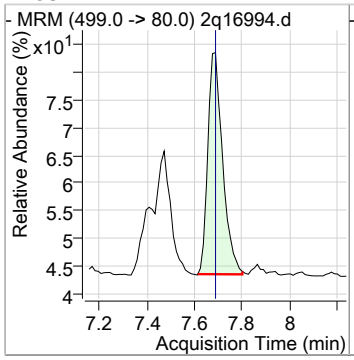
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.01	7.69	0.01	8973				

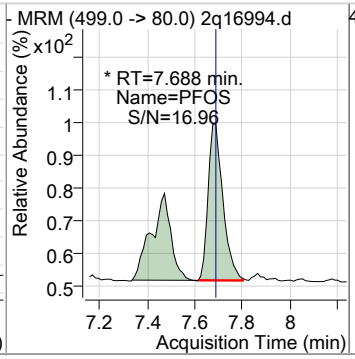


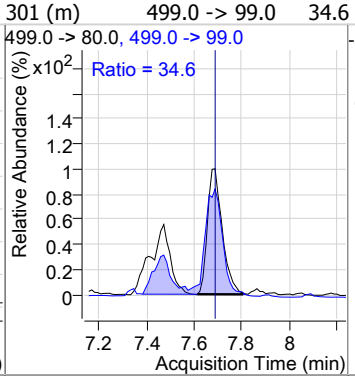


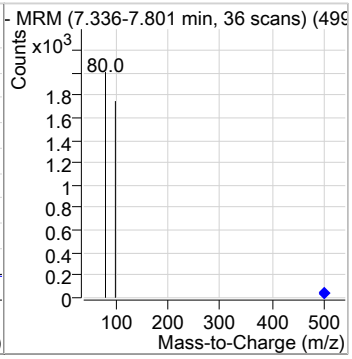


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.64	7.69	0.01	301 (m)	499.0 -> 99.0	34.6	14.5	74.5

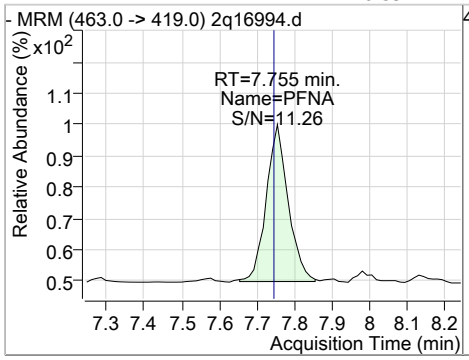


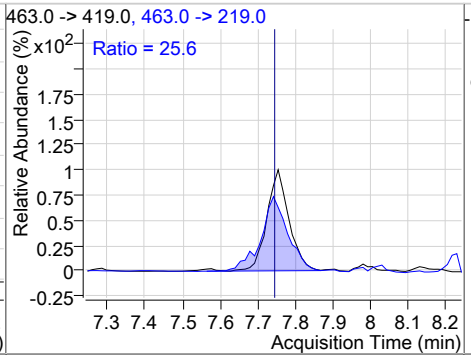


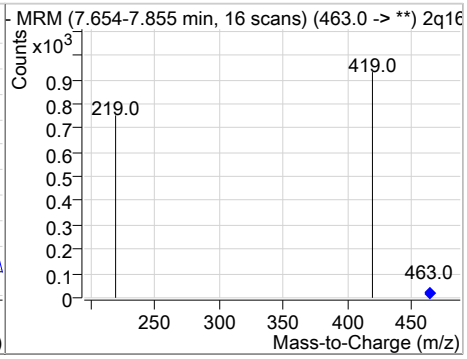




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.59	7.75	0.01	177	463.0 -> 219.0	25.6	0.0	58.4

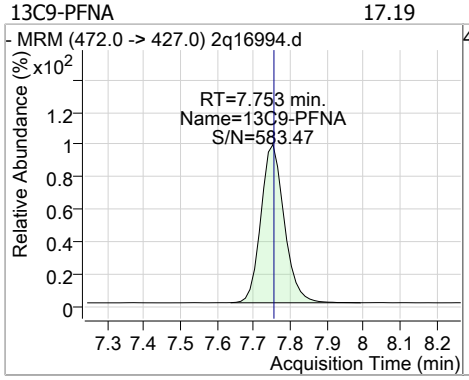


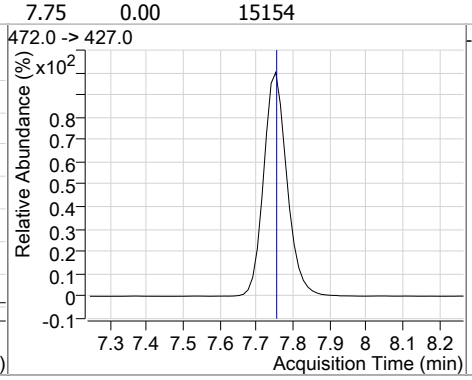


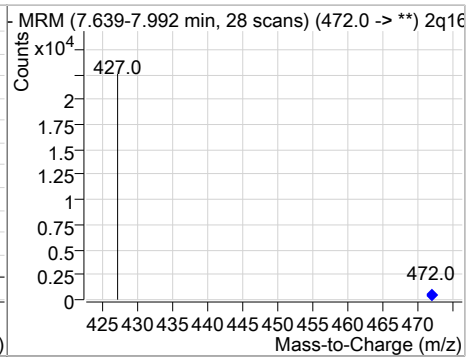


Perfluorinated Compounds by LC/MS/MS

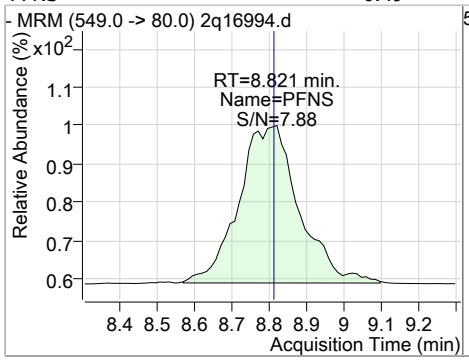
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	17.19	7.75	0.00	15154				

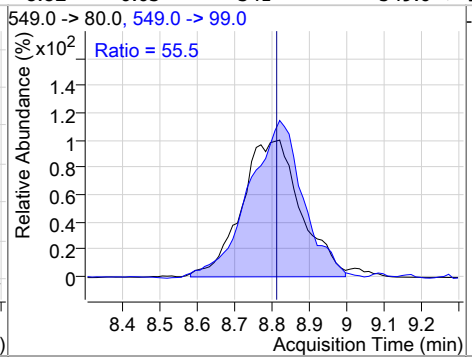


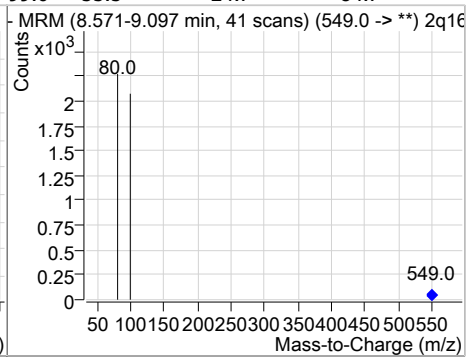




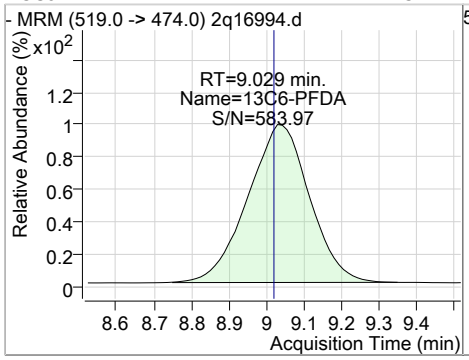
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.49	8.82	0.03	341	549.0 -> 99.0	55.5	24.7	84.7

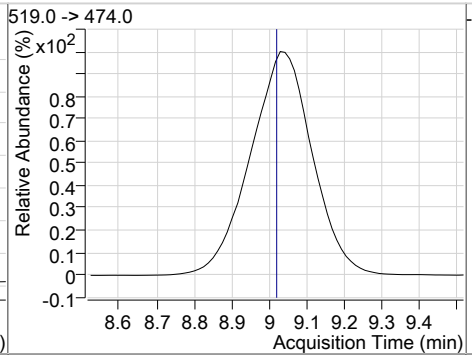


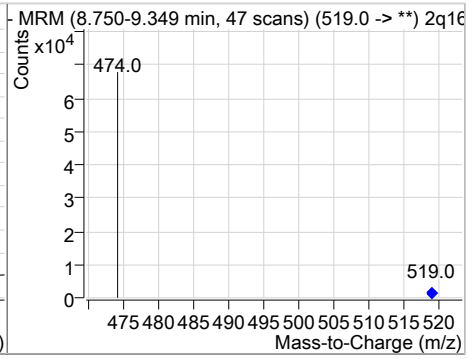




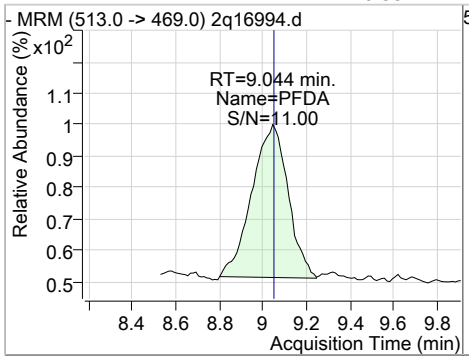
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	17.23	9.03	0.01	47753				

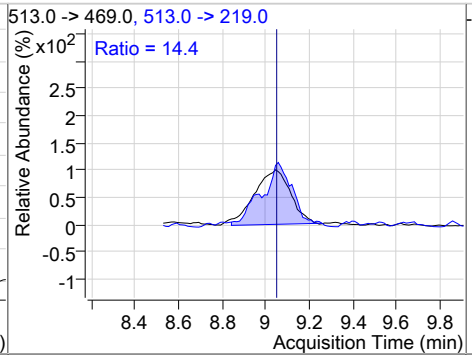


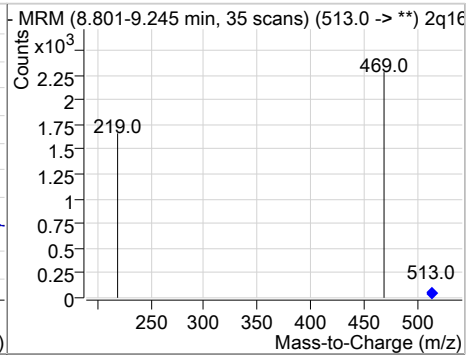




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.55	9.04	0.01	495	513.0 -> 219.0	14.4	0.0	45.3

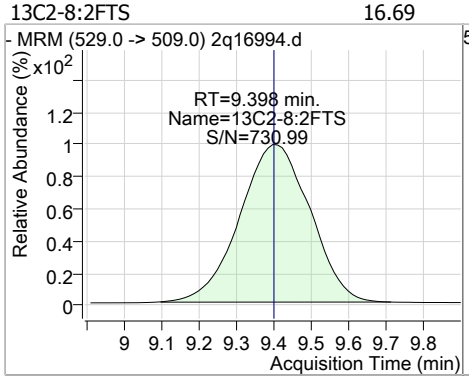


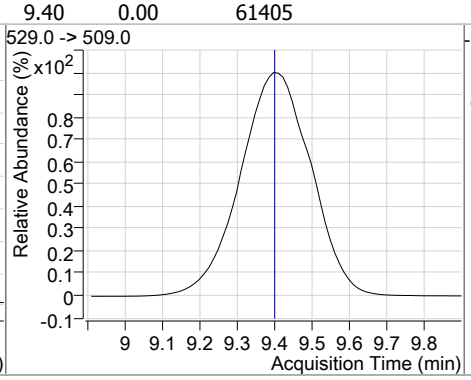


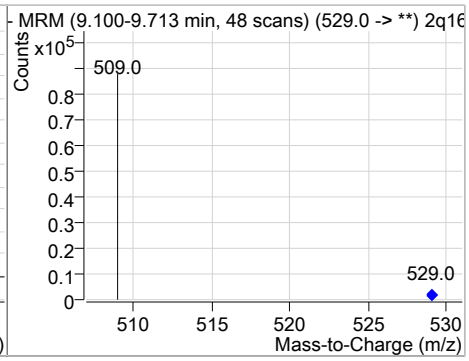


Perfluorinated Compounds by LC/MS/MS

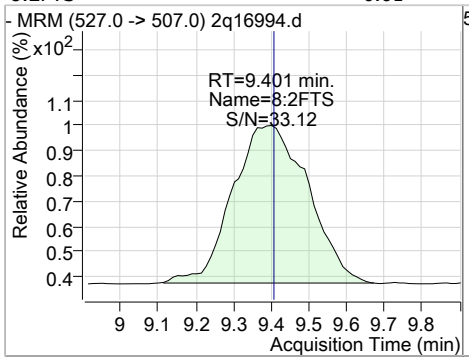
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	16.69	9.40	0.00	61405				

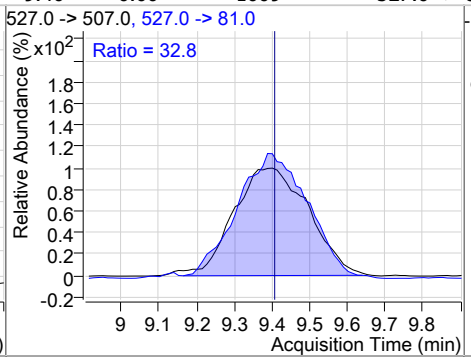


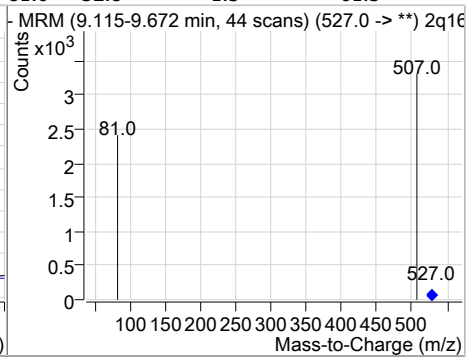




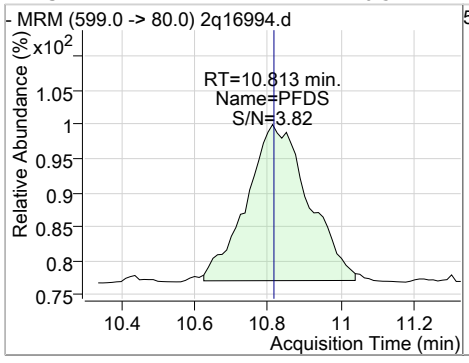
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.61	9.40	0.00	1009	527.0 -> 81.0	32.8	1.3	61.3

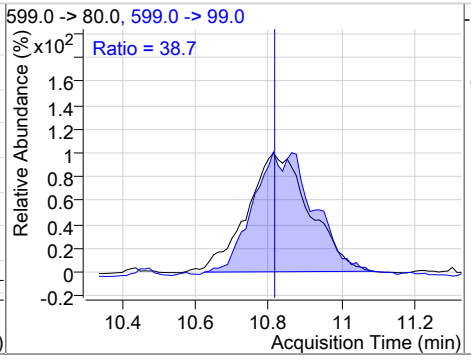


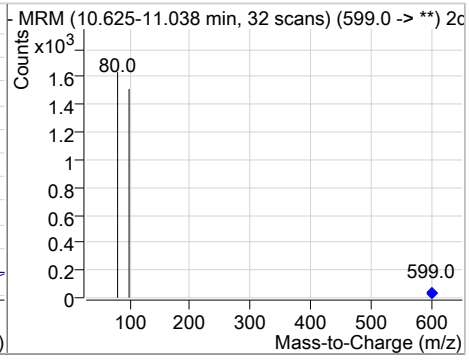




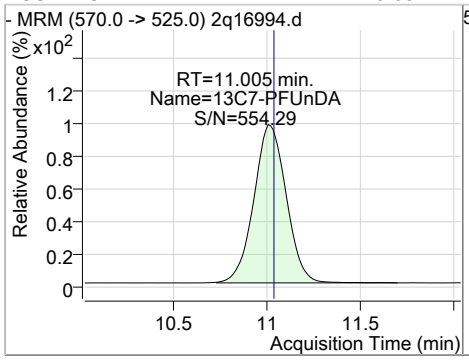
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.52	10.81	-0.02	152	599.0 -> 99.0	38.7	9.7	69.7

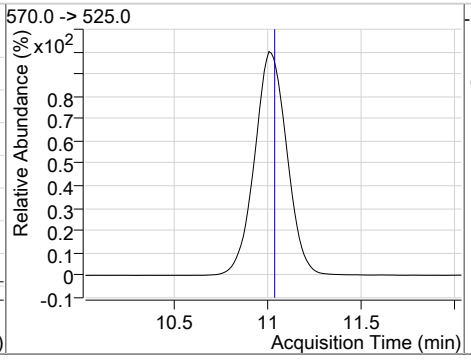


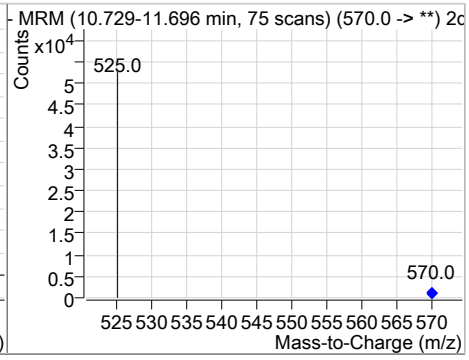




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	16.68	11.00	-0.02	34371				

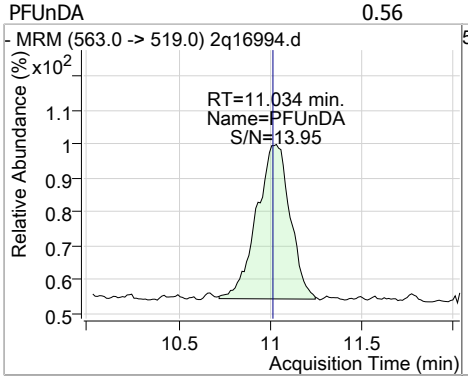


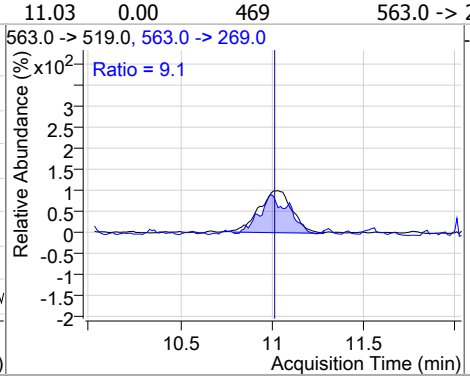


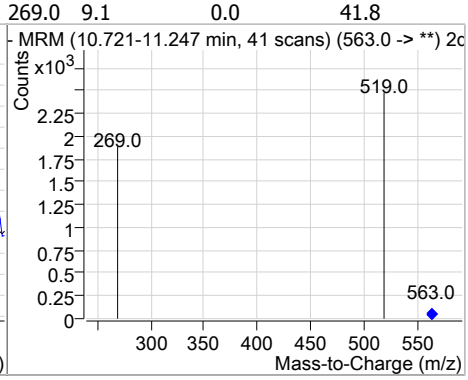


Perfluorinated Compounds by LC/MS/MS

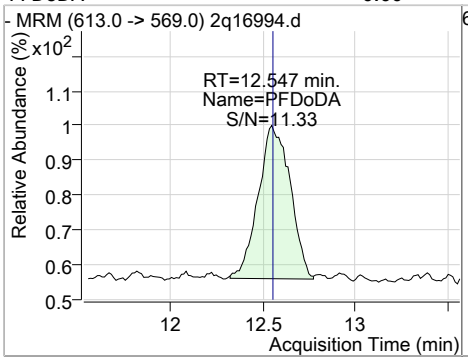
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.56	11.03	0.00	469	563.0 -> 269.0	9.1	0.0	41.8

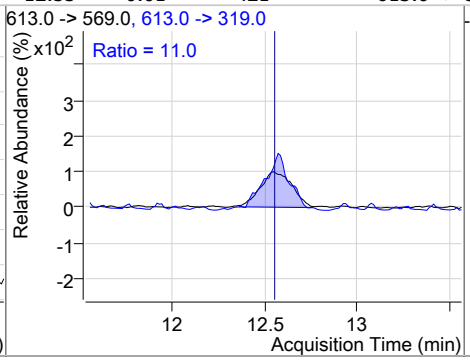


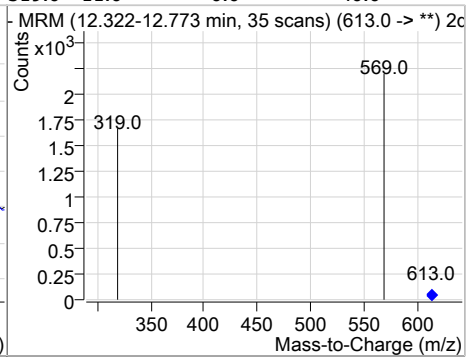




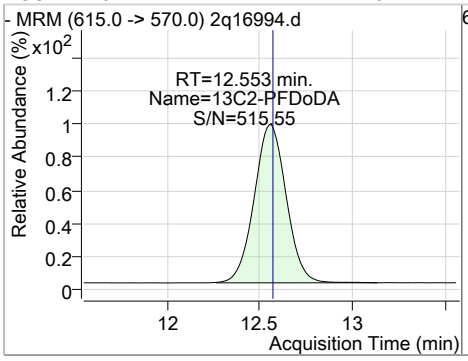
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.60	12.55	-0.01	421	613.0 -> 319.0	11.0	0.0	40.0

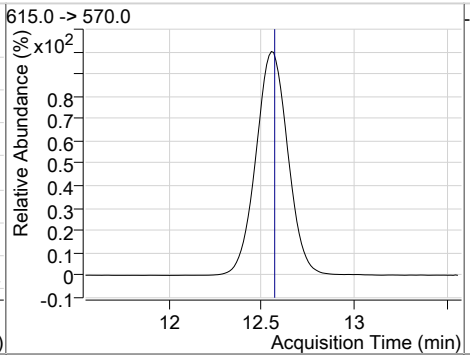


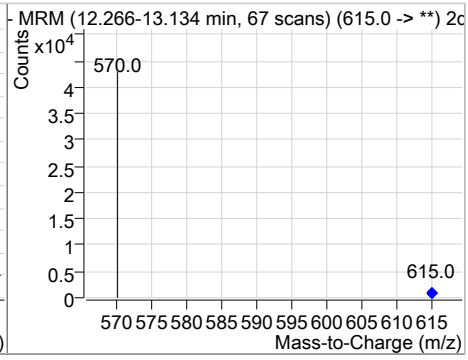




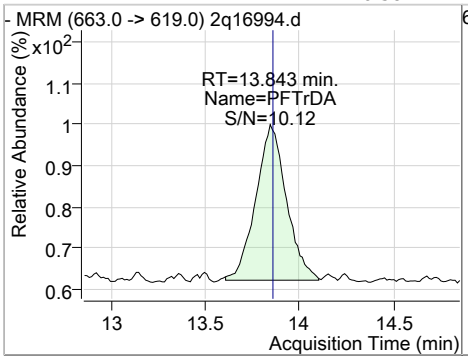
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	16.42	12.55	-0.01	27643				

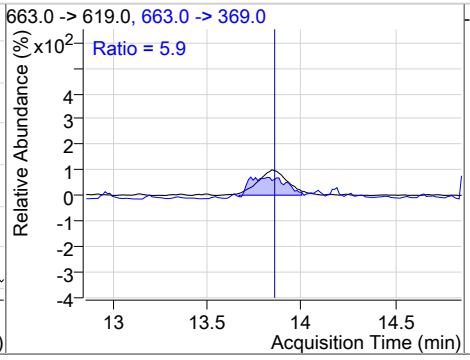


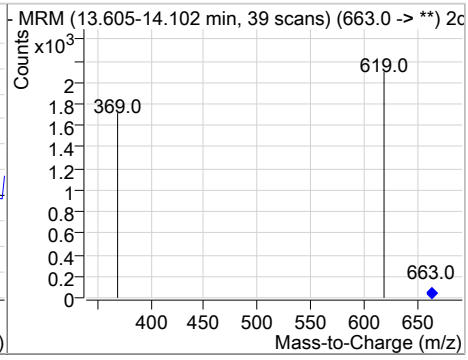




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.58	13.84	-0.01	301	663.0 -> 369.0	5.9	0.0	37.1

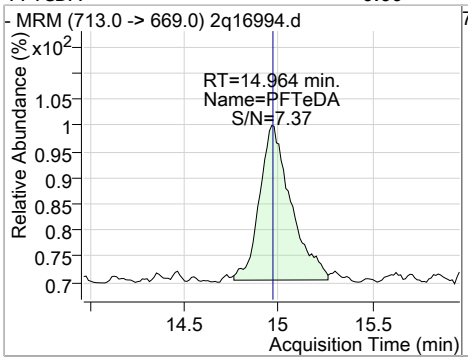


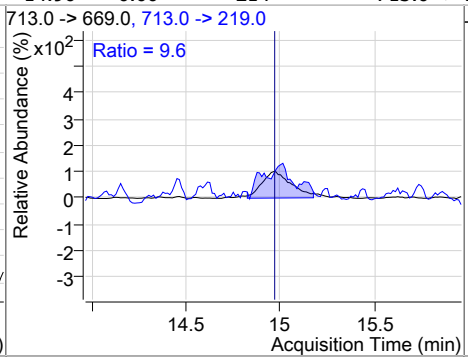


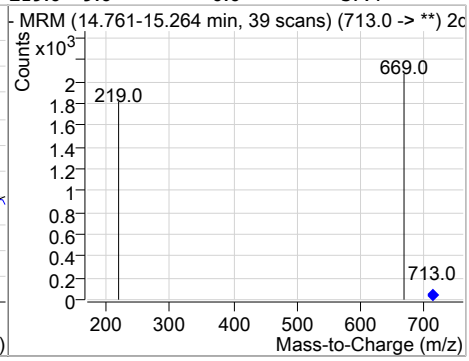


Perfluorinated Compounds by LC/MS/MS

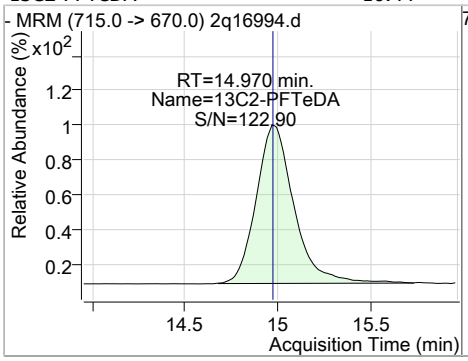
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.60	14.96	0.00	214	713.0 -> 219.0	9.6	0.0	37.4

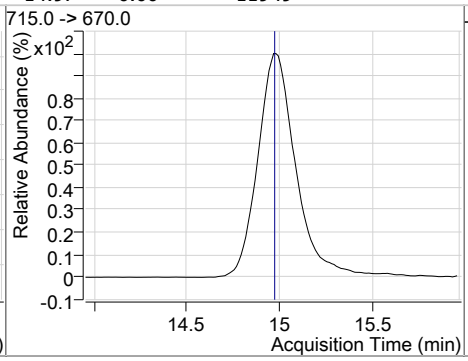


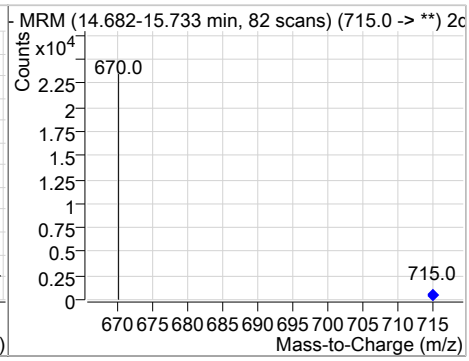




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	16.44	14.97	0.00	11949				







Manual Integration Approval Summary

Sample Number: S2Q295-IC295
Lab FileID: 2Q16994.D
Injection Time: 07/12/18 09:19

Method: EPA 537M BY ID
Analyst approved: 07/13/18 12:48 Nancy Saunders
Supervisor approved: 07/13/18 17:24 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.24	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.69	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 07/13/18 17:24

Perfluorinated Compounds by LC/MS/MS

Data File	:	2q16995.d
Operator	:	NATASHAG
Acq. Method	:	dMRM_ID_PFC.m
Acq. Date-Time	:	7/12/2018 9:40:34 AM
Sample Name	:	ic295-1.0
Vial	:	Vial 3
DA Method File	:	PFC_ID_071218_S2Q295.quantmethod.xml
Batch Name	:	s2q295.batch.bin
Sample Information	:	op70790,S2Q295,1.99,,,1.0,1,soil

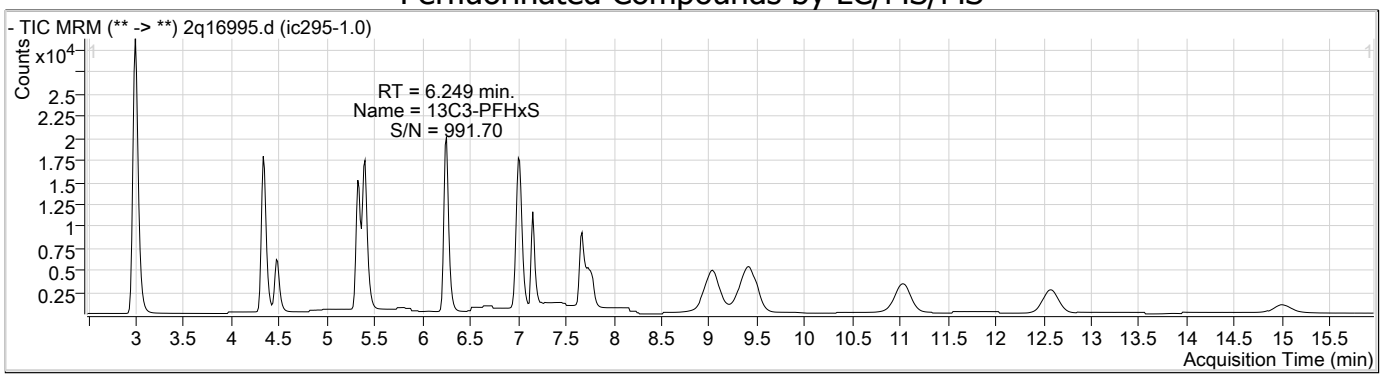
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.998	415.0 -> 370.0	15165	20.00	µg/L	0.001
13C4-PFOS	7.674	503.0 -> 80.0	8949	20.00	µg/L	-0.001
M4-PFBA	2.991	217.0 -> 172.0	122896	20.00	µg/L	0.000
M5-PFPeA	4.337	268.0 -> 223.0	60726	20.00	µg/L	0.000
M5-PFHxA	5.401	318.0 -> 273.0	55198	20.00	µg/L	0.011
M4-PFHpA	6.255	367.0 -> 322.0	52584	20.00	µg/L	0.001
M8-PFOA	7.009	421.0 -> 376.0	23599	20.00	µg/L	0.014
M9-PFNA	7.753	472.0 -> 427.0	15711	20.00	µg/L	0.001
M6-PFDA	9.042	519.0 -> 474.0	51046	20.00	µg/L	0.025
M7-PFUnDA	11.030	570.0 -> 525.0	37918	20.00	µg/L	0.001
M2-PFDoDA	12.578	615.0 -> 570.0	30957	20.00	µg/L	0.013
M2-PFTeDA	14.995	715.0 -> 670.0	13032	20.00	µg/L	0.026
M8-FOSA	7.155	506.0 -> 78.0	30717	20.00	µg/L	0.013
M3-PFBS	4.468	302.0 -> 99.0	19366	20.00	µg/L	0.000
M3-PFHxS	6.249	402.0 -> 99.0	15311	20.00	µg/L	0.013
M8-PFOS	7.685	507.0 -> 99.0	7794	20.00	µg/L	0.012
M2-4:2FTS	5.322	329.0 -> 309.0	49241	20.00	µg/L	-0.001
M2-6:2FTS	7.018	429.0 -> 409.0	33209	20.00	µg/L	0.001
M2-8:2FTS	9.410	529.0 -> 509.0	62934	20.00	µg/L	0.013
M3-MeFOSAA	7.658	573.0 -> 419.0	14735	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.322	329.0 -> 309.0	49259	17.46	µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.3%		
13C2-6:2FTS	7.018	429.0 -> 409.0	33211	17.02	µg/L	0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.1%		
13C2-8:2FTS	9.410	529.0 -> 509.0	62817	17.08	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.4%		
13C2-PFDoDA	12.578	615.0 -> 570.0	30952	18.39	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.9%		
13C2-PFTeDA	14.995	715.0 -> 670.0	12919	17.78	µg/L	0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.9%		
13C3-PFBS	4.468	302.0 -> 99.0	19365	18.57	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.9%		
13C3-PFHxS	6.249	402.0 -> 99.0	15306	18.34	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.7%		
13C4-PFBA	2.991	217.0 -> 172.0	122803	18.48	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.4%		
13C4-PFHpA	6.255	367.0 -> 322.0	52583	18.59	µg/L	0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.9%		
13C5-PFHxA	5.401	318.0 -> 273.0	55204	18.61	µg/L	0.011
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.1%		
13C5-PFPeA	4.337	268.0 -> 223.0	60720	18.51	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.5%		
13C6-PFDA	9.042	519.0 -> 474.0	50751	18.31	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.5%		

Perfluorinated Compounds by LC/MS/MS

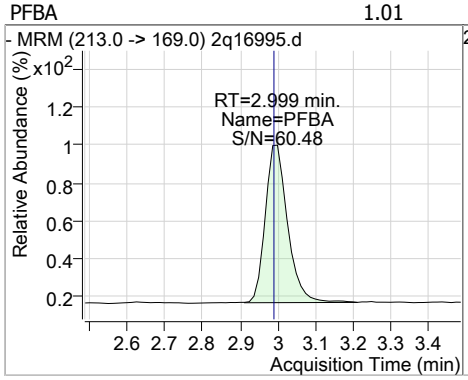
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	11.030	570.0 -> 525.0	37950	18.41	µg/L		0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.1%			
13C8-FOSA	7.155	506.0 -> 78.0	30716	19.10	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.5%			
13C8-PFOA	7.009	421.0 -> 376.0	23582	17.95	µg/L		0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.8%			
13C8-PFOS	7.685	507.0 -> 99.0	7787	18.77	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.8%			
13C9-PFNA	7.753	472.0 -> 427.0	15738	17.85	µg/L		0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.2%			
d3-MeFOSAA	7.658	573.0 -> 419.0	14756	19.00	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.0%			
M2-PFOA	6.998	415.0 -> 370.0	15160	19.99	ng/ml		0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.674	503.0 -> 80.0	8943	19.99	ng/ml		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
Target Compounds							**QValue**
4:2FTS	5.324	327.0 -> 307.0	1410	1.10	µg/L		81
6:2FTS	7.032	427.0 -> 407.0	917	1.09	µg/L		98
8:2FTS	9.401	527.0 -> 507.0	1955	1.16	µg/L		97
EtFOSAA	7.782	584.0 -> 419.0	254	1.07	µg/L		89
FOSA	7.158	498.0 -> 78.0	748	0.99	µg/L		98
MeFOSAA	7.672	570.0 -> 419.0	300	1.10	µg/L		93
PFBA	2.999	213.0 -> 169.0	988	1.01	µg/L		100
PFBS	4.472	299.0 -> 80.0	1375	1.04	µg/L		97
PFDA	9.032	513.0 -> 469.0	984	1.03	µg/L		96
PFDoDA	12.597	613.0 -> 569.0	908	1.15	µg/L		100
PFDS	10.813	599.0 -> 80.0	357	1.10	µg/L	m	99
PFHpA	6.258	363.0 -> 319.0	1965	1.00	µg/L		99
PFHpS	6.967	449.0 -> 80.0	410	0.95	µg/L		85
PFHxA	5.403	313.0 -> 269.0	928	1.00	µg/L		98
PFHxS	6.239	399.0 -> 80.0	944	1.04	µg/L	m	98
PFNA	7.742	463.0 -> 419.0	287	0.92	µg/L		88
PFNS	8.809	549.0 -> 80.0	677	0.94	µg/L		96
PFOA	6.999	413.0 -> 369.0	619	0.98	µg/L		98
PFOS	7.688	499.0 -> 80.0	466	0.95	µg/L	m	92
PFPeA	4.341	263.0 -> 219.0	3333	1.18	µg/L		100
PFPeS	5.446	349.0 -> 80.0	885	1.05	µg/L		98
PFTeDA	14.989	713.0 -> 669.0	461	1.19	µg/L		93
PFTrDA	13.868	663.0 -> 619.0	659	1.16	µg/L		99
PFUnDA	11.047	563.0 -> 519.0	996	1.07	µg/L		99

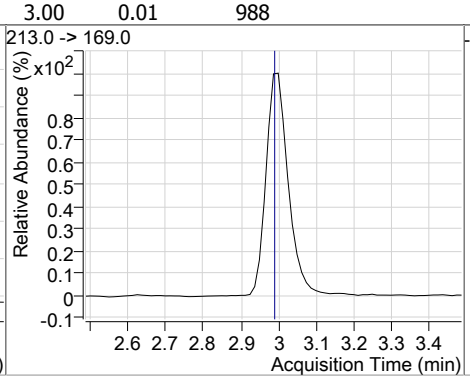
 # = Qualifier out of range, m = manually integrated, + = Area summed

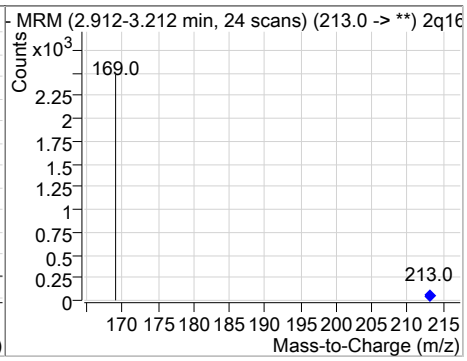
Perfluorinated Compounds by LC/MS/MS



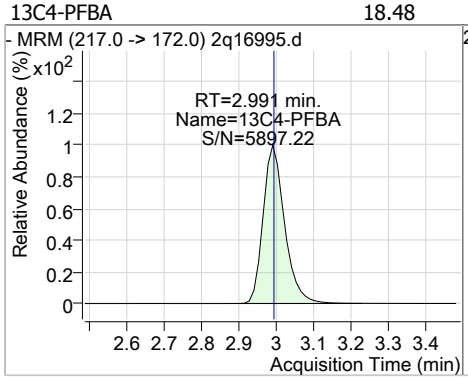
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.01	3.00	0.01	988				

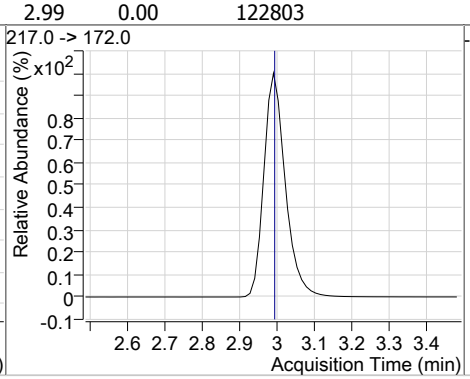


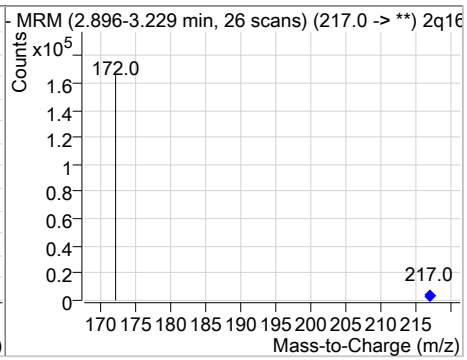




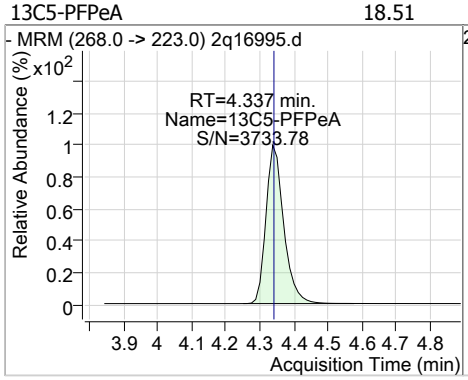
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.48	2.99	0.00	122803				

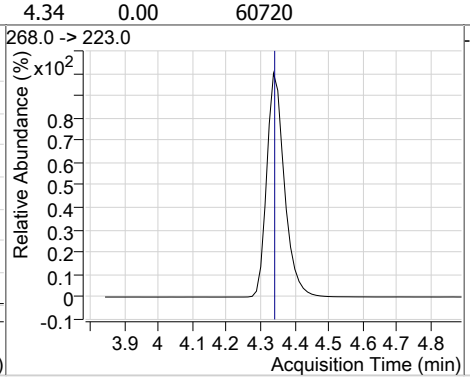


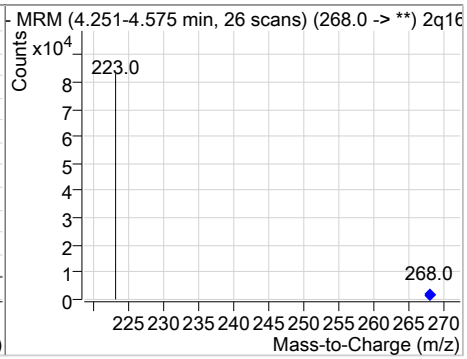




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.51	4.34	0.00	60720				

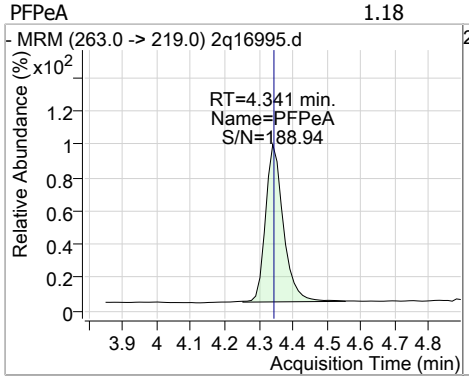


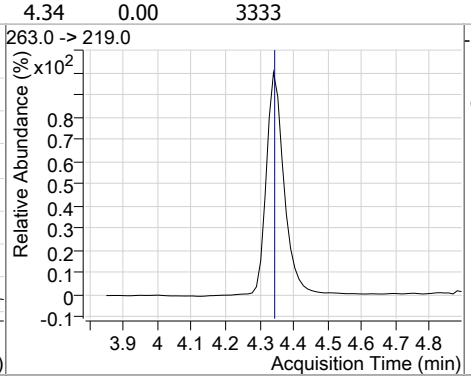


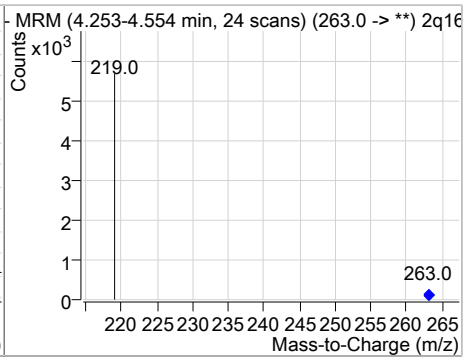


Perfluorinated Compounds by LC/MS/MS

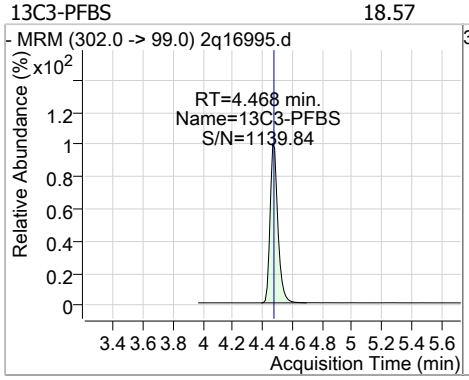
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.18	4.34	0.00	3333				

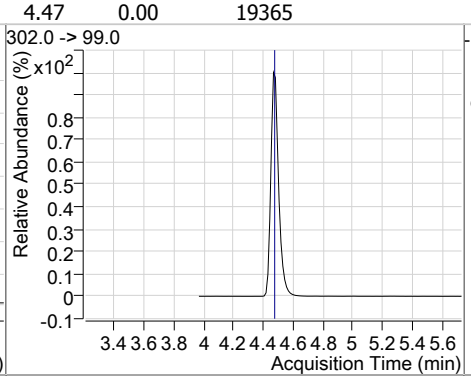


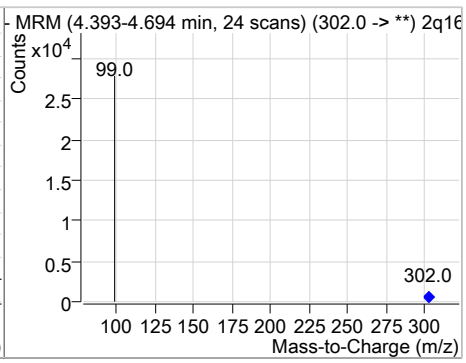




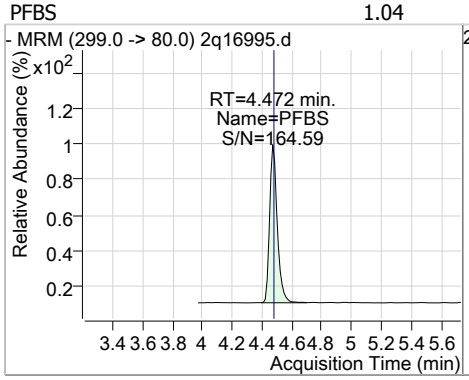
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.57	4.47	0.00	19365				

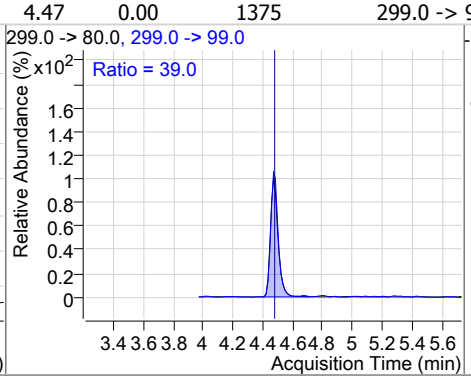


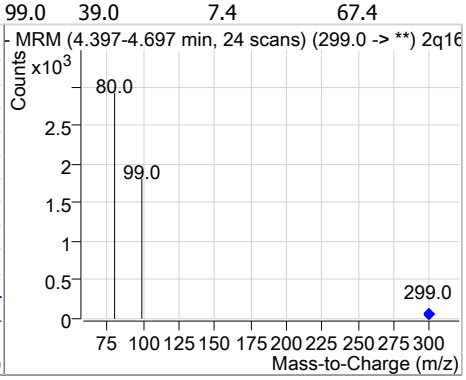




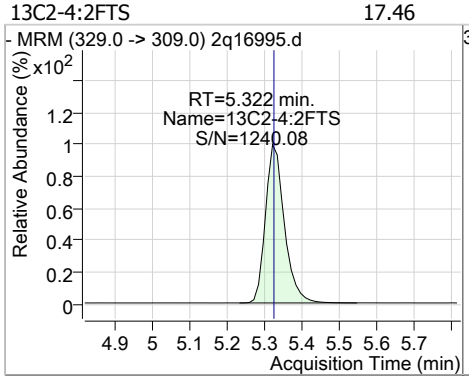
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.04	4.47	0.00	1375	299.0 -> 99.0	39.0	7.4	67.4

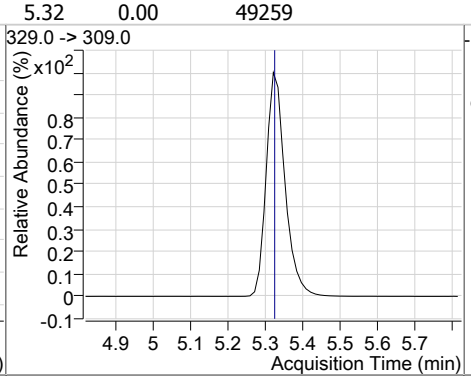


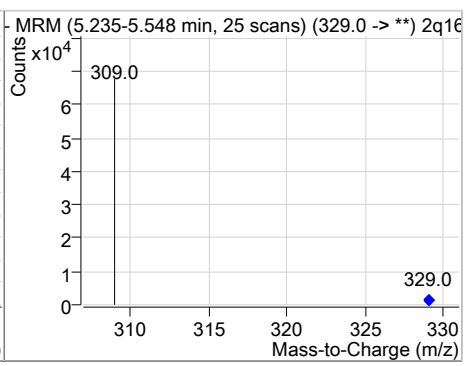




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	17.46	5.32	0.00	49259				

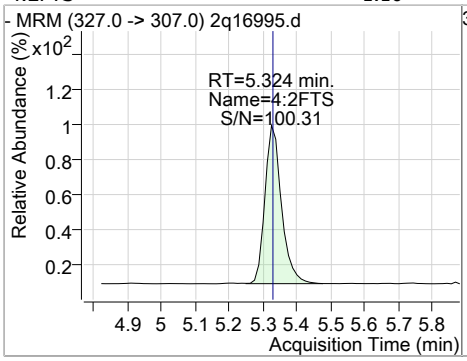


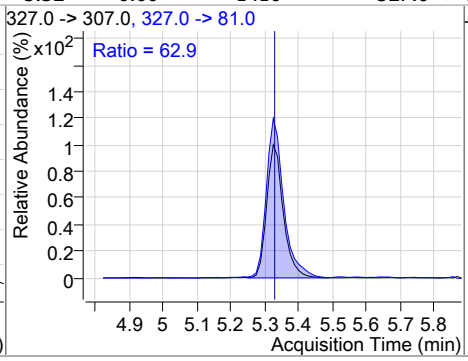


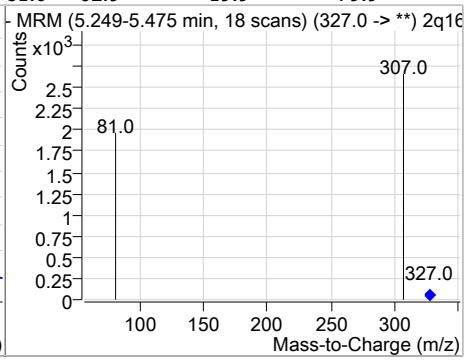


Perfluorinated Compounds by LC/MS/MS

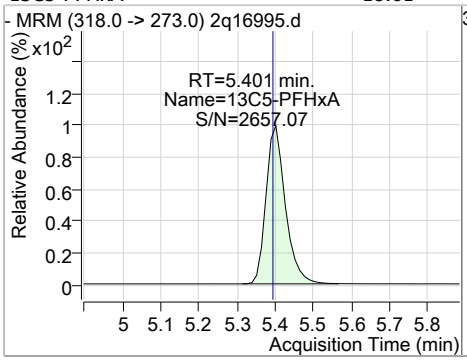
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.10	5.32	0.00	1410	327.0 -> 81.0	62.9	19.9	79.9

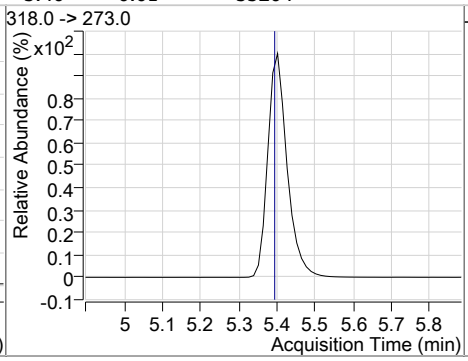


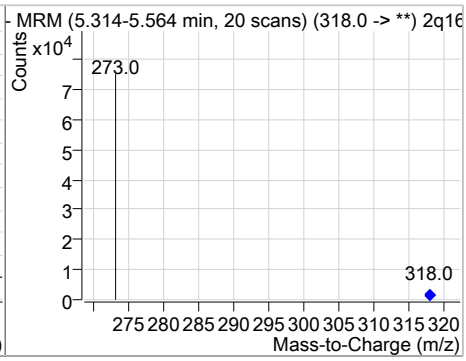




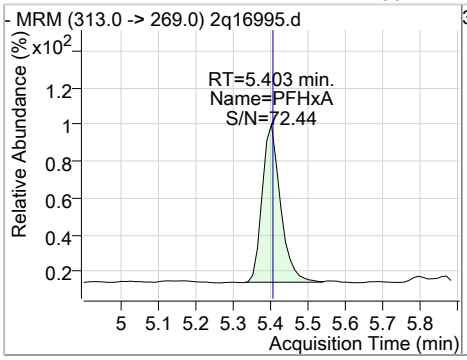
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.61	5.40	0.01	55204				

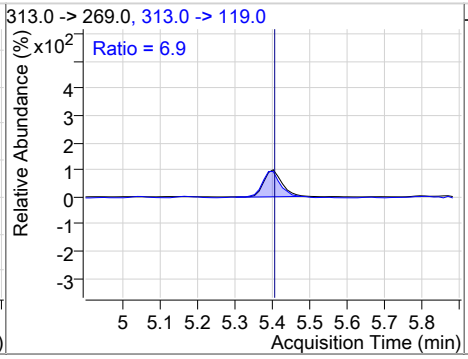


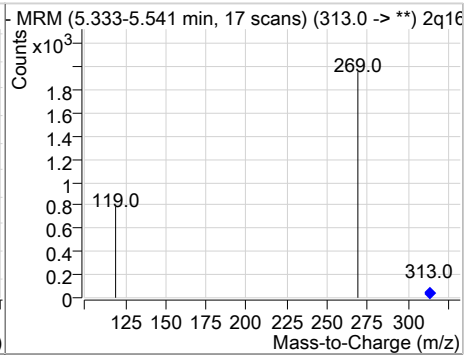




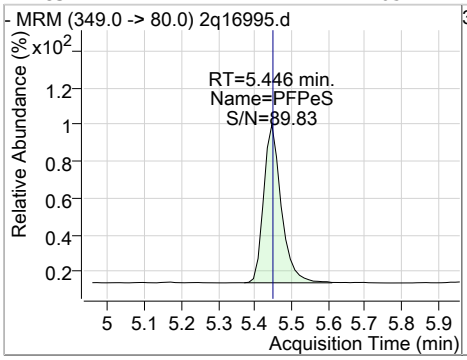
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.00	5.40	0.01	928	313.0 -> 119.0	6.9	0.0	37.6

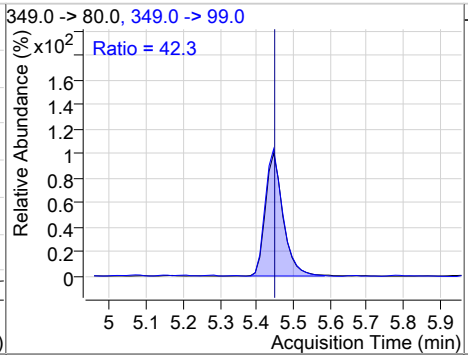


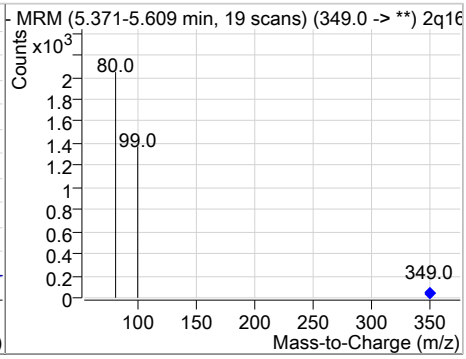




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.05	5.45	0.00	885	349.0 -> 99.0	42.3	10.8	70.8

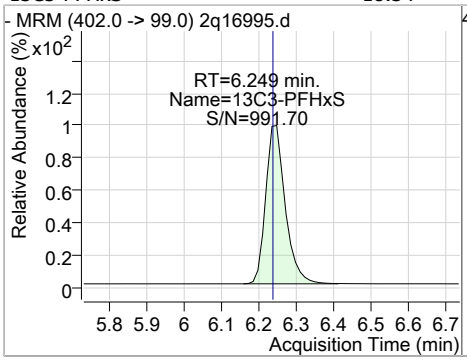


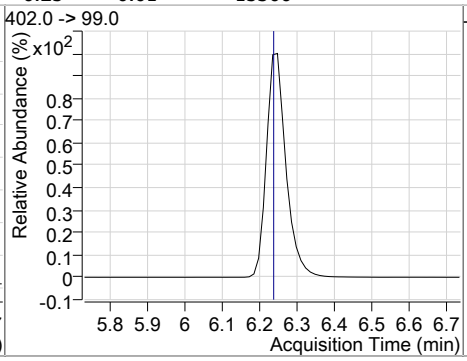


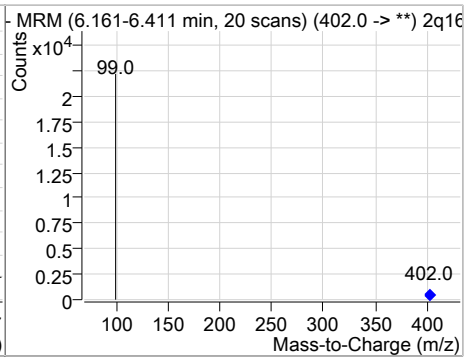


Perfluorinated Compounds by LC/MS/MS

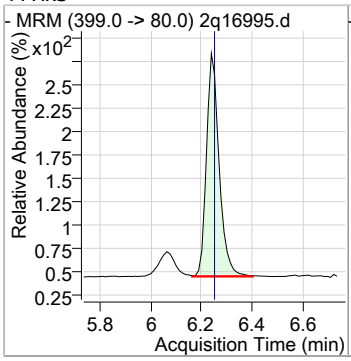
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.34	6.25	0.01	15306				

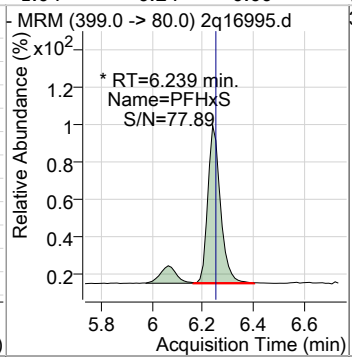


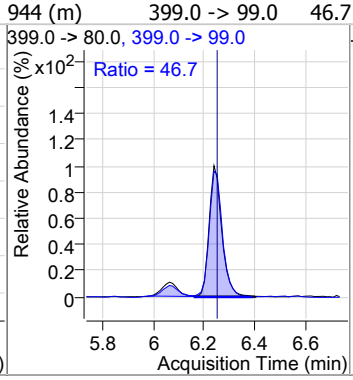


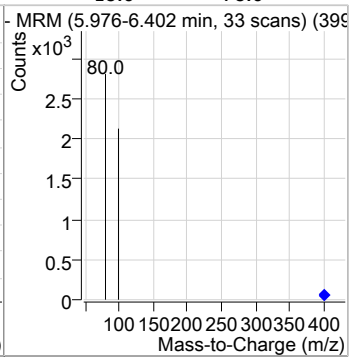


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.04	6.24	0.00	944 (m)	399.0 -> 99.0	46.7	18.0	78.0

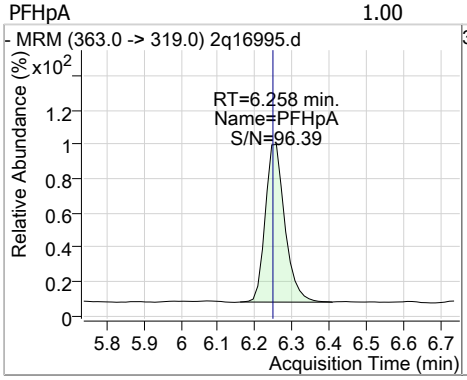


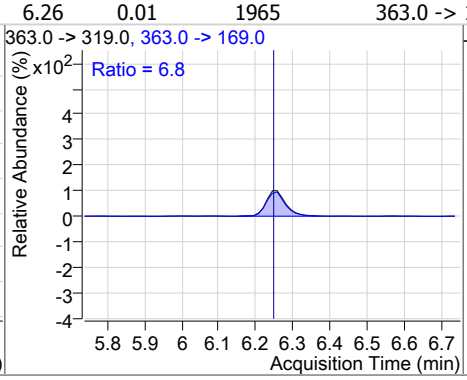


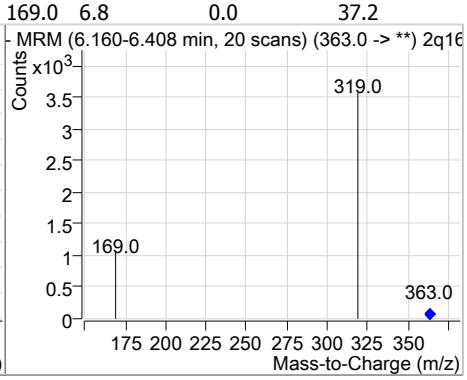




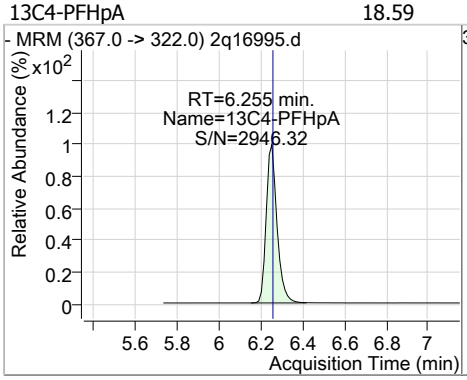
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.00	6.26	0.01	1965	363.0 -> 169.0	6.8	0.0	37.2

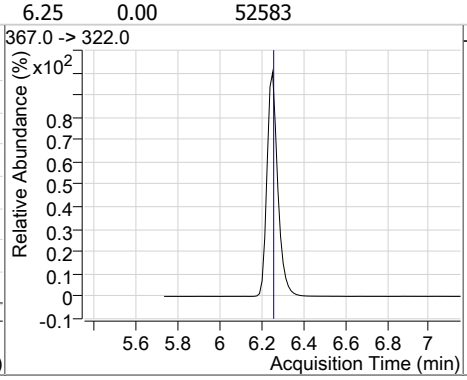


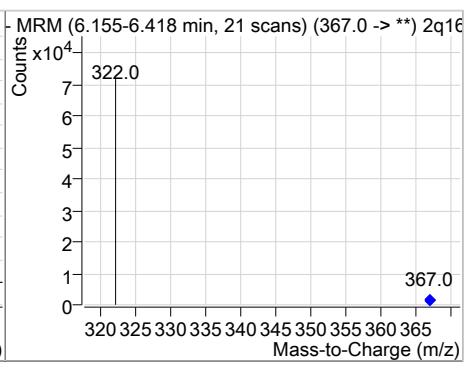




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.59	6.25	0.00	52583				

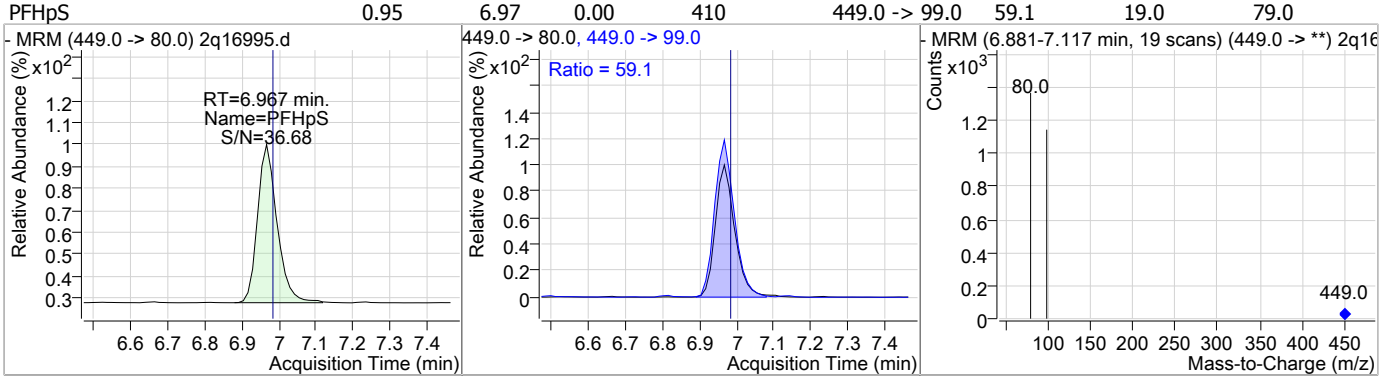




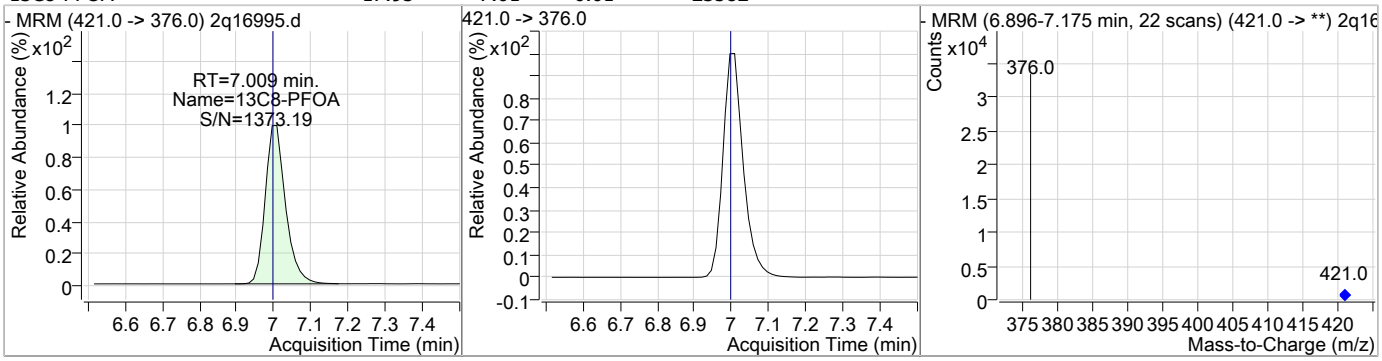


Perfluorinated Compounds by LC/MS/MS

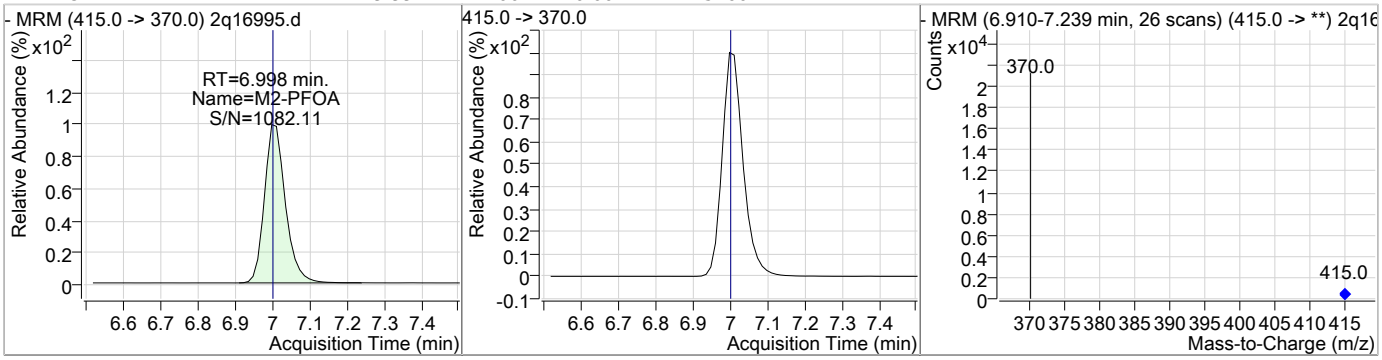
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.95	6.97	0.00	410	449.0 -> 99.0	59.1	19.0	79.0



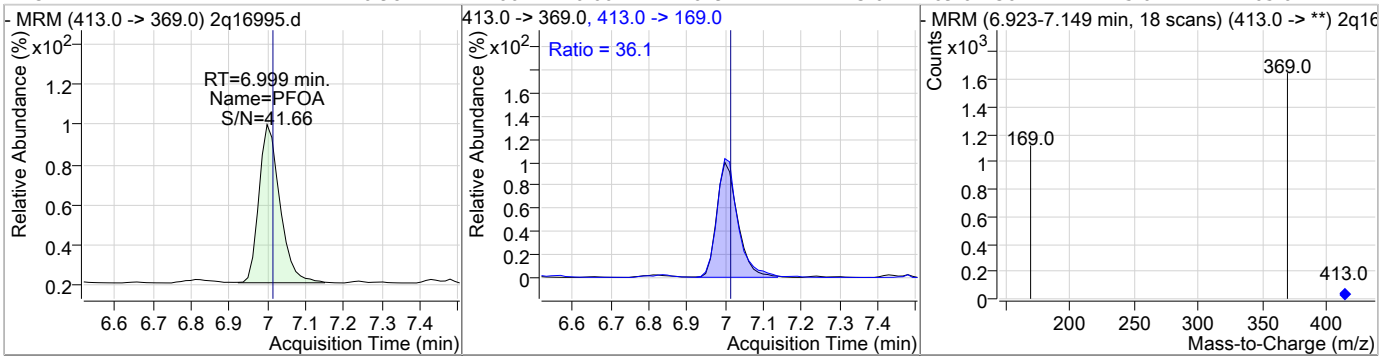
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	17.95	7.01	0.01	23582				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	19.99	7.00	0.00	15160				

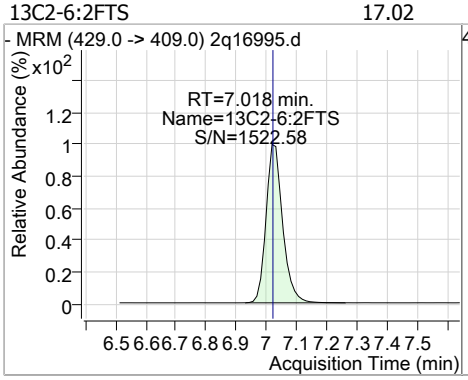


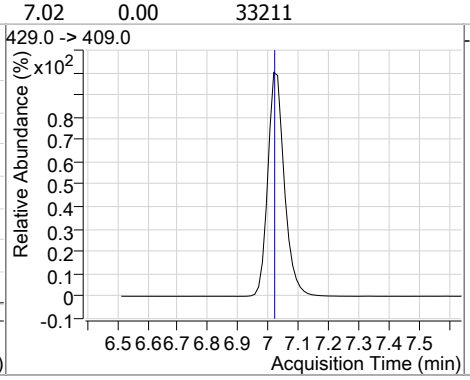
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.98	7.00	0.00	619	413.0 -> 169.0	36.1	5.0	65.0

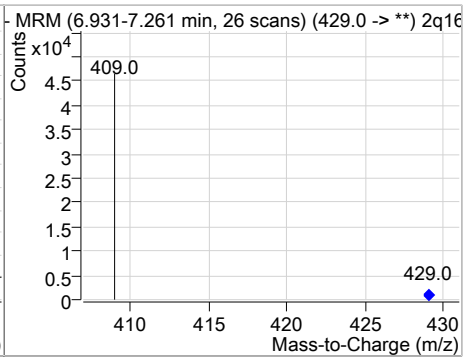


Perfluorinated Compounds by LC/MS/MS

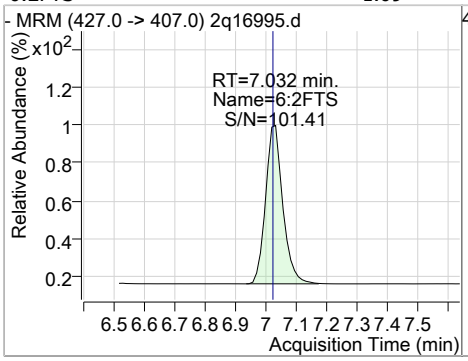
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	17.02	7.02	0.00	33211				

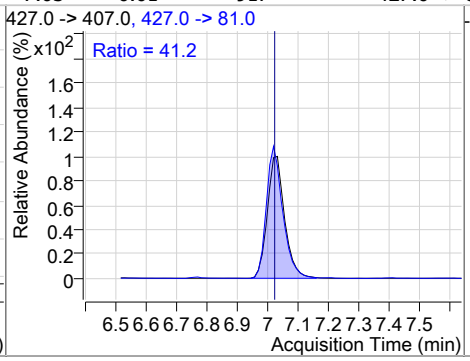


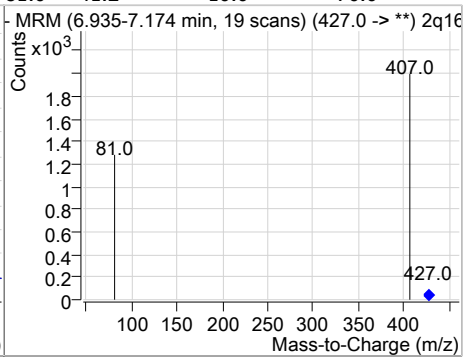




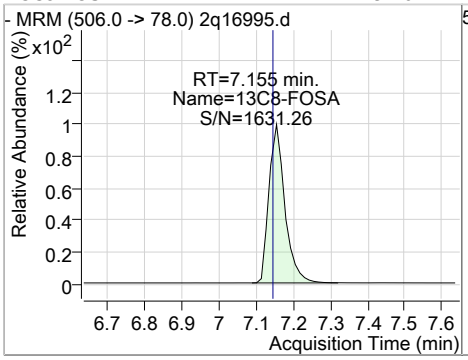
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.09	7.03	0.01	917	427.0 -> 81.0	41.2	10.0	70.0

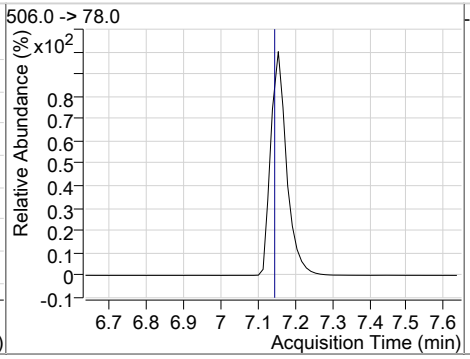


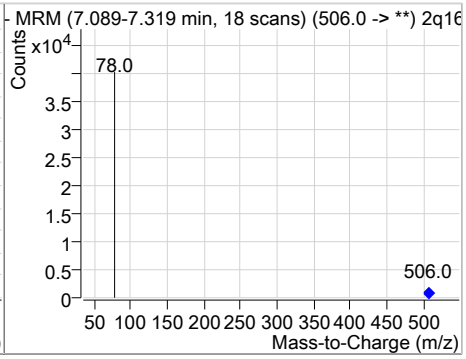




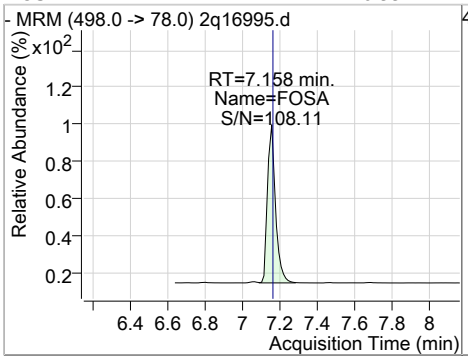
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.10	7.16	0.01	30716				

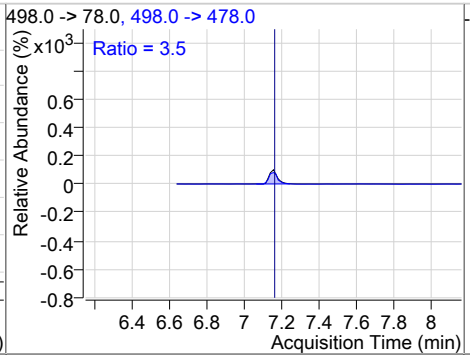


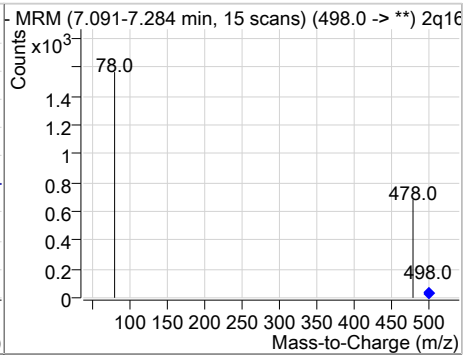




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.99	7.16	0.01	748	498.0 -> 478.0	3.5	0.0	34.0

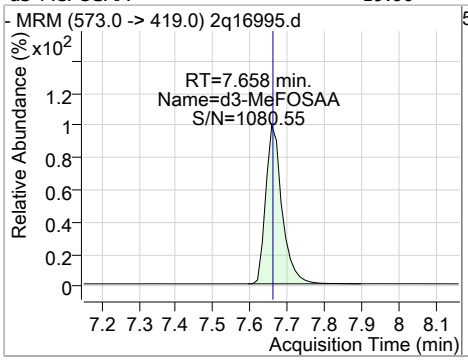


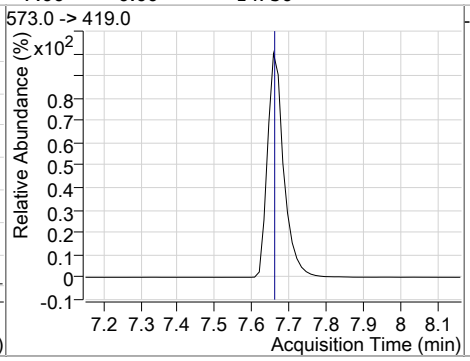


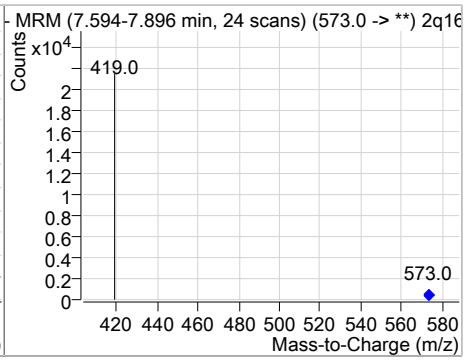


Perfluorinated Compounds by LC/MS/MS

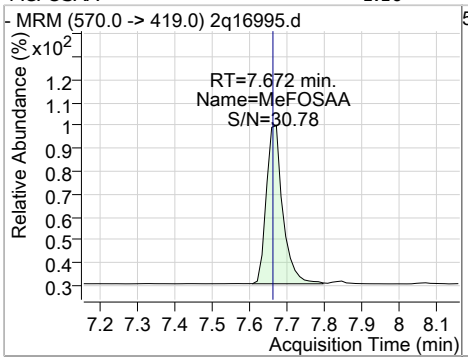
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.00	7.66	0.00	14756				

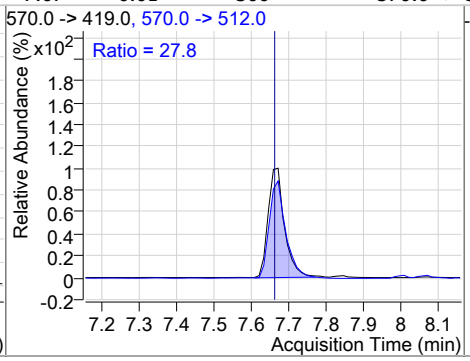


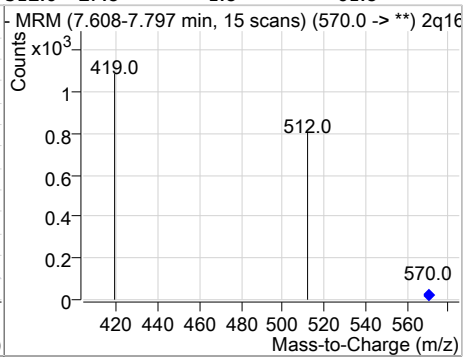




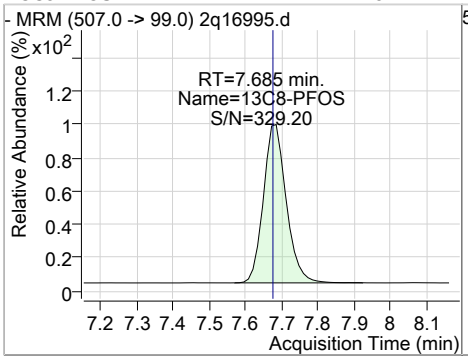
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	1.10	7.67	0.01	300	570.0 -> 512.0	27.8	1.8	61.8

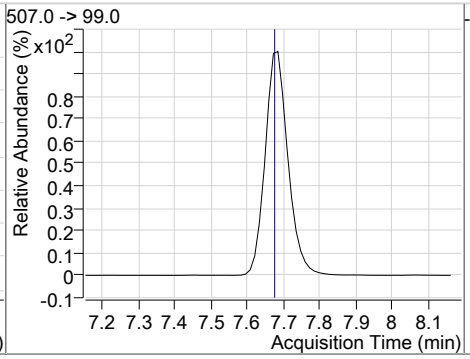


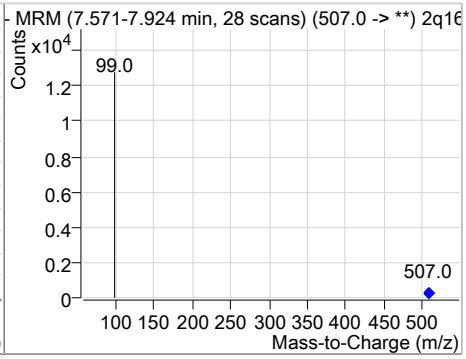




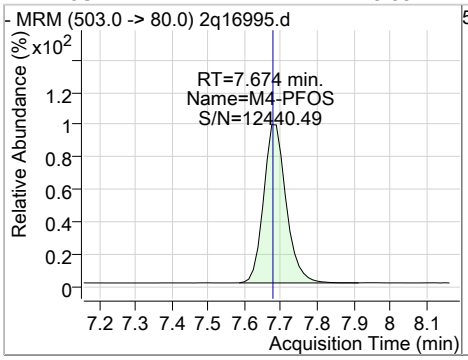
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.77	7.69	0.01	7787				

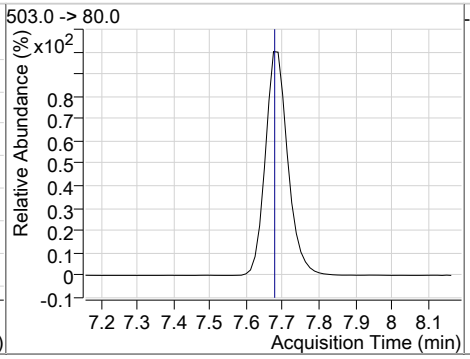


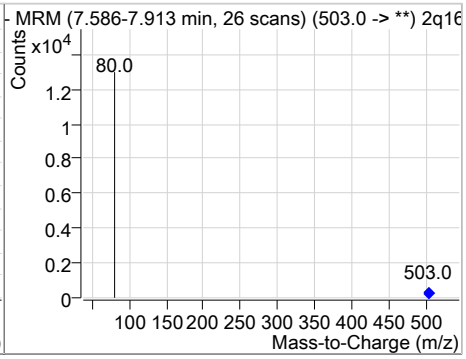




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	19.99	7.67	0.00	8943				

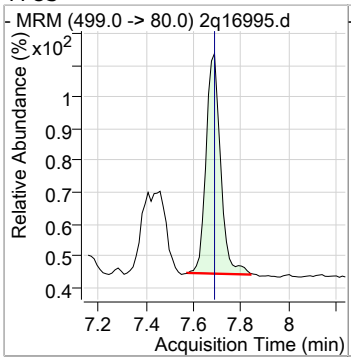


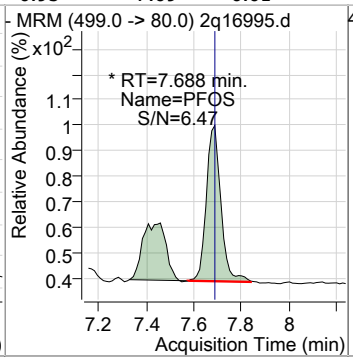


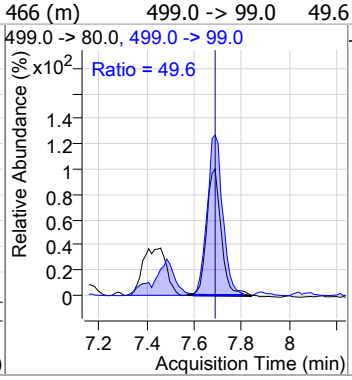


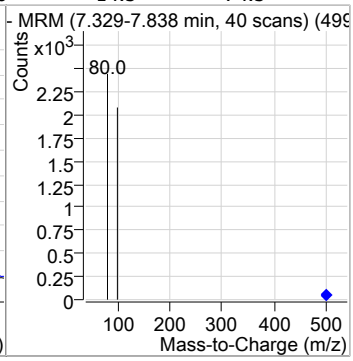
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.95	7.69	0.01	466 (m)	499.0 -> 99.0	49.6	14.5	74.5

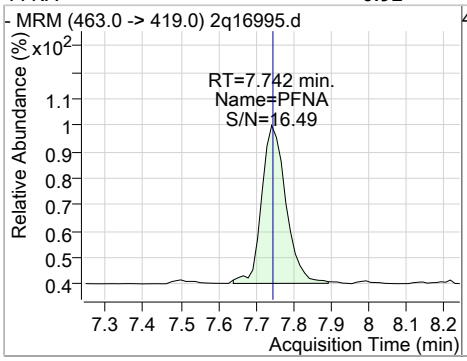


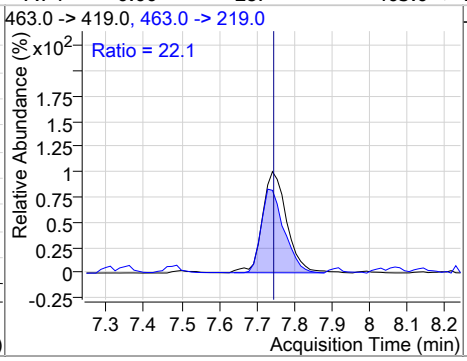


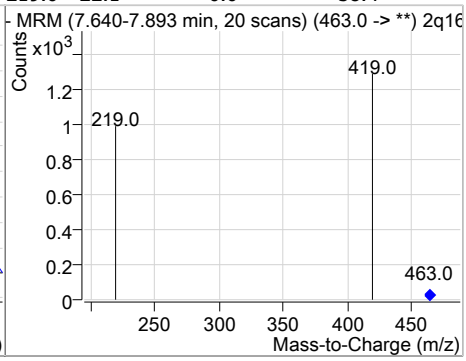




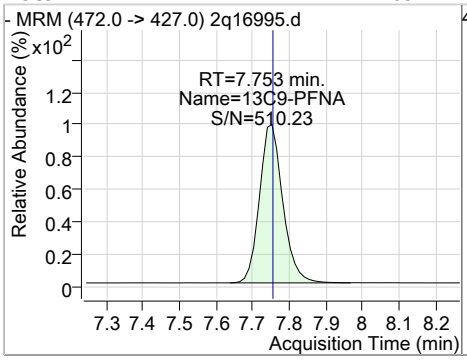
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.92	7.74	0.00	287	463.0 -> 219.0	22.1	0.0	58.4

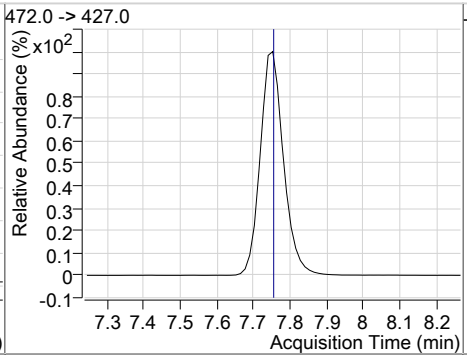


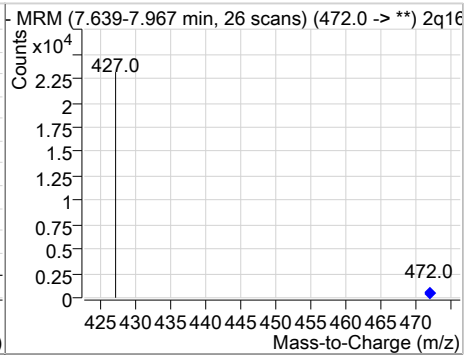




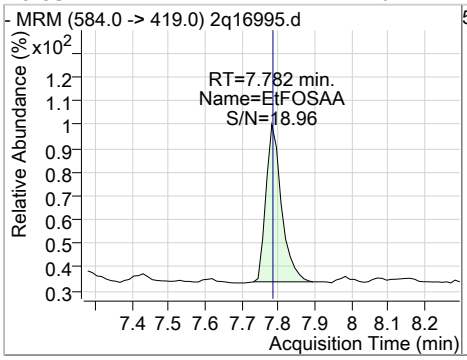
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	17.85	7.75	0.00	15738				

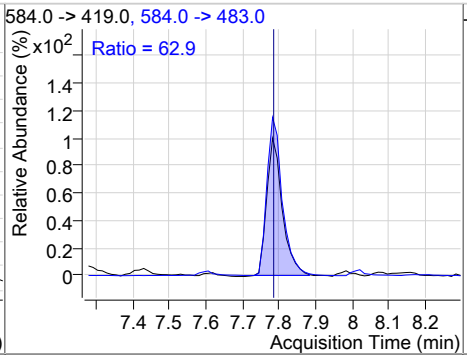


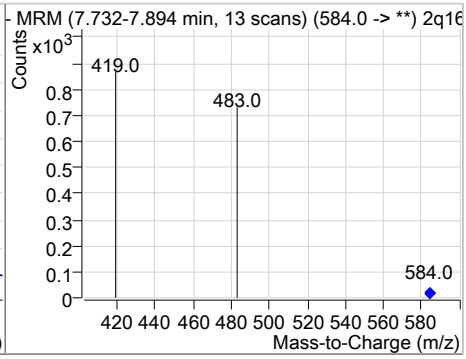




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.07	7.78	0.00	254	584.0 -> 483.0	62.9	24.8	84.8

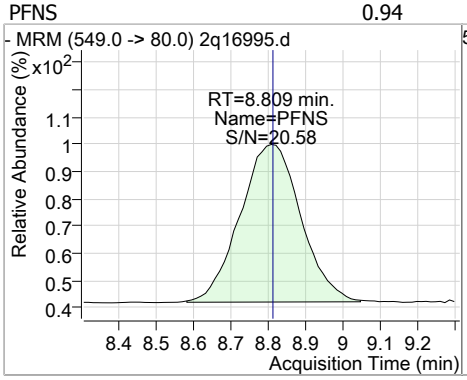


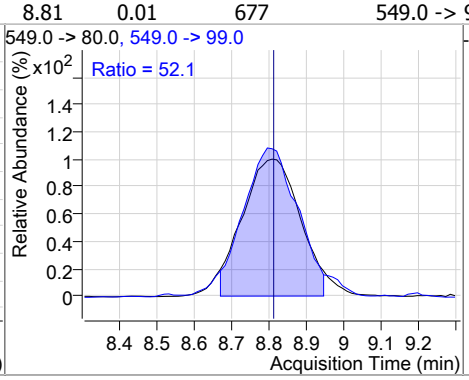


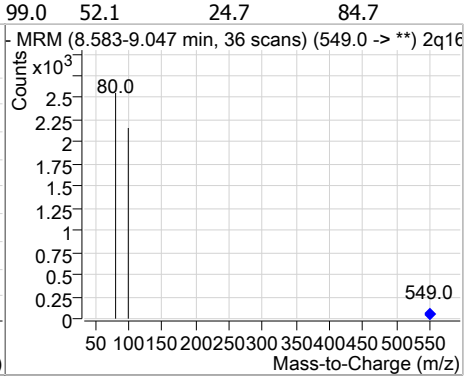


Perfluorinated Compounds by LC/MS/MS

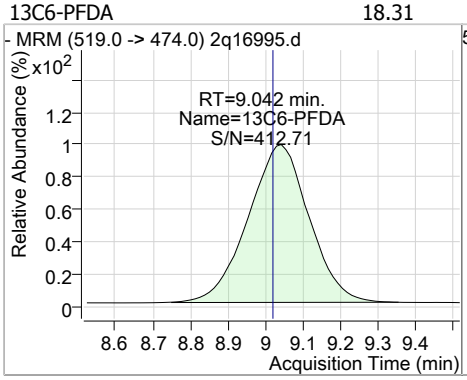
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.94	8.81	0.01	677	549.0 -> 99.0	52.1	24.7	84.7

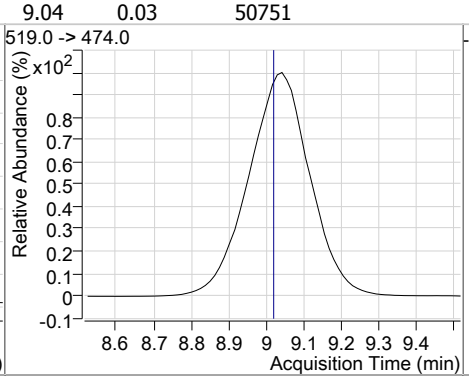


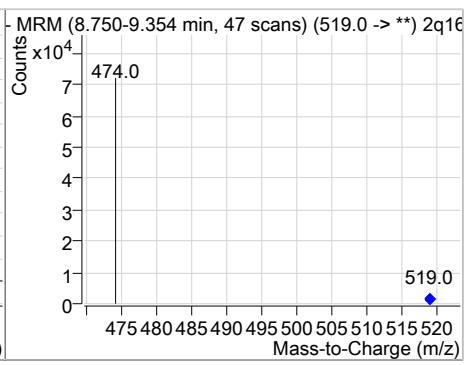




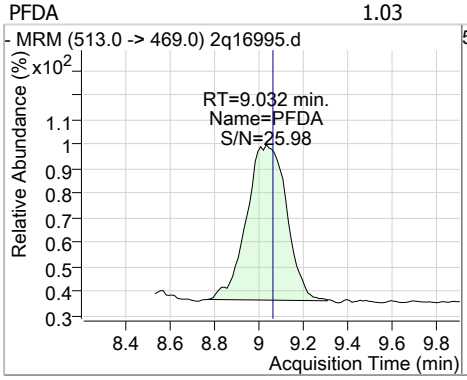
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	18.31	9.04	0.03	50751				

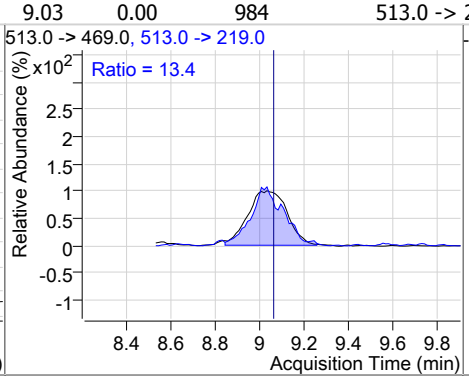


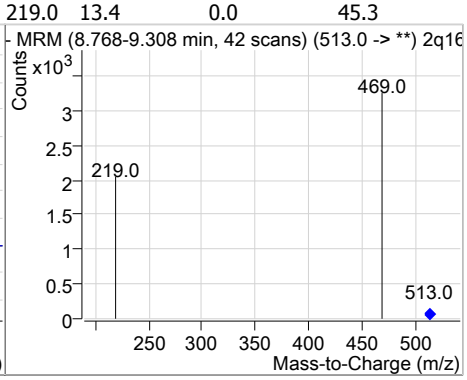




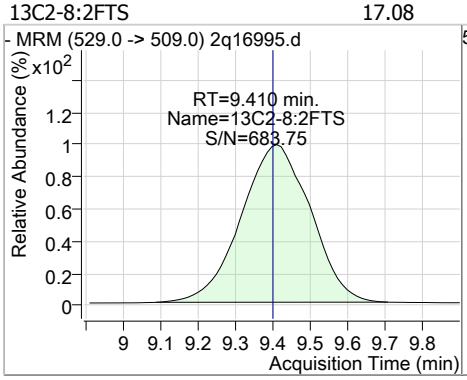
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	1.03	9.03	0.00	984	513.0 -> 219.0	13.4	0.0	45.3

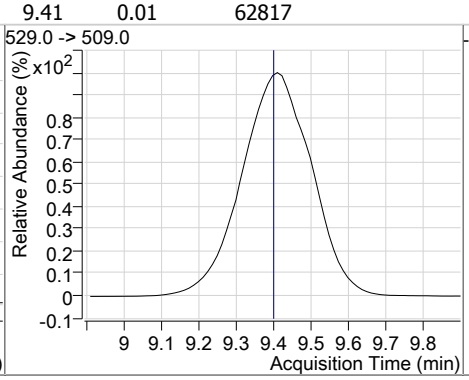


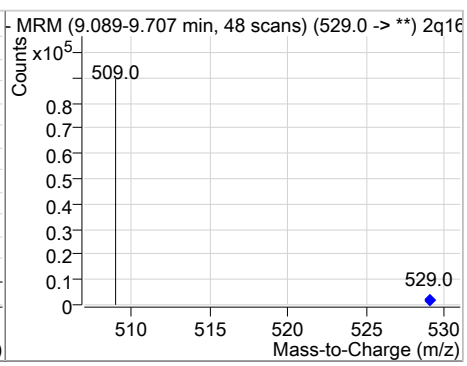




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	17.08	9.41	0.01	62817				

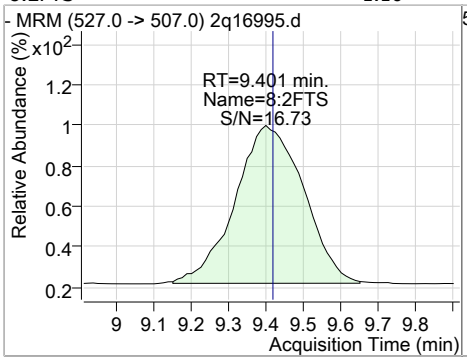


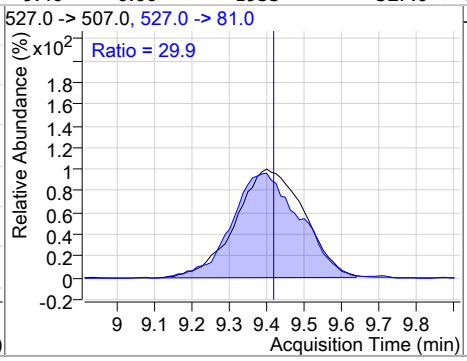


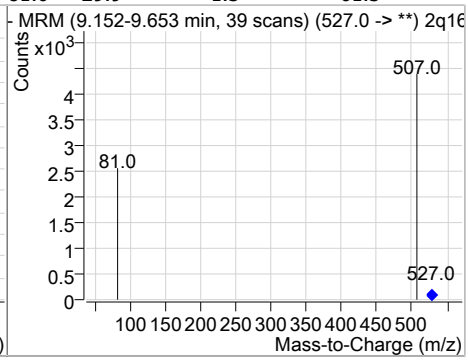


Perfluorinated Compounds by LC/MS/MS

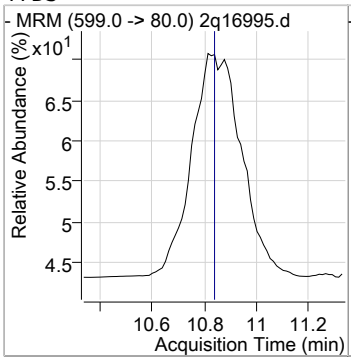
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.16	9.40	0.00	1955	527.0 -> 81.0	29.9	1.3	61.3

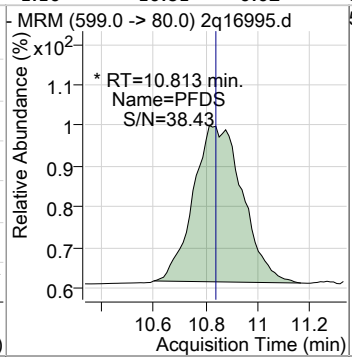


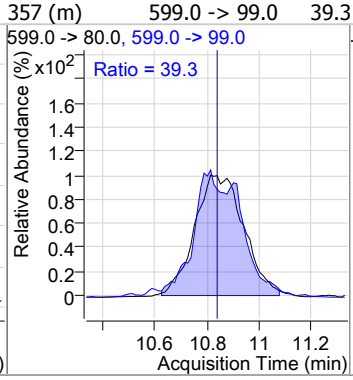


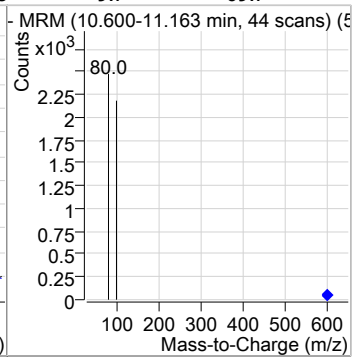


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	1.10	10.81	-0.02	357 (m)	599.0 -> 99.0	39.3	9.7	69.7

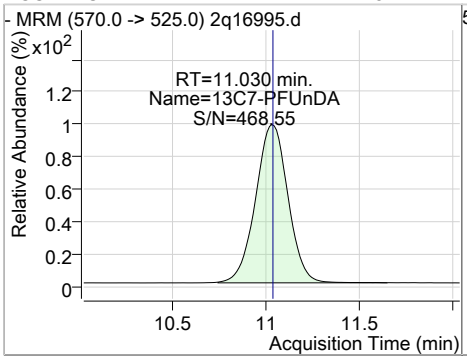


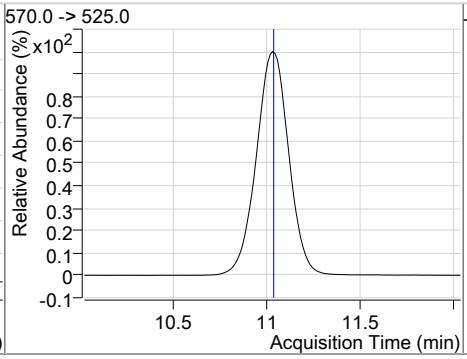


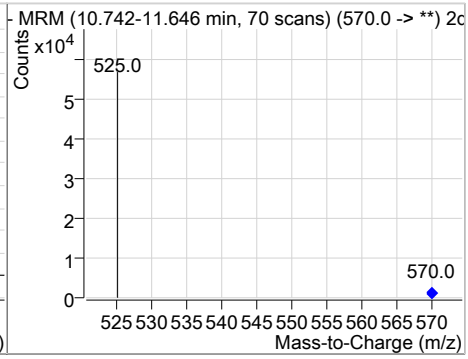




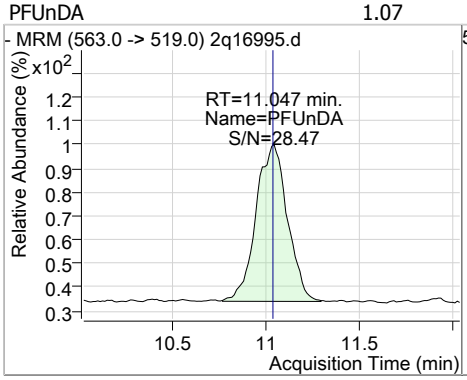
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.41	11.03	0.00	37950				

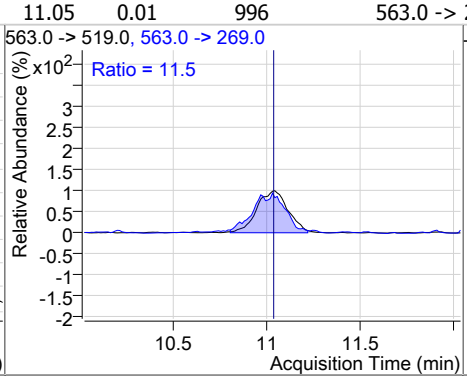


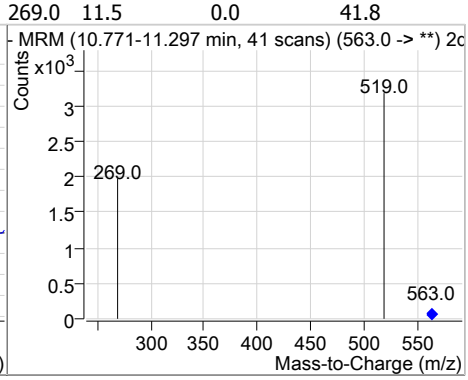




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	1.07	11.05	0.01	996	563.0 -> 269.0	11.5	0.0	41.8

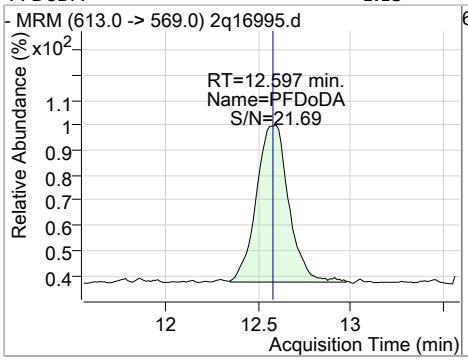


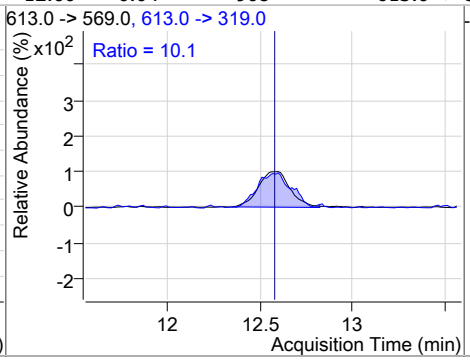


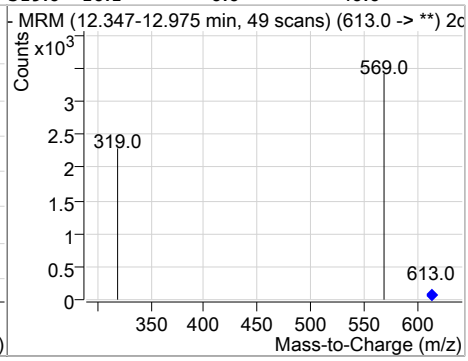


Perfluorinated Compounds by LC/MS/MS

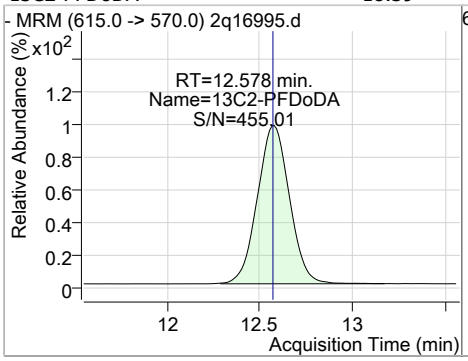
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	1.15	12.60	0.04	908	613.0 -> 319.0	10.1	0.0	40.0

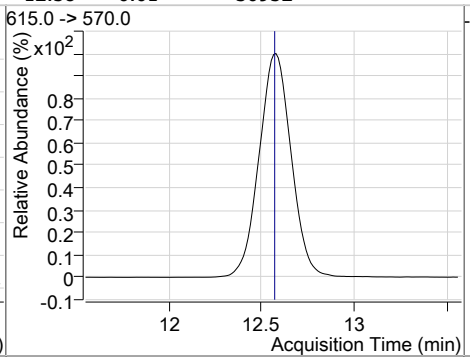


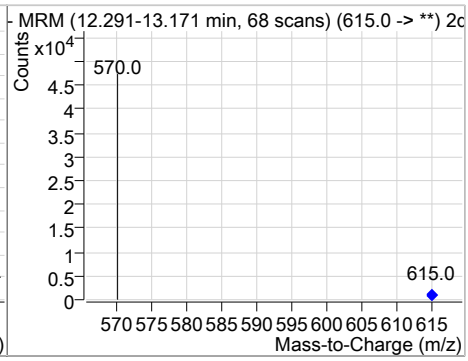




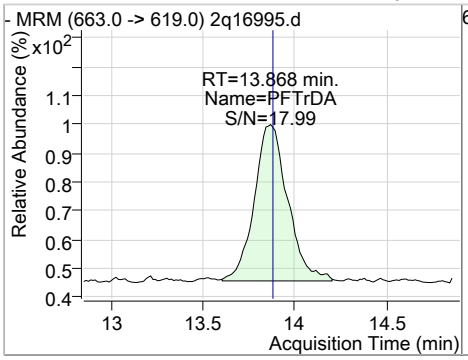
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.39	12.58	0.01	30952				

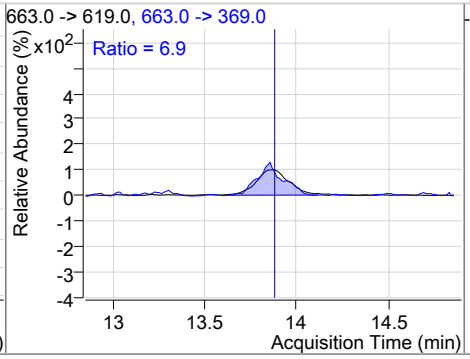


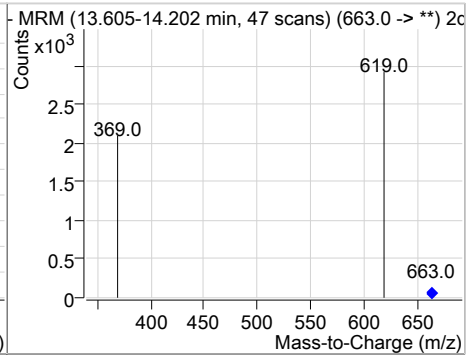




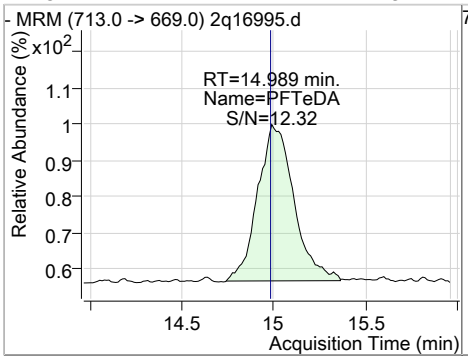
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	1.16	13.87	0.02	659	663.0 -> 369.0	6.9	0.0	37.1

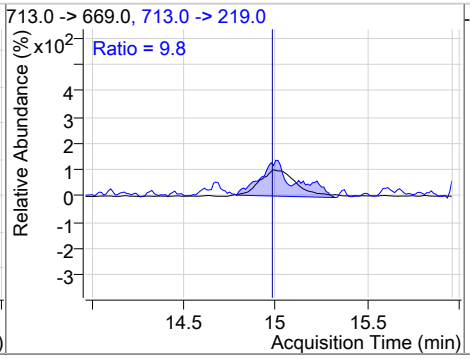


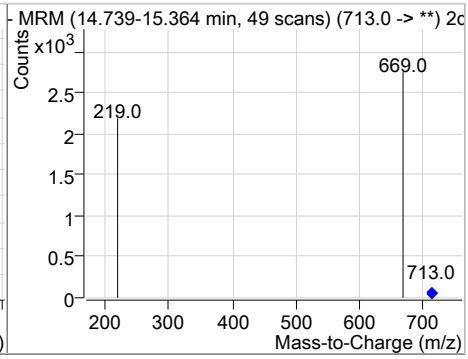




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.19	14.99	0.03	461	713.0 -> 219.0	9.8	0.0	37.4

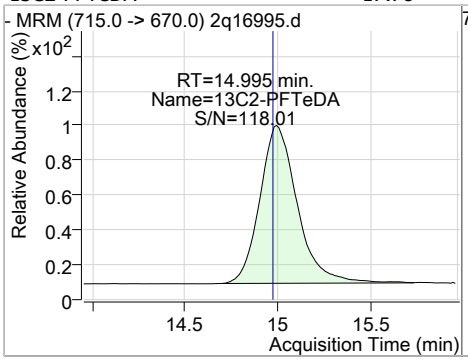


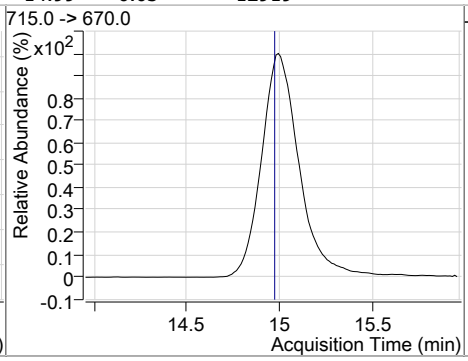


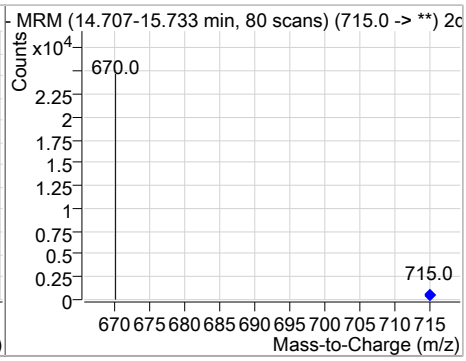


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	17.78	14.99	0.03	12919				







Manual Integration Approval Summary

Sample Number: S2Q295-IC295
Lab FileID: 2Q16995.D
Injection Time: 07/12/18 09:40
Method: EPA 537M BY ID
Analyst approved: 07/13/18 12:48 Nancy Saunders
Supervisor approved: 07/13/18 17:24 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.24	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.69	Split peak
Perfluorodecanesulfonic acid	335-77-3		10.81	Missed peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 07/13/18 17:24

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16996.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/12/2018 10:01:33 AM
Sample Name : ic295-2.0
Vial : Vial 4
DA Method File : PFC_ID_071218_S2Q295.quantmethod.xml
Batch Name : s2q295.batch.bin
Sample Information : op70790,S2Q295,1.99,,,1.0,1,soil

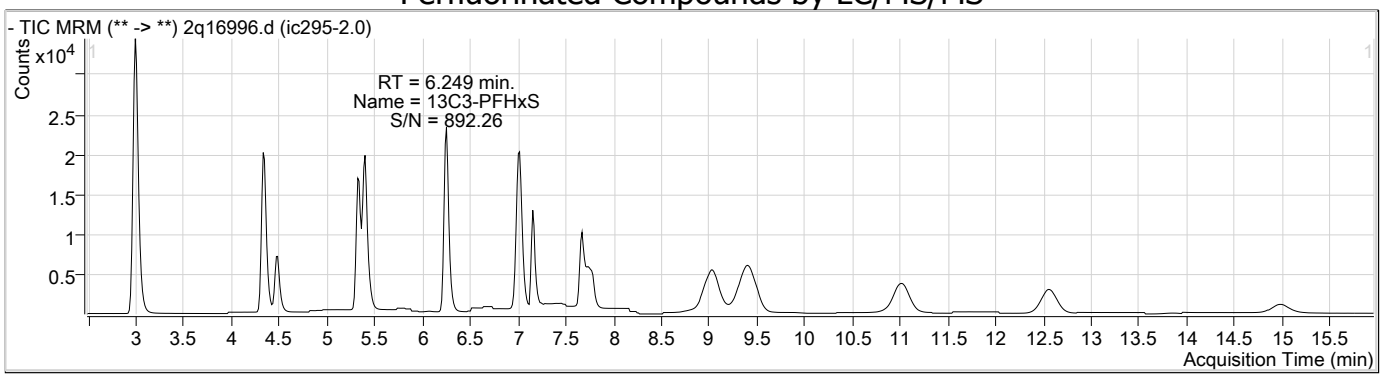
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	7.010	415.0 -> 370.0	16806	20.00	µg/L	0.014
13C4-PFOS	7.687	503.0 -> 80.0	9317	20.00	µg/L	0.012
M4-PFBA	2.991	217.0 -> 172.0	134560	20.00	µg/L	0.000
M5-PFPeA	4.337	268.0 -> 223.0	66706	20.00	µg/L	0.000
M5-PFHxA	5.401	318.0 -> 273.0	60917	20.00	µg/L	0.011
M4-PFHpA	6.255	367.0 -> 322.0	57970	20.00	µg/L	0.001
M8-PFOA	7.009	421.0 -> 376.0	26857	20.00	µg/L	0.014
M9-PFNA	7.753	472.0 -> 427.0	17827	20.00	µg/L	0.001
M6-PFDA	9.029	519.0 -> 474.0	56843	20.00	µg/L	0.013
M7-PFUnDA	11.017	570.0 -> 525.0	41653	20.00	µg/L	-0.012
M2-PFDoDA	12.553	615.0 -> 570.0	33700	20.00	µg/L	-0.012
M2-PFTeDA	14.982	715.0 -> 670.0	14289	20.00	µg/L	0.013
M8-FOSA	7.155	506.0 -> 78.0	34719	20.00	µg/L	0.013
M3-PFBS	4.481	302.0 -> 99.0	21461	20.00	µg/L	0.013
M3-PFHxS	6.249	402.0 -> 99.0	16804	20.00	µg/L	0.013
M8-PFOS	7.685	507.0 -> 99.0	8337	20.00	µg/L	0.012
M2-4:2FTS	5.322	329.0 -> 309.0	54020	20.00	µg/L	-0.001
M2-6:2FTS	7.031	429.0 -> 409.0	36786	20.00	µg/L	0.013
M2-8:2FTS	9.398	529.0 -> 509.0	69548	20.00	µg/L	0.000
M3-MeFOSAA	7.658	573.0 -> 419.0	15696	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.322	329.0 -> 309.0	54015	19.14	µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.7%		
13C2-6:2FTS	7.031	429.0 -> 409.0	36782	18.85	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.2%		
13C2-8:2FTS	9.398	529.0 -> 509.0	68750	18.69	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.4%		
13C2-PFDoDA	12.553	615.0 -> 570.0	33747	20.05	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C2-PFTeDA	14.982	715.0 -> 670.0	14533	20.00	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C3-PFBS	4.481	302.0 -> 99.0	21472	20.59	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.0%		
13C3-PFHxS	6.249	402.0 -> 99.0	16803	20.13	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%		
13C4-PFBA	2.991	217.0 -> 172.0	134456	20.23	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%		
13C4-PFHpA	6.255	367.0 -> 322.0	57971	20.49	µg/L	0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%		
13C5-PFHxA	5.401	318.0 -> 273.0	60970	20.56	µg/L	0.011
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.8%		
13C5-PFPeA	4.337	268.0 -> 223.0	66684	20.33	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
13C6-PFDA	9.029	519.0 -> 474.0	56226	20.28	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.4%		

Perfluorinated Compounds by LC/MS/MS

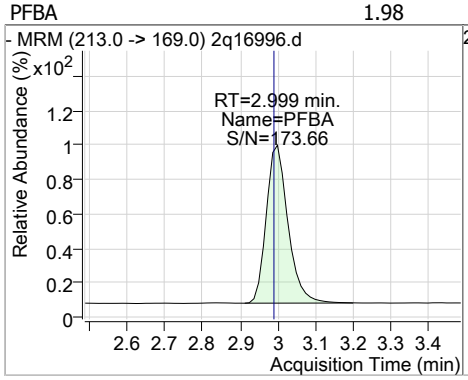
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	11.017	570.0 -> 525.0	41679	20.22	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%			
13C8-FOSA	7.155	506.0 -> 78.0	34720	21.59	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.9%			
13C8-PFOA	7.009	421.0 -> 376.0	26854	20.44	µg/L		0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%			
13C8-PFOS	7.685	507.0 -> 99.0	8339	20.10	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.5%			
13C9-PFNA	7.753	472.0 -> 427.0	17827	20.22	µg/L		0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%			
d3-MeFOSAA	7.658	573.0 -> 419.0	15695	20.20	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%			
M2-PFOA	7.010	415.0 -> 370.0	16816	20.01	ng/ml		0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
M4-PFOS	7.687	503.0 -> 80.0	9318	20.01	ng/ml		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
Target Compounds							**QValue**
4:2FTS	5.324	327.0 -> 307.0	3008	2.14	µg/L		94
6:2FTS	7.020	427.0 -> 407.0	2058	2.22	µg/L		94
8:2FTS	9.414	527.0 -> 507.0	4012	2.16	µg/L		97
EtFOSAA	7.782	584.0 -> 419.0	556	2.19	µg/L		87
FOSA	7.158	498.0 -> 78.0	1642	1.93	µg/L		100
MeFOSAA	7.672	570.0 -> 419.0	667	2.31	µg/L		89
PFBA	2.999	213.0 -> 169.0	2110	1.98	µg/L		100
PFBS	4.472	299.0 -> 80.0	2791	1.90	µg/L		98
PFDA	9.032	513.0 -> 469.0	1986	1.87	µg/L		96
PFDoDA	12.560	613.0 -> 569.0	1830	2.13	µg/L		99
PFDS	10.850	599.0 -> 80.0	739	2.07	µg/L		99
PFHpA	6.258	363.0 -> 319.0	4289	1.99	µg/L		100
PFHpS	6.967	449.0 -> 80.0	922	1.95	µg/L		98
PFHxA	5.403	313.0 -> 269.0	1987	1.93	µg/L		99
PFHxS	6.239	399.0 -> 80.0	1992	2.00	µg/L	m	100
PFNA	7.755	463.0 -> 419.0	748	2.13	µg/L		88
PFNS	8.796	549.0 -> 80.0	1582	2.06	µg/L		97
PFOA	7.011	413.0 -> 369.0	1291	1.80	µg/L		95
PFOS	7.688	499.0 -> 80.0	1015	1.94	µg/L	m	98
PFPeA	4.341	263.0 -> 219.0	6886	2.21	µg/L		100
PFPeS	5.446	349.0 -> 80.0	1938	2.07	µg/L		100
PFTeDA	14.989	713.0 -> 669.0	929	2.19	µg/L		94
PFTrDA	13.843	663.0 -> 619.0	1306	2.09	µg/L		96
PFUnDA	11.022	563.0 -> 519.0	2049	2.00	µg/L		100

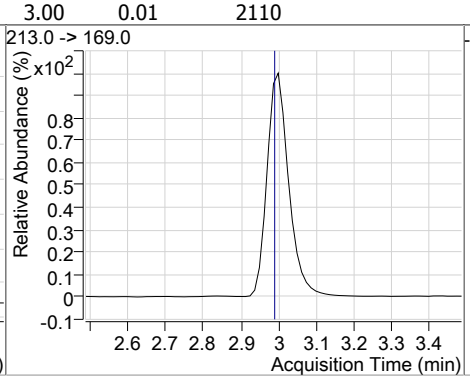
 # = Qualifier out of range, m = manually integrated, + = Area summed

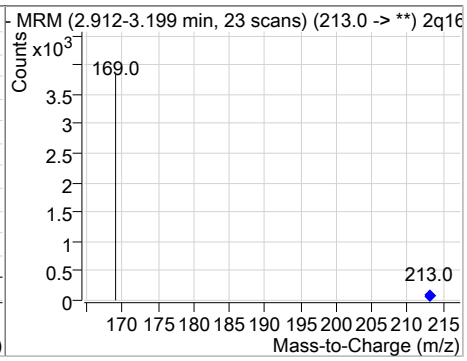
Perfluorinated Compounds by LC/MS/MS



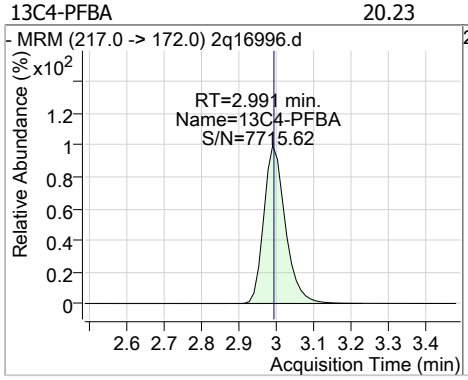
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.98	3.00	0.01	2110				

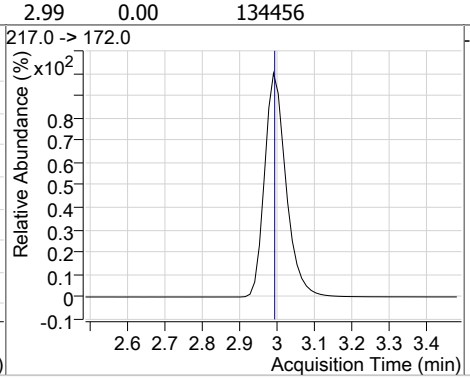


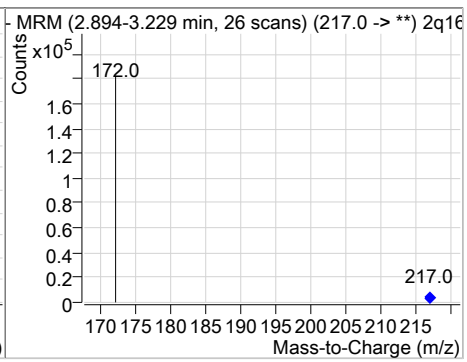




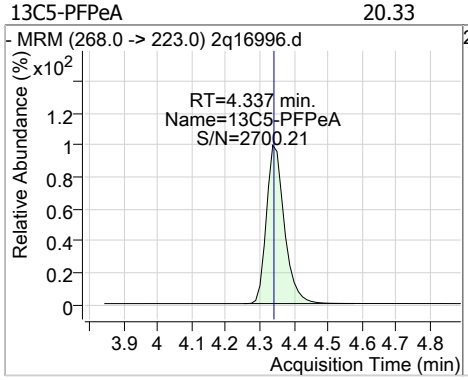
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.23	2.99	0.00	134456				

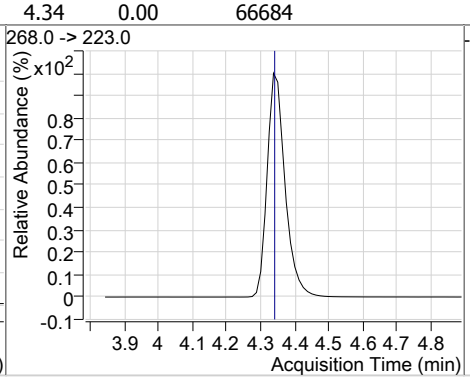


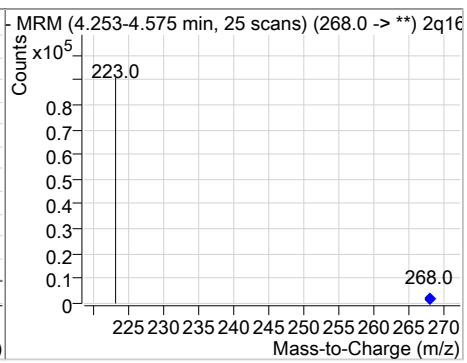




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.33	4.34	0.00	66684				

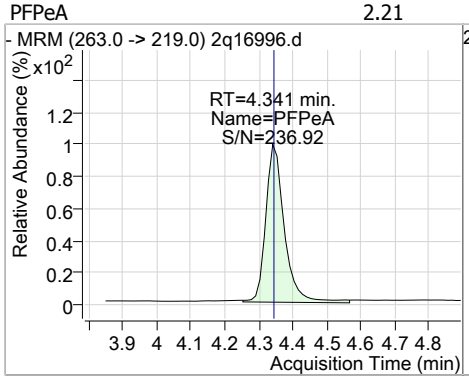


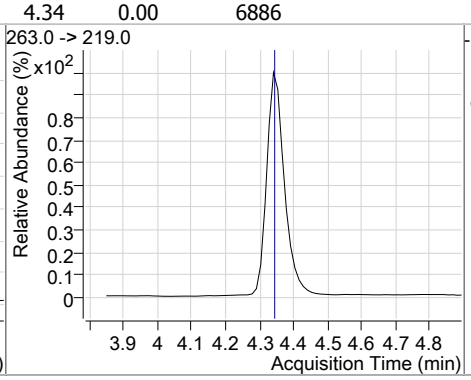


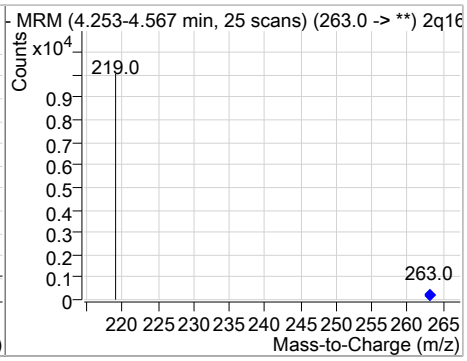


Perfluorinated Compounds by LC/MS/MS

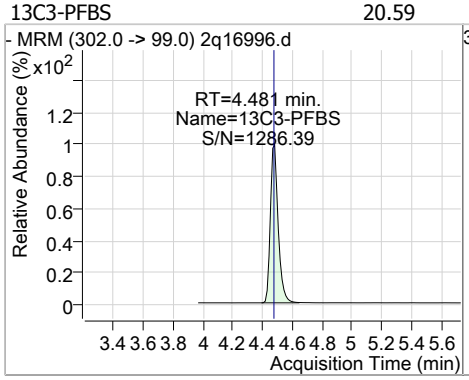
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	2.21	4.34	0.00	6886				

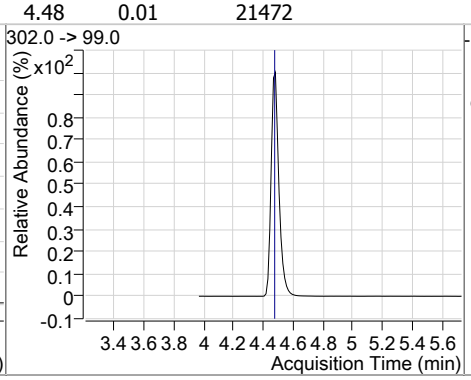


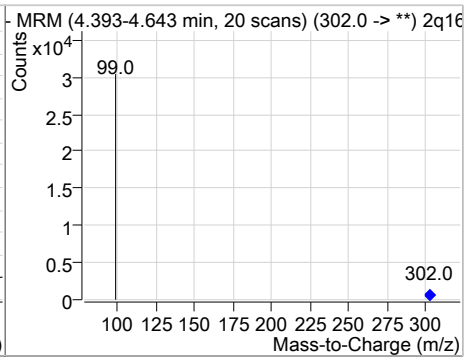




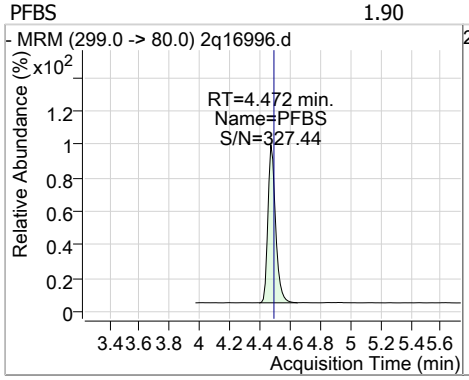
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.59	4.48	0.01	21472				

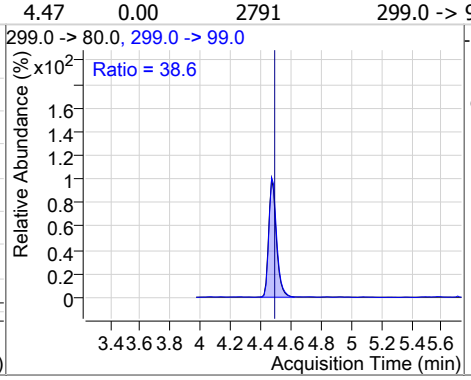


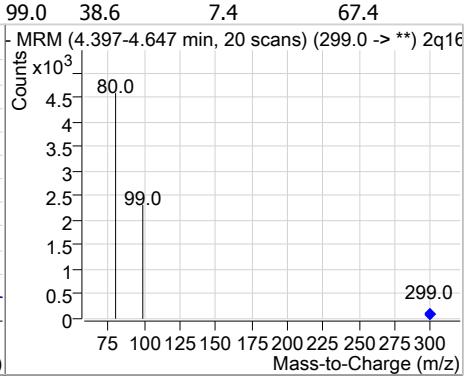




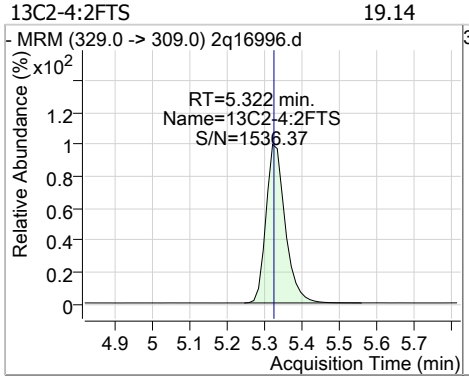
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.90	4.47	0.00	2791	299.0 -> 99.0	38.6	7.4	67.4

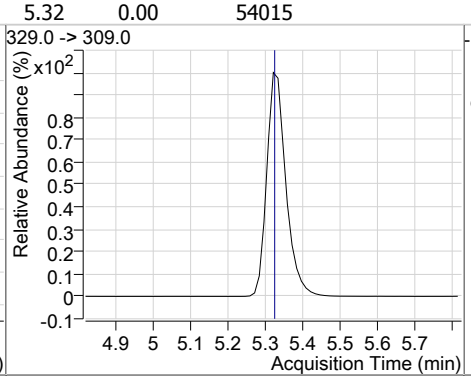


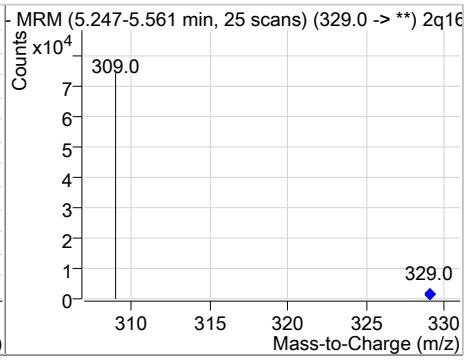




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.14	5.32	0.00	54015				

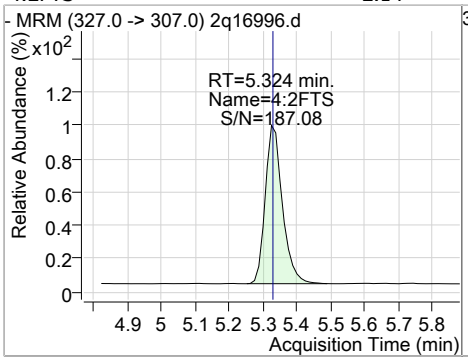


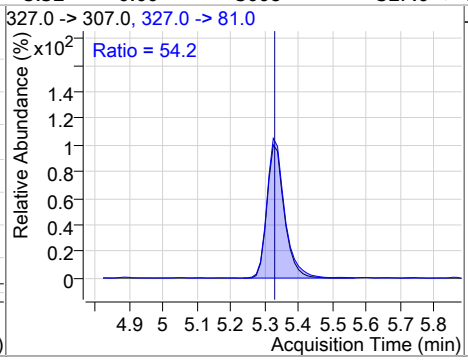


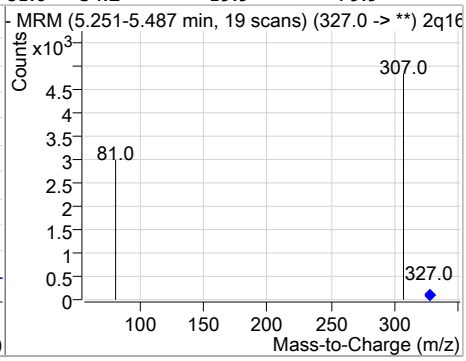


Perfluorinated Compounds by LC/MS/MS

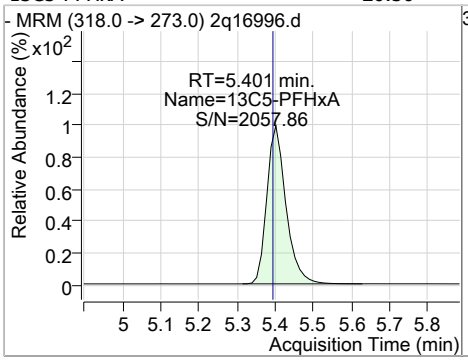
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	2.14	5.32	0.00	3008	327.0 -> 81.0	54.2	19.9	79.9

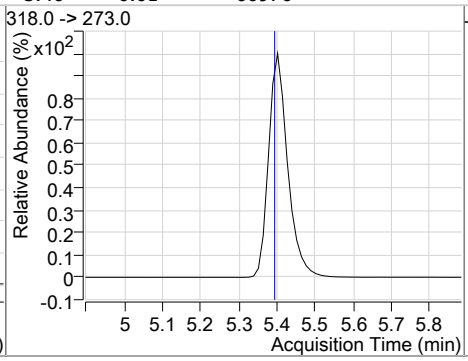


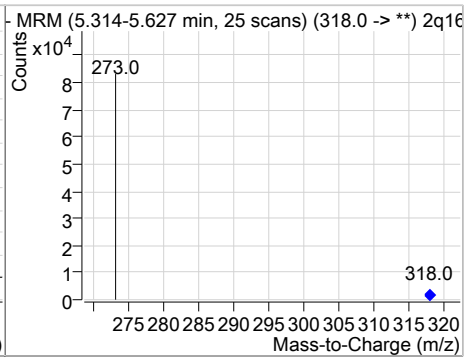




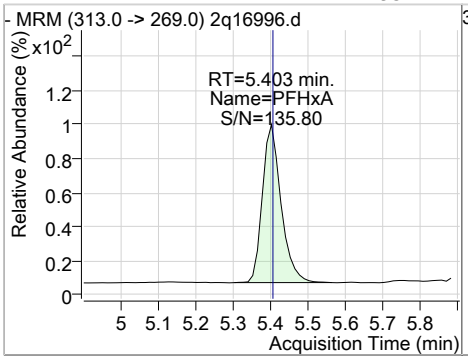
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.56	5.40	0.01	60970				

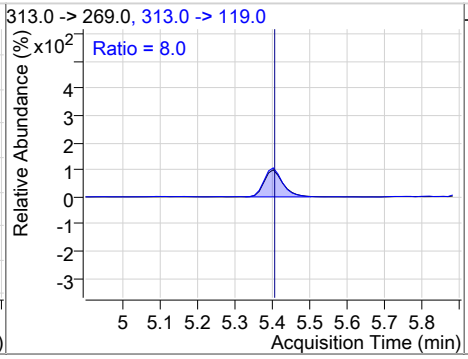


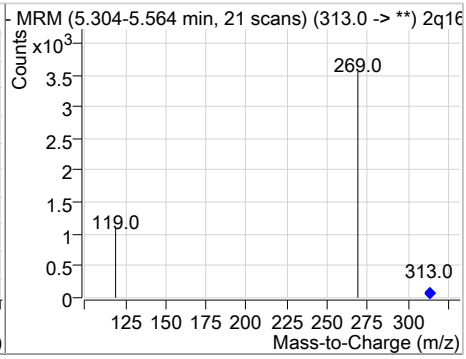




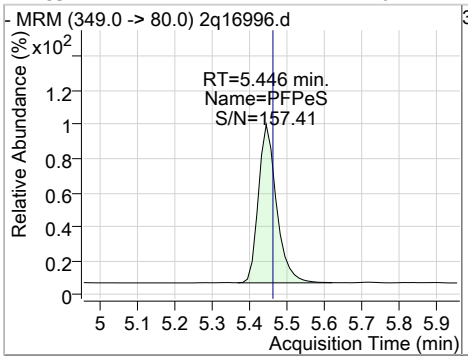
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.93	5.40	0.01	1987	313.0 -> 119.0	8.0	0.0	37.6

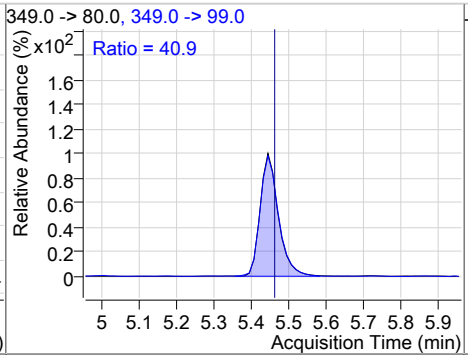


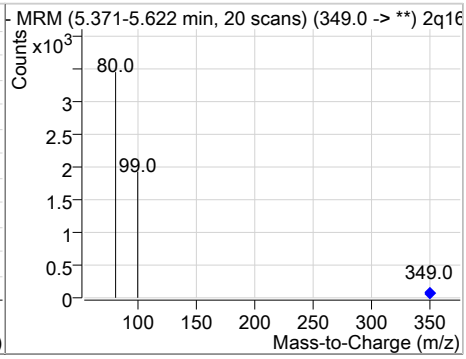




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.07	5.45	0.00	1938	349.0 -> 99.0	40.9	10.8	70.8

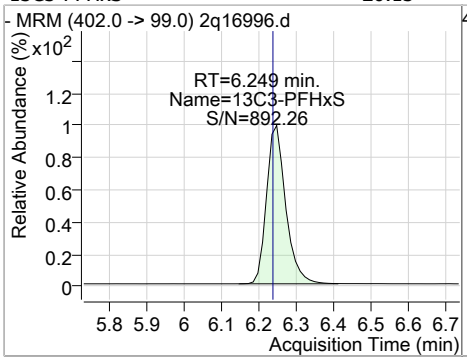


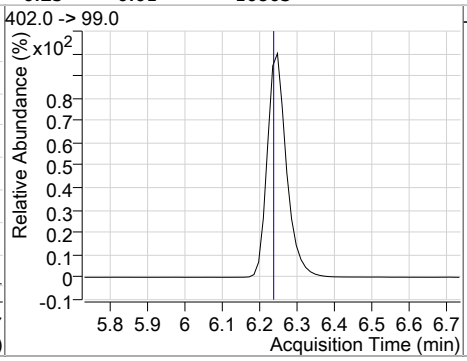


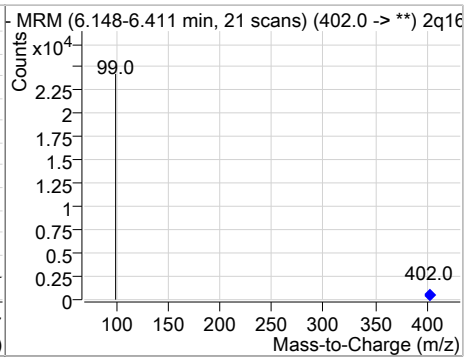


Perfluorinated Compounds by LC/MS/MS

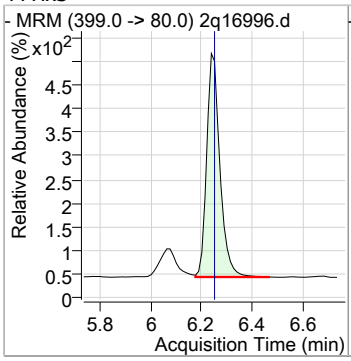
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.13	6.25	0.01	16803				

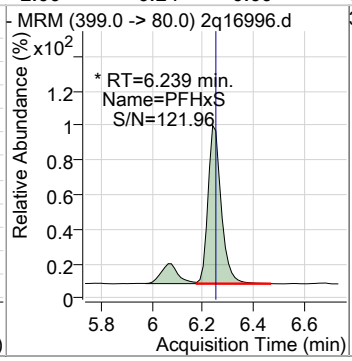


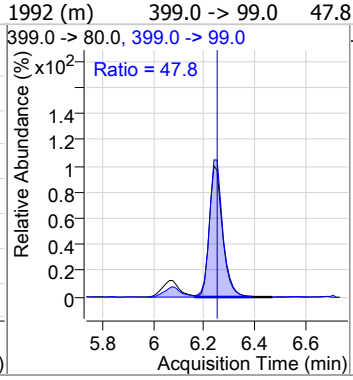


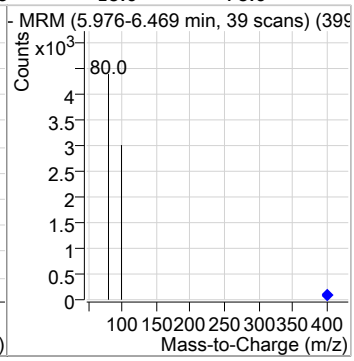


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.00	6.24	0.00	1992 (m)	399.0 -> 99.0	47.8	18.0	78.0

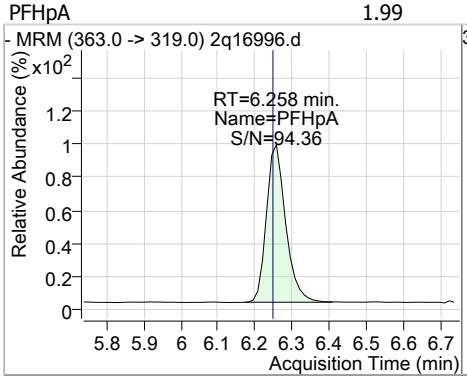


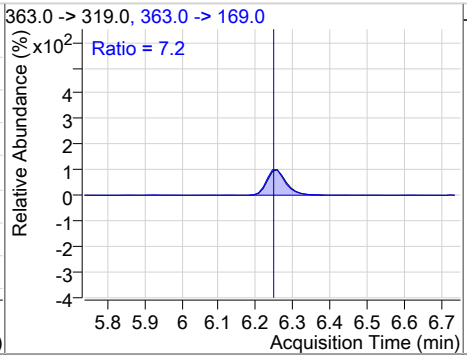


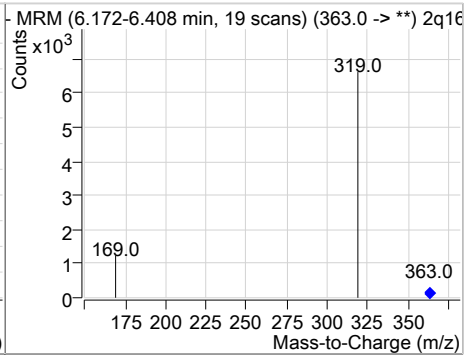




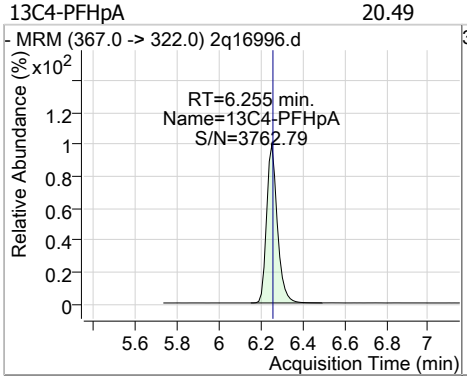
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.99	6.26	0.01	4289	363.0 -> 169.0	7.2	0.0	37.2

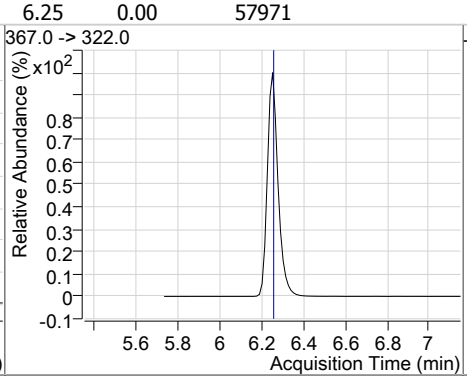


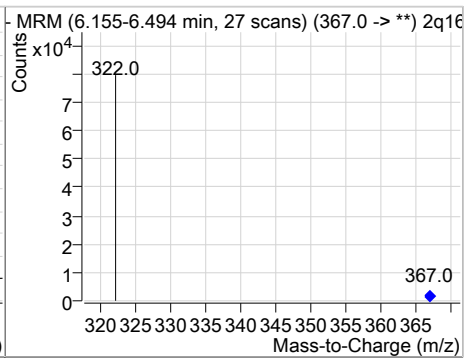




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.49	6.25	0.00	57971				

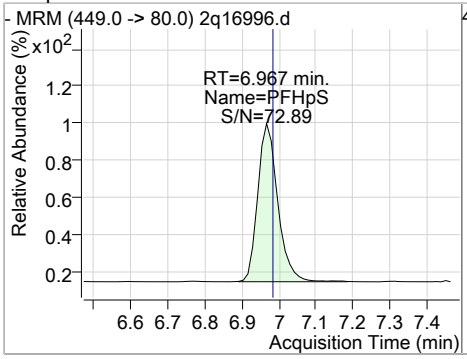


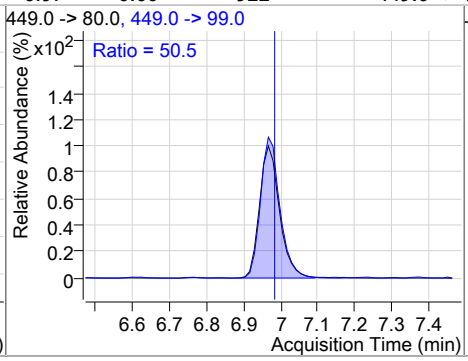


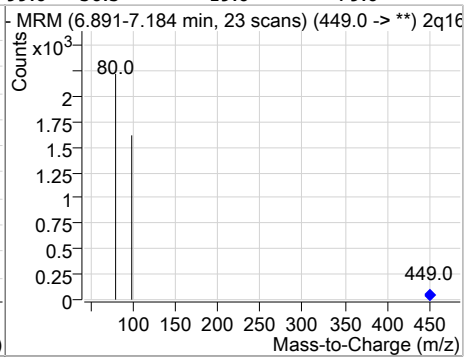


Perfluorinated Compounds by LC/MS/MS

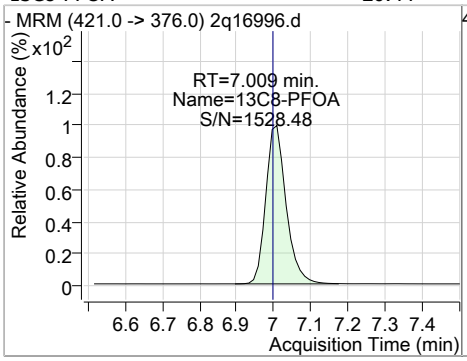
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.95	6.97	0.00	922	449.0 -> 99.0	50.5	19.0	79.0

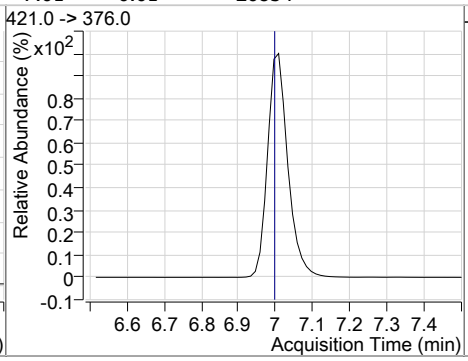


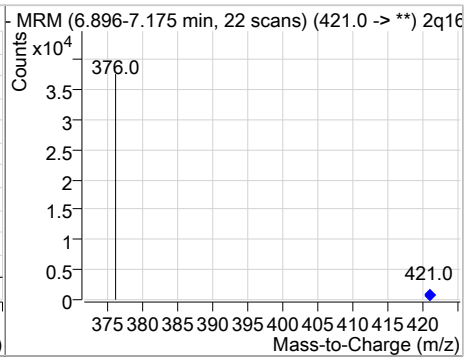




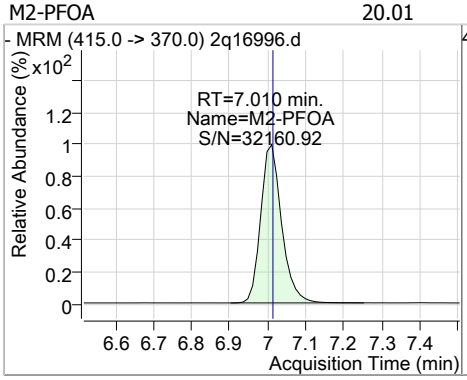
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.44	7.01	0.01	26854				

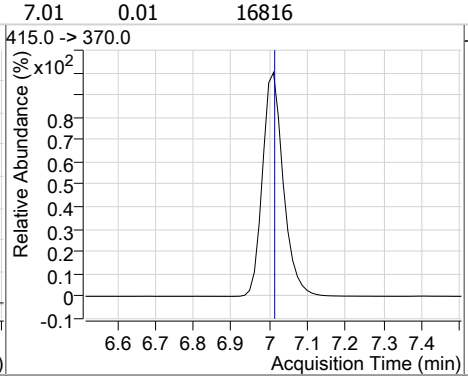


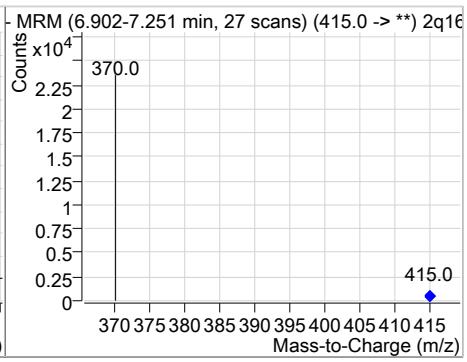




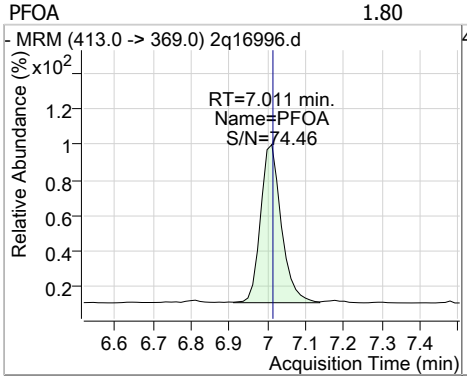
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.01	7.01	0.01	16816				

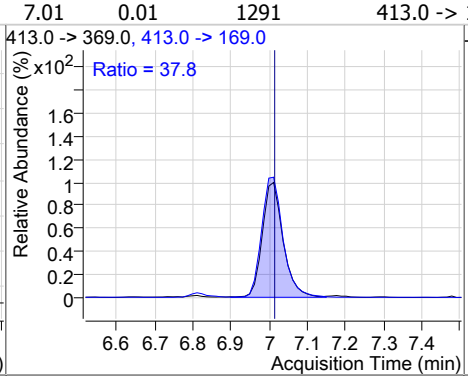


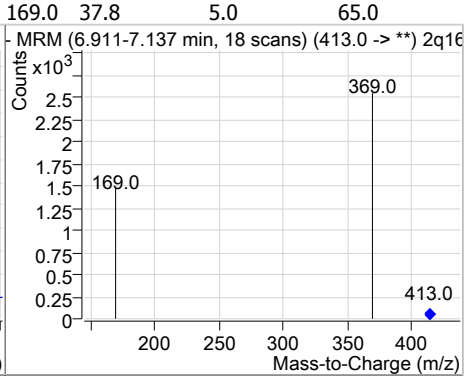




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.80	7.01	0.01	1291	413.0 -> 169.0	37.8	5.0	65.0

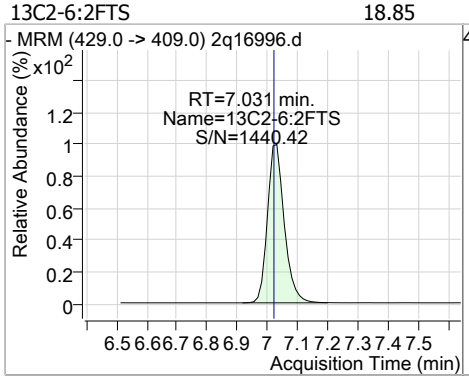


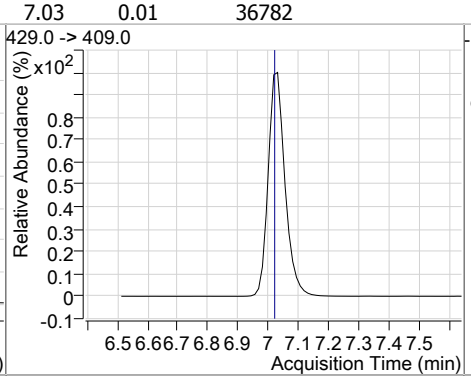


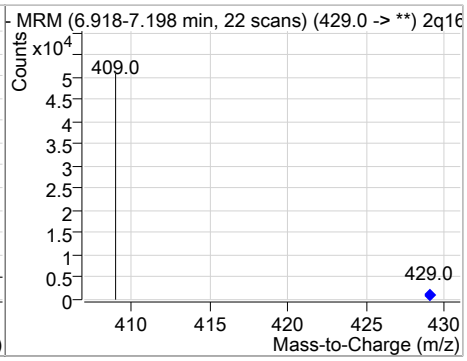


Perfluorinated Compounds by LC/MS/MS

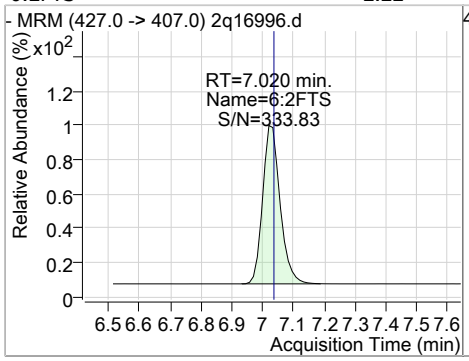
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.85	7.03	0.01	36782				

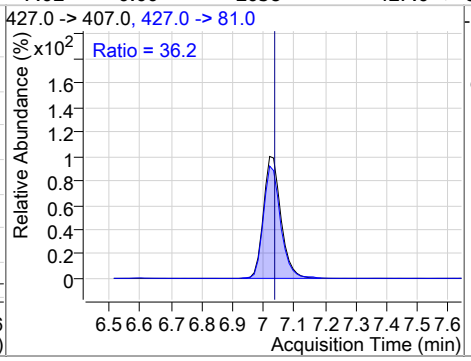


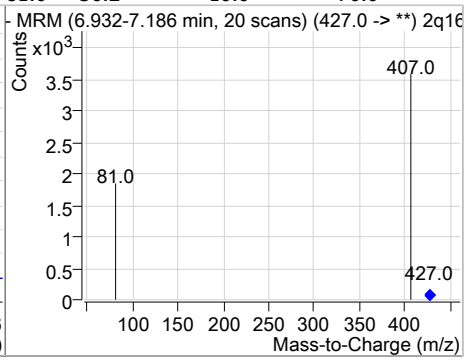




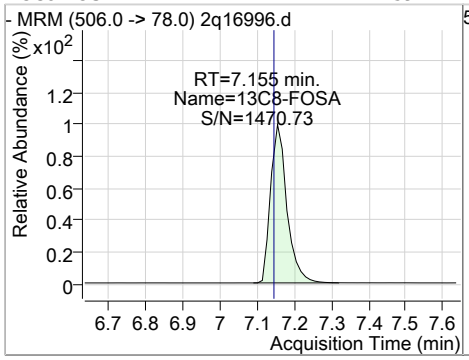
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	2.22	7.02	0.00	2058	427.0 -> 81.0	36.2	10.0	70.0

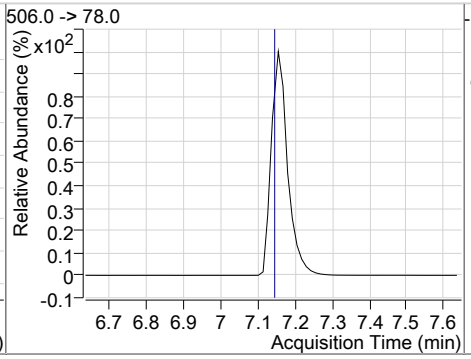


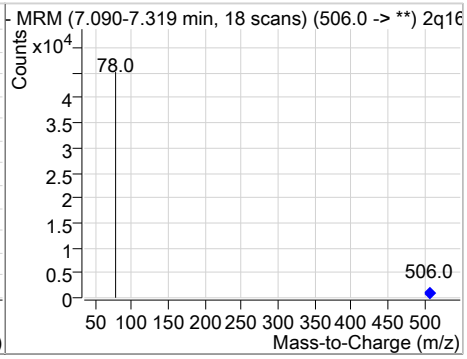




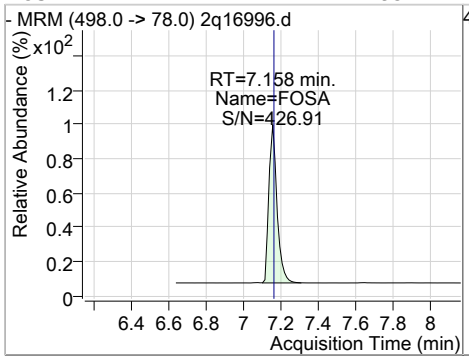
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.59	7.16	0.01	34720				

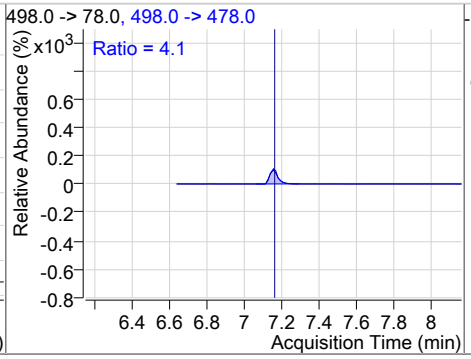


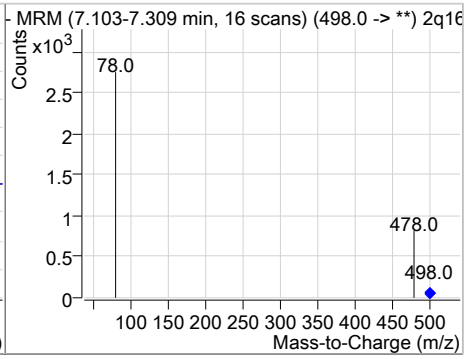




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.93	7.16	0.01	1642	498.0 -> 478.0	4.1	0.0	34.0

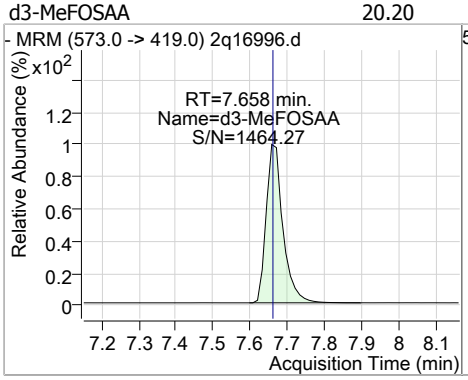


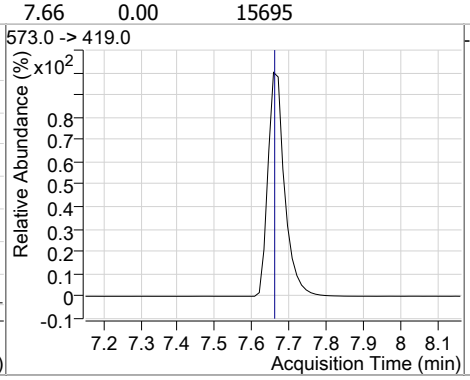


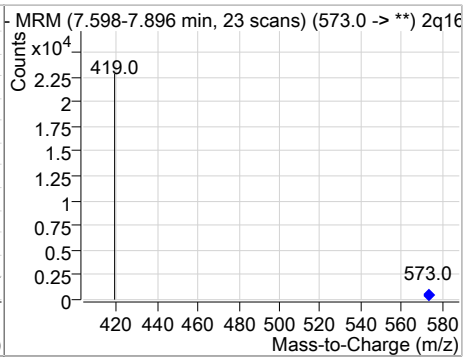


Perfluorinated Compounds by LC/MS/MS

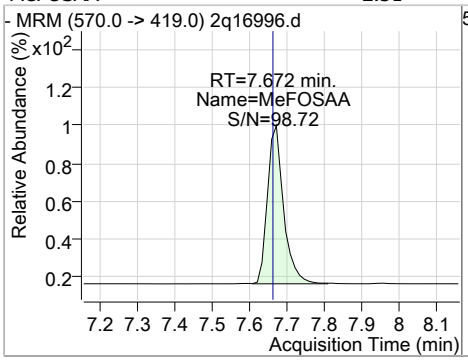
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.20	7.66	0.00	15695				

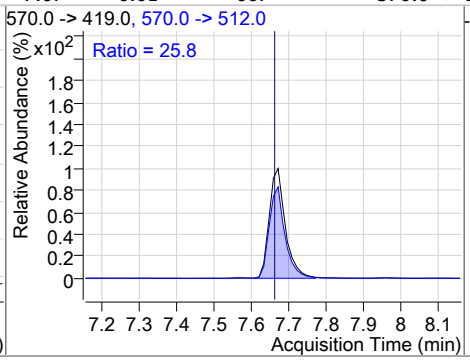


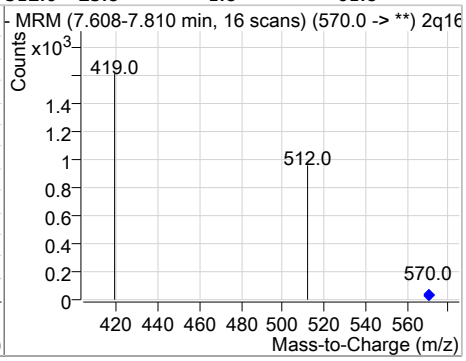




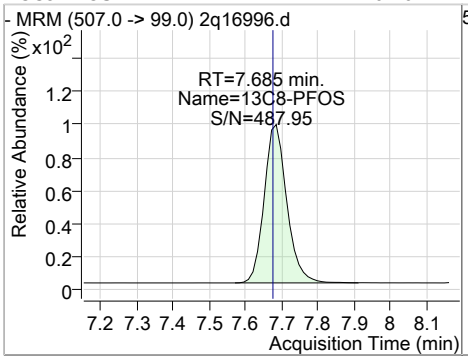
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.31	7.67	0.01	667	570.0 -> 512.0	25.8	1.8	61.8

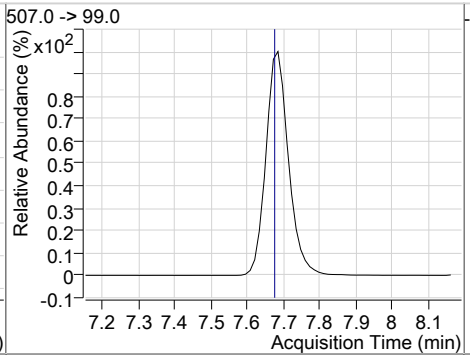


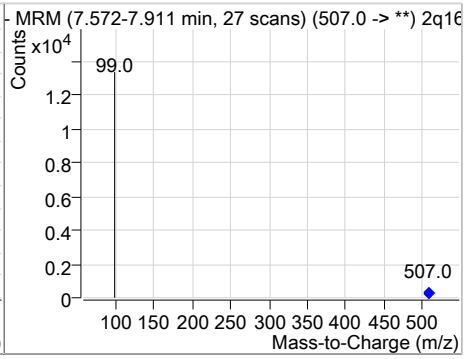




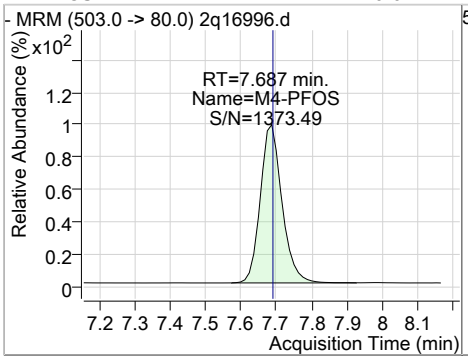
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.10	7.69	0.01	8339				

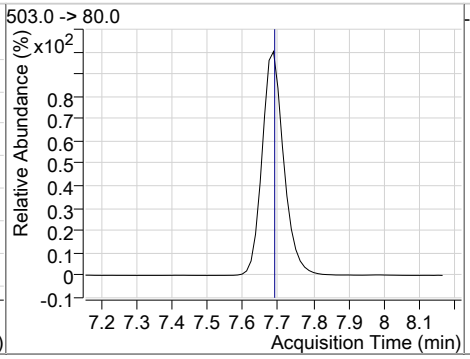


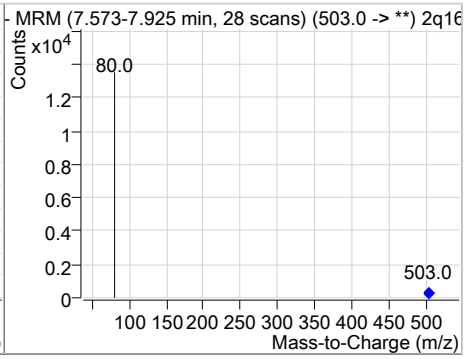




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.01	7.69	0.01	9318				

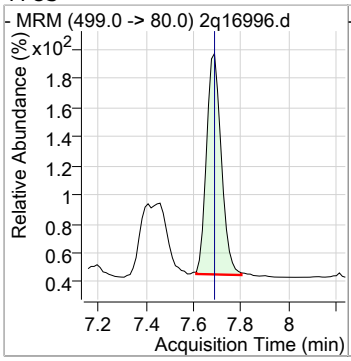


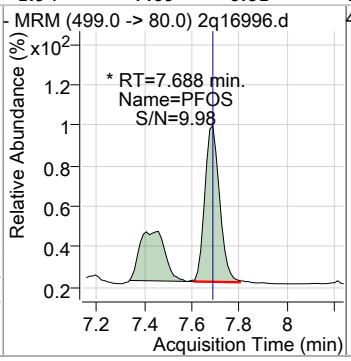


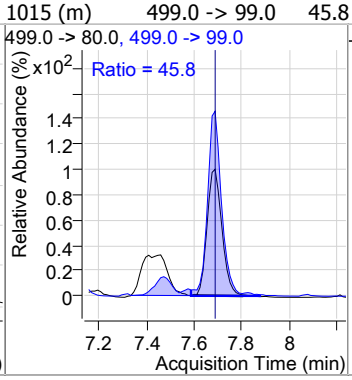


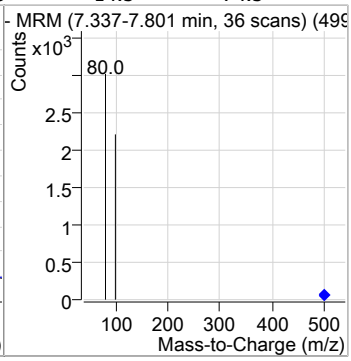
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.94	7.69	0.01	1015 (m)	499.0 -> 99.0	45.8	14.5	74.5

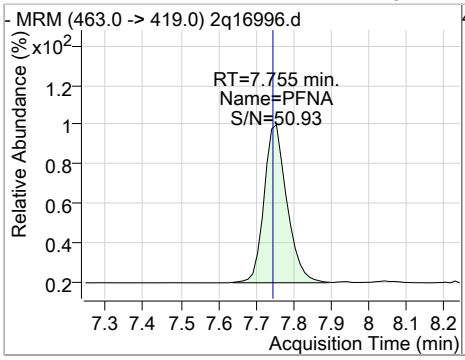


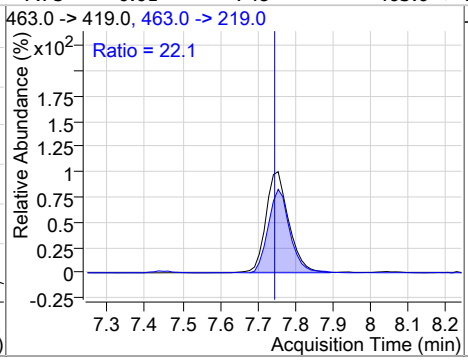


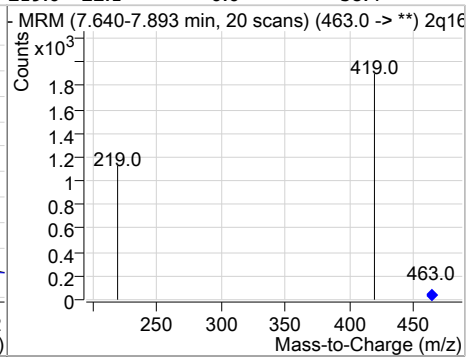




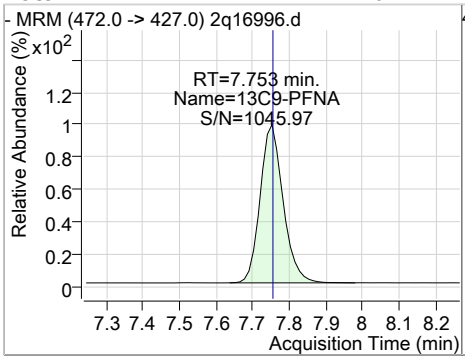
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.13	7.75	0.01	748	463.0 -> 219.0	22.1	0.0	58.4

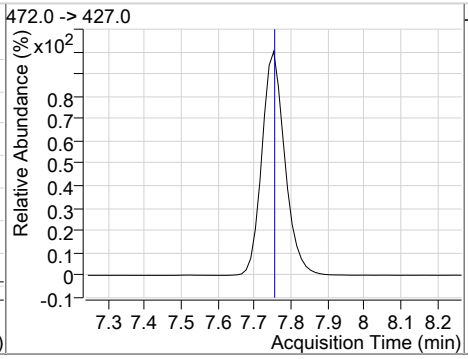


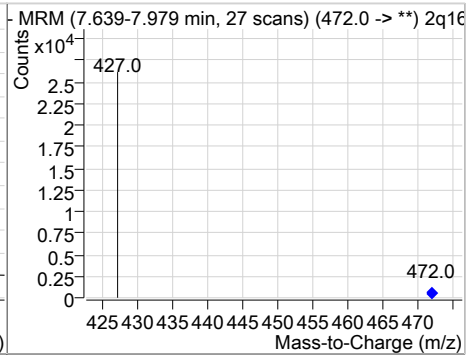




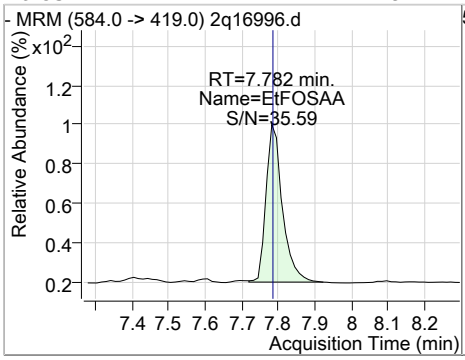
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.22	7.75	0.00	17827				

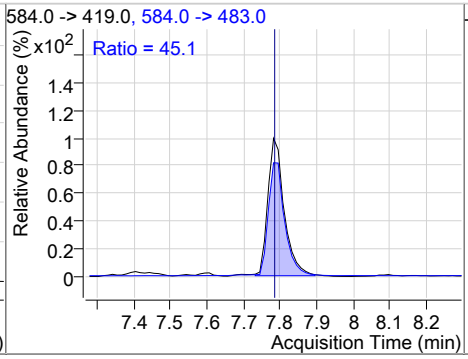


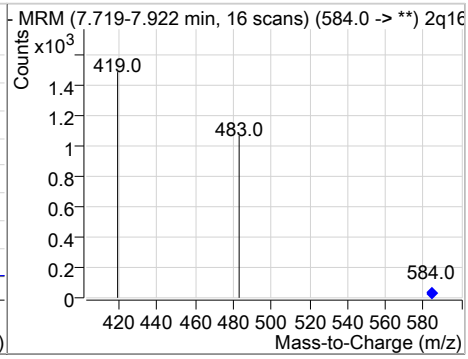




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.19	7.78	0.00	556	584.0 -> 483.0	45.1	24.8	84.8

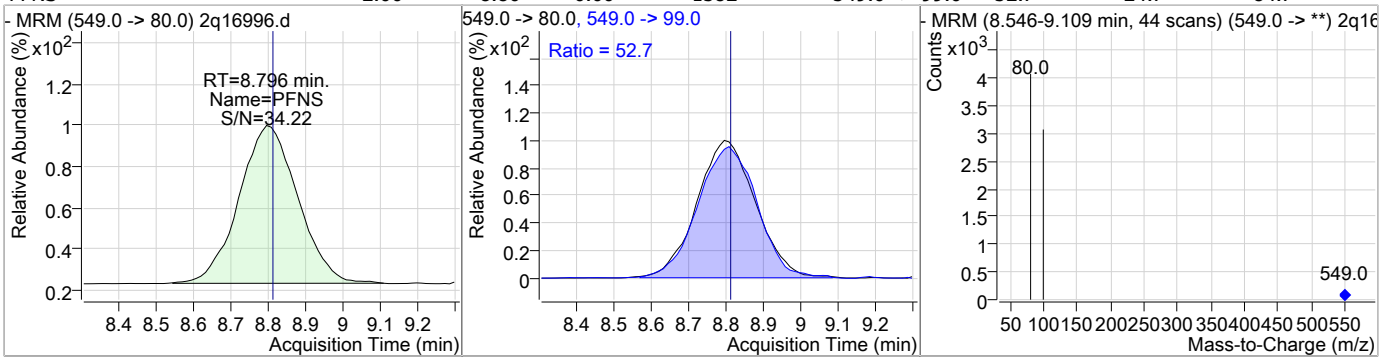




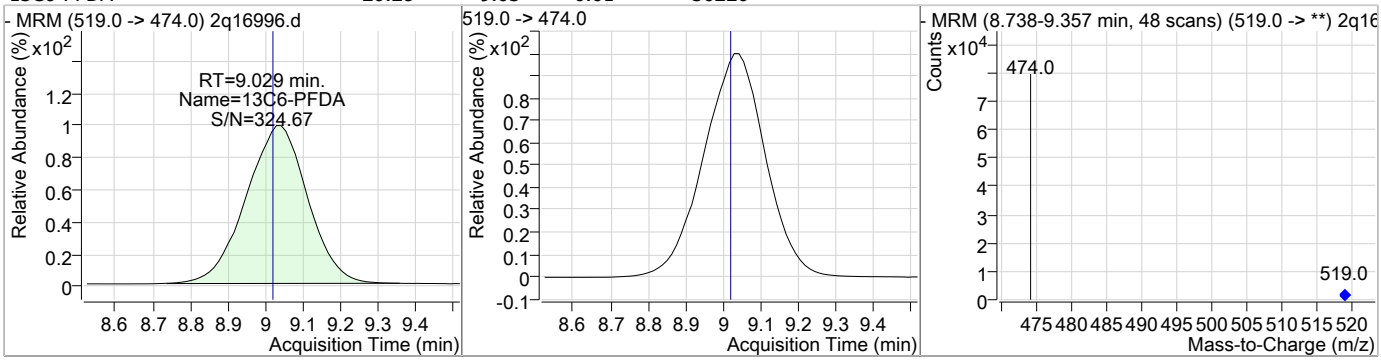


Perfluorinated Compounds by LC/MS/MS

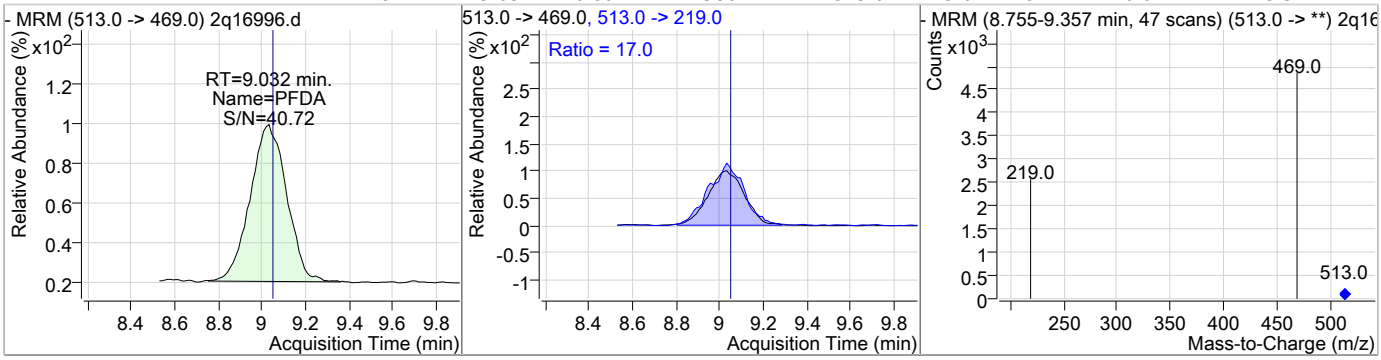
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.06	8.80	0.00	1582	549.0 -> 99.0	52.7	24.7	84.7



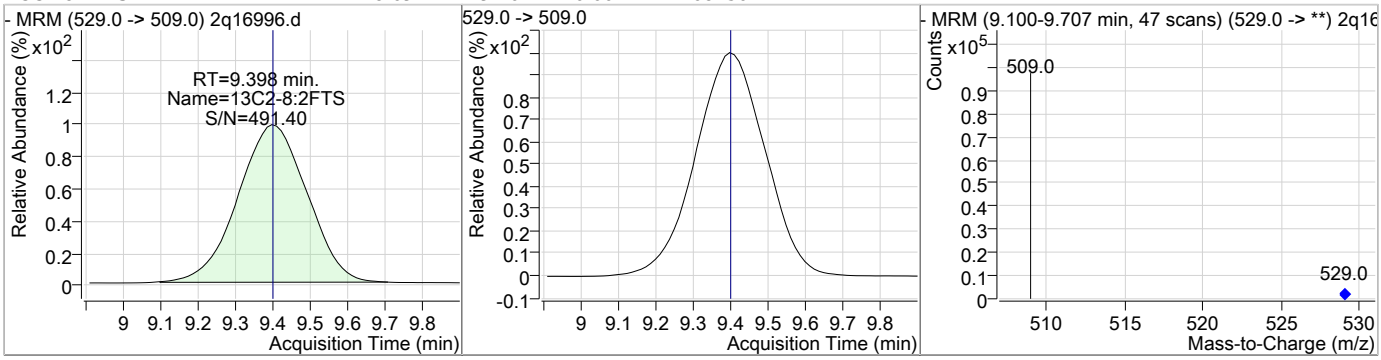
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.28	9.03	0.01	56226				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	1.87	9.03	0.00	1986	513.0 -> 219.0	17.0	0.0	45.3

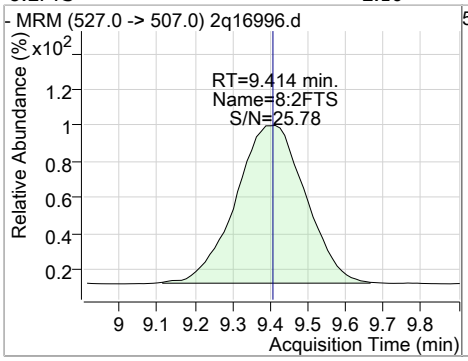


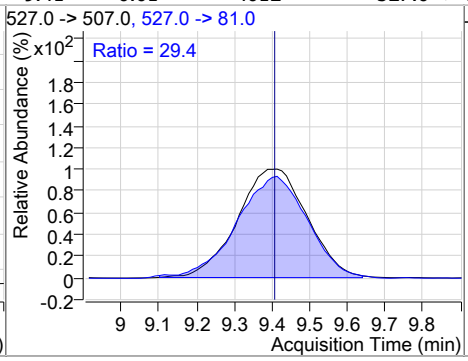
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.69	9.40	0.00	68750				

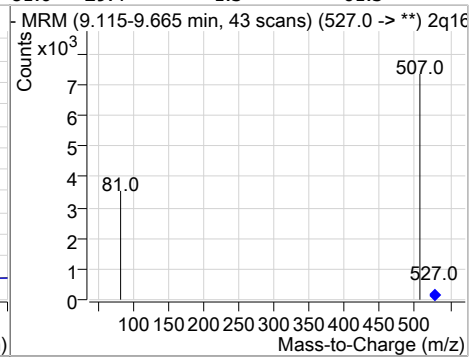


Perfluorinated Compounds by LC/MS/MS

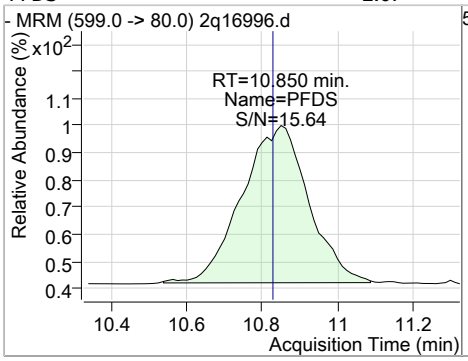
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	2.16	9.41	0.01	4012	527.0 -> 81.0	29.4	1.3	61.3

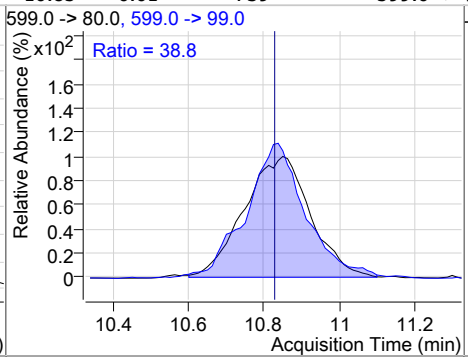


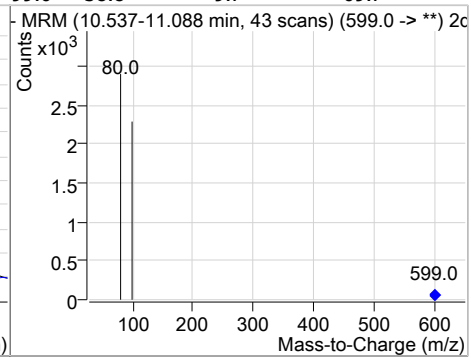




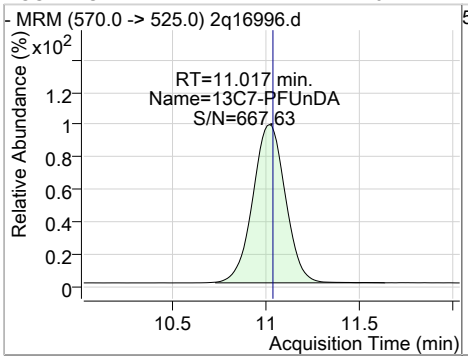
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.07	10.85	0.01	739	599.0 -> 99.0	38.8	9.7	69.7

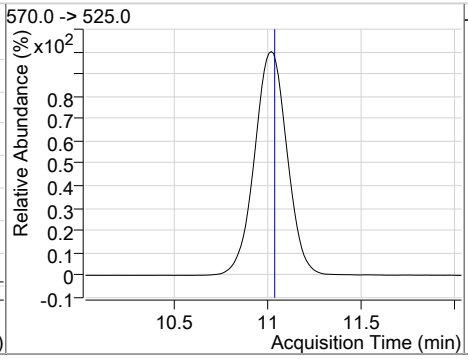


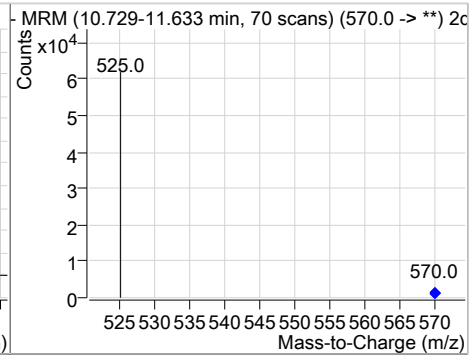




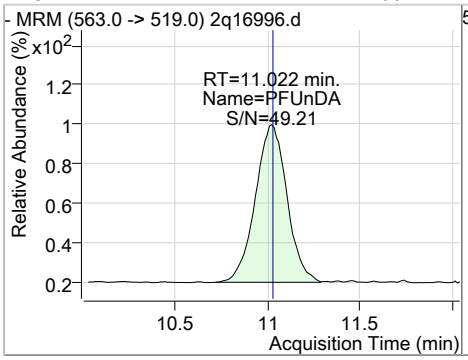
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.22	11.02	-0.01	41679				

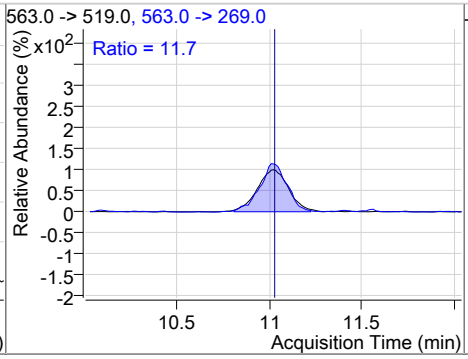


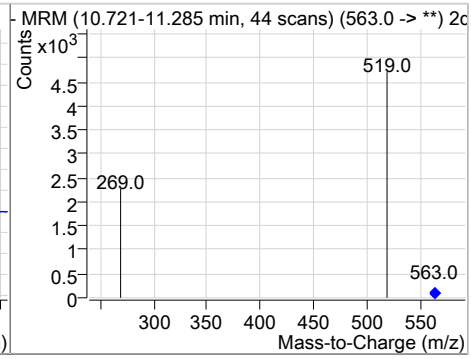




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.00	11.02	-0.01	2049	563.0 -> 269.0	11.7	0.0	41.8

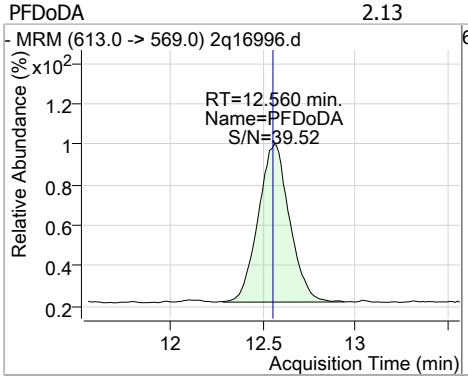


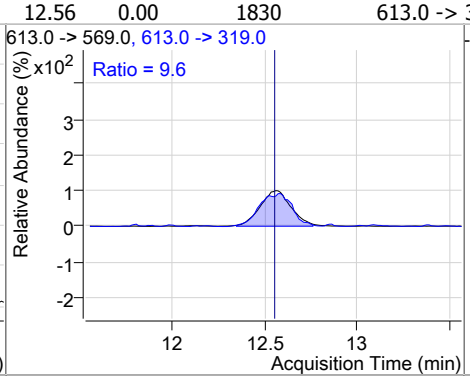


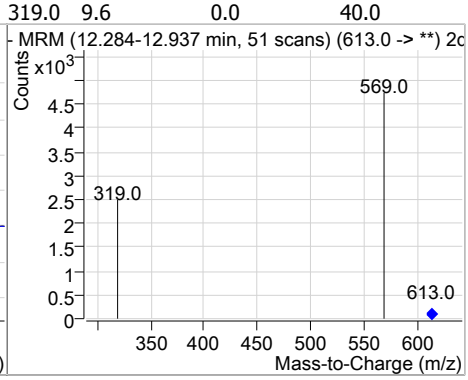


Perfluorinated Compounds by LC/MS/MS

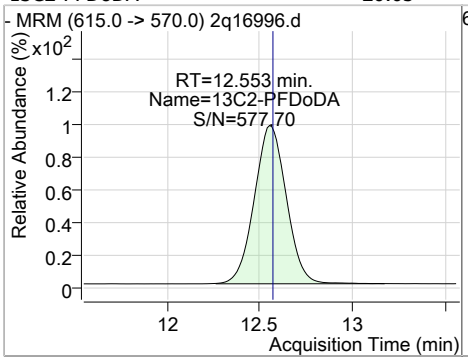
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.13	12.56	0.00	1830	613.0 -> 319.0	9.6	0.0	40.0

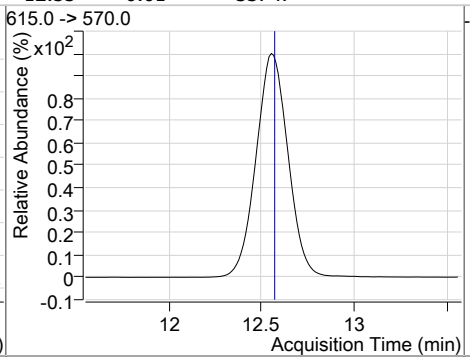


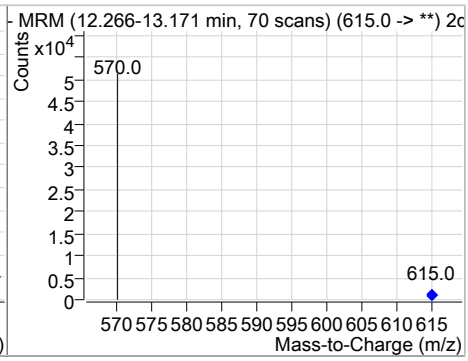




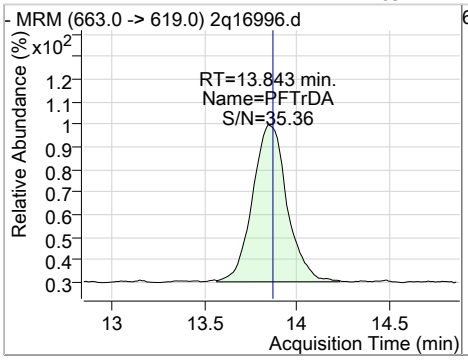
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.05	12.55	-0.01	33747				

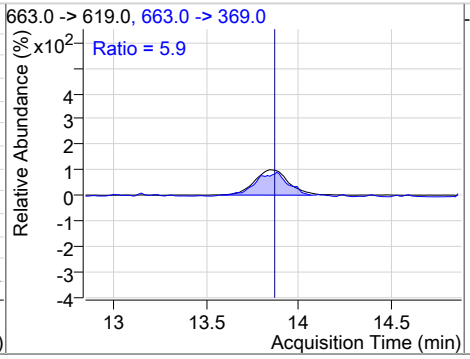


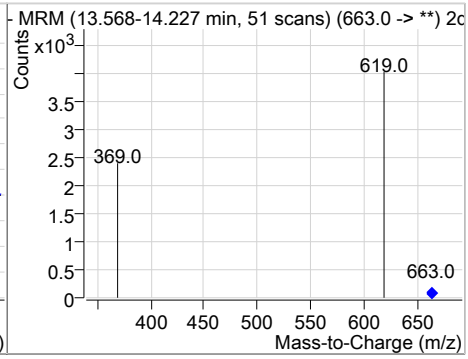




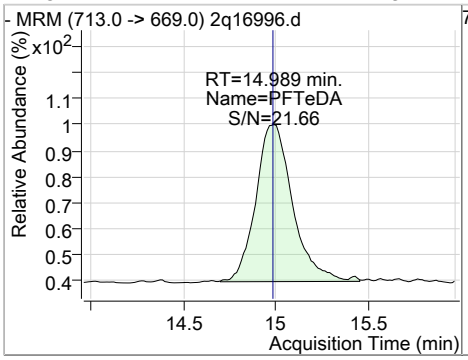
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.09	13.84	-0.01	1306	663.0 -> 369.0	5.9	0.0	37.1

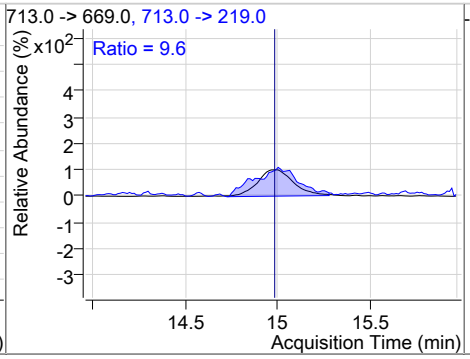


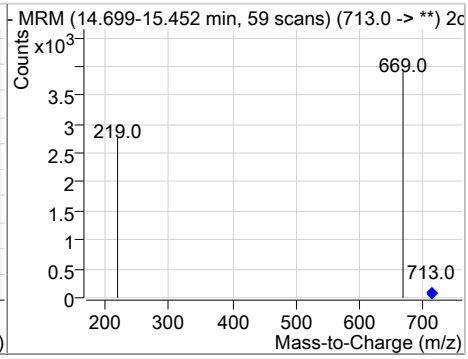




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.19	14.99	0.03	929	713.0 -> 219.0	9.6	0.0	37.4

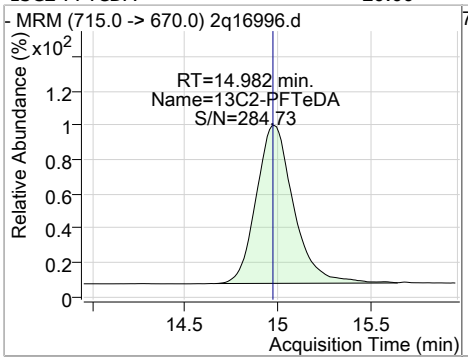


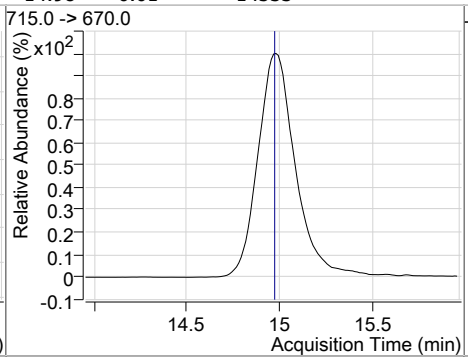


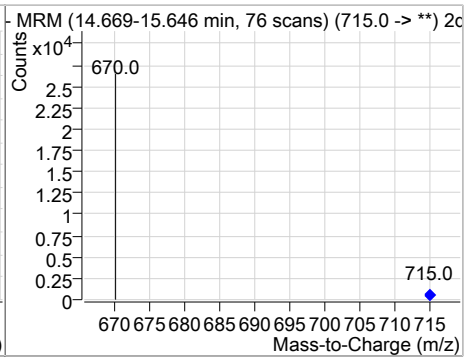


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.00	14.98	0.01	14533				







Manual Integration Approval Summary

Sample Number:	S2Q295-IC295	**Method:**	EPA 537M BY ID
Lab FileID:	2Q16996.D	**Analyst approved:**	07/13/18 12:48 Nancy Saunders
Injection Time:	07/12/18 10:01	**Supervisor approved:**	07/13/18 17:24 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.24	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.69	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 07/13/18 17:24

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16997.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/12/2018 10:22:18 AM
Sample Name : ic295-5.0
Vial : Vial 5
DA Method File : PFC_ID_071218_S2Q295.quantmethod.xml
Batch Name : s2q295.batch.bin
Sample Information : op70790,S2Q295,1.99,,,1.0,1,soil

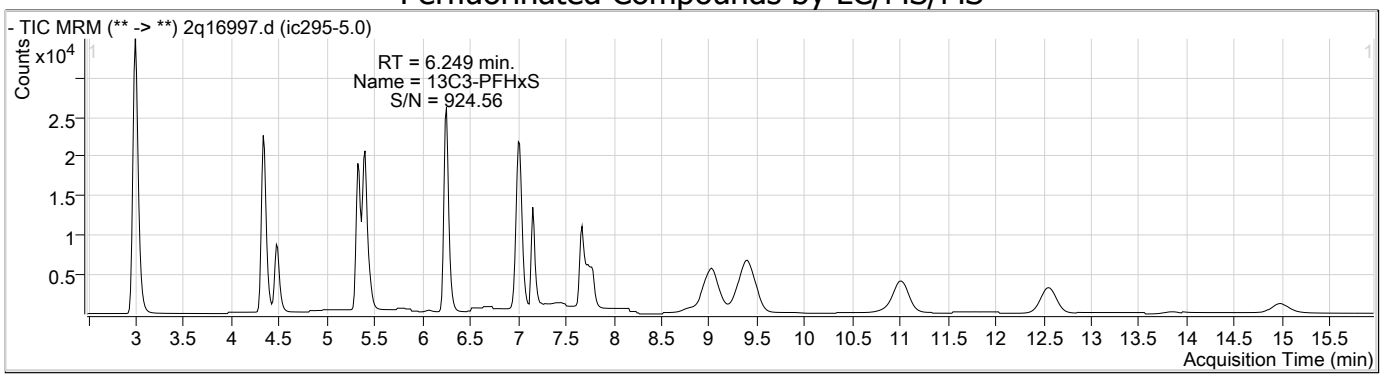
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.998	415.0 -> 370.0	17182	20.00	µg/L	0.001
13C4-PFOS	7.687	503.0 -> 80.0	9629	20.00	µg/L	0.012
M4-PFBA	2.991	217.0 -> 172.0	132912	20.00	µg/L	0.000
M5-PFPeA	4.337	268.0 -> 223.0	65837	20.00	µg/L	0.000
M5-PFHxA	5.401	318.0 -> 273.0	61114	20.00	µg/L	0.011
M4-PFHpA	6.255	367.0 -> 322.0	58313	20.00	µg/L	0.001
M8-PFOA	7.009	421.0 -> 376.0	26035	20.00	µg/L	0.014
M9-PFNA	7.753	472.0 -> 427.0	17486	20.00	µg/L	0.001
M6-PFDA	9.029	519.0 -> 474.0	56245	20.00	µg/L	0.013
M7-PFUnDA	11.005	570.0 -> 525.0	42039	20.00	µg/L	-0.025
M2-PFDoDA	12.553	615.0 -> 570.0	33869	20.00	µg/L	-0.012
M2-PFTeDA	14.982	715.0 -> 670.0	14475	20.00	µg/L	0.013
M8-FOSA	7.155	506.0 -> 78.0	33332	20.00	µg/L	0.013
M3-PFBS	4.468	302.0 -> 99.0	21033	20.00	µg/L	0.000
M3-PFHxS	6.249	402.0 -> 99.0	16809	20.00	µg/L	0.013
M8-PFOS	7.673	507.0 -> 99.0	8240	20.00	µg/L	0.000
M2-4:2FTS	5.322	329.0 -> 309.0	54433	20.00	µg/L	-0.001
M2-6:2FTS	7.018	429.0 -> 409.0	36917	20.00	µg/L	0.001
M2-8:2FTS	9.398	529.0 -> 509.0	70088	20.00	µg/L	0.000
M3-MeFOSAA	7.658	573.0 -> 419.0	15940	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.322	329.0 -> 309.0	54437	19.29	µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.5%		
13C2-6:2FTS	7.018	429.0 -> 409.0	36919	18.92	µg/L	0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.6%		
13C2-8:2FTS	9.398	529.0 -> 509.0	69372	18.86	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.3%		
13C2-PFDoDA	12.553	615.0 -> 570.0	33966	20.18	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%		
13C2-PFTeDA	14.982	715.0 -> 670.0	14608	20.10	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.5%		
13C3-PFBS	4.468	302.0 -> 99.0	21037	20.18	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%		
13C3-PFHxS	6.249	402.0 -> 99.0	16811	20.14	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%		
13C4-PFBA	2.991	217.0 -> 172.0	132906	20.00	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C4-PFHpA	6.255	367.0 -> 322.0	58314	20.61	µg/L	0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.1%		
13C5-PFHxA	5.401	318.0 -> 273.0	61098	20.60	µg/L	0.011
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.0%		
13C5-PFPeA	4.337	268.0 -> 223.0	65817	20.06	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C6-PFDA	9.029	519.0 -> 474.0	55876	20.16	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.8%		

Perfluorinated Compounds by LC/MS/MS

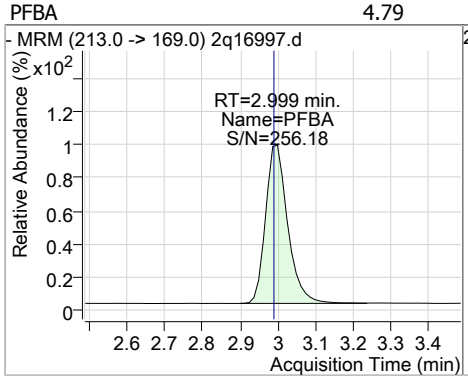
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	11.005	570.0 -> 525.0	42014	20.39	µg/L		-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%			
13C8-FOSA	7.155	506.0 -> 78.0	33334	20.72	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.6%			
13C8-PFOA	7.009	421.0 -> 376.0	26039	19.82	µg/L		0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%			
13C8-PFOS	7.673	507.0 -> 99.0	8243	19.87	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.4%			
13C9-PFNA	7.753	472.0 -> 427.0	17488	19.83	µg/L		0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.2%			
d3-MeFOSAA	7.658	573.0 -> 419.0	15940	20.52	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.6%			
M2-PFOA	6.998	415.0 -> 370.0	17185	20.00	ng/ml		0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.687	503.0 -> 80.0	9621	19.99	ng/ml		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%			
Target Compounds							**QValue**
4:2FTS	5.324	327.0 -> 307.0	6942	4.92	µg/L		99
6:2FTS	7.020	427.0 -> 407.0	4615	4.99	µg/L		100
8:2FTS	9.401	527.0 -> 507.0	9853	5.28	µg/L		95
EtFOSAA	7.782	584.0 -> 419.0	1287	5.00	µg/L		92
FOSA	7.158	498.0 -> 78.0	4009	4.90	µg/L		99
MeFOSAA	7.672	570.0 -> 419.0	1437	4.89	µg/L		98
PFBA	2.999	213.0 -> 169.0	5051	4.79	µg/L		100
PFBS	4.472	299.0 -> 80.0	6830	4.73	µg/L		98
PFDA	9.032	513.0 -> 469.0	5057	4.82	µg/L		99
PFDoDA	12.547	613.0 -> 569.0	4397	5.09	µg/L		99
PFDS	10.825	599.0 -> 80.0	1768	4.91	µg/L		99
PFHpA	6.258	363.0 -> 319.0	10180	4.69	µg/L		100
PFHpS	6.967	449.0 -> 80.0	2207	4.67	µg/L		99
PFHxA	5.403	313.0 -> 269.0	4785	4.64	µg/L		98
PFHxS	6.239	399.0 -> 80.0	4779	4.80	µg/L	m	99
PFNA	7.755	463.0 -> 419.0	1709	4.95	µg/L		92
PFNS	8.796	549.0 -> 80.0	3670	4.83	µg/L		98
PFOA	6.999	413.0 -> 369.0	3511	5.06	µg/L		96
PFOS	7.675	499.0 -> 80.0	2499	4.84	µg/L	m	92
PFPeA	4.341	263.0 -> 219.0	15184	4.94	µg/L		100
PFPeS	5.446	349.0 -> 80.0	4403	4.80	µg/L		98
PFTeDA	14.989	713.0 -> 669.0	2270	5.27	µg/L		98
PFTrDA	13.855	663.0 -> 619.0	3208	5.08	µg/L		99
PFUnDA	11.022	563.0 -> 519.0	4823	4.66	µg/L		98

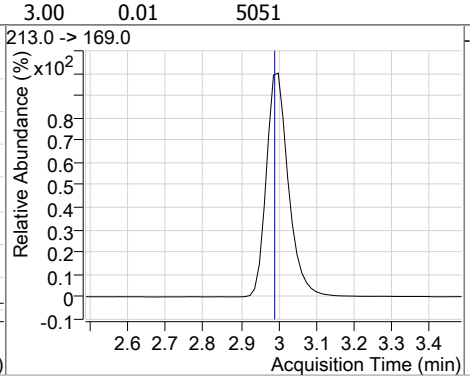
 # = Qualifier out of range, m = manually integrated, + = Area summed

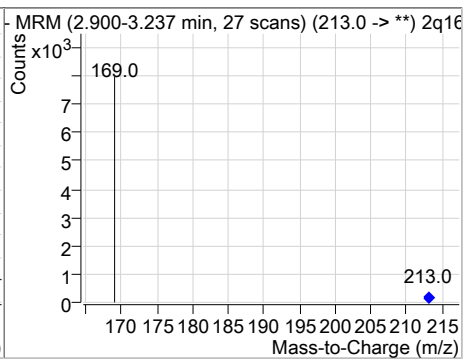
Perfluorinated Compounds by LC/MS/MS



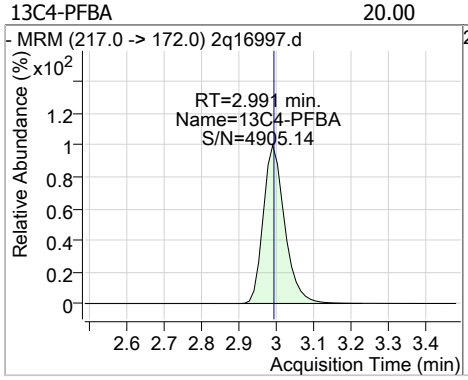
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	4.79	3.00	0.01	5051				

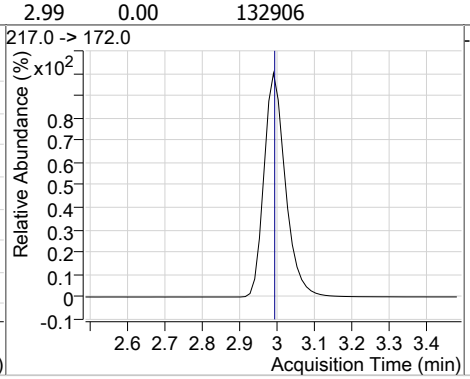


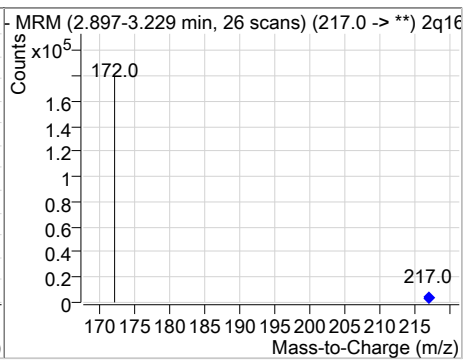




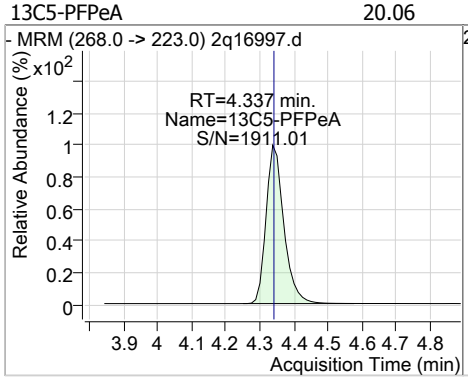
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.00	2.99	0.00	132906				

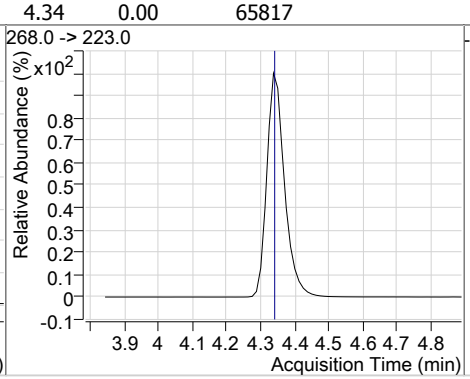


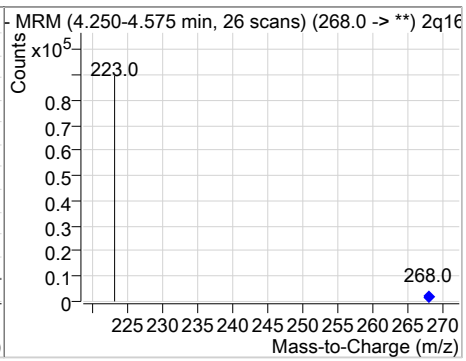




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.06	4.34	0.00	65817				

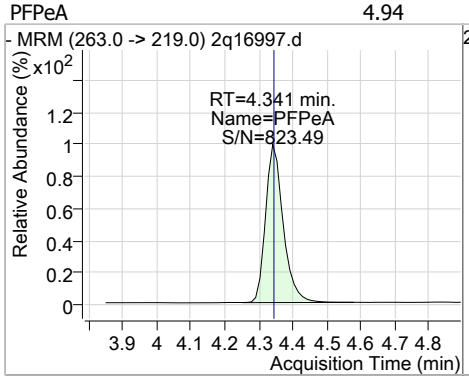


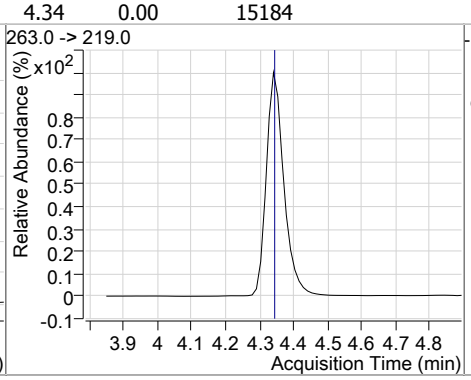


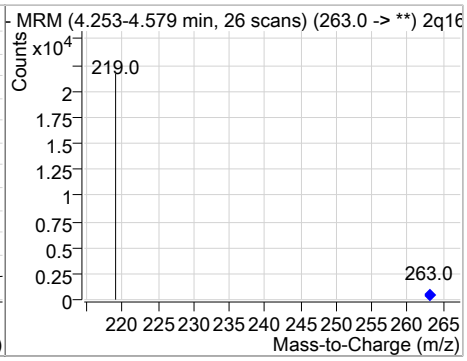


Perfluorinated Compounds by LC/MS/MS

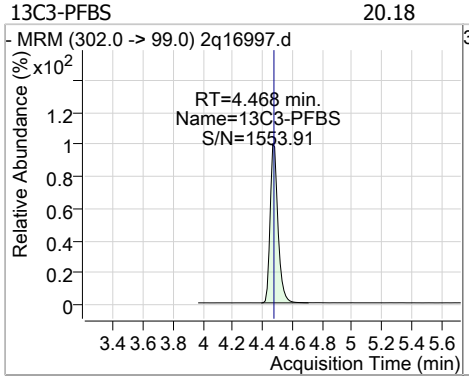
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.94	4.34	0.00	15184				

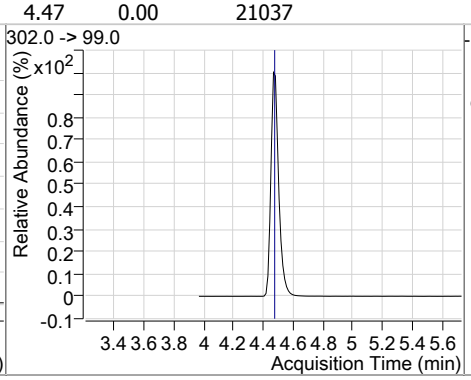


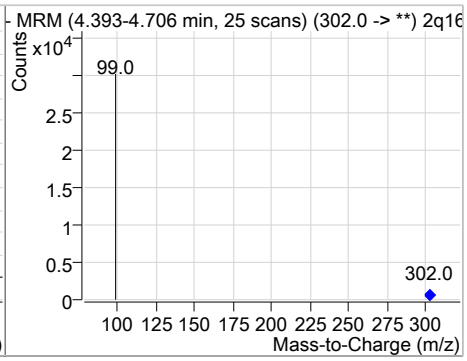




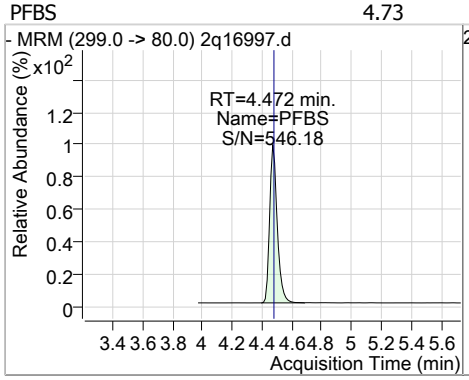
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.18	4.47	0.00	21037				

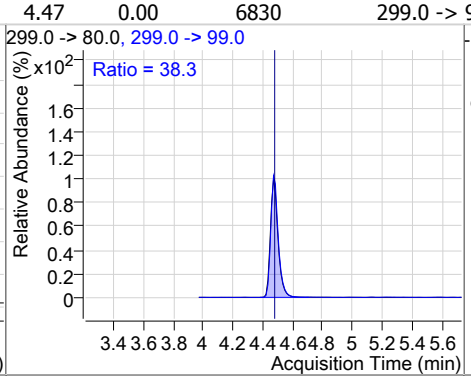


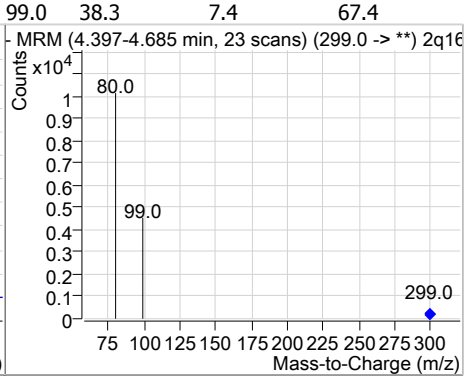




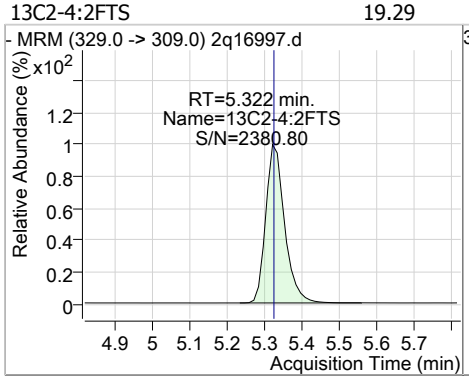
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	4.73	4.47	0.00	6830	299.0 -> 99.0	38.3	7.4	67.4

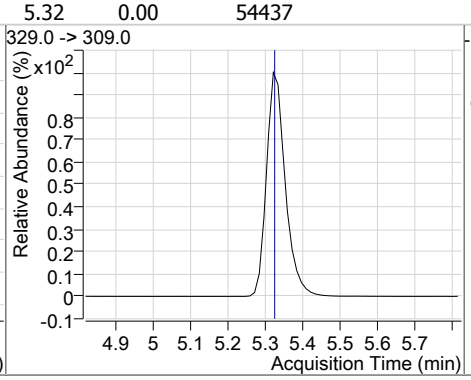


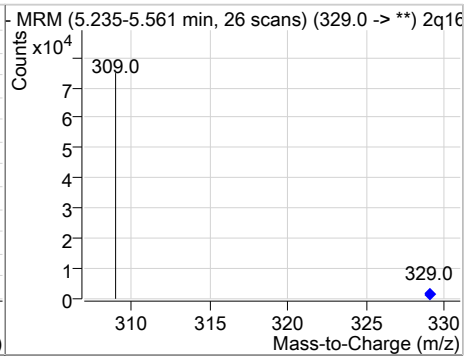




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.29	5.32	0.00	54437				

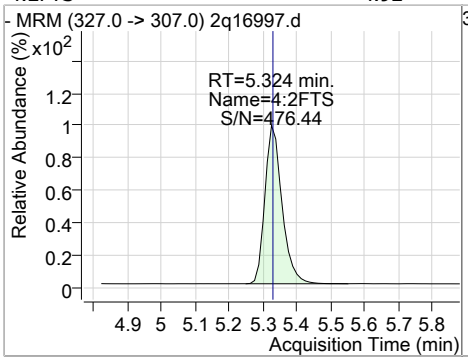


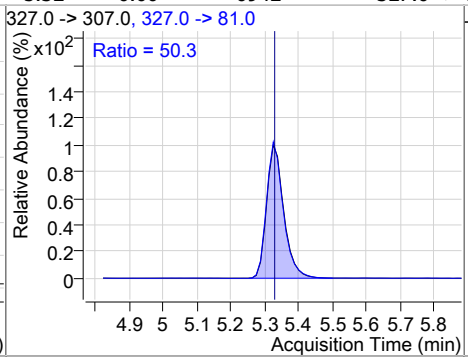


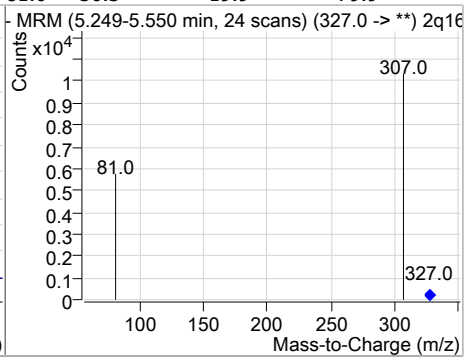


Perfluorinated Compounds by LC/MS/MS

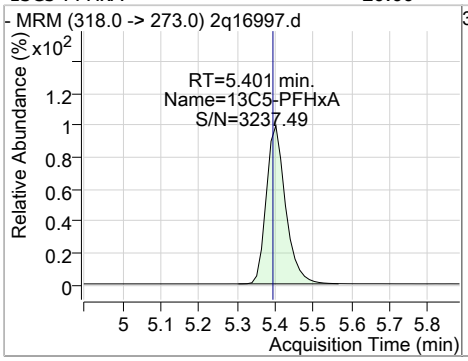
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	4.92	5.32	0.00	6942	327.0 -> 81.0	50.3	19.9	79.9

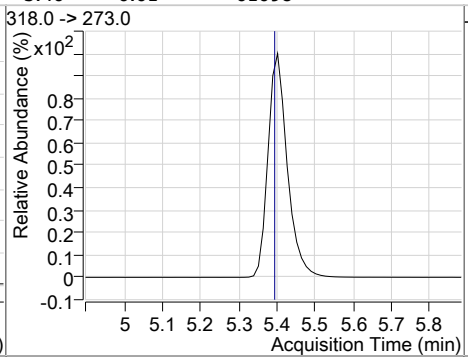


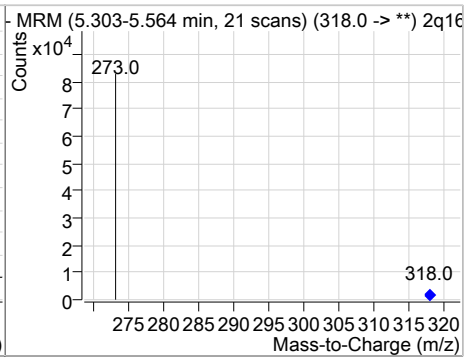




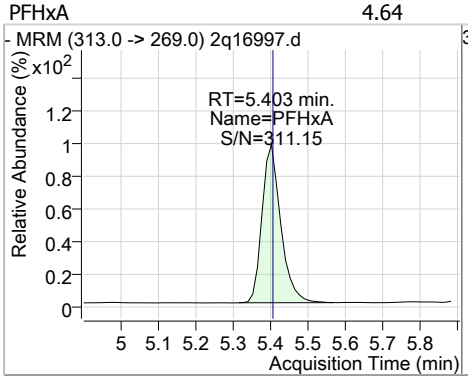
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.60	5.40	0.01	61098				

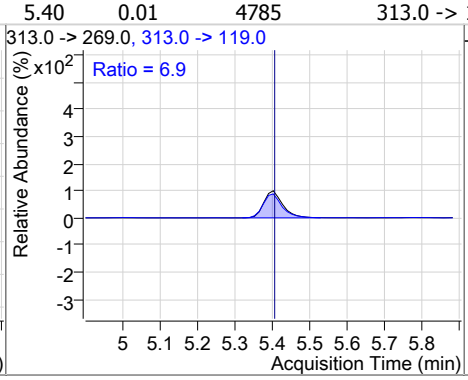


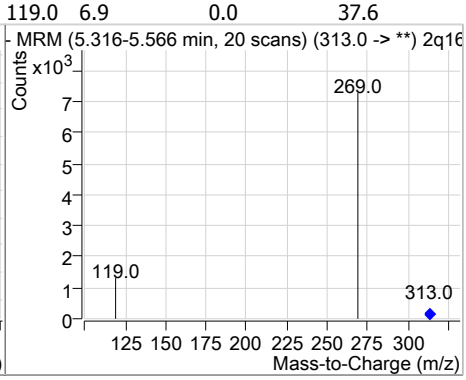




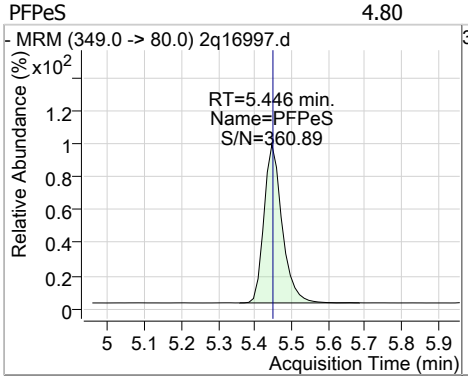
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	4.64	5.40	0.01	4785	313.0 -> 119.0	6.9	0.0	37.6

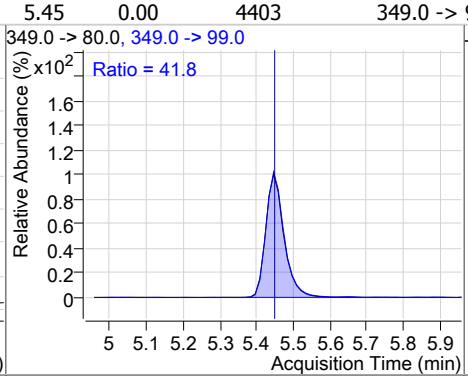


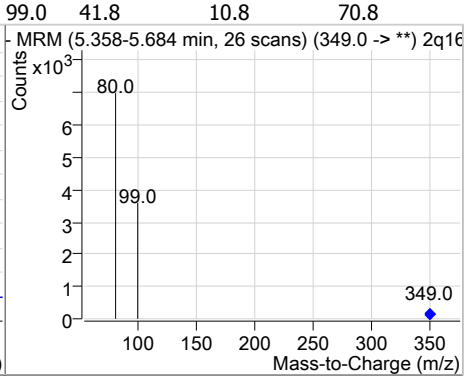




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	4.80	5.45	0.00	4403	349.0 -> 99.0	41.8	10.8	70.8

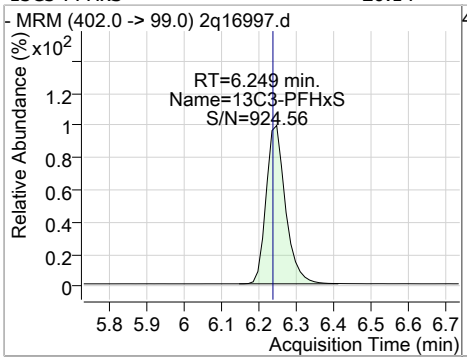


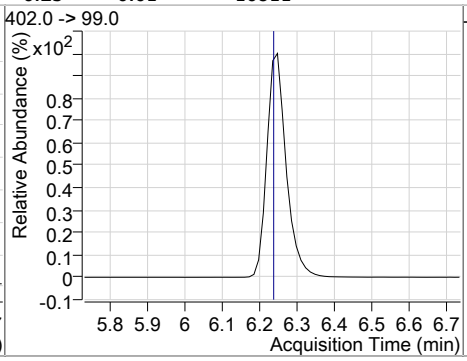


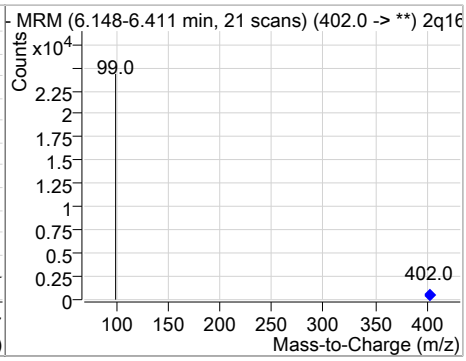


Perfluorinated Compounds by LC/MS/MS

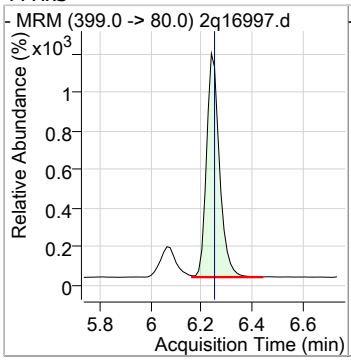
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.14	6.25	0.01	16811				

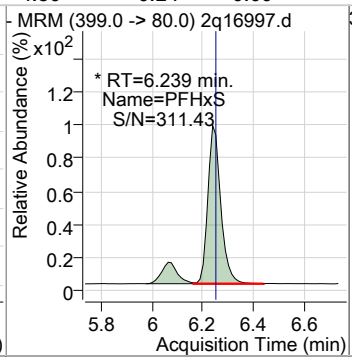


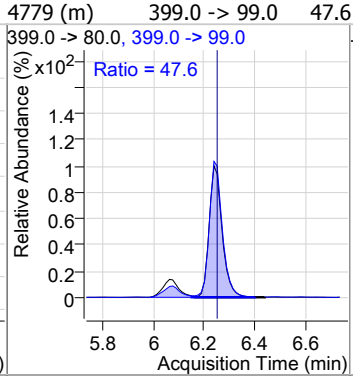


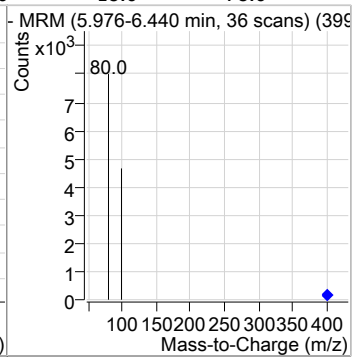


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	4.80	6.24	0.00	4779 (m)	399.0 -> 99.0	47.6	18.0	78.0

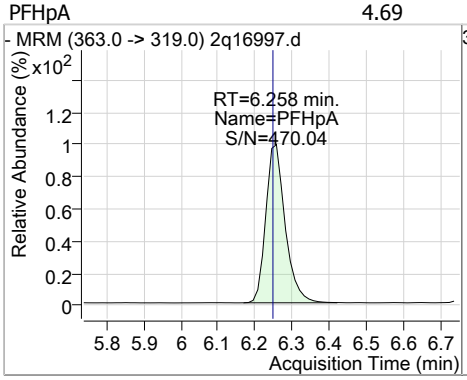


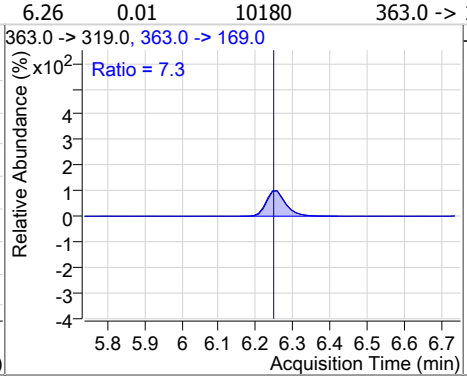


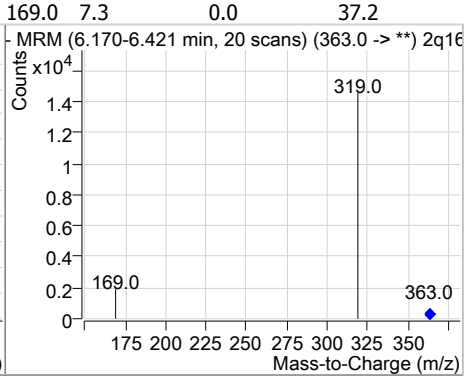




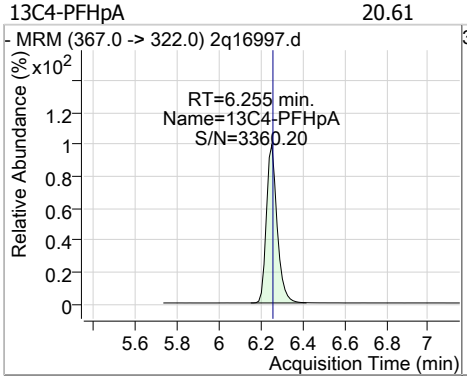
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	4.69	6.26	0.01	10180	363.0 -> 169.0	7.3	0.0	37.2

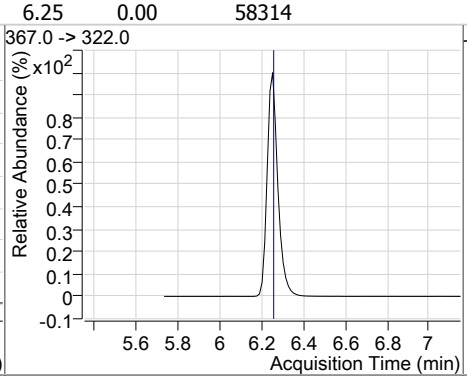


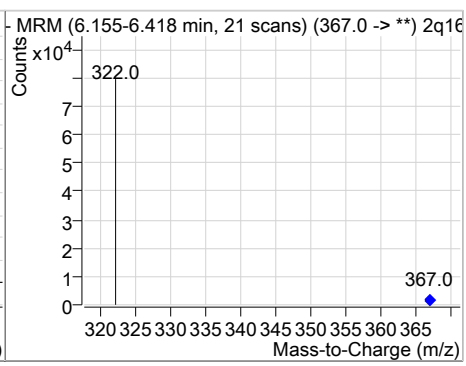




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.61	6.25	0.00	58314				

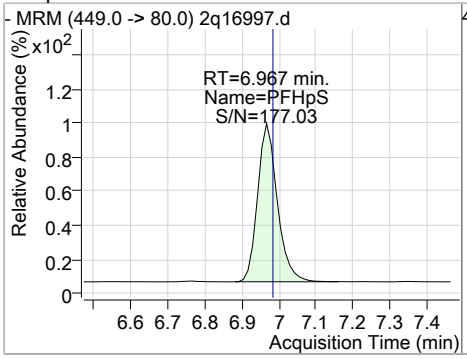


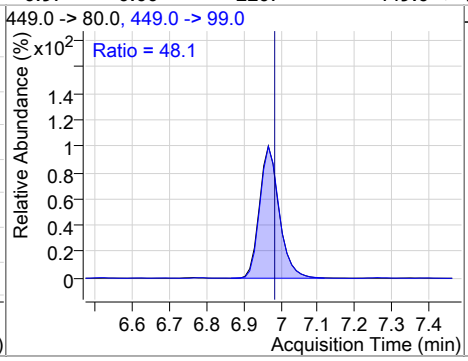


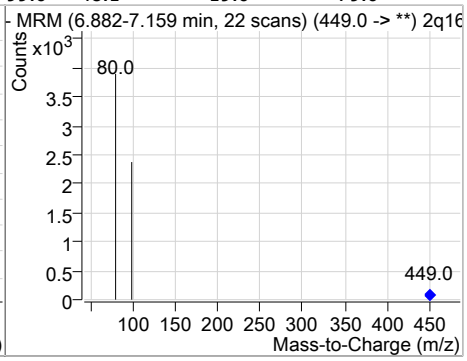


Perfluorinated Compounds by LC/MS/MS

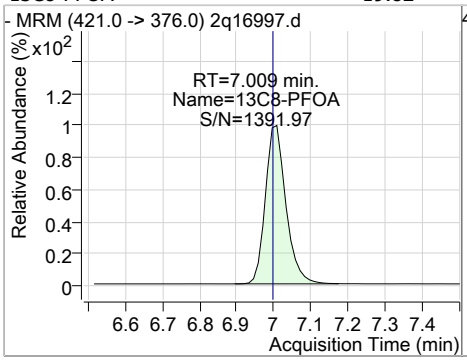
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	4.67	6.97	0.00	2207	449.0 -> 99.0	48.1	19.0	79.0

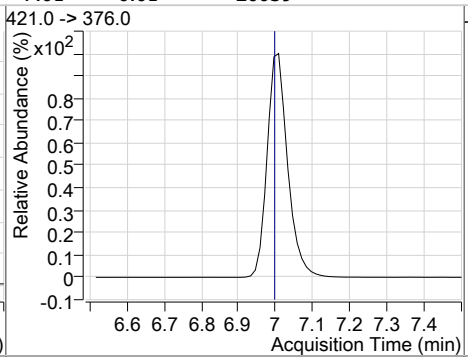


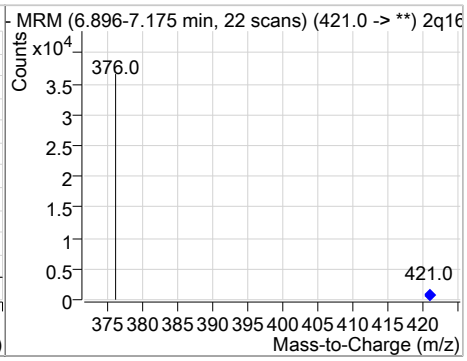




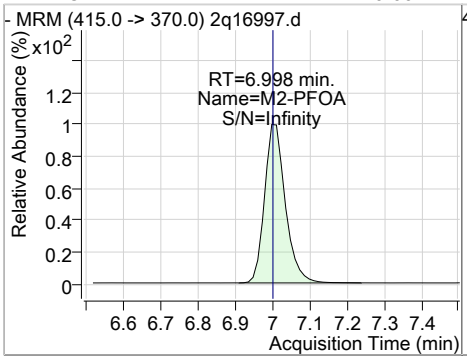
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.82	7.01	0.01	26039				

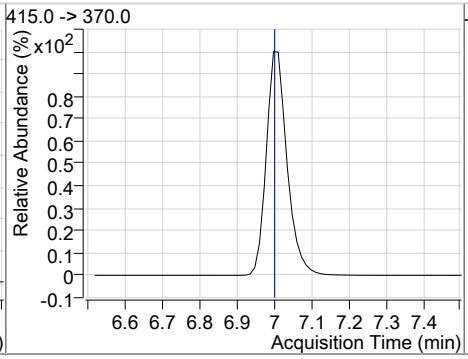


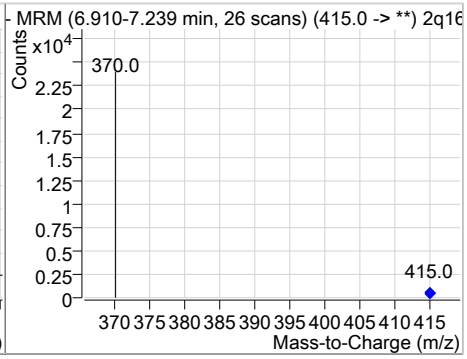




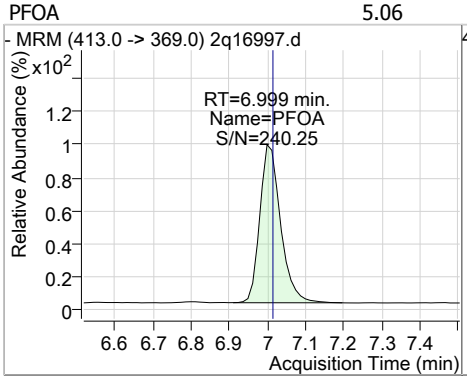
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	7.00	0.00	17185				

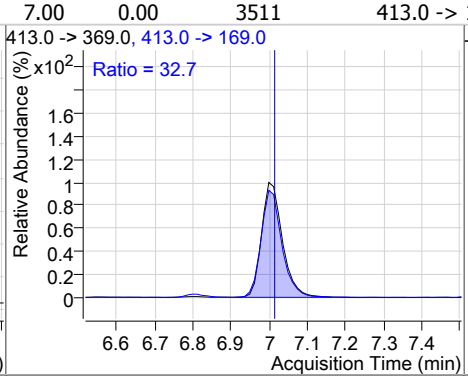


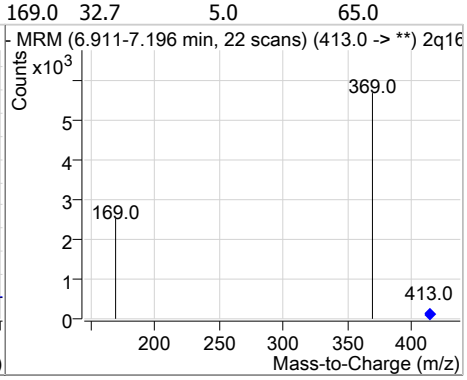




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	5.06	7.00	0.00	3511	413.0 -> 169.0	32.7	5.0	65.0

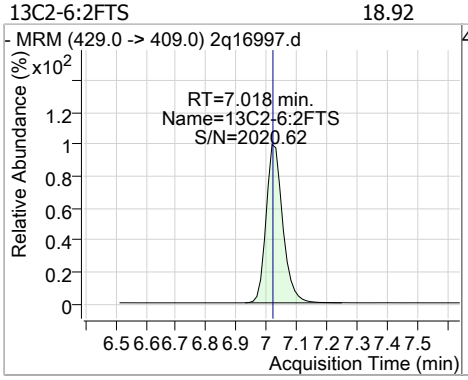


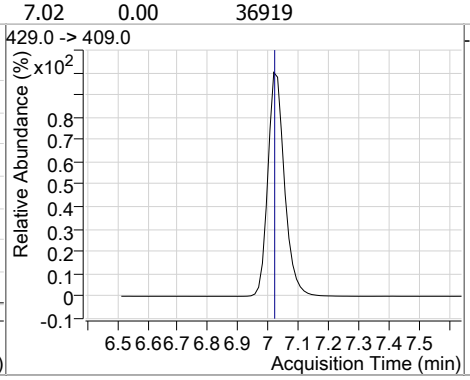


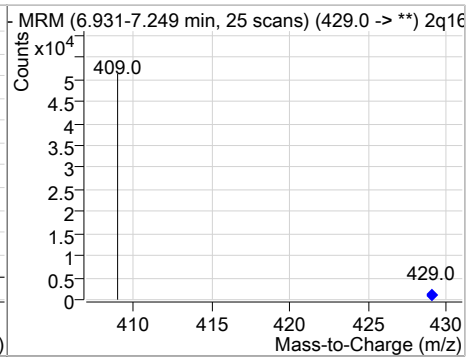


Perfluorinated Compounds by LC/MS/MS

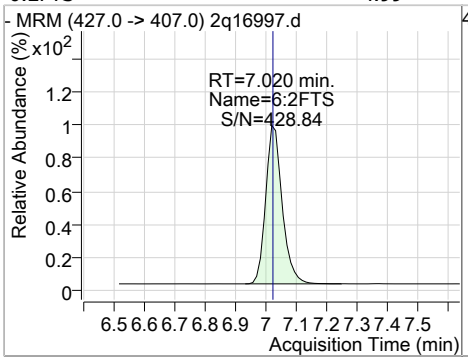
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.92	7.02	0.00	36919				

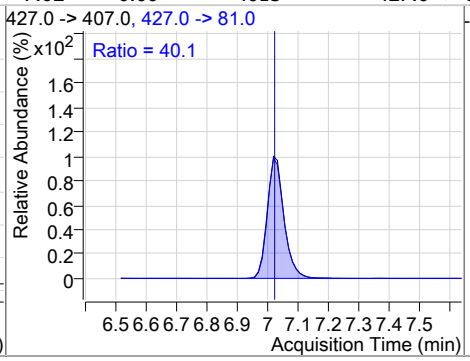


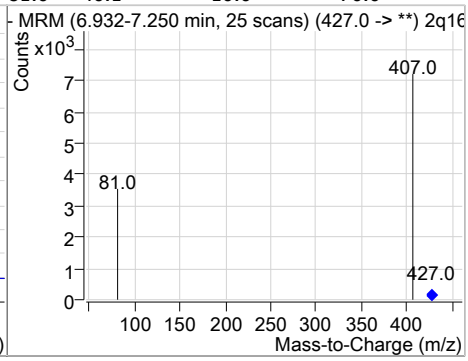




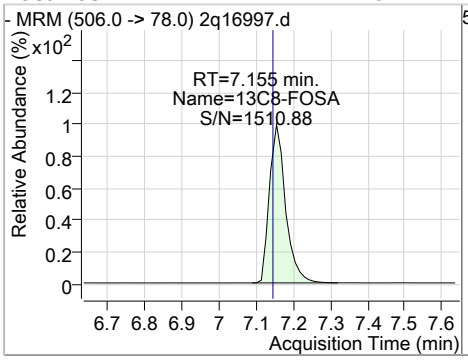
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	4.99	7.02	0.00	4615	427.0 -> 81.0	40.1	10.0	70.0

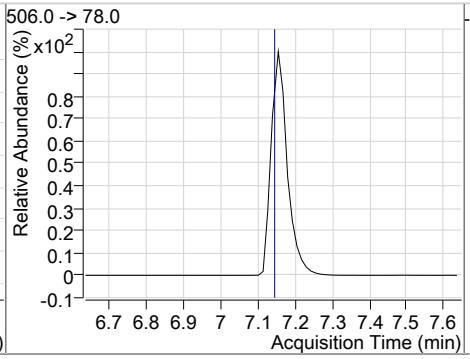


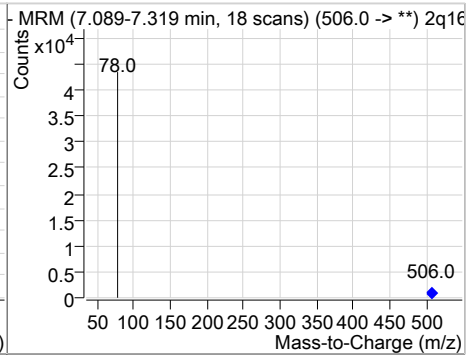




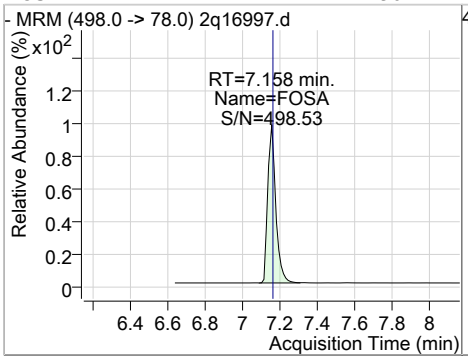
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.72	7.16	0.01	33334				

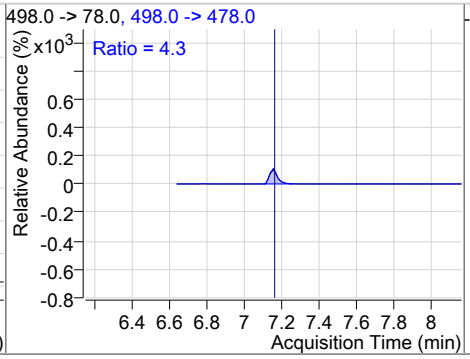


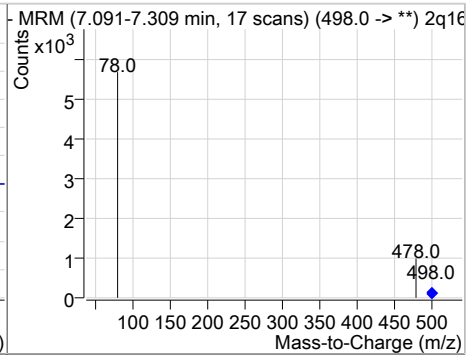




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	4.90	7.16	0.01	4009	498.0 -> 478.0	4.3	0.0	34.0

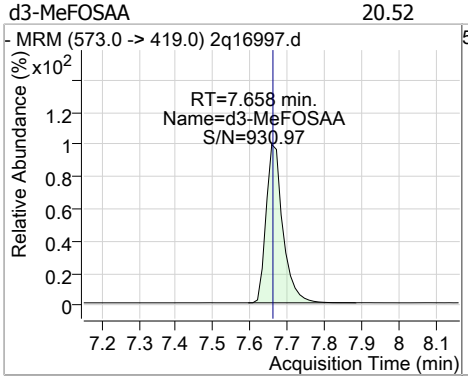


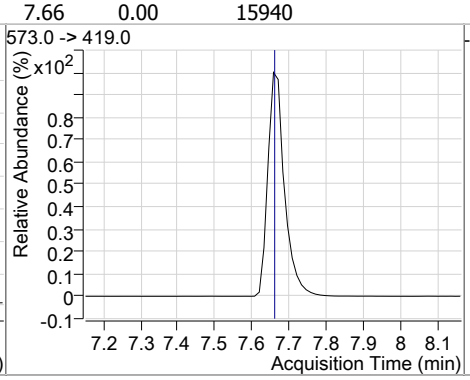


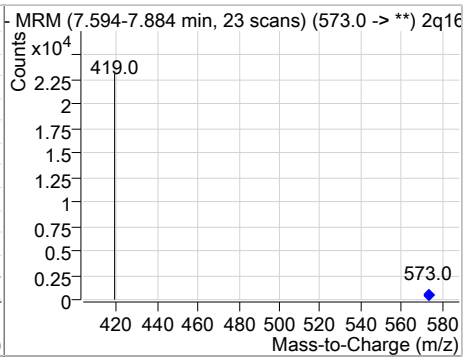


Perfluorinated Compounds by LC/MS/MS

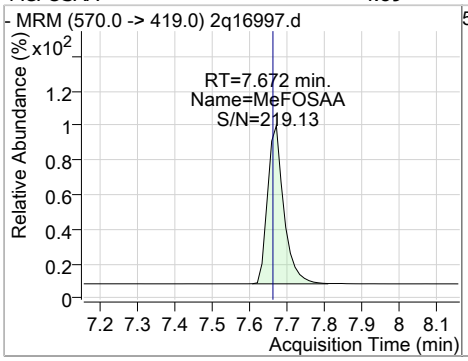
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.52	7.66	0.00	15940				

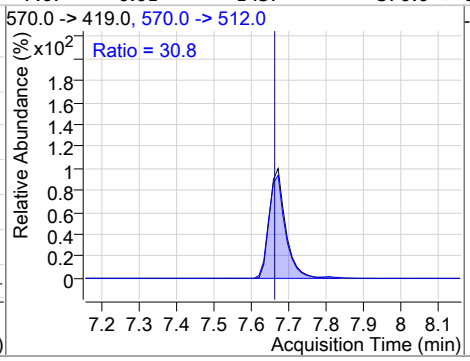


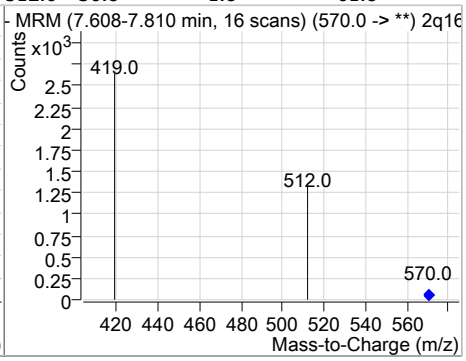




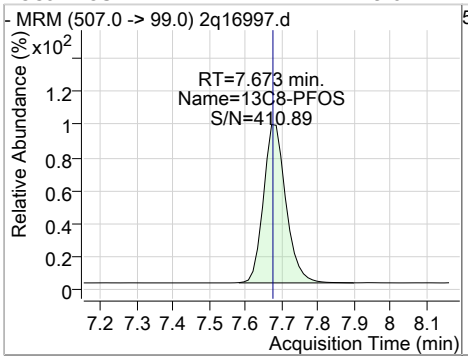
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	4.89	7.67	0.01	1437	570.0 -> 512.0	30.8	1.8	61.8

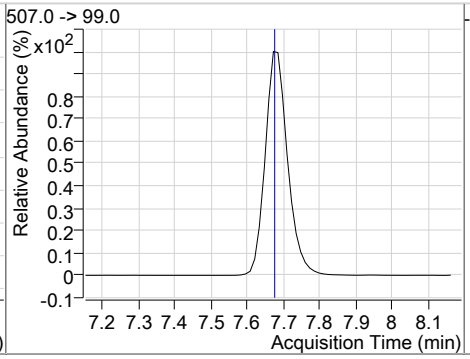


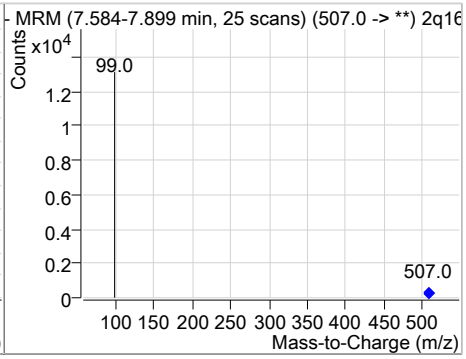




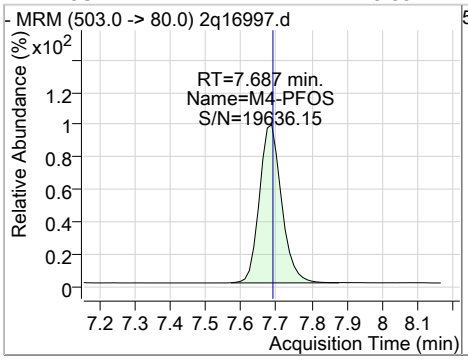
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.87	7.67	0.00	8243				

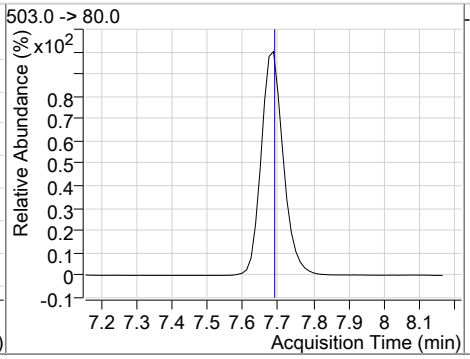


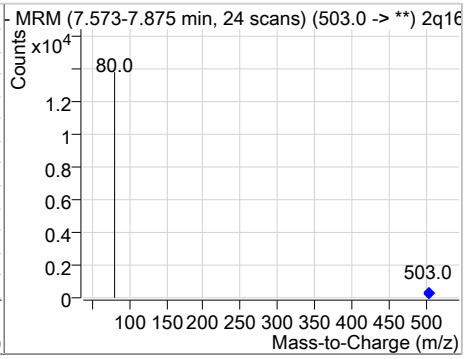




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	19.99	7.69	0.01	9621				

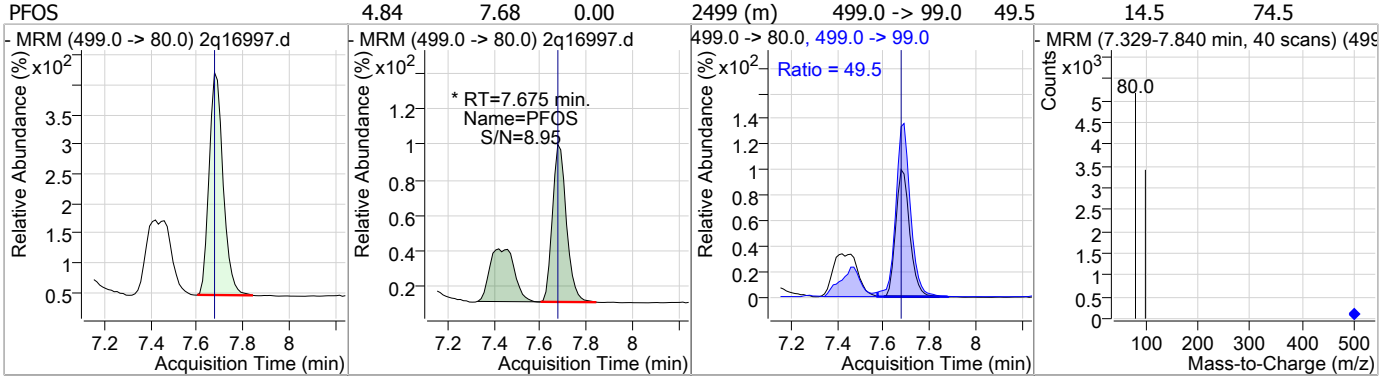




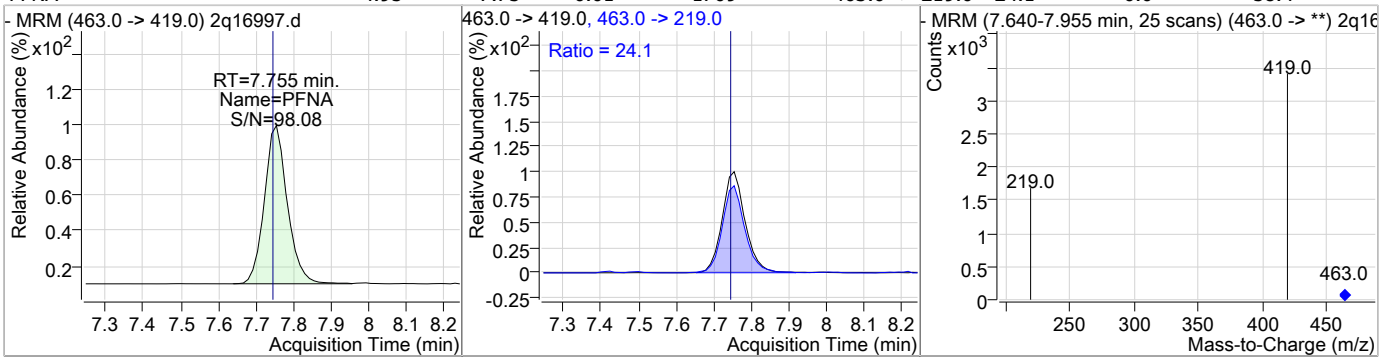


Perfluorinated Compounds by LC/MS/MS

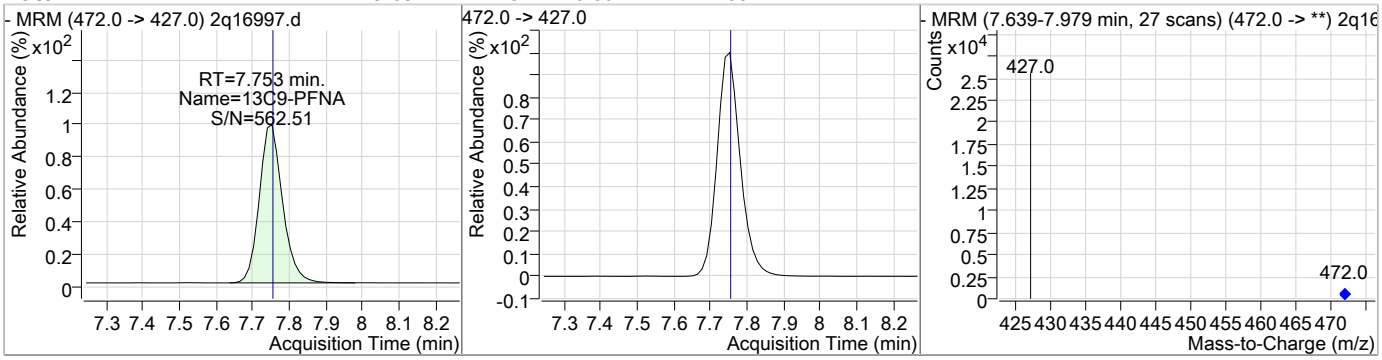
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	4.84	7.68	0.00	2499 (m)	499.0 -> 99.0	49.5	14.5	74.5



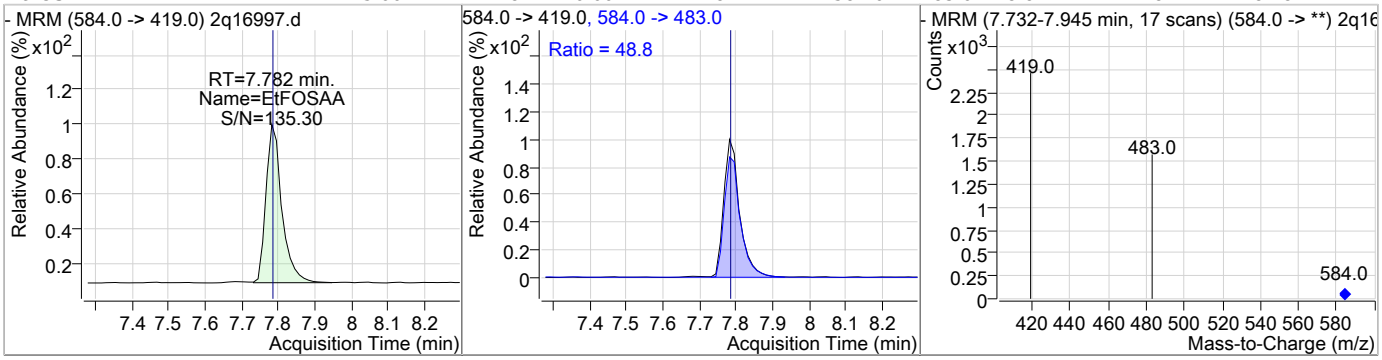
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	4.95	7.75	0.01	1709	463.0 -> 219.0	24.1	0.0	58.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.83	7.75	0.00	17488				

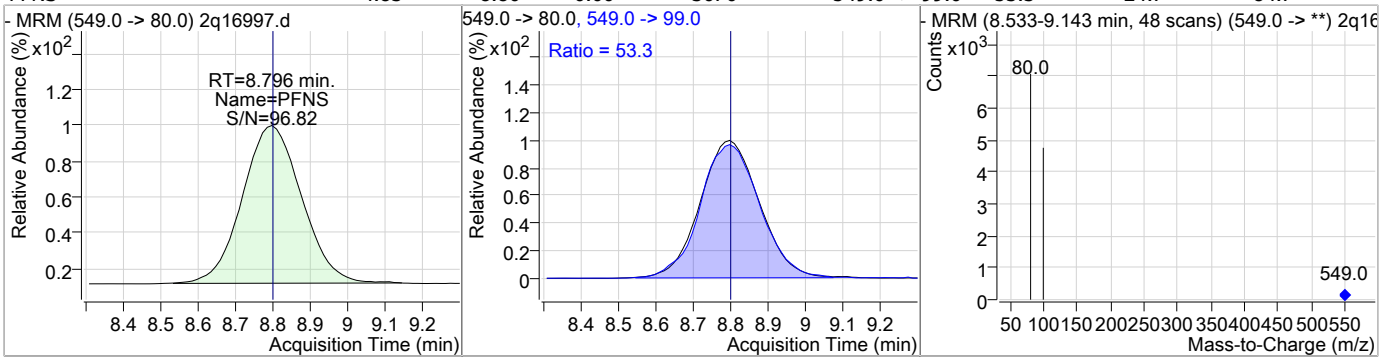


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	5.00	7.78	0.00	1287	584.0 -> 483.0	48.8	24.8	84.8

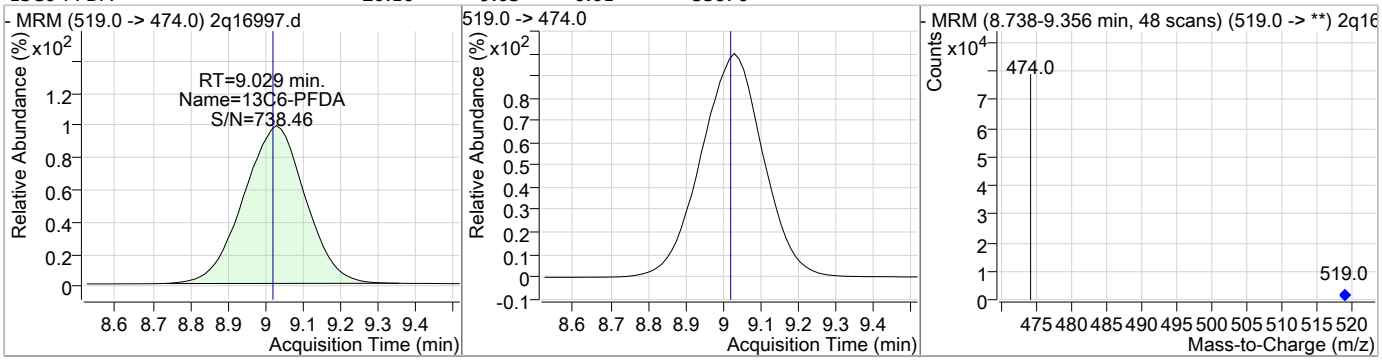


Perfluorinated Compounds by LC/MS/MS

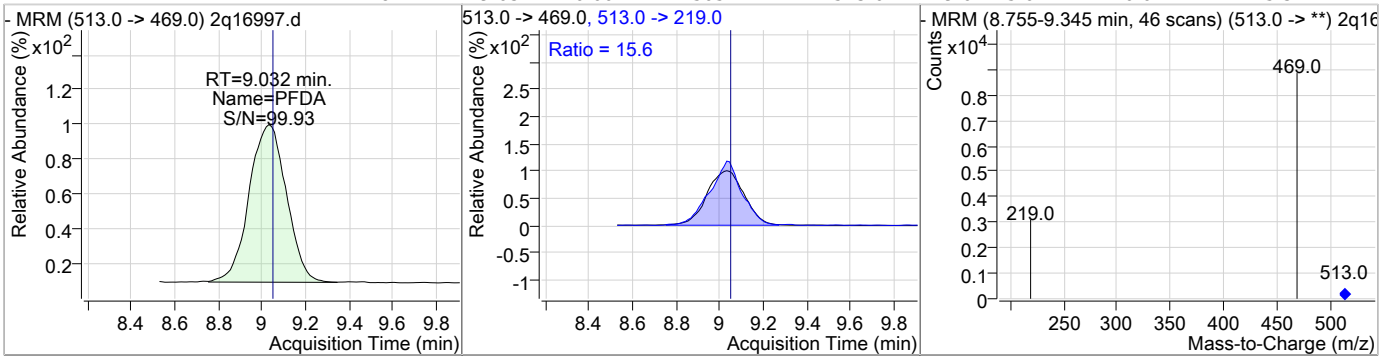
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	4.83	8.80	0.00	3670	549.0 -> 99.0	53.3	24.7	84.7



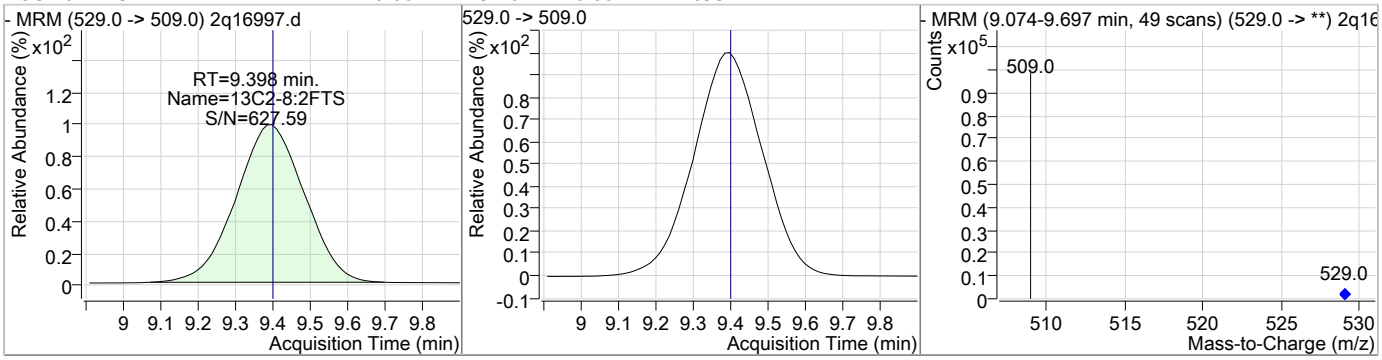
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.16	9.03	0.01	55876				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	4.82	9.03	0.00	5057	513.0 -> 219.0	15.6	0.0	45.3

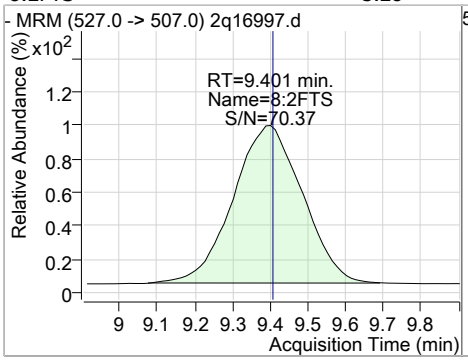


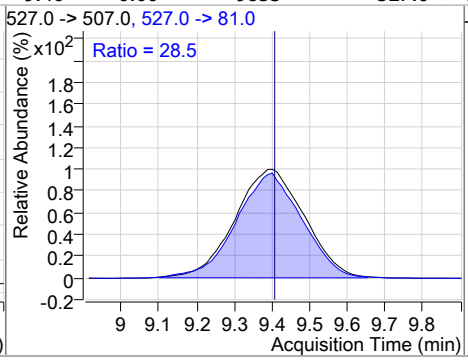
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.86	9.40	0.00	69372				

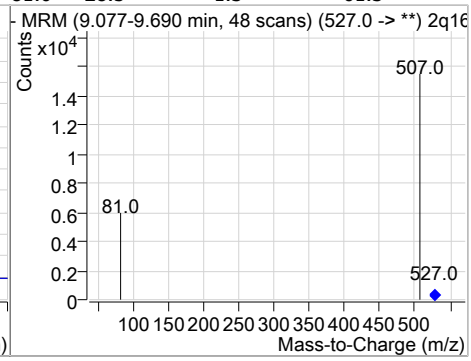


Perfluorinated Compounds by LC/MS/MS

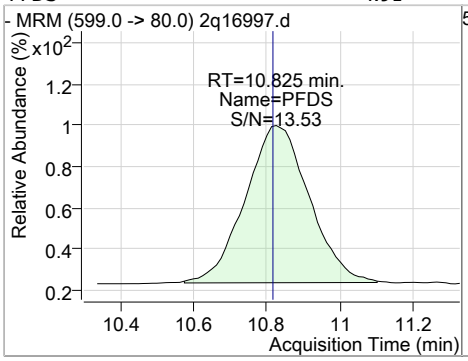
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	5.28	9.40	0.00	9853	527.0 -> 81.0	28.5	1.3	61.3

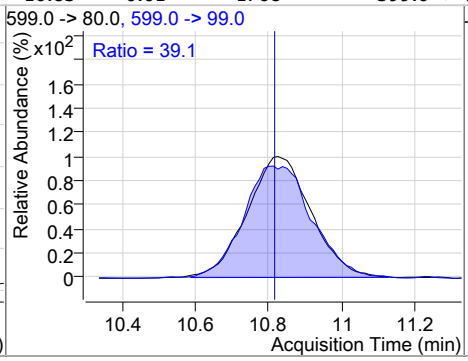


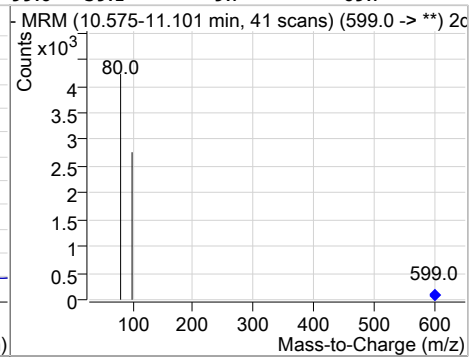




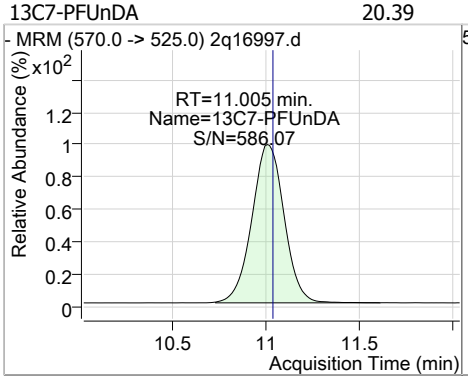
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	4.91	10.83	-0.01	1768	599.0 -> 99.0	39.1	9.7	69.7

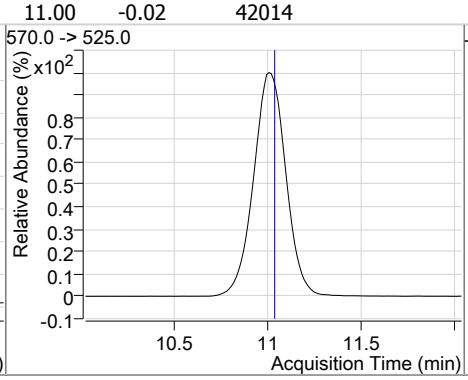


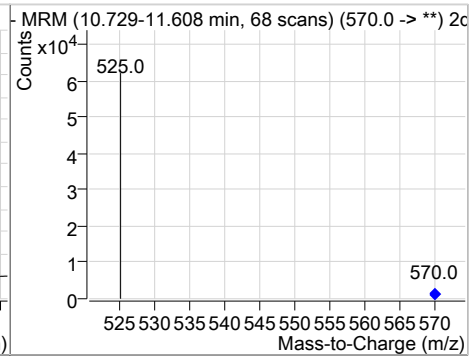




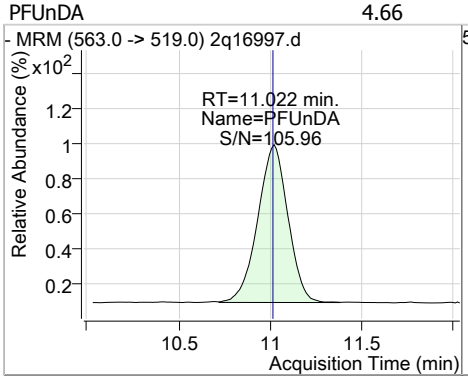
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.39	11.00	-0.02	42014				

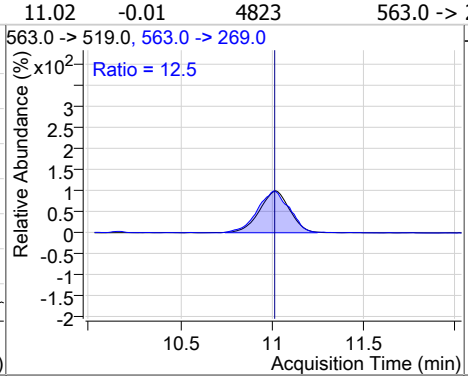


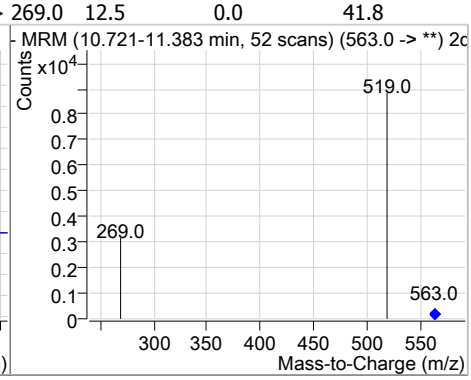




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	4.66	11.02	-0.01	4823	563.0 -> 269.0	12.5	0.0	41.8

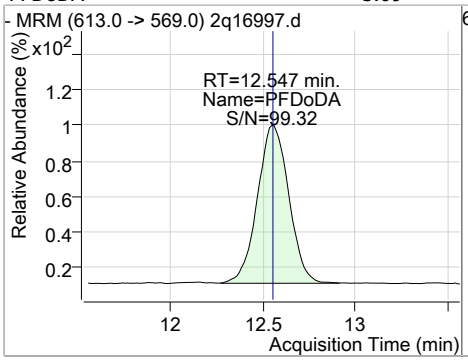


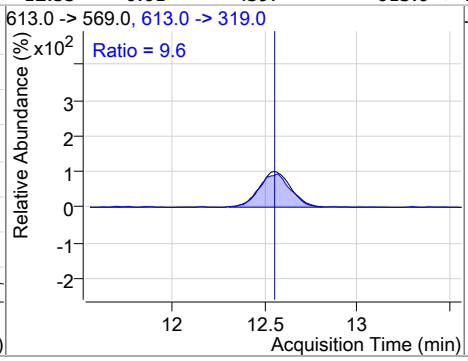


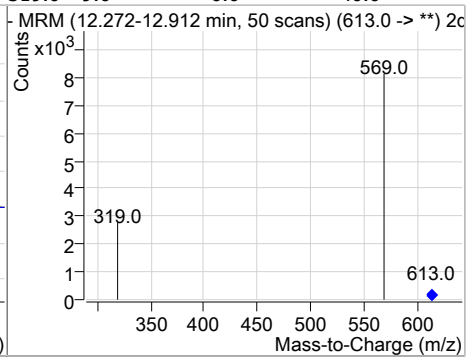


Perfluorinated Compounds by LC/MS/MS

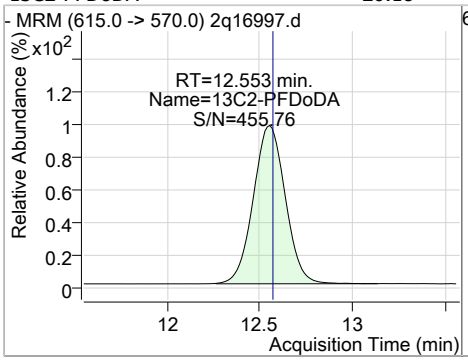
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	5.09	12.55	-0.01	4397	613.0 -> 319.0	9.6	0.0	40.0

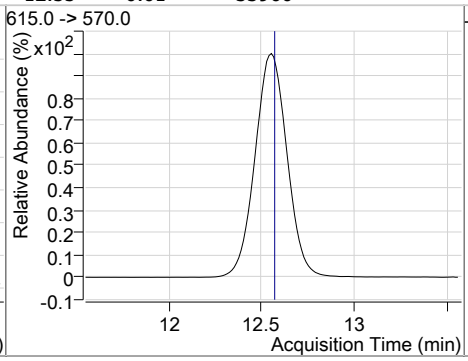


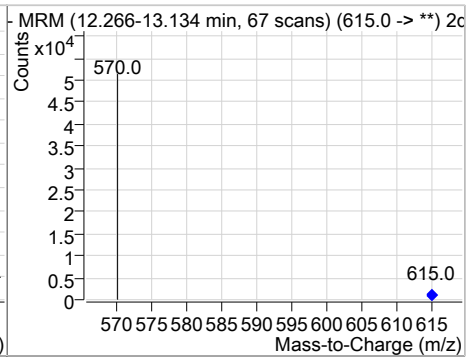




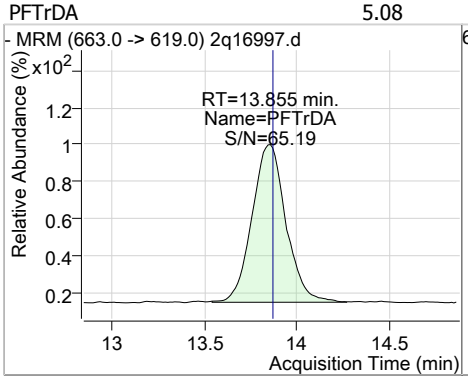
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.18	12.55	-0.01	33966				

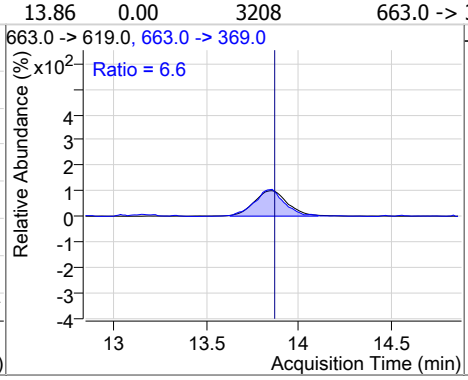


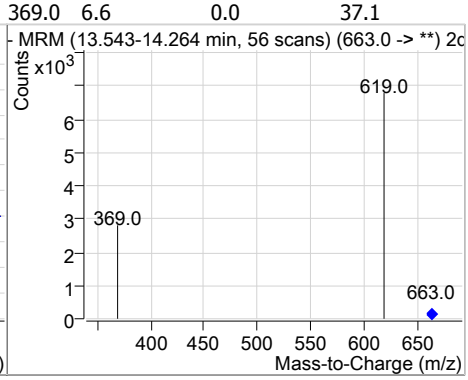




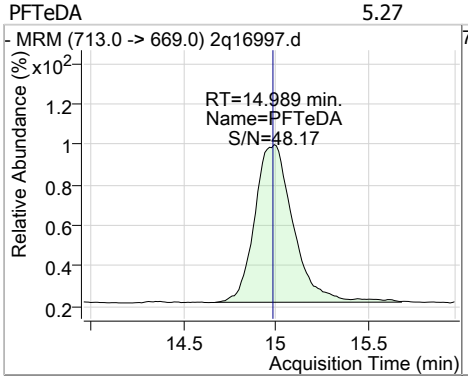
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	5.08	13.86	0.00	3208	663.0 -> 369.0	6.6	0.0	37.1

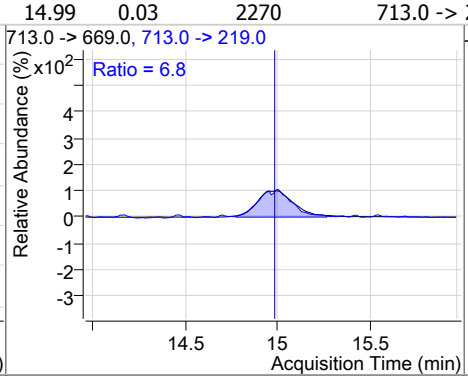


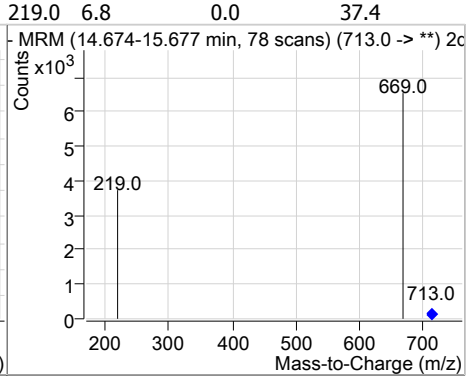




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	5.27	14.99	0.03	2270	713.0 -> 219.0	6.8	0.0	37.4

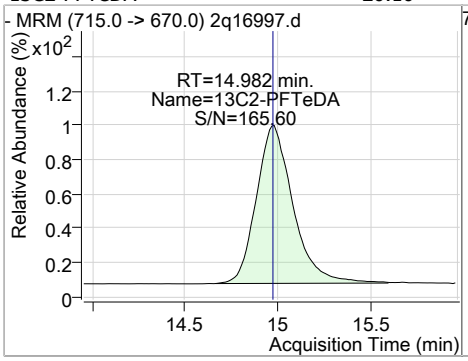


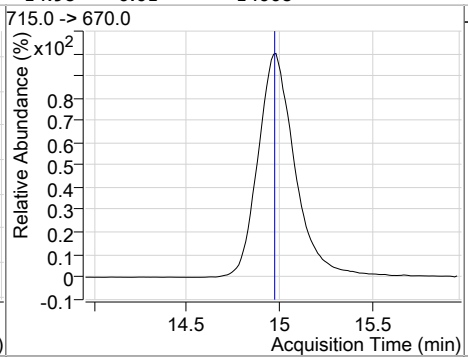


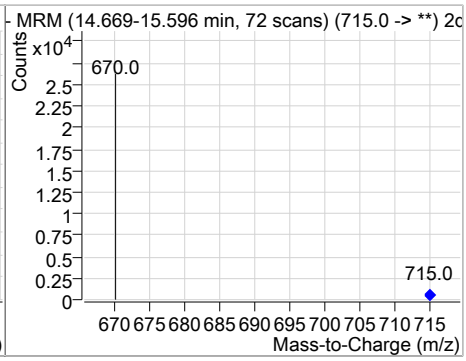


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.10	14.98	0.01	14608				







Manual Integration Approval Summary

Sample Number:	S2Q295-IC295	**Method:**	EPA 537M BY ID
Lab FileID:	2Q16997.D	**Analyst approved:**	07/13/18 12:48 Nancy Saunders
Injection Time:	07/12/18 10:22	**Supervisor approved:**	07/13/18 17:24 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.24	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.67	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 07/13/18 17:24

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16998.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/12/2018 10:43:02 AM
Sample Name : ic295-10
Vial : Vial 6
DA Method File : PFC_ID_071218_S2Q295.quantmethod.xml
Batch Name : s2q295.batch.bin
Sample Information : op70790,S2Q295,1.99,,,1.0,1,soil

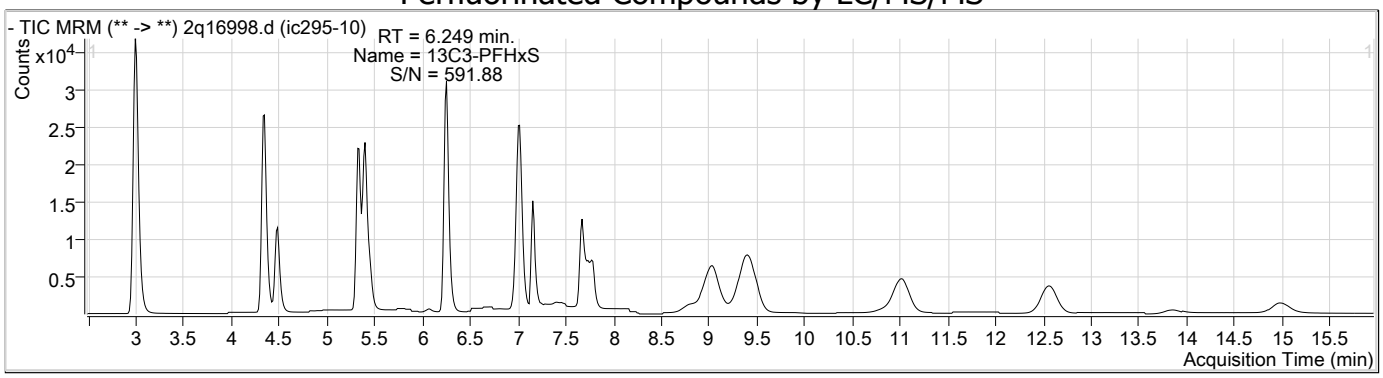
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	7.010	415.0 -> 370.0	16839	20.00	µg/L	0.014
13C4-PFOS	7.687	503.0 -> 80.0	9989	20.00	µg/L	0.012
M4-PFBA	2.991	217.0 -> 172.0	136453	20.00	µg/L	0.000
M5-PFPeA	4.350	268.0 -> 223.0	67836	20.00	µg/L	0.012
M5-PFHxA	5.401	318.0 -> 273.0	61553	20.00	µg/L	0.011
M4-PFHpA	6.255	367.0 -> 322.0	58645	20.00	µg/L	0.001
M8-PFOA	7.009	421.0 -> 376.0	27275	20.00	µg/L	0.014
M9-PFNA	7.753	472.0 -> 427.0	18834	20.00	µg/L	0.001
M6-PFDA	9.029	519.0 -> 474.0	57881	20.00	µg/L	0.013
M7-PFUnDA	11.017	570.0 -> 525.0	42550	20.00	µg/L	-0.012
M2-PFDoDA	12.553	615.0 -> 570.0	34819	20.00	µg/L	-0.012
M2-PFTeDA	14.970	715.0 -> 670.0	15138	20.00	µg/L	0.001
M8-FOSA	7.155	506.0 -> 78.0	34355	20.00	µg/L	0.013
M3-PFBS	4.481	302.0 -> 99.0	21499	20.00	µg/L	0.013
M3-PFHxS	6.249	402.0 -> 99.0	16952	20.00	µg/L	0.013
M8-PFOS	7.685	507.0 -> 99.0	8499	20.00	µg/L	0.012
M2-4:2FTS	5.335	329.0 -> 309.0	56566	20.00	µg/L	0.012
M2-6:2FTS	7.031	429.0 -> 409.0	38537	20.00	µg/L	0.013
M2-8:2FTS	9.398	529.0 -> 509.0	73282	20.00	µg/L	0.000
M3-MeFOSAA	7.670	573.0 -> 419.0	16096	20.00	µg/L	0.013
System Monitoring Compounds						
13C2-4:2FTS	5.335	329.0 -> 309.0	56549	20.04	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C2-6:2FTS	7.031	429.0 -> 409.0	38543	19.75	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.8%		
13C2-8:2FTS	9.398	529.0 -> 509.0	72413	19.69	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.4%		
13C2-PFDoDA	12.553	615.0 -> 570.0	34869	20.71	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.6%		
13C2-PFTeDA	14.970	715.0 -> 670.0	14940	20.56	µg/L	0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.8%		
13C3-PFBS	4.481	302.0 -> 99.0	21494	20.62	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.1%		
13C3-PFHxS	6.249	402.0 -> 99.0	16960	20.32	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
13C4-PFBA	2.991	217.0 -> 172.0	136336	20.51	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.6%		
13C4-PFHpA	6.255	367.0 -> 322.0	58632	20.72	µg/L	0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.6%		
13C5-PFHxA	5.401	318.0 -> 273.0	61538	20.75	µg/L	0.011
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.7%		
13C5-PFPeA	4.350	268.0 -> 223.0	67833	20.68	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.4%		
13C6-PFDA	9.029	519.0 -> 474.0	57458	20.73	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.6%		

Perfluorinated Compounds by LC/MS/MS

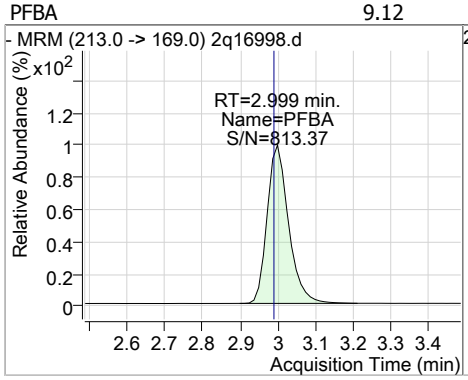
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	11.017	570.0 -> 525.0	42625	20.68	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.4%			
13C8-FOSA	7.155	506.0 -> 78.0	34356	21.36	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.8%			
13C8-PFOA	7.009	421.0 -> 376.0	27278	20.76	µg/L		0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.8%			
13C8-PFOS	7.685	507.0 -> 99.0	8485	20.45	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%			
13C9-PFNA	7.753	472.0 -> 427.0	18847	21.37	µg/L		0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.9%			
d3-MeFOSAA	7.670	573.0 -> 419.0	16096	20.72	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.6%			
M2-PFOA	7.010	415.0 -> 370.0	16829	19.99	ng/ml		0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%			
M4-PFOS	7.687	503.0 -> 80.0	9979	19.99	ng/ml		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%			
Target Compounds							**QValue**
4:2FTS	5.324	327.0 -> 307.0	13833	9.51	µg/L		99
6:2FTS	7.020	427.0 -> 407.0	9443	9.86	µg/L		96
8:2FTS	9.401	527.0 -> 507.0	18903	9.77	µg/L		95
EtFOSAA	7.782	584.0 -> 419.0	2484	9.55	µg/L		99
FOSA	7.158	498.0 -> 78.0	7865	9.33	µg/L		100
MeFOSAA	7.672	570.0 -> 419.0	2913	9.82	µg/L		96
PFBA	2.999	213.0 -> 169.0	9871	9.12	µg/L		100
PFBS	4.472	299.0 -> 80.0	13599	9.22	µg/L		99
PFDA	9.032	513.0 -> 469.0	10120	9.38	µg/L		99
PFDoDA	12.560	613.0 -> 569.0	8519	9.59	µg/L		98
PFDS	10.838	599.0 -> 80.0	3480	9.55	µg/L		99
PFHpA	6.258	363.0 -> 319.0	20580	9.42	µg/L		99
PFHpS	6.967	449.0 -> 80.0	4419	9.27	µg/L		98
PFHxA	5.403	313.0 -> 269.0	9497	9.15	µg/L		100
PFHxS	6.239	399.0 -> 80.0	9327	9.29	µg/L	m	99
PFNA	7.755	463.0 -> 419.0	3328	8.96	µg/L		94
PFNS	8.796	549.0 -> 80.0	7288	9.31	µg/L		99
PFOA	7.011	413.0 -> 369.0	6833	9.40	µg/L		99
PFOS	7.688	499.0 -> 80.0	4912	9.23	µg/L	m	94
PFPeA	4.341	263.0 -> 219.0	30045	9.49	µg/L		100
PFPeS	5.446	349.0 -> 80.0	8639	9.22	µg/L		98
PFTeDA	14.989	713.0 -> 669.0	4288	9.52	µg/L		100
PFTrDA	13.855	663.0 -> 619.0	6315	9.56	µg/L		99
PFUnDA	11.034	563.0 -> 519.0	9743	9.31	µg/L		99

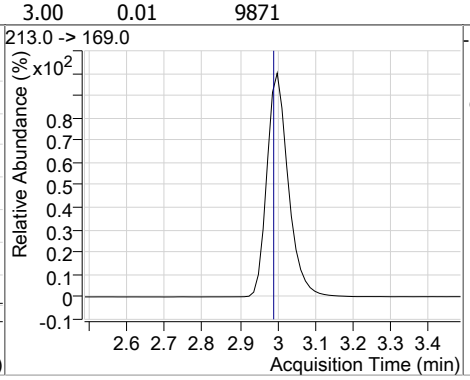
 # = Qualifier out of range, m = manually integrated, + = Area summed

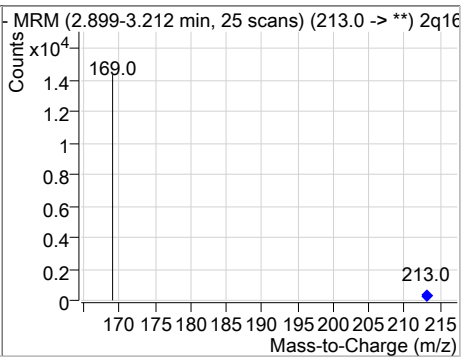
Perfluorinated Compounds by LC/MS/MS



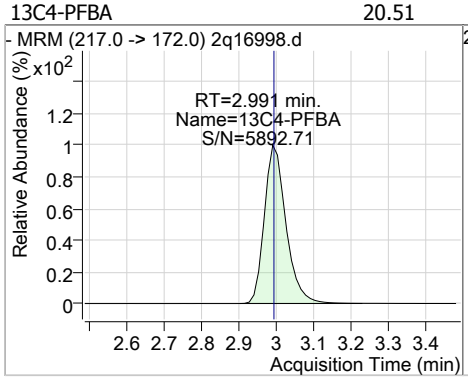
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	9.12	3.00	0.01	9871				

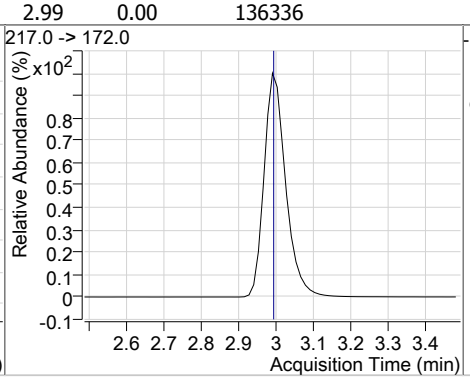


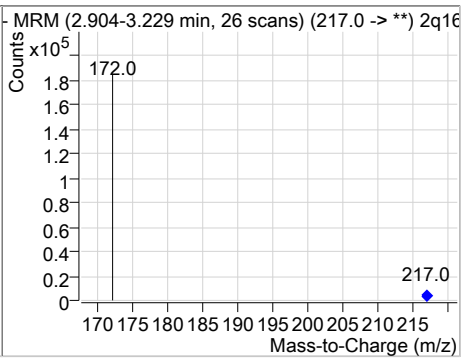




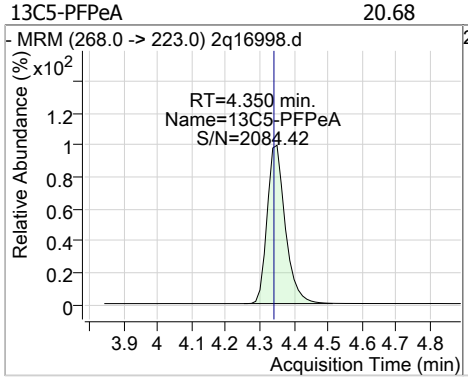
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.51	2.99	0.00	136336				

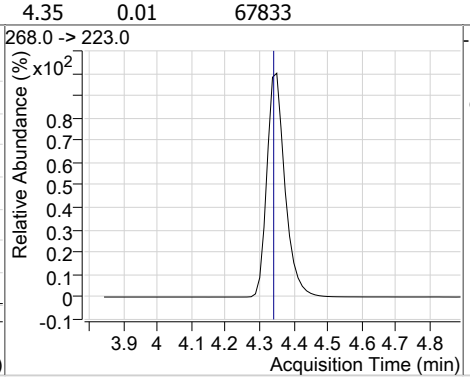


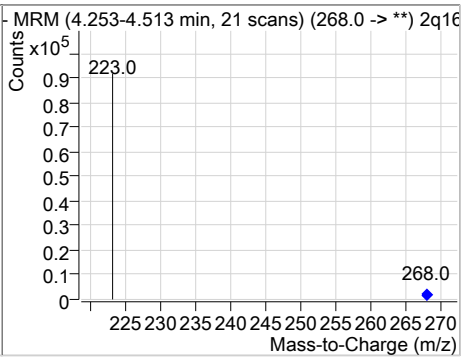




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.68	4.35	0.01	67833				

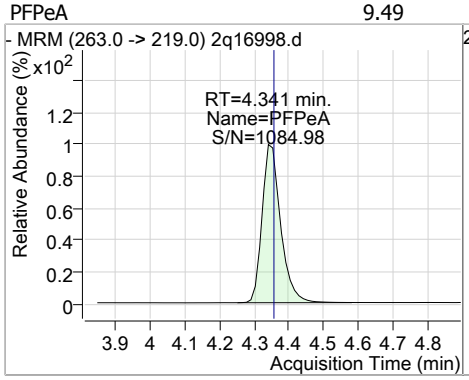


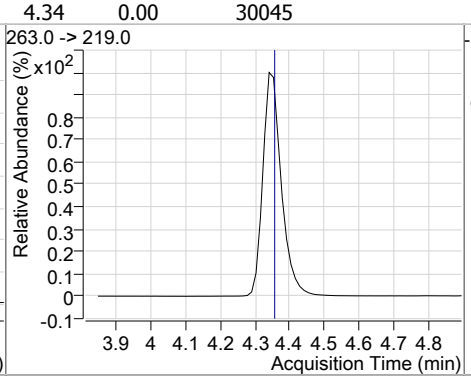


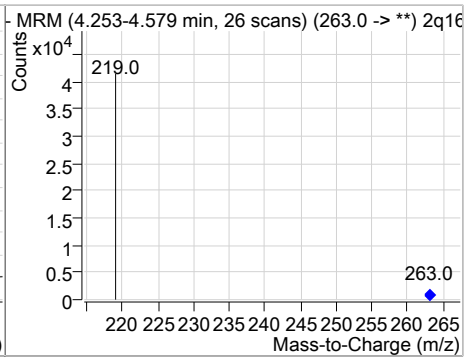


Perfluorinated Compounds by LC/MS/MS

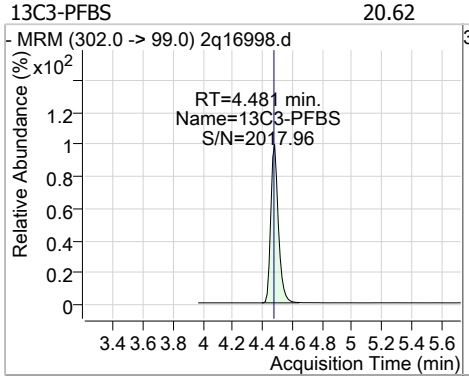
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	9.49	4.34	0.00	30045				

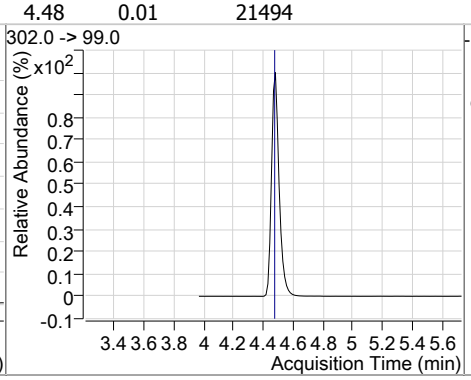


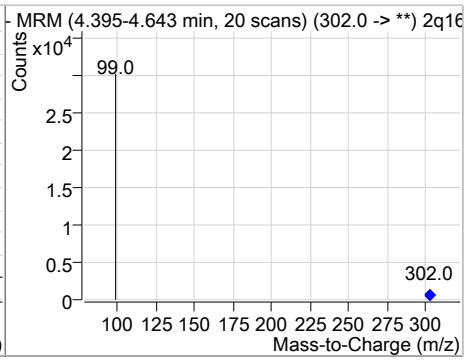




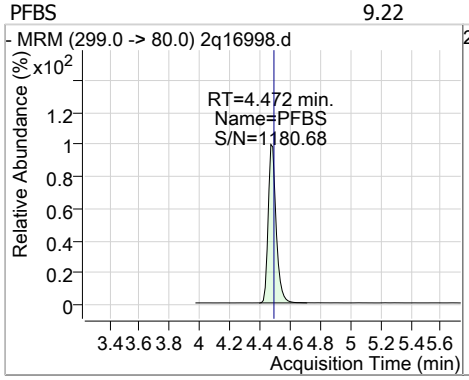
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.62	4.48	0.01	21494				

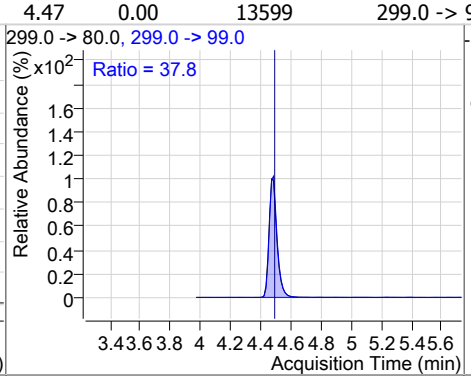


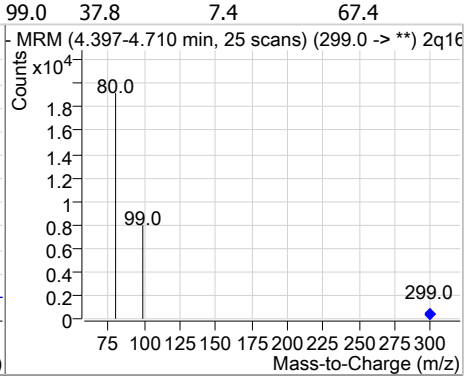




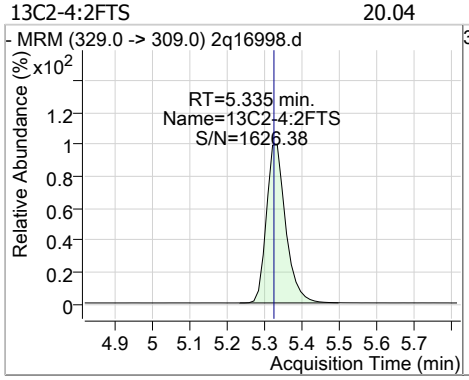
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	9.22	4.47	0.00	13599	299.0 -> 99.0	37.8	7.4	67.4

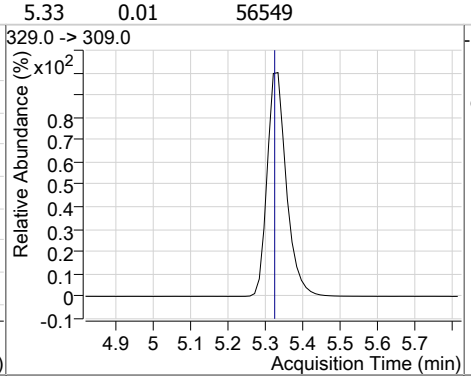


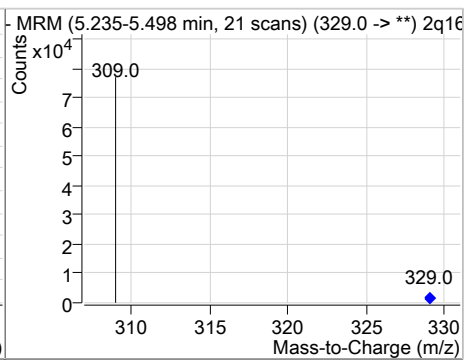




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.04	5.33	0.01	56549				

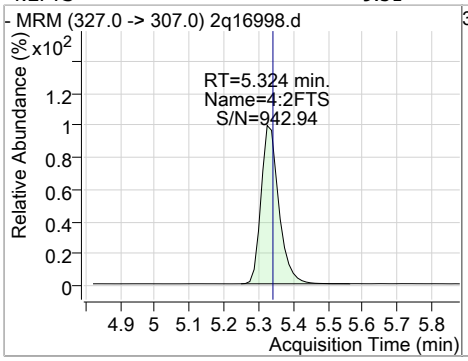


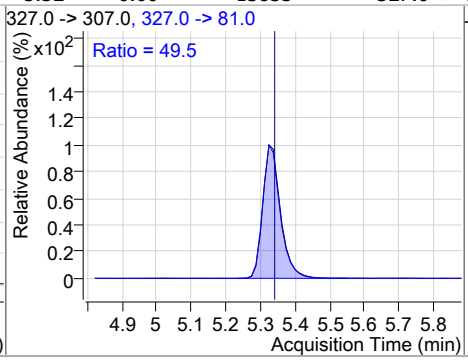


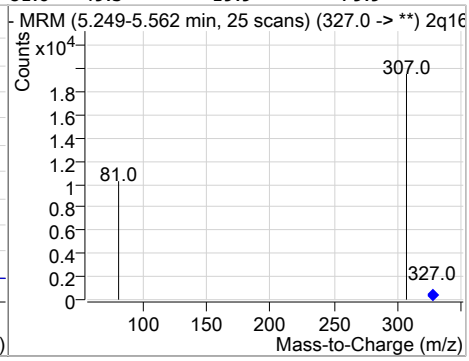


Perfluorinated Compounds by LC/MS/MS

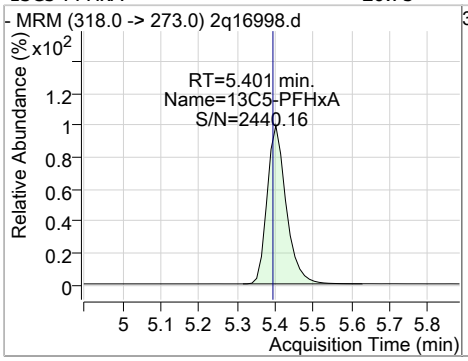
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	9.51	5.32	0.00	13833	327.0 -> 81.0	49.5	19.9	79.9

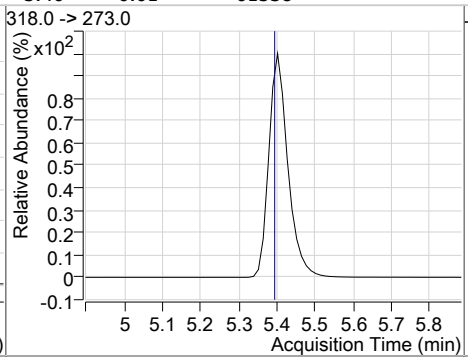


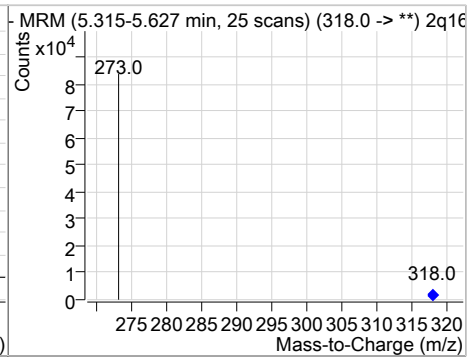




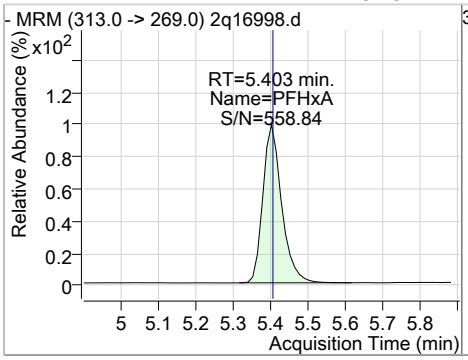
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.75	5.40	0.01	61538				

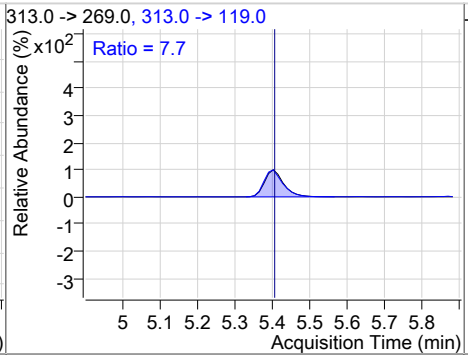


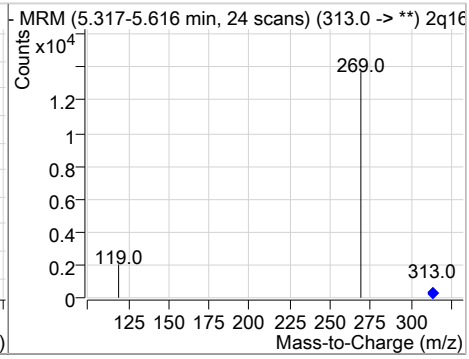




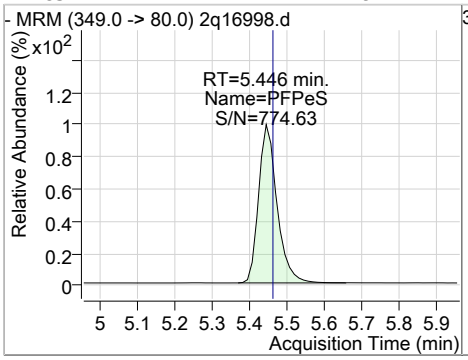
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	9.15	5.40	0.01	9497	313.0 -> 119.0	7.7	0.0	37.6

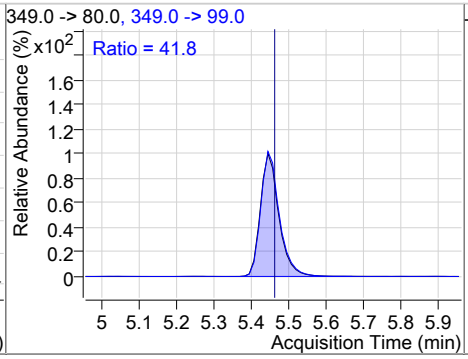


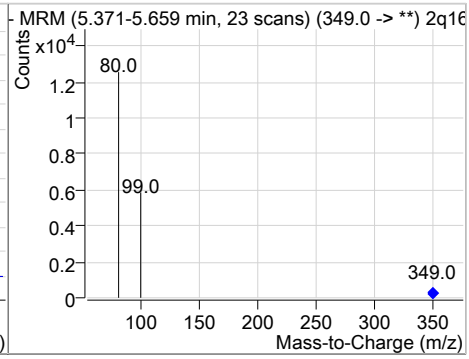




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	9.22	5.45	0.00	8639	349.0 -> 99.0	41.8	10.8	70.8

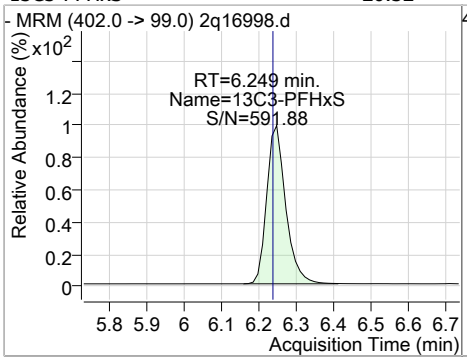


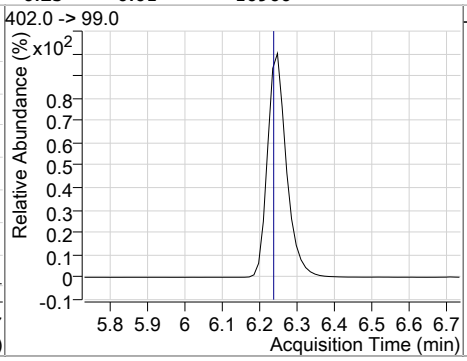


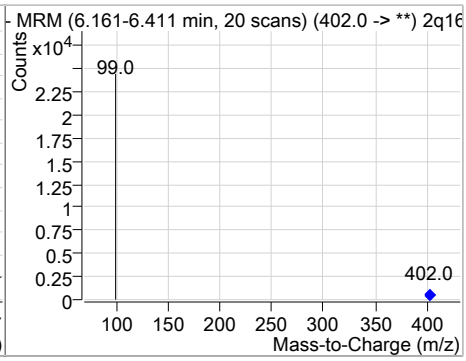


Perfluorinated Compounds by LC/MS/MS

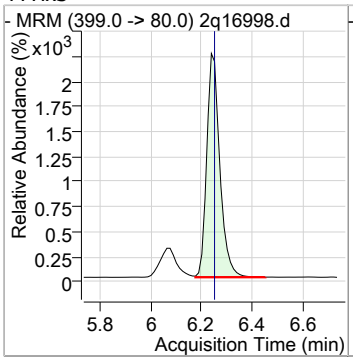
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.32	6.25	0.01	16960				

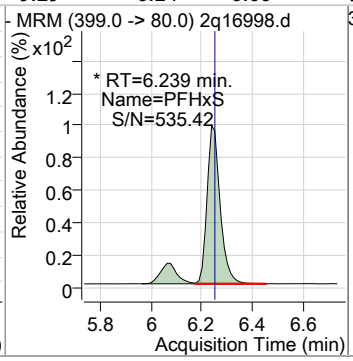


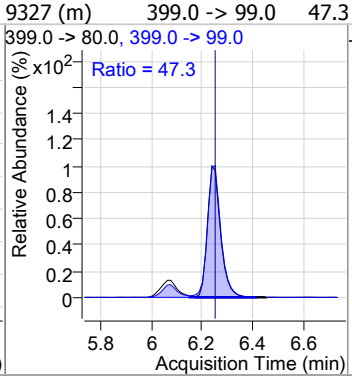


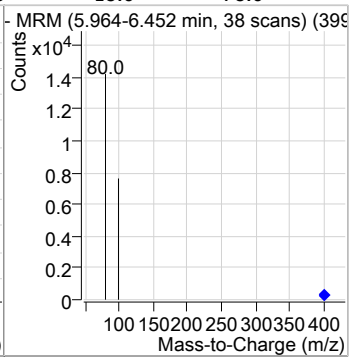


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	9.29	6.24	0.00	9327 (m)	399.0 -> 99.0	47.3	18.0	78.0

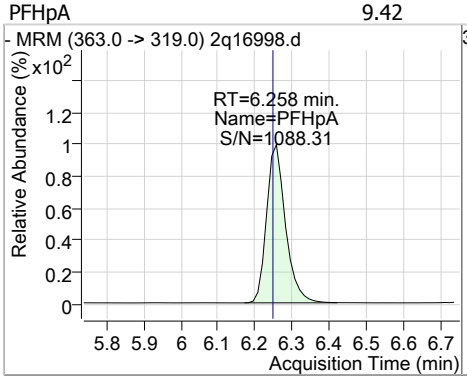


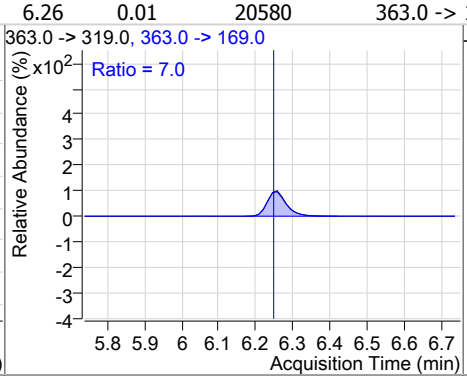


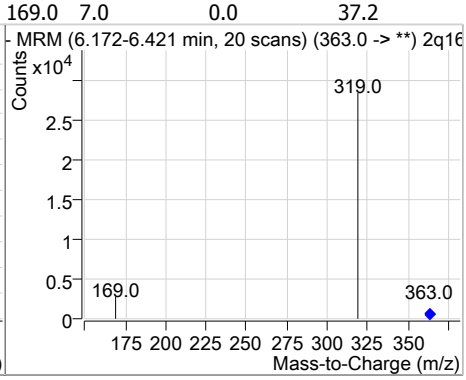




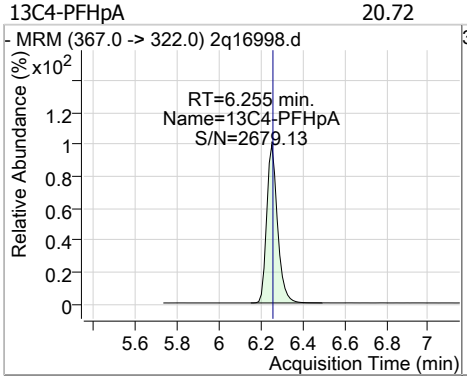
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	9.42	6.26	0.01	20580	363.0 -> 169.0	7.0	0.0	37.2

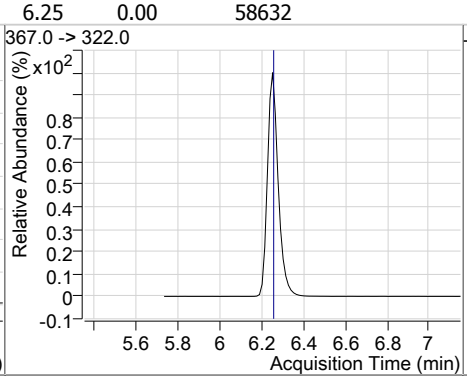


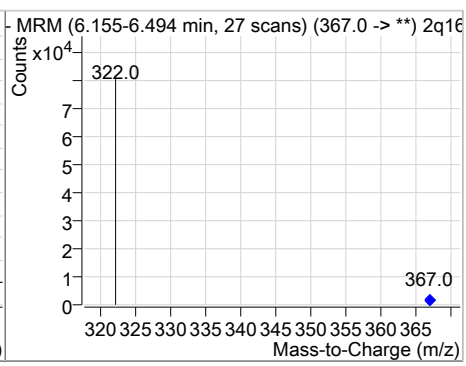




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.72	6.25	0.00	58632				

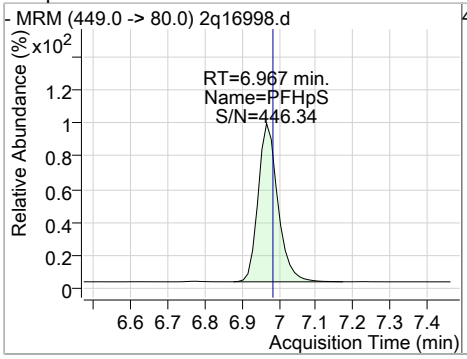


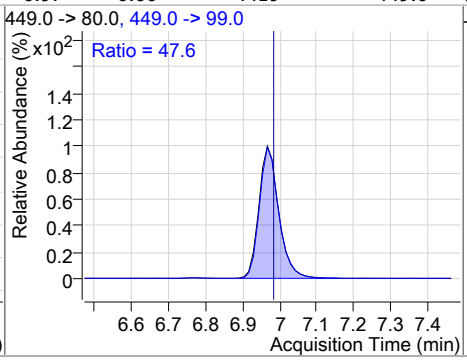


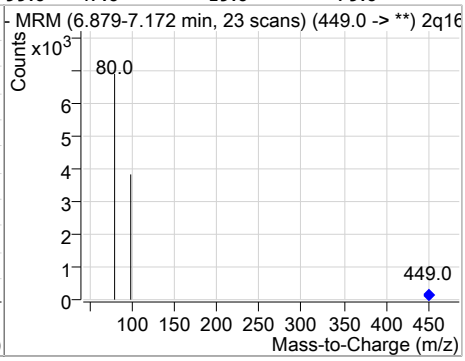


Perfluorinated Compounds by LC/MS/MS

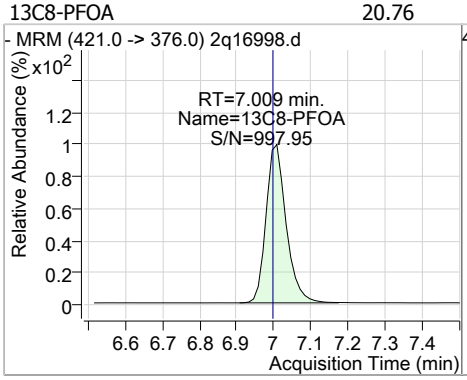
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	9.27	6.97	0.00	4419	449.0 -> 99.0	47.6	19.0	79.0

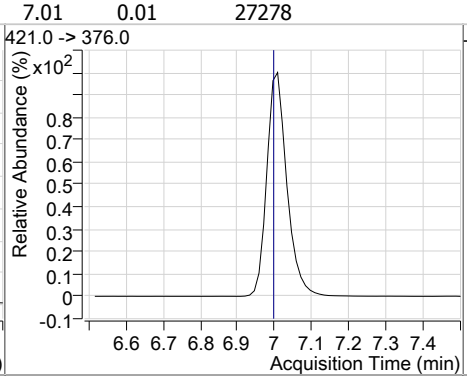


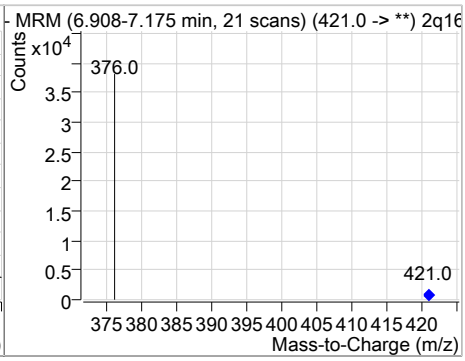




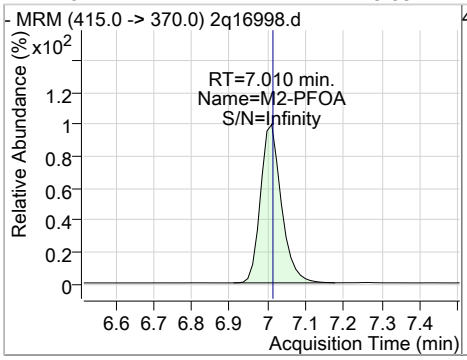
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.76	7.01	0.01	27278				

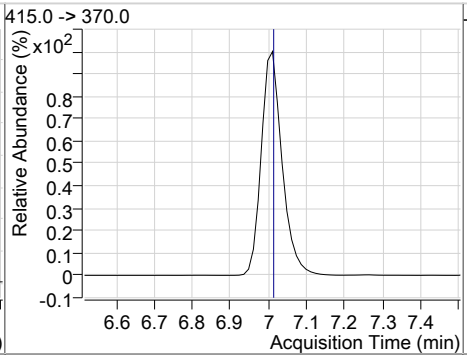


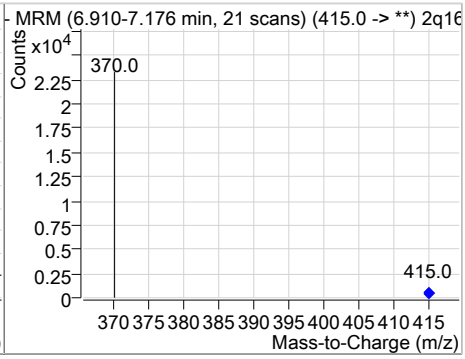




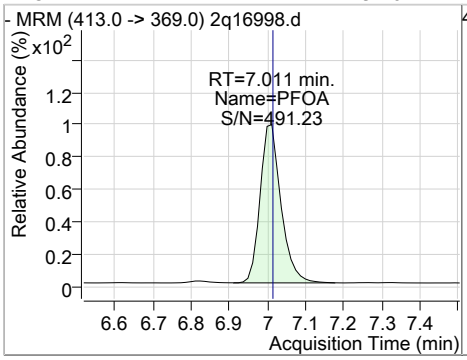
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	19.99	7.01	0.01	16829				

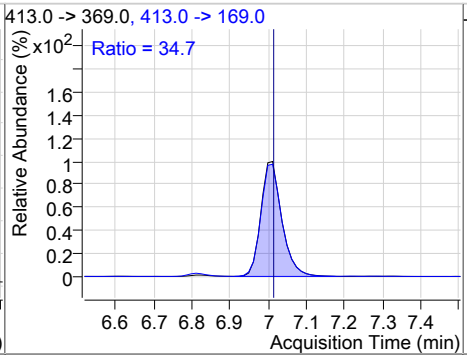


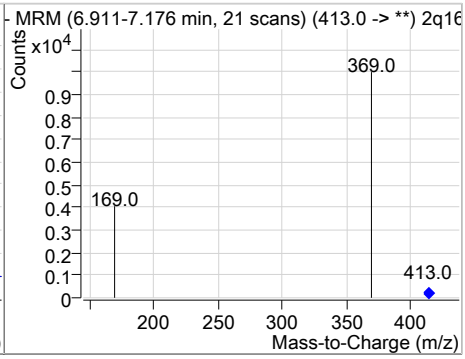




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	9.40	7.01	0.01	6833	413.0 -> 169.0	34.7	5.0	65.0

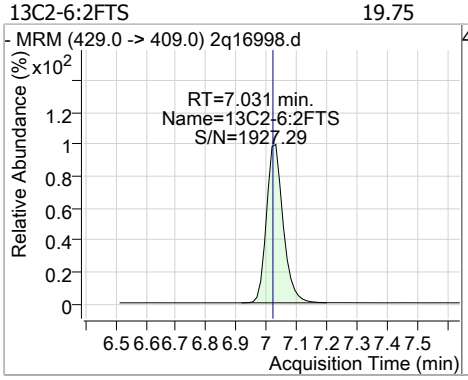


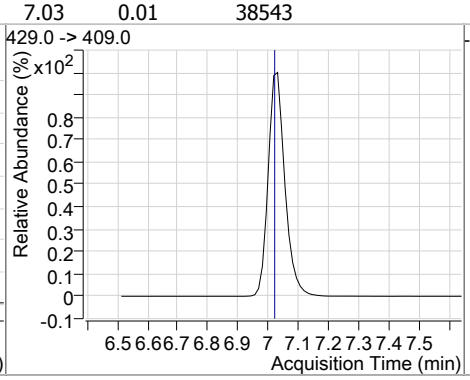


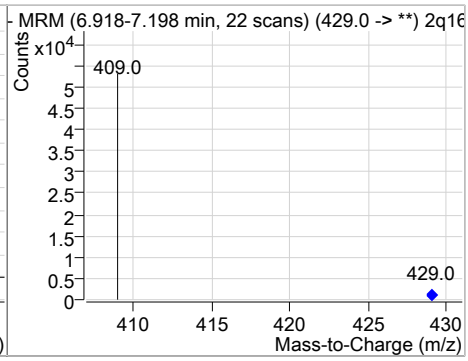


Perfluorinated Compounds by LC/MS/MS

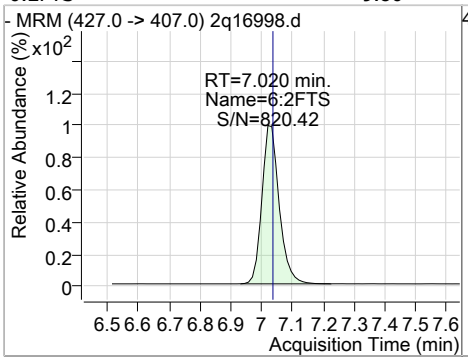
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.75	7.03	0.01	38543				

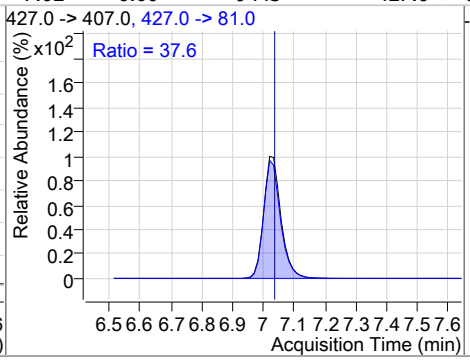


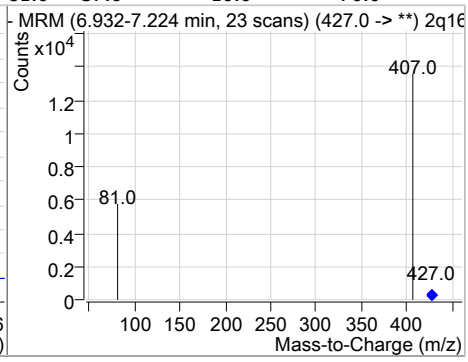




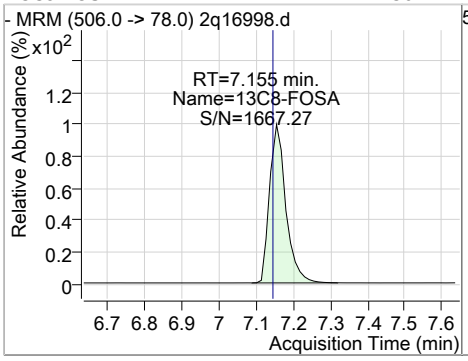
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	9.86	7.02	0.00	9443	427.0 -> 81.0	37.6	10.0	70.0

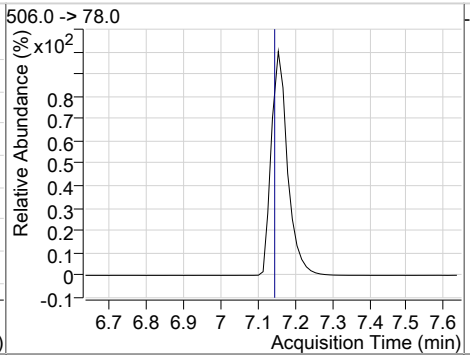


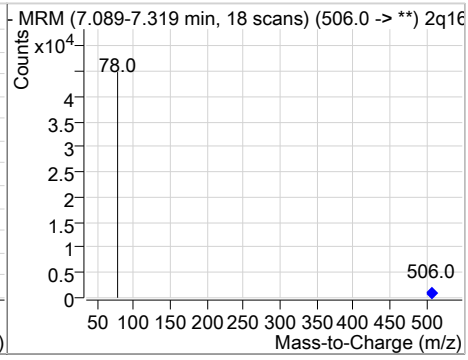




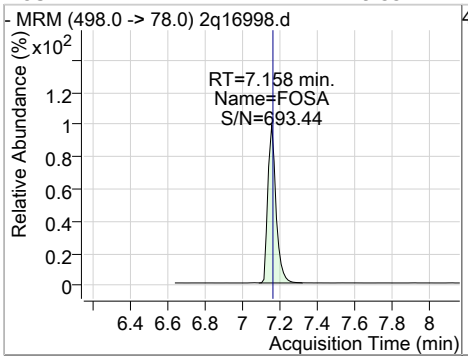
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.36	7.16	0.01	34356				

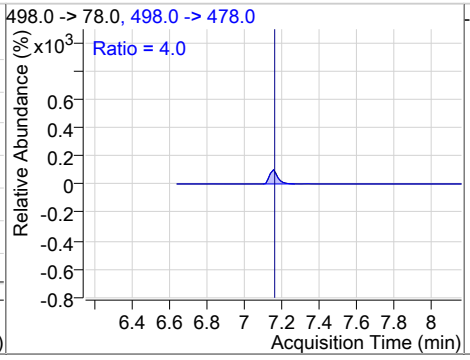


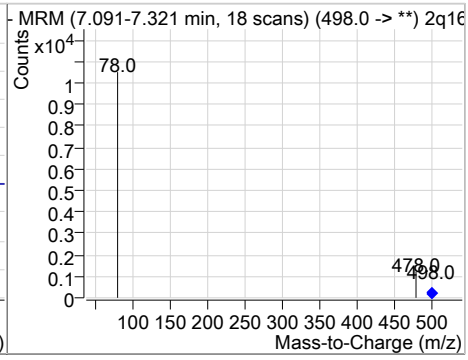




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	9.33	7.16	0.01	7865	498.0 -> 478.0	4.0	0.0	34.0

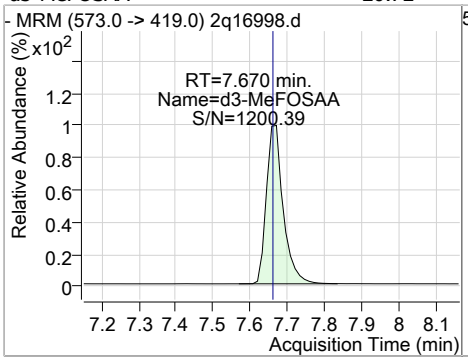


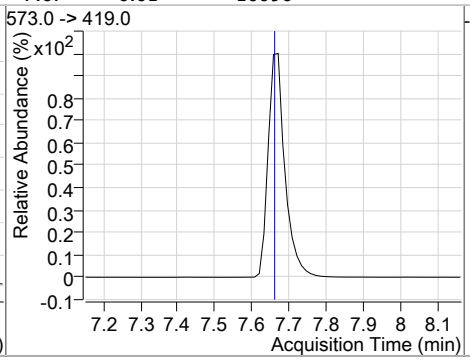


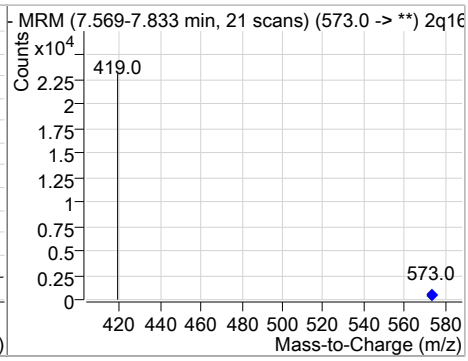


Perfluorinated Compounds by LC/MS/MS

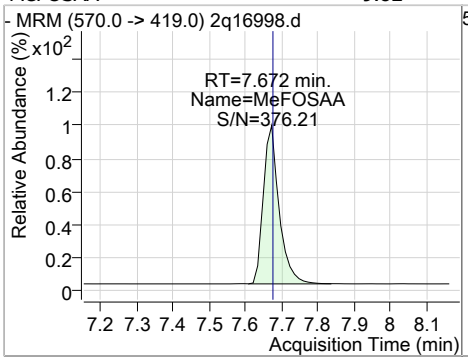
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.72	7.67	0.01	16096				

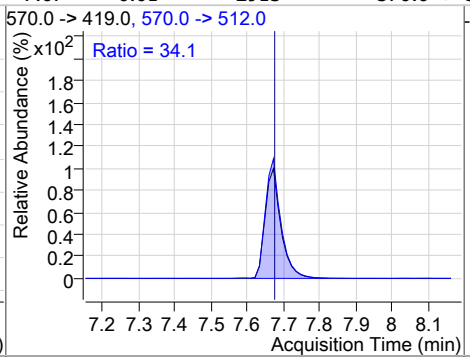


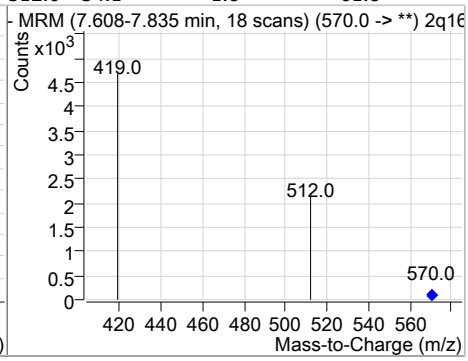




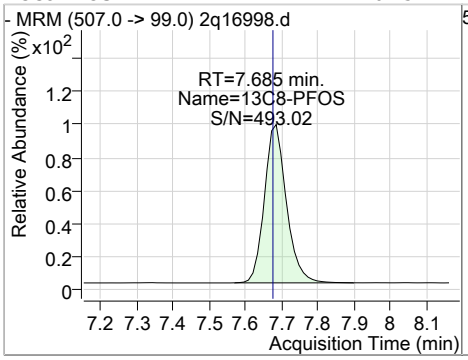
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	9.82	7.67	0.01	2913	570.0 -> 512.0	34.1	1.8	61.8

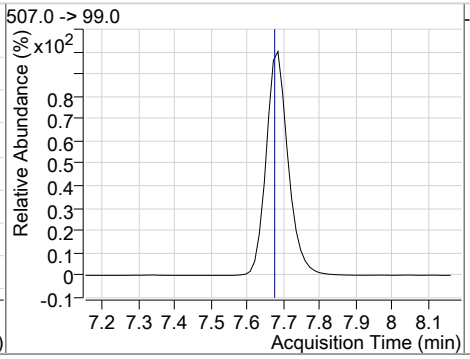


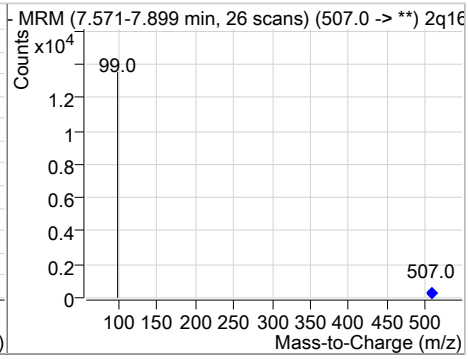




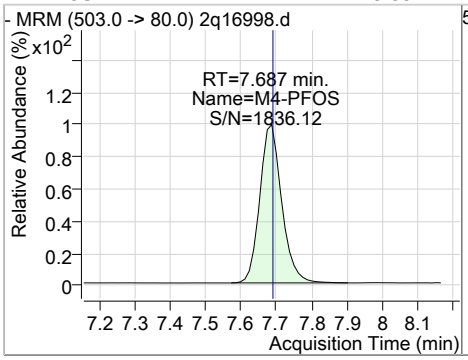
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.45	7.69	0.01	8485				

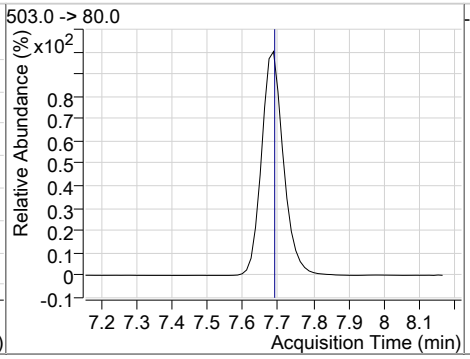


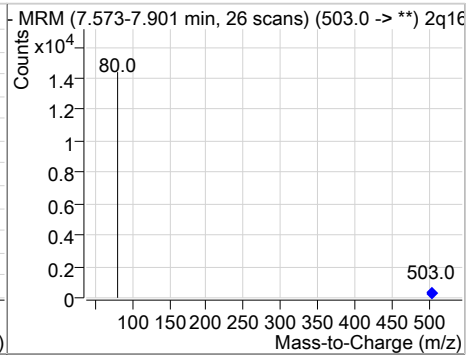




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	19.99	7.69	0.01	9979				

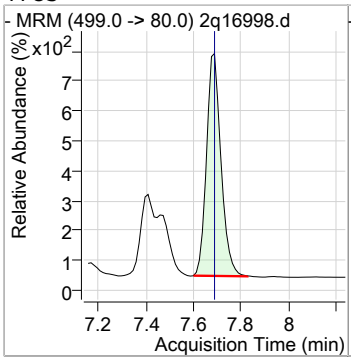


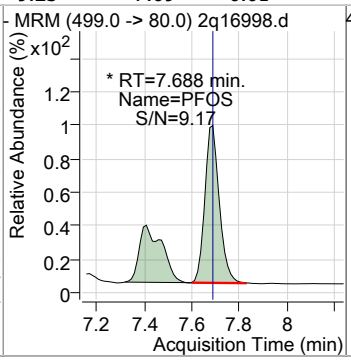


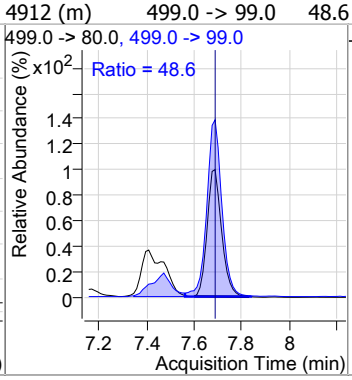


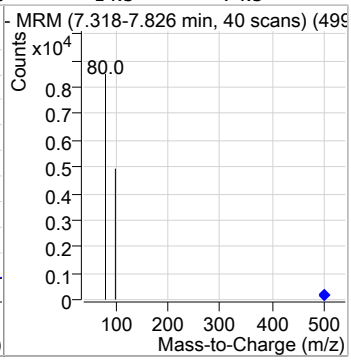
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	9.23	7.69	0.01	4912 (m)	499.0 -> 99.0	48.6	14.5	74.5

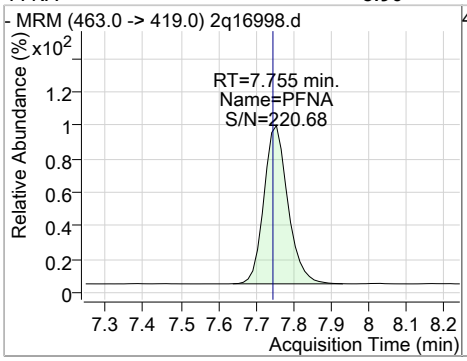


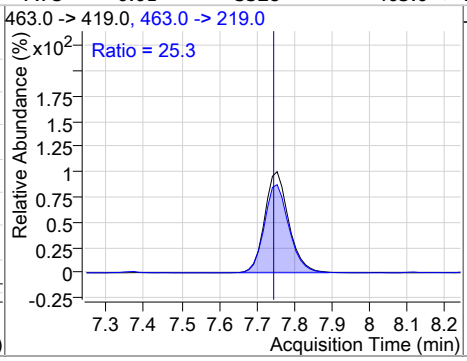


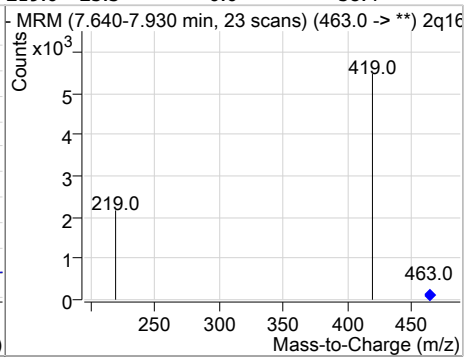




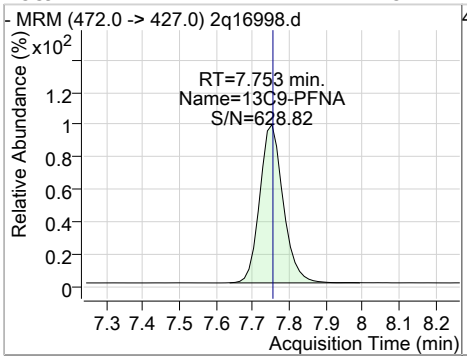
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	8.96	7.75	0.01	3328	463.0 -> 219.0	25.3	0.0	58.4

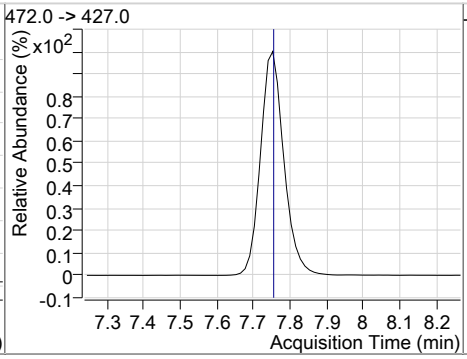


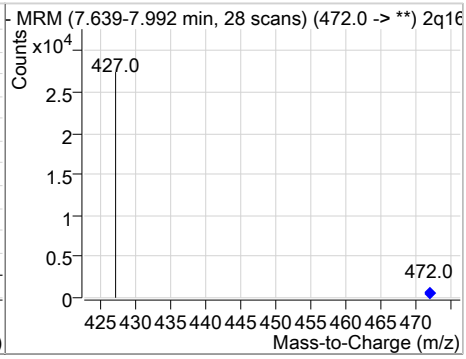




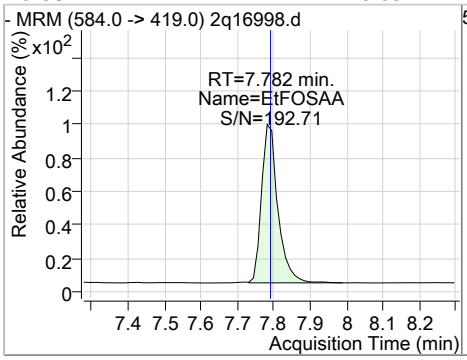
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.37	7.75	0.00	18847				

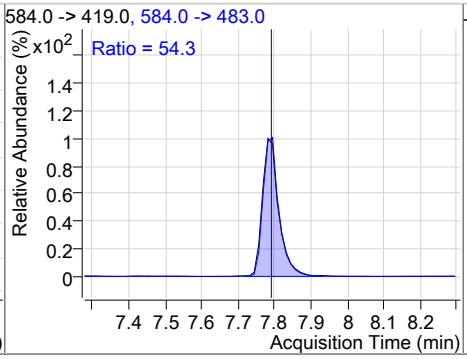


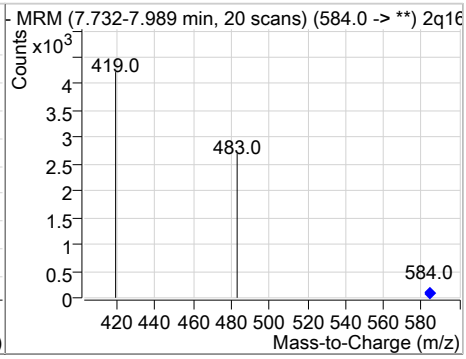




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	9.55	7.78	0.00	2484	584.0 -> 483.0	54.3	24.8	84.8

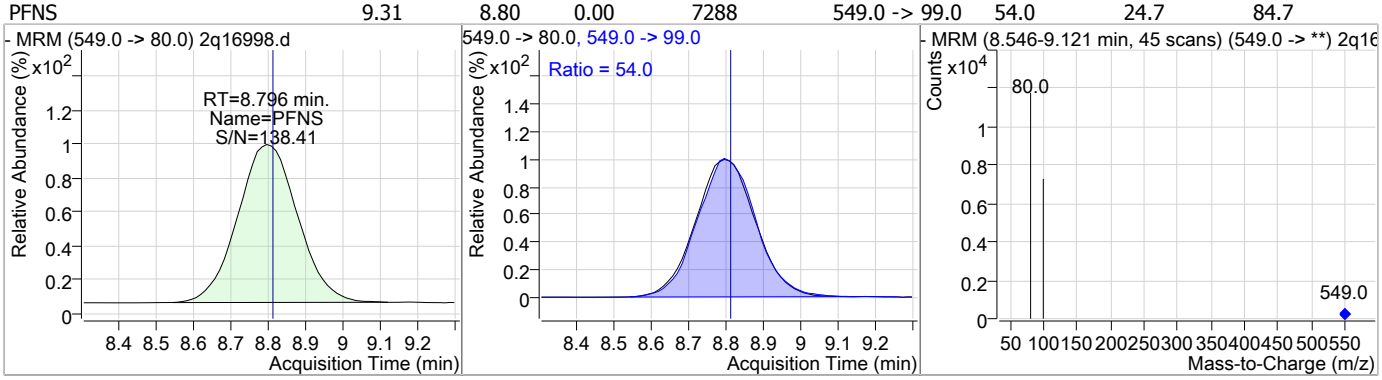




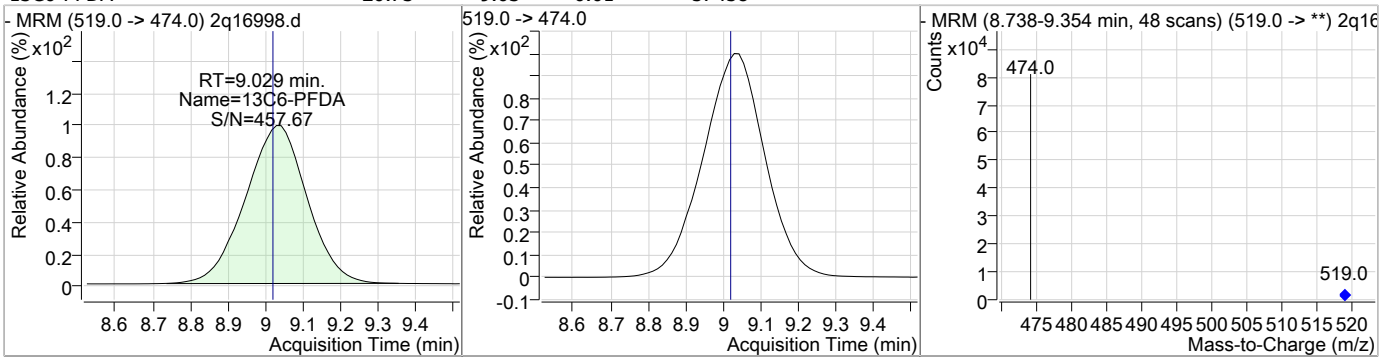


Perfluorinated Compounds by LC/MS/MS

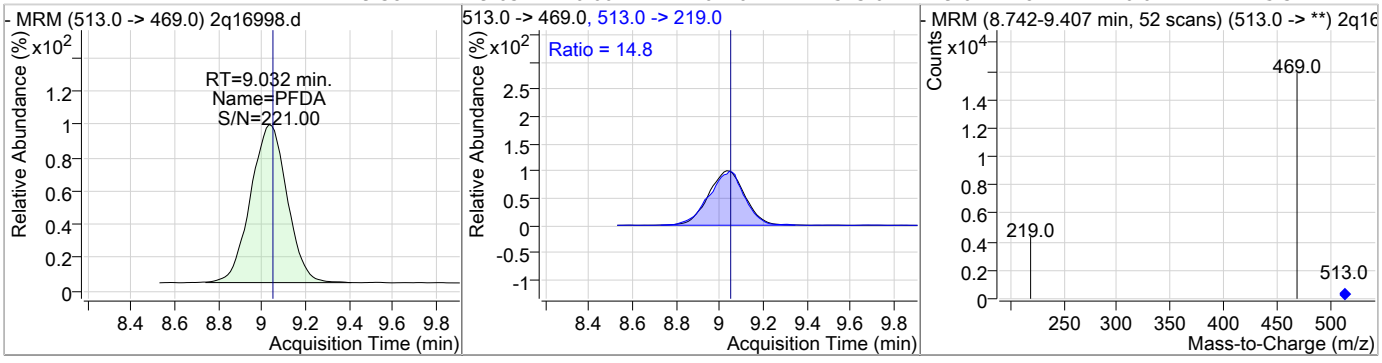
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	9.31	8.80	0.00	7288	549.0 -> 99.0	54.0	24.7	84.7



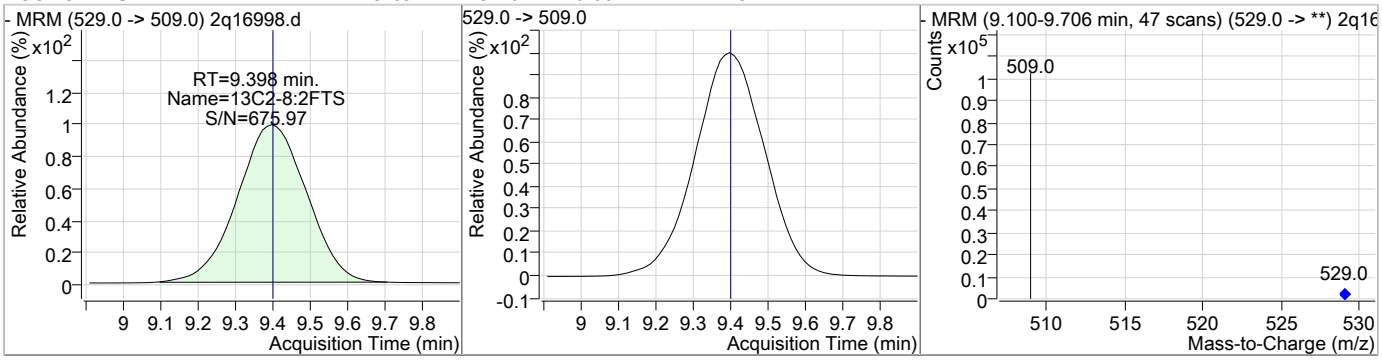
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.73	9.03	0.01	57458				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	9.38	9.03	0.00	10120	513.0 -> 219.0	14.8	0.0	45.3

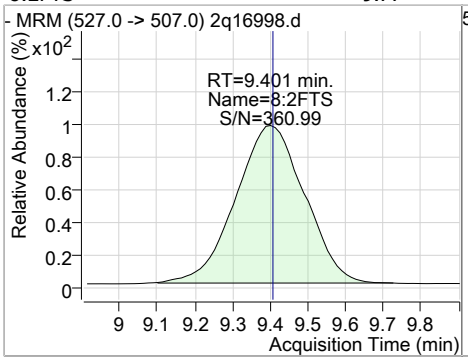


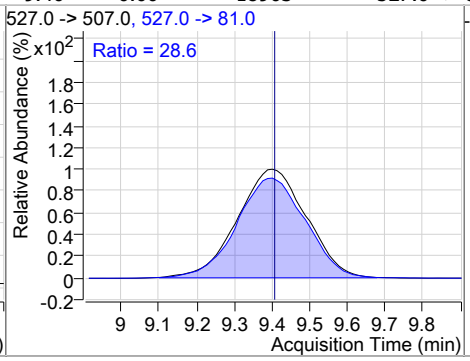
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.69	9.40	0.00	72413				

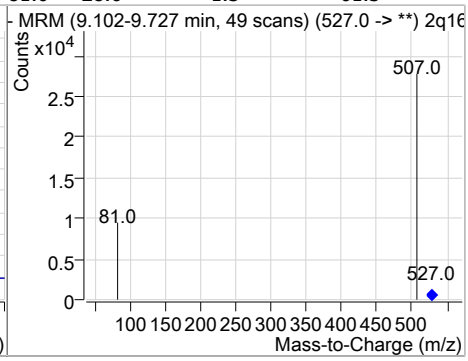


Perfluorinated Compounds by LC/MS/MS

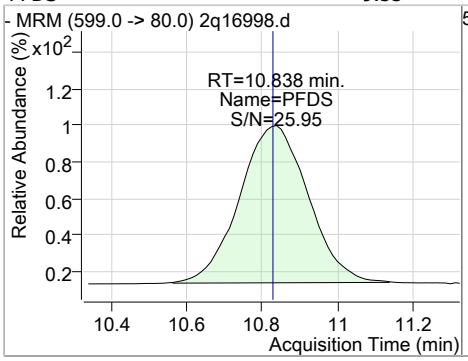
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	9.77	9.40	0.00	18903	527.0 -> 81.0	28.6	1.3	61.3

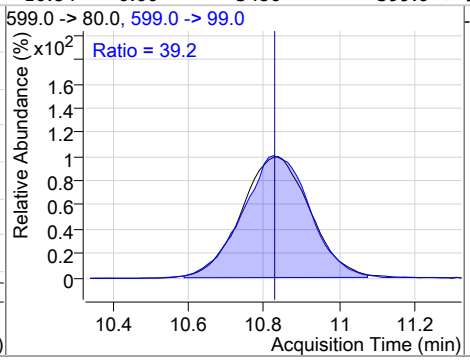


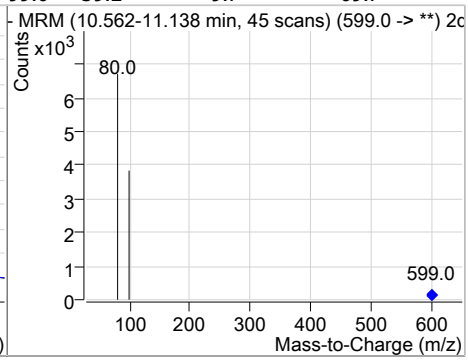




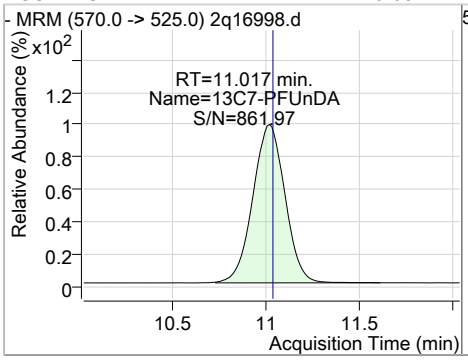
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	9.55	10.84	0.00	3480	599.0 -> 99.0	39.2	9.7	69.7

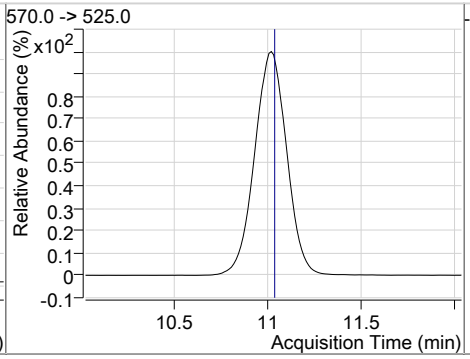


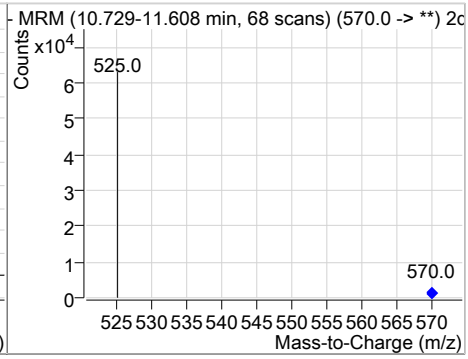




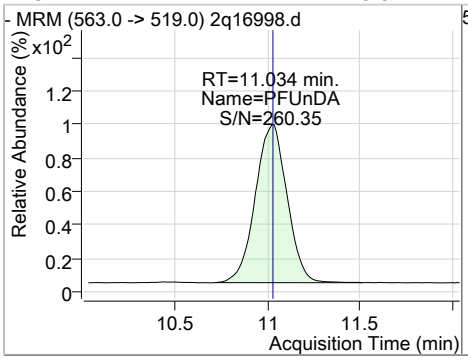
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.68	11.02	-0.01	42625				

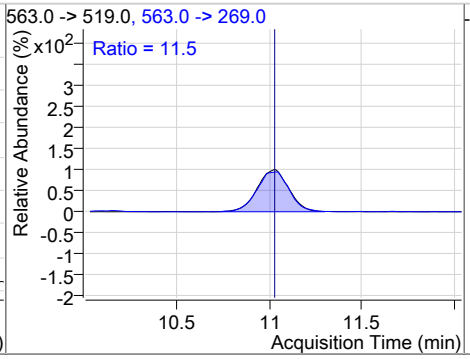


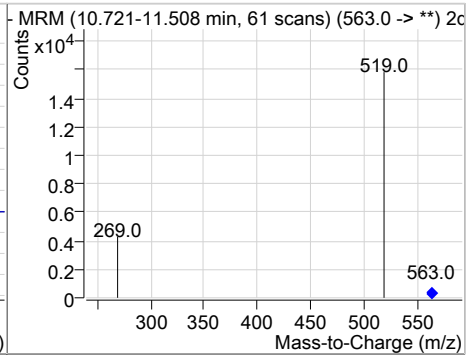




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	9.31	11.03	0.00	9743	563.0 -> 269.0	11.5	0.0	41.8

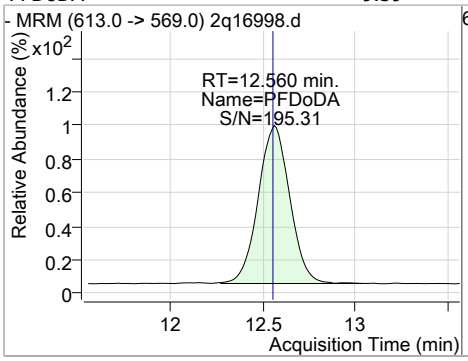


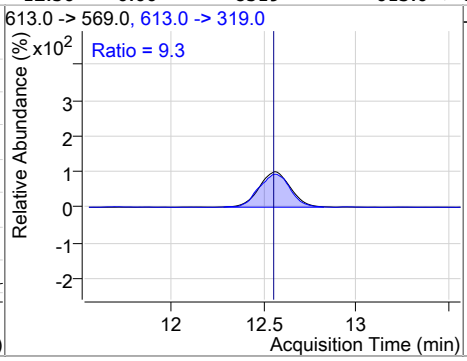


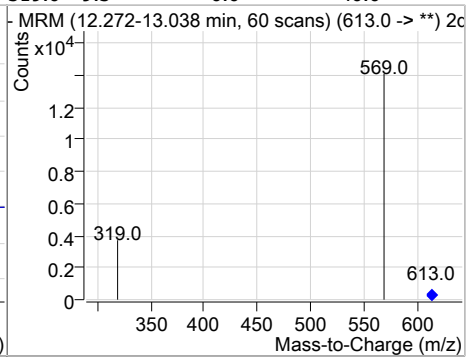


Perfluorinated Compounds by LC/MS/MS

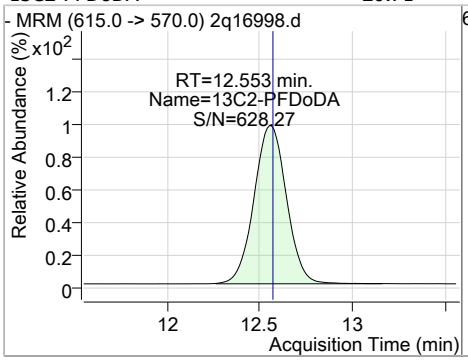
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	9.59	12.56	0.00	8519	613.0 -> 319.0	9.3	0.0	40.0

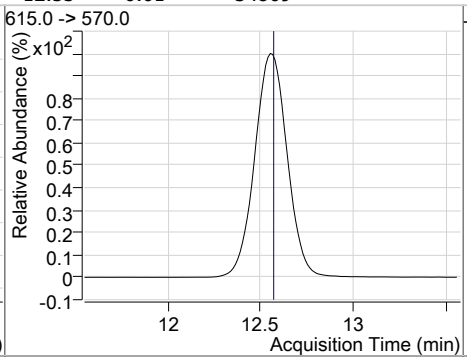


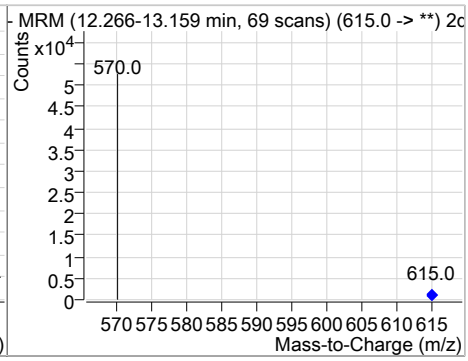




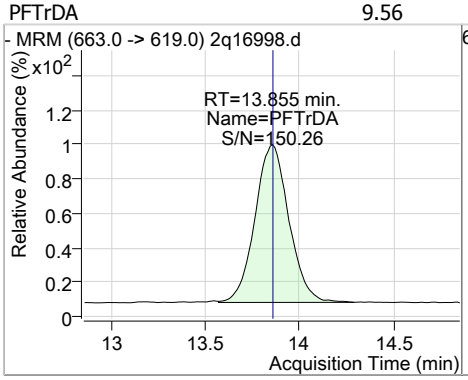
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.71	12.55	-0.01	34869				

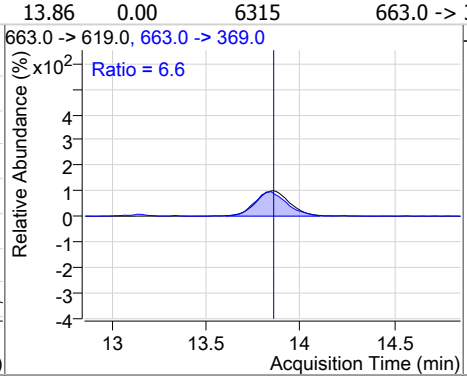


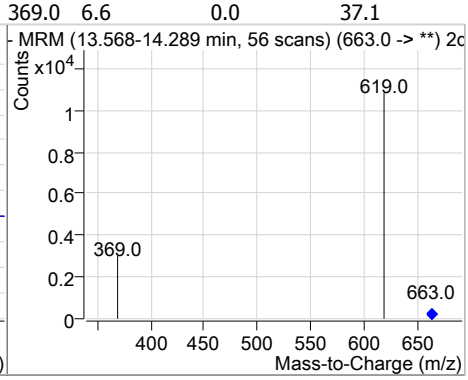




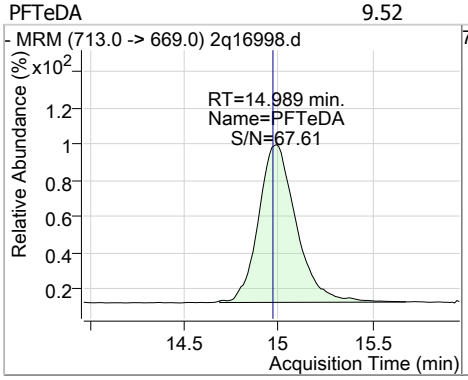
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	9.56	13.86	0.00	6315	663.0 -> 369.0	6.6	0.0	37.1

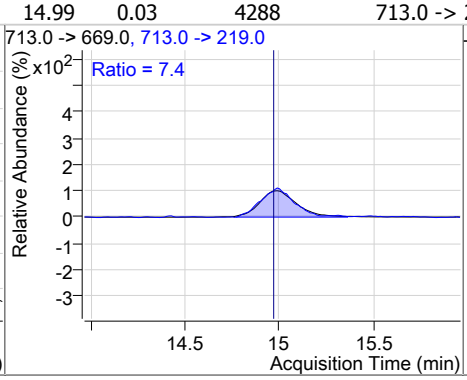


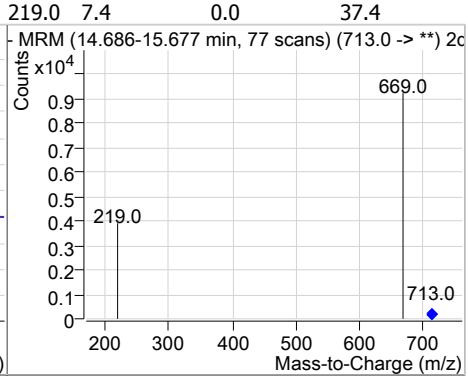




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	9.52	14.99	0.03	4288	713.0 -> 219.0	7.4	0.0	37.4

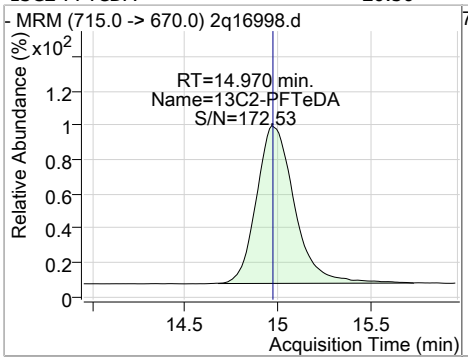


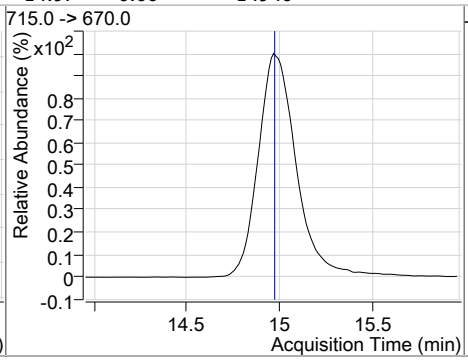


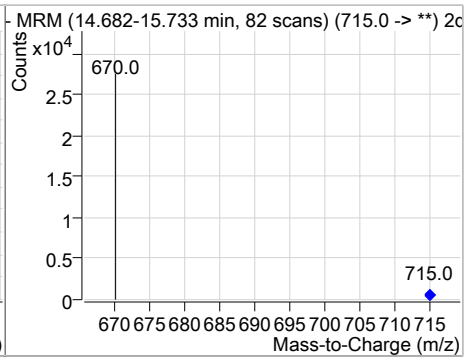


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.56	14.97	0.00	14940				







Manual Integration Approval Summary

Sample Number:	S2Q295-IC295	**Method:**	EPA 537M BY ID
Lab FileID:	2Q16998.D	**Analyst approved:**	07/13/18 12:48 Nancy Saunders
Injection Time:	07/12/18 10:43	**Supervisor approved:**	07/13/18 17:24 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.24	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.69	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 07/13/18 17:24

Perfluorinated Compounds by LC/MS/MS

Data File : 2q16999.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/12/2018 11:03:47 AM
Sample Name : icc295-20
Vial : Vial 7
DA Method File : PFC_ID_071218_S2Q295.quantmethod.xml
Batch Name : s2q295.batch.bin
Sample Information : op70790,S2Q295,1.99,,,1.0,1,soil

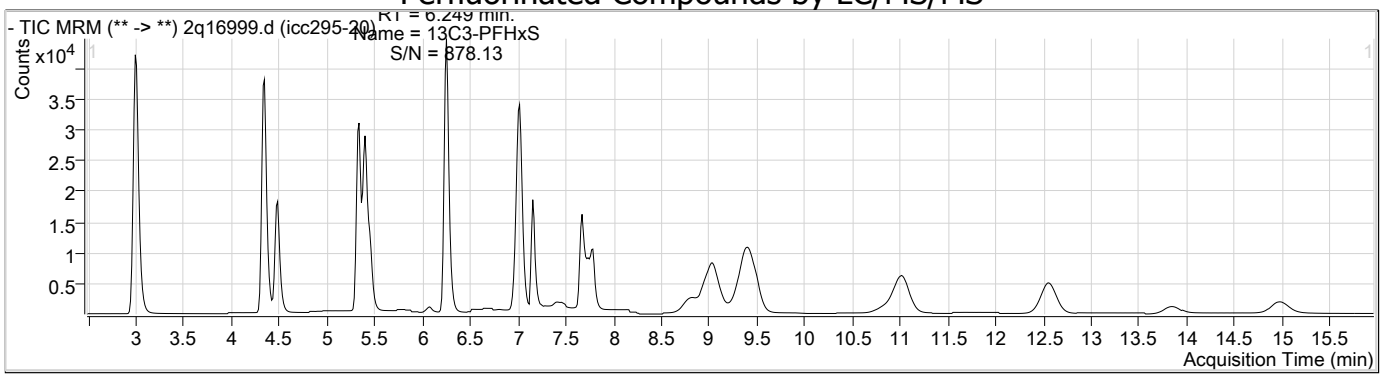
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	7.010	415.0 -> 370.0	18335	20.00	µg/L	0.014
13C4-PFOS	7.687	503.0 -> 80.0	10496	20.00	µg/L	0.012
M4-PFBA	2.991	217.0 -> 172.0	147531	20.00	µg/L	0.000
M5-PFPeA	4.350	268.0 -> 223.0	73184	20.00	µg/L	0.012
M5-PFHxA	5.401	318.0 -> 273.0	66514	20.00	µg/L	0.011
M4-PFHpA	6.255	367.0 -> 322.0	62988	20.00	µg/L	0.001
M8-PFOA	7.009	421.0 -> 376.0	29683	20.00	µg/L	0.014
M9-PFNA	7.753	472.0 -> 427.0	20092	20.00	µg/L	0.001
M6-PFDA	9.042	519.0 -> 474.0	63554	20.00	µg/L	0.025
M7-PFUnDA	11.017	570.0 -> 525.0	46771	20.00	µg/L	-0.012
M2-PFDoDA	12.553	615.0 -> 570.0	37791	20.00	µg/L	-0.012
M2-PFTeDA	14.970	715.0 -> 670.0	16237	20.00	µg/L	0.001
M8-FOSA	7.155	506.0 -> 78.0	35776	20.00	µg/L	0.013
M3-PFBS	4.481	302.0 -> 99.0	23153	20.00	µg/L	0.013
M3-PFHxS	6.249	402.0 -> 99.0	18576	20.00	µg/L	0.013
M8-PFOS	7.685	507.0 -> 99.0	9372	20.00	µg/L	0.012
M2-4:2FTS	5.335	329.0 -> 309.0	62253	20.00	µg/L	0.012
M2-6:2FTS	7.031	429.0 -> 409.0	43212	20.00	µg/L	0.013
M2-8:2FTS	9.398	529.0 -> 509.0	82897	20.00	µg/L	0.000
M3-MeFOSAA	7.658	573.0 -> 419.0	17796	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.335	329.0 -> 309.0	62216	22.05	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.3%		
13C2-6:2FTS	7.031	429.0 -> 409.0	43228	22.15	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.8%		
13C2-8:2FTS	9.398	529.0 -> 509.0	81625	22.19	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.9%		
13C2-PFDoDA	12.553	615.0 -> 570.0	37864	22.49	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.5%		
13C2-PFTeDA	14.970	715.0 -> 670.0	16486	22.69	µg/L	0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.4%		
13C3-PFBS	4.481	302.0 -> 99.0	23153	22.21	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.0%		
13C3-PFHxS	6.249	402.0 -> 99.0	18578	22.25	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.3%		
13C4-PFBA	2.991	217.0 -> 172.0	147525	22.20	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.0%		
13C4-PFHpA	6.255	367.0 -> 322.0	63003	22.27	µg/L	0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.3%		
13C5-PFHxA	5.401	318.0 -> 273.0	66540	22.44	µg/L	0.011
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.2%		
13C5-PFPeA	4.350	268.0 -> 223.0	73165	22.30	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.5%		
13C6-PFDA	9.042	519.0 -> 474.0	63111	22.77	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.8%		

Perfluorinated Compounds by LC/MS/MS

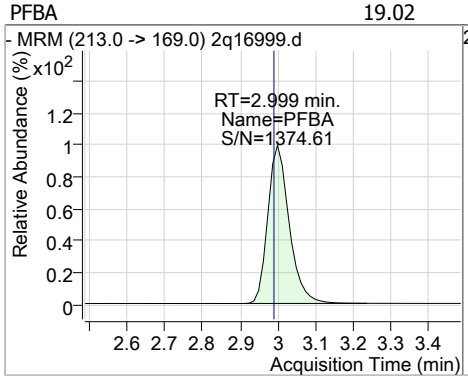
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	11.017	570.0 -> 525.0	46774	22.70	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.5%			
13C8-FOSA	7.155	506.0 -> 78.0	35786	22.25	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.2%			
13C8-PFOA	7.009	421.0 -> 376.0	29701	22.61	µg/L		0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.0%			
13C8-PFOS	7.685	507.0 -> 99.0	9376	22.60	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.0%			
13C9-PFNA	7.753	472.0 -> 427.0	20092	22.79	µg/L		0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.9%			
d3-MeFOSAA	7.658	573.0 -> 419.0	17780	22.89	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.4%			
M2-PFOA	7.010	415.0 -> 370.0	18338	20.00	ng/ml		0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.687	503.0 -> 80.0	10498	20.01	ng/ml		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
Target Compounds							**QValue**
4:2FTS	5.337	327.0 -> 307.0	30460	19.38	µg/L		100
6:2FTS	7.032	427.0 -> 407.0	20496	19.41	µg/L		97
8:2FTS	9.401	527.0 -> 507.0	42447	19.73	µg/L		95
EtFOSAA	7.782	584.0 -> 419.0	5514	19.18	µg/L		95
FOSA	7.158	498.0 -> 78.0	16910	19.27	µg/L		100
MeFOSAA	7.672	570.0 -> 419.0	6266	19.10	µg/L		99
PFBA	2.999	213.0 -> 169.0	22254	19.02	µg/L		100
PFBS	4.472	299.0 -> 80.0	30268	19.05	µg/L		100
PFDA	9.032	513.0 -> 469.0	22443	18.94	µg/L		100
PFDoDA	12.547	613.0 -> 569.0	19023	19.74	µg/L		98
PFDS	10.825	599.0 -> 80.0	7675	19.16	µg/L		99
PFHpA	6.258	363.0 -> 319.0	45302	19.31	µg/L		100
PFHpS	6.967	449.0 -> 80.0	9971	19.08	µg/L		99
PFHxA	5.403	313.0 -> 269.0	22082	19.69	µg/L		99
PFHxS	6.252	399.0 -> 80.0	21344	19.39	µg/L	m	97
PFNA	7.755	463.0 -> 419.0	7591	19.15	µg/L		94
PFNS	8.796	549.0 -> 80.0	16258	18.83	µg/L		98
PFOA	7.011	413.0 -> 369.0	15434	19.51	µg/L		99
PFOS	7.688	499.0 -> 80.0	11499	19.59	µg/L	m	100
PFPeA	4.341	263.0 -> 219.0	66899	19.58	µg/L		100
PFPeS	5.446	349.0 -> 80.0	19110	18.94	µg/L		100
PFTeDA	14.964	713.0 -> 669.0	9469	19.61	µg/L		98
PFTrDA	13.843	663.0 -> 619.0	14317	20.20	µg/L		99
PFUnDA	11.022	563.0 -> 519.0	21631	18.80	µg/L		100

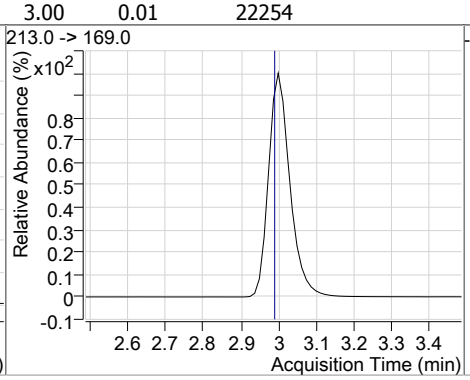
 # = Qualifier out of range, m = manually integrated, + = Area summed

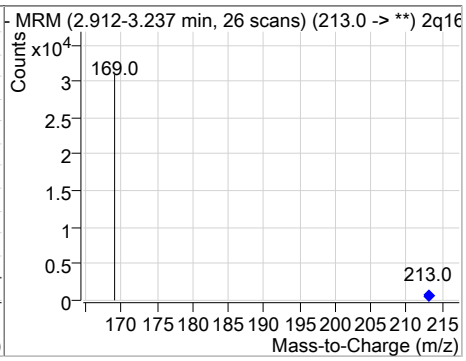
Perfluorinated Compounds by LC/MS/MS



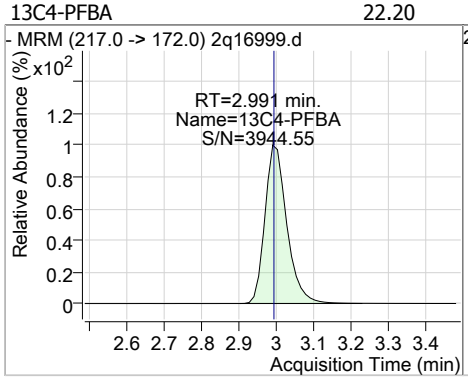
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.02	3.00	0.01	22254				

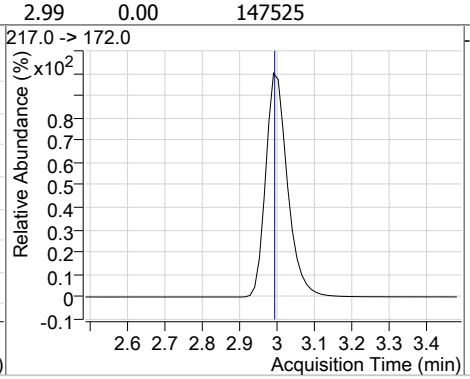


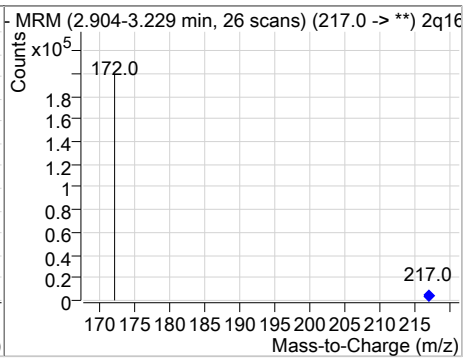




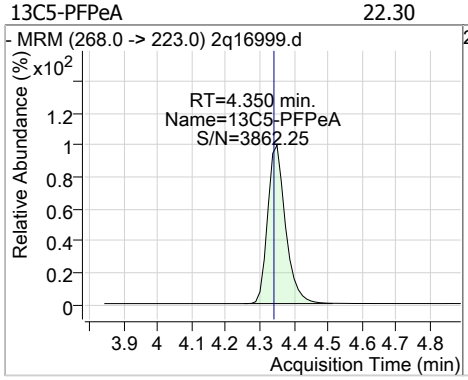
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	22.20	2.99	0.00	147525				

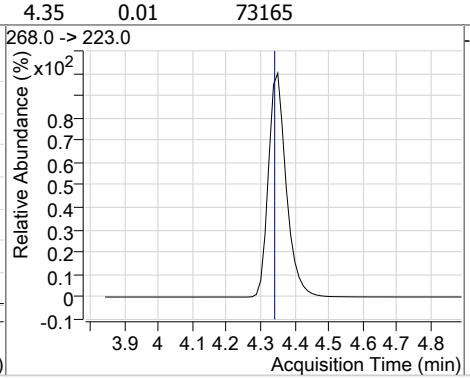


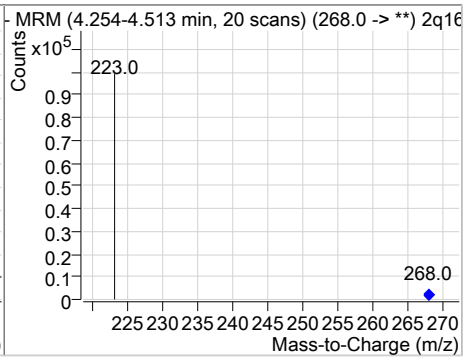




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	22.30	4.35	0.01	73165				

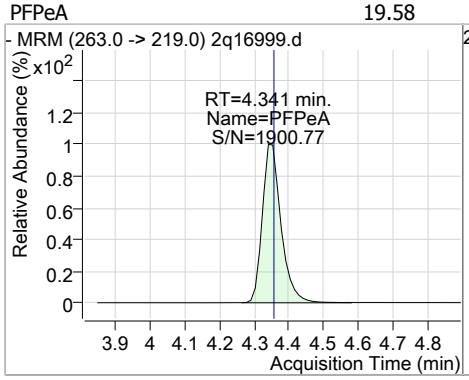


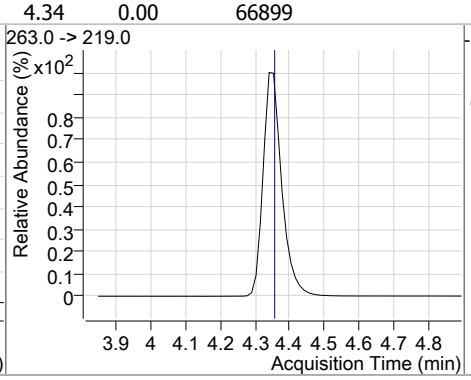


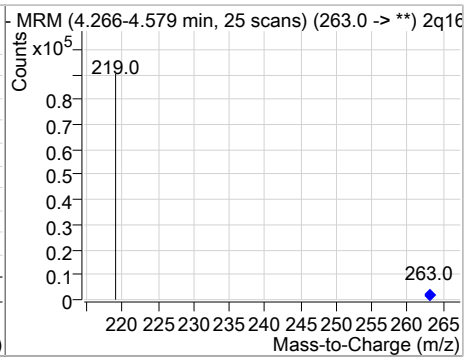


Perfluorinated Compounds by LC/MS/MS

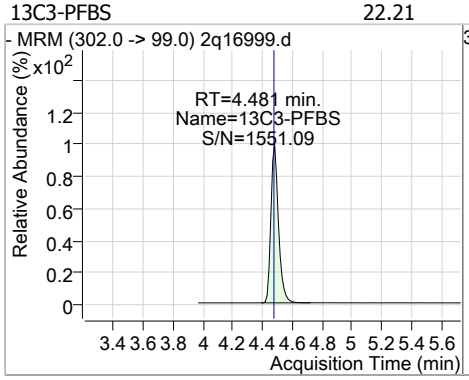
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.58	4.34	0.00	66899				

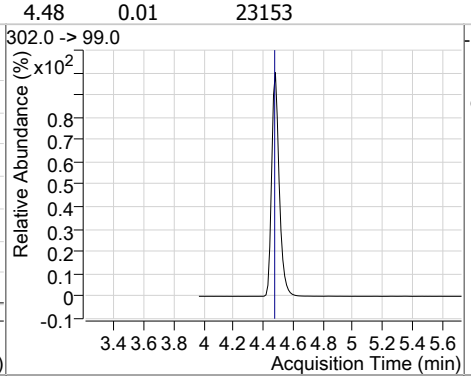


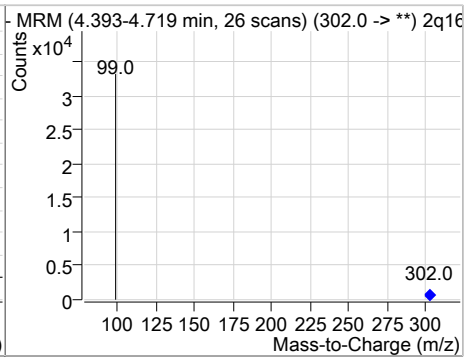




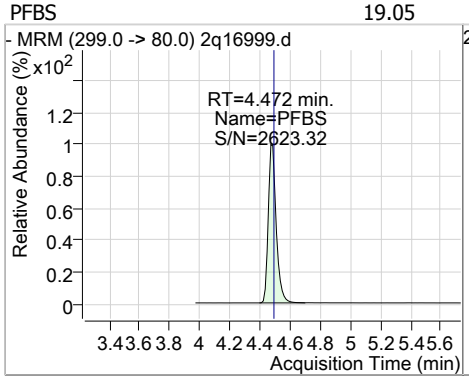
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	22.21	4.48	0.01	23153				

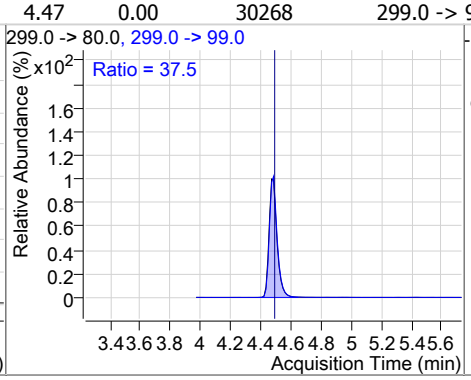


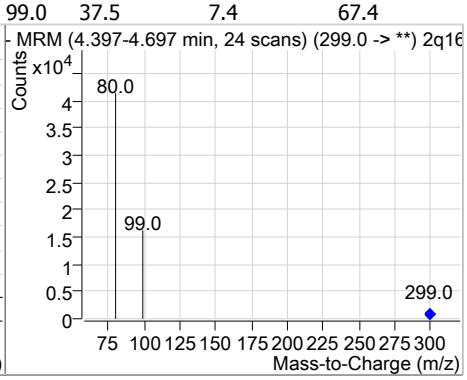




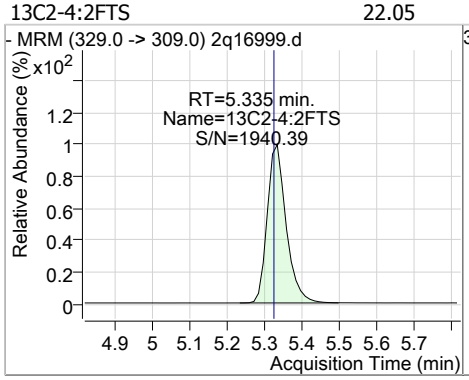
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.05	4.47	0.00	30268	299.0 -> 99.0	37.5	7.4	67.4

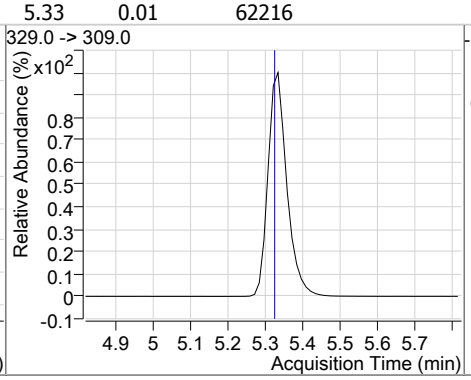


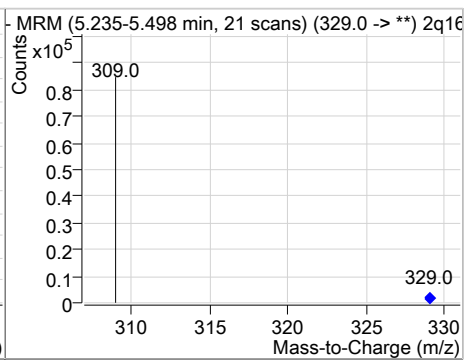




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	22.05	5.33	0.01	62216				

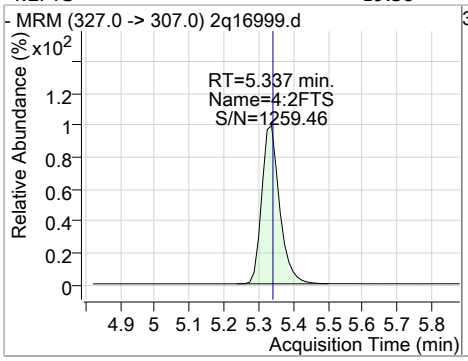


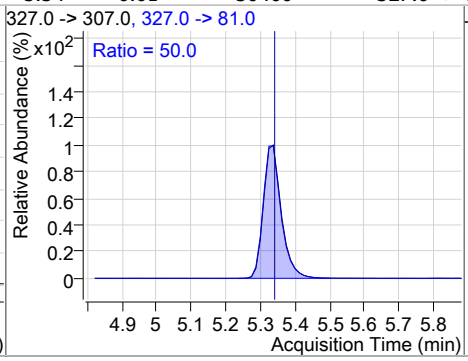


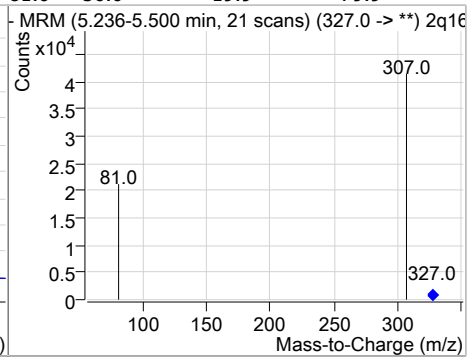


Perfluorinated Compounds by LC/MS/MS

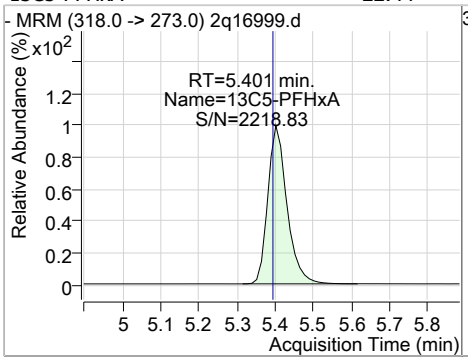
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.38	5.34	0.01	30460	327.0 -> 81.0	50.0	19.9	79.9

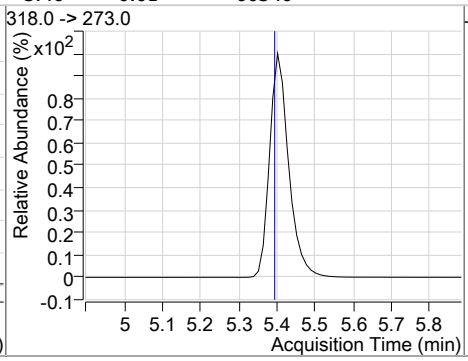


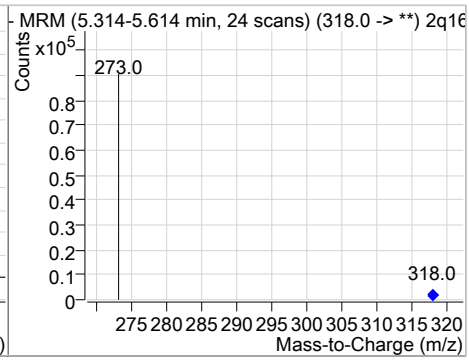




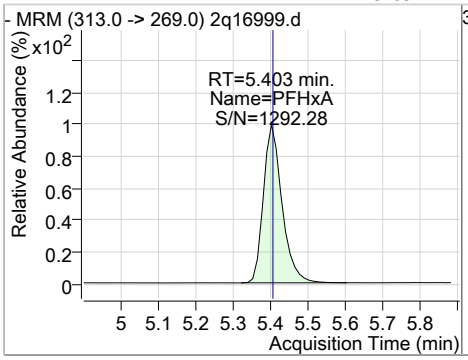
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	22.44	5.40	0.01	66540				

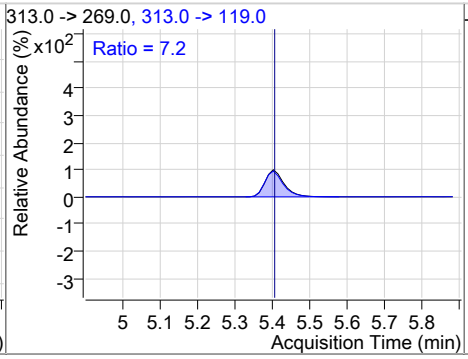


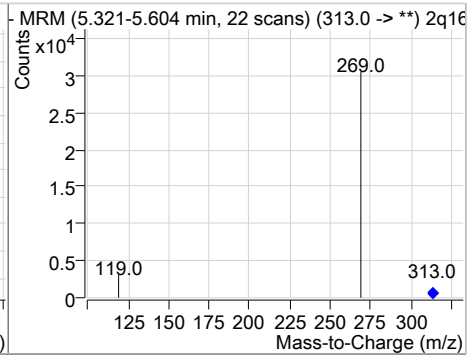




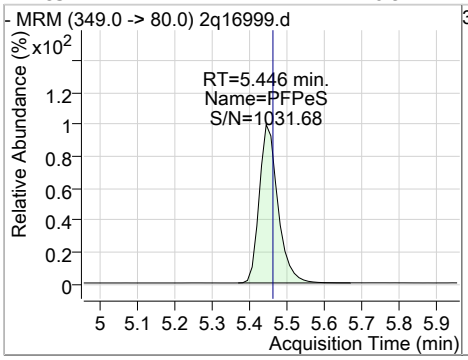
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.69	5.40	0.01	22082	313.0 -> 119.0	7.2	0.0	37.6

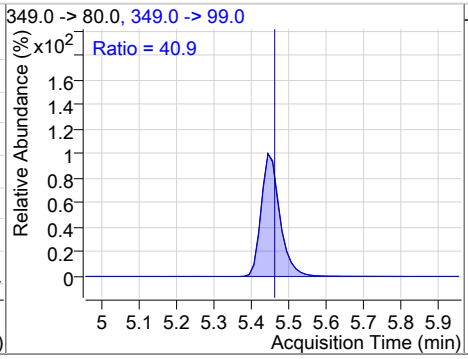


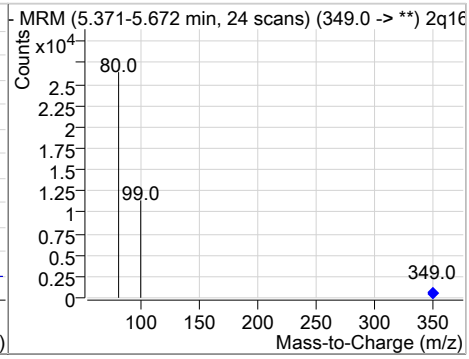




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	18.94	5.45	0.00	19110	349.0 -> 99.0	40.9	10.8	70.8

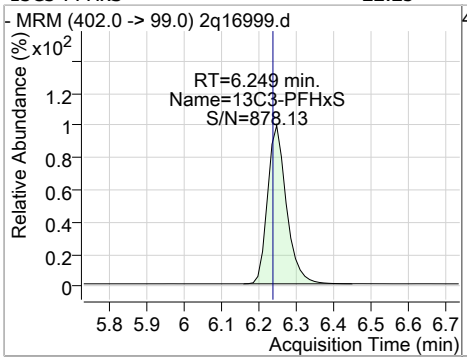


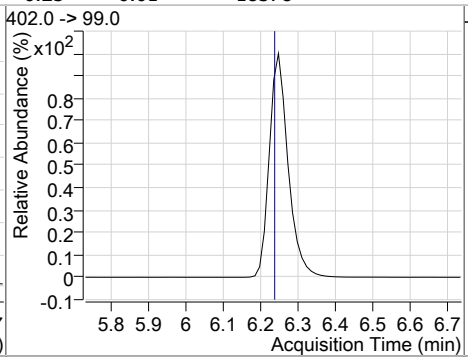


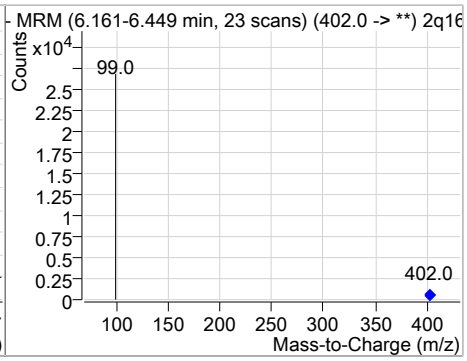


Perfluorinated Compounds by LC/MS/MS

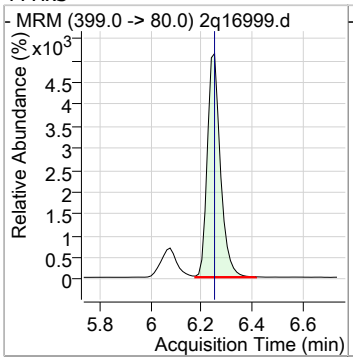
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	22.25	6.25	0.01	18578				

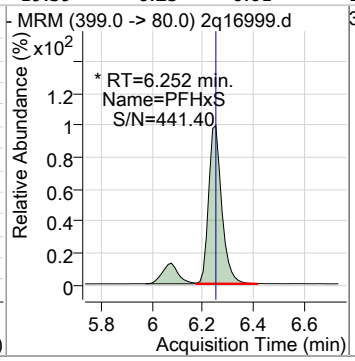


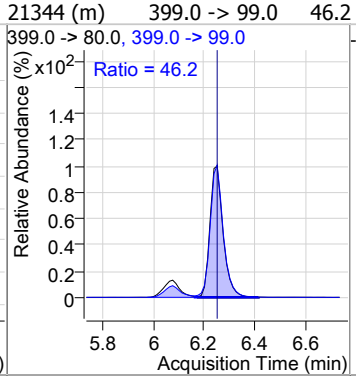


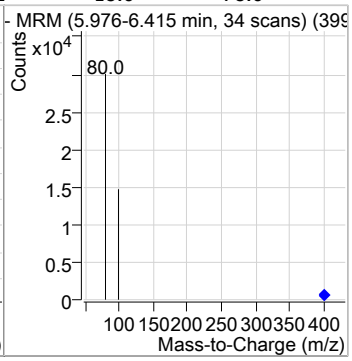


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.39	6.25	0.01	21344 (m)	399.0 -> 99.0	46.2	18.0	78.0

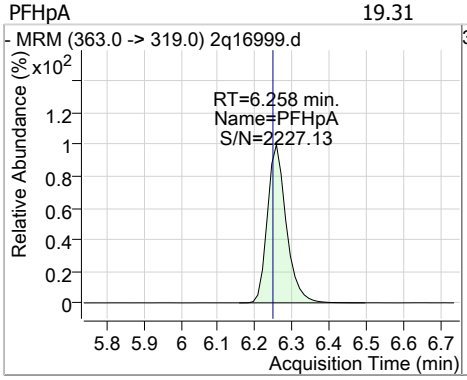


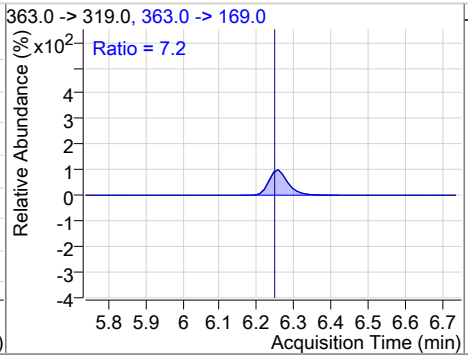


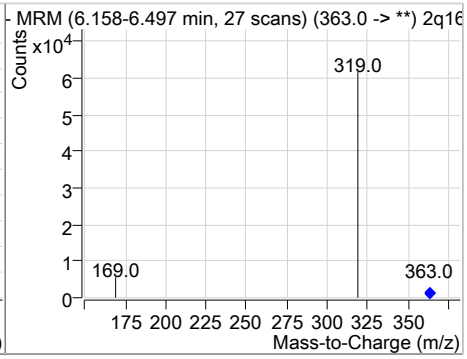




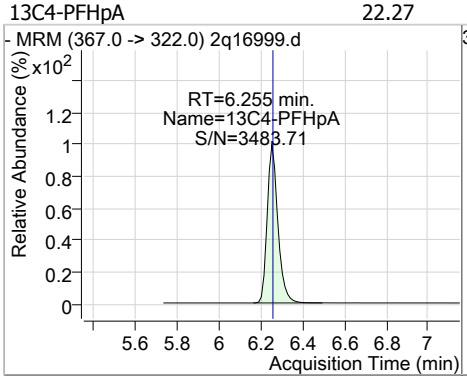
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.31	6.26	0.01	45302	363.0 -> 169.0	7.2	0.0	37.2

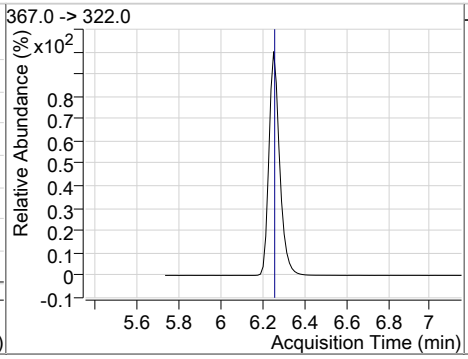


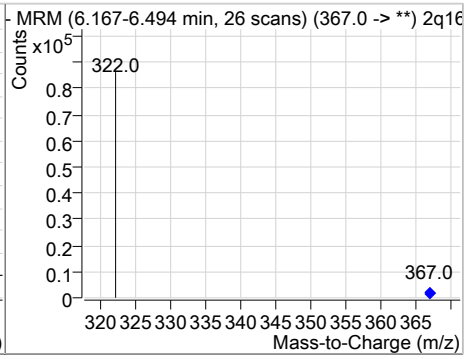




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	22.27	6.25	0.00	63003				

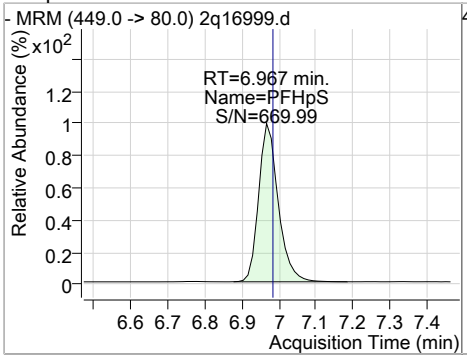


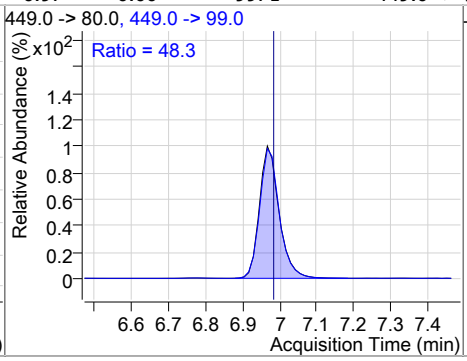


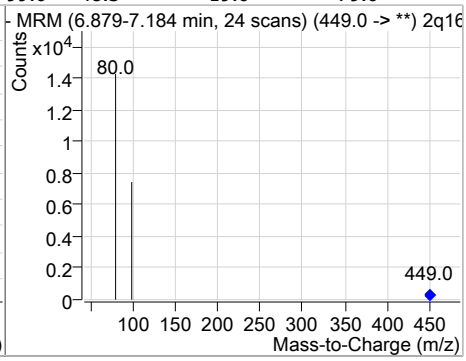


Perfluorinated Compounds by LC/MS/MS

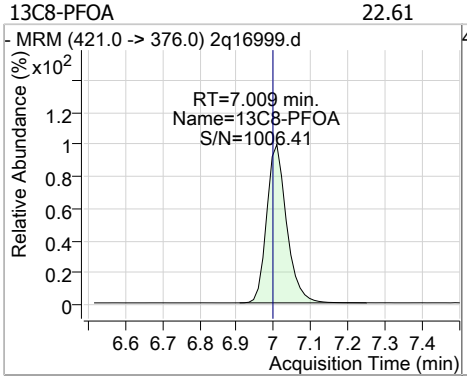
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	19.08	6.97	0.00	9971	449.0 -> 99.0	48.3	19.0	79.0

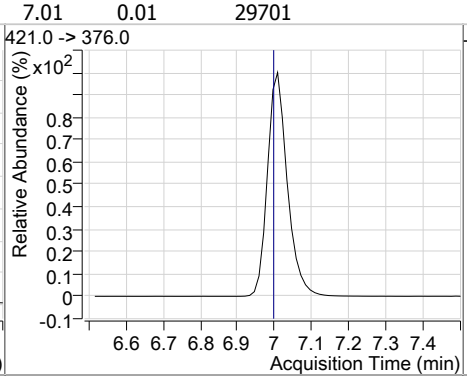


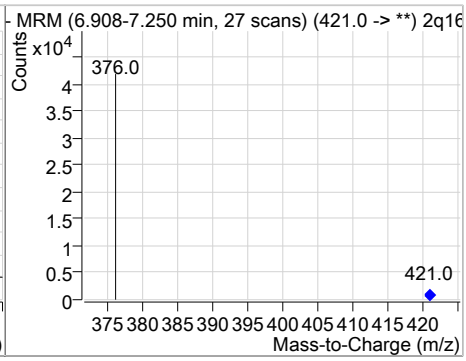




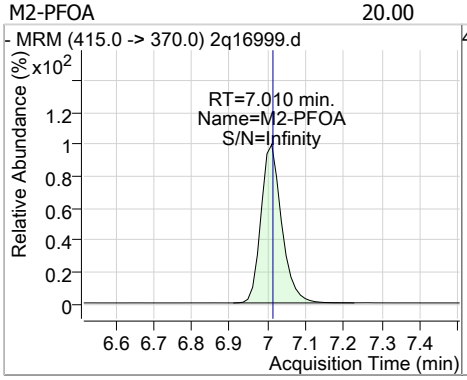
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	22.61	7.01	0.01	29701				

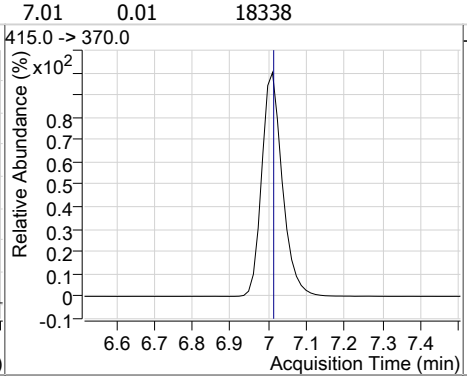


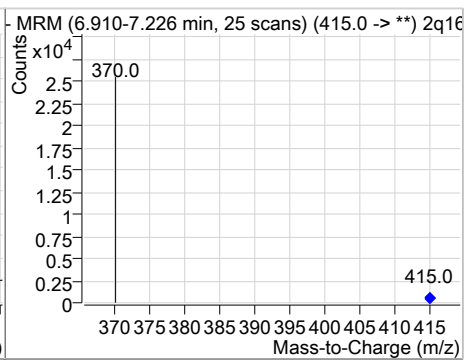




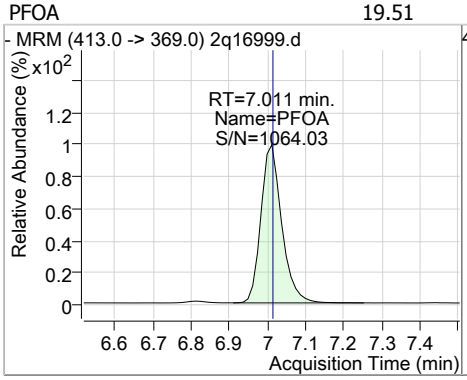
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	7.01	0.01	18338				

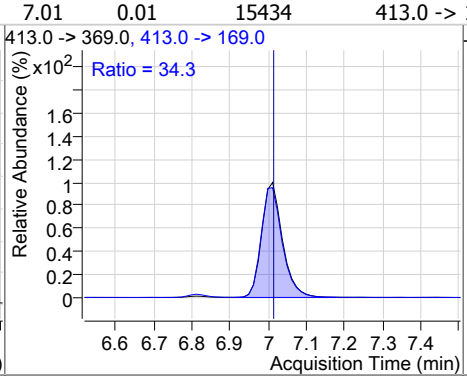


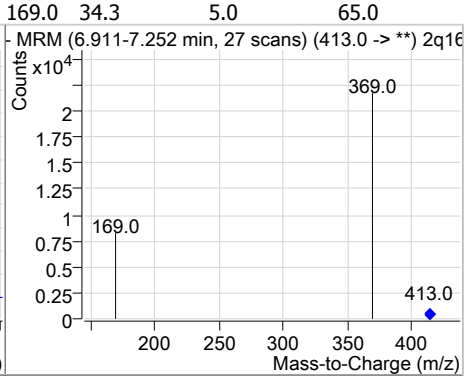




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.51	7.01	0.01	15434	413.0 -> 169.0	34.3	5.0	65.0

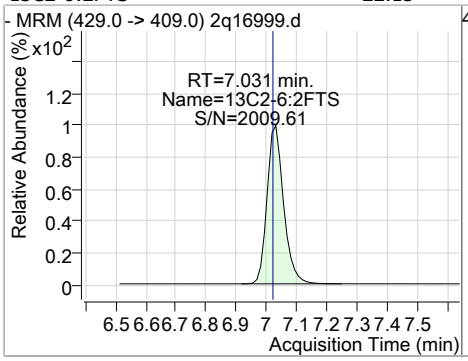


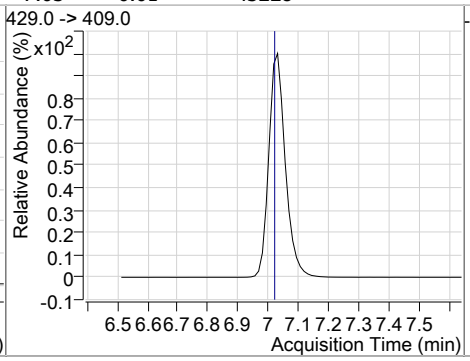


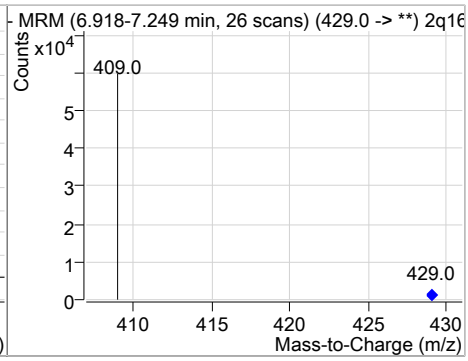


Perfluorinated Compounds by LC/MS/MS

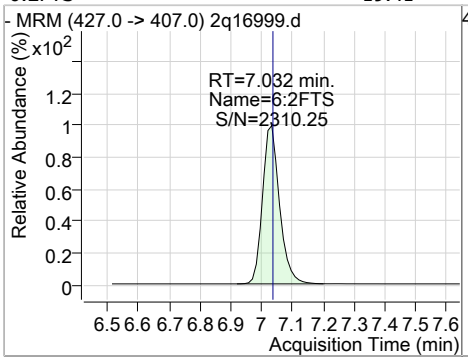
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	22.15	7.03	0.01	43228				

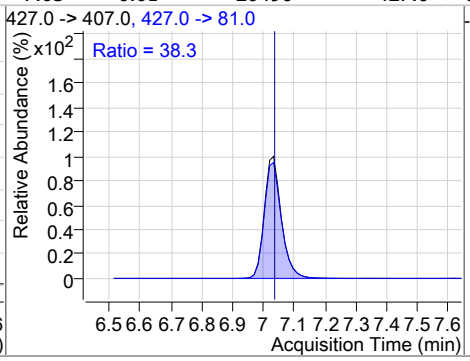


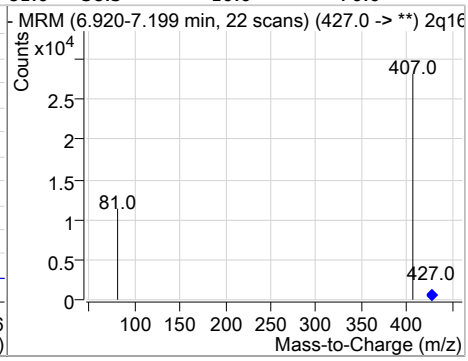




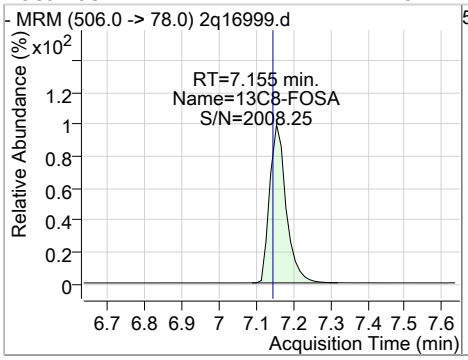
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.41	7.03	0.01	20496	427.0 -> 81.0	38.3	10.0	70.0

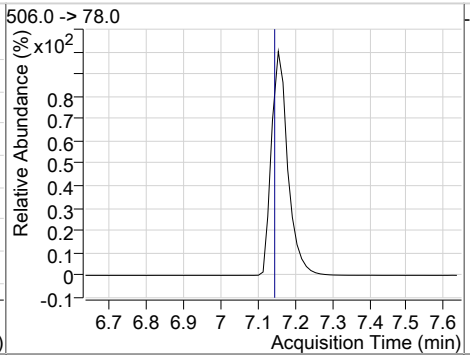


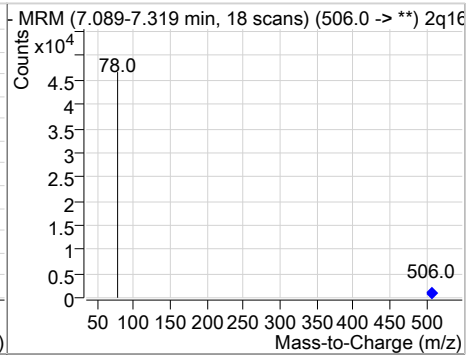




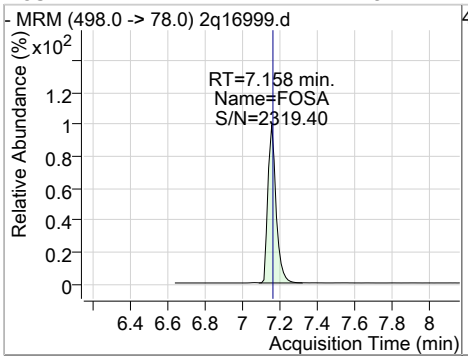
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	22.25	7.16	0.01	35786				

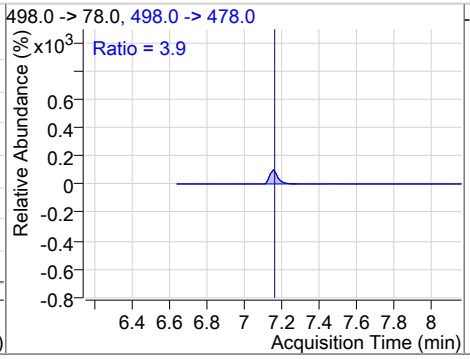


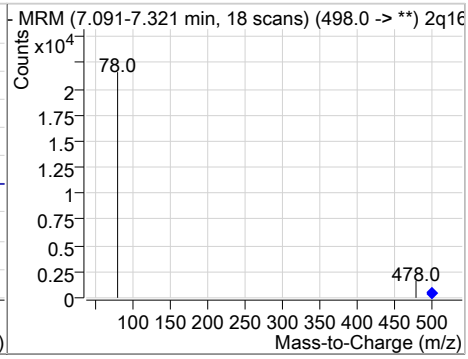




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.27	7.16	0.01	16910	498.0 -> 478.0	3.9	0.0	34.0

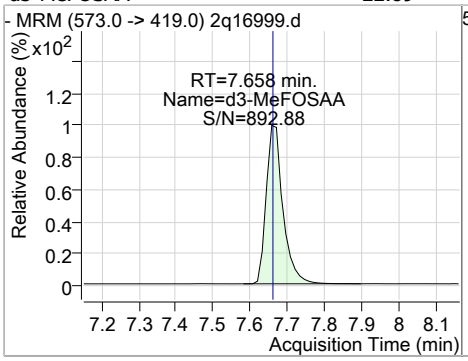


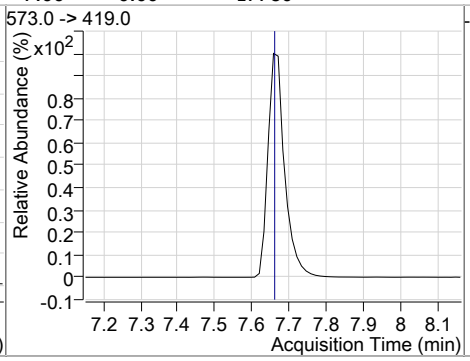


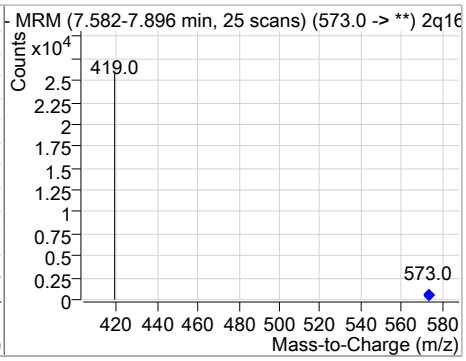


Perfluorinated Compounds by LC/MS/MS

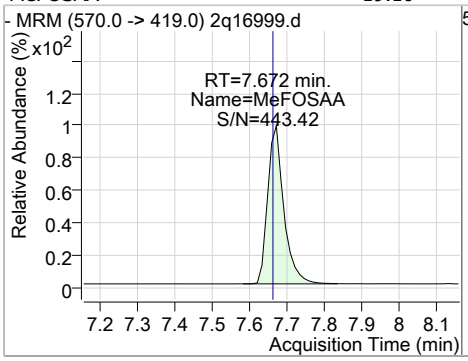
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	22.89	7.66	0.00	17780				

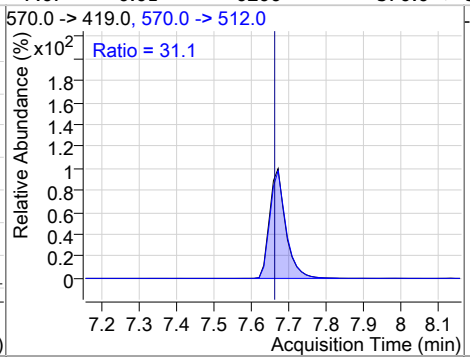


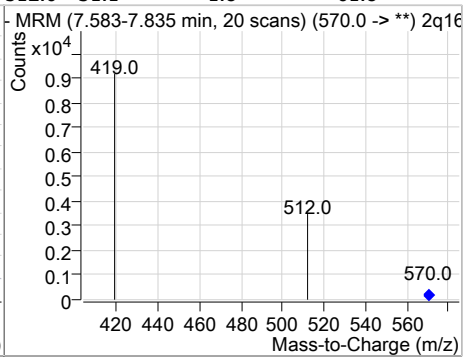




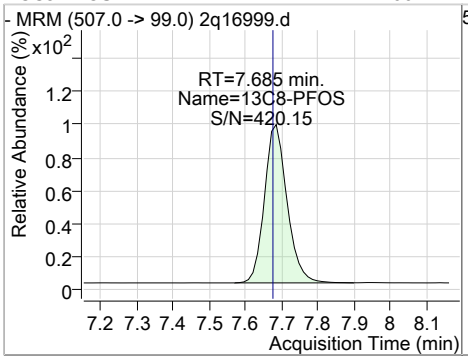
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.10	7.67	0.01	6266	570.0 -> 512.0	31.1	1.8	61.8

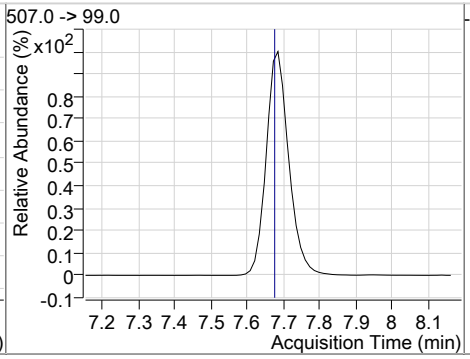


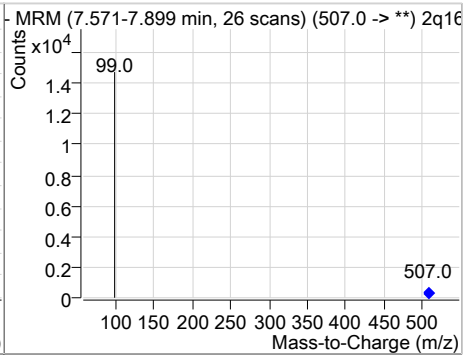




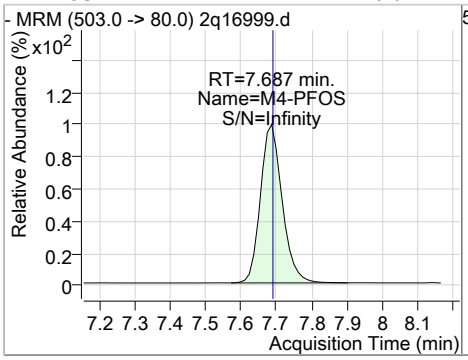
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	22.60	7.69	0.01	9376				

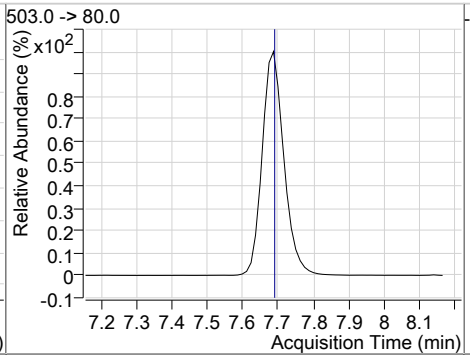


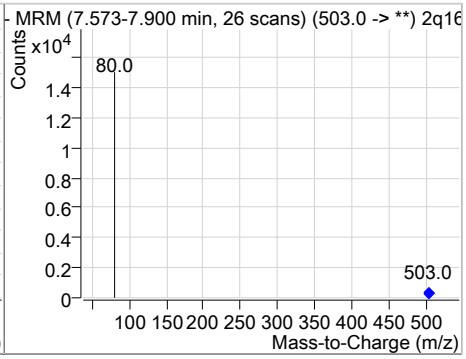




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.01	7.69	0.01	10498				

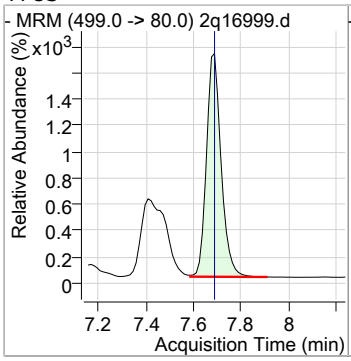


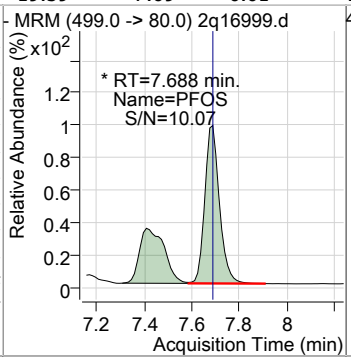


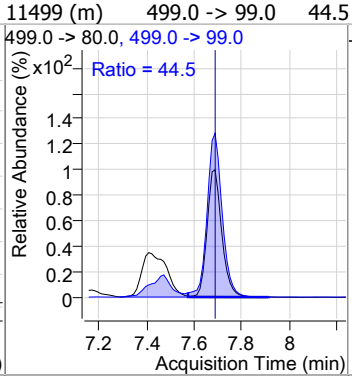


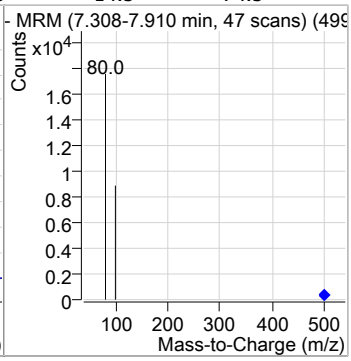
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.59	7.69	0.01	11499 (m)	499.0 -> 99.0	44.5	14.5	74.5

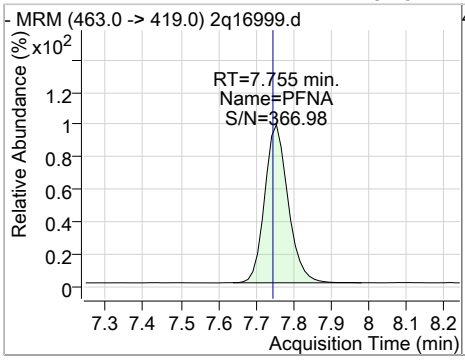


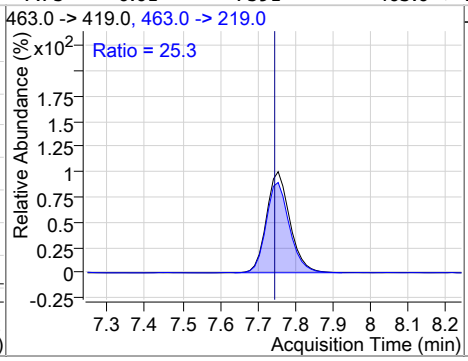


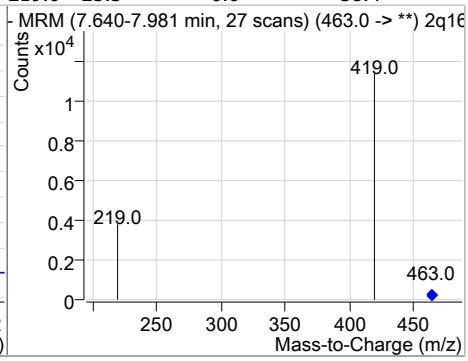




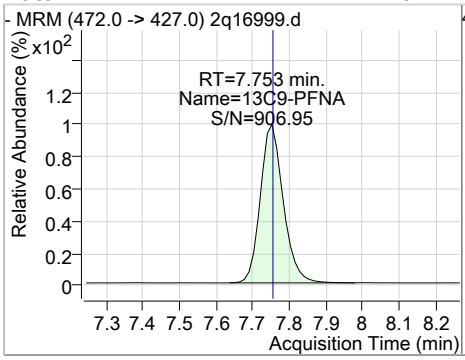
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.15	7.75	0.01	7591	463.0 -> 219.0	25.3	0.0	58.4

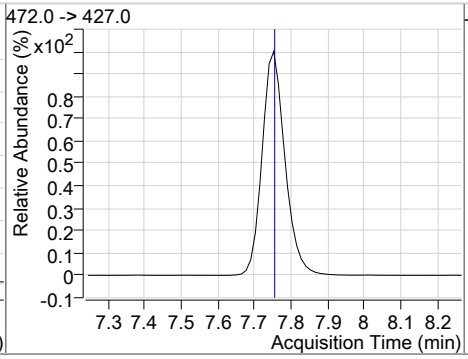


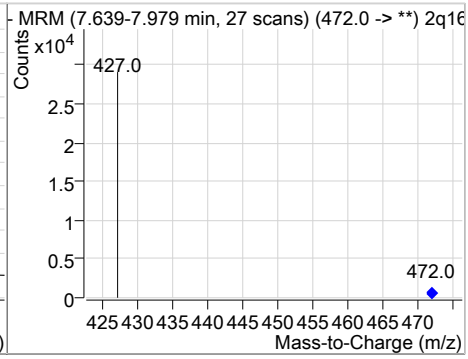




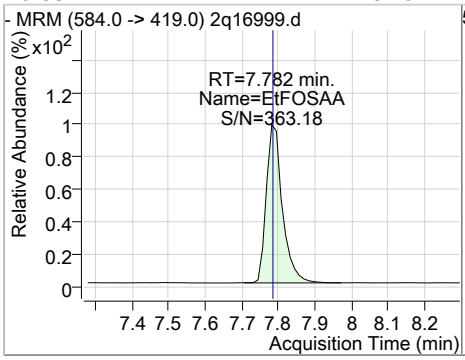
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	22.79	7.75	0.00	20092				

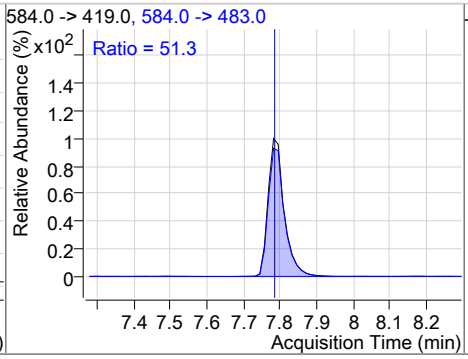


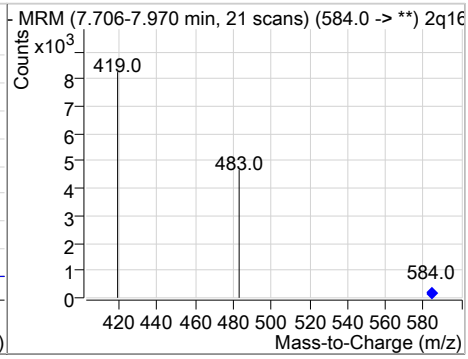




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.18	7.78	0.00	5514	584.0 -> 483.0	51.3	24.8	84.8

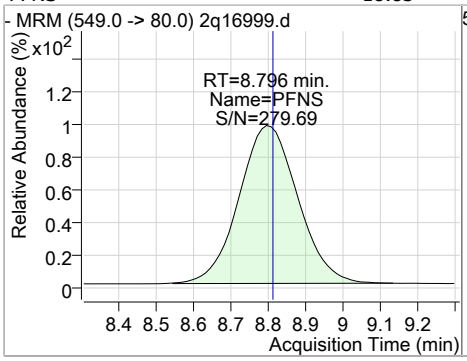


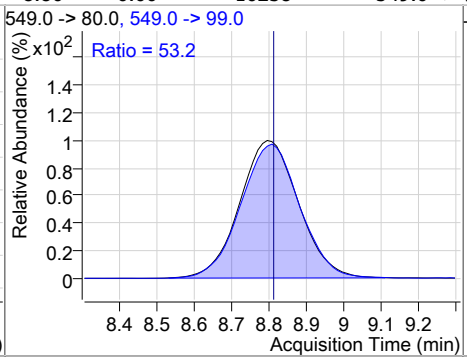


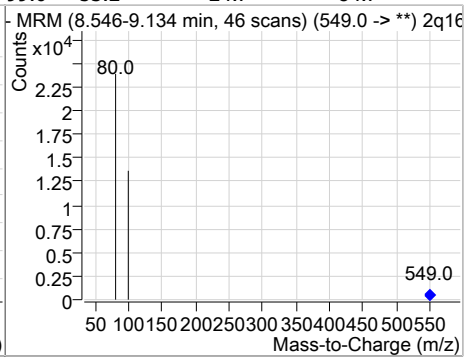


Perfluorinated Compounds by LC/MS/MS

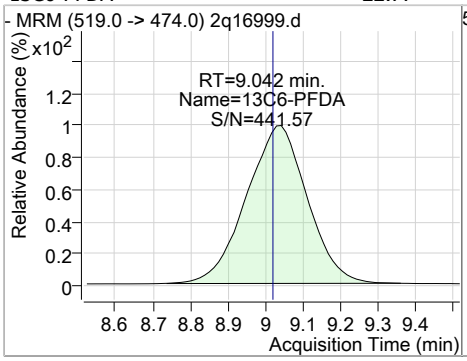
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	18.83	8.80	0.00	16258	549.0 -> 99.0	53.2	24.7	84.7

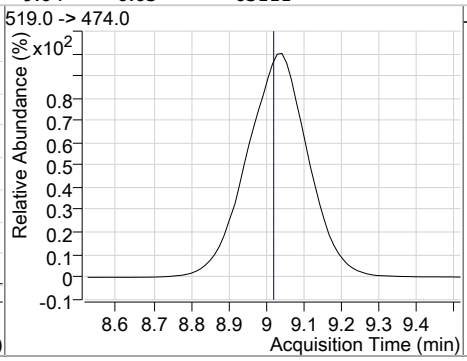


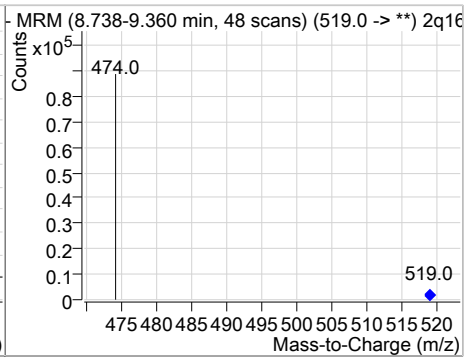




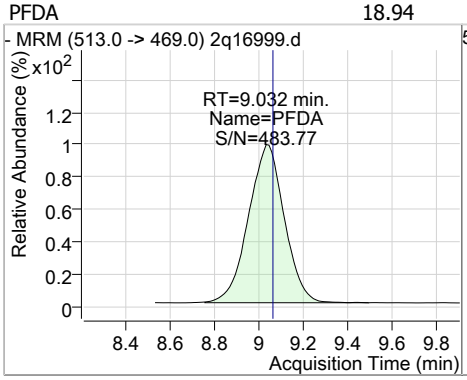
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	22.77	9.04	0.03	63111				

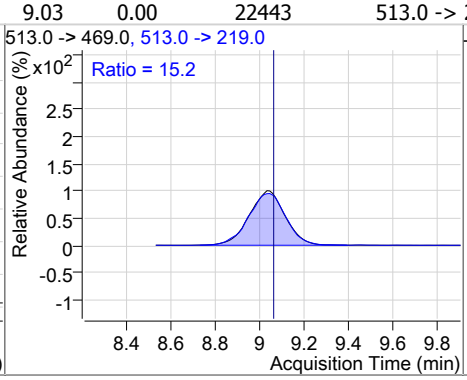


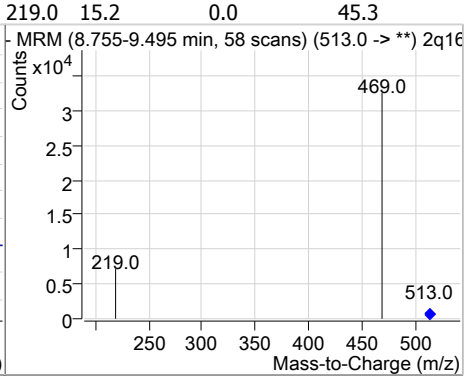




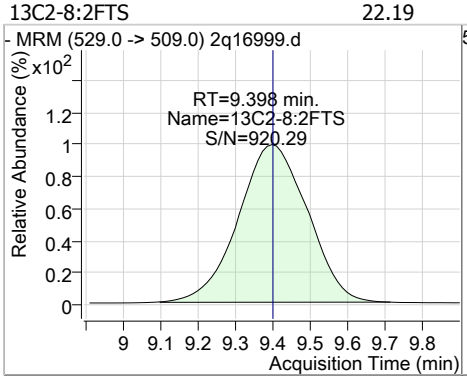
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	18.94	9.03	0.00	22443	513.0 -> 219.0	15.2	0.0	45.3

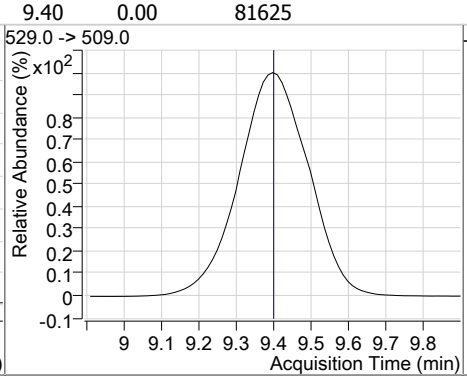


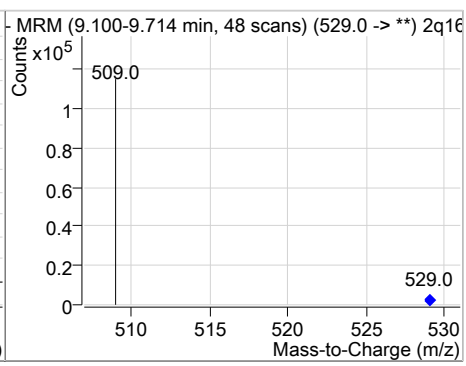




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	22.19	9.40	0.00	81625				

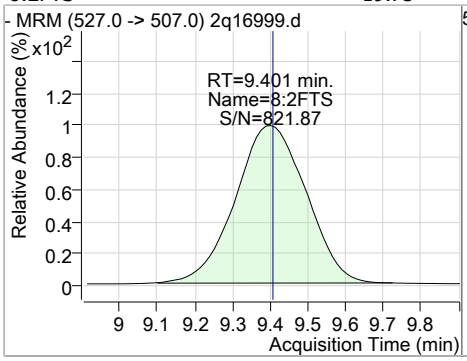


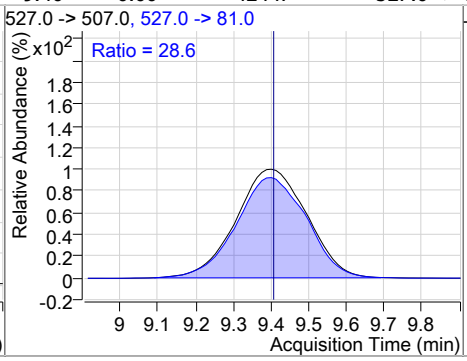


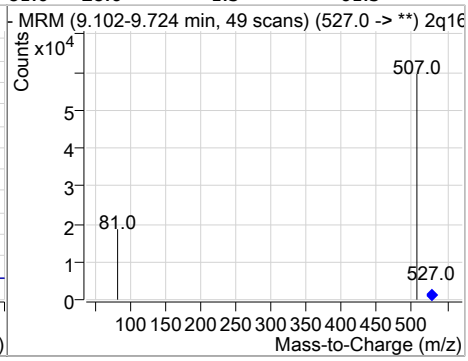


Perfluorinated Compounds by LC/MS/MS

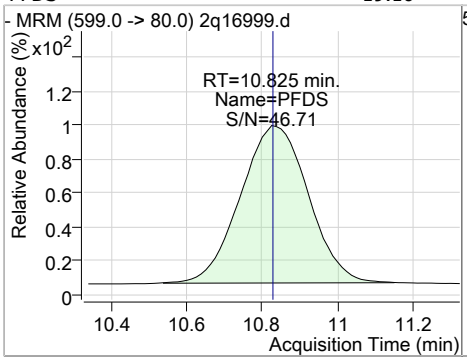
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.73	9.40	0.00	42447	527.0 -> 81.0	28.6	1.3	61.3

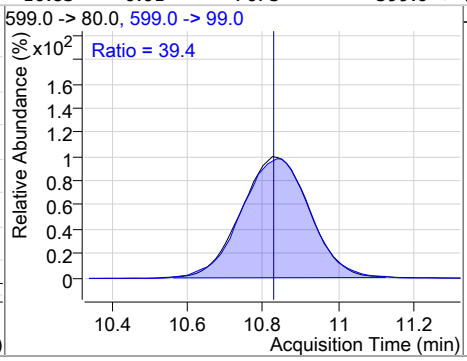


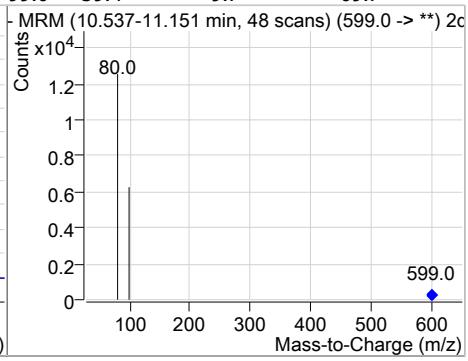




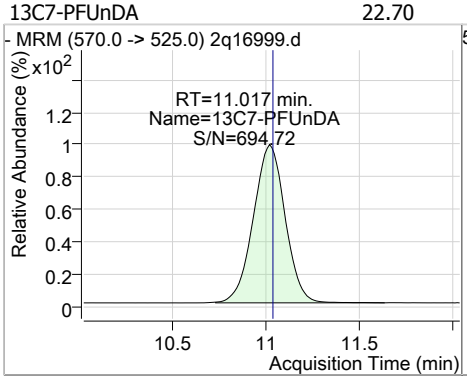
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.16	10.83	-0.01	7675	599.0 -> 99.0	39.4	9.7	69.7

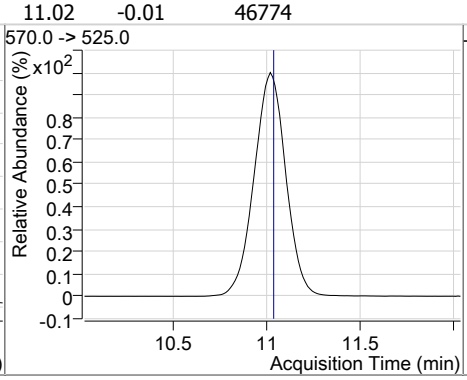


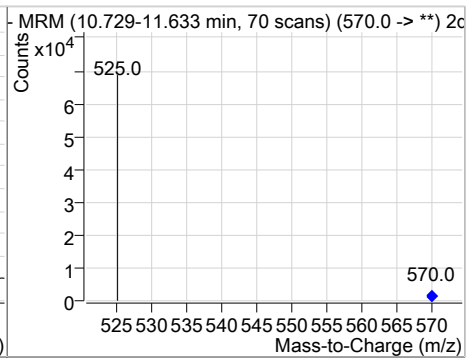




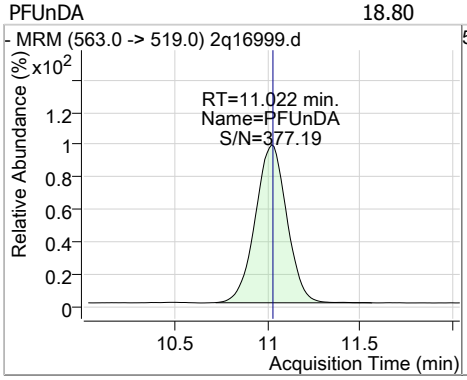
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	22.70	11.02	-0.01	46774				

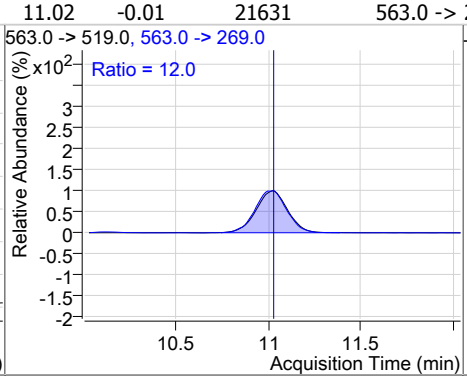


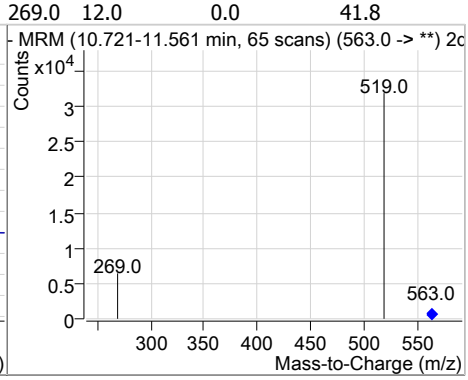




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	18.80	11.02	-0.01	21631	563.0 -> 269.0	12.0	0.0	41.8

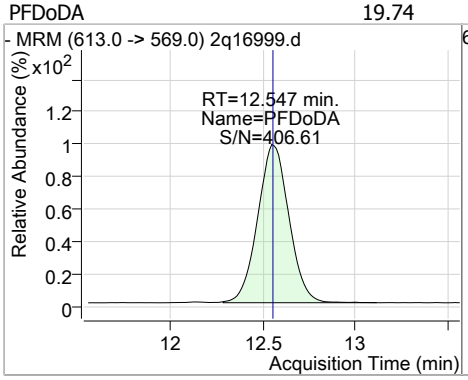


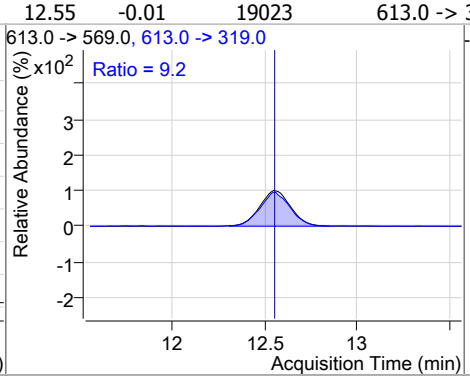


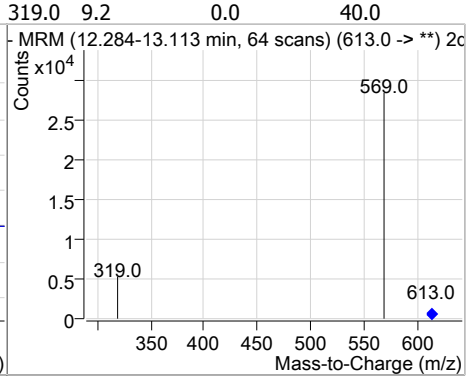


Perfluorinated Compounds by LC/MS/MS

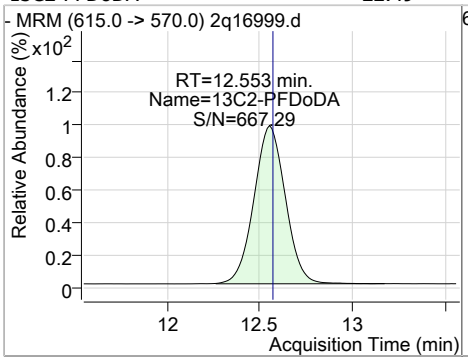
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.74	12.55	-0.01	19023	613.0 -> 319.0	9.2	0.0	40.0

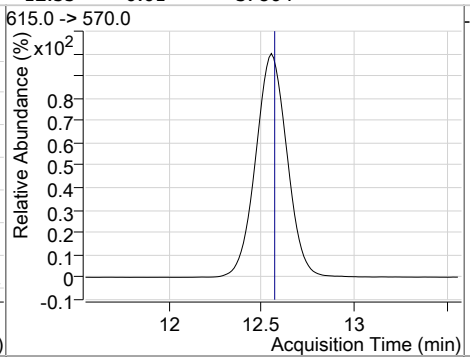


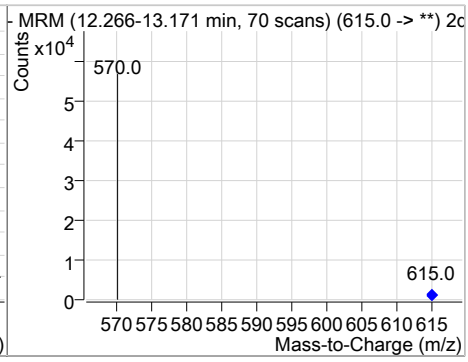




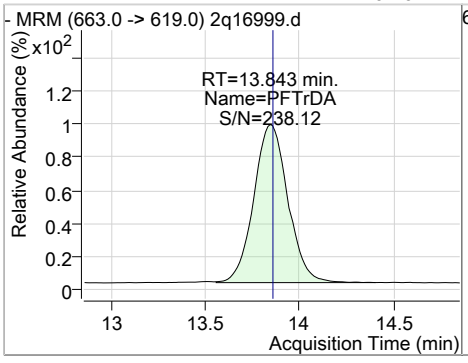
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	22.49	12.55	-0.01	37864				

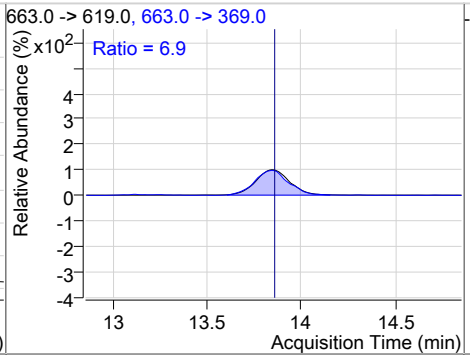


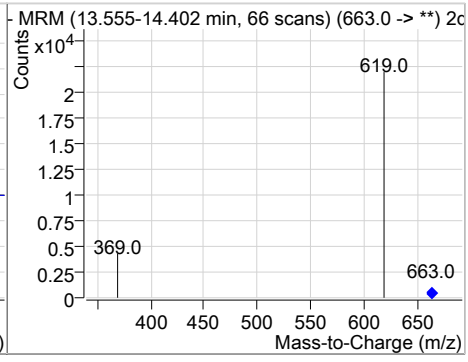




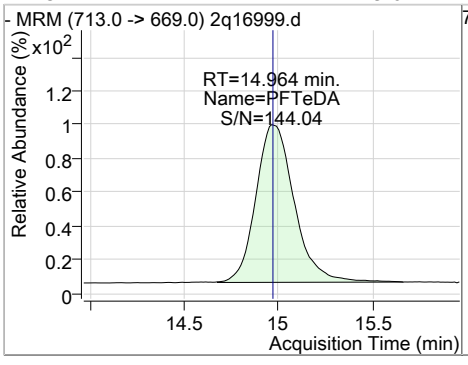
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.20	13.84	-0.01	14317	663.0 -> 369.0	6.9	0.0	37.1

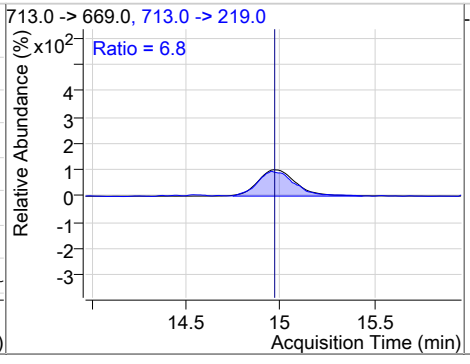


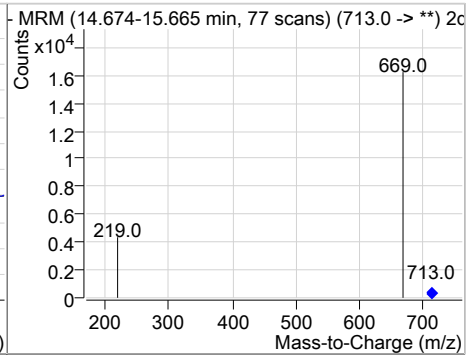




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.61	14.96	0.00	9469	713.0 -> 219.0	6.8	0.0	37.4

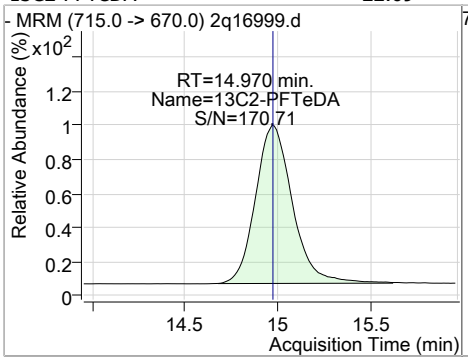


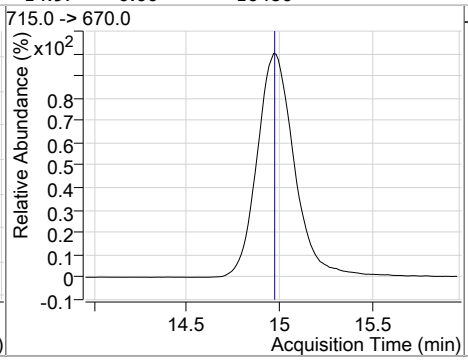


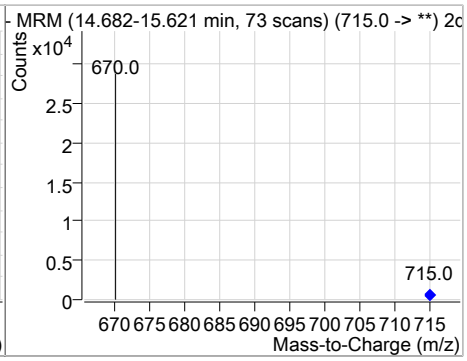


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	22.69	14.97	0.00	16486				







Manual Integration Approval Summary

Sample Number:	S2Q295-ICC295	**Method:**	EPA 537M BY ID
Lab FileID:	2Q16999.D	**Analyst approved:**	07/13/18 12:48 Nancy Saunders
Injection Time:	07/12/18 11:03	**Supervisor approved:**	07/13/18 17:24 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.25	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.69	Split peak

2Q17000.D

Manual Integrations APPROVED (compounds with "m" flag)

Norman Farmer 07/13/18 17:24

Perfluorinated Compounds by LC/MS/MS

Data File	:	2q17000.d
Operator	:	NATASHAG
Acq. Method	:	dMRM_ID_PFC.m
Acq. Date-Time	:	7/12/2018 11:24:47 AM
Sample Name	:	ic295-50
Vial	:	Vial 8
DA Method File	:	PFC_ID_071218_S2Q295.quantmethod.xml
Batch Name	:	s2q295.batch.bin
Sample Information	:	op70790,S2Q295,1.99,,,1.0,1,soil

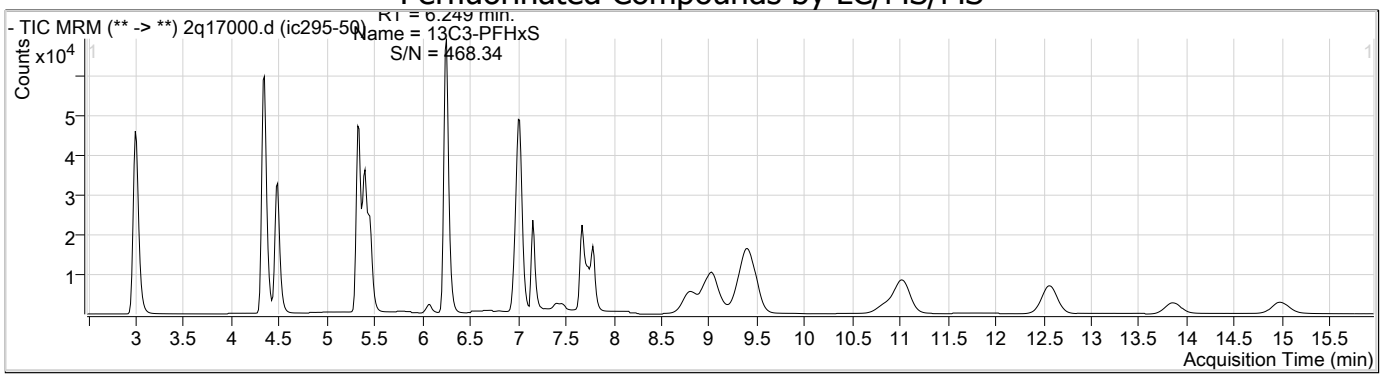
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	7.010	415.0 -> 370.0	16918	20.00	µg/L	0.014
13C4-PFOS	7.674	503.0 -> 80.0	9656	20.00	µg/L	-0.001
M4-PFBA	2.991	217.0 -> 172.0	133770	20.00	µg/L	0.000
M5-PFPeA	4.350	268.0 -> 223.0	66308	20.00	µg/L	0.012
M5-PFHxA	5.401	318.0 -> 273.0	59214	20.00	µg/L	0.011
M4-PFHpA	6.255	367.0 -> 322.0	56867	20.00	µg/L	0.001
M8-PFOA	6.996	421.0 -> 376.0	26689	20.00	µg/L	0.001
M9-PFNA	7.753	472.0 -> 427.0	17966	20.00	µg/L	0.001
M6-PFDA	9.029	519.0 -> 474.0	56607	20.00	µg/L	0.013
M7-PFUnDA	11.017	570.0 -> 525.0	41676	20.00	µg/L	-0.012
M2-PFDoDA	12.566	615.0 -> 570.0	34913	20.00	µg/L	0.001
M2-PFTeDA	14.970	715.0 -> 670.0	15152	20.00	µg/L	0.001
M8-FOSA	7.155	506.0 -> 78.0	30712	20.00	µg/L	0.013
M3-PFBS	4.481	302.0 -> 99.0	20849	20.00	µg/L	0.013
M3-PFHxS	6.249	402.0 -> 99.0	16832	20.00	µg/L	0.013
M8-PFOS	7.685	507.0 -> 99.0	8474	20.00	µg/L	0.012
M2-4:2FTS	5.335	329.0 -> 309.0	60106	20.00	µg/L	0.012
M2-6:2FTS	7.018	429.0 -> 409.0	41899	20.00	µg/L	0.001
M2-8:2FTS	9.398	529.0 -> 509.0	81603	20.00	µg/L	0.000
M3-MeFOSAA	7.670	573.0 -> 419.0	15203	20.00	µg/L	0.013
System Monitoring Compounds						
13C2-4:2FTS	5.335	329.0 -> 309.0	60078	21.29	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.5%		
13C2-6:2FTS	7.018	429.0 -> 409.0	41914	21.48	µg/L	0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.4%		
13C2-8:2FTS	9.398	529.0 -> 509.0	80506	21.89	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.4%		
13C2-PFDoDA	12.566	615.0 -> 570.0	34861	20.71	µg/L	0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.6%		
13C2-PFTeDA	14.970	715.0 -> 670.0	15265	21.01	µg/L	0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.0%		
13C3-PFBS	4.481	302.0 -> 99.0	20846	19.99	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C3-PFHxS	6.249	402.0 -> 99.0	16834	20.17	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.8%		
13C4-PFBA	2.991	217.0 -> 172.0	133644	20.11	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.5%		
13C4-PFHpA	6.255	367.0 -> 322.0	56858	20.10	µg/L	0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.5%		
13C5-PFHxA	5.401	318.0 -> 273.0	59269	19.98	µg/L	0.011
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%		
13C5-PFPeA	4.350	268.0 -> 223.0	66307	20.21	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%		
13C6-PFDA	9.029	519.0 -> 474.0	56241	20.29	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.4%		

Perfluorinated Compounds by LC/MS/MS

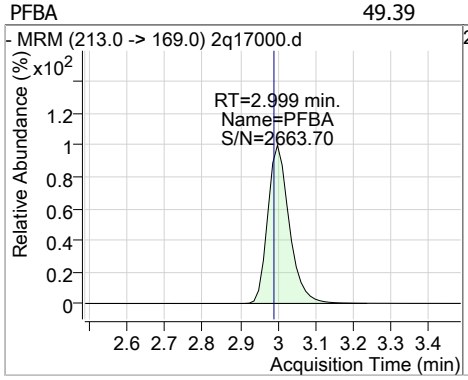
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	11.017	570.0 -> 525.0	41751	20.26	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.3%			
13C8-FOSA	7.155	506.0 -> 78.0	30712	19.09	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.5%			
13C8-PFOA	6.996	421.0 -> 376.0	26674	20.30	µg/L		0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%			
13C8-PFOS	7.685	507.0 -> 99.0	8476	20.43	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%			
13C9-PFNA	7.753	472.0 -> 427.0	17959	20.37	µg/L		0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.8%			
d3-MeFOSAA	7.670	573.0 -> 419.0	15203	19.57	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%			
M2-PFOA	7.010	415.0 -> 370.0	16924	20.01	ng/ml		0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.674	503.0 -> 80.0	9651	19.99	ng/ml		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
Target Compounds							**QValue**
4:2FTS	5.324	327.0 -> 307.0	72416	50.66	µg/L		98
6:2FTS	7.020	427.0 -> 407.0	48830	50.46	µg/L		97
8:2FTS	9.401	527.0 -> 507.0	100504	50.20	µg/L		95
EtFOSAA	7.794	584.0 -> 419.0	12604	51.31	µg/L		97
FOSA	7.158	498.0 -> 78.0	36863	48.93	µg/L		99
MeFOSAA	7.672	570.0 -> 419.0	14039	50.09	µg/L		96
PFBA	2.999	213.0 -> 169.0	52410	49.39	µg/L		100
PFBS	4.472	299.0 -> 80.0	71022	49.65	µg/L		100
PFDA	9.032	513.0 -> 469.0	52888	50.11	µg/L		99
PFDoDA	12.560	613.0 -> 569.0	44861	50.38	µg/L		98
PFDS	10.838	599.0 -> 80.0	17943	50.28	µg/L		99
PFHpA	6.258	363.0 -> 319.0	104970	49.57	µg/L		100
PFHpS	6.967	449.0 -> 80.0	23539	49.71	µg/L		99
PFHxA	5.403	313.0 -> 269.0	50586	50.66	µg/L		97
PFHxS	6.239	399.0 -> 80.0	50038	50.17	µg/L	m	98
PFNA	7.755	463.0 -> 419.0	17617	49.71	µg/L		94
PFNS	8.796	549.0 -> 80.0	37691	48.27	µg/L		99
PFOA	6.999	413.0 -> 369.0	35723	50.23	µg/L		99
PFOS	7.675	499.0 -> 80.0	25558	48.16	µg/L	m	100
PFPeA	4.354	263.0 -> 219.0	155121	50.11	µg/L		100
PFPeS	5.446	349.0 -> 80.0	45146	49.69	µg/L		99
PFTeDA	14.976	713.0 -> 669.0	22787	50.56	µg/L		99
PFTrDA	13.855	663.0 -> 619.0	33642	50.86	µg/L		99
PFUnDA	11.034	563.0 -> 519.0	51436	50.17	µg/L		100

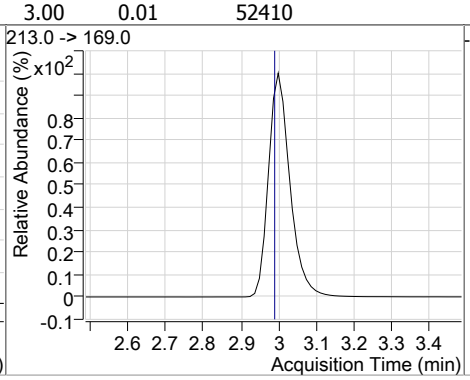
 # = Qualifier out of range, m = manually integrated, + = Area summed

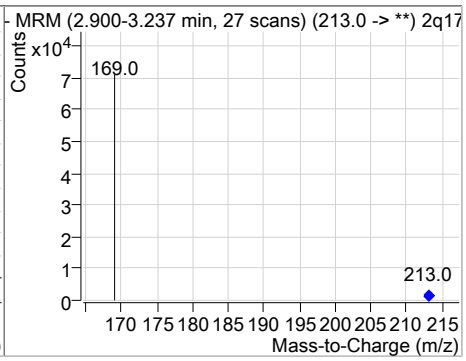
Perfluorinated Compounds by LC/MS/MS



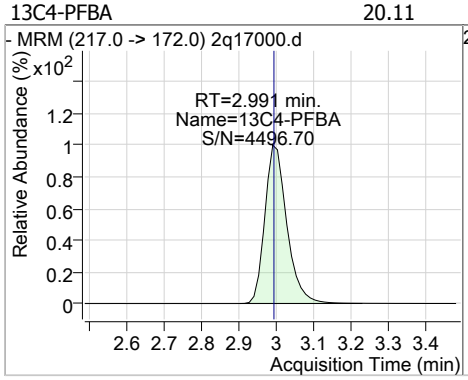
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	49.39	3.00	0.01	52410				

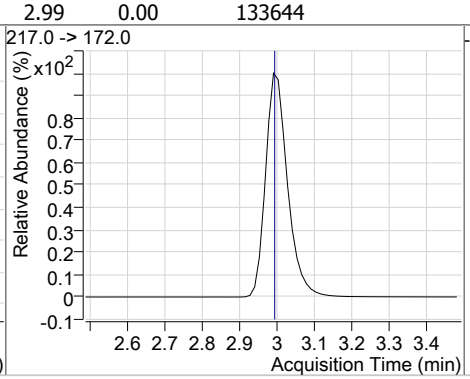


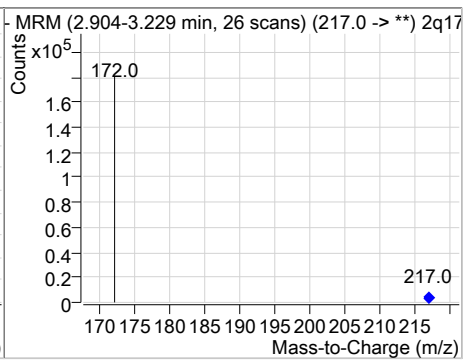




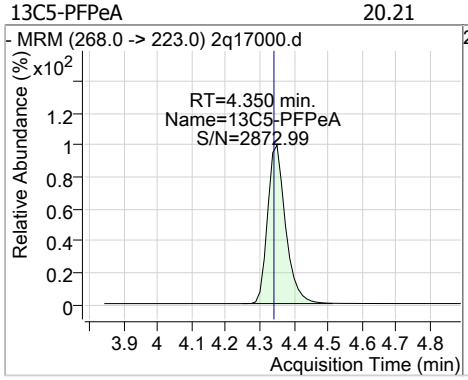
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.11	2.99	0.00	133644				

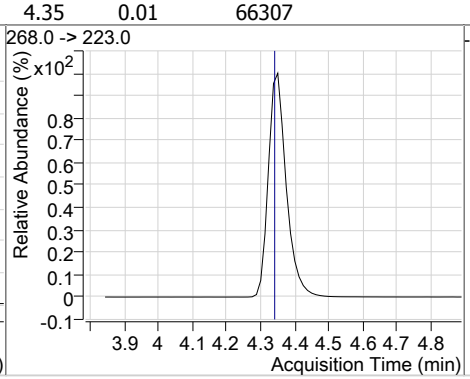


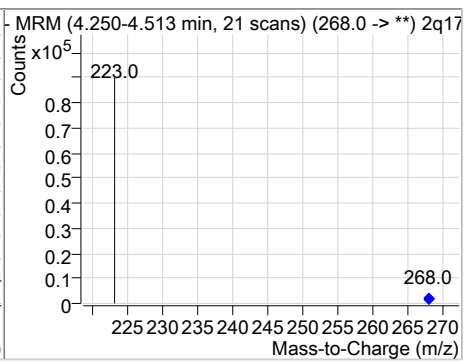




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.21	4.35	0.01	66307				

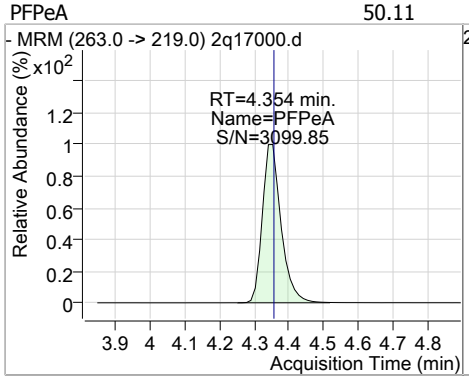


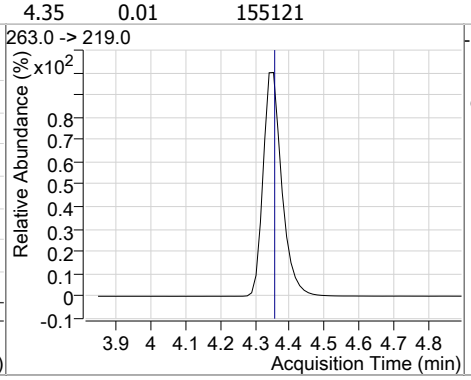


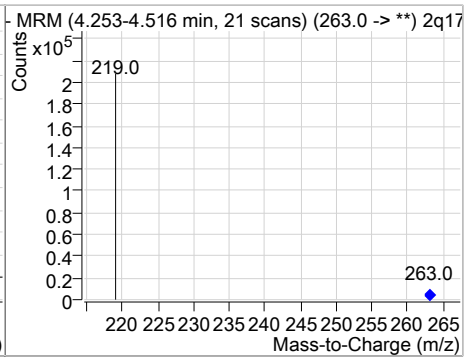


Perfluorinated Compounds by LC/MS/MS

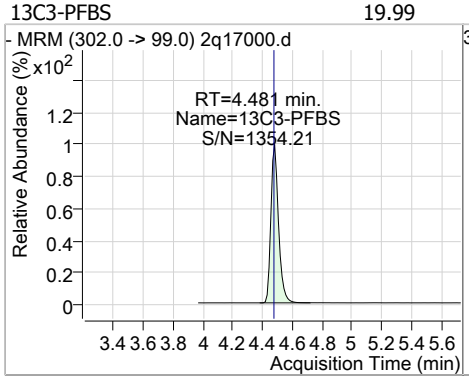
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	50.11	4.35	0.01	155121				

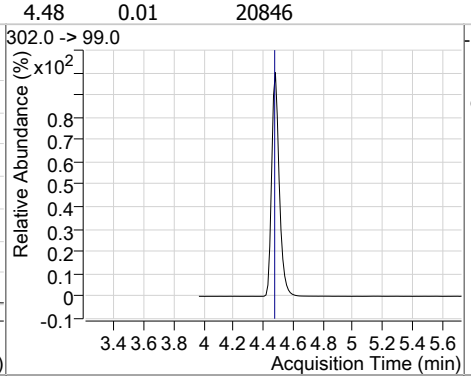


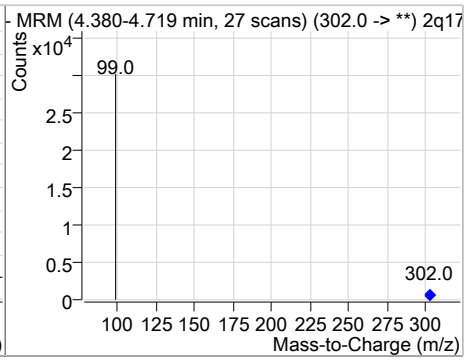




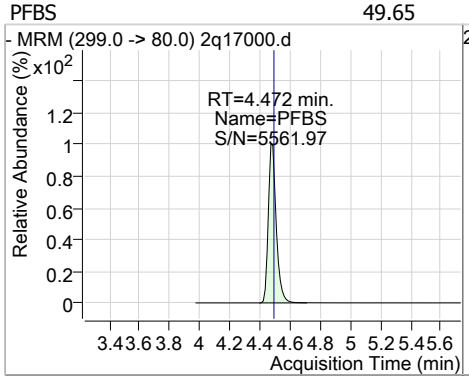
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.99	4.48	0.01	20846				

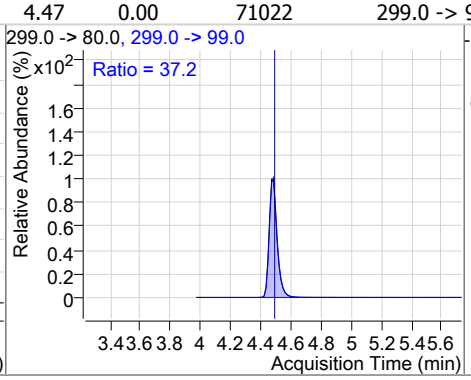


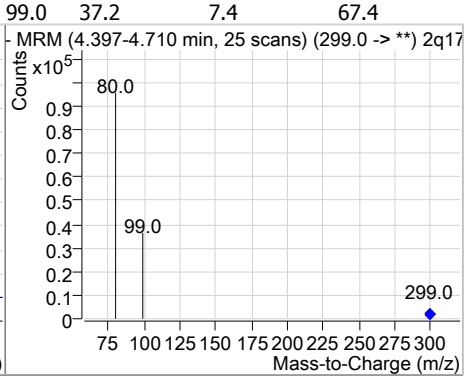




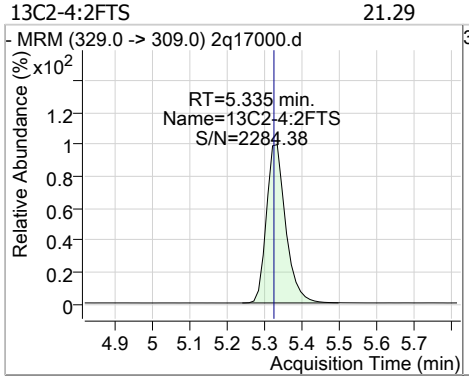
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	49.65	4.47	0.00	71022	299.0 -> 99.0	37.2	7.4	67.4

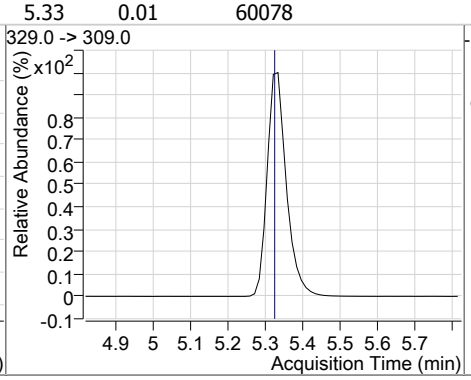


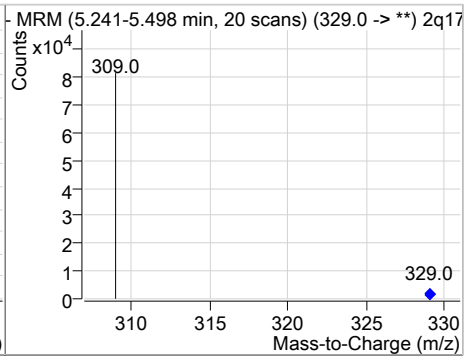




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	21.29	5.33	0.01	60078				

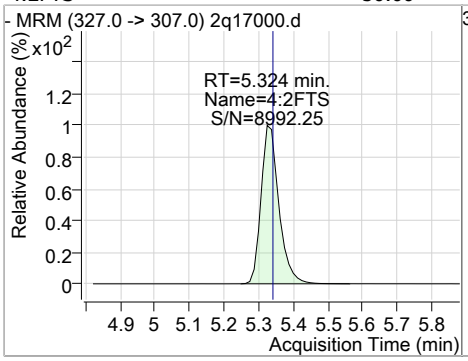


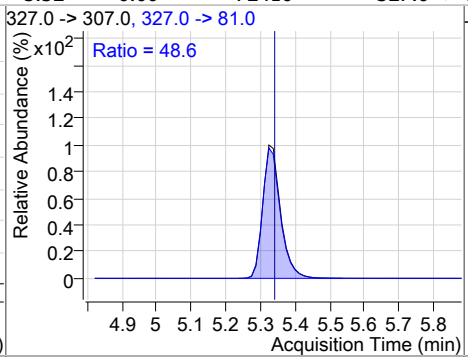


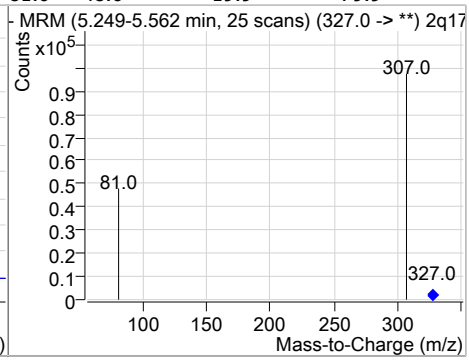


Perfluorinated Compounds by LC/MS/MS

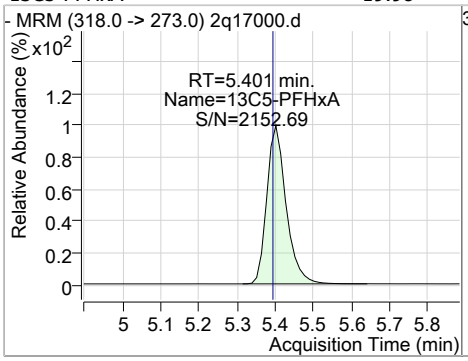
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	50.66	5.32	0.00	72416	327.0 -> 81.0	48.6	19.9	79.9

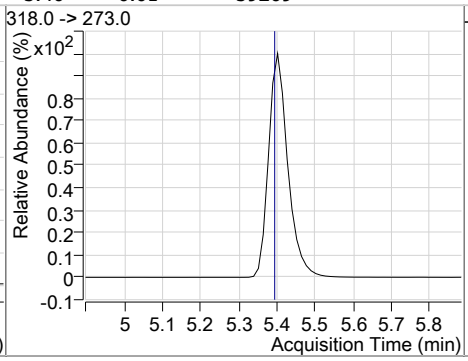


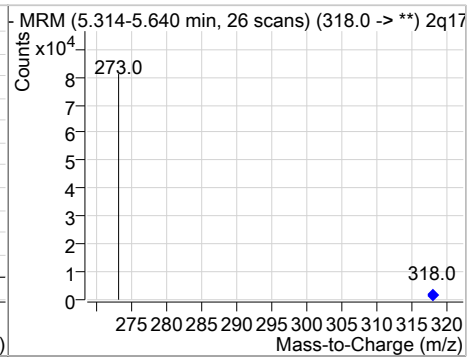




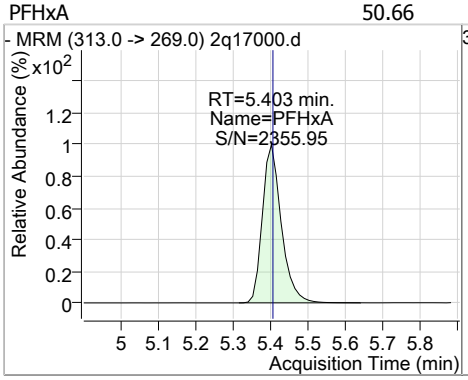
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.98	5.40	0.01	59269				

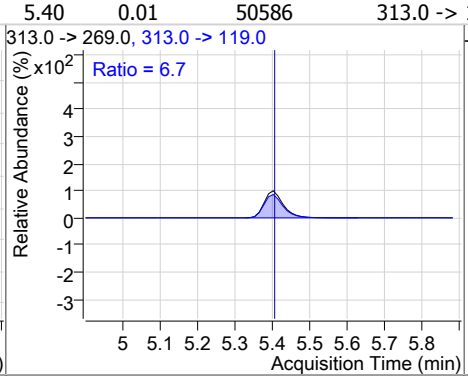


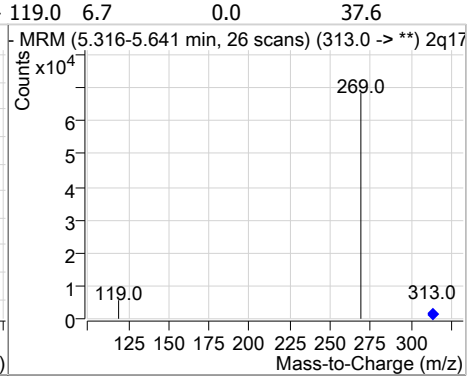




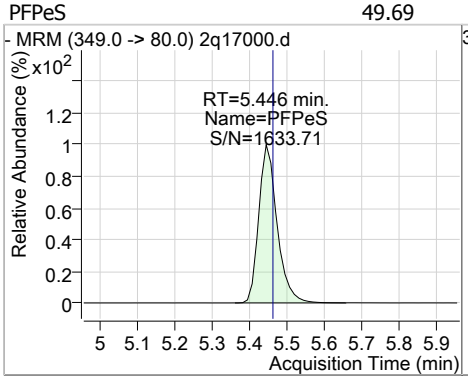
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	50.66	5.40	0.01	50586	313.0 -> 119.0	6.7	0.0	37.6

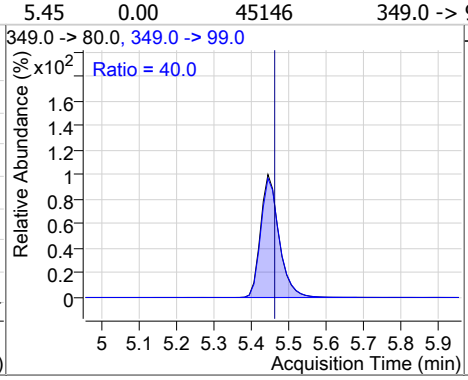


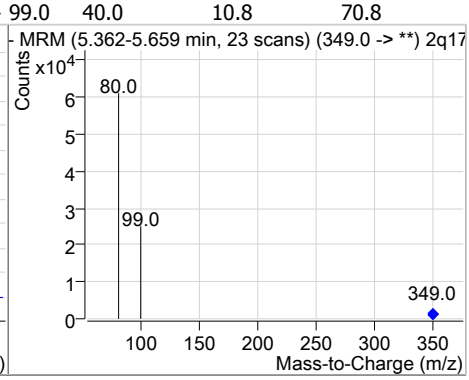




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	49.69	5.45	0.00	45146	349.0 -> 99.0	40.0	10.8	70.8

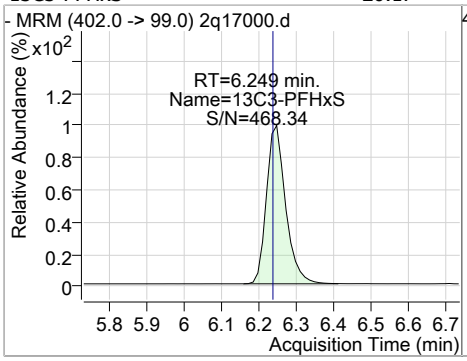


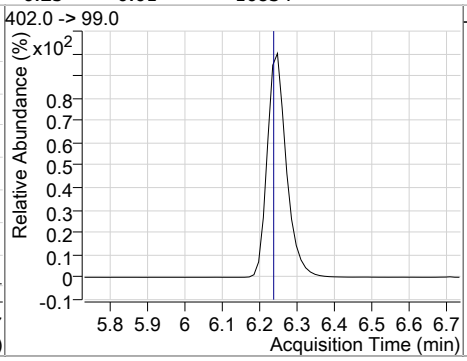


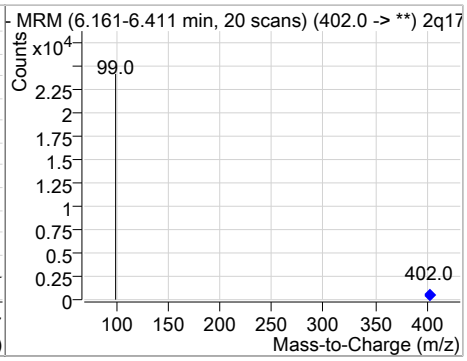


Perfluorinated Compounds by LC/MS/MS

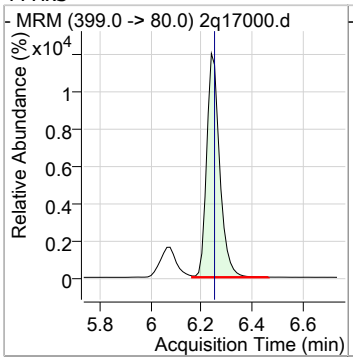
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.17	6.25	0.01	16834				

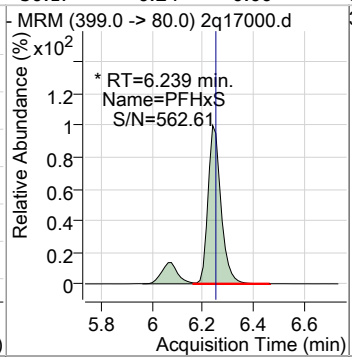


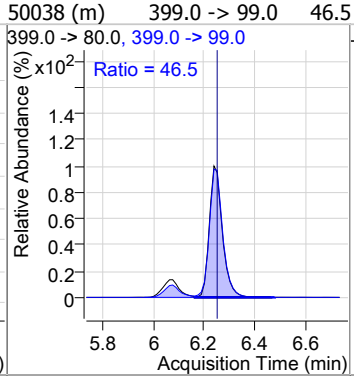


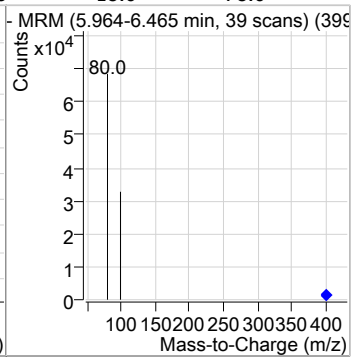


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	50.17	6.24	0.00	50038 (m)	399.0 -> 99.0	46.5	18.0	78.0

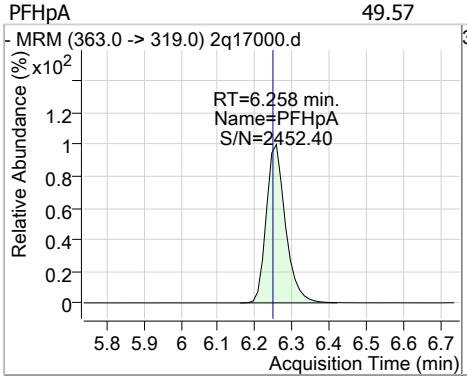


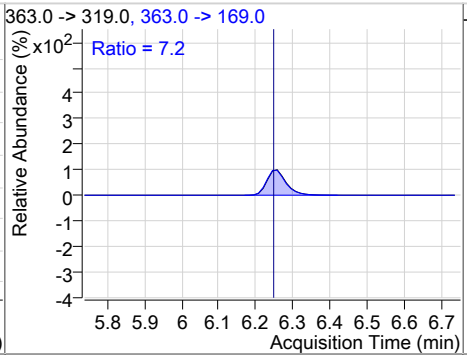


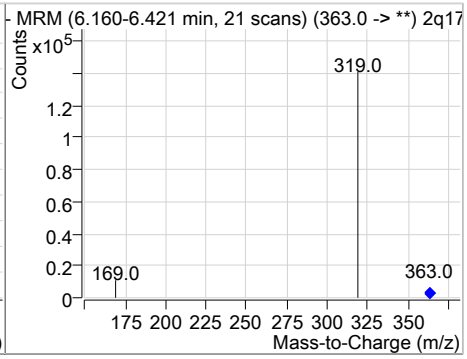




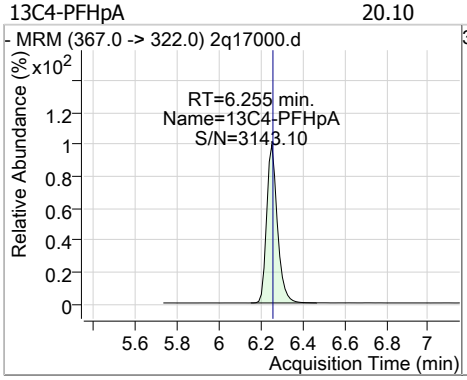
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	49.57	6.26	0.01	104970	363.0 -> 169.0	7.2	0.0	37.2

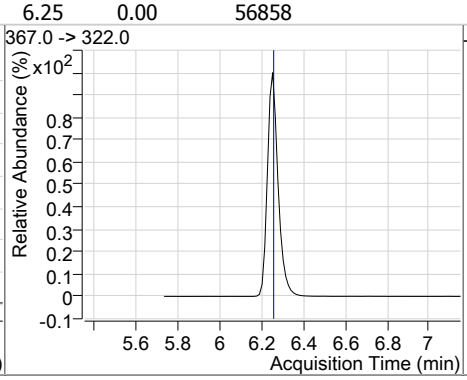


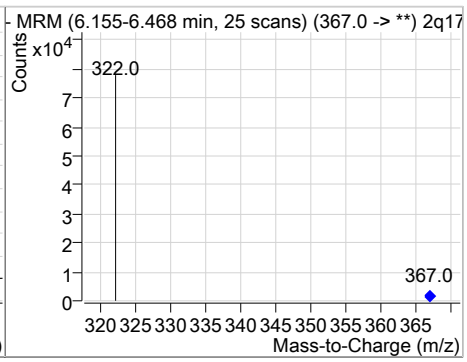




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.10	6.25	0.00	56858				

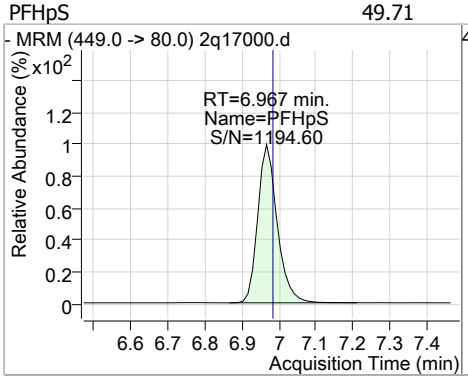


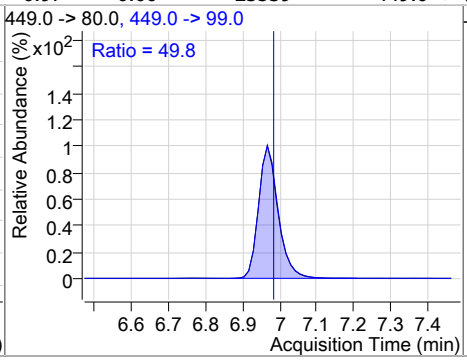


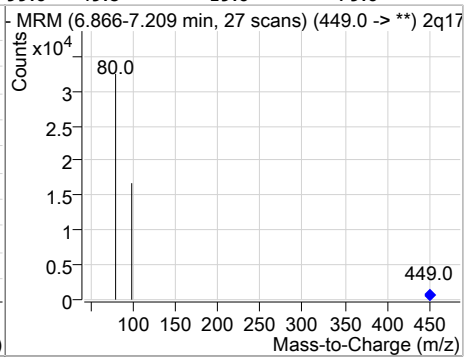


Perfluorinated Compounds by LC/MS/MS

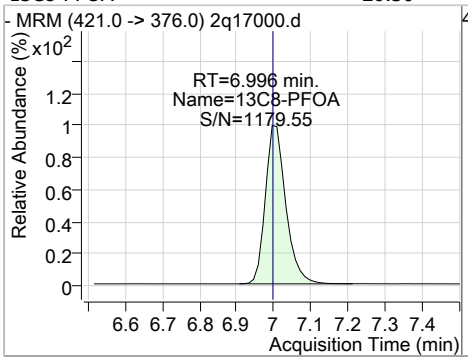
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	49.71	6.97	0.00	23539	449.0 -> 99.0	49.8	19.0	79.0

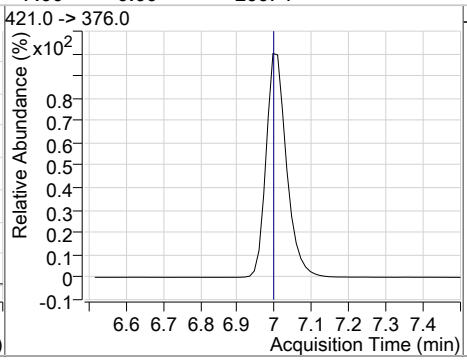


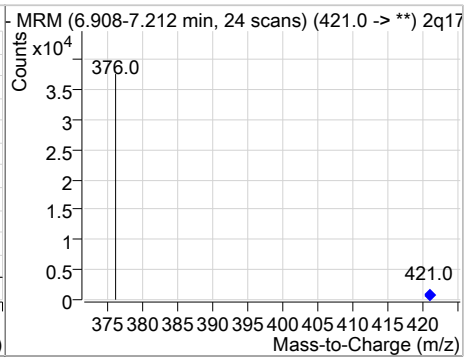




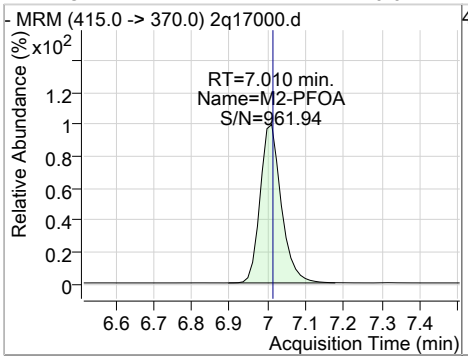
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.30	7.00	0.00	26674				

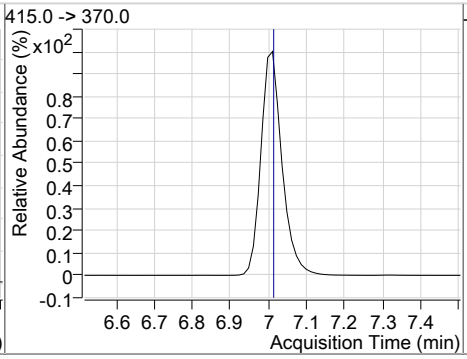


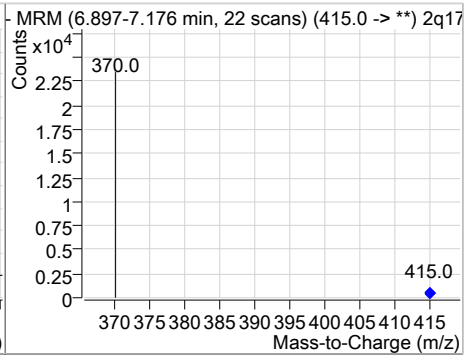




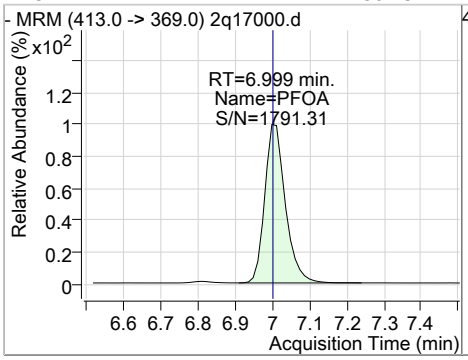
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.01	7.01	0.01	16924				

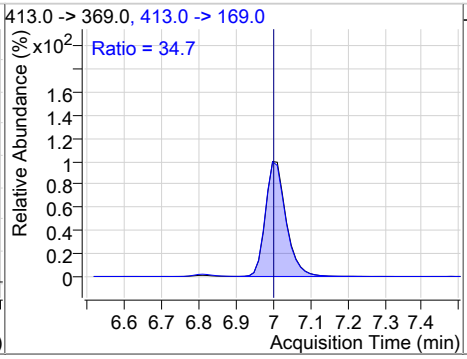


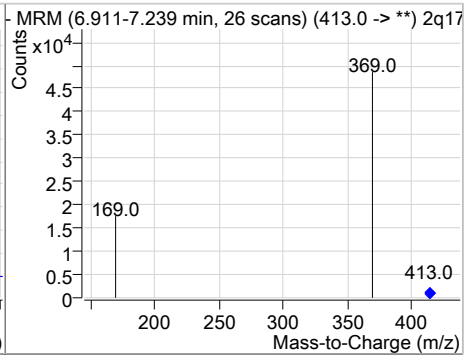




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	50.23	7.00	0.00	35723	413.0 -> 169.0	34.7	5.0	65.0

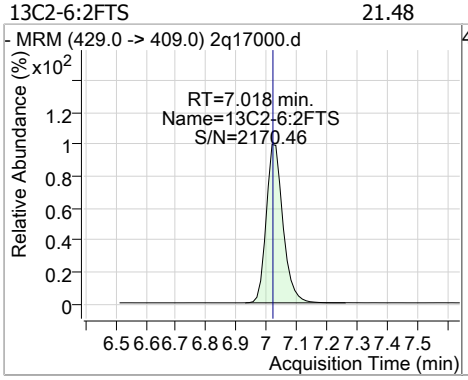


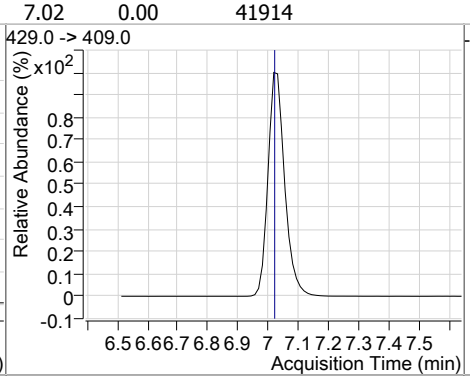


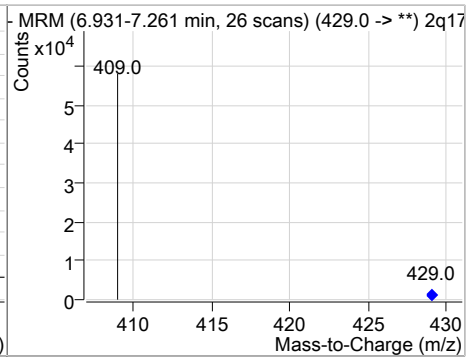


Perfluorinated Compounds by LC/MS/MS

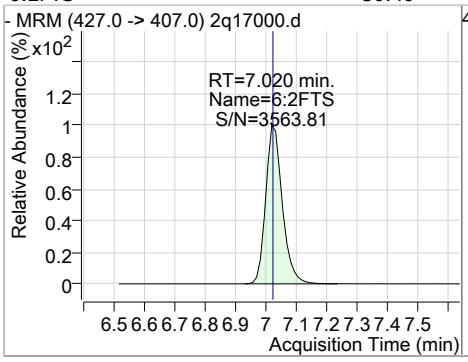
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	21.48	7.02	0.00	41914				

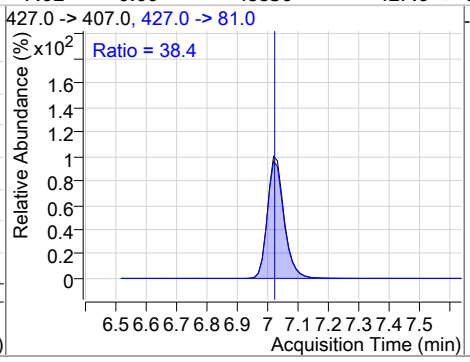


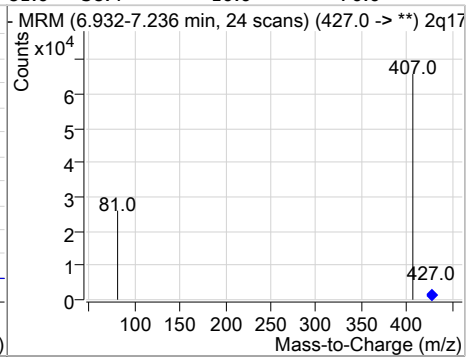




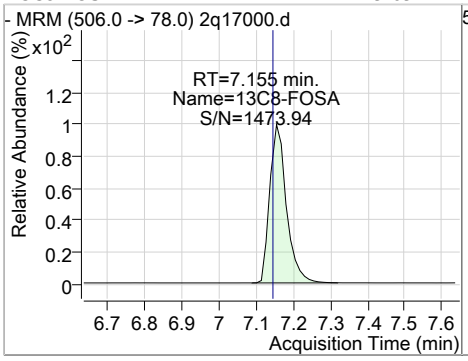
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	50.46	7.02	0.00	48830	427.0 -> 81.0	38.4	10.0	70.0

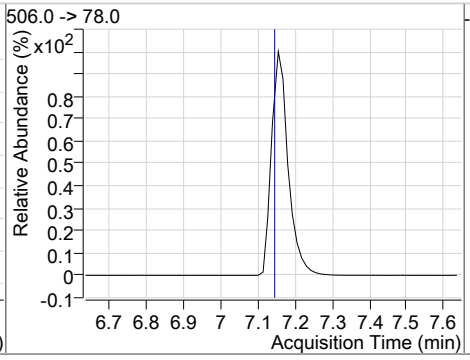


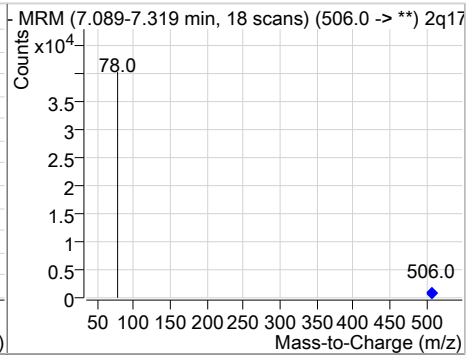




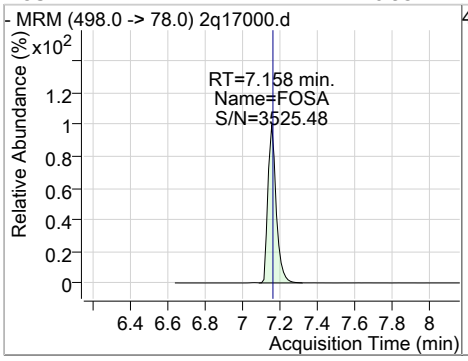
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.09	7.16	0.01	30712				

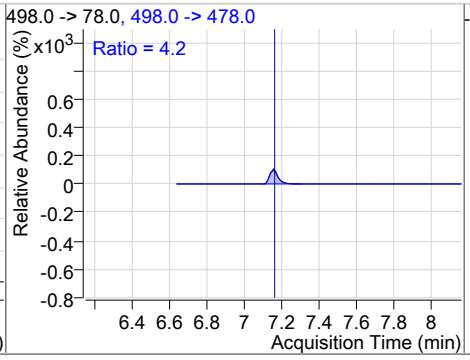


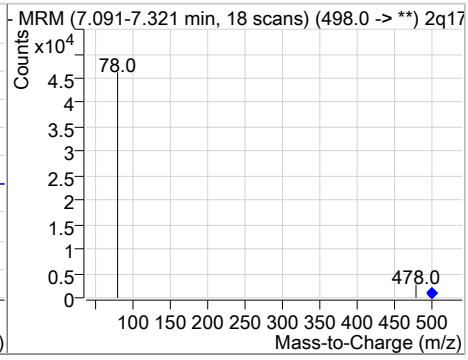




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	48.93	7.16	0.01	36863	498.0 -> 478.0	4.2	0.0	34.0

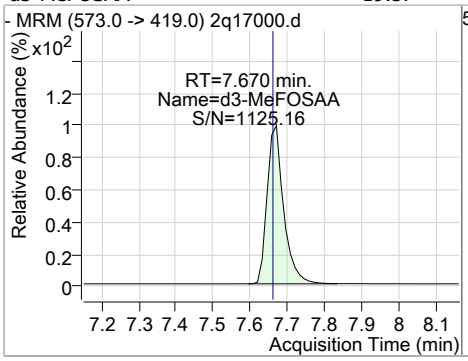


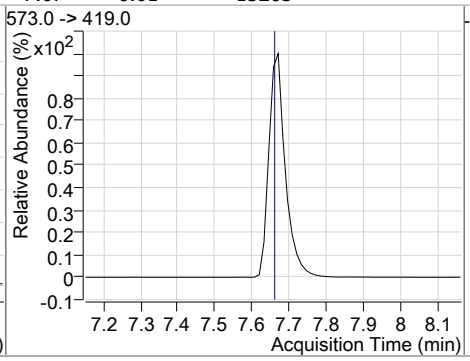


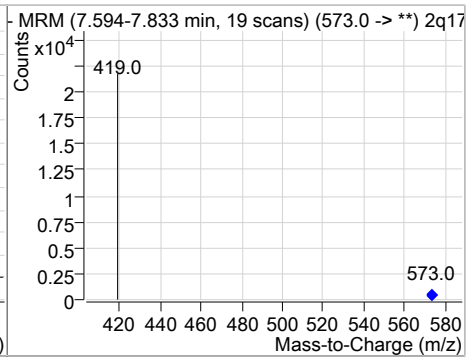


Perfluorinated Compounds by LC/MS/MS

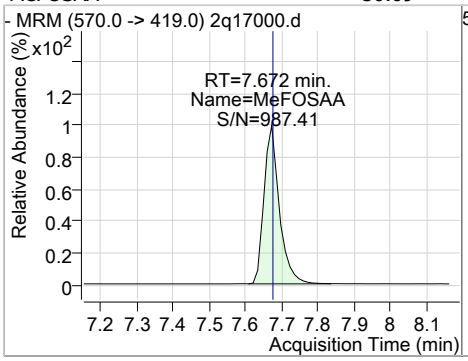
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.57	7.67	0.01	15203				

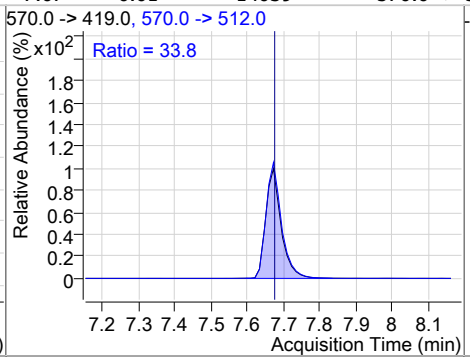


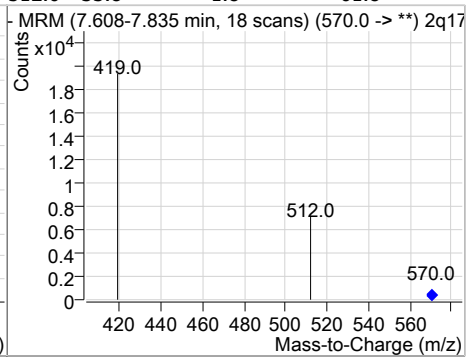




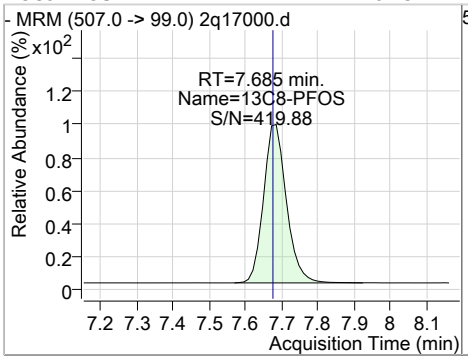
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	50.09	7.67	0.01	14039	570.0 -> 512.0	33.8	1.8	61.8

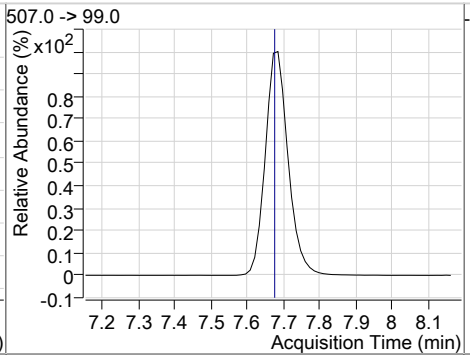


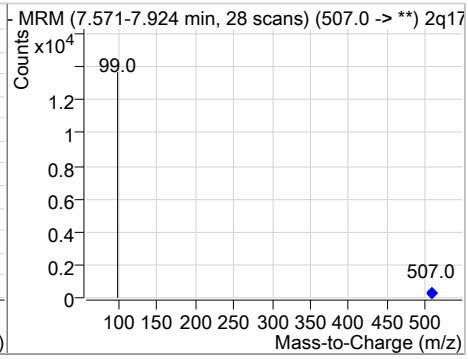




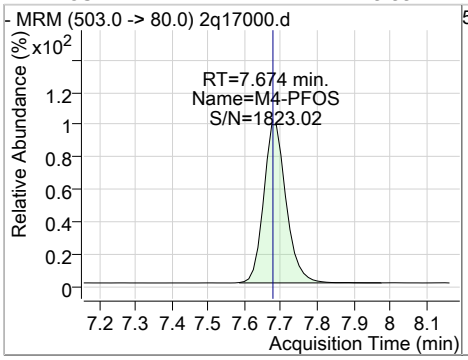
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.43	7.69	0.01	8476				

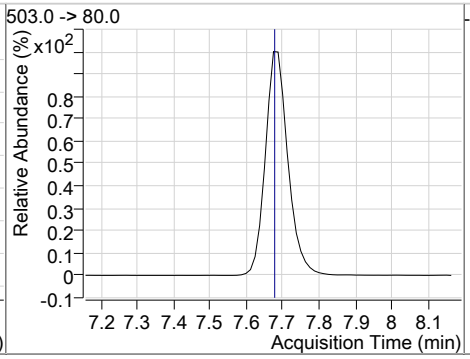


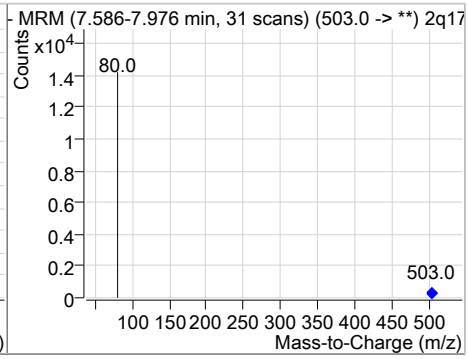




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	19.99	7.67	0.00	9651				

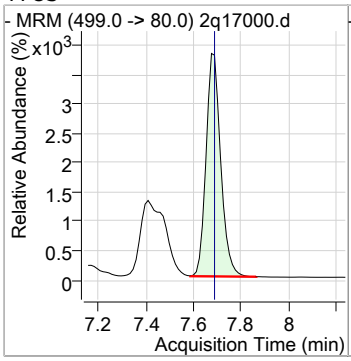


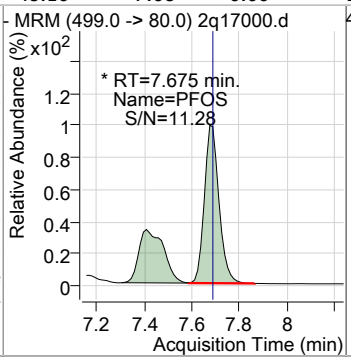


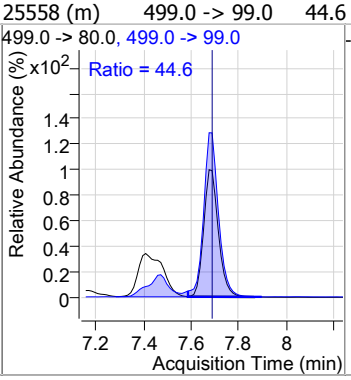


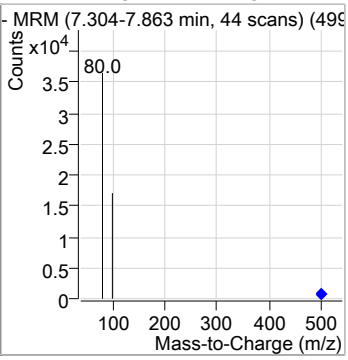
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	48.16	7.68	0.00	25558 (m)	499.0 -> 99.0	44.6	14.5	74.5

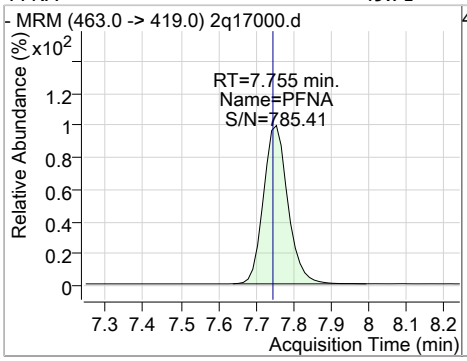


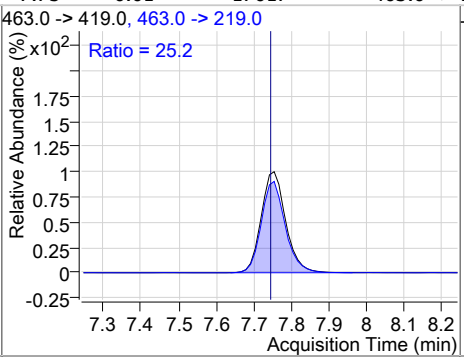


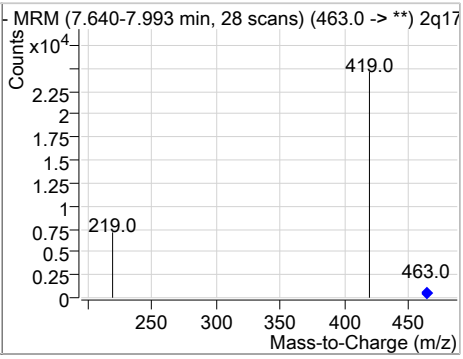




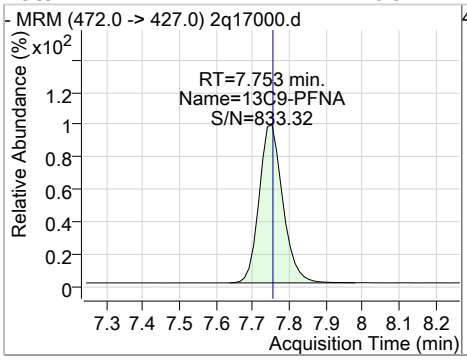
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	49.71	7.75	0.01	17617	463.0 -> 219.0	25.2	0.0	58.4

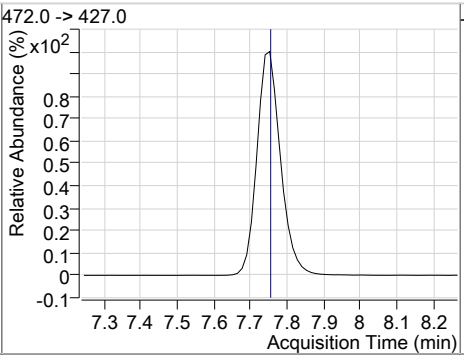


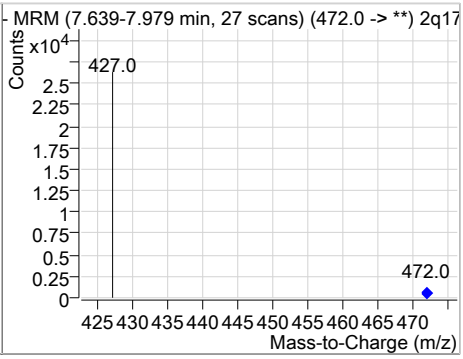




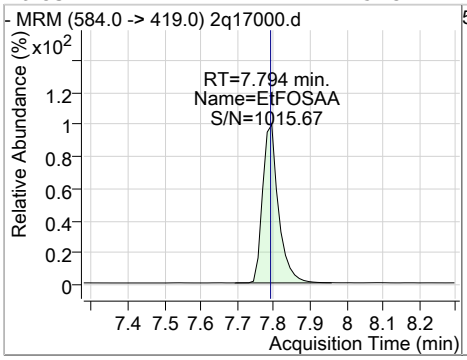
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.37	7.75	0.00	17959				

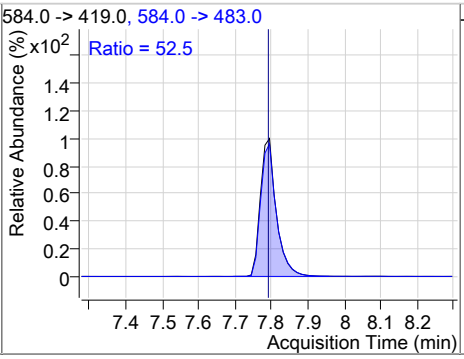


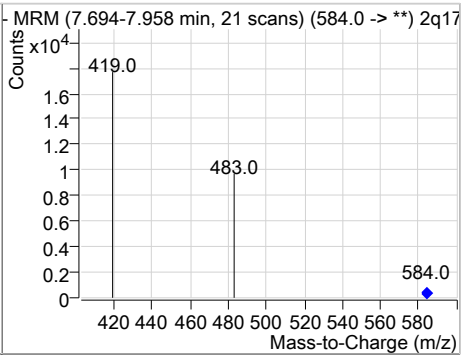




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	51.31	7.79	0.01	12604	584.0 -> 483.0	52.5	24.8	84.8

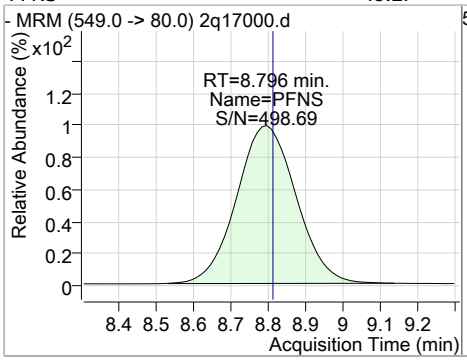


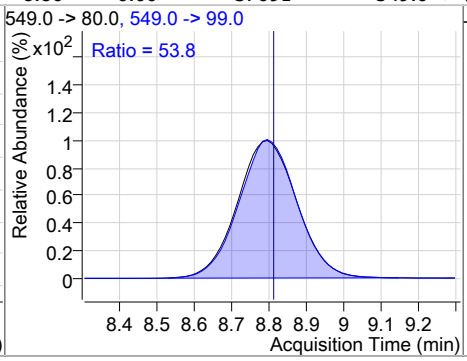


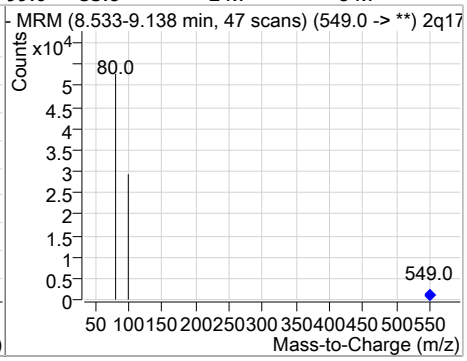


Perfluorinated Compounds by LC/MS/MS

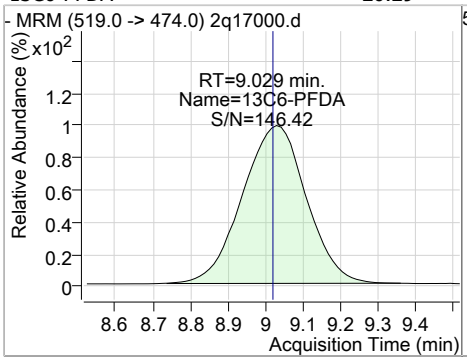
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	48.27	8.80	0.00	37691	549.0 -> 99.0	53.8	24.7	84.7

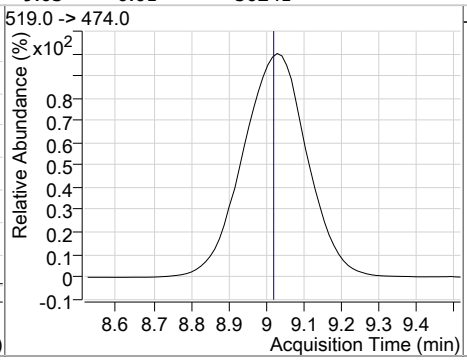


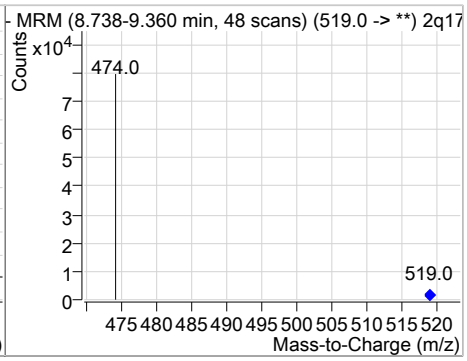




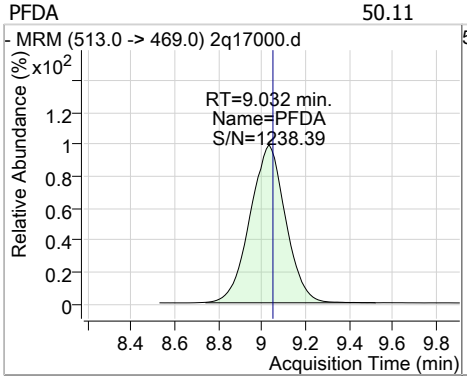
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.29	9.03	0.01	56241				

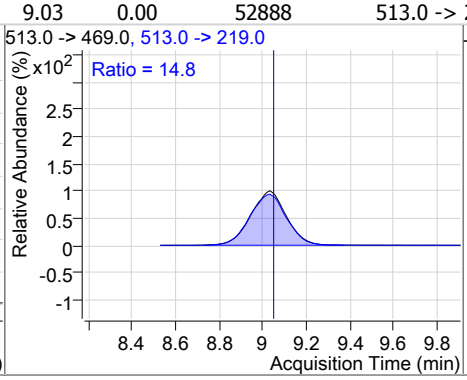


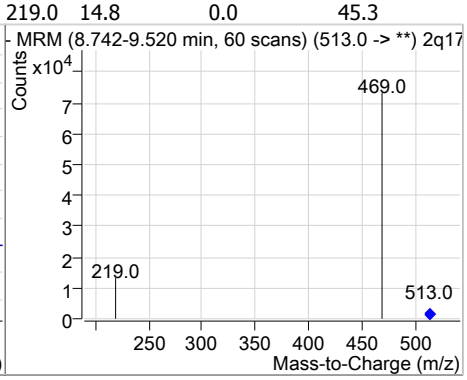




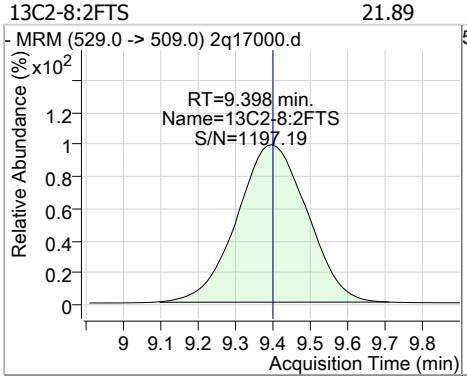
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	50.11	9.03	0.00	52888	513.0 -> 219.0	14.8	0.0	45.3

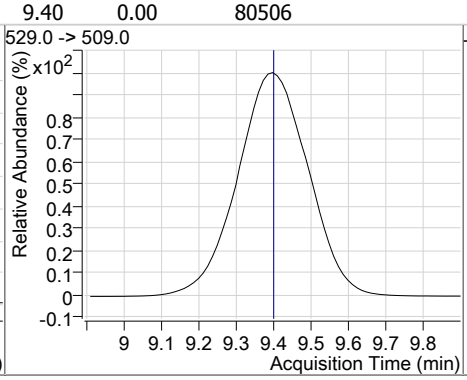


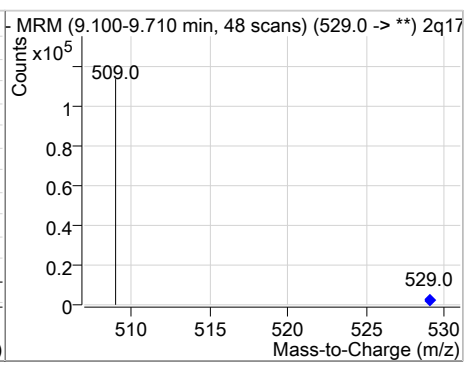




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	21.89	9.40	0.00	80506				

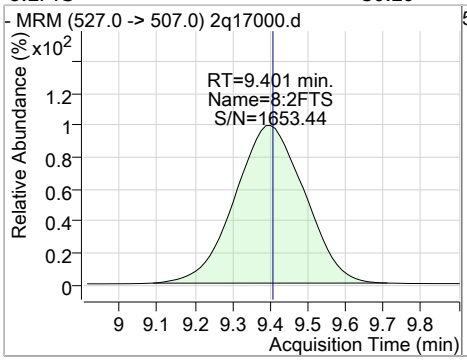


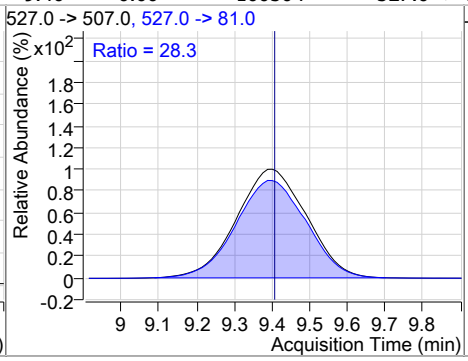


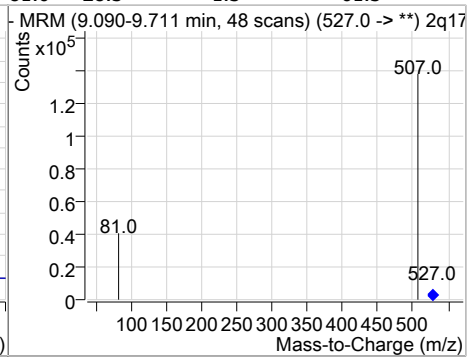


Perfluorinated Compounds by LC/MS/MS

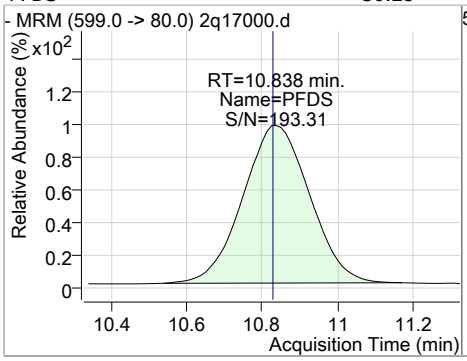
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	50.20	9.40	0.00	100504	527.0 -> 81.0	28.3	1.3	61.3

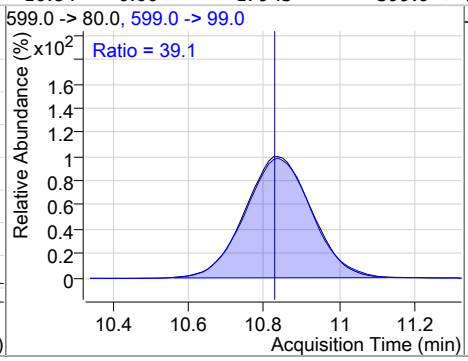


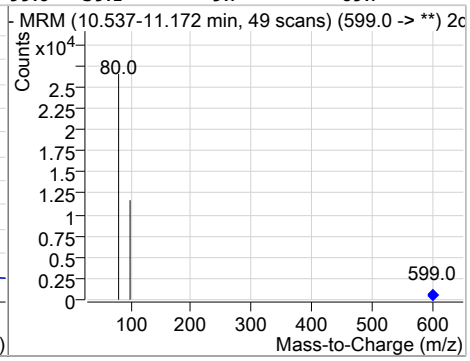




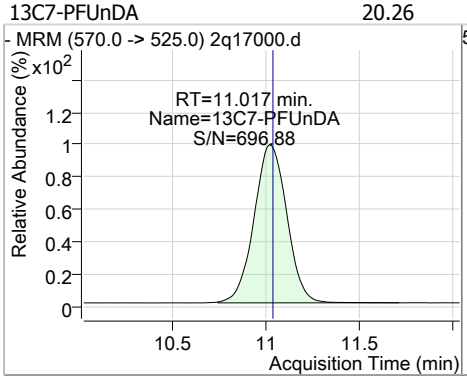
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	50.28	10.84	0.00	17943	599.0 -> 99.0	39.1	9.7	69.7

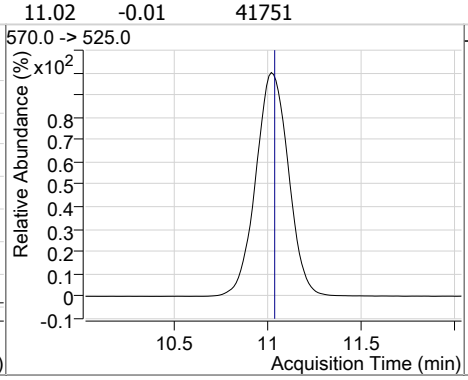


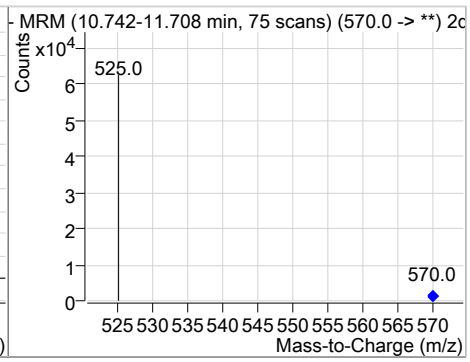




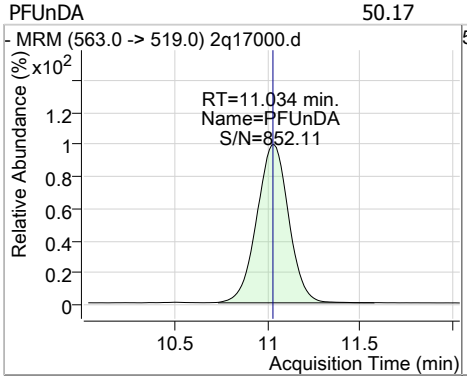
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.26	11.02	-0.01	41751				

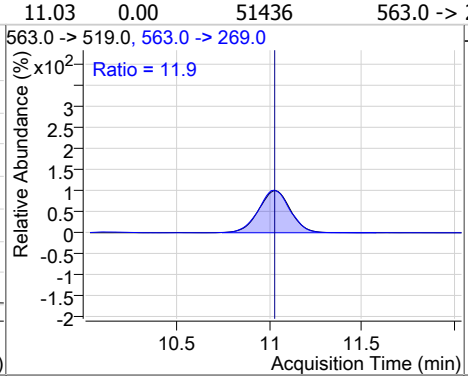


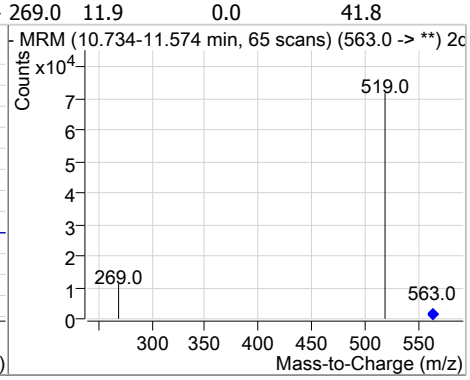




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	50.17	11.03	0.00	51436	563.0 -> 269.0	11.9	0.0	41.8

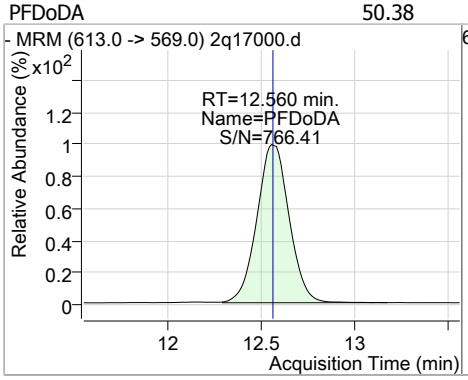


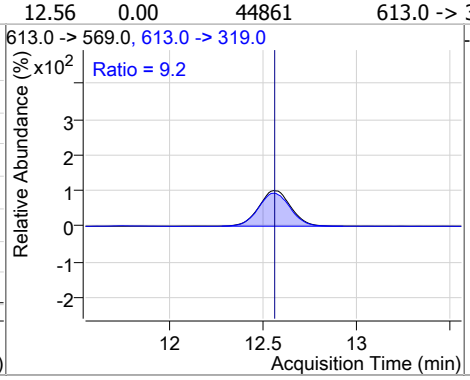


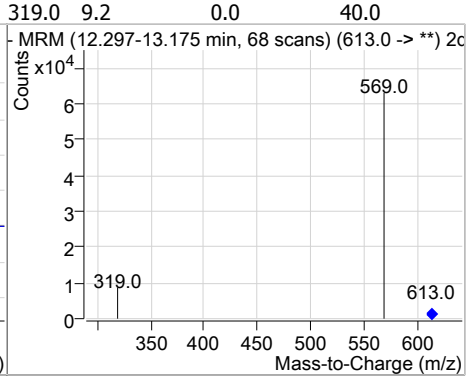


Perfluorinated Compounds by LC/MS/MS

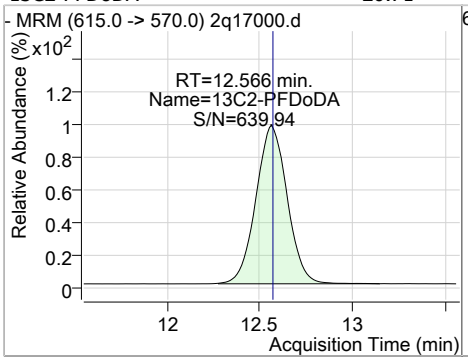
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	50.38	12.56	0.00	44861	613.0 -> 319.0	9.2	0.0	40.0

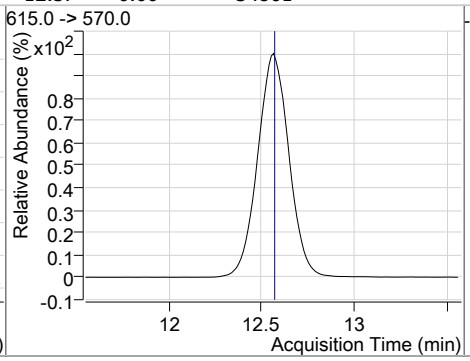


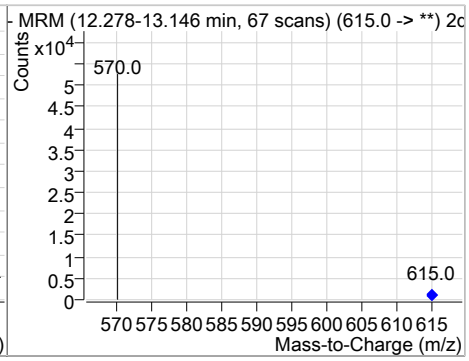




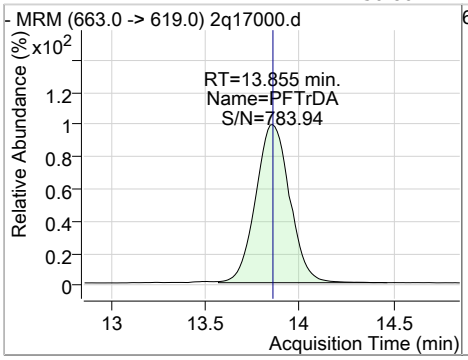
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.71	12.57	0.00	34861				

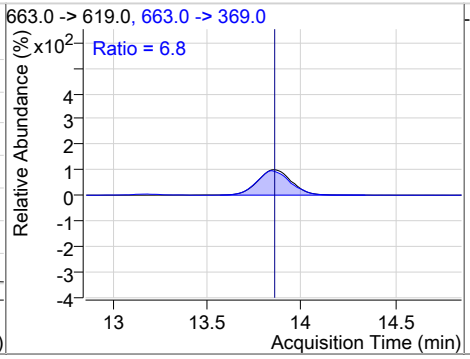


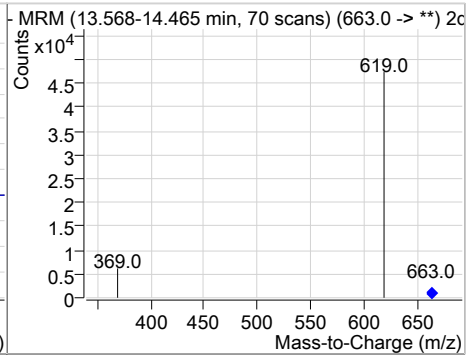




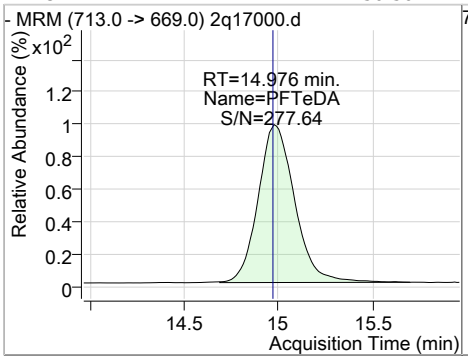
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	50.86	13.86	0.00	33642	663.0 -> 369.0	6.8	0.0	37.1

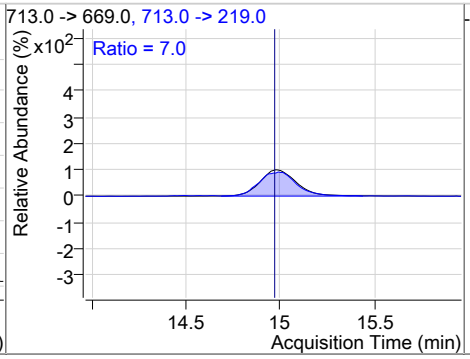


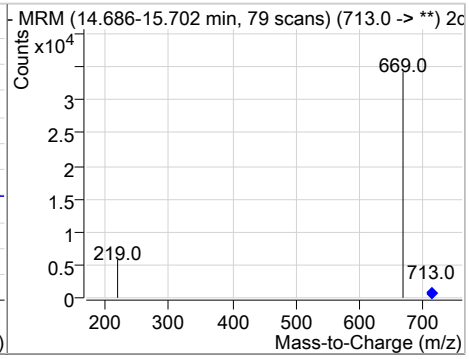




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	50.56	14.98	0.01	22787	713.0 -> 219.0	7.0	0.0	37.4

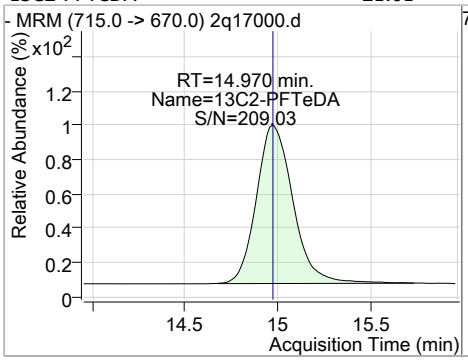


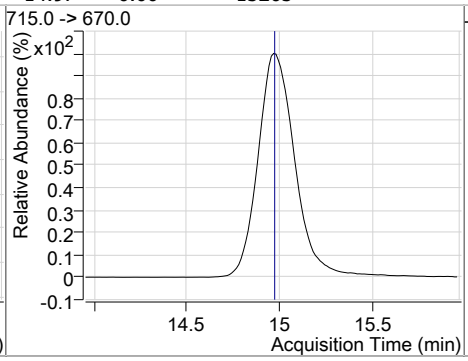


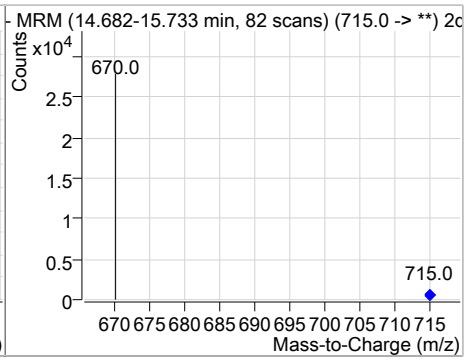


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.01	14.97	0.00	15265				







7.5.45

7

Manual Integration Approval Summary

Sample Number:	S2Q295-IC295	**Method:**	EPA 537M BY ID
Lab FileID:	2Q17000.D	**Analyst approved:**	07/13/18 12:48 Nancy Saunders
Injection Time:	07/12/18 11:24	**Supervisor approved:**	07/13/18 17:24 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.24	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.67	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 07/13/18 17:24

Perfluorinated Compounds by LC/MS/MS

Data File : 2q17001.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/12/2018 11:45:43 AM
Sample Name : ic295-100
Vial : Vial 9
DA Method File : PFC_ID_071218_S2Q295.quantmethod.xml
Batch Name : s2q295.batch.bin
Sample Information : op70790,S2Q295,1.99,,,1.0,1,soil

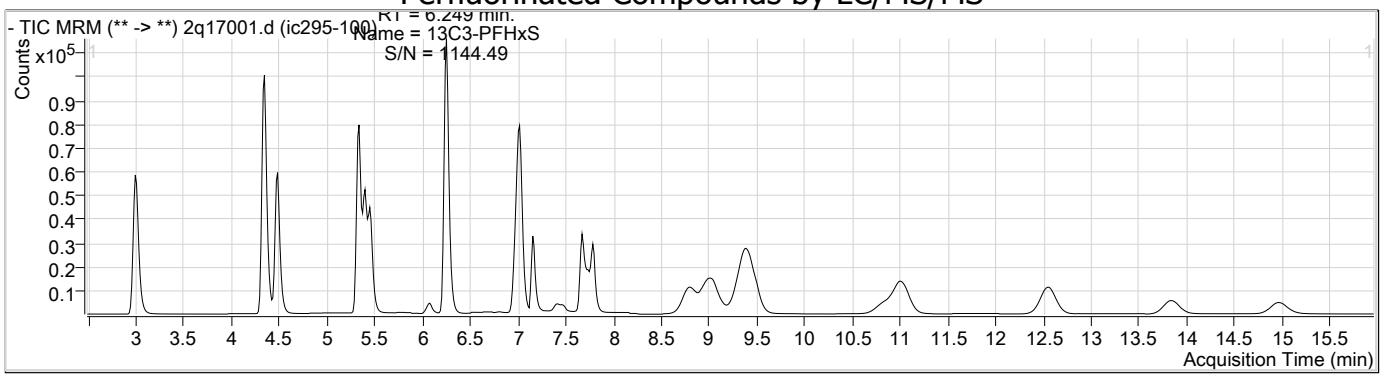
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-PFOA	7.010	415.0 -> 370.0	17075	20.00 µg/L	0.014
13C4-PFOS	7.687	503.0 -> 80.0	9357	20.00 µg/L	0.012
M4-PFBA	2.991	217.0 -> 172.0	131769	20.00 µg/L	0.000
M5-PFPeA	4.350	268.0 -> 223.0	65149	20.00 µg/L	0.012
M5-PFHxA	5.401	318.0 -> 273.0	57231	20.00 µg/L	0.011
M4-PFHpA	6.255	367.0 -> 322.0	54616	20.00 µg/L	0.001
M8-PFOA	7.009	421.0 -> 376.0	26238	20.00 µg/L	0.014
M9-PFNA	7.753	472.0 -> 427.0	17985	20.00 µg/L	0.001
M6-PFDA	9.017	519.0 -> 474.0	56546	20.00 µg/L	0.000
M7-PFUnDA	11.017	570.0 -> 525.0	42539	20.00 µg/L	-0.012
M2-PFDoDA	12.553	615.0 -> 570.0	35375	20.00 µg/L	-0.012
M2-PFTeDA	14.957	715.0 -> 670.0	15456	20.00 µg/L	-0.012
M8-FOSA	7.155	506.0 -> 78.0	27700	20.00 µg/L	0.013
M3-PFBS	4.481	302.0 -> 99.0	20235	20.00 µg/L	0.013
M3-PFHxS	6.249	402.0 -> 99.0	16623	20.00 µg/L	0.013
M8-PFOS	7.685	507.0 -> 99.0	8098	20.00 µg/L	0.012
M2-4:2FTS	5.335	329.0 -> 309.0	66551	20.00 µg/L	0.012
M2-6:2FTS	7.031	429.0 -> 409.0	47350	20.00 µg/L	0.013
M2-8:2FTS	9.385	529.0 -> 509.0	92926	20.00 µg/L	-0.012
M3-MeFOSAA	7.670	573.0 -> 419.0	14934	20.00 µg/L	0.013
System Monitoring Compounds					
13C2-4:2FTS	5.335	329.0 -> 309.0	66541	23.58 µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 117.9%	
13C2-6:2FTS	7.031	429.0 -> 409.0	47366	24.27 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.4%	
13C2-8:2FTS	9.385	529.0 -> 509.0	91681	24.92 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 124.6%	
13C2-PFDoDA	12.553	615.0 -> 570.0	35424	21.04 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.2%	
13C2-PFTeDA	14.957	715.0 -> 670.0	15565	21.42 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.1%	
13C3-PFBS	4.481	302.0 -> 99.0	20243	19.41 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.1%	
13C3-PFHxS	6.249	402.0 -> 99.0	16622	19.91 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C4-PFBA	2.991	217.0 -> 172.0	131710	19.82 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C4-PFHpA	6.255	367.0 -> 322.0	54612	19.30 µg/L	0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.5%	
13C5-PFHxA	5.401	318.0 -> 273.0	57243	19.30 µg/L	0.011
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.5%	
13C5-PFPeA	4.350	268.0 -> 223.0	65130	19.85 µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C6-PFDA	9.017	519.0 -> 474.0	56134	20.25 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.2%	

Perfluorinated Compounds by LC/MS/MS

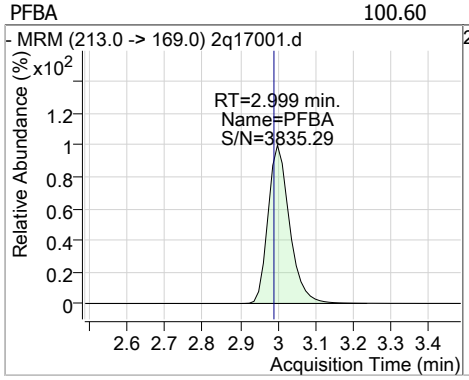
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	11.017	570.0 -> 525.0	42581	20.66	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%			
13C8-FOSA	7.155	506.0 -> 78.0	27701	17.22	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.1%			
13C8-PFOA	7.009	421.0 -> 376.0	26238	19.97	µg/L		0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%			
13C8-PFOS	7.685	507.0 -> 99.0	8102	19.53	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.6%			
13C9-PFNA	7.753	472.0 -> 427.0	17979	20.39	µg/L		0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.0%			
d3-MeFOSAA	7.670	573.0 -> 419.0	14953	19.25	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.2%			
M2-PFOA	7.010	415.0 -> 370.0	17078	20.00	ng/ml		0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.687	503.0 -> 80.0	9360	20.01	ng/ml		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
Target Compounds							**QValue**
4:2FTS	5.337	327.0 -> 307.0	142716	99.83	µg/L		99
6:2FTS	7.032	427.0 -> 407.0	99197	99.89	µg/L		96
8:2FTS	9.388	527.0 -> 507.0	206354	99.95	µg/L		93
EtFOSAA	7.794	584.0 -> 419.0	24019	99.55	µg/L		97
FOSA	7.158	498.0 -> 78.0	68466	100.76	µg/L		100
MeFOSAA	7.672	570.0 -> 419.0	27575	100.15	µg/L		99
PFBA	2.999	213.0 -> 169.0	105143	100.60	µg/L		100
PFBS	4.484	299.0 -> 80.0	139486	100.46	µg/L		100
PFDA	9.032	513.0 -> 469.0	105664	100.23	µg/L		100
PFDoDA	12.560	613.0 -> 569.0	90122	99.89	µg/L		99
PFDS	10.825	599.0 -> 80.0	36451	100.07	µg/L		98
PFHpA	6.258	363.0 -> 319.0	204256	100.43	µg/L		99
PFHpS	6.967	449.0 -> 80.0	46965	100.42	µg/L		99
PFHxA	5.403	313.0 -> 269.0	96354	99.84	µg/L		97
PFHxS	6.252	399.0 -> 80.0	98619	100.12	µg/L	m	98
PFNA	7.755	463.0 -> 419.0	35622	100.42	µg/L		94
PFNS	8.784	549.0 -> 80.0	75501	101.18	µg/L		100
PFOA	7.011	413.0 -> 369.0	69950	100.04	µg/L		99
PFOS	7.688	499.0 -> 80.0	51271	101.09	µg/L	m	98
PFPeA	4.354	263.0 -> 219.0	304417	100.08	µg/L		100
PFPeS	5.446	349.0 -> 80.0	88570	100.45	µg/L		100
PFTeDA	14.964	713.0 -> 669.0	45896	99.83	µg/L		99
PFTrDA	13.843	663.0 -> 619.0	67184	99.57	µg/L		99
PFUnDA	11.009	563.0 -> 519.0	104887	100.24	µg/L		100

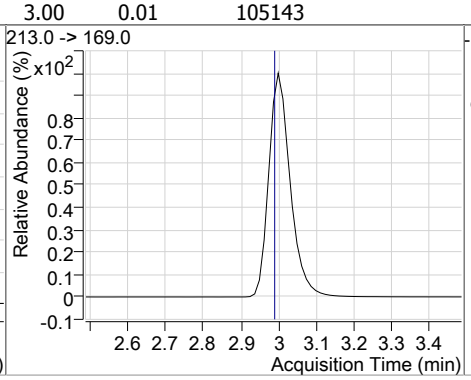
 # = Qualifier out of range, m = manually integrated, + = Area summed

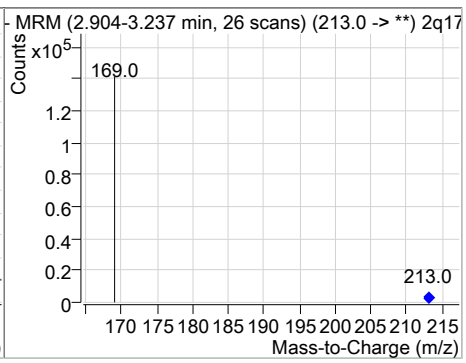
Perfluorinated Compounds by LC/MS/MS



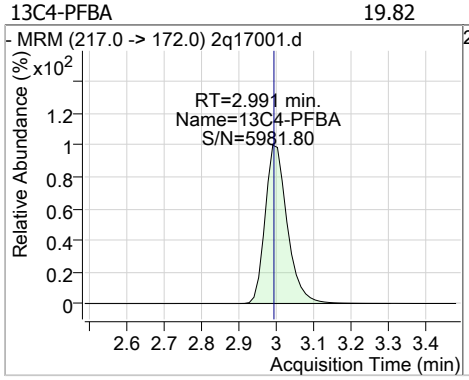
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	100.60	3.00	0.01	105143				

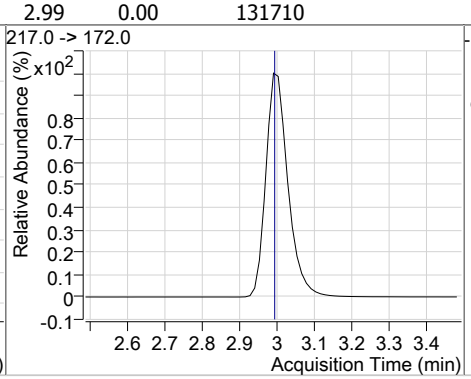


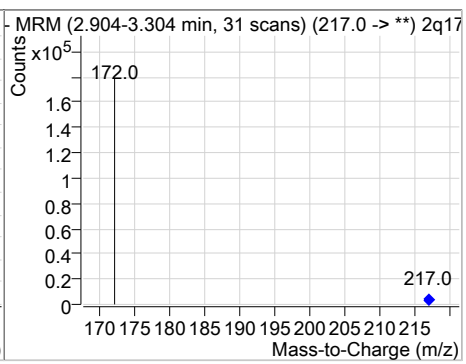




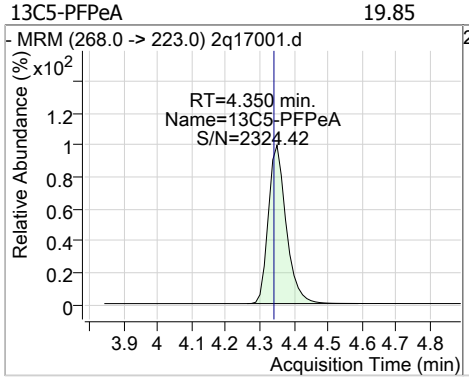
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.82	2.99	0.00	131710				

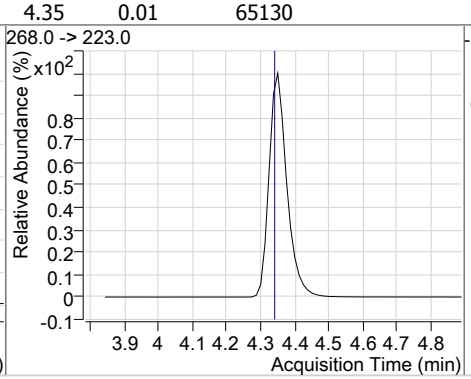


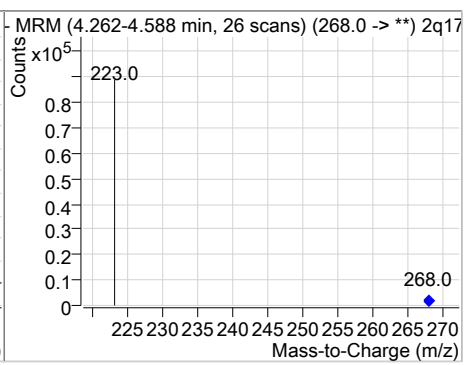




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.85	4.35	0.01	65130				

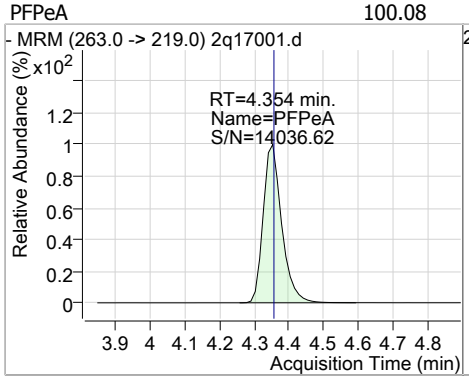


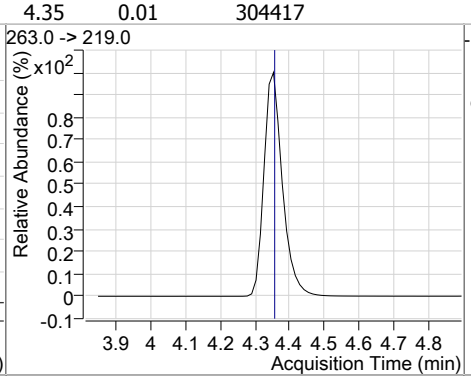


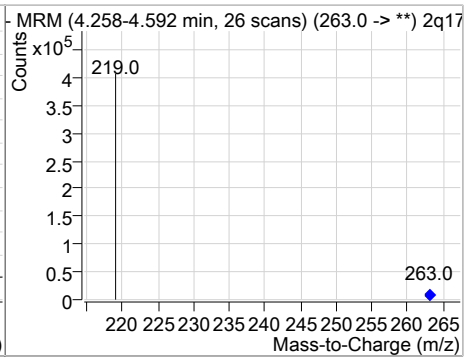


Perfluorinated Compounds by LC/MS/MS

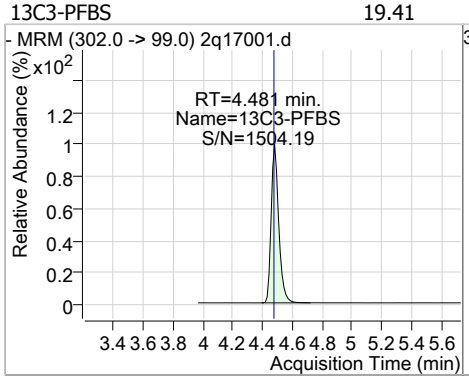
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	100.08	4.35	0.01	304417				

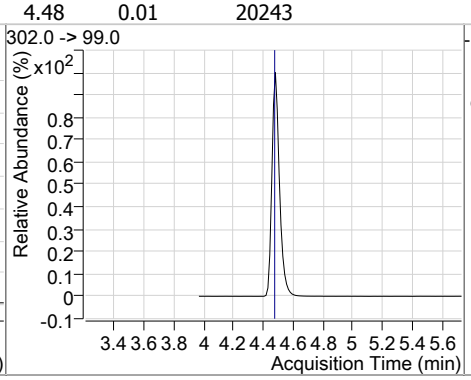


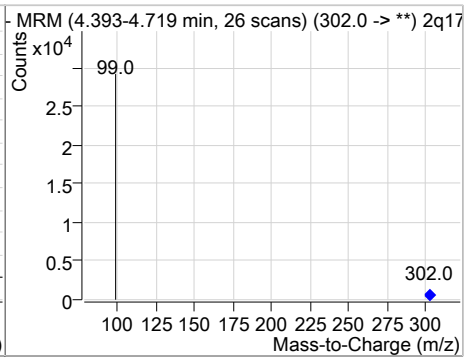




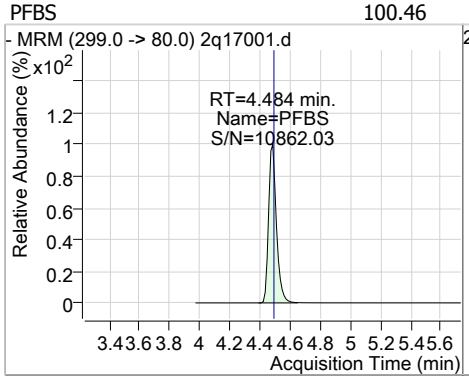
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.41	4.48	0.01	20243				

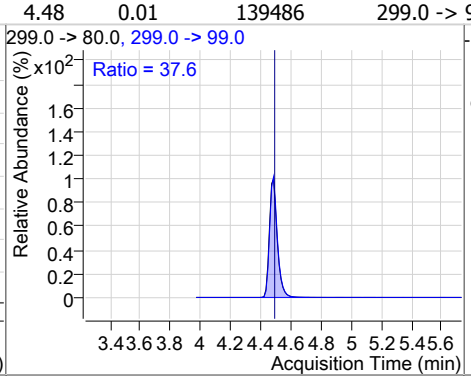


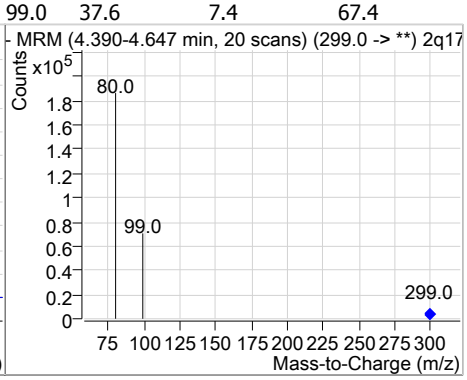




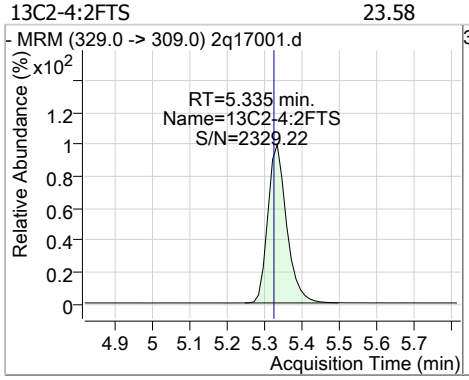
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	100.46	4.48	0.01	139486	299.0 -> 99.0	37.6	7.4	67.4

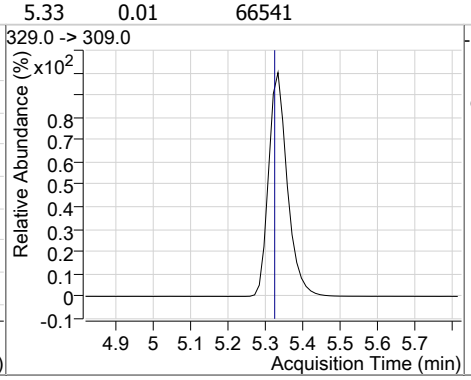


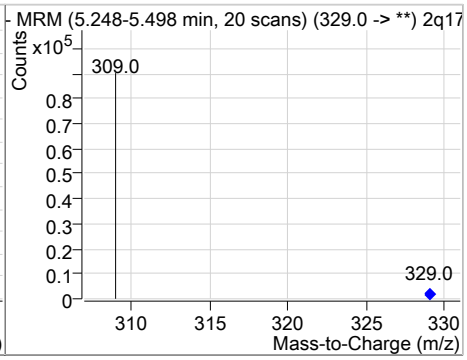




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	23.58	5.33	0.01	66541				

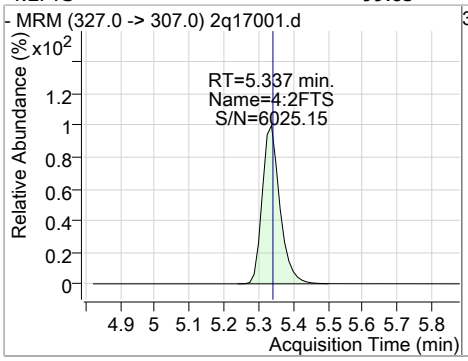


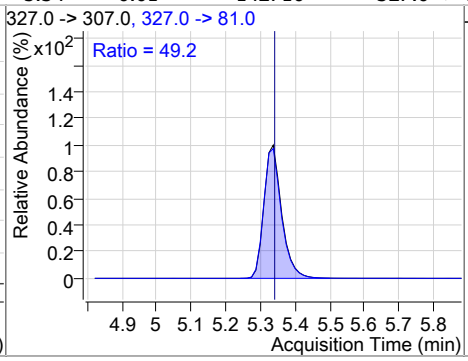


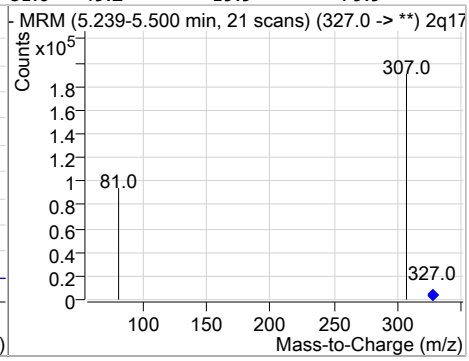


Perfluorinated Compounds by LC/MS/MS

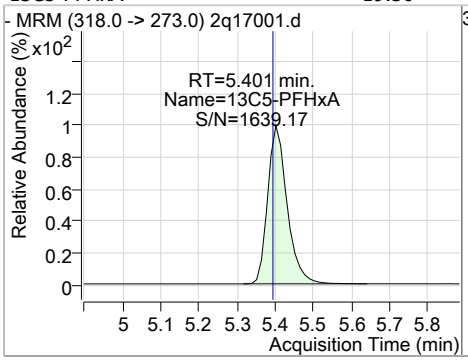
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	99.83	5.34	0.01	142716	327.0 -> 81.0	49.2	19.9	79.9

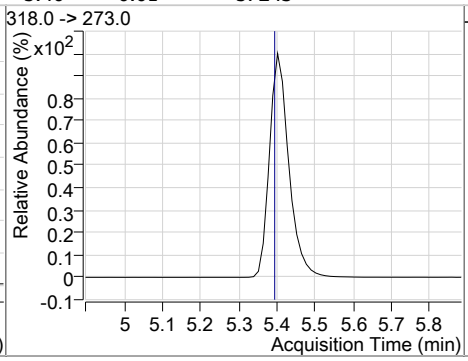


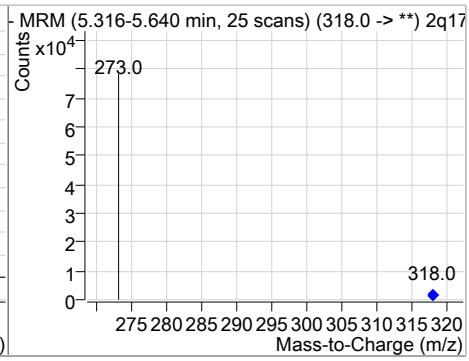




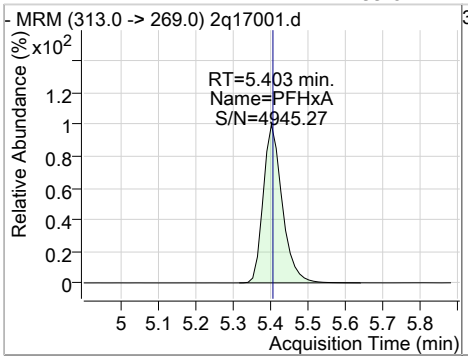
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.30	5.40	0.01	57243				

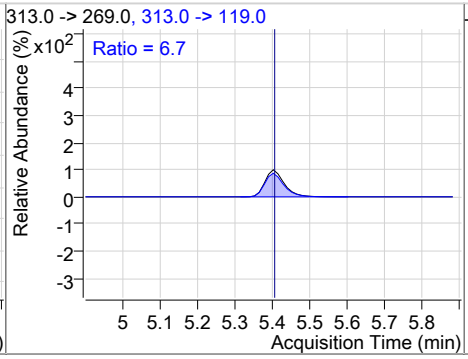


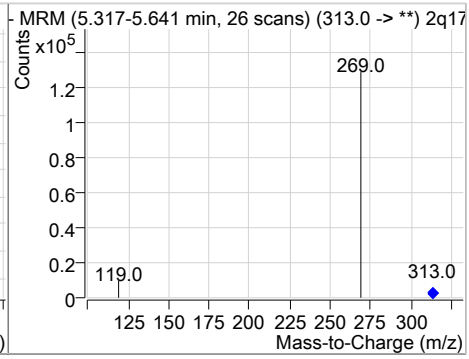




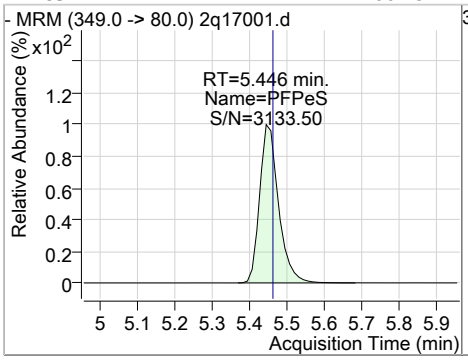
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	99.84	5.40	0.01	96354	313.0 -> 119.0	6.7	0.0	37.6

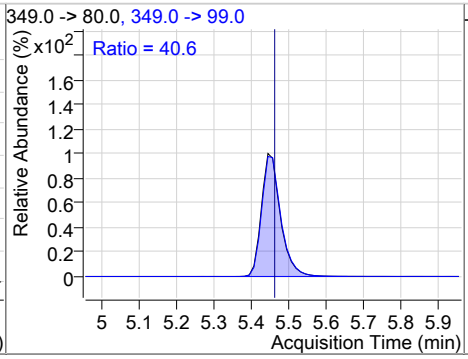


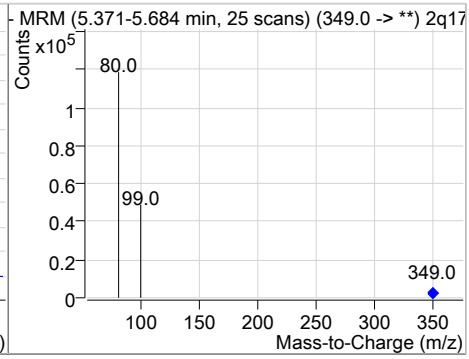




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	100.45	5.45	0.00	88570	349.0 -> 99.0	40.6	10.8	70.8

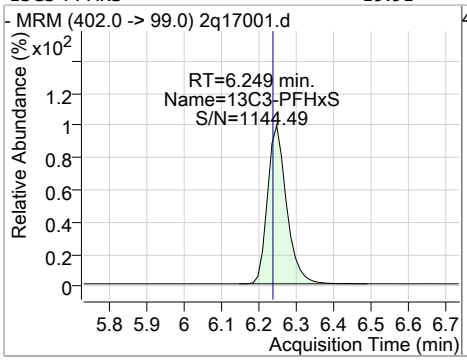


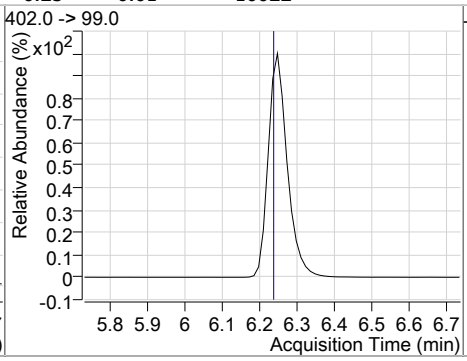


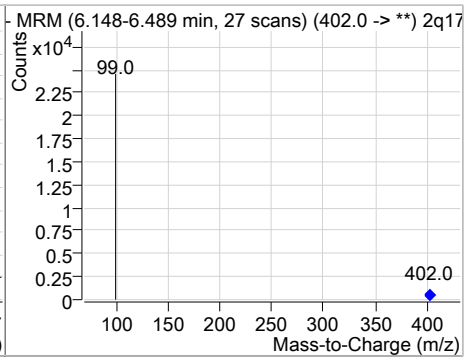


Perfluorinated Compounds by LC/MS/MS

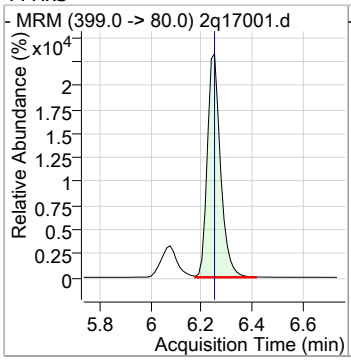
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.91	6.25	0.01	16622				

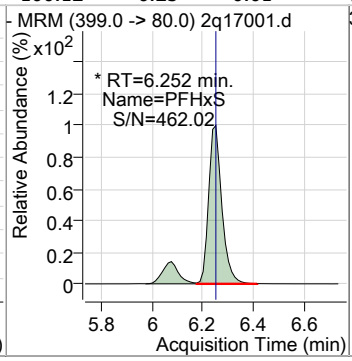


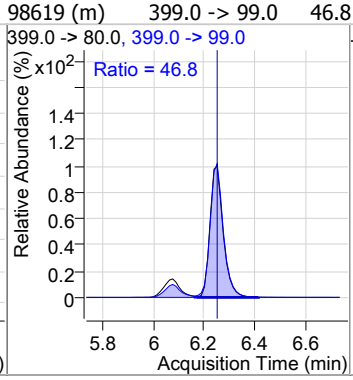


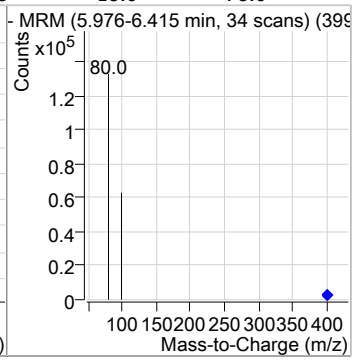


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	100.12	6.25	0.01	98619 (m)	399.0 -> 99.0	46.8	18.0	78.0

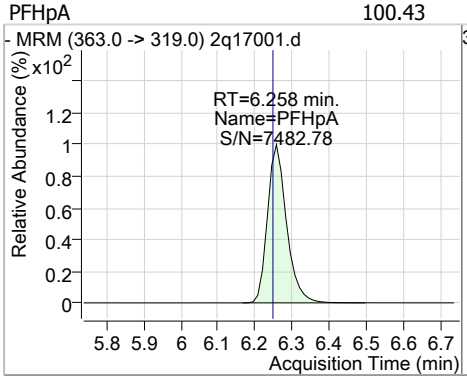


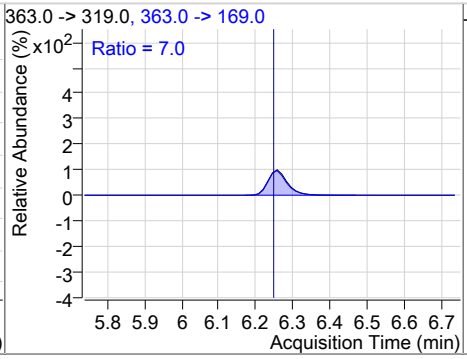


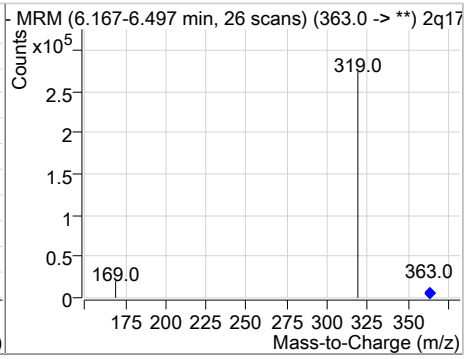




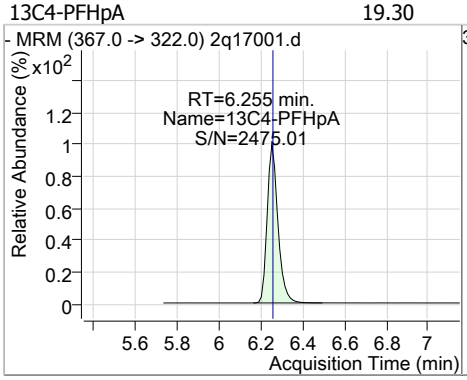
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	100.43	6.26	0.01	204256	363.0 -> 169.0	7.0	0.0	37.2

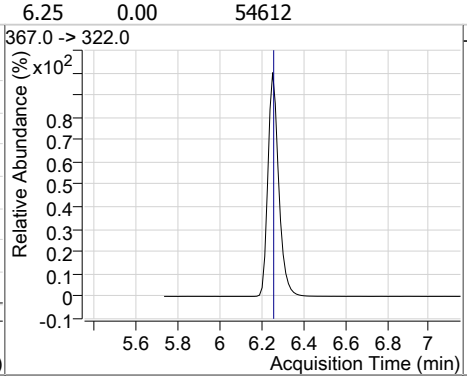


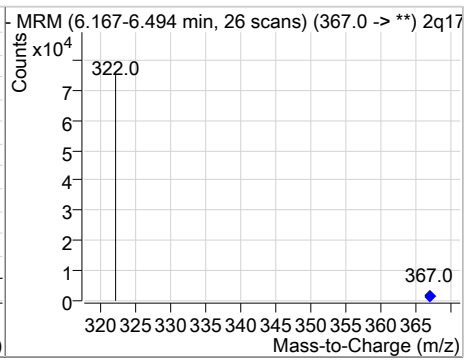




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.30	6.25	0.00	54612				

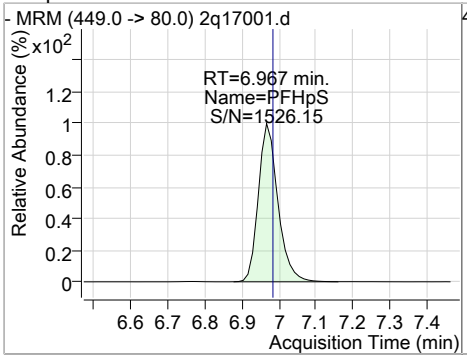


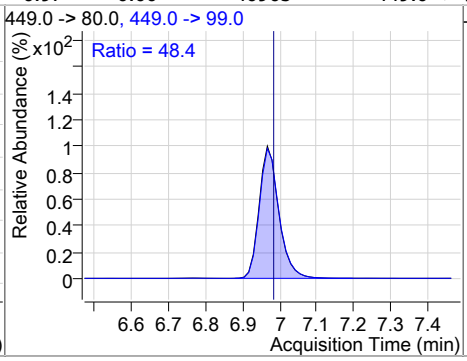


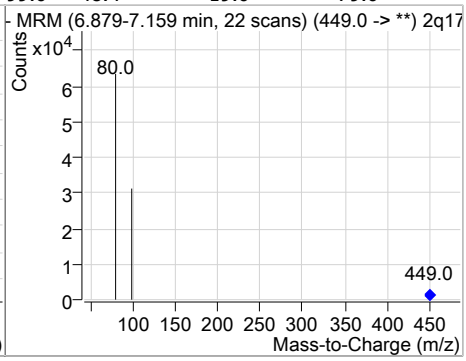


Perfluorinated Compounds by LC/MS/MS

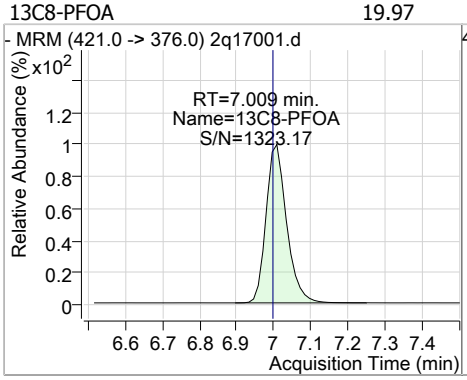
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	100.42	6.97	0.00	46965	449.0 -> 99.0	48.4	19.0	79.0

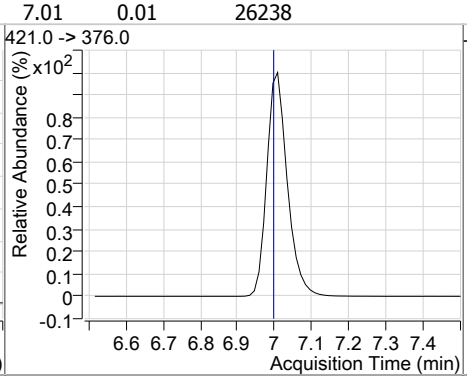


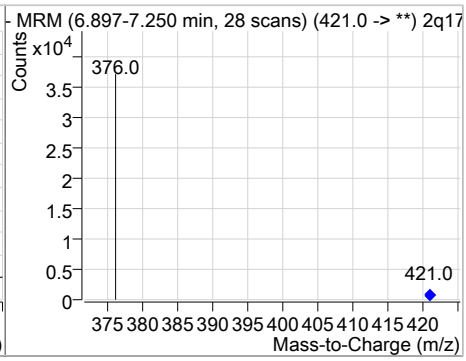




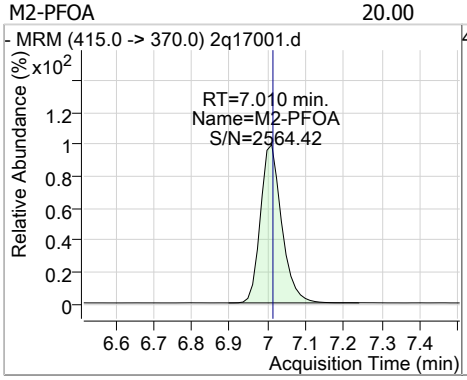
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.97	7.01	0.01	26238				

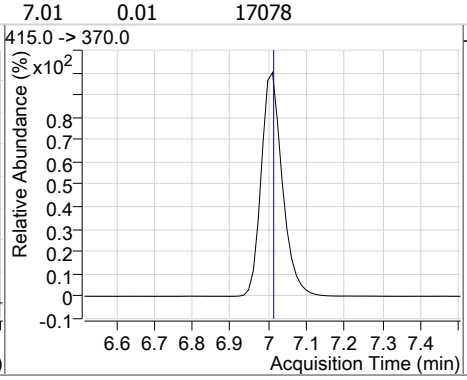


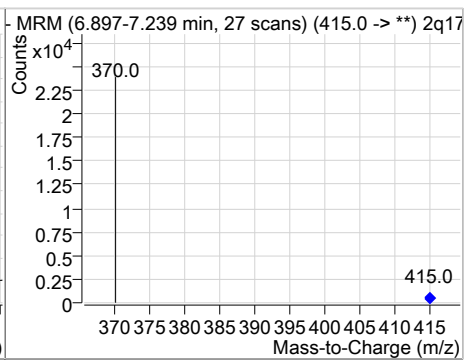




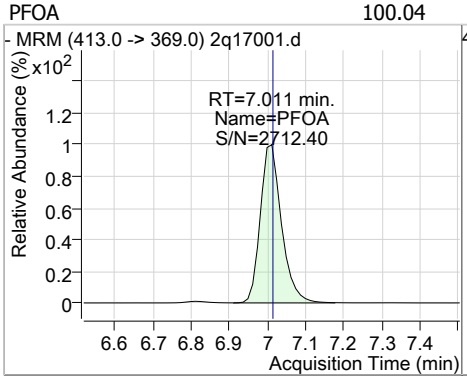
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	7.01	0.01	17078				

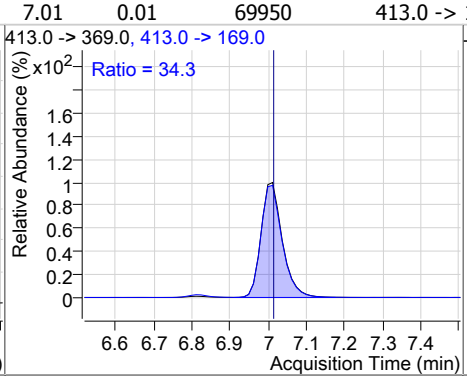


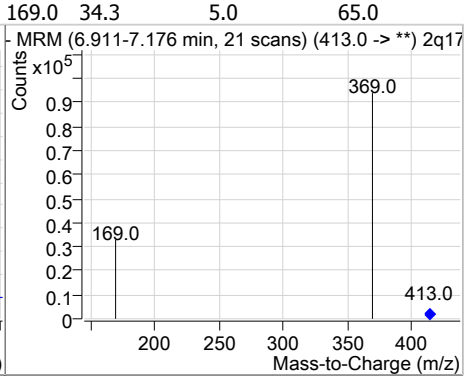




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	100.04	7.01	0.01	69950	413.0 -> 169.0	34.3	5.0	65.0

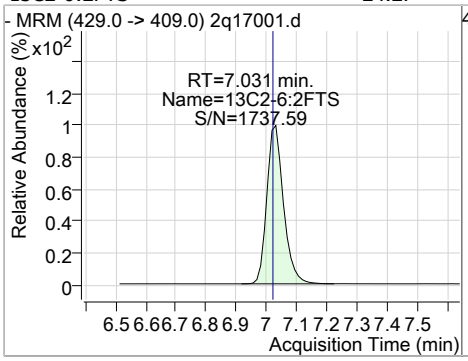


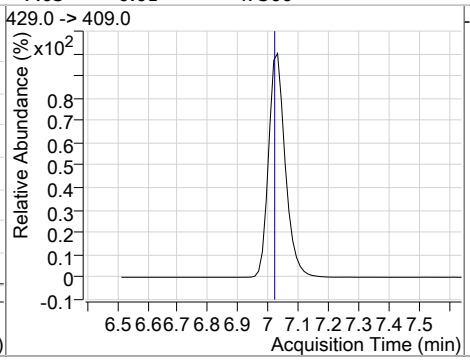


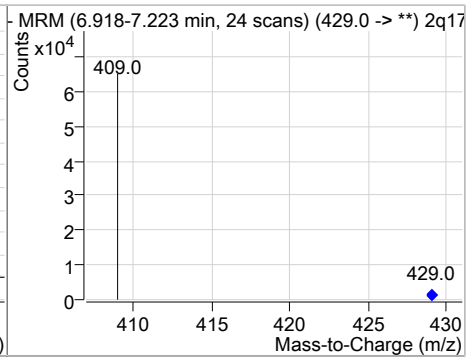


Perfluorinated Compounds by LC/MS/MS

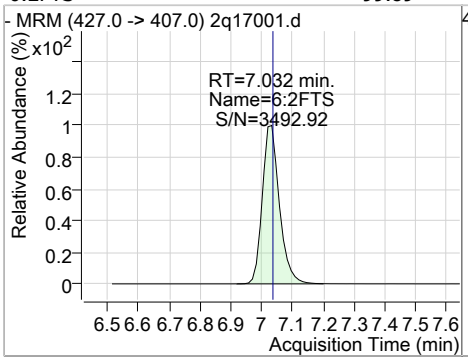
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	24.27	7.03	0.01	47366				

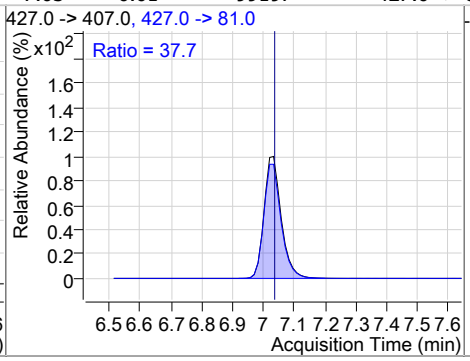


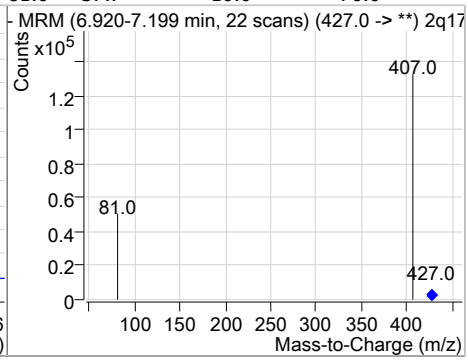




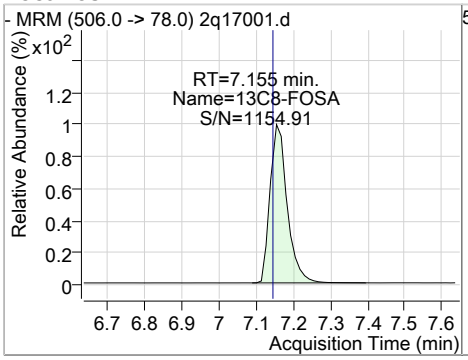
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	99.89	7.03	0.01	99197	427.0 -> 81.0	37.7	10.0	70.0

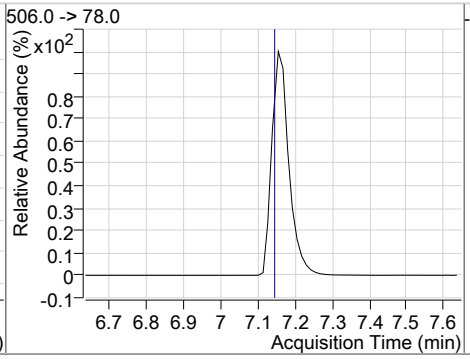


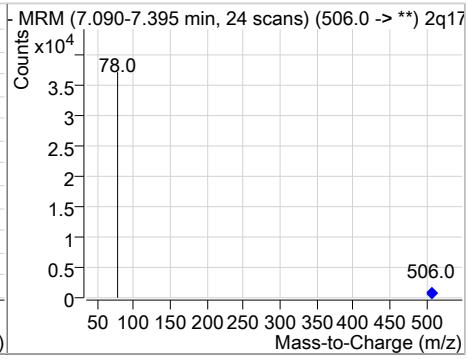




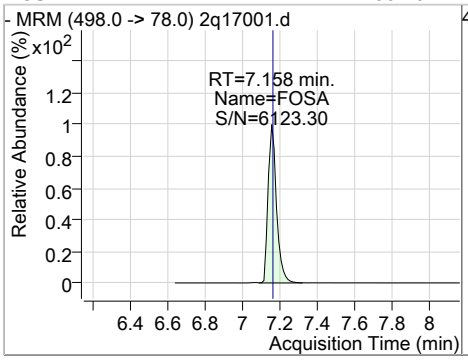
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	17.22	7.16	0.01	27701				

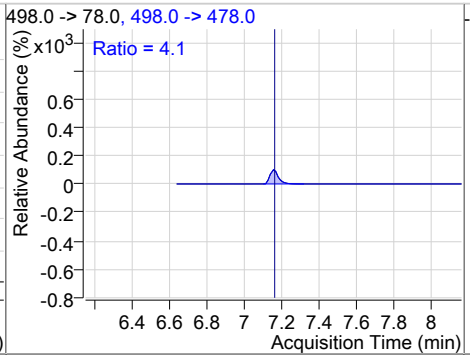


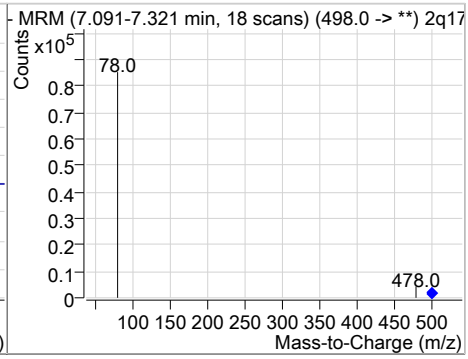




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	100.76	7.16	0.01	68466	498.0 -> 478.0	4.1	0.0	34.0

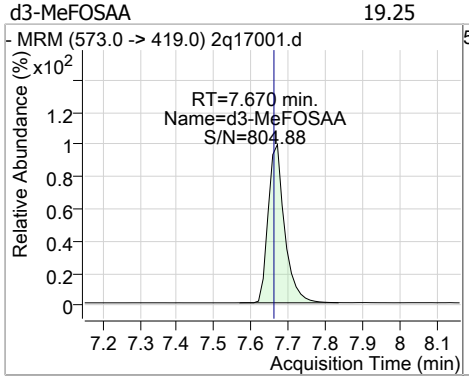


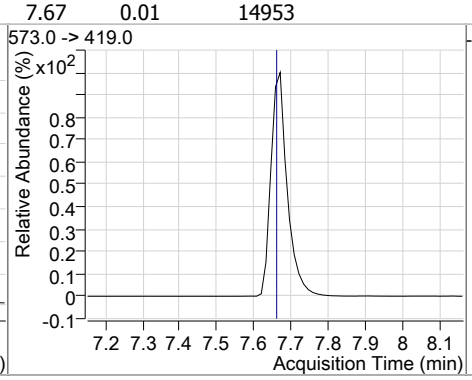


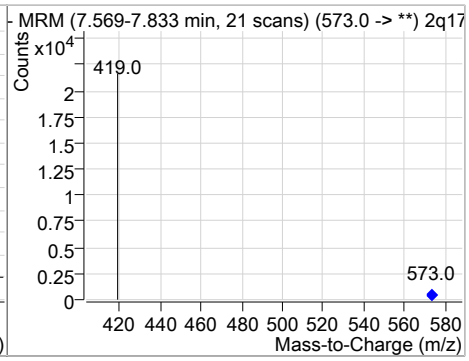


Perfluorinated Compounds by LC/MS/MS

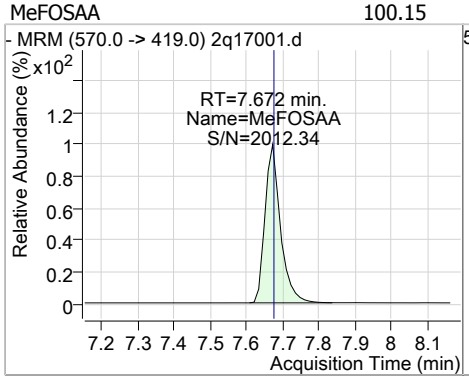
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.25	7.67	0.01	14953				

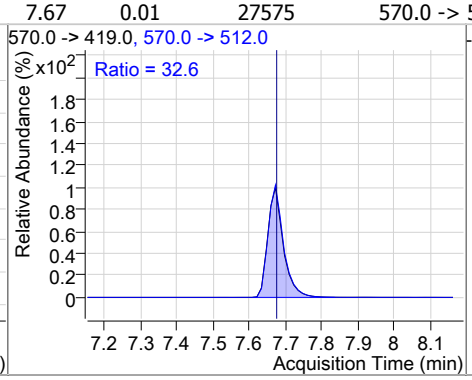


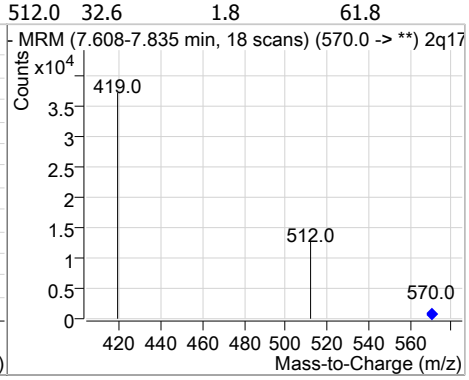




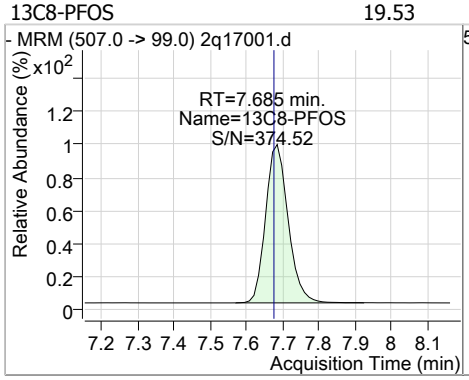
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	100.15	7.67	0.01	27575	570.0 -> 512.0	32.6	1.8	61.8

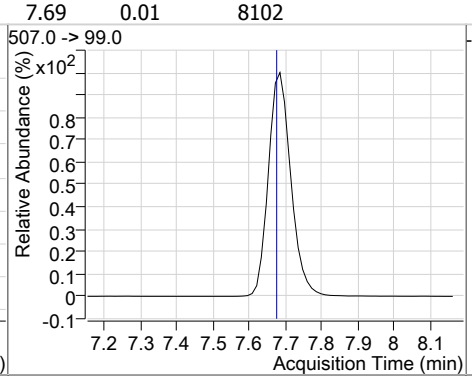


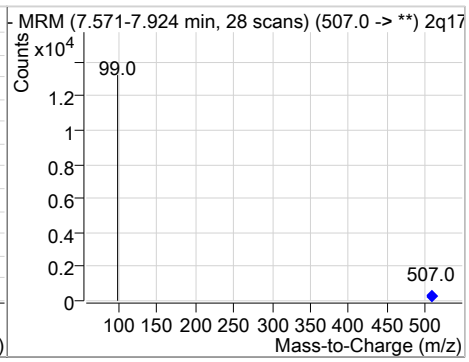




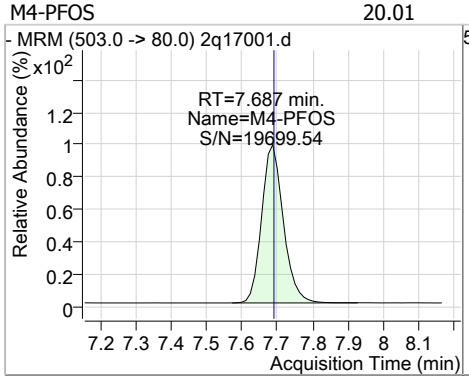
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.53	7.69	0.01	8102				

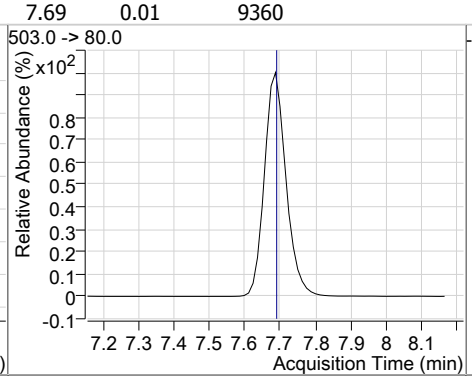


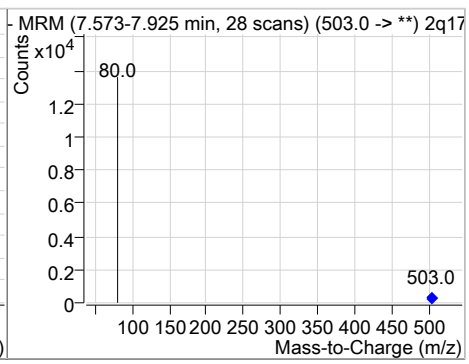




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.01	7.69	0.01	9360				

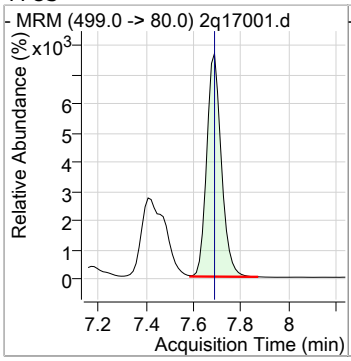


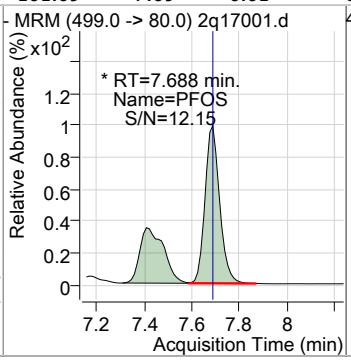


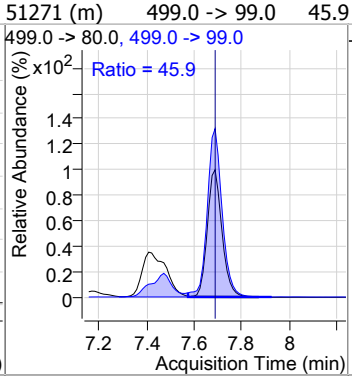


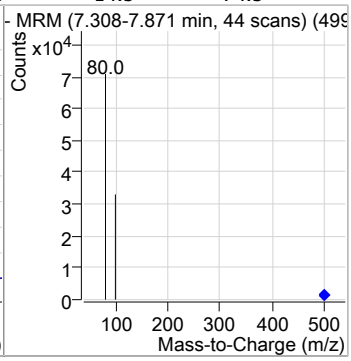
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	101.09	7.69	0.01	51271 (m)	499.0 -> 99.0	45.9	14.5	74.5

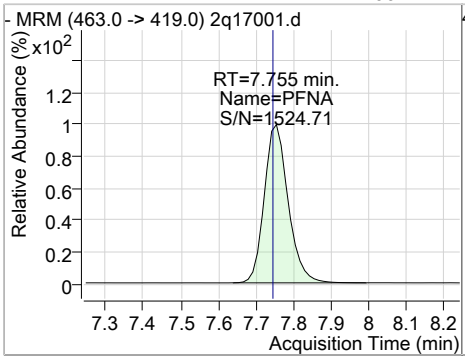


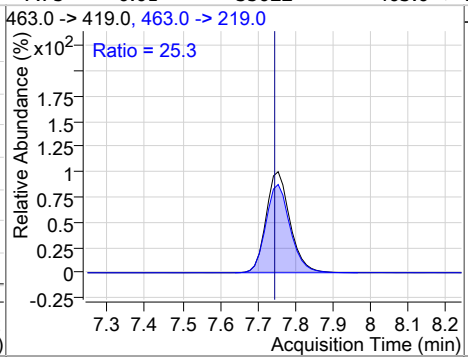


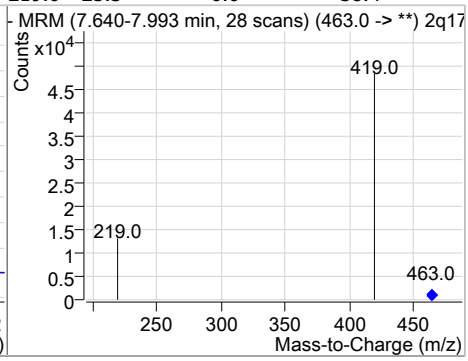




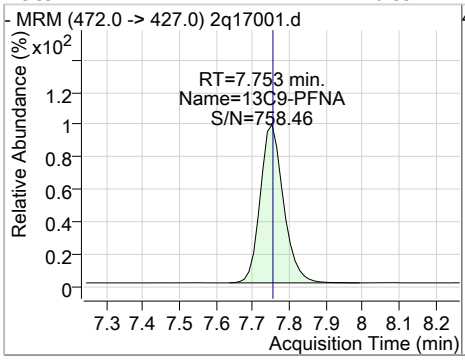
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	100.42	7.75	0.01	35622	463.0 -> 219.0	25.3	0.0	58.4

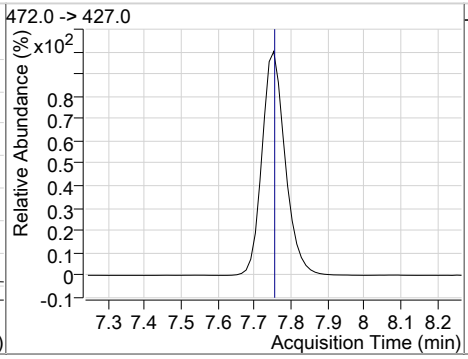


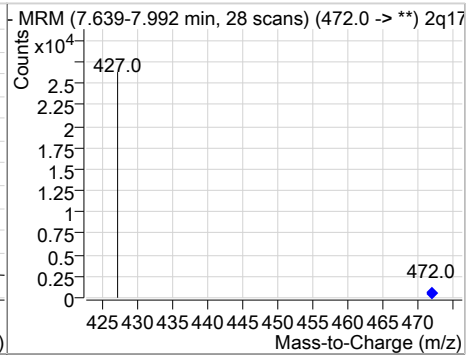




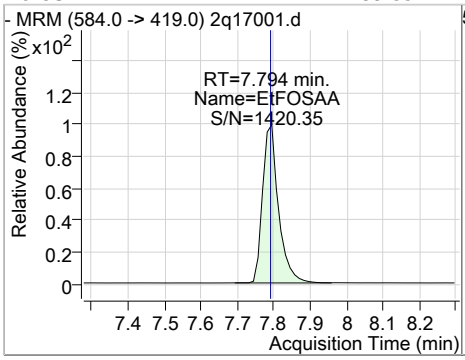
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.39	7.75	0.00	17979				

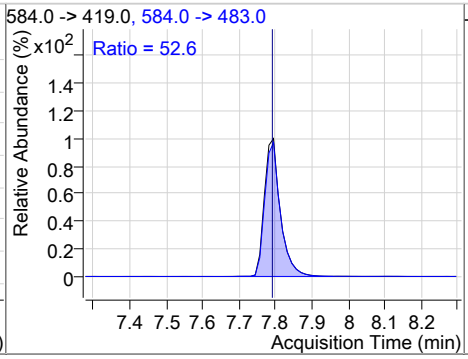


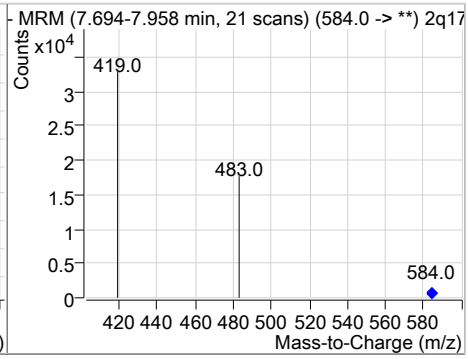




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	99.55	7.79	0.01	24019	584.0 -> 483.0	52.6	24.8	84.8

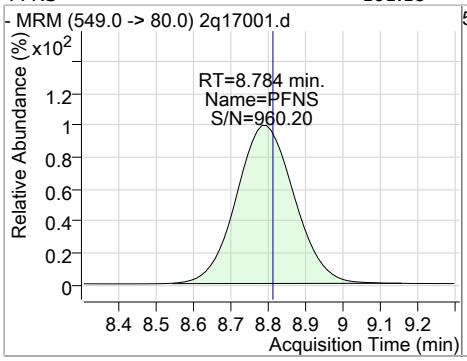


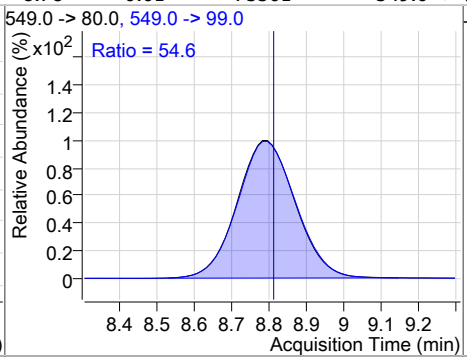


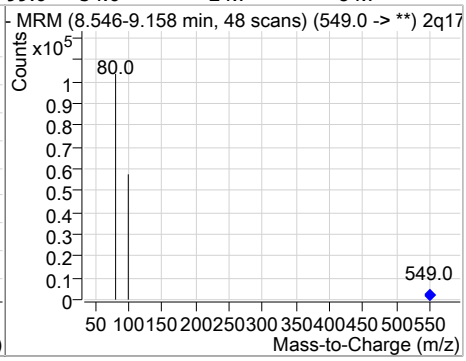


Perfluorinated Compounds by LC/MS/MS

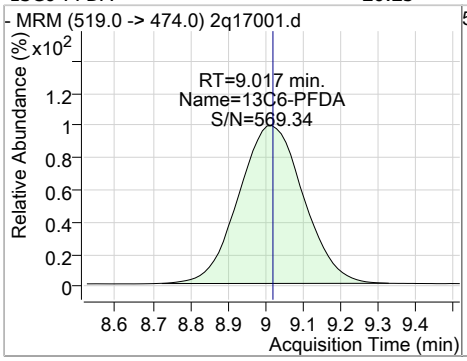
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	101.18	8.78	-0.01	75501	549.0 -> 99.0	54.6	24.7	84.7

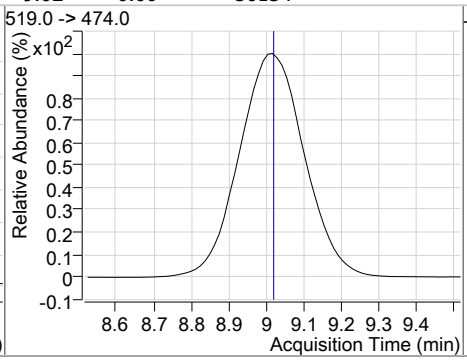


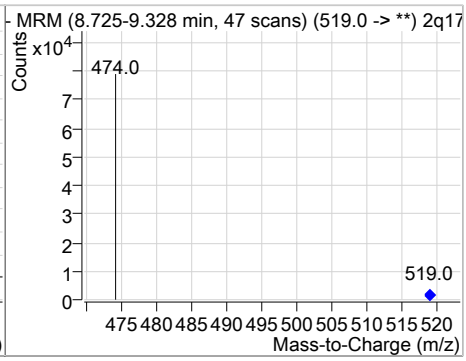




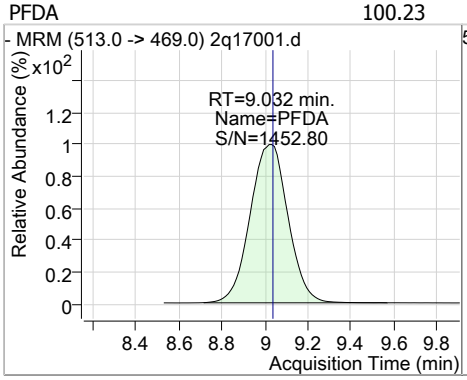
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.25	9.02	0.00	56134				

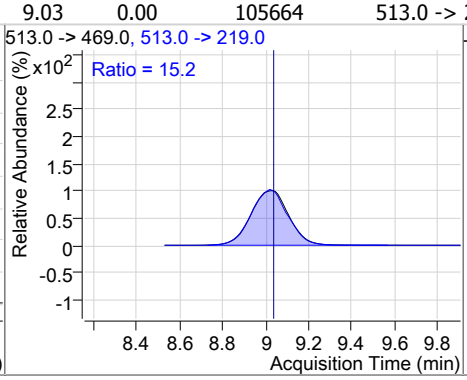


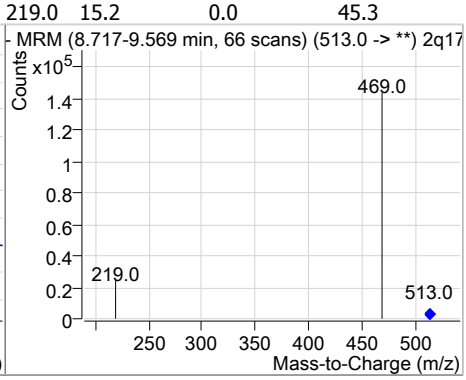




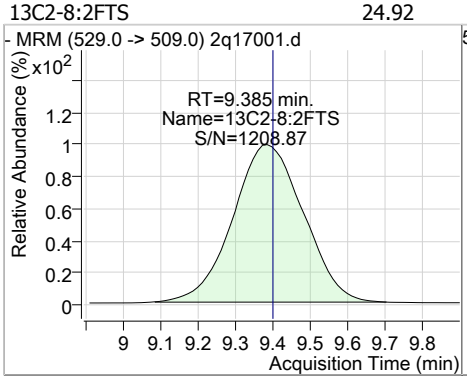
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	100.23	9.03	0.00	105664	513.0 -> 219.0	15.2	0.0	45.3

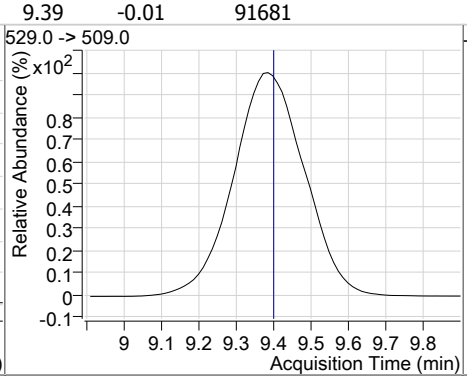


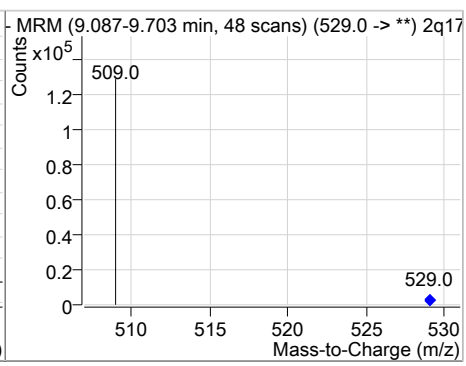




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	24.92	9.39	-0.01	91681				

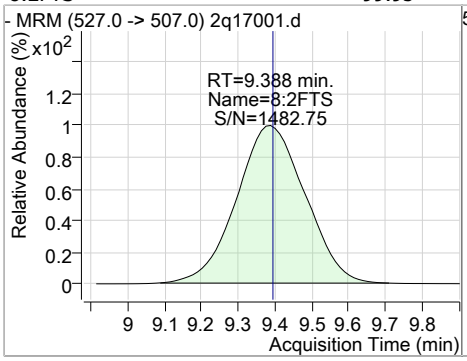


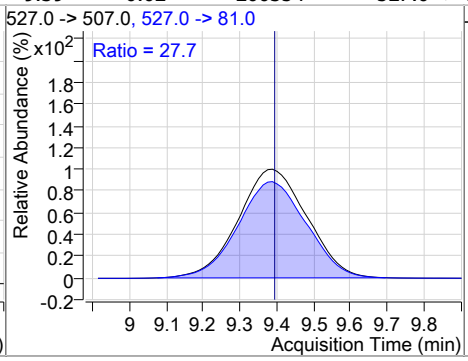


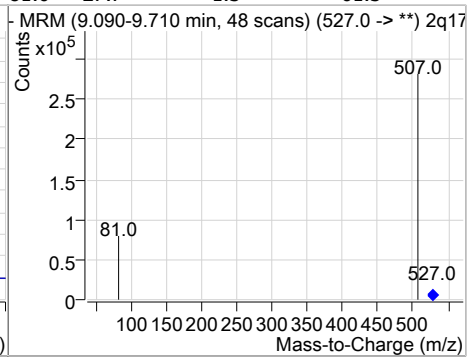


Perfluorinated Compounds by LC/MS/MS

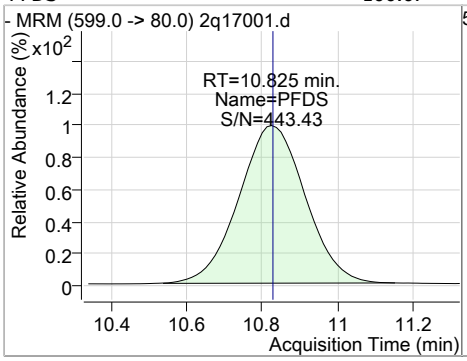
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	99.95	9.39	-0.02	206354	527.0 -> 81.0	27.7	1.3	61.3

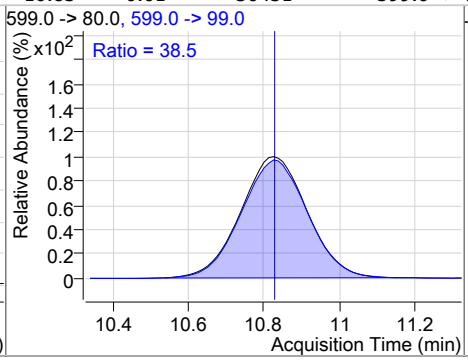


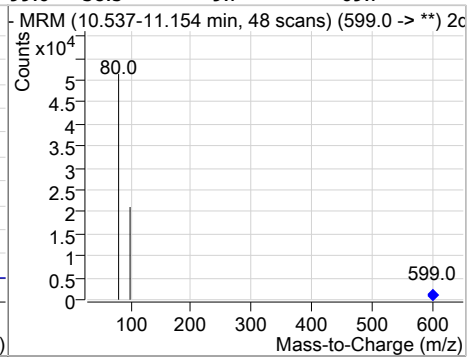




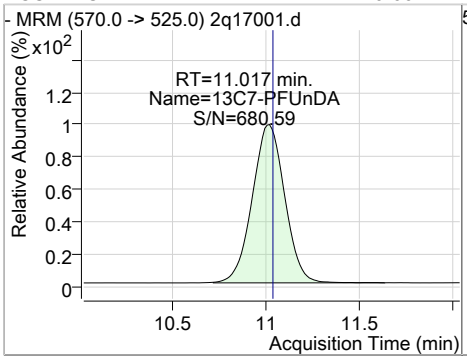
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	100.07	10.83	-0.01	36451	599.0 -> 99.0	38.5	9.7	69.7

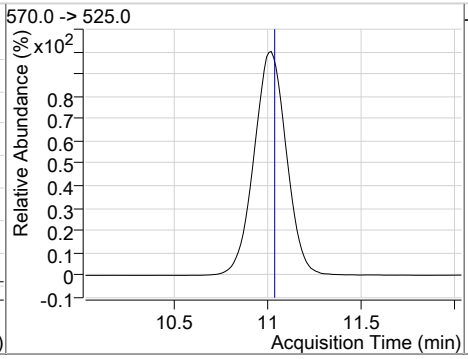


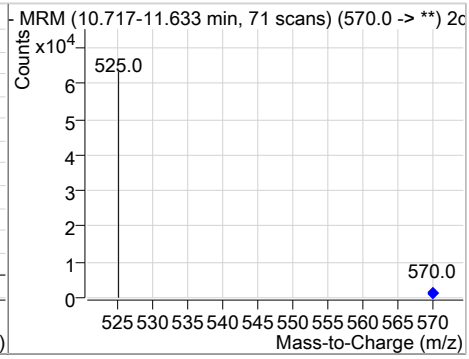




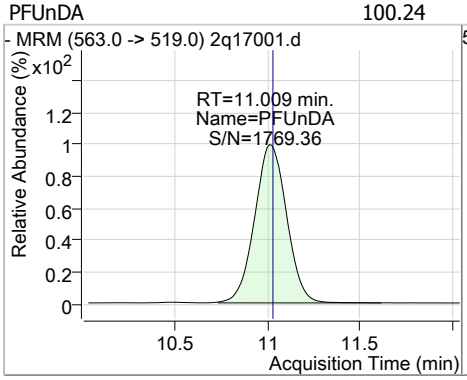
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.66	11.02	-0.01	42581				

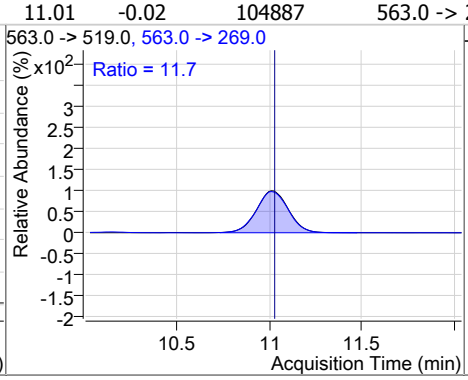


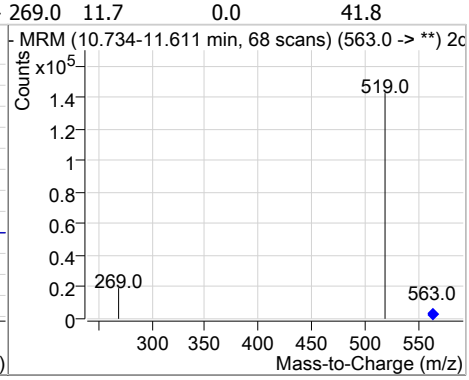




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	100.24	11.01	-0.02	104887	563.0 -> 269.0	11.7	0.0	41.8

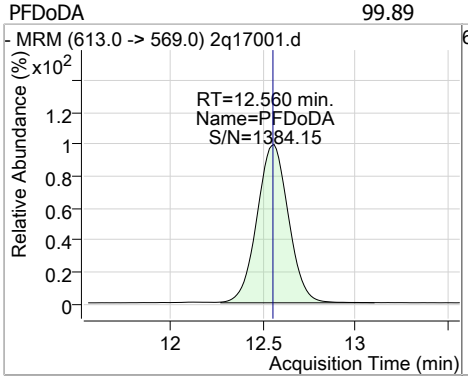


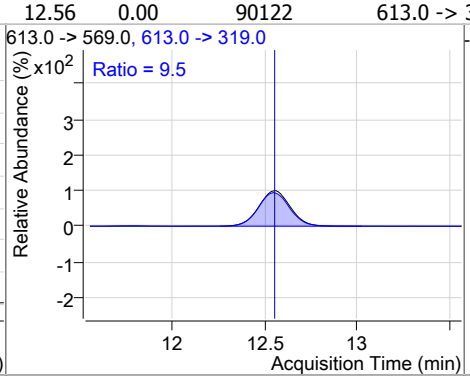


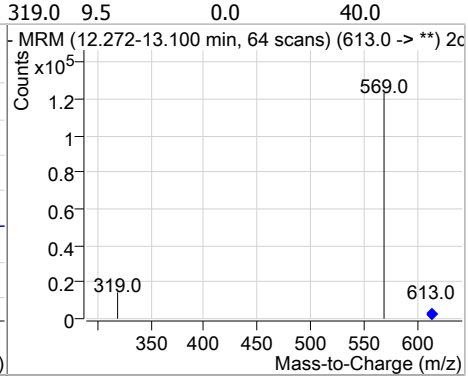


Perfluorinated Compounds by LC/MS/MS

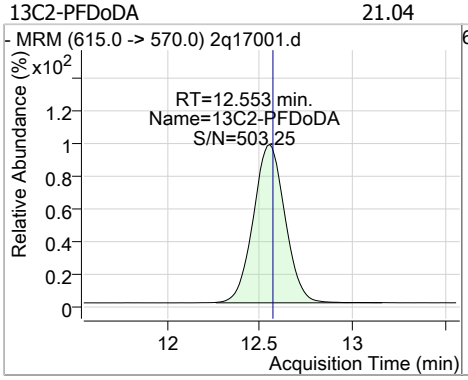
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	99.89	12.56	0.00	90122	613.0 -> 319.0	9.5	0.0	40.0

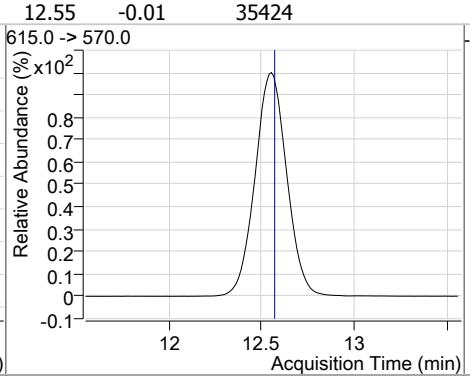


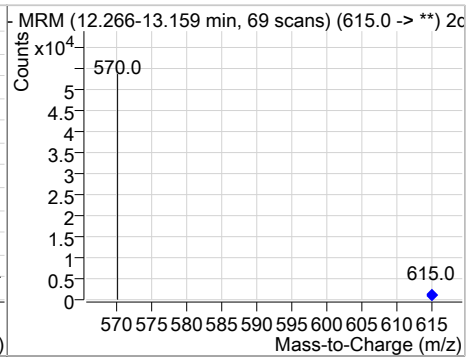




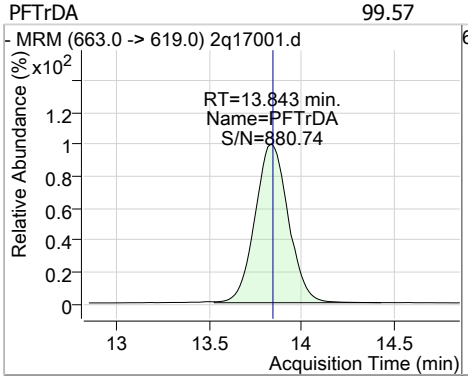
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.04	12.55	-0.01	35424				

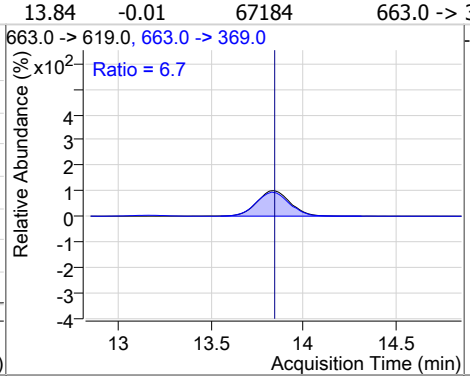


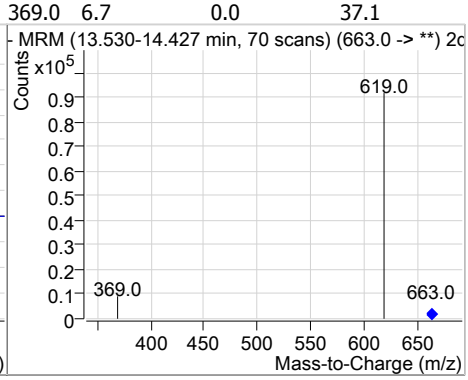




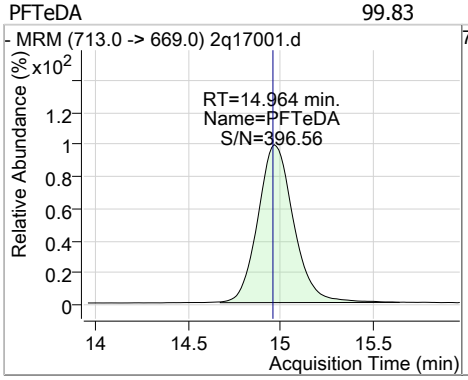
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	99.57	13.84	-0.01	67184	663.0 -> 369.0	6.7	0.0	37.1

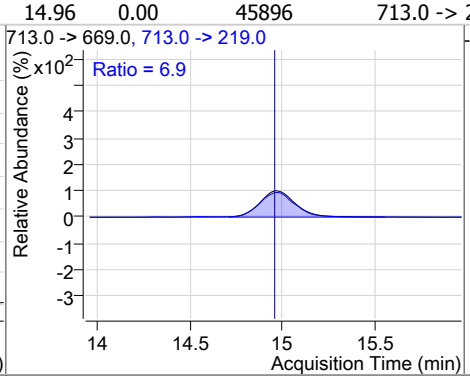


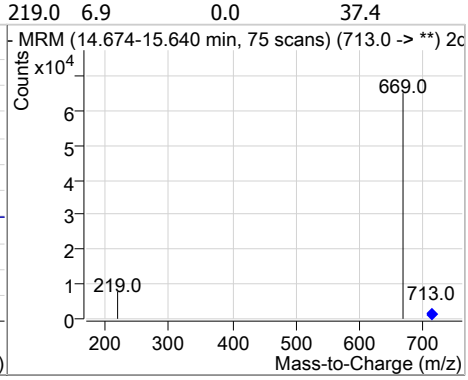




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	99.83	14.96	0.00	45896	713.0 -> 219.0	6.9	0.0	37.4

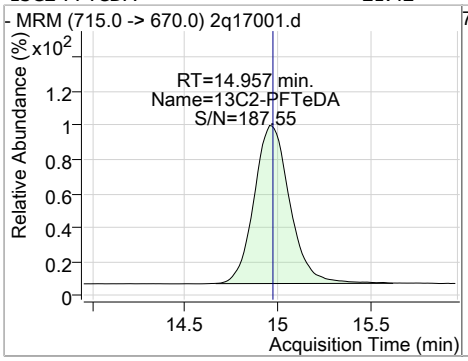


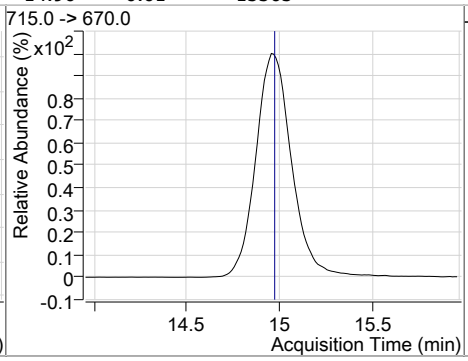


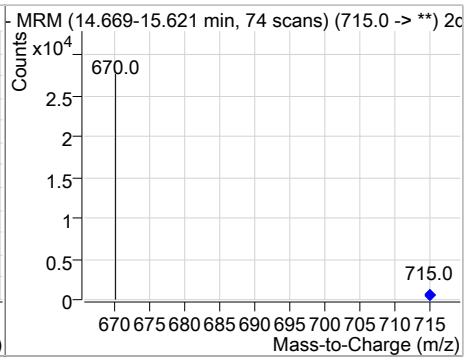


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.42	14.96	-0.01	15565				







Manual Integration Approval Summary

Sample Number:	S2Q295-IC295	**Method:**	EPA 537M BY ID
Lab FileID:	2Q17001.D	**Analyst approved:**	07/13/18 12:48 Nancy Saunders
Injection Time:	07/12/18 11:45	**Supervisor approved:**	07/13/18 17:24 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.25	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.69	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 07/13/18 17:24

Perfluorinated Compounds by LC/MS/MS

Data File : 2q17003.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/12/2018 12:30:09 PM
Sample Name : icv295-20
Vial : Vial 10
DA Method File : PFC_ID_071218_S2Q295.quantmethod.xml
Batch Name : s2q295.batch.bin
Sample Information : op70790,S2Q295,1.99,,,1.0,1,soil

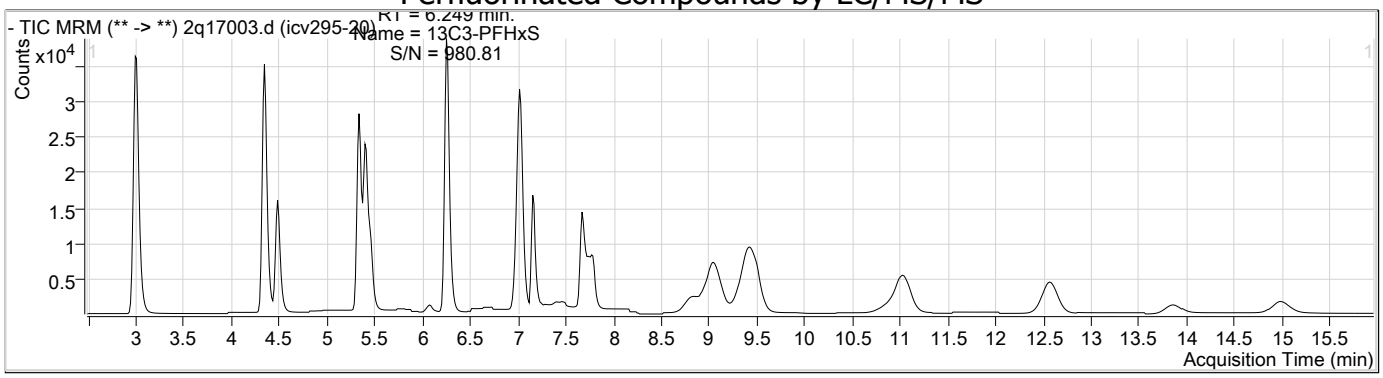
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	7.010	415.0 -> 370.0	16968	20.00	µg/L	0.014
13C4-PFOS	7.687	503.0 -> 80.0	9031	20.00	µg/L	0.012
M4-PFBA	3.003	217.0 -> 172.0	125106	20.00	µg/L	0.013
M5-PFPeA	4.350	268.0 -> 223.0	60876	20.00	µg/L	0.012
M5-PFHxA	5.414	318.0 -> 273.0	55195	20.00	µg/L	0.023
M4-PFHpA	6.255	367.0 -> 322.0	52428	20.00	µg/L	0.001
M8-PFOA	7.009	421.0 -> 376.0	25111	20.00	µg/L	0.014
M9-PFNA	7.753	472.0 -> 427.0	17456	20.00	µg/L	0.001
M6-PFDA	9.042	519.0 -> 474.0	53547	20.00	µg/L	0.025
M7-PFUnDA	11.030	570.0 -> 525.0	37784	20.00	µg/L	0.001
M2-PFDoDA	12.566	615.0 -> 570.0	31105	20.00	µg/L	0.001
M2-PFTeDA	14.982	715.0 -> 670.0	13780	20.00	µg/L	0.013
M8-FOSA	7.155	506.0 -> 78.0	30931	20.00	µg/L	0.013
M3-PFBS	4.481	302.0 -> 99.0	19267	20.00	µg/L	0.013
M3-PFHxS	6.249	402.0 -> 99.0	15901	20.00	µg/L	0.013
M8-PFOS	7.685	507.0 -> 99.0	7837	20.00	µg/L	0.012
M2-4:2FTS	5.335	329.0 -> 309.0	52696	20.00	µg/L	0.012
M2-6:2FTS	7.031	429.0 -> 409.0	37592	20.00	µg/L	0.013
M2-8:2FTS	9.423	529.0 -> 509.0	70025	20.00	µg/L	0.025
M3-MeFOSAA	7.670	573.0 -> 419.0	14645	20.00	µg/L	0.013
System Monitoring Compounds						
13C2-4:2FTS	5.335	329.0 -> 309.0	52717	18.68	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.4%		
13C2-6:2FTS	7.031	429.0 -> 409.0	37584	19.26	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.3%		
13C2-8:2FTS	9.423	529.0 -> 509.0	69151	18.80	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.0%		
13C2-PFDoDA	12.566	615.0 -> 570.0	31092	18.47	µg/L	0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.4%		
13C2-PFTeDA	14.982	715.0 -> 670.0	13624	18.75	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.7%		
13C3-PFBS	4.481	302.0 -> 99.0	19260	18.47	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.4%		
13C3-PFHxS	6.249	402.0 -> 99.0	15897	19.04	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.2%		
13C4-PFBA	3.003	217.0 -> 172.0	125104	18.82	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.1%		
13C4-PFHpA	6.255	367.0 -> 322.0	52452	18.54	µg/L	0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.7%		
13C5-PFHxA	5.414	318.0 -> 273.0	55191	18.61	µg/L	0.023
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.0%		
13C5-PFPeA	4.350	268.0 -> 223.0	60884	18.56	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.8%		
13C6-PFDA	9.042	519.0 -> 474.0	53144	19.17	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.9%		

Perfluorinated Compounds by LC/MS/MS

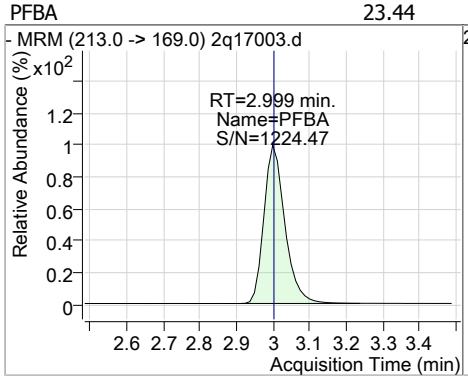
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	11.030	570.0 -> 525.0	37783	18.33	µg/L		0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.7%			
13C8-FOSA	7.155	506.0 -> 78.0	30943	19.24	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.2%			
13C8-PFOA	7.009	421.0 -> 376.0	25104	19.11	µg/L		0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.5%			
13C8-PFOS	7.685	507.0 -> 99.0	7832	18.88	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.4%			
13C9-PFNA	7.753	472.0 -> 427.0	17541	19.89	µg/L		0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%			
d3-MeFOSAA	7.670	573.0 -> 419.0	14671	18.89	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.4%			
M2-PFOA	7.010	415.0 -> 370.0	16973	20.01	ng/ml		0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.687	503.0 -> 80.0	9017	19.98	ng/ml		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%			
Target Compounds							**QValue**
4:2FTS	5.337	327.0 -> 307.0	28486	21.50	µg/L		100
6:2FTS	7.032	427.0 -> 407.0	20842	22.83	µg/L		97
8:2FTS	9.426	527.0 -> 507.0	39250	21.68	µg/L		94
EtFOSAA	7.794	584.0 -> 419.0	5174	21.87	µg/L		100
FOSA	7.158	498.0 -> 78.0	17679	23.30	µg/L		100
MeFOSAA	7.672	570.0 -> 419.0	6114	22.64	µg/L		94
PFBA	2.999	213.0 -> 169.0	23259	23.44	µg/L		100
PFBS	4.484	299.0 -> 80.0	26089	19.73	µg/L		99
PFDA	9.057	513.0 -> 469.0	21194	21.23	µg/L		98
PFDoDA	12.572	613.0 -> 569.0	19382	24.43	µg/L		98
PFDS	10.838	599.0 -> 80.0	7036	21.75	µg/L		99
PFHpA	6.258	363.0 -> 319.0	43959	22.52	µg/L		99
PFHpS	6.979	449.0 -> 80.0	9665	21.60	µg/L		99
PFHxA	5.403	313.0 -> 269.0	19059	20.48	µg/L		98
PFHxS	6.252	399.0 -> 80.0	18616	19.76	µg/L	m	99
PFNA	7.755	463.0 -> 419.0	6814	19.79	µg/L		97
PFNS	8.821	549.0 -> 80.0	15333	21.23	µg/L		98
PFOA	7.011	413.0 -> 369.0	15566	23.26	µg/L		97
PFOS	7.688	499.0 -> 80.0	11042	22.50	µg/L	m	92
PFPeA	4.354	263.0 -> 219.0	64159	22.57	µg/L		100
PFPeS	5.459	349.0 -> 80.0	17311	20.62	µg/L		99
PFTeDA	14.989	713.0 -> 669.0	8763	21.38	µg/L		100
PFTrDA	13.855	663.0 -> 619.0	15027	24.98	µg/L		99
PFUnDA	11.034	563.0 -> 519.0	21392	23.02	µg/L		99

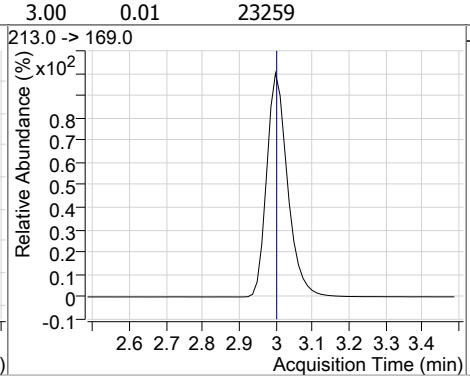
 # = Qualifier out of range, m = manually integrated, + = Area summed

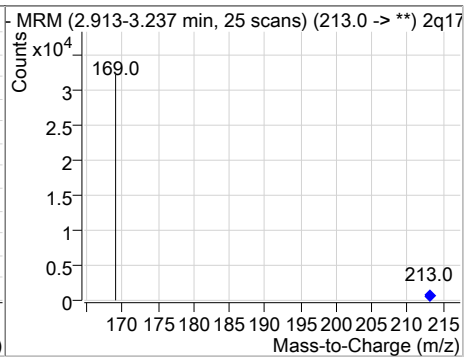
Perfluorinated Compounds by LC/MS/MS



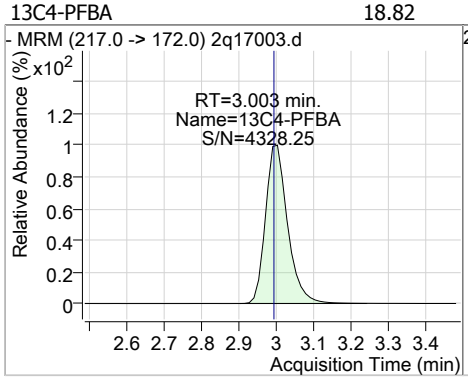
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	23.44	3.00	0.01	23259				

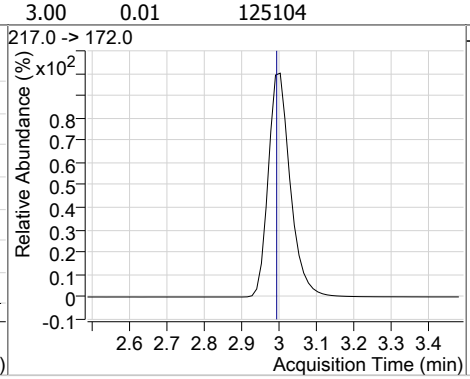


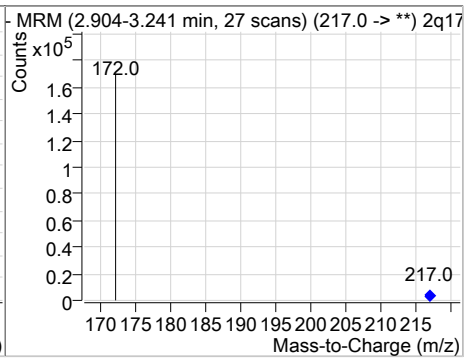




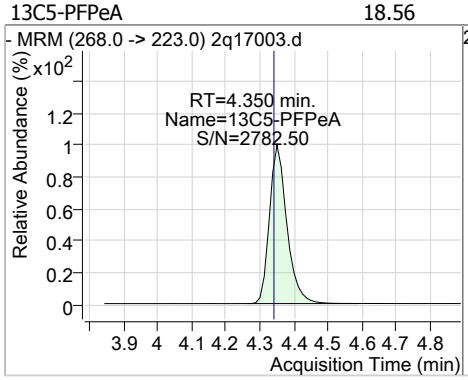
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.82	3.00	0.01	125104				

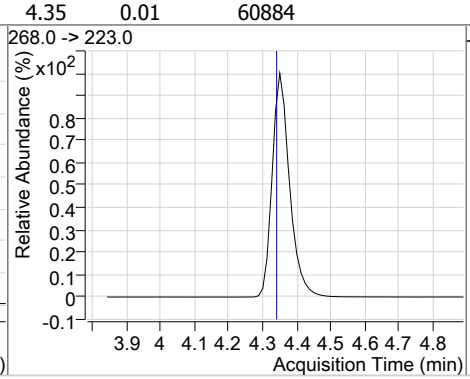


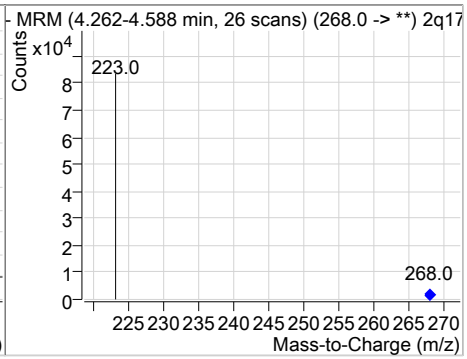




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.56	4.35	0.01	60884				

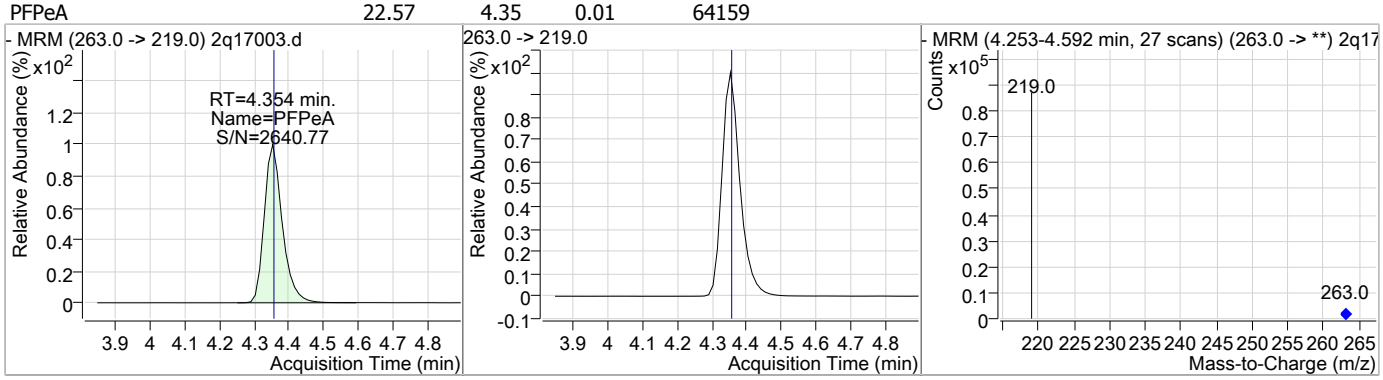




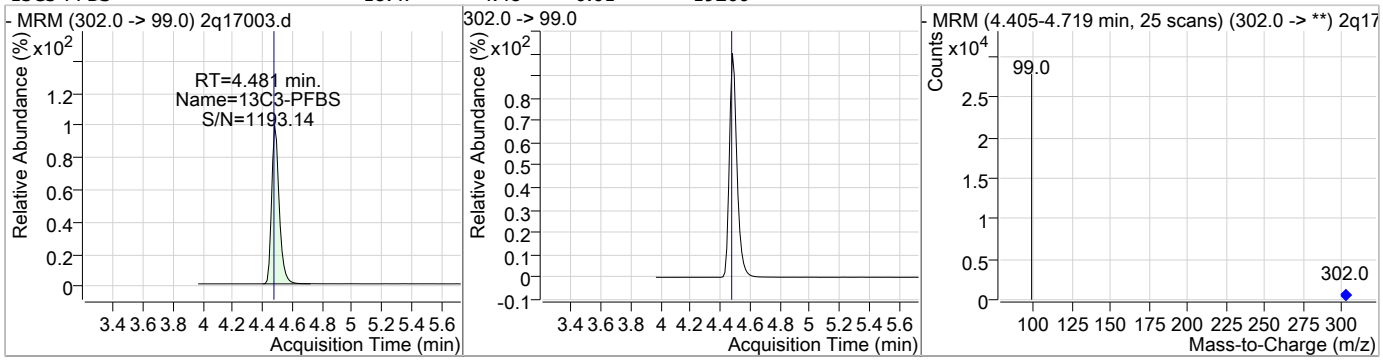


Perfluorinated Compounds by LC/MS/MS

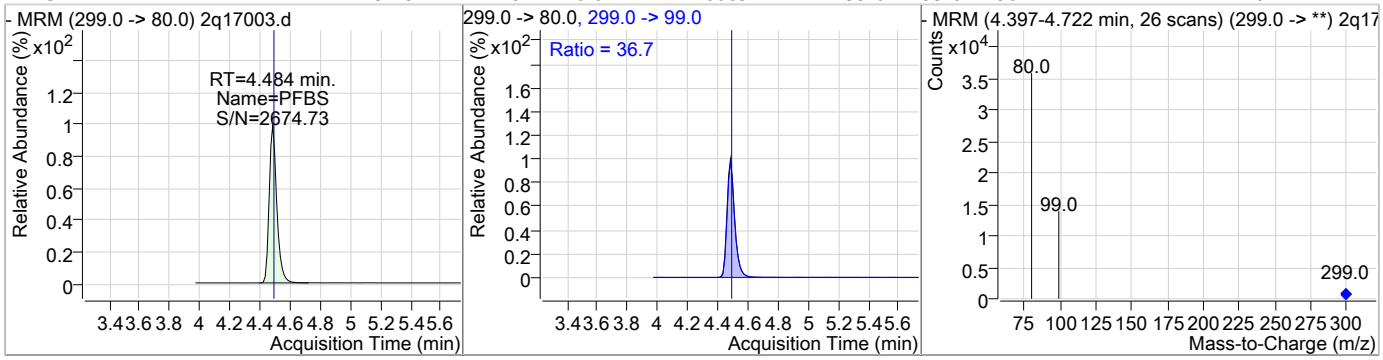
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	22.57	4.35	0.01	64159				



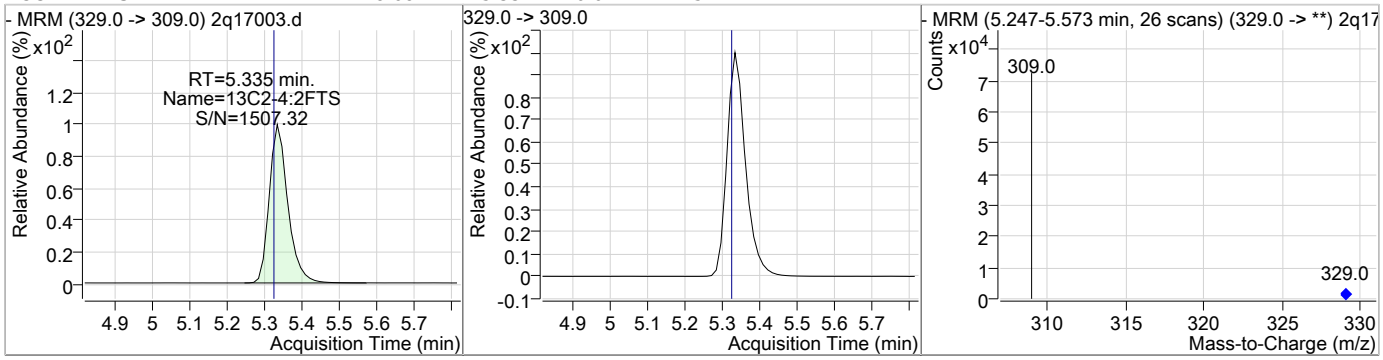
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.47	4.48	0.01	19260				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.73	4.48	0.01	26089	299.0 -> 99.0	36.7	7.4	67.4

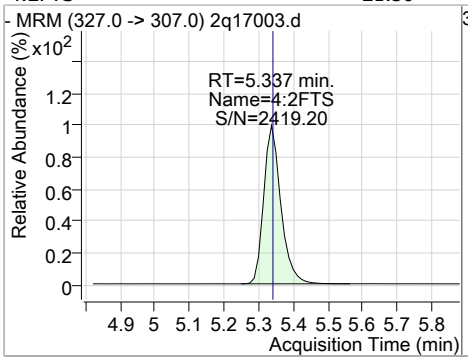


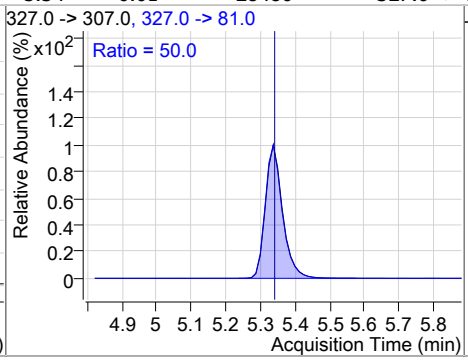
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.68	5.33	0.01	52717				

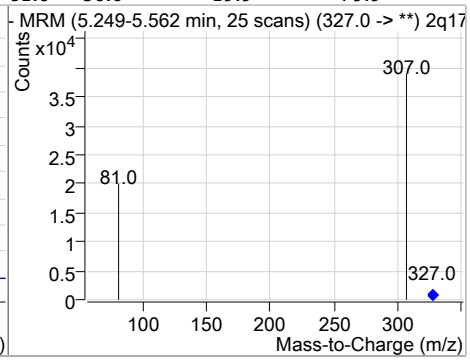


Perfluorinated Compounds by LC/MS/MS

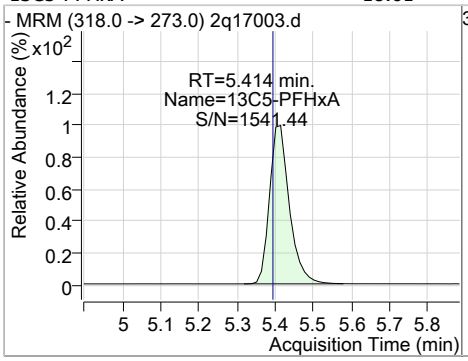
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	21.50	5.34	0.01	28486	327.0 -> 81.0	50.0	19.9	79.9

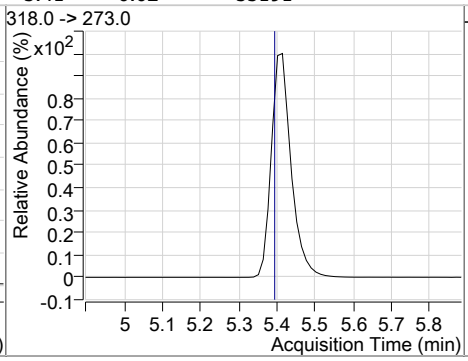


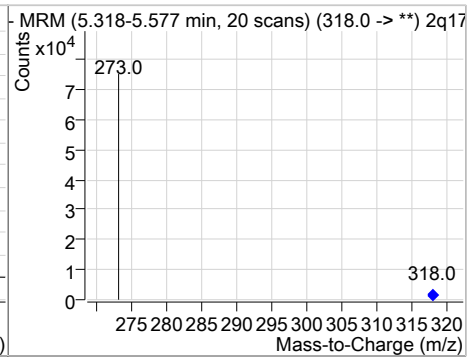




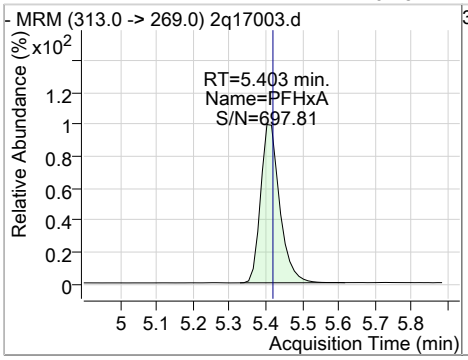
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.61	5.41	0.02	55191				

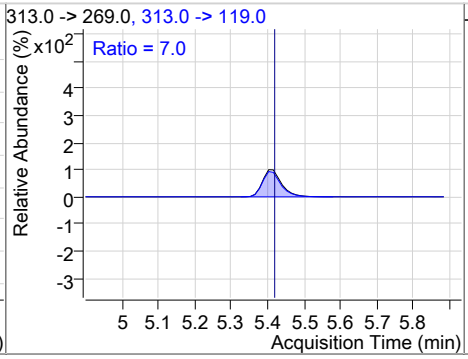


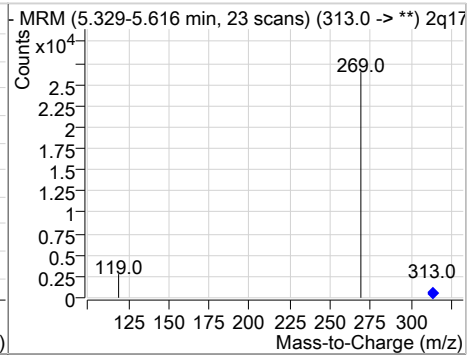




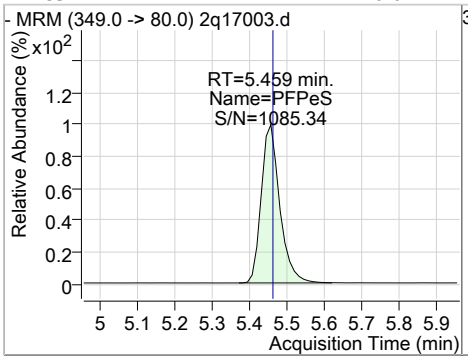
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.48	5.40	0.01	19059	313.0 -> 119.0	7.0	0.0	37.6

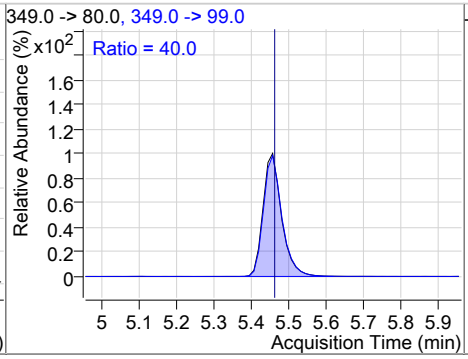


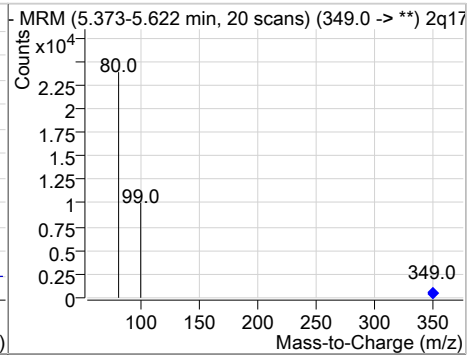




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	20.62	5.46	0.01	17311	349.0 -> 99.0	40.0	10.8	70.8

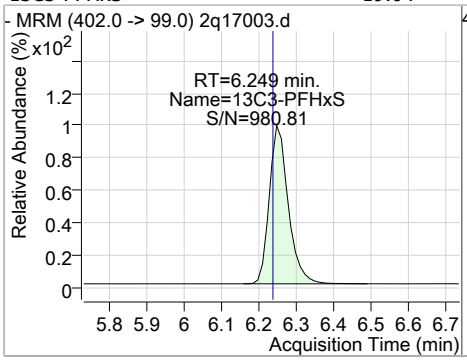


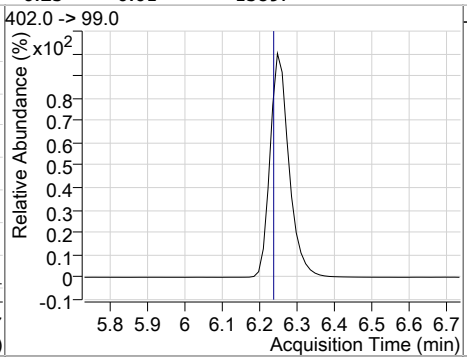


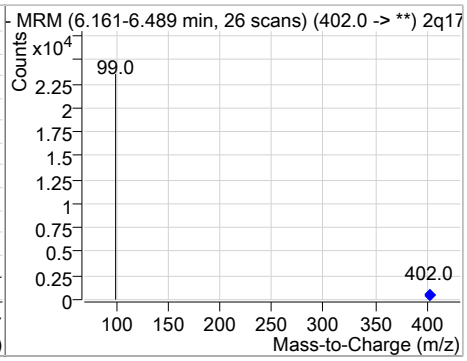


Perfluorinated Compounds by LC/MS/MS

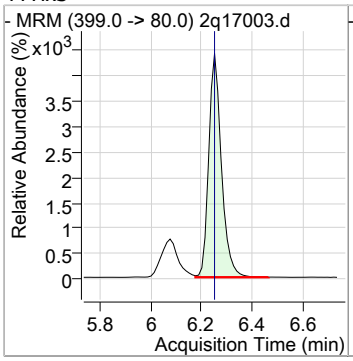
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.04	6.25	0.01	15897				

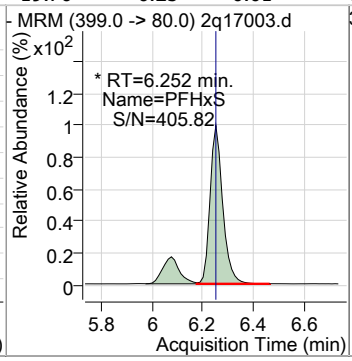


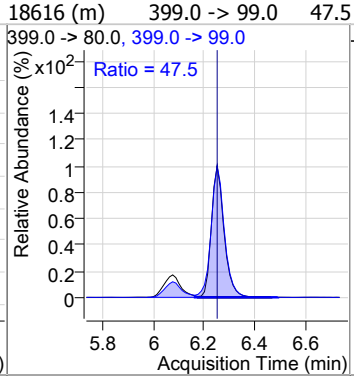


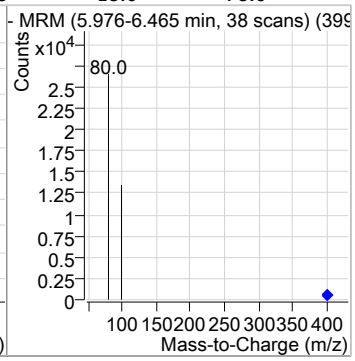


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.76	6.25	0.01	18616 (m)	399.0 -> 99.0	47.5	18.0	78.0

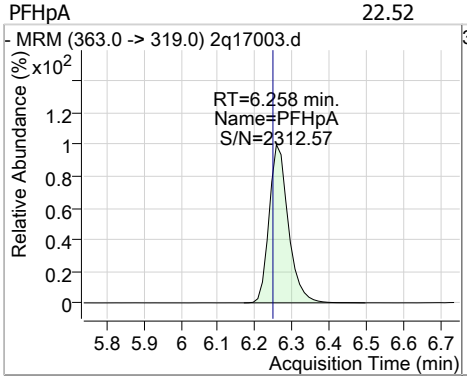


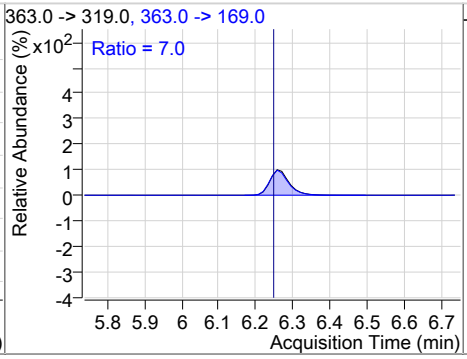


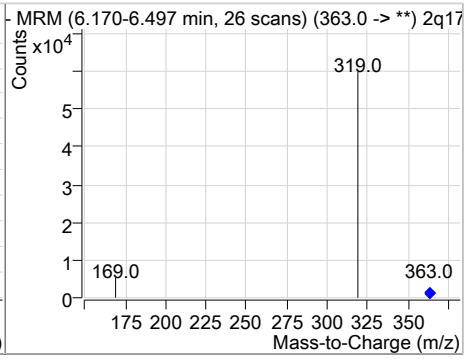




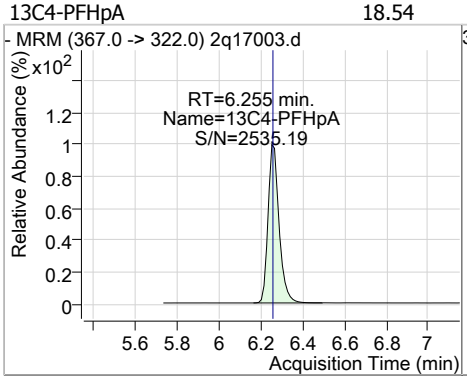
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	22.52	6.26	0.01	43959	363.0 -> 169.0	7.0	0.0	37.2

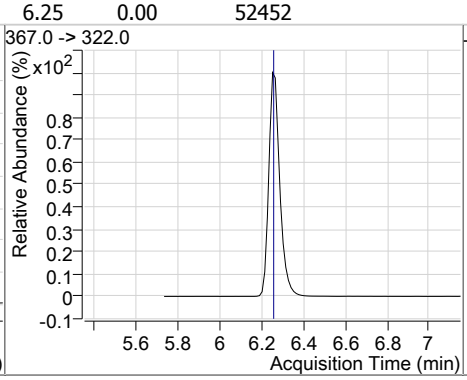


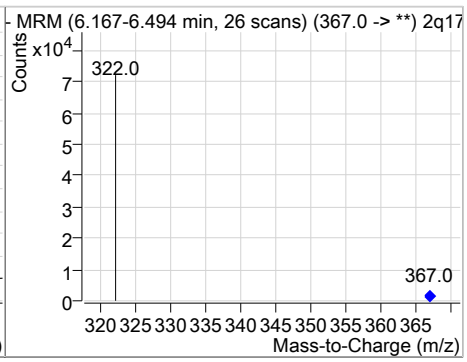




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.54	6.25	0.00	52452				

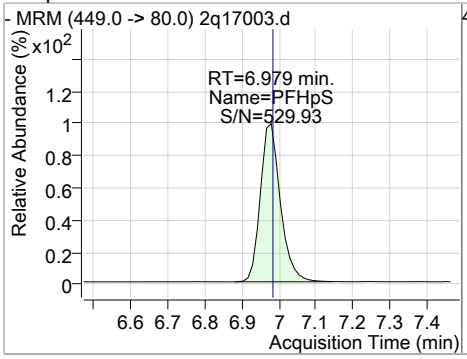


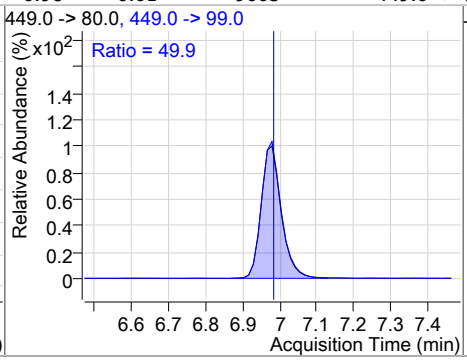


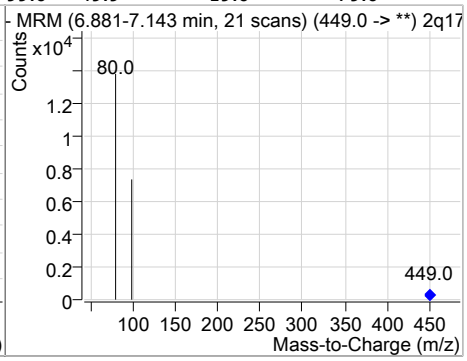


Perfluorinated Compounds by LC/MS/MS

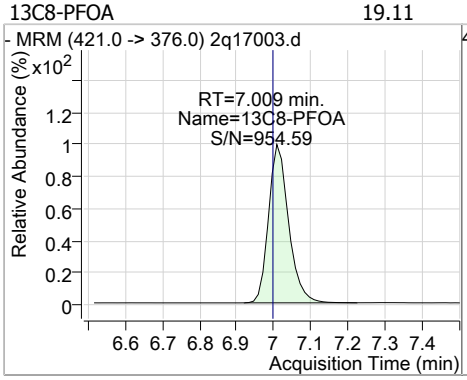
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.60	6.98	0.01	9665	449.0 -> 99.0	49.9	19.0	79.0

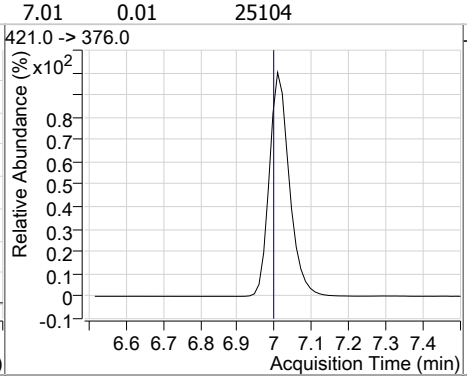


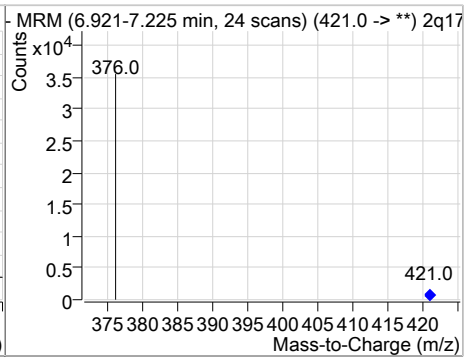




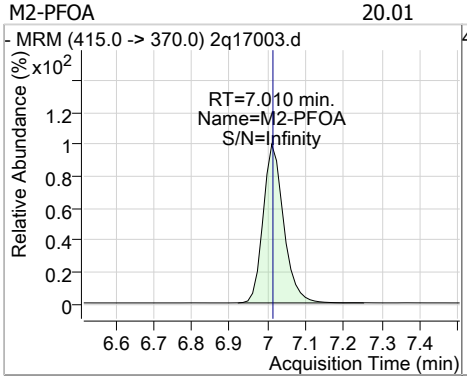
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.11	7.01	0.01	25104				

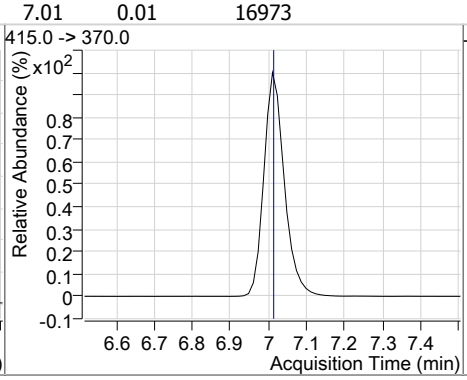


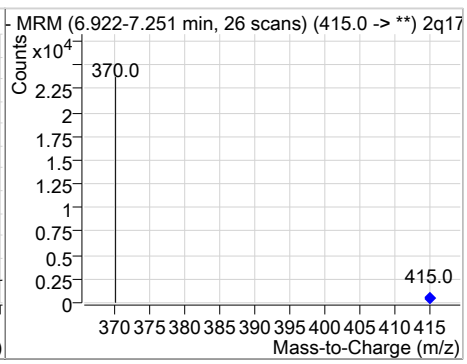




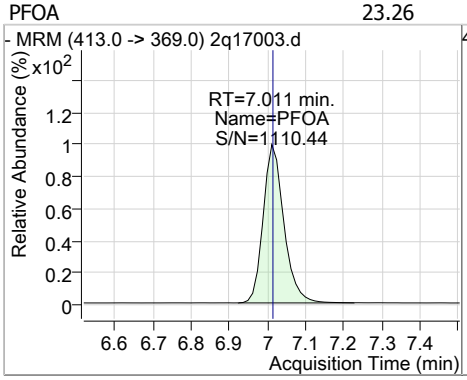
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.01	7.01	0.01	16973				

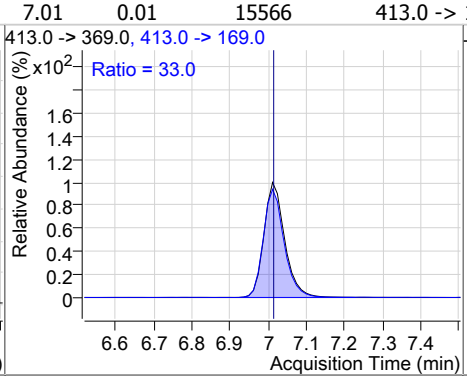


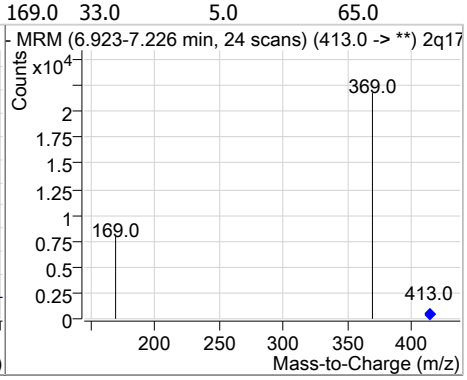




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	23.26	7.01	0.01	15566	413.0 -> 169.0	33.0	5.0	65.0

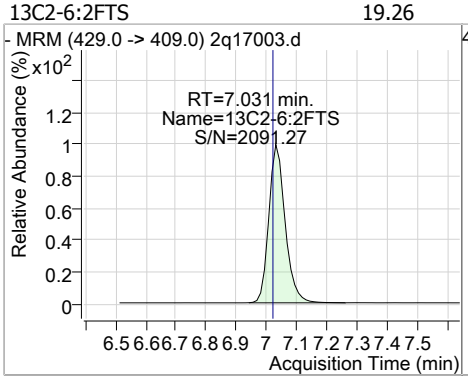


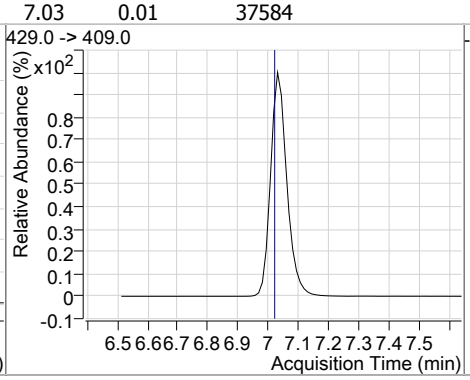


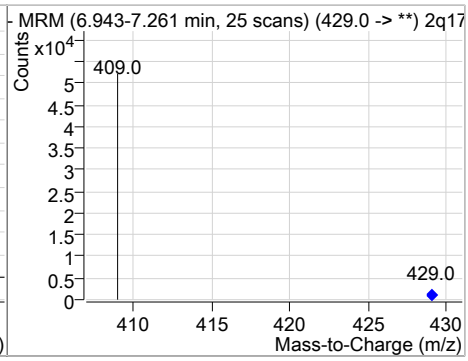


Perfluorinated Compounds by LC/MS/MS

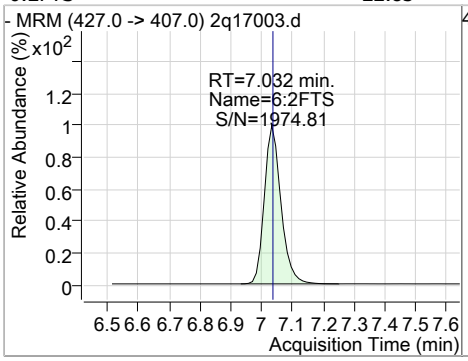
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.26	7.03	0.01	37584				

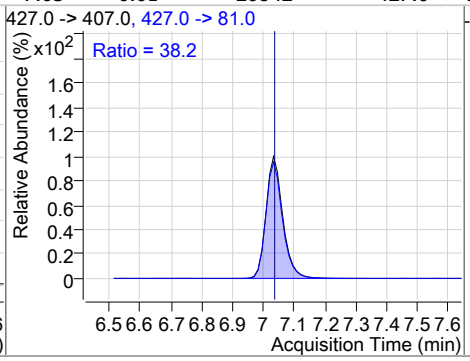


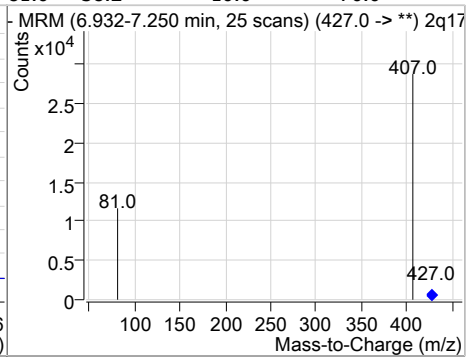




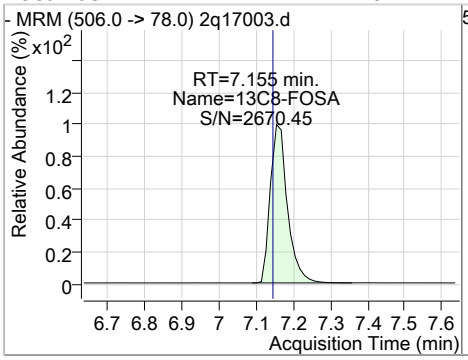
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	22.83	7.03	0.01	20842	427.0 -> 81.0	38.2	10.0	70.0

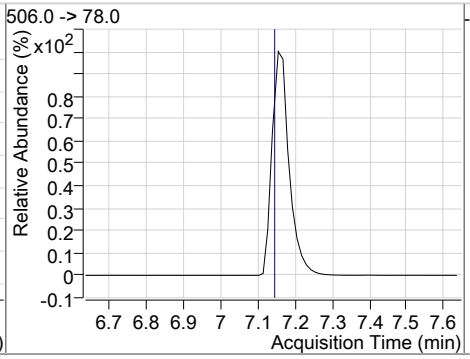


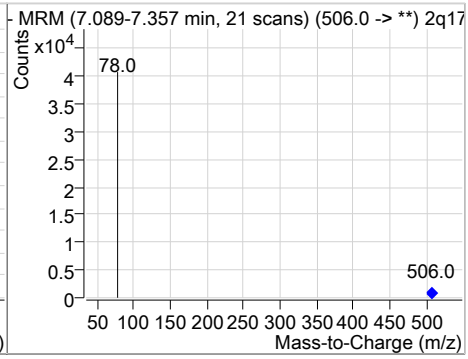




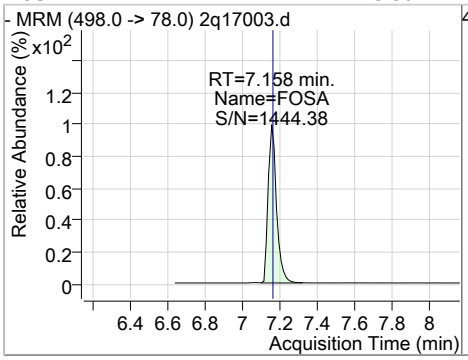
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.24	7.16	0.01	30943				

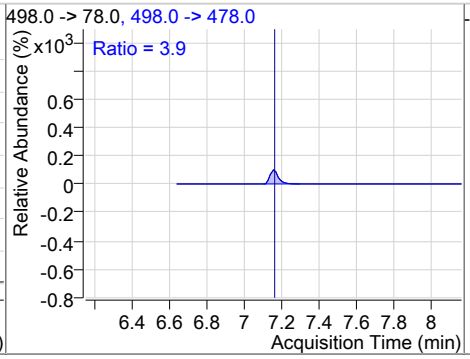


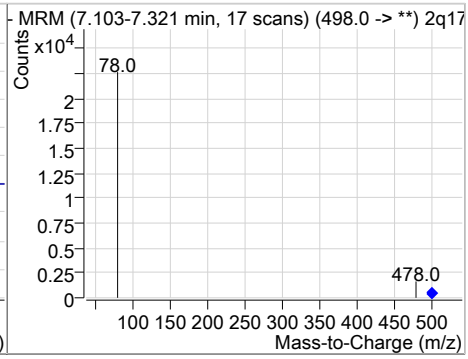




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	23.30	7.16	0.01	17679	498.0 -> 478.0	3.9	0.0	34.0

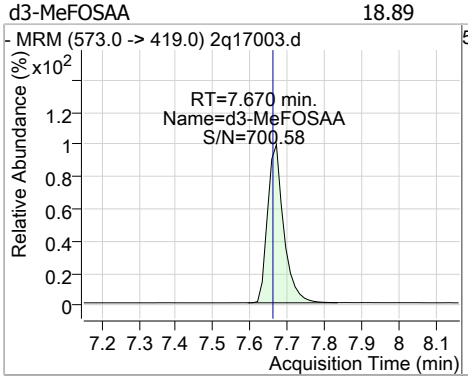


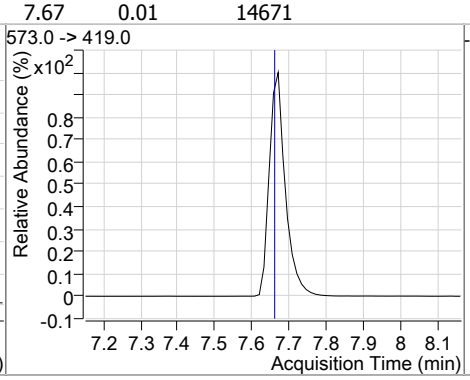


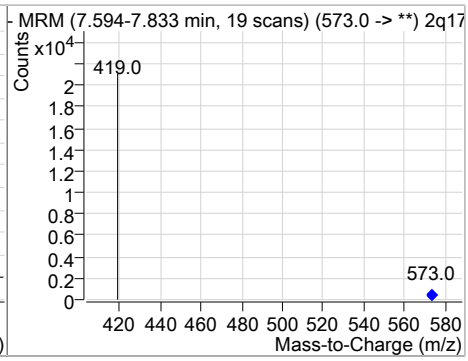


Perfluorinated Compounds by LC/MS/MS

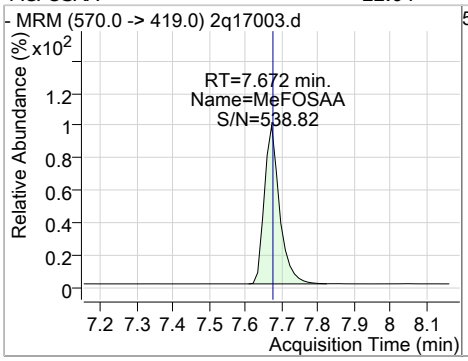
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.89	7.67	0.01	14671				

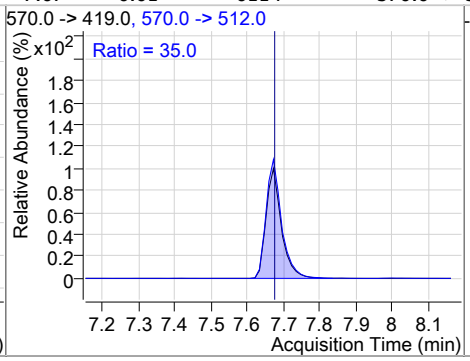


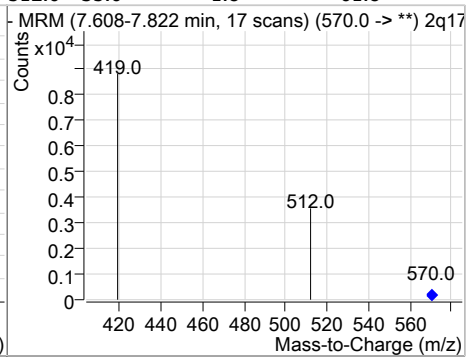




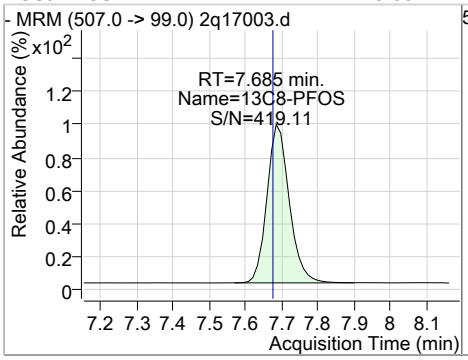
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	22.64	7.67	0.01	6114	570.0 -> 512.0	35.0	1.8	61.8

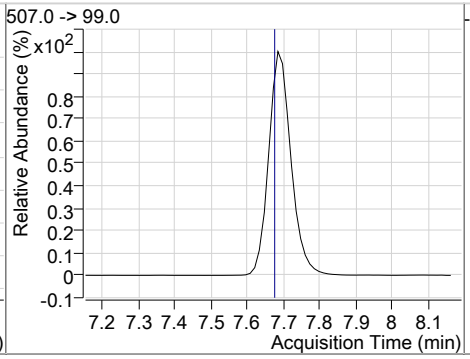


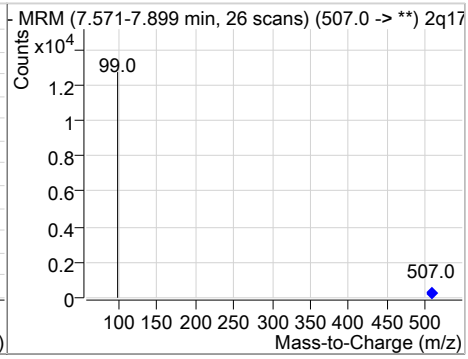




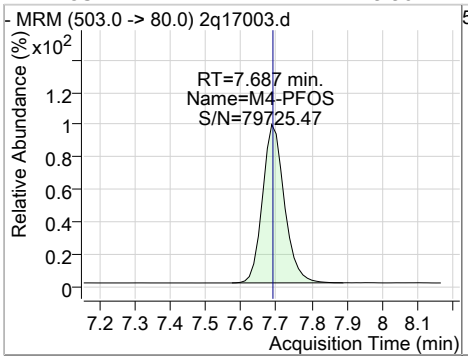
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.88	7.69	0.01	7832				

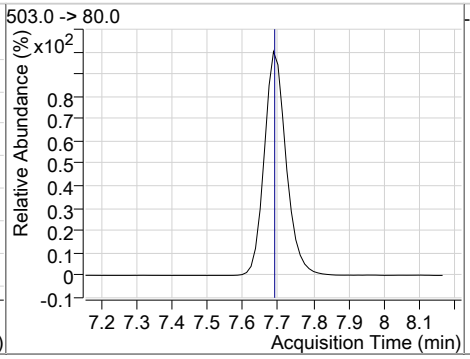


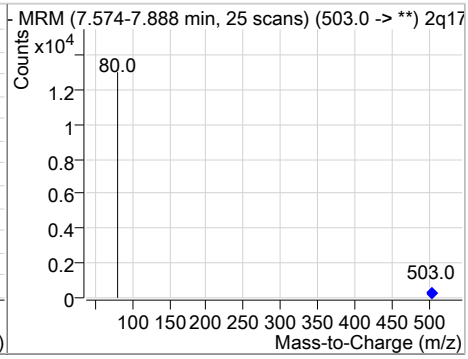




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	19.98	7.69	0.01	9017				

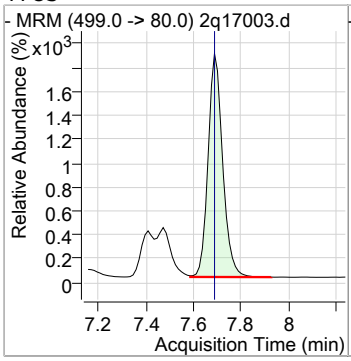


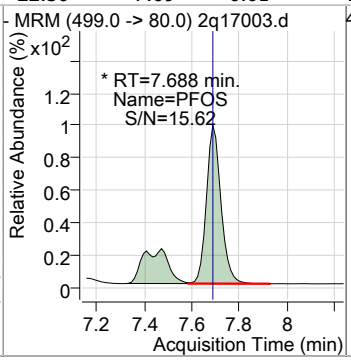


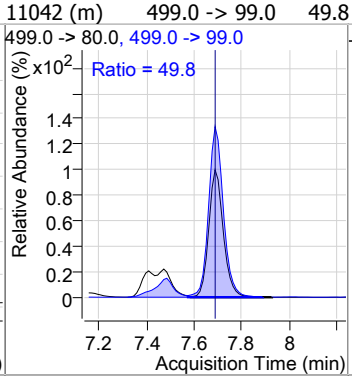


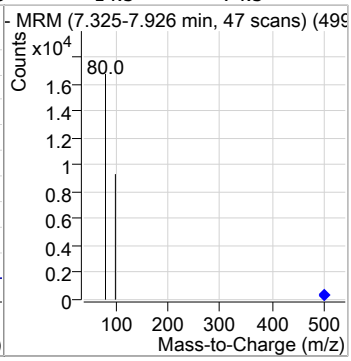
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	22.50	7.69	0.01	11042 (m)	499.0 -> 99.0	49.8	14.5	74.5

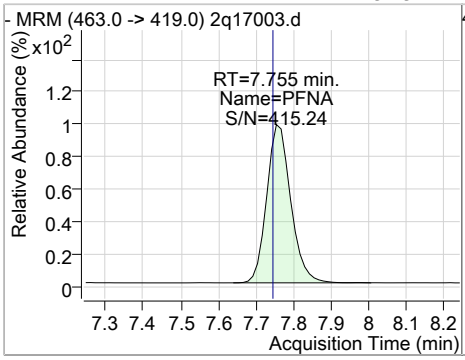


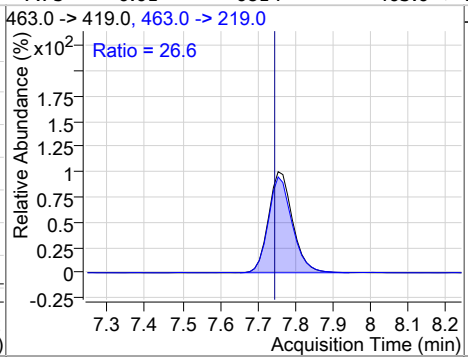


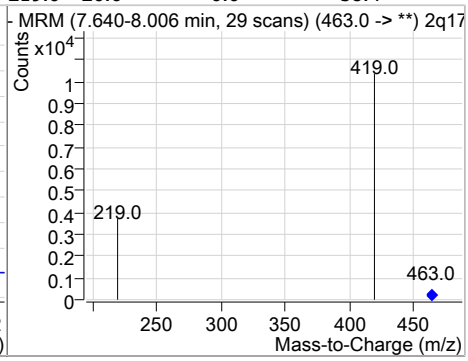




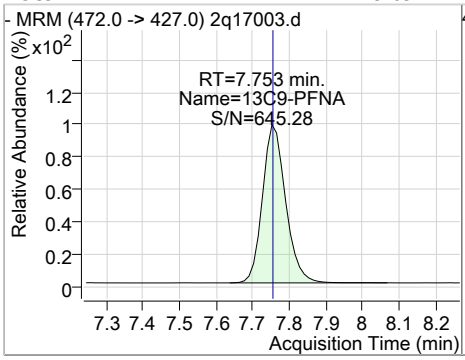
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.79	7.75	0.01	6814	463.0 -> 219.0	26.6	0.0	58.4

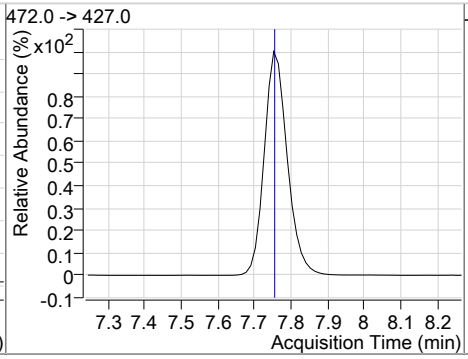


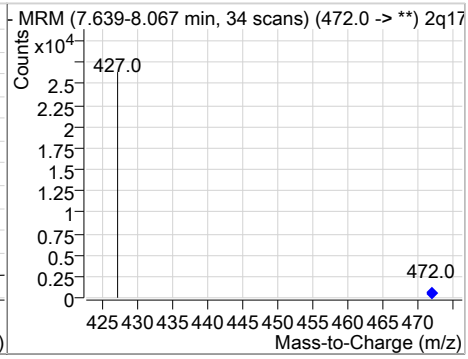




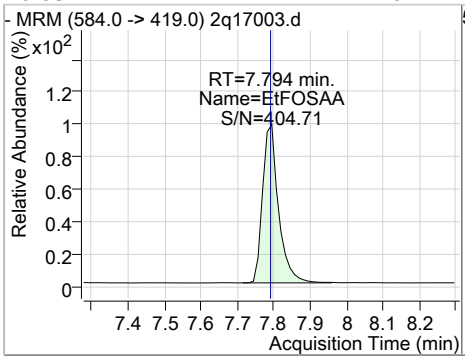
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.89	7.75	0.00	17541				

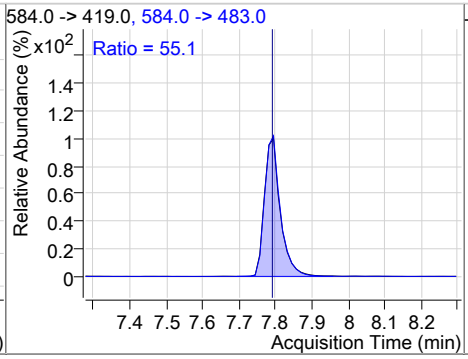


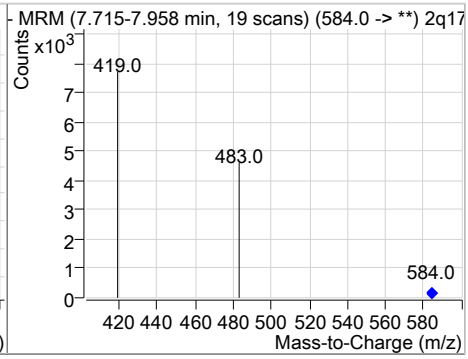




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	21.87	7.79	0.01	5174	584.0 -> 483.0	55.1	24.8	84.8

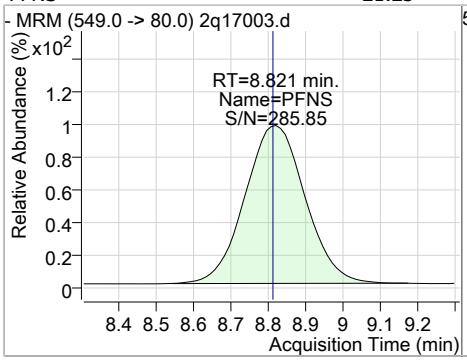


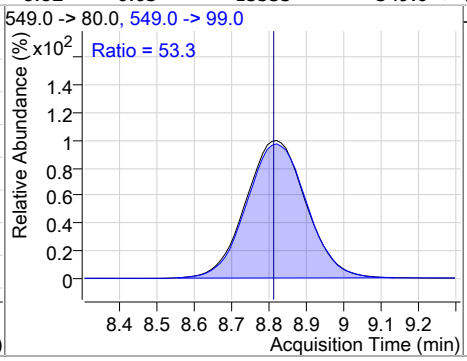


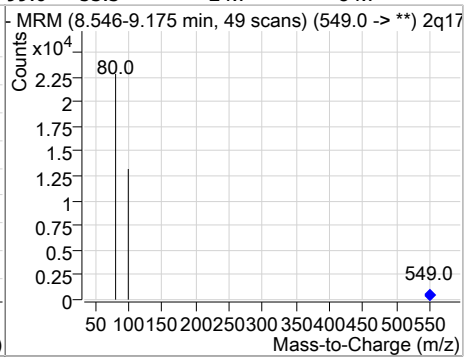


Perfluorinated Compounds by LC/MS/MS

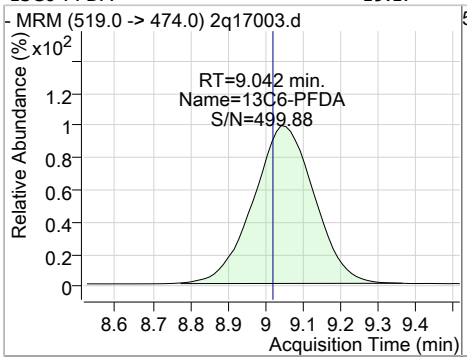
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	21.23	8.82	0.03	15333	549.0 -> 99.0	53.3	24.7	84.7

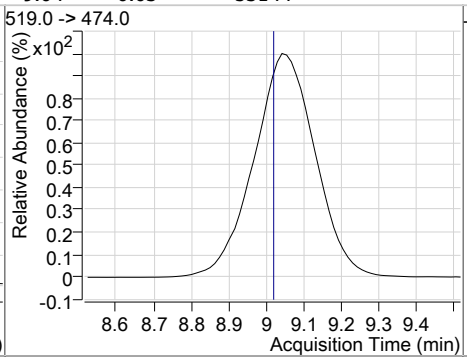


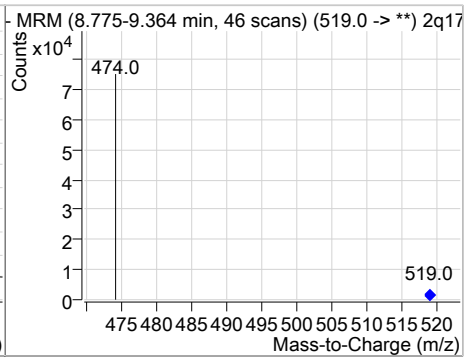




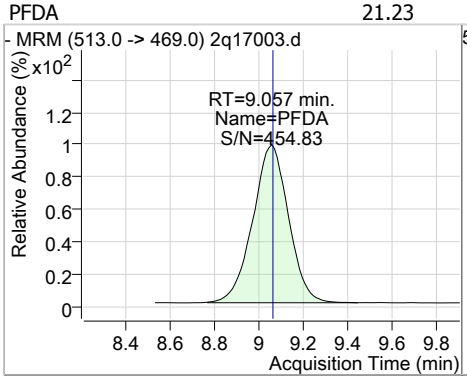
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.17	9.04	0.03	53144				

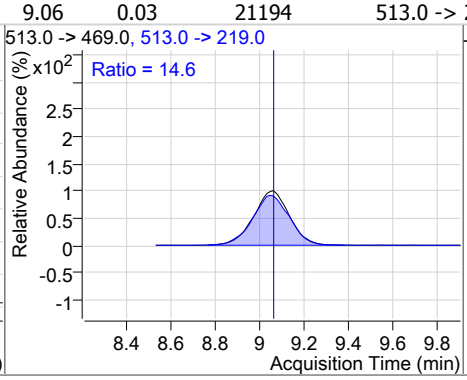


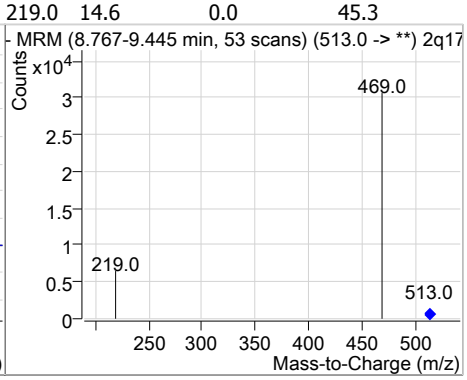




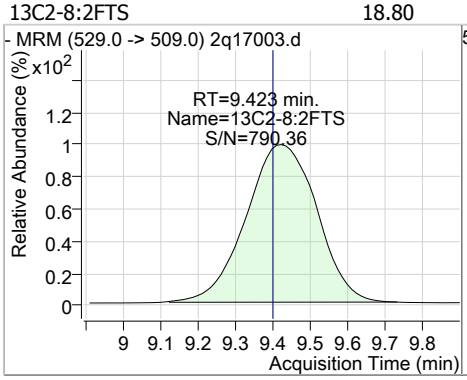
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	21.23	9.06	0.03	21194	513.0 -> 219.0	14.6	0.0	45.3

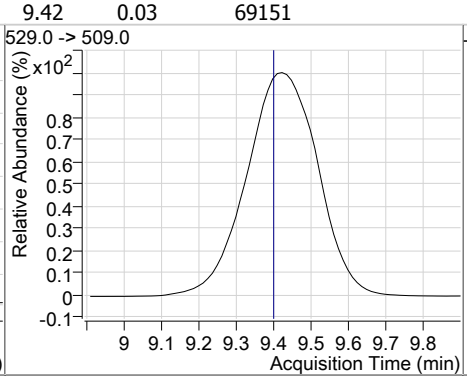


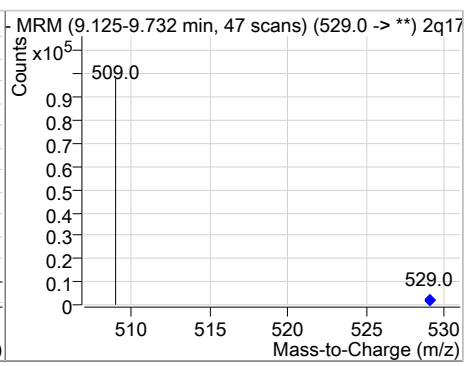




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.80	9.42	0.03	69151				

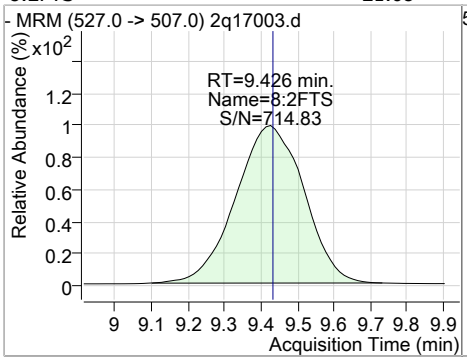


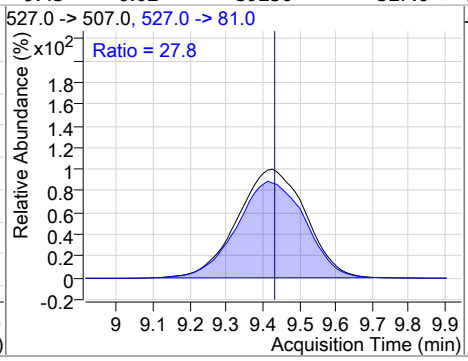


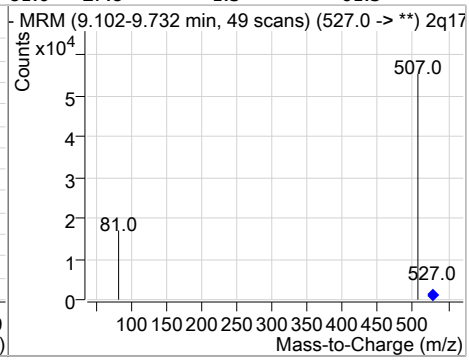


Perfluorinated Compounds by LC/MS/MS

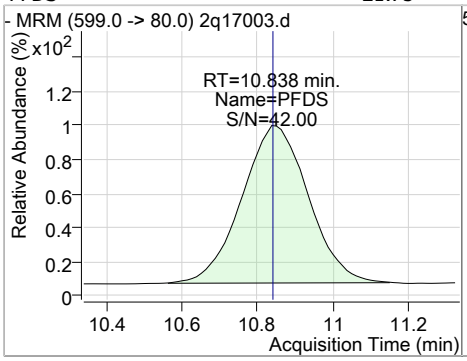
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	21.68	9.43	0.02	39250	527.0 -> 81.0	27.8	1.3	61.3

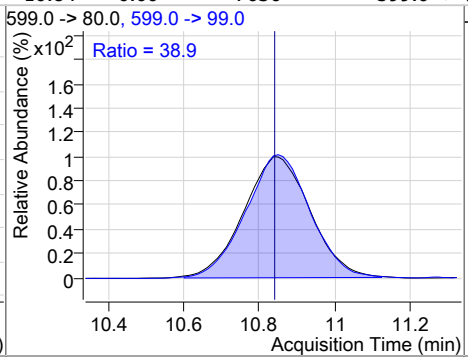


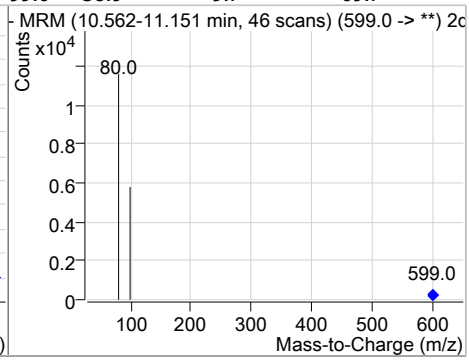




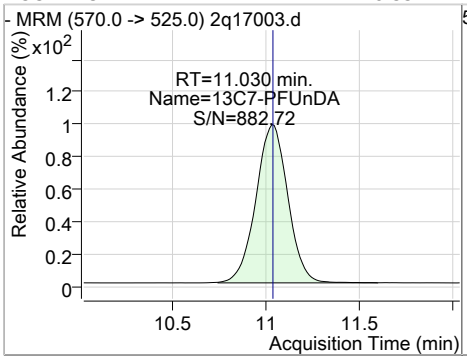
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	21.75	10.84	0.00	7036	599.0 -> 99.0	38.9	9.7	69.7

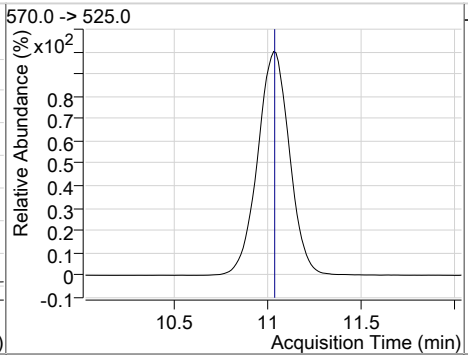


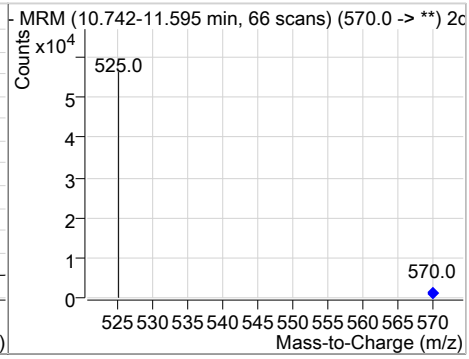




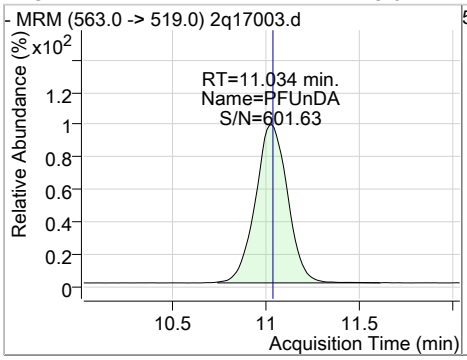
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.33	11.03	0.00	37783				

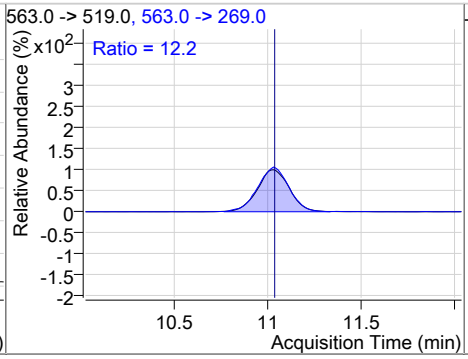


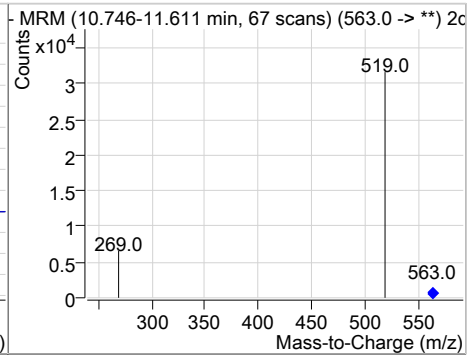




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	23.02	11.03	0.00	21392	563.0 -> 269.0	12.2	0.0	41.8

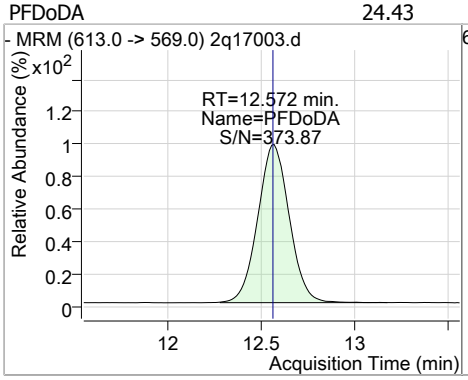


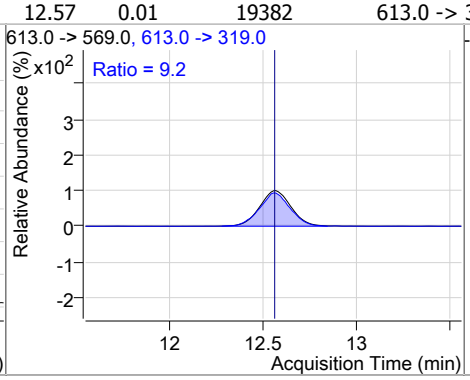


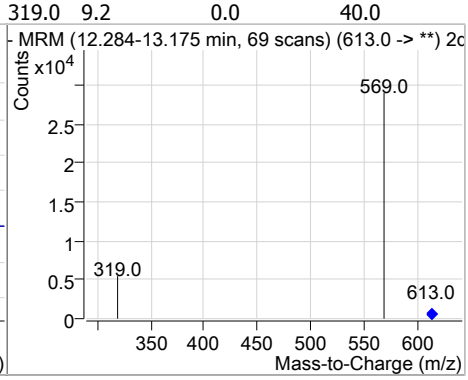


Perfluorinated Compounds by LC/MS/MS

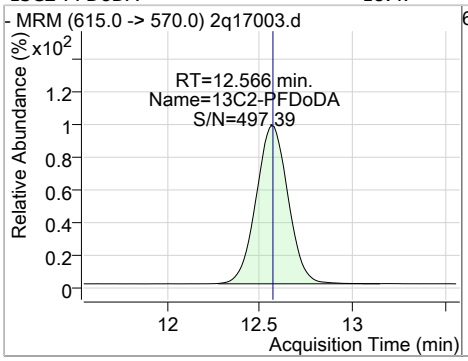
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	24.43	12.57	0.01	19382	613.0 -> 319.0	9.2	0.0	40.0

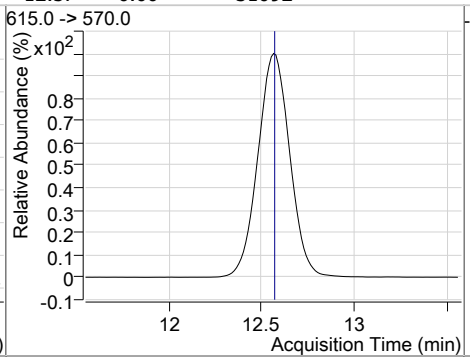


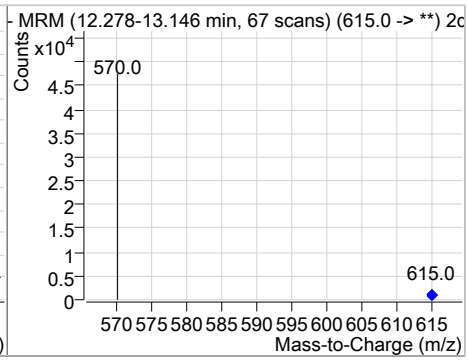




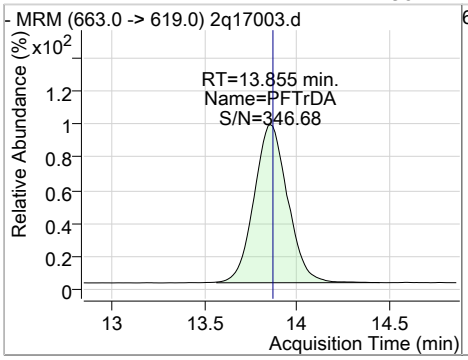
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.47	12.57	0.00	31092				

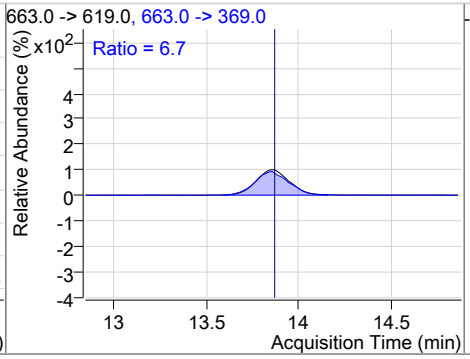


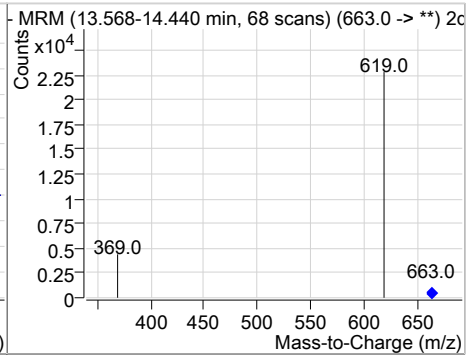




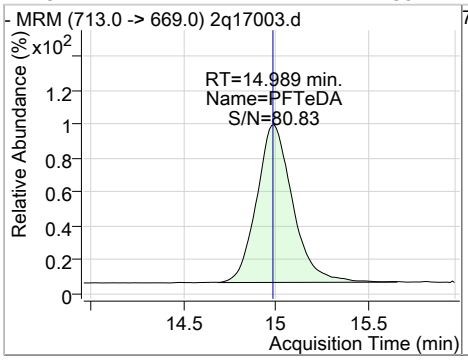
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	24.98	13.86	0.00	15027	663.0 -> 369.0	6.7	0.0	37.1

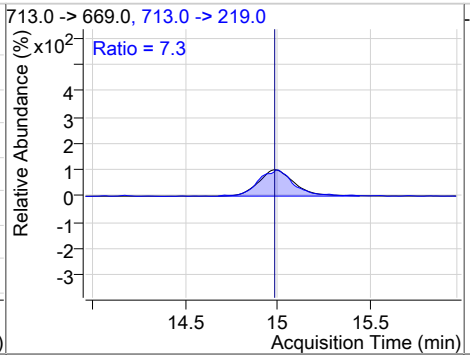


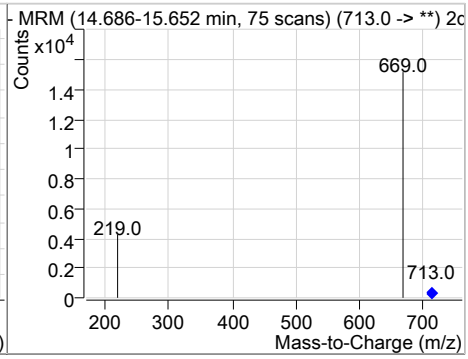




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	21.38	14.99	0.03	8763	713.0 -> 219.0	7.3	0.0	37.4

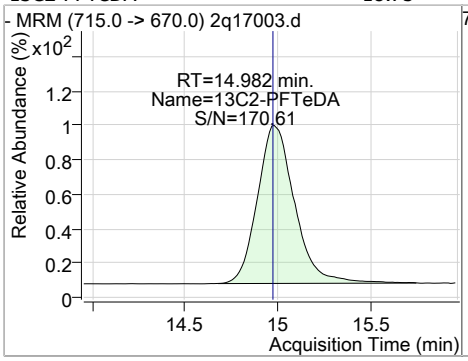


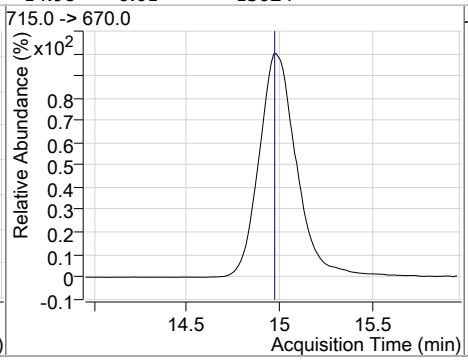


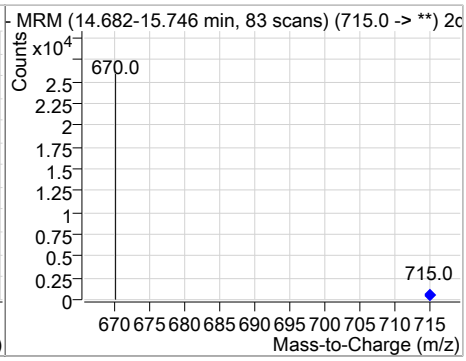


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	18.75	14.98	0.01	13624				







Manual Integration Approval Summary

Sample Number: S2Q295-ICV295
Lab FileID: 2Q17003.D
Injection Time: 07/12/18 12:30
Method: EPA 537M BY ID
Analyst approved: 07/13/18 12:48 Nancy Saunders
Supervisor approved: 07/13/18 17:24 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.25	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.69	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 07/13/18 17:24

Perfluorinated Compounds by LC/MS/MS

Data File : 2q17014.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/12/2018 4:30:51 PM
Sample Name : cc295-20
Vial : Vial 7
DA Method File : PFC_ID_071218_S2Q295.quantmethod.xml
Batch Name : s2q295.batch.bin
Sample Information : op70790,S2Q295,1.99,,,1.0,1,soil

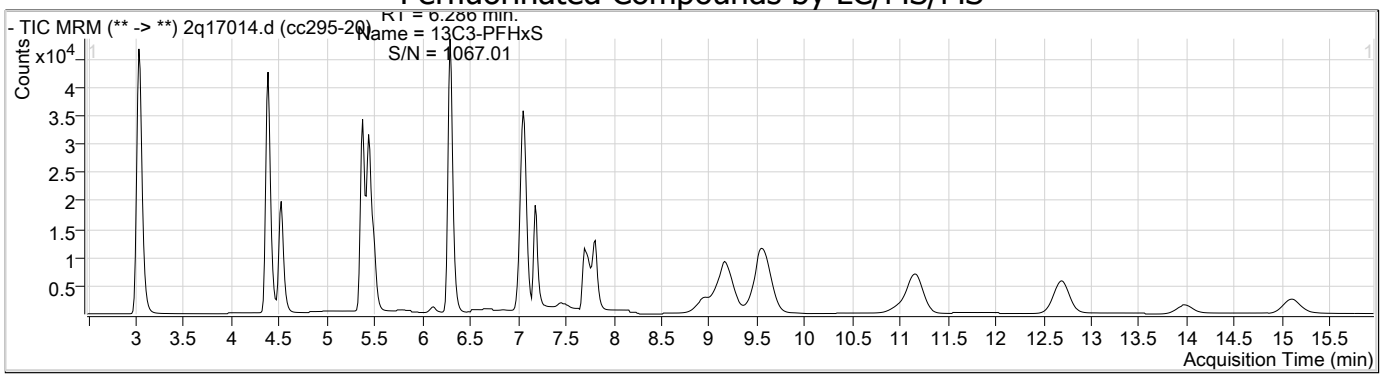
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	7.048	415.0 -> 370.0	20362	20.00	µg/L	0.052
13C4-PFOS	7.737	503.0 -> 80.0	10737	20.00	µg/L	0.062
M4-PFBA	3.028	217.0 -> 172.0	160753	20.00	µg/L	0.038
M5-PFPeA	4.388	268.0 -> 223.0	80950	20.00	µg/L	0.050
M5-PFHxA	5.439	318.0 -> 273.0	73866	20.00	µg/L	0.048
M4-PFHpA	6.292	367.0 -> 322.0	69582	20.00	µg/L	0.038
M8-PFOA	7.047	421.0 -> 376.0	33045	20.00	µg/L	0.051
M9-PFNA	7.803	472.0 -> 427.0	20534	20.00	µg/L	0.051
M6-PFDA	9.167	519.0 -> 474.0	71123	20.00	µg/L	0.150
M7-PFUnDA	11.168	570.0 -> 525.0	53160	20.00	µg/L	0.138
M2-PFDoDA	12.691	615.0 -> 570.0	44259	20.00	µg/L	0.126
M2-PFTeDA	15.108	715.0 -> 670.0	21384	20.00	µg/L	0.138
M8-FOSA	7.180	506.0 -> 78.0	36283	20.00	µg/L	0.038
M3-PFBS	4.518	302.0 -> 99.0	24651	20.00	µg/L	0.050
M3-PFHxS	6.286	402.0 -> 99.0	20203	20.00	µg/L	0.051
M8-PFOS	7.736	507.0 -> 99.0	9503	20.00	µg/L	0.062
M2-4:2FTS	5.373	329.0 -> 309.0	66870	20.00	µg/L	0.050
M2-6:2FTS	7.069	429.0 -> 409.0	44861	20.00	µg/L	0.051
M2-8:2FTS	9.548	529.0 -> 509.0	83912	20.00	µg/L	0.151
M3-MeFOSAA	7.695	573.0 -> 419.0	15272	20.00	µg/L	0.038
System Monitoring Compounds						
13C2-4:2FTS	5.373	329.0 -> 309.0	66873	23.70	µg/L	0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 118.5%		
13C2-6:2FTS	7.069	429.0 -> 409.0	44853	22.98	µg/L	0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.9%		
13C2-8:2FTS	9.548	529.0 -> 509.0	82297	22.37	µg/L	0.151
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.9%		
13C2-PFDoDA	12.691	615.0 -> 570.0	44268	26.30	µg/L	0.126
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 131.5%		
13C2-PFTeDA	15.108	715.0 -> 670.0	21469	29.54	µg/L	0.138
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 147.7%		
13C3-PFBS	4.518	302.0 -> 99.0	24652	23.64	µg/L	0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 118.2%		
13C3-PFHxS	6.286	402.0 -> 99.0	20203	24.20	µg/L	0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.0%		
13C4-PFBA	3.028	217.0 -> 172.0	160649	24.17	µg/L	0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 120.9%		
13C4-PFHpA	6.292	367.0 -> 322.0	69582	24.59	µg/L	0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 123.0%		
13C5-PFHxA	5.439	318.0 -> 273.0	73856	24.90	µg/L	0.048
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 124.5%		
13C5-PFPeA	4.388	268.0 -> 223.0	80932	24.67	µg/L	0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 123.4%		
13C6-PFDA	9.167	519.0 -> 474.0	69911	25.22	µg/L	0.150
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 126.1%		

Perfluorinated Compounds by LC/MS/MS

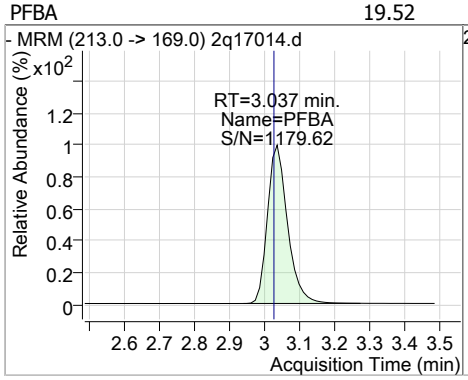
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	11.168	570.0 -> 525.0	53179	25.80	µg/L		0.138
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 129.0%			
13C8-FOSA	7.180	506.0 -> 78.0	36328	22.59	µg/L		0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.9%			
13C8-PFOA	7.047	421.0 -> 376.0	33042	25.15	µg/L		0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 125.8%			
13C8-PFOS	7.736	507.0 -> 99.0	9501	22.90	µg/L		0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.5%			
13C9-PFNA	7.803	472.0 -> 427.0	20543	23.30	µg/L		0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.5%			
d3-MeFOSAA	7.695	573.0 -> 419.0	15292	19.69	µg/L		0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.4%			
M2-PFOA	7.048	415.0 -> 370.0	20371	20.01	ng/ml		0.052
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.737	503.0 -> 80.0	10739	20.01	ng/ml		0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
Target Compounds							**QValue**
4:2FTS	5.374	327.0 -> 307.0	33463	19.84	µg/L		98
6:2FTS	7.070	427.0 -> 407.0	21212	19.35	µg/L		97
8:2FTS	9.552	527.0 -> 507.0	43024	19.76	µg/L		93
EtFOSAA	7.807	584.0 -> 419.0	4478	18.15	µg/L		98
FOSA	7.183	498.0 -> 78.0	17231	19.36	µg/L		99
MeFOSAA	7.697	570.0 -> 419.0	5518	19.60	µg/L		99
PFBA	3.037	213.0 -> 169.0	24896	19.52	µg/L		100
PFBS	4.522	299.0 -> 80.0	32193	19.03	µg/L		98
PFDA	9.170	513.0 -> 469.0	25720	19.40	µg/L		98
PFDoDA	12.697	613.0 -> 569.0	22383	19.83	µg/L		98
PFDS	10.976	599.0 -> 80.0	8699	19.11	µg/L		99
PFHpA	6.296	363.0 -> 319.0	48451	18.70	µg/L		100
PFHpS	7.017	449.0 -> 80.0	10937	19.24	µg/L		99
PFHxA	5.441	313.0 -> 269.0	23632	18.97	µg/L		98
PFHxS	6.289	399.0 -> 80.0	23188	19.37	µg/L	m	98
PFNA	7.805	463.0 -> 419.0	7385	18.23	µg/L		100
PFNS	8.934	549.0 -> 80.0	17578	20.07	µg/L		99
PFOA	7.049	413.0 -> 369.0	16552	18.80	µg/L		100
PFOS	7.738	499.0 -> 80.0	11806	19.84	µg/L	m	99
PFPeA	4.391	263.0 -> 219.0	71384	18.89	µg/L		100
PFPeS	5.484	349.0 -> 80.0	20895	19.45	µg/L		100
PFTeDA	15.101	713.0 -> 669.0	12375	19.46	µg/L		99
PFTrDA	13.976	663.0 -> 619.0	17488	18.73	µg/L		99
PFUnDA	11.159	563.0 -> 519.0	25222	19.29	µg/L		99

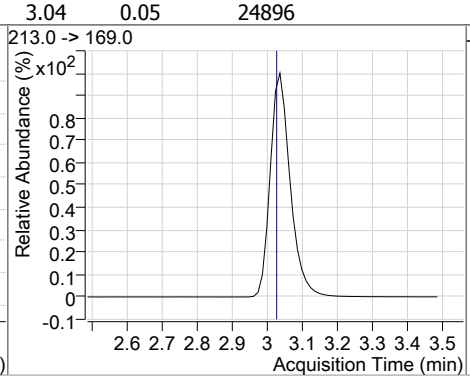
 # = Qualifier out of range, m = manually integrated, + = Area summed

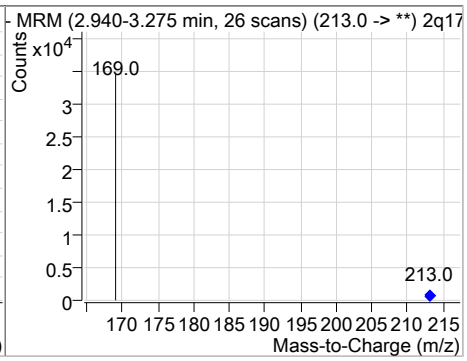
Perfluorinated Compounds by LC/MS/MS



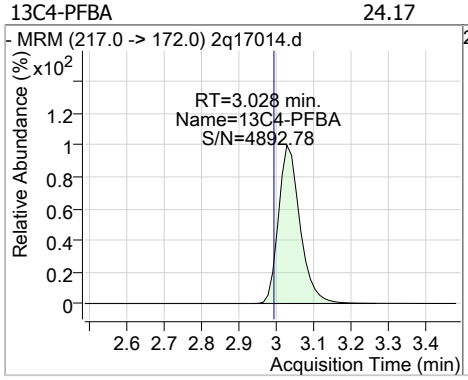
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.52	3.04	0.05	24896				

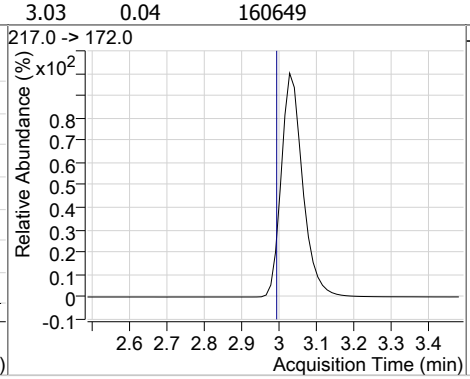


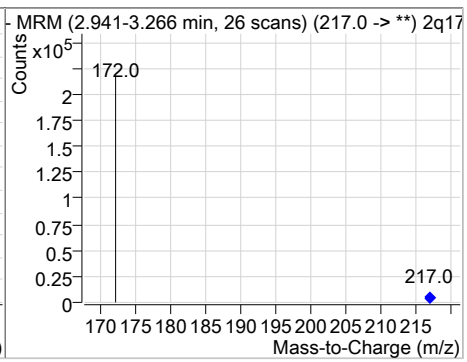




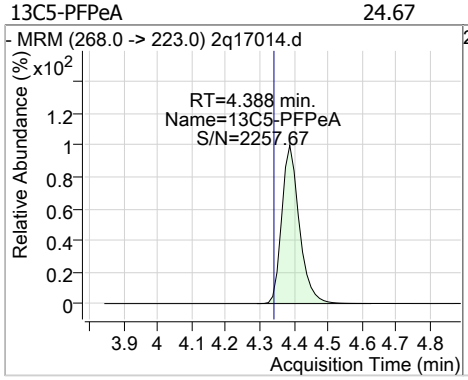
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	24.17	3.03	0.04	160649				

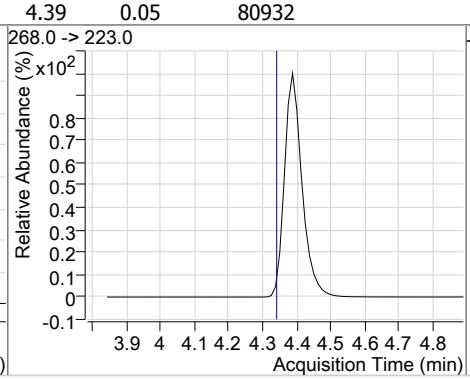


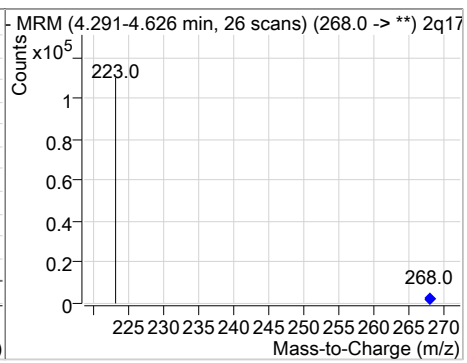




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	24.67	4.39	0.05	80932				

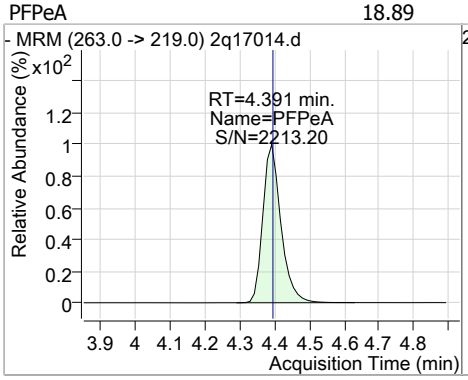


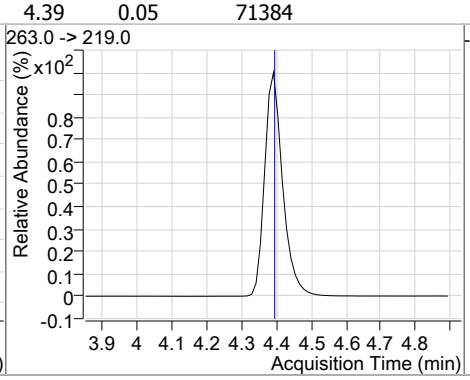


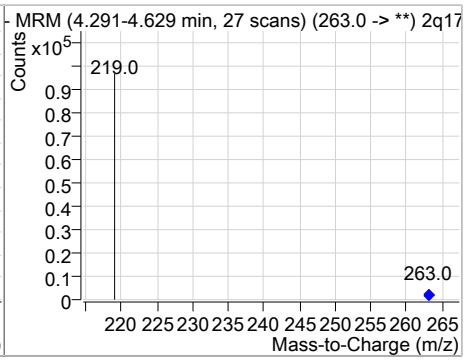


Perfluorinated Compounds by LC/MS/MS

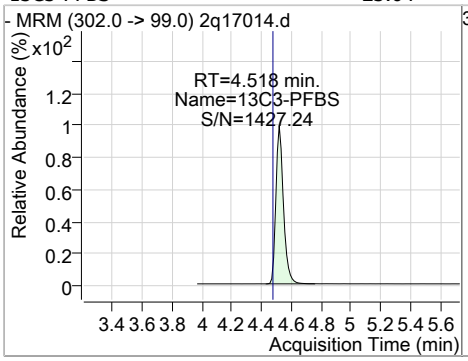
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	18.89	4.39	0.05	71384				

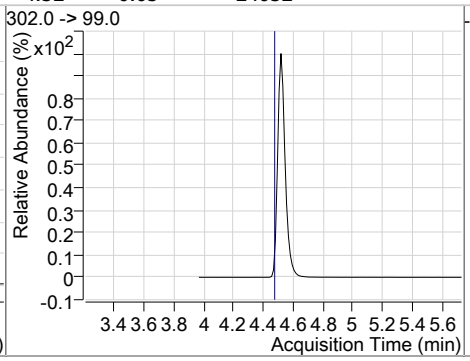


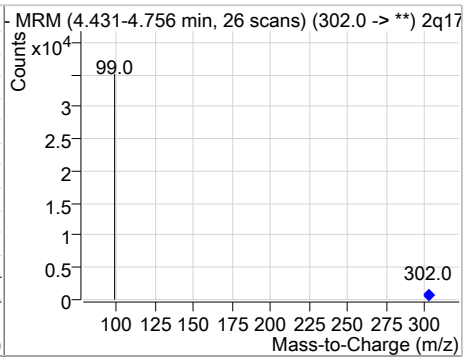




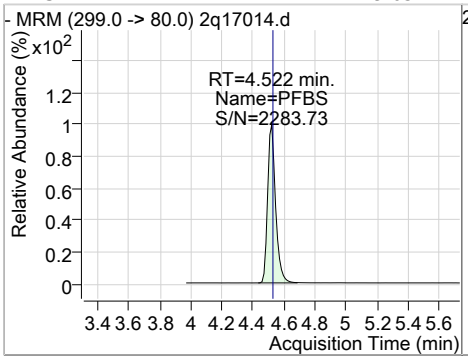
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	23.64	4.52	0.05	24652				

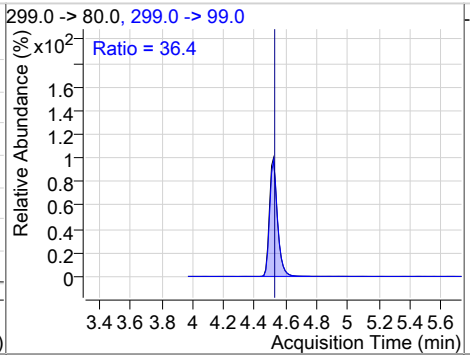


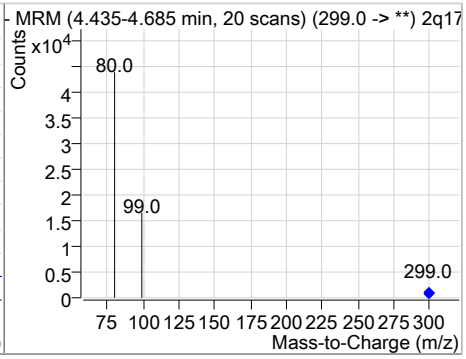




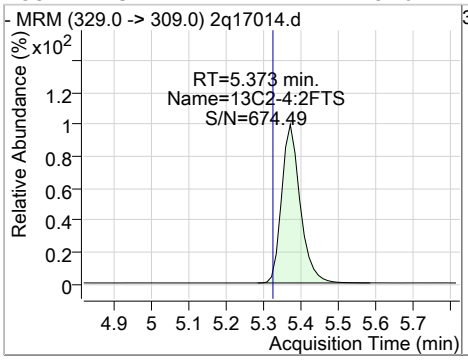
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.03	4.52	0.05	32193	299.0 -> 99.0	36.4	7.4	67.4

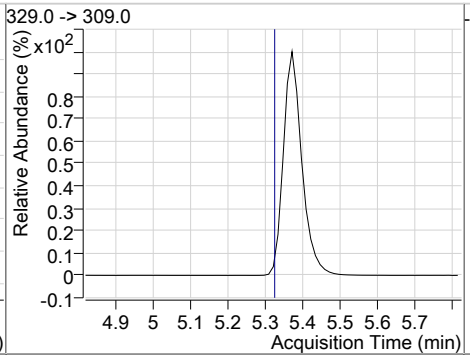


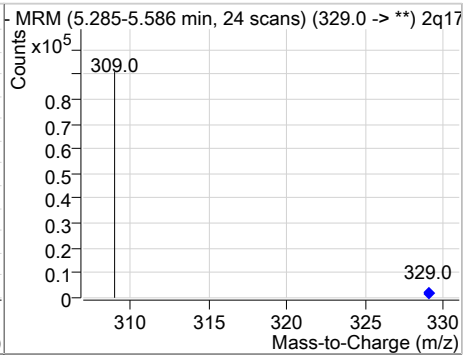




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	23.70	5.37	0.05	66873				

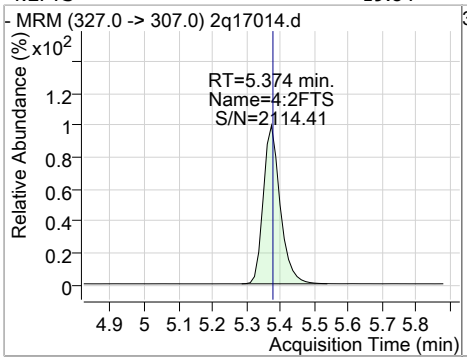


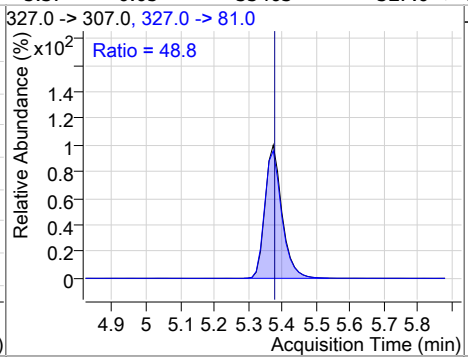


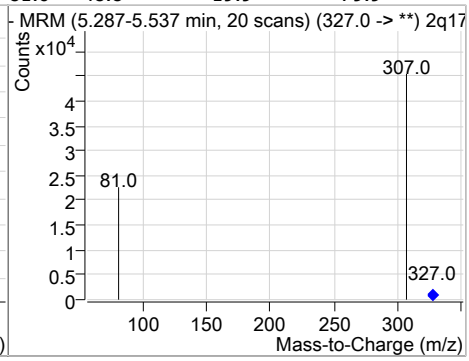


Perfluorinated Compounds by LC/MS/MS

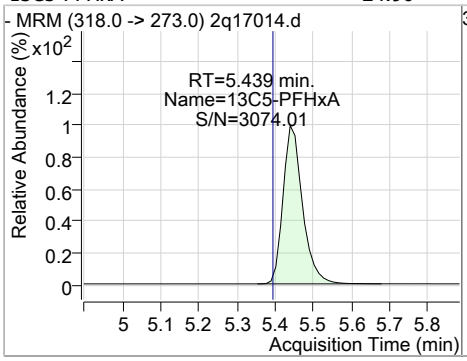
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.84	5.37	0.05	33463	327.0 -> 81.0	48.8	19.9	79.9

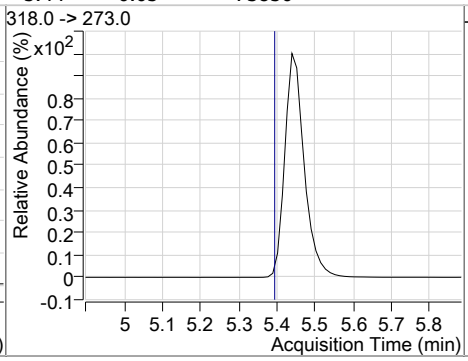


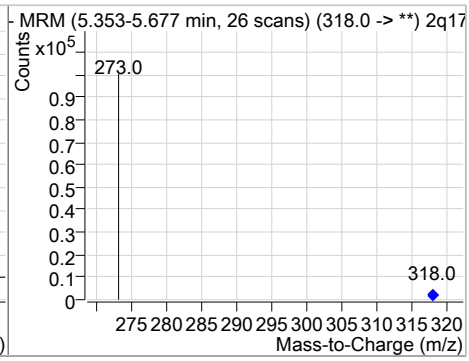




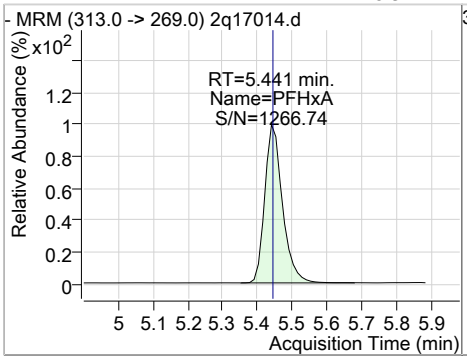
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	24.90	5.44	0.05	73856				

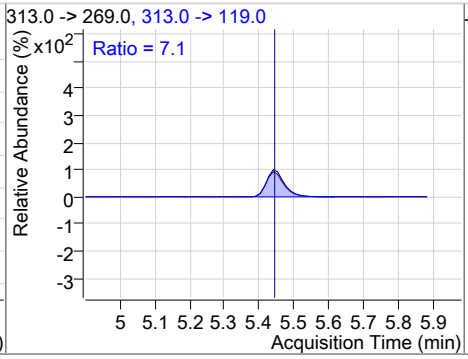


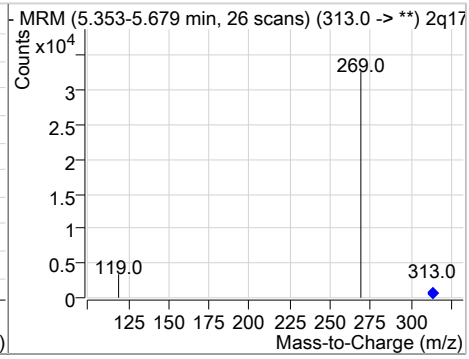




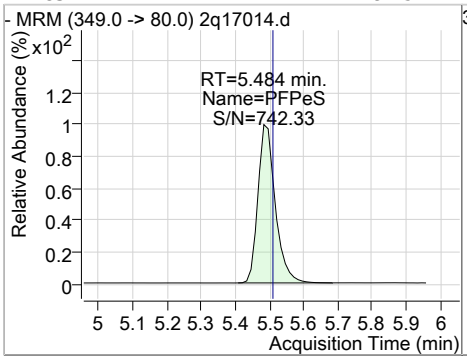
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	18.97	5.44	0.05	23632	313.0 -> 119.0	7.1	0.0	37.6

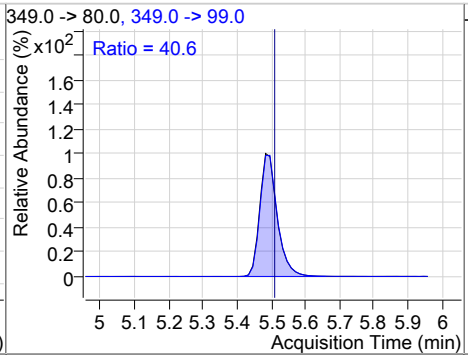


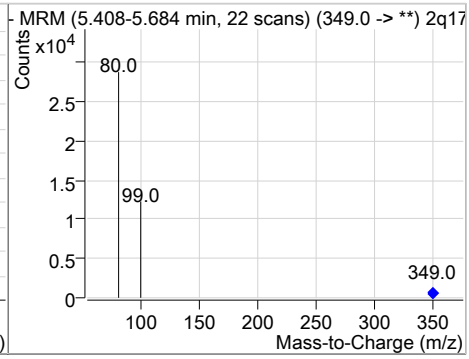




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.45	5.48	0.04	20895	349.0 -> 99.0	40.6	10.8	70.8

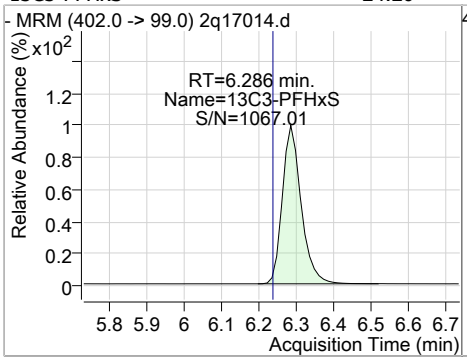


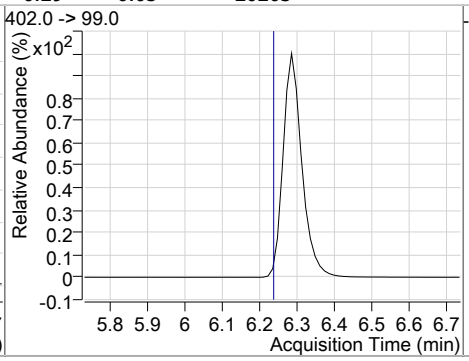


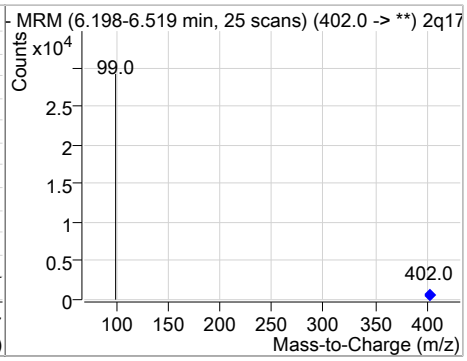


Perfluorinated Compounds by LC/MS/MS

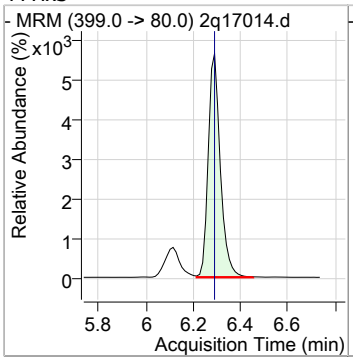
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	24.20	6.29	0.05	20203				

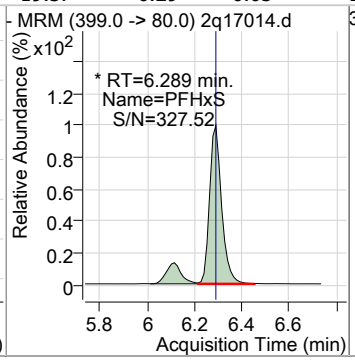


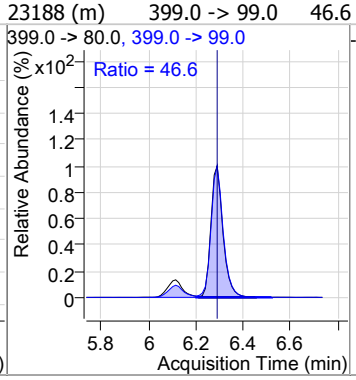


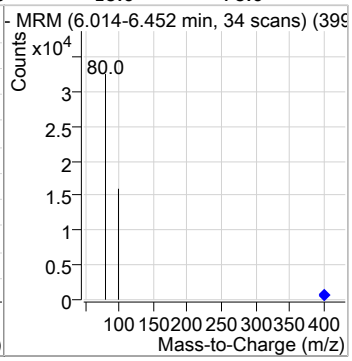


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.37	6.29	0.05	23188 (m)	399.0 -> 99.0	46.6	18.0	78.0

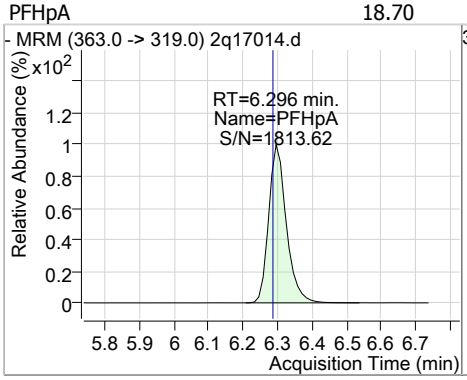


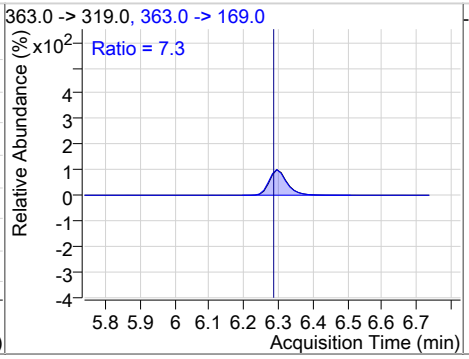


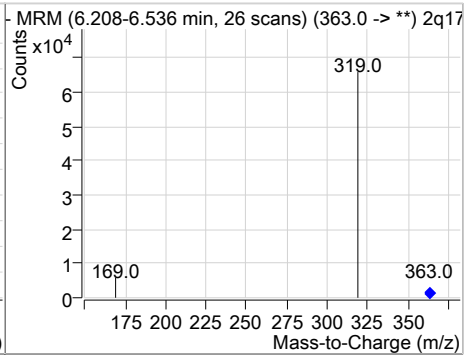




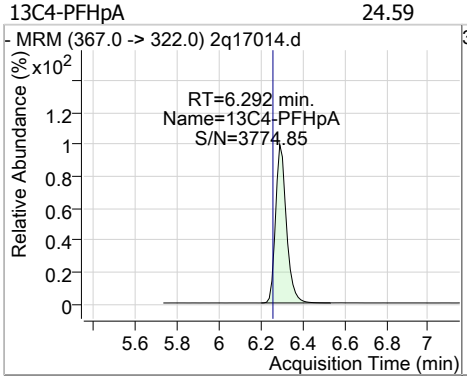
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	18.70	6.30	0.05	48451	363.0 -> 169.0	7.3	0.0	37.2

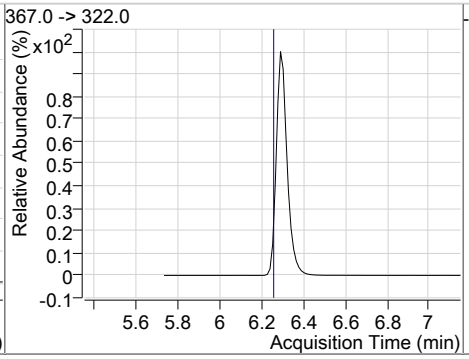


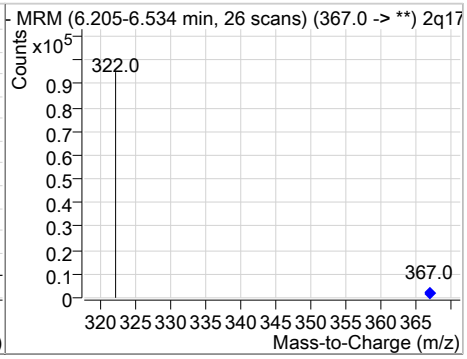




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	24.59	6.29	0.04	69582				

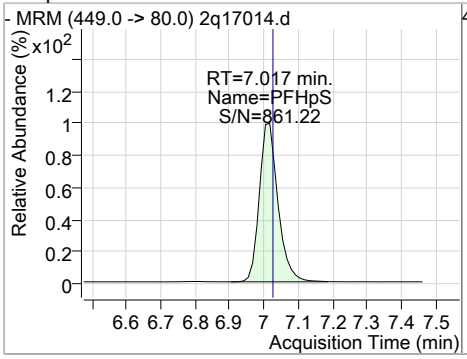


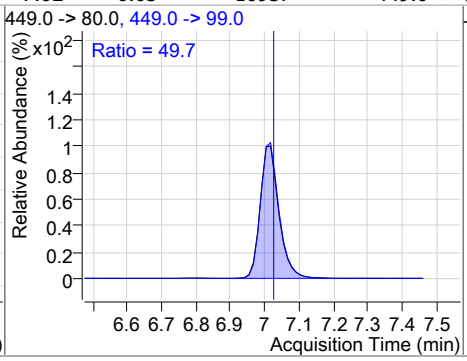


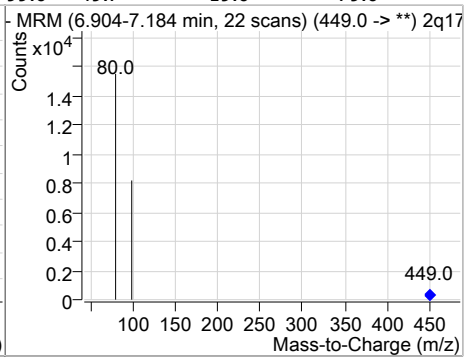


Perfluorinated Compounds by LC/MS/MS

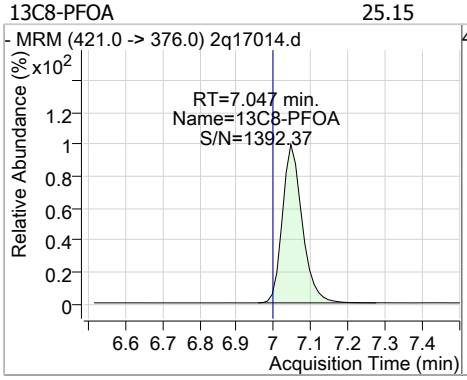
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	19.24	7.02	0.05	10937	449.0 -> 99.0	49.7	19.0	79.0

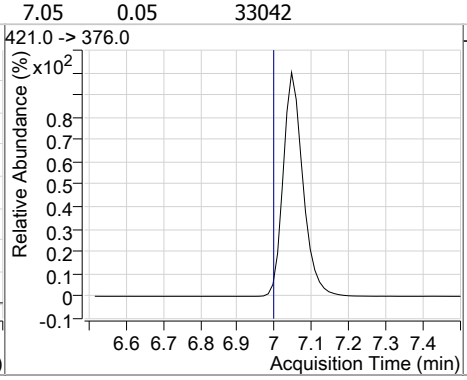


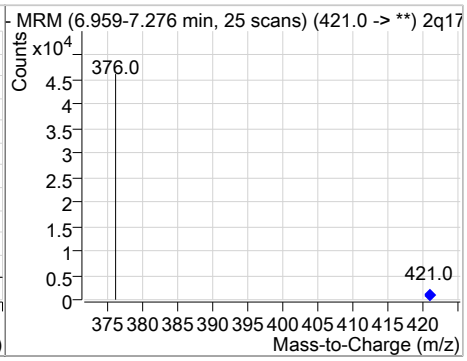




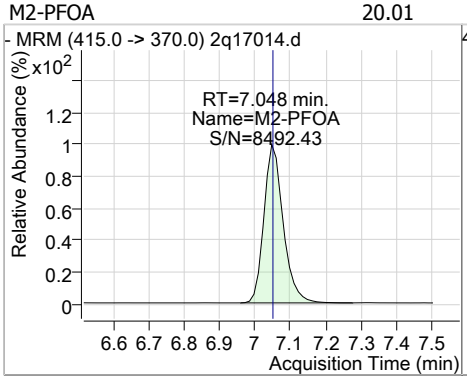
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	25.15	7.05	0.05	33042				

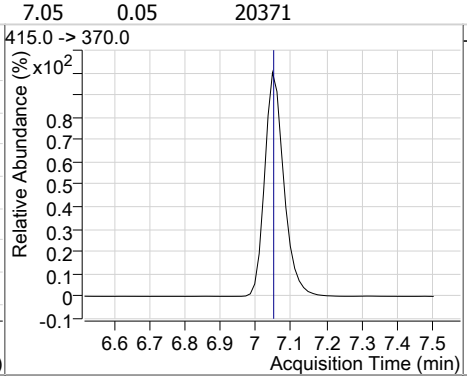


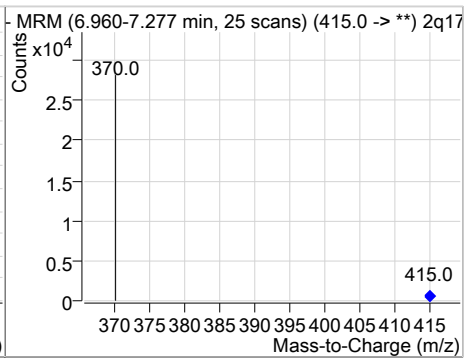




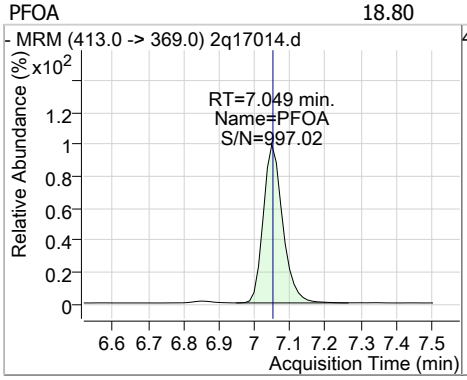
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.01	7.05	0.05	20371				

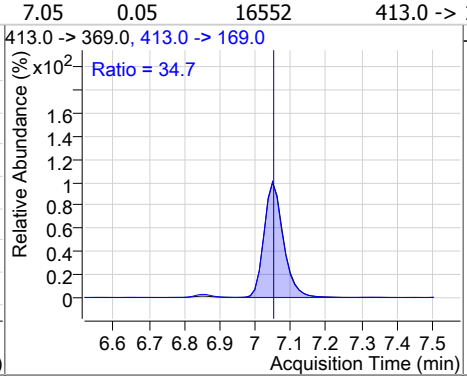


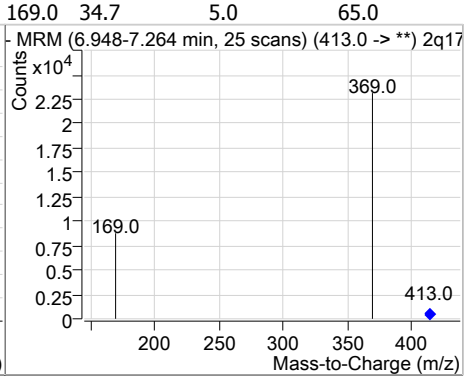




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	18.80	7.05	0.05	16552	413.0 -> 169.0	34.7	5.0	65.0

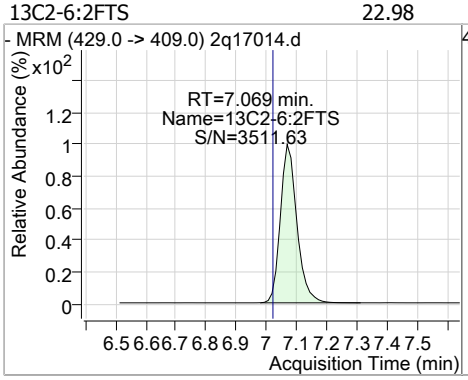


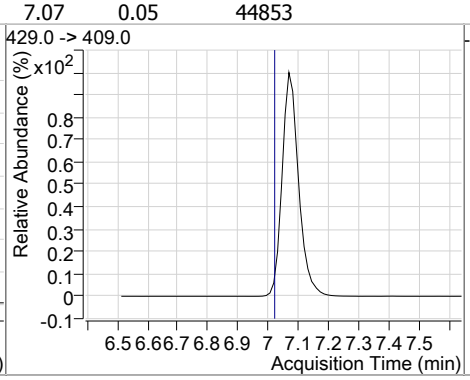


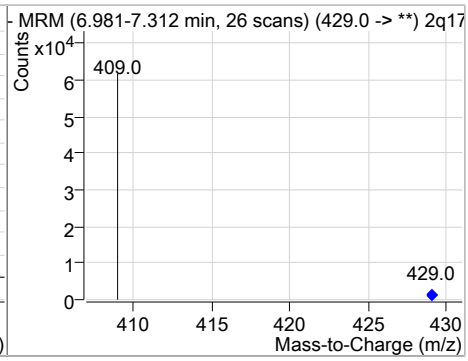


Perfluorinated Compounds by LC/MS/MS

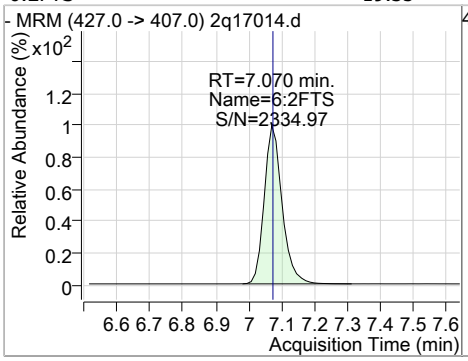
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	22.98	7.07	0.05	44853				

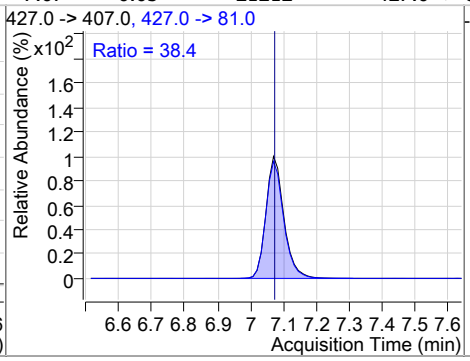


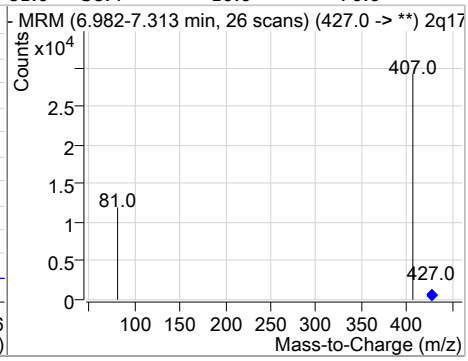




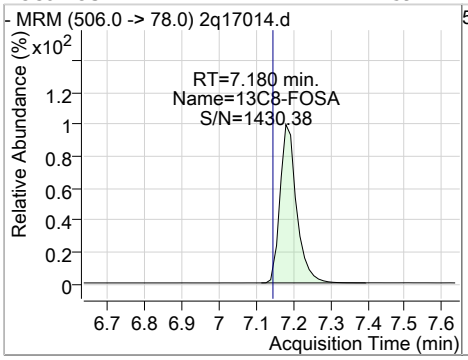
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.35	7.07	0.05	21212	427.0 -> 81.0	38.4	10.0	70.0

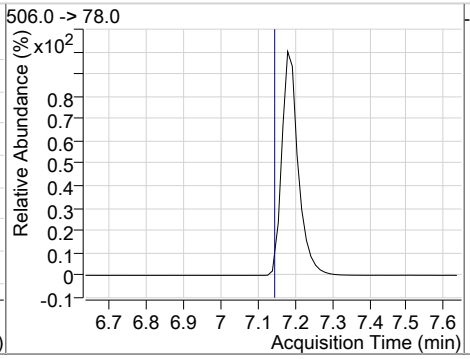


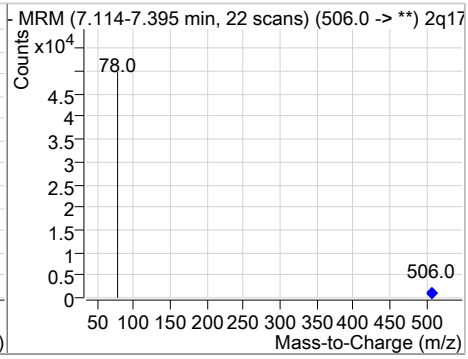




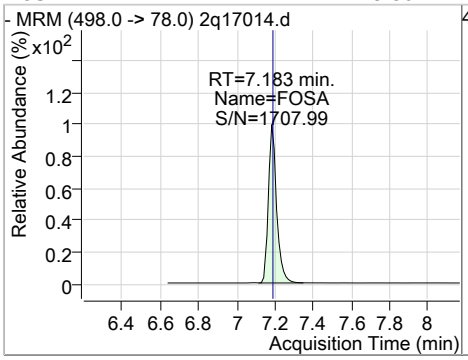
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	22.59	7.18	0.04	36328				

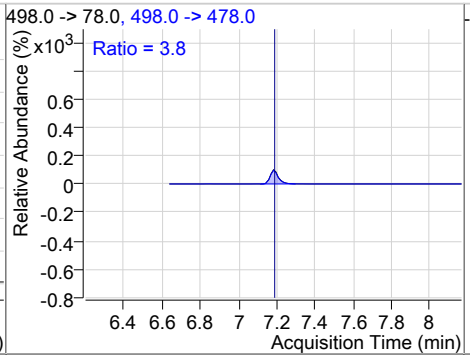


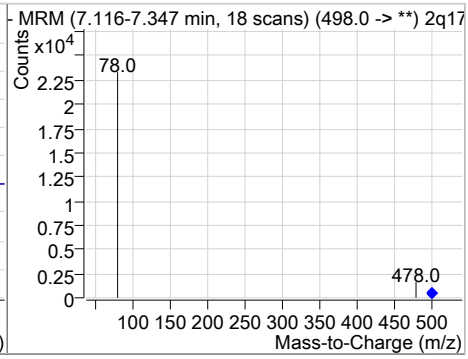




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.36	7.18	0.04	17231	498.0 -> 478.0	3.8	0.0	34.0

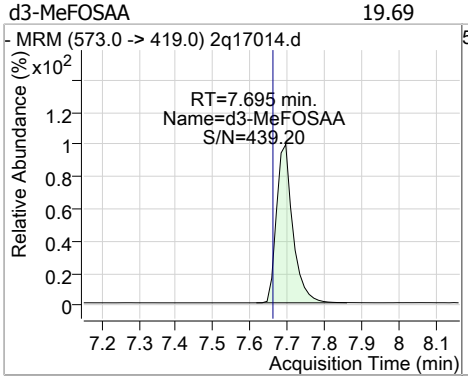


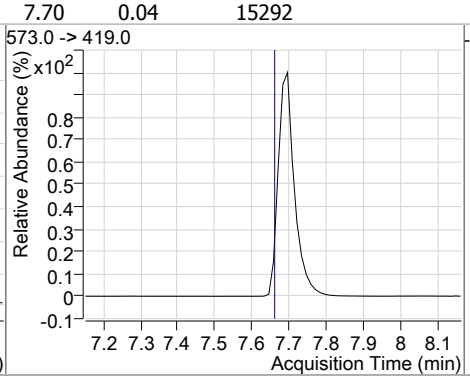


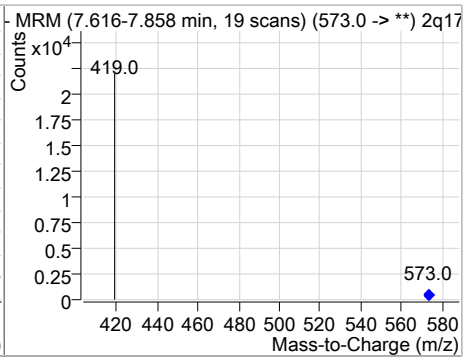


Perfluorinated Compounds by LC/MS/MS

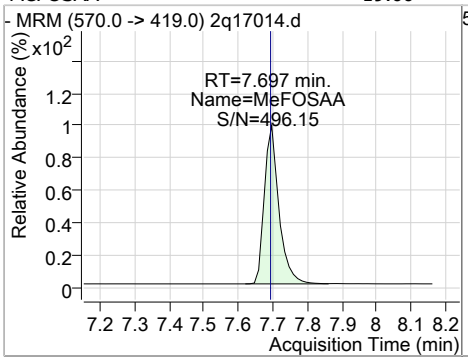
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.69	7.70	0.04	15292				

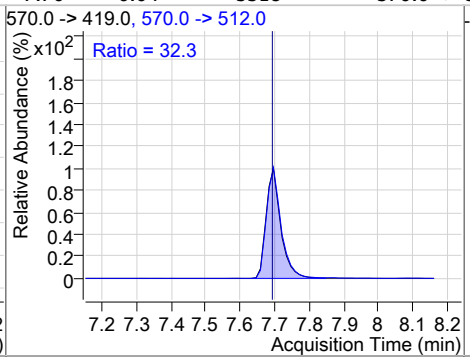


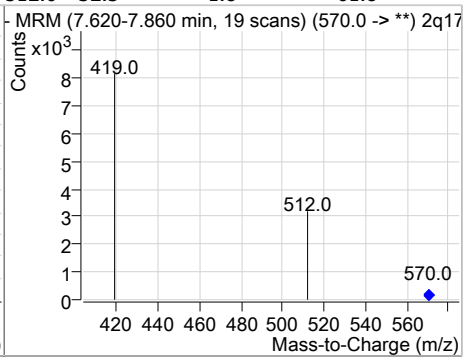




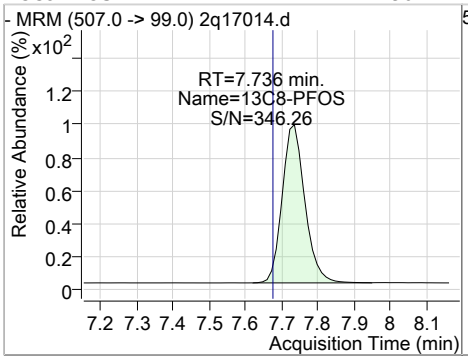
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.60	7.70	0.04	5518	570.0 -> 512.0	32.3	1.8	61.8

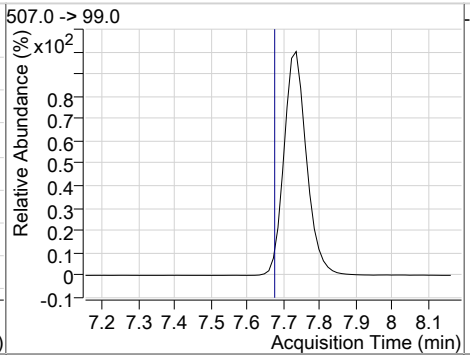


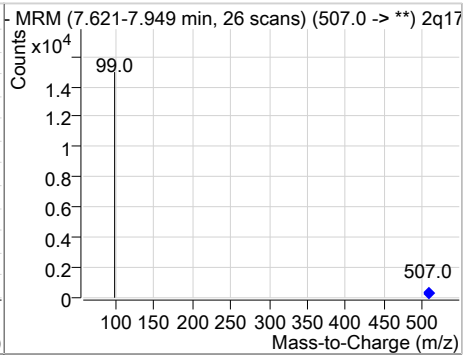




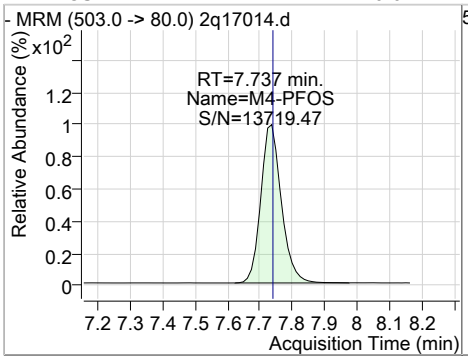
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	22.90	7.74	0.06	9501				

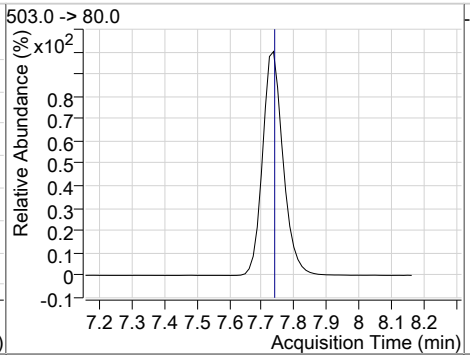


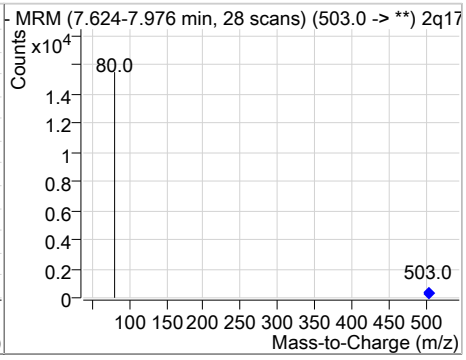




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.01	7.74	0.06	10739				

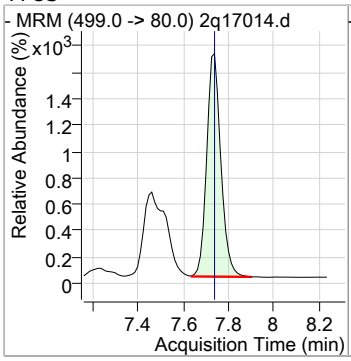


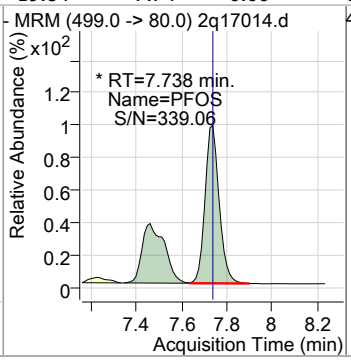


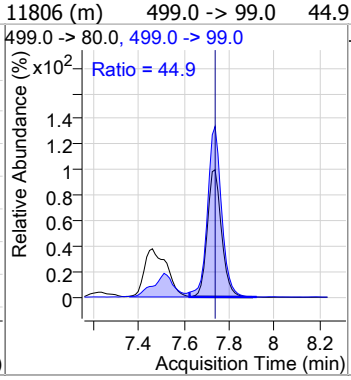


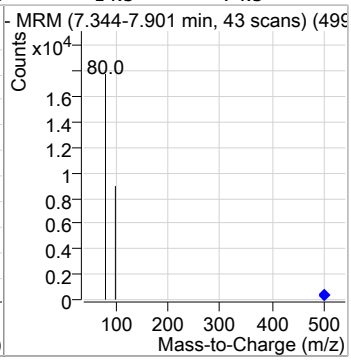
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.84	7.74	0.06	11806 (m)	499.0 -> 99.0	44.9	14.5	74.5

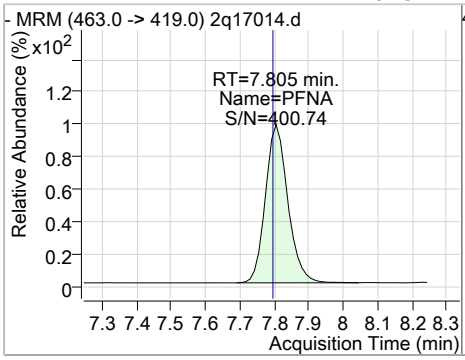


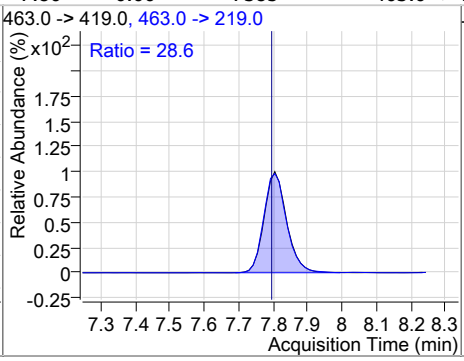


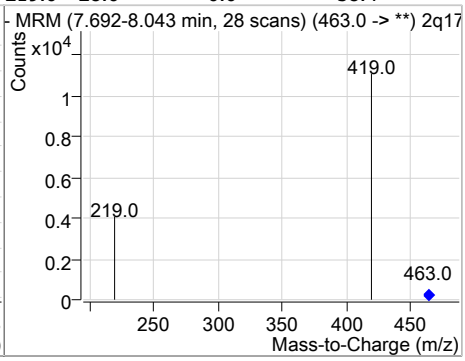




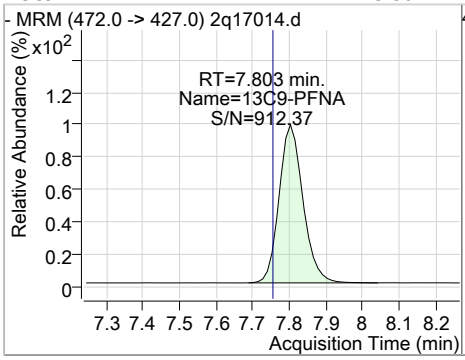
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	18.23	7.80	0.06	7385	463.0 -> 219.0	28.6	0.0	58.4

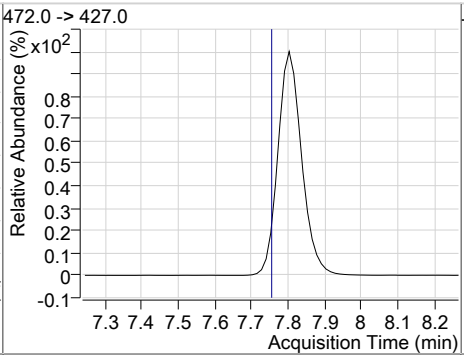


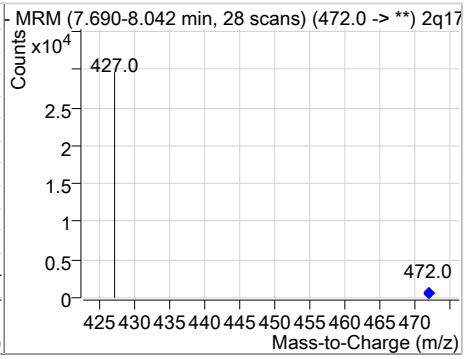




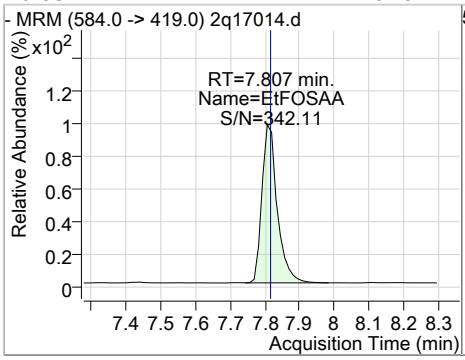
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	23.30	7.80	0.05	20543				

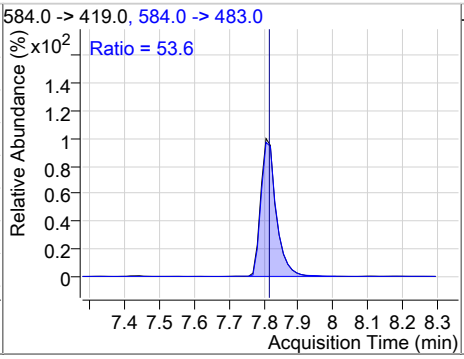


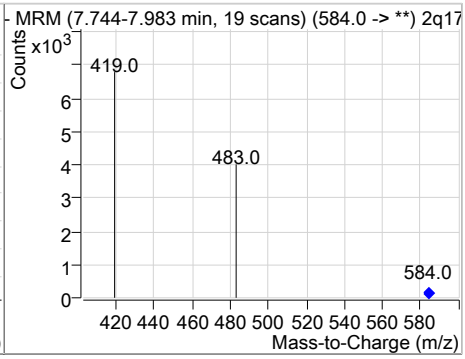




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	18.15	7.81	0.03	4478	584.0 -> 483.0	53.6	24.8	84.8

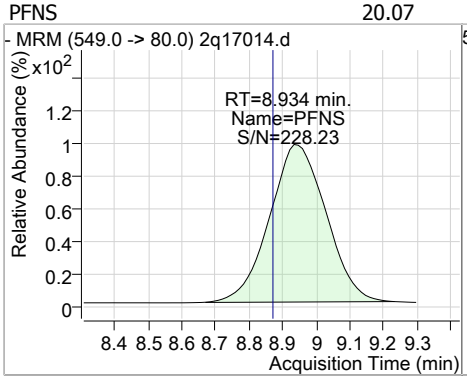


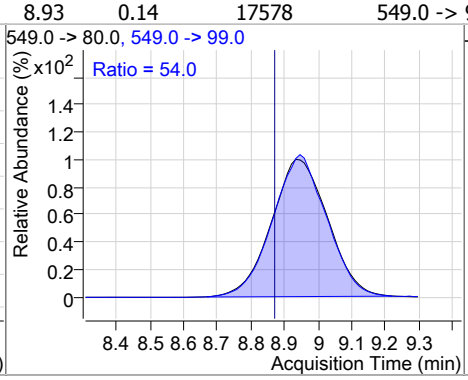


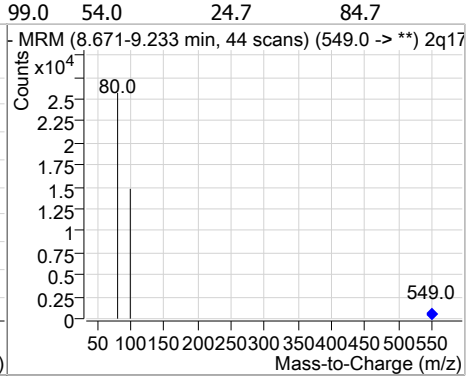


Perfluorinated Compounds by LC/MS/MS

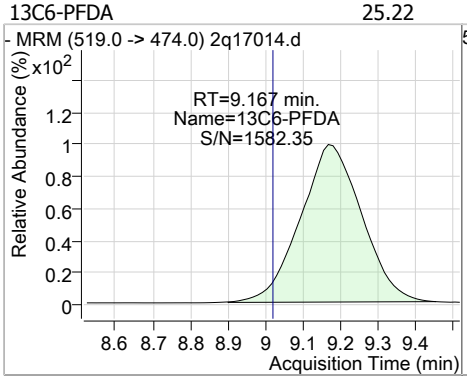
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	20.07	8.93	0.14	17578	549.0 -> 99.0	54.0	24.7	84.7

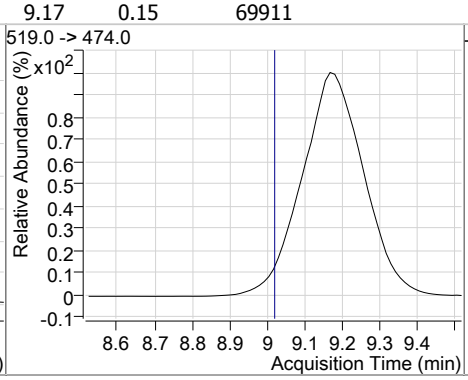


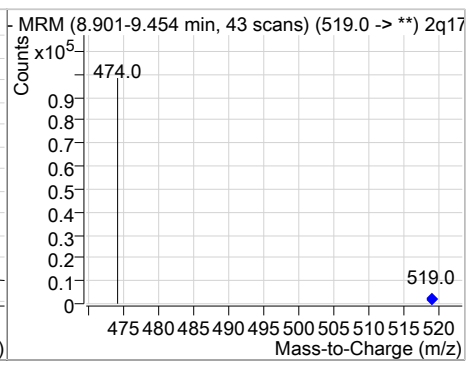




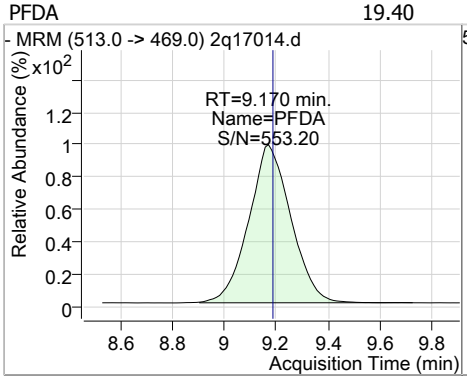
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	25.22	9.17	0.15	69911				

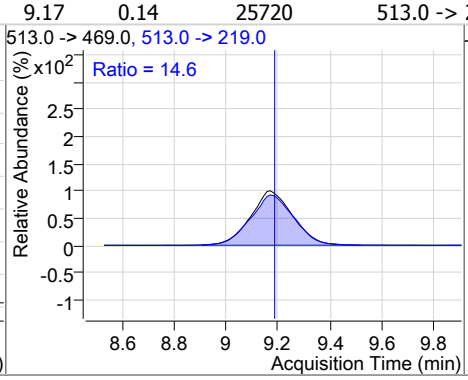


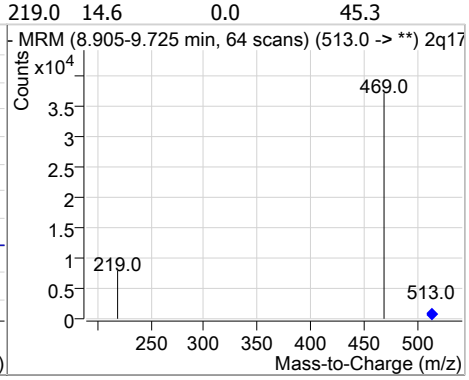




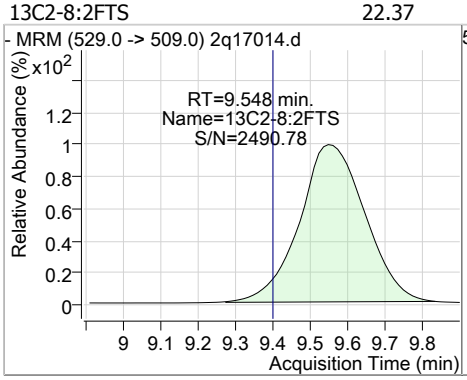
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.40	9.17	0.14	25720	513.0 -> 219.0	14.6	0.0	45.3

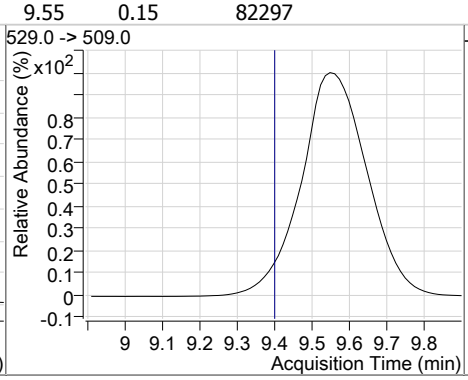


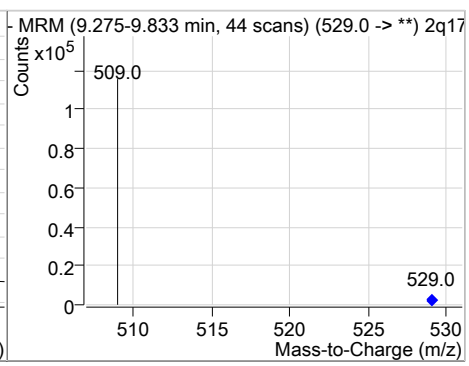




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	22.37	9.55	0.15	82297				

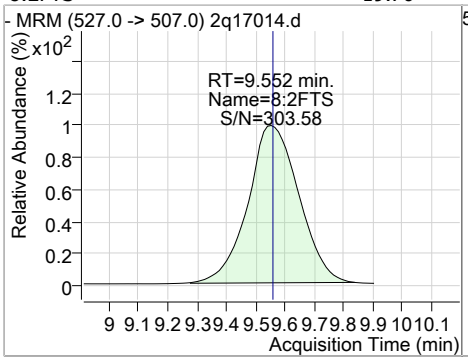


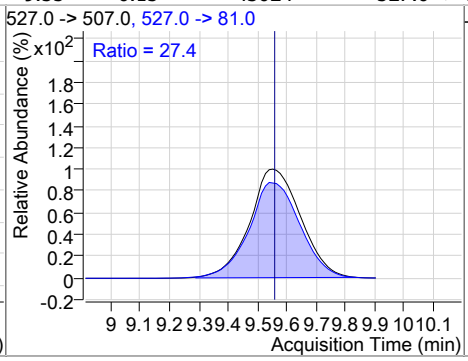


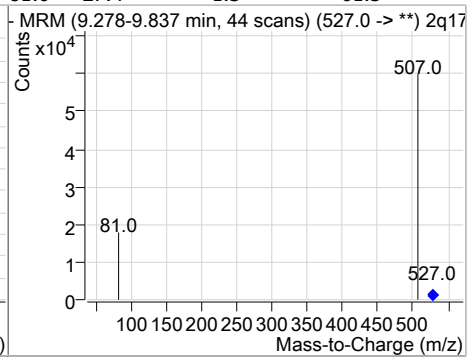


Perfluorinated Compounds by LC/MS/MS

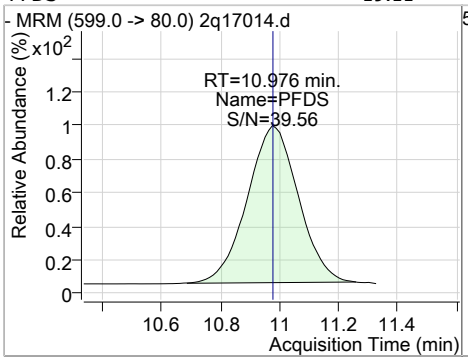
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.76	9.55	0.15	43024	527.0 -> 81.0	27.4	1.3	61.3

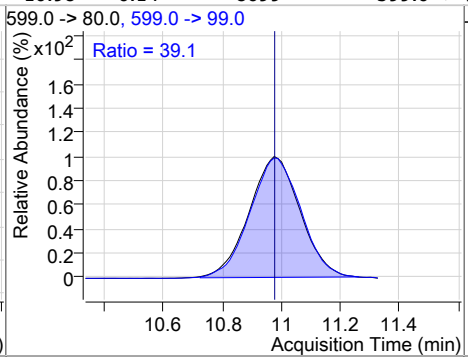


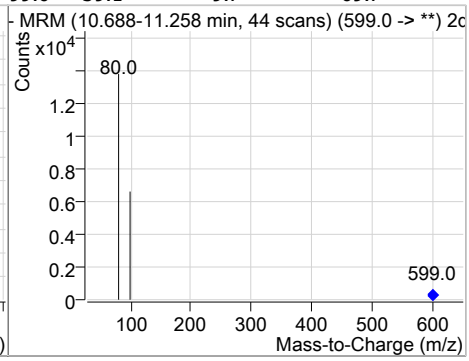




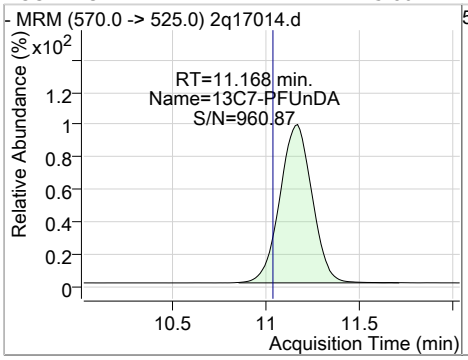
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.11	10.98	0.14	8699	599.0 -> 99.0	39.1	9.7	69.7

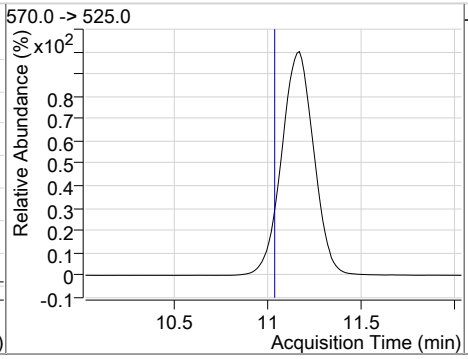


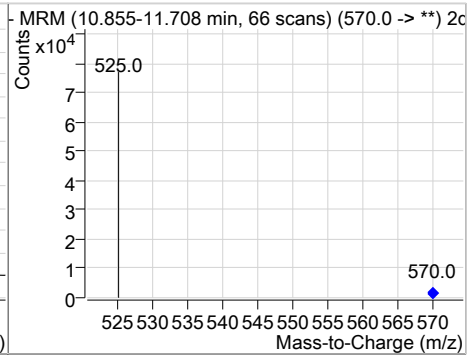




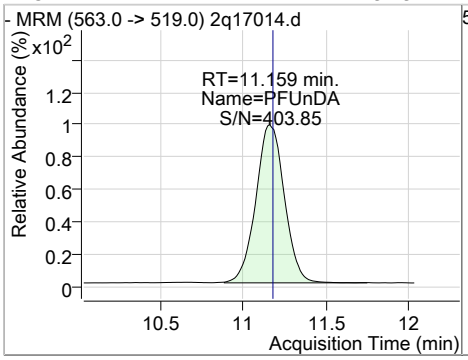
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	25.80	11.17	0.14	53179				

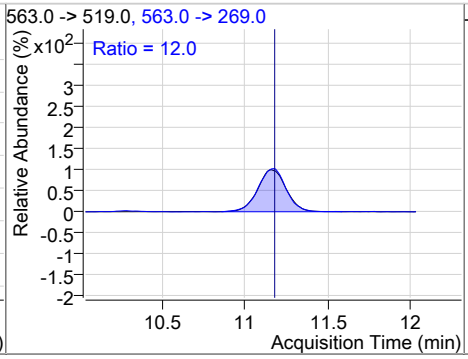


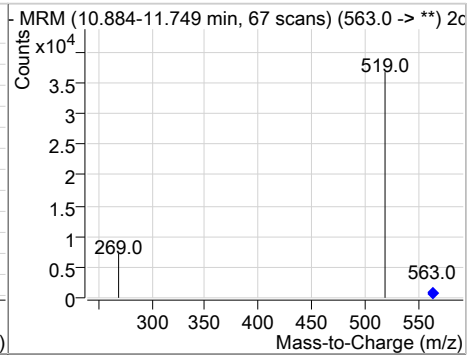




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.29	11.16	0.13	25222	563.0 -> 269.0	12.0	0.0	41.8

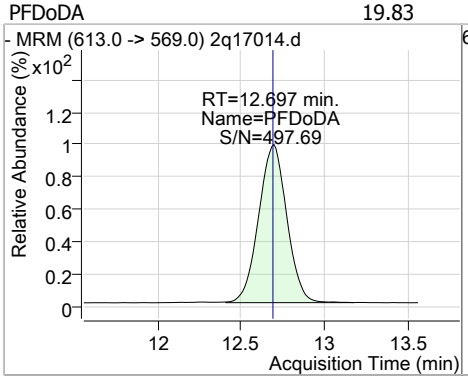


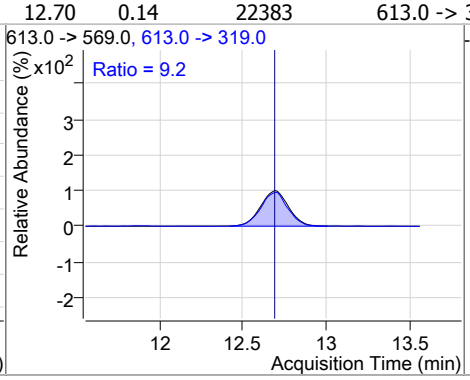


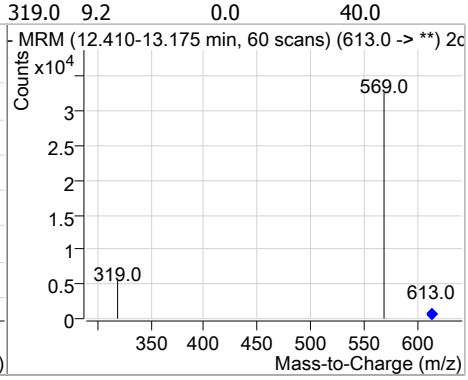


Perfluorinated Compounds by LC/MS/MS

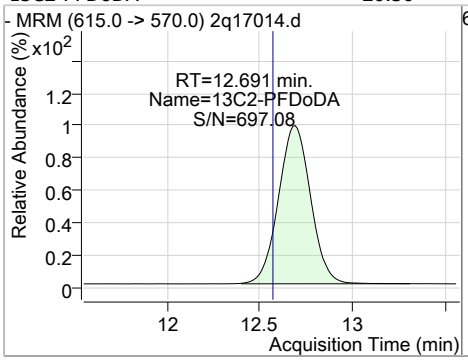
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.83	12.70	0.14	22383	613.0 -> 319.0	9.2	0.0	40.0

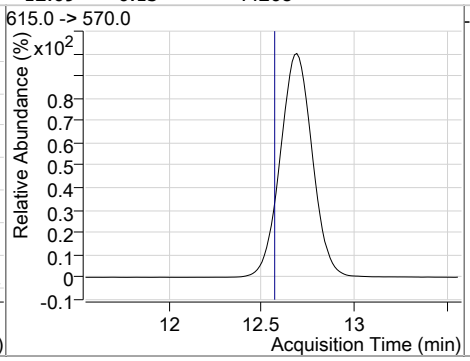


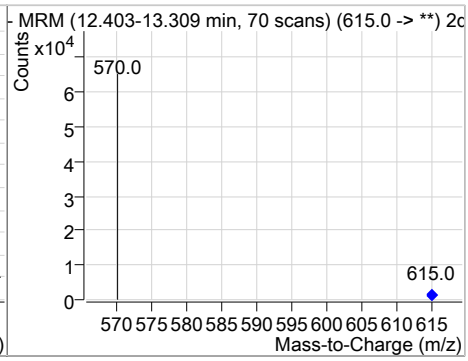




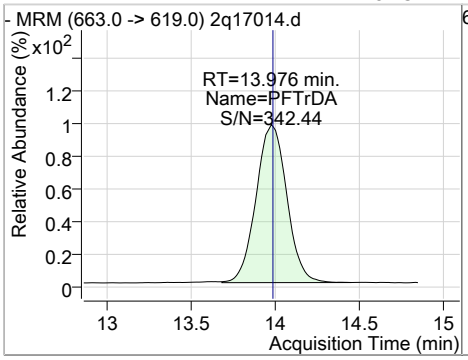
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	26.30	12.69	0.13	44268				

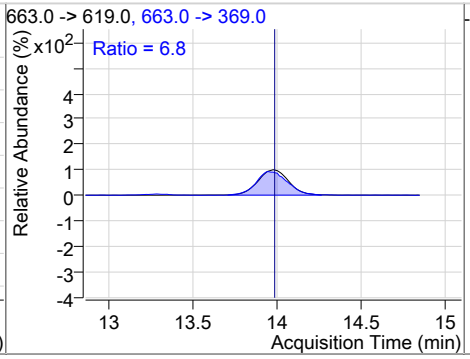


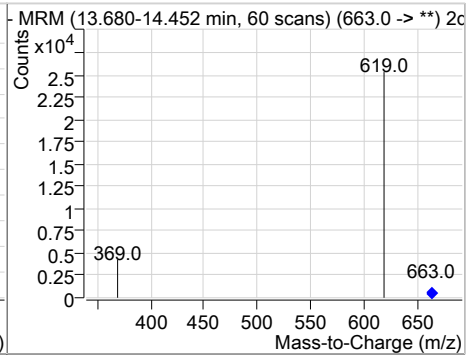




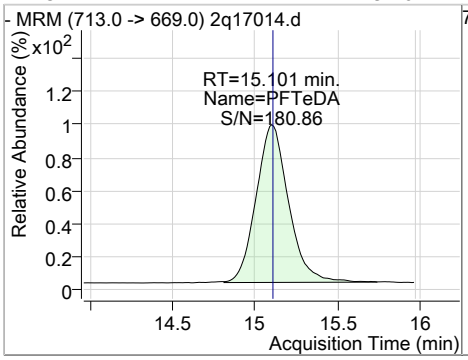
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	18.73	13.98	0.13	17488	663.0 -> 369.0	6.8	0.0	37.1

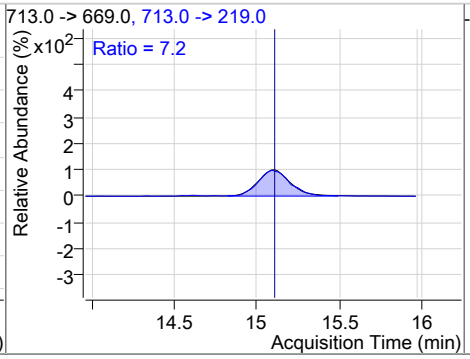


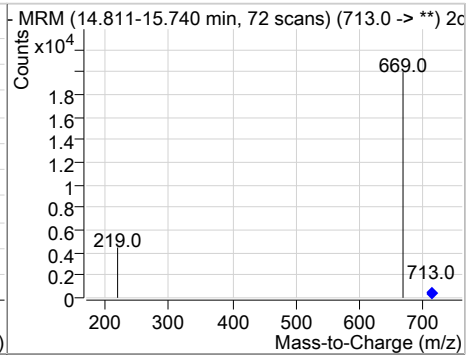




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.46	15.10	0.14	12375	713.0 -> 219.0	7.2	0.0	37.4

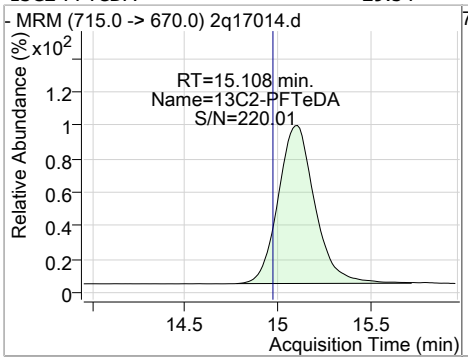


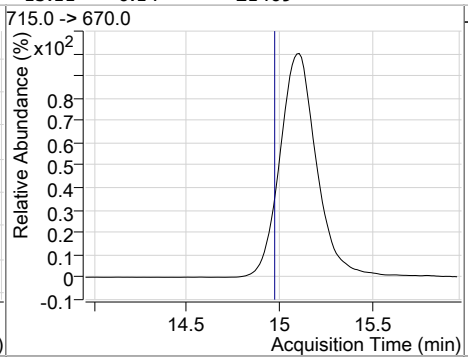


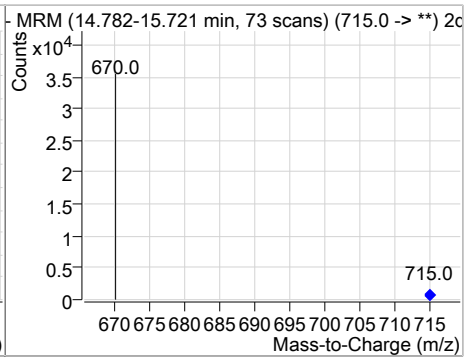


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	29.54	15.11	0.14	21469				







Manual Integration Approval Summary

Sample Number:	S2Q295-CC295	**Method:**	EPA 537M BY ID
Lab FileID:	2Q17014.D	**Analyst approved:**	07/13/18 12:48 Nancy Saunders
Injection Time:	07/12/18 16:30	**Supervisor approved:**	07/13/18 17:24 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.29	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.74	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 07/13/18 17:24

Perfluorinated Compounds by LC/MS/MS

Data File : 2q17032.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/12/2018 10:44:28 PM
Sample Name : cc295-1
Vial : Vial 3
DA Method File : PFC_ID_071218_S2Q295.quantmethod.xml
Batch Name : s2q295.batch.bin
Sample Information : op70743,S2Q295,130,,,1.0,1,water

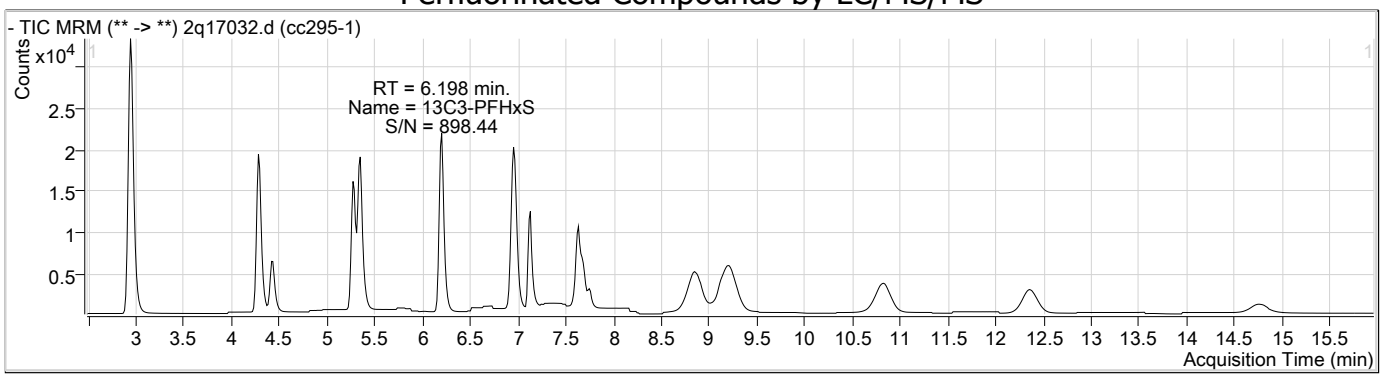
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.948	415.0 -> 370.0	17410	20.00	µg/L	-0.049
13C4-PFOS	7.624	503.0 -> 80.0	9524	20.00	µg/L	-0.051
M4-PFBA	2.941	217.0 -> 172.0	130556	20.00	µg/L	-0.050
M5-PFPeA	4.287	268.0 -> 223.0	65036	20.00	µg/L	-0.050
M5-PFHxA	5.351	318.0 -> 273.0	59837	20.00	µg/L	-0.040
M4-PFHpA	6.205	367.0 -> 322.0	56503	20.00	µg/L	-0.050
M8-PFOA	6.946	421.0 -> 376.0	26594	20.00	µg/L	-0.049
M9-PFNA	7.690	472.0 -> 427.0	18659	20.00	µg/L	-0.062
M6-PFDA	8.851	519.0 -> 474.0	53001	20.00	µg/L	-0.166
M7-PFUnDA	10.830	570.0 -> 525.0	40146	20.00	µg/L	-0.200
M2-PFDoDA	12.353	615.0 -> 570.0	32119	20.00	µg/L	-0.212
M2-PFTeDA	14.757	715.0 -> 670.0	13603	20.00	µg/L	-0.212
M8-FOSA	7.127	506.0 -> 78.0	34675	20.00	µg/L	-0.015
M3-PFBS	4.431	302.0 -> 99.0	20214	20.00	µg/L	-0.038
M3-PFHxS	6.198	402.0 -> 99.0	16570	20.00	µg/L	-0.037
M8-PFOS	7.621	507.0 -> 99.0	7892	20.00	µg/L	-0.052
M2-4:2FTS	5.272	329.0 -> 309.0	51819	20.00	µg/L	-0.051
M2-6:2FTS	6.968	429.0 -> 409.0	35440	20.00	µg/L	-0.049
M2-8:2FTS	9.200	529.0 -> 509.0	64728	20.00	µg/L	-0.198
M3-MeFOSAA	7.632	573.0 -> 419.0	14192	20.00	µg/L	-0.026
System Monitoring Compounds						
13C2-4:2FTS	5.272	329.0 -> 309.0	51799	18.36	µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.8%		
13C2-6:2FTS	6.968	429.0 -> 409.0	35442	18.16	µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.8%		
13C2-8:2FTS	9.200	529.0 -> 509.0	63897	17.37	µg/L	-0.198
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.9%		
13C2-PFDoDA	12.353	615.0 -> 570.0	32133	19.09	µg/L	-0.212
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.4%		
13C2-PFTeDA	14.757	715.0 -> 670.0	13628	18.75	µg/L	-0.212
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.8%		
13C3-PFBS	4.431	302.0 -> 99.0	20214	19.39	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.9%		
13C3-PFHxS	6.198	402.0 -> 99.0	16575	19.86	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.3%		
13C4-PFBA	2.941	217.0 -> 172.0	130526	19.64	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.2%		
13C4-PFHpA	6.205	367.0 -> 322.0	56519	19.98	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%		
13C5-PFHxA	5.351	318.0 -> 273.0	59821	20.17	µg/L	-0.040
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.8%		
13C5-PFPeA	4.287	268.0 -> 223.0	65046	19.83	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%		
13C6-PFDA	8.851	519.0 -> 474.0	52560	18.96	µg/L	-0.166
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.8%		

Perfluorinated Compounds by LC/MS/MS

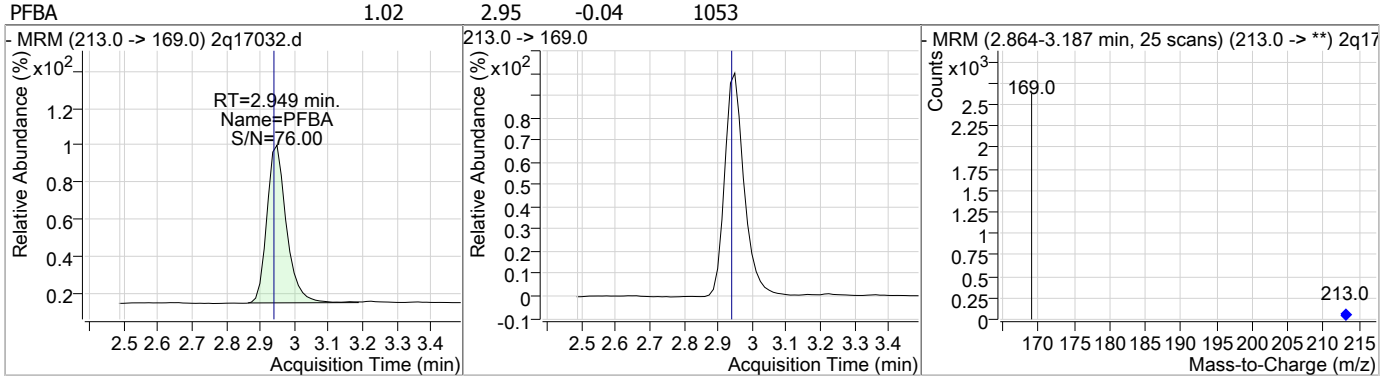
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.830	570.0 -> 525.0	40271	19.54	µg/L		-0.200
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.7%			
13C8-FOSA	7.127	506.0 -> 78.0	34687	21.57	µg/L		-0.015
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.8%			
13C8-PFOA	6.946	421.0 -> 376.0	26599	20.25	µg/L		-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.2%			
13C8-PFOS	7.621	507.0 -> 99.0	7919	19.09	µg/L		-0.052
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.4%			
13C9-PFNA	7.690	472.0 -> 427.0	18667	21.17	µg/L		-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.9%			
d3-MeFOSAA	7.632	573.0 -> 419.0	14191	18.27	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.3%			
M2-PFOA	6.948	415.0 -> 370.0	17412	20.00	ng/ml		-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.624	503.0 -> 80.0	9533	20.02	ng/ml		-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
Target Compounds							**QValue**
4:2FTS	5.274	327.0 -> 307.0	1370	1.01	µg/L		74
6:2FTS	6.970	427.0 -> 407.0	1030	1.15	µg/L		97
8:2FTS	9.202	527.0 -> 507.0	2017	1.16	µg/L		95
EtFOSAA	7.757	584.0 -> 419.0	245	1.07	µg/L		84
FOSA	7.128	498.0 -> 78.0	884	1.04	µg/L		98
MeFOSAA	7.633	570.0 -> 419.0	253	0.97	µg/L		100
PFBA	2.949	213.0 -> 169.0	1053	1.02	µg/L		100
PFBS	4.422	299.0 -> 80.0	1396	1.01	µg/L		99
PFDA	8.867	513.0 -> 469.0	1060	1.07	µg/L		98
PFDoDA	12.372	613.0 -> 569.0	984	1.20	µg/L		98
PFDS	10.625	599.0 -> 80.0	369	1.07	µg/L	m	100
PFHpA	6.208	363.0 -> 319.0	2123	1.01	µg/L		99
PFHpS	6.917	449.0 -> 80.0	498	1.07	µg/L		96
PFHxA	5.353	313.0 -> 269.0	1025	1.02	µg/L		95
PFHxS	6.189	399.0 -> 80.0	989	1.01	µg/L	m	98
PFNA	7.692	463.0 -> 419.0	337	0.91	µg/L		94
PFNS	8.646	549.0 -> 80.0	709	0.97	µg/L		95
PFOA	6.948	413.0 -> 369.0	817	1.15	µg/L		97
PFOS	7.624	499.0 -> 80.0	536	1.08	µg/L	m	90
PFPeA	4.291	263.0 -> 219.0	3683	1.21	µg/L		100
PFPeS	5.396	349.0 -> 80.0	911	1.03	µg/L		98
PFTeDA	14.761	713.0 -> 669.0	498	1.23	µg/L		94
PFTrDA	13.630	663.0 -> 619.0	653	1.10	µg/L		97
PFUnDA	10.821	563.0 -> 519.0	1044	1.06	µg/L		97

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

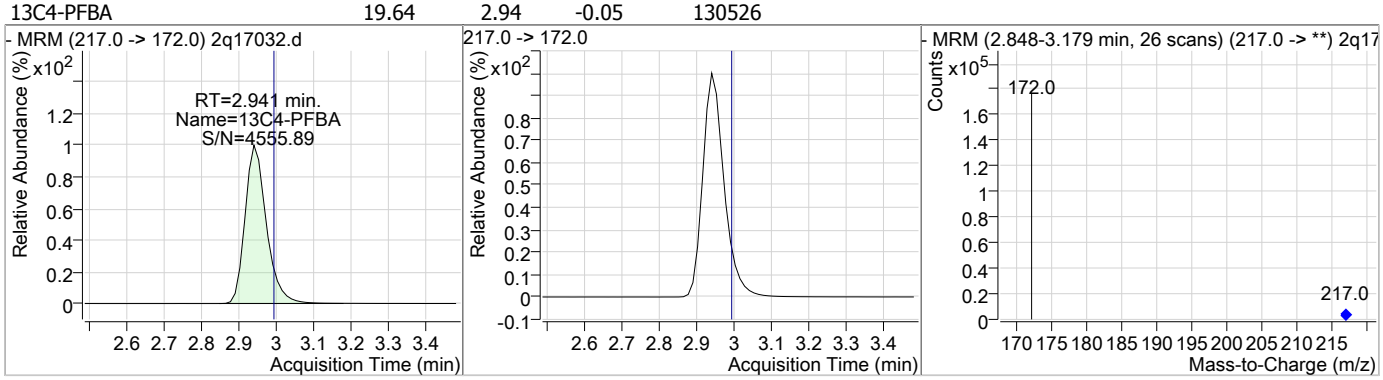
Perfluorinated Compounds by LC/MS/MS



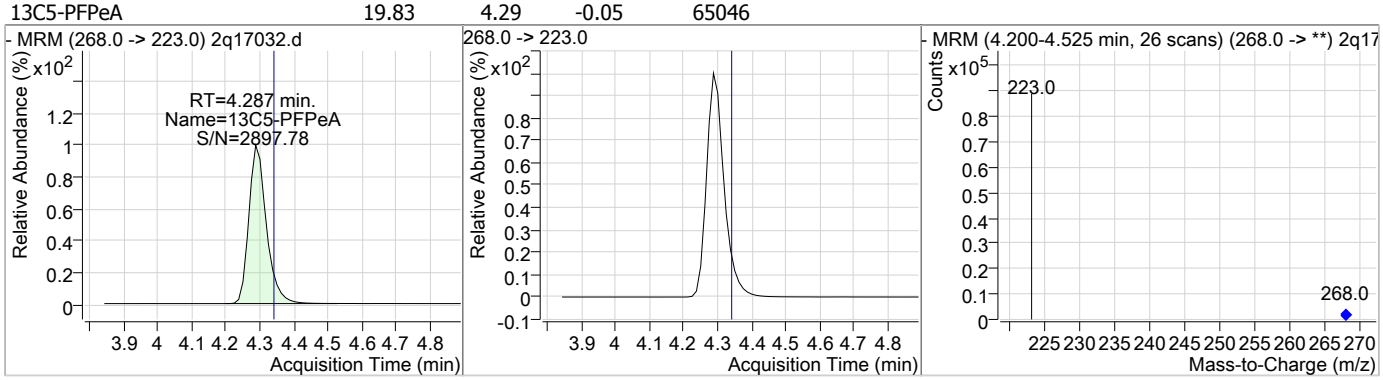
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.02	2.95	-0.04	1053				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.64	2.94	-0.05	130526				

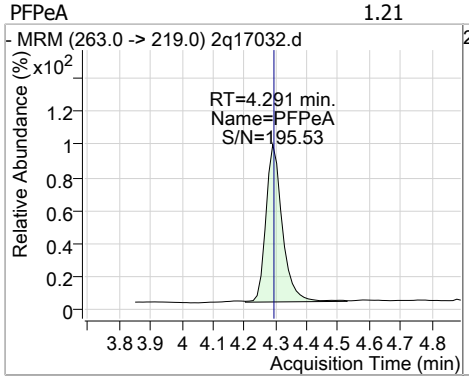


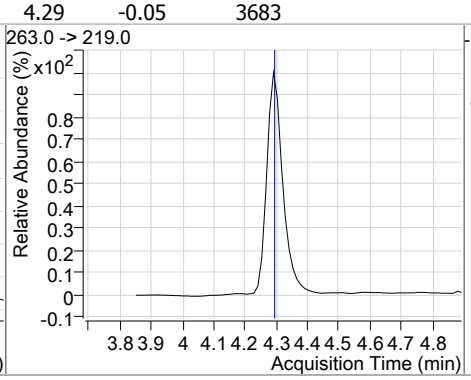
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.83	4.29	-0.05	65046				

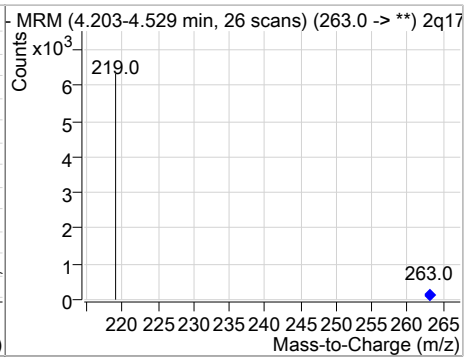


Perfluorinated Compounds by LC/MS/MS

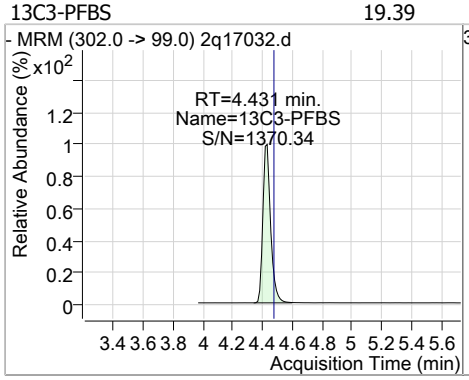
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.21	4.29	-0.05	3683				

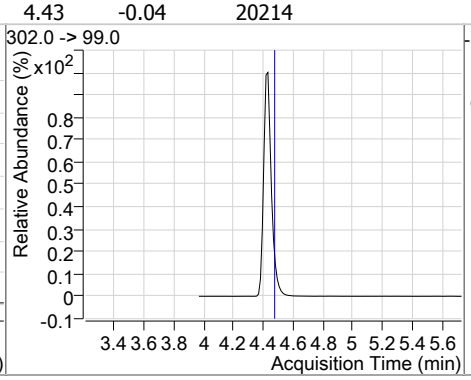


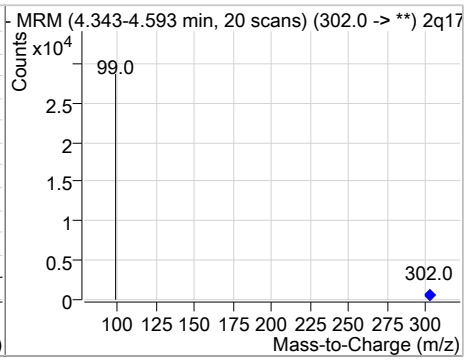




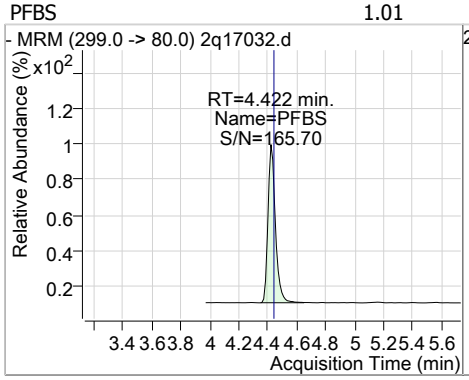
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.39	4.43	-0.04	20214				

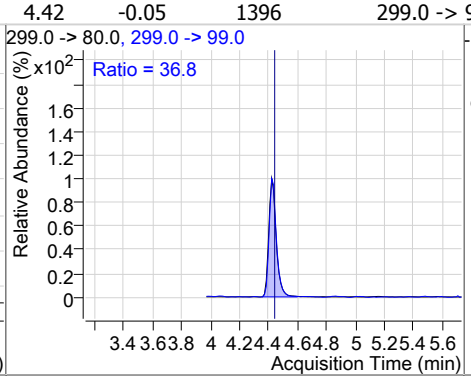


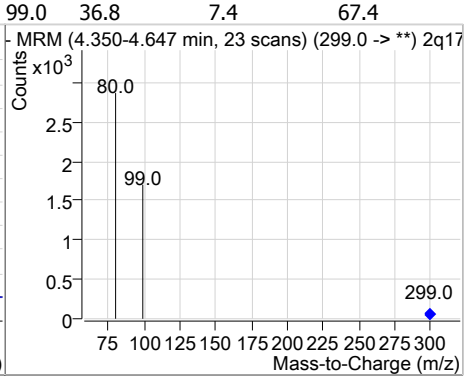




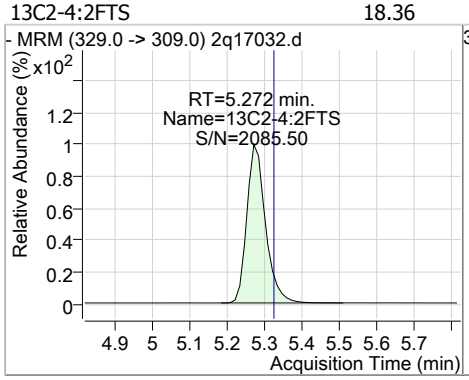
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.01	4.42	-0.05	1396	299.0 -> 99.0	36.8	7.4	67.4

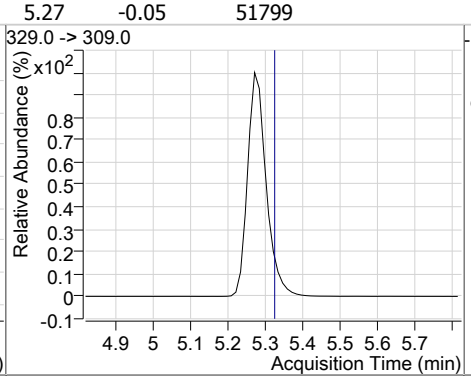


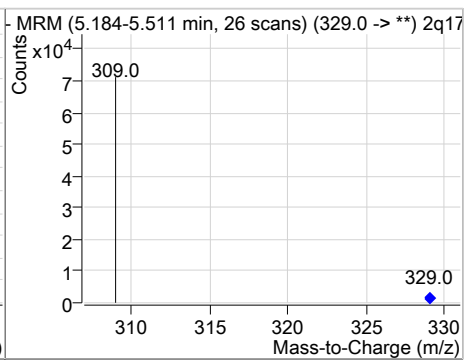




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.36	5.27	-0.05	51799				

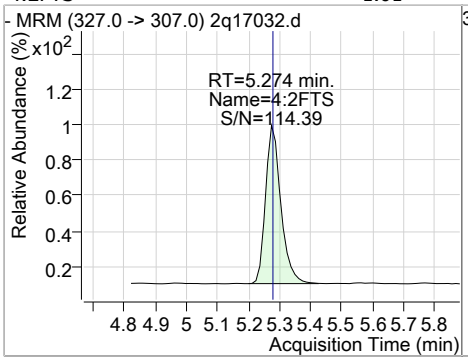


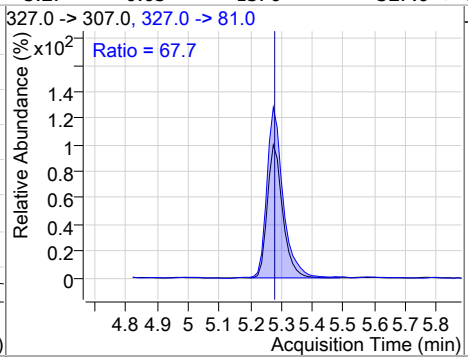


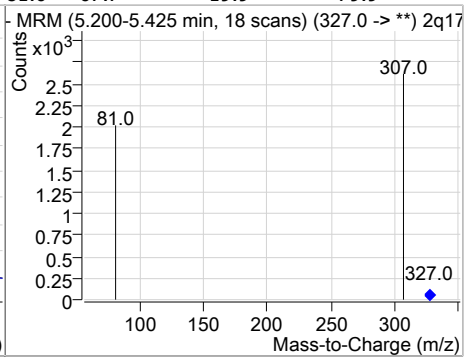


Perfluorinated Compounds by LC/MS/MS

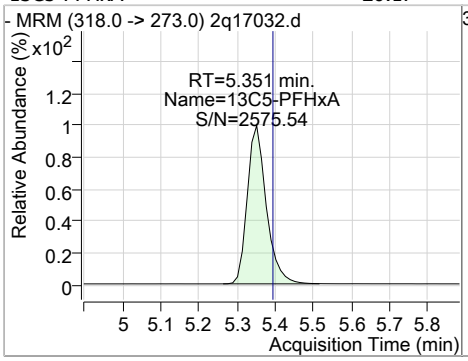
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.01	5.27	-0.05	1370	327.0 -> 81.0	67.7	19.9	79.9

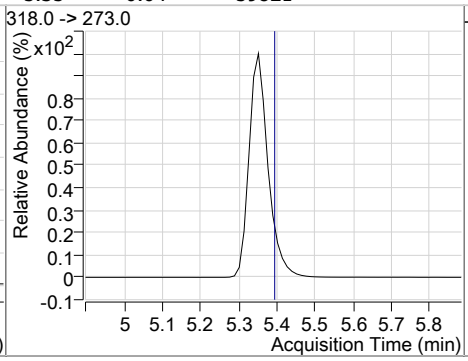


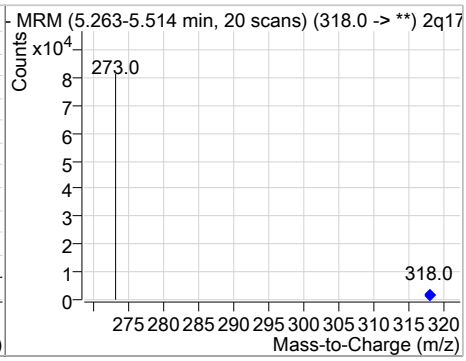




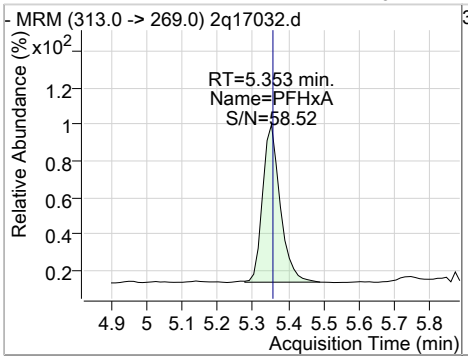
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.17	5.35	-0.04	59821				

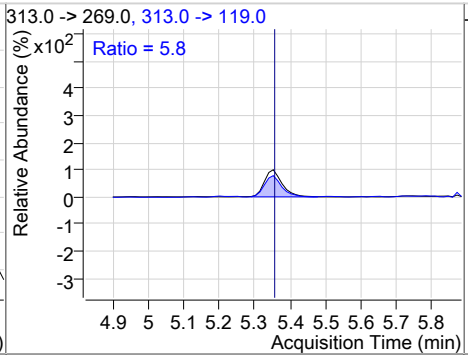


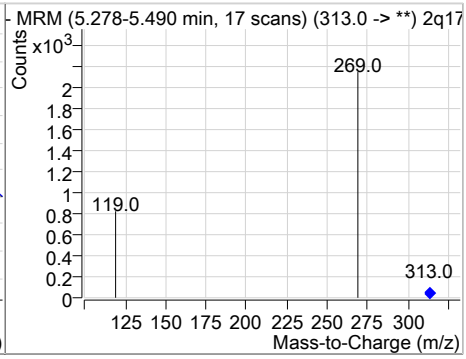




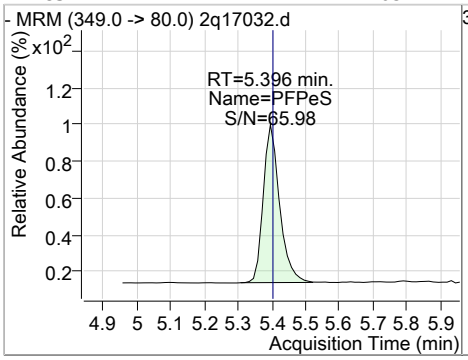
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.02	5.35	-0.04	1025	313.0 -> 119.0	5.8	0.0	37.6

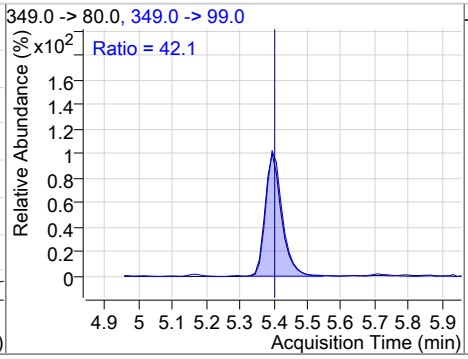


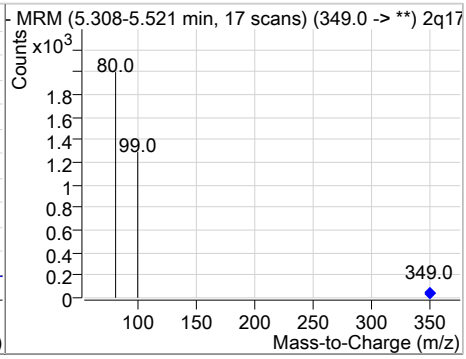




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.03	5.40	-0.05	911	349.0 -> 99.0	42.1	10.8	70.8

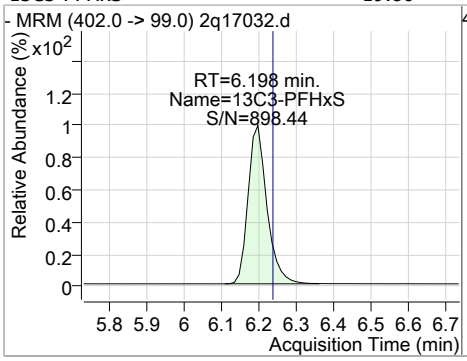


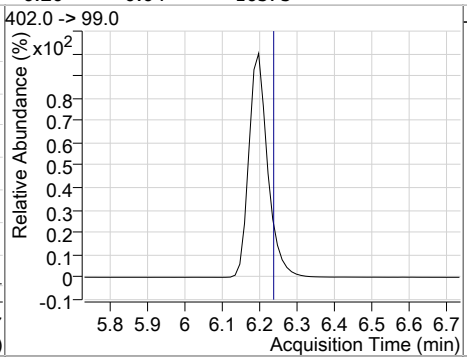


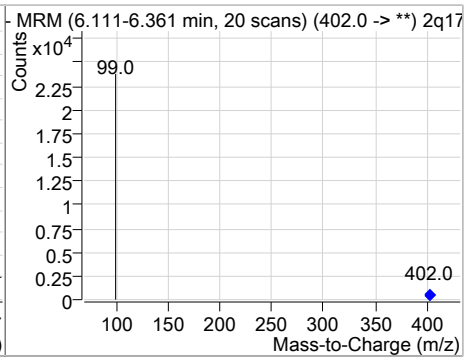


Perfluorinated Compounds by LC/MS/MS

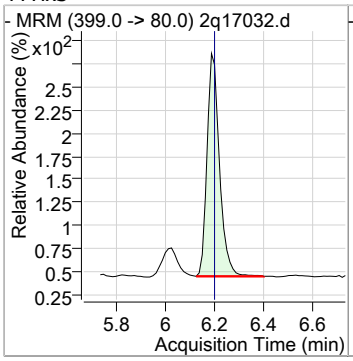
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.86	6.20	-0.04	16575				

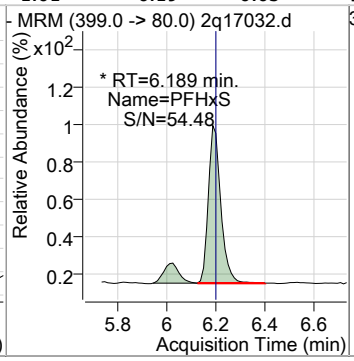


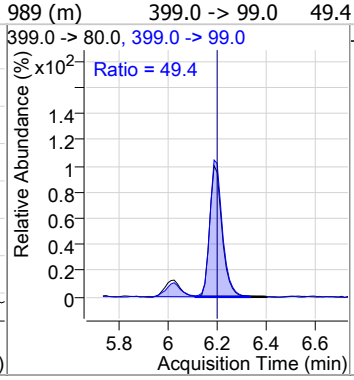


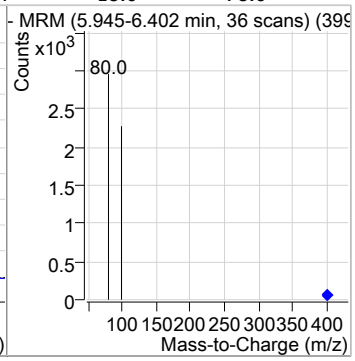


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.01	6.19	-0.05	989 (m)	399.0 -> 99.0	49.4	18.0	78.0

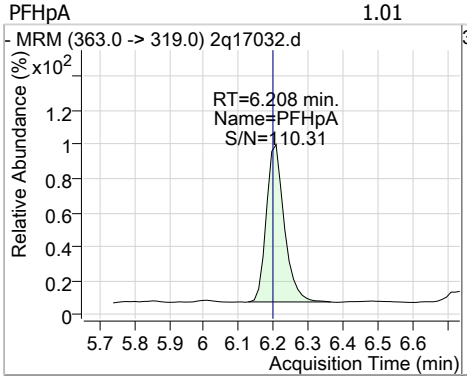


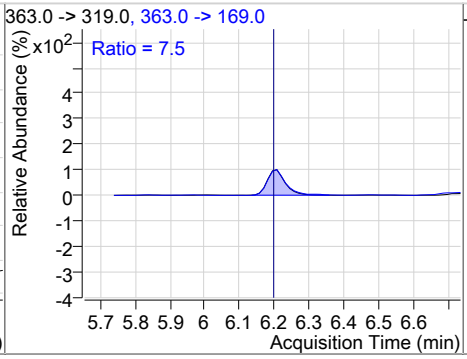


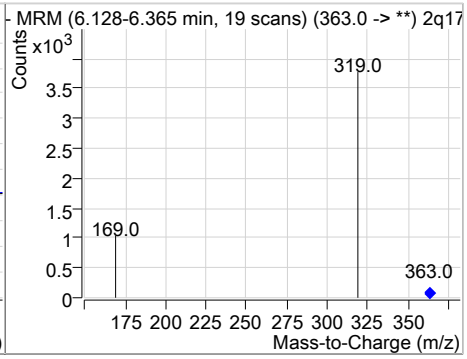




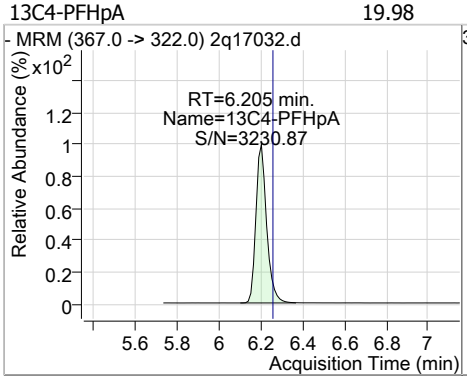
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.01	6.21	-0.04	2123	363.0 -> 169.0	7.5	0.0	37.2

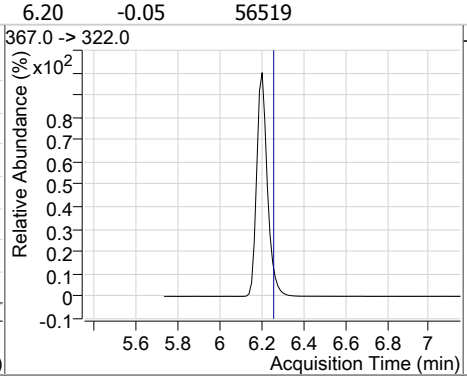


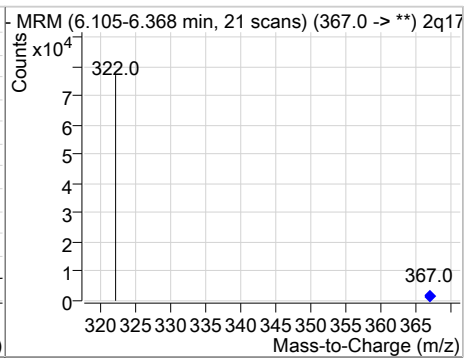




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.98	6.20	-0.05	56519				

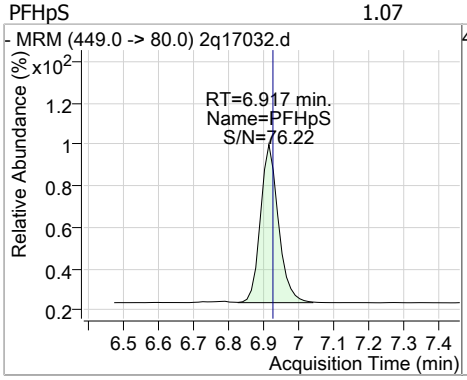


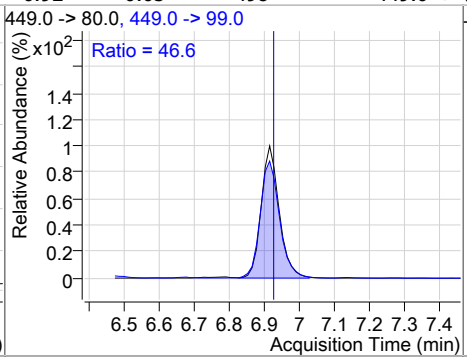


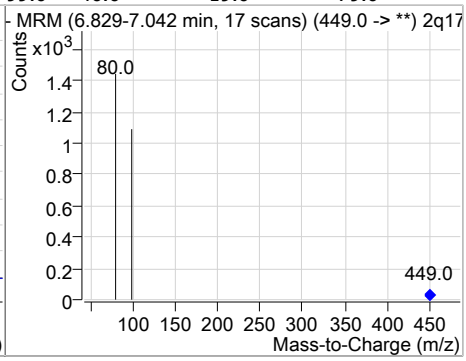


Perfluorinated Compounds by LC/MS/MS

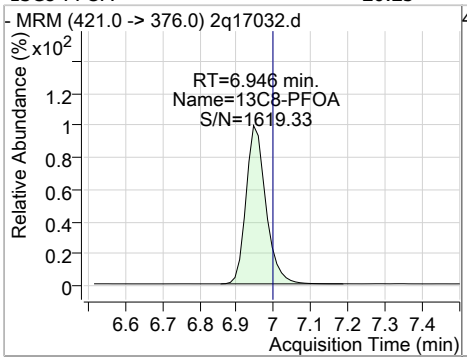
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.07	6.92	-0.05	498	449.0 -> 99.0	46.6	19.0	79.0

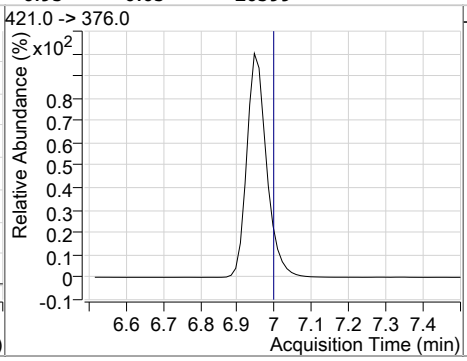


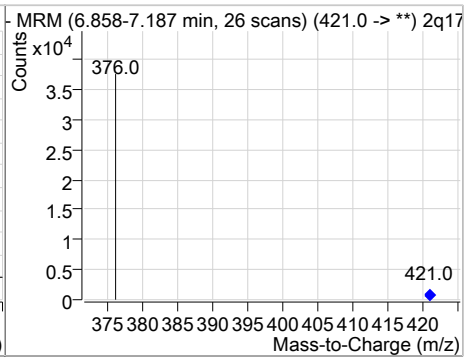




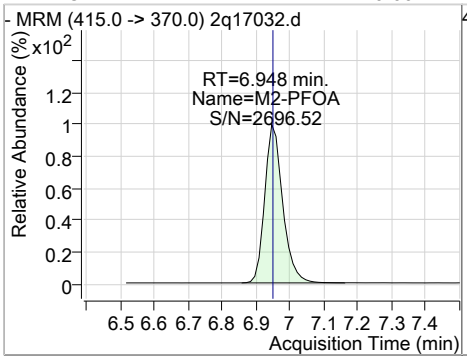
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.25	6.95	-0.05	26599				

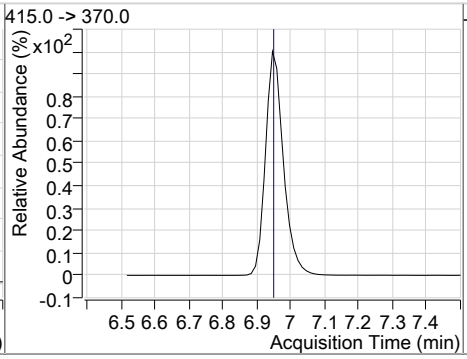


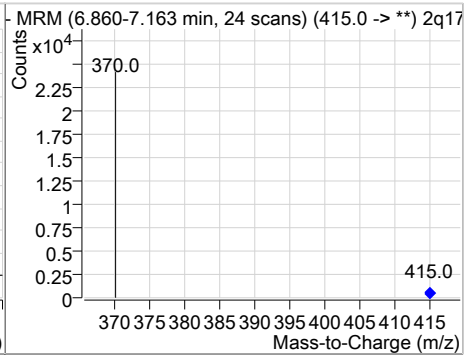




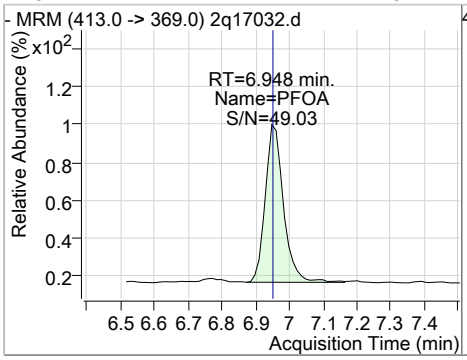
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.95	-0.05	17412				

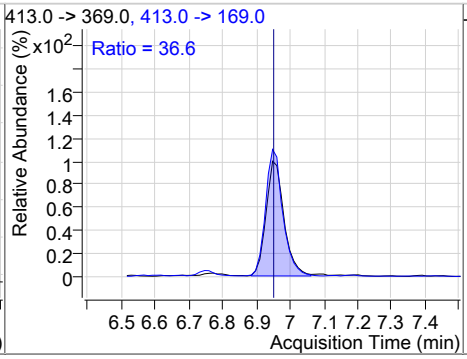


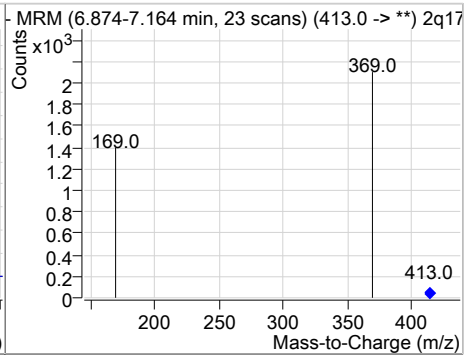




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.15	6.95	-0.05	817	413.0 -> 169.0	36.6	5.0	65.0

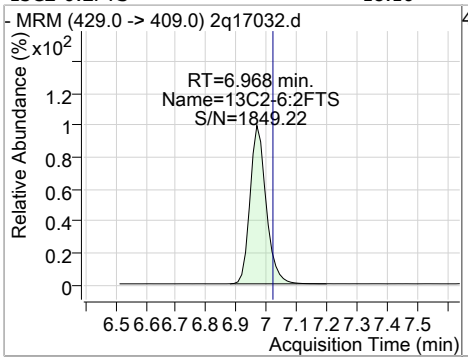


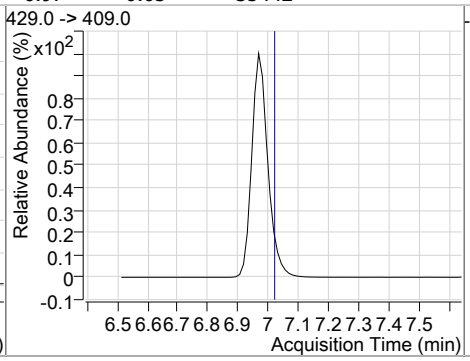


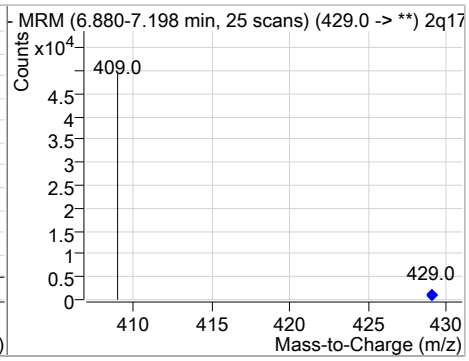


Perfluorinated Compounds by LC/MS/MS

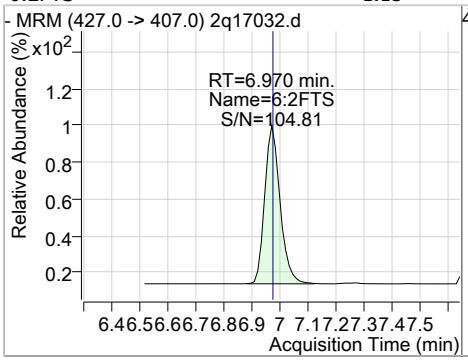
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.16	6.97	-0.05	35442				

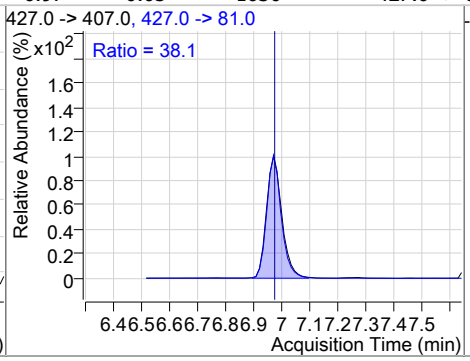


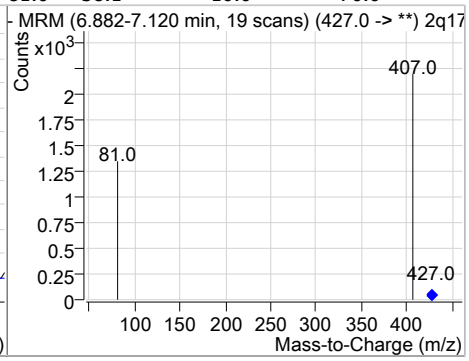




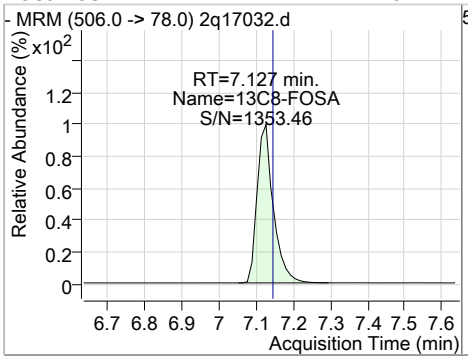
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.15	6.97	-0.05	1030	427.0 -> 81.0	38.1	10.0	70.0

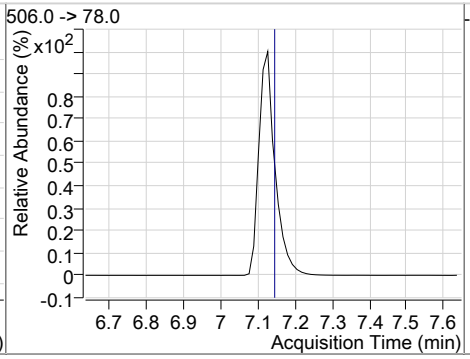


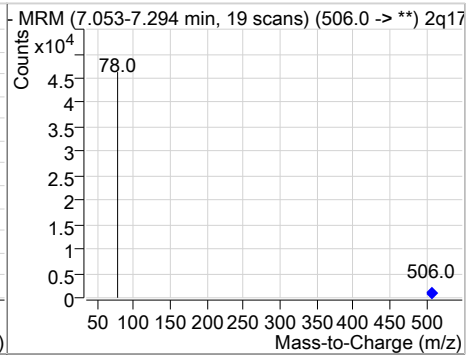




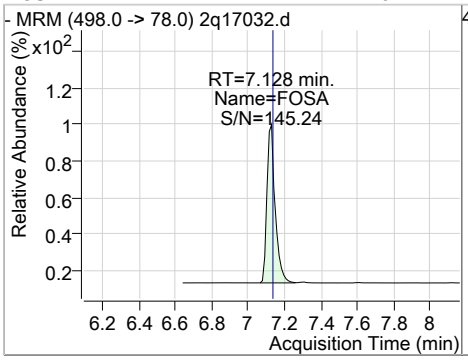
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.57	7.13	-0.02	34687				

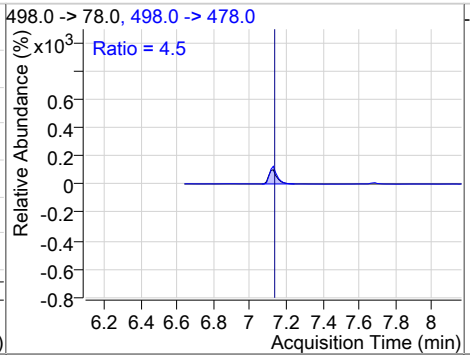


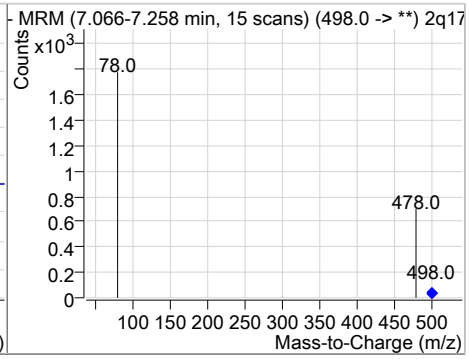




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.04	7.13	-0.02	884	498.0 -> 478.0	4.5	0.0	34.0

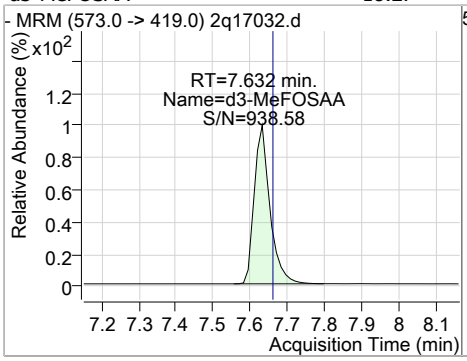


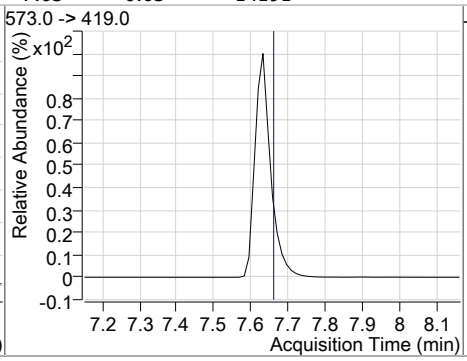


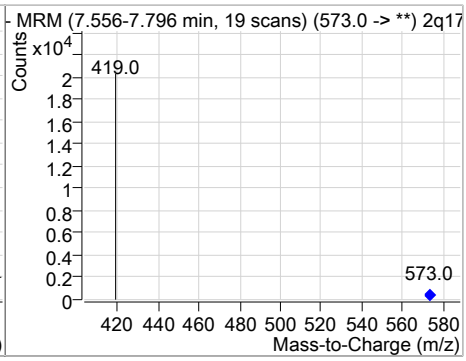


Perfluorinated Compounds by LC/MS/MS

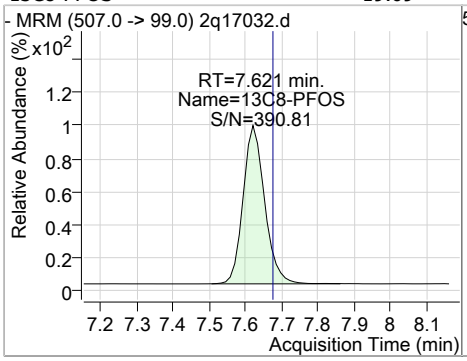
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.27	7.63	-0.03	14191				

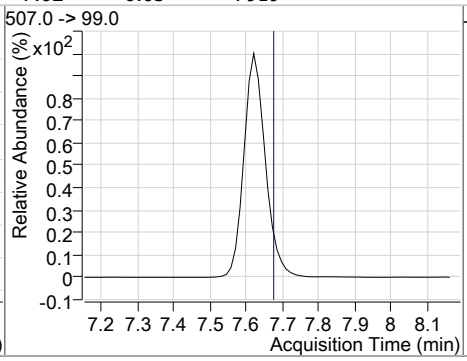


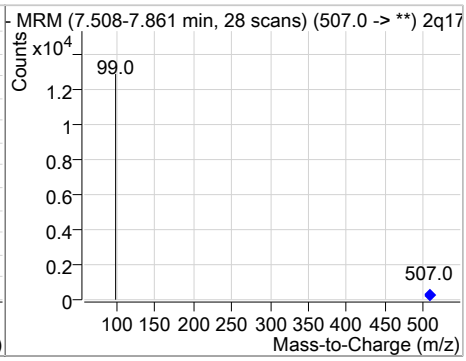




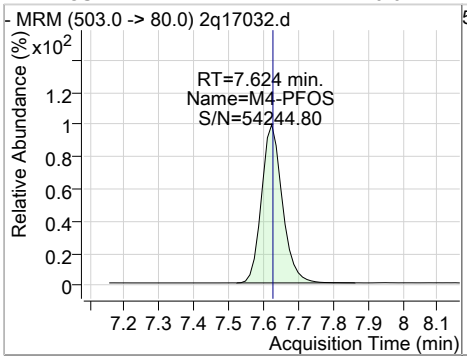
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.09	7.62	-0.05	7919				

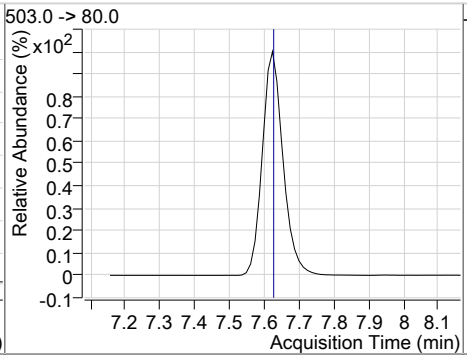


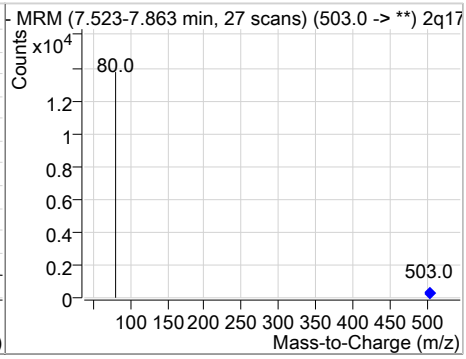




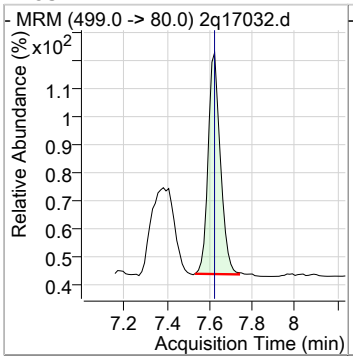
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.02	7.62	-0.05	9533				

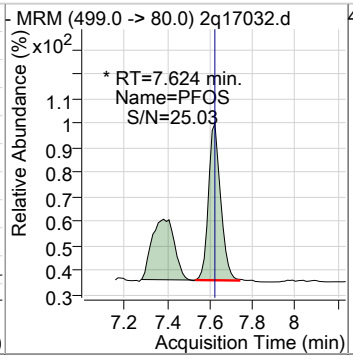


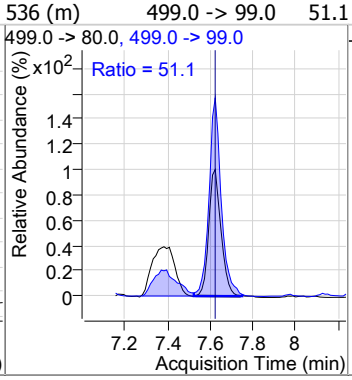


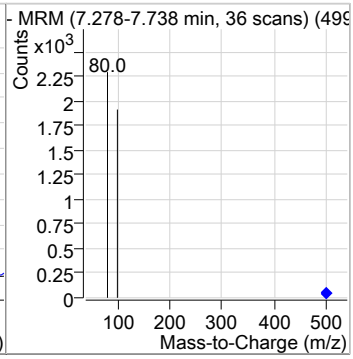


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.08	7.62	-0.05	536 (m)	499.0 -> 99.0	51.1	14.5	74.5



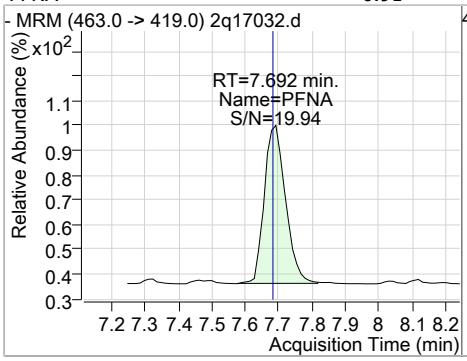


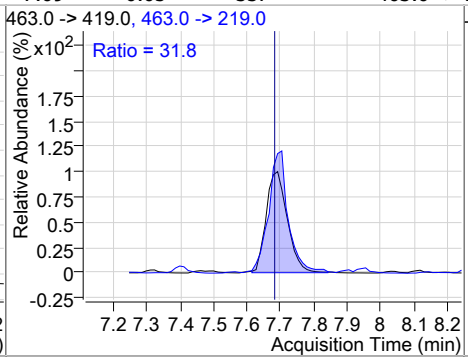


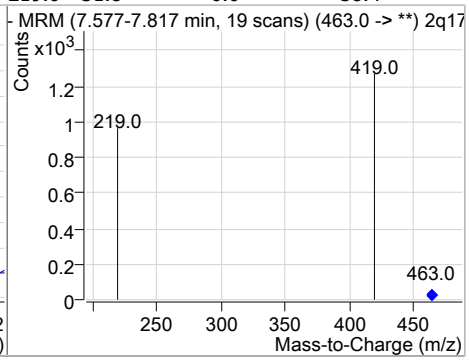


Perfluorinated Compounds by LC/MS/MS

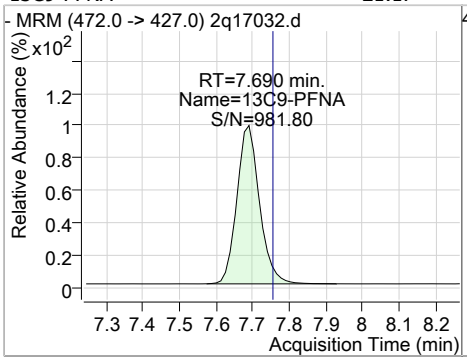
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.91	7.69	-0.05	337	463.0 -> 219.0	31.8	0.0	58.4

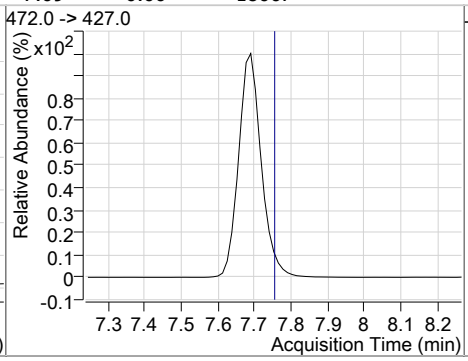


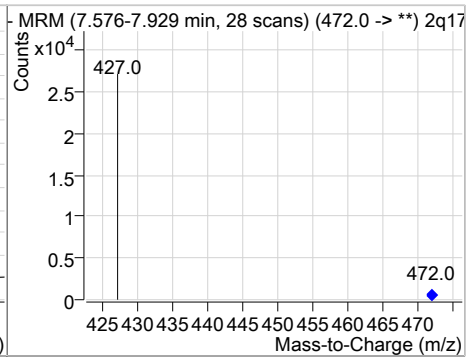




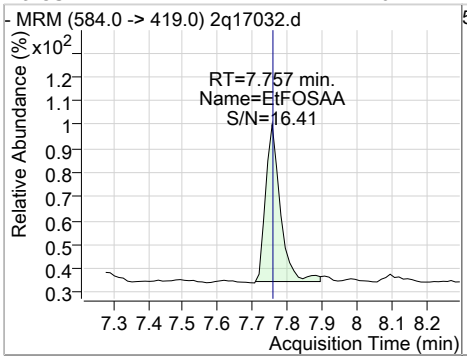
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.17	7.69	-0.06	18667				

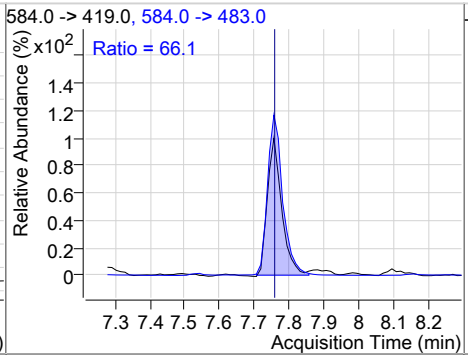


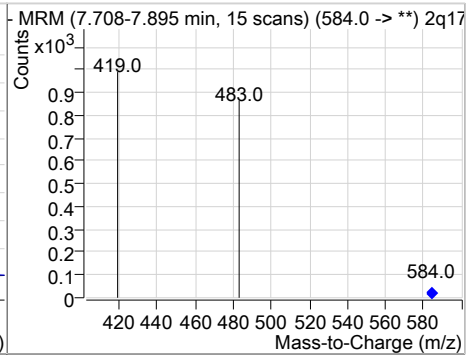




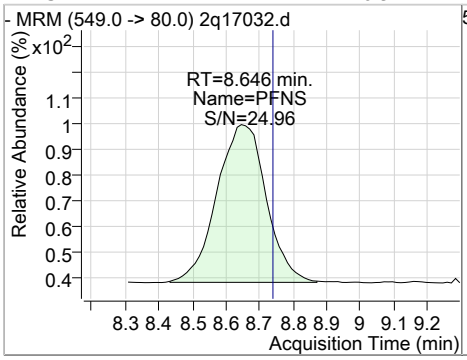
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.07	7.76	-0.02	245	584.0 -> 483.0	66.1	24.8	84.8

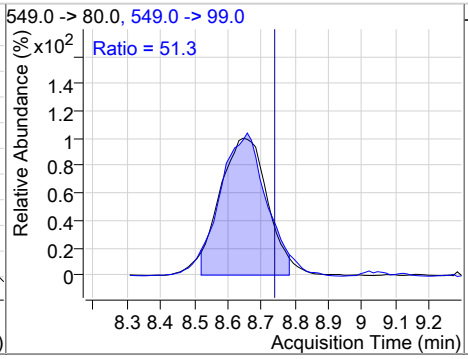


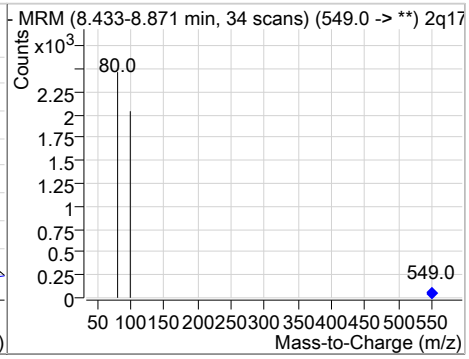




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.97	8.65	-0.15	709	549.0 -> 99.0	51.3	24.7	84.7

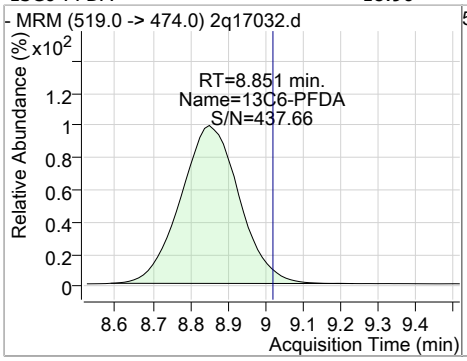


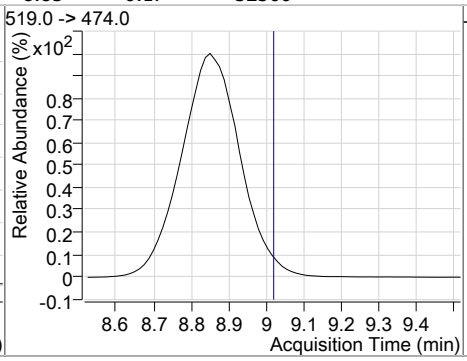


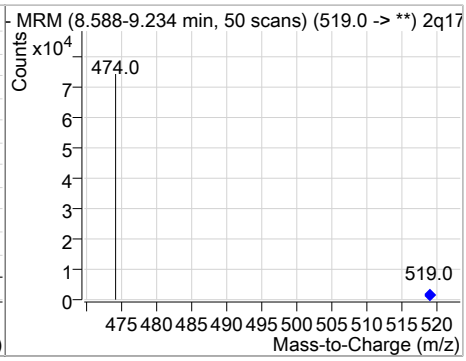


Perfluorinated Compounds by LC/MS/MS

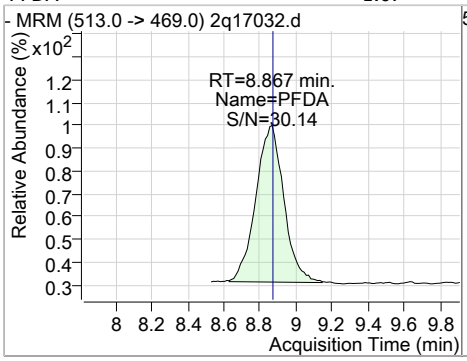
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	18.96	8.85	-0.17	52560				

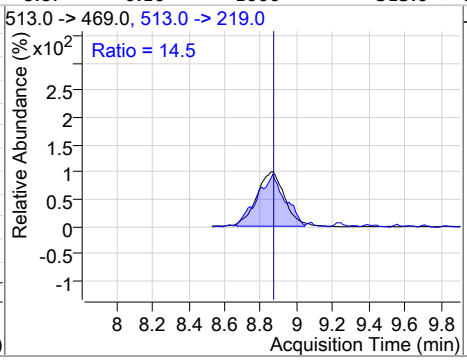


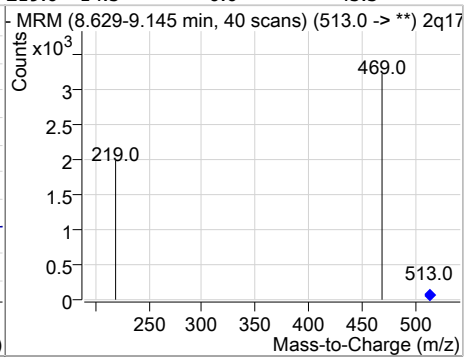




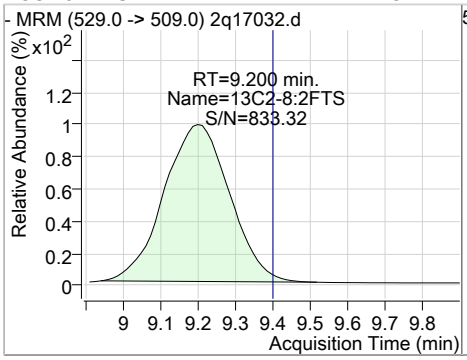
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	1.07	8.87	-0.16	1060	513.0 -> 219.0	14.5	0.0	45.3

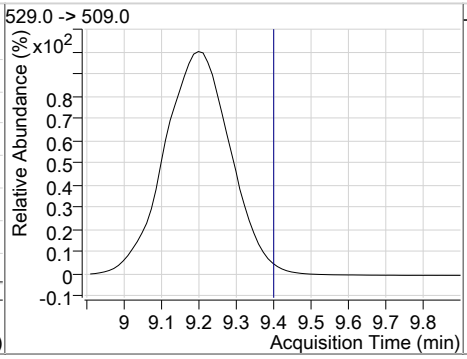


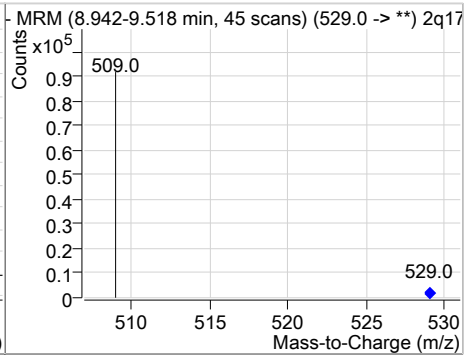




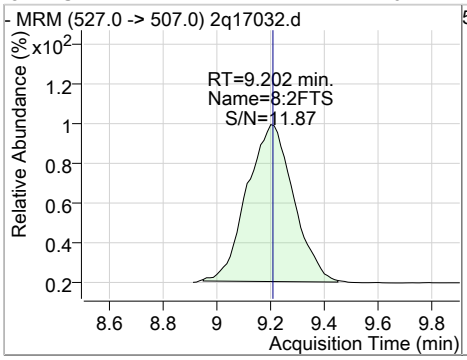
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	17.37	9.20	-0.20	63897				

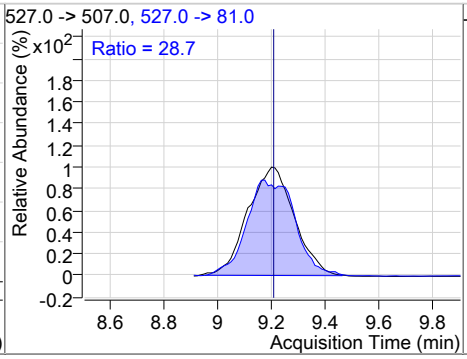


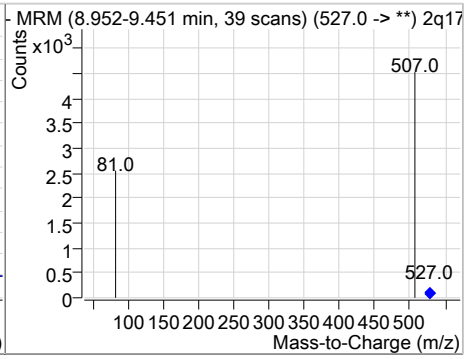




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.16	9.20	-0.20	2017	527.0 -> 81.0	28.7	1.3	61.3

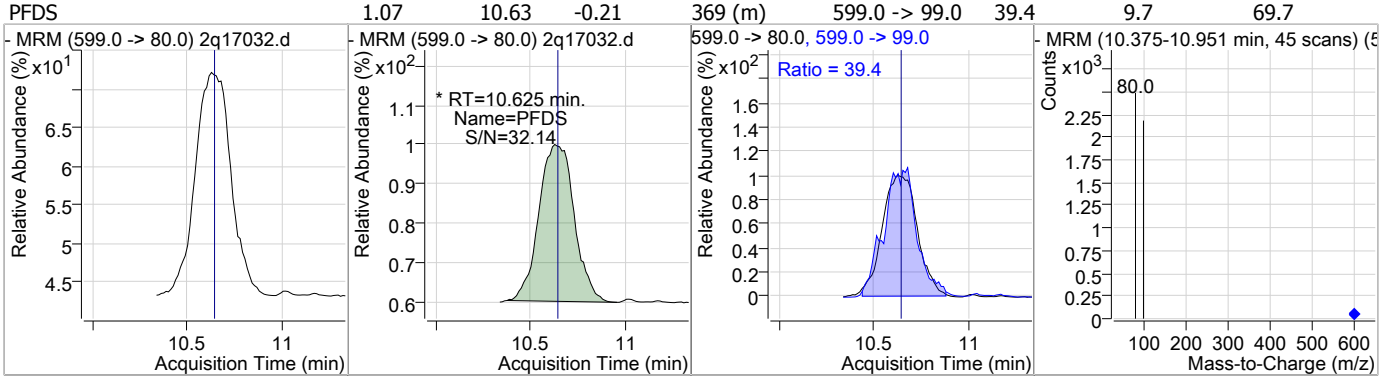




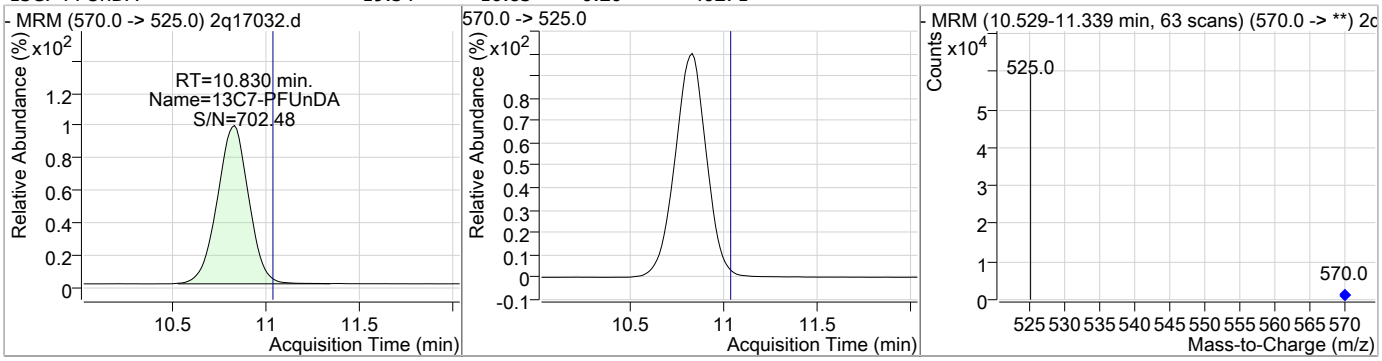


Perfluorinated Compounds by LC/MS/MS

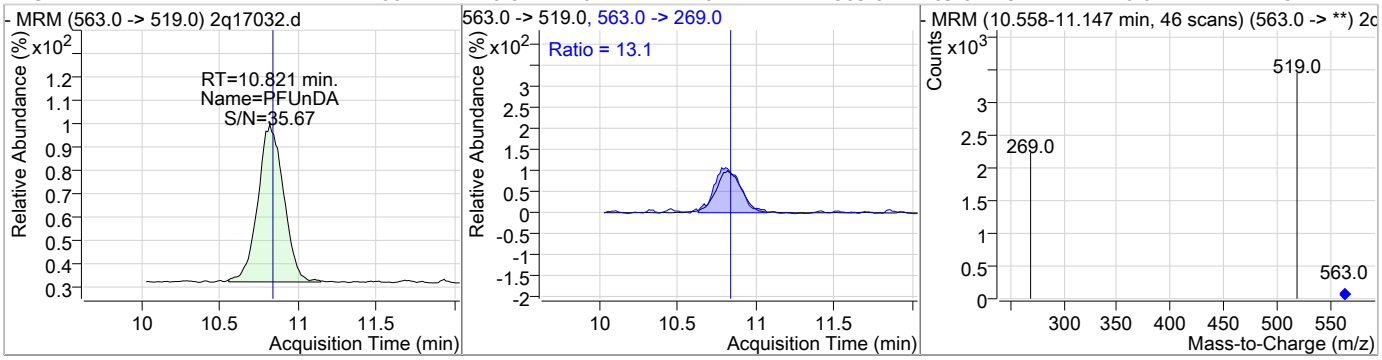
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	1.07	10.63	-0.21	369 (m)	599.0 -> 99.0	39.4	9.7	69.7



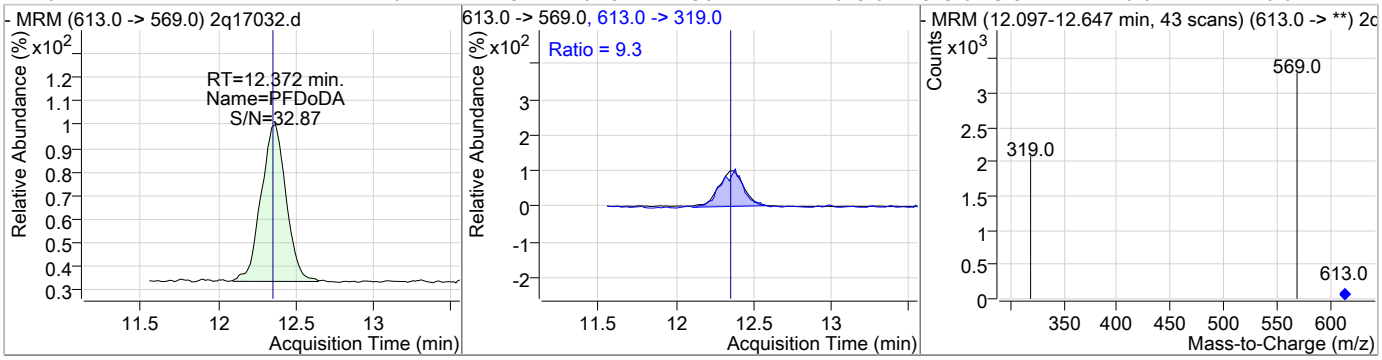
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.54	10.83	-0.20	40271				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	1.06	10.82	-0.21	1044	563.0 -> 269.0	13.1	0.0	41.8

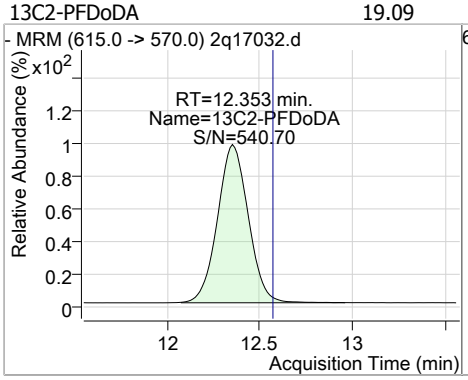


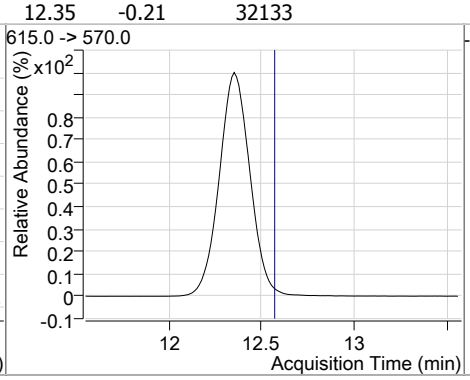
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	1.20	12.37	-0.19	984	613.0 -> 319.0	9.3	0.0	40.0

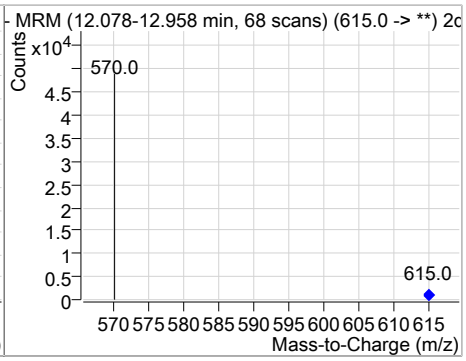


Perfluorinated Compounds by LC/MS/MS

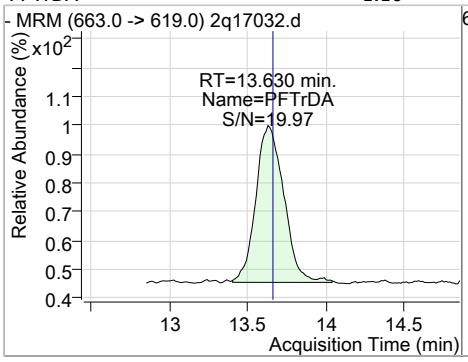
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.09	12.35	-0.21	32133				

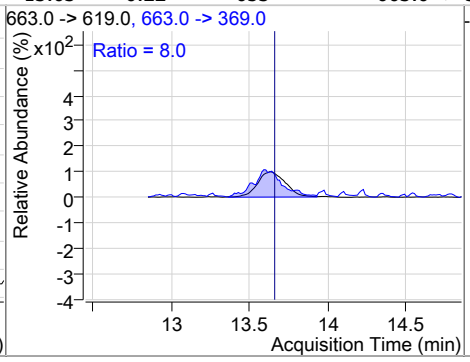


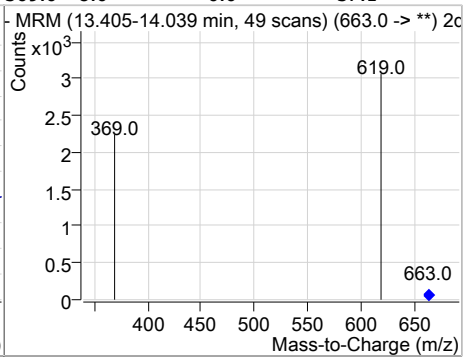




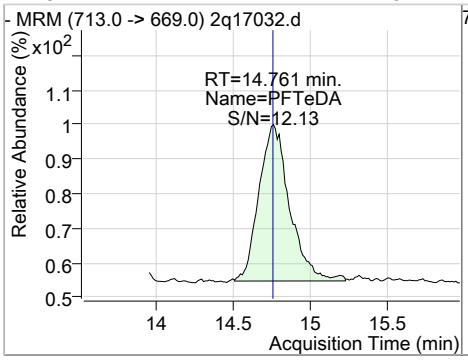
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	1.10	13.63	-0.22	653	663.0 -> 369.0	8.0	0.0	37.1

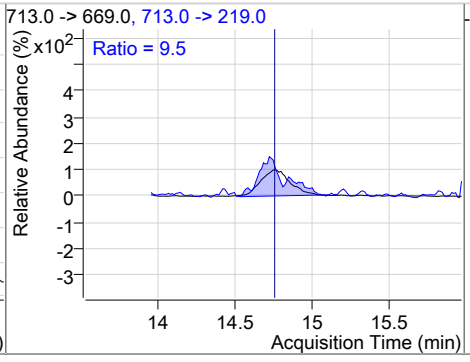


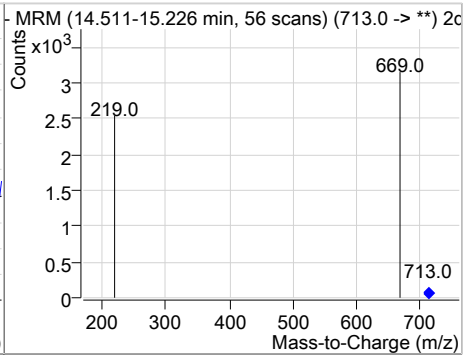




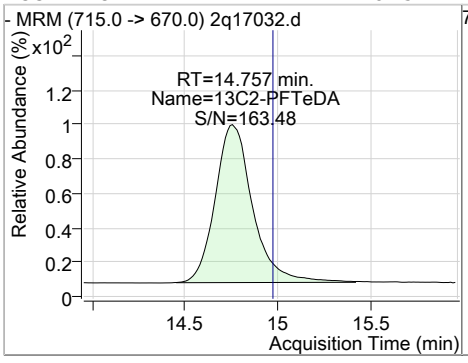
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.23	14.76	-0.20	498	713.0 -> 219.0	9.5	0.0	37.4

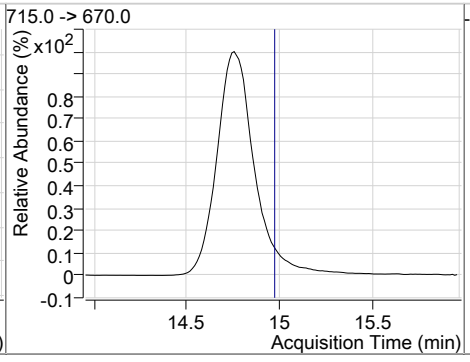


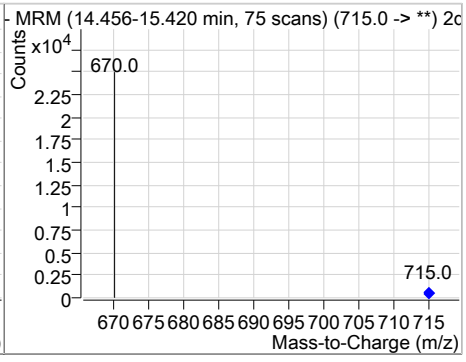




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	18.75	14.76	-0.21	13628				







Manual Integration Approval Summary

Sample Number: S2Q295-CC295
Lab FileID: 2Q17032.D
Injection Time: 07/12/18 22:44
Method: EPA 537M QSM5.1 B-15
Analyst approved: 07/13/18 12:48 Nancy Saunders
Supervisor approved: 07/13/18 17:24 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.19	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.62	Split peak
Perfluorodecanesulfonic acid	335-77-3		10.62	Missed peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 07/13/18 17:24

Perfluorinated Compounds by LC/MS/MS

Data File : 2q17033.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/12/2018 11:05:12 PM
Sample Name : cc295-20
Vial : Vial 7
DA Method File : PFC_ID_071218_S2Q295.quantmethod.xml
Batch Name : s2q295.batch.bin
Sample Information : op70790,S2Q295,1.99,,,1.0,1,soil

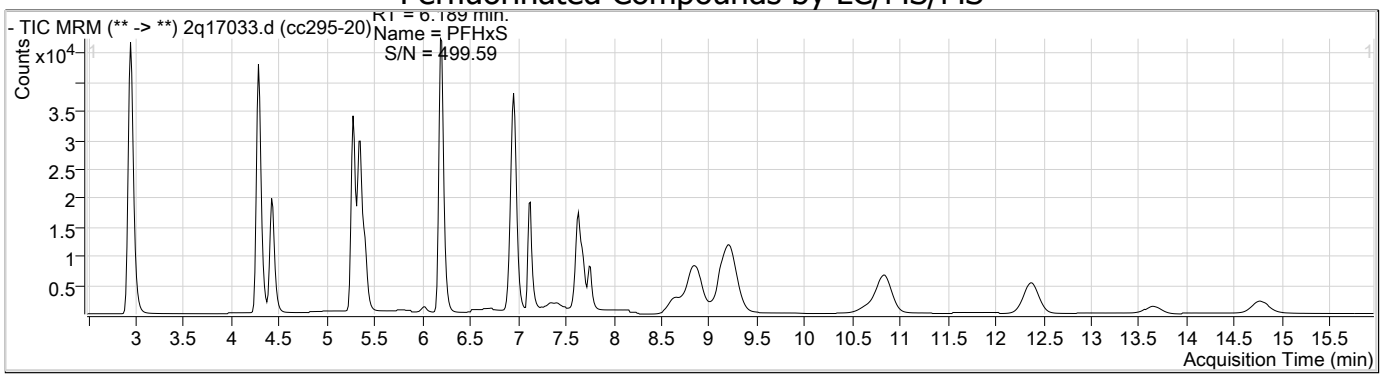
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-PFOA	6.948	415.0 -> 370.0	19743	20.00 µg/L	-0.049
13C4-PFOS	7.624	503.0 -> 80.0	11100	20.00 µg/L	-0.051
M4-PFBA	2.941	217.0 -> 172.0	159939	20.00 µg/L	-0.050
M5-PFPeA	4.287	268.0 -> 223.0	79877	20.00 µg/L	-0.050
M5-PFHxA	5.351	318.0 -> 273.0	71479	20.00 µg/L	-0.040
M4-PFHpA	6.205	367.0 -> 322.0	68443	20.00 µg/L	-0.050
M8-PFOA	6.946	421.0 -> 376.0	31840	20.00 µg/L	-0.049
M9-PFNA	7.678	472.0 -> 427.0	22009	20.00 µg/L	-0.075
M6-PFDA	8.851	519.0 -> 474.0	65210	20.00 µg/L	-0.166
M7-PFUnDA	10.842	570.0 -> 525.0	49765	20.00 µg/L	-0.187
M2-PFDoDA	12.366	615.0 -> 570.0	39717	20.00 µg/L	-0.200
M2-PFTeDA	14.770	715.0 -> 670.0	17151	20.00 µg/L	-0.200
M8-FOSA	7.127	506.0 -> 78.0	39026	20.00 µg/L	-0.015
M3-PFBS	4.418	302.0 -> 99.0	24775	20.00 µg/L	-0.050
M3-PFHxS	6.198	402.0 -> 99.0	20247	20.00 µg/L	-0.037
M8-PFOS	7.621	507.0 -> 99.0	9829	20.00 µg/L	-0.052
M2-4:2FTS	5.272	329.0 -> 309.0	66159	20.00 µg/L	-0.051
M2-6:2FTS	6.968	429.0 -> 409.0	45377	20.00 µg/L	-0.049
M2-8:2FTS	9.212	529.0 -> 509.0	86585	20.00 µg/L	-0.185
M3-MeFOSAA	7.632	573.0 -> 419.0	16328	20.00 µg/L	-0.026
System Monitoring Compounds					
13C2-4:2FTS	5.272	329.0 -> 309.0	66156	23.45 µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 117.2%	
13C2-6:2FTS	6.968	429.0 -> 409.0	45378	23.25 µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.3%	
13C2-8:2FTS	9.212	529.0 -> 509.0	85546	23.26 µg/L	-0.185
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.3%	
13C2-PFDoDA	12.366	615.0 -> 570.0	39807	23.65 µg/L	-0.200
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 118.2%	
13C2-PFTeDA	14.770	715.0 -> 670.0	17112	23.55 µg/L	-0.200
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 117.7%	
13C3-PFBS	4.418	302.0 -> 99.0	24770	23.76 µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 118.8%	
13C3-PFHxS	6.198	402.0 -> 99.0	20262	24.27 µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.4%	
13C4-PFBA	2.941	217.0 -> 172.0	159869	24.05 µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 120.3%	
13C4-PFHpA	6.205	367.0 -> 322.0	68438	24.19 µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 120.9%	
13C5-PFHxA	5.351	318.0 -> 273.0	71458	24.09 µg/L	-0.040
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 120.5%	
13C5-PFPeA	4.287	268.0 -> 223.0	79849	24.34 µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.7%	
13C6-PFDA	8.851	519.0 -> 474.0	64468	23.26 µg/L	-0.166
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.3%	

Perfluorinated Compounds by LC/MS/MS

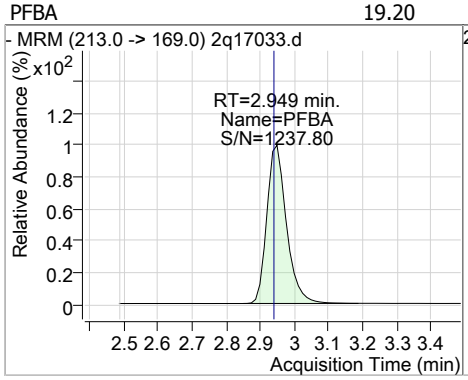
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.842	570.0 -> 525.0	49772	24.15	µg/L		-0.187
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 120.8%			
13C8-FOSA	7.127	506.0 -> 78.0	39012	24.26	µg/L		-0.015
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.3%			
13C8-PFOA	6.946	421.0 -> 376.0	31851	24.25	µg/L		-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.2%			
13C8-PFOS	7.621	507.0 -> 99.0	9835	23.71	µg/L		-0.052
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 118.5%			
13C9-PFNA	7.678	472.0 -> 427.0	22052	25.01	µg/L		-0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 125.0%			
d3-MeFOSAA	7.632	573.0 -> 419.0	16373	21.08	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.4%			
M2-PFOA	6.948	415.0 -> 370.0	19744	20.00	ng/ml		-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.624	503.0 -> 80.0	11088	19.98	ng/ml		-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%			
Target Compounds							**QValue**
4:2FTS	5.274	327.0 -> 307.0	32899	19.71	µg/L		99
6:2FTS	6.970	427.0 -> 407.0	21922	19.79	µg/L		98
8:2FTS	9.202	527.0 -> 507.0	44444	19.78	µg/L		94
EtFOSAA	7.757	584.0 -> 419.0	5636	21.36	µg/L		94
FOSA	7.116	498.0 -> 78.0	18688	19.52	µg/L		100
MeFOSAA	7.633	570.0 -> 419.0	6177	20.52	µg/L		99
PFBA	2.949	213.0 -> 169.0	24352	19.20	µg/L		100
PFBS	4.422	299.0 -> 80.0	32283	18.99	µg/L		99
PFDA	8.855	513.0 -> 469.0	23153	19.04	µg/L		99
PFDoDA	12.372	613.0 -> 569.0	19838	19.58	µg/L		100
PFDS	10.638	599.0 -> 80.0	8488	19.92	µg/L		98
PFHpA	6.195	363.0 -> 319.0	49676	19.49	µg/L		99
PFHpS	6.917	449.0 -> 80.0	11279	19.80	µg/L		100
PFHxA	5.353	313.0 -> 269.0	23155	19.21	µg/L		99
PFHxS	6.189	399.0 -> 80.0	23224	19.36	µg/L	m	97
PFNA	7.679	463.0 -> 419.0	8423	19.40	µg/L		92
PFNS	8.634	549.0 -> 80.0	16415	18.12	µg/L		97
PFOA	6.948	413.0 -> 369.0	17143	20.20	µg/L		97
PFOS	7.624	499.0 -> 80.0	11694	19.00	µg/L	m	93
PFPeA	4.291	263.0 -> 219.0	72245	19.37	µg/L		100
PFPeS	5.396	349.0 -> 80.0	20634	19.11	µg/L		100
PFTeDA	14.761	713.0 -> 669.0	10183	19.96	µg/L		99
PFTrDA	13.643	663.0 -> 619.0	15052	20.10	µg/L		99
PFUnDA	10.834	563.0 -> 519.0	23255	19.00	µg/L		99

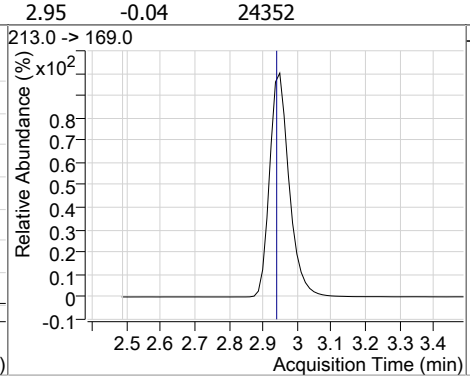
 # = Qualifier out of range, m = manually integrated, + = Area summed

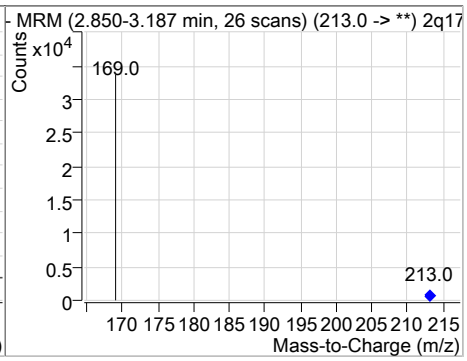
Perfluorinated Compounds by LC/MS/MS



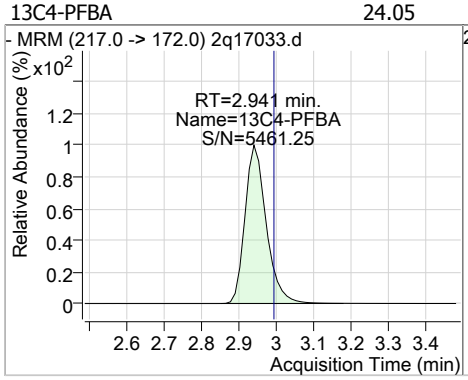
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.20	2.95	-0.04	24352				

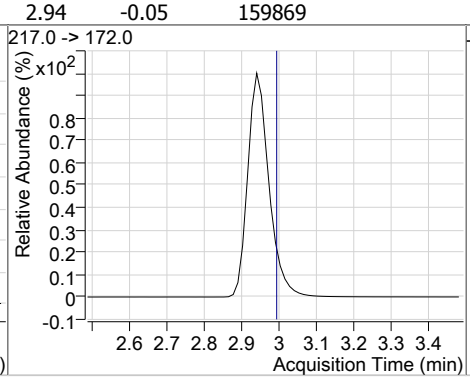


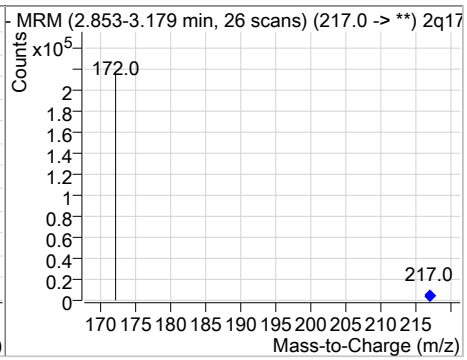




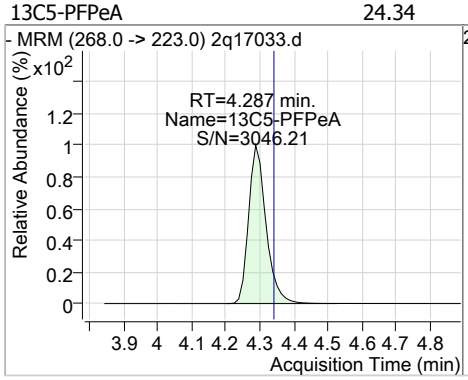
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	24.05	2.94	-0.05	159869				

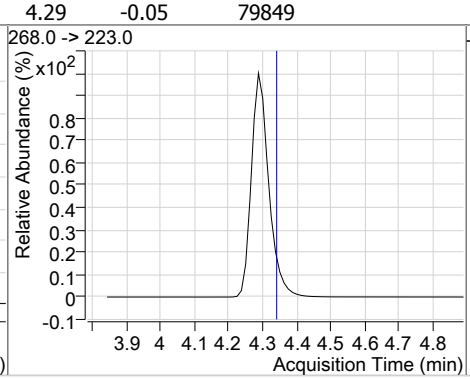


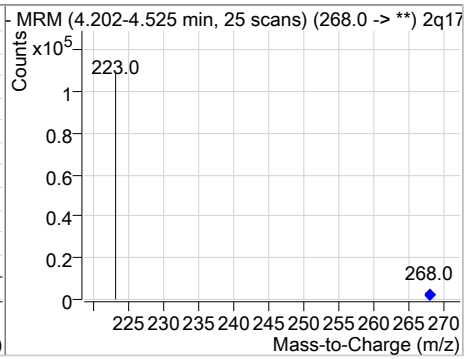




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	24.34	4.29	-0.05	79849				

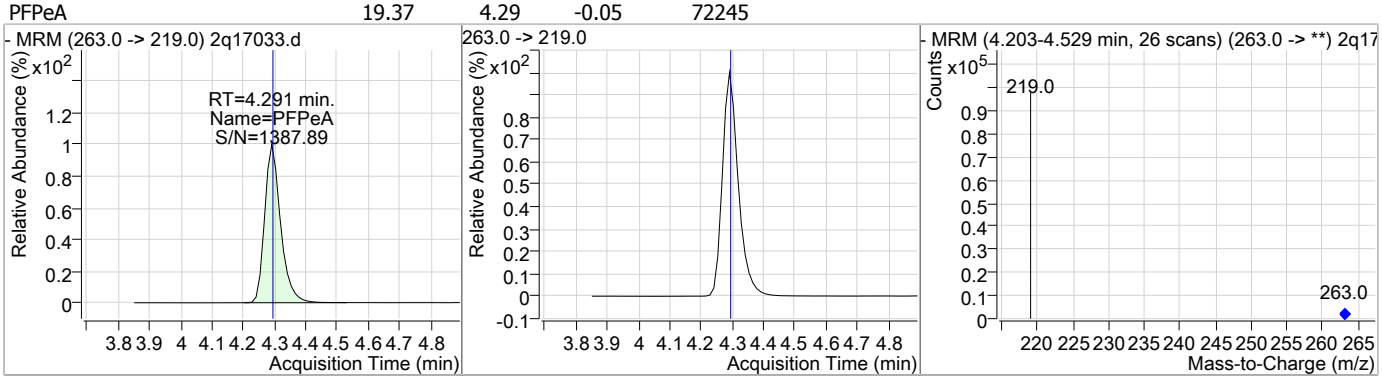




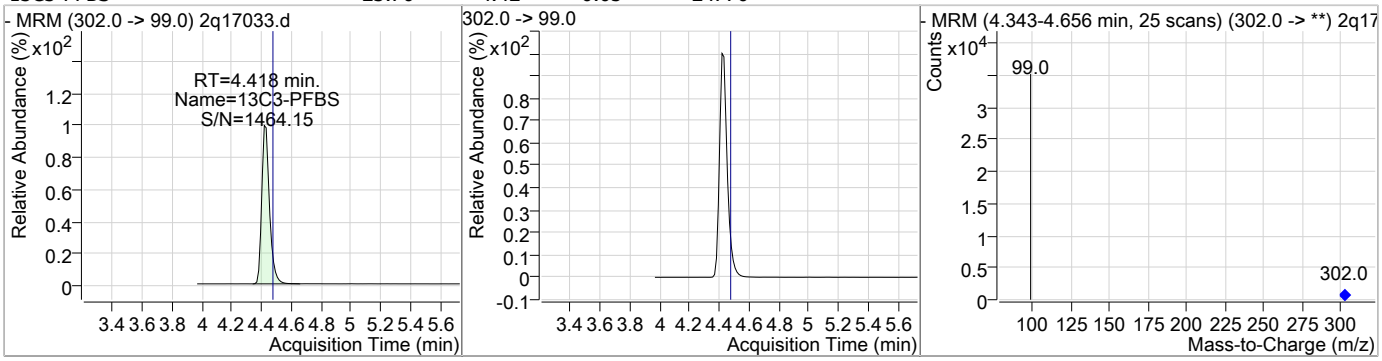


Perfluorinated Compounds by LC/MS/MS

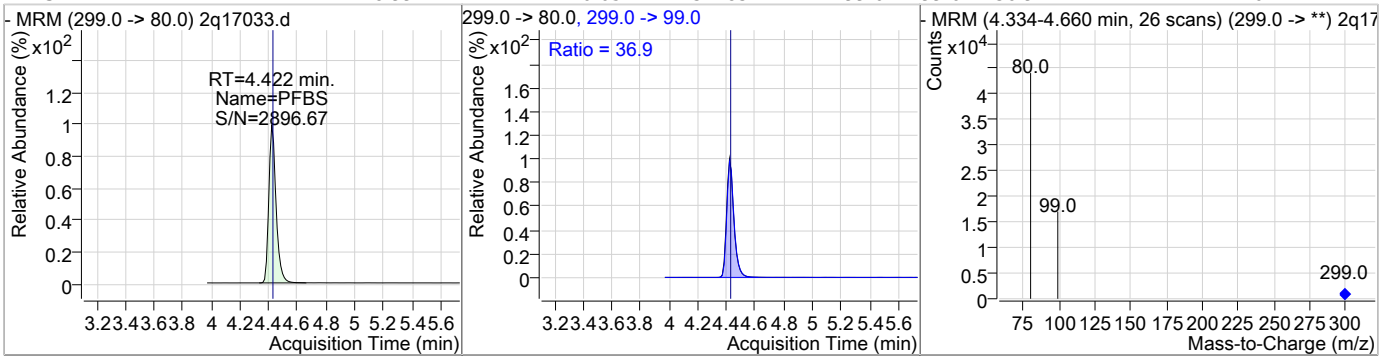
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.37	4.29	-0.05	72245				



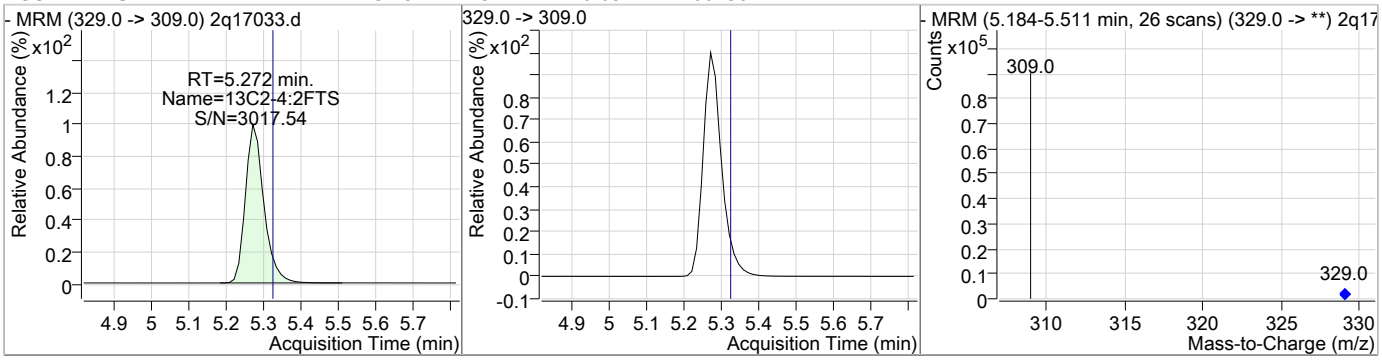
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	23.76	4.42	-0.05	24770				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	18.99	4.42	-0.05	32283	299.0 -> 99.0	36.9	7.4	67.4

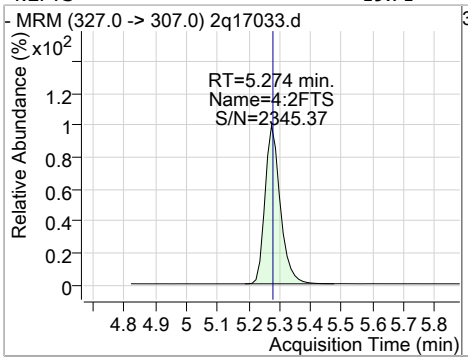


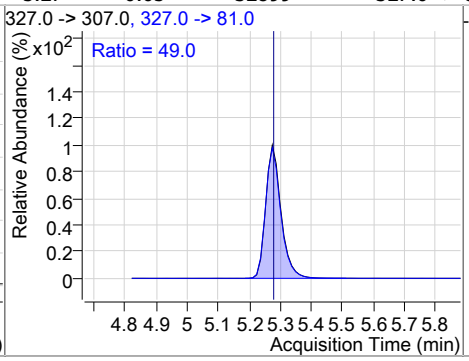
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	23.45	5.27	-0.05	66156				

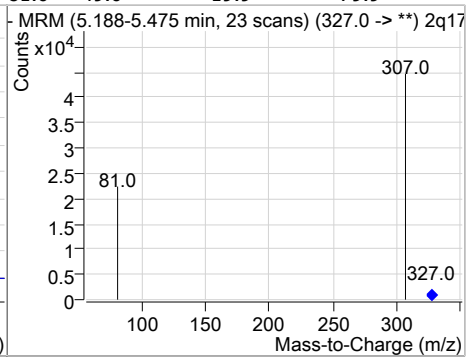


Perfluorinated Compounds by LC/MS/MS

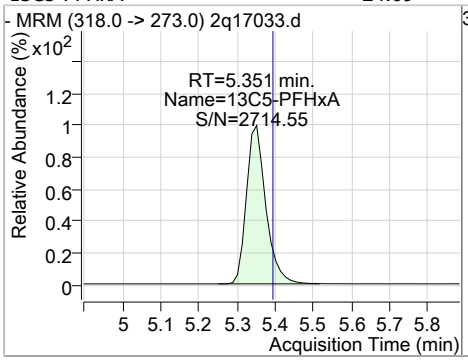
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.71	5.27	-0.05	32899	327.0 -> 81.0	49.0	19.9	79.9

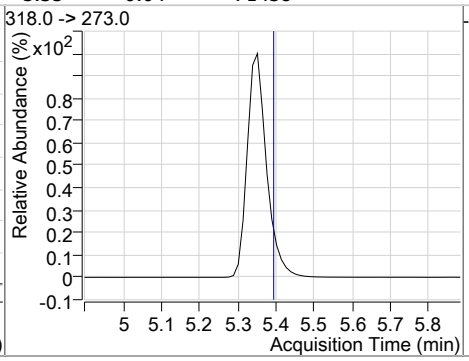


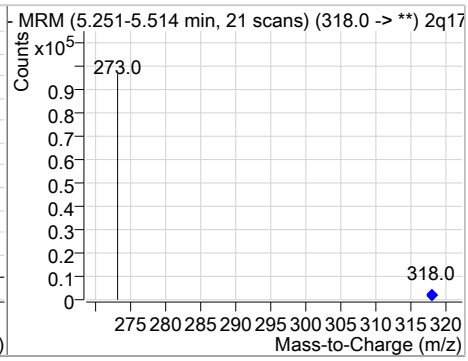




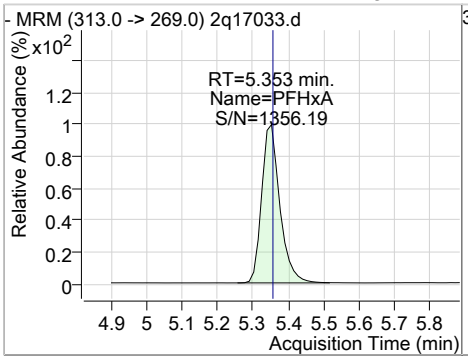
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	24.09	5.35	-0.04	71458				

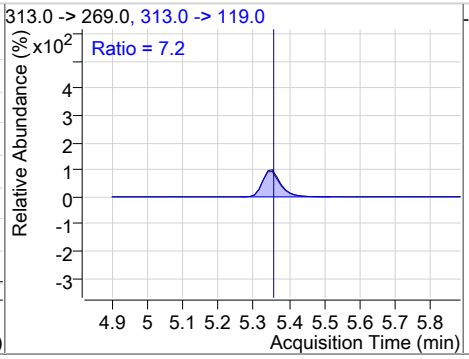


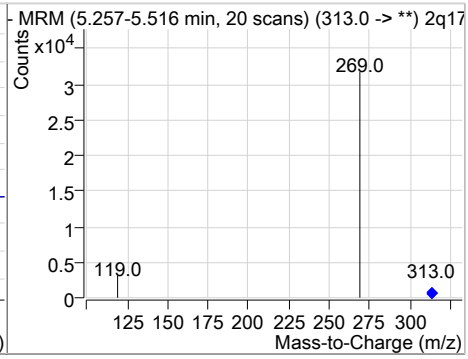




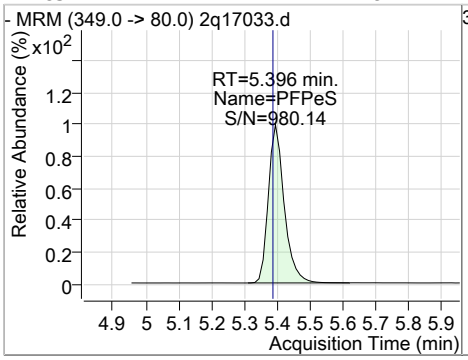
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.21	5.35	-0.04	23155	313.0 -> 119.0	7.2	0.0	37.6

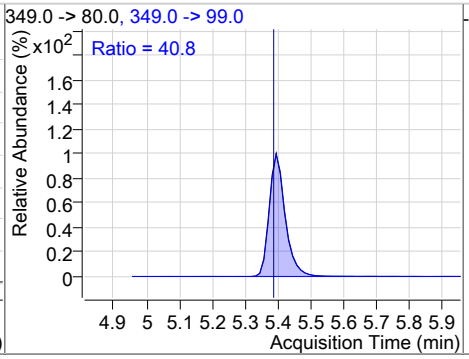


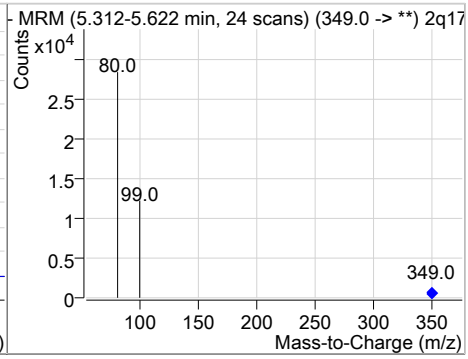




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.11	5.40	-0.05	20634	349.0 -> 99.0	40.8	10.8	70.8

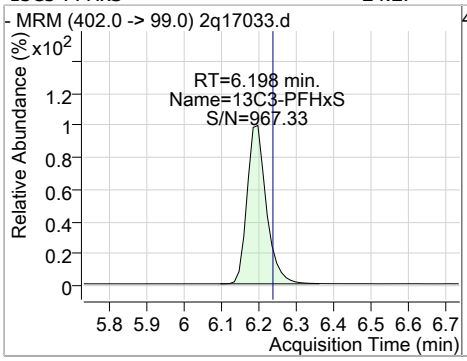


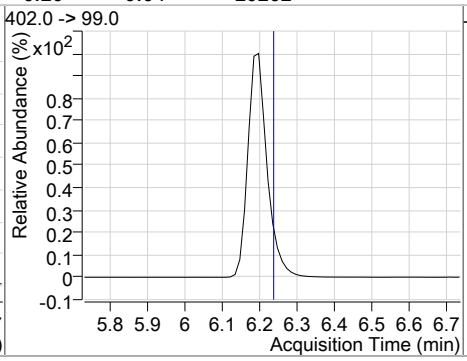


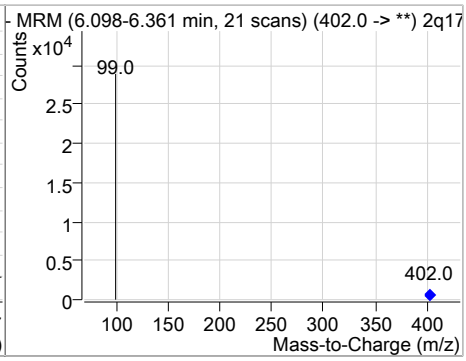


Perfluorinated Compounds by LC/MS/MS

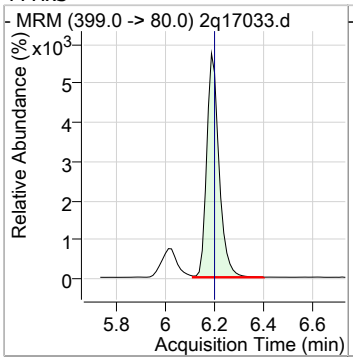
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	24.27	6.20	-0.04	20262				

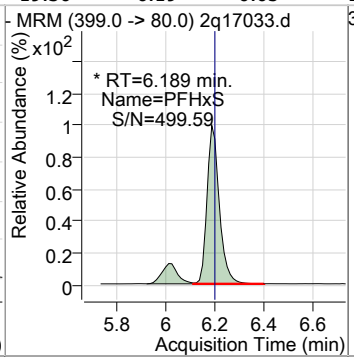


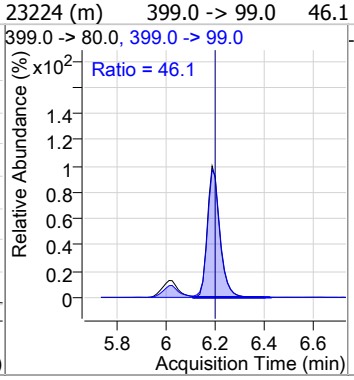


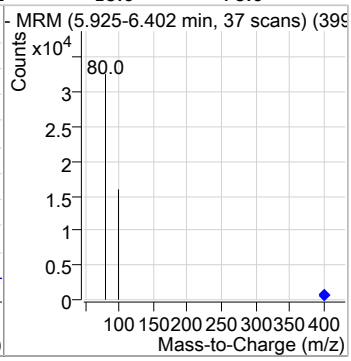


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.36	6.19	-0.05	23224 (m)	399.0 -> 99.0	46.1	18.0	78.0

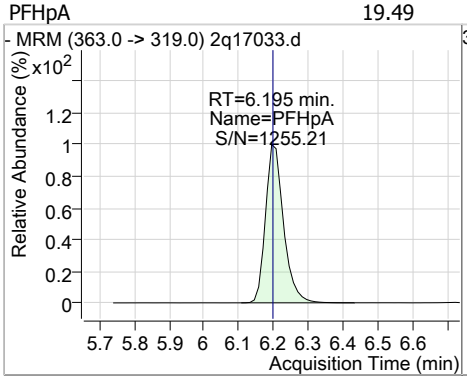


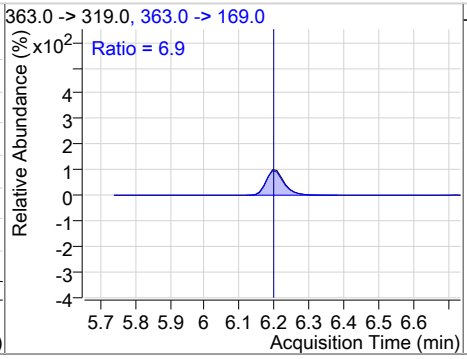


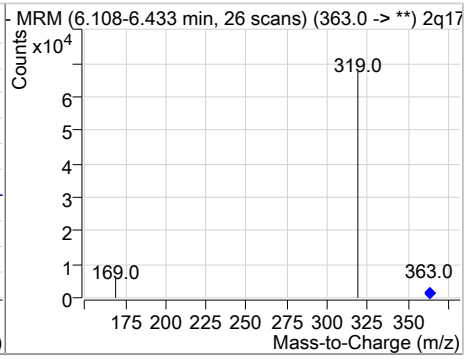




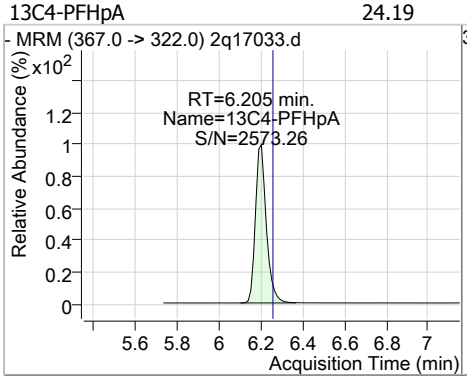
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.49	6.20	-0.05	49676	363.0 -> 169.0	6.9	0.0	37.2

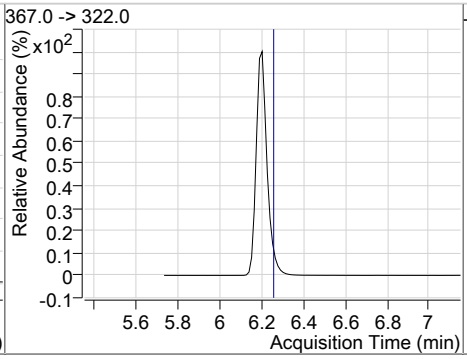


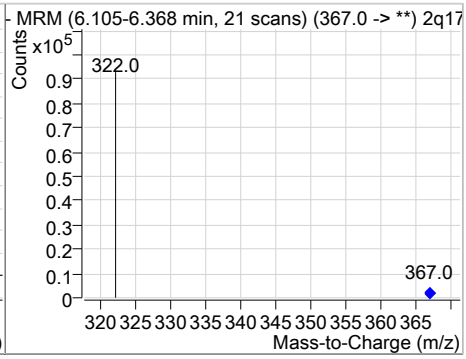




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	24.19	6.20	-0.05	68438				

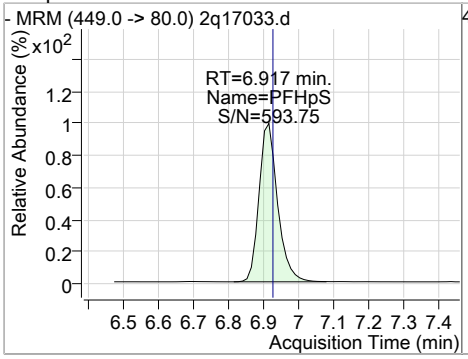


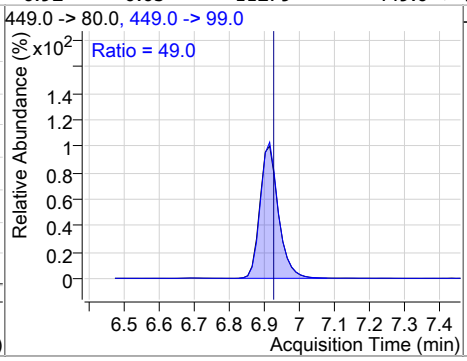


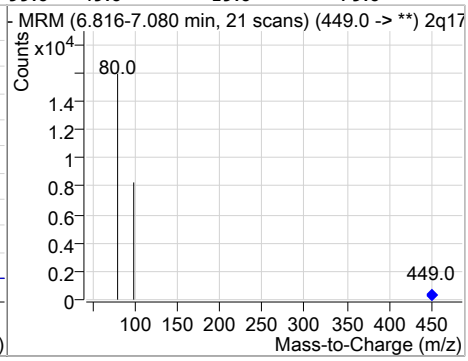


Perfluorinated Compounds by LC/MS/MS

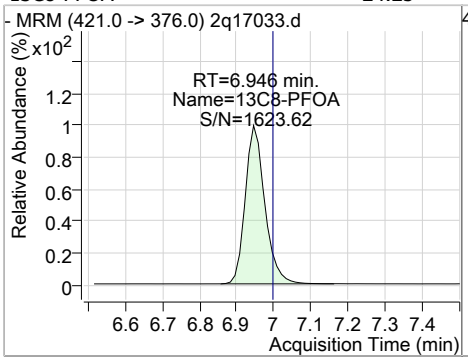
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	19.80	6.92	-0.05	11279	449.0 -> 99.0	49.0	19.0	79.0

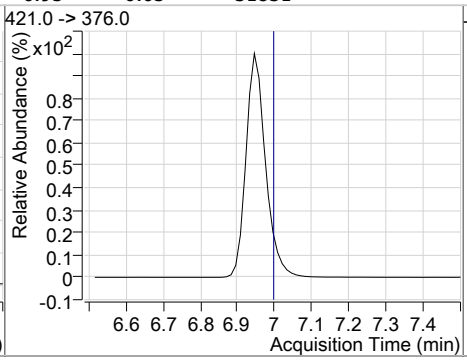


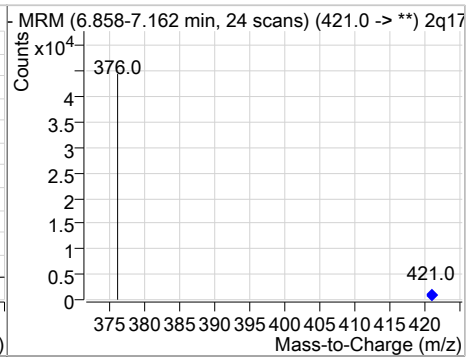




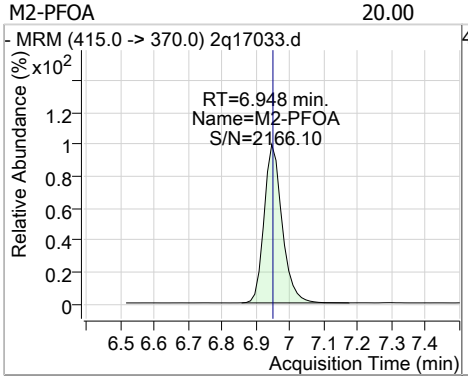
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	24.25	6.95	-0.05	31851				

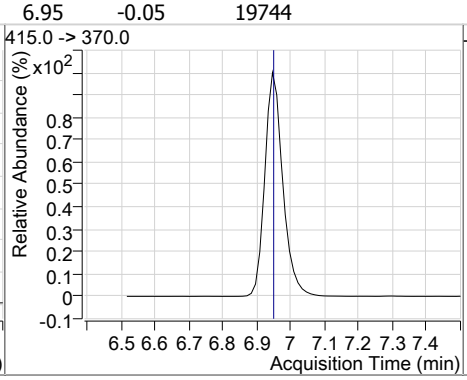


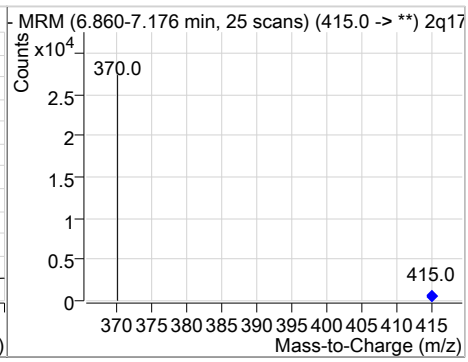




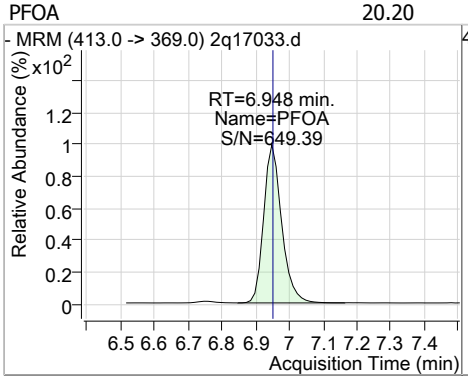
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.95	-0.05	19744				

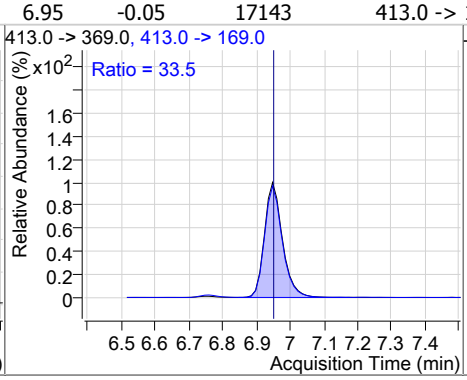


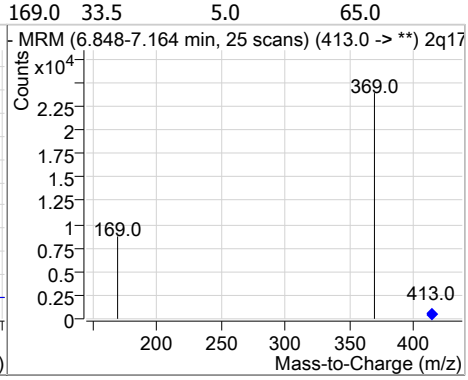




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	20.20	6.95	-0.05	17143	413.0 -> 169.0	33.5	5.0	65.0

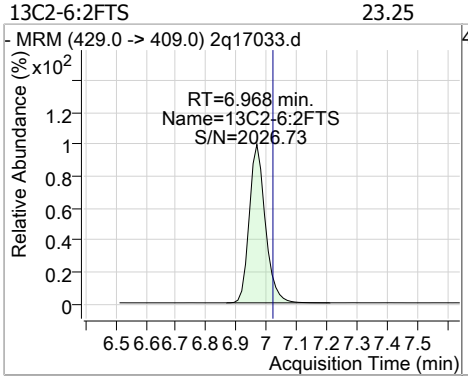


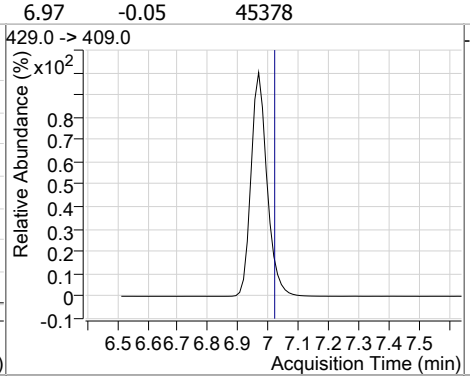


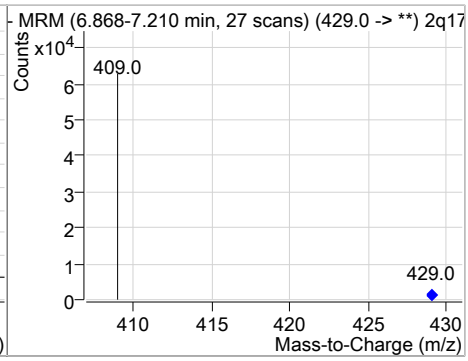


Perfluorinated Compounds by LC/MS/MS

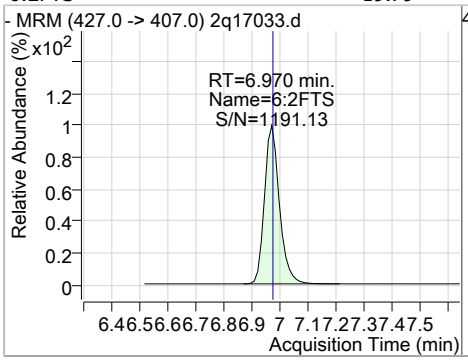
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	23.25	6.97	-0.05	45378				

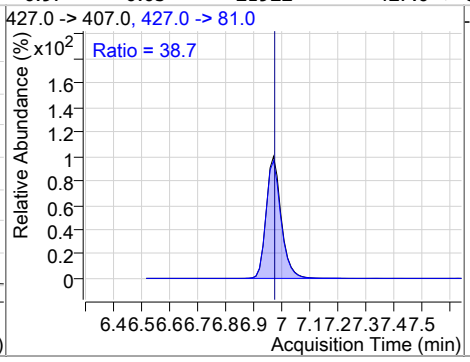


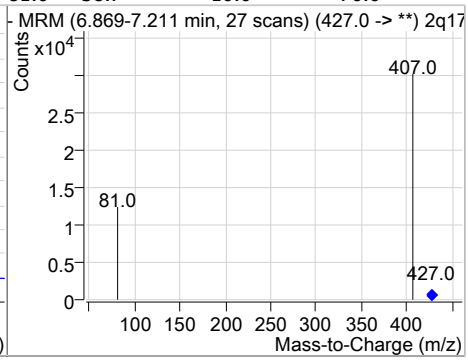




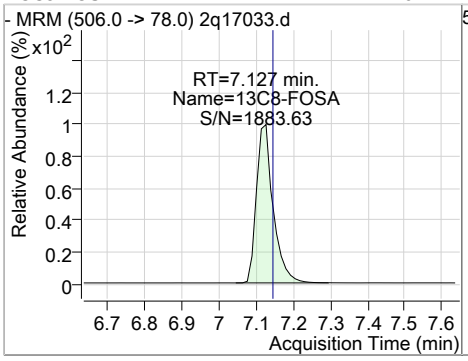
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.79	6.97	-0.05	21922	427.0 -> 81.0	38.7	10.0	70.0

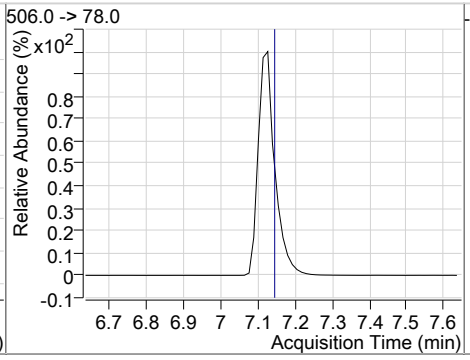


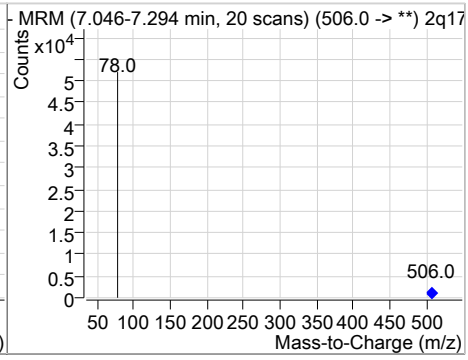




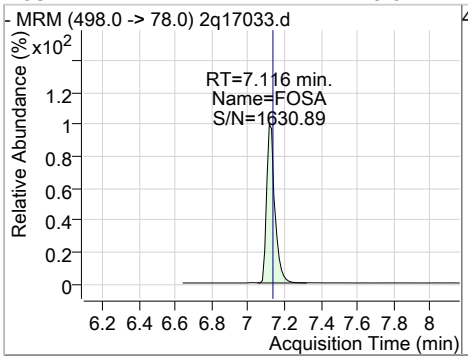
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	24.26	7.13	-0.02	39012				

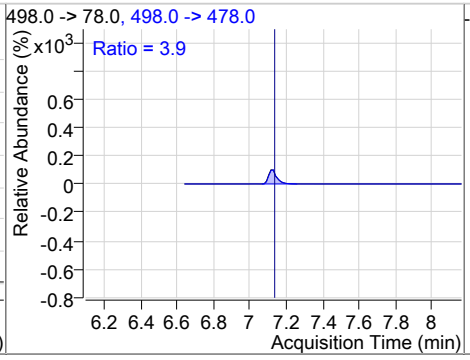


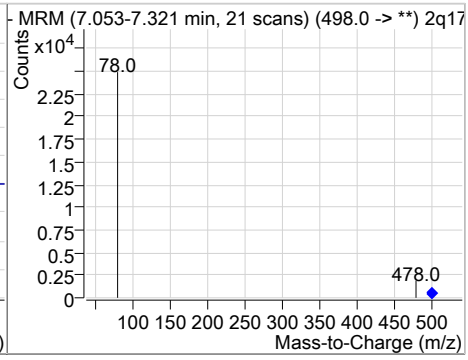




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.52	7.12	-0.03	18688	498.0 -> 478.0	3.9	0.0	34.0

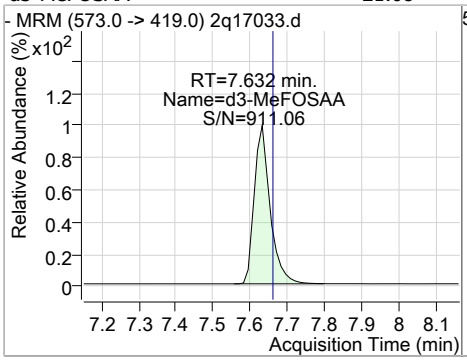


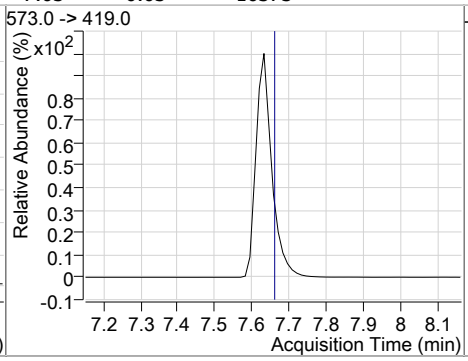


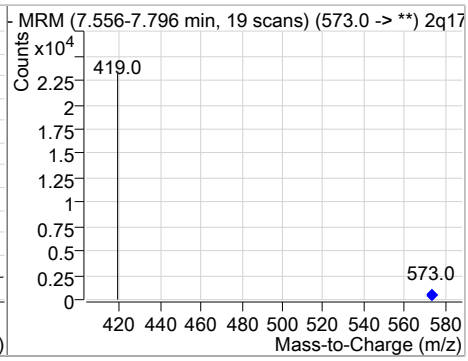


Perfluorinated Compounds by LC/MS/MS

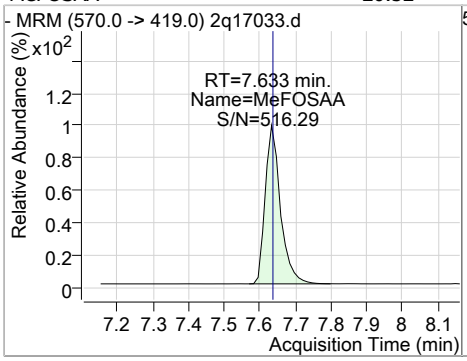
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.08	7.63	-0.03	16373				

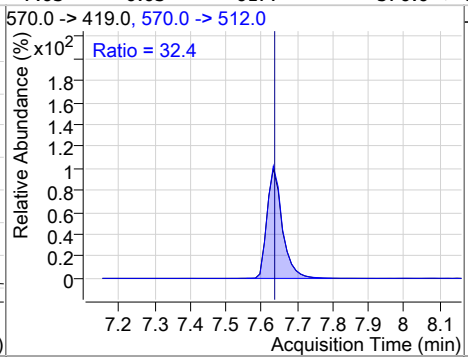


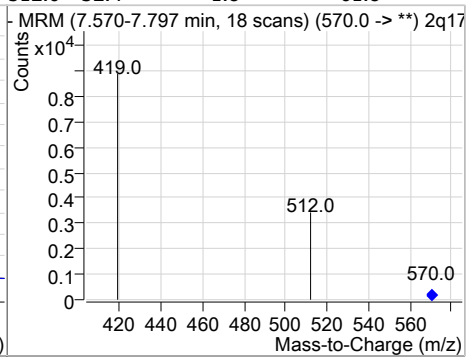




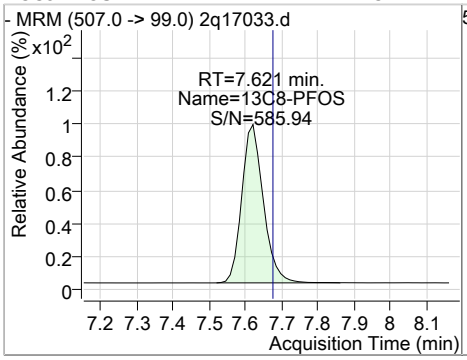
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.52	7.63	-0.03	6177	570.0 -> 512.0	32.4	1.8	61.8

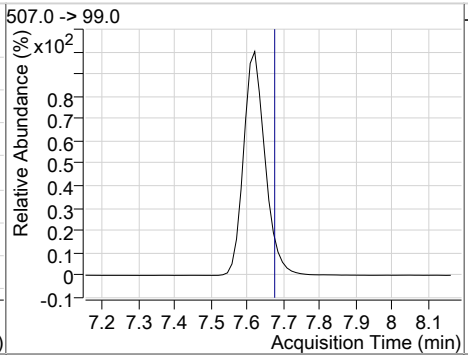


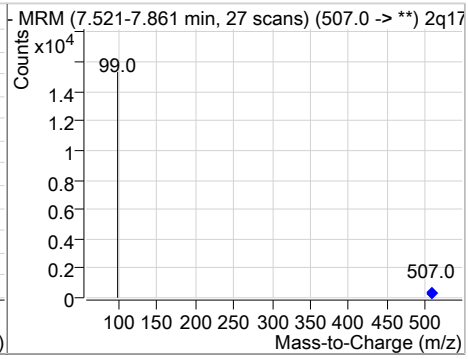




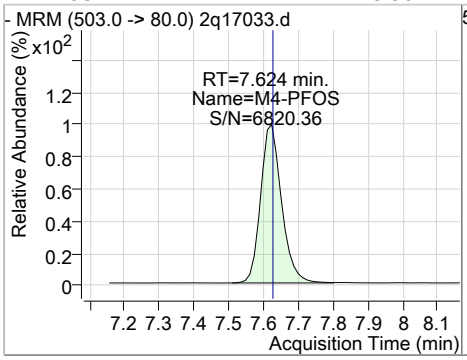
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	23.71	7.62	-0.05	9835				

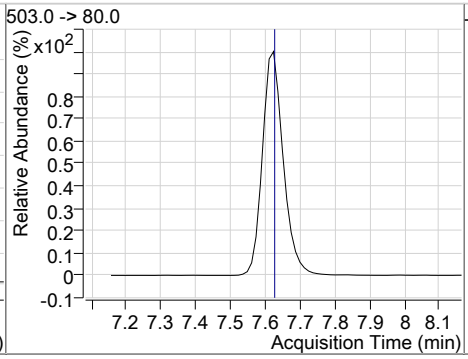


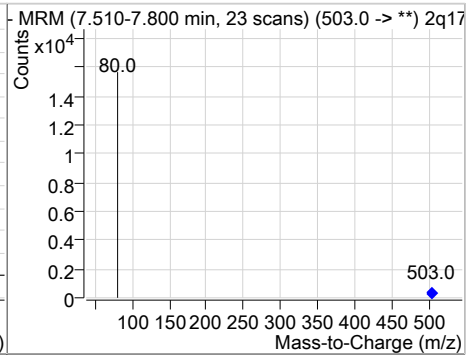




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	19.98	7.62	-0.05	11088				

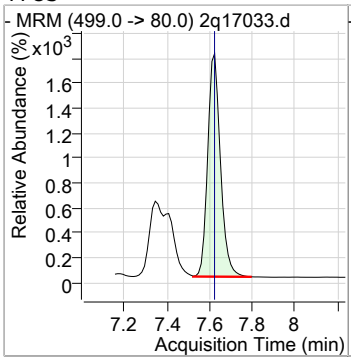


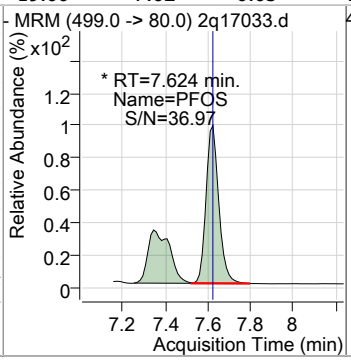


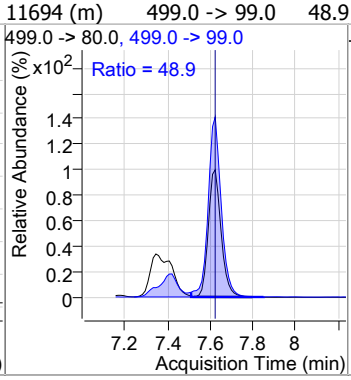


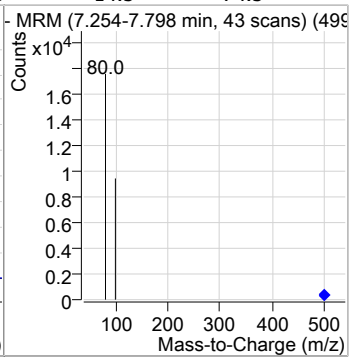
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.00	7.62	-0.05	11694 (m)	499.0 -> 99.0	48.9	14.5	74.5

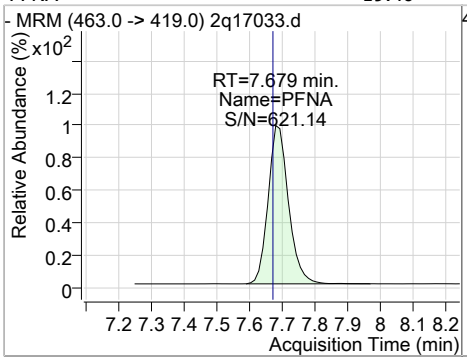


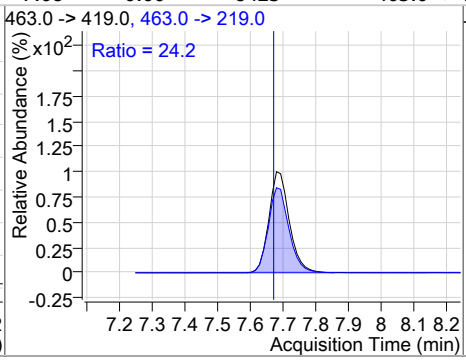


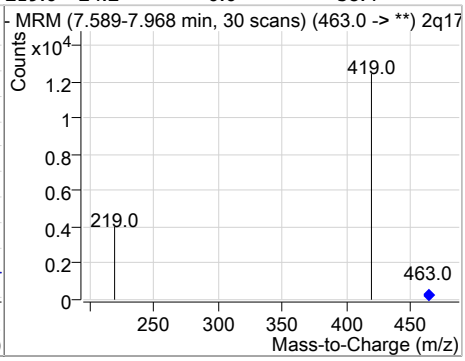




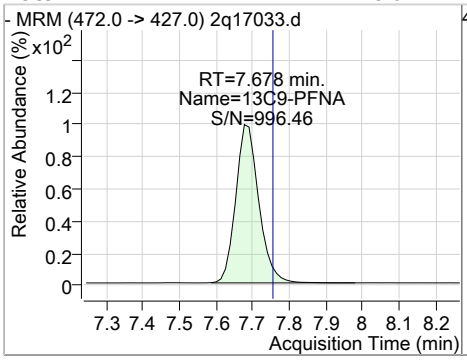
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.40	7.68	-0.06	8423	463.0 -> 219.0	24.2	0.0	58.4

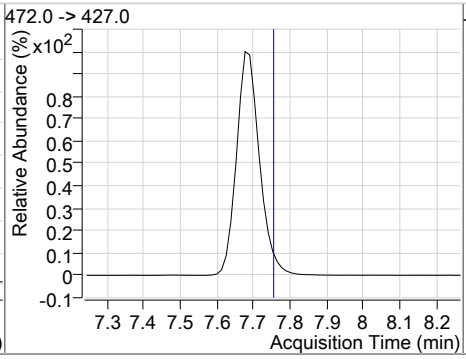


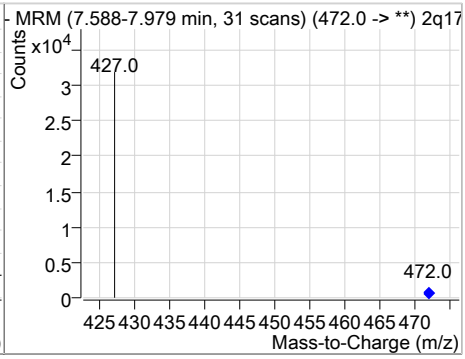




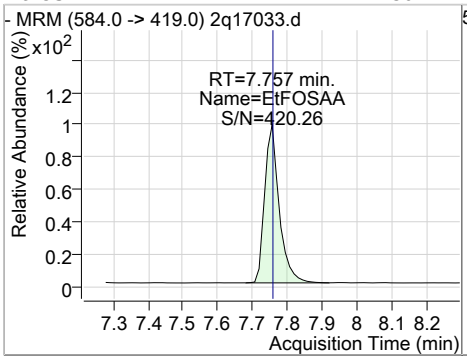
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	25.01	7.68	-0.07	22052				

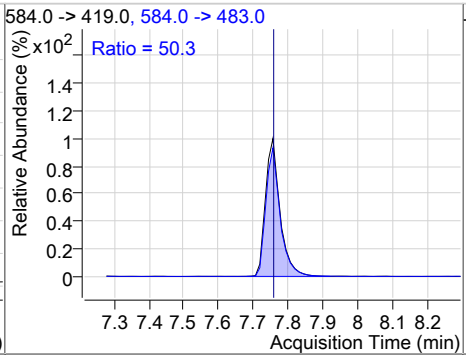


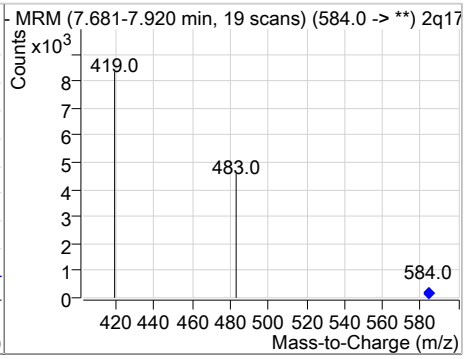




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	21.36	7.76	-0.02	5636	584.0 -> 483.0	50.3	24.8	84.8

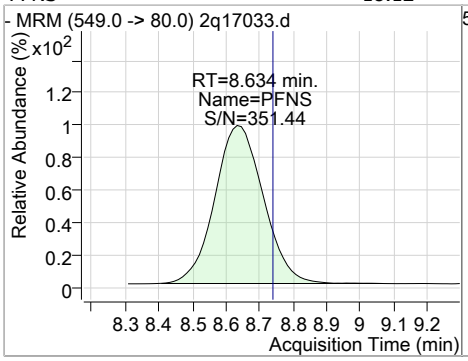


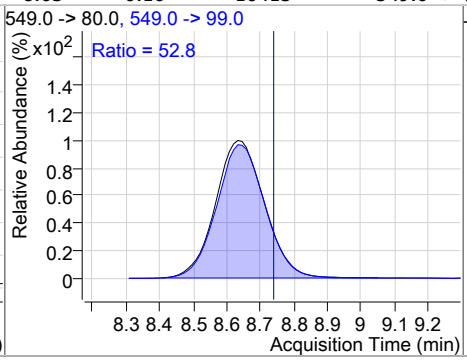


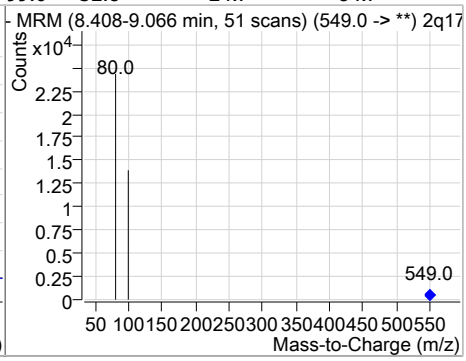


Perfluorinated Compounds by LC/MS/MS

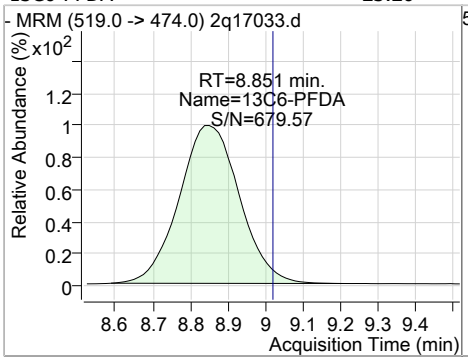
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	18.12	8.63	-0.16	16415	549.0 -> 99.0	52.8	24.7	84.7

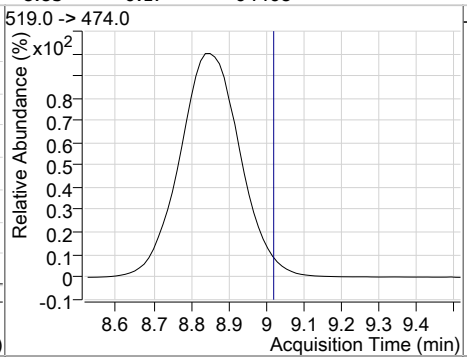


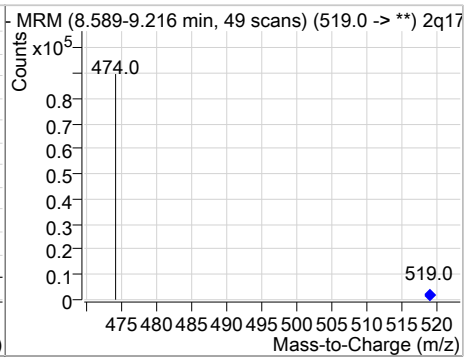




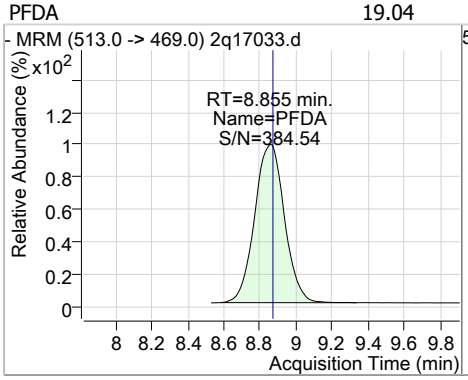
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	23.26	8.85	-0.17	64468				

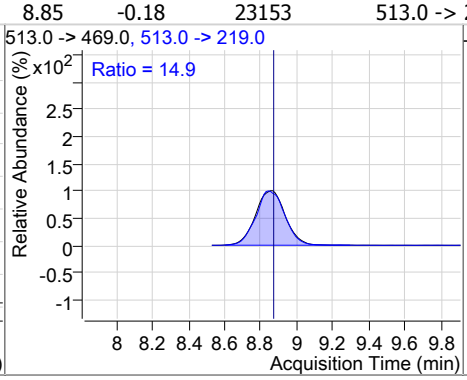


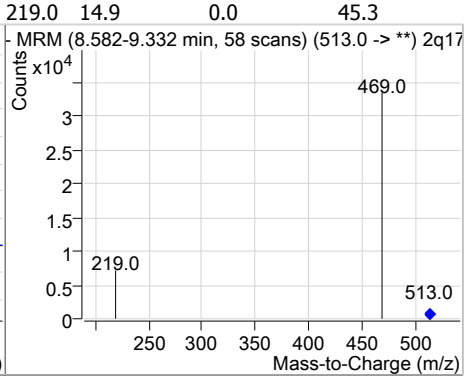




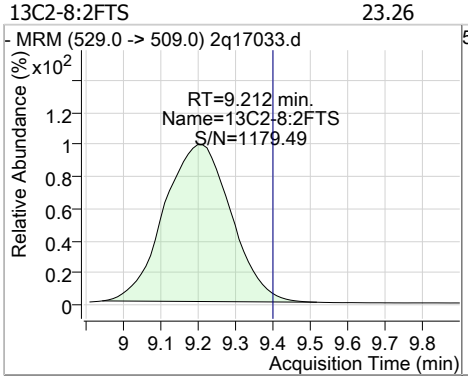
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.04	8.85	-0.18	23153	513.0 -> 219.0	14.9	0.0	45.3

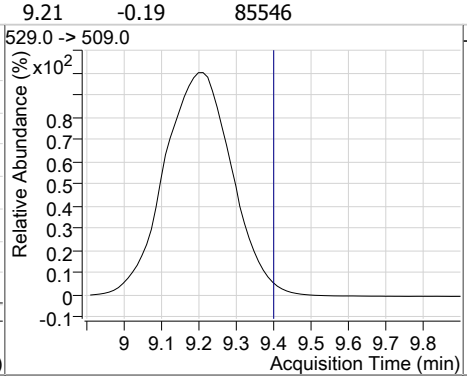


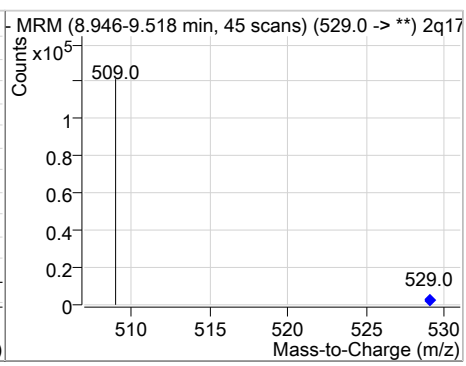




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	23.26	9.21	-0.19	85546				

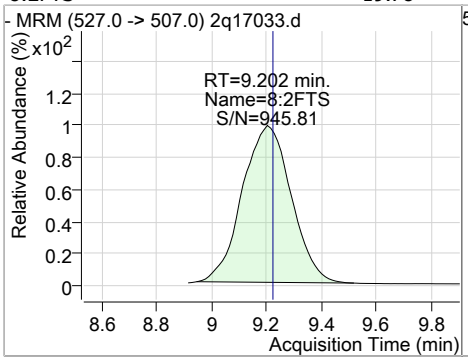


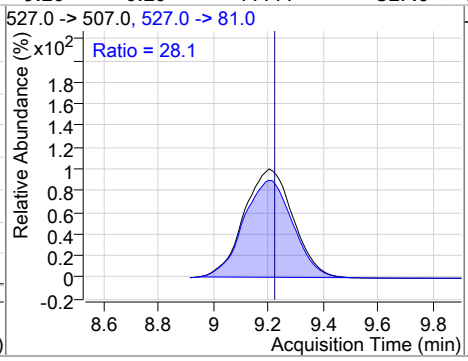


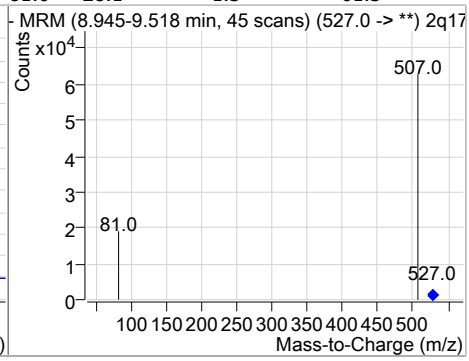


Perfluorinated Compounds by LC/MS/MS

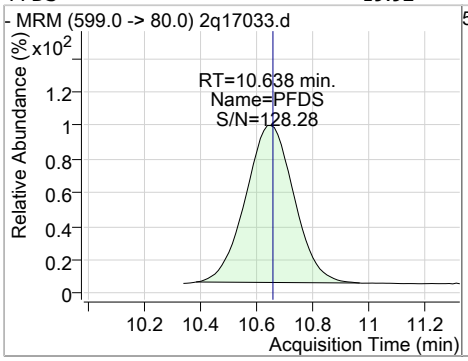
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.78	9.20	-0.20	44444	527.0 -> 81.0	28.1	1.3	61.3

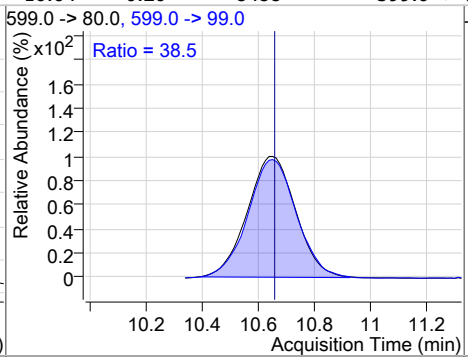


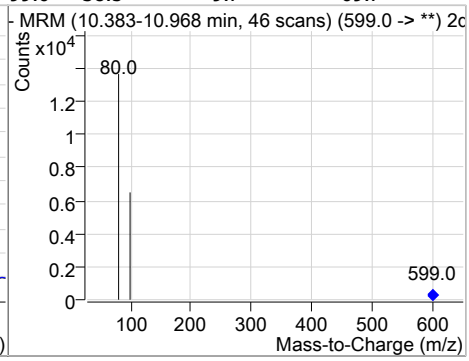




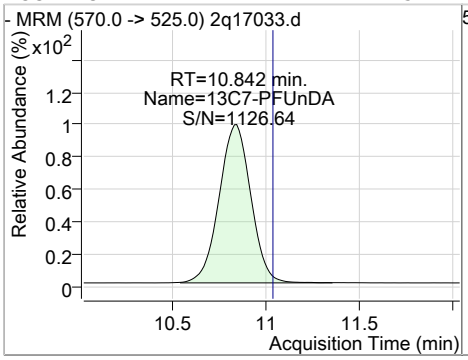
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.92	10.64	-0.20	8488	599.0 -> 99.0	38.5	9.7	69.7

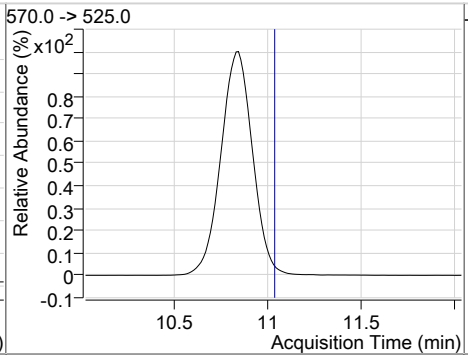


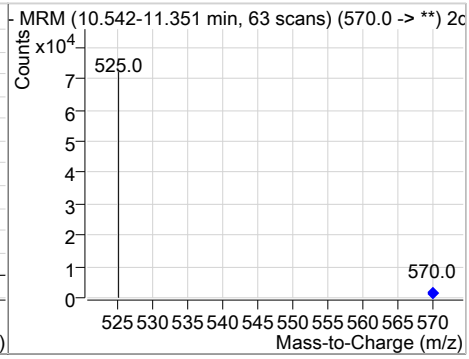




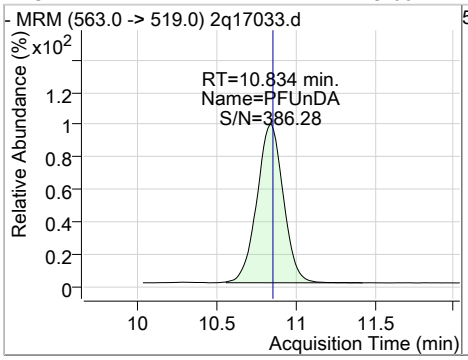
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	24.15	10.84	-0.19	49772				

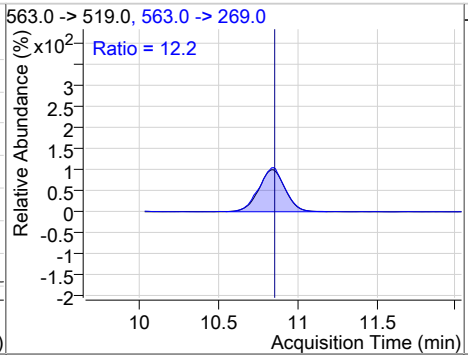


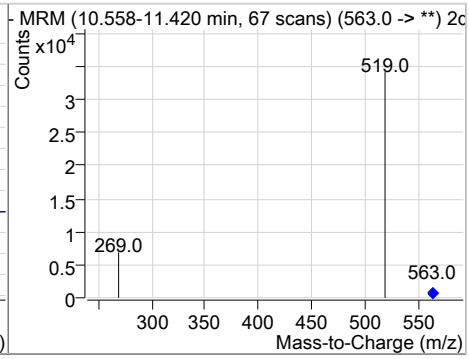




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.00	10.83	-0.20	23255	563.0 -> 269.0	12.2	0.0	41.8

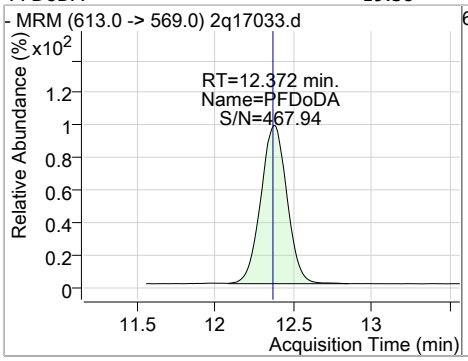


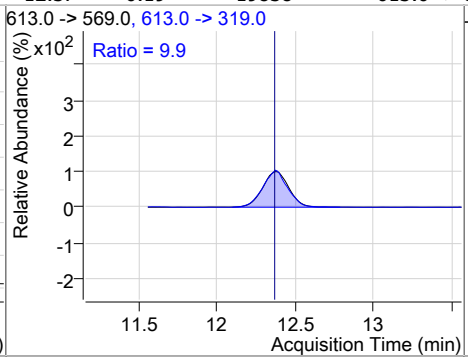


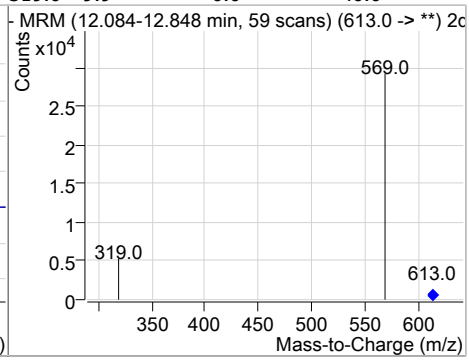


Perfluorinated Compounds by LC/MS/MS

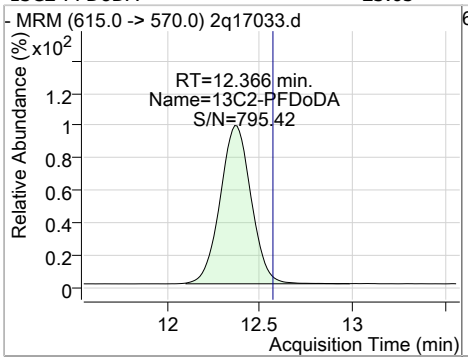
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.58	12.37	-0.19	19838	613.0 -> 319.0	9.9	0.0	40.0

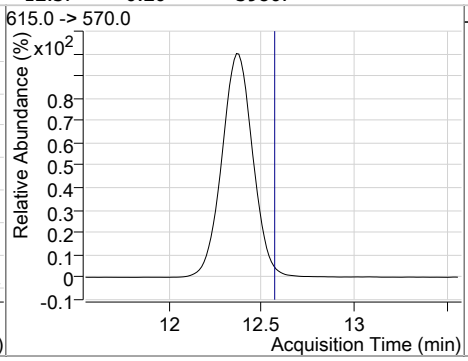


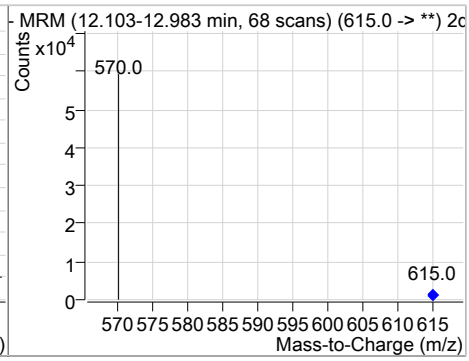




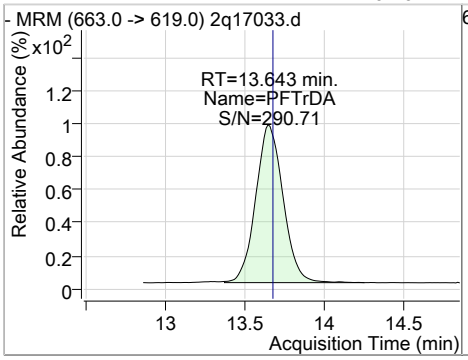
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	23.65	12.37	-0.20	39807				

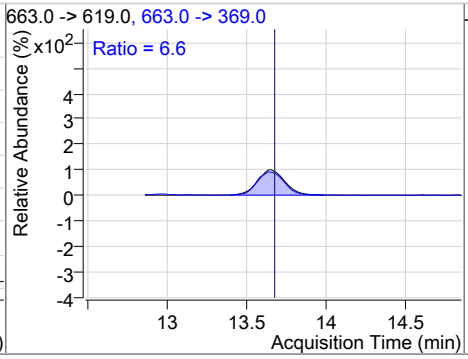


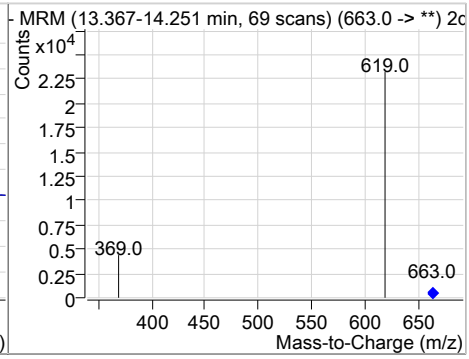




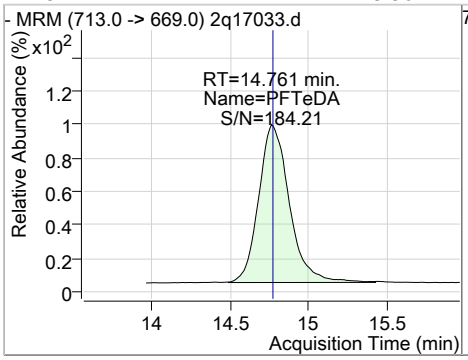
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.10	13.64	-0.21	15052	663.0 -> 369.0	6.6	0.0	37.1

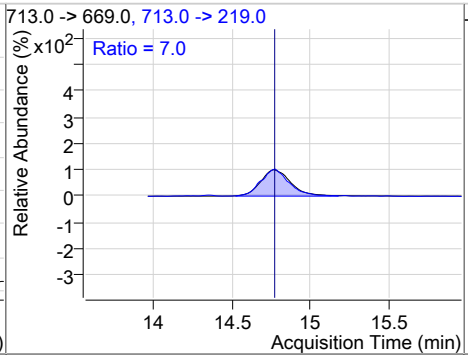


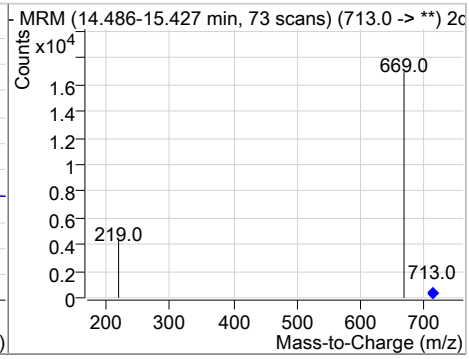




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.96	14.76	-0.20	10183	713.0 -> 219.0	7.0	0.0	37.4

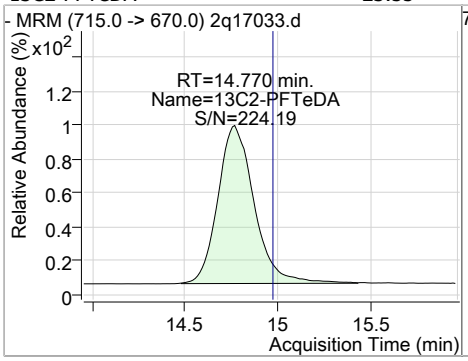


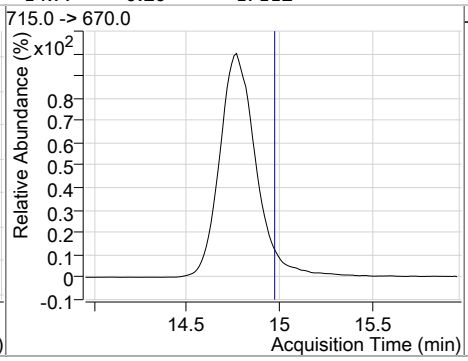


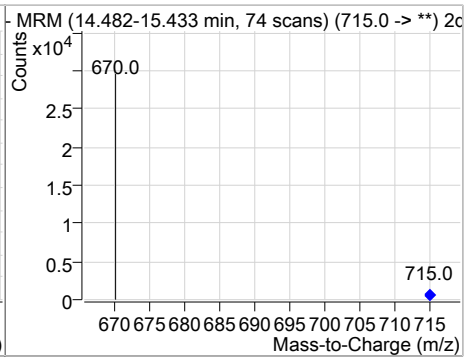


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	23.55	14.77	-0.20	17112				







Manual Integration Approval Summary

Sample Number:	S2Q295-CC295	**Method:**	EPA 537M BY ID
Lab FileID:	2Q17033.D	**Analyst approved:**	07/13/18 12:48 Nancy Saunders
Injection Time:	07/12/18 23:05	**Supervisor approved:**	07/13/18 17:24 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.19	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.62	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
07/16/18 14:50

Perfluorinated Compounds by LC/MS/MS

Data File : 2q17044.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/13/2018 2:54:16 AM
Sample Name : cc295-20
Vial : Vial 7
DA Method File : PFC_ID_071218_S2Q295.quantmethod.xml
Batch Name : s2q295.batch.bin
Sample Information : op70790,S2Q295,1.99,,,1.0,1,soil

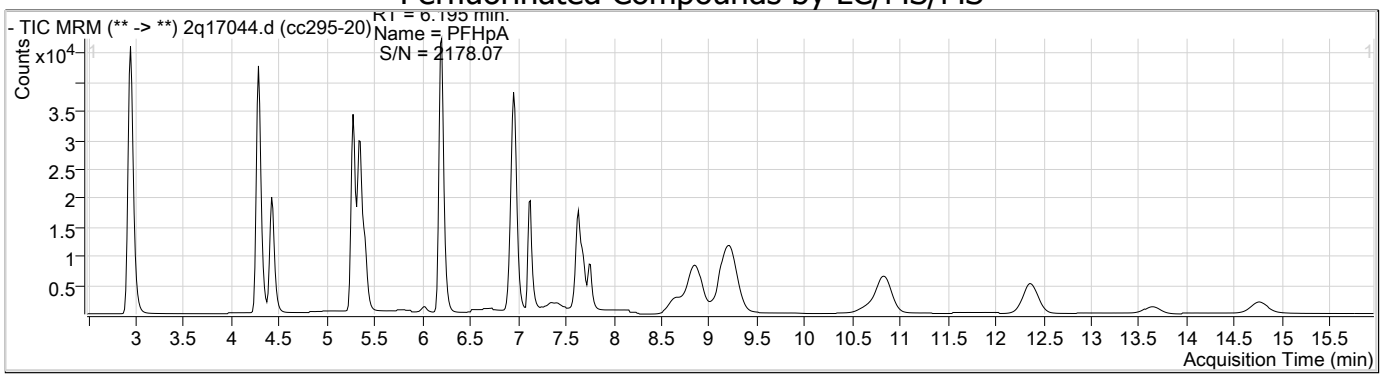
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.948	415.0 -> 370.0	19569	20.00	µg/L	-0.049
13C4-PFOS	7.623	503.0 -> 80.0	11018	20.00	µg/L	-0.051
M4-PFBA	2.941	217.0 -> 172.0	158627	20.00	µg/L	-0.050
M5-PFPeA	4.287	268.0 -> 223.0	78744	20.00	µg/L	-0.050
M5-PFHxA	5.351	318.0 -> 273.0	72376	20.00	µg/L	-0.040
M4-PFHpA	6.205	367.0 -> 322.0	68671	20.00	µg/L	-0.050
M8-PFOA	6.946	421.0 -> 376.0	32067	20.00	µg/L	-0.049
M9-PFNA	7.690	472.0 -> 427.0	22431	20.00	µg/L	-0.062
M6-PFDA	8.851	519.0 -> 474.0	65789	20.00	µg/L	-0.166
M7-PFUnDA	10.830	570.0 -> 525.0	48528	20.00	µg/L	-0.200
M2-PFDoDA	12.366	615.0 -> 570.0	38585	20.00	µg/L	-0.200
M2-PFTeDA	14.757	715.0 -> 670.0	15757	20.00	µg/L	-0.212
M8-FOSA	7.127	506.0 -> 78.0	39666	20.00	µg/L	-0.015
M3-PFBS	4.418	302.0 -> 99.0	24951	20.00	µg/L	-0.050
M3-PFHxS	6.198	402.0 -> 99.0	20099	20.00	µg/L	-0.037
M8-PFOS	7.621	507.0 -> 99.0	9530	20.00	µg/L	-0.052
M2-4:2FTS	5.272	329.0 -> 309.0	67042	20.00	µg/L	-0.051
M2-6:2FTS	6.968	429.0 -> 409.0	46675	20.00	µg/L	-0.049
M2-8:2FTS	9.212	529.0 -> 509.0	86772	20.00	µg/L	-0.185
M3-MeFOSAA	7.632	573.0 -> 419.0	17523	20.00	µg/L	-0.026
System Monitoring Compounds						
13C2-4:2FTS	5.272	329.0 -> 309.0	67005	23.75	µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 118.7%		
13C2-6:2FTS	6.968	429.0 -> 409.0	46675	23.92	µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 119.6%		
13C2-8:2FTS	9.212	529.0 -> 509.0	85405	23.22	µg/L	-0.185
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.1%		
13C2-PFDoDA	12.366	615.0 -> 570.0	38631	22.95	µg/L	-0.200
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.7%		
13C2-PFTeDA	14.757	715.0 -> 670.0	15715	21.63	µg/L	-0.212
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.1%		
13C3-PFBS	4.418	302.0 -> 99.0	24948	23.93	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 119.6%		
13C3-PFHxS	6.198	402.0 -> 99.0	20104	24.08	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 120.4%		
13C4-PFBA	2.941	217.0 -> 172.0	158498	23.85	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 119.2%		
13C4-PFHpA	6.205	367.0 -> 322.0	68668	24.27	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.4%		
13C5-PFHxA	5.351	318.0 -> 273.0	72355	24.40	µg/L	-0.040
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 122.0%		
13C5-PFPeA	4.287	268.0 -> 223.0	78729	24.00	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 120.0%		
13C6-PFDA	8.851	519.0 -> 474.0	65228	23.53	µg/L	-0.166
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 117.6%		

Perfluorinated Compounds by LC/MS/MS

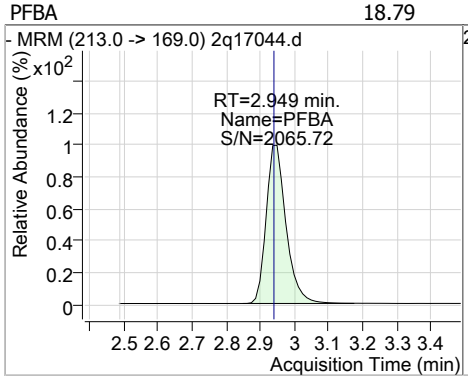
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.830	570.0 -> 525.0	48592	23.58	µg/L		-0.200
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 117.9%			
13C8-FOSA	7.127	506.0 -> 78.0	39672	24.67	µg/L		-0.015
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 123.3%			
13C8-PFOA	6.946	421.0 -> 376.0	32063	24.41	µg/L		-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 122.0%			
13C8-PFOS	7.621	507.0 -> 99.0	9523	22.96	µg/L		-0.052
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.8%			
13C9-PFNA	7.690	472.0 -> 427.0	22465	25.48	µg/L		-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 127.4%			
d3-MeFOSAA	7.632	573.0 -> 419.0	17521	22.56	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.8%			
M2-PFOA	6.948	415.0 -> 370.0	19563	19.99	ng/ml		-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.623	503.0 -> 80.0	11016	20.00	ng/ml		-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
Target Compounds							**QValue**
4:2FTS	5.274	327.0 -> 307.0	32685	19.31	µg/L		99
6:2FTS	6.970	427.0 -> 407.0	22005	19.29	µg/L		97
8:2FTS	9.202	527.0 -> 507.0	44460	19.75	µg/L		95
EtFOSAA	7.757	584.0 -> 419.0	5755	20.33	µg/L		94
FOSA	7.116	498.0 -> 78.0	18951	19.48	µg/L		99
MeFOSAA	7.633	570.0 -> 419.0	6143	19.01	µg/L		98
PFBA	2.949	213.0 -> 169.0	23636	18.79	µg/L		100
PFBS	4.422	299.0 -> 80.0	32438	18.95	µg/L		99
PFDA	8.855	513.0 -> 469.0	22725	18.53	µg/L		99
PFDoDA	12.359	613.0 -> 569.0	19149	19.46	µg/L		100
PFDS	10.650	599.0 -> 80.0	8064	19.41	µg/L		100
PFHpA	6.195	363.0 -> 319.0	49766	19.46	µg/L		99
PFHpS	6.917	449.0 -> 80.0	10941	19.35	µg/L		99
PFHxA	5.353	313.0 -> 269.0	22531	18.46	µg/L		98
PFHxS	6.189	399.0 -> 80.0	22937	19.26	µg/L	m	98
PFNA	7.692	463.0 -> 419.0	8226	18.59	µg/L		95
PFNS	8.646	549.0 -> 80.0	16312	18.58	µg/L		97
PFOA	6.948	413.0 -> 369.0	17131	20.05	µg/L		96
PFOS	7.624	499.0 -> 80.0	11970	20.06	µg/L	m	98
PFPeA	4.291	263.0 -> 219.0	72542	19.73	µg/L		100
PFPeS	5.396	349.0 -> 80.0	20778	19.11	µg/L		100
PFTeDA	14.761	713.0 -> 669.0	9445	20.15	µg/L		99
PFTrDA	13.643	663.0 -> 619.0	14278	20.76	µg/L		99
PFUnDA	10.834	563.0 -> 519.0	22519	18.86	µg/L		98

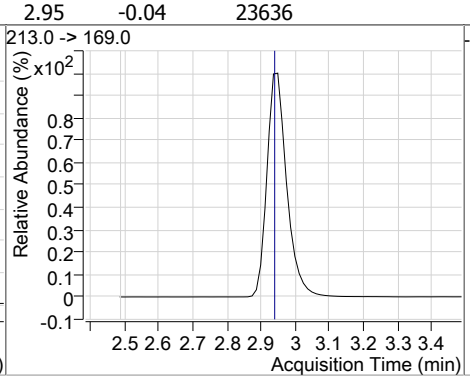
 # = Qualifier out of range, m = manually integrated, + = Area summed

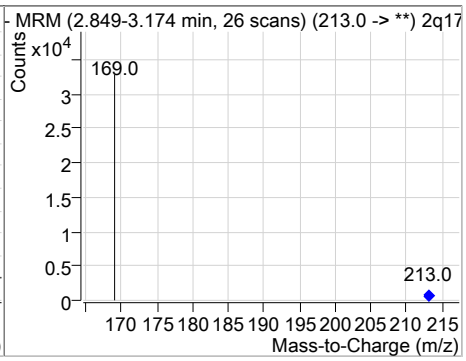
Perfluorinated Compounds by LC/MS/MS



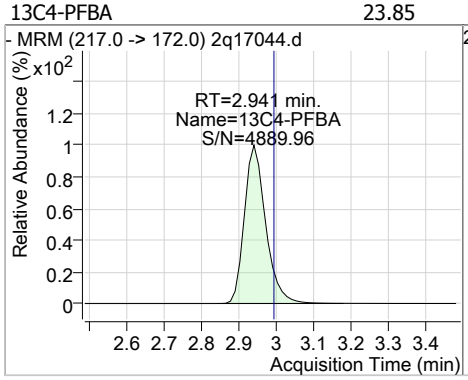
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	18.79	2.95	-0.04	23636				

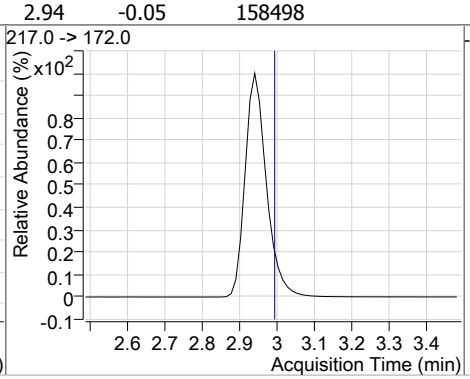


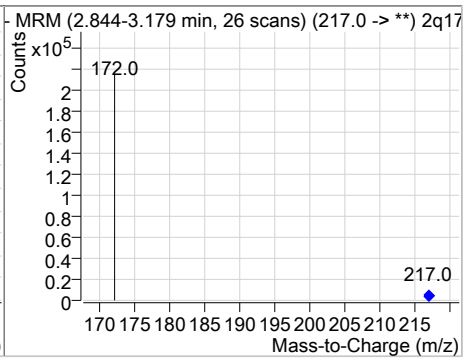




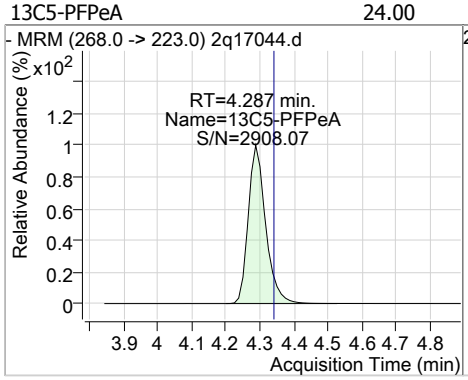
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	23.85	2.94	-0.05	158498				

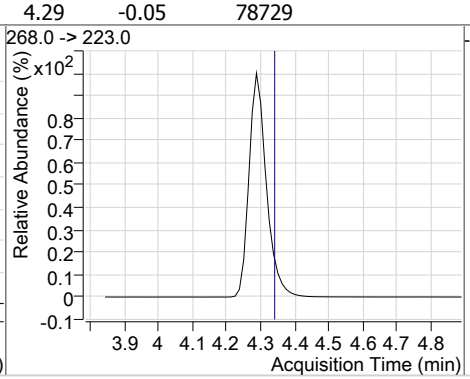


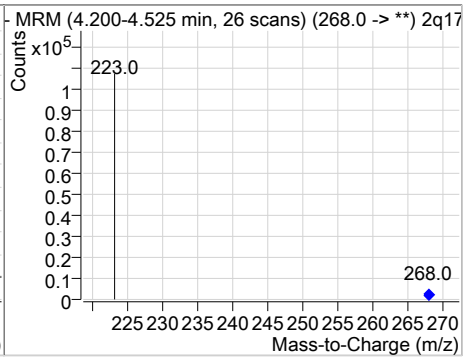




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	24.00	4.29	-0.05	78729				

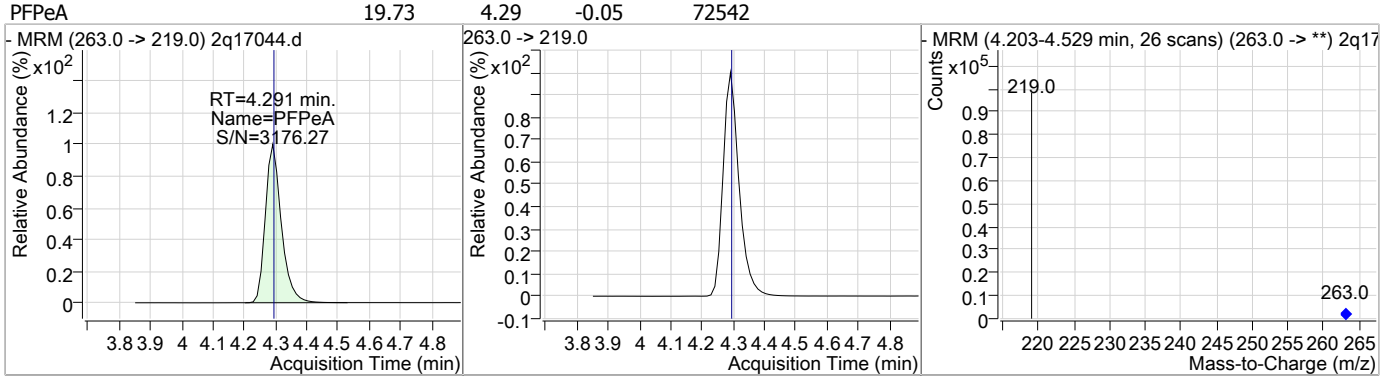




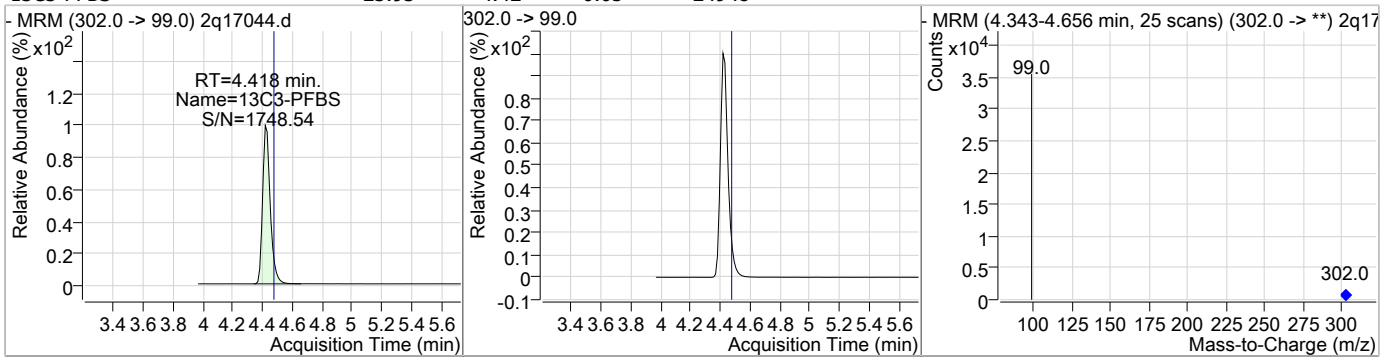


Perfluorinated Compounds by LC/MS/MS

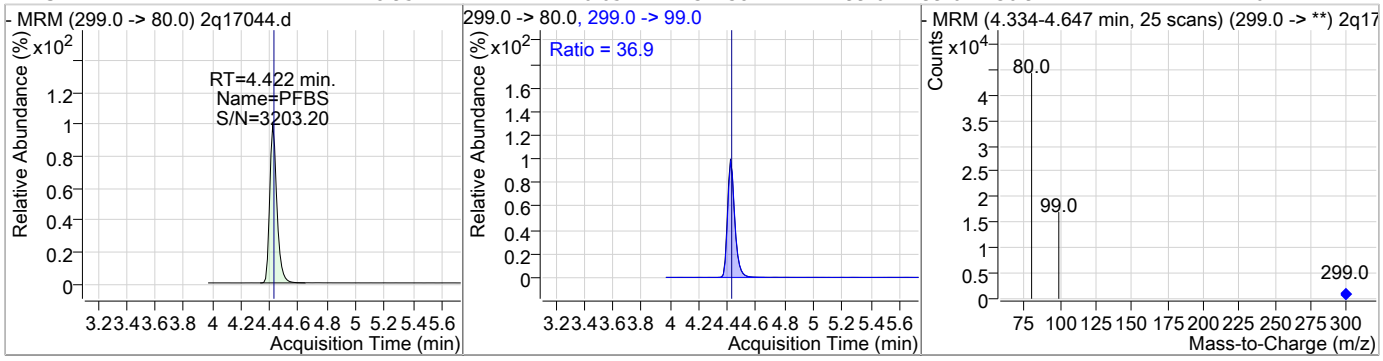
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.73	4.29	-0.05	72542				



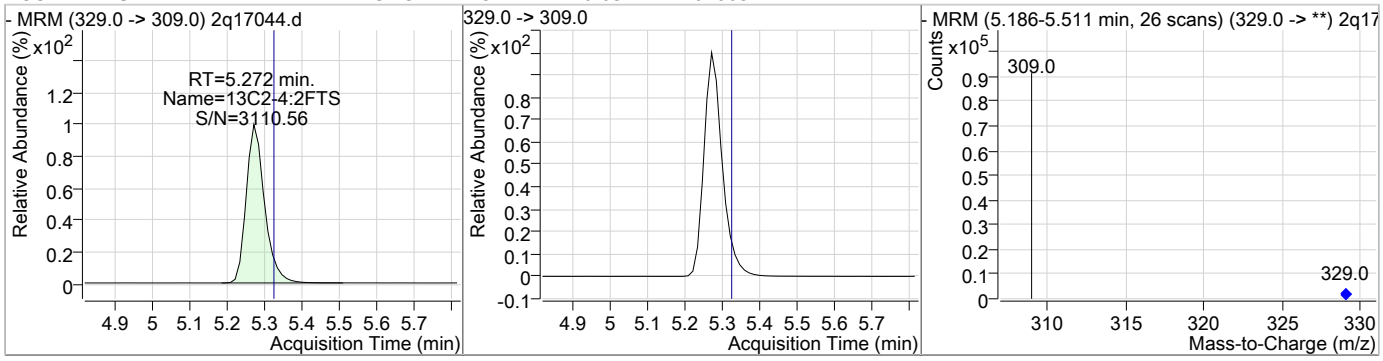
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	23.93	4.42	-0.05	24948				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	18.95	4.42	-0.05	32438	299.0 -> 99.0	36.9	7.4	67.4

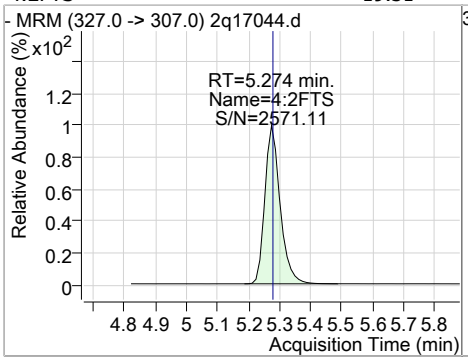


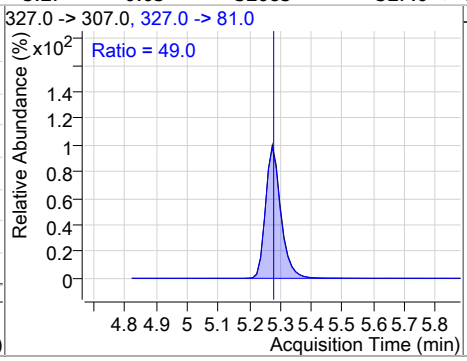
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	23.75	5.27	-0.05	67005				

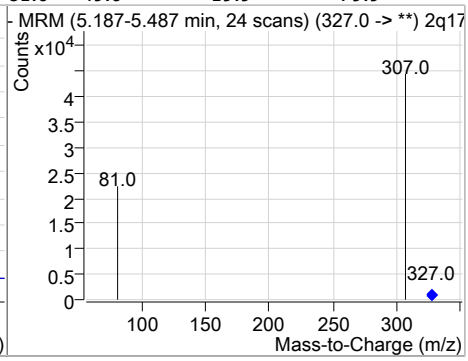


Perfluorinated Compounds by LC/MS/MS

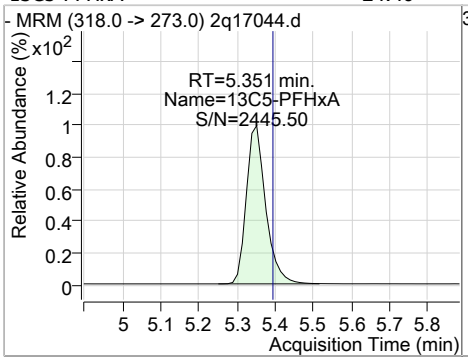
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.31	5.27	-0.05	32685	327.0 -> 81.0	49.0	19.9	79.9

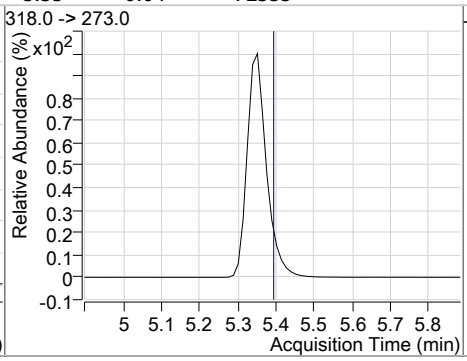


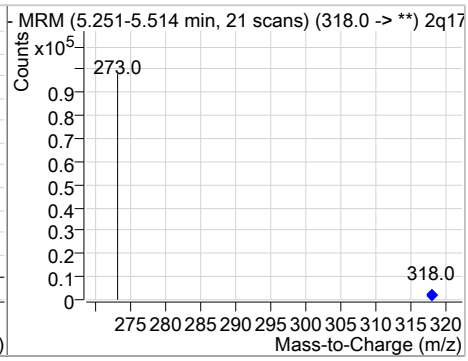




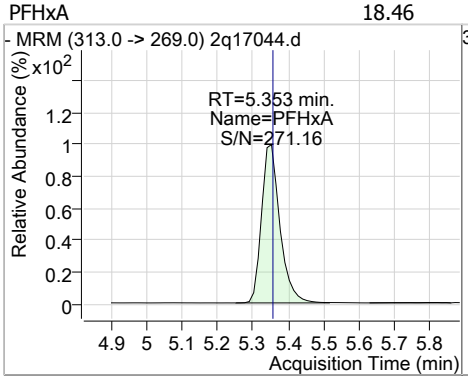
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	24.40	5.35	-0.04	72355				

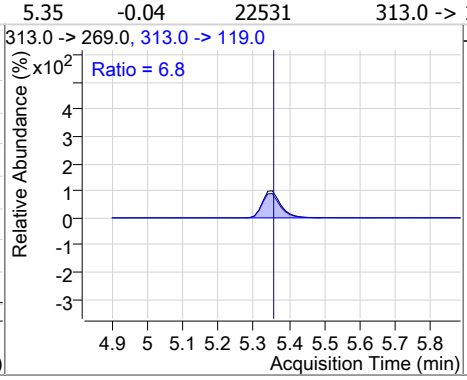


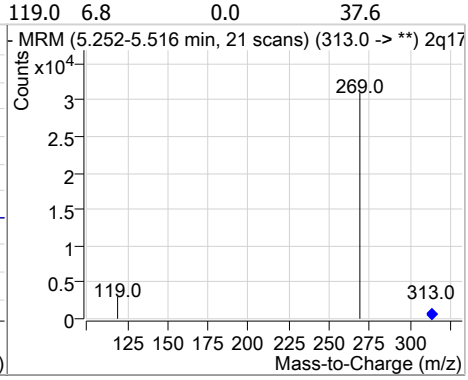




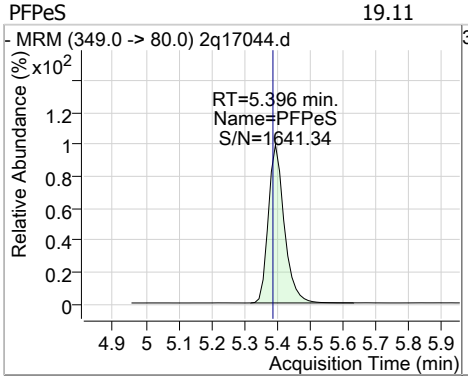
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	18.46	5.35	-0.04	22531	313.0 -> 119.0	6.8	0.0	37.6

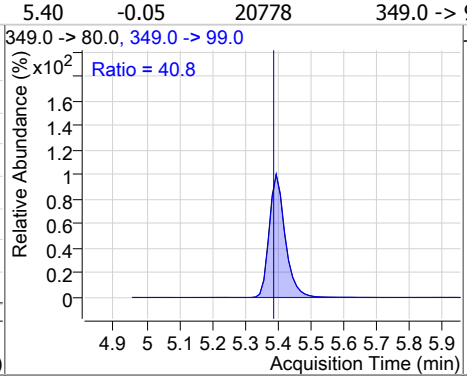


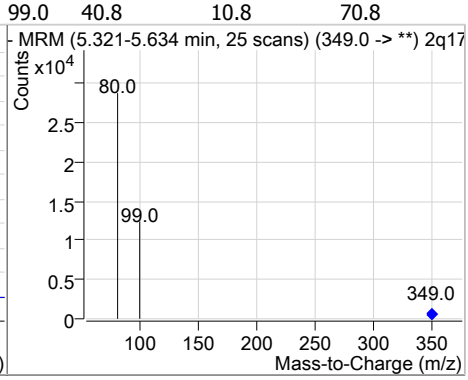




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.11	5.40	-0.05	20778	349.0 -> 99.0	40.8	10.8	70.8

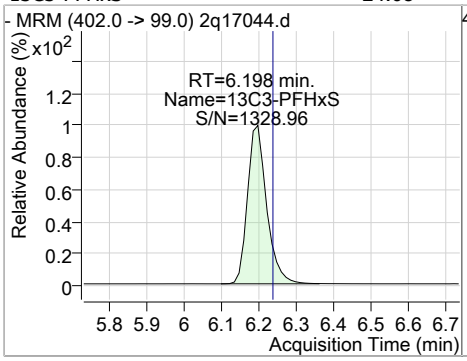


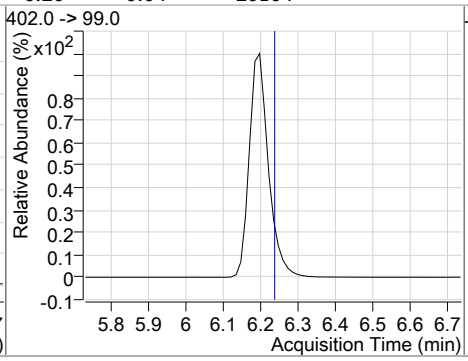


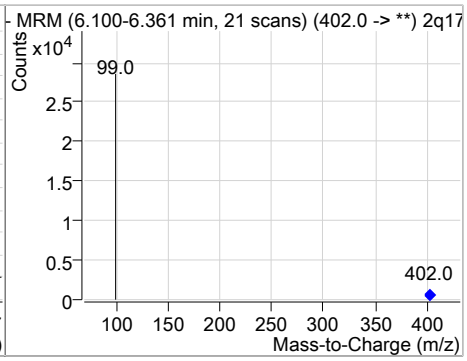


Perfluorinated Compounds by LC/MS/MS

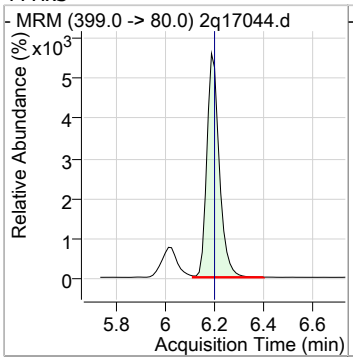
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	24.08	6.20	-0.04	20104				

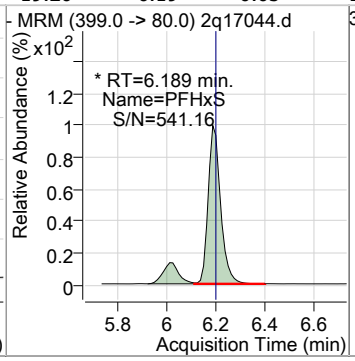


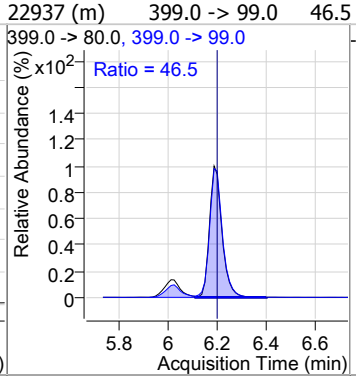


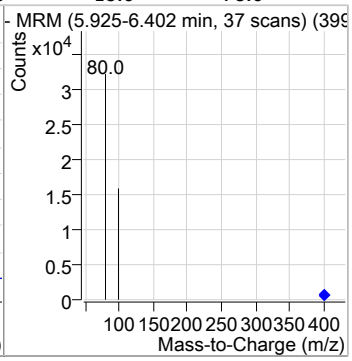


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.26	6.19	-0.05	22937 (m)	399.0 -> 99.0	46.5	18.0	78.0

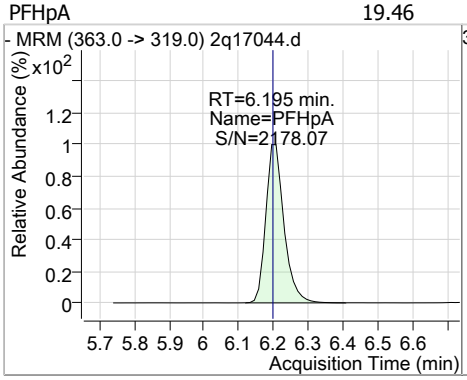


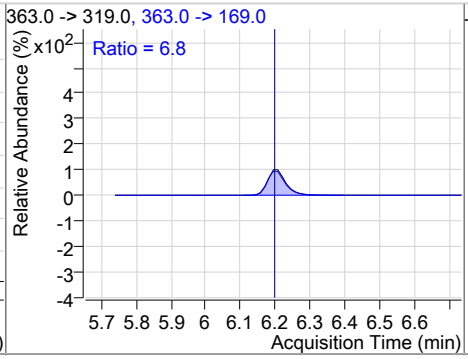


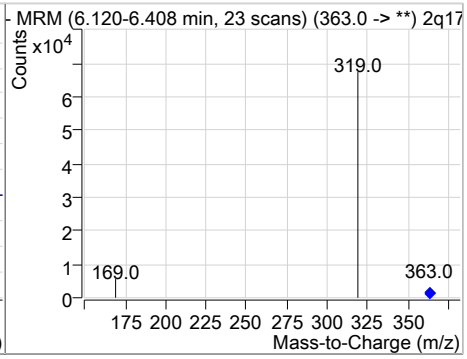




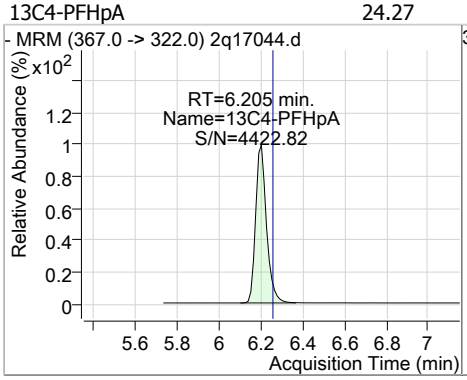
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.46	6.20	-0.05	49766	363.0 -> 169.0	6.8	0.0	37.2

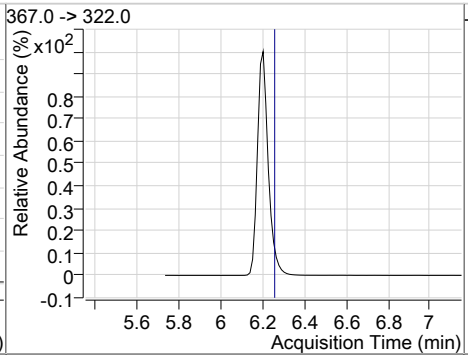


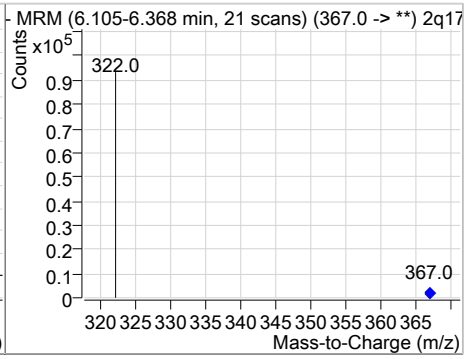




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	24.27	6.20	-0.05	68668				

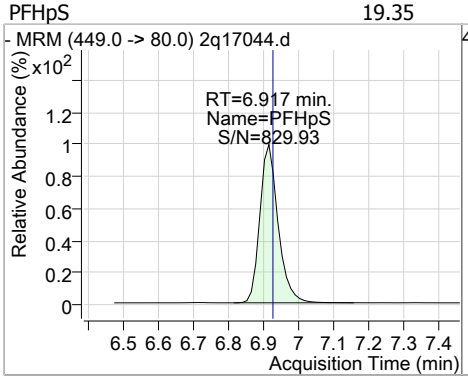


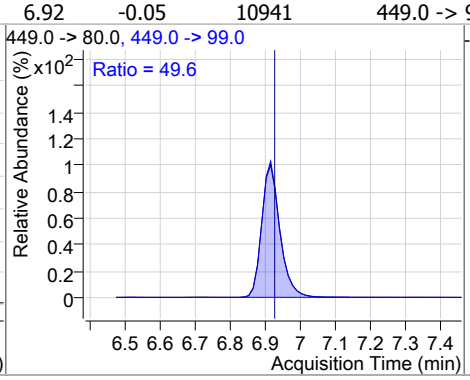


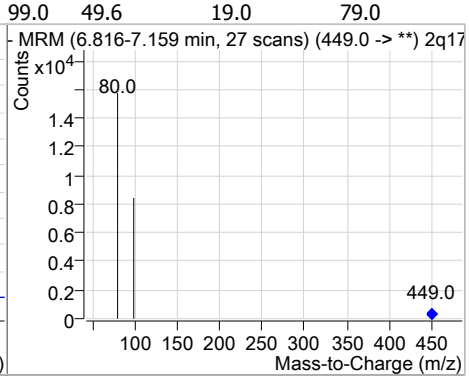


Perfluorinated Compounds by LC/MS/MS

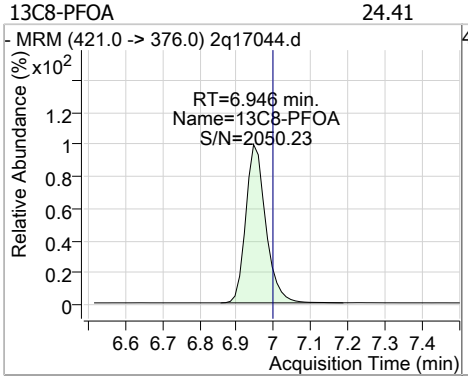
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	19.35	6.92	-0.05	10941	449.0 -> 99.0	49.6	19.0	79.0

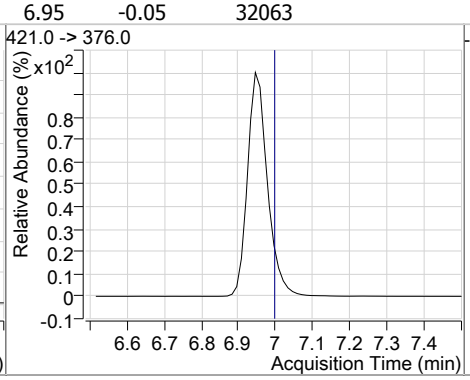


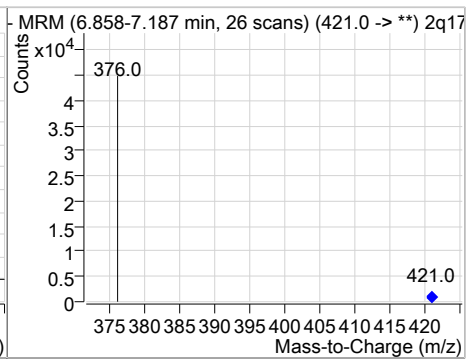




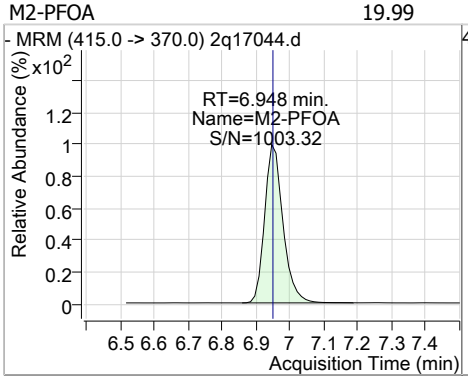
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	24.41	6.95	-0.05	32063				

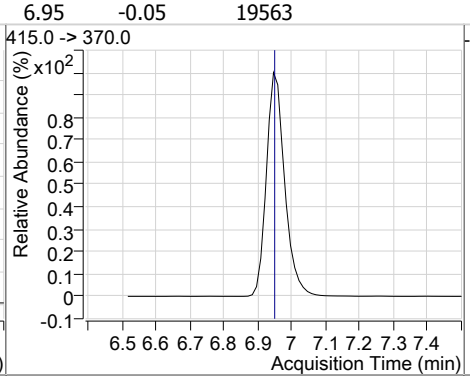


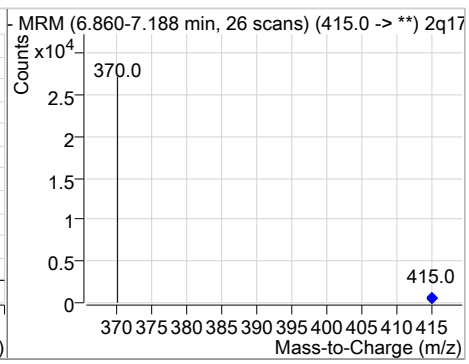




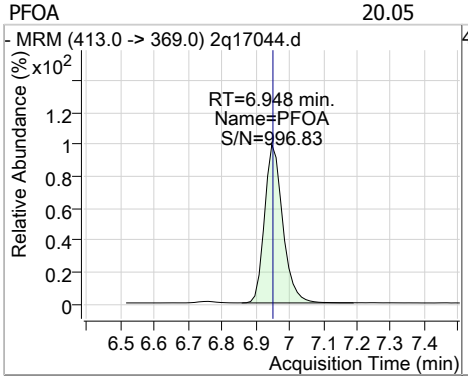
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	19.99	6.95	-0.05	19563				

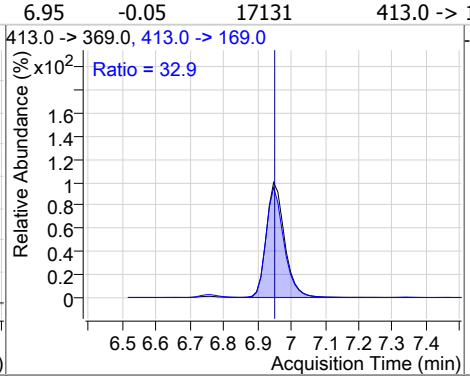


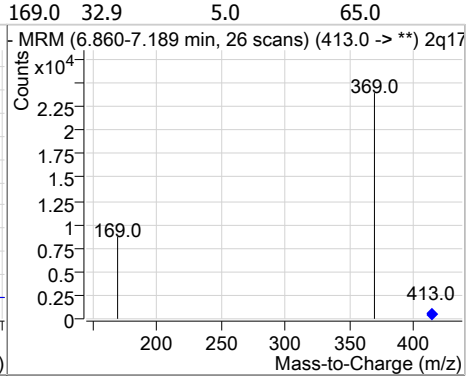




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	20.05	6.95	-0.05	17131	413.0 -> 169.0	32.9	5.0	65.0

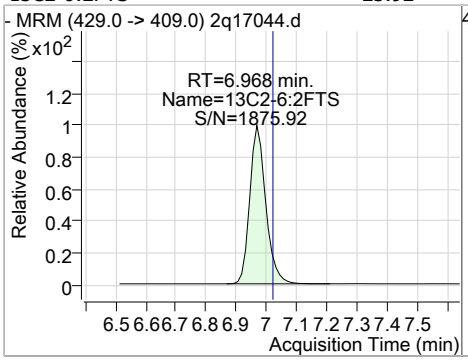


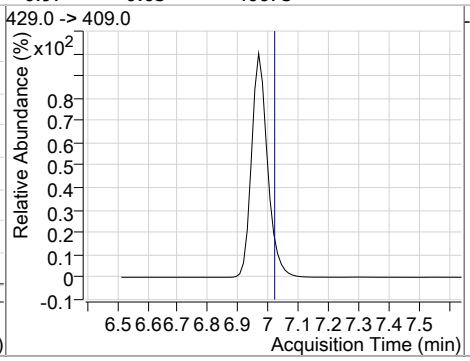


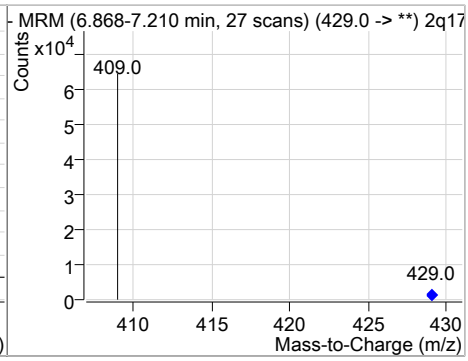


Perfluorinated Compounds by LC/MS/MS

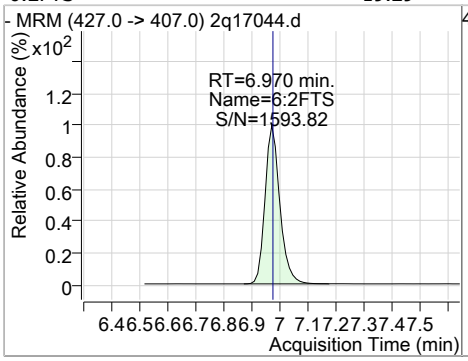
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	23.92	6.97	-0.05	46675				

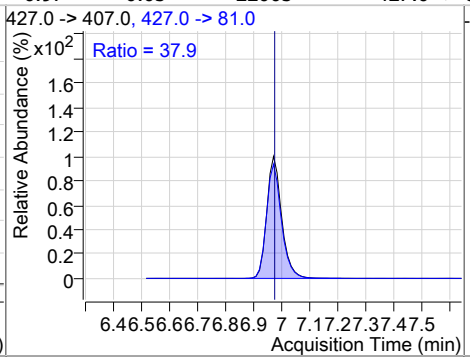


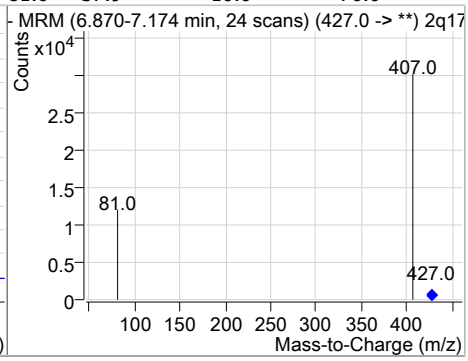




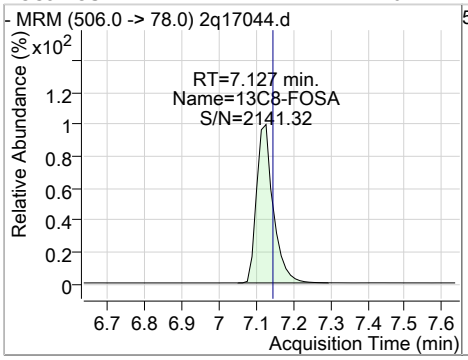
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.29	6.97	-0.05	22005	427.0 -> 81.0	37.9	10.0	70.0

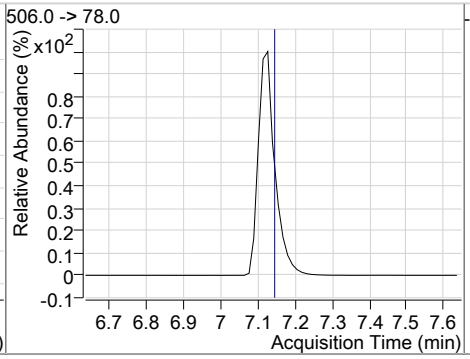


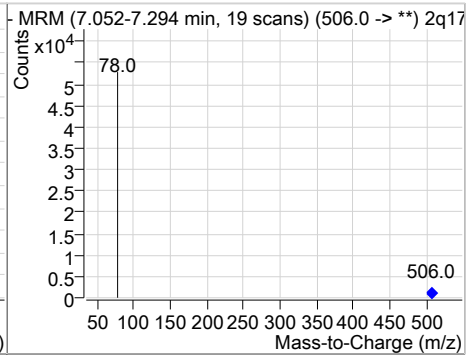




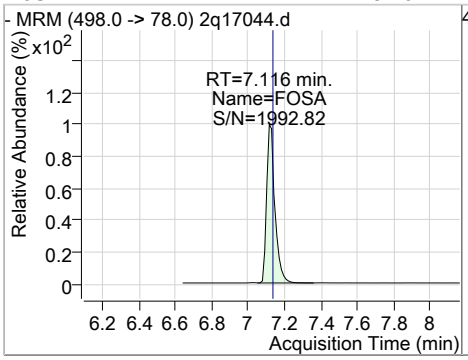
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	24.67	7.13	-0.02	39672				

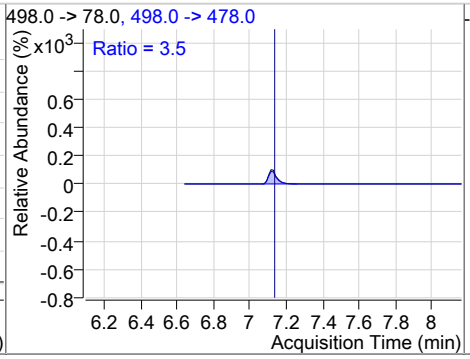


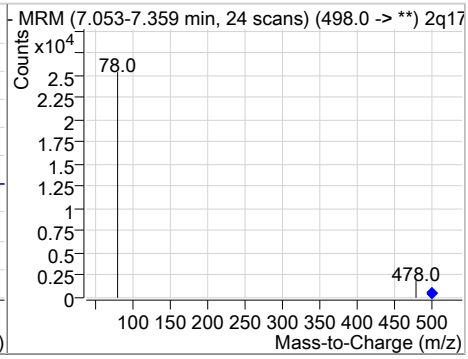




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.48	7.12	-0.03	18951	498.0 -> 478.0	3.5	0.0	34.0

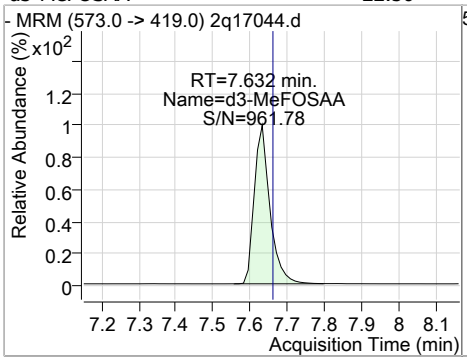


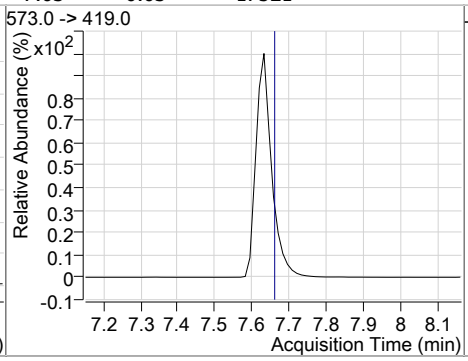


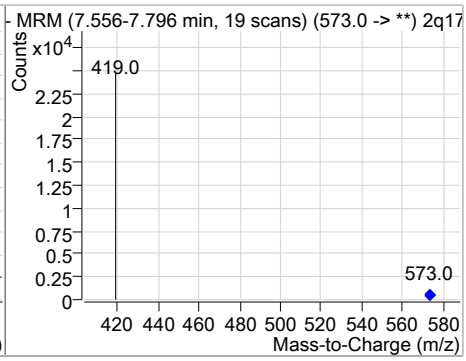


Perfluorinated Compounds by LC/MS/MS

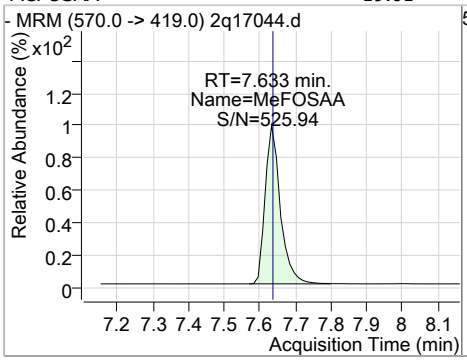
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	22.56	7.63	-0.03	17521				

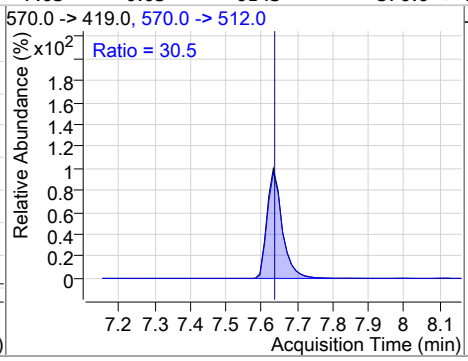


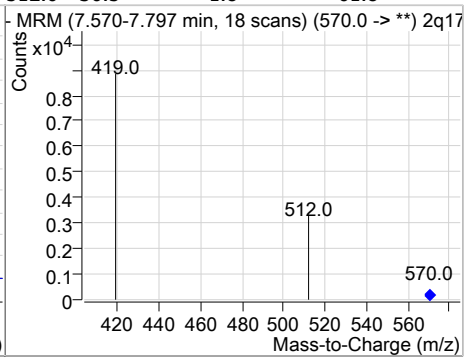




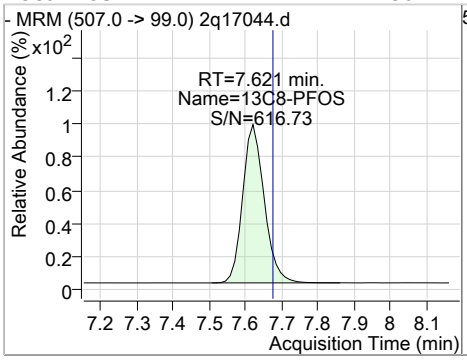
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.01	7.63	-0.03	6143	570.0 -> 512.0	30.5	1.8	61.8

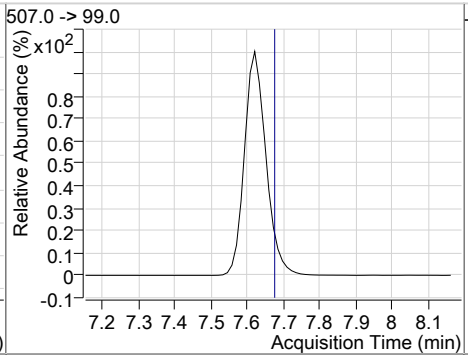


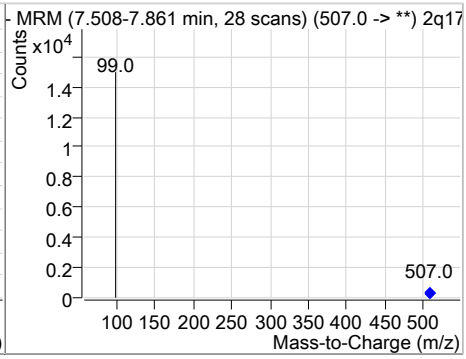




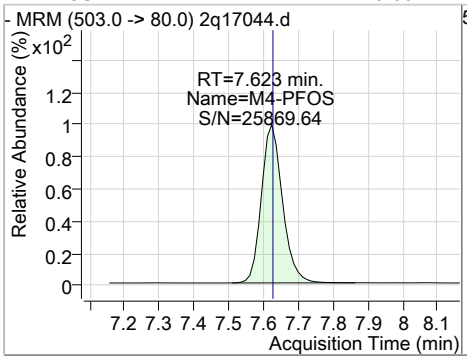
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	22.96	7.62	-0.05	9523				

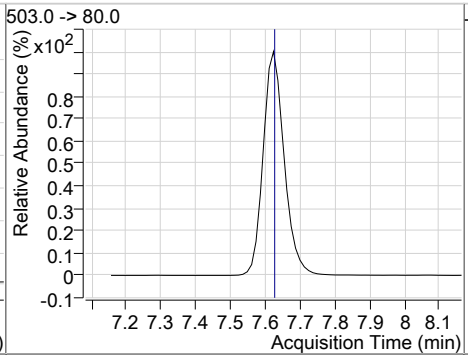


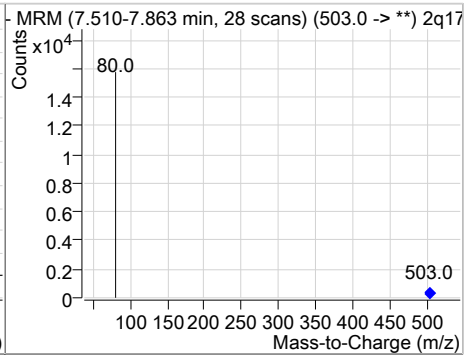




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.00	7.62	-0.05	11016				

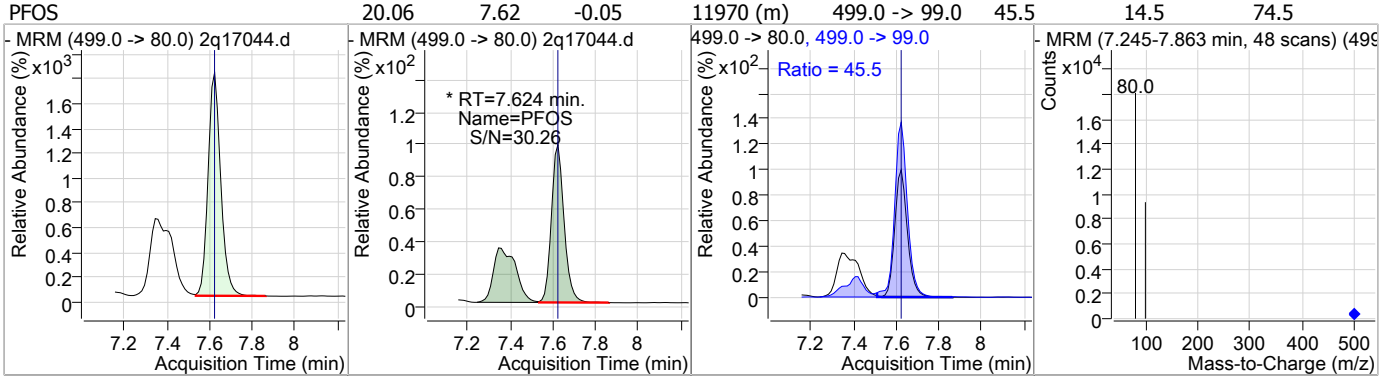




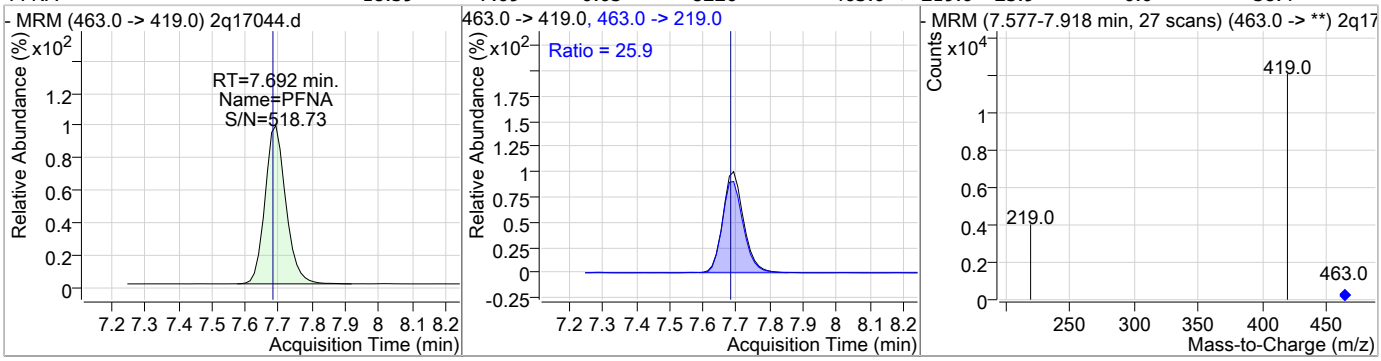


Perfluorinated Compounds by LC/MS/MS

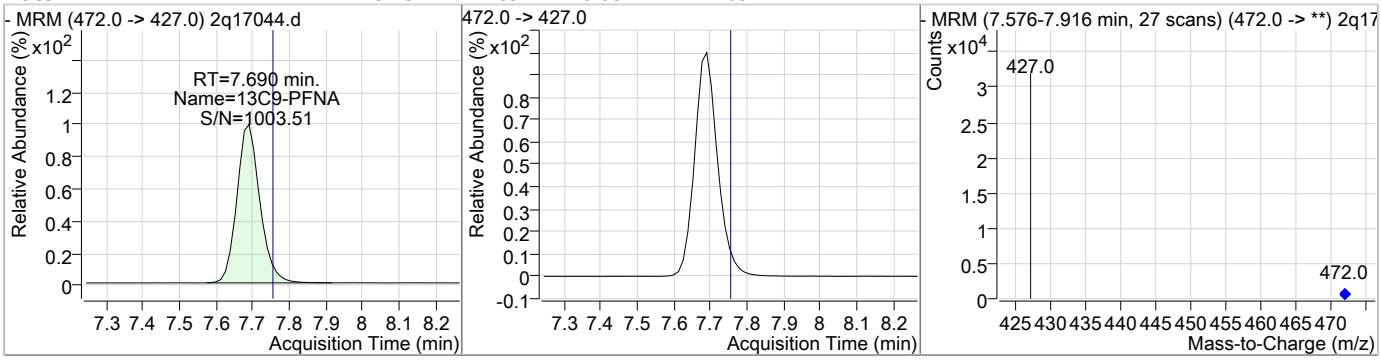
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	20.06	7.62	-0.05	11970 (m)	499.0 -> 99.0	45.5	14.5	74.5



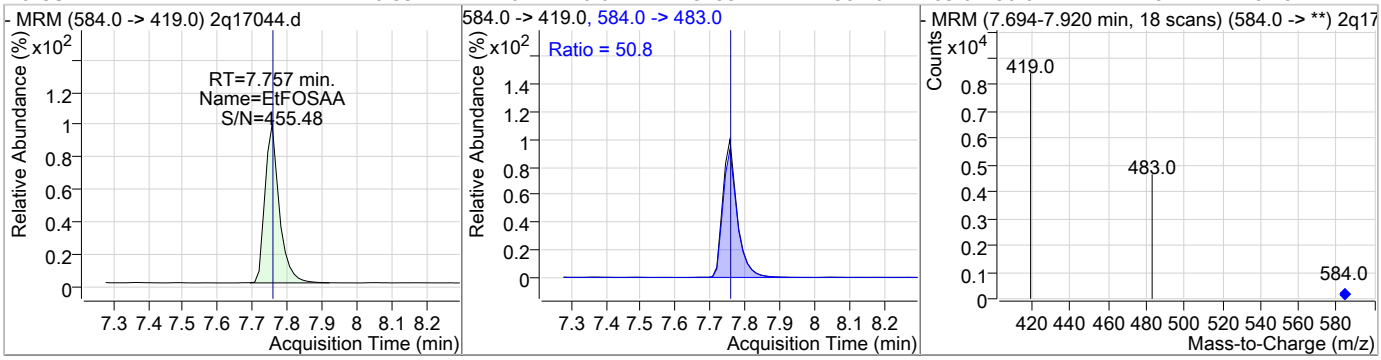
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	18.59	7.69	-0.05	8226	463.0 -> 219.0	25.9	0.0	58.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	25.48	7.69	-0.06	22465				

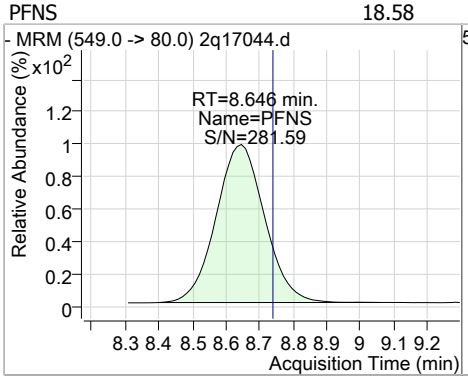


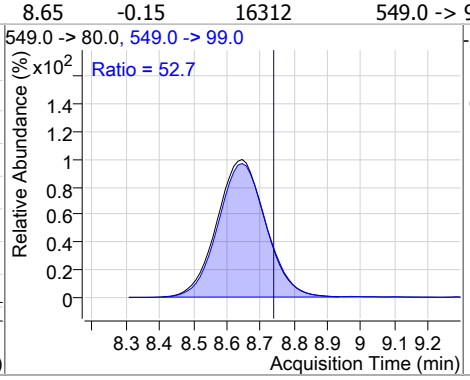
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.33	7.76	-0.02	5755	584.0 -> 483.0	50.8	24.8	84.8

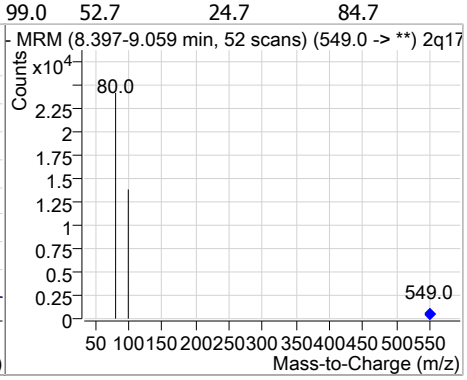


Perfluorinated Compounds by LC/MS/MS

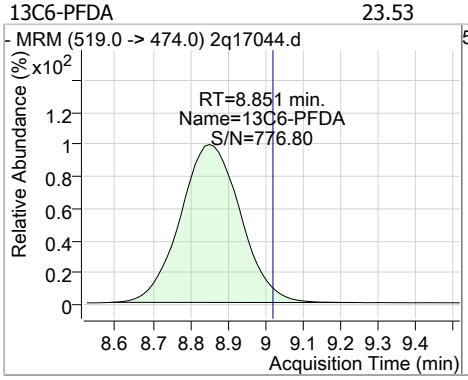
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	18.58	8.65	-0.15	16312	549.0 -> 99.0	52.7	24.7	84.7

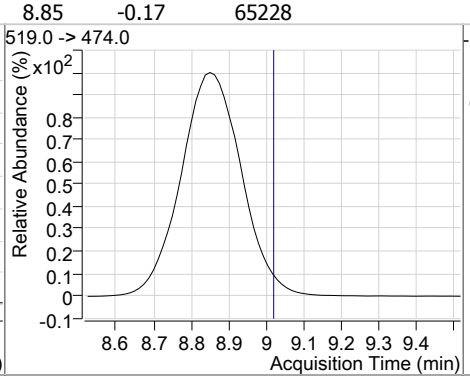


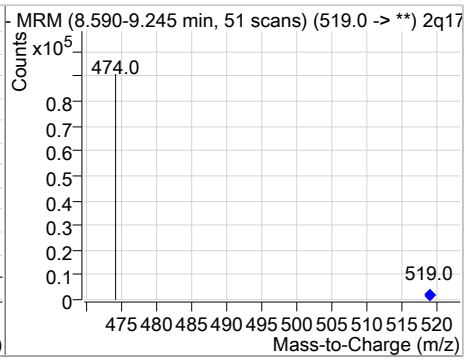




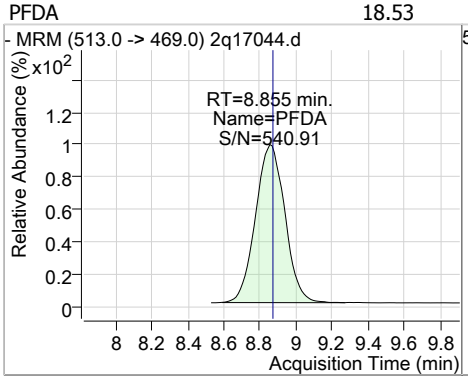
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	23.53	8.85	-0.17	65228				

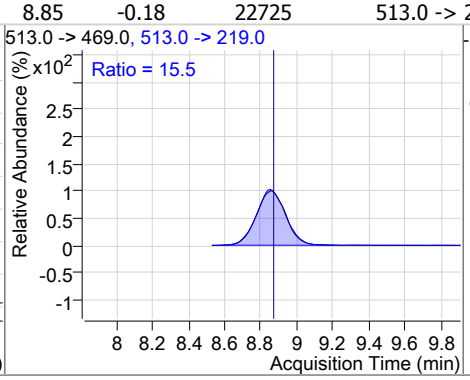


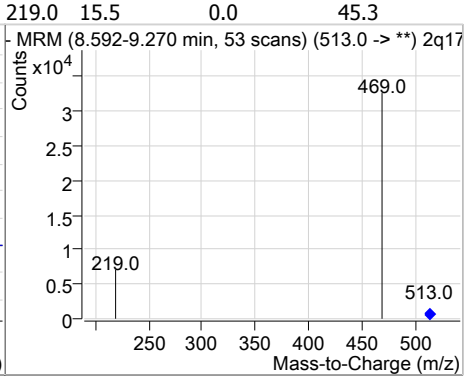




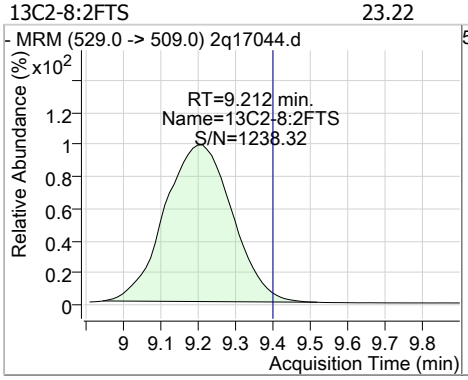
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	18.53	8.85	-0.18	22725	513.0 -> 219.0	15.5	0.0	45.3

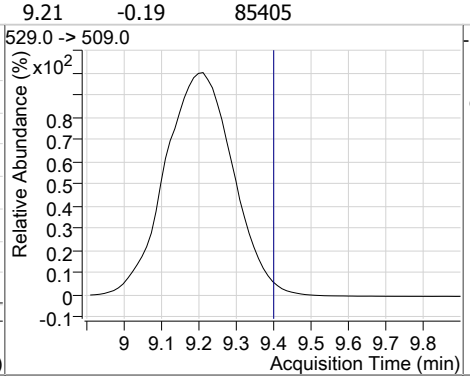


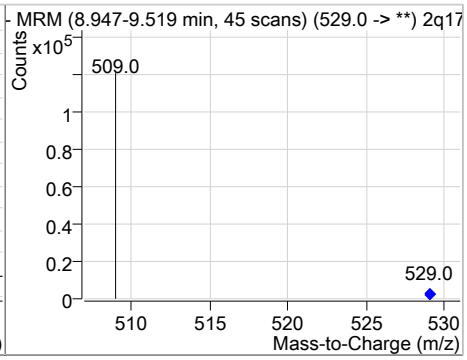




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	23.22	9.21	-0.19	85405				

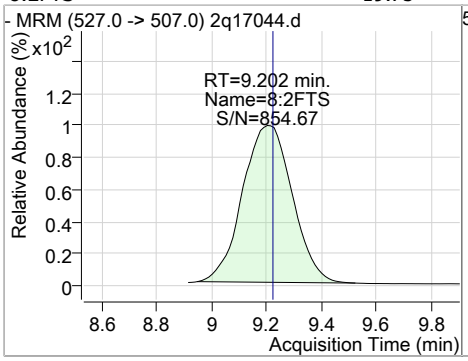


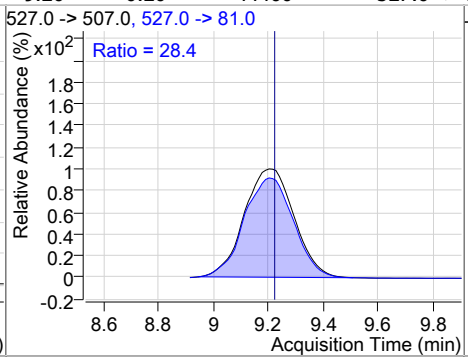


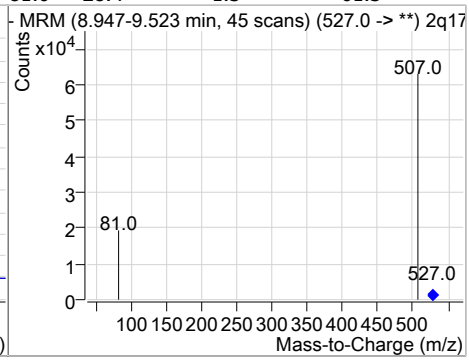


Perfluorinated Compounds by LC/MS/MS

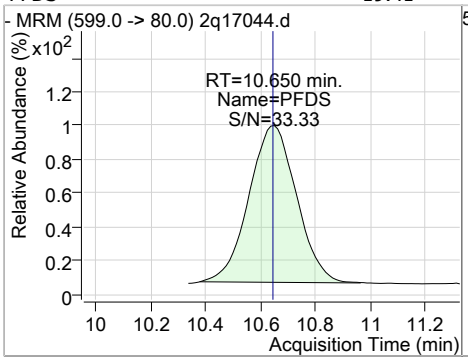
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.75	9.20	-0.20	44460	527.0 -> 81.0	28.4	1.3	61.3

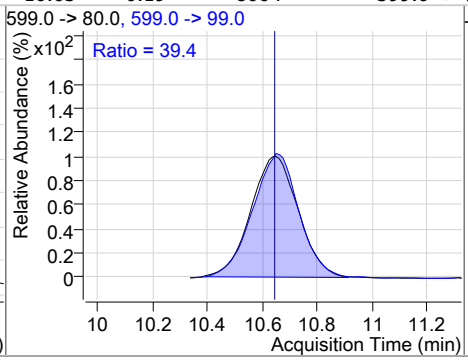


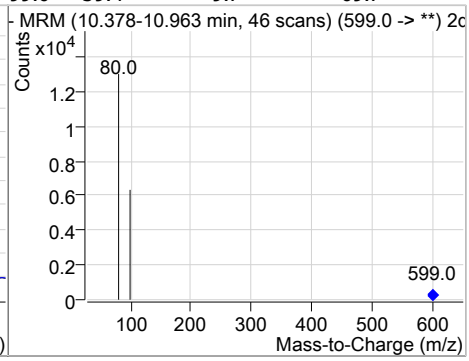




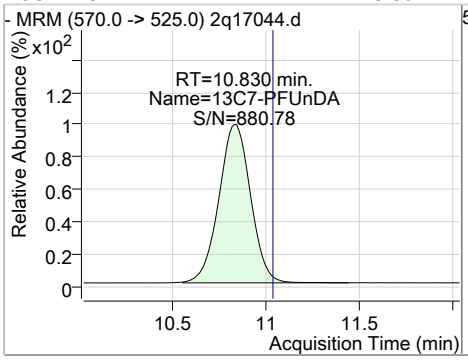
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.41	10.65	-0.19	8064	599.0 -> 99.0	39.4	9.7	69.7

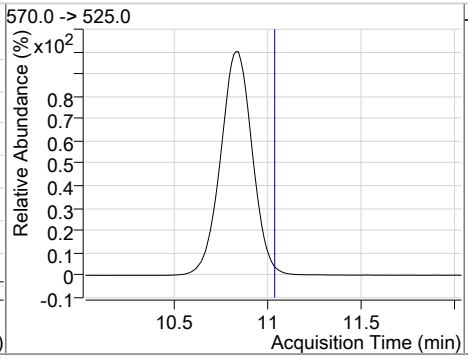


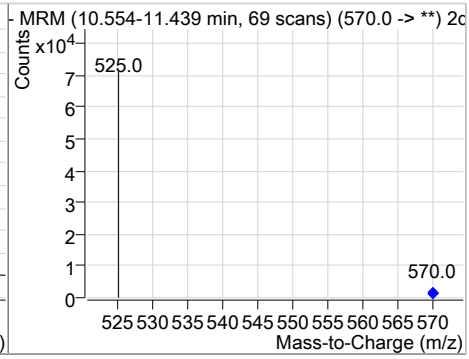




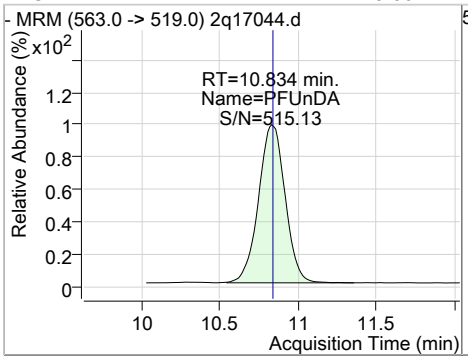
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	23.58	10.83	-0.20	48592				

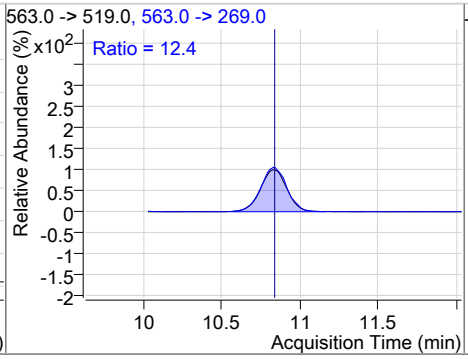


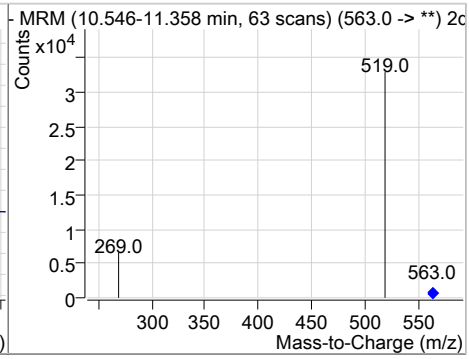




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	18.86	10.83	-0.20	22519	563.0 -> 269.0	12.4	0.0	41.8

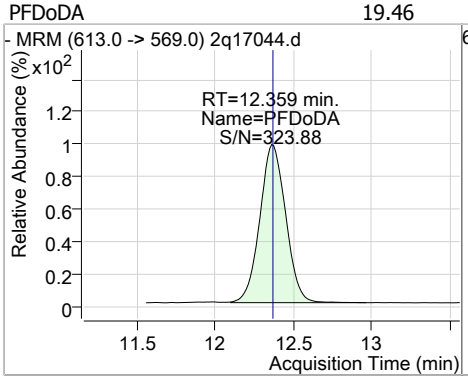


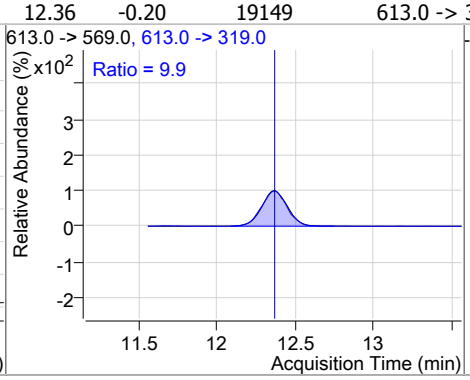


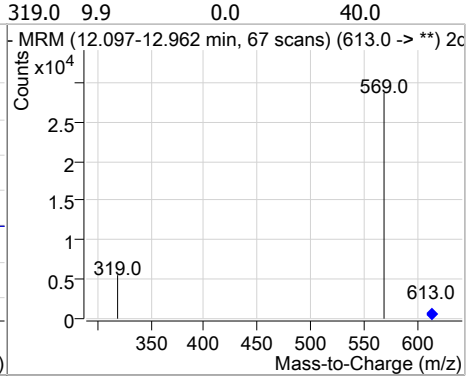


Perfluorinated Compounds by LC/MS/MS

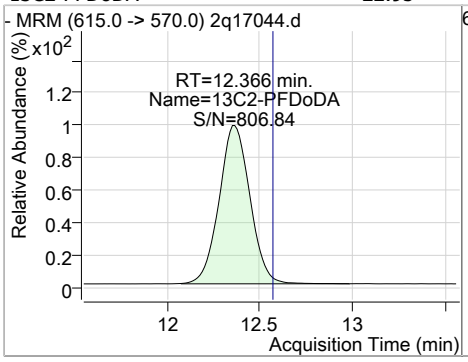
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.46	12.36	-0.20	19149	613.0 -> 319.0	9.9	0.0	40.0

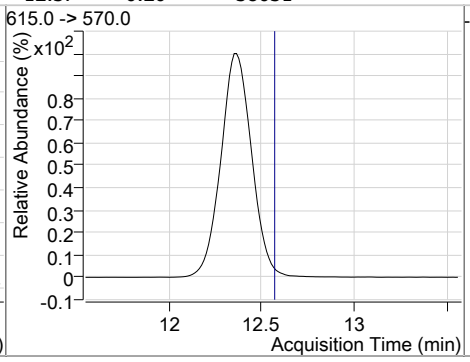


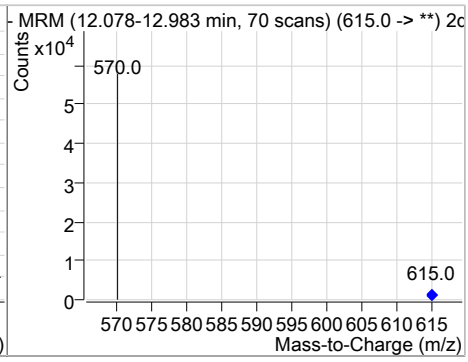




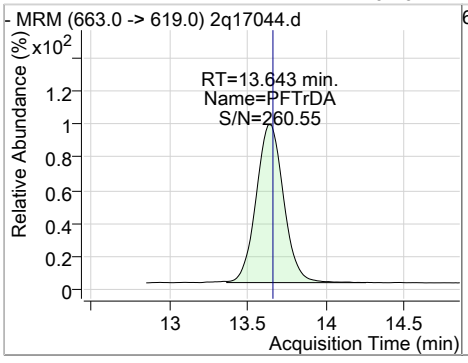
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	22.95	12.37	-0.20	38631				

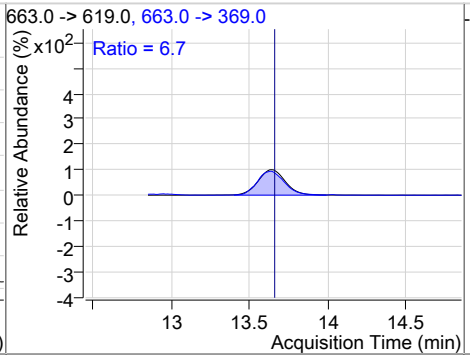


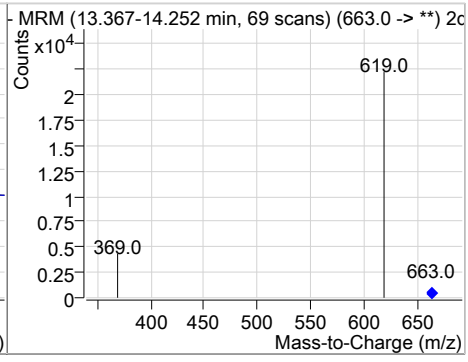




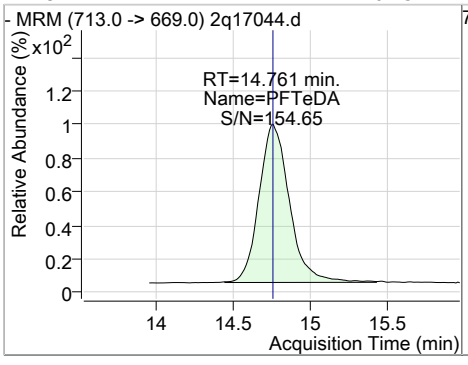
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.76	13.64	-0.21	14278	663.0 -> 369.0	6.7	0.0	37.1

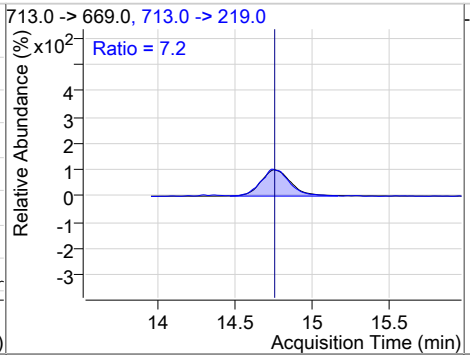


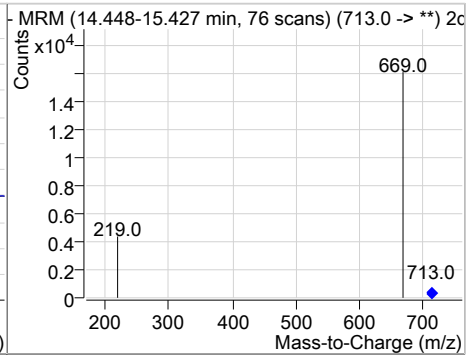




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.15	14.76	-0.20	9445	713.0 -> 219.0	7.2	0.0	37.4

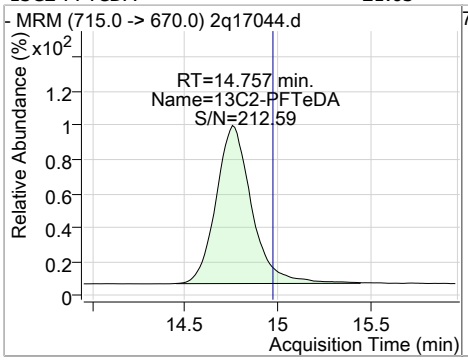


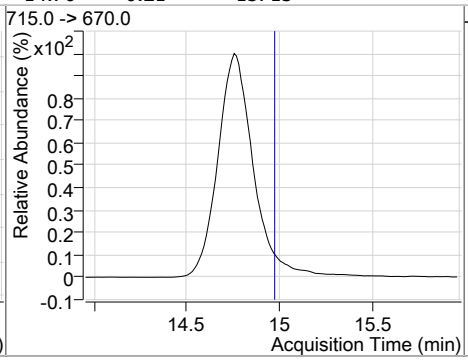


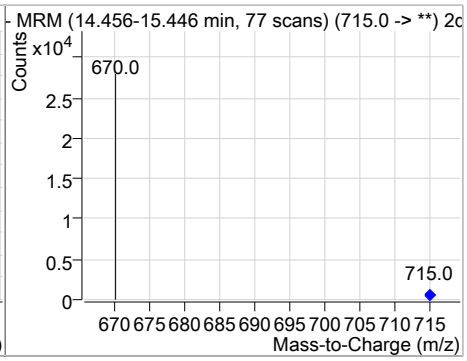


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.63	14.76	-0.21	15715				







Manual Integration Approval Summary

Sample Number:	S2Q295-CC295	**Method:**	EPA 537M BY ID
Lab FileID:	2Q17044.D	**Analyst approved:**	07/13/18 12:48 Nancy Saunders
Injection Time:	07/13/18 02:54	**Supervisor approved:**	07/16/18 14:50 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.19	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.62	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
07/16/18 17:22

Perfluorinated Compounds by LC/MS/MS

Data File : 2q17068.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/13/2018 12:09:05 PM
Sample Name : ic296-1.0
Vial : Vial 3
DA Method File : PFC_ID_071318_S2Q296.quantmethod.xml
Batch Name : s2q296.batch.bin
Sample Information : op70790,S2Q296,1.99,,,1.0,1,soil

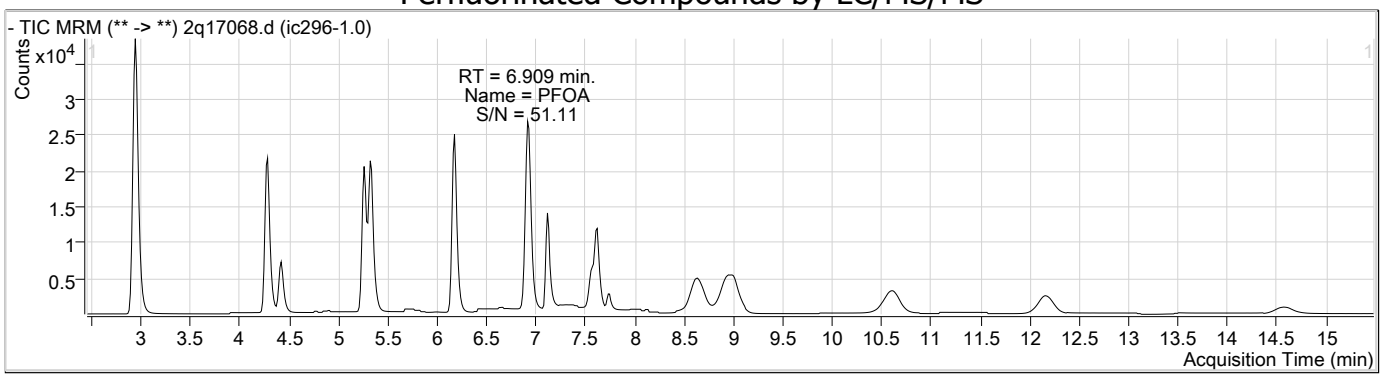
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.921	415.0 -> 370.0	21169	20.00	µg/L	0.000
13C4-PFOS	7.573	503.0 -> 80.0	10656	20.00	µg/L	0.000
M4-PFBA	2.941	217.0 -> 172.0	149023	20.00	µg/L	0.000
M5-PFPeA	4.287	268.0 -> 223.0	73731	20.00	µg/L	0.000
M5-PFHxA	5.328	318.0 -> 273.0	66627	20.00	µg/L	-0.013
M4-PFHpA	6.179	367.0 -> 322.0	63014	20.00	µg/L	0.000
M8-PFOA	6.920	421.0 -> 376.0	33039	20.00	µg/L	0.000
M9-PFNA	7.627	472.0 -> 427.0	19519	20.00	µg/L	0.000
M6-PFDA	8.641	519.0 -> 474.0	44605	20.00	µg/L	0.013
M7-PFUnDA	10.616	570.0 -> 525.0	35485	20.00	µg/L	0.013
M2-PFDoDA	12.152	615.0 -> 570.0	27836	20.00	µg/L	-0.012
M2-PFTeDA	14.569	715.0 -> 670.0	12089	20.00	µg/L	0.000
M8-FOSA	7.117	506.0 -> 78.0	37273	20.00	µg/L	0.000
M3-PFBS	4.418	302.0 -> 99.0	22036	20.00	µg/L	0.000
M3-PFHxS	6.173	402.0 -> 99.0	18831	20.00	µg/L	0.000
M8-PFOS	7.571	507.0 -> 99.0	9430	20.00	µg/L	0.000
M2-4:2FTS	5.260	329.0 -> 309.0	65564	20.00	µg/L	0.000
M2-6:2FTS	6.930	429.0 -> 409.0	49138	20.00	µg/L	0.000
M2-8:2FTS	8.972	529.0 -> 509.0	62178	20.00	µg/L	0.000
M3-MeFOSAA	7.620	573.0 -> 419.0	16449	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.260	329.0 -> 309.0	65556	18.87	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.4%		
13C2-6:2FTS	6.930	429.0 -> 409.0	49127	18.64	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.2%		
13C2-8:2FTS	8.972	529.0 -> 509.0	61752	19.39	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.0%		
13C2-PFDoDA	12.152	615.0 -> 570.0	27823	19.66	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.3%		
13C2-PFTeDA	14.569	715.0 -> 670.0	11972	19.58	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%		
13C3-PFBS	4.418	302.0 -> 99.0	22038	19.97	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%		
13C3-PFHxS	6.173	402.0 -> 99.0	18828	19.71	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.5%		
13C4-PFBA	2.941	217.0 -> 172.0	148923	19.86	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.3%		
13C4-PFHpA	6.179	367.0 -> 322.0	63012	19.83	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.2%		
13C5-PFHxA	5.328	318.0 -> 273.0	66632	19.92	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.6%		
13C5-PFPeA	4.287	268.0 -> 223.0	73719	19.91	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.6%		
13C6-PFDA	8.641	519.0 -> 474.0	44539	20.07	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.3%		

Perfluorinated Compounds by LC/MS/MS

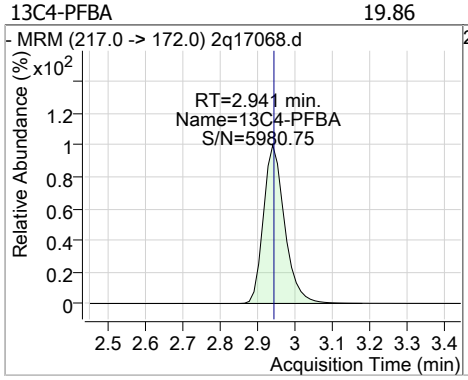
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.616	570.0 -> 525.0	35591	19.87	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.4%			
13C8-FOSA	7.117	506.0 -> 78.0	37268	20.80	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.0%			
13C8-PFOA	6.920	421.0 -> 376.0	33030	20.00	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
13C8-PFOS	7.571	507.0 -> 99.0	9429	20.13	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%			
13C9-PFNA	7.627	472.0 -> 427.0	19542	19.22	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.1%			
d3-MeFOSAA	7.620	573.0 -> 419.0	16502	20.33	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.7%			
M2-PFOA	6.921	415.0 -> 370.0	21155	19.99	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%			
M4-PFOS	7.573	503.0 -> 80.0	10655	20.00	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
Target Compounds							**QValue**
4:2FTS	5.263	327.0 -> 307.0	1872	1.05	µg/L		88
6:2FTS	6.931	427.0 -> 407.0	1258	0.97	µg/L		98
8:2FTS	8.952	527.0 -> 507.0	1851	1.06	µg/L		99
EtFOSAA	7.744	584.0 -> 419.0	327	1.29	µg/L		78
FOSA	7.119	498.0 -> 78.0	967	1.07	µg/L		94
MeFOSAA	7.622	570.0 -> 419.0	287	0.96	µg/L		98
PFBA	2.949	213.0 -> 169.0	1220	1.04	µg/L		100
PFBS	4.422	299.0 -> 80.0	1547	1.08	µg/L		99
PFDA	8.644	513.0 -> 469.0	832	1.05	µg/L		95
PFDoDA	12.146	613.0 -> 569.0	829	1.22	µg/L		100
PFDS	10.412	599.0 -> 80.0	362	1.08	µg/L		100
PFHpA	6.182	363.0 -> 319.0	2504	1.11	µg/L		98
PFHpS	6.878	449.0 -> 80.0	586	1.04	µg/L		91
PFHxA	5.330	313.0 -> 269.0	1198	1.11	µg/L		96
PFHxS	6.176	399.0 -> 80.0	1198	1.10	µg/L	m	99
PFNA	7.629	463.0 -> 419.0	400	1.09	µg/L		99
PFNS	8.458	549.0 -> 80.0	661	1.08	µg/L		90
PFOA	6.909	413.0 -> 369.0	942	1.11	µg/L		98
PFOS	7.574	499.0 -> 80.0	598	1.02	µg/L	m	94
PFPeA	4.291	263.0 -> 219.0	4099	1.25	µg/L		100
PFPeS	5.383	349.0 -> 80.0	945	0.99	µg/L		93
PFTeDA	14.538	713.0 -> 669.0	407	1.11	µg/L		93
PFTrDA	13.454	663.0 -> 619.0	590	1.15	µg/L		99
PFUnDA	10.608	563.0 -> 519.0	929	1.11	µg/L		98

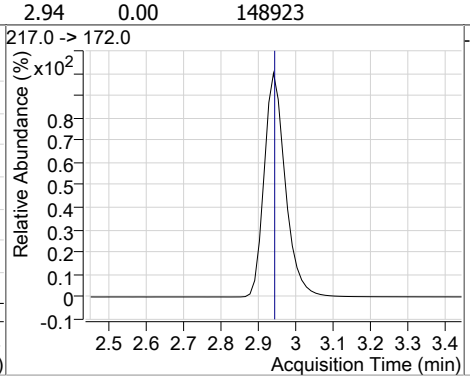
 # = Qualifier out of range, m = manually integrated, + = Area summed

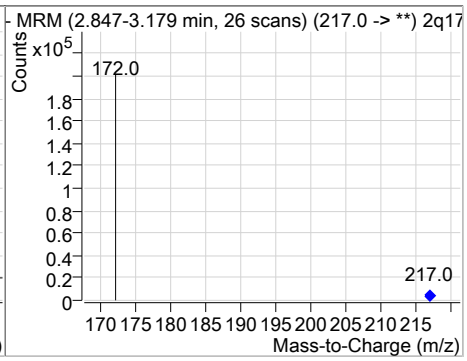
Perfluorinated Compounds by LC/MS/MS



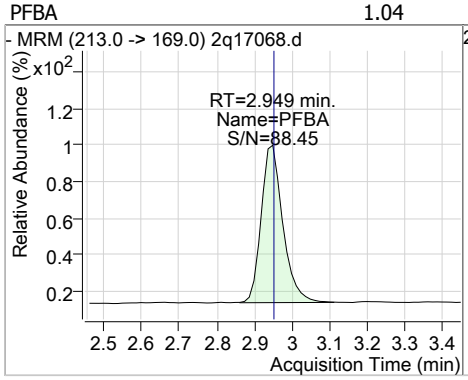
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.86	2.94	0.00	148923				

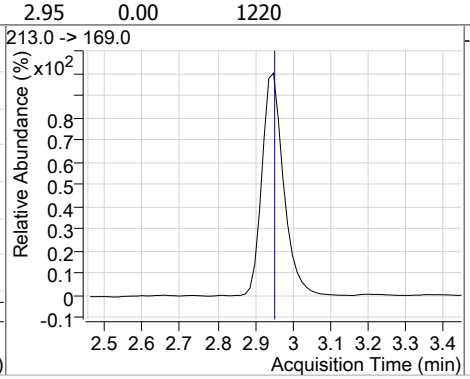


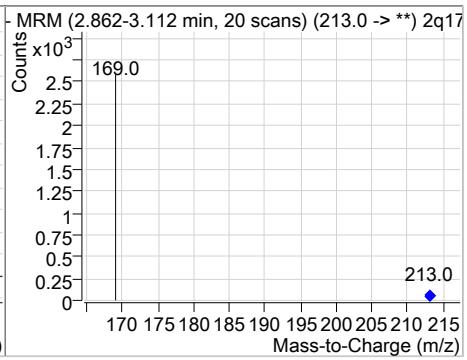




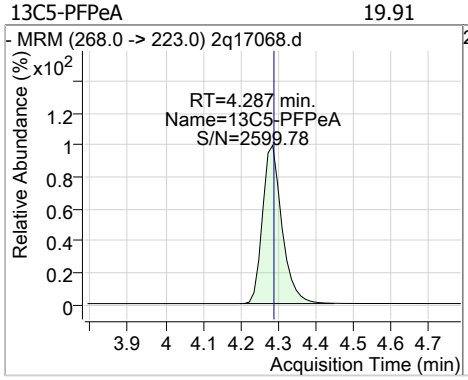
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.04	2.95	0.00	1220				

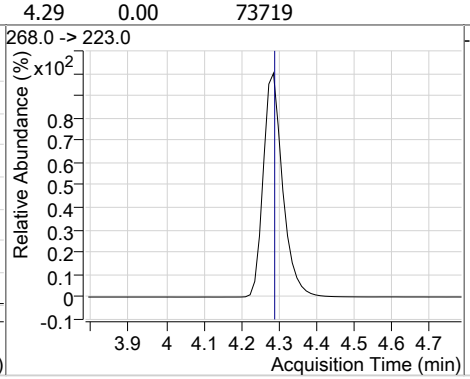


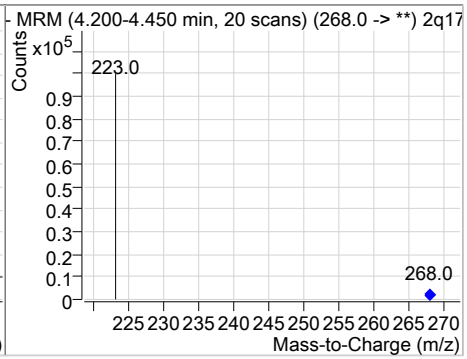




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.91	4.29	0.00	73719				

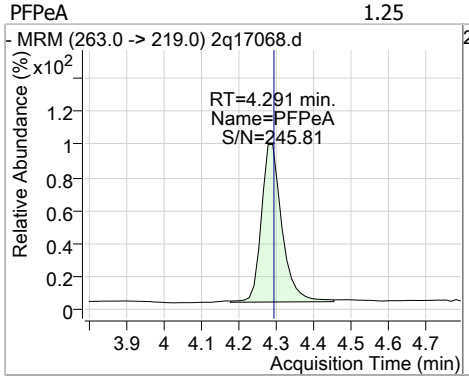


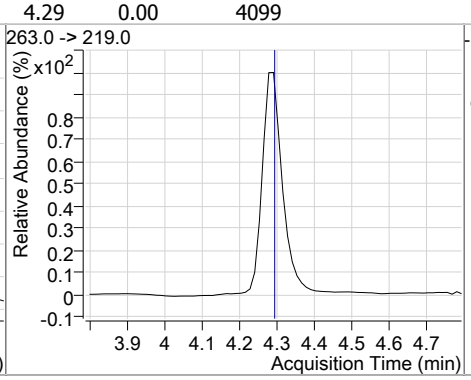


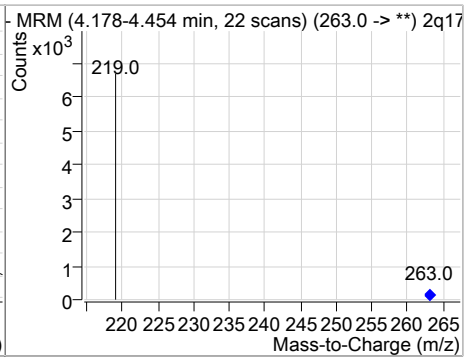


Perfluorinated Compounds by LC/MS/MS

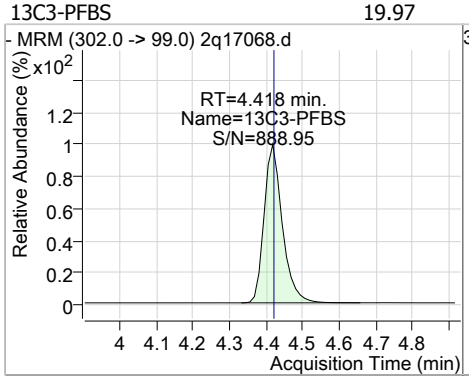
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.25	4.29	0.00	4099				

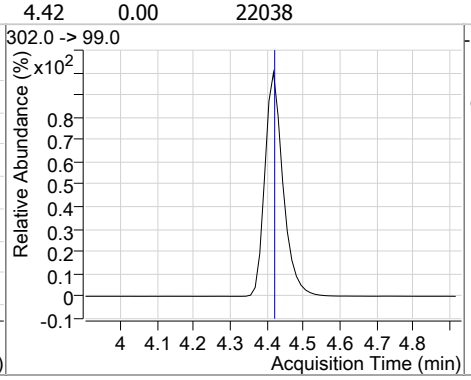


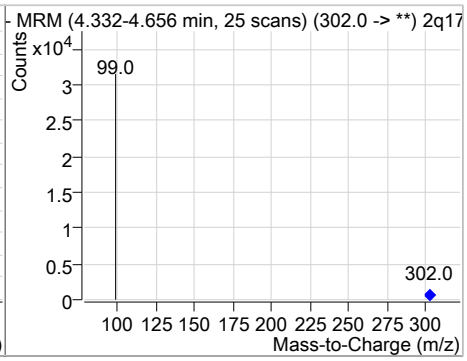




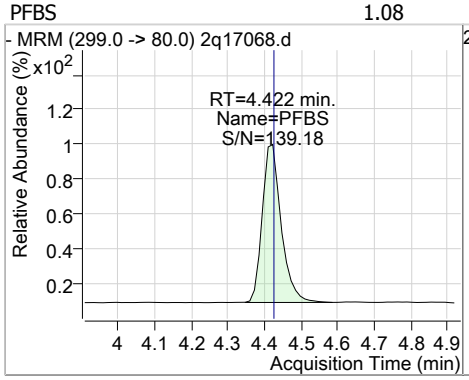
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.97	4.42	0.00	22038				

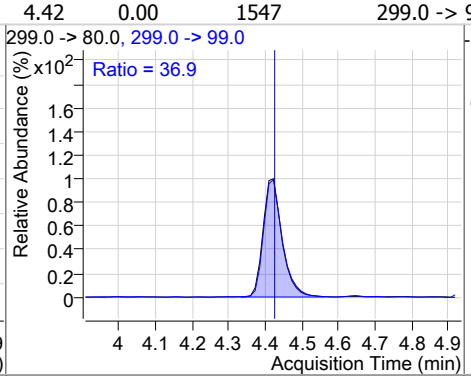


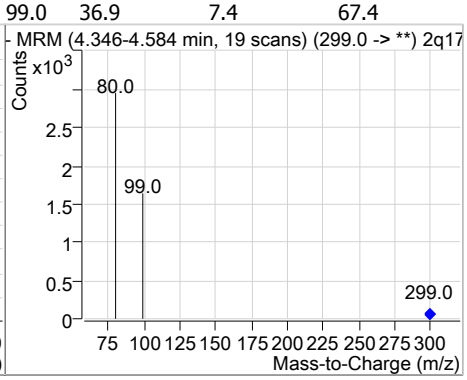




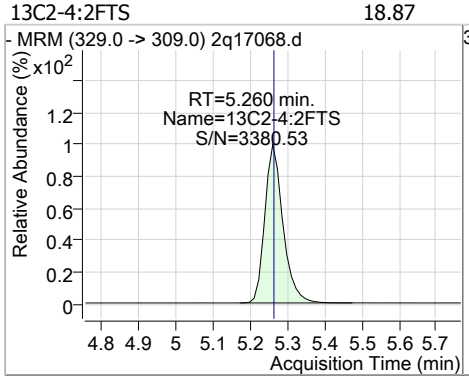
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.08	4.42	0.00	1547	299.0 -> 99.0	36.9	7.4	67.4

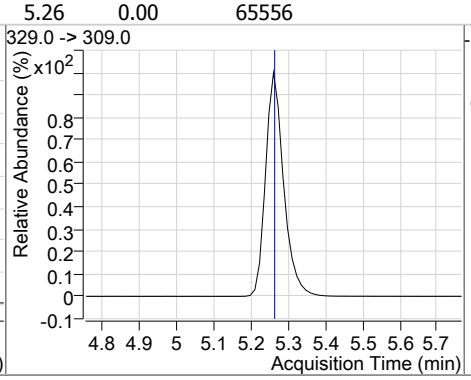


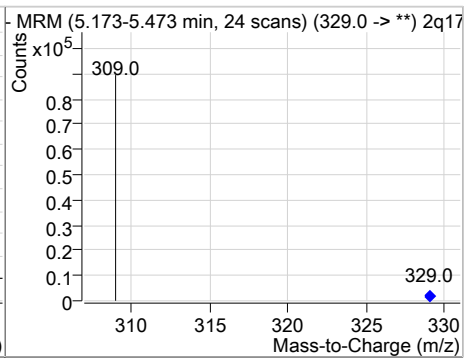




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.87	5.26	0.00	65556				

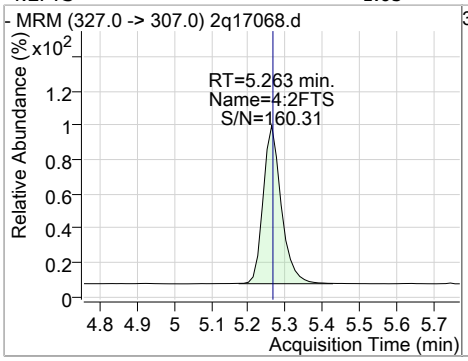


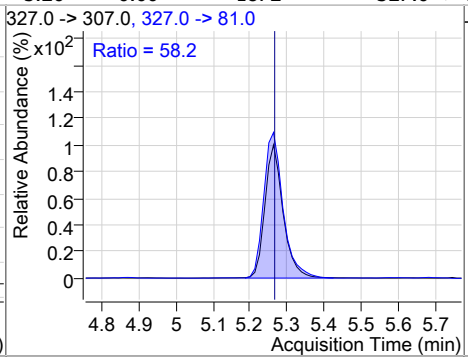


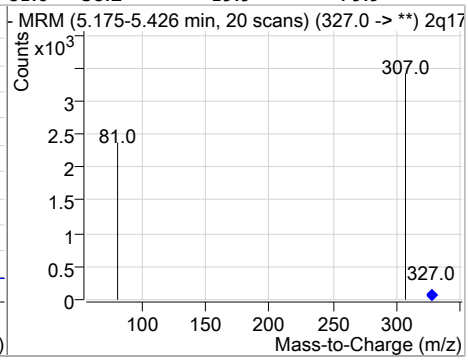


Perfluorinated Compounds by LC/MS/MS

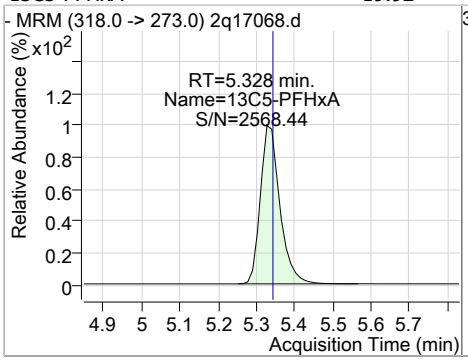
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.05	5.26	0.00	1872	327.0 -> 81.0	58.2	19.9	79.9

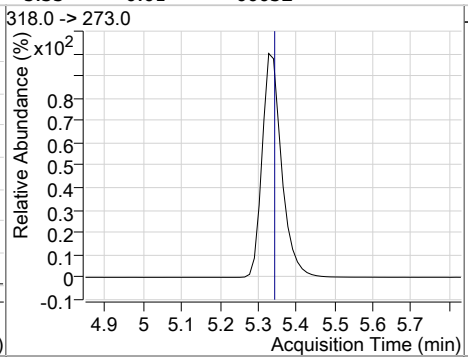


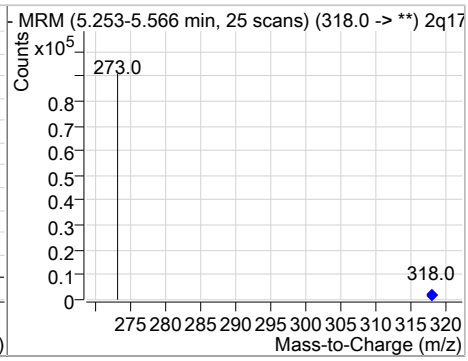




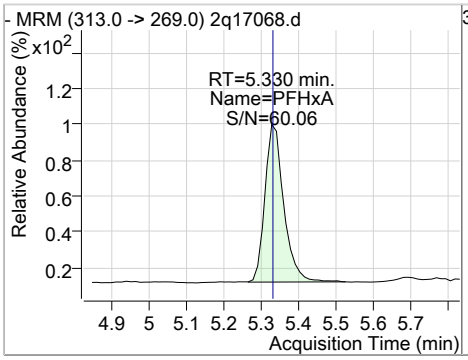
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.92	5.33	-0.01	66632				

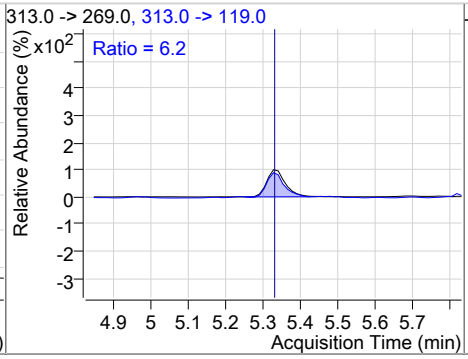


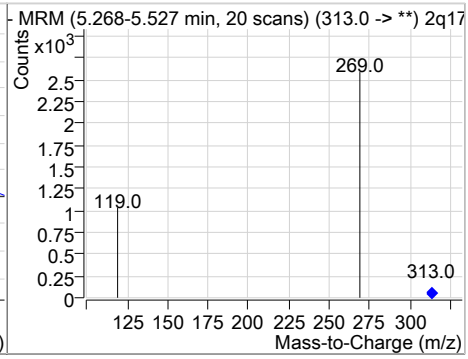




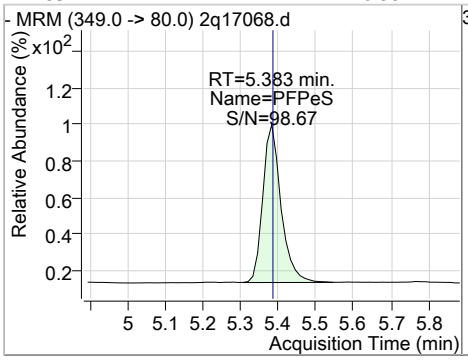
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.11	5.33	-0.01	1198	313.0 -> 119.0	6.2	0.0	37.6

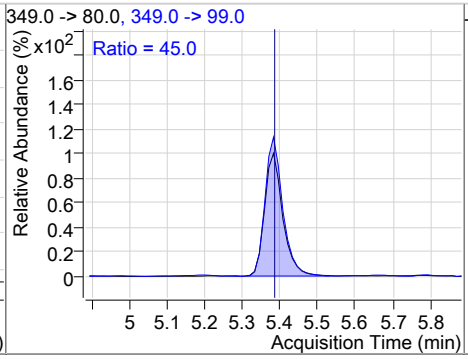


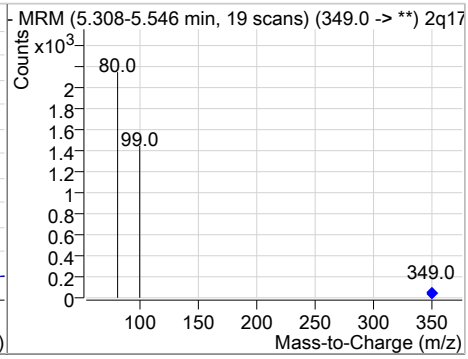




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.99	5.38	0.00	945	349.0 -> 99.0	45.0	10.8	70.8

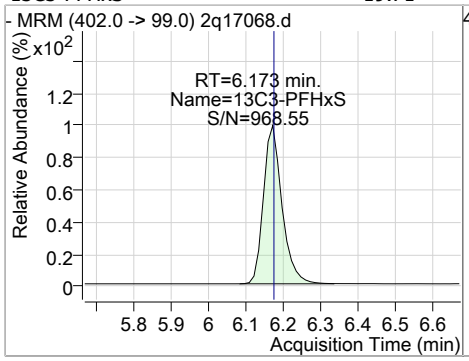


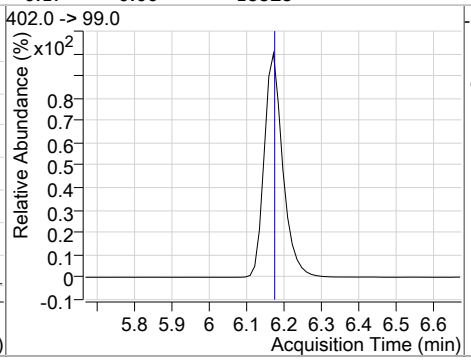


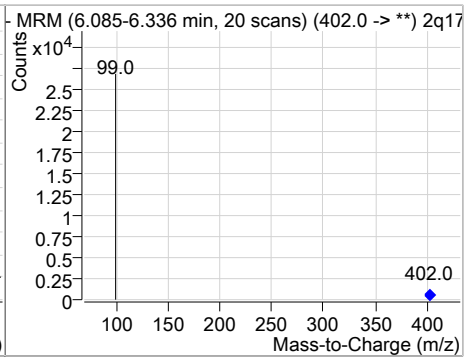


Perfluorinated Compounds by LC/MS/MS

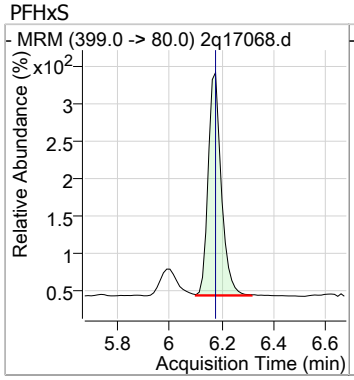
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.71	6.17	0.00	18828				

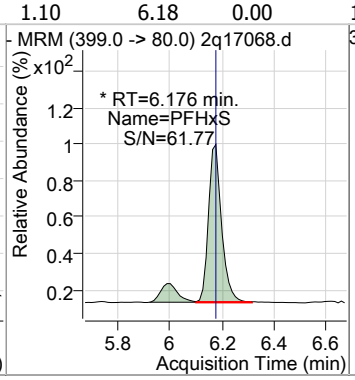


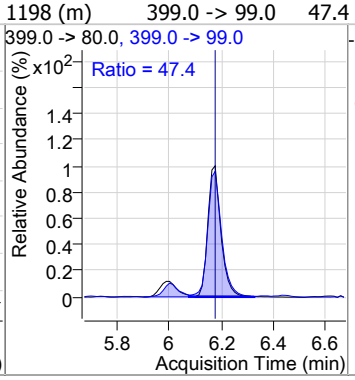


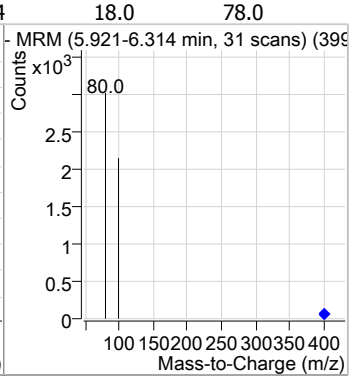


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.10	6.18	0.00	1198 (m)	399.0 -> 99.0	47.4	18.0	78.0

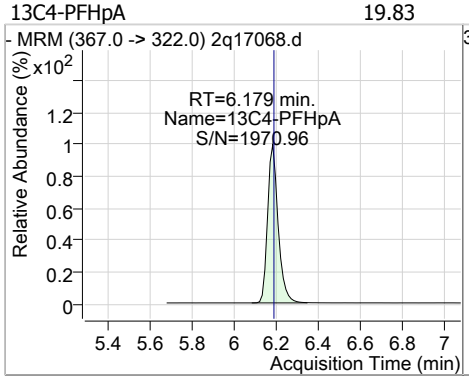


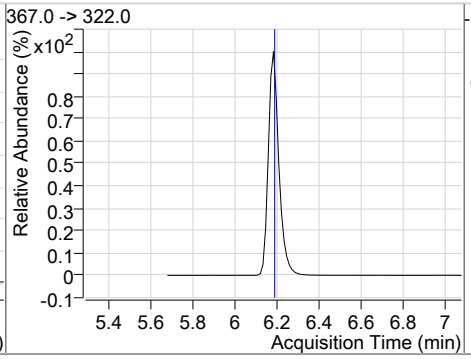


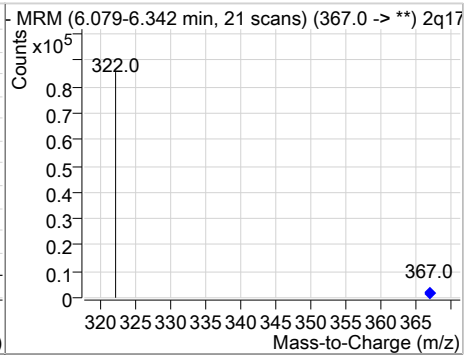




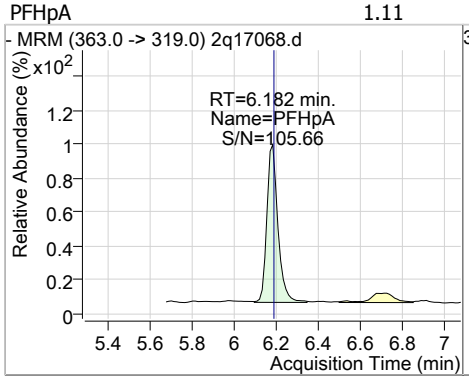
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.83	6.18	0.00	63012				

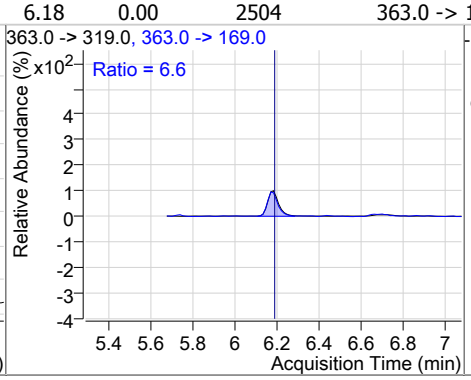


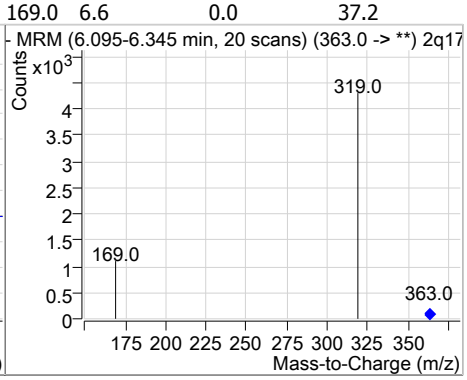




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.11	6.18	0.00	2504	363.0 -> 169.0	6.6	0.0	37.2

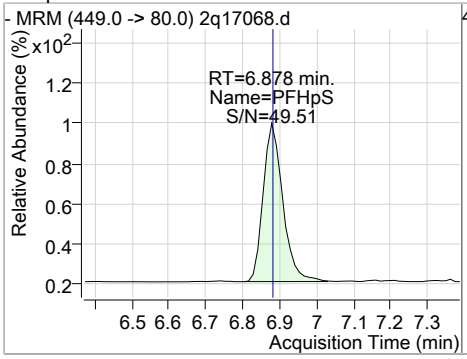


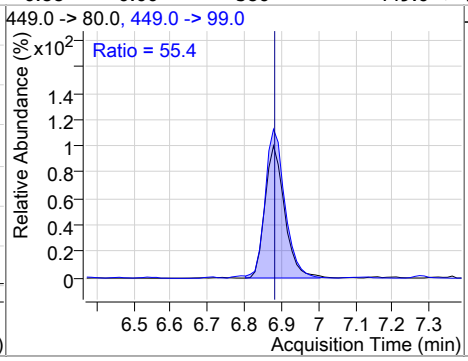


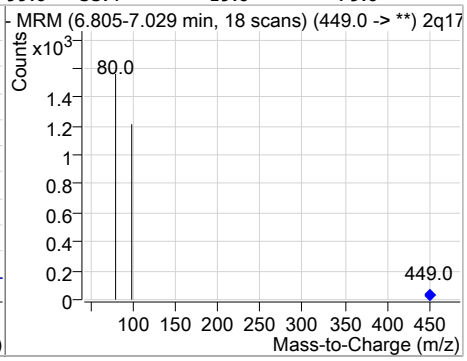


Perfluorinated Compounds by LC/MS/MS

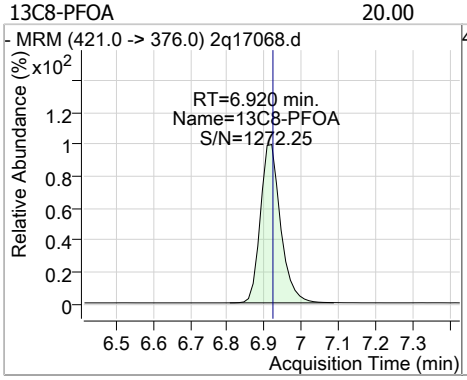
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.04	6.88	0.00	586	449.0 -> 99.0	55.4	19.0	79.0

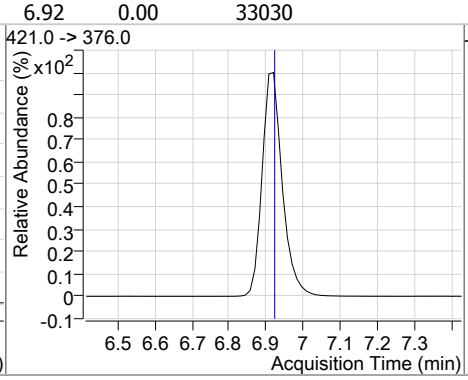


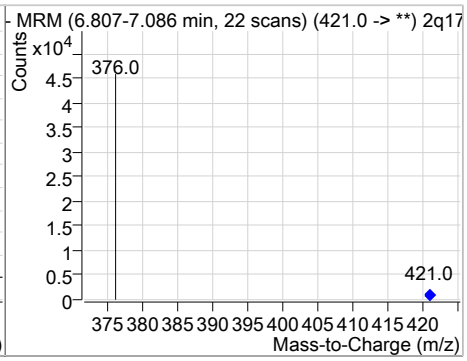




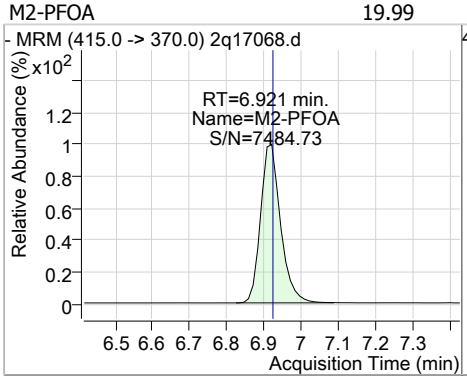
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.00	6.92	0.00	33030				

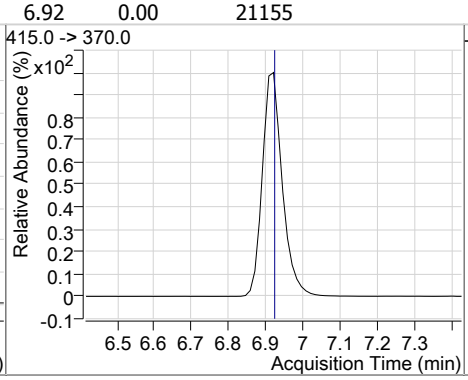


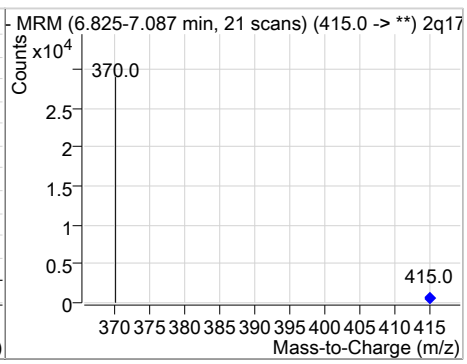




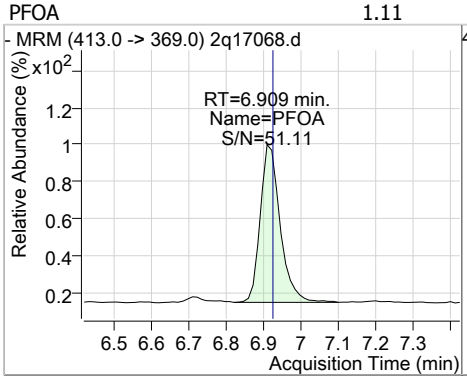
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	19.99	6.92	0.00	21155				

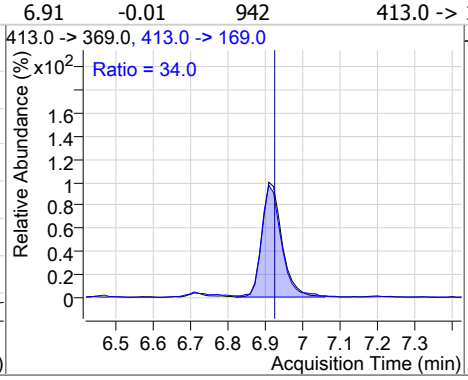


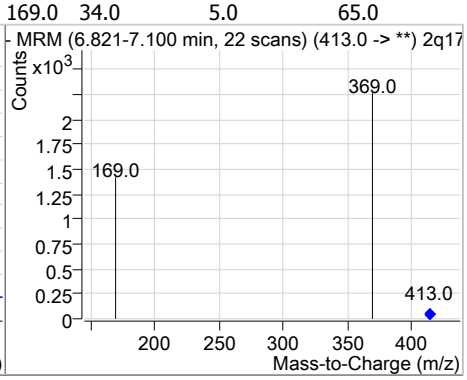




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.11	6.91	-0.01	942	413.0 -> 169.0	34.0	5.0	65.0

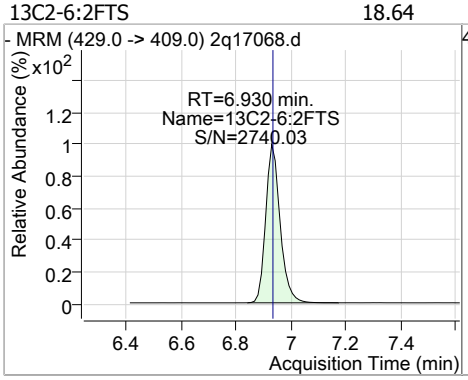


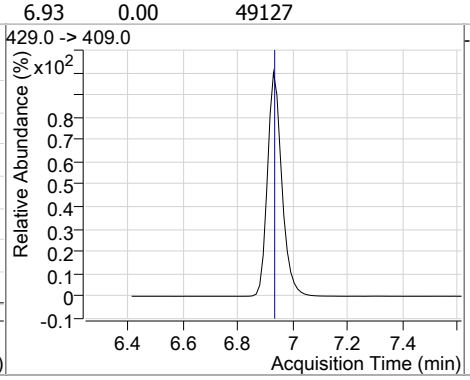


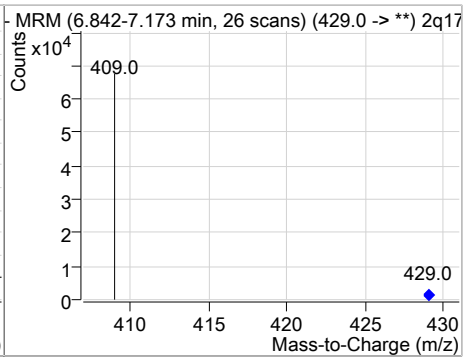


Perfluorinated Compounds by LC/MS/MS

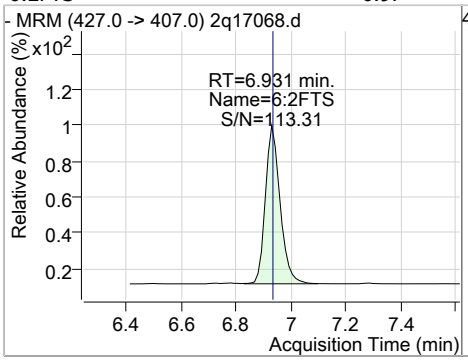
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.64	6.93	0.00	49127				

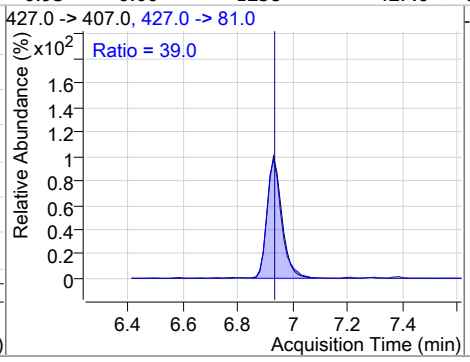


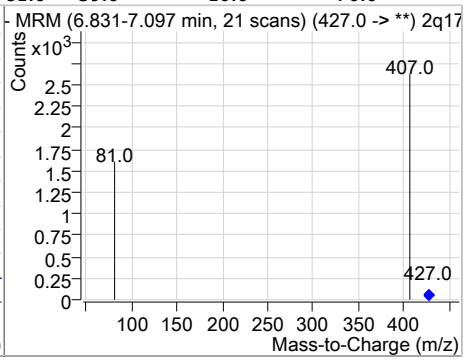




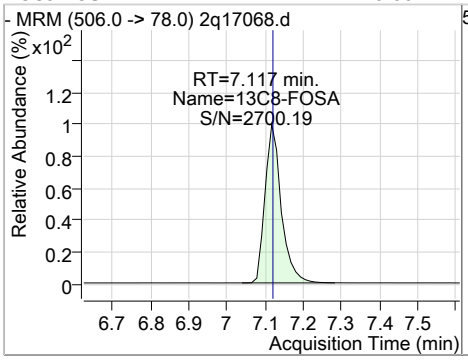
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.97	6.93	0.00	1258	427.0 -> 81.0	39.0	10.0	70.0

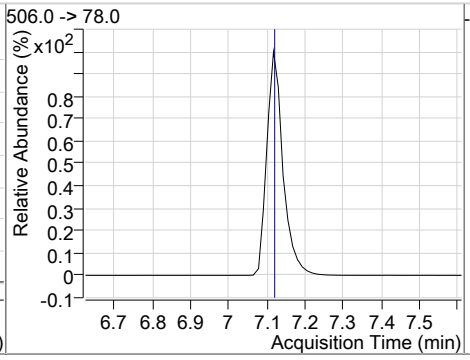


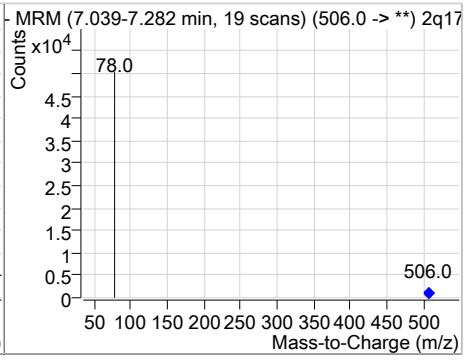




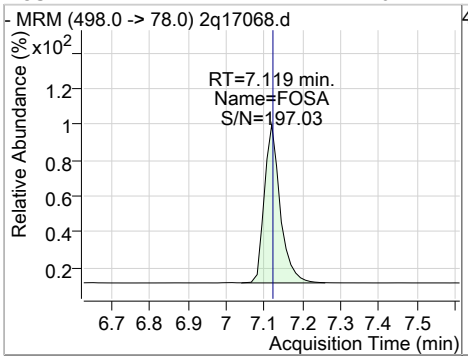
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.80	7.12	0.00	37268				

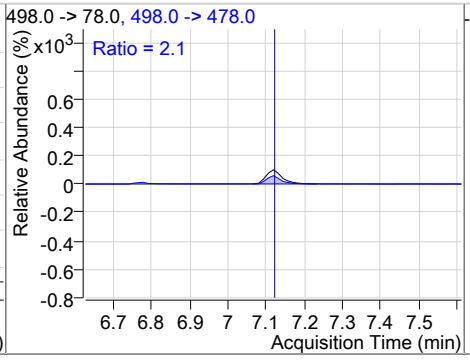


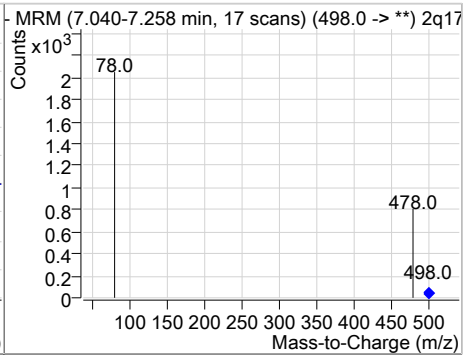




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.07	7.12	0.00	967	498.0 -> 478.0	2.1	0.0	34.0

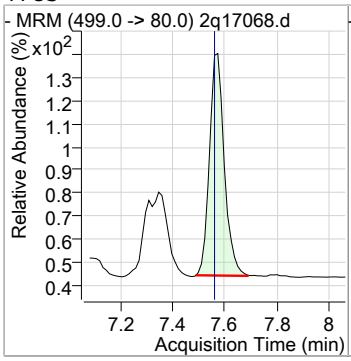


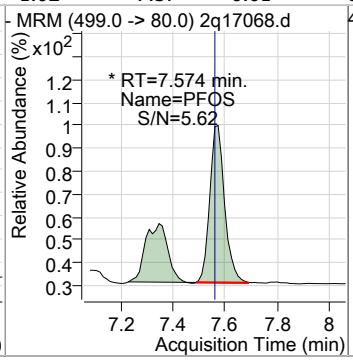


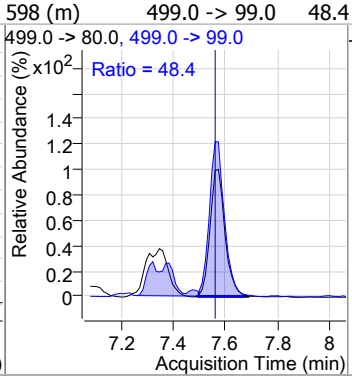


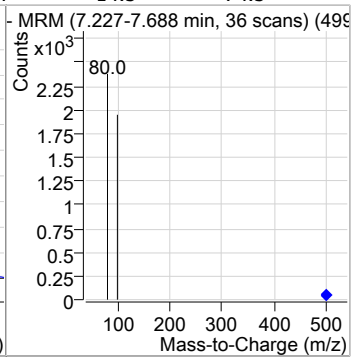
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.02	7.57	0.01	598 (m)	499.0 -> 99.0	48.4	14.5	74.5

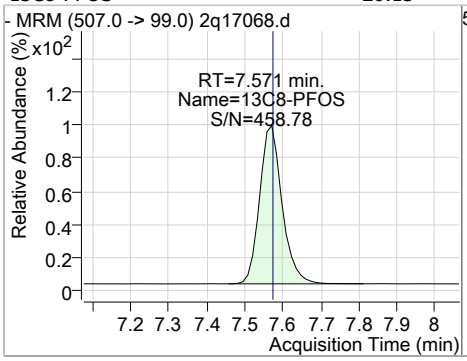


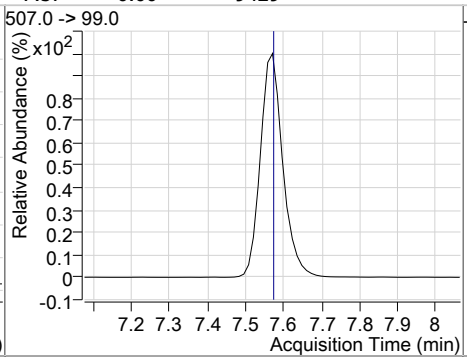


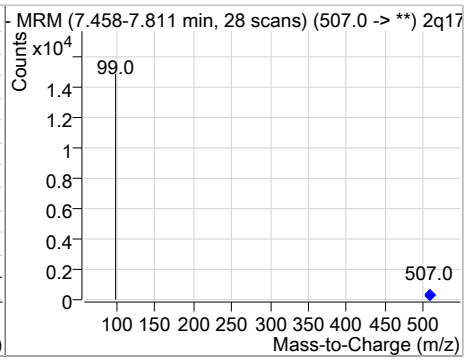




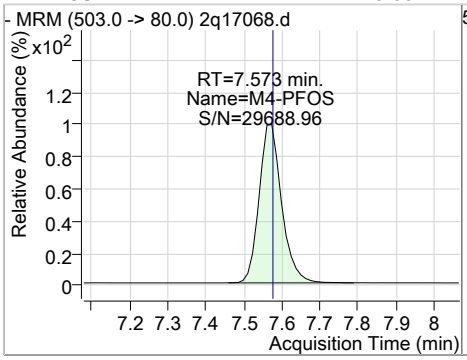
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.13	7.57	0.00	9429				

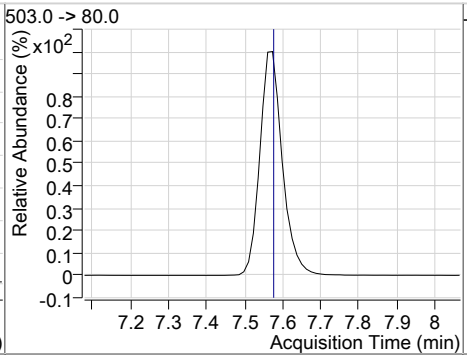


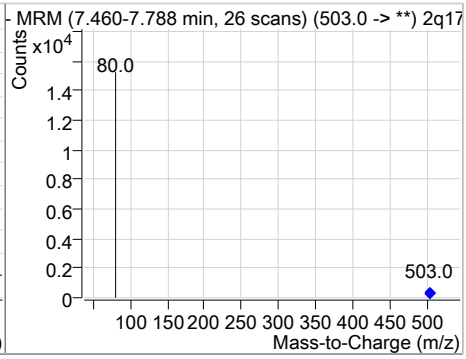




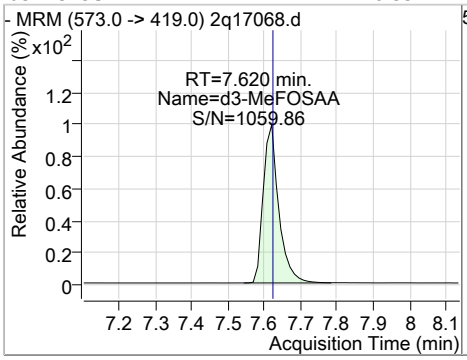
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.00	7.57	0.00	10655				

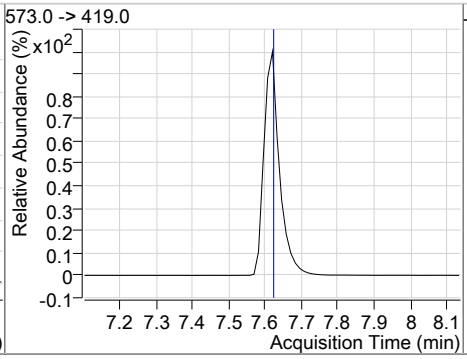


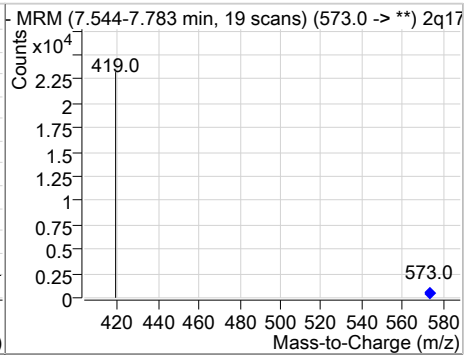




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.33	7.62	0.00	16502				

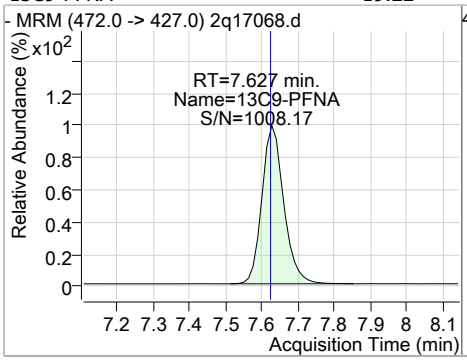


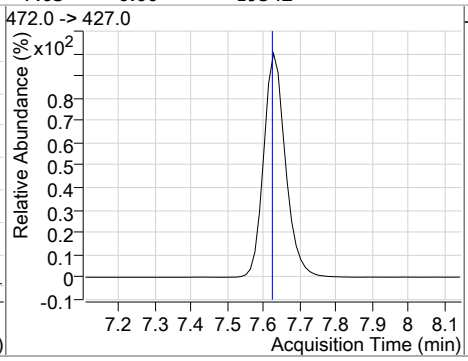


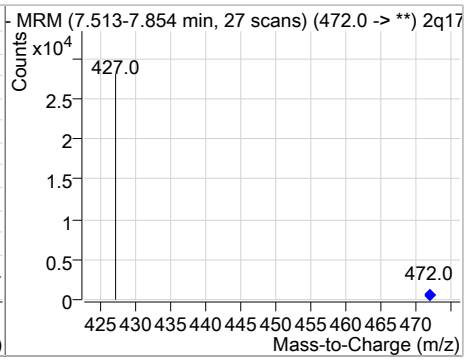


Perfluorinated Compounds by LC/MS/MS

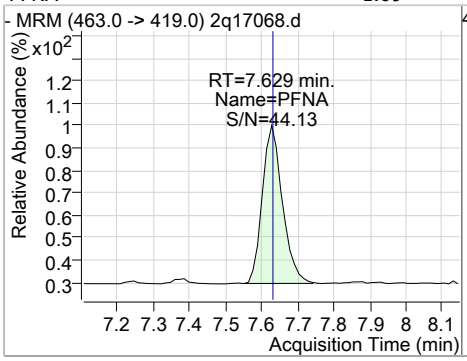
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.22	7.63	0.00	19542				

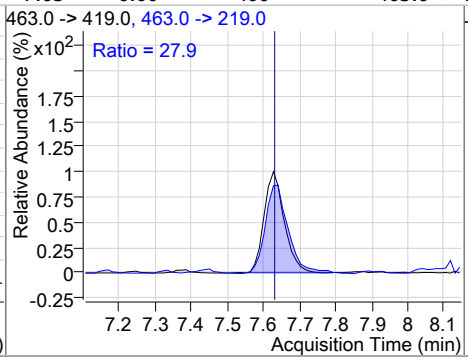


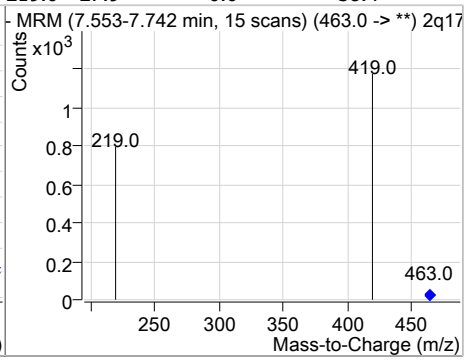




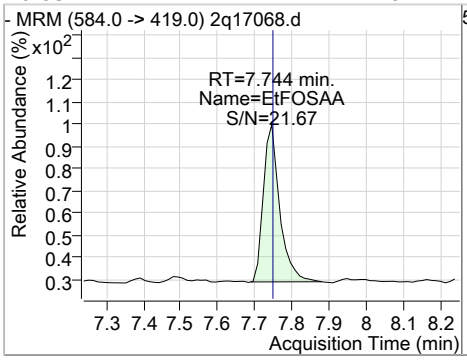
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.09	7.63	0.00	400	463.0 -> 219.0	27.9	0.0	58.4

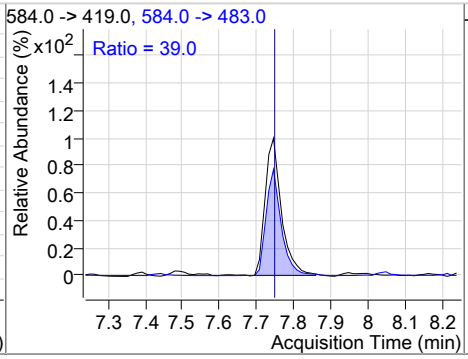


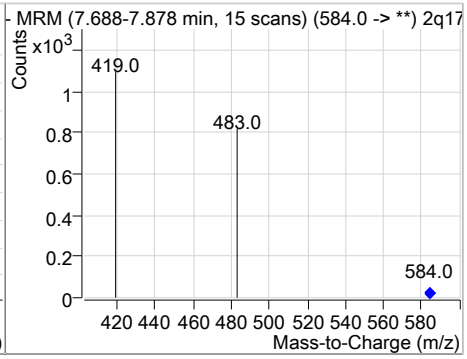




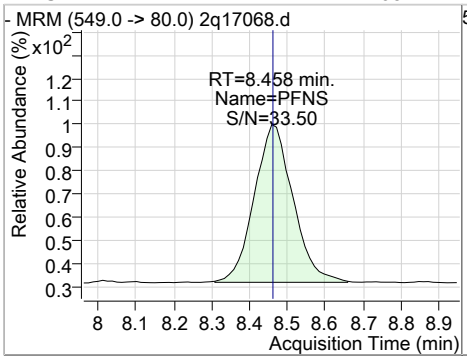
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.29	7.74	0.00	327	584.0 -> 483.0	39.0	24.8	84.8

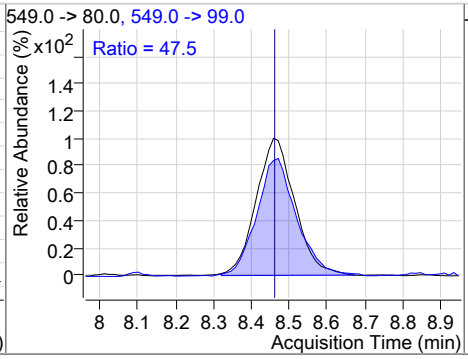


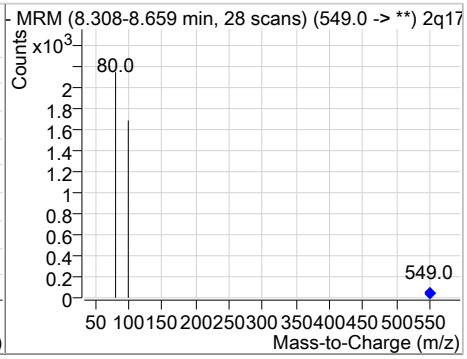




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	1.08	8.46	0.00	661	549.0 -> 99.0	47.5	24.7	84.7

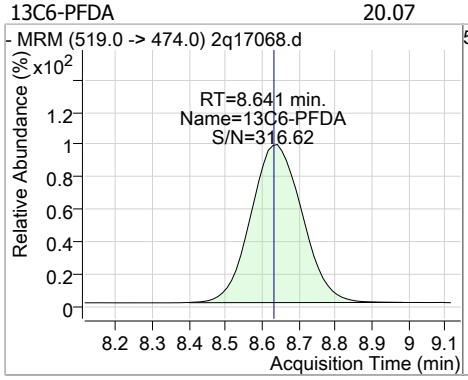


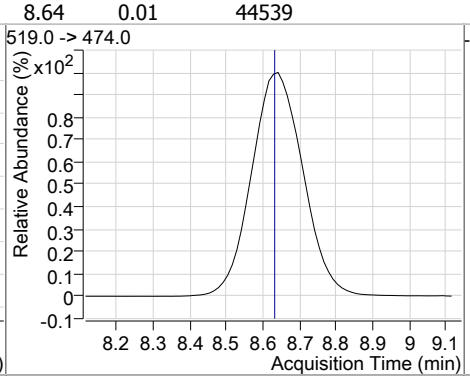


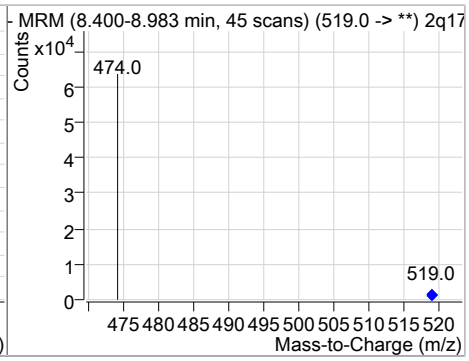


Perfluorinated Compounds by LC/MS/MS

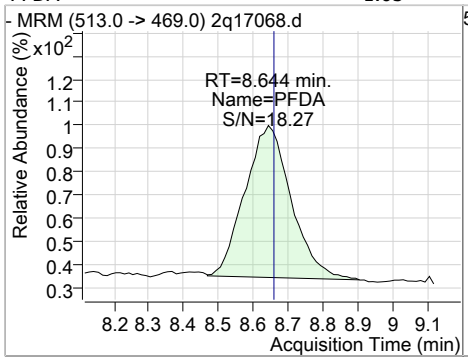
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.07	8.64	0.01	44539				

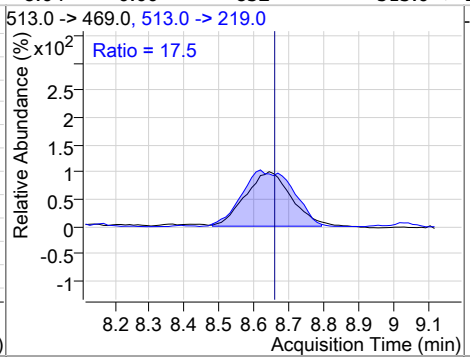


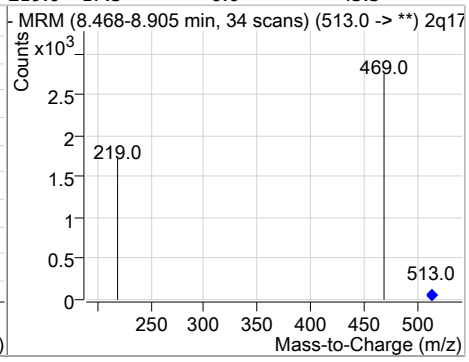




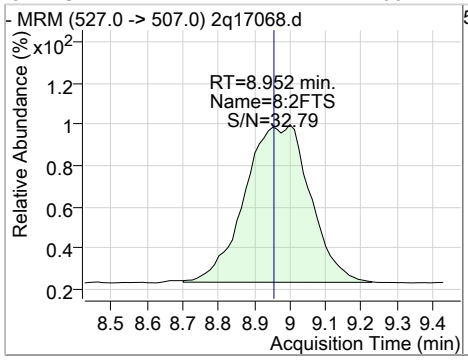
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	1.05	8.64	0.00	832	513.0 -> 219.0	17.5	0.0	45.3

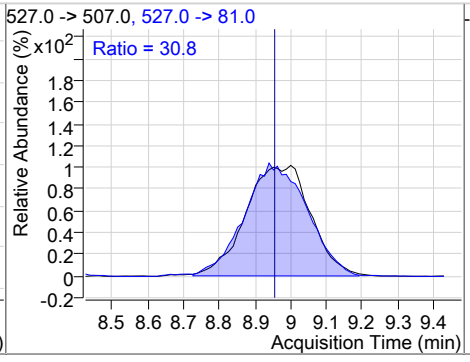


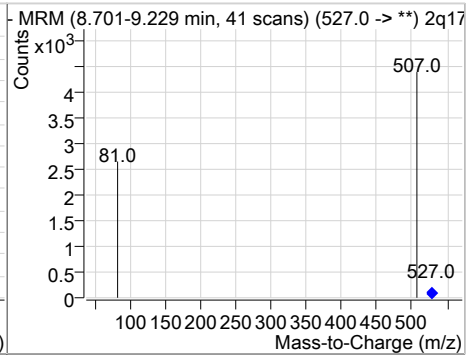




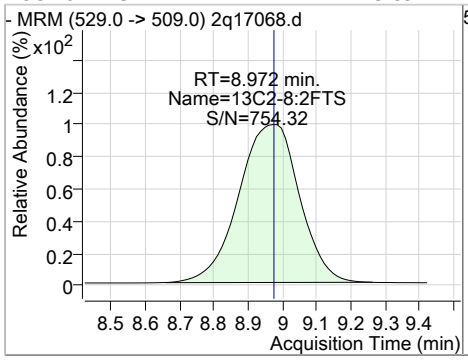
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.06	8.95	0.00	1851	527.0 -> 81.0	30.8	1.3	61.3

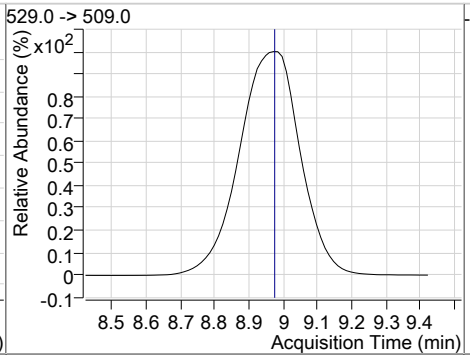


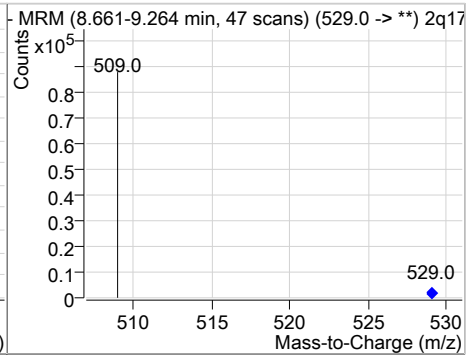




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.39	8.97	0.00	61752				

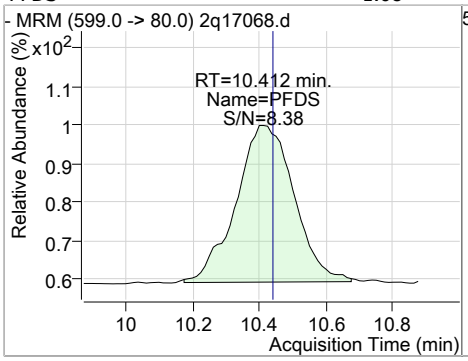


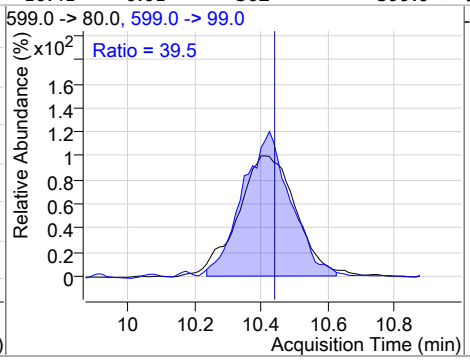


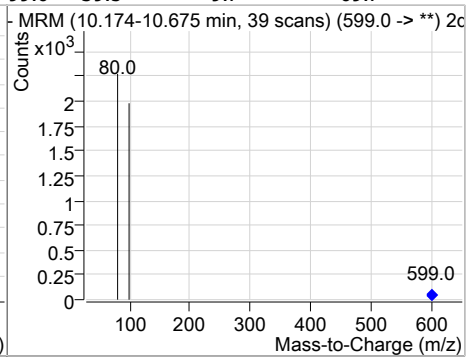


Perfluorinated Compounds by LC/MS/MS

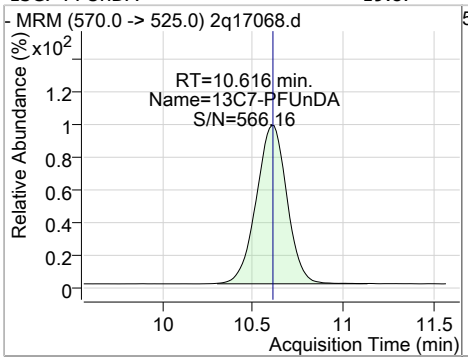
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	1.08	10.41	-0.01	362	599.0 -> 99.0	39.5	9.7	69.7

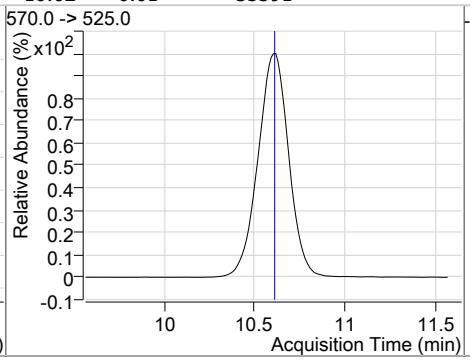


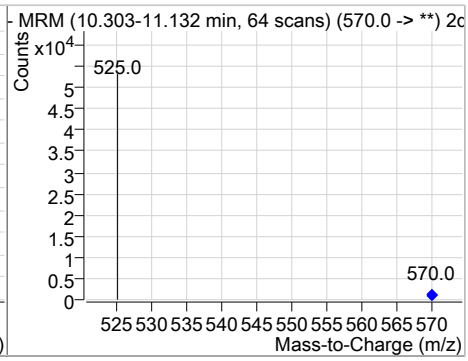




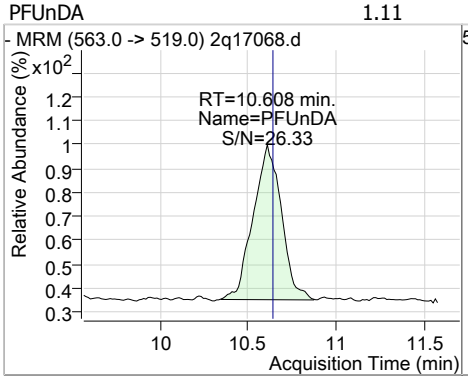
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.87	10.62	0.01	35591				

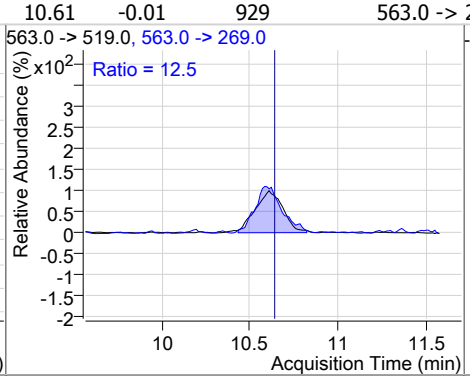


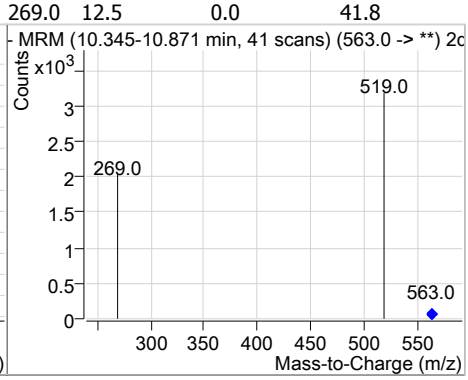




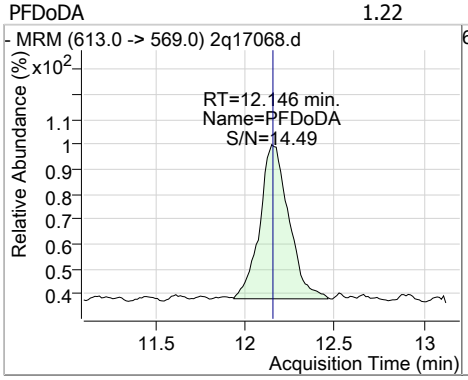
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	1.11	10.61	-0.01	929	563.0 -> 269.0	12.5	0.0	41.8

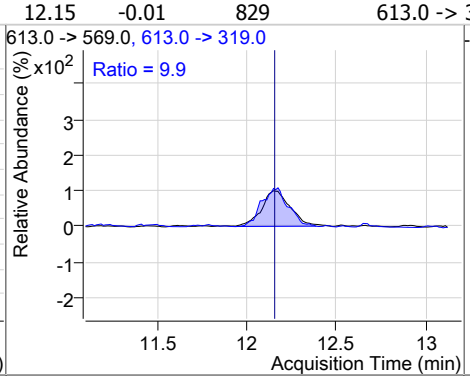


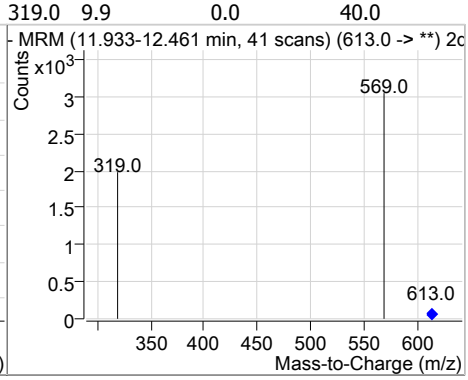




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	1.22	12.15	-0.01	829	613.0 -> 319.0	9.9	0.0	40.0

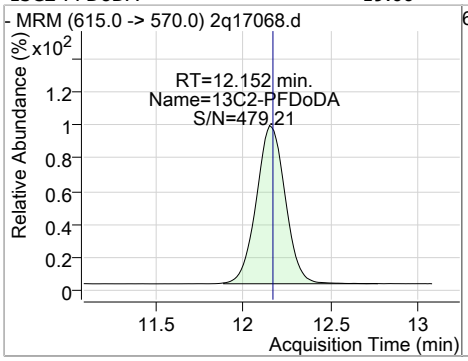


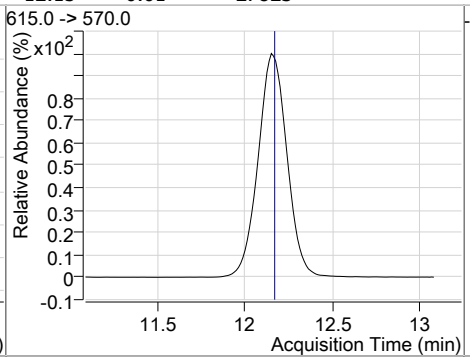


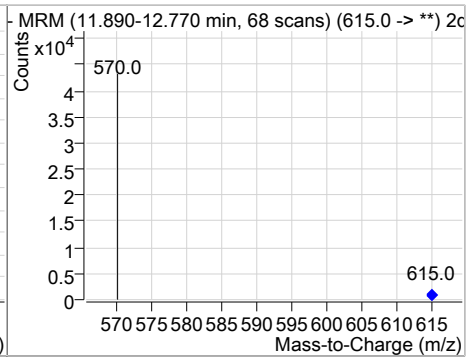


Perfluorinated Compounds by LC/MS/MS

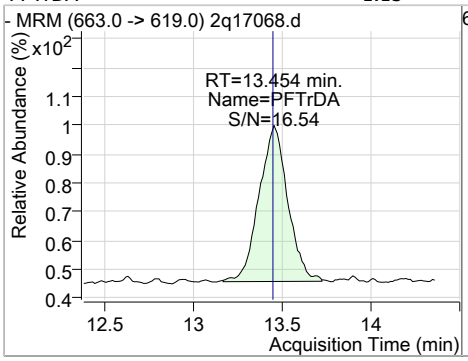
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.66	12.15	-0.01	27823				

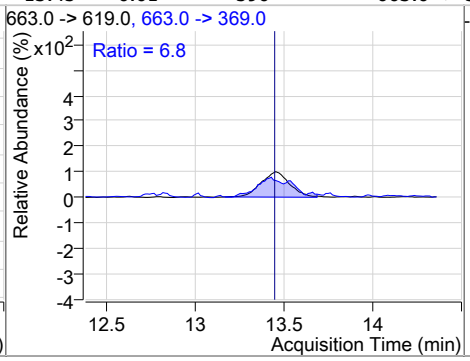


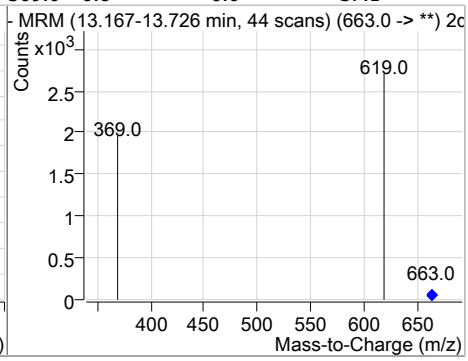




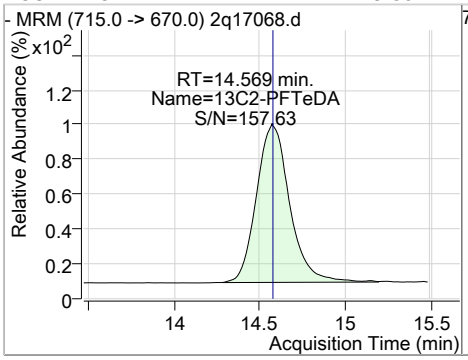
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	1.15	13.45	0.01	590	663.0 -> 369.0	6.8	0.0	37.1

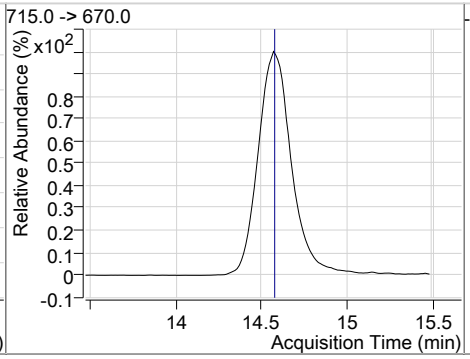


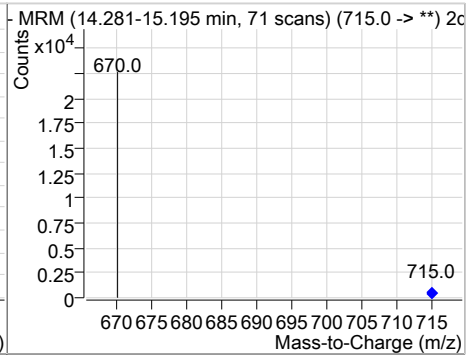




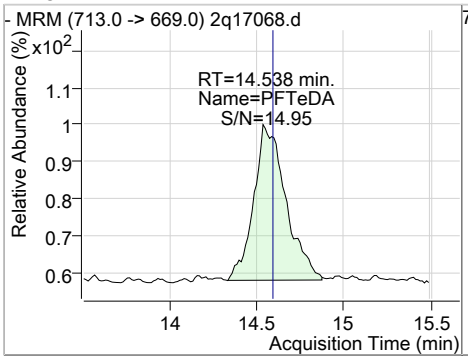
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.58	14.57	0.00	11972				

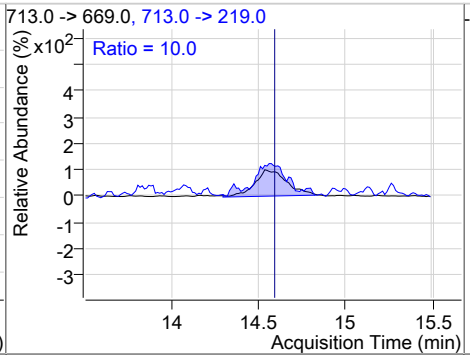


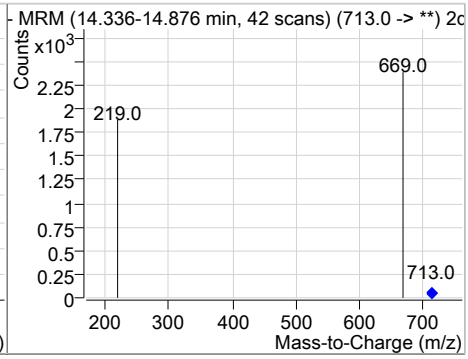




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.11	14.54	-0.05	407	713.0 -> 219.0	10.0	0.0	37.4







Manual Integration Approval Summary

Sample Number:	S2Q296-IC296	**Method:**	EPA 537M BY ID
Lab FileID:	2Q17068.D	**Analyst approved:**	07/16/18 13:34 Natasha Gumtie
Injection Time:	07/13/18 12:09	**Supervisor approved:**	07/16/18 17:22 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.57	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
07/16/18 17:22

Perfluorinated Compounds by LC/MS/MS

Data File : 2q17069.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/13/2018 12:29:49 PM
Sample Name : ic296-2.0
Vial : Vial 4
DA Method File : PFC_ID_071318_S2Q296.quantmethod.xml
Batch Name : s2q296.batch.bin
Sample Information : op70790,S2Q296,1.99,,,1.0,1,soil

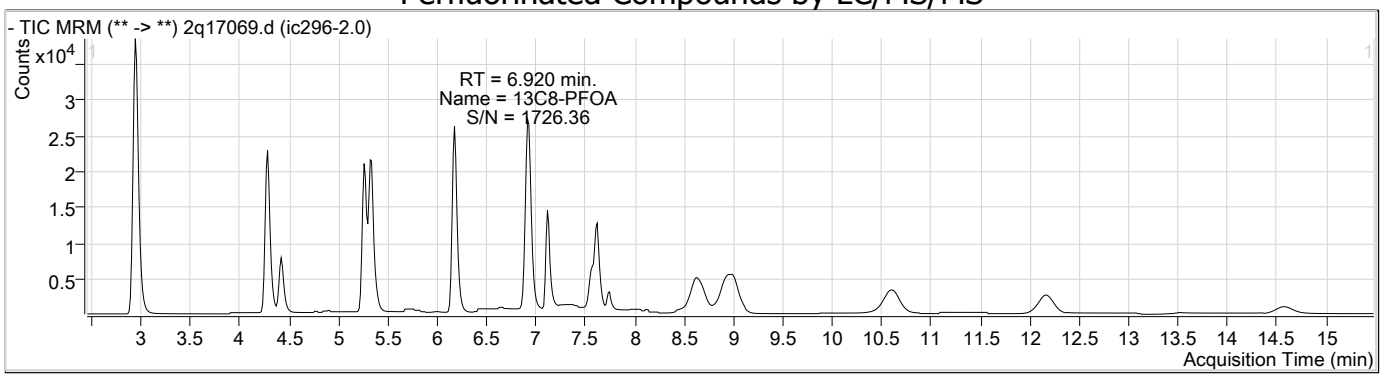
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.921	415.0 -> 370.0	21199	20.00	µg/L	0.000
13C4-PFOS	7.573	503.0 -> 80.0	10679	20.00	µg/L	0.000
M4-PFBA	2.941	217.0 -> 172.0	148737	20.00	µg/L	0.000
M5-PFPeA	4.287	268.0 -> 223.0	73480	20.00	µg/L	0.000
M5-PFHxA	5.340	318.0 -> 273.0	67229	20.00	µg/L	0.000
M4-PFHpA	6.179	367.0 -> 322.0	63599	20.00	µg/L	0.000
M8-PFOA	6.920	421.0 -> 376.0	31979	20.00	µg/L	0.000
M9-PFNA	7.627	472.0 -> 427.0	20568	20.00	µg/L	0.000
M6-PFDA	8.629	519.0 -> 474.0	44891	20.00	µg/L	0.000
M7-PFUnDA	10.604	570.0 -> 525.0	35984	20.00	µg/L	0.000
M2-PFDoDA	12.165	615.0 -> 570.0	28272	20.00	µg/L	0.000
M2-PFTeDA	14.569	715.0 -> 670.0	12068	20.00	µg/L	0.000
M8-FOSA	7.117	506.0 -> 78.0	37927	20.00	µg/L	0.000
M3-PFBS	4.418	302.0 -> 99.0	21986	20.00	µg/L	0.000
M3-PFHxS	6.173	402.0 -> 99.0	19142	20.00	µg/L	0.000
M8-PFOS	7.571	507.0 -> 99.0	9319	20.00	µg/L	0.000
M2-4:2FTS	5.260	329.0 -> 309.0	65477	20.00	µg/L	0.000
M2-6:2FTS	6.930	429.0 -> 409.0	49643	20.00	µg/L	0.000
M2-8:2FTS	8.972	529.0 -> 509.0	60420	20.00	µg/L	0.000
M3-MeFOSAA	7.620	573.0 -> 419.0	16872	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.260	329.0 -> 309.0	65464	18.85	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.2%		
13C2-6:2FTS	6.930	429.0 -> 409.0	49659	18.84	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.2%		
13C2-8:2FTS	8.972	529.0 -> 509.0	60029	18.85	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.3%		
13C2-PFDoDA	12.165	615.0 -> 570.0	28254	19.96	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C2-PFTeDA	14.569	715.0 -> 670.0	12154	19.87	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.4%		
13C3-PFBS	4.418	302.0 -> 99.0	21975	19.92	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.6%		
13C3-PFHxS	6.173	402.0 -> 99.0	19150	20.04	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C4-PFBA	2.941	217.0 -> 172.0	148703	19.83	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.2%		
13C4-PFHpA	6.179	367.0 -> 322.0	63597	20.02	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%		
13C5-PFHxA	5.340	318.0 -> 273.0	67239	20.10	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.5%		
13C5-PFPeA	4.287	268.0 -> 223.0	73441	19.84	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.2%		
13C6-PFDA	8.629	519.0 -> 474.0	44762	20.17	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.8%		

Perfluorinated Compounds by LC/MS/MS

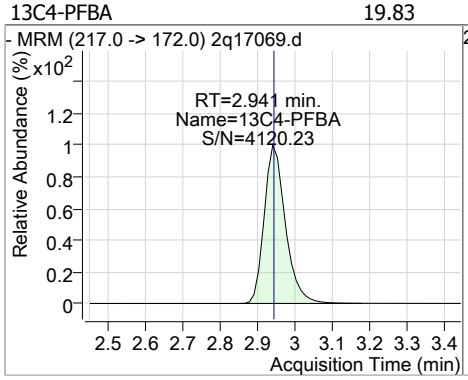
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.604	570.0 -> 525.0	36050	20.13	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%			
13C8-FOSA	7.117	506.0 -> 78.0	37928	21.17	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.9%			
13C8-PFOA	6.920	421.0 -> 376.0	31983	19.37	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.8%			
13C8-PFOS	7.571	507.0 -> 99.0	9314	19.89	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.4%			
13C9-PFNA	7.627	472.0 -> 427.0	20568	20.23	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%			
d3-MeFOSAA	7.620	573.0 -> 419.0	16870	20.78	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.9%			
M2-PFOA	6.921	415.0 -> 370.0	21207	20.01	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
M4-PFOS	7.573	503.0 -> 80.0	10669	19.98	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%			
Target Compounds							**QValue**
4:2FTS	5.263	327.0 -> 307.0	3578	2.01	µg/L		94
6:2FTS	6.931	427.0 -> 407.0	2595	1.99	µg/L		97
8:2FTS	8.952	527.0 -> 507.0	3539	2.09	µg/L		99
EtFOSAA	7.744	584.0 -> 419.0	558	2.14	µg/L		97
FOSA	7.119	498.0 -> 78.0	1742	1.90	µg/L		99
MeFOSAA	7.622	570.0 -> 419.0	632	2.07	µg/L		94
PFBA	2.949	213.0 -> 169.0	2469	2.10	µg/L		100
PFBS	4.422	299.0 -> 80.0	3040	2.13	µg/L		99
PFDA	8.644	513.0 -> 469.0	1600	2.00	µg/L		95
PFDoDA	12.159	613.0 -> 569.0	1555	2.25	µg/L		99
PFDS	10.424	599.0 -> 80.0	717	2.11	µg/L		95
PFHpA	6.182	363.0 -> 319.0	4671	2.06	µg/L		99
PFHpS	6.878	449.0 -> 80.0	1144	2.00	µg/L		98
PFHxA	5.343	313.0 -> 269.0	2289	2.10	µg/L		96
PFHxS	6.176	399.0 -> 80.0	2354	2.13	µg/L	m	96
PFNA	7.629	463.0 -> 419.0	736	1.90	µg/L		97
PFNS	8.458	549.0 -> 80.0	1297	2.15	µg/L		99
PFOA	6.922	413.0 -> 369.0	1860	2.27	µg/L		94
PFOS	7.561	499.0 -> 80.0	1169	2.02	µg/L	m	93
PFPeA	4.291	263.0 -> 219.0	7451	2.28	µg/L		100
PFPeS	5.383	349.0 -> 80.0	1993	2.10	µg/L		99
PFTeDA	14.588	713.0 -> 669.0	786	2.16	µg/L		100
PFTrDA	13.442	663.0 -> 619.0	1150	2.24	µg/L		98
PFUnDA	10.621	563.0 -> 519.0	1756	2.07	µg/L		97

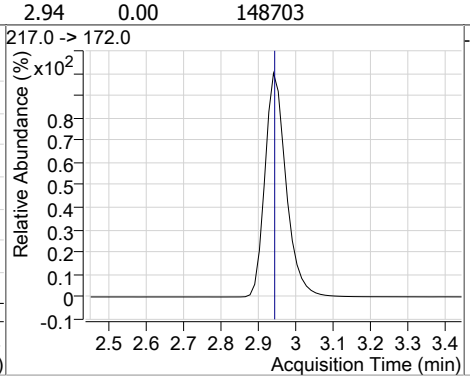
 # = Qualifier out of range, m = manually integrated, + = Area summed

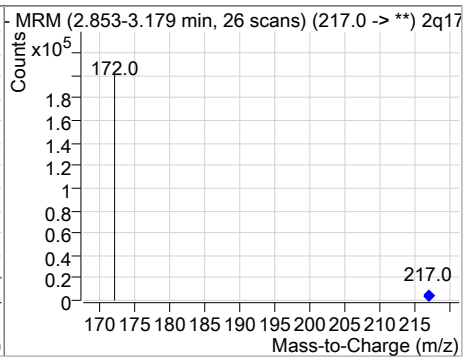
Perfluorinated Compounds by LC/MS/MS



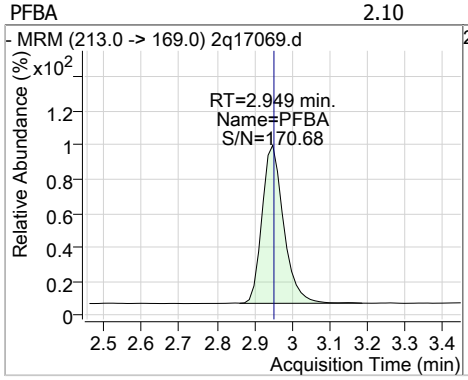
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.83	2.94	0.00	148703				

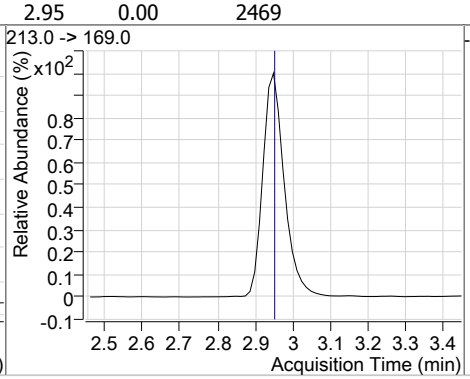


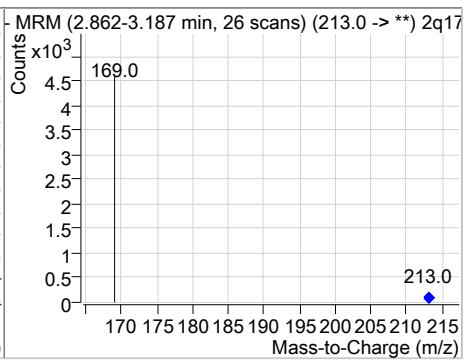




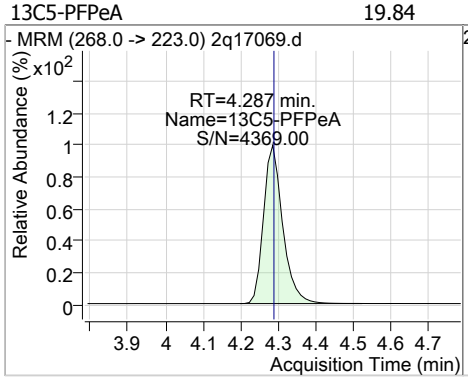
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	2.10	2.95	0.00	2469				

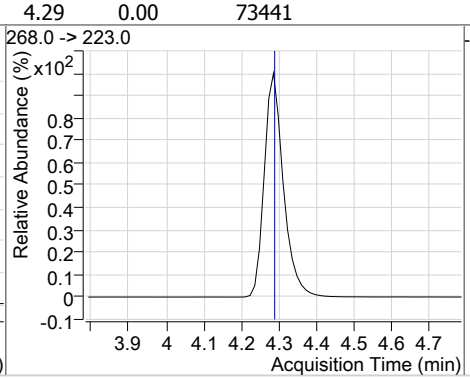


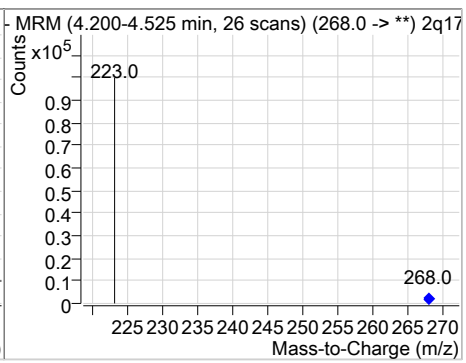




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.84	4.29	0.00	73441				

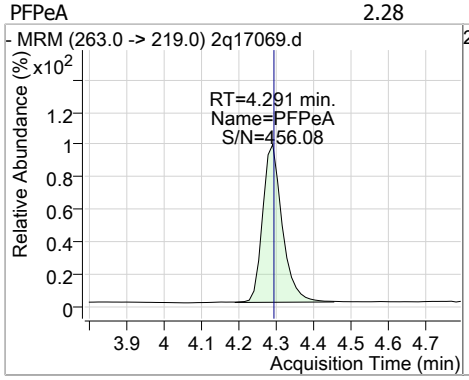


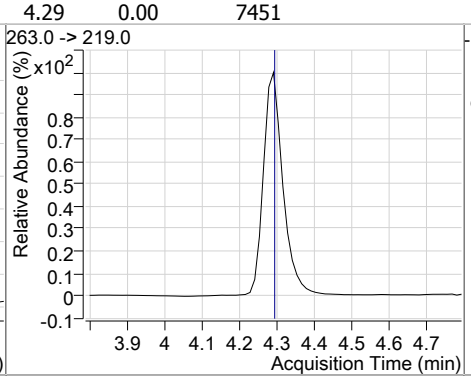


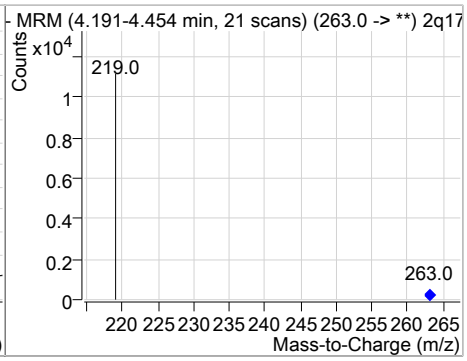


Perfluorinated Compounds by LC/MS/MS

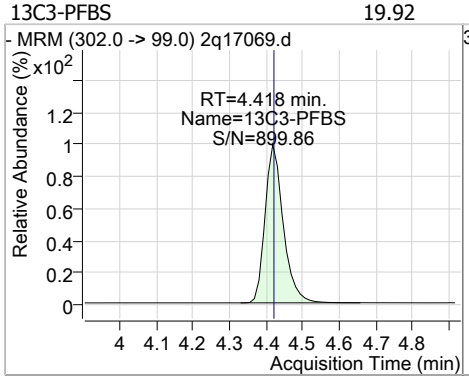
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	2.28	4.29	0.00	7451				

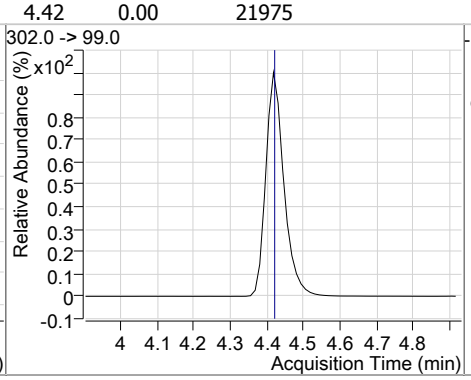


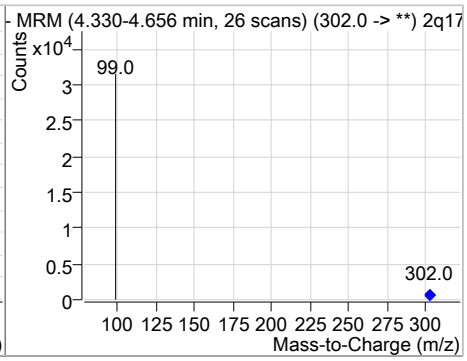




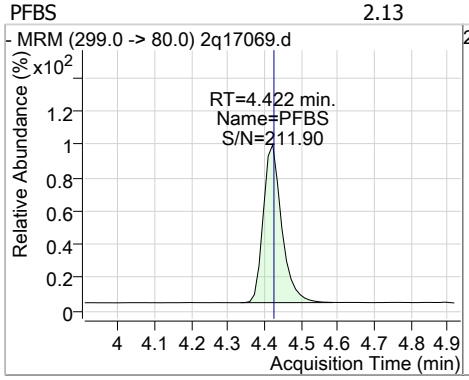
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.92	4.42	0.00	21975				

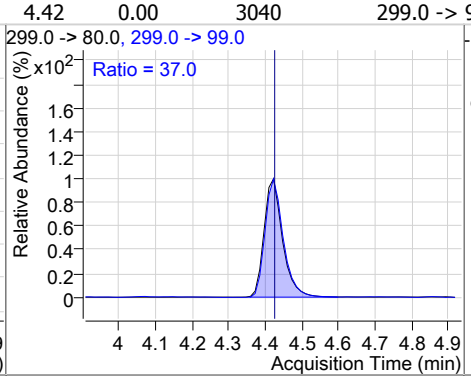


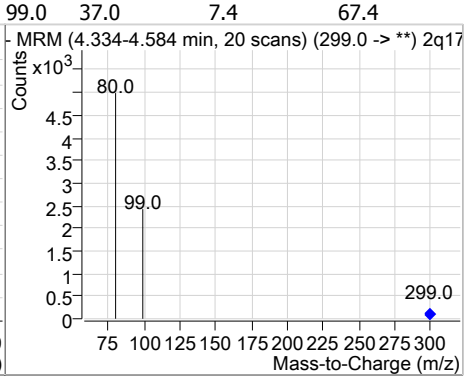




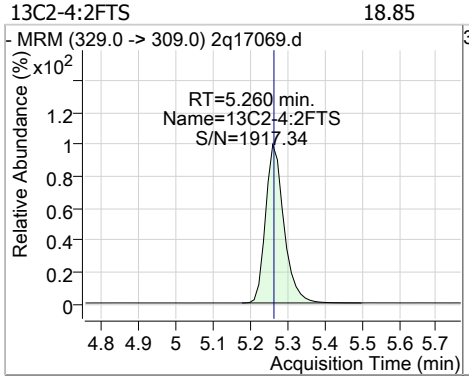
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.13	4.42	0.00	3040	299.0 -> 99.0	37.0	7.4	67.4

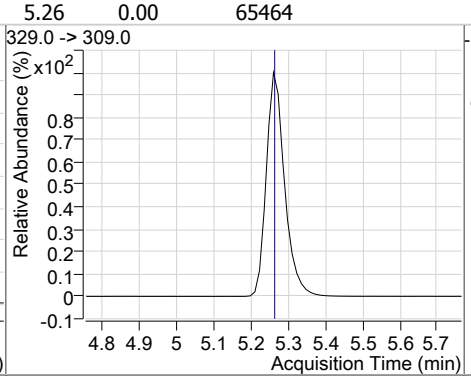


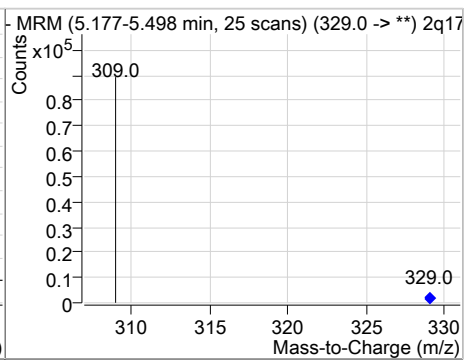




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.85	5.26	0.00	65464				

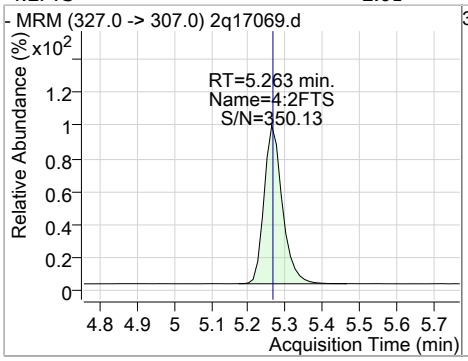


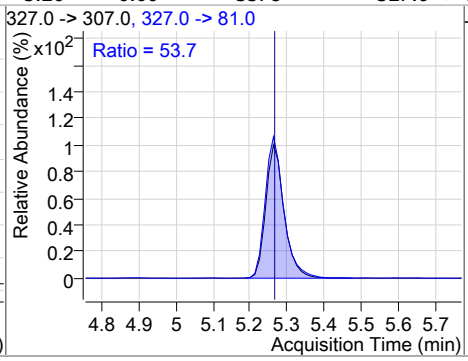


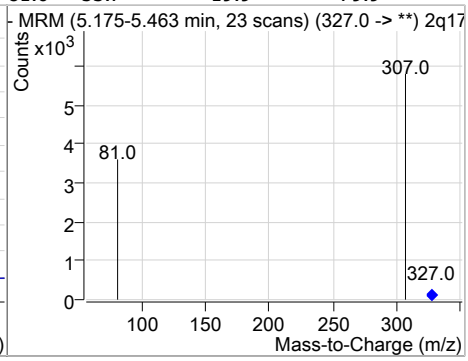


Perfluorinated Compounds by LC/MS/MS

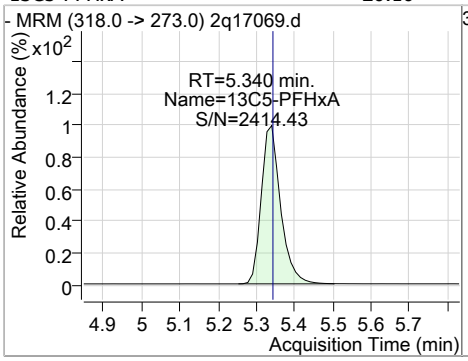
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	2.01	5.26	0.00	3578	327.0 -> 81.0	53.7	19.9	79.9

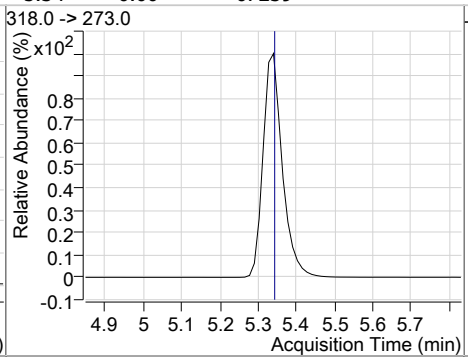


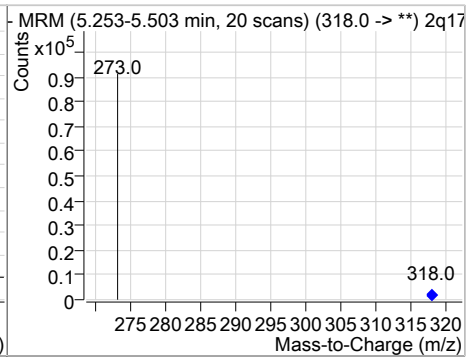




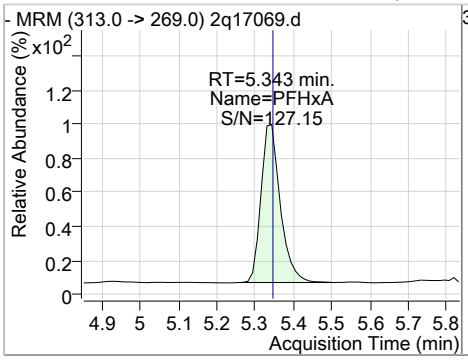
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.10	5.34	0.00	67239				

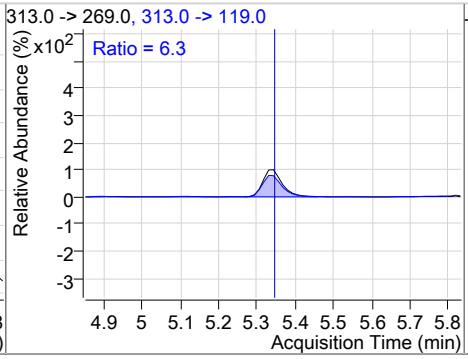


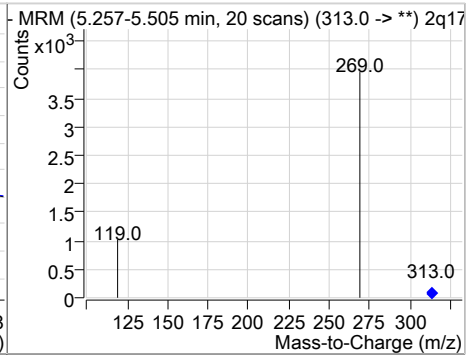




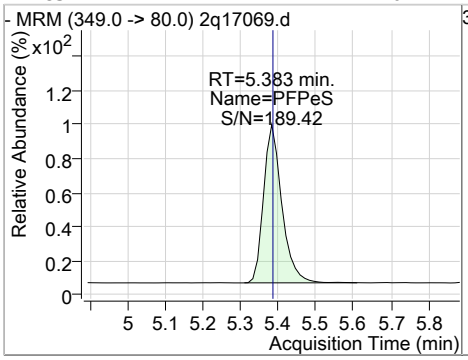
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.10	5.34	0.00	2289	313.0 -> 119.0	6.3	0.0	37.6

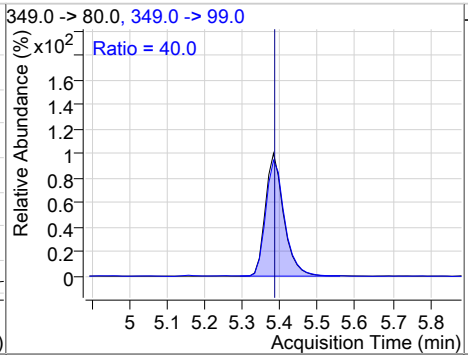


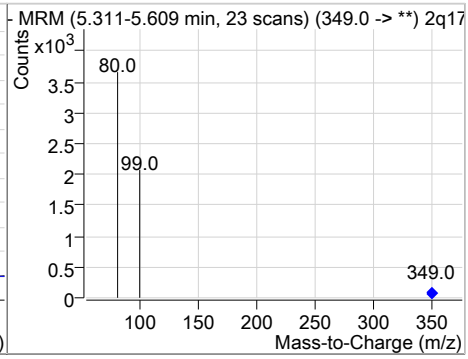




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.10	5.38	0.00	1993	349.0 -> 99.0	40.0	10.8	70.8

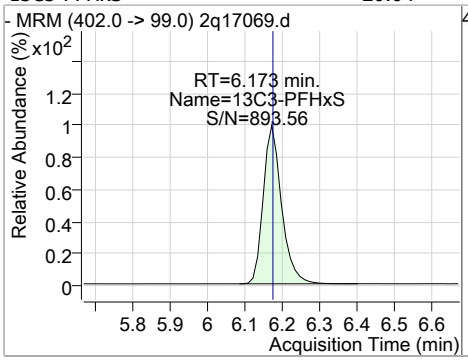


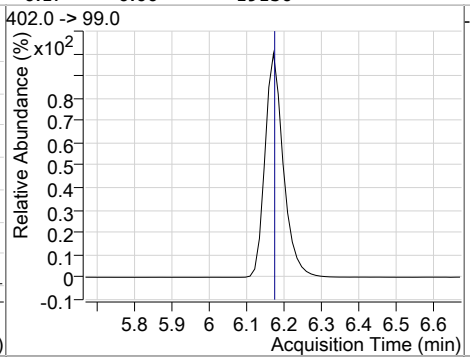


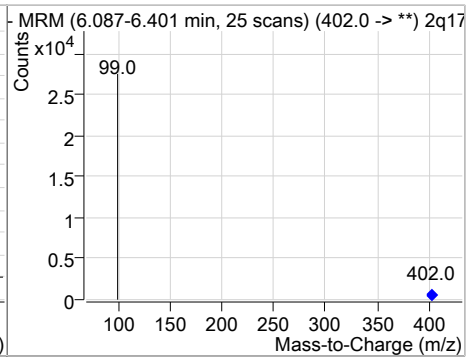


Perfluorinated Compounds by LC/MS/MS

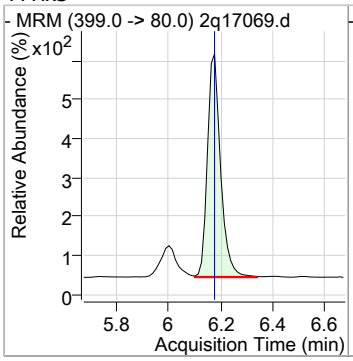
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.04	6.17	0.00	19150				

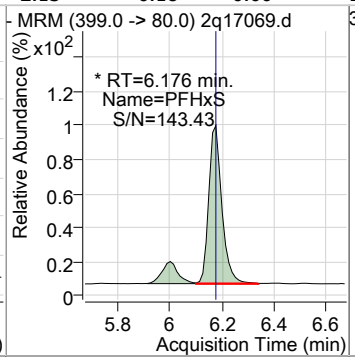


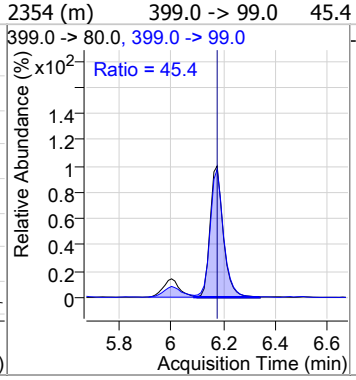


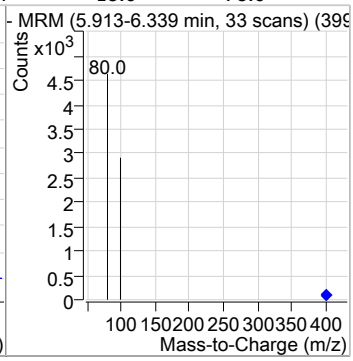


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.13	6.18	0.00	2354 (m)	399.0 -> 99.0	45.4	18.0	78.0

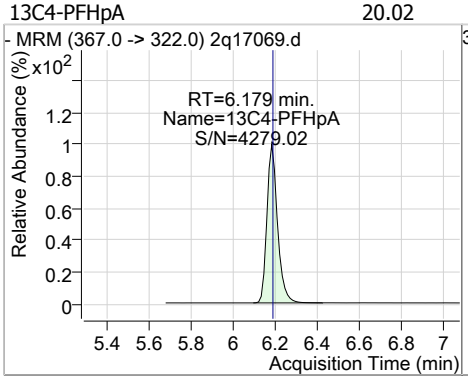


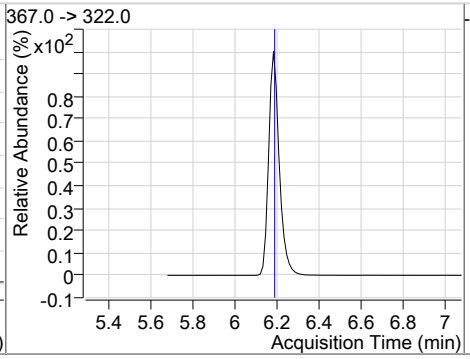


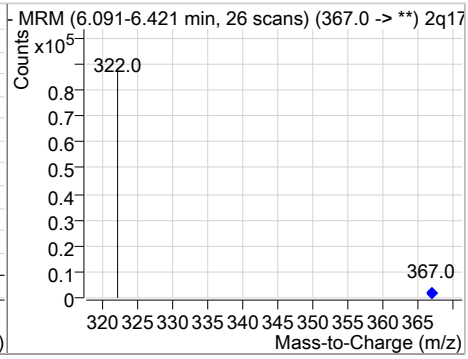




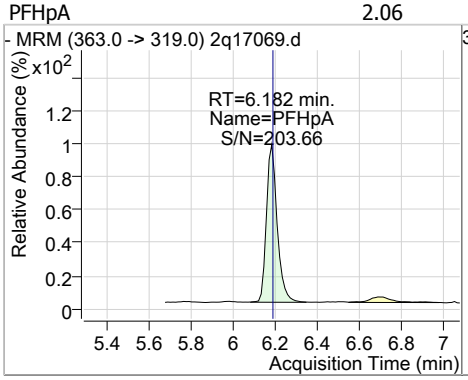
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.02	6.18	0.00	63597				

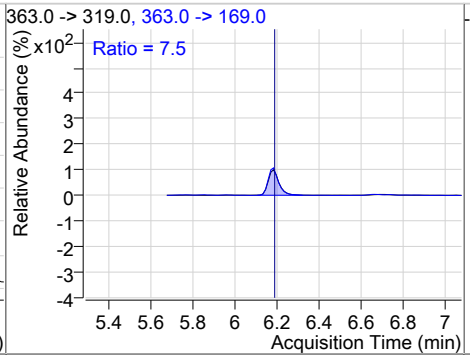


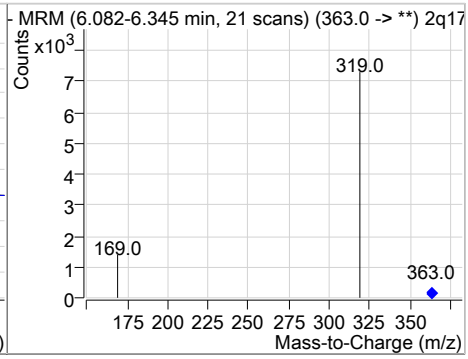




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.06	6.18	0.00	4671	363.0 -> 169.0	7.5	0.0	37.2

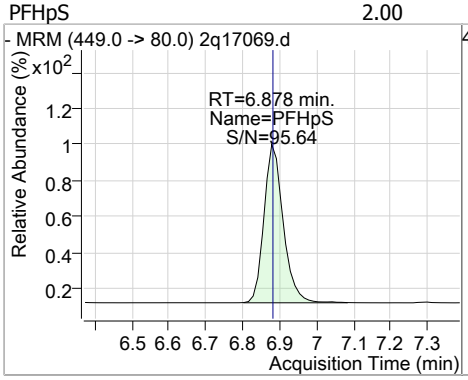


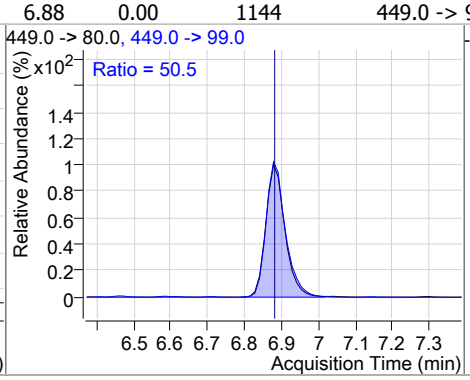


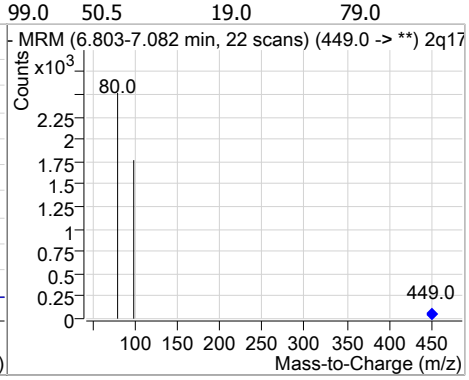


Perfluorinated Compounds by LC/MS/MS

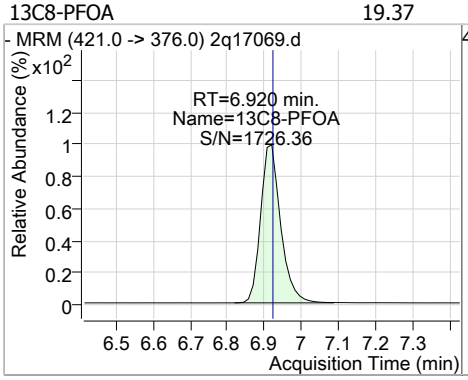
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.00	6.88	0.00	1144	449.0 -> 99.0	50.5	19.0	79.0

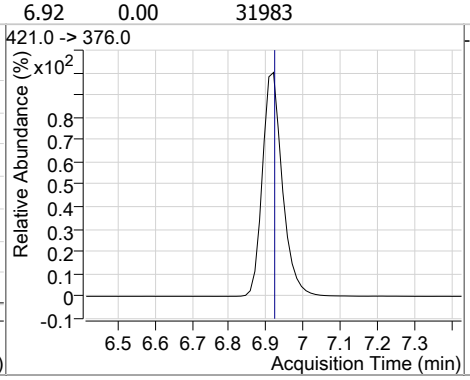


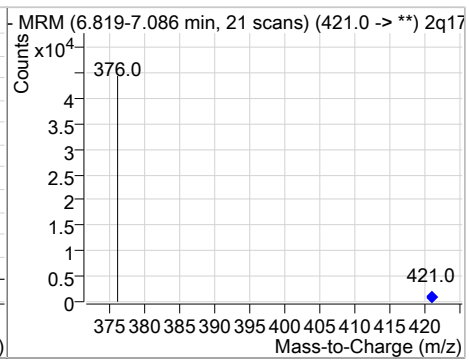




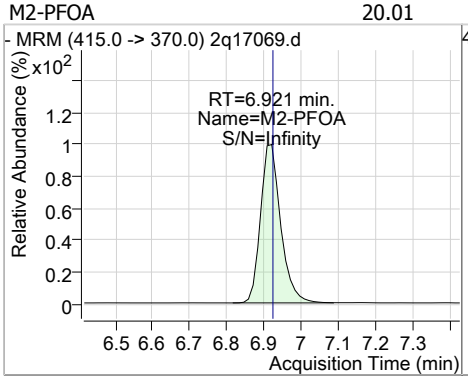
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.37	6.92	0.00	31983				

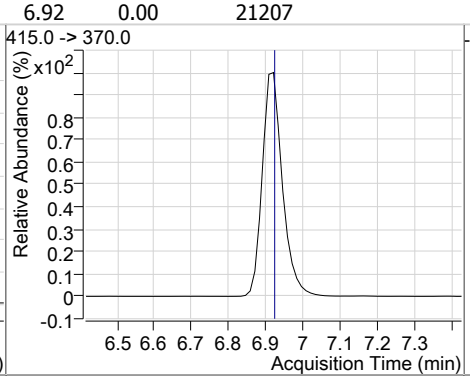


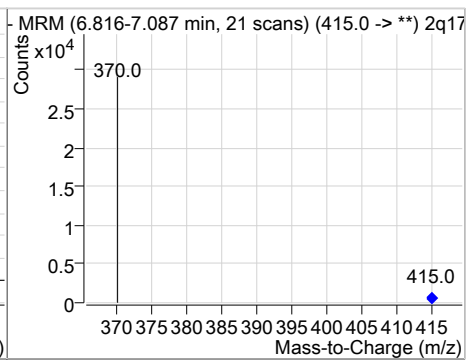




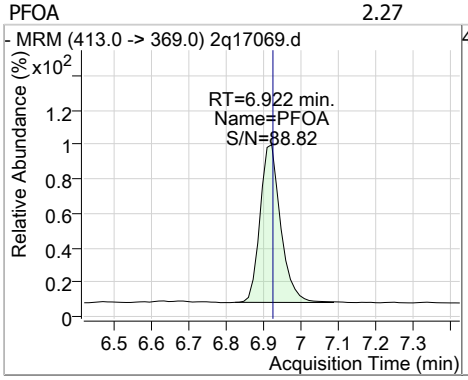
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.01	6.92	0.00	21207				

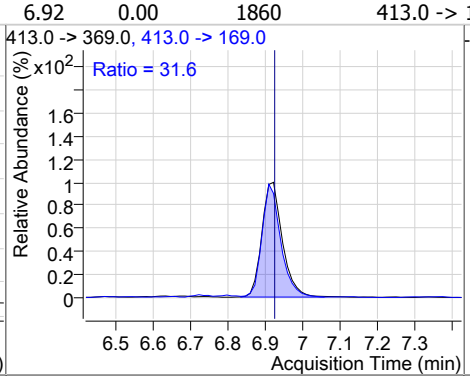


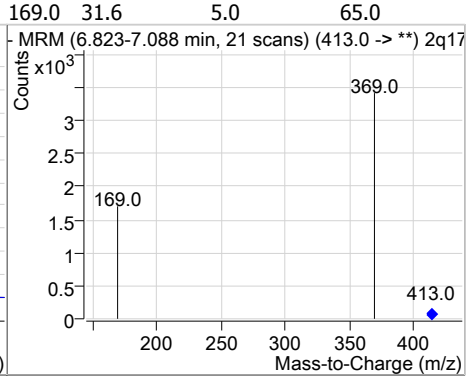




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.27	6.92	0.00	1860	413.0 -> 169.0	31.6	5.0	65.0

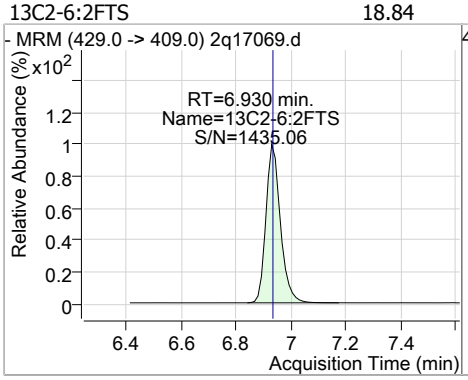


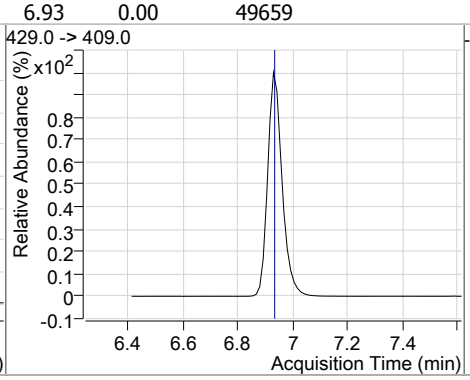


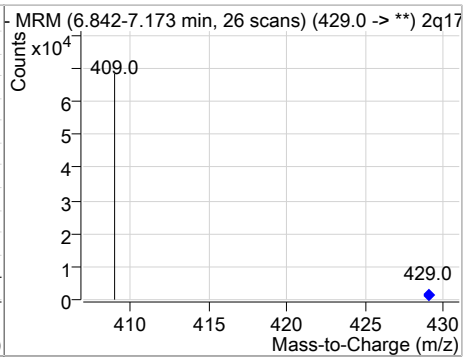


Perfluorinated Compounds by LC/MS/MS

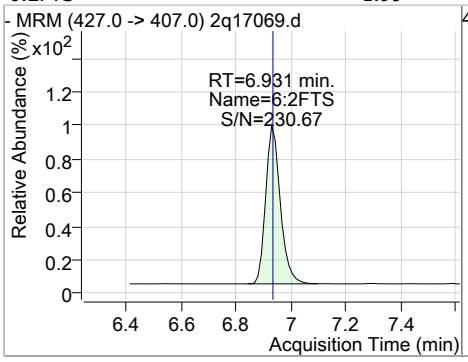
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.84	6.93	0.00	49659				

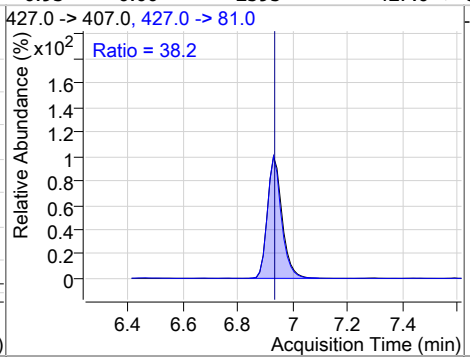


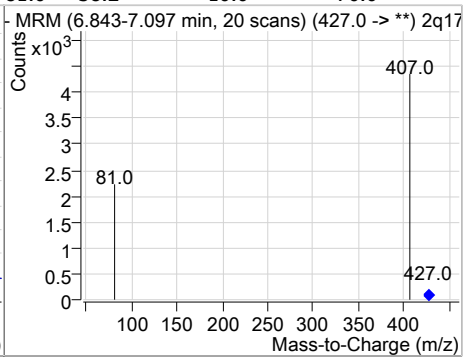




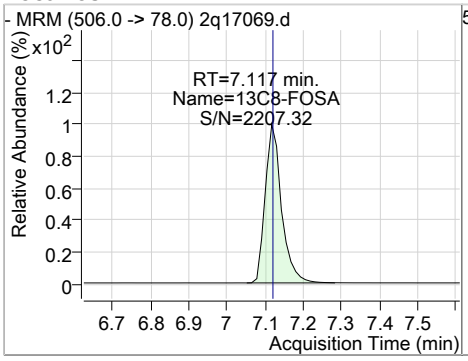
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.99	6.93	0.00	2595	427.0 -> 81.0	38.2	10.0	70.0

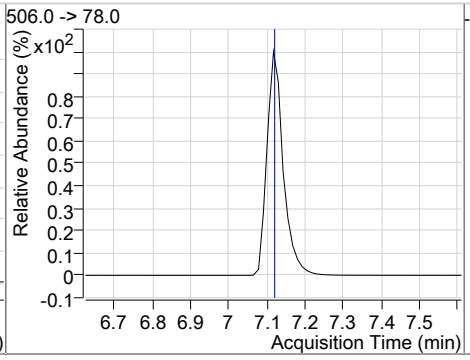


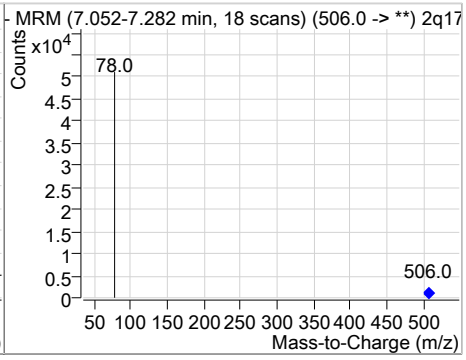




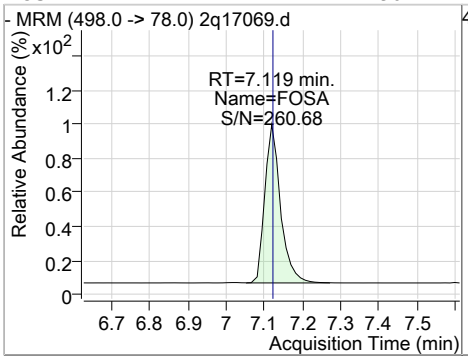
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.17	7.12	0.00	37928				

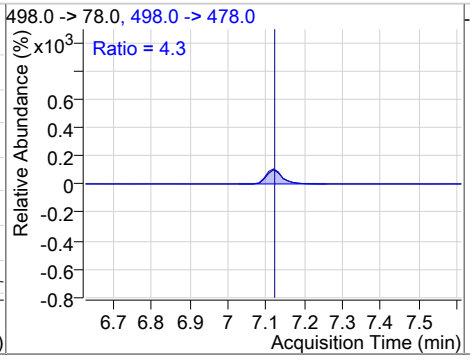


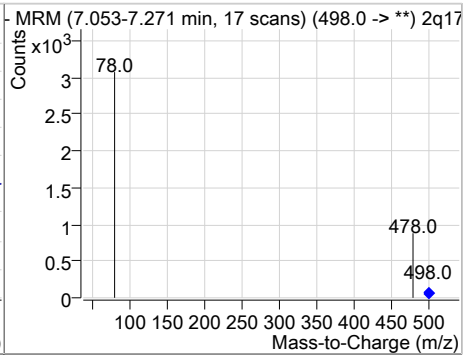




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.90	7.12	0.00	1742	498.0 -> 478.0	4.3	0.0	34.0

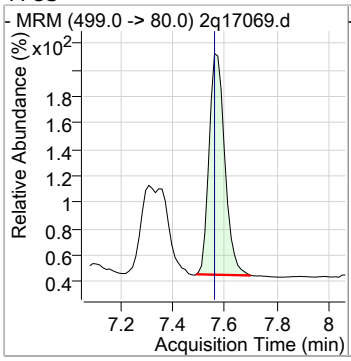


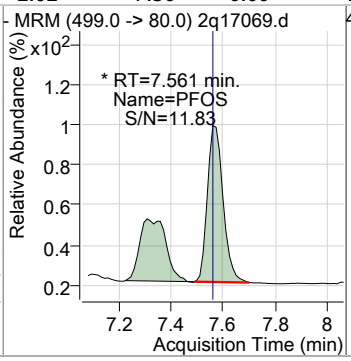


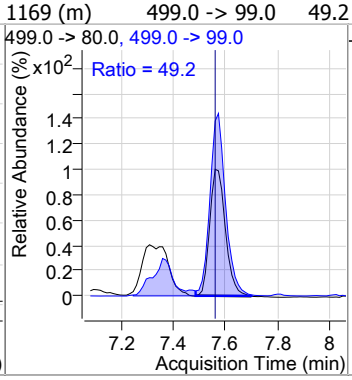


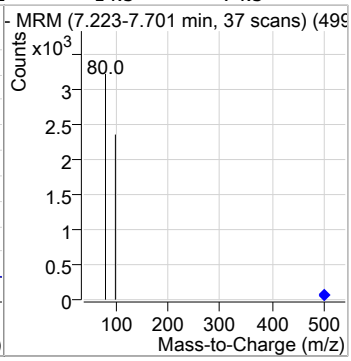
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.02	7.56	0.00	1169 (m)	499.0 -> 99.0	49.2	14.5	74.5

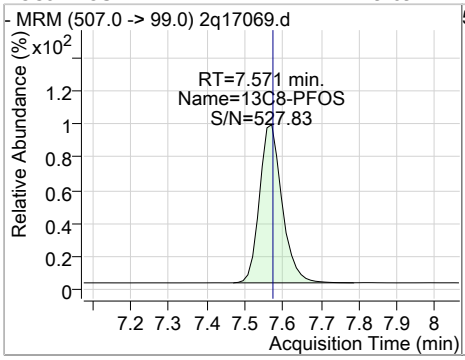


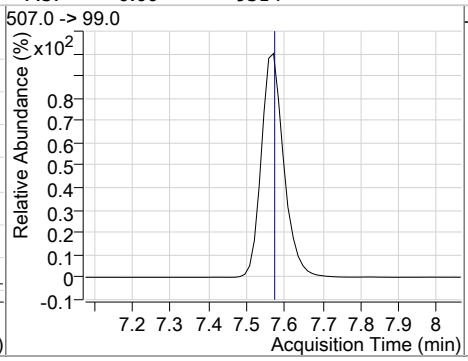


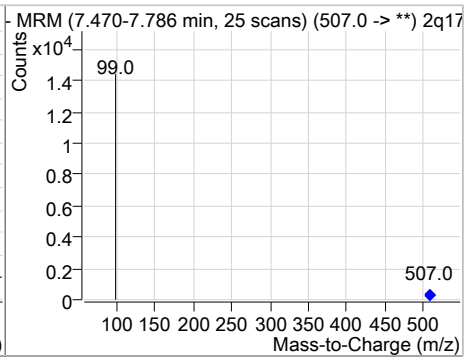




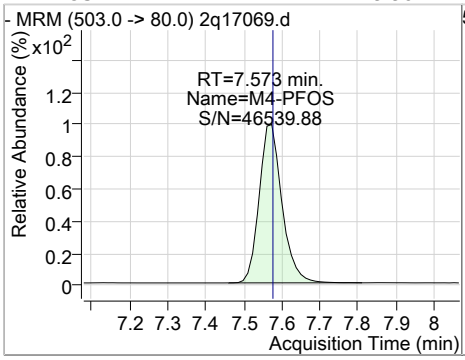
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.89	7.57	0.00	9314				

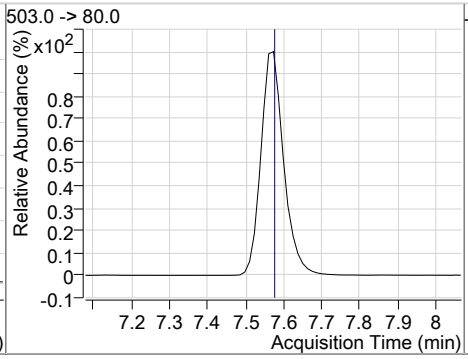


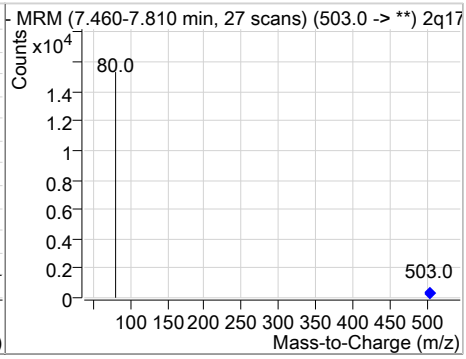




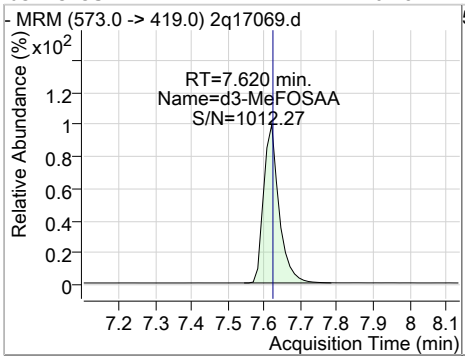
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	19.98	7.57	0.00	10669				

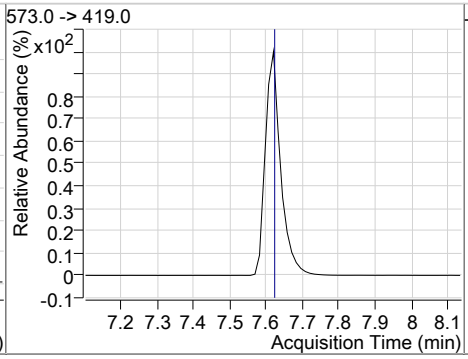


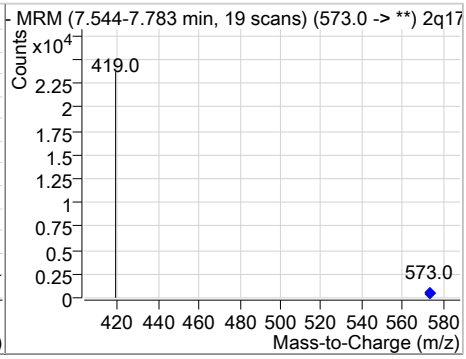




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.78	7.62	0.00	16870				

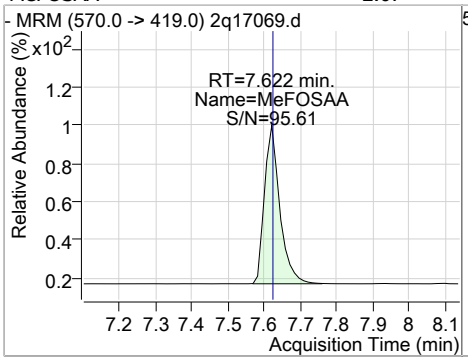


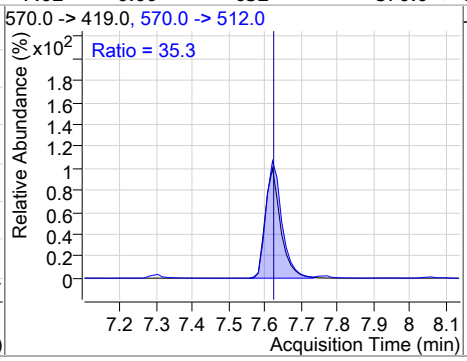


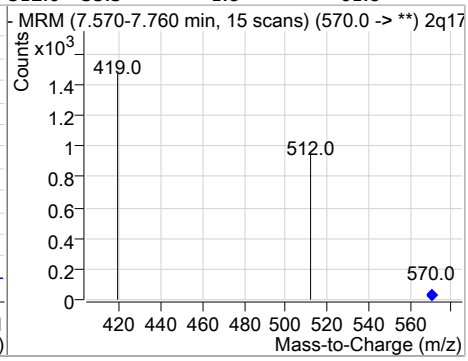


Perfluorinated Compounds by LC/MS/MS

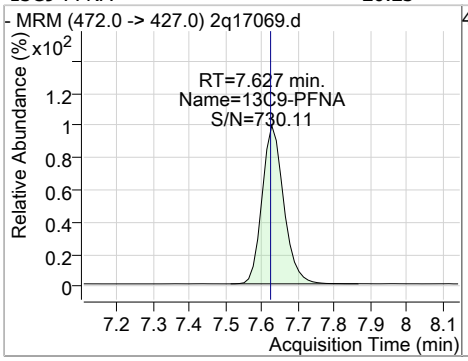
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.07	7.62	0.00	632	570.0 -> 512.0	35.3	1.8	61.8

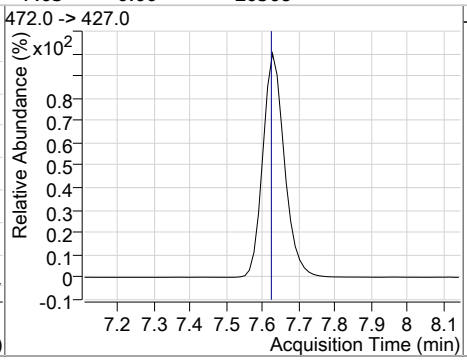


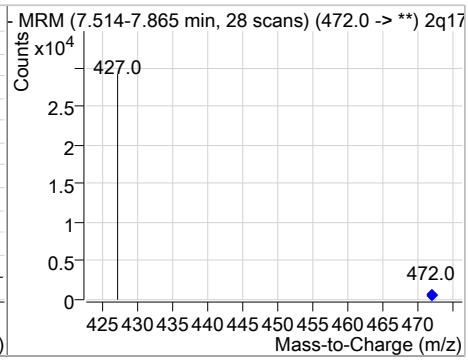




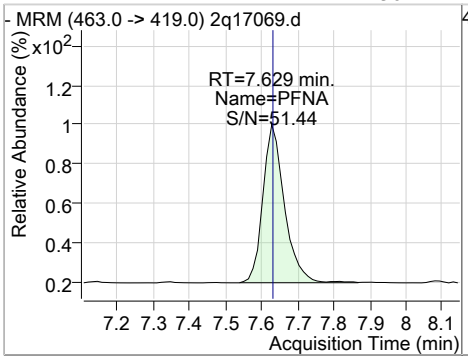
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.23	7.63	0.00	20568				

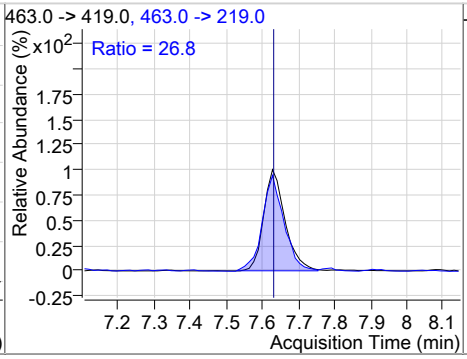


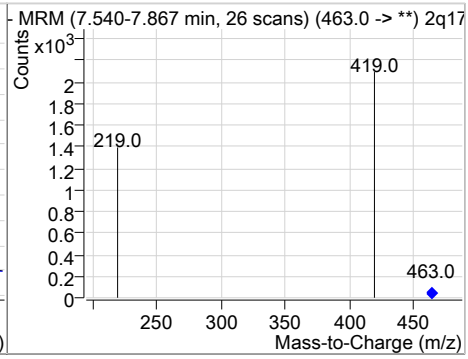




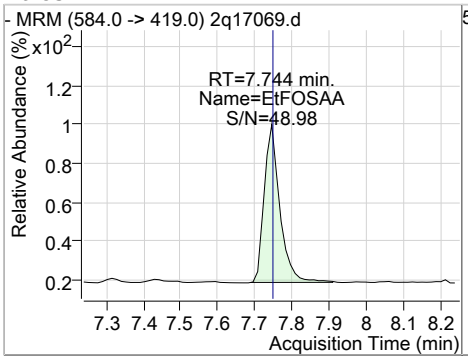
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.90	7.63	0.00	736	463.0 -> 219.0	26.8	0.0	58.4

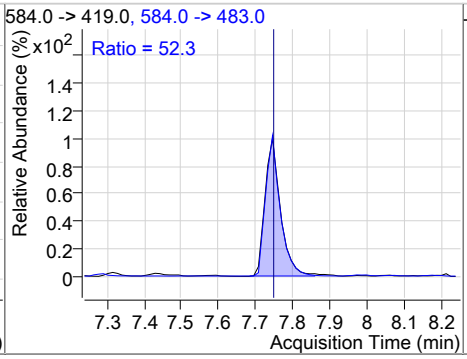


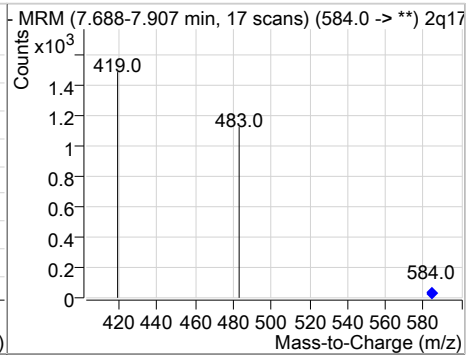




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.14	7.74	0.00	558	584.0 -> 483.0	52.3	24.8	84.8

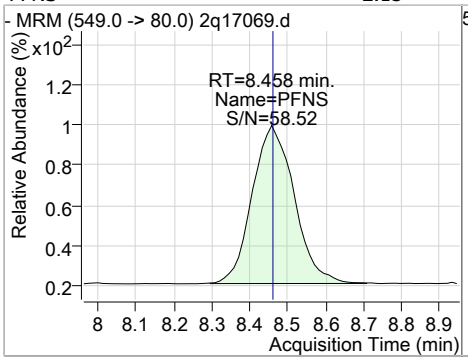


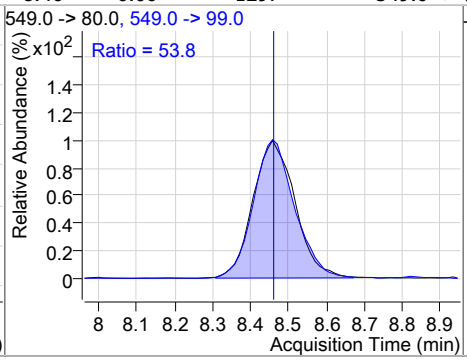


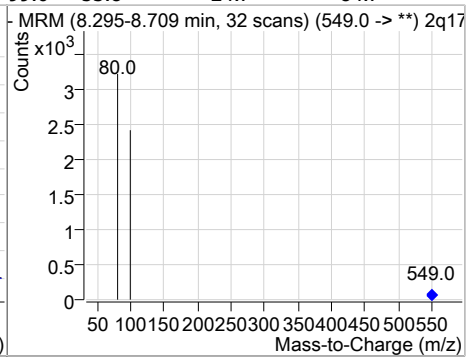


Perfluorinated Compounds by LC/MS/MS

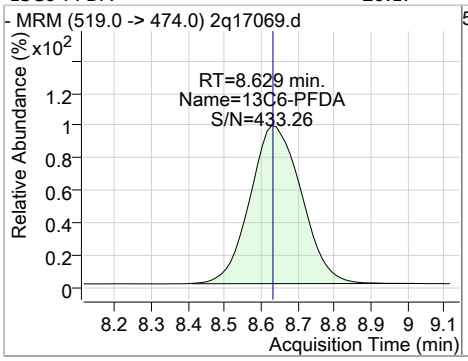
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.15	8.46	0.00	1297	549.0 -> 99.0	53.8	24.7	84.7

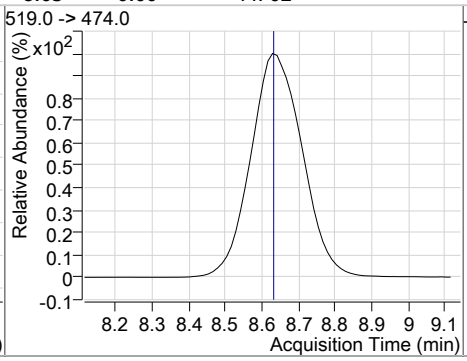


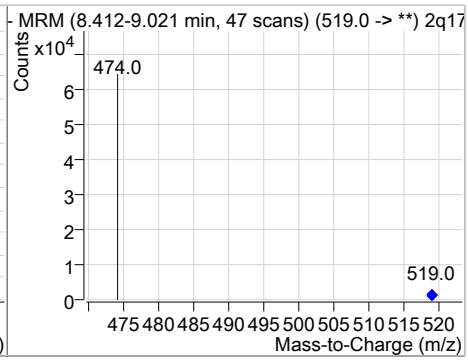




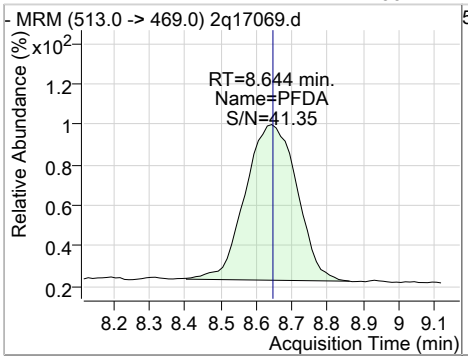
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.17	8.63	0.00	44762				

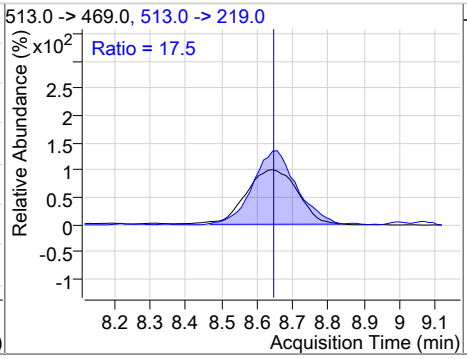


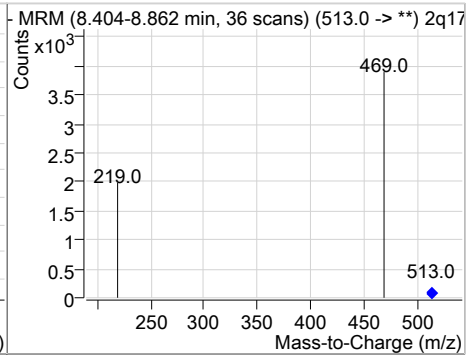




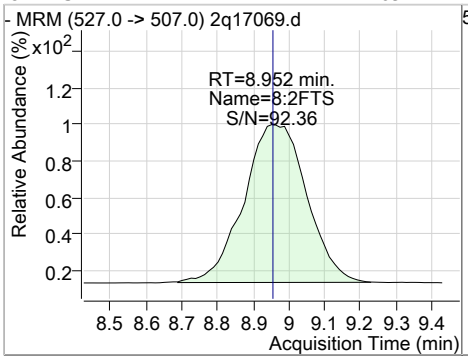
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.00	8.64	0.00	1600	513.0 -> 219.0	17.5	0.0	45.3

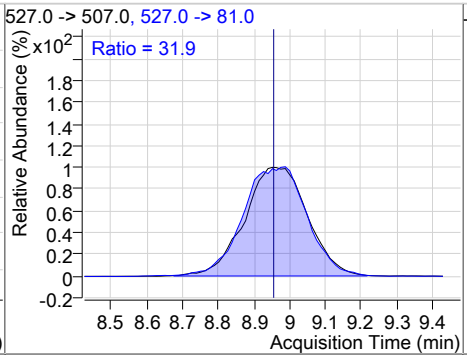


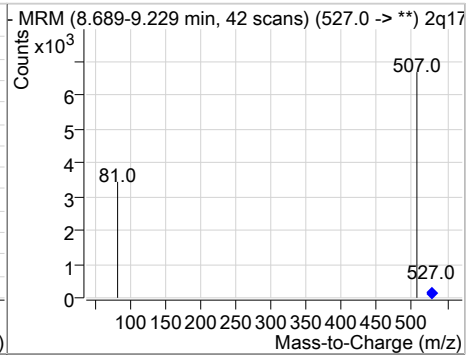




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	2.09	8.95	0.00	3539	527.0 -> 81.0	31.9	1.3	61.3

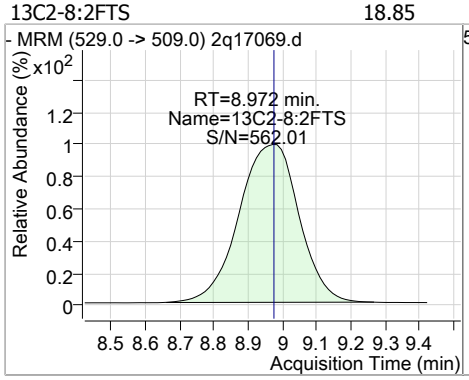


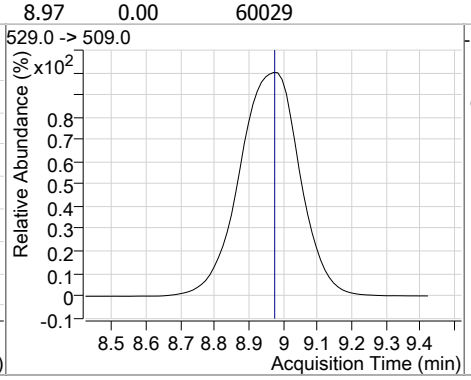


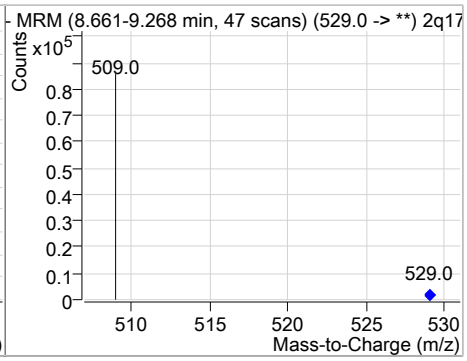


Perfluorinated Compounds by LC/MS/MS

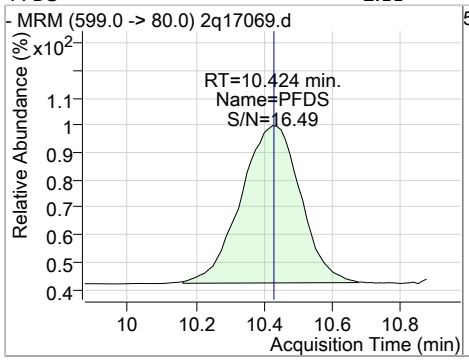
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.85	8.97	0.00	60029				

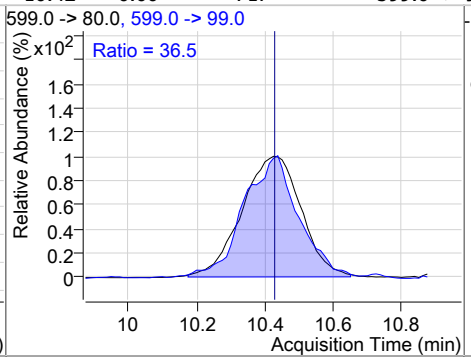


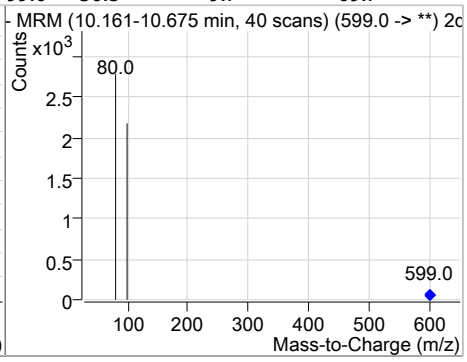




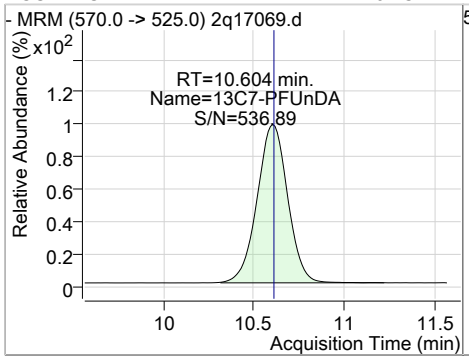
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.11	10.42	0.00	717	599.0 -> 99.0	36.5	9.7	69.7

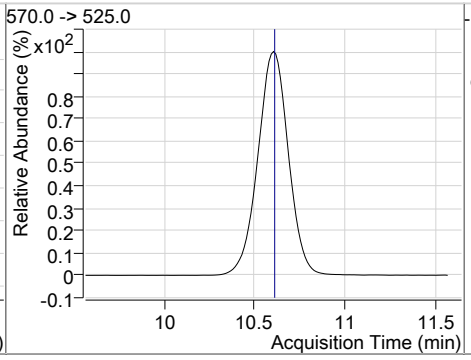


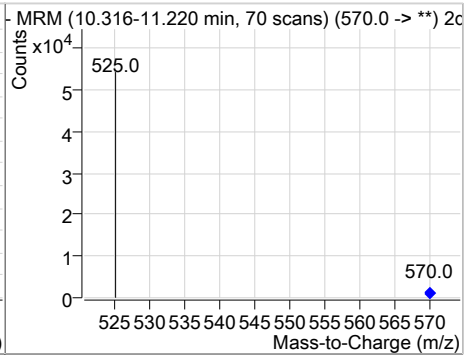




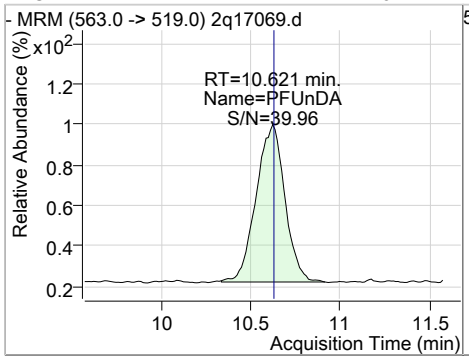
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.13	10.60	0.00	36050				

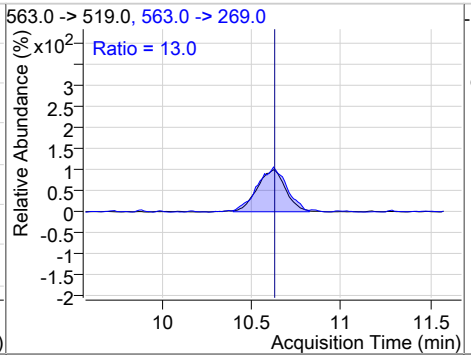


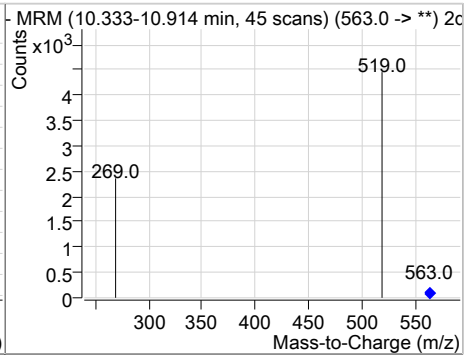




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.07	10.62	0.00	1756	563.0 -> 269.0	13.0	0.0	41.8

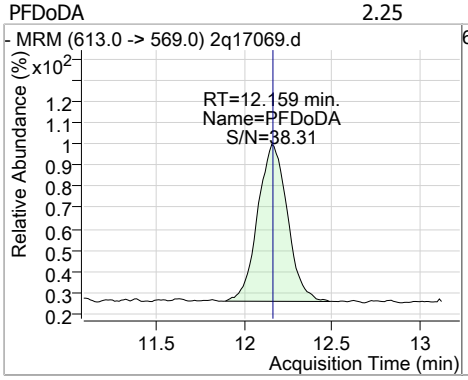


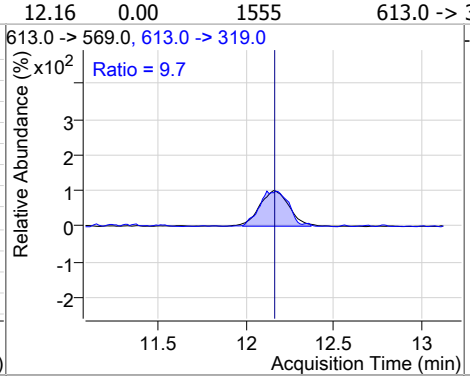


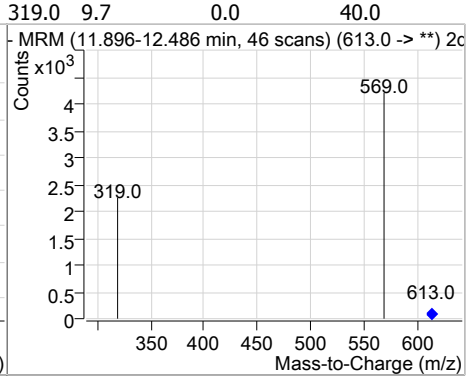


Perfluorinated Compounds by LC/MS/MS

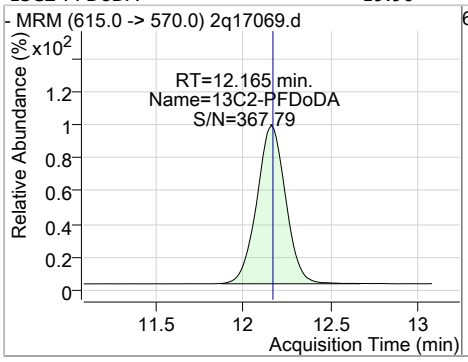
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.25	12.16	0.00	1555	613.0 -> 319.0	9.7	0.0	40.0

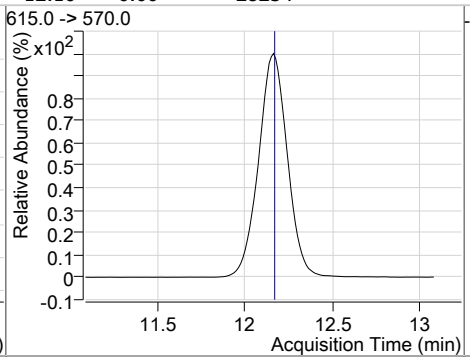


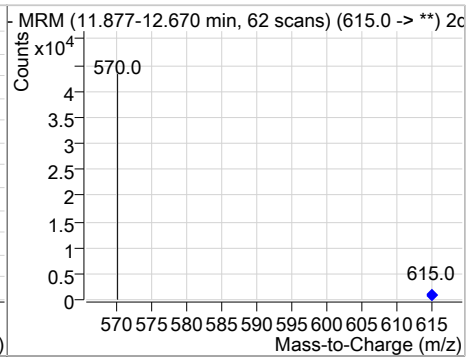




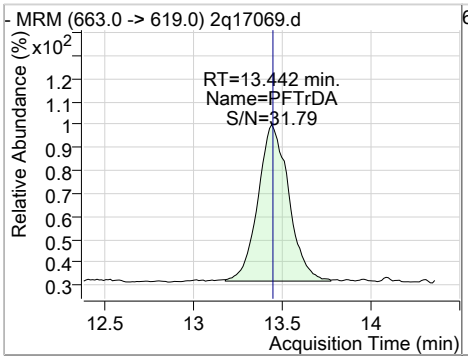
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.96	12.16	0.00	28254				

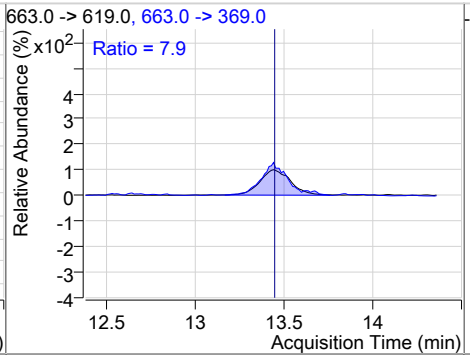


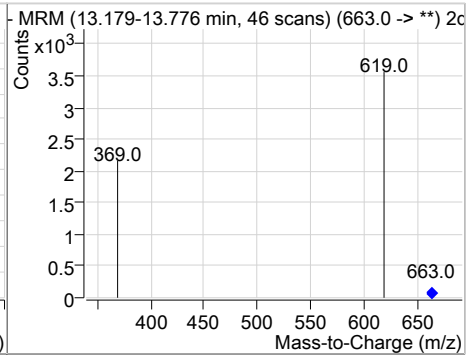




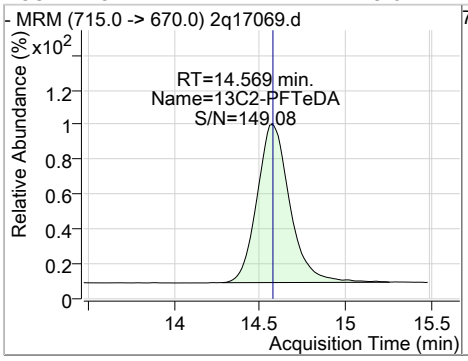
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.24	13.44	0.00	1150	663.0 -> 369.0	7.9	0.0	37.1

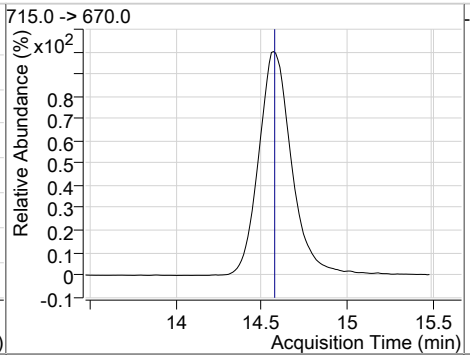


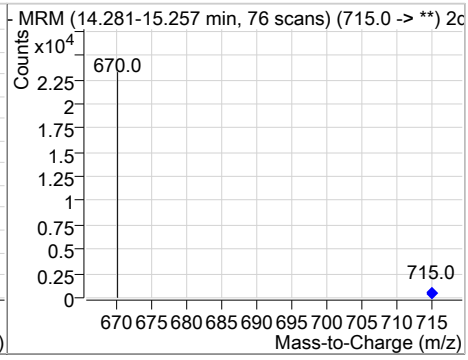




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.87	14.57	0.00	12154				

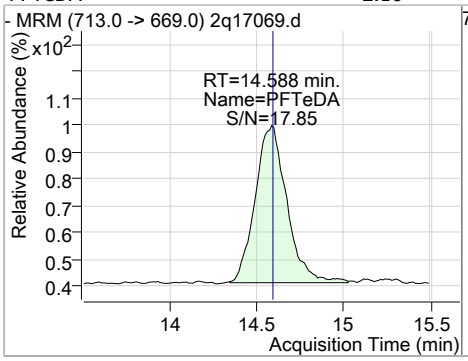


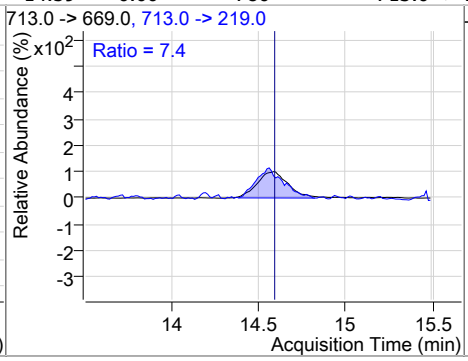


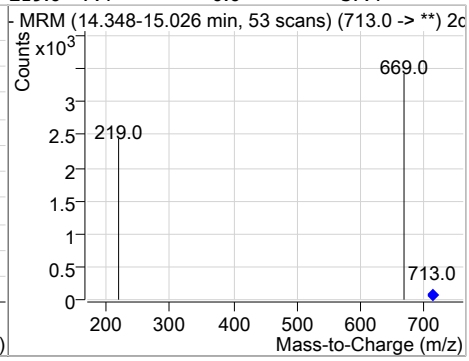


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.16	14.59	0.00	786	713.0 -> 219.0	7.4	0.0	37.4







Manual Integration Approval Summary

Sample Number: S2Q296-IC296
Lab FileID: 2Q17069.D
Injection Time: 07/13/18 12:29
Method: EPA 537M BY ID
Analyst approved: 07/16/18 13:34 Natasha Gumtie
Supervisor approved: 07/16/18 17:22 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.56	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/16/18 17:22

Perfluorinated Compounds by LC/MS/MS

Data File : 2q17070.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/13/2018 12:50:33 PM
Sample Name : ic296-5.0
Vial : Vial 5
DA Method File : PFC_ID_071318_S2Q296.quantmethod.xml
Batch Name : s2q296.batch.bin
Sample Information : op70790,S2Q296,1.99,,,1.0,1,soil

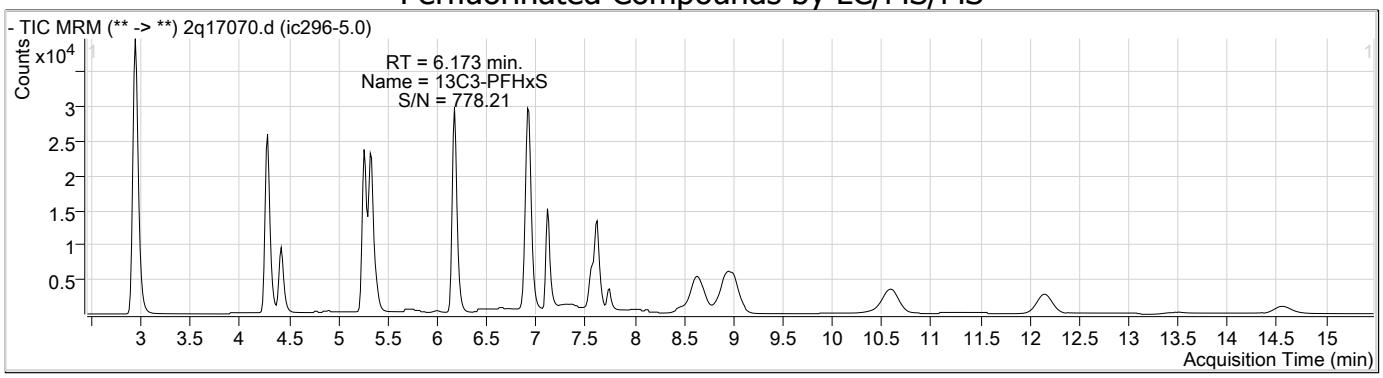
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.921	415.0 -> 370.0	21223	20.00	µg/L	0.000
13C4-PFOS	7.561	503.0 -> 80.0	10740	20.00	µg/L	-0.013
M4-PFBA	2.941	217.0 -> 172.0	149105	20.00	µg/L	0.000
M5-PFPeA	4.287	268.0 -> 223.0	74109	20.00	µg/L	0.000
M5-PFHxA	5.340	318.0 -> 273.0	68088	20.00	µg/L	0.000
M4-PFHpA	6.179	367.0 -> 322.0	63861	20.00	µg/L	0.000
M8-PFOA	6.920	421.0 -> 376.0	33220	20.00	µg/L	0.000
M9-PFNA	7.627	472.0 -> 427.0	20125	20.00	µg/L	0.000
M6-PFDA	8.641	519.0 -> 474.0	44391	20.00	µg/L	0.013
M7-PFUnDA	10.591	570.0 -> 525.0	35960	20.00	µg/L	-0.013
M2-PFDoDA	12.152	615.0 -> 570.0	28090	20.00	µg/L	-0.012
M2-PFTeDA	14.556	715.0 -> 670.0	12292	20.00	µg/L	-0.013
M8-FOSA	7.117	506.0 -> 78.0	37001	20.00	µg/L	0.000
M3-PFBS	4.418	302.0 -> 99.0	22132	20.00	µg/L	0.000
M3-PFHxS	6.173	402.0 -> 99.0	18938	20.00	µg/L	0.000
M8-PFOS	7.571	507.0 -> 99.0	9238	20.00	µg/L	0.000
M2-4:2FTS	5.260	329.0 -> 309.0	66348	20.00	µg/L	0.000
M2-6:2FTS	6.930	429.0 -> 409.0	49852	20.00	µg/L	0.000
M2-8:2FTS	8.959	529.0 -> 509.0	61101	20.00	µg/L	-0.013
M3-MeFOSAA	7.620	573.0 -> 419.0	16854	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.260	329.0 -> 309.0	66360	19.10	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.5%		
13C2-6:2FTS	6.930	429.0 -> 409.0	49874	18.92	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.6%		
13C2-8:2FTS	8.959	529.0 -> 509.0	60733	19.07	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.4%		
13C2-PFDoDA	12.152	615.0 -> 570.0	28173	19.90	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%		
13C2-PFTeDA	14.556	715.0 -> 670.0	12266	20.06	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C3-PFBS	4.418	302.0 -> 99.0	22138	20.06	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C3-PFHxS	6.173	402.0 -> 99.0	18937	19.82	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%		
13C4-PFBA	2.941	217.0 -> 172.0	148980	19.87	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.3%		
13C4-PFHpA	6.179	367.0 -> 322.0	63921	20.12	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%		
13C5-PFHxA	5.340	318.0 -> 273.0	68097	20.36	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.8%		
13C5-PFPeA	4.287	268.0 -> 223.0	74155	20.03	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C6-PFDA	8.641	519.0 -> 474.0	44102	19.87	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.4%		

Perfluorinated Compounds by LC/MS/MS

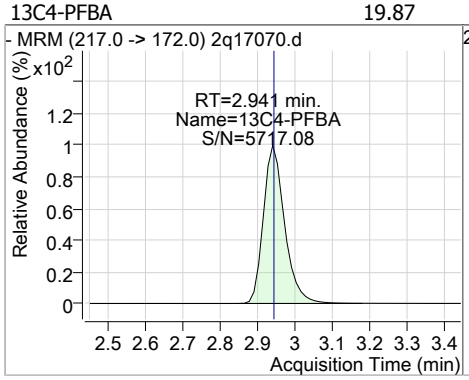
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.591	570.0 -> 525.0	35950	20.07	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.4%			
13C8-FOSA	7.117	506.0 -> 78.0	36992	20.65	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.2%			
13C8-PFOA	6.920	421.0 -> 376.0	33207	20.11	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%			
13C8-PFOS	7.571	507.0 -> 99.0	9253	19.76	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.8%			
13C9-PFNA	7.627	472.0 -> 427.0	20122	19.79	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%			
d3-MeFOSAA	7.620	573.0 -> 419.0	16843	20.75	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.8%			
M2-PFOA	6.921	415.0 -> 370.0	21211	19.99	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.561	503.0 -> 80.0	10745	20.01	ng/ml		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
Target Compounds							**QValue**
4:2FTS	5.263	327.0 -> 307.0	8518	4.76	µg/L		100
6:2FTS	6.931	427.0 -> 407.0	6109	4.69	µg/L		95
8:2FTS	8.952	527.0 -> 507.0	8615	5.07	µg/L		98
EtFOSAA	7.744	584.0 -> 419.0	1273	4.89	µg/L		99
FOSA	7.119	498.0 -> 78.0	4531	5.06	µg/L		99
MeFOSAA	7.622	570.0 -> 419.0	1526	5.00	µg/L		98
PFBA	2.949	213.0 -> 169.0	5776	4.90	µg/L		100
PFBS	4.422	299.0 -> 80.0	7119	4.94	µg/L		99
PFDA	8.631	513.0 -> 469.0	4106	5.19	µg/L		99
PFDoDA	12.146	613.0 -> 569.0	3706	5.39	µg/L		100
PFDS	10.412	599.0 -> 80.0	1700	5.00	µg/L		96
PFHpA	6.182	363.0 -> 319.0	11131	4.89	µg/L		100
PFHpS	6.878	449.0 -> 80.0	2884	5.09	µg/L		100
PFHxA	5.330	313.0 -> 269.0	5531	5.02	µg/L		97
PFHxS	6.176	399.0 -> 80.0	5453	4.99	µg/L	m	98
PFNA	7.629	463.0 -> 419.0	1971	5.20	µg/L		97
PFNS	8.458	549.0 -> 80.0	3021	5.05	µg/L		99
PFOA	6.909	413.0 -> 369.0	4121	4.85	µg/L		97
PFOS	7.574	499.0 -> 80.0	2859	4.98	µg/L	m	93
PFPeA	4.291	263.0 -> 219.0	16931	5.14	µg/L		100
PFPeS	5.383	349.0 -> 80.0	4697	4.92	µg/L		98
PFTeDA	14.538	713.0 -> 669.0	1812	4.90	µg/L		100
PFTrDA	13.442	663.0 -> 619.0	2692	5.15	µg/L		100
PFUnDA	10.596	563.0 -> 519.0	4322	5.11	µg/L		99

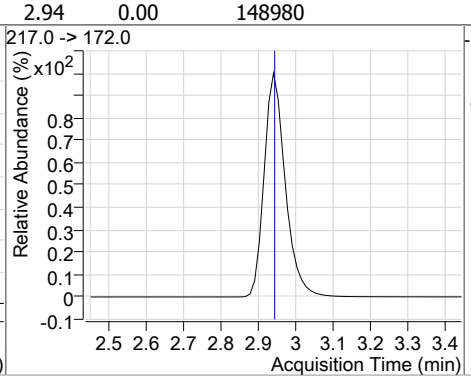
 # = Qualifier out of range, m = manually integrated, + = Area summed

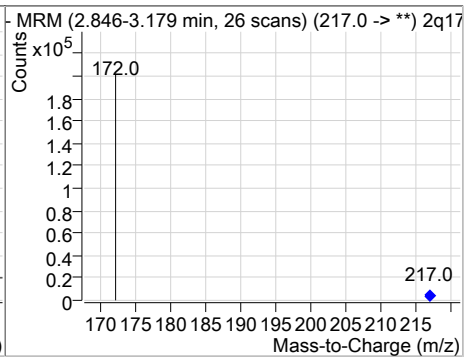
Perfluorinated Compounds by LC/MS/MS



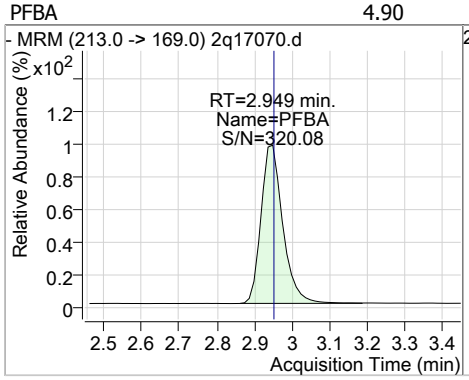
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.87	2.94	0.00	148980				

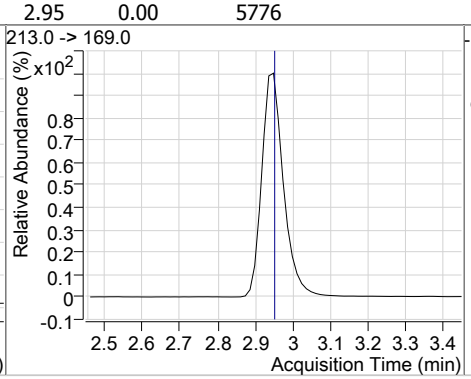


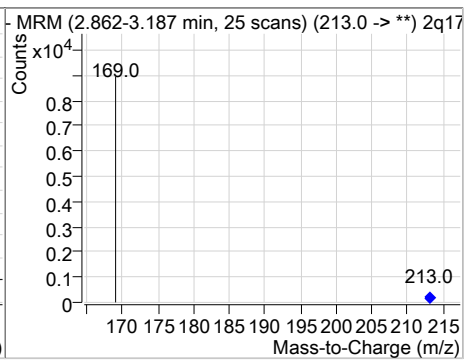




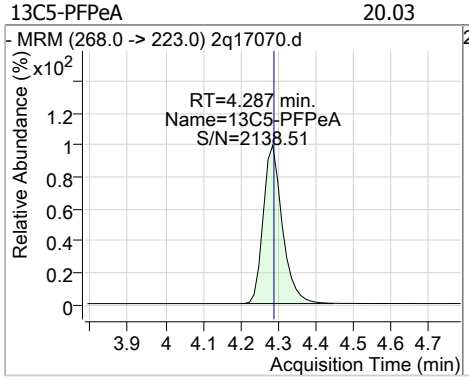
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	4.90	2.95	0.00	5776				

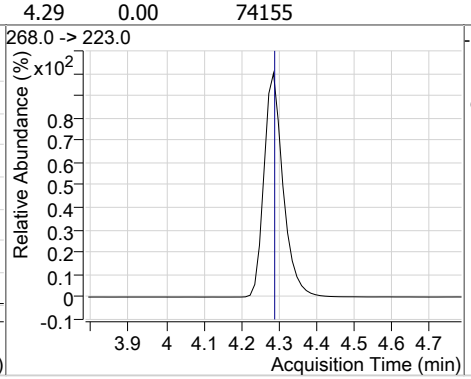


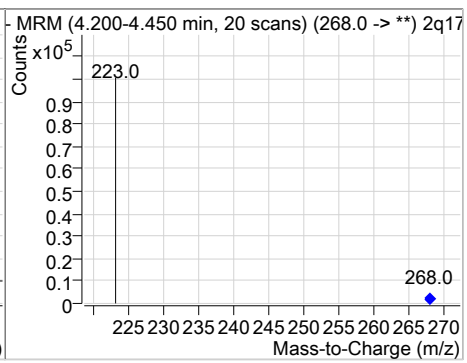




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.03	4.29	0.00	74155				

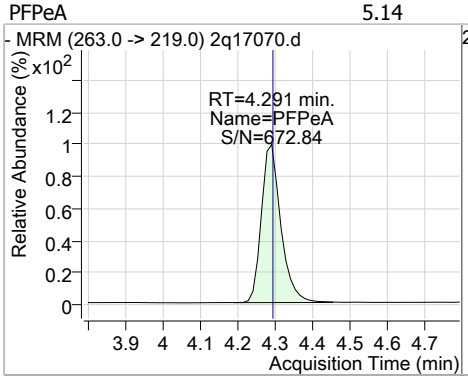


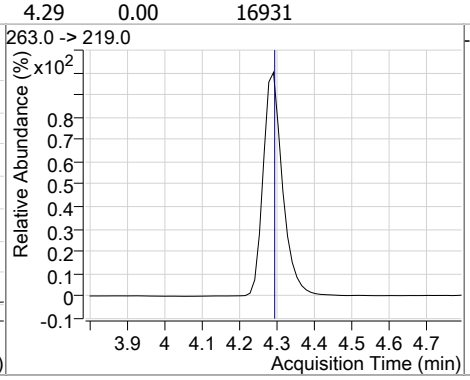


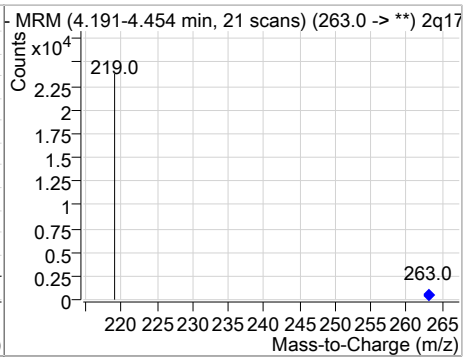


Perfluorinated Compounds by LC/MS/MS

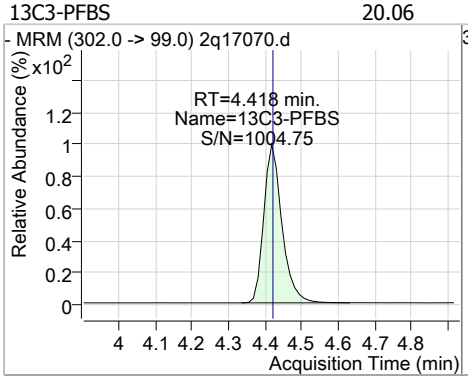
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	5.14	4.29	0.00	16931				

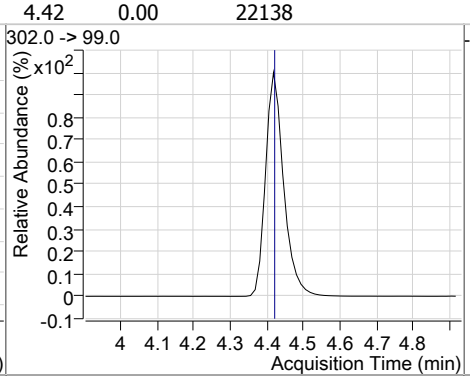


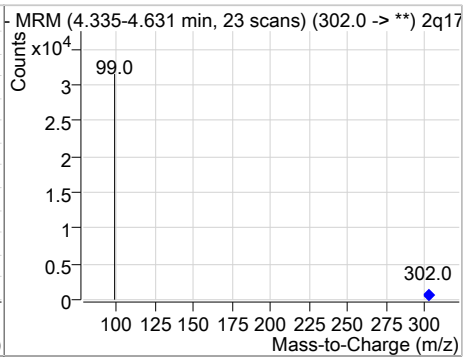




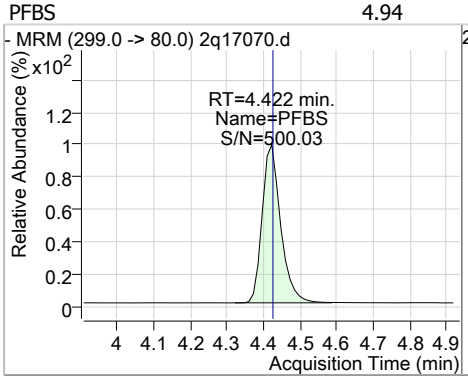
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.06	4.42	0.00	22138				

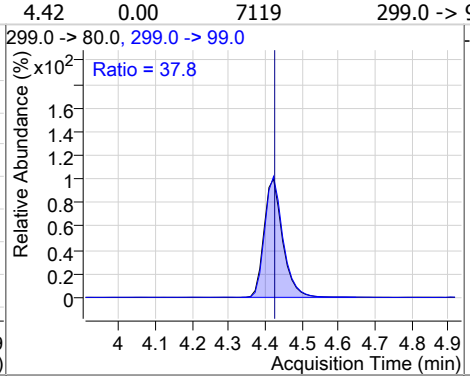


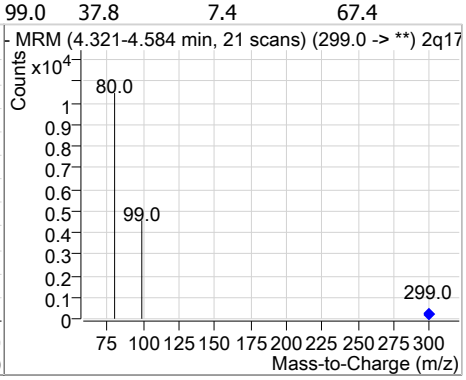




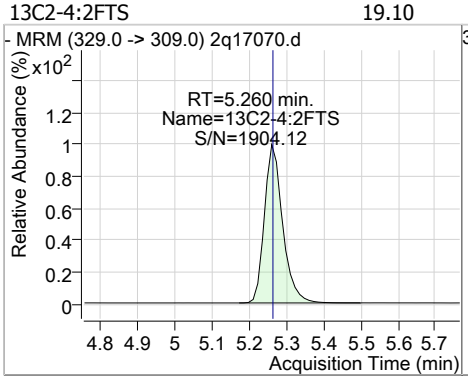
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	4.94	4.42	0.00	7119	299.0 -> 99.0	37.8	7.4	67.4

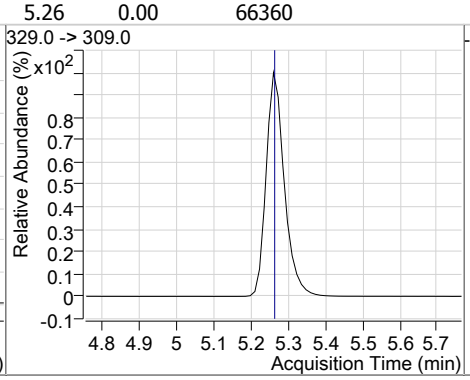


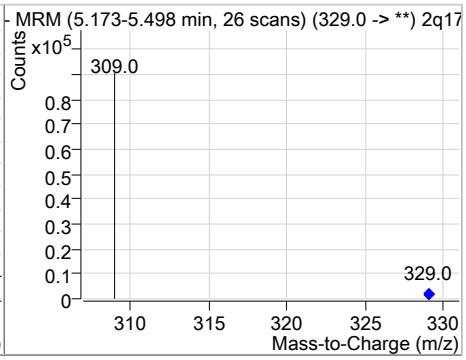




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.10	5.26	0.00	66360				

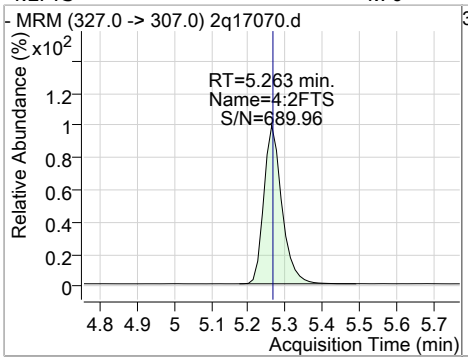


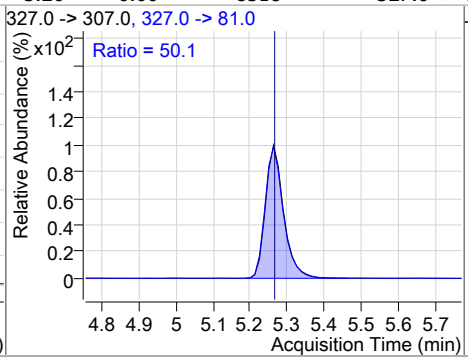


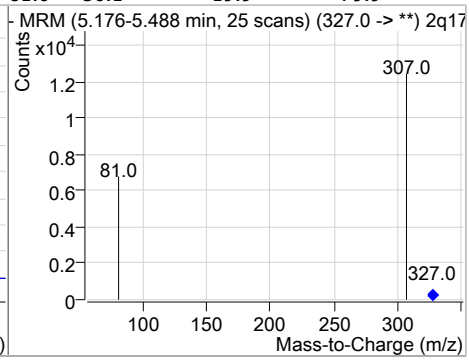


Perfluorinated Compounds by LC/MS/MS

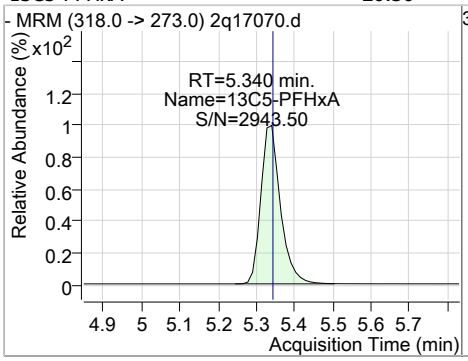
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	4.76	5.26	0.00	8518	327.0 -> 81.0	50.1	19.9	79.9

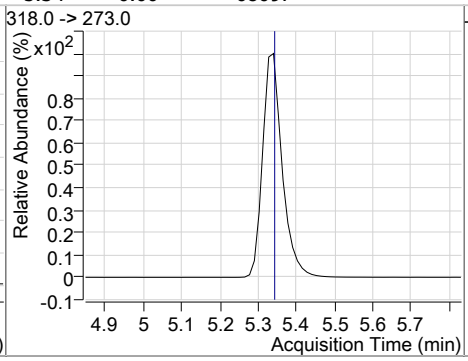


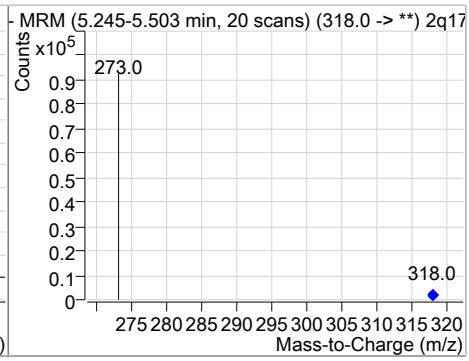




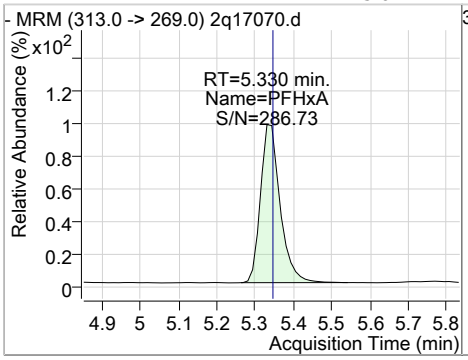
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.36	5.34	0.00	68097				

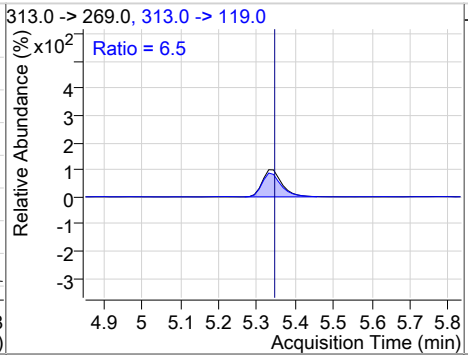


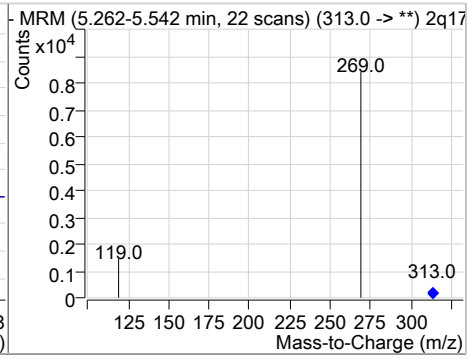




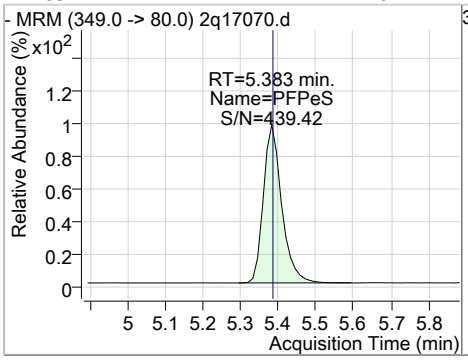
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	5.02	5.33	-0.01	5531	313.0 -> 119.0	6.5	0.0	37.6

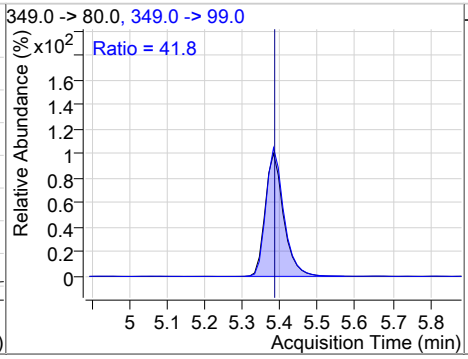


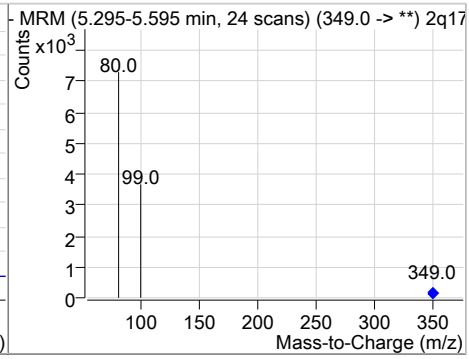




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	4.92	5.38	0.00	4697	349.0 -> 99.0	41.8	10.8	70.8

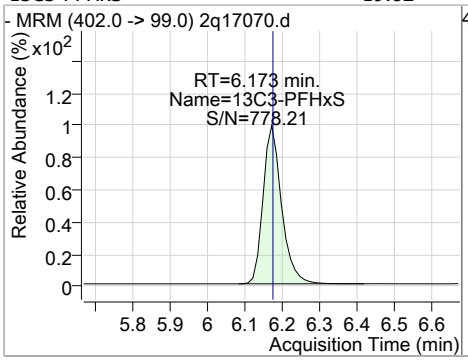


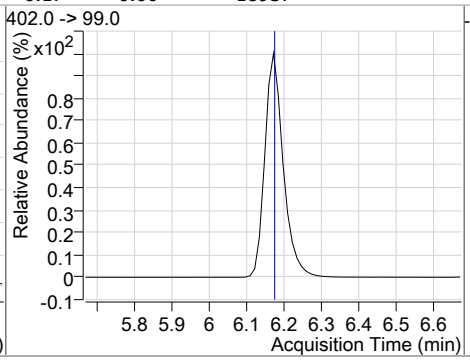


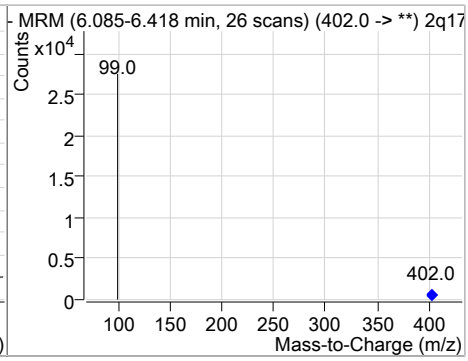


Perfluorinated Compounds by LC/MS/MS

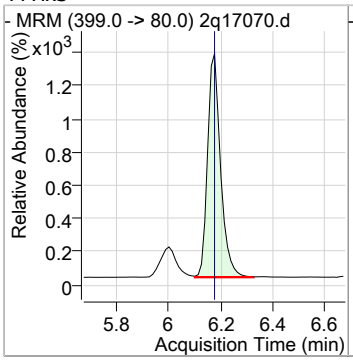
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.82	6.17	0.00	18937				

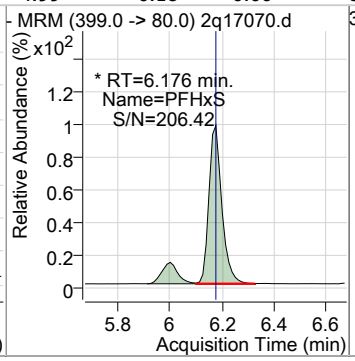


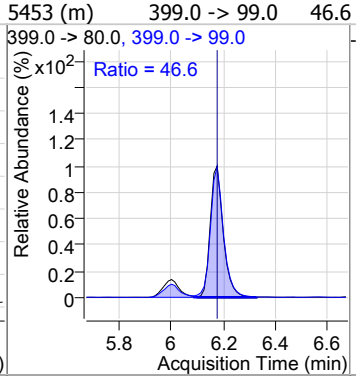


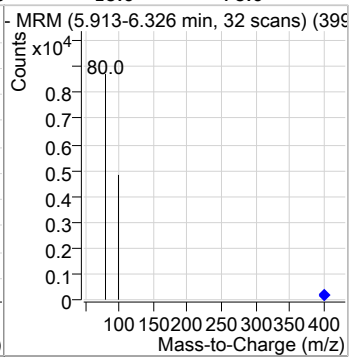


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	4.99	6.18	0.00	5453 (m)	399.0 -> 99.0	46.6	18.0	78.0

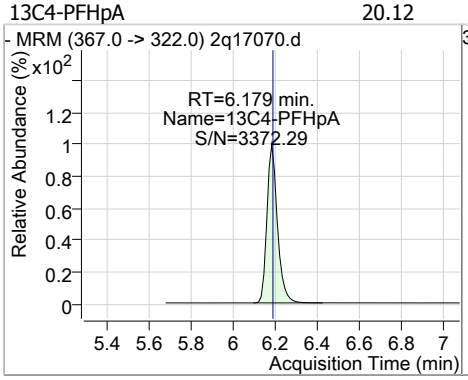


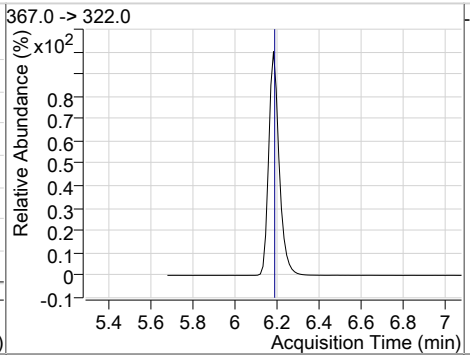


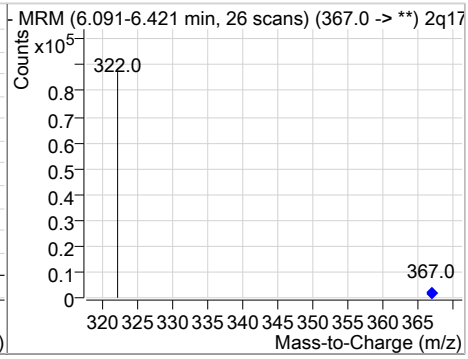




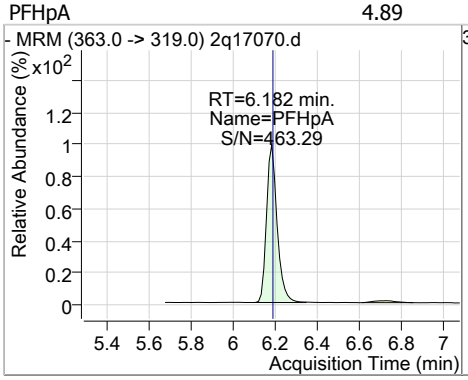
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.12	6.18	0.00	63921				

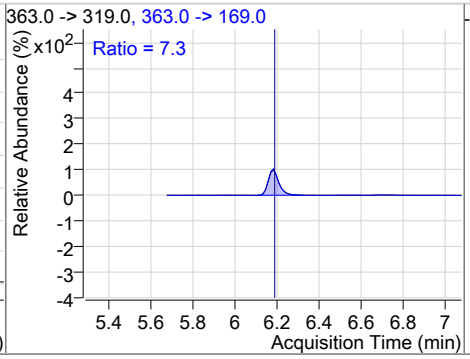


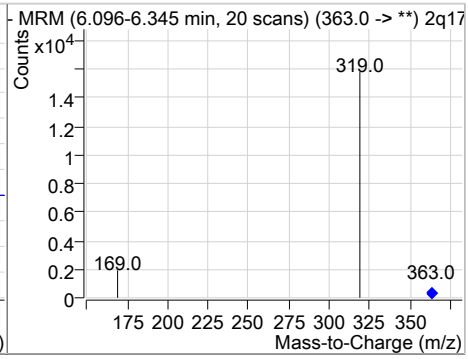




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	4.89	6.18	0.00	11131	363.0 -> 169.0	7.3	0.0	37.2

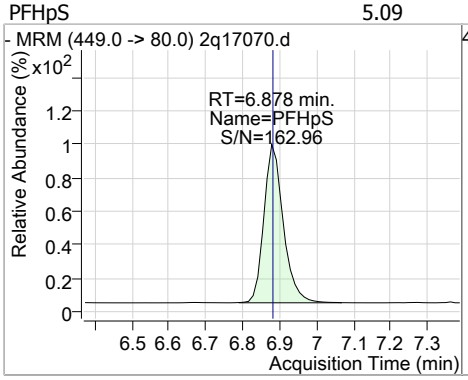


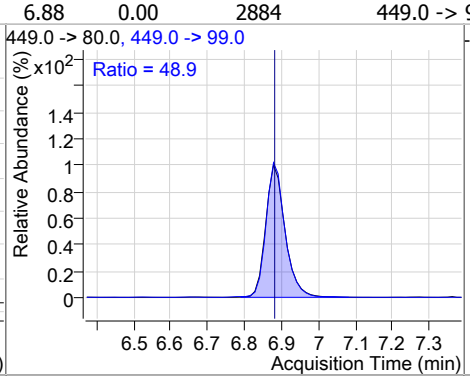


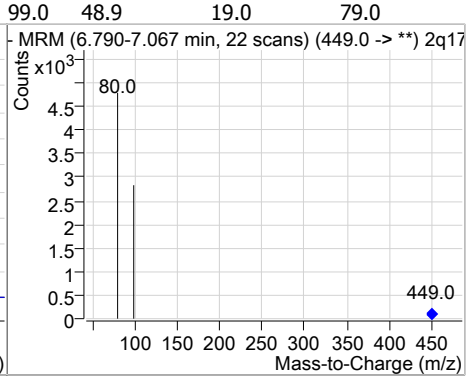


Perfluorinated Compounds by LC/MS/MS

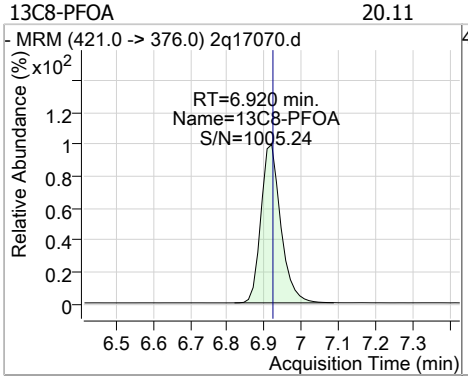
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	5.09	6.88	0.00	2884	449.0 -> 99.0	48.9	19.0	79.0

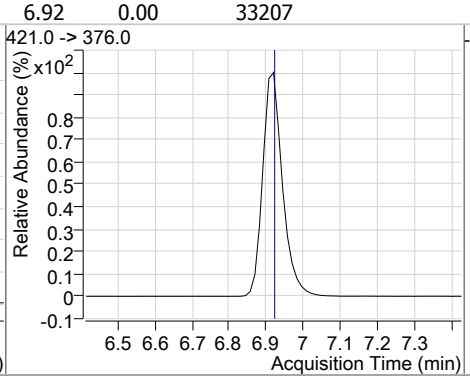


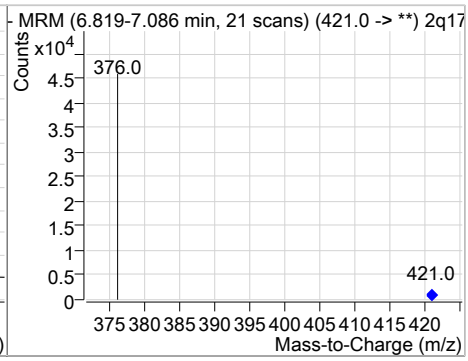




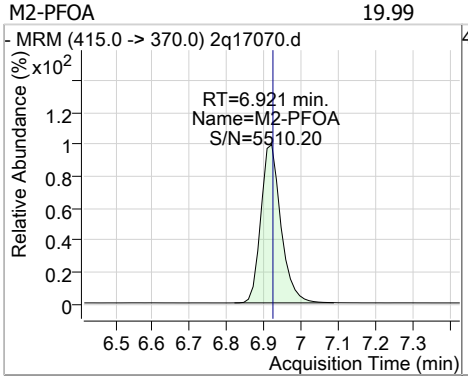
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.11	6.92	0.00	33207				

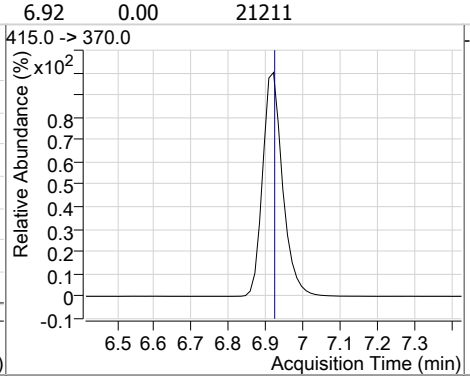


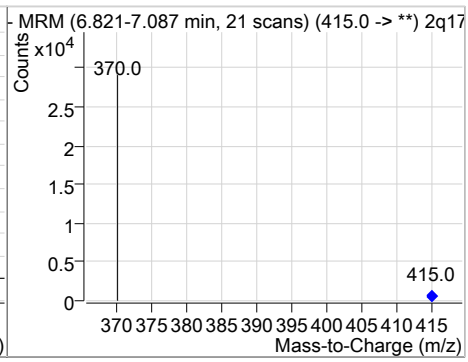




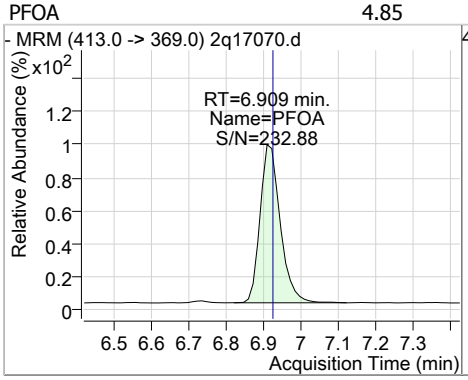
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	19.99	6.92	0.00	21211				

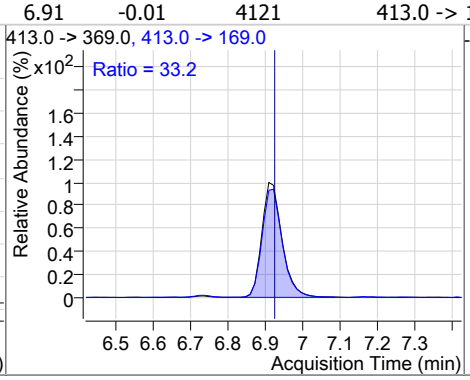


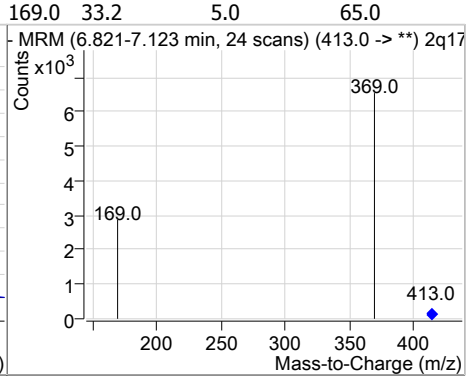




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	4.85	6.91	-0.01	4121	413.0 -> 169.0	33.2	5.0	65.0

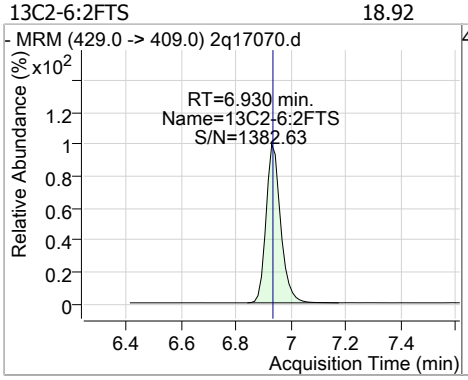


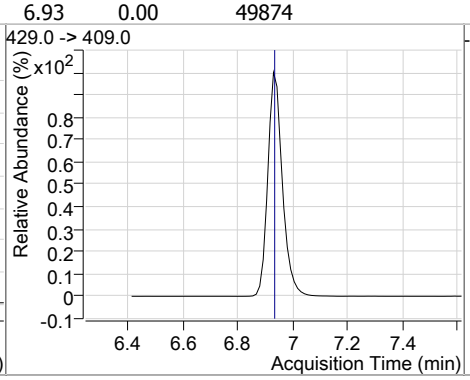


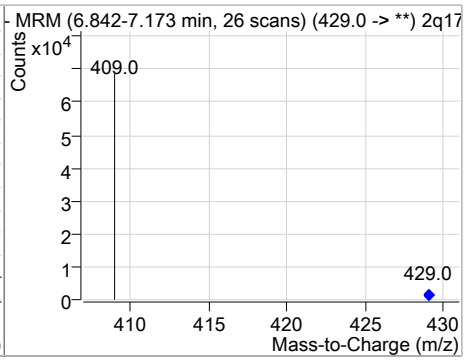


Perfluorinated Compounds by LC/MS/MS

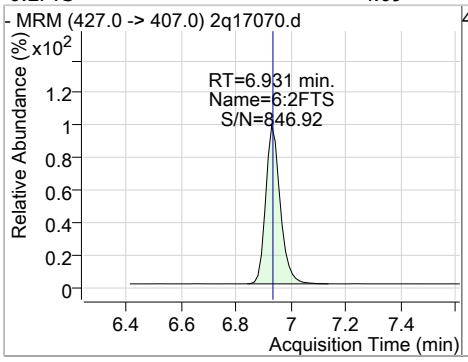
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.92	6.93	0.00	49874				

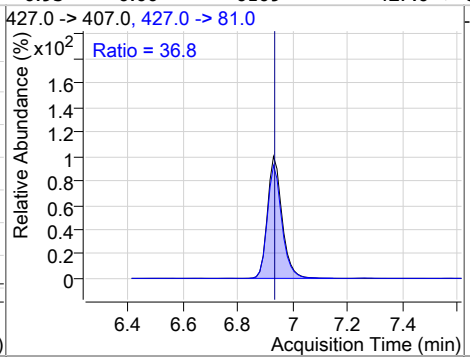


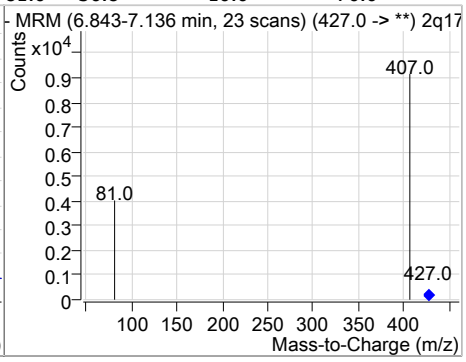




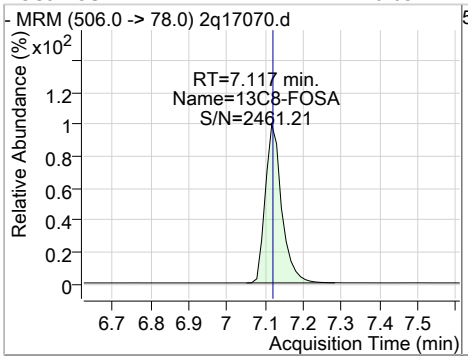
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	4.69	6.93	0.00	6109	427.0 -> 81.0	36.8	10.0	70.0

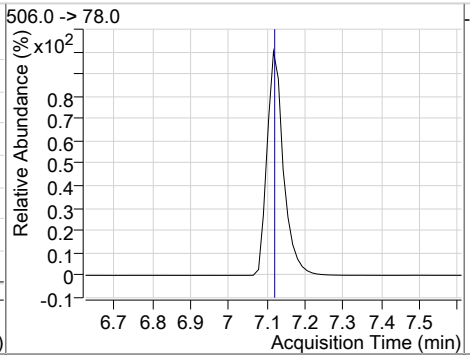


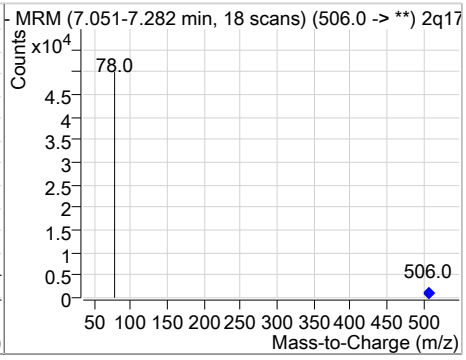




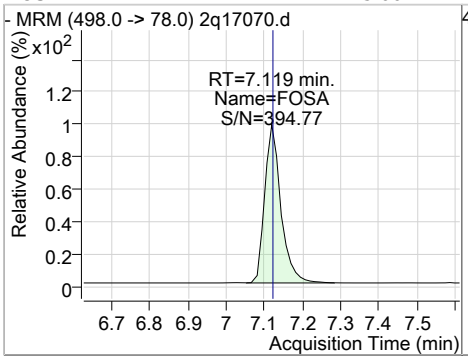
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.65	7.12	0.00	36992				

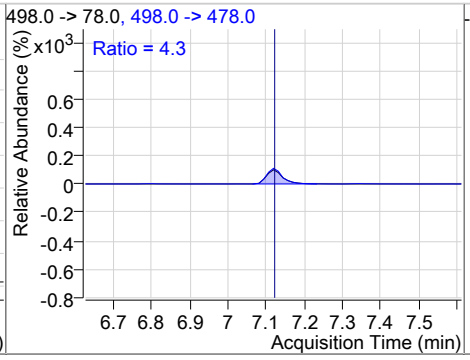


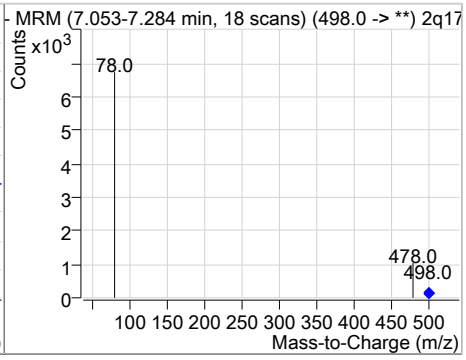




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	5.06	7.12	0.00	4531	498.0 -> 478.0	4.3	0.0	34.0

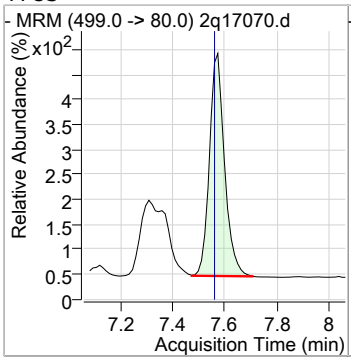


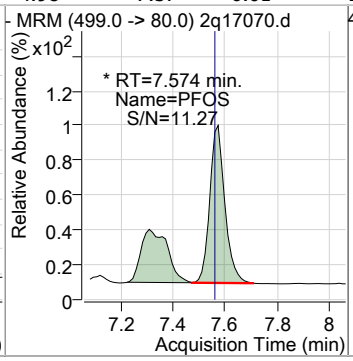


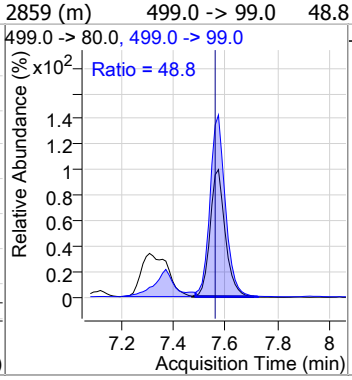


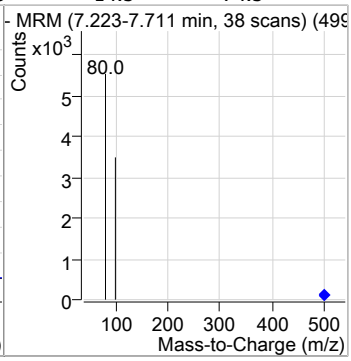
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	4.98	7.57	0.01	2859 (m)	499.0 -> 99.0	48.8	14.5	74.5

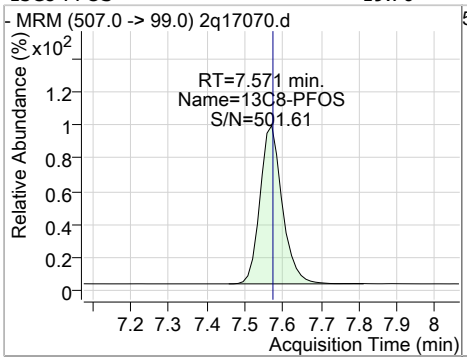


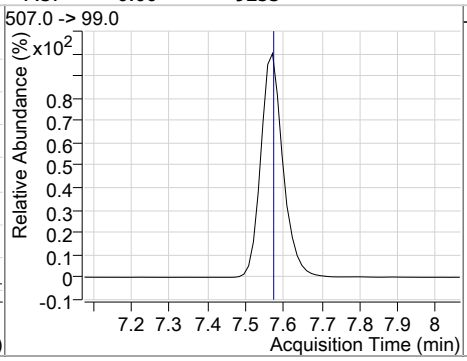


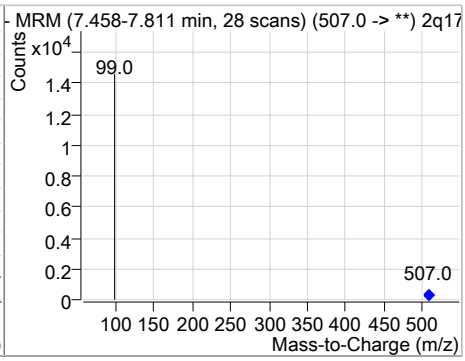




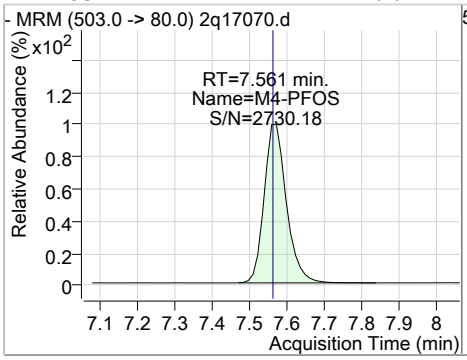
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.76	7.57	0.00	9253				

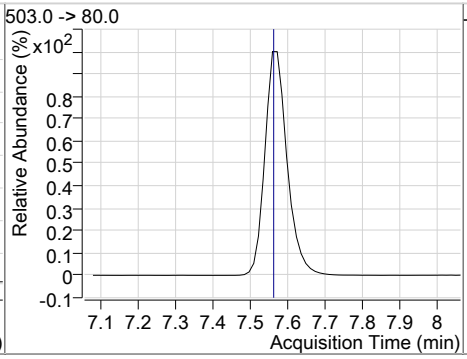


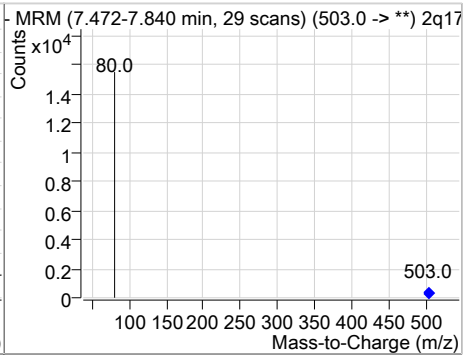




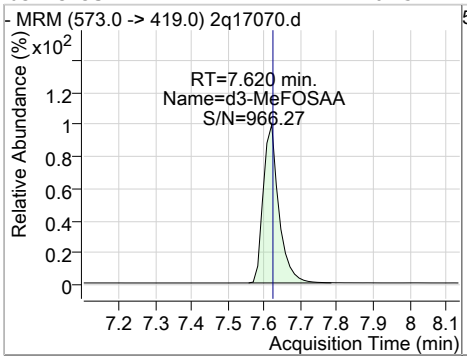
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.01	7.56	-0.01	10745				

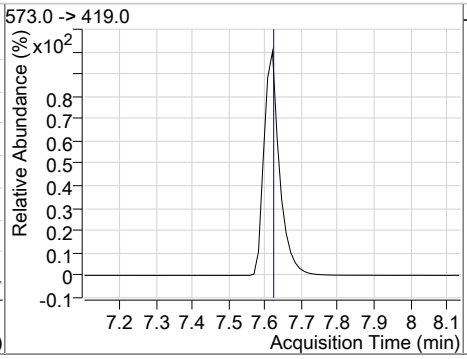


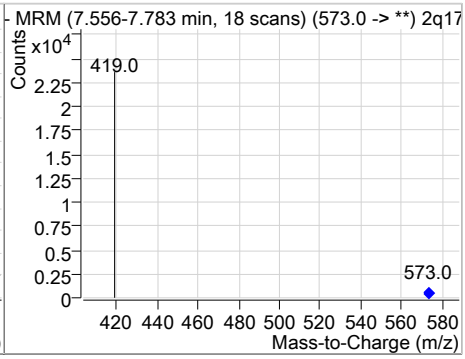




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.75	7.62	0.00	16843				

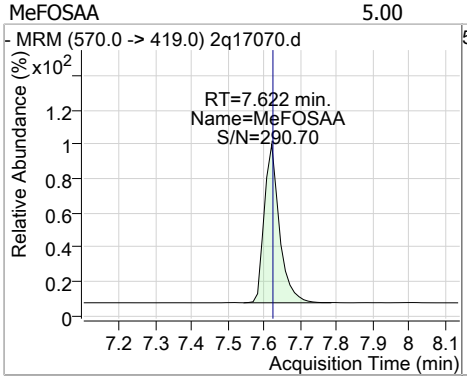


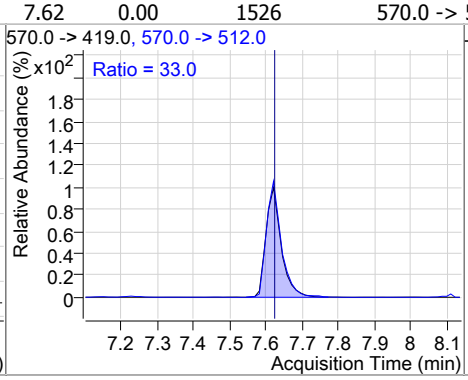


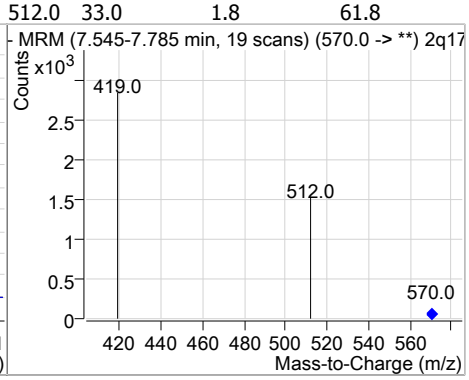


Perfluorinated Compounds by LC/MS/MS

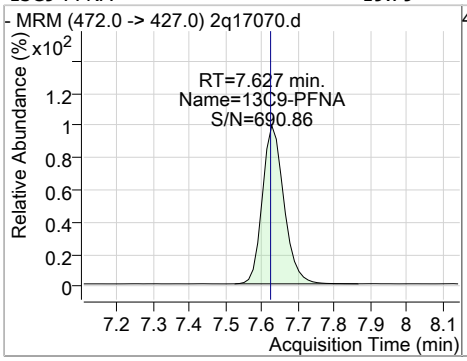
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	5.00	7.62	0.00	1526	570.0 -> 512.0	33.0	1.8	61.8

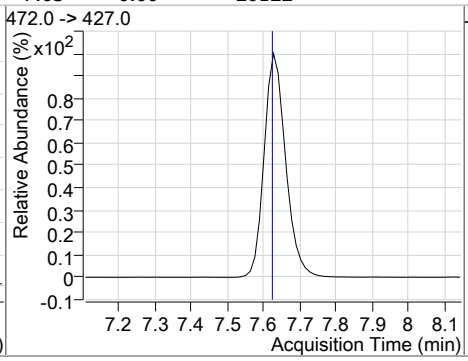


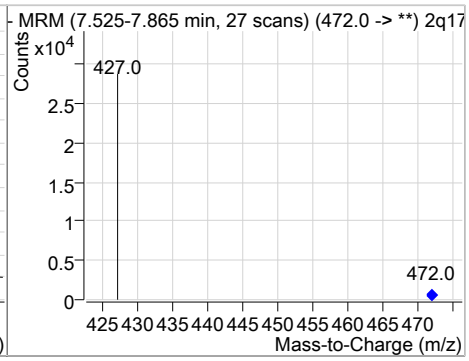




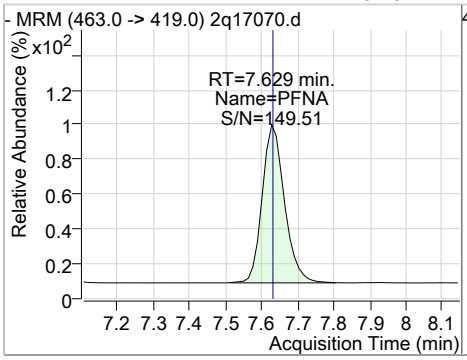
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.79	7.63	0.00	20122				

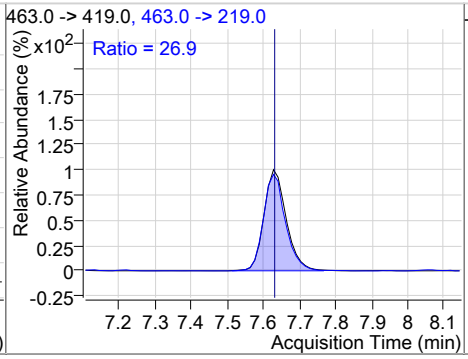


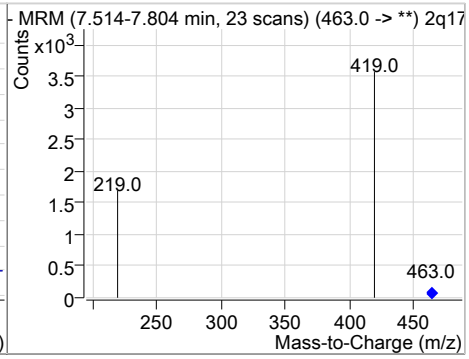




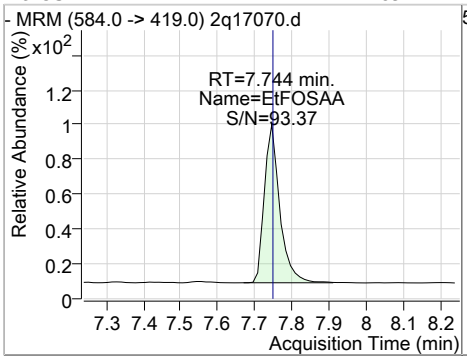
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	5.20	7.63	0.00	1971	463.0 -> 219.0	26.9	0.0	58.4

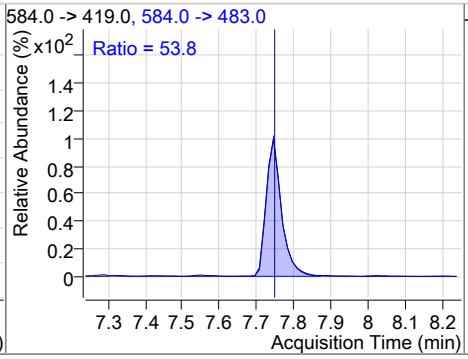


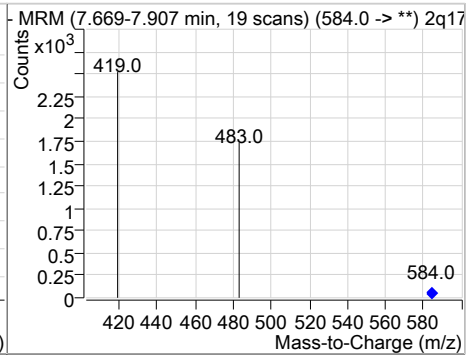




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	4.89	7.74	0.00	1273	584.0 -> 483.0	53.8	24.8	84.8

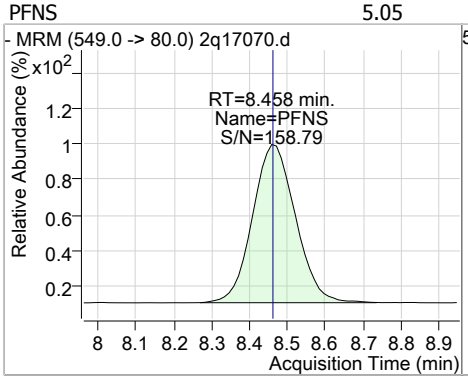


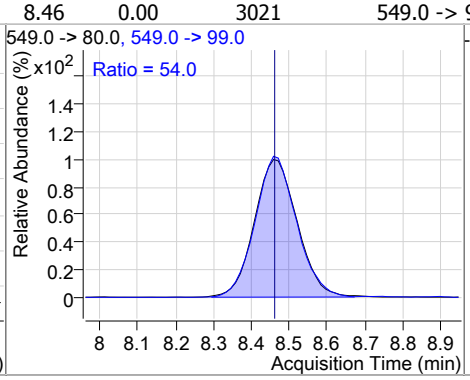


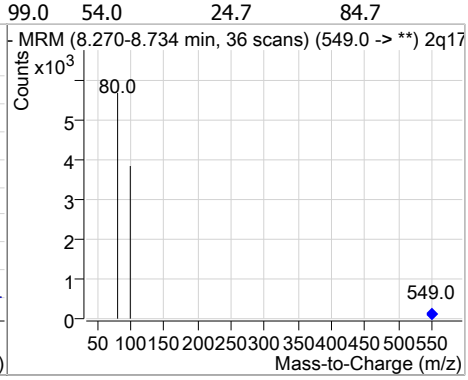


Perfluorinated Compounds by LC/MS/MS

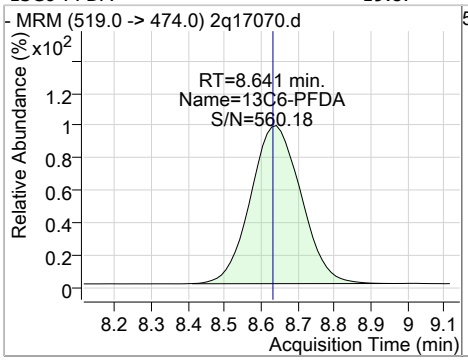
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	5.05	8.46	0.00	3021	549.0 -> 99.0	54.0	24.7	84.7

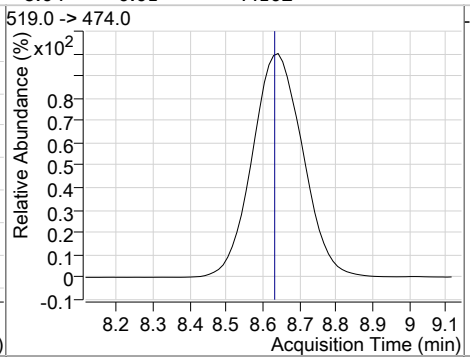


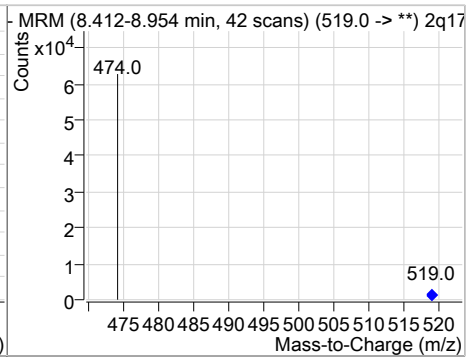




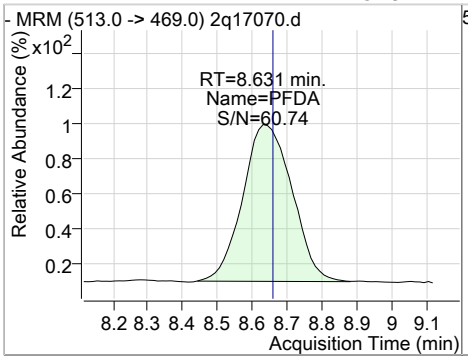
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.87	8.64	0.01	44102				

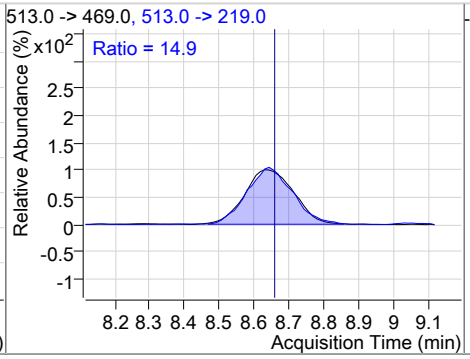


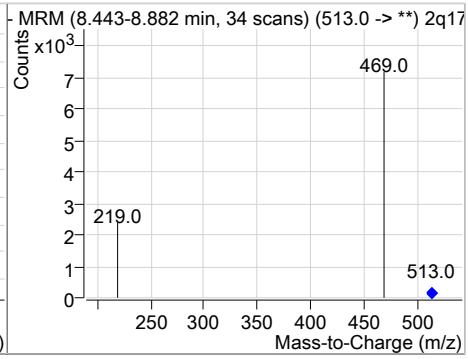




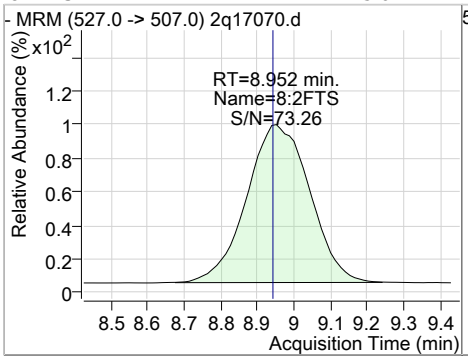
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	5.19	8.63	-0.01	4106	513.0 -> 219.0	14.9	0.0	45.3

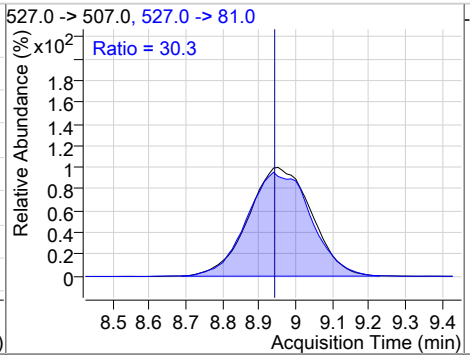


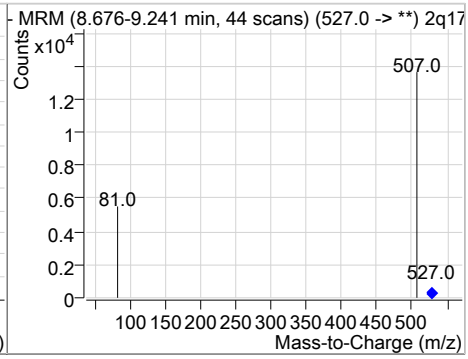




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	5.07	8.95	0.00	8615	527.0 -> 81.0	30.3	1.3	61.3

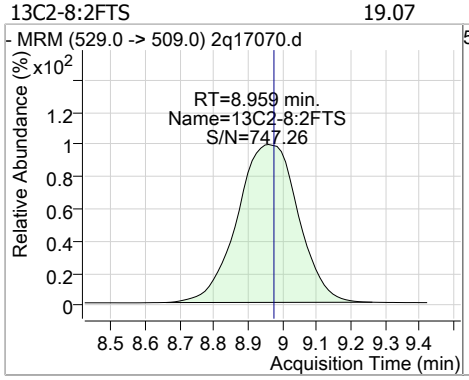


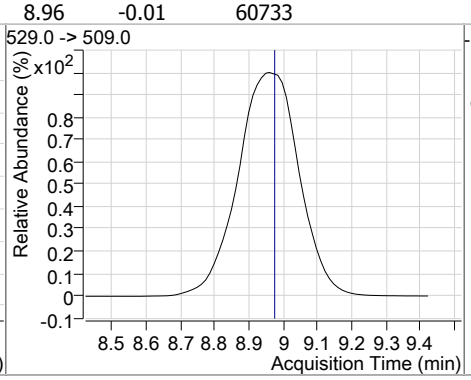


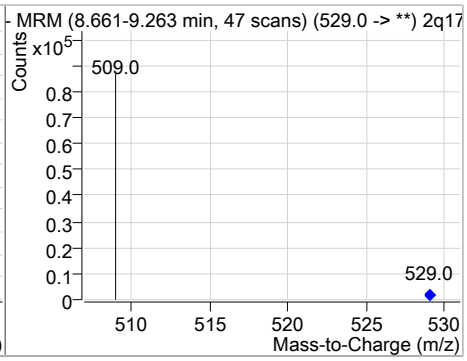


Perfluorinated Compounds by LC/MS/MS

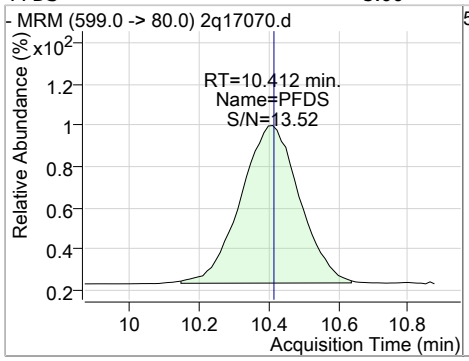
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.07	8.96	-0.01	60733				

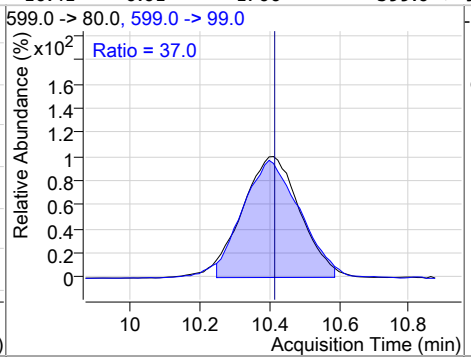


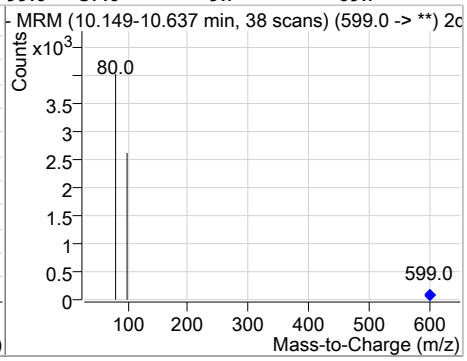




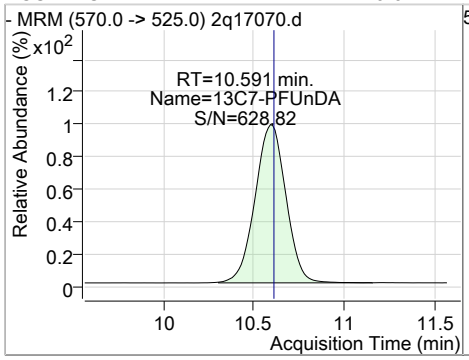
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	5.00	10.41	-0.01	1700	599.0 -> 99.0	37.0	9.7	69.7

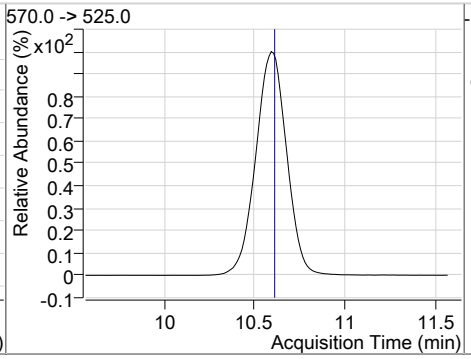


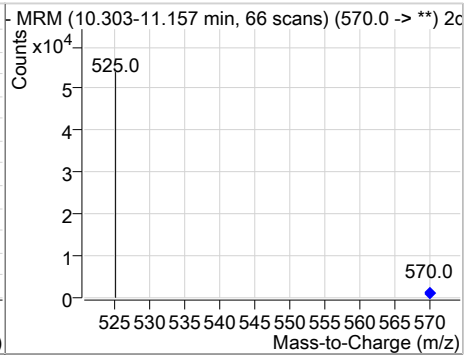




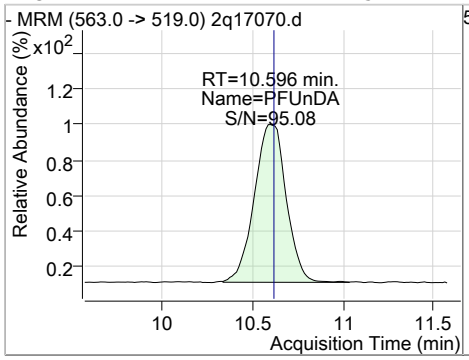
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.07	10.59	-0.01	35950				

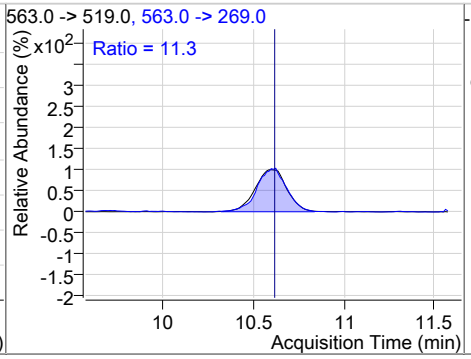


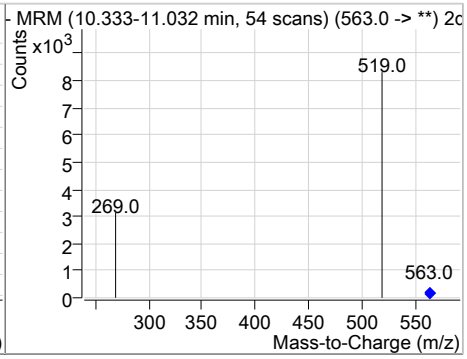




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	5.11	10.60	-0.03	4322	563.0 -> 269.0	11.3	0.0	41.8

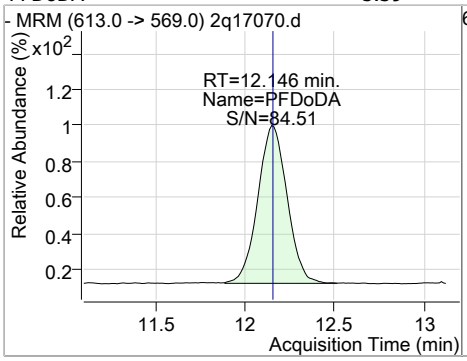


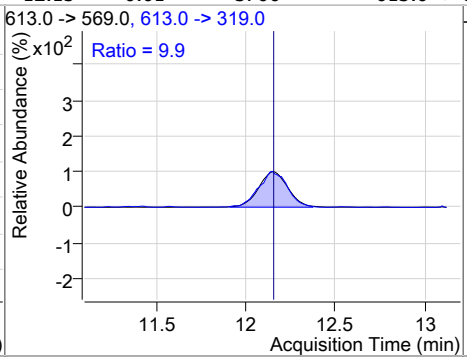


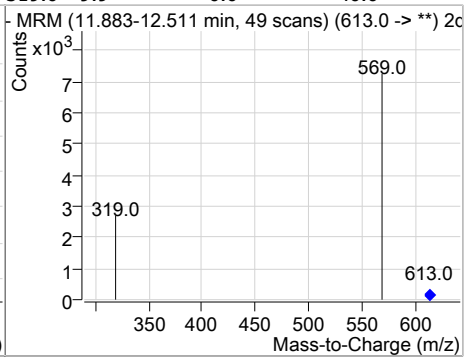


Perfluorinated Compounds by LC/MS/MS

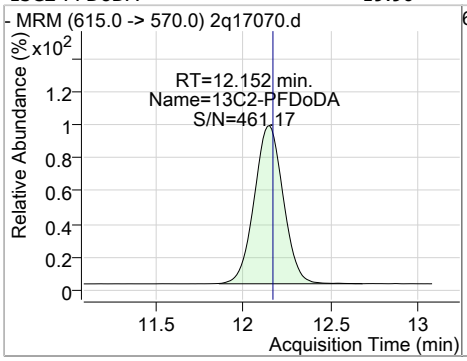
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	5.39	12.15	-0.01	3706	613.0 -> 319.0	9.9	0.0	40.0

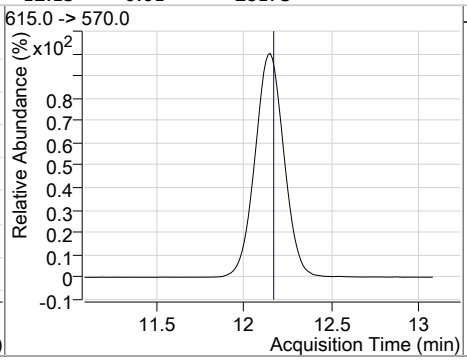


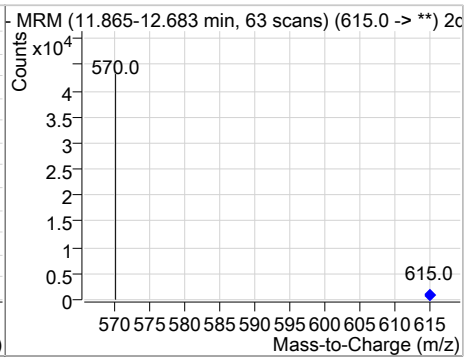




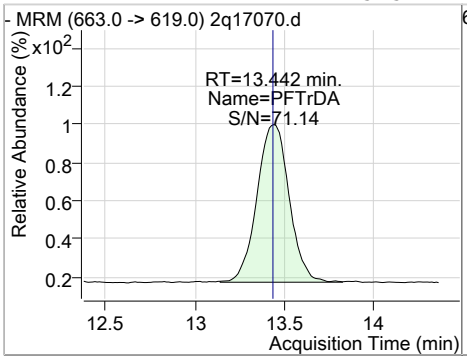
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.90	12.15	-0.01	28173				

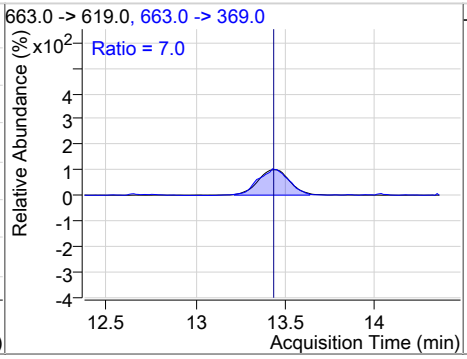


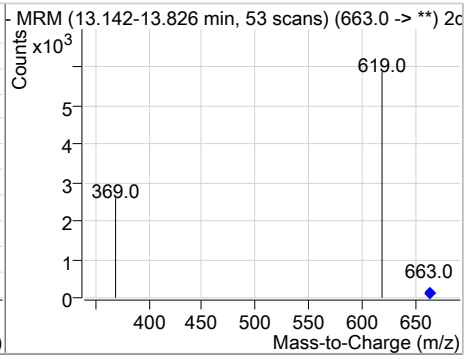




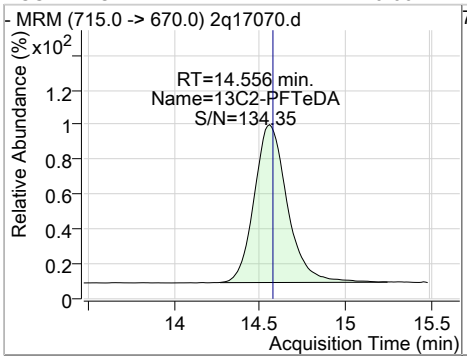
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	5.15	13.44	0.00	2692	663.0 -> 369.0	7.0	0.0	37.1

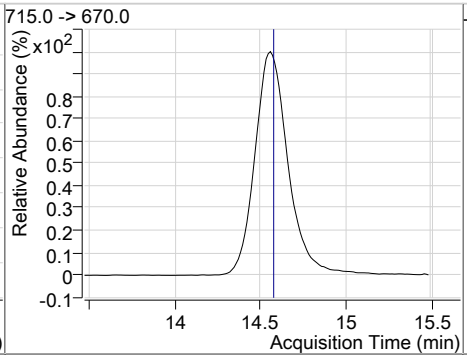


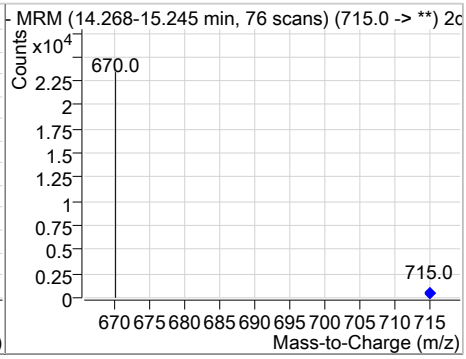




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.06	14.56	-0.01	12266				

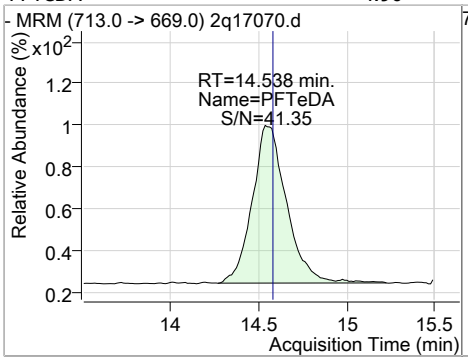


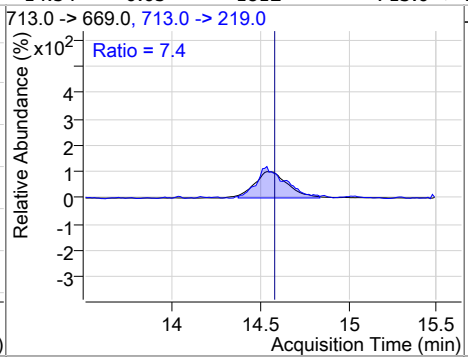


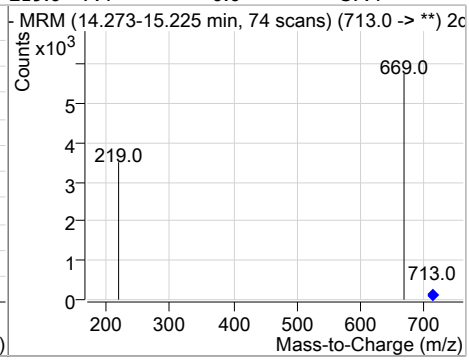


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	4.90	14.54	-0.05	1812	713.0 -> 219.0	7.4	0.0	37.4







Manual Integration Approval Summary

Sample Number: S2Q296-IC296
Lab FileID: 2Q17070.D
Injection Time: 07/13/18 12:50
Method: EPA 537M BY ID
Analyst approved: 07/16/18 13:34 Natasha Gumtie
Supervisor approved: 07/16/18 17:22 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.57	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/16/18 17:22

Perfluorinated Compounds by LC/MS/MS

Data File : 2q17071.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/13/2018 1:11:17 PM
Sample Name : ic296-10
Vial : Vial 6
DA Method File : PFC_ID_071318_S2Q296.quantmethod.xml
Batch Name : s2q296.batch.bin
Sample Information : op70790,S2Q296,1.99,,,1.0,1,soil

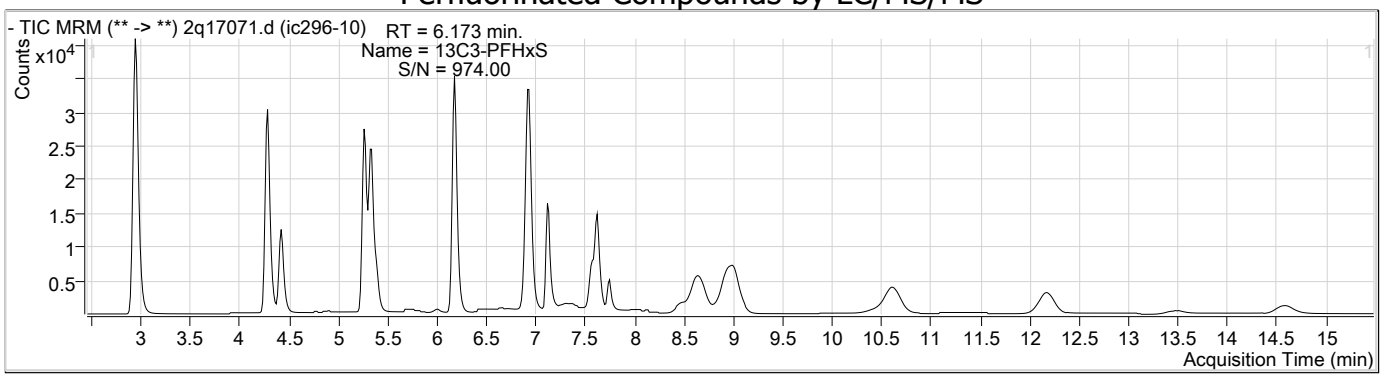
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.921	415.0 -> 370.0	20310	20.00	µg/L	0.000
13C4-PFOS	7.573	503.0 -> 80.0	10814	20.00	µg/L	0.000
M4-PFBA	2.941	217.0 -> 172.0	148531	20.00	µg/L	0.000
M5-PFPeA	4.287	268.0 -> 223.0	73400	20.00	µg/L	0.000
M5-PFHxA	5.340	318.0 -> 273.0	66752	20.00	µg/L	0.000
M4-PFHpA	6.179	367.0 -> 322.0	63265	20.00	µg/L	0.000
M8-PFOA	6.920	421.0 -> 376.0	33276	20.00	µg/L	0.000
M9-PFNA	7.627	472.0 -> 427.0	20448	20.00	µg/L	0.000
M6-PFDA	8.641	519.0 -> 474.0	44190	20.00	µg/L	0.013
M7-PFUnDA	10.616	570.0 -> 525.0	35446	20.00	µg/L	0.013
M2-PFDoDA	12.165	615.0 -> 570.0	27740	20.00	µg/L	0.000
M2-PFTeDA	14.581	715.0 -> 670.0	12222	20.00	µg/L	0.013
M8-FOSA	7.117	506.0 -> 78.0	37018	20.00	µg/L	0.000
M3-PFBS	4.418	302.0 -> 99.0	21918	20.00	µg/L	0.000
M3-PFHxS	6.173	402.0 -> 99.0	19087	20.00	µg/L	0.000
M8-PFOS	7.571	507.0 -> 99.0	9183	20.00	µg/L	0.000
M2-4:2FTS	5.260	329.0 -> 309.0	67057	20.00	µg/L	0.000
M2-6:2FTS	6.930	429.0 -> 409.0	50817	20.00	µg/L	0.000
M2-8:2FTS	8.984	529.0 -> 509.0	62304	20.00	µg/L	0.013
M3-MeFOSAA	7.620	573.0 -> 419.0	16452	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.260	329.0 -> 309.0	67050	19.30	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.5%		
13C2-6:2FTS	6.930	429.0 -> 409.0	50816	19.28	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.4%		
13C2-8:2FTS	8.984	529.0 -> 509.0	61925	19.45	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.2%		
13C2-PFDoDA	12.165	615.0 -> 570.0	27845	19.67	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.4%		
13C2-PFTeDA	14.581	715.0 -> 670.0	12179	19.92	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.6%		
13C3-PFBS	4.418	302.0 -> 99.0	21925	19.87	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.4%		
13C3-PFHxS	6.173	402.0 -> 99.0	19088	19.98	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%		
13C4-PFBA	2.941	217.0 -> 172.0	148520	19.81	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%		
13C4-PFHpA	6.179	367.0 -> 322.0	63261	19.91	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.6%		
13C5-PFHxA	5.340	318.0 -> 273.0	66741	19.95	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C5-PFPeA	4.287	268.0 -> 223.0	73421	19.83	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.2%		
13C6-PFDA	8.641	519.0 -> 474.0	44226	19.93	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.6%		

Perfluorinated Compounds by LC/MS/MS

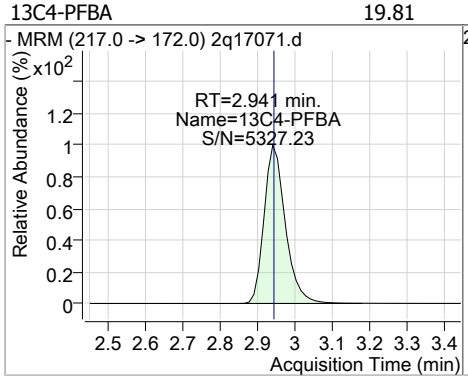
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.616	570.0 -> 525.0	35480	19.81	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%			
13C8-FOSA	7.117	506.0 -> 78.0	37018	20.66	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%			
13C8-PFOA	6.920	421.0 -> 376.0	33269	20.15	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%			
13C8-PFOS	7.571	507.0 -> 99.0	9177	19.60	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.0%			
13C9-PFNA	7.627	472.0 -> 427.0	20443	20.11	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.5%			
d3-MeFOSAA	7.620	573.0 -> 419.0	16454	20.27	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.4%			
M2-PFOA	6.921	415.0 -> 370.0	20313	20.01	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.573	503.0 -> 80.0	10814	20.00	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
Target Compounds							**QValue**
4:2FTS	5.263	327.0 -> 307.0	17334	9.71	µg/L		99
6:2FTS	6.931	427.0 -> 407.0	12681	9.67	µg/L		97
8:2FTS	8.975	527.0 -> 507.0	17014	9.93	µg/L		97
EtFOSAA	7.744	584.0 -> 419.0	2689	10.59	µg/L		99
FOSA	7.119	498.0 -> 78.0	8868	9.90	µg/L		99
MeFOSAA	7.622	570.0 -> 419.0	3061	10.26	µg/L		98
PFBA	2.949	213.0 -> 169.0	11801	10.05	µg/L		100
PFBS	4.422	299.0 -> 80.0	14801	10.38	µg/L		100
PFDA	8.656	513.0 -> 469.0	8005	10.16	µg/L		98
PFDoDA	12.171	613.0 -> 569.0	7393	10.88	µg/L		99
PFDS	10.424	599.0 -> 80.0	3639	10.84	µg/L		100
PFHpA	6.182	363.0 -> 319.0	22849	10.13	µg/L		99
PFHpS	6.878	449.0 -> 80.0	5866	10.28	µg/L		98
PFHxA	5.343	313.0 -> 269.0	11305	10.47	µg/L		97
PFHxS	6.176	399.0 -> 80.0	11244	10.21	µg/L	m	97
PFNA	7.629	463.0 -> 419.0	4127	10.71	µg/L		92
PFNS	8.471	549.0 -> 80.0	6178	10.39	µg/L		99
PFOA	6.922	413.0 -> 369.0	8409	9.88	µg/L		96
PFOS	7.574	499.0 -> 80.0	5766	10.11	µg/L	m	99
PFPeA	4.291	263.0 -> 219.0	33932	10.41	µg/L		100
PFPeS	5.383	349.0 -> 80.0	9895	10.47	µg/L		99
PFTeDA	14.575	713.0 -> 669.0	3779	10.32	µg/L		99
PFTrDA	13.454	663.0 -> 619.0	5494	10.58	µg/L		99
PFUnDA	10.596	563.0 -> 519.0	8460	10.14	µg/L		100

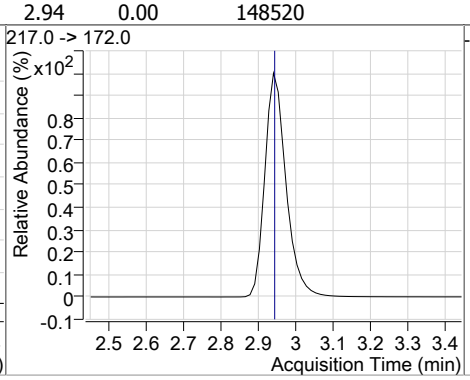
 # = Qualifier out of range, m = manually integrated, + = Area summed

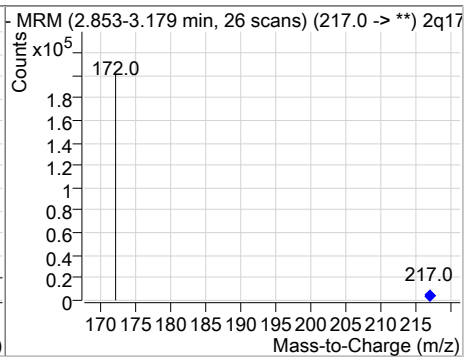
Perfluorinated Compounds by LC/MS/MS



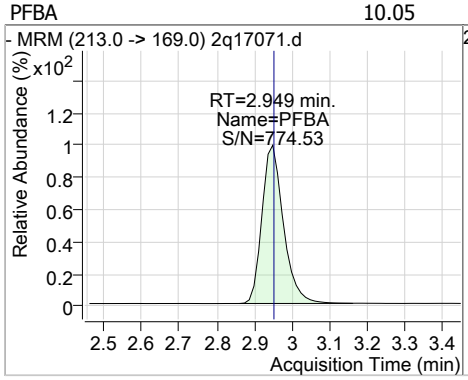
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.81	2.94	0.00	148520				

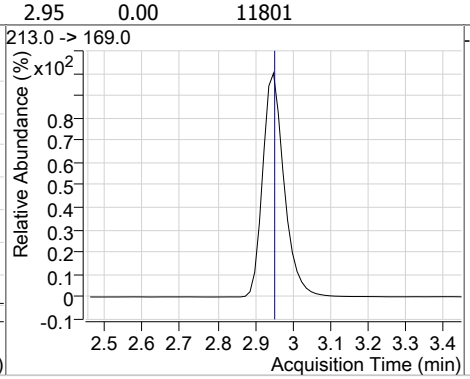


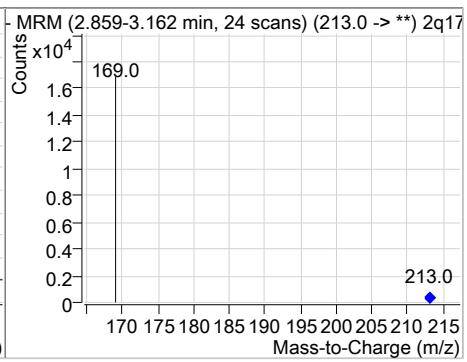




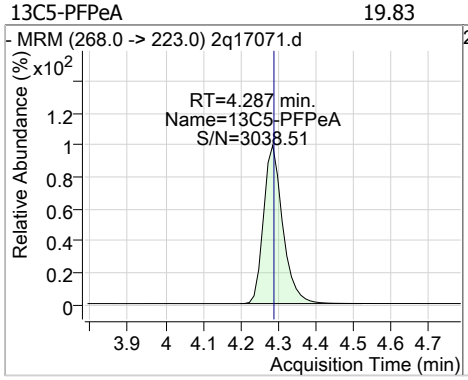
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	10.05	2.95	0.00	11801				

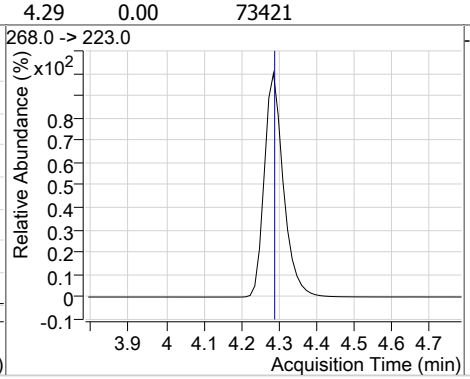


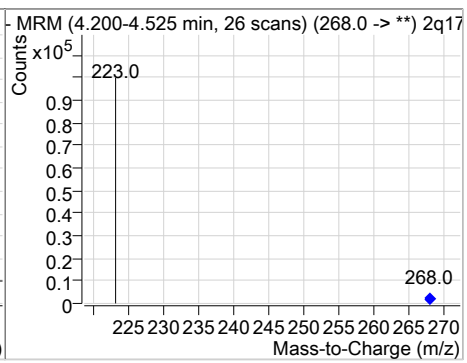




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.83	4.29	0.00	73421				

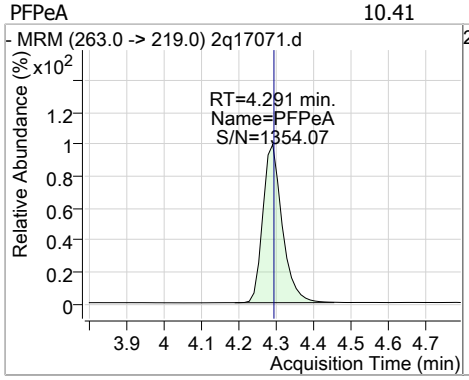


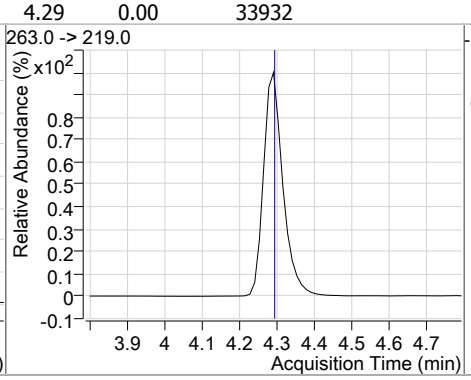


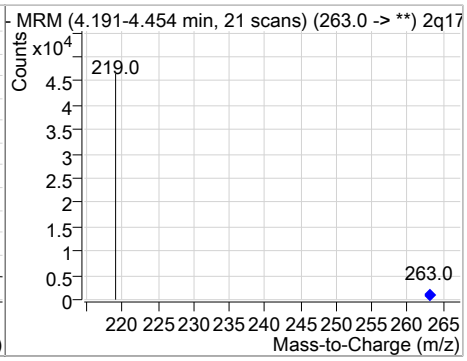


Perfluorinated Compounds by LC/MS/MS

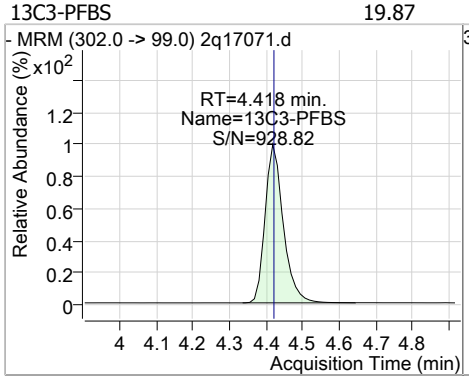
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	10.41	4.29	0.00	33932				

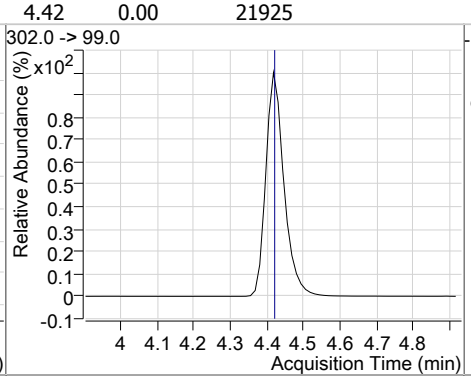


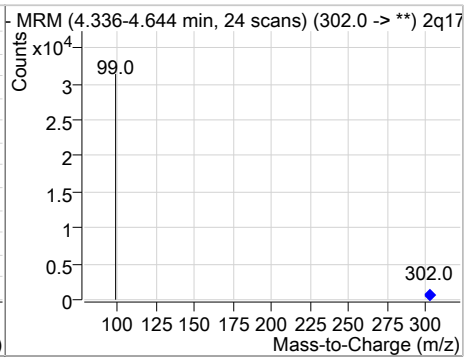




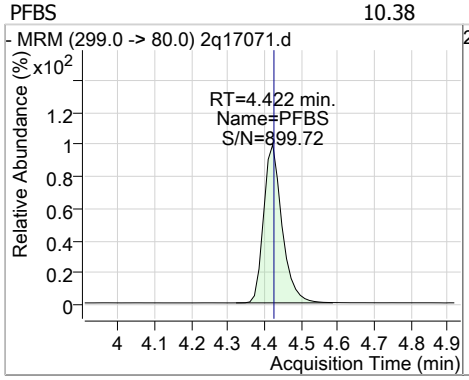
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.87	4.42	0.00	21925				

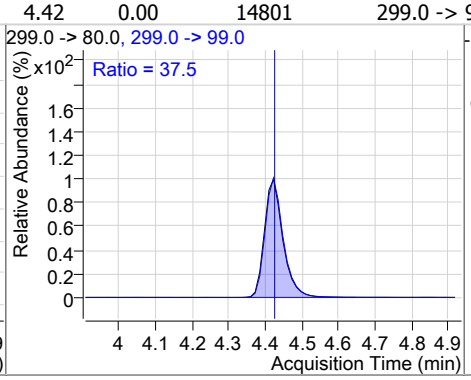


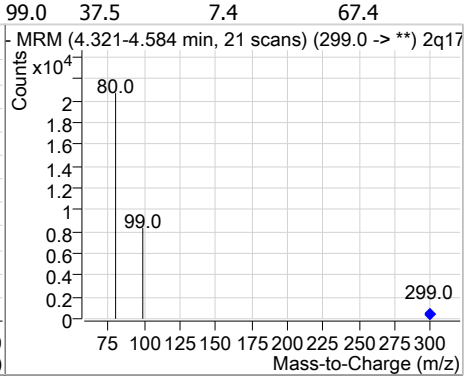




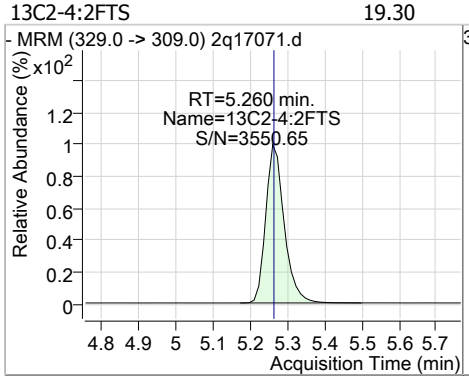
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	10.38	4.42	0.00	14801	299.0 -> 99.0	37.5	7.4	67.4

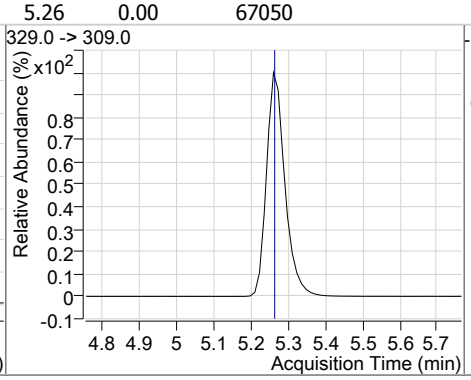


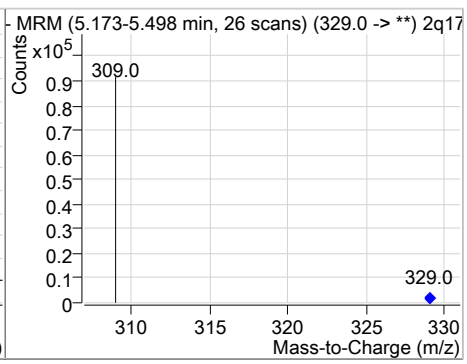




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.30	5.26	0.00	67050				

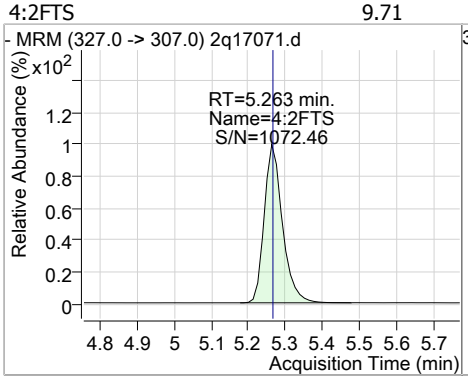


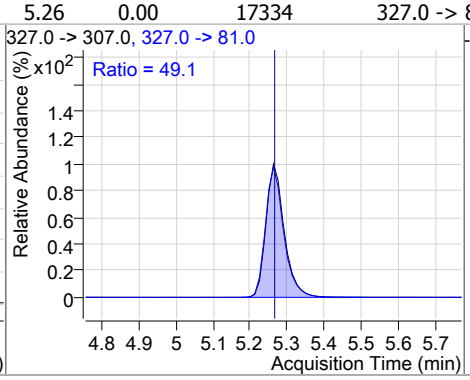


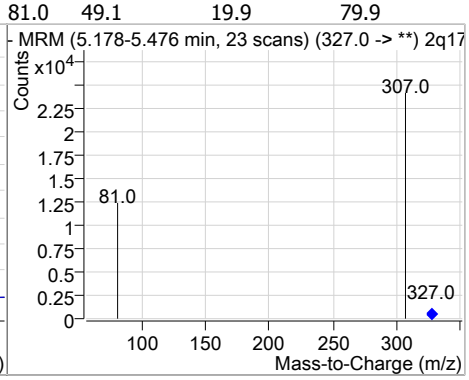


Perfluorinated Compounds by LC/MS/MS

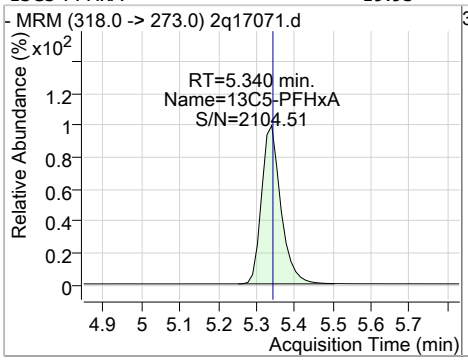
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	9.71	5.26	0.00	17334	327.0 -> 81.0	49.1	19.9	79.9

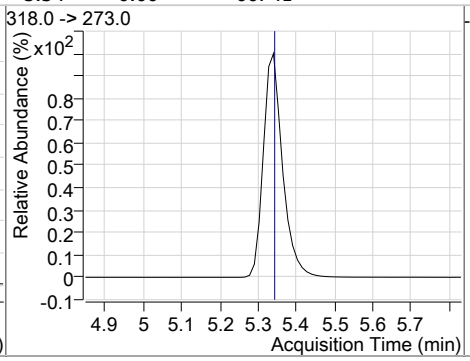


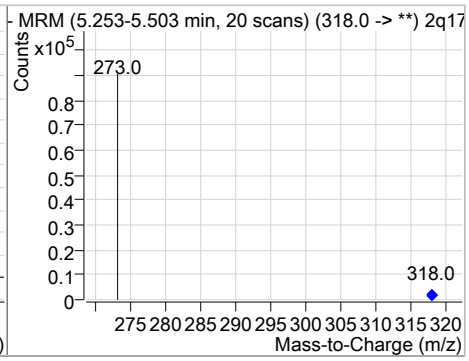




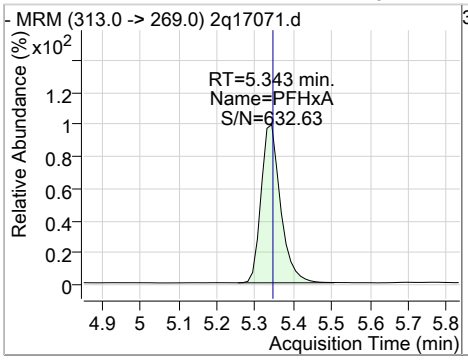
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.95	5.34	0.00	66741				

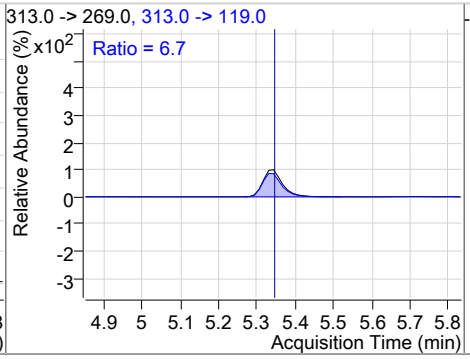


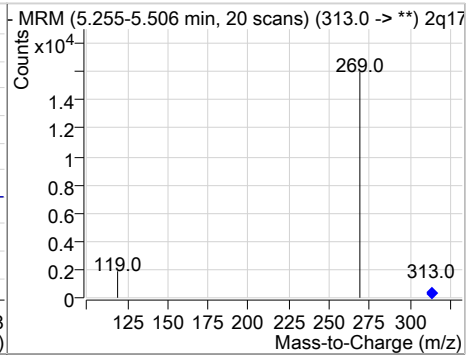




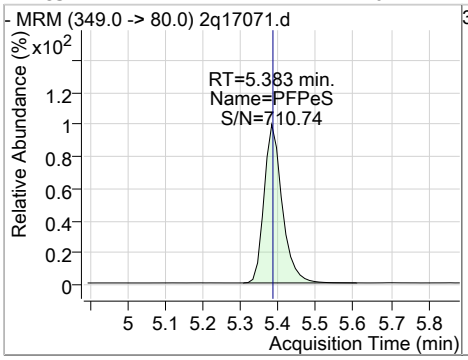
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	10.47	5.34	0.00	11305	313.0 -> 119.0	6.7	0.0	37.6

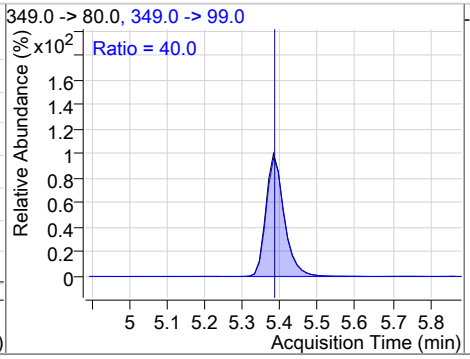


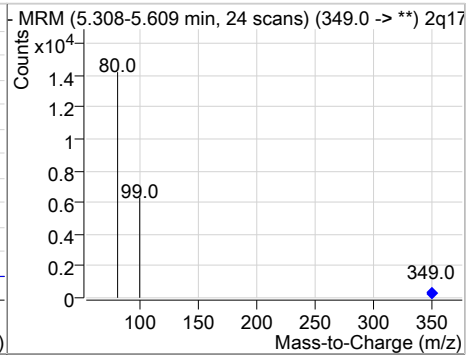




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	10.47	5.38	0.00	9895	349.0 -> 99.0	40.0	10.8	70.8

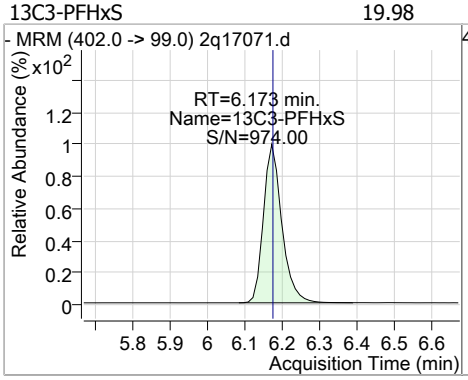


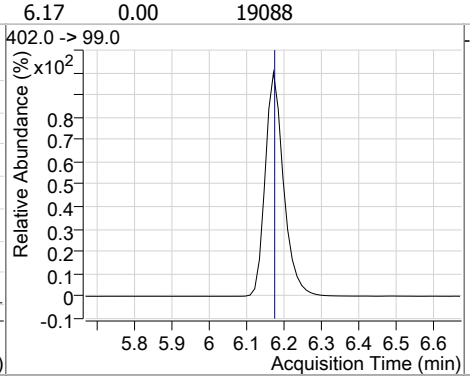


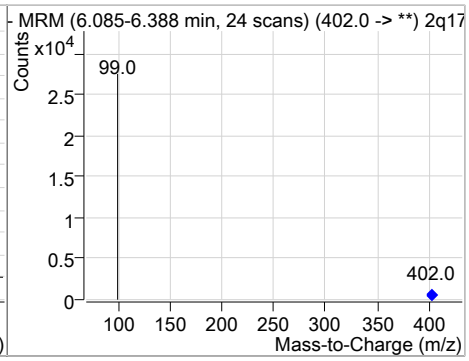


Perfluorinated Compounds by LC/MS/MS

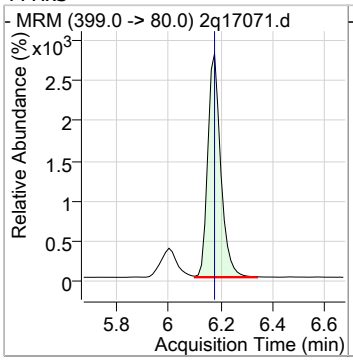
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.98	6.17	0.00	19088				

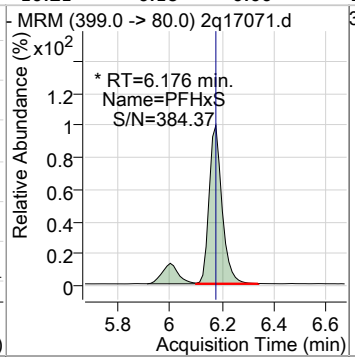


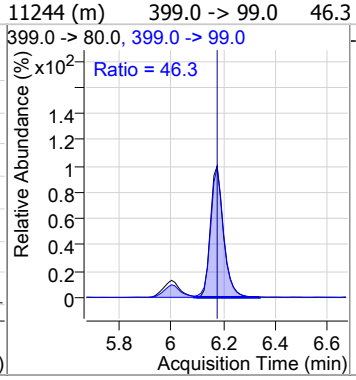


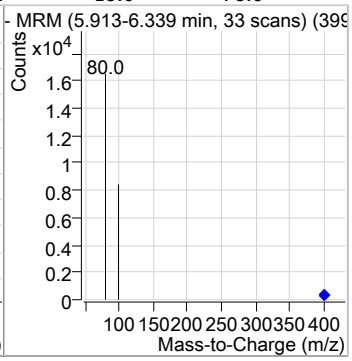


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	10.21	6.18	0.00	11244 (m)	399.0 -> 99.0	46.3	18.0	78.0

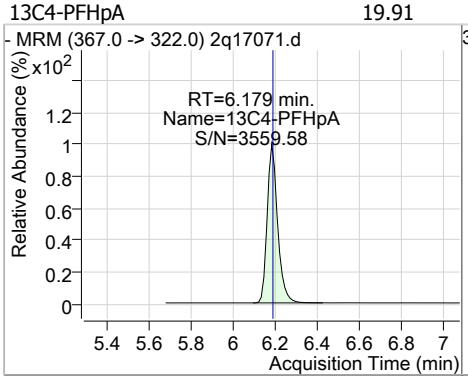


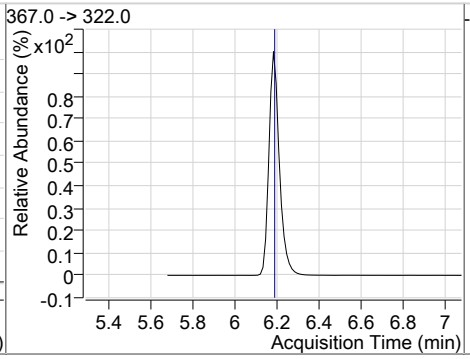


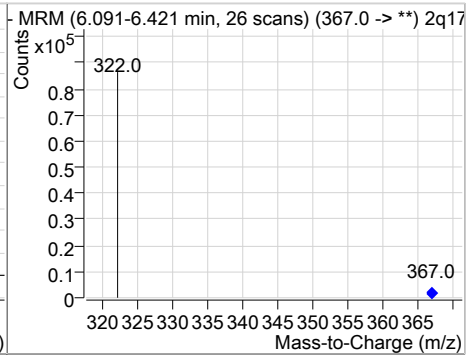




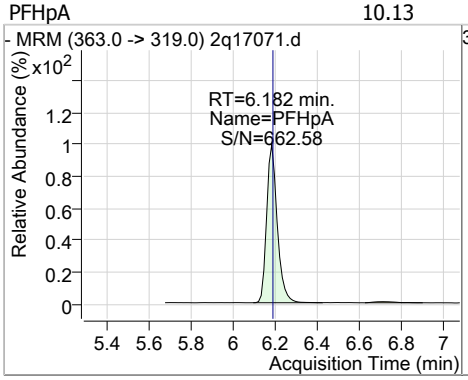
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.91	6.18	0.00	63261				

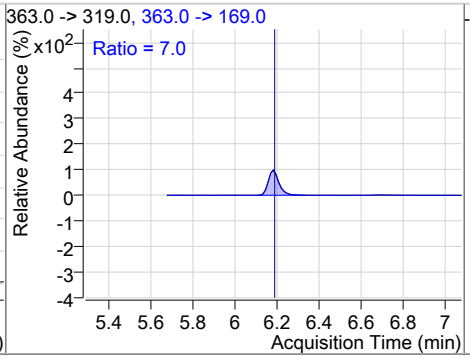


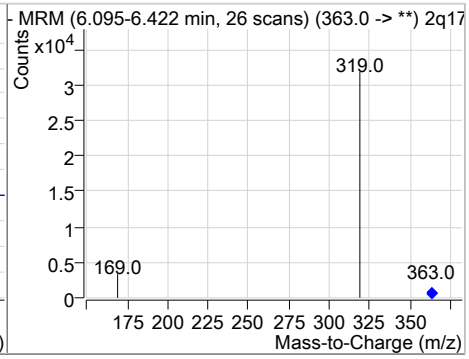




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	10.13	6.18	0.00	22849	363.0 -> 169.0	7.0	0.0	37.2

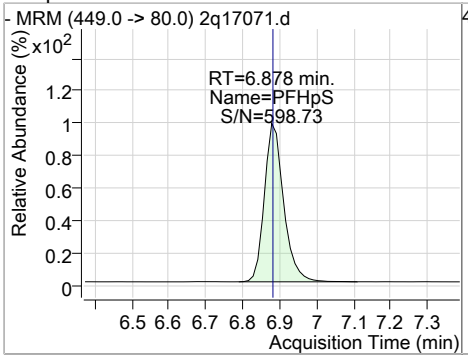


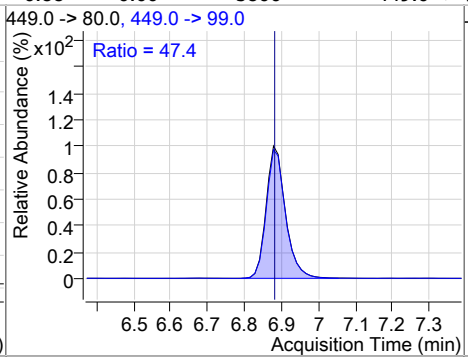


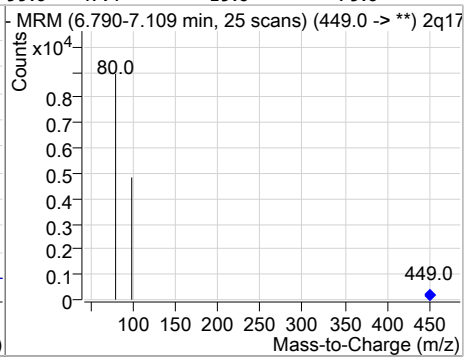


Perfluorinated Compounds by LC/MS/MS

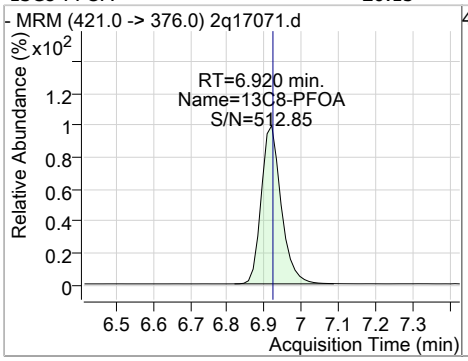
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	10.28	6.88	0.00	5866	449.0 -> 99.0	47.4	19.0	79.0

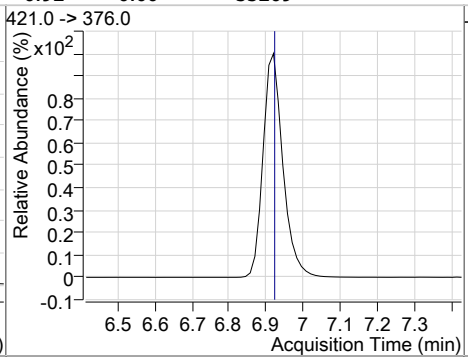


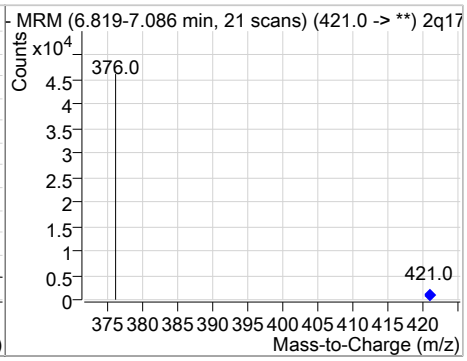




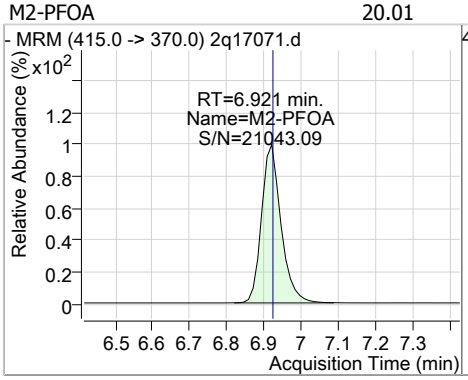
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.15	6.92	0.00	33269				

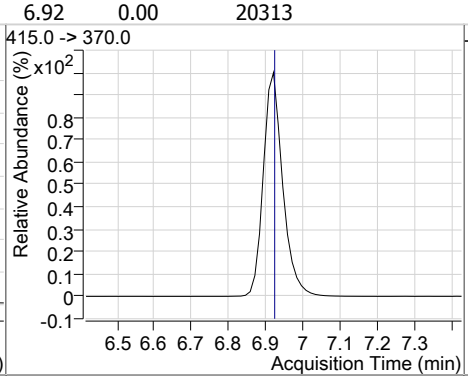


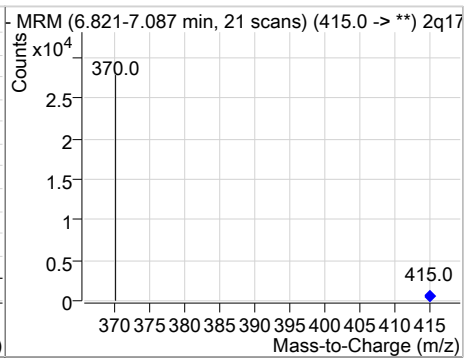




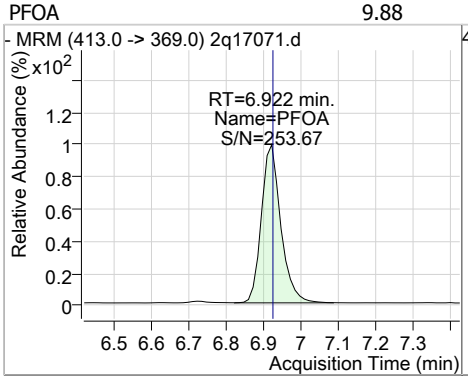
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.01	6.92	0.00	20313				

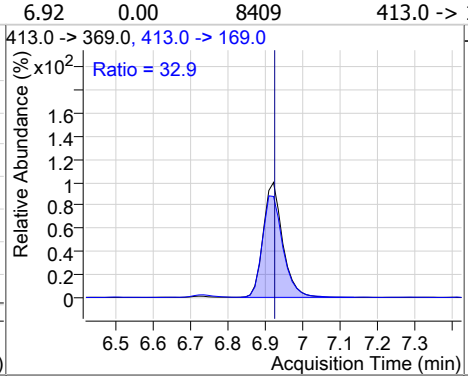


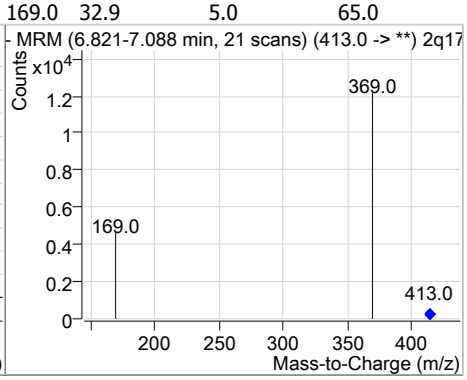




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	9.88	6.92	0.00	8409	413.0 -> 169.0	32.9	5.0	65.0

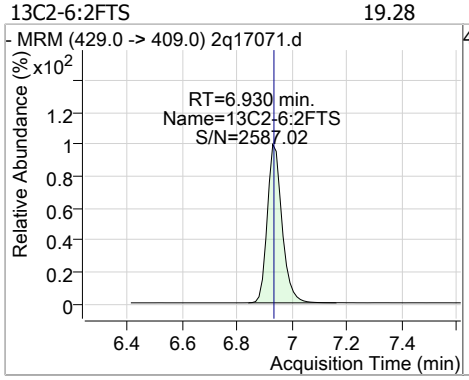


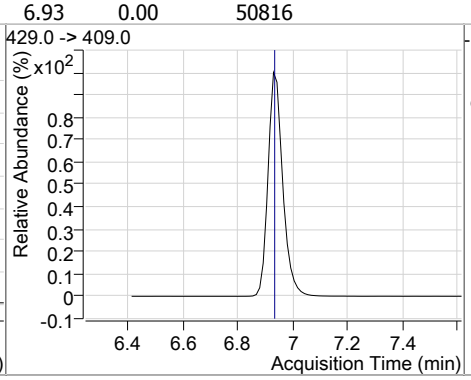


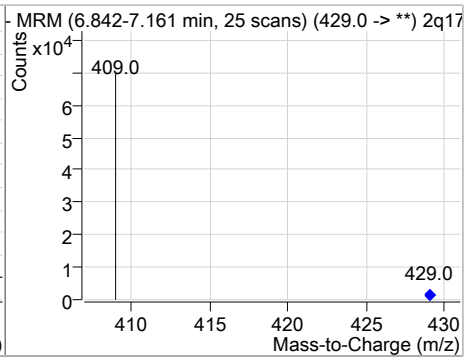


Perfluorinated Compounds by LC/MS/MS

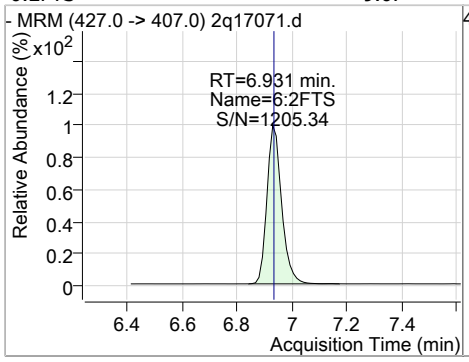
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.28	6.93	0.00	50816				

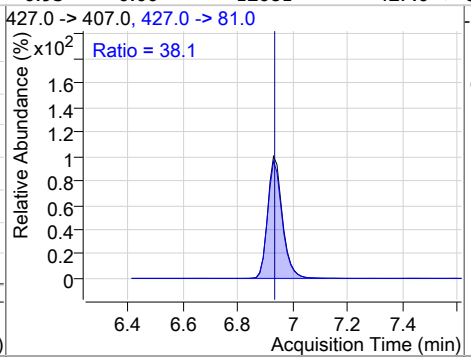


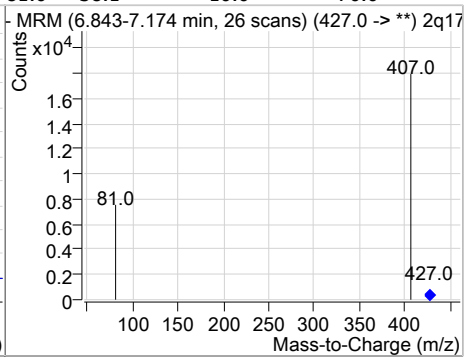




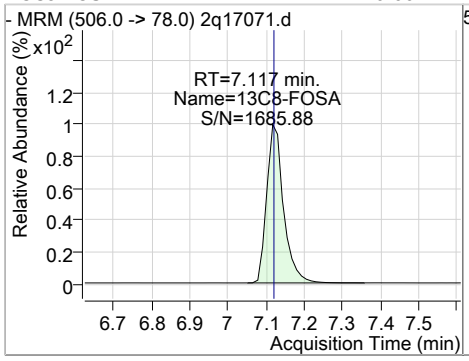
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	9.67	6.93	0.00	12681	427.0 -> 81.0	38.1	10.0	70.0

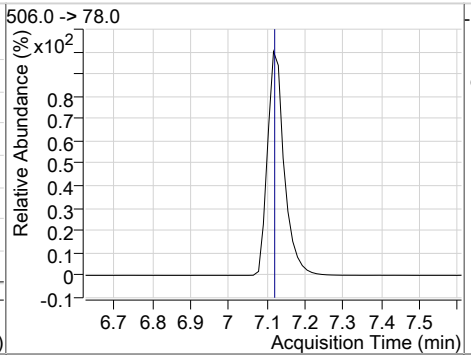


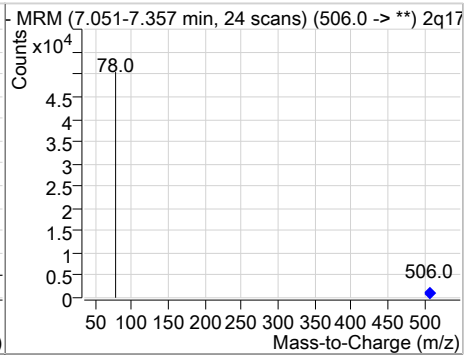




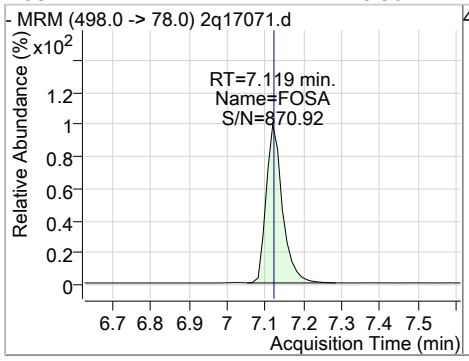
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.66	7.12	0.00	37018				

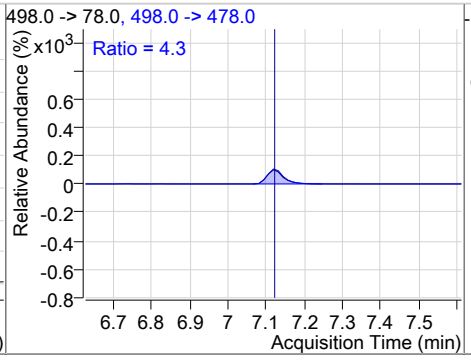


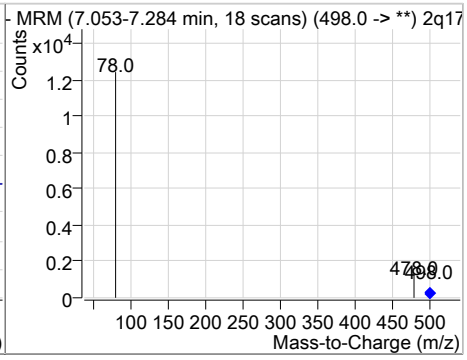




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	9.90	7.12	0.00	8868	498.0 -> 478.0	4.3	0.0	34.0

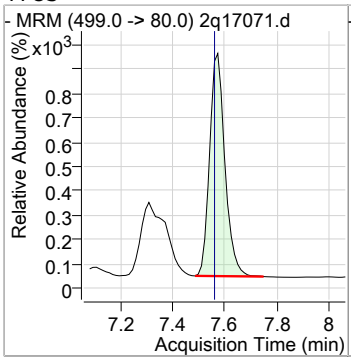


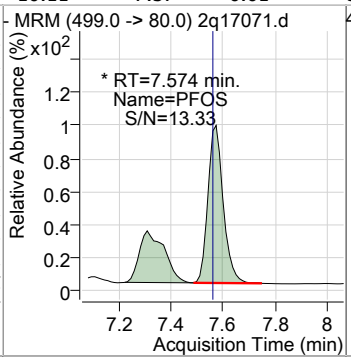


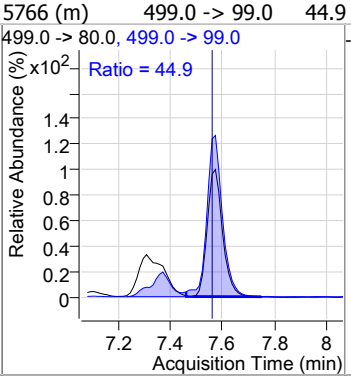


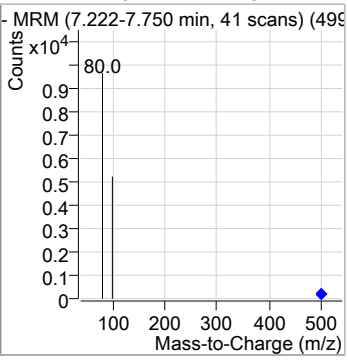
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	10.11	7.57	0.01	5766 (m)	499.0 -> 99.0	44.9	14.5	74.5

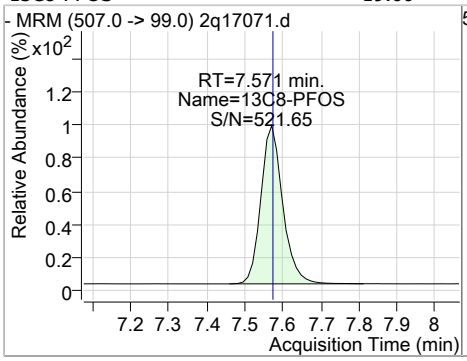


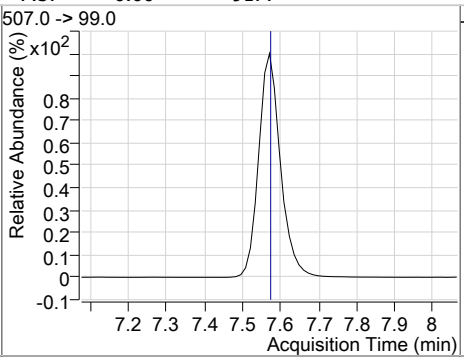


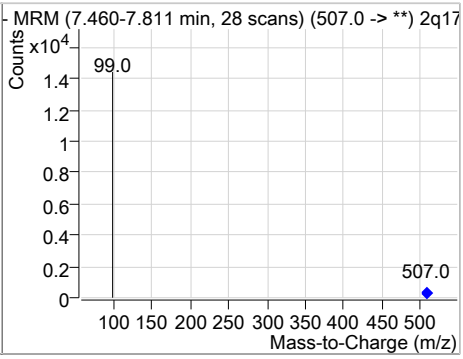




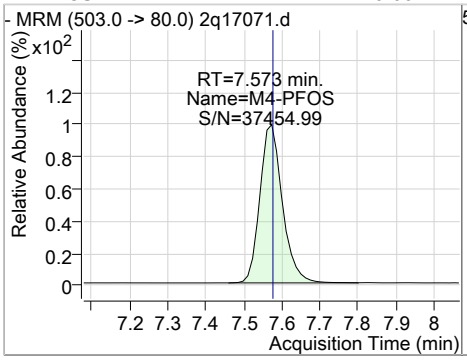
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.60	7.57	0.00	9177				

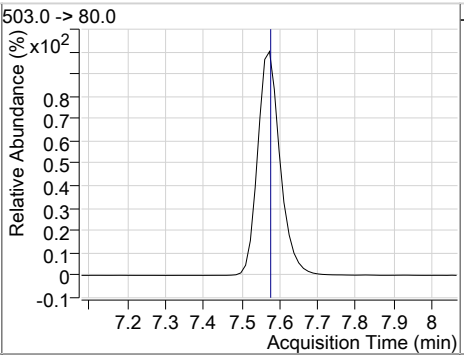


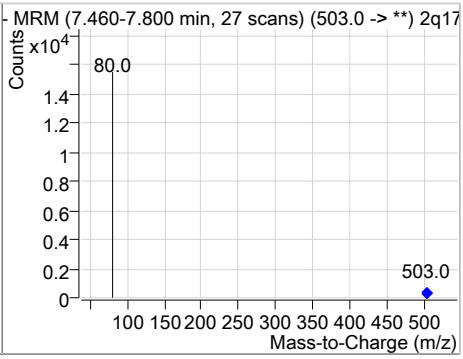




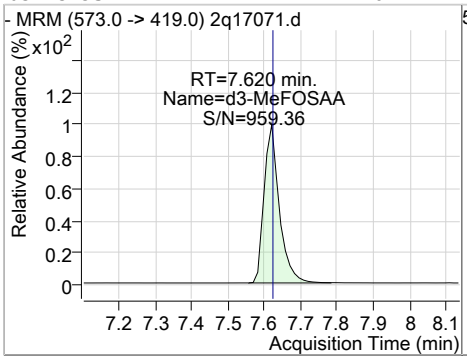
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.00	7.57	0.00	10814				

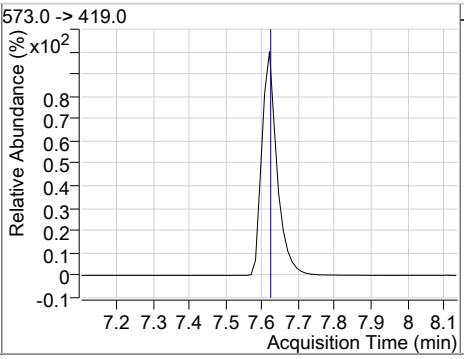


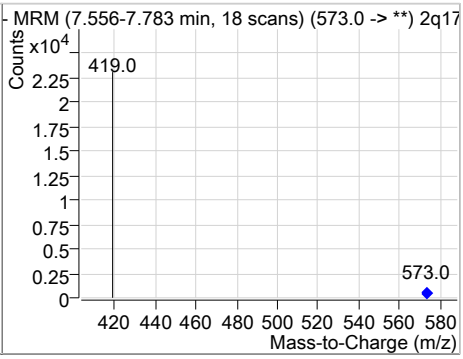




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.27	7.62	0.00	16454				

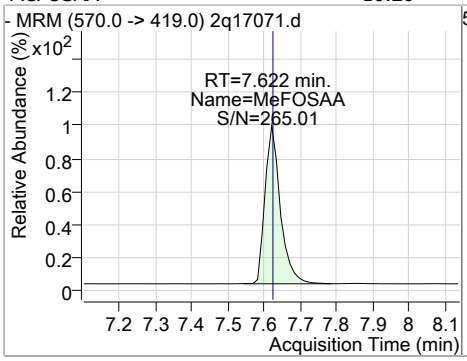


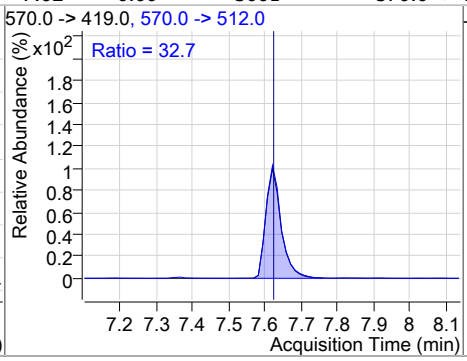


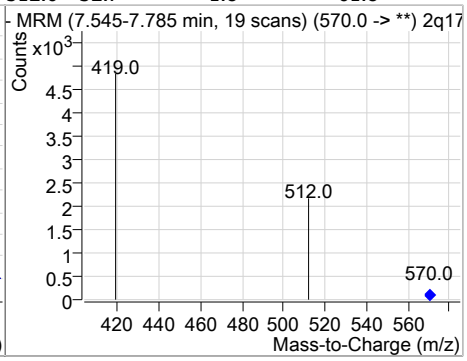


Perfluorinated Compounds by LC/MS/MS

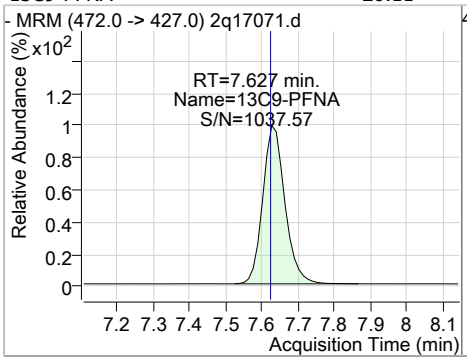
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	10.26	7.62	0.00	3061	570.0 -> 512.0	32.7	1.8	61.8

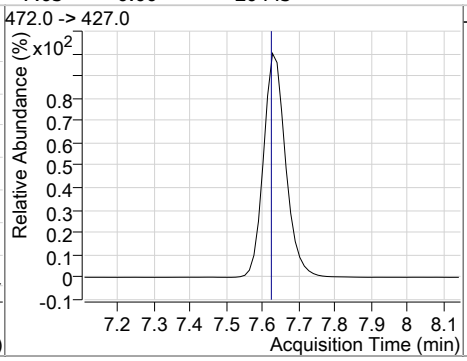


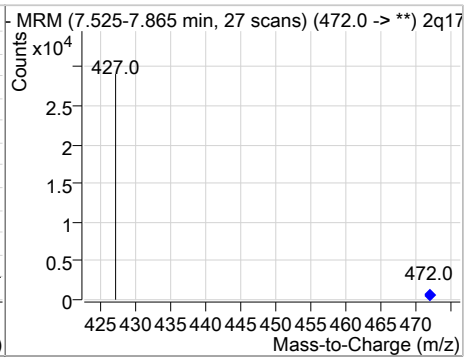




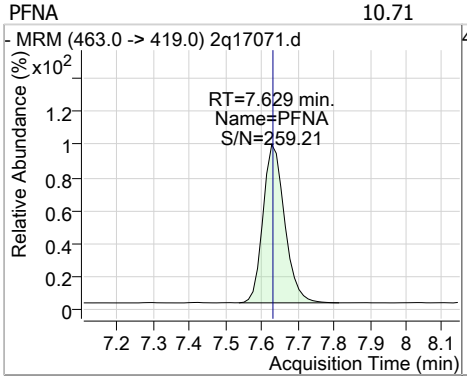
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.11	7.63	0.00	20443				

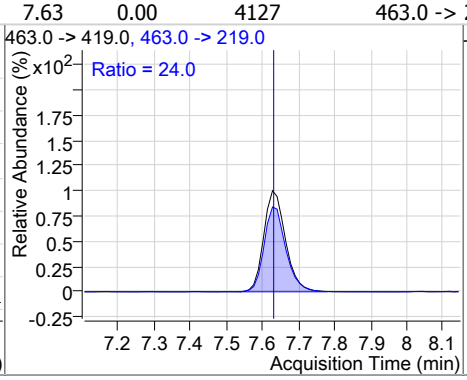


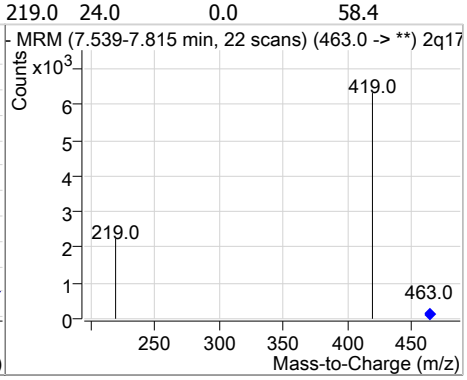




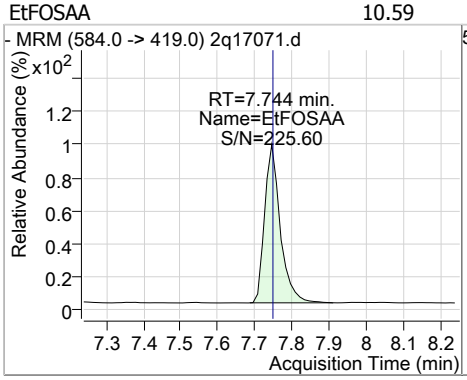
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	10.71	7.63	0.00	4127	463.0 -> 219.0	24.0	0.0	58.4

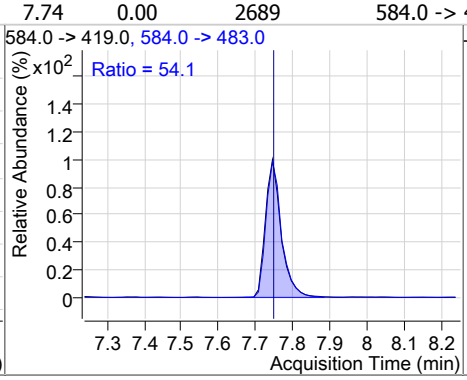


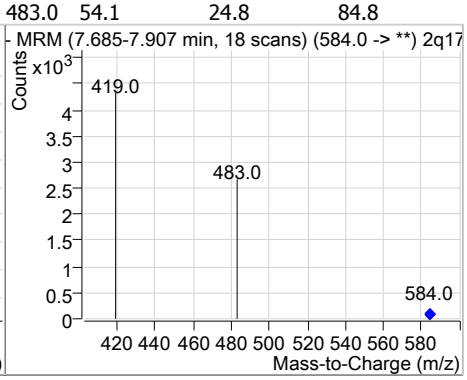




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	10.59	7.74	0.00	2689	584.0 -> 483.0	54.1	24.8	84.8

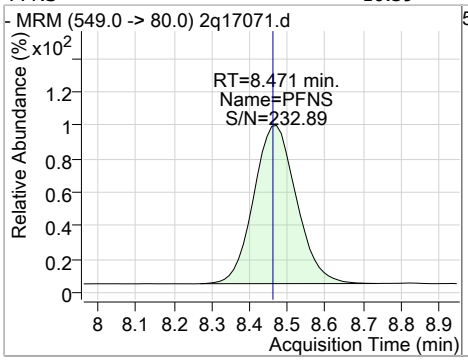


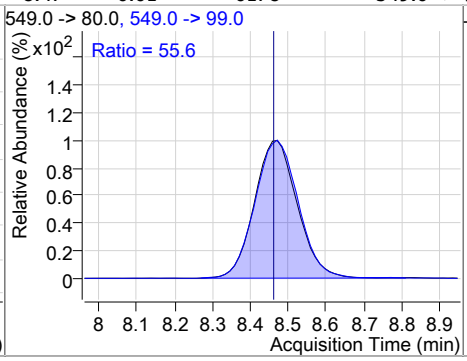


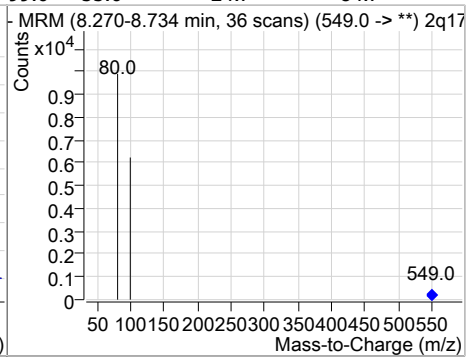


Perfluorinated Compounds by LC/MS/MS

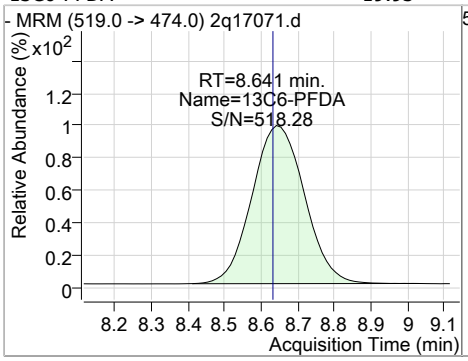
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	10.39	8.47	0.01	6178	549.0 -> 99.0	55.6	24.7	84.7

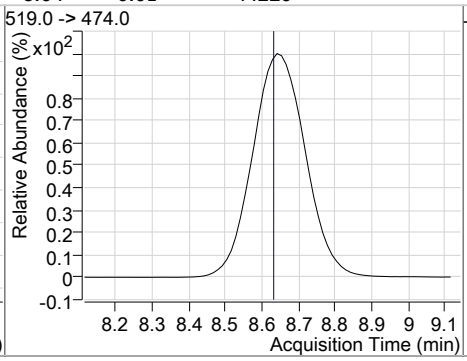


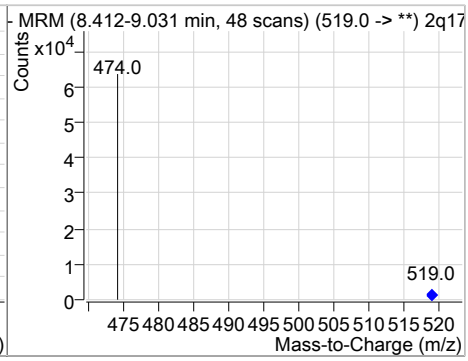




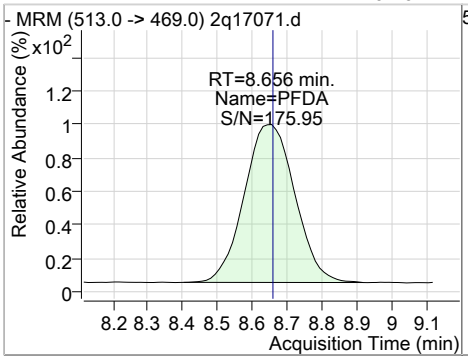
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.93	8.64	0.01	44226				

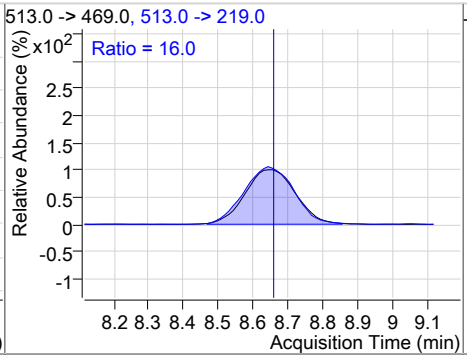


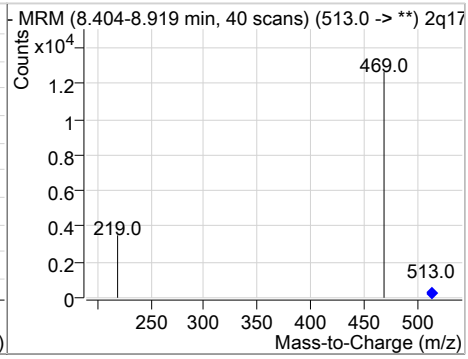




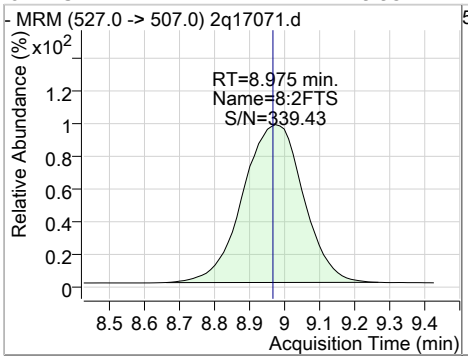
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	10.16	8.66	0.01	8005	513.0 -> 219.0	16.0	0.0	45.3

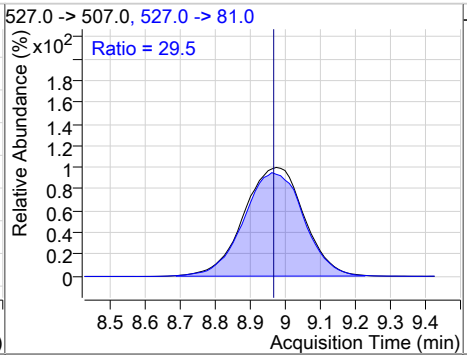


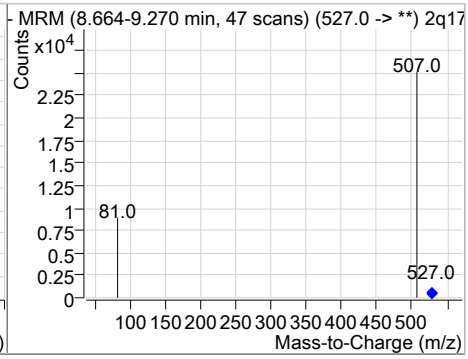




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	9.93	8.98	0.02	17014	527.0 -> 81.0	29.5	1.3	61.3

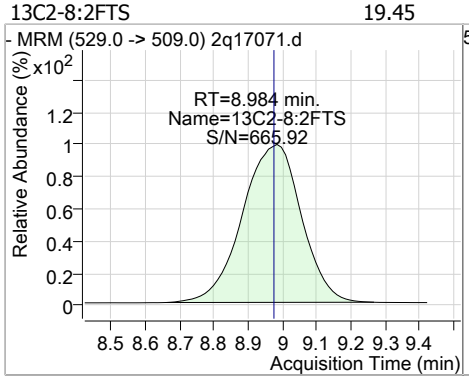


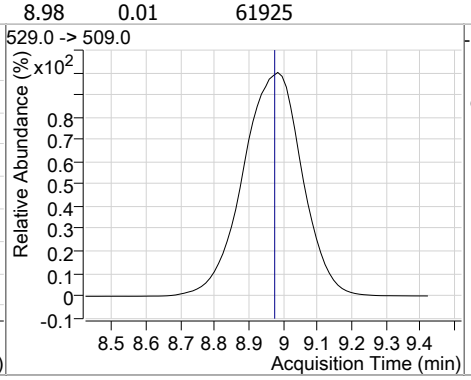


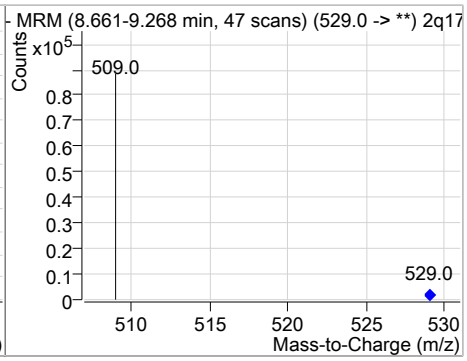


Perfluorinated Compounds by LC/MS/MS

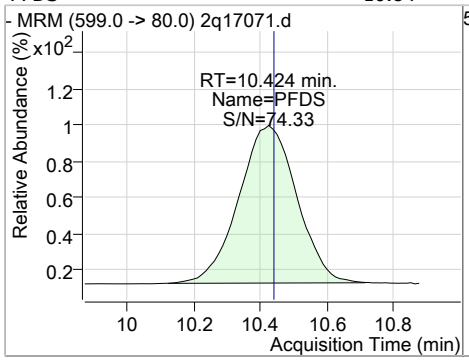
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.45	8.98	0.01	61925				

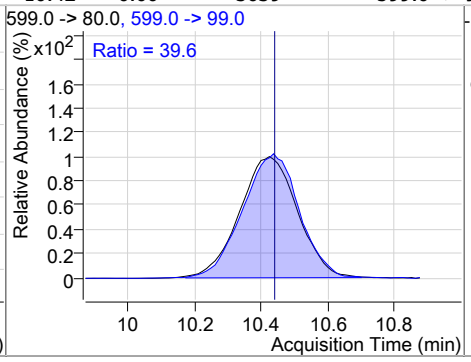


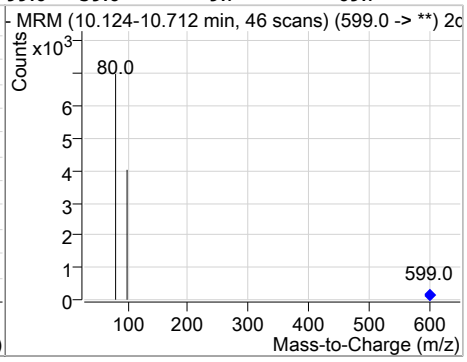




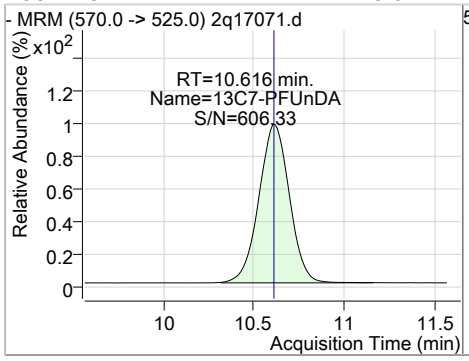
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	10.84	10.42	0.00	3639	599.0 -> 99.0	39.6	9.7	69.7

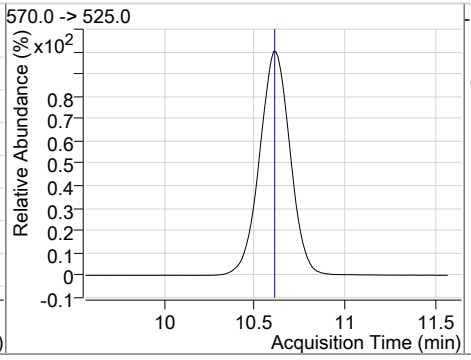


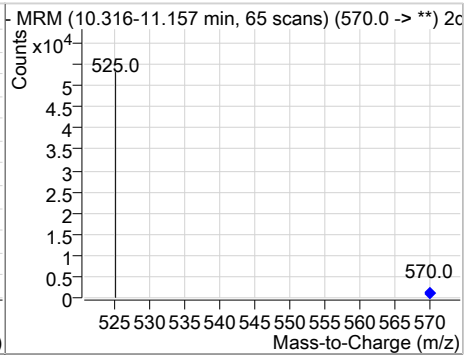




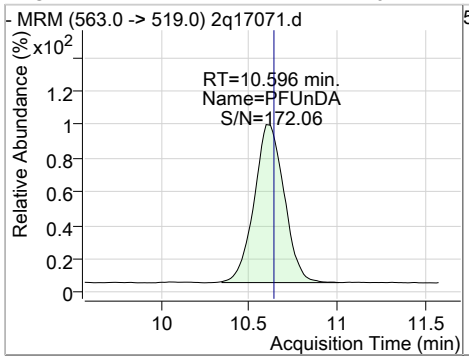
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.81	10.62	0.01	35480				

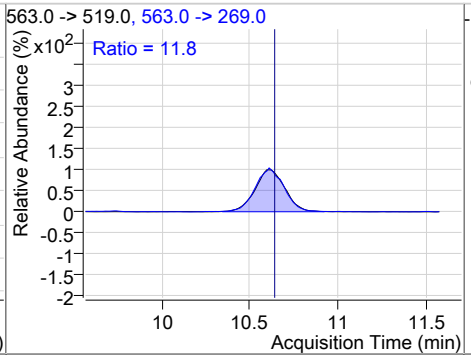


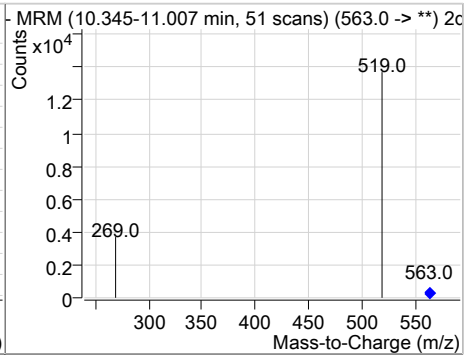




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	10.14	10.60	-0.03	8460	563.0 -> 269.0	11.8	0.0	41.8

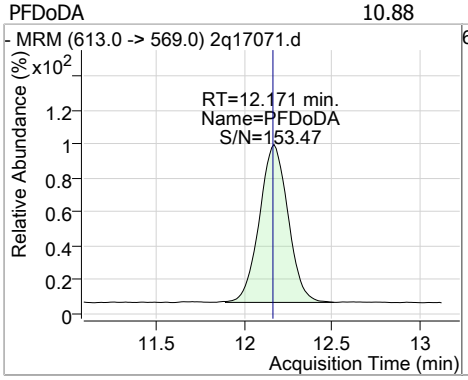


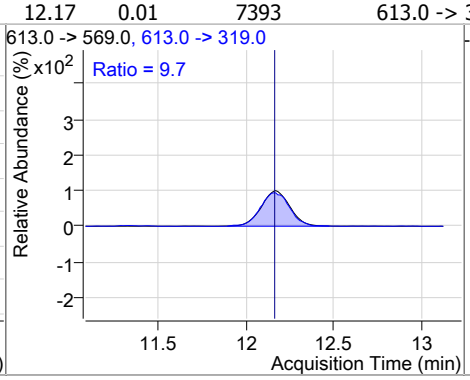


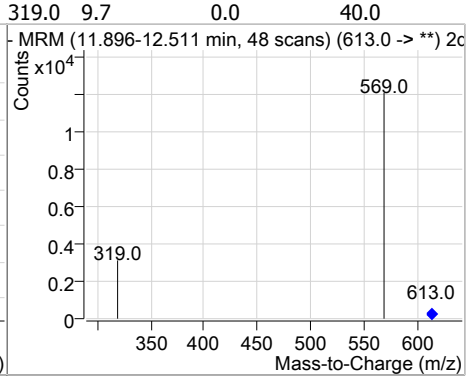


Perfluorinated Compounds by LC/MS/MS

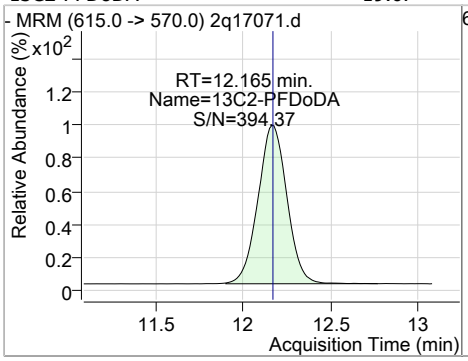
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	10.88	12.17	0.01	7393	613.0 -> 319.0	9.7	0.0	40.0

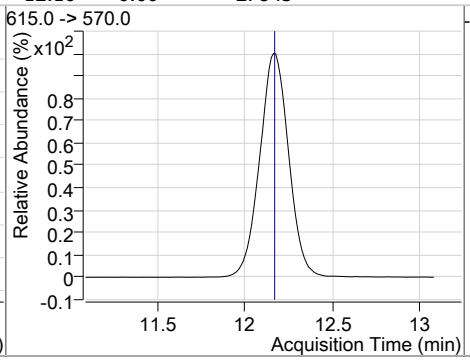


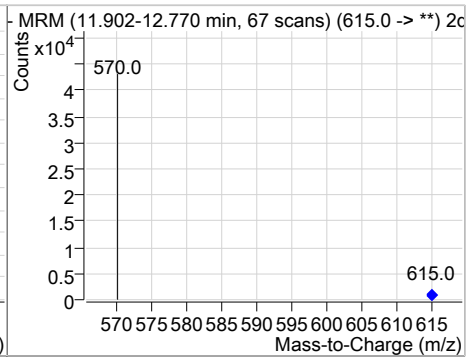




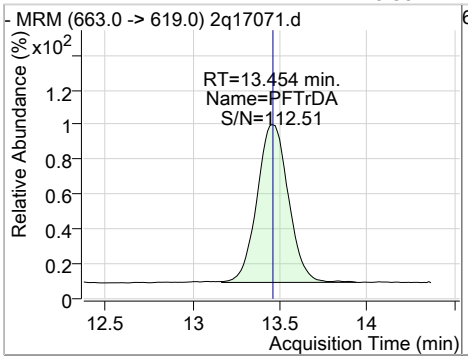
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.67	12.16	0.00	27845				

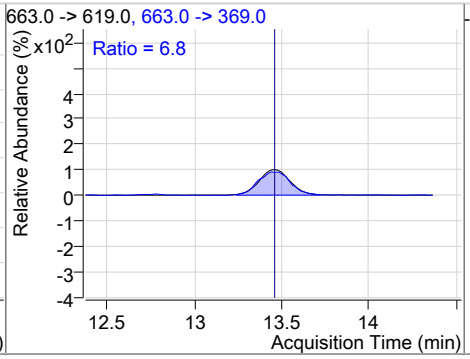


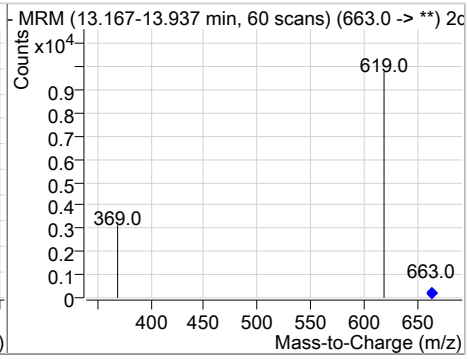




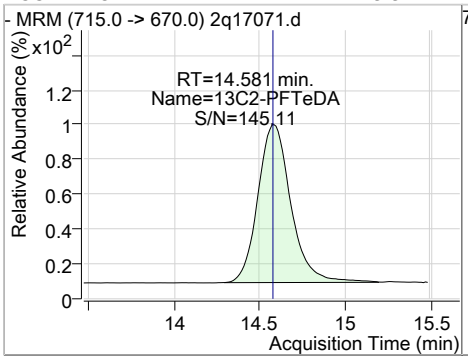
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	10.58	13.45	0.01	5494	663.0 -> 369.0	6.8	0.0	37.1

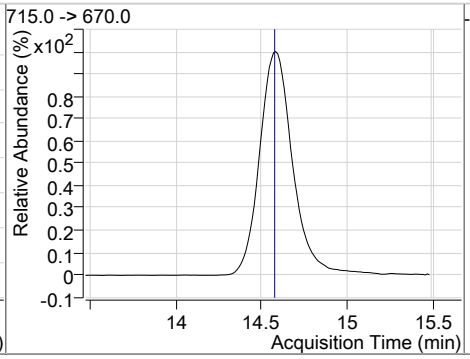


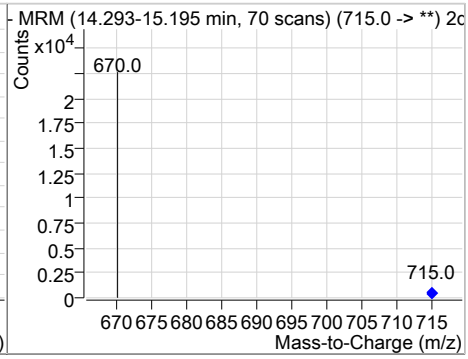




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.92	14.58	0.01	12179				

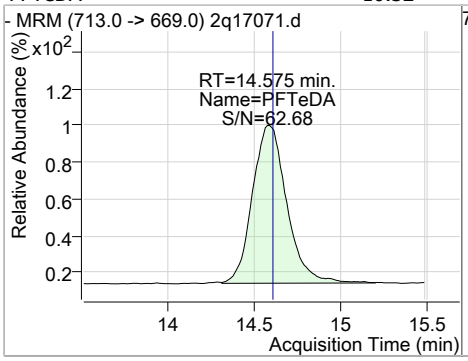


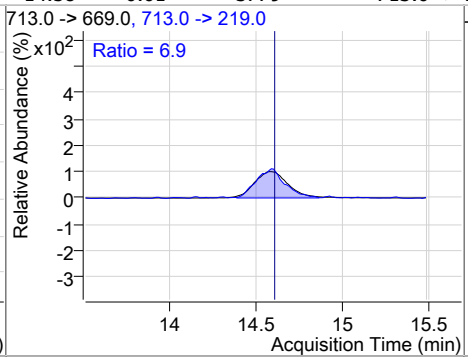


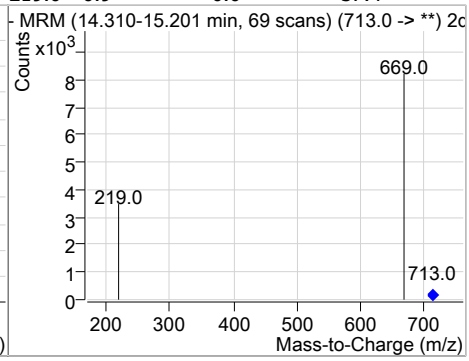


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	10.32	14.58	-0.01	3779	713.0 -> 219.0	6.9	0.0	37.4







Manual Integration Approval Summary

Sample Number:	S2Q296-IC296	**Method:**	EPA 537M BY ID
Lab FileID:	2Q17071.D	**Analyst approved:**	07/16/18 13:34 Natasha Gumtie
Injection Time:	07/13/18 13:11	**Supervisor approved:**	07/16/18 17:22 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.57	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/16/18 17:22

Perfluorinated Compounds by LC/MS/MS

Data File : 2q17072.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/13/2018 1:34:46 PM
Sample Name : ic296-0.5
Vial : Vial 2
DA Method File : PFC_ID_071318_S2Q296.quantmethod.xml
Batch Name : s2q296.batch.bin
Sample Information : op70790,S2Q296,1.99,,,1.0,1,soil

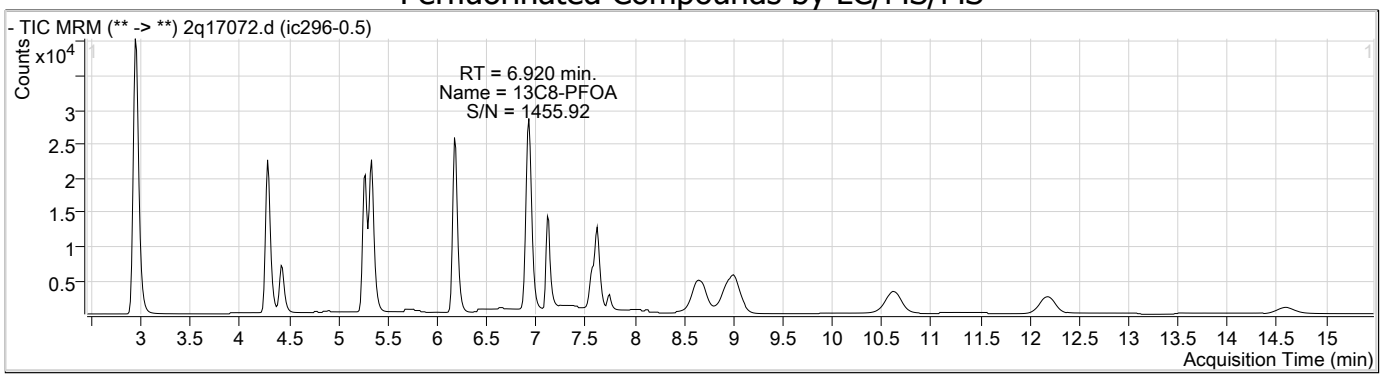
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.921	415.0 -> 370.0	22915	20.00	µg/L	0.000
13C4-PFOS	7.573	503.0 -> 80.0	11776	20.00	µg/L	0.000
M4-PFBA	2.941	217.0 -> 172.0	159495	20.00	µg/L	0.000
M5-PFPeA	4.287	268.0 -> 223.0	77077	20.00	µg/L	0.000
M5-PFHxA	5.340	318.0 -> 273.0	71157	20.00	µg/L	0.000
M4-PFHpA	6.179	367.0 -> 322.0	67590	20.00	µg/L	0.000
M8-PFOA	6.920	421.0 -> 376.0	35200	20.00	µg/L	0.000
M9-PFNA	7.640	472.0 -> 427.0	21532	20.00	µg/L	0.013
M6-PFDA	8.654	519.0 -> 474.0	46657	20.00	µg/L	0.025
M7-PFUnDA	10.616	570.0 -> 525.0	36660	20.00	µg/L	0.013
M2-PFDoDA	12.178	615.0 -> 570.0	28641	20.00	µg/L	0.013
M2-PFTeDA	14.594	715.0 -> 670.0	12087	20.00	µg/L	0.025
M8-FOSA	7.117	506.0 -> 78.0	39887	20.00	µg/L	0.000
M3-PFBS	4.418	302.0 -> 99.0	23087	20.00	µg/L	0.000
M3-PFHxS	6.173	402.0 -> 99.0	20354	20.00	µg/L	0.000
M8-PFOS	7.571	507.0 -> 99.0	10206	20.00	µg/L	0.000
M2-4:2FTS	5.273	329.0 -> 309.0	68703	20.00	µg/L	0.013
M2-6:2FTS	6.942	429.0 -> 409.0	54175	20.00	µg/L	0.013
M2-8:2FTS	8.997	529.0 -> 509.0	62555	20.00	µg/L	0.025
M3-MeFOSAA	7.620	573.0 -> 419.0	16885	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.273	329.0 -> 309.0	68735	19.79	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.9%		
13C2-6:2FTS	6.942	429.0 -> 409.0	54171	20.55	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.8%		
13C2-8:2FTS	8.997	529.0 -> 509.0	61937	19.45	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.3%		
13C2-PFDoDA	12.178	615.0 -> 570.0	28688	20.27	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.3%		
13C2-PFTeDA	14.594	715.0 -> 670.0	12116	19.81	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%		
13C3-PFBS	4.418	302.0 -> 99.0	23080	20.92	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.6%		
13C3-PFHxS	6.173	402.0 -> 99.0	20372	21.32	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.6%		
13C4-PFBA	2.941	217.0 -> 172.0	159455	21.26	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.3%		
13C4-PFHpA	6.179	367.0 -> 322.0	67599	21.28	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.4%		
13C5-PFHxA	5.340	318.0 -> 273.0	71170	21.28	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.4%		
13C5-PFPeA	4.287	268.0 -> 223.0	77083	20.82	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.1%		
13C6-PFDA	8.654	519.0 -> 474.0	46616	21.00	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.0%		

Perfluorinated Compounds by LC/MS/MS

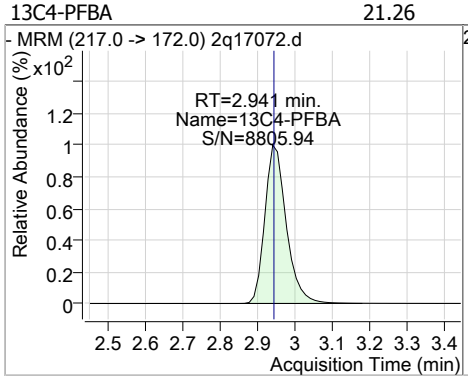
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.616	570.0 -> 525.0	36714	20.50	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%			
13C8-FOSA	7.117	506.0 -> 78.0	39897	22.27	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.4%			
13C8-PFOA	6.920	421.0 -> 376.0	35201	21.32	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.6%			
13C8-PFOS	7.571	507.0 -> 99.0	10200	21.78	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.9%			
13C9-PFNA	7.640	472.0 -> 427.0	21544	21.19	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.9%			
d3-MeFOSAA	7.620	573.0 -> 419.0	16928	20.86	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.3%			
M2-PFOA	6.921	415.0 -> 370.0	22905	19.99	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.573	503.0 -> 80.0	11778	20.00	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
Target Compounds							**QValue**
4:2FTS	5.263	327.0 -> 307.0	974	0.52	µg/L		72
6:2FTS	6.944	427.0 -> 407.0	738	0.52	µg/L		99
8:2FTS	8.988	527.0 -> 507.0	939	0.53	µg/L		43
EtFOSAA	7.744	584.0 -> 419.0	142	0.55	µg/L		85
FOSA	7.119	498.0 -> 78.0	530	0.55	µg/L		88
MeFOSAA	7.622	570.0 -> 419.0	161	0.53	µg/L		98
PFBA	2.949	213.0 -> 169.0	689	0.55	µg/L		100
PFBS	4.422	299.0 -> 80.0	773	0.51	µg/L		94
PFDA	8.669	513.0 -> 469.0	452	0.54	µg/L		63
PFDoDA	12.171	613.0 -> 569.0	431	0.61	µg/L		73
PFDS	10.424	599.0 -> 80.0	201	0.58	µg/L	m	36
PFHpA	6.182	363.0 -> 319.0	1222	0.51	µg/L		79
PFHpS	6.891	449.0 -> 80.0	305	0.50	µg/L		98
PFHxA	5.343	313.0 -> 269.0	674	0.59	µg/L		78
PFHxS	6.176	399.0 -> 80.0	654	0.56	µg/L	m	93
PFNA	7.641	463.0 -> 419.0	221	0.54	µg/L		46
PFNS	8.483	549.0 -> 80.0	355	0.54	µg/L		100
PFOA	6.922	413.0 -> 369.0	487	0.54	µg/L		92
PFOS	7.574	499.0 -> 80.0	320	0.51	µg/L	m	83
PFPeA	4.291	263.0 -> 219.0	2359	0.69	µg/L		100
PFPeS	5.383	349.0 -> 80.0	528	0.53	µg/L		98
PFTeDA	14.588	713.0 -> 669.0	223	0.61	µg/L		79
PFTrDA	13.473	663.0 -> 619.0	275	0.54	µg/L		79
PFUnDA	10.646	563.0 -> 519.0	509	0.59	µg/L		69

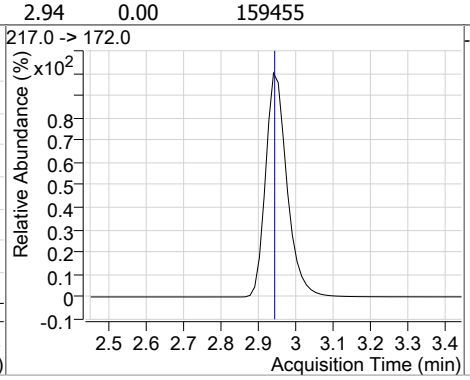
 # = Qualifier out of range, m = manually integrated, + = Area summed

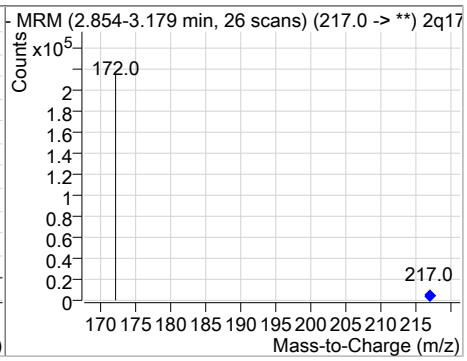
Perfluorinated Compounds by LC/MS/MS



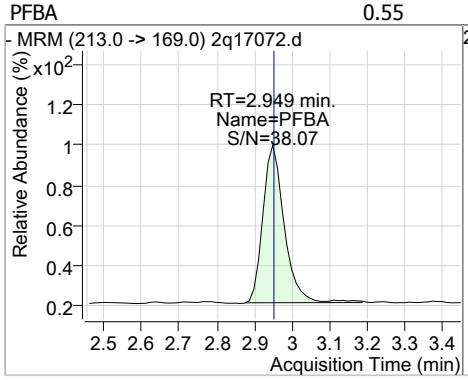
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	21.26	2.94	0.00	159455				

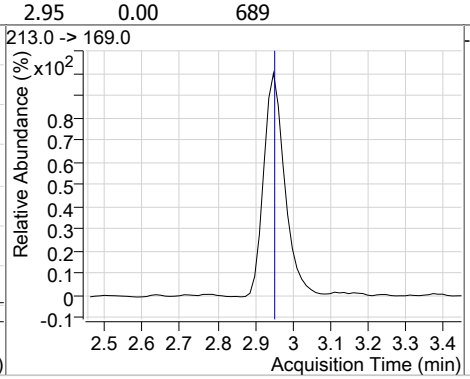


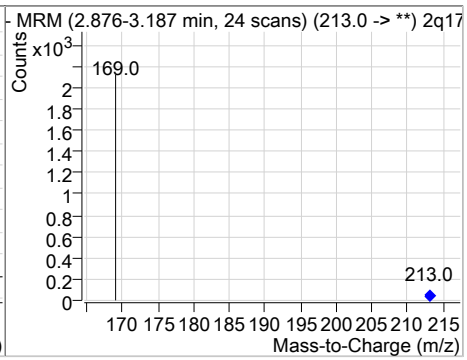




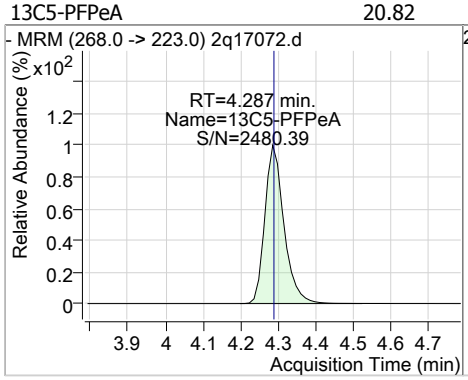
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.55	2.95	0.00	689				

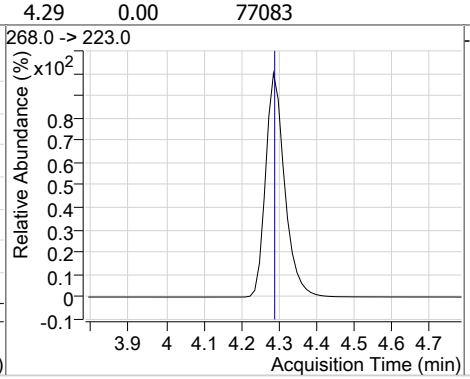


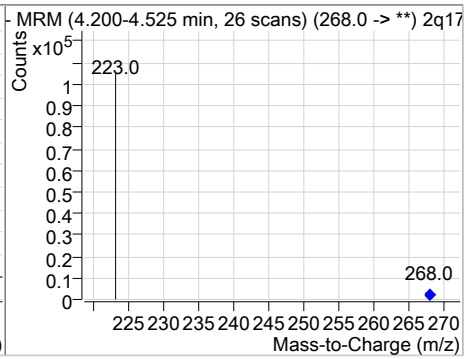




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.82	4.29	0.00	77083				

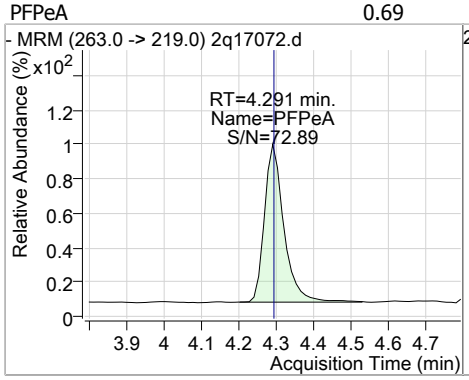


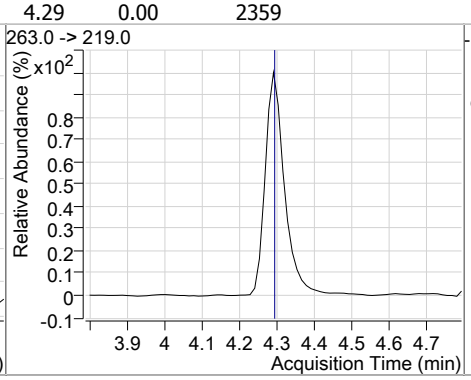


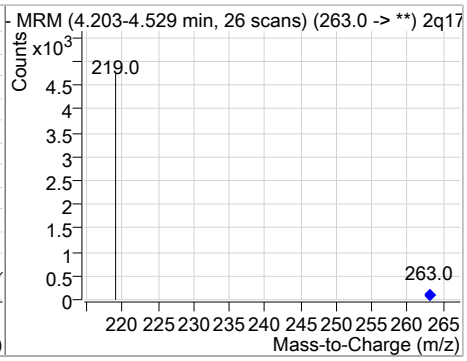


Perfluorinated Compounds by LC/MS/MS

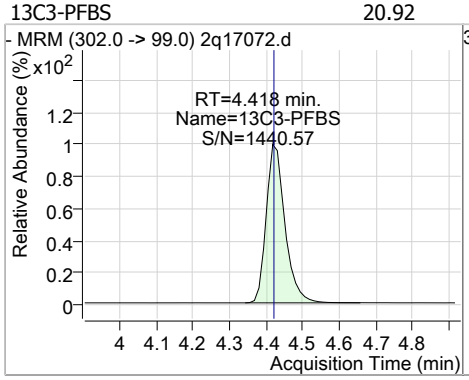
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.69	4.29	0.00	2359				

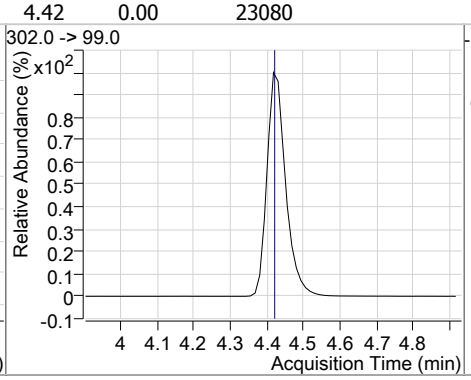


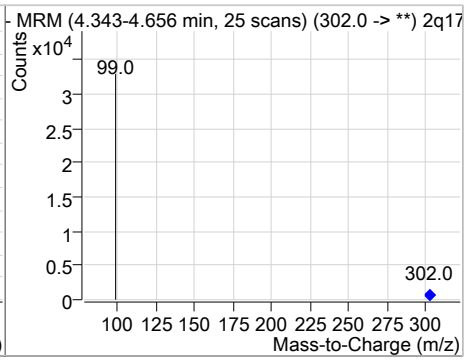




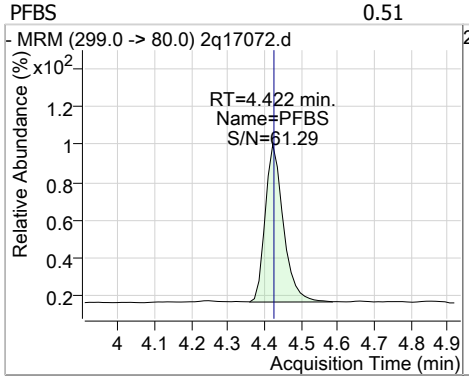
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.92	4.42	0.00	23080				

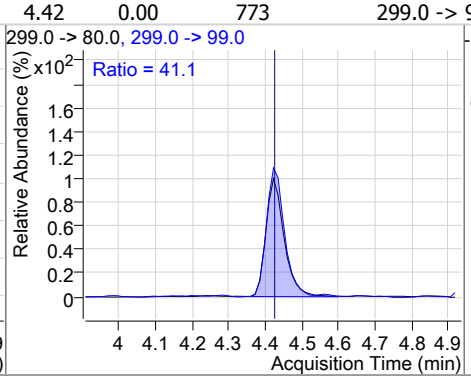


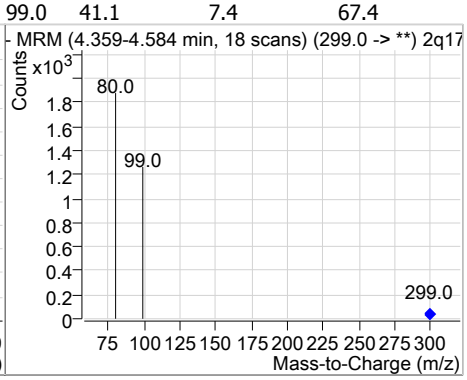




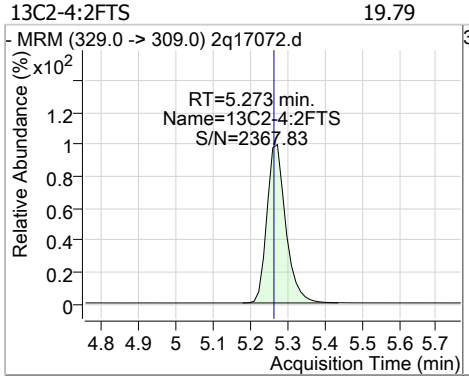
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.51	4.42	0.00	773	299.0 -> 99.0	41.1	7.4	67.4

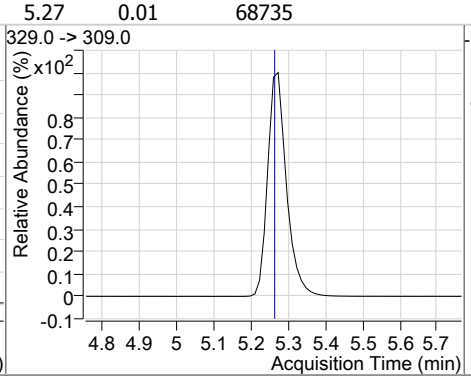


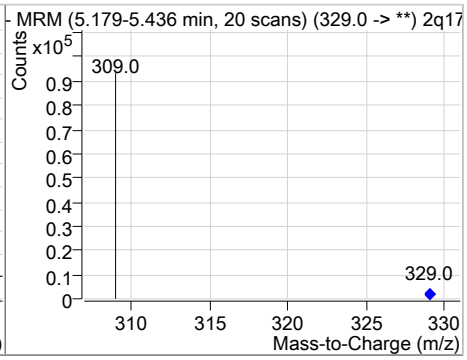




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.79	5.27	0.01	68735				

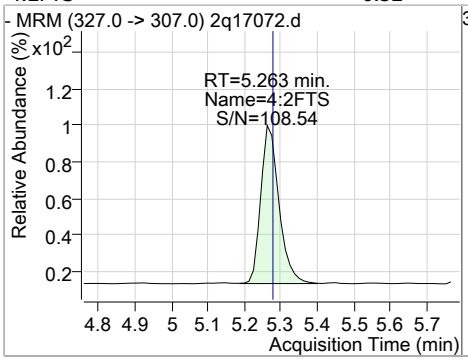


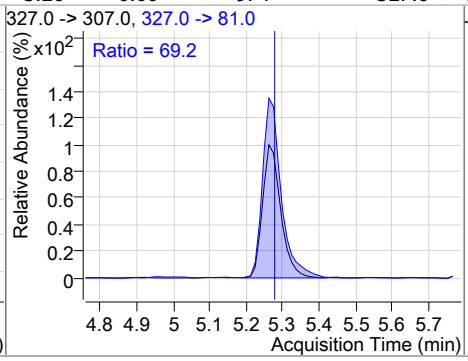


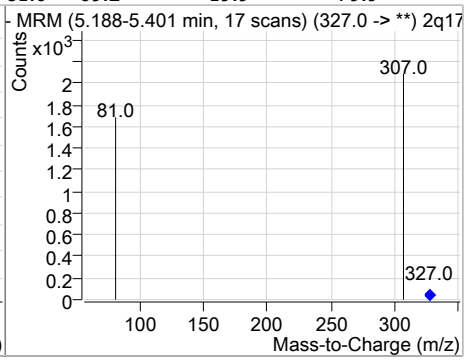


Perfluorinated Compounds by LC/MS/MS

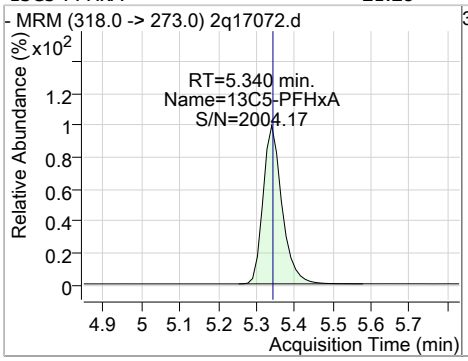
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.52	5.26	0.00	974	327.0 -> 81.0	69.2	19.9	79.9

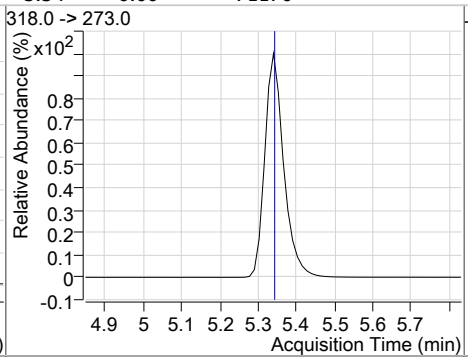


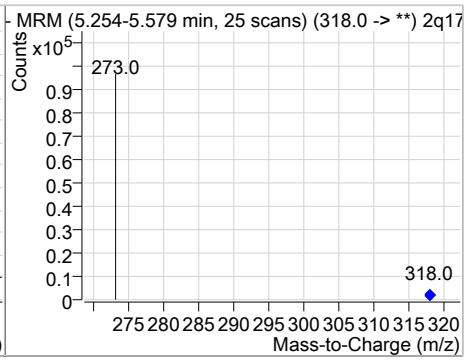




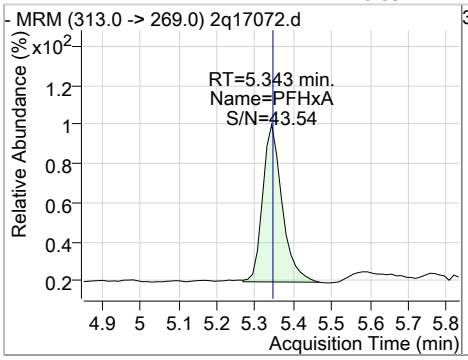
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.28	5.34	0.00	71170				

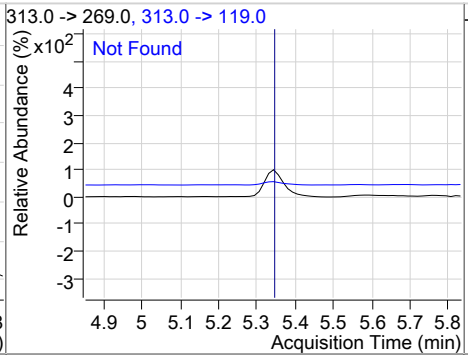


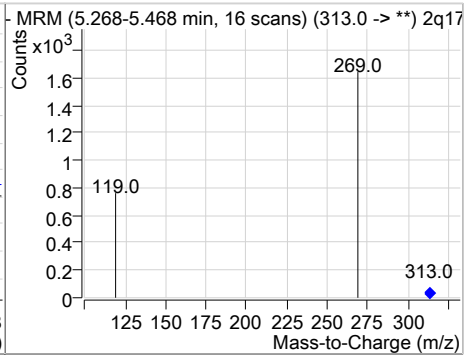




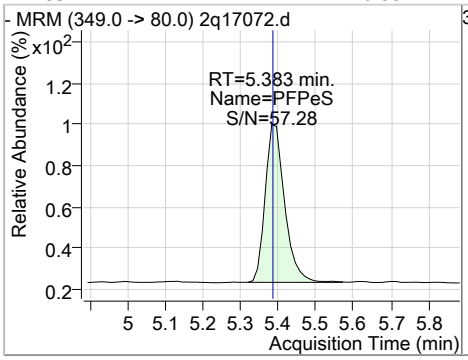
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.59	5.34	0.00	674	313.0 -> 119.0		0.0	37.6

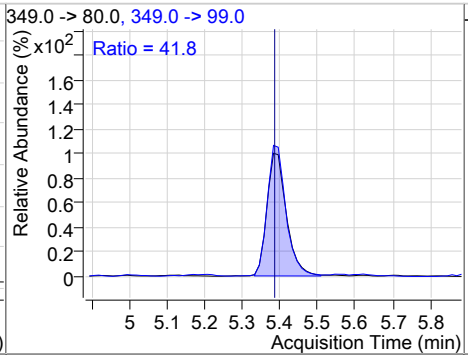


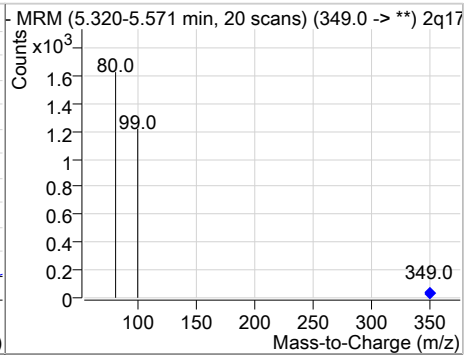




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.53	5.38	0.00	528	349.0 -> 99.0	41.8	10.8	70.8

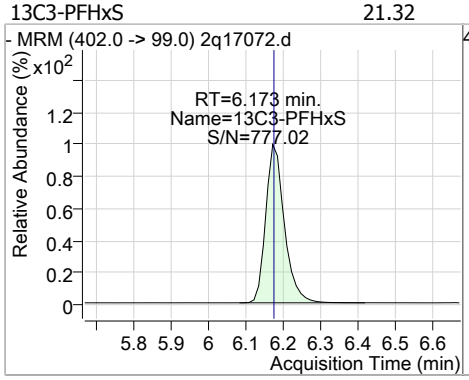


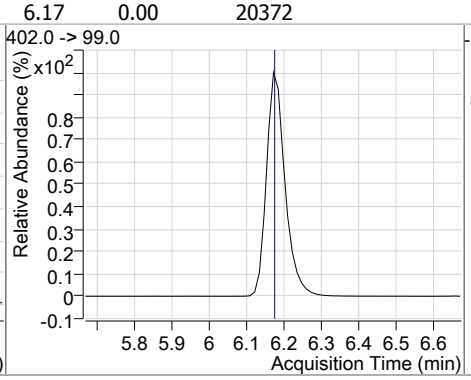


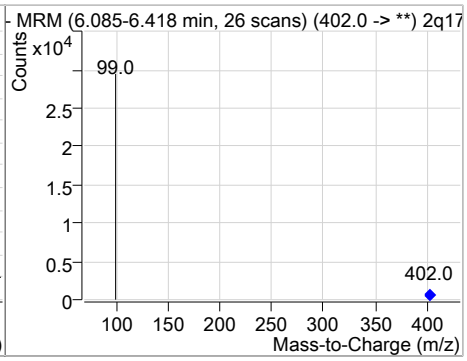


Perfluorinated Compounds by LC/MS/MS

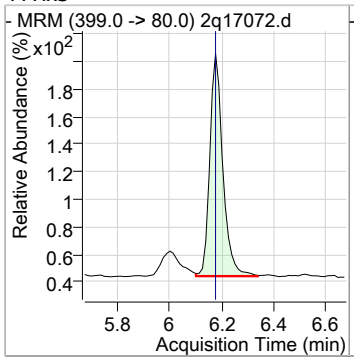
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.32	6.17	0.00	20372				

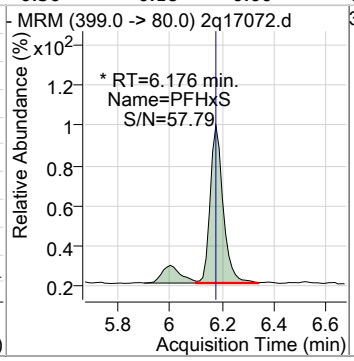


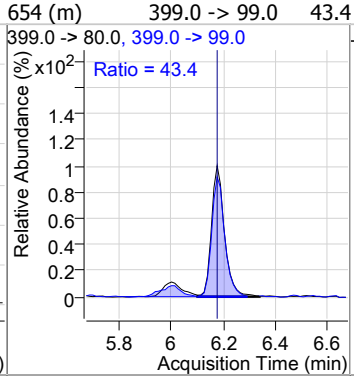


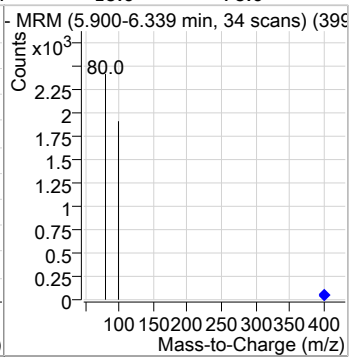


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.56	6.18	0.00	654 (m)	399.0 -> 99.0	43.4	18.0	78.0

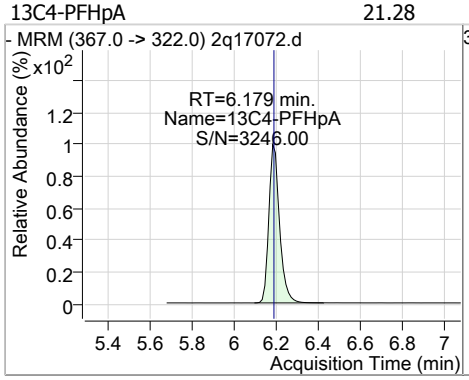


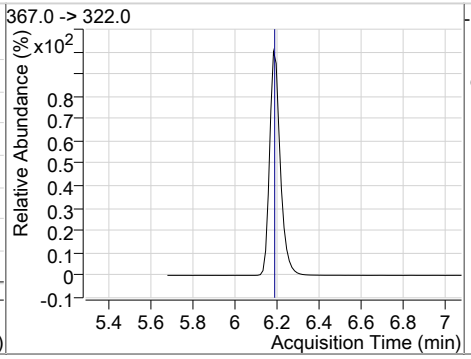


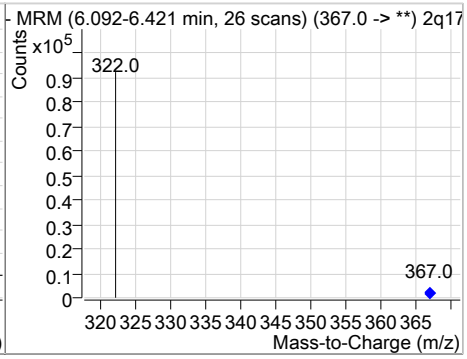




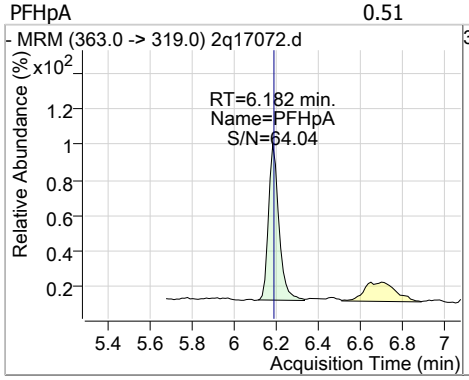
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.28	6.18	0.00	67599				

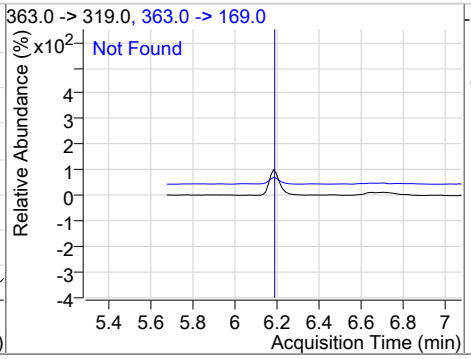


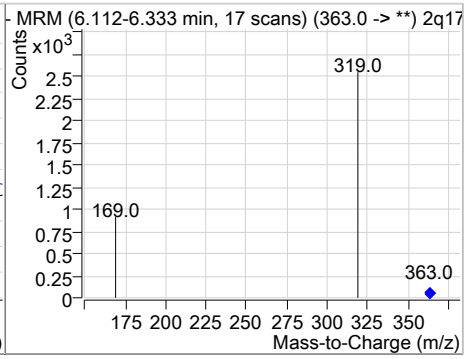




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.51	6.18	0.00	1222	363.0 -> 169.0		0.0	37.2

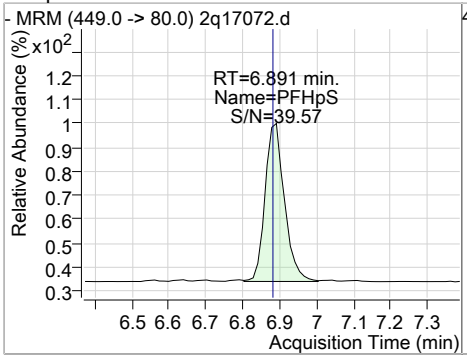


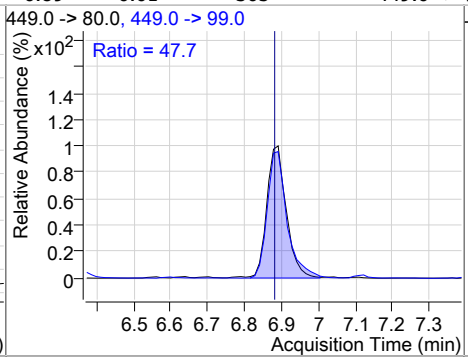


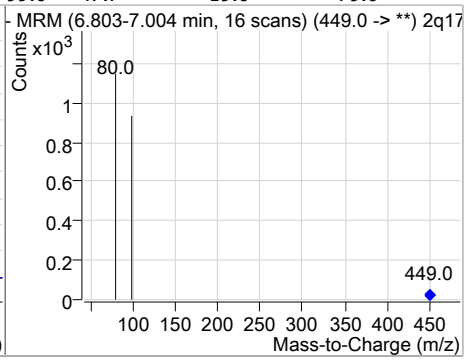


Perfluorinated Compounds by LC/MS/MS

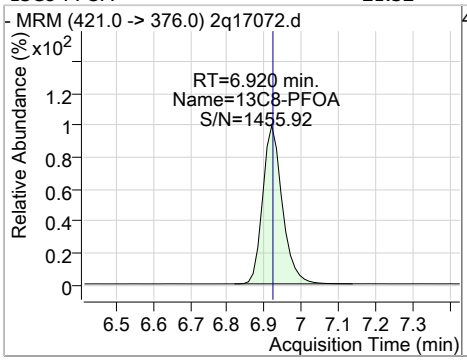
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.50	6.89	0.01	305	449.0 -> 99.0	47.7	19.0	79.0

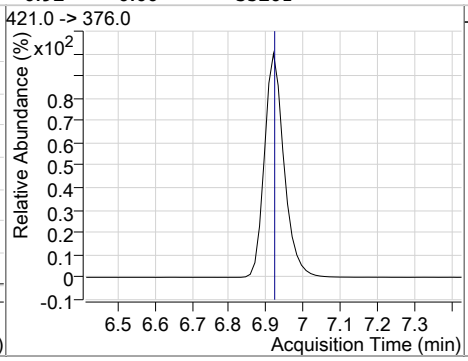


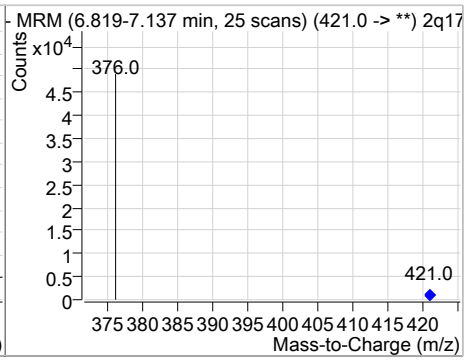




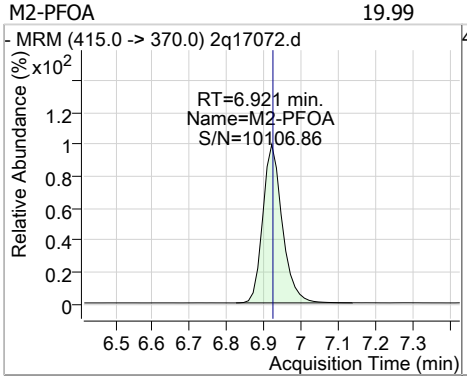
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.32	6.92	0.00	35201				

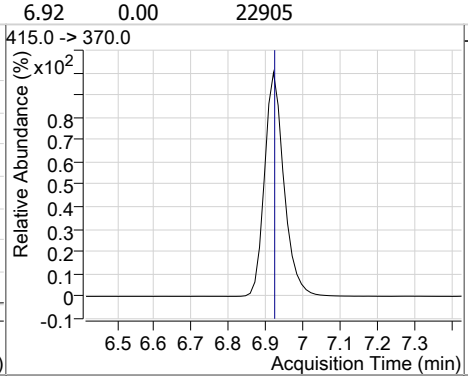


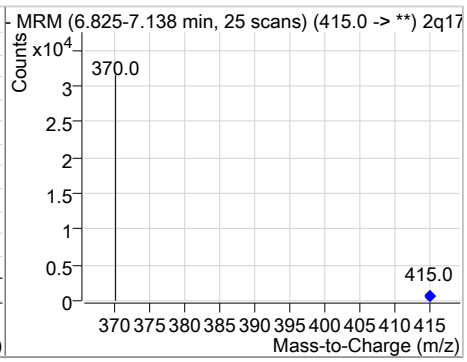




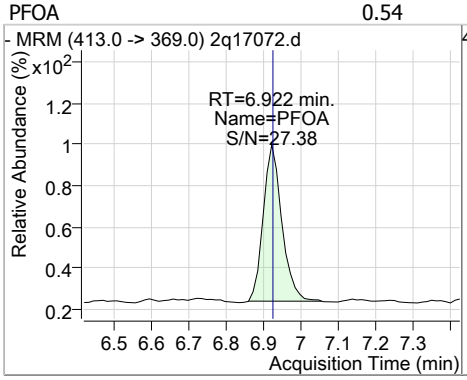
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	19.99	6.92	0.00	22905				

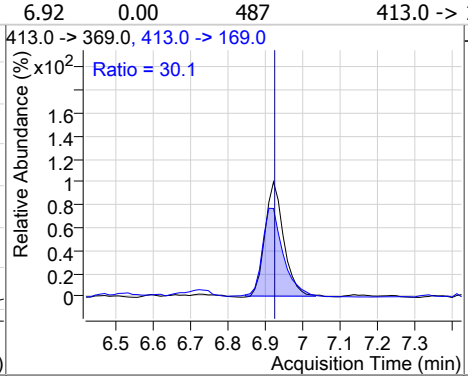


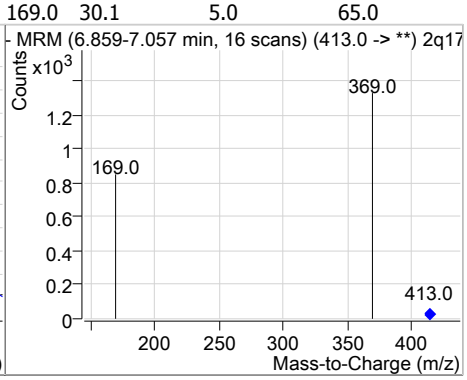




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.54	6.92	0.00	487	413.0 -> 169.0	30.1	5.0	65.0

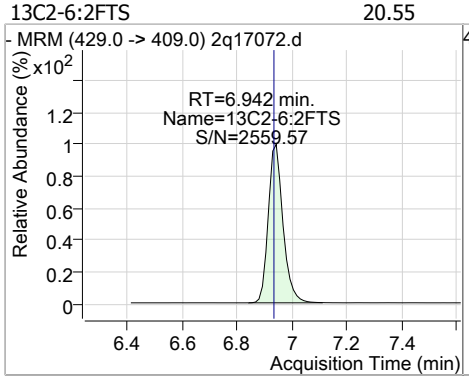


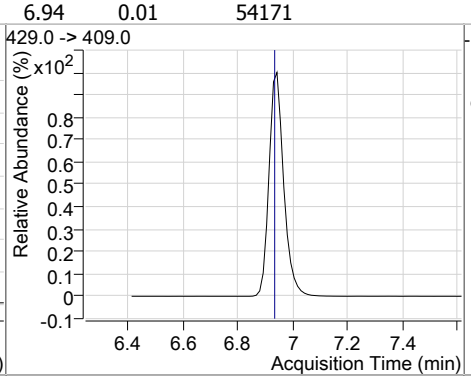


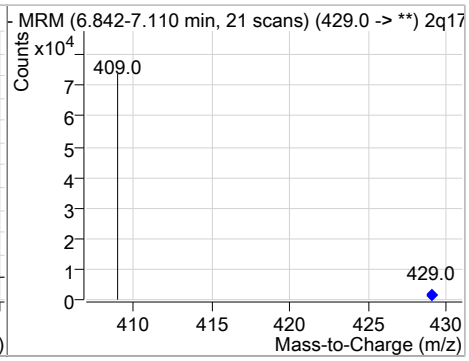


Perfluorinated Compounds by LC/MS/MS

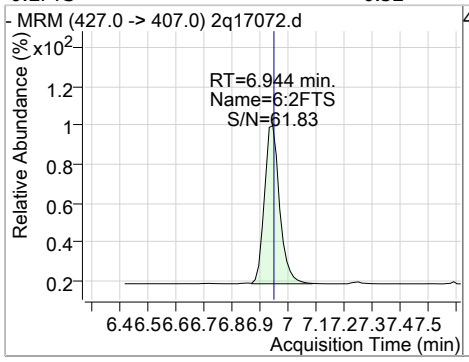
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.55	6.94	0.01	54171				

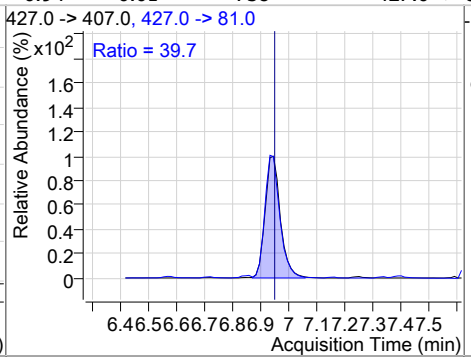


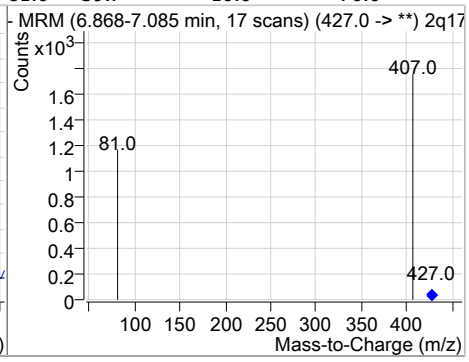




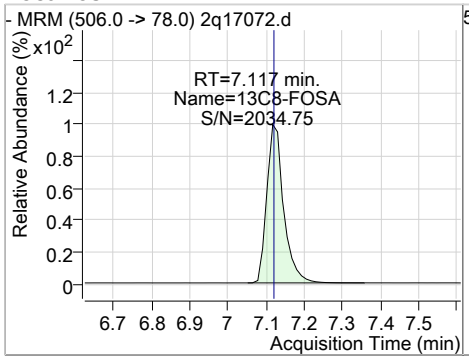
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.52	6.94	0.01	738	427.0 -> 81.0	39.7	10.0	70.0

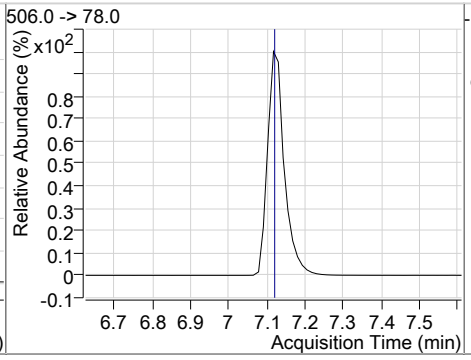


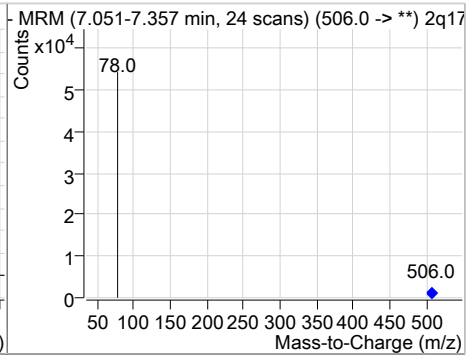




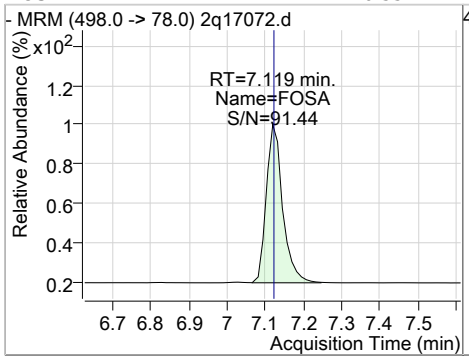
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	22.27	7.12	0.00	39897				

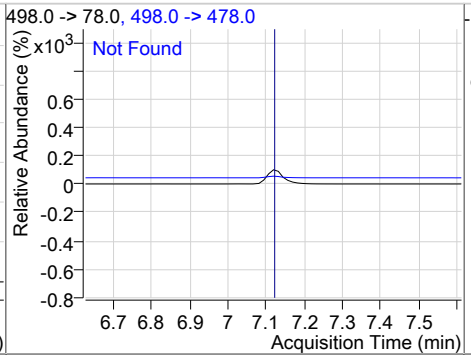


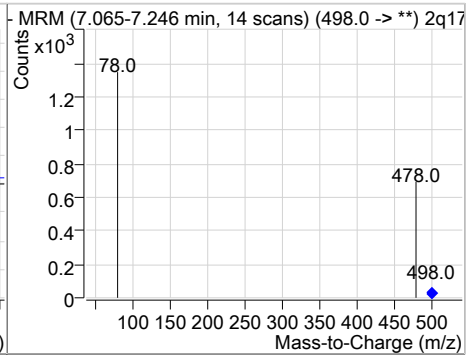




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.55	7.12	0.00	530	498.0 -> 478.0		0.0	34.0

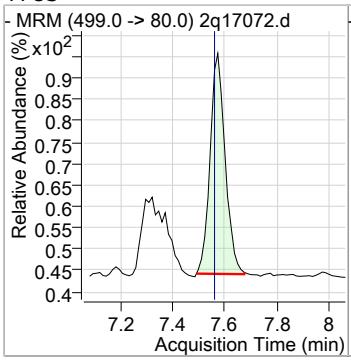


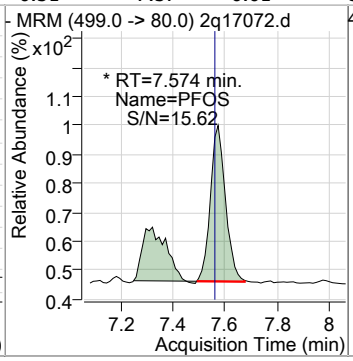


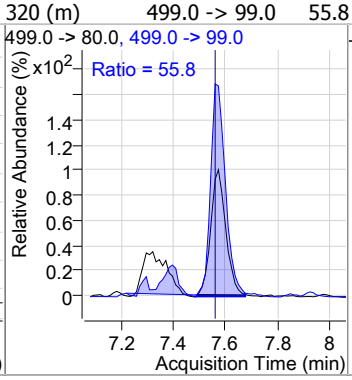


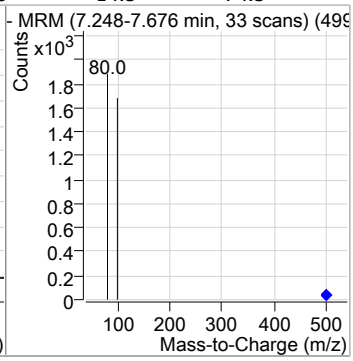
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.51	7.57	0.01	320 (m)	499.0 -> 99.0	55.8	14.5	74.5

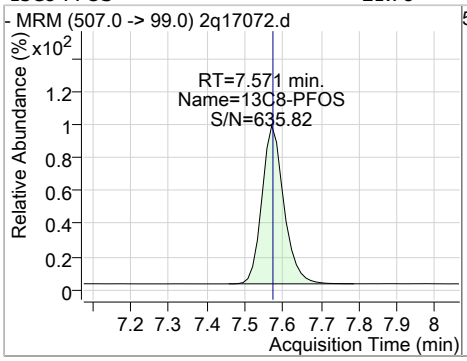


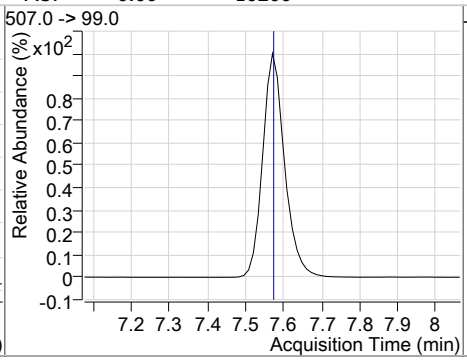


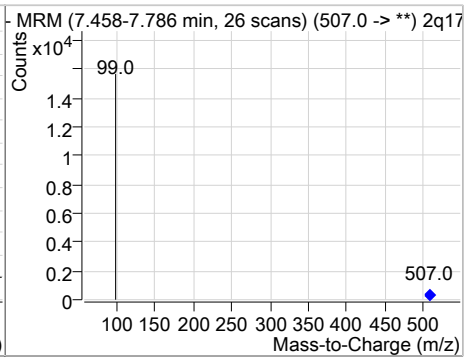




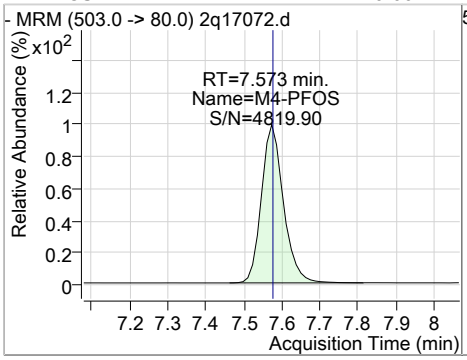
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	21.78	7.57	0.00	10200				

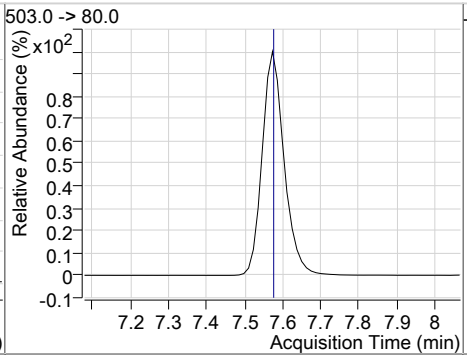


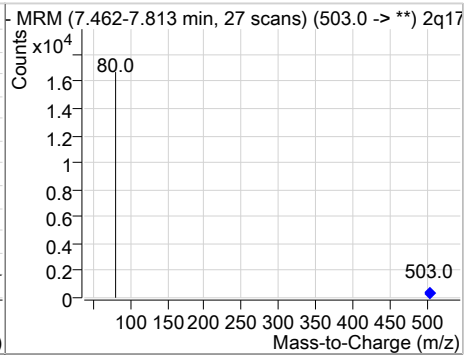




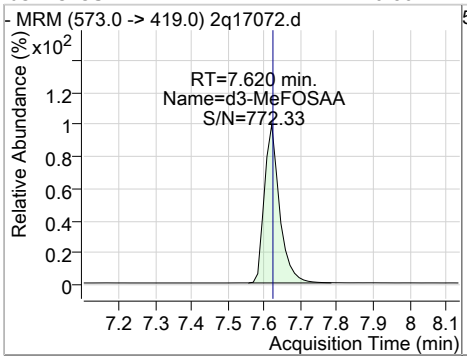
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.00	7.57	0.00	11778				

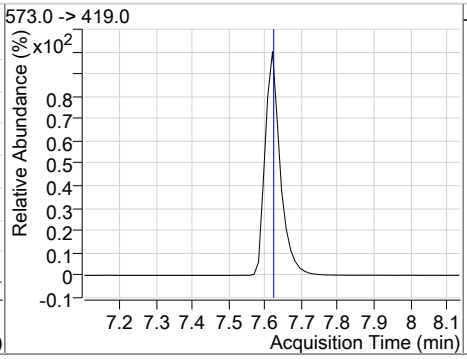


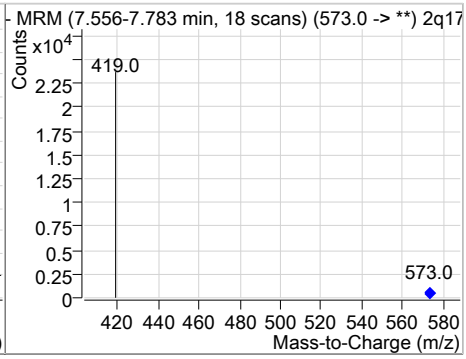




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.86	7.62	0.00	16928				

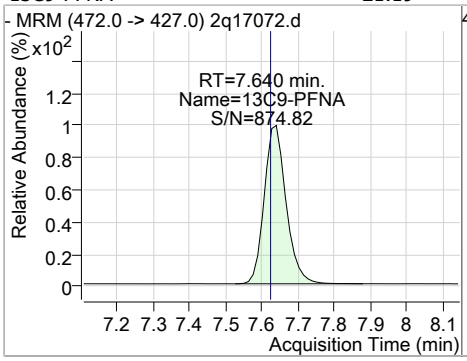


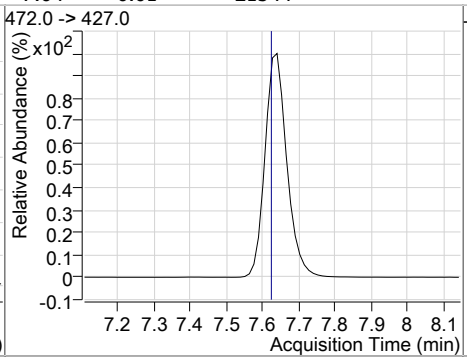


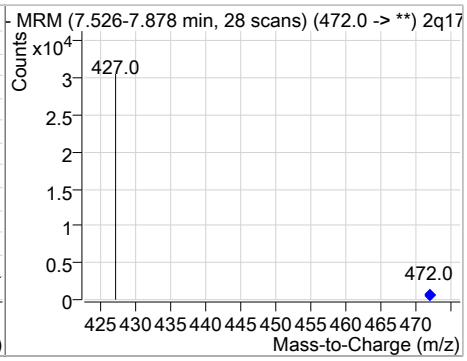


Perfluorinated Compounds by LC/MS/MS

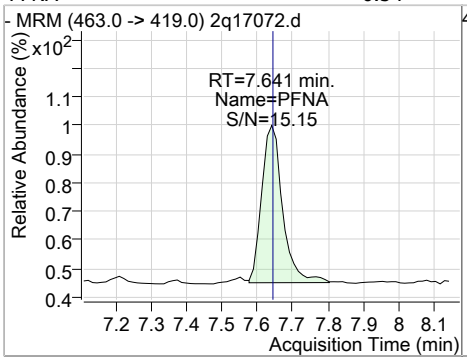
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.19	7.64	0.01	21544				

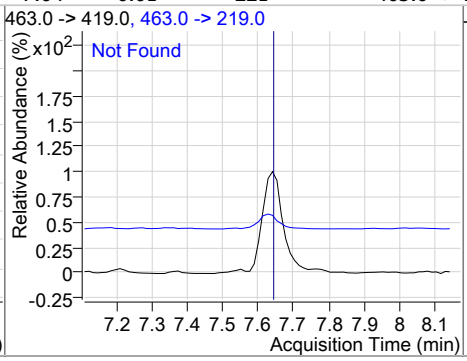


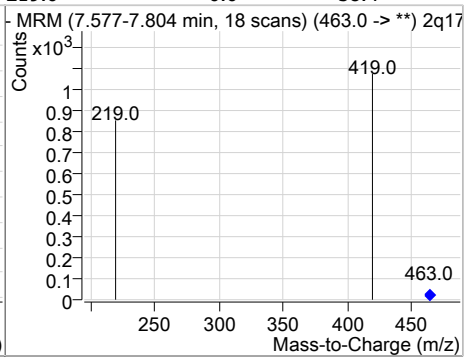




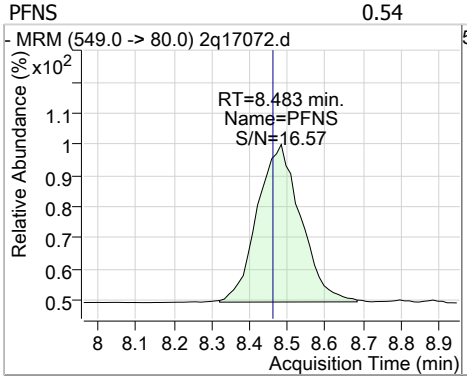
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.54	7.64	0.01	221	463.0 -> 219.0		0.0	58.4

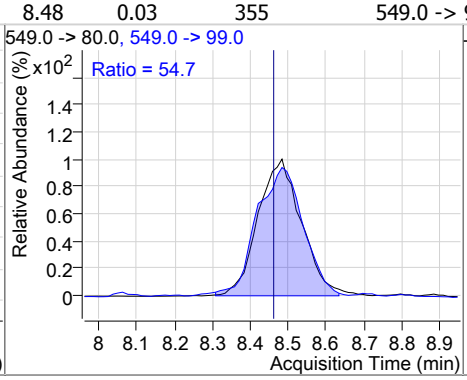


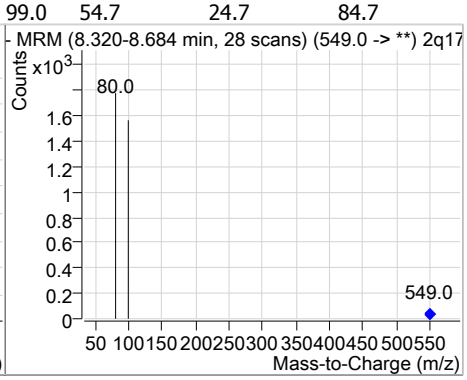




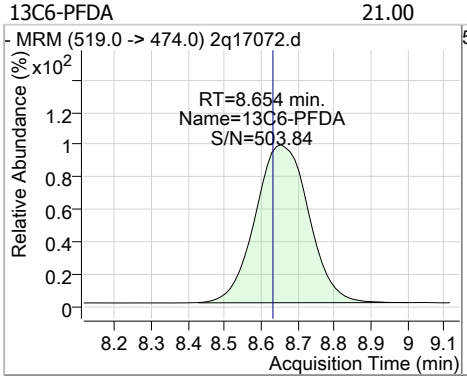
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.54	8.48	0.03	355	549.0 -> 99.0	54.7	24.7	84.7

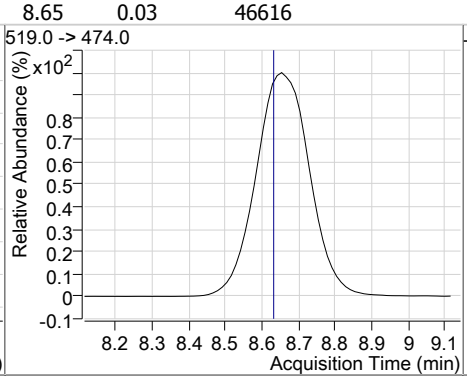


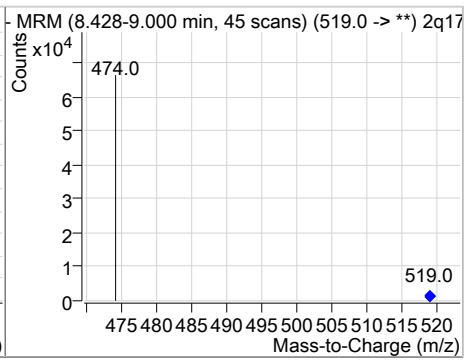




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.00	8.65	0.03	46616				

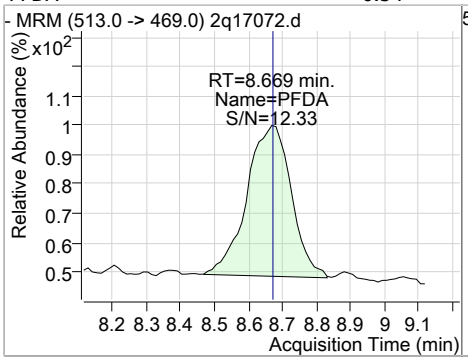


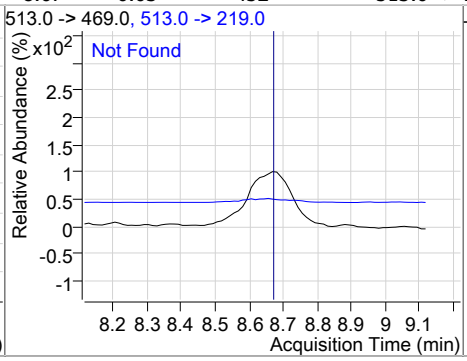


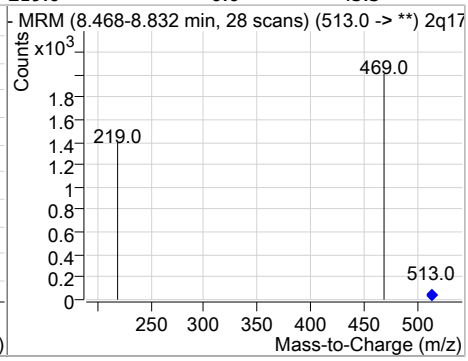


Perfluorinated Compounds by LC/MS/MS

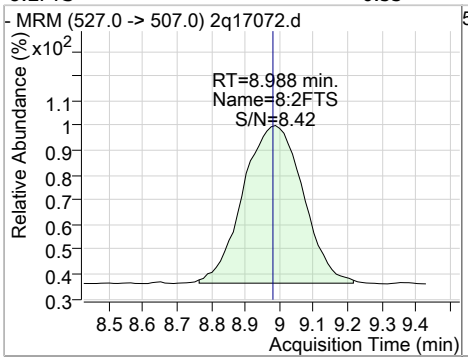
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.54	8.67	0.03	452	513.0 -> 219.0		0.0	45.3

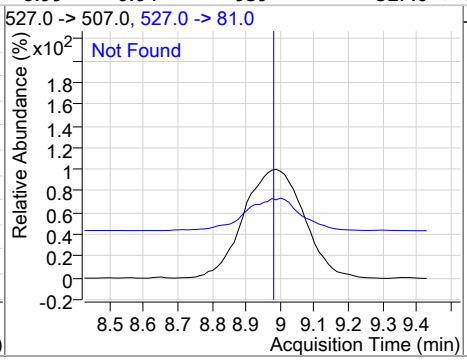


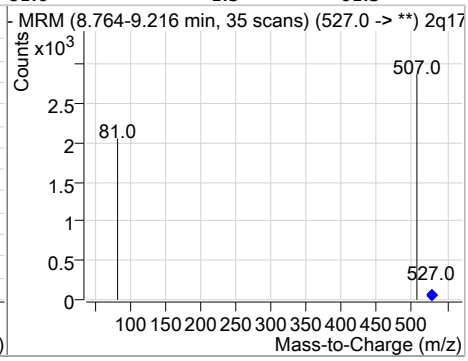




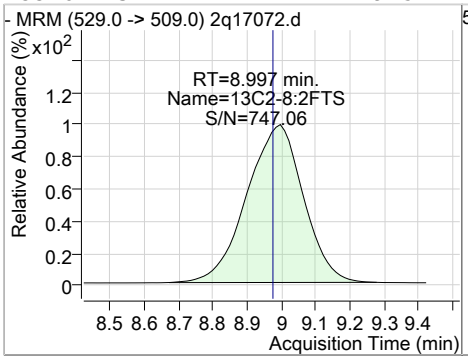
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.53	8.99	0.04	939	527.0 -> 81.0		1.3	61.3

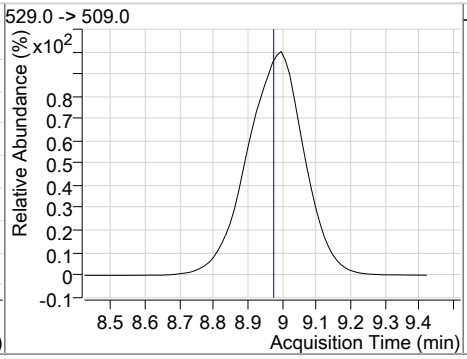


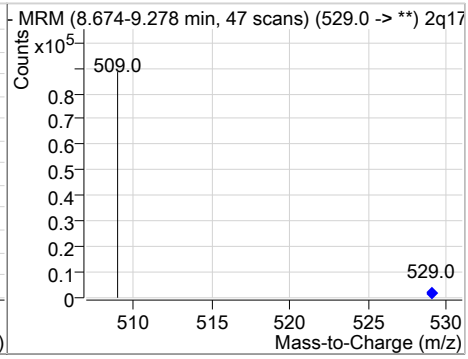




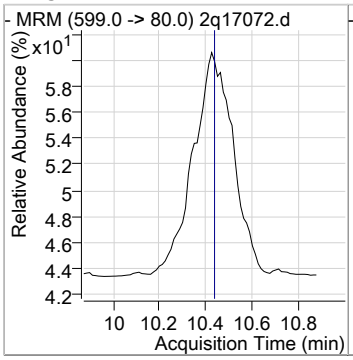
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.45	9.00	0.03	61937				

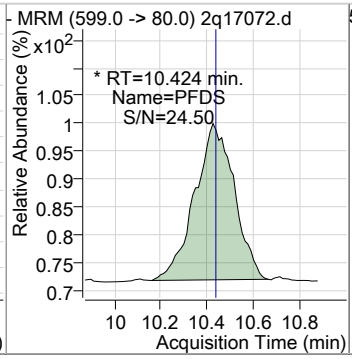


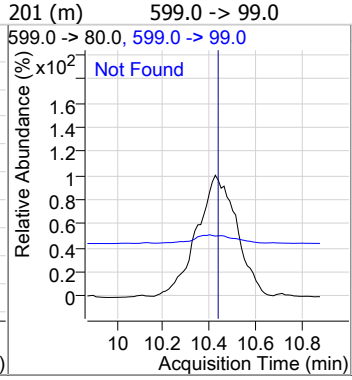


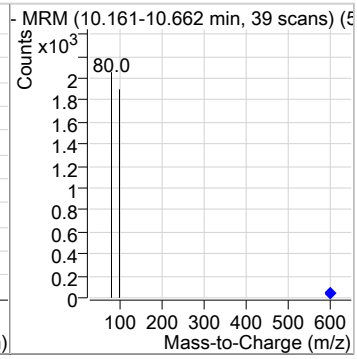


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.58	10.42	0.00	201 (m)	599.0 -> 99.0		9.7	69.7



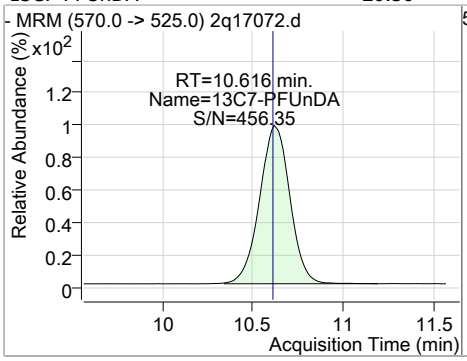


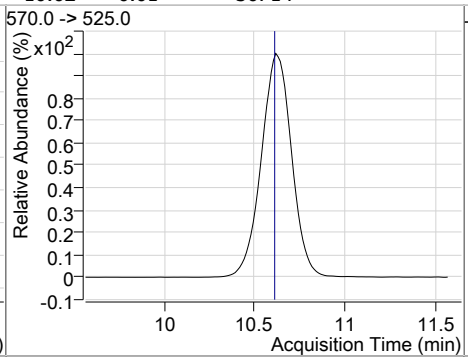


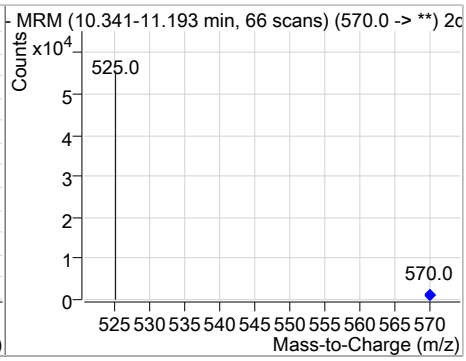


Perfluorinated Compounds by LC/MS/MS

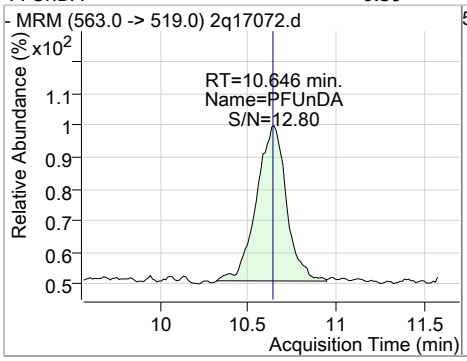
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.50	10.62	0.01	36714				

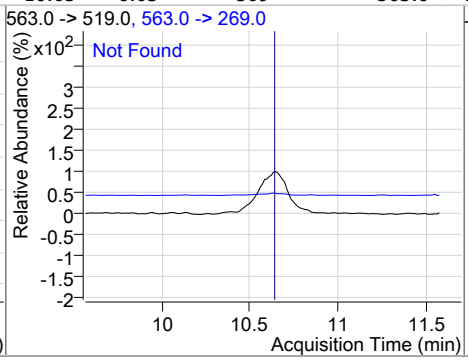


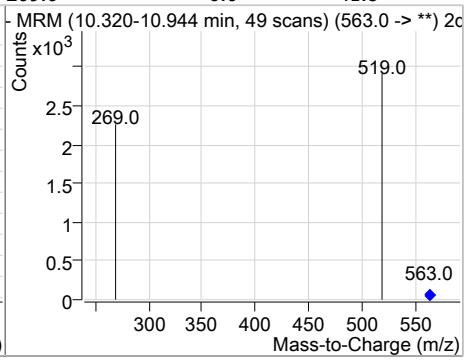




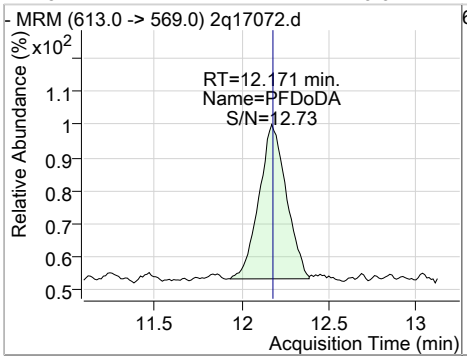
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.59	10.65	0.03	509	563.0 -> 269.0		0.0	41.8

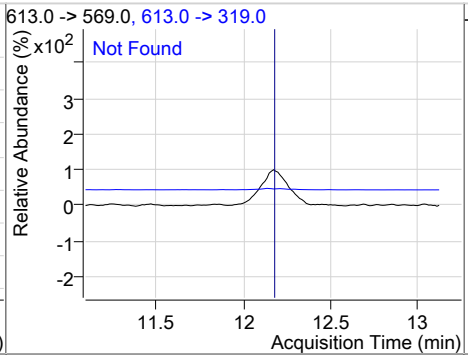


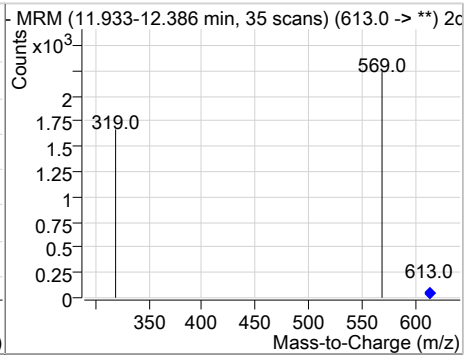




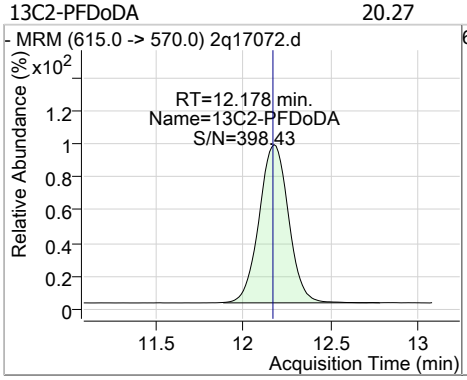
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.61	12.17	0.01	431	613.0 -> 319.0		0.0	40.0

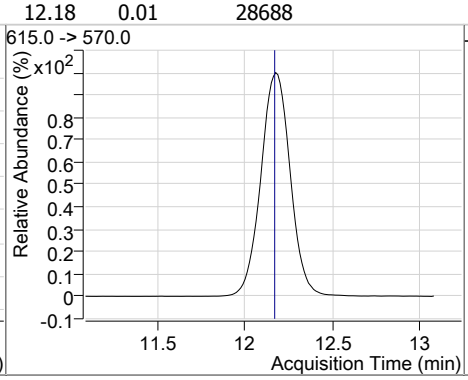


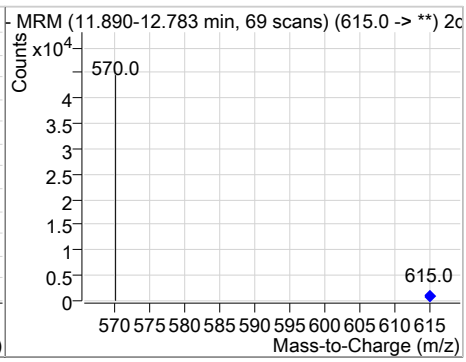




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.27	12.18	0.01	28688				

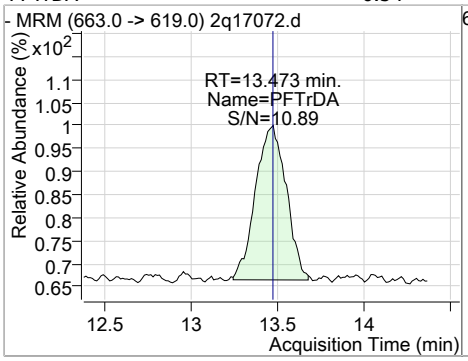


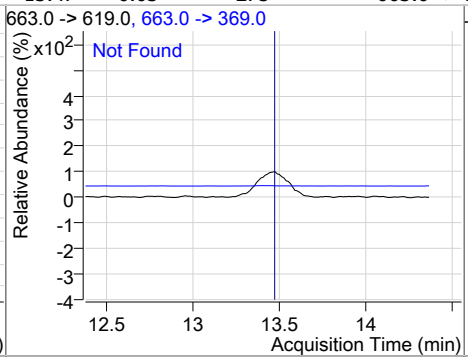


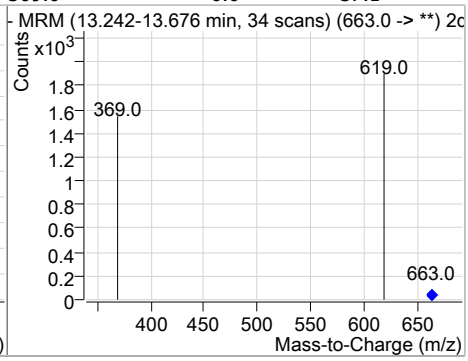


Perfluorinated Compounds by LC/MS/MS

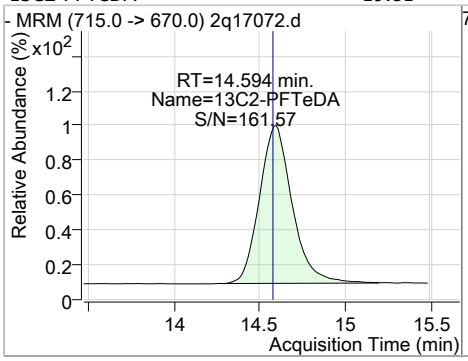
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.54	13.47	0.03	275	663.0 -> 369.0		0.0	37.1

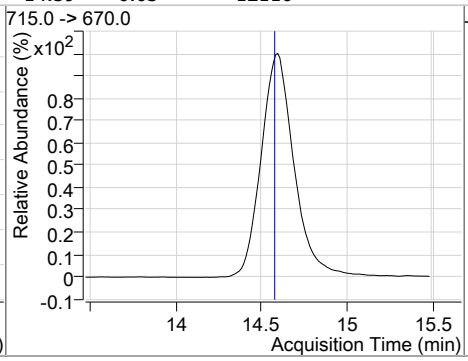


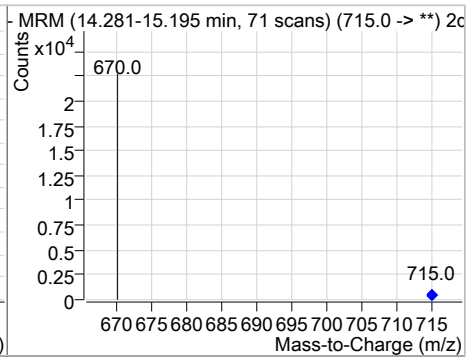




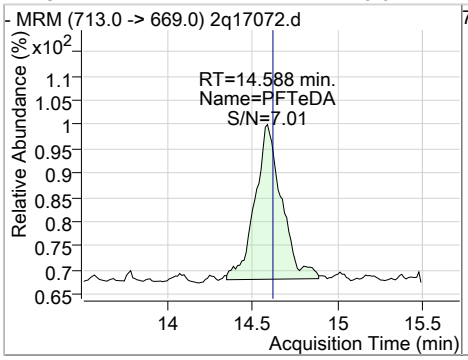
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.81	14.59	0.03	12116				

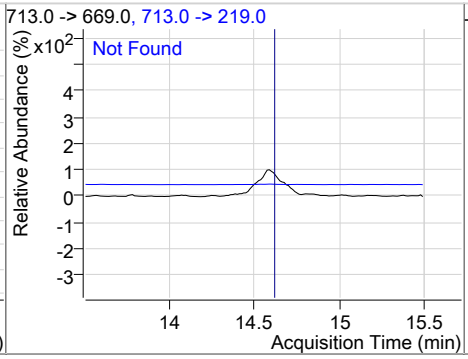


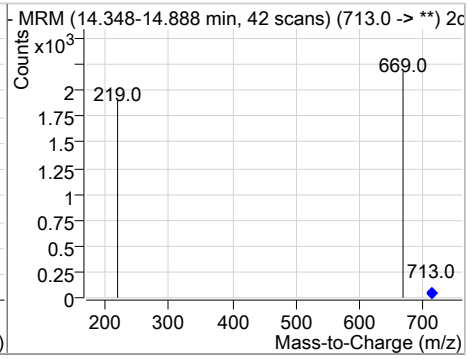




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.61	14.59	0.00	223	713.0 -> 219.0		0.0	37.4







Manual Integration Approval Summary

Sample Number: S2Q296-IC296
Lab FileID: 2Q17072.D
Injection Time: 07/13/18 13:34
Method: EPA 537M BY ID
Analyst approved: 07/16/18 13:34 Natasha Gumtie
Supervisor approved: 07/16/18 17:22 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.57	Split peak
Perfluorodecanesulfonic acid	335-77-3		10.42	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/16/18 17:22

Perfluorinated Compounds by LC/MS/MS

Data File : 2q17073.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/13/2018 1:55:31 PM
Sample Name : icc296-20
Vial : Vial 7
DA Method File : PFC_ID_071318_S2Q296.quantmethod.xml
Batch Name : s2q296.batch.bin
Sample Information : op70790,S2Q296,1.99,,,1.0,1,soil

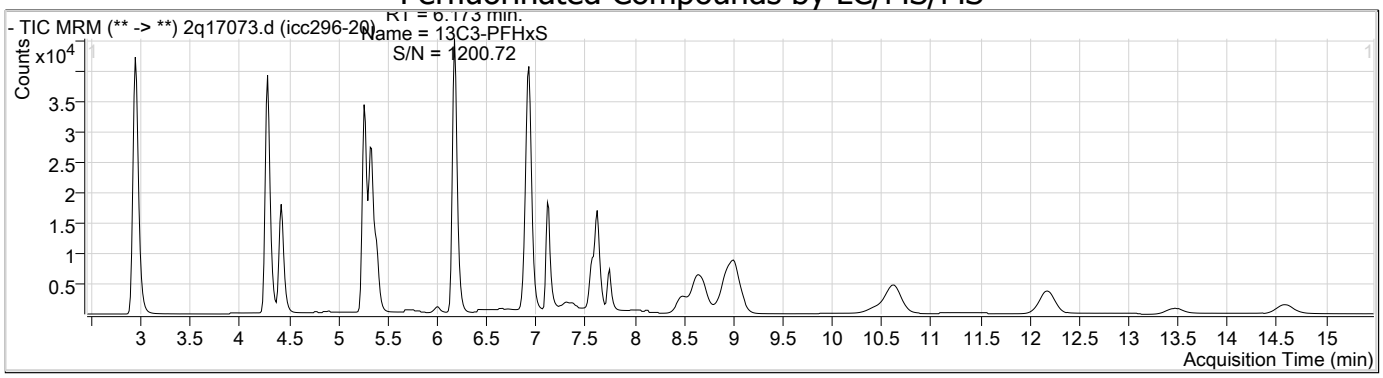
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.921	415.0 -> 370.0	19827	20.00	µg/L	0.000
13C4-PFOS	7.573	503.0 -> 80.0	10551	20.00	µg/L	0.000
M4-PFBA	2.941	217.0 -> 172.0	142928	20.00	µg/L	0.000
M5-PFPeA	4.287	268.0 -> 223.0	71392	20.00	µg/L	0.000
M5-PFHxA	5.340	318.0 -> 273.0	64272	20.00	µg/L	0.000
M4-PFHpA	6.179	367.0 -> 322.0	60778	20.00	µg/L	0.000
M8-PFOA	6.920	421.0 -> 376.0	31308	20.00	µg/L	0.000
M9-PFNA	7.627	472.0 -> 427.0	19474	20.00	µg/L	0.000
M6-PFDA	8.654	519.0 -> 474.0	42817	20.00	µg/L	0.025
M7-PFUnDA	10.629	570.0 -> 525.0	34167	20.00	µg/L	0.025
M2-PFDoDA	12.178	615.0 -> 570.0	27195	20.00	µg/L	0.013
M2-PFTeDA	14.581	715.0 -> 670.0	11894	20.00	µg/L	0.013
M8-FOSA	7.117	506.0 -> 78.0	34461	20.00	µg/L	0.000
M3-PFBS	4.418	302.0 -> 99.0	21106	20.00	µg/L	0.000
M3-PFHxS	6.173	402.0 -> 99.0	18247	20.00	µg/L	0.000
M8-PFOS	7.571	507.0 -> 99.0	9015	20.00	µg/L	0.000
M2-4:2FTS	5.260	329.0 -> 309.0	65801	20.00	µg/L	0.000
M2-6:2FTS	6.942	429.0 -> 409.0	49718	20.00	µg/L	0.013
M2-8:2FTS	8.997	529.0 -> 509.0	60011	20.00	µg/L	0.025
M3-MeFOSAA	7.620	573.0 -> 419.0	15546	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.260	329.0 -> 309.0	65792	18.94	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.7%		
13C2-6:2FTS	6.942	429.0 -> 409.0	49723	18.86	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.3%		
13C2-8:2FTS	8.997	529.0 -> 509.0	59310	18.63	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.1%		
13C2-PFDoDA	12.178	615.0 -> 570.0	27258	19.26	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.3%		
13C2-PFTeDA	14.581	715.0 -> 670.0	11872	19.41	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.1%		
13C3-PFBS	4.418	302.0 -> 99.0	21109	19.13	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.7%		
13C3-PFHxS	6.173	402.0 -> 99.0	18255	19.11	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.5%		
13C4-PFBA	2.941	217.0 -> 172.0	142860	19.05	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.3%		
13C4-PFHpA	6.179	367.0 -> 322.0	60777	19.13	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.7%		
13C5-PFHxA	5.340	318.0 -> 273.0	64295	19.22	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.1%		
13C5-PFPeA	4.287	268.0 -> 223.0	71353	19.27	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.4%		
13C6-PFDA	8.654	519.0 -> 474.0	42697	19.24	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.2%		

Perfluorinated Compounds by LC/MS/MS

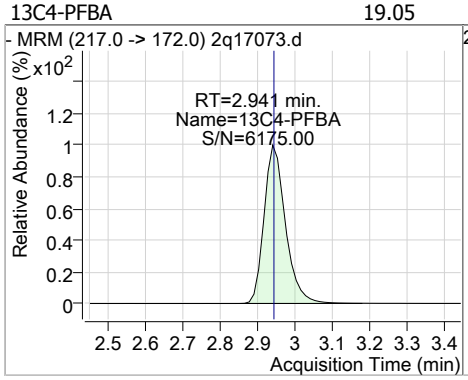
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.629	570.0 -> 525.0	34348	19.18	µg/L		0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.9%			
13C8-FOSA	7.117	506.0 -> 78.0	34463	19.24	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.2%			
13C8-PFOA	6.920	421.0 -> 376.0	31314	18.96	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.8%			
13C8-PFOS	7.571	507.0 -> 99.0	9019	19.26	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.3%			
13C9-PFNA	7.627	472.0 -> 427.0	19502	19.18	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.9%			
d3-MeFOSAA	7.620	573.0 -> 419.0	15540	19.14	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.7%			
M2-PFOA	6.921	415.0 -> 370.0	19814	19.99	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%			
M4-PFOS	7.573	503.0 -> 80.0	10557	20.01	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
Target Compounds							**QValue**
4:2FTS	5.263	327.0 -> 307.0	34521	20.24	µg/L		97
6:2FTS	6.931	427.0 -> 407.0	25250	20.19	µg/L		95
8:2FTS	9.000	527.0 -> 507.0	32648	20.31	µg/L		97
EtFOSAA	7.744	584.0 -> 419.0	5094	21.22	µg/L		98
FOSA	7.119	498.0 -> 78.0	17148	20.57	µg/L		99
MeFOSAA	7.622	570.0 -> 419.0	5784	20.52	µg/L		96
PFBA	2.949	213.0 -> 169.0	23539	20.84	µg/L		100
PFBS	4.422	299.0 -> 80.0	28922	21.06	µg/L		99
PFDA	8.644	513.0 -> 469.0	16324	21.38	µg/L		99
PFDoDA	12.171	613.0 -> 569.0	14347	21.53	µg/L		99
PFDS	10.437	599.0 -> 80.0	7055	21.81	µg/L		98
PFHpA	6.182	363.0 -> 319.0	45191	20.85	µg/L		100
PFHpS	6.878	449.0 -> 80.0	11286	20.69	µg/L		97
PFHxA	5.343	313.0 -> 269.0	21148	20.34	µg/L		98
PFHxS	6.176	399.0 -> 80.0	21978	20.88	µg/L	m	99
PFNA	7.629	463.0 -> 419.0	7456	20.32	µg/L		95
PFNS	8.471	549.0 -> 80.0	12303	21.09	µg/L		99
PFOA	6.922	413.0 -> 369.0	17102	21.36	µg/L		94
PFOS	7.574	499.0 -> 80.0	11158	19.92	µg/L	m	94
PFPeA	4.291	263.0 -> 219.0	66910	21.09	µg/L		100
PFPeS	5.383	349.0 -> 80.0	19393	21.30	µg/L		99
PFTeDA	14.600	713.0 -> 669.0	7275	20.55	µg/L		98
PFTrDA	13.454	663.0 -> 619.0	10777	21.32	µg/L		100
PFUnDA	10.621	563.0 -> 519.0	16933	21.06	µg/L		99

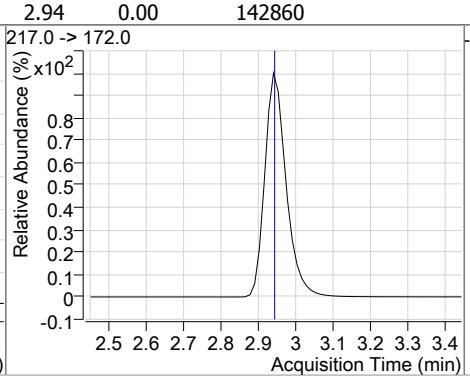
 # = Qualifier out of range, m = manually integrated, + = Area summed

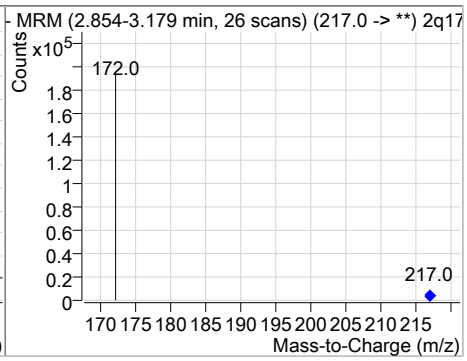
Perfluorinated Compounds by LC/MS/MS



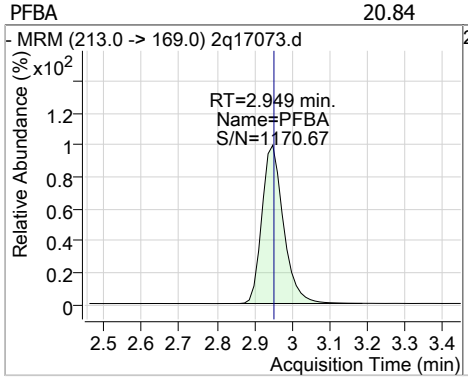
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.05	2.94	0.00	142860				

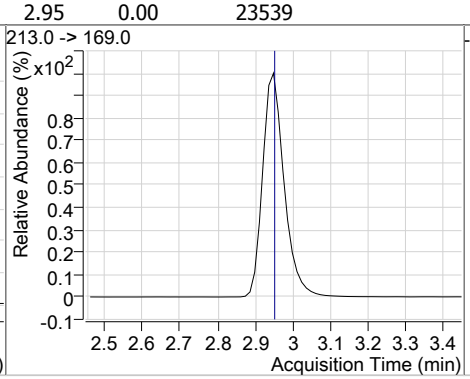


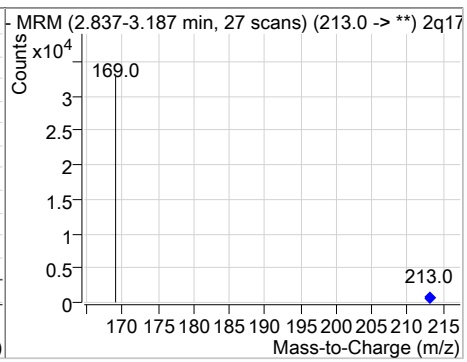




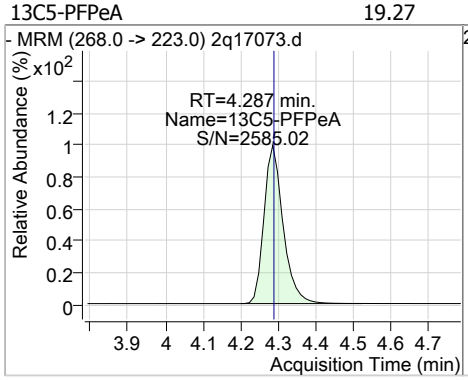
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.84	2.95	0.00	23539				

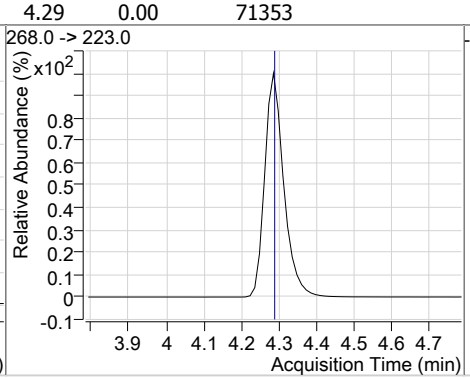


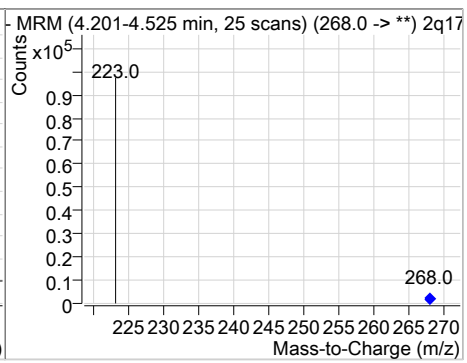




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.27	4.29	0.00	71353				

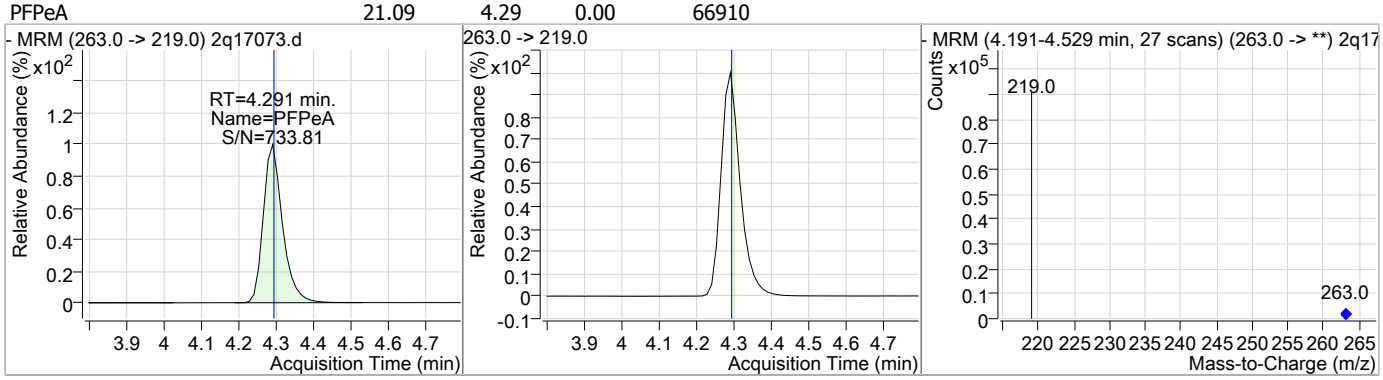




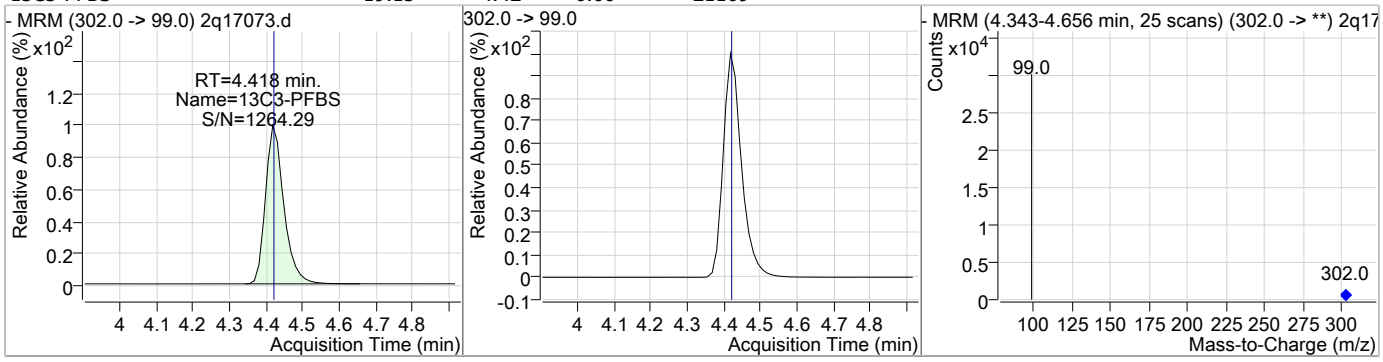


Perfluorinated Compounds by LC/MS/MS

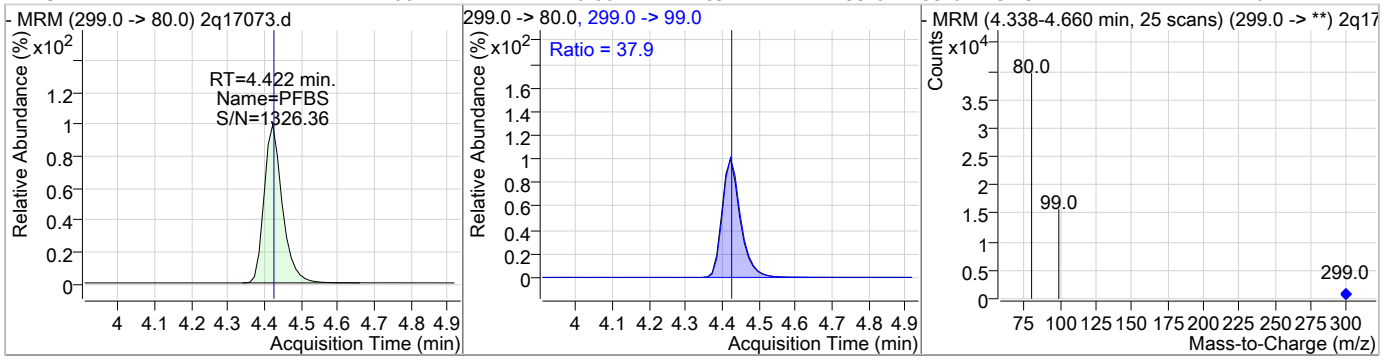
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	21.09	4.29	0.00	66910				



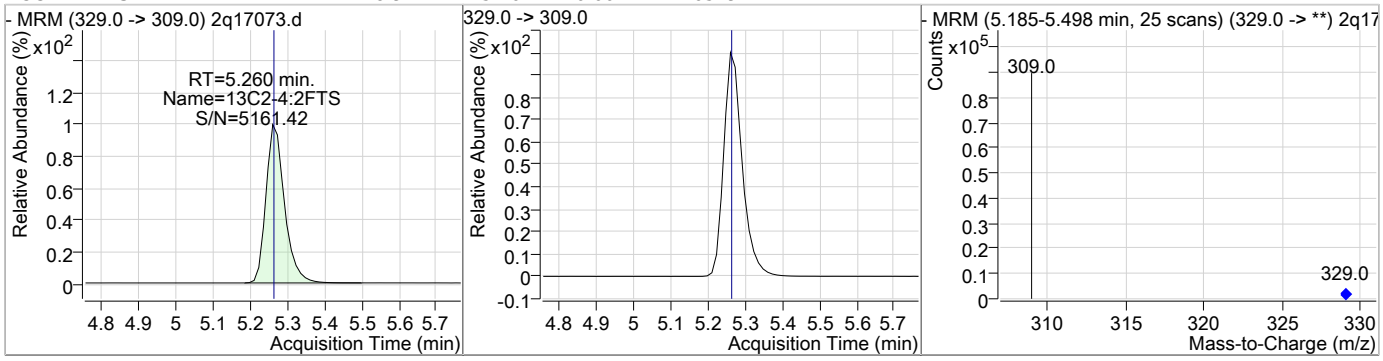
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.13	4.42	0.00	21109				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	21.06	4.42	0.00	28922	299.0 -> 99.0	37.9	7.4	67.4

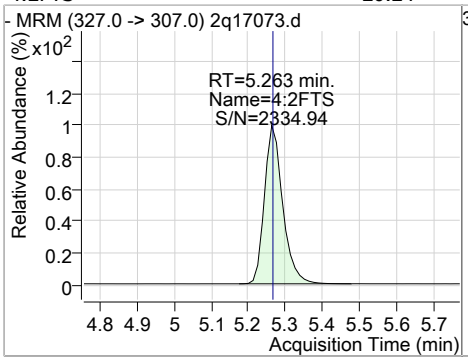


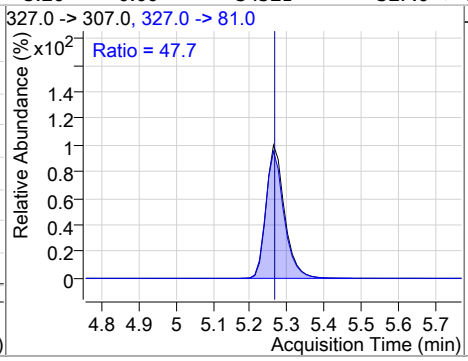
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.94	5.26	0.00	65792				

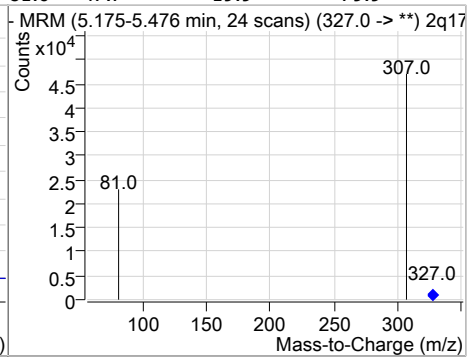


Perfluorinated Compounds by LC/MS/MS

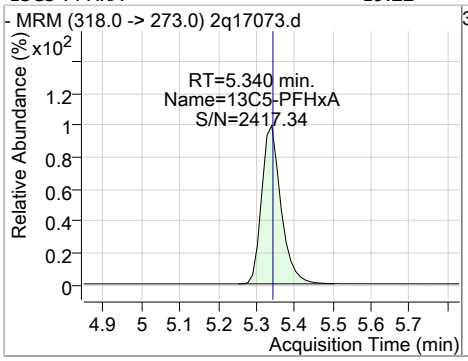
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.24	5.26	0.00	34521	327.0 -> 81.0	47.7	19.9	79.9

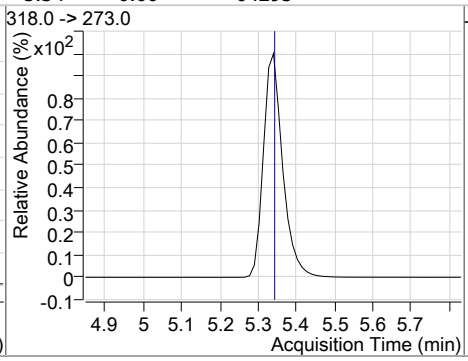


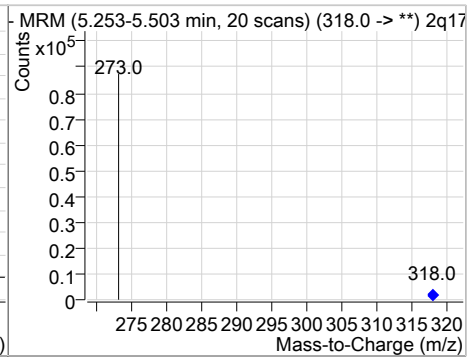




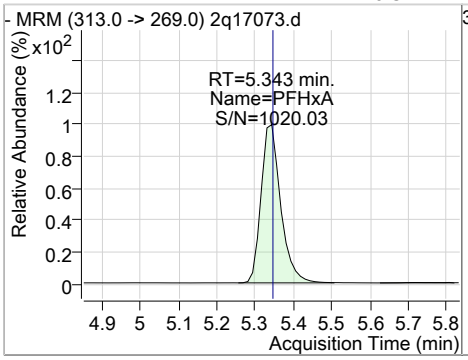
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.22	5.34	0.00	64295				

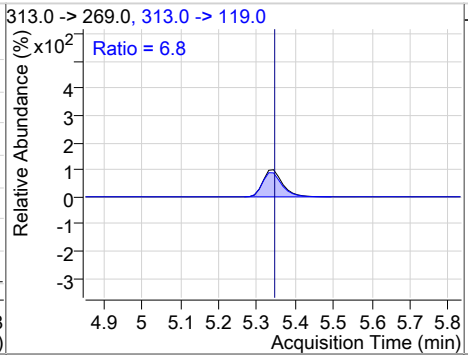


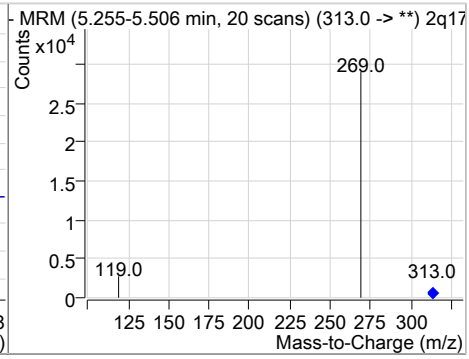




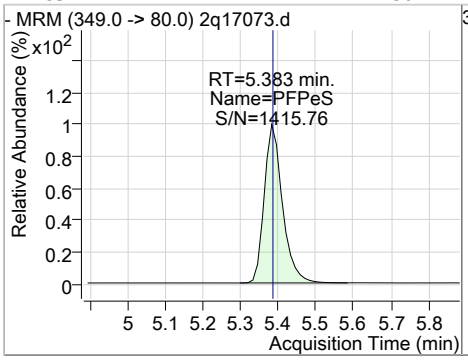
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.34	5.34	0.00	21148	313.0 -> 119.0	6.8	0.0	37.6

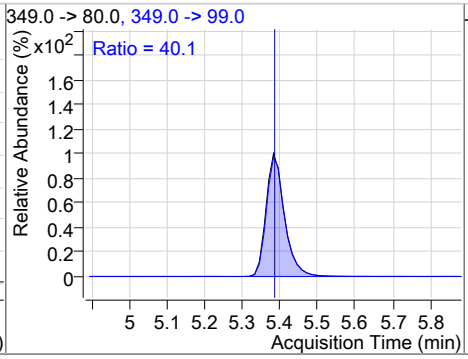


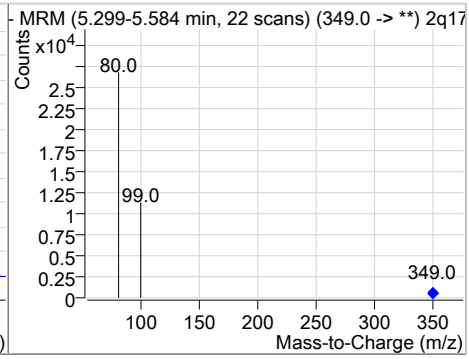




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	21.30	5.38	0.00	19393	349.0 -> 99.0	40.1	10.8	70.8

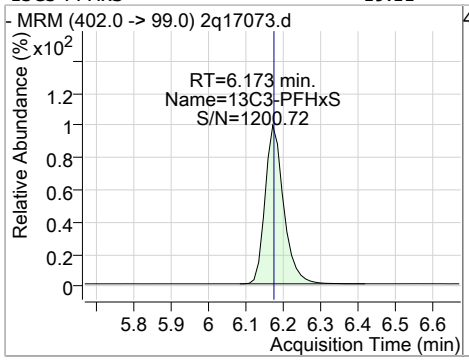


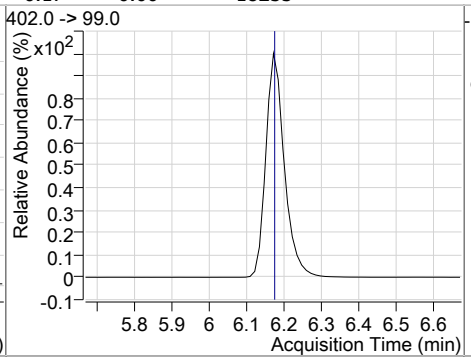


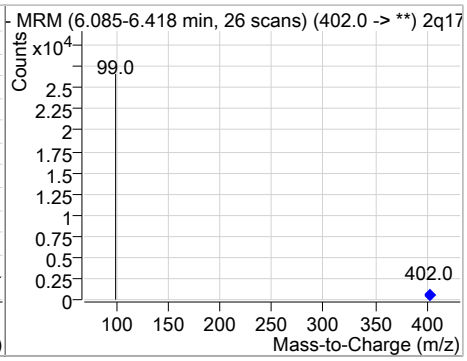


Perfluorinated Compounds by LC/MS/MS

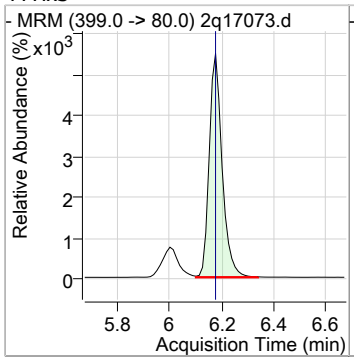
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.11	6.17	0.00	18255				

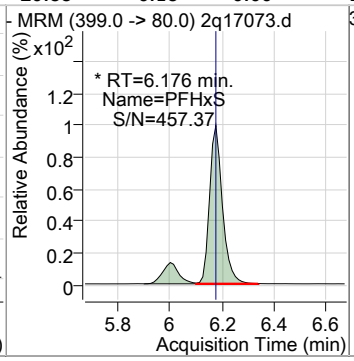


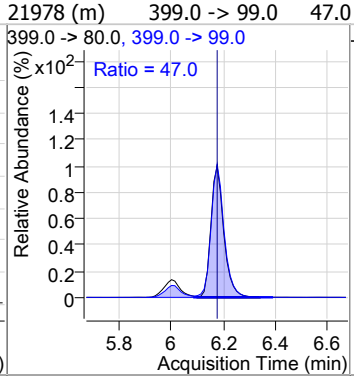


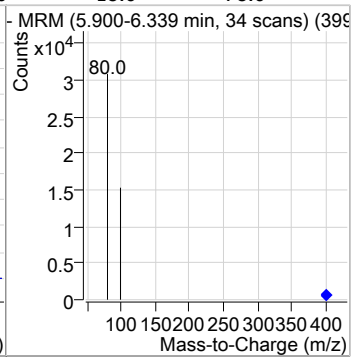


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.88	6.18	0.00	21978 (m)	399.0 -> 99.0	47.0	18.0	78.0

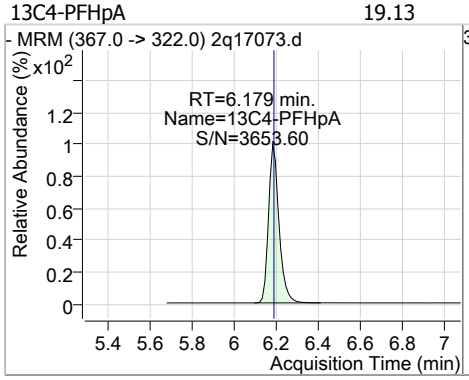


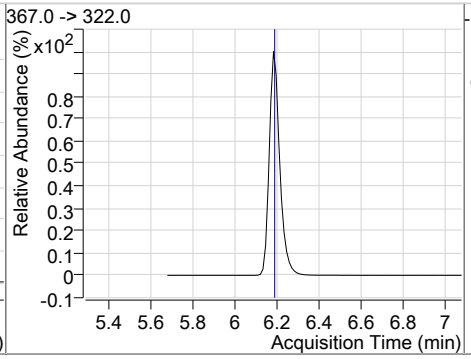


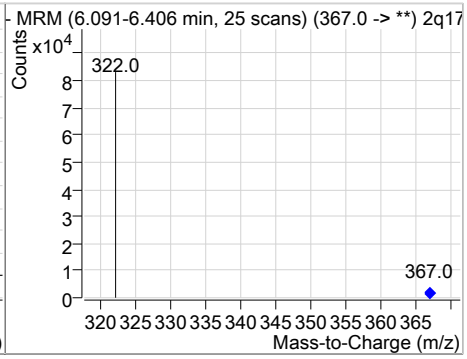




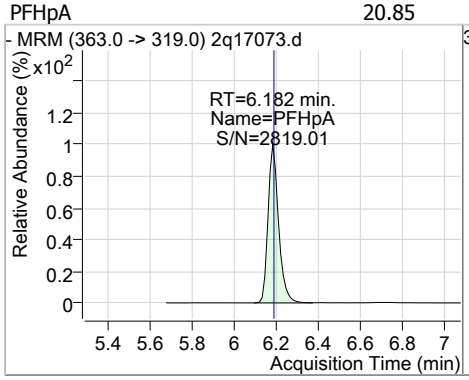
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.13	6.18	0.00	60777				

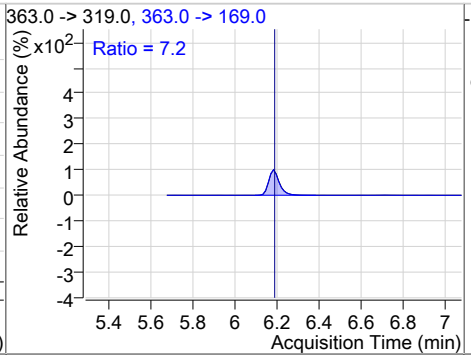


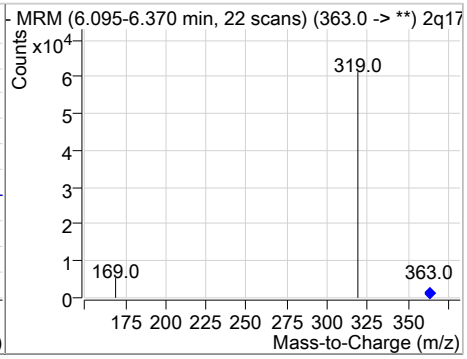




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.85	6.18	0.00	45191	363.0 -> 169.0	7.2	0.0	37.2

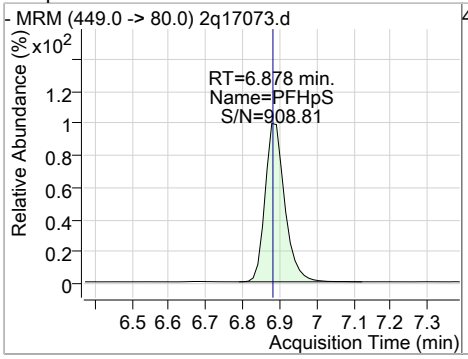


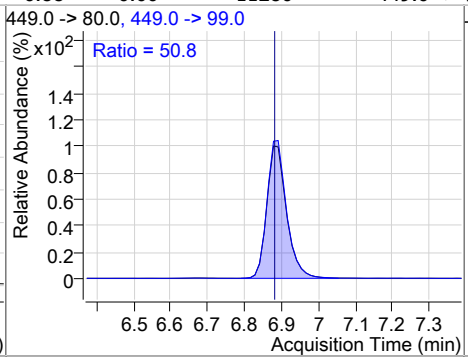


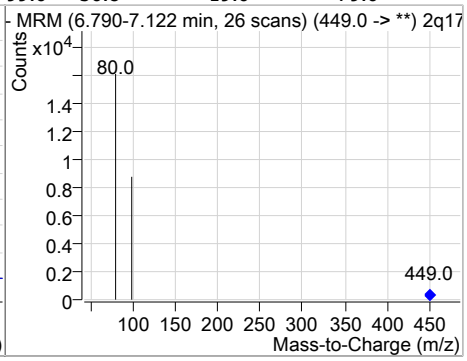


Perfluorinated Compounds by LC/MS/MS

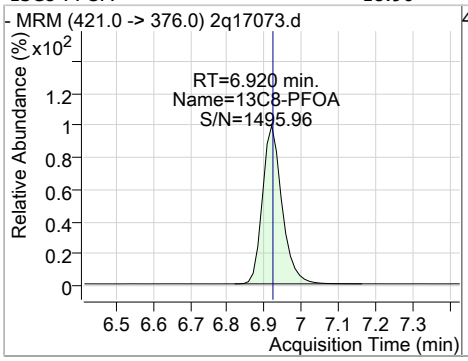
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.69	6.88	0.00	11286	449.0 -> 99.0	50.8	19.0	79.0

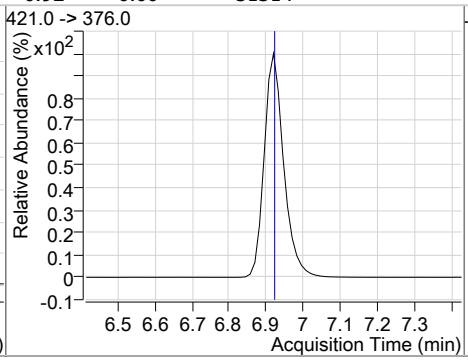


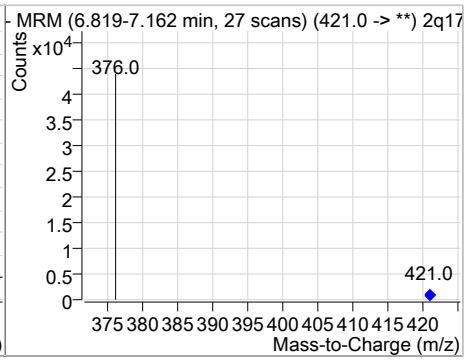




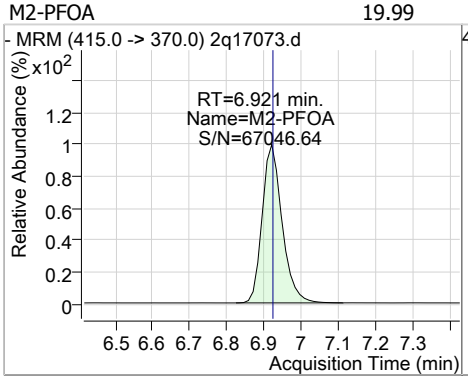
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	18.96	6.92	0.00	31314				

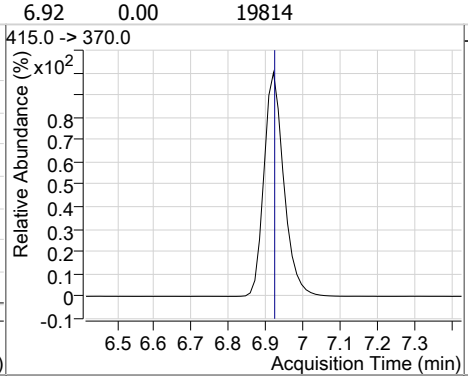


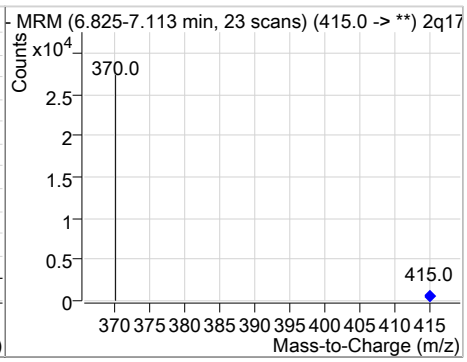




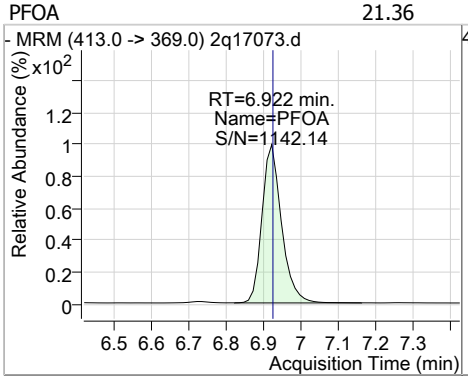
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	19.99	6.92	0.00	19814				

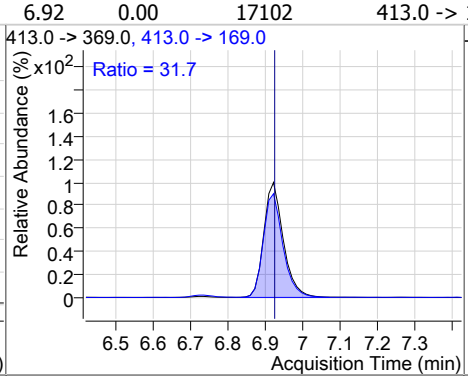


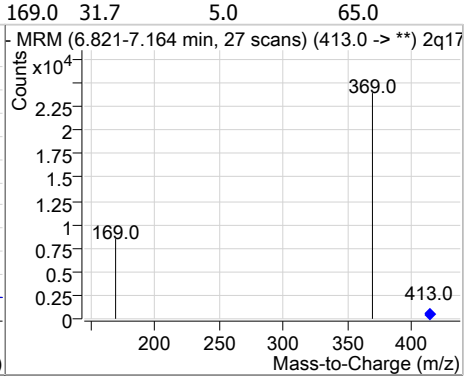




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	21.36	6.92	0.00	17102	413.0 -> 169.0	31.7	5.0	65.0

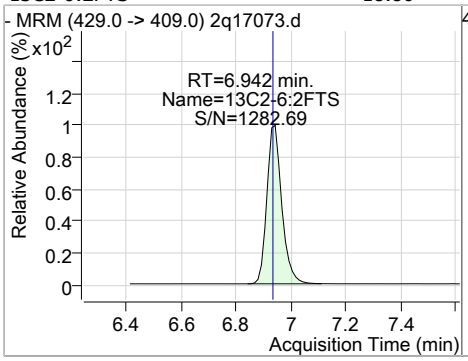


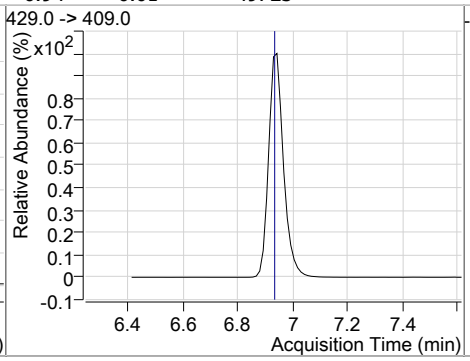


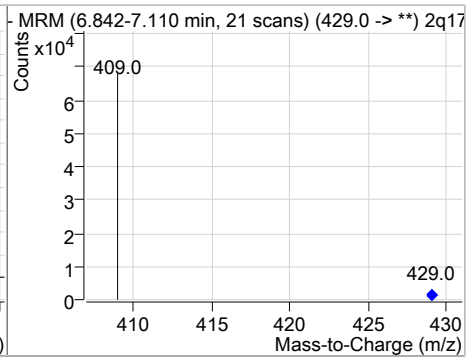


Perfluorinated Compounds by LC/MS/MS

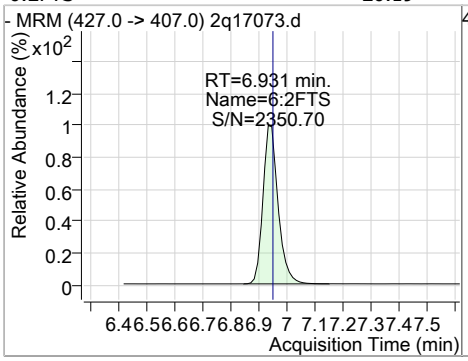
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.86	6.94	0.01	49723				

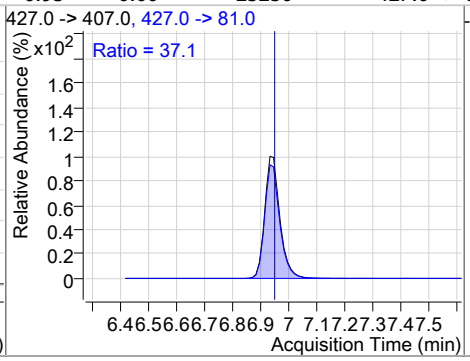


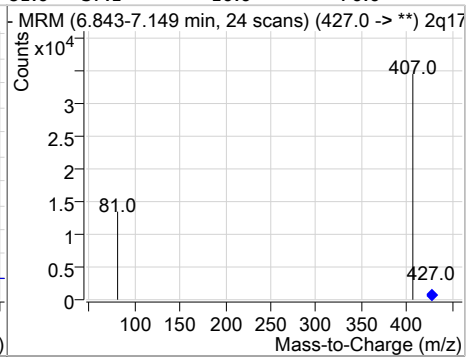




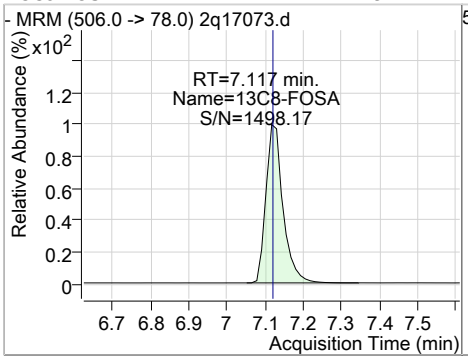
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.19	6.93	0.00	25250	427.0 -> 81.0	37.1	10.0	70.0

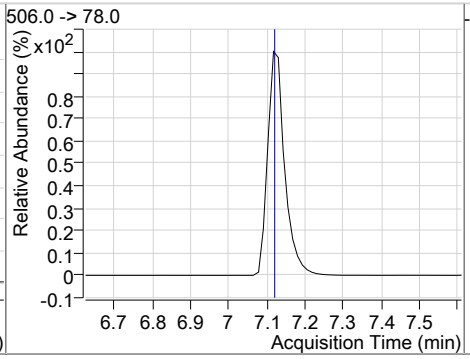


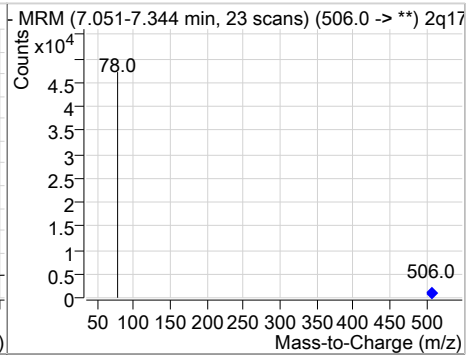




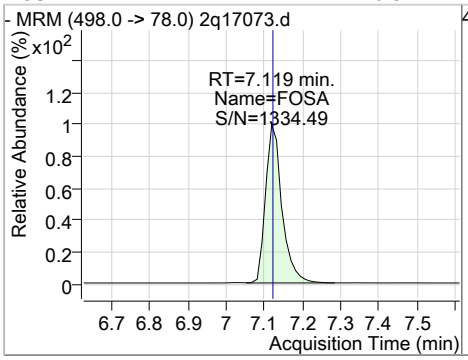
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.24	7.12	0.00	34463				

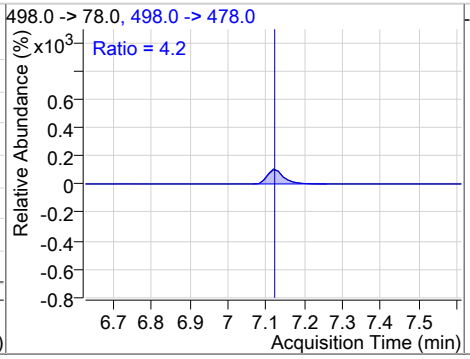


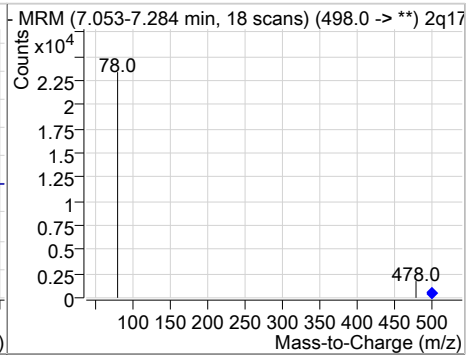




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.57	7.12	0.00	17148	498.0 -> 478.0	4.2	0.0	34.0

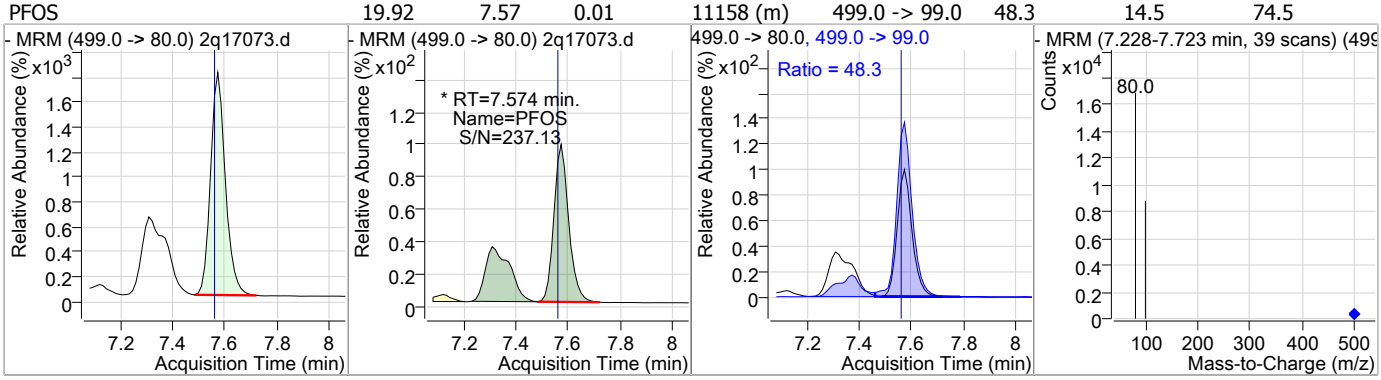




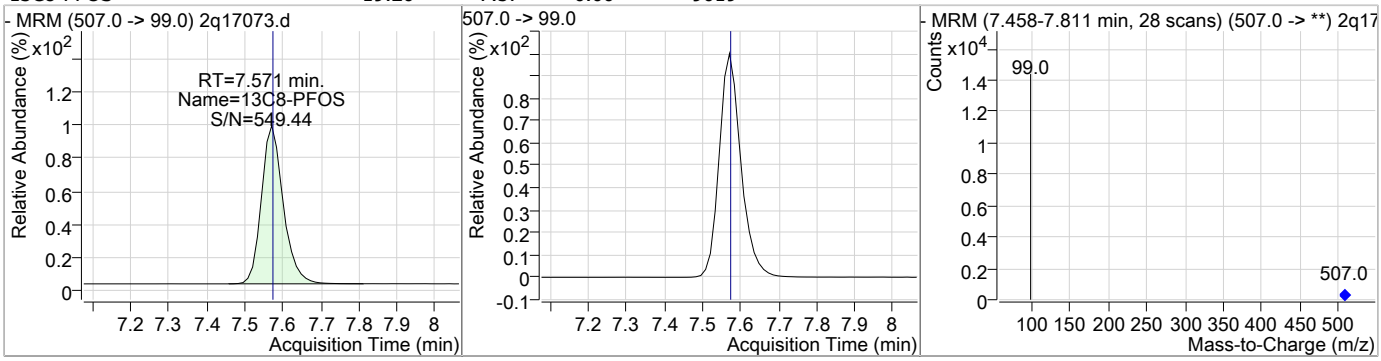


Perfluorinated Compounds by LC/MS/MS

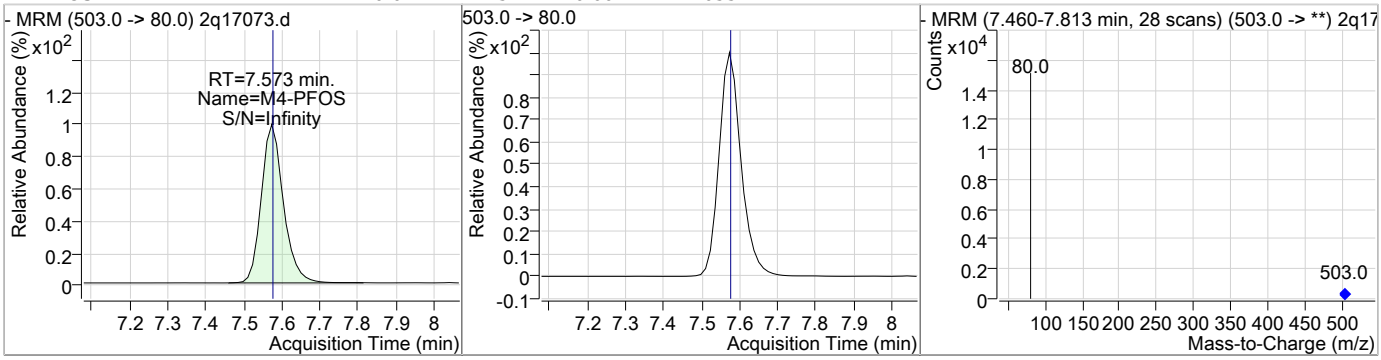
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.92	7.57	0.01	11158 (m)	499.0 -> 99.0	48.3	14.5	74.5



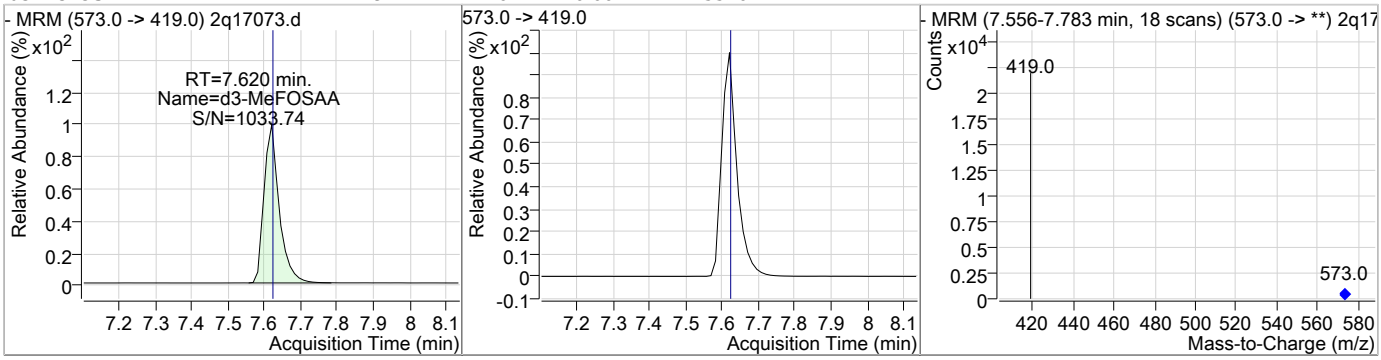
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.26	7.57	0.00	9019				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.01	7.57	0.00	10557				

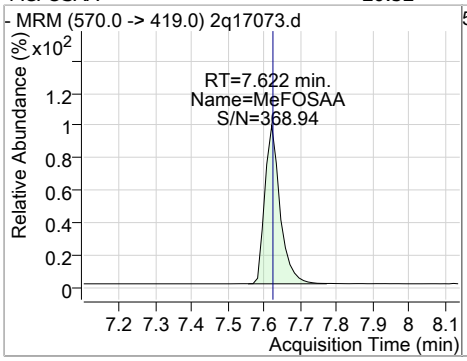


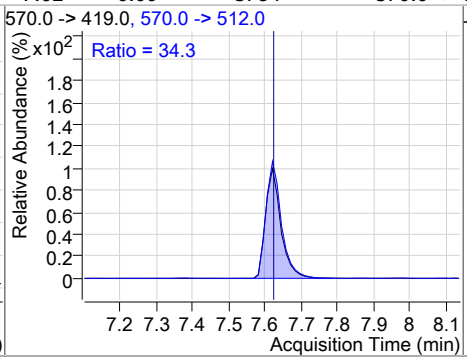
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.14	7.62	0.00	15540				

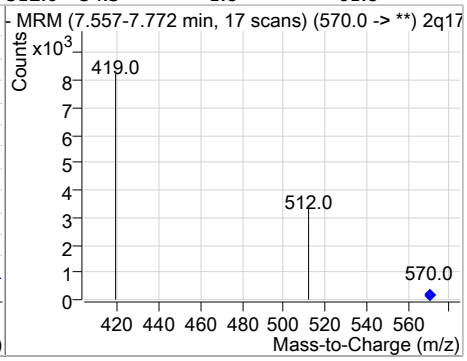


Perfluorinated Compounds by LC/MS/MS

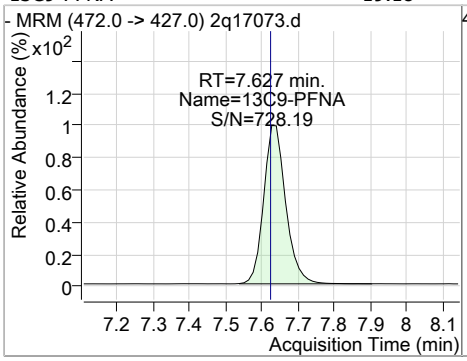
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.52	7.62	0.00	5784	570.0 -> 512.0	34.3	1.8	61.8

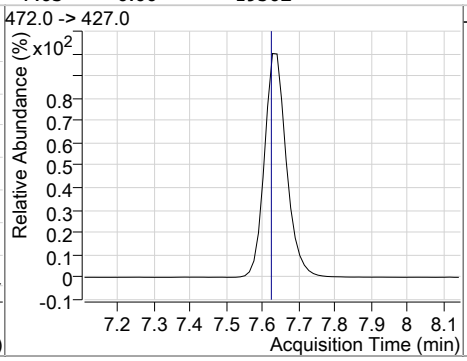


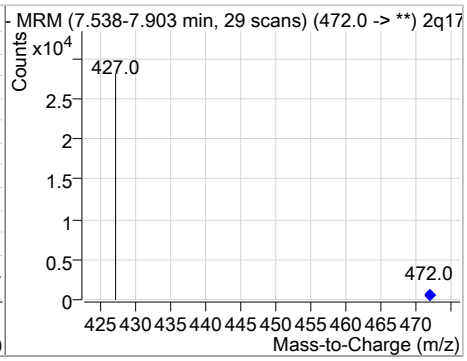




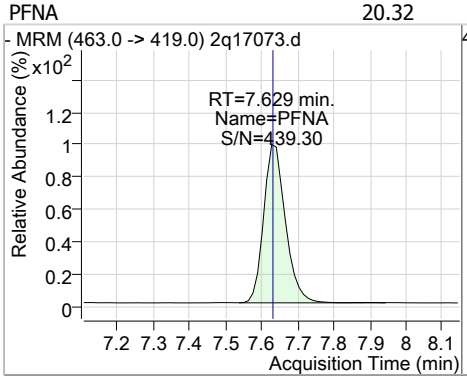
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.18	7.63	0.00	19502				

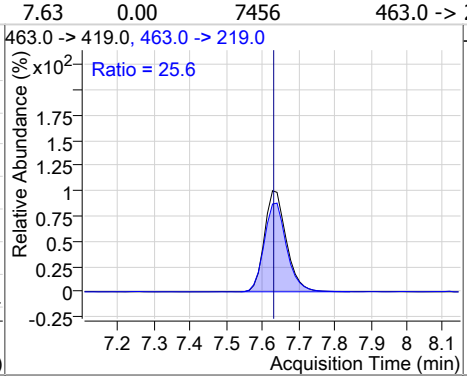


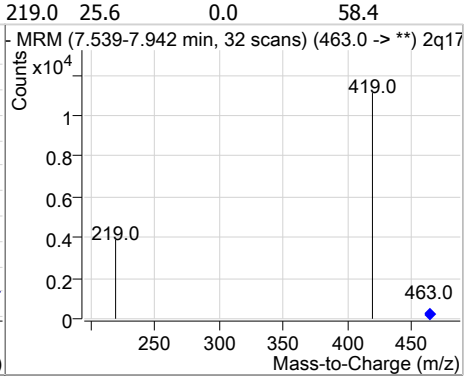




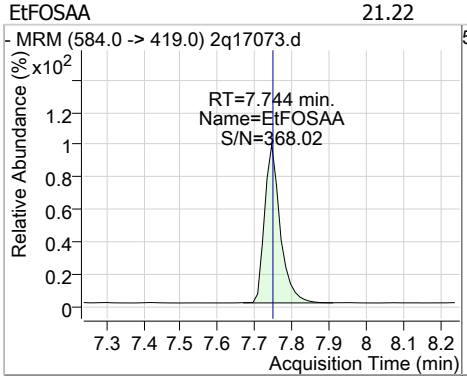
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	20.32	7.63	0.00	7456	463.0 -> 219.0	25.6	0.0	58.4

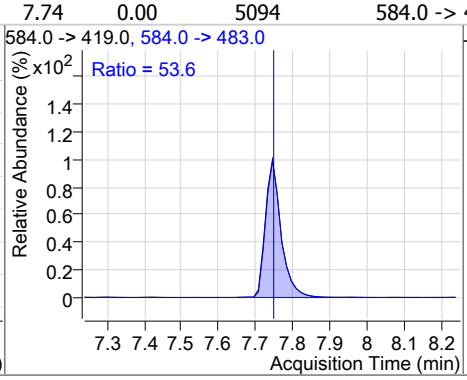


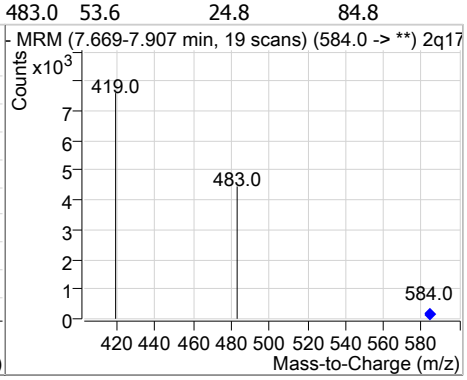




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	21.22	7.74	0.00	5094	584.0 -> 483.0	53.6	24.8	84.8

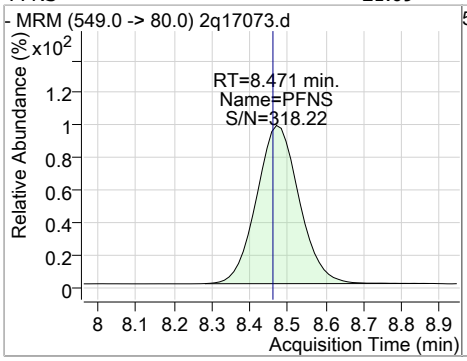


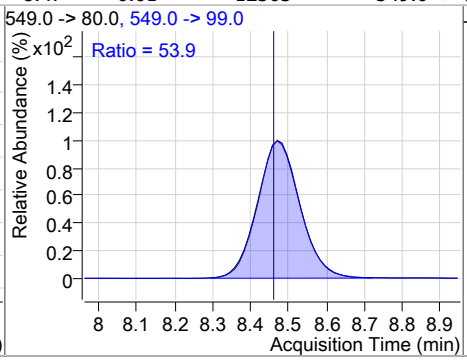


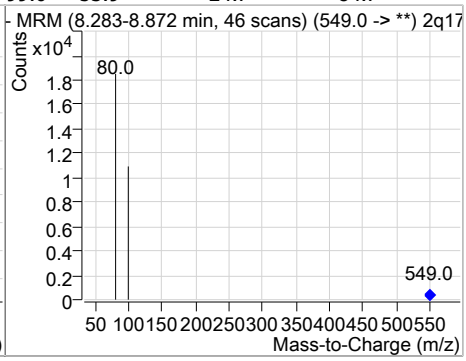


Perfluorinated Compounds by LC/MS/MS

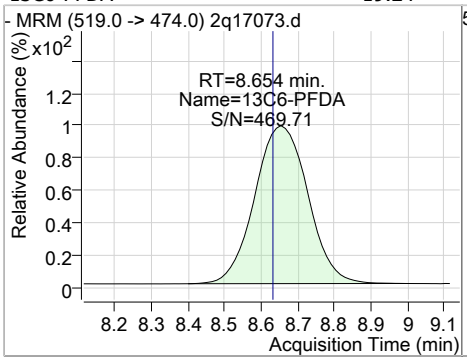
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	21.09	8.47	0.01	12303	549.0 -> 99.0	53.9	24.7	84.7

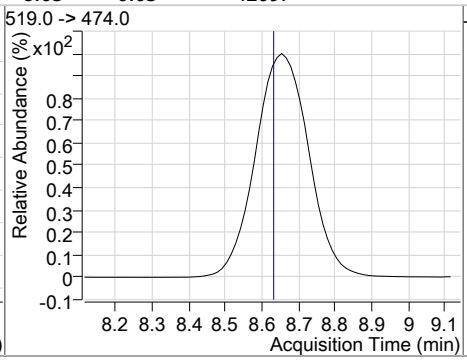


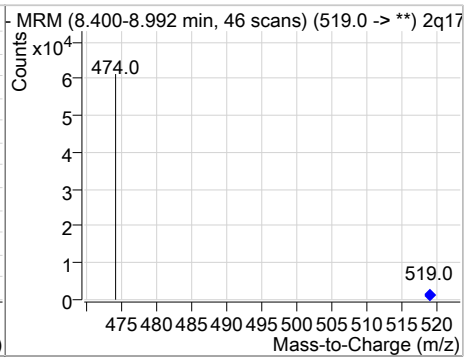




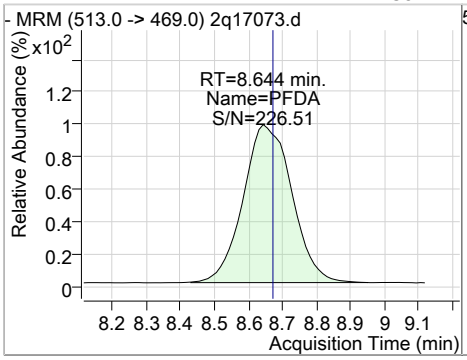
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.24	8.65	0.03	42697				

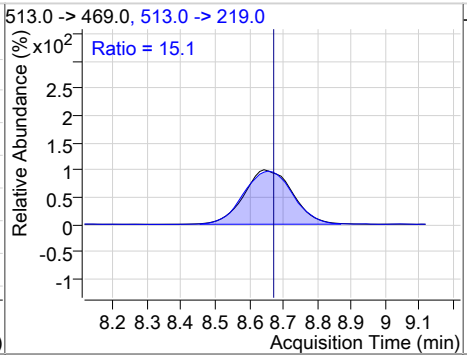


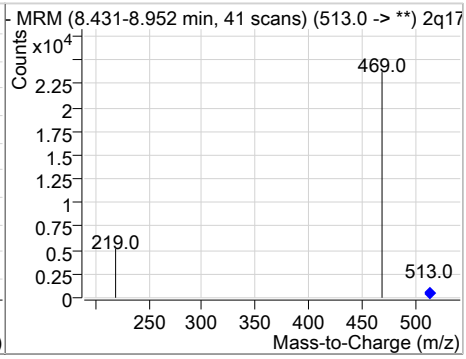




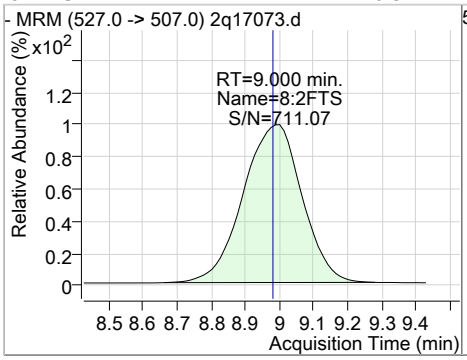
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	21.38	8.64	0.00	16324	513.0 -> 219.0	15.1	0.0	45.3

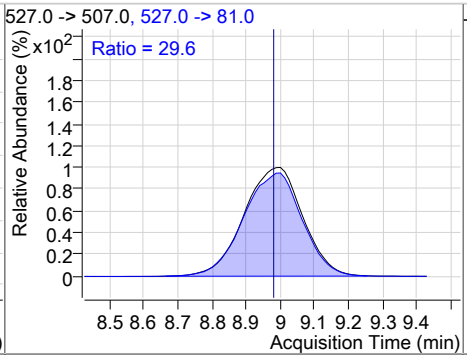


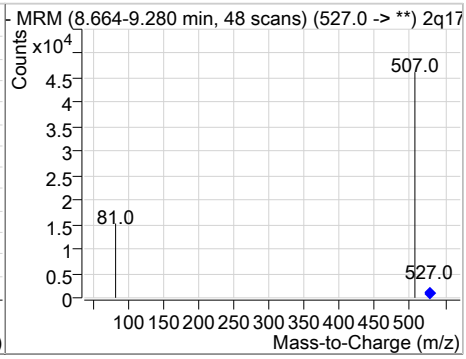




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.31	9.00	0.05	32648	527.0 -> 81.0	29.6	1.3	61.3

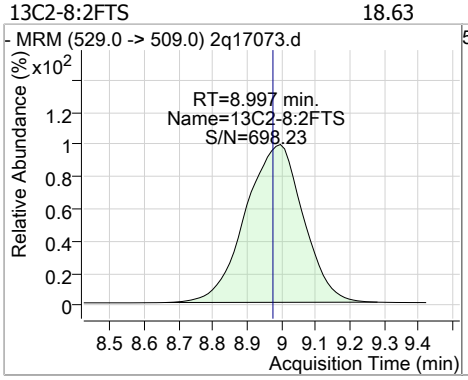


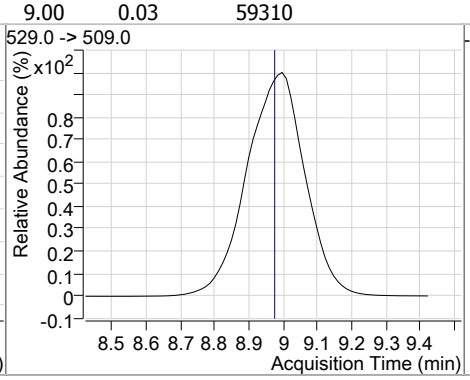


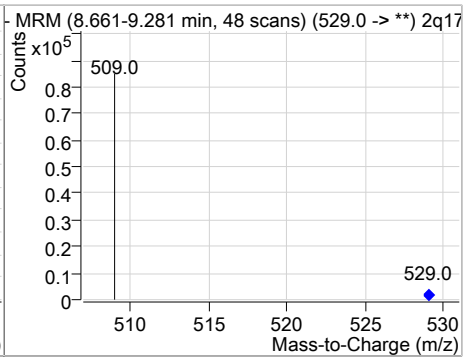


Perfluorinated Compounds by LC/MS/MS

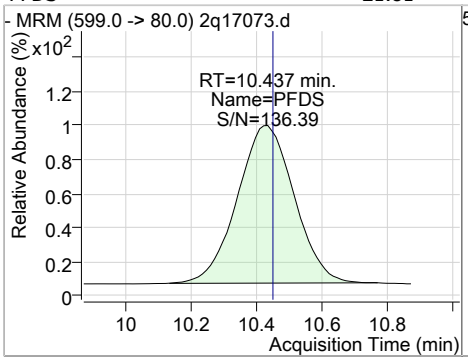
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.63	9.00	0.03	59310				

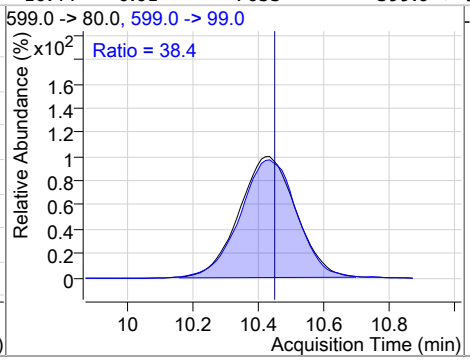


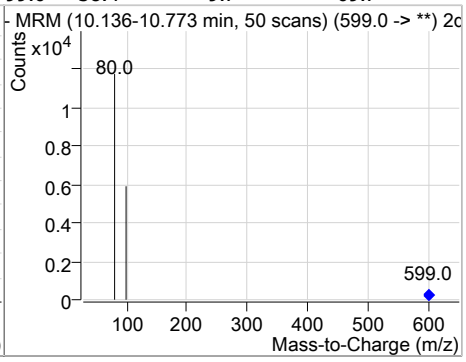




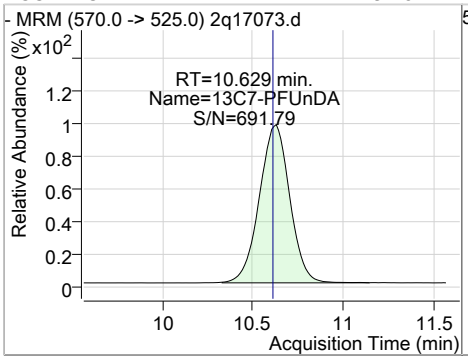
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	21.81	10.44	0.01	7055	599.0 -> 99.0	38.4	9.7	69.7

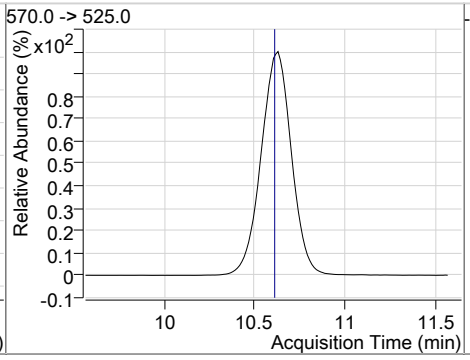


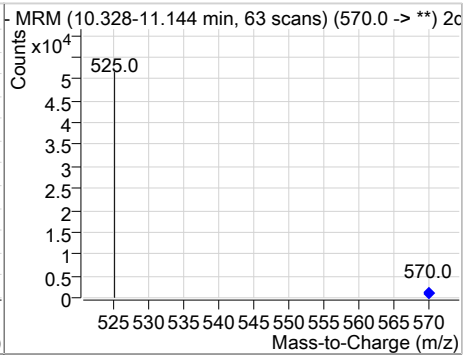




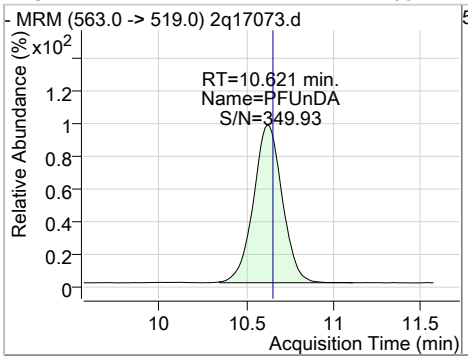
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.18	10.63	0.03	34348				

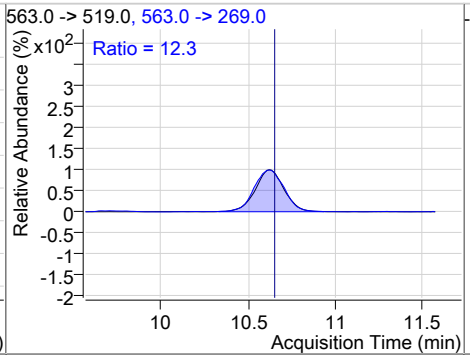


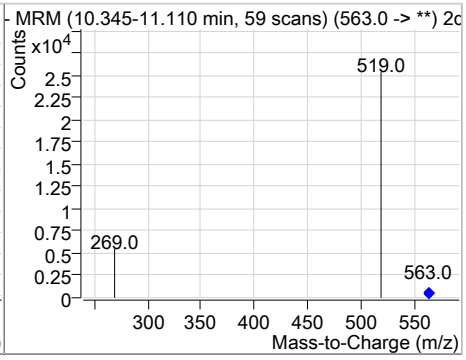




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	21.06	10.62	0.00	16933	563.0 -> 269.0	12.3	0.0	41.8

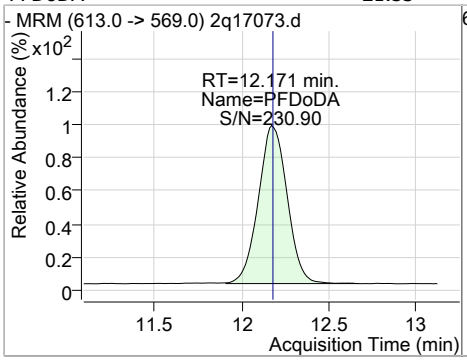


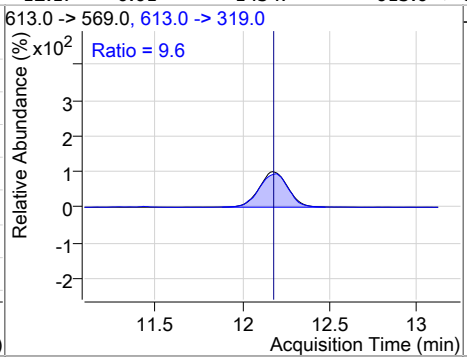


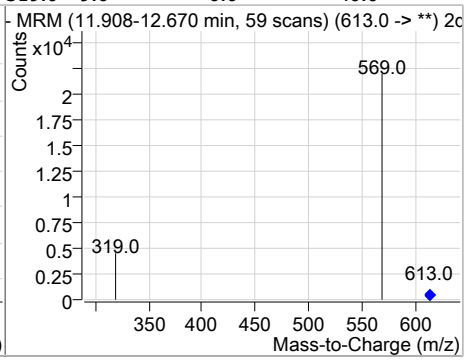


Perfluorinated Compounds by LC/MS/MS

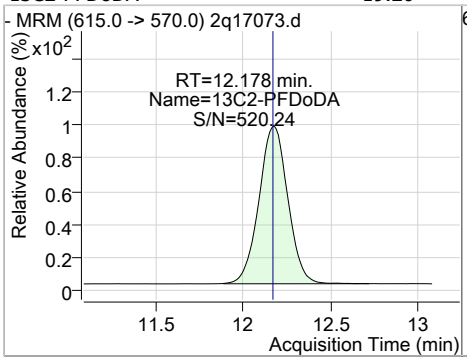
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	21.53	12.17	0.01	14347	613.0 -> 319.0	9.6	0.0	40.0

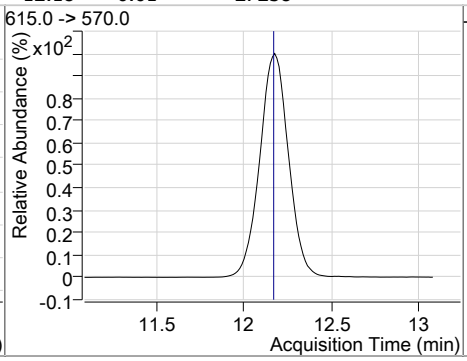


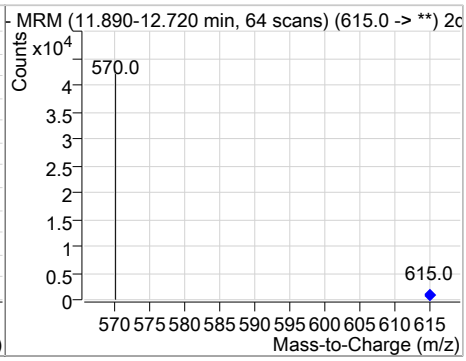




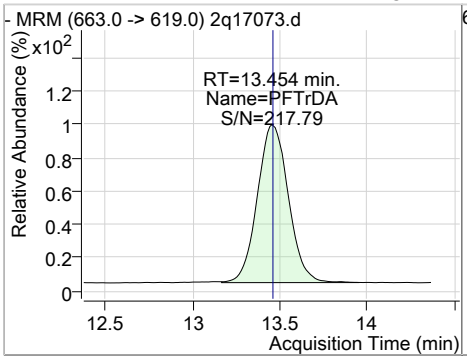
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.26	12.18	0.01	27258				

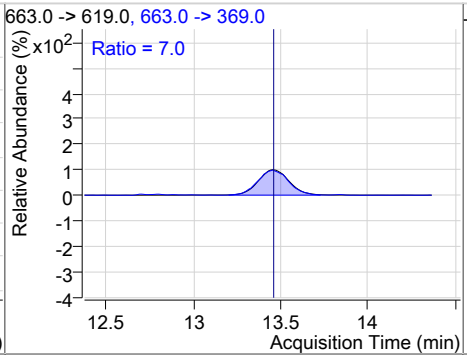


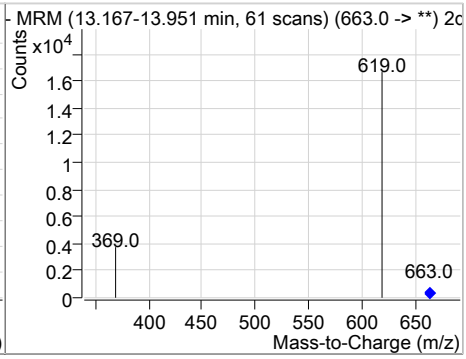




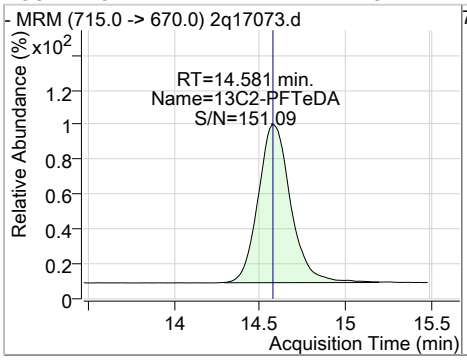
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	21.32	13.45	0.01	10777	663.0 -> 369.0	7.0	0.0	37.1

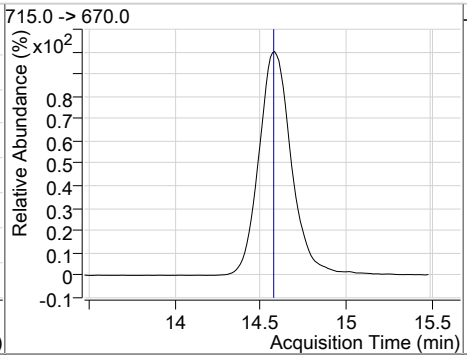


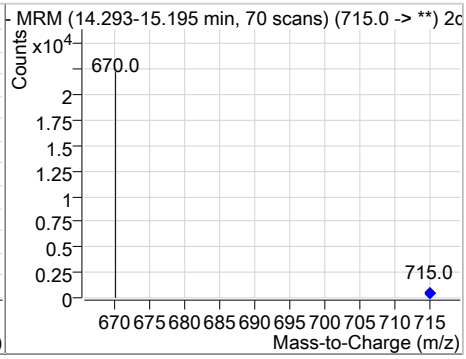




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.41	14.58	0.01	11872				

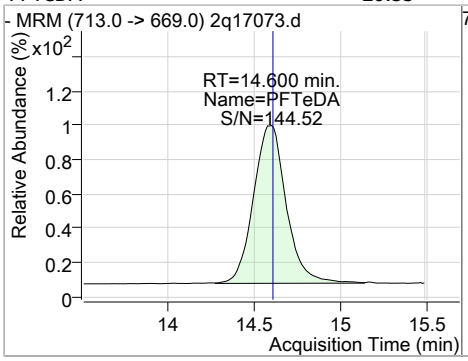


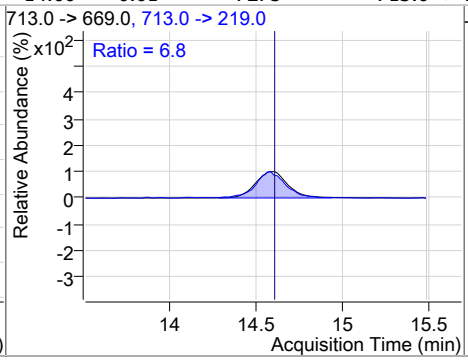


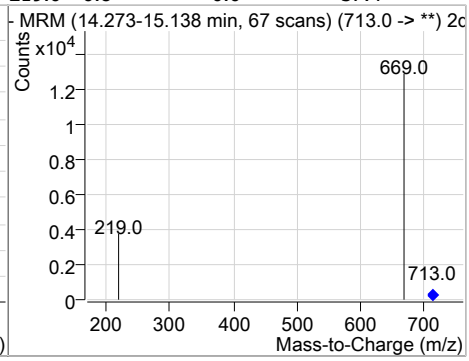


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.55	14.60	0.01	7275	713.0 -> 219.0	6.8	0.0	37.4







Manual Integration Approval Summary

Sample Number:	S2Q296-ICC296	**Method:**	EPA 537M BY ID
Lab FileID:	2Q17073.D	**Analyst approved:**	07/16/18 13:34 Natasha Gumtie
Injection Time:	07/13/18 13:55	**Supervisor approved:**	07/16/18 17:22 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.57	Split peak

2Q17074.D

Manual Integrations APPROVED (compounds with "m" flag)

Mike Eger 07/16/18 17:22

Perfluorinated Compounds by LC/MS/MS

Data File : 2q17074.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/13/2018 2:16:44 PM
Sample Name : ic296-50
Vial : Vial 8
DA Method File : PFC_ID_071318_S2Q296.quantmethod.xml
Batch Name : s2q296.batch.bin
Sample Information : op70790,S2Q296,1.99,,,1.0,1,soil

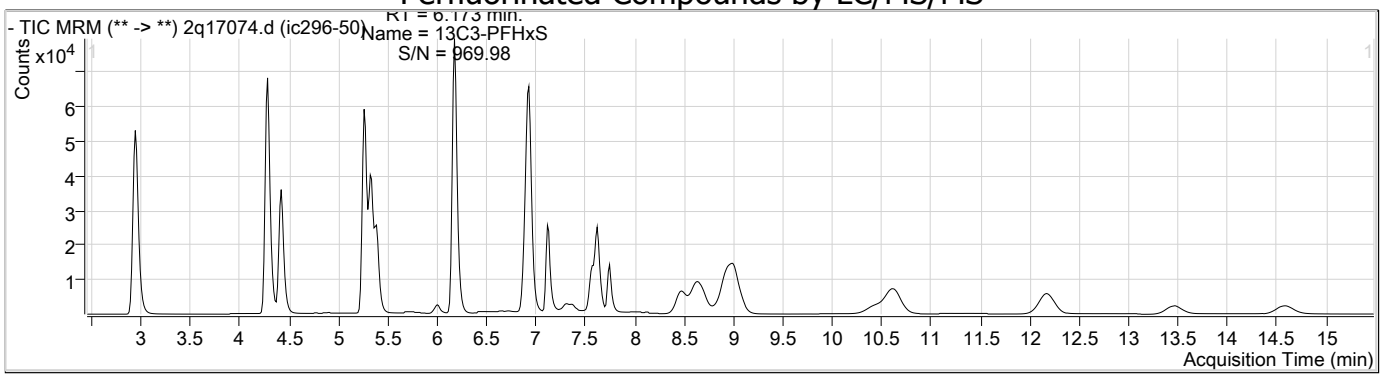
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.921	415.0 -> 370.0	19721	20.00	µg/L	0.000
13C4-PFOS	7.573	503.0 -> 80.0	10854	20.00	µg/L	0.000
M4-PFBA	2.941	217.0 -> 172.0	148548	20.00	µg/L	0.000
M5-PFPeA	4.287	268.0 -> 223.0	73126	20.00	µg/L	0.000
M5-PFHxA	5.340	318.0 -> 273.0	65043	20.00	µg/L	0.000
M4-PFHpA	6.179	367.0 -> 322.0	62765	20.00	µg/L	0.000
M8-PFOA	6.920	421.0 -> 376.0	32743	20.00	µg/L	0.000
M9-PFNA	7.627	472.0 -> 427.0	20328	20.00	µg/L	0.000
M6-PFDA	8.629	519.0 -> 474.0	43679	20.00	µg/L	0.000
M7-PFUnDA	10.616	570.0 -> 525.0	35777	20.00	µg/L	0.013
M2-PFDoDA	12.165	615.0 -> 570.0	28172	20.00	µg/L	0.000
M2-PFTeDA	14.594	715.0 -> 670.0	12294	20.00	µg/L	0.025
M8-FOSA	7.117	506.0 -> 78.0	32230	20.00	µg/L	0.000
M3-PFBS	4.418	302.0 -> 99.0	21902	20.00	µg/L	0.000
M3-PFHxS	6.173	402.0 -> 99.0	18813	20.00	µg/L	0.000
M8-PFOS	7.571	507.0 -> 99.0	9087	20.00	µg/L	0.000
M2-4:2FTS	5.260	329.0 -> 309.0	72821	20.00	µg/L	0.000
M2-6:2FTS	6.942	429.0 -> 409.0	55580	20.00	µg/L	0.013
M2-8:2FTS	8.984	529.0 -> 509.0	67118	20.00	µg/L	0.013
M3-MeFOSAA	7.620	573.0 -> 419.0	15580	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.260	329.0 -> 309.0	72827	20.96	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.8%		
13C2-6:2FTS	6.942	429.0 -> 409.0	55579	21.09	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.4%		
13C2-8:2FTS	8.984	529.0 -> 509.0	66661	20.94	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.7%		
13C2-PFDoDA	12.165	615.0 -> 570.0	28198	19.92	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.6%		
13C2-PFTeDA	14.594	715.0 -> 670.0	12428	20.32	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
13C3-PFBS	4.418	302.0 -> 99.0	21905	19.85	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.3%		
13C3-PFHxS	6.173	402.0 -> 99.0	18808	19.69	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.4%		
13C4-PFBA	2.941	217.0 -> 172.0	148402	19.79	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%		
13C4-PFHpA	6.179	367.0 -> 322.0	62766	19.76	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.8%		
13C5-PFHxA	5.340	318.0 -> 273.0	65081	19.46	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.3%		
13C5-PFPeA	4.287	268.0 -> 223.0	73093	19.74	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.7%		
13C6-PFDA	8.629	519.0 -> 474.0	43485	19.59	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.0%		

Perfluorinated Compounds by LC/MS/MS

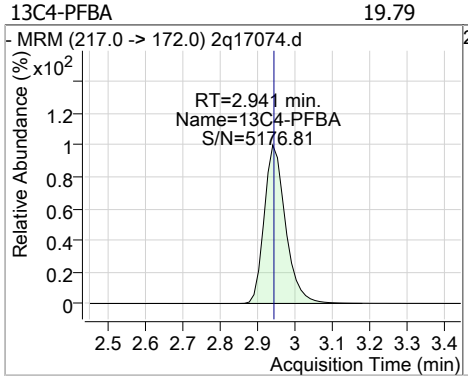
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.616	570.0 -> 525.0	35726	19.95	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%			
13C8-FOSA	7.117	506.0 -> 78.0	32225	17.99	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.9%			
13C8-PFOA	6.920	421.0 -> 376.0	32733	19.82	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%			
13C8-PFOS	7.571	507.0 -> 99.0	9092	19.42	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.1%			
13C9-PFNA	7.627	472.0 -> 427.0	20323	19.99	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%			
d3-MeFOSAA	7.620	573.0 -> 419.0	15586	19.20	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.0%			
M2-PFOA	6.921	415.0 -> 370.0	19731	20.01	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
M4-PFOS	7.573	503.0 -> 80.0	10847	19.99	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%			
Target Compounds							**QValue**
4:2FTS	5.263	327.0 -> 307.0	87094	50.00	µg/L		98
6:2FTS	6.931	427.0 -> 407.0	64727	50.08	µg/L		95
8:2FTS	8.988	527.0 -> 507.0	82746	49.77	µg/L		96
EtFOSAA	7.744	584.0 -> 419.0	12329	51.25	µg/L		97
FOSA	7.119	498.0 -> 78.0	40544	52.00	µg/L		100
MeFOSAA	7.622	570.0 -> 419.0	14139	50.06	µg/L		96
PFBA	2.949	213.0 -> 169.0	60852	51.83	µg/L		100
PFBS	4.422	299.0 -> 80.0	73608	51.66	µg/L		100
PFDA	8.644	513.0 -> 469.0	40503	52.01	µg/L		99
PFDoDA	12.171	613.0 -> 569.0	36424	52.77	µg/L		99
PFDS	10.424	599.0 -> 80.0	17617	52.02	µg/L		100
PFHpA	6.182	363.0 -> 319.0	113854	50.86	µg/L		99
PFHpS	6.878	449.0 -> 80.0	29517	52.49	µg/L		98
PFHxA	5.343	313.0 -> 269.0	54605	51.89	µg/L		98
PFHxS	6.176	399.0 -> 80.0	56427	51.99	µg/L	m	98
PFNA	7.629	463.0 -> 419.0	19370	50.58	µg/L		96
PFNS	8.471	549.0 -> 80.0	30820	52.40	µg/L		98
PFOA	6.922	413.0 -> 369.0	42556	50.82	µg/L		98
PFOS	7.574	499.0 -> 80.0	28937	51.25	µg/L	m	97
PFPeA	4.291	263.0 -> 219.0	169483	52.17	µg/L		100
PFPeS	5.383	349.0 -> 80.0	48732	51.58	µg/L		99
PFTeDA	14.588	713.0 -> 669.0	17750	49.51	µg/L		100
PFTrDA	13.454	663.0 -> 619.0	27278	52.21	µg/L		100
PFUnDA	10.621	563.0 -> 519.0	42030	49.93	µg/L		99

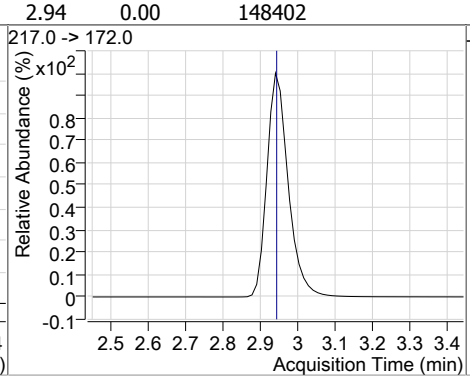
 # = Qualifier out of range, m = manually integrated, + = Area summed

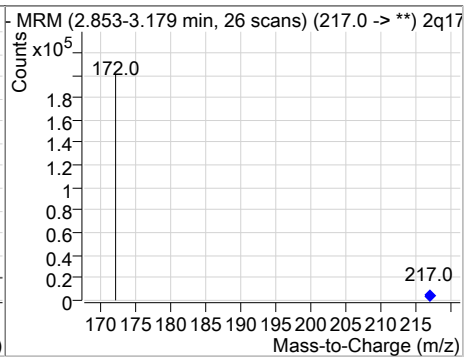
Perfluorinated Compounds by LC/MS/MS



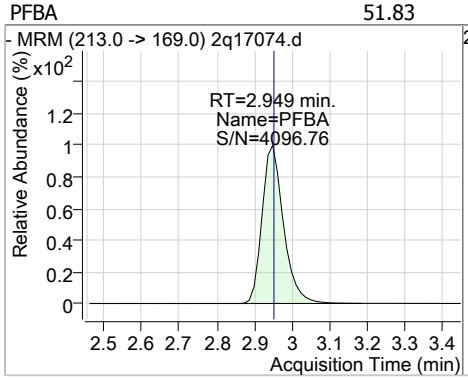
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.79	2.94	0.00	148402				

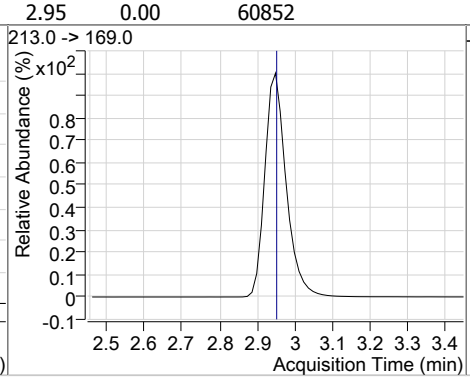


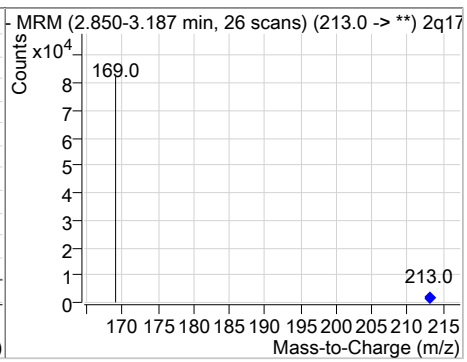




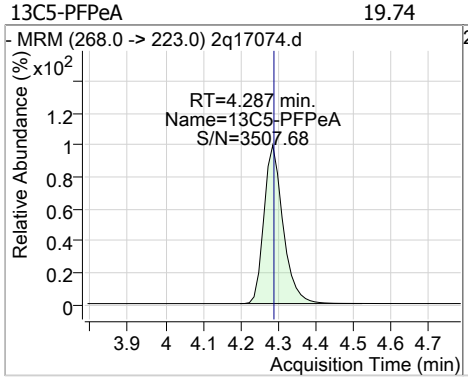
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	51.83	2.95	0.00	60852				

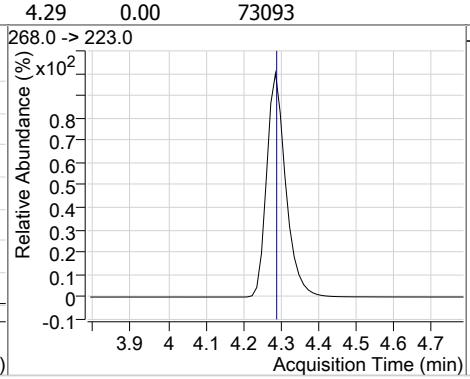


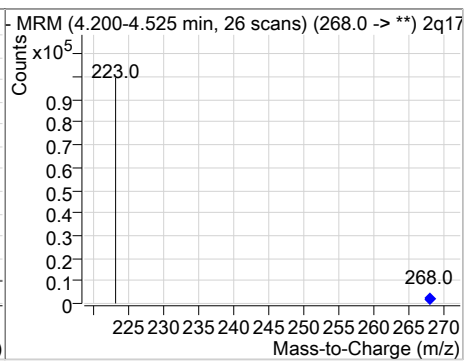




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.74	4.29	0.00	73093				

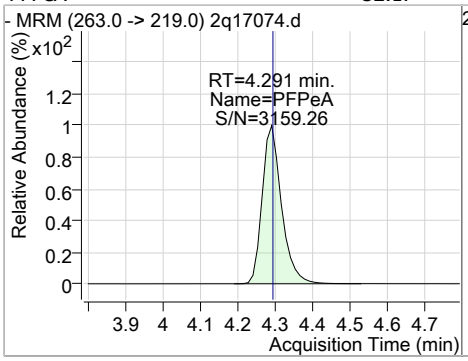


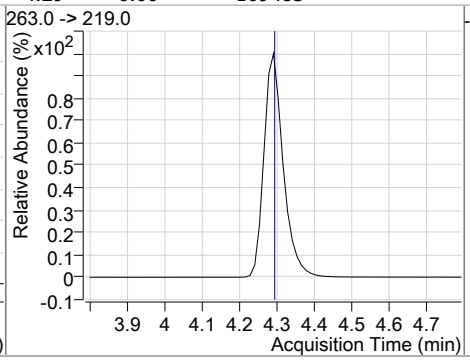


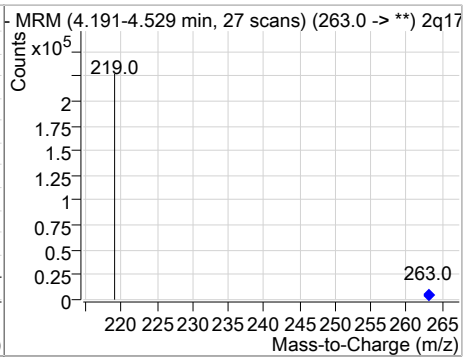


Perfluorinated Compounds by LC/MS/MS

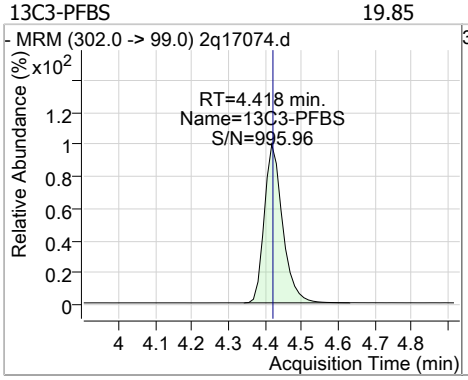
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	52.17	4.29	0.00	169483				

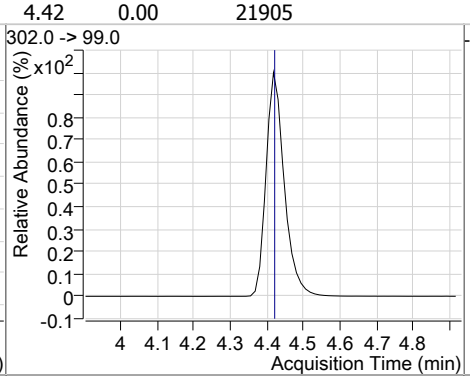


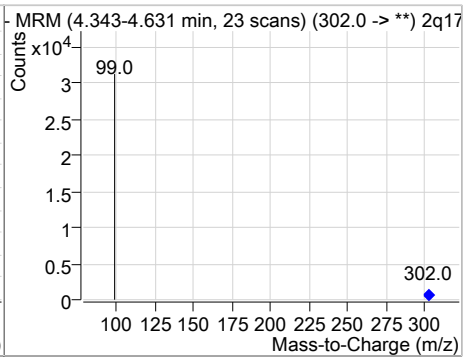




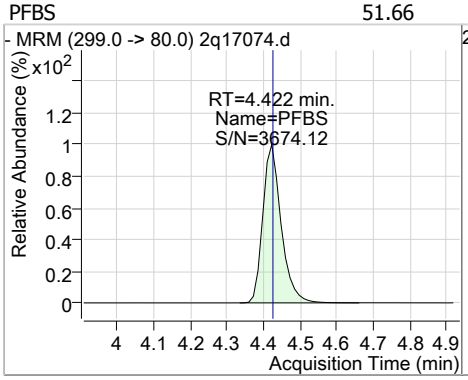
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.85	4.42	0.00	21905				

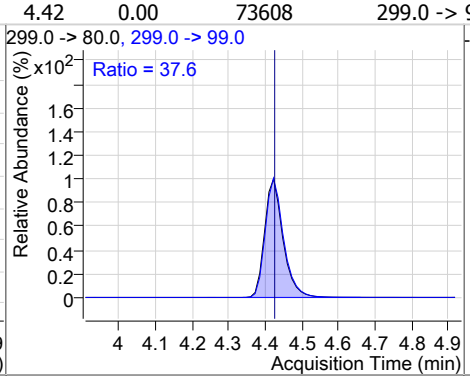


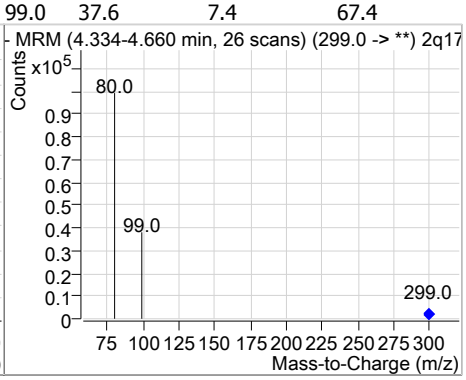




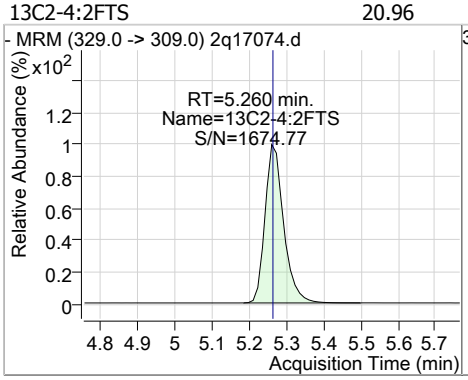
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	51.66	4.42	0.00	73608	299.0 -> 99.0	37.6	7.4	67.4

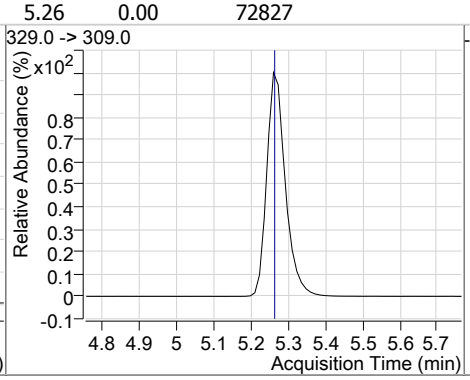


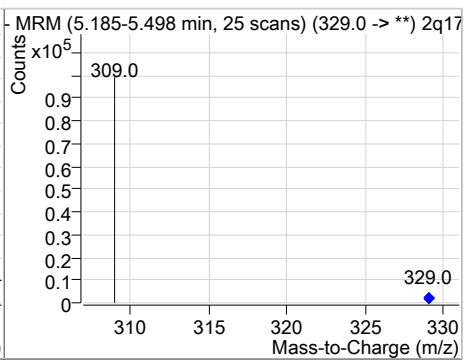




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.96	5.26	0.00	72827				

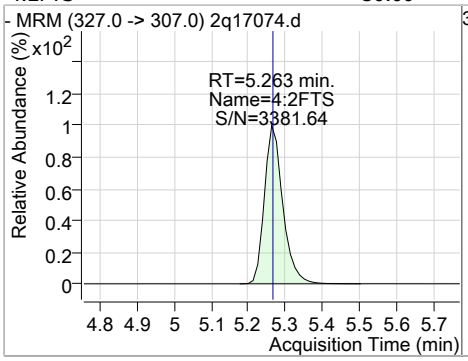


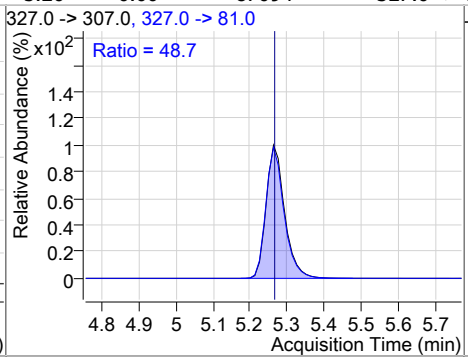


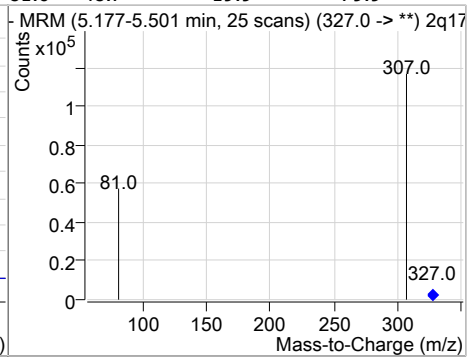


Perfluorinated Compounds by LC/MS/MS

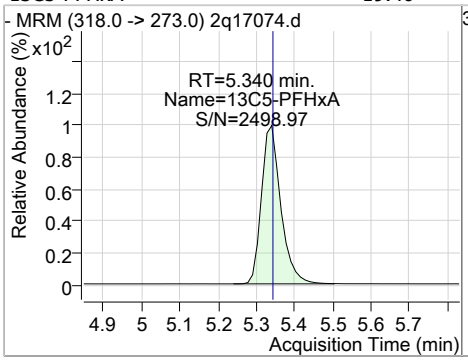
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	50.00	5.26	0.00	87094	327.0 -> 81.0	48.7	19.9	79.9

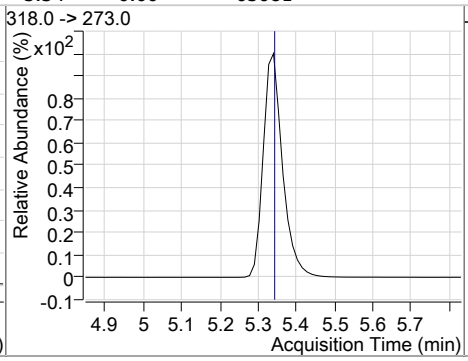


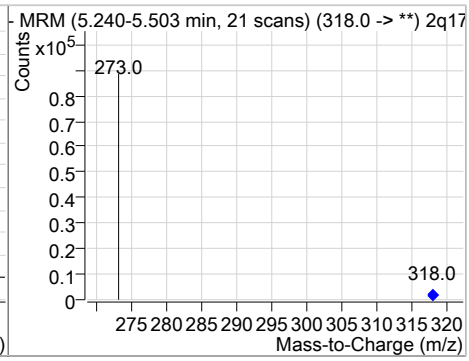




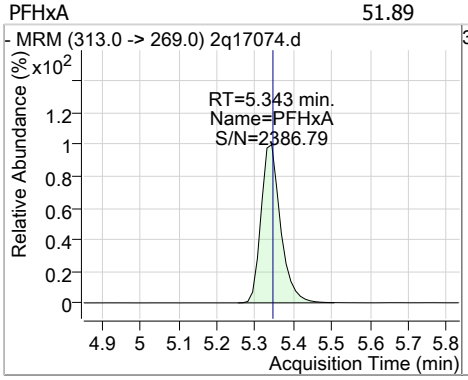
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.46	5.34	0.00	65081				

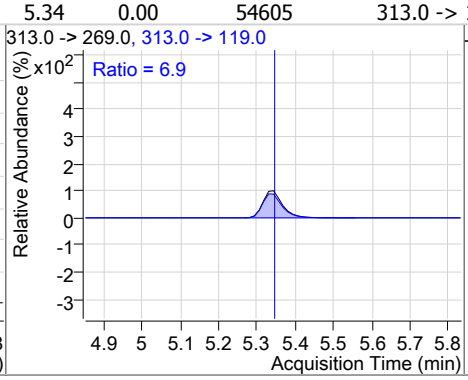


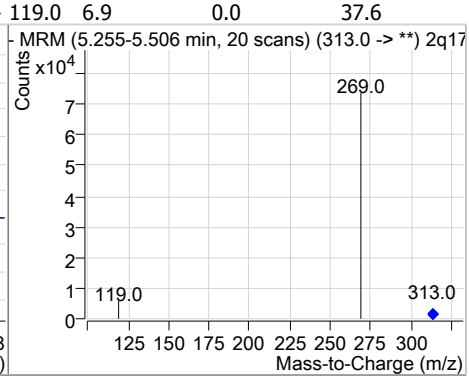




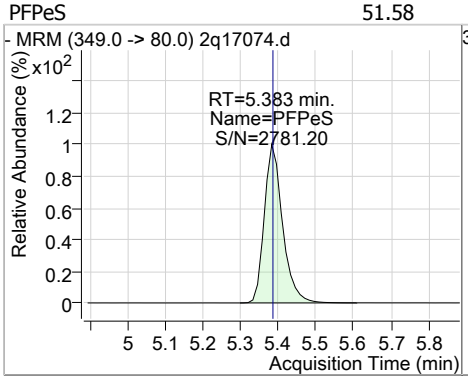
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	51.89	5.34	0.00	54605	313.0 -> 119.0	6.9	0.0	37.6

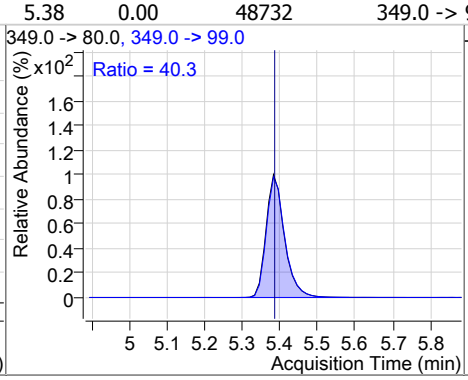


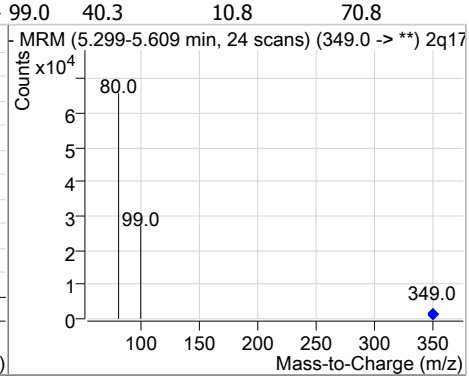




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	51.58	5.38	0.00	48732	349.0 -> 99.0	40.3	10.8	70.8

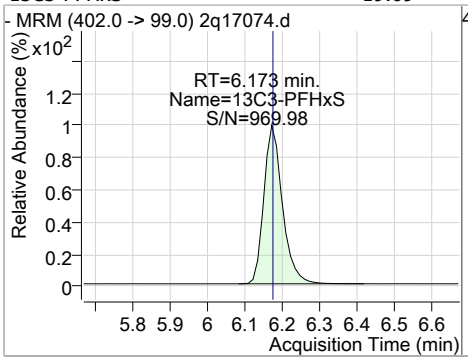


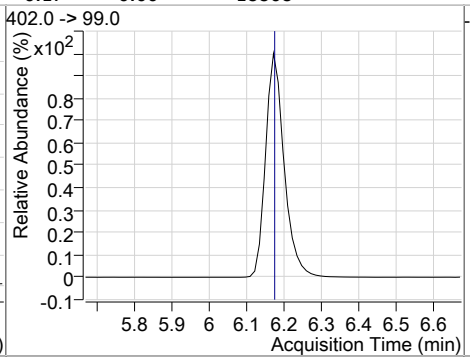


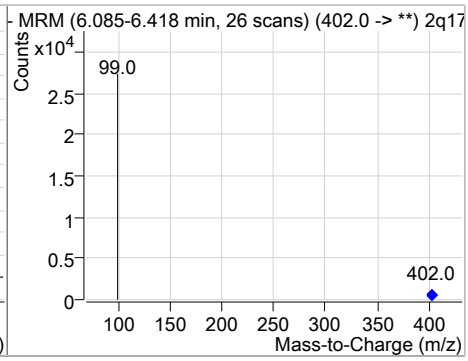


Perfluorinated Compounds by LC/MS/MS

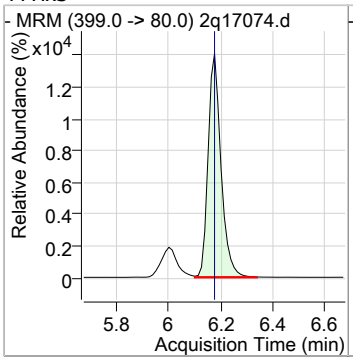
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.69	6.17	0.00	18808				

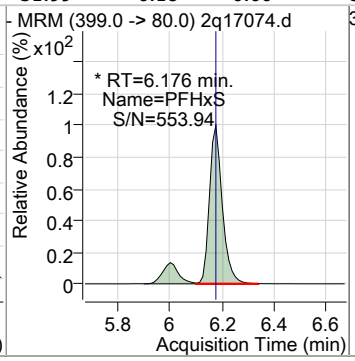


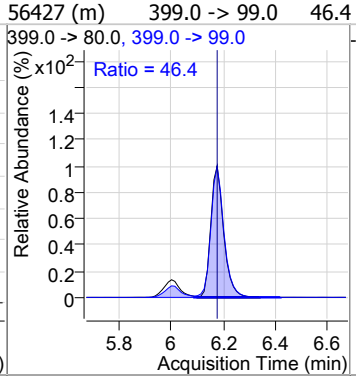


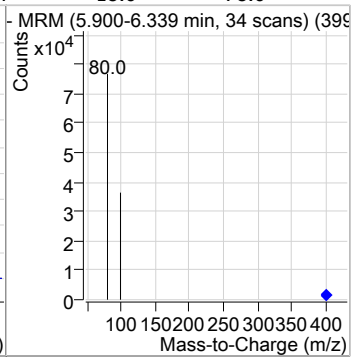


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	51.99	6.18	0.00	56427 (m)	399.0 -> 99.0	46.4	18.0	78.0

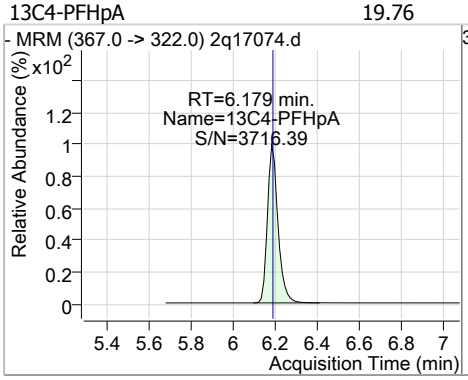


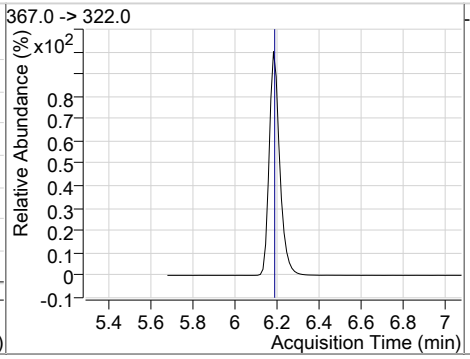


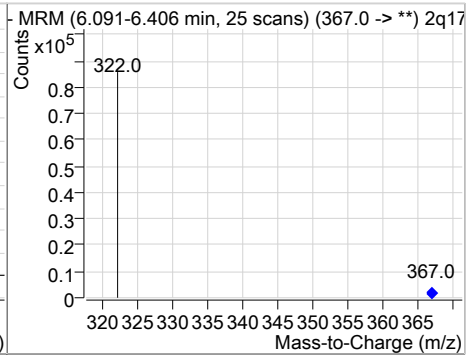




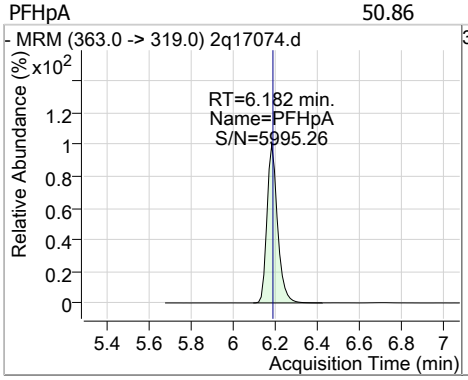
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.76	6.18	0.00	62766				

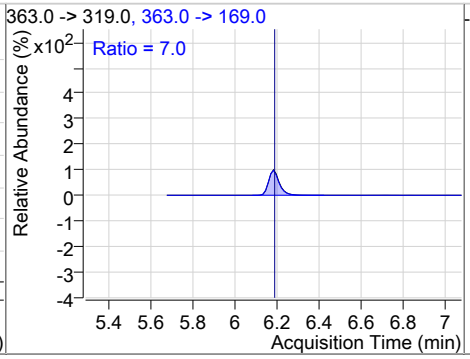


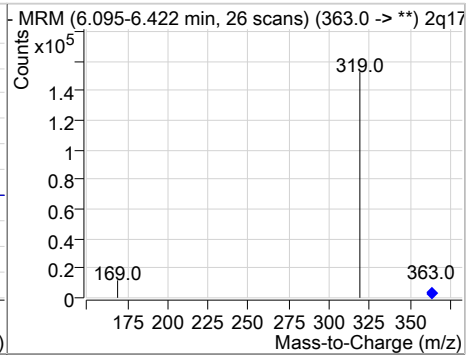




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	50.86	6.18	0.00	113854	363.0 -> 169.0	7.0	0.0	37.2

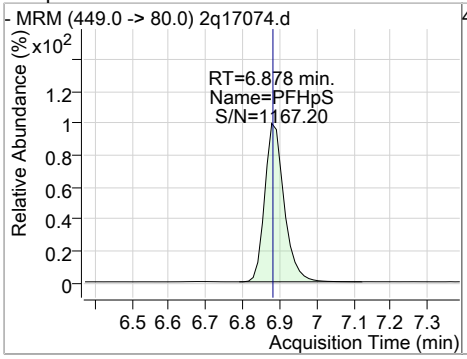


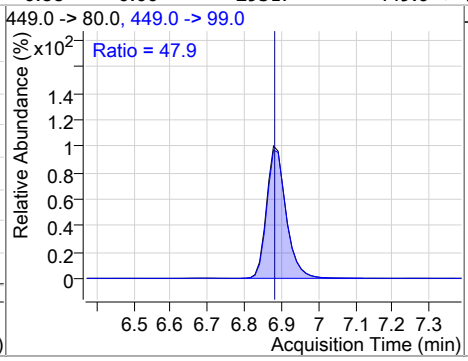


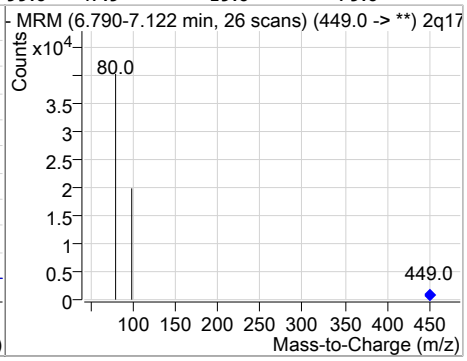


Perfluorinated Compounds by LC/MS/MS

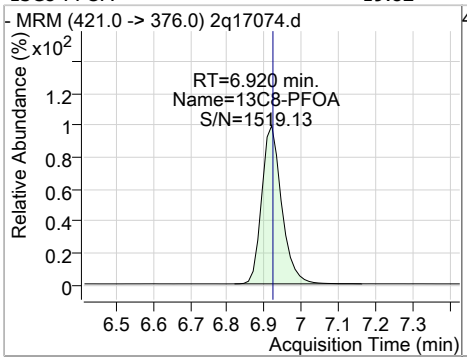
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	52.49	6.88	0.00	29517	449.0 -> 99.0	47.9	19.0	79.0

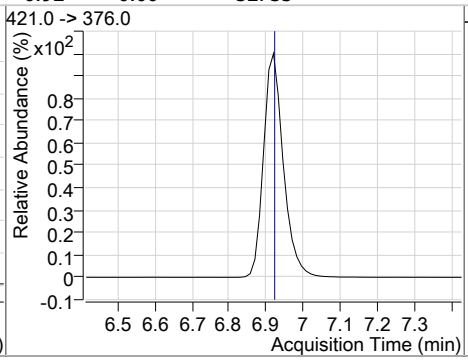


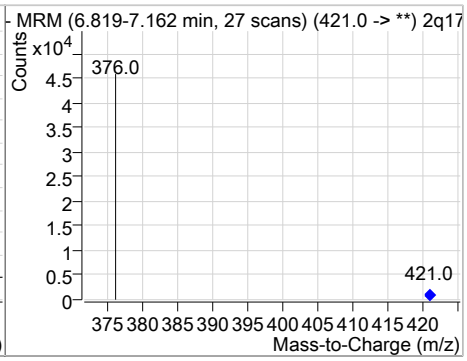




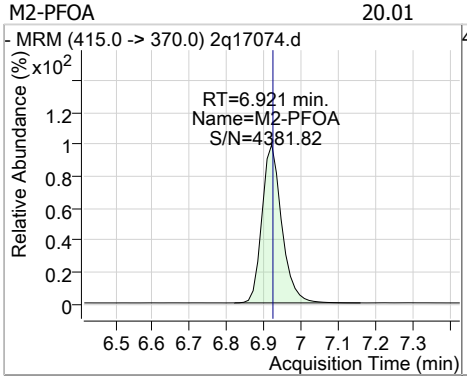
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.82	6.92	0.00	32733				

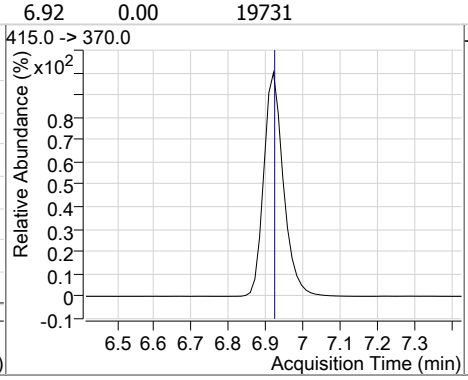


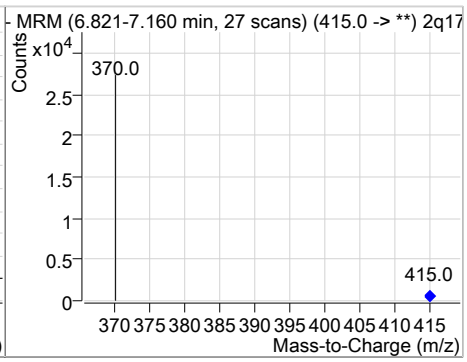




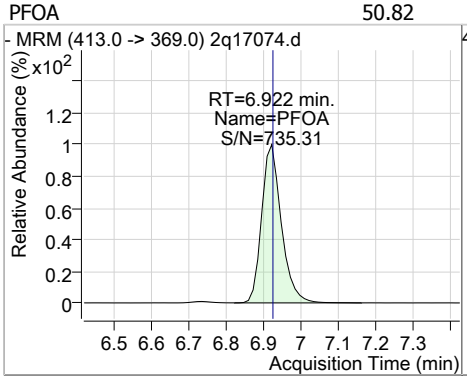
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.01	6.92	0.00	19731				

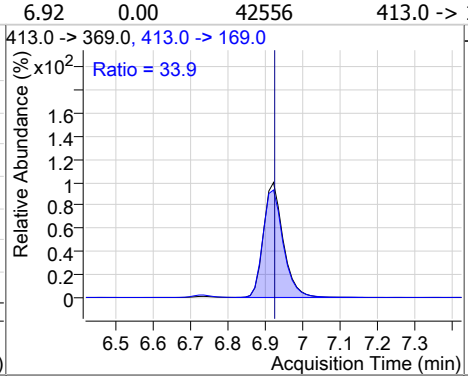


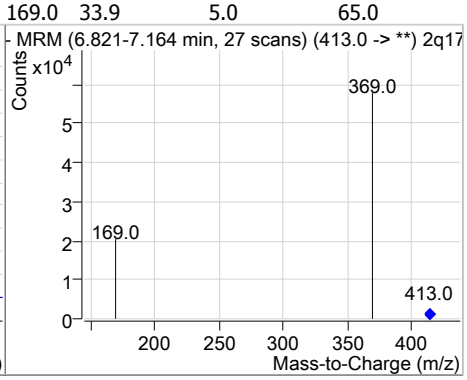




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	50.82	6.92	0.00	42556	413.0 -> 169.0	33.9	5.0	65.0

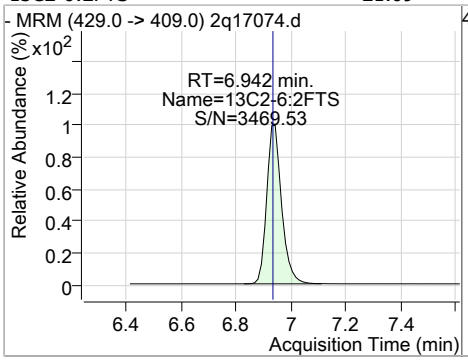


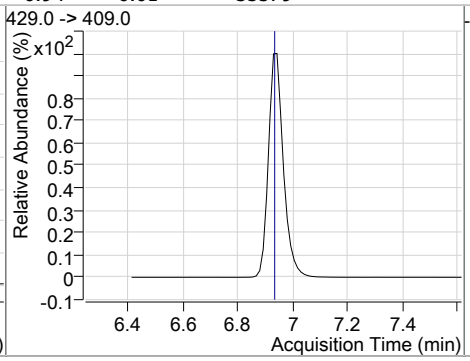


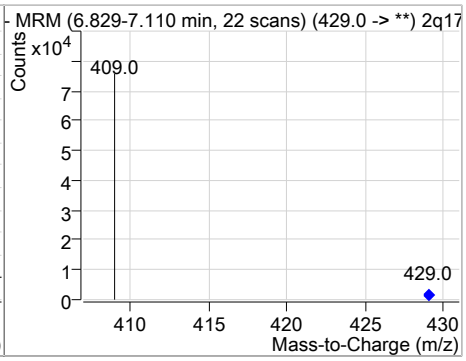


Perfluorinated Compounds by LC/MS/MS

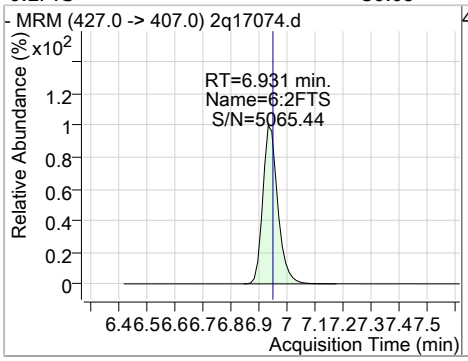
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	21.09	6.94	0.01	55579				

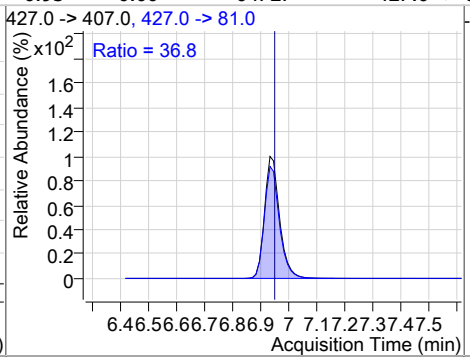


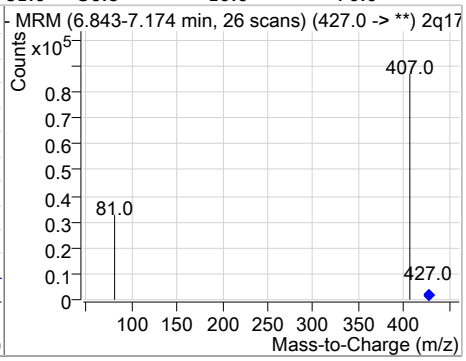




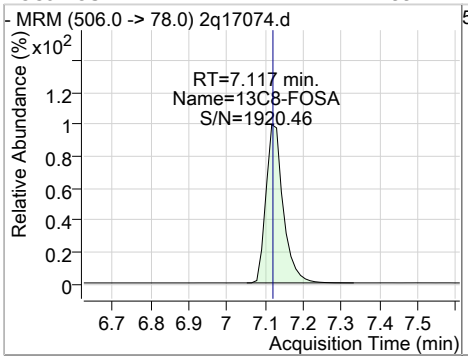
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	50.08	6.93	0.00	64727	427.0 -> 81.0	36.8	10.0	70.0

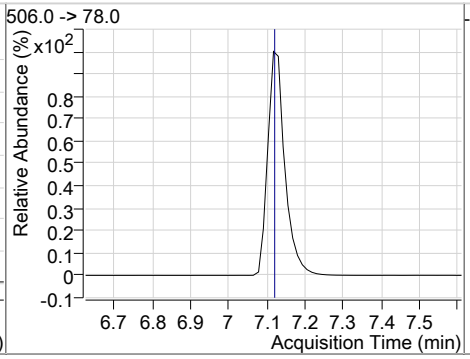


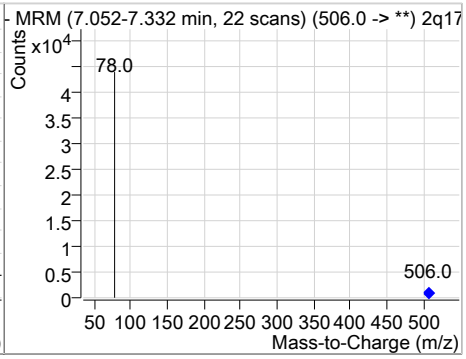




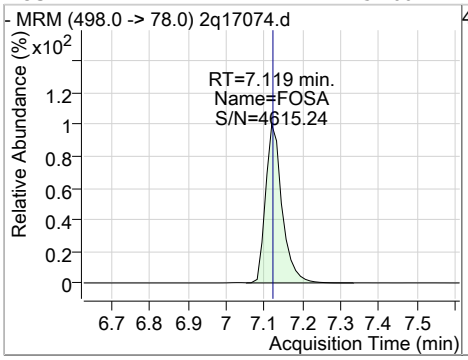
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	17.99	7.12	0.00	32225				

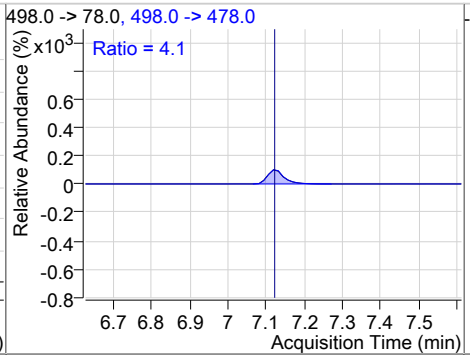


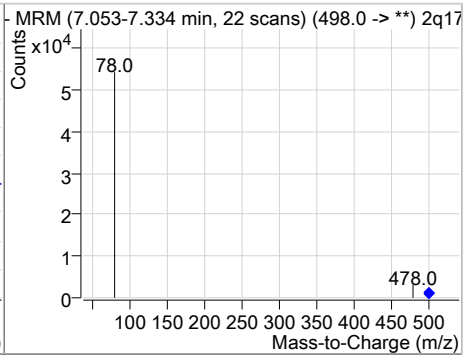




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	52.00	7.12	0.00	40544	498.0 -> 478.0	4.1	0.0	34.0

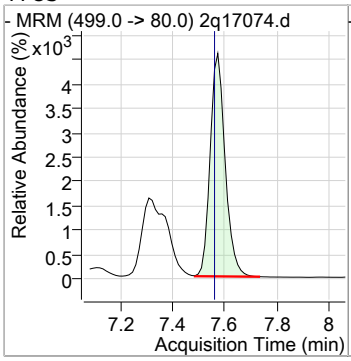


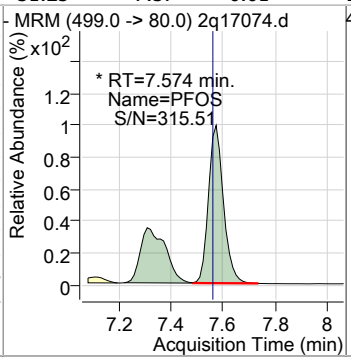


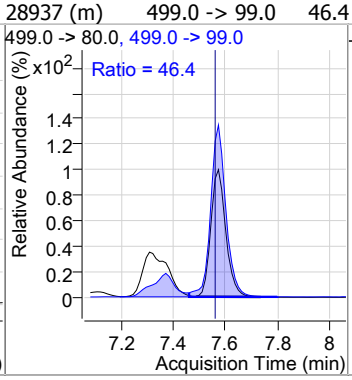


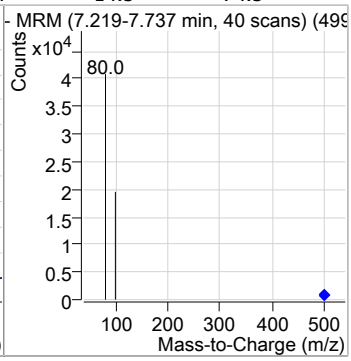
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	51.25	7.57	0.01	28937 (m)	499.0 -> 99.0	46.4	14.5	74.5

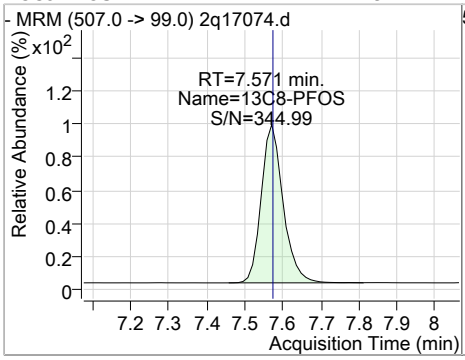


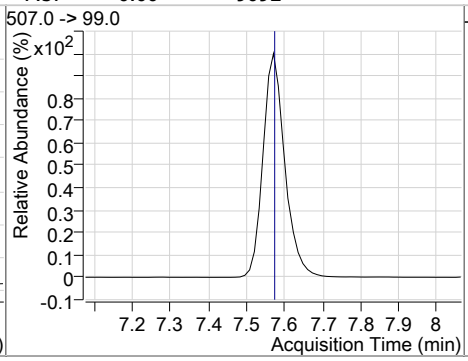


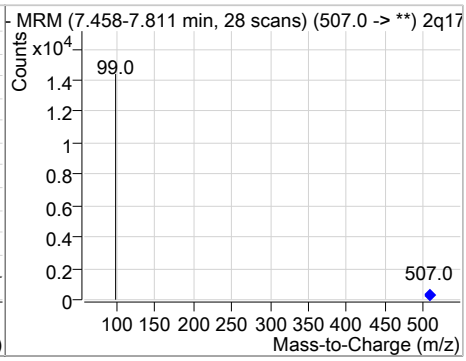




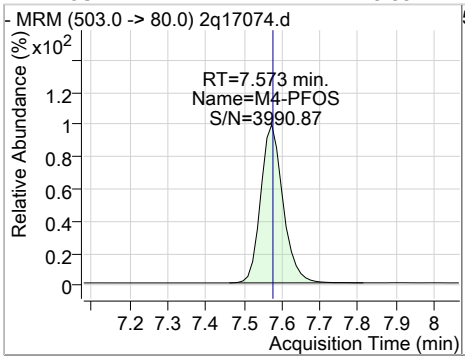
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.42	7.57	0.00	9092				

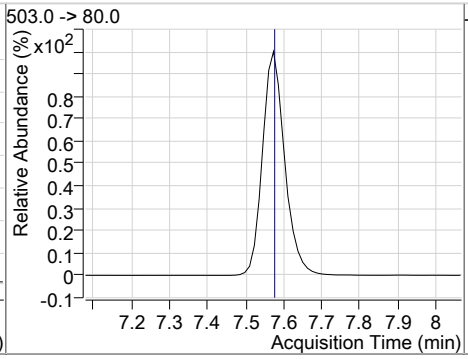


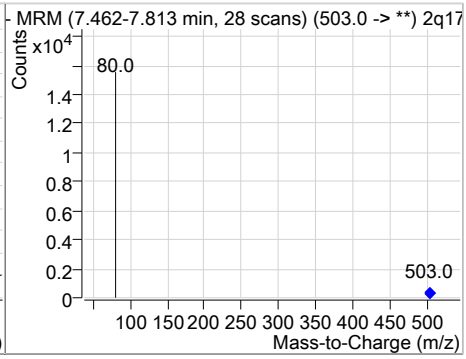




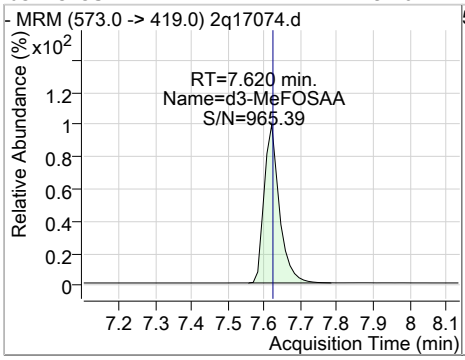
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	19.99	7.57	0.00	10847				

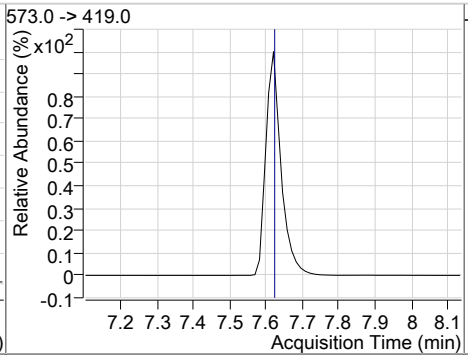


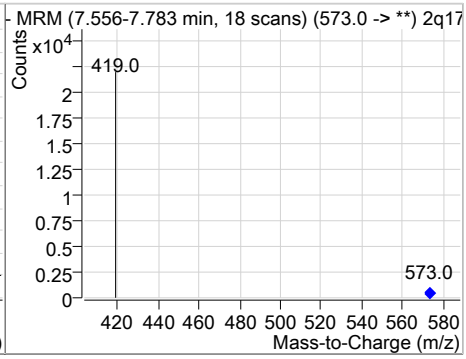




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.20	7.62	0.00	15586				

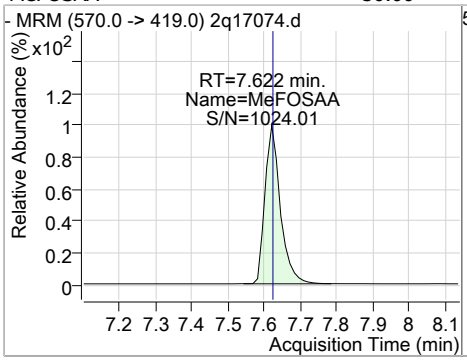


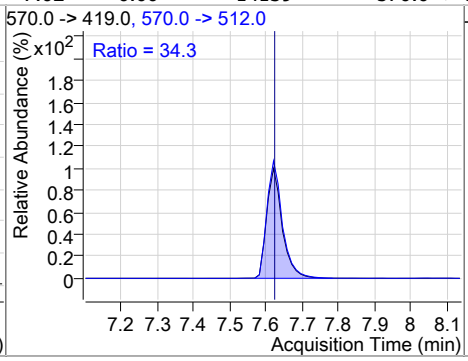


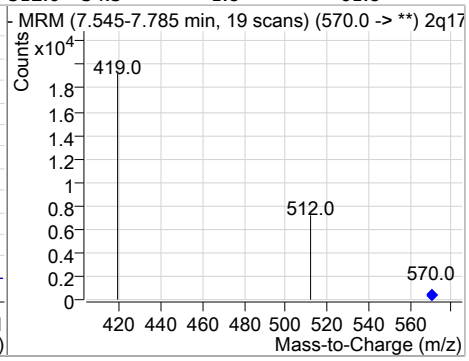


Perfluorinated Compounds by LC/MS/MS

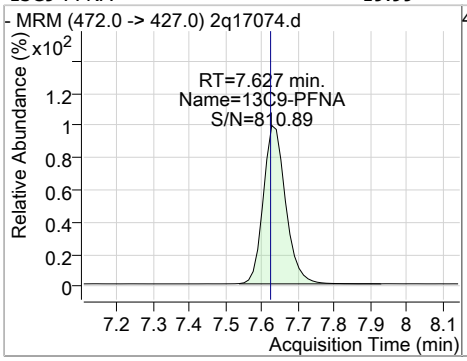
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	50.06	7.62	0.00	14139	570.0 -> 512.0	34.3	1.8	61.8

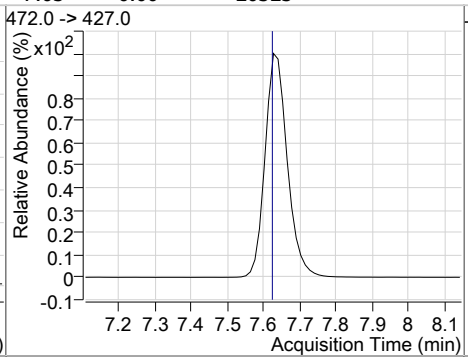


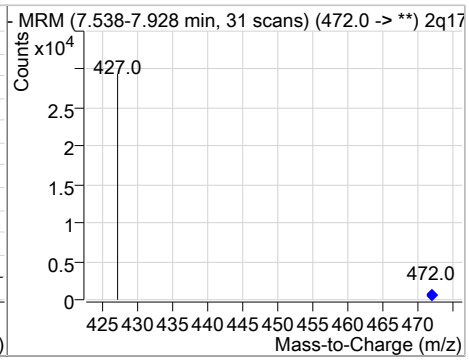




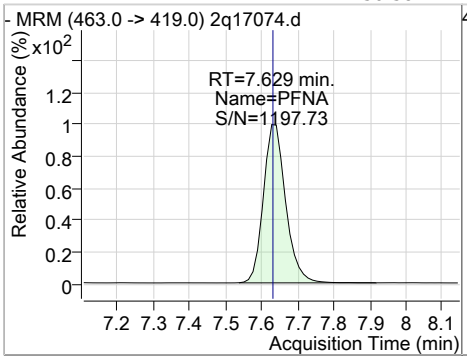
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.99	7.63	0.00	20323				

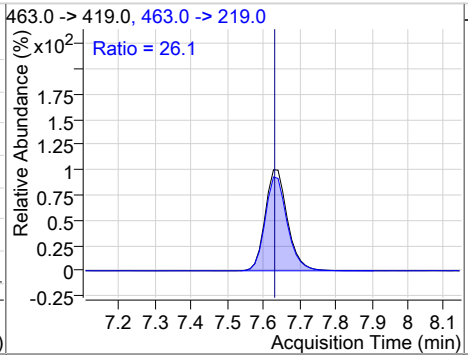


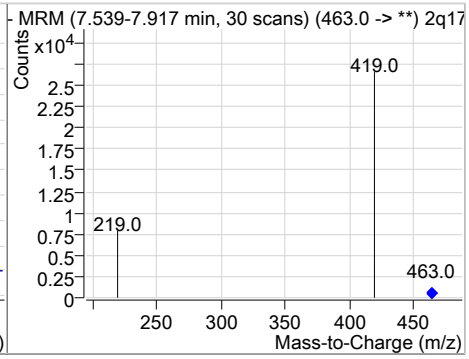




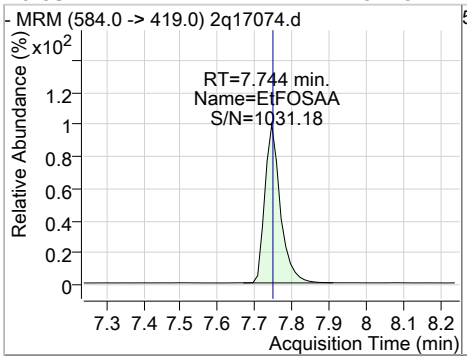
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	50.58	7.63	0.00	19370	463.0 -> 219.0	26.1	0.0	58.4

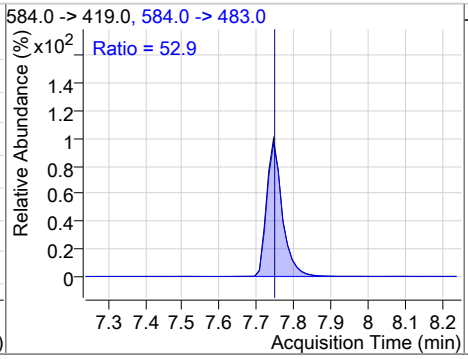


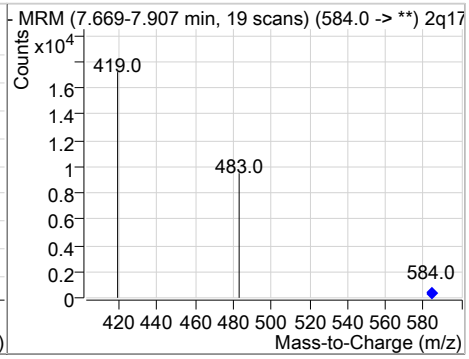




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	51.25	7.74	0.00	12329	584.0 -> 483.0	52.9	24.8	84.8

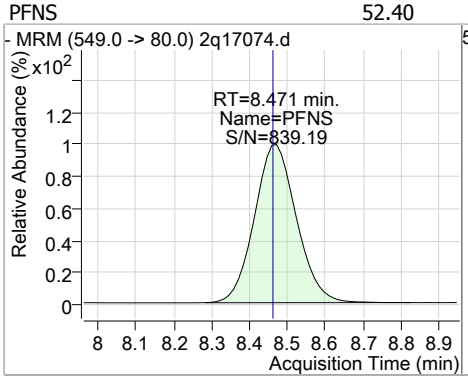


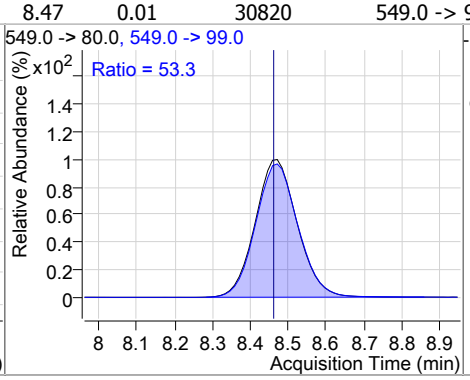


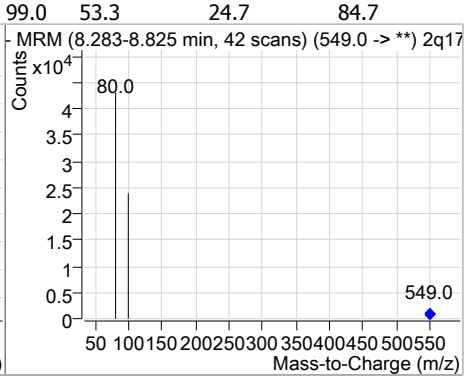


Perfluorinated Compounds by LC/MS/MS

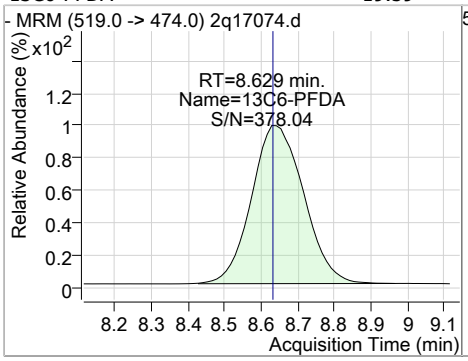
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	52.40	8.47	0.01	30820	549.0 -> 99.0	53.3	24.7	84.7

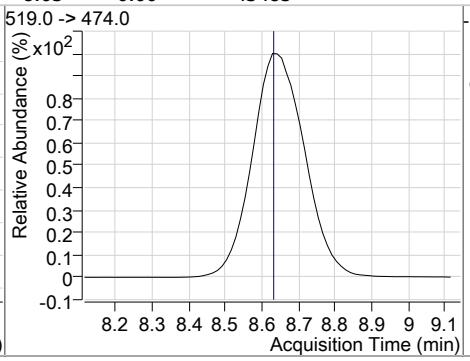


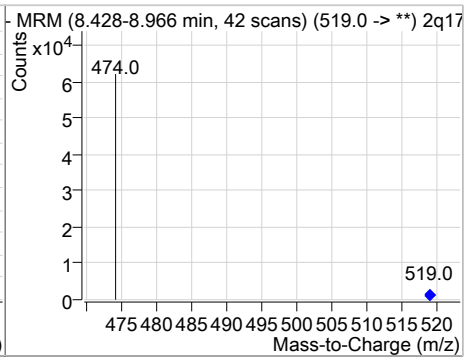




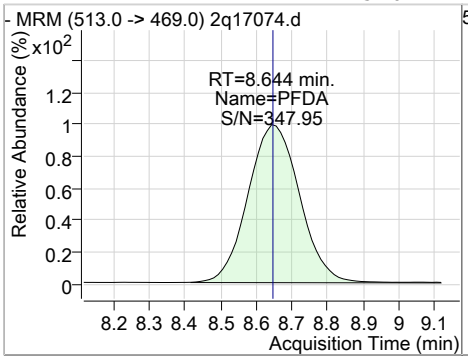
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.59	8.63	0.00	43485				

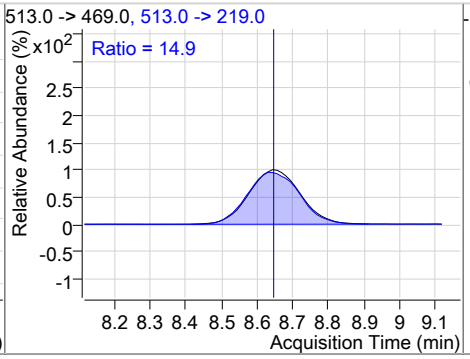


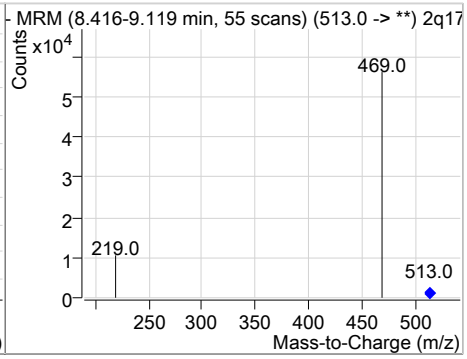




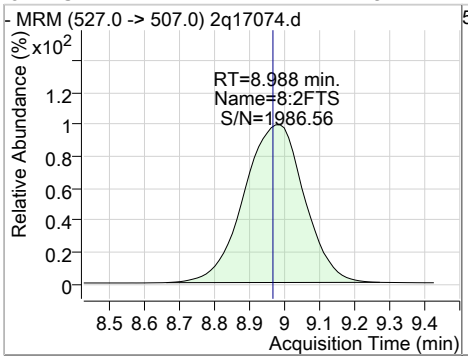
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	52.01	8.64	0.00	40503	513.0 -> 219.0	14.9	0.0	45.3

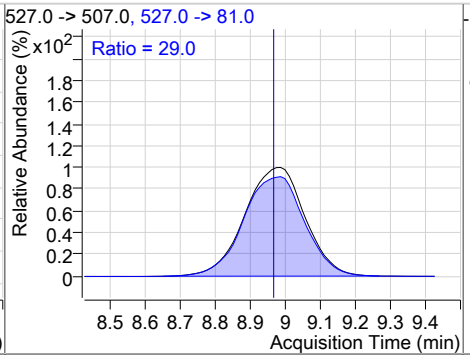


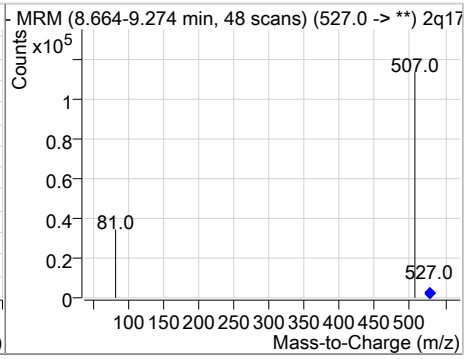




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	49.77	8.99	0.04	82746	527.0 -> 81.0	29.0	1.3	61.3

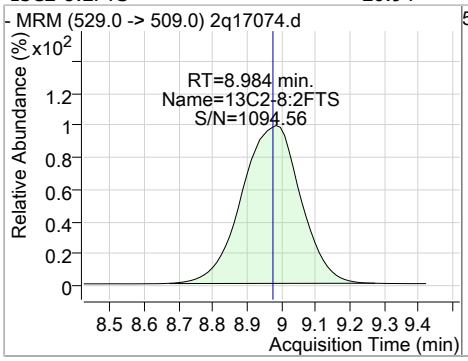


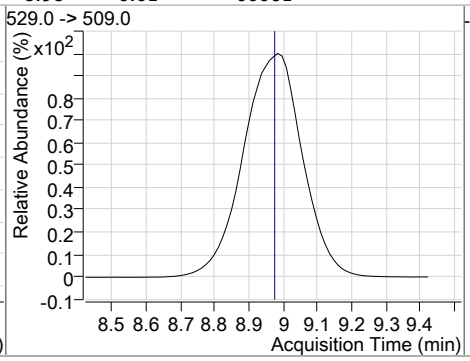


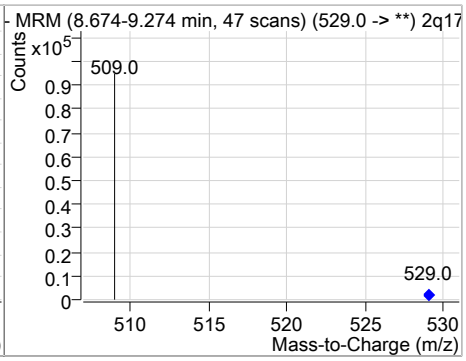


Perfluorinated Compounds by LC/MS/MS

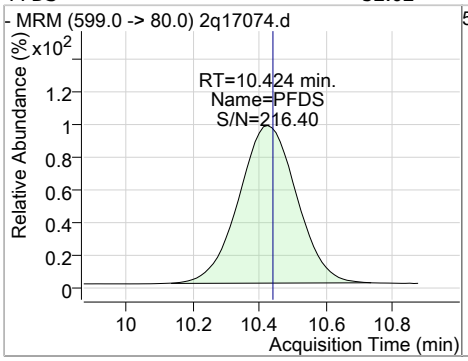
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.94	8.98	0.01	66661				

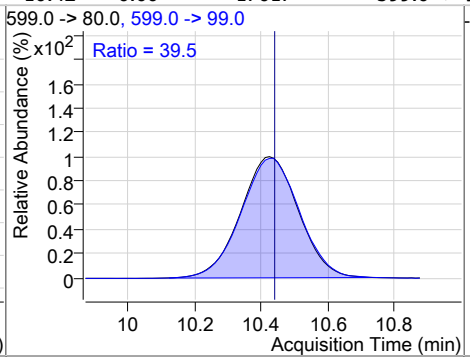


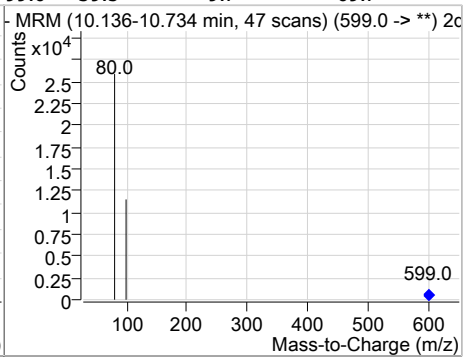




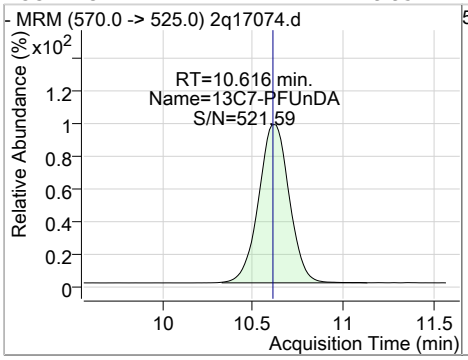
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	52.02	10.42	0.00	17617	599.0 -> 99.0	39.5	9.7	69.7

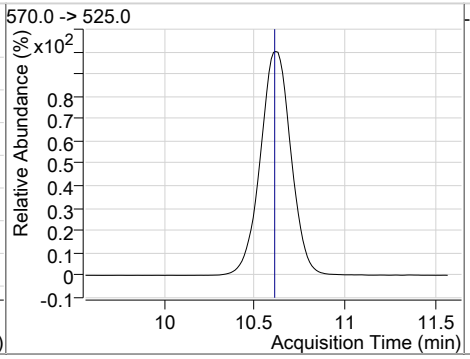


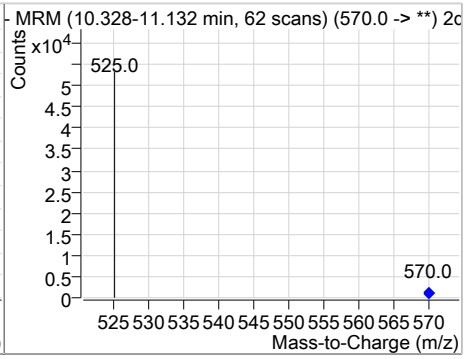




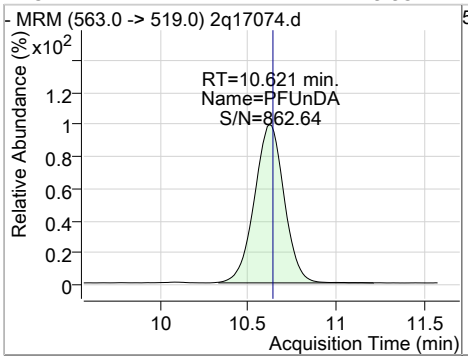
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.95	10.62	0.01	35726				

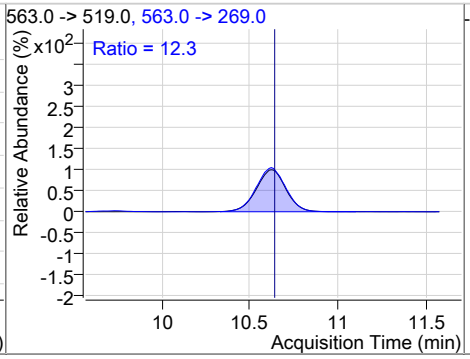


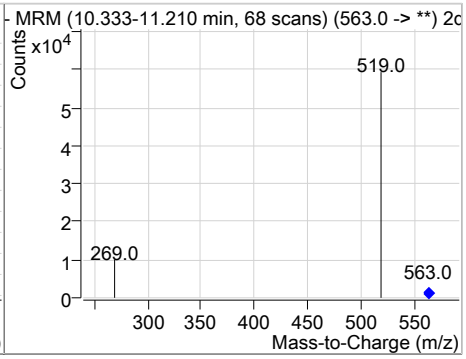




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	49.93	10.62	0.00	42030	563.0 -> 269.0	12.3	0.0	41.8

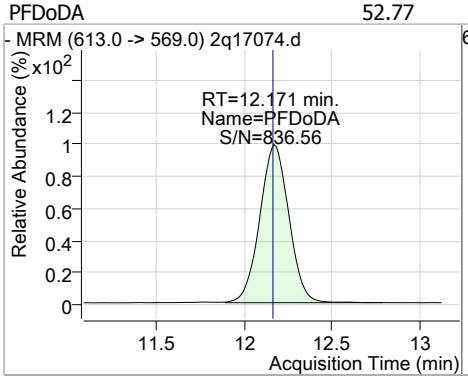


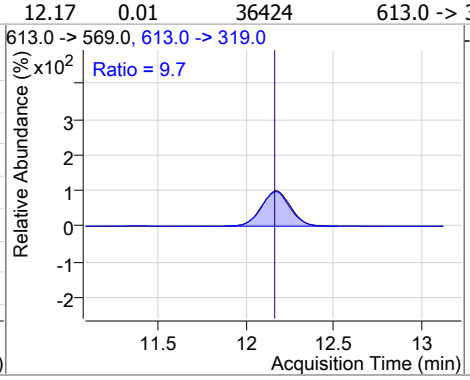


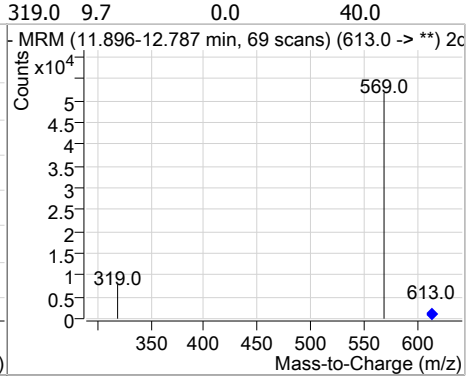


Perfluorinated Compounds by LC/MS/MS

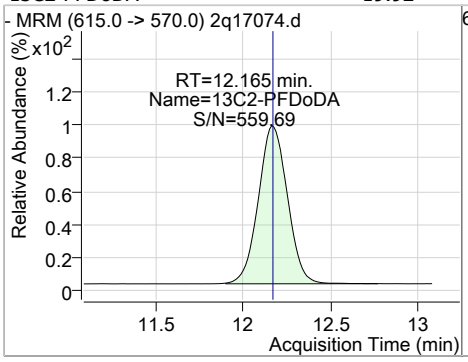
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	52.77	12.17	0.01	36424	613.0 -> 319.0	9.7	0.0	40.0

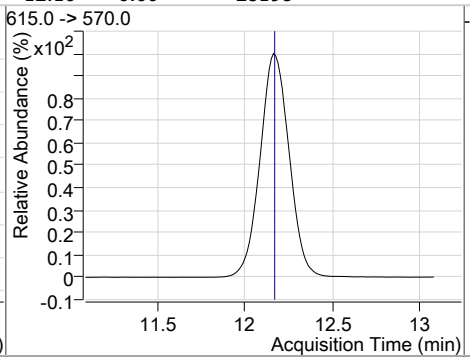


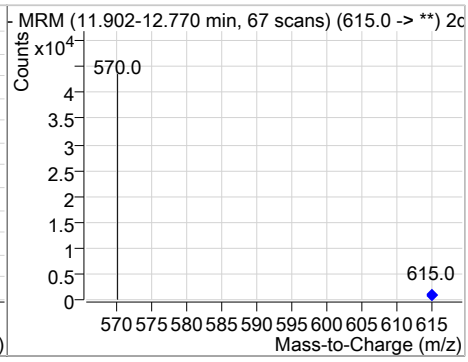




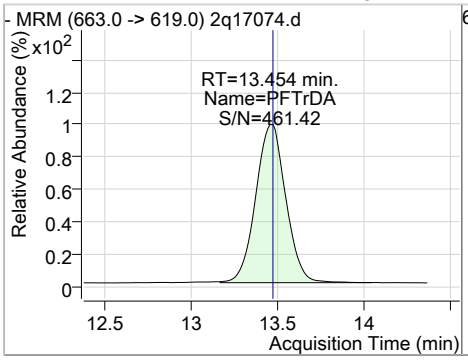
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.92	12.16	0.00	28198				

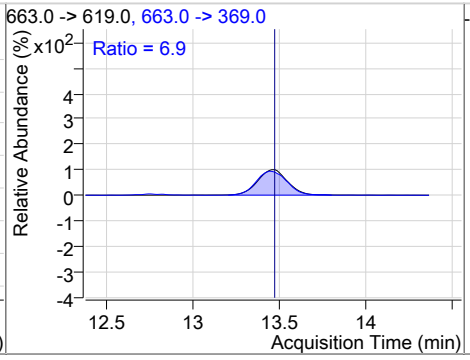


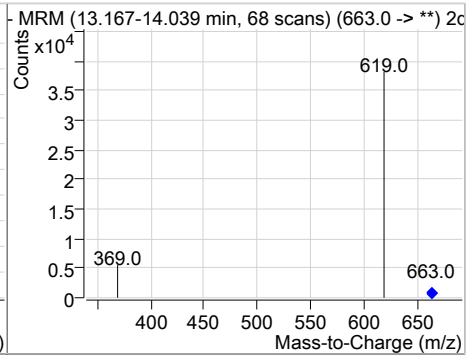




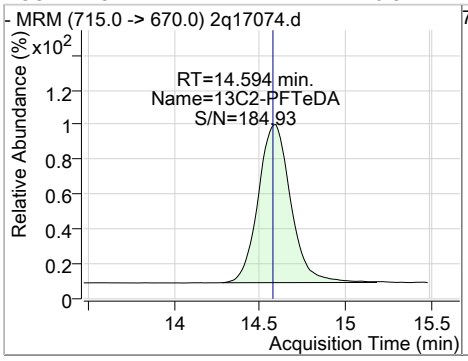
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	52.21	13.45	0.01	27278	663.0 -> 369.0	6.9	0.0	37.1

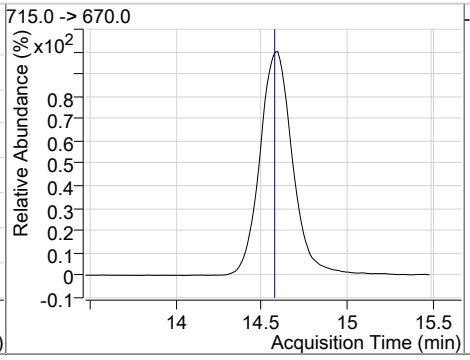


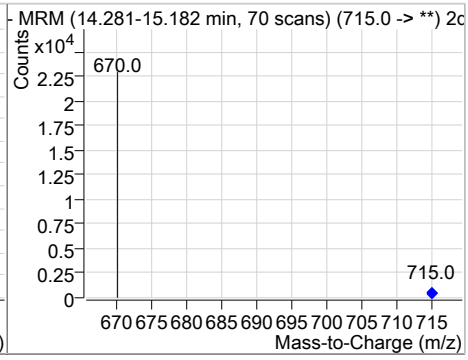




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.32	14.59	0.03	12428				

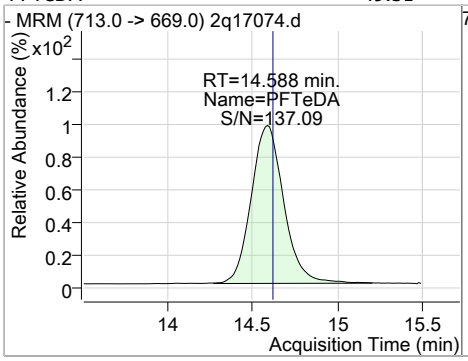


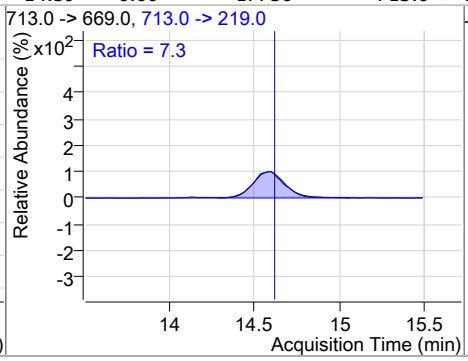


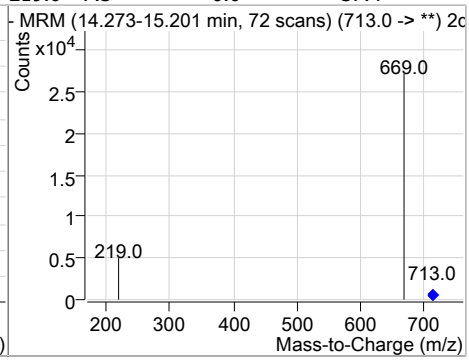


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	49.51	14.59	0.00	17750	713.0 -> 219.0	7.3	0.0	37.4







Manual Integration Approval Summary

Sample Number:	S2Q296-IC296	**Method:**	EPA 537M BY ID
Lab FileID:	2Q17074.D	**Analyst approved:**	07/16/18 13:34 Natasha Gumtie
Injection Time:	07/13/18 14:16	**Supervisor approved:**	07/16/18 17:22 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.57	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/16/18 17:22

Perfluorinated Compounds by LC/MS/MS

Data File : 2q17075.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/13/2018 2:38:09 PM
Sample Name : ic296-100
Vial : Vial 9
DA Method File : PFC_ID_071318_S2Q296.quantmethod.xml
Batch Name : s2q296.batch.bin
Sample Information : op70790,S2Q296,1.99,,,1.0,1,soil

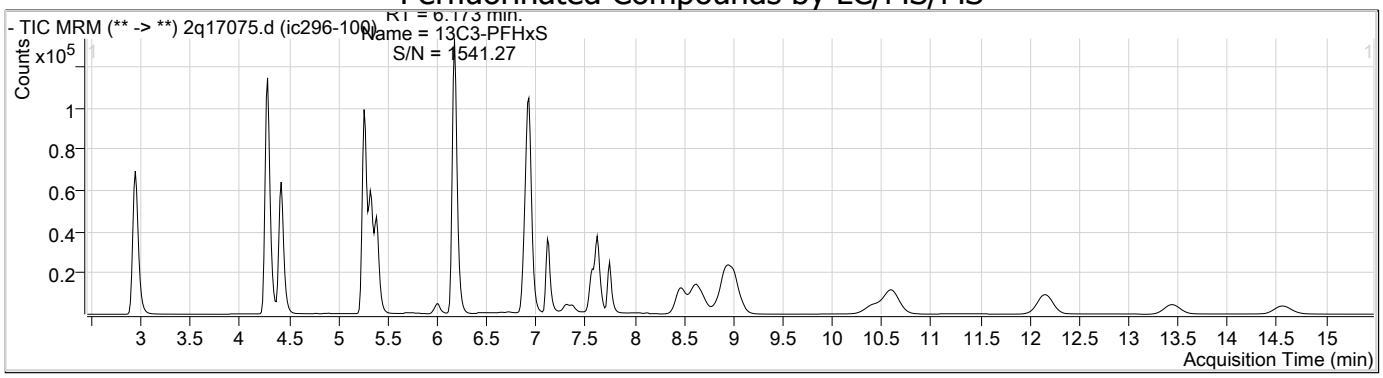
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.921	415.0 -> 370.0	20722	20.00	µg/L	0.000
13C4-PFOS	7.573	503.0 -> 80.0	10425	20.00	µg/L	0.000
M4-PFBA	2.941	217.0 -> 172.0	153979	20.00	µg/L	0.000
M5-PFPeA	4.287	268.0 -> 223.0	76068	20.00	µg/L	0.000
M5-PFHxA	5.340	318.0 -> 273.0	65929	20.00	µg/L	0.000
M4-PFHpA	6.179	367.0 -> 322.0	63360	20.00	µg/L	0.000
M8-PFOA	6.920	421.0 -> 376.0	33458	20.00	µg/L	0.000
M9-PFNA	7.627	472.0 -> 427.0	20637	20.00	µg/L	0.000
M6-PFDA	8.629	519.0 -> 474.0	44755	20.00	µg/L	0.000
M7-PFUnDA	10.591	570.0 -> 525.0	36683	20.00	µg/L	-0.013
M2-PFDoDA	12.152	615.0 -> 570.0	30220	20.00	µg/L	-0.012
M2-PFTeDA	14.556	715.0 -> 670.0	12813	20.00	µg/L	-0.013
M8-FOSA	7.117	506.0 -> 78.0	30835	20.00	µg/L	0.000
M3-PFBS	4.418	302.0 -> 99.0	22361	20.00	µg/L	0.000
M3-PFHxS	6.173	402.0 -> 99.0	19424	20.00	µg/L	0.000
M8-PFOS	7.571	507.0 -> 99.0	9448	20.00	µg/L	0.000
M2-4:2FTS	5.260	329.0 -> 309.0	84036	20.00	µg/L	0.000
M2-6:2FTS	6.930	429.0 -> 409.0	62767	20.00	µg/L	0.000
M2-8:2FTS	8.949	529.0 -> 509.0	77576	20.00	µg/L	-0.023
M3-MeFOSAA	7.620	573.0 -> 419.0	15138	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.260	329.0 -> 309.0	84017	24.19	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 120.9%		
13C2-6:2FTS	6.930	429.0 -> 409.0	62769	23.81	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 119.1%		
13C2-8:2FTS	8.949	529.0 -> 509.0	77103	24.22	µg/L	-0.023
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.1%		
13C2-PFDoDA	12.152	615.0 -> 570.0	30252	21.37	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.9%		
13C2-PFTeDA	14.556	715.0 -> 670.0	12861	21.03	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.1%		
13C3-PFBS	4.418	302.0 -> 99.0	22367	20.27	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.4%		
13C3-PFHxS	6.173	402.0 -> 99.0	19422	20.33	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
13C4-PFBA	2.941	217.0 -> 172.0	153925	20.53	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.6%		
13C4-PFHpA	6.179	367.0 -> 322.0	63378	19.95	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C5-PFHxA	5.340	318.0 -> 273.0	65943	19.71	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.6%		
13C5-PFPeA	4.287	268.0 -> 223.0	76040	20.54	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.7%		
13C6-PFDA	8.629	519.0 -> 474.0	44689	20.13	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%		

Perfluorinated Compounds by LC/MS/MS

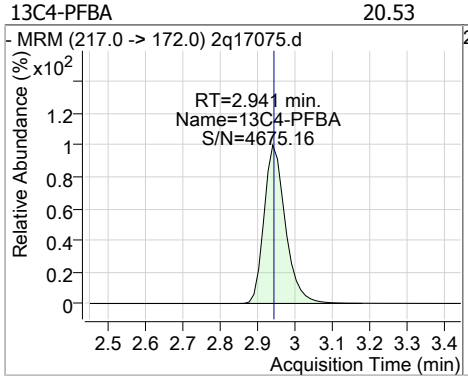
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.591	570.0 -> 525.0	36702	20.49	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%			
13C8-FOSA	7.117	506.0 -> 78.0	30833	17.21	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.1%			
13C8-PFOA	6.920	421.0 -> 376.0	33450	20.26	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.3%			
13C8-PFOS	7.571	507.0 -> 99.0	9445	20.17	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.8%			
13C9-PFNA	7.627	472.0 -> 427.0	20635	20.30	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%			
d3-MeFOSAA	7.620	573.0 -> 419.0	15149	18.66	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.3%			
M2-PFOA	6.921	415.0 -> 370.0	20727	20.01	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.573	503.0 -> 80.0	10430	20.01	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
Target Compounds							**QValue**
4:2FTS	5.263	327.0 -> 307.0	172749	99.99	µg/L		97
6:2FTS	6.931	427.0 -> 407.0	126058	99.96	µg/L		95
8:2FTS	8.952	527.0 -> 507.0	165532	100.06	µg/L		95
EtFOSAA	7.744	584.0 -> 419.0	23156	99.07	µg/L		99
FOSA	7.119	498.0 -> 78.0	73763	98.89	µg/L		99
MeFOSAA	7.622	570.0 -> 419.0	27396	99.84	µg/L		98
PFBA	2.949	213.0 -> 169.0	120363	98.91	µg/L		100
PFBS	4.422	299.0 -> 80.0	143885	98.92	µg/L		100
PFDA	8.631	513.0 -> 469.0	78756	98.69	µg/L		98
PFDoDA	12.159	613.0 -> 569.0	72696	98.19	µg/L		98
PFDS	10.399	599.0 -> 80.0	34215	98.54	µg/L		100
PFHpA	6.182	363.0 -> 319.0	224623	99.39	µg/L		99
PFHpS	6.878	449.0 -> 80.0	57233	98.58	µg/L		100
PFHxA	5.330	313.0 -> 269.0	105530	98.94	µg/L		97
PFHxS	6.176	399.0 -> 80.0	110723	98.81	µg/L	m	98
PFNA	7.629	463.0 -> 419.0	38710	99.57	µg/L		95
PFNS	8.458	549.0 -> 80.0	60257	98.54	µg/L		98
PFOA	6.922	413.0 -> 369.0	84990	99.33	µg/L		95
PFOS	7.574	499.0 -> 80.0	58338	99.38	µg/L	m	99
PFPeA	4.291	263.0 -> 219.0	333377	98.64	µg/L		100
PFPeS	5.383	349.0 -> 80.0	95400	98.91	µg/L		99
PFTeDA	14.563	713.0 -> 669.0	36055	100.10	µg/L		99
PFTrDA	13.442	663.0 -> 619.0	53672	98.56	µg/L		99
PFUnDA	10.608	563.0 -> 519.0	86138	99.80	µg/L		100

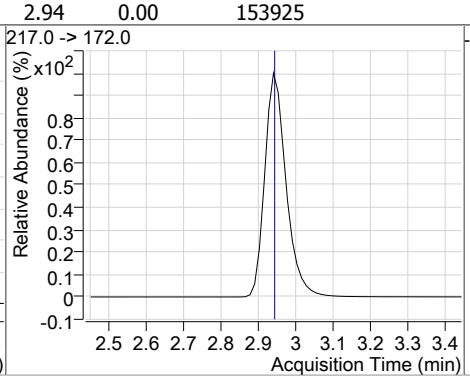
 # = Qualifier out of range, m = manually integrated, + = Area summed

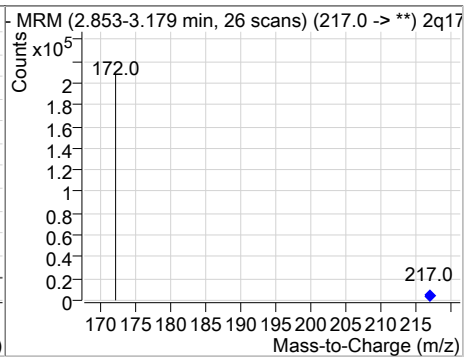
Perfluorinated Compounds by LC/MS/MS



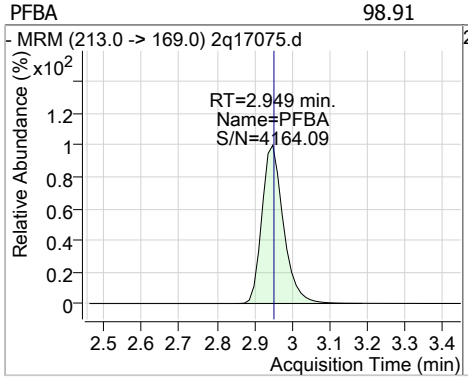
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.53	2.94	0.00	153925				

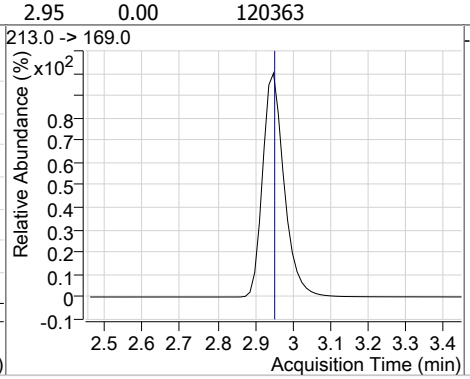


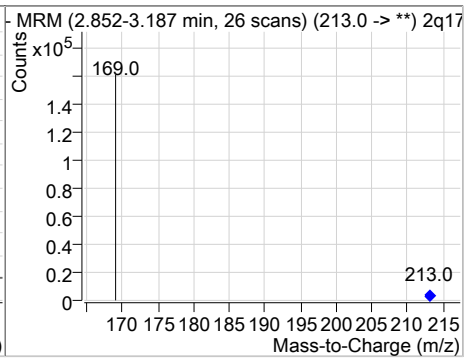




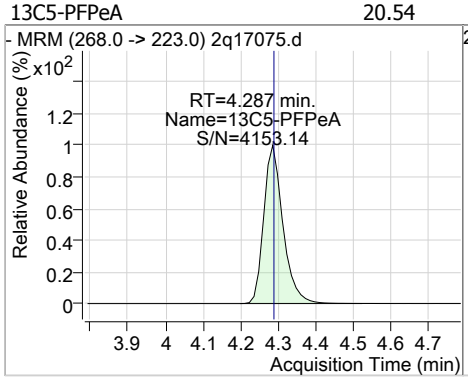
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	98.91	2.95	0.00	120363				

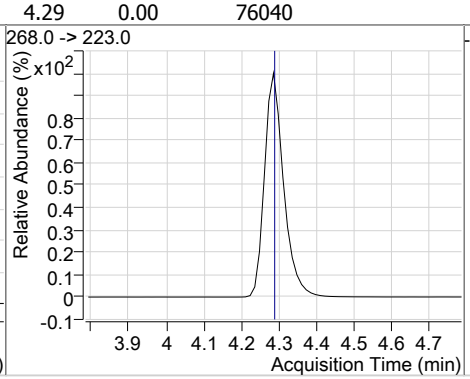


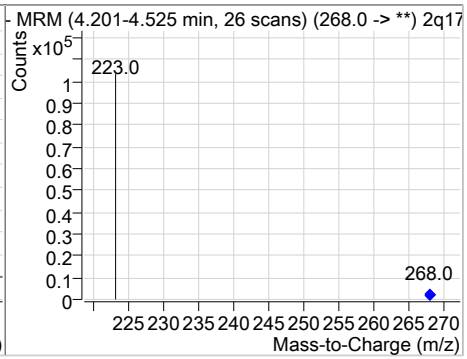




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.54	4.29	0.00	76040				

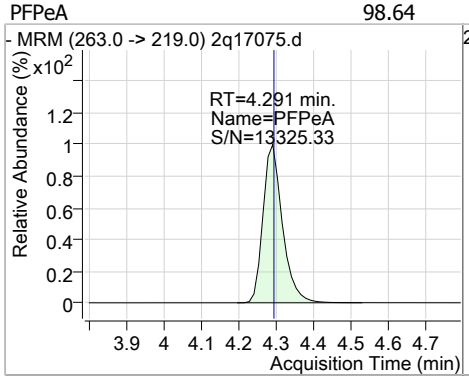


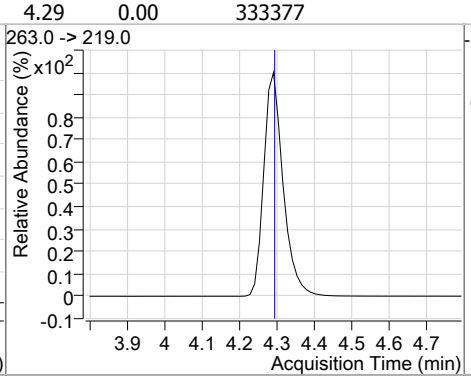


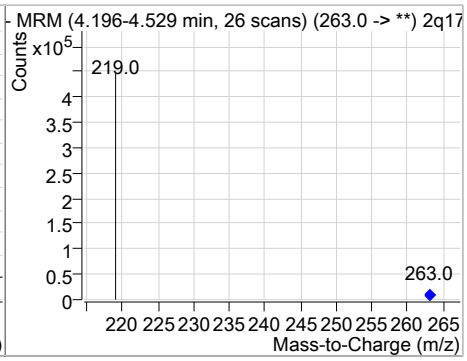


Perfluorinated Compounds by LC/MS/MS

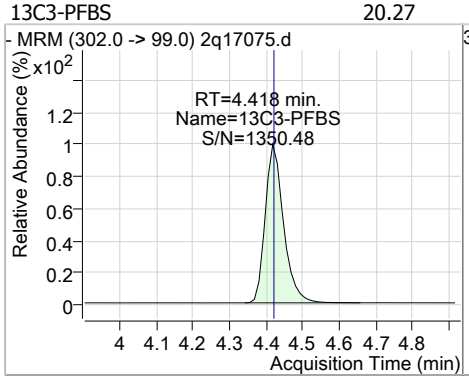
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	98.64	4.29	0.00	333377				

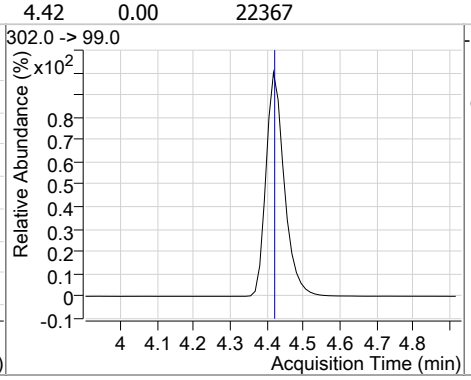


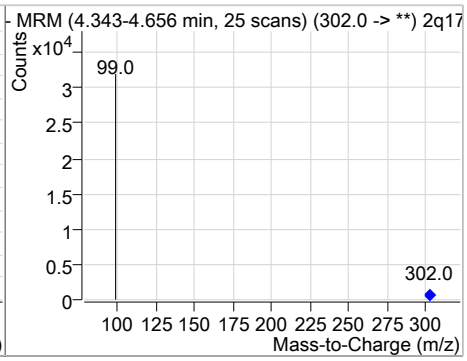




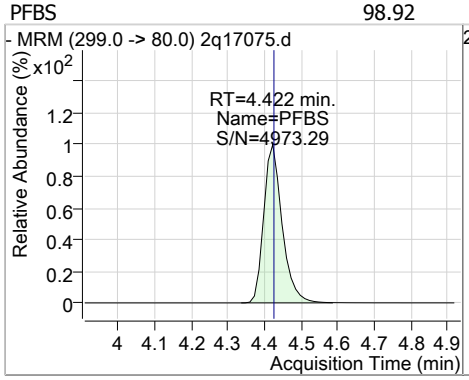
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.27	4.42	0.00	22367				

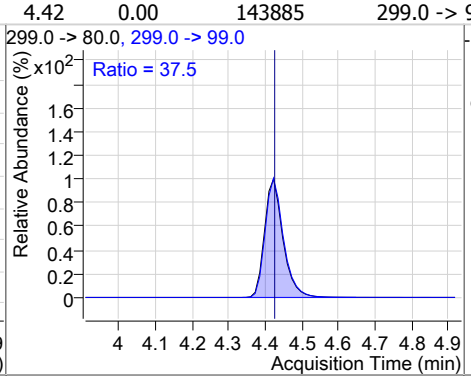


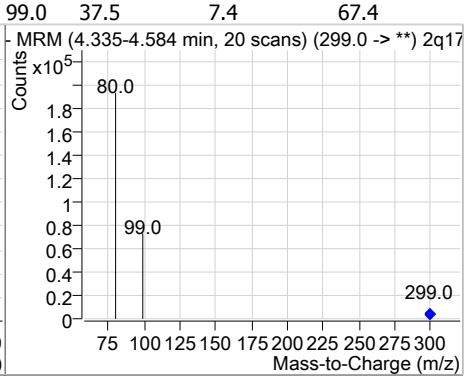




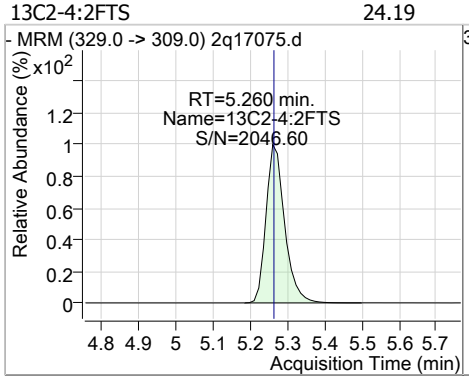
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	98.92	4.42	0.00	143885	299.0 -> 99.0	37.5	7.4	67.4

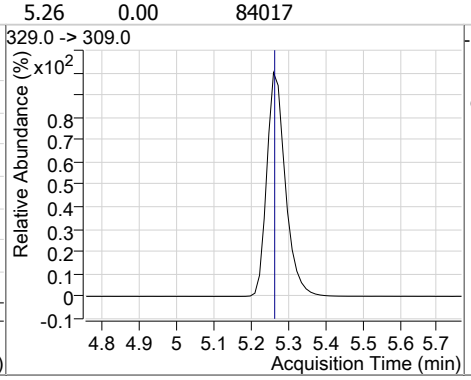


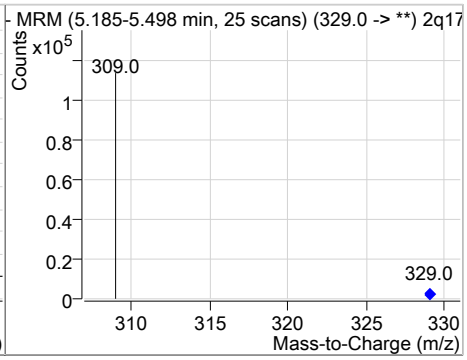




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	24.19	5.26	0.00	84017				

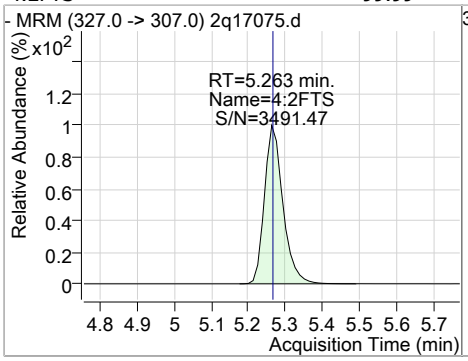


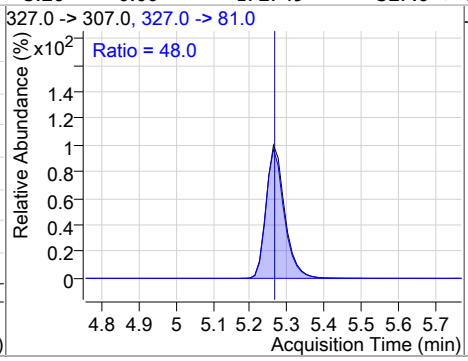


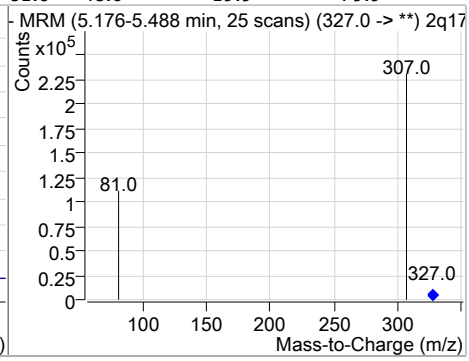


Perfluorinated Compounds by LC/MS/MS

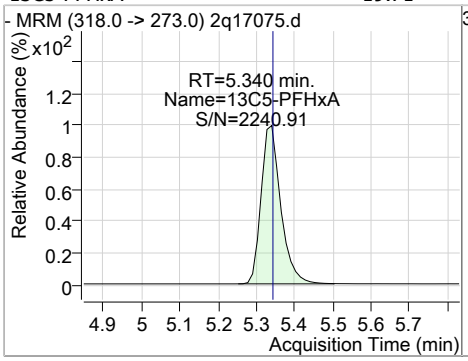
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	99.99	5.26	0.00	172749	327.0 -> 81.0	48.0	19.9	79.9

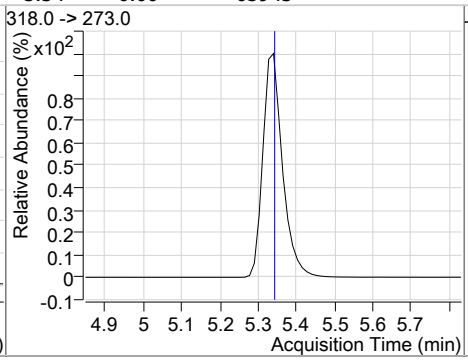


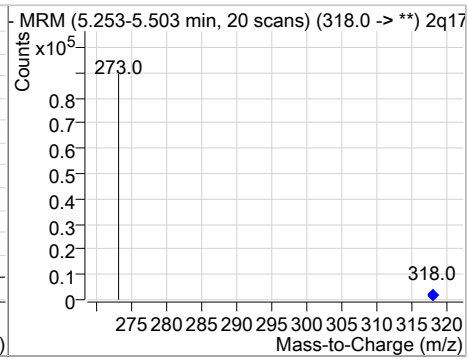




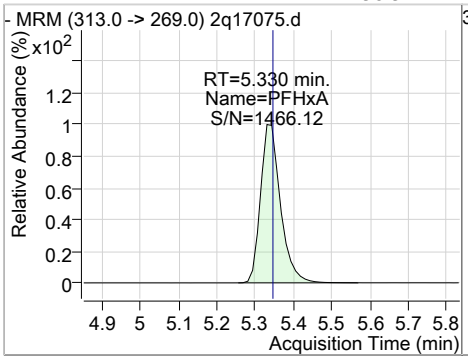
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.71	5.34	0.00	65943				

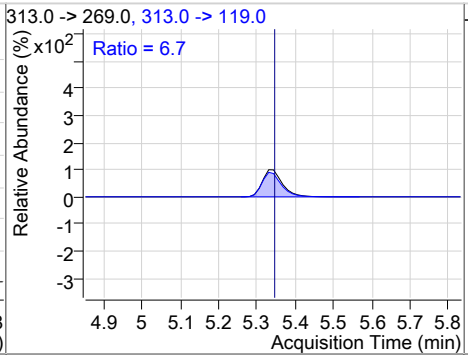


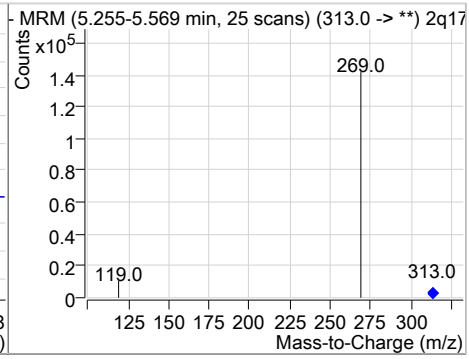




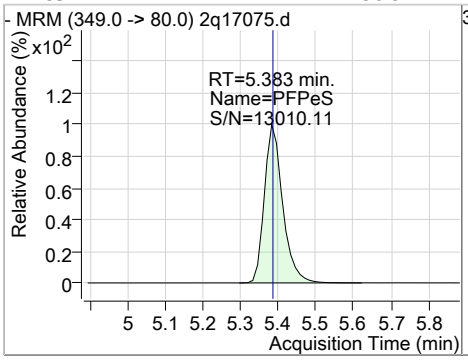
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	98.94	5.33	-0.01	105530	313.0 -> 119.0	6.7	0.0	37.6

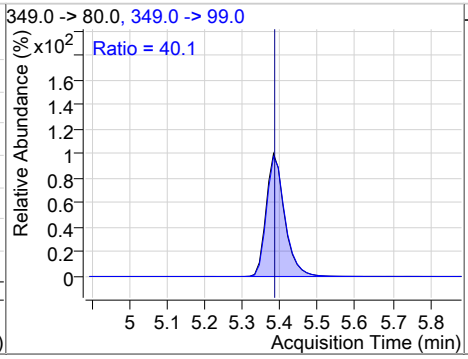


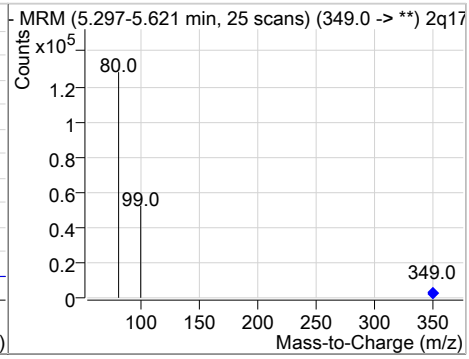




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	98.91	5.38	0.00	95400	349.0 -> 99.0	40.1	10.8	70.8

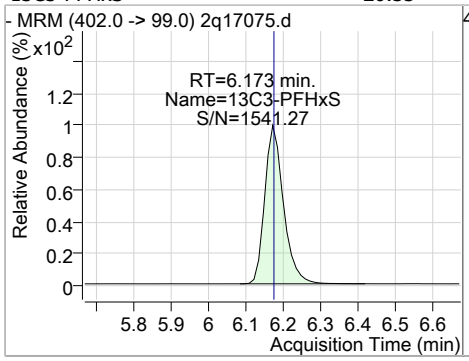


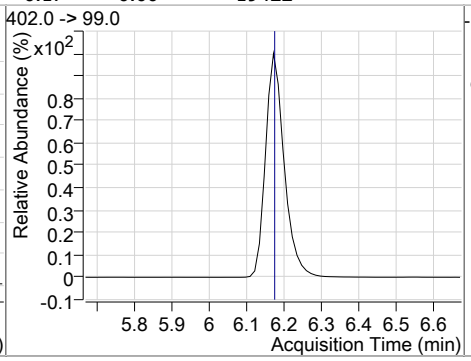


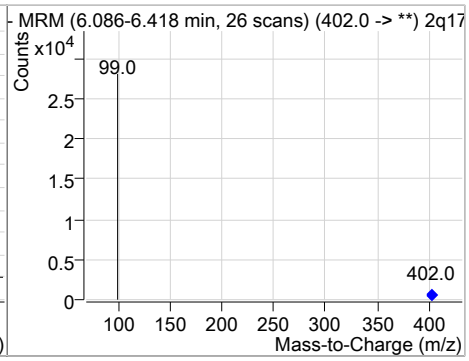


Perfluorinated Compounds by LC/MS/MS

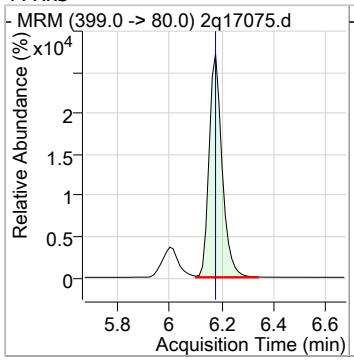
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.33	6.17	0.00	19422				

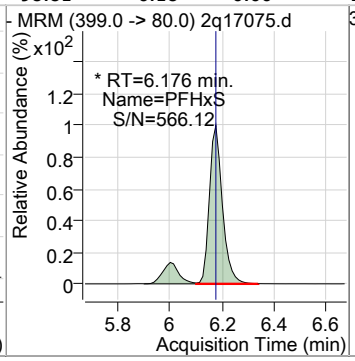


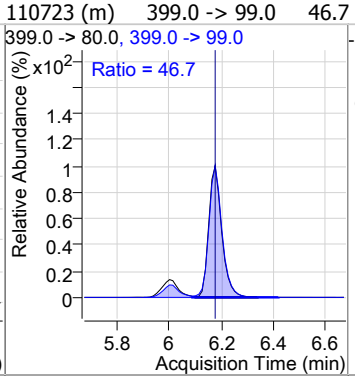


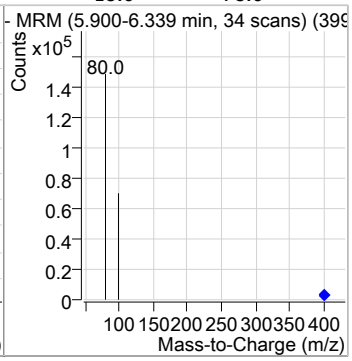


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	98.81	6.18	0.00	110723 (m)	399.0 -> 99.0	46.7	18.0	78.0

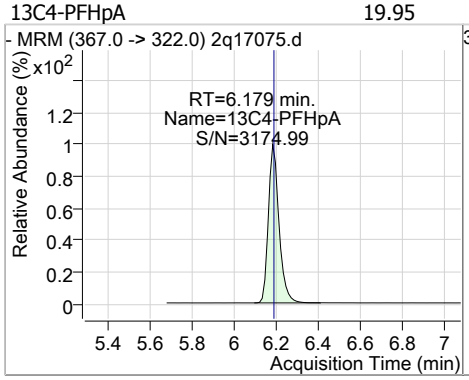


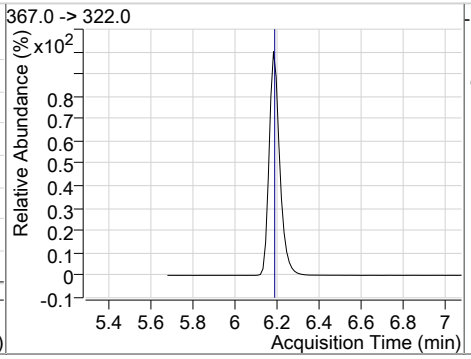


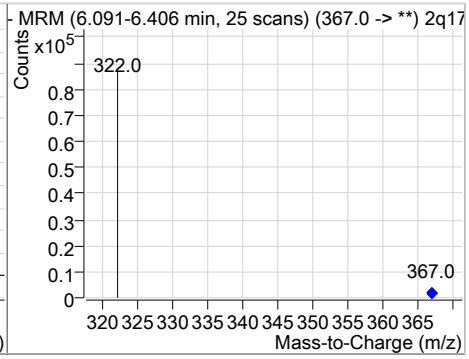




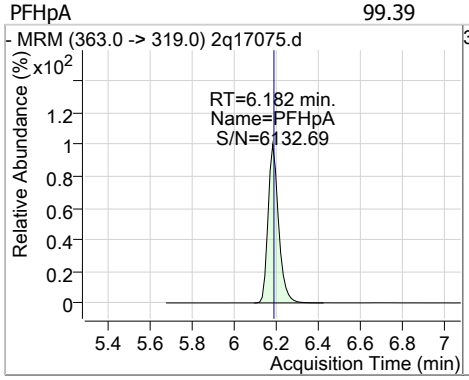
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.95	6.18	0.00	63378				

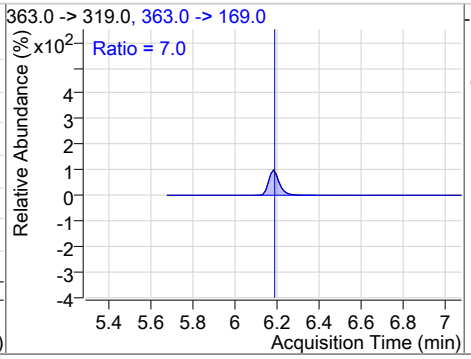


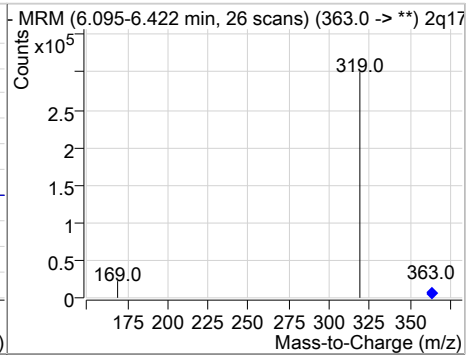




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	99.39	6.18	0.00	224623	363.0 -> 169.0	7.0	0.0	37.2

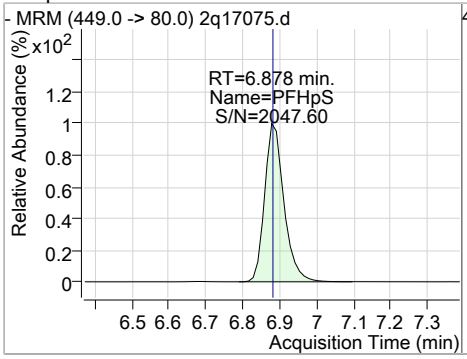


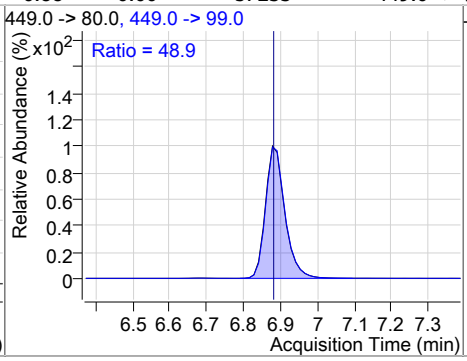


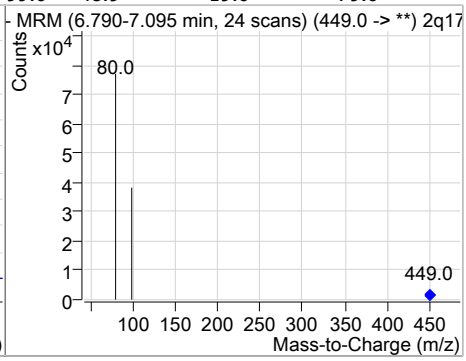


Perfluorinated Compounds by LC/MS/MS

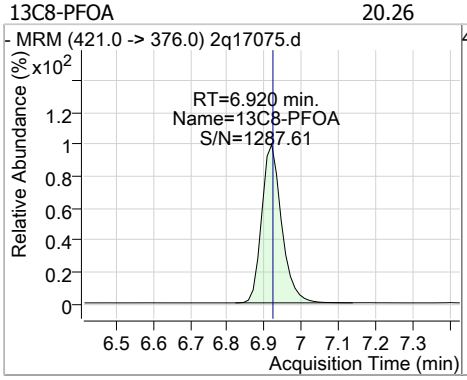
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	98.58	6.88	0.00	57233	449.0 -> 99.0	48.9	19.0	79.0

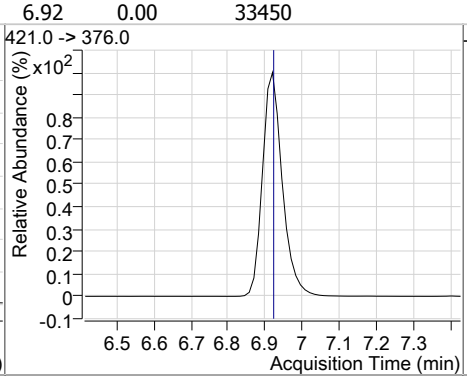


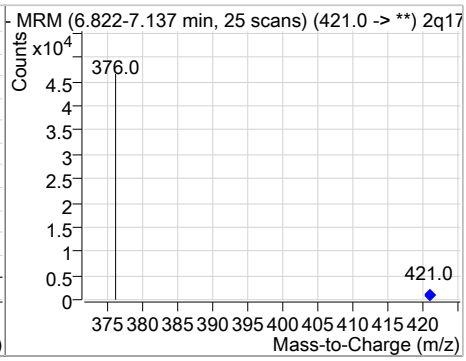




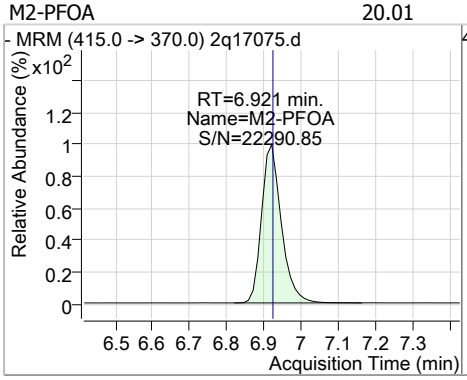
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.26	6.92	0.00	33450				

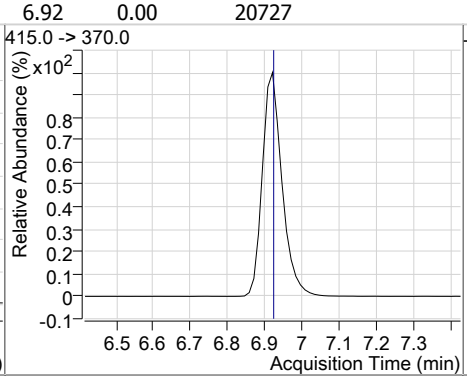


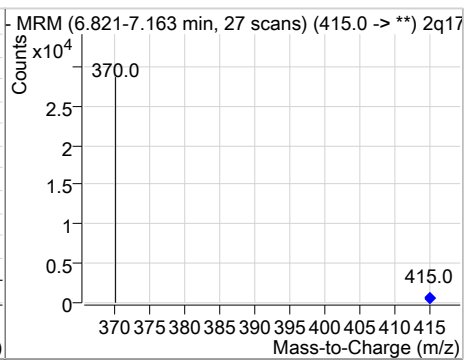




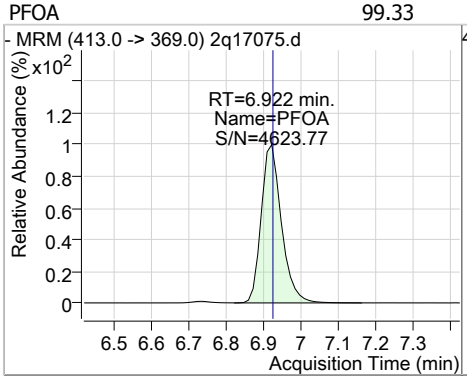
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.01	6.92	0.00	20727				

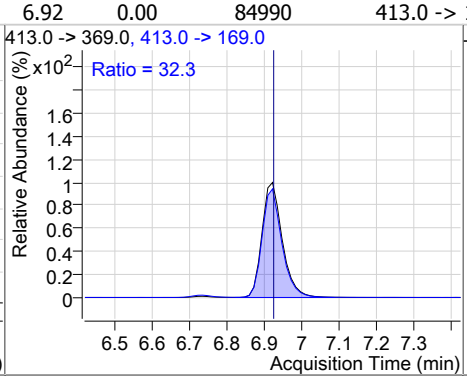


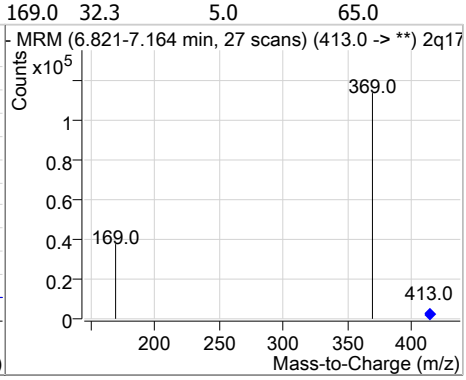




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	99.33	6.92	0.00	84990	413.0 -> 169.0	32.3	5.0	65.0

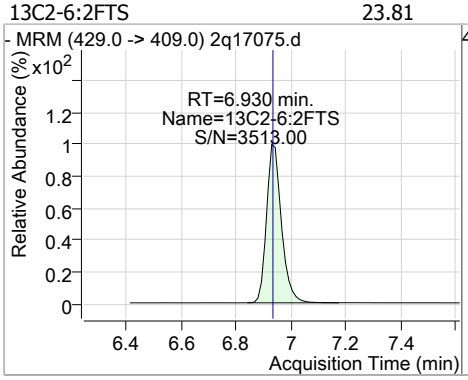


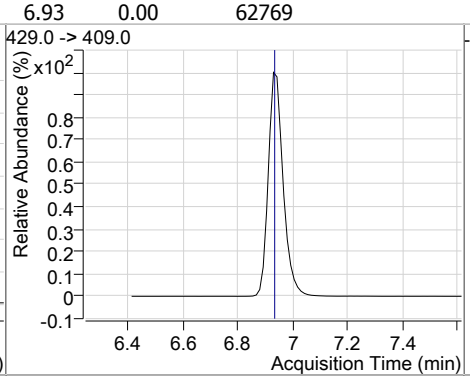


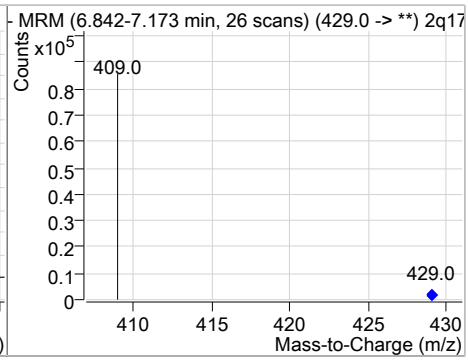


Perfluorinated Compounds by LC/MS/MS

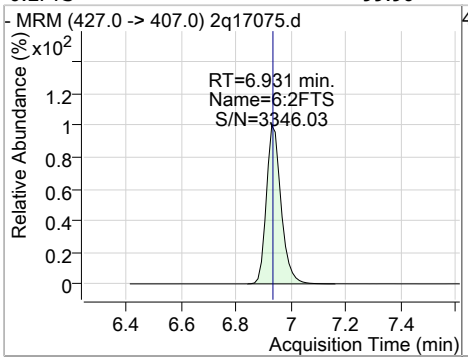
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	23.81	6.93	0.00	62769				

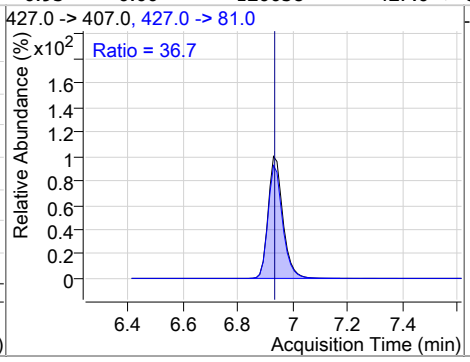


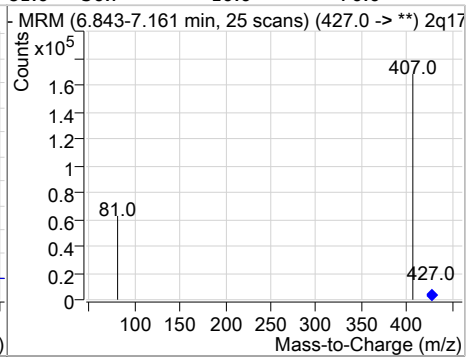




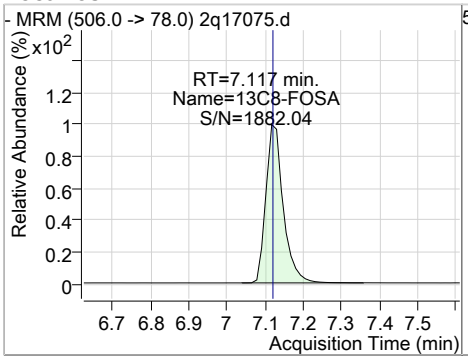
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	99.96	6.93	0.00	126058	427.0 -> 81.0	36.7	10.0	70.0

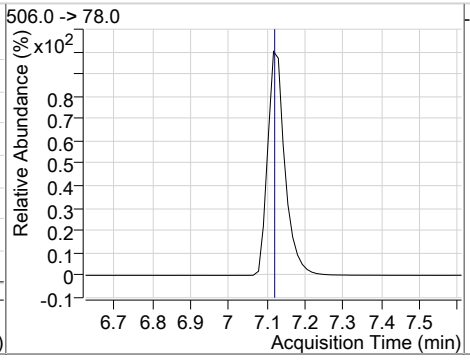


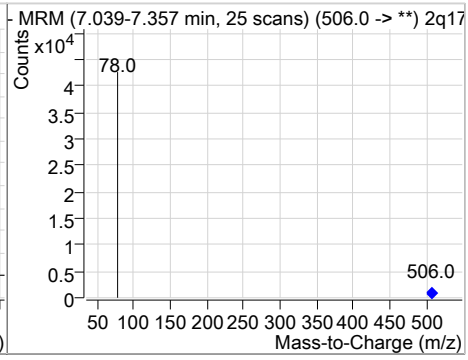




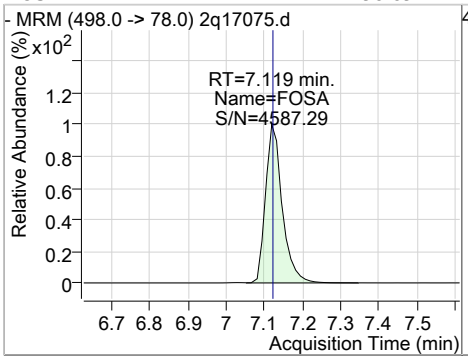
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	17.21	7.12	0.00	30833				

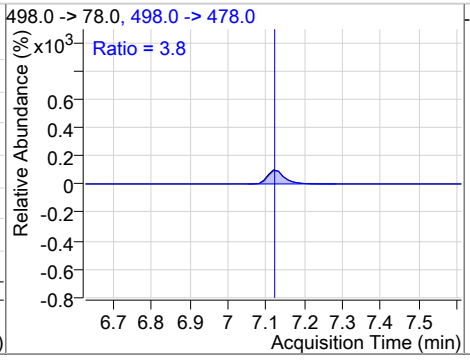


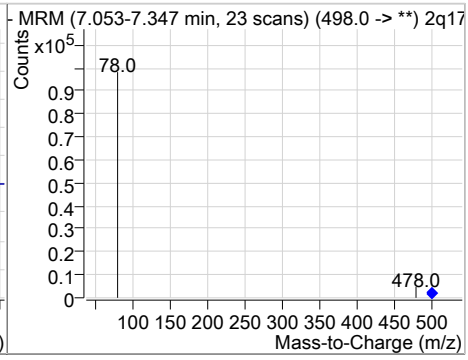




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	98.89	7.12	0.00	73763	498.0 -> 478.0	3.8	0.0	34.0

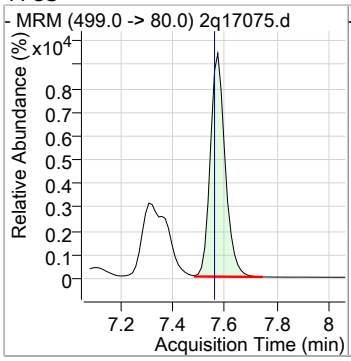


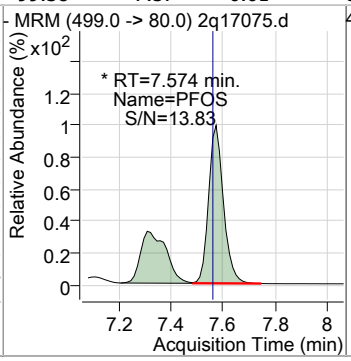


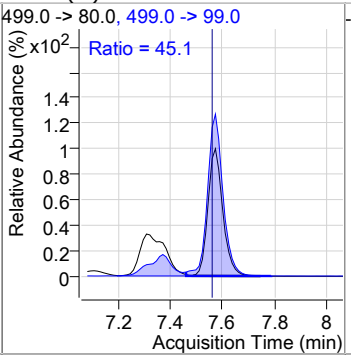


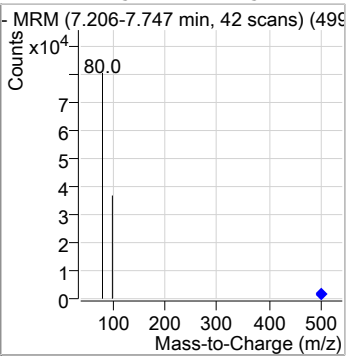
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	99.38	7.57	0.01	58338 (m)	499.0 -> 99.0	45.1	14.5	74.5

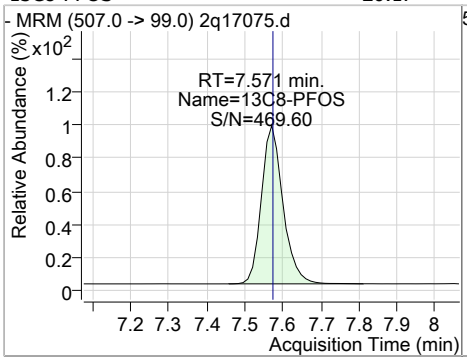


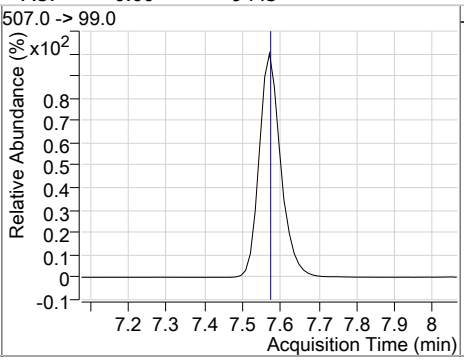


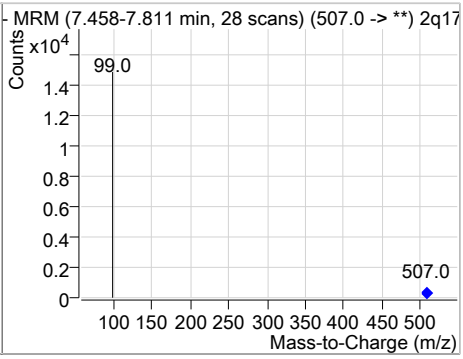




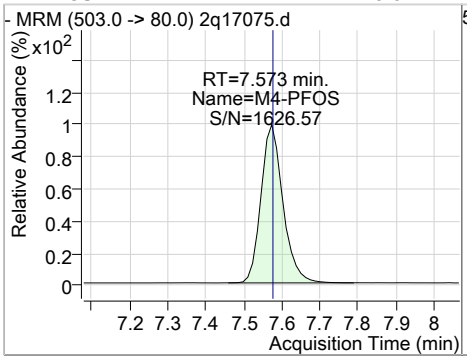
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.17	7.57	0.00	9445				

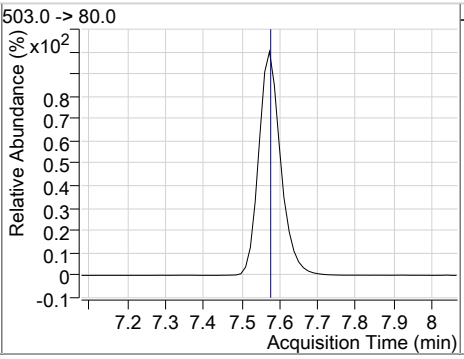


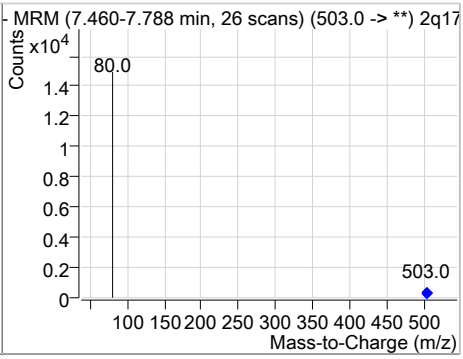




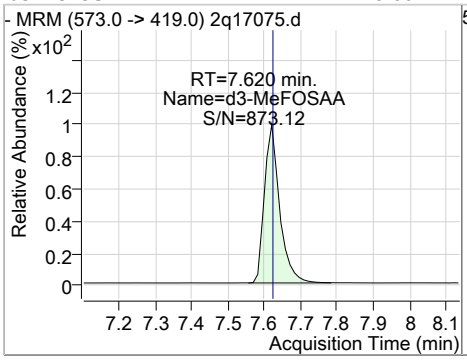
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.01	7.57	0.00	10430				

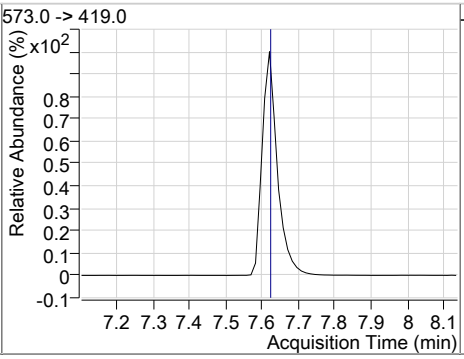


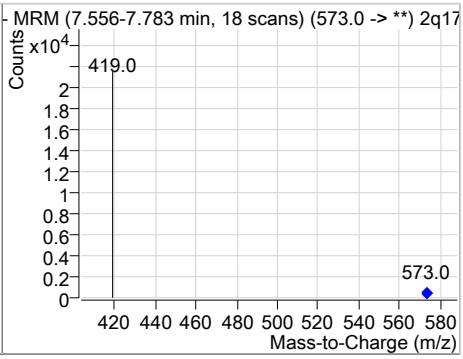




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.66	7.62	0.00	15149				

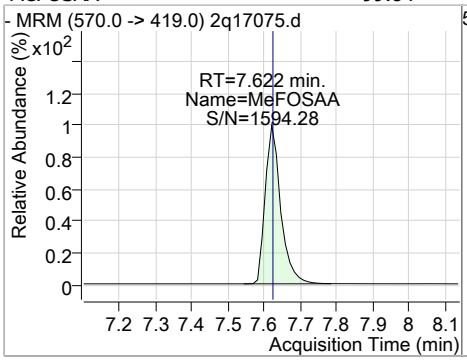


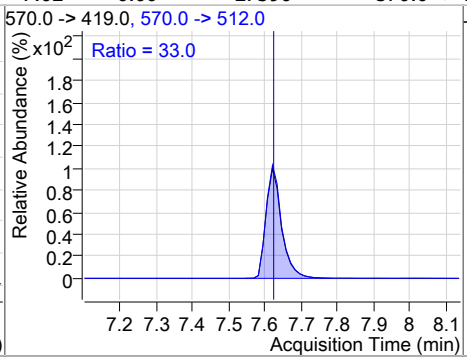


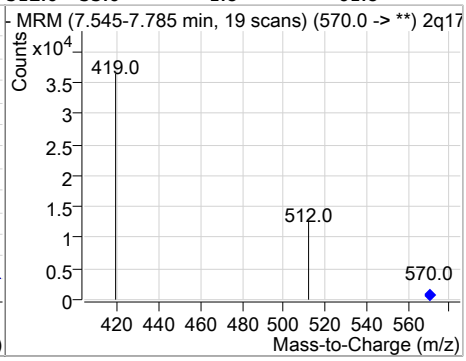


Perfluorinated Compounds by LC/MS/MS

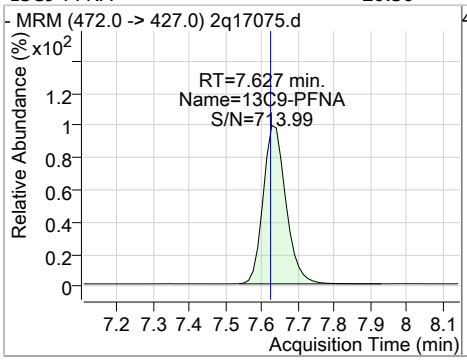
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	99.84	7.62	0.00	27396	570.0 -> 512.0	33.0	1.8	61.8

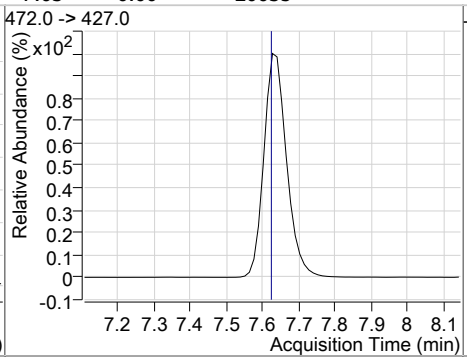


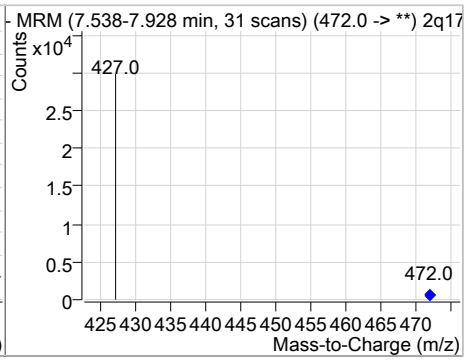




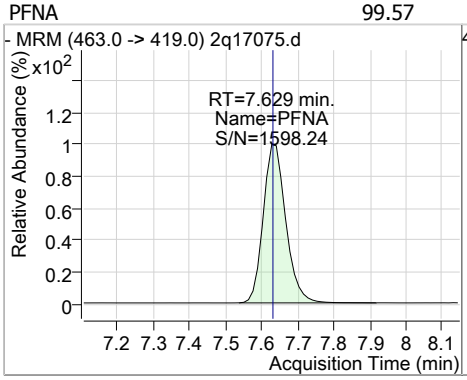
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.30	7.63	0.00	20635				

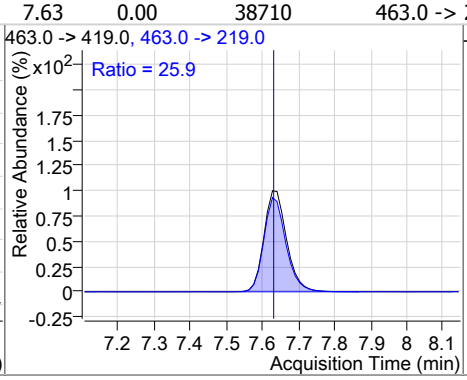


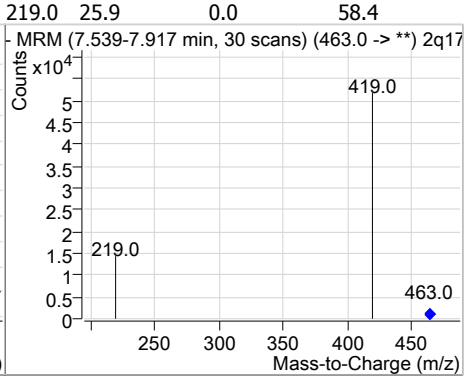




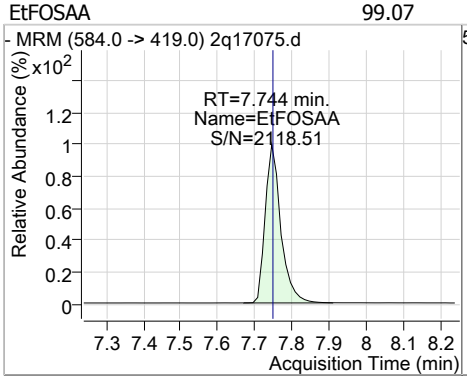
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	99.57	7.63	0.00	38710	463.0 -> 219.0	25.9	0.0	58.4

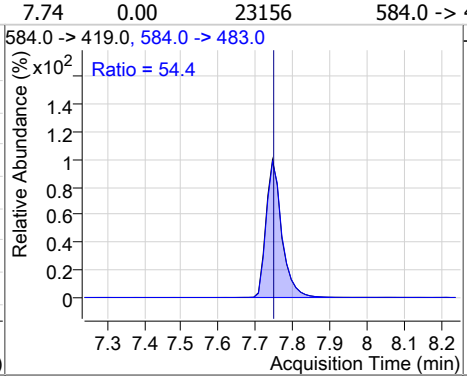


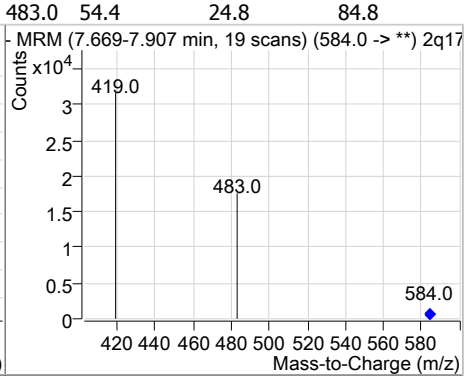




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	99.07	7.74	0.00	23156	584.0 -> 483.0	54.4	24.8	84.8

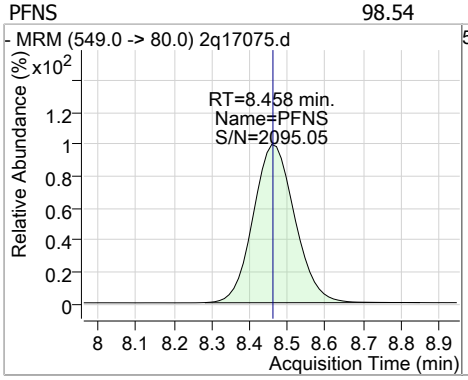


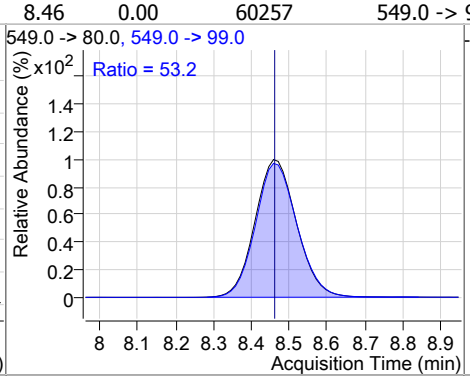


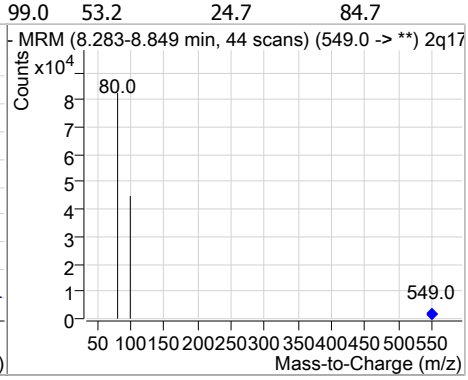


Perfluorinated Compounds by LC/MS/MS

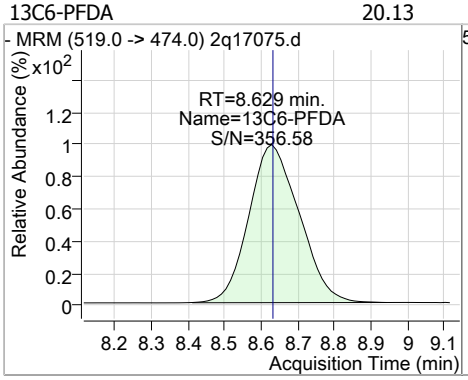
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	98.54	8.46	0.00	60257	549.0 -> 99.0	53.2	24.7	84.7

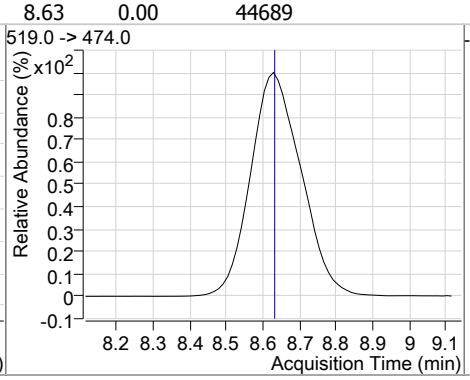


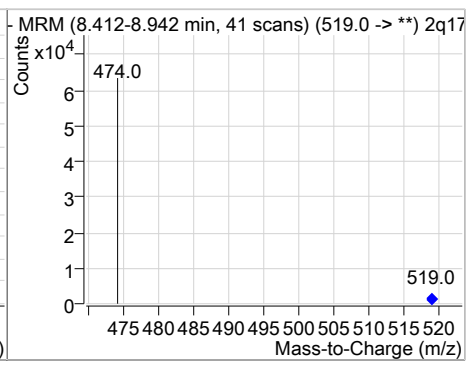




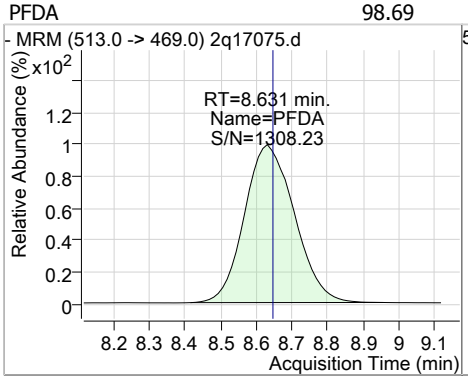
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.13	8.63	0.00	44689				

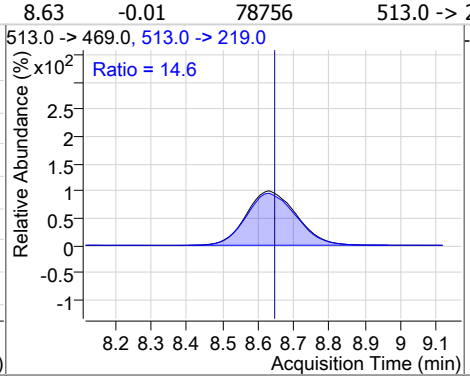


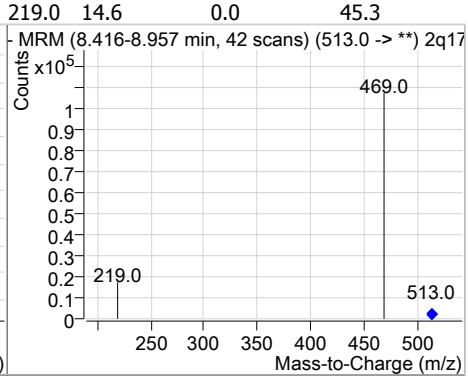




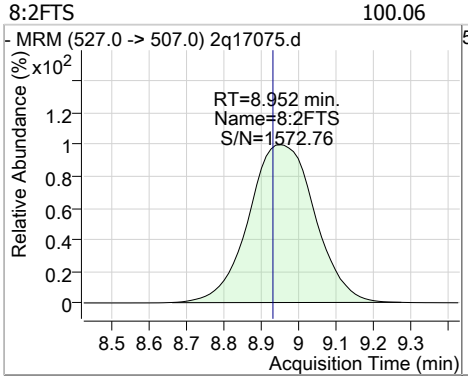
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	98.69	8.63	-0.01	78756	513.0 -> 219.0	14.6	0.0	45.3

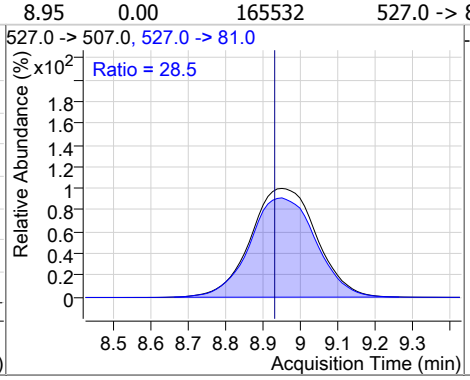


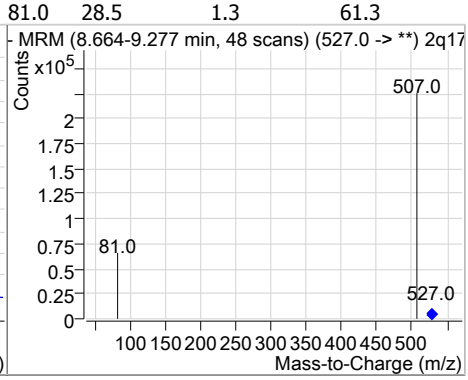




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	100.06	8.95	0.00	165532	527.0 -> 81.0	28.5	1.3	61.3

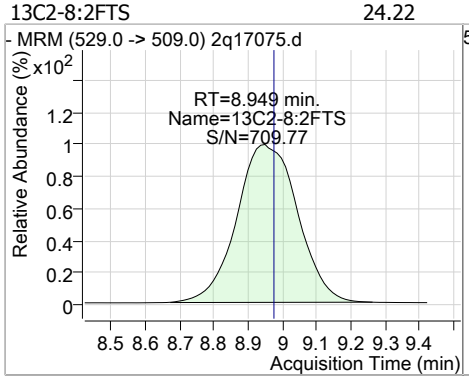


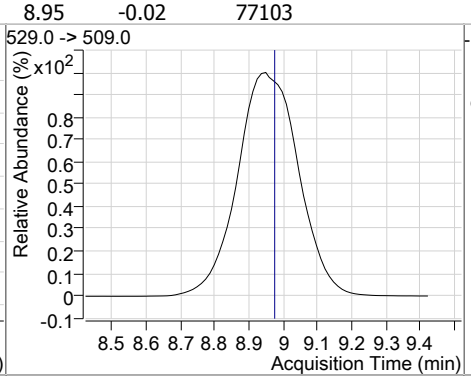


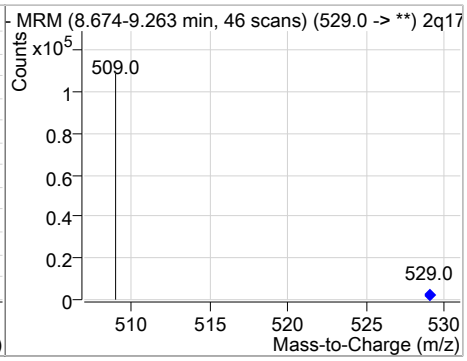


Perfluorinated Compounds by LC/MS/MS

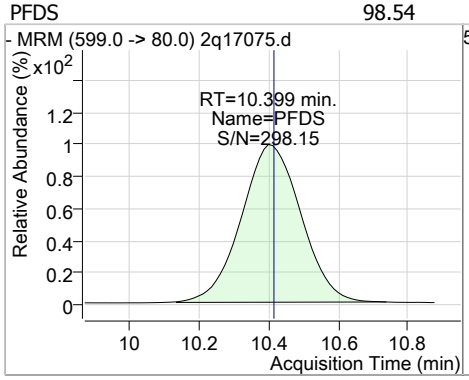
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	24.22	8.95	-0.02	77103				

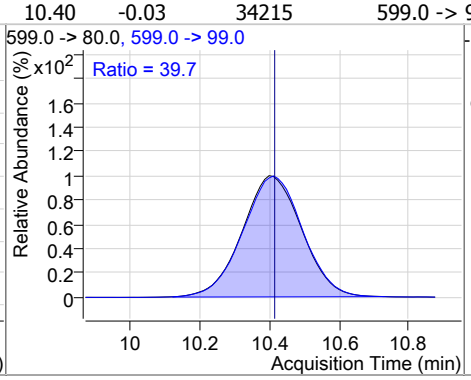


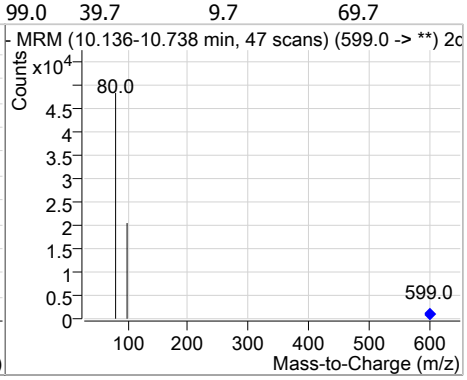




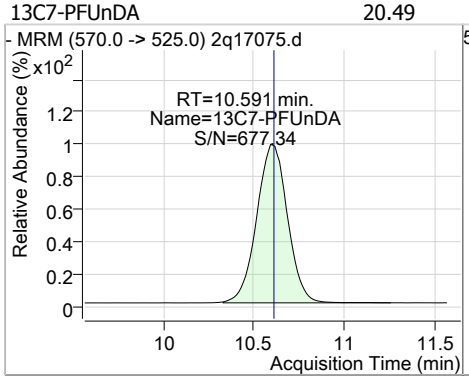
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	98.54	10.40	-0.03	34215	599.0 -> 99.0	39.7	9.7	69.7

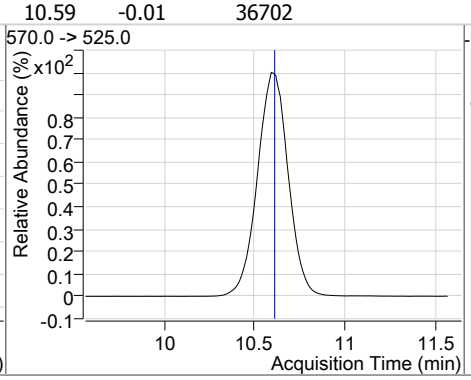


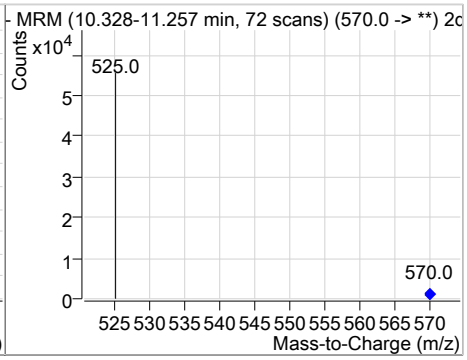




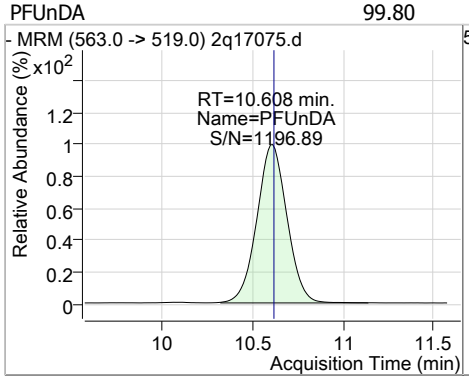
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.49	10.59	-0.01	36702				

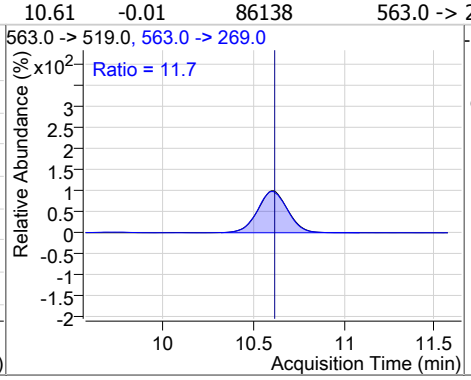


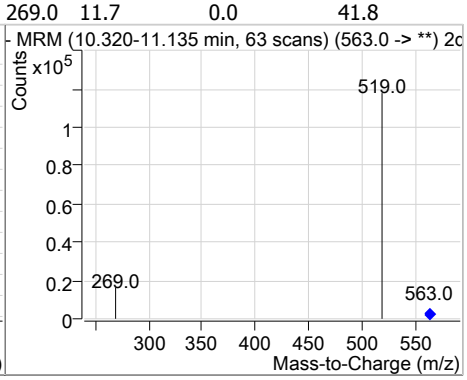




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	99.80	10.61	-0.01	86138	563.0 -> 269.0	11.7	0.0	41.8

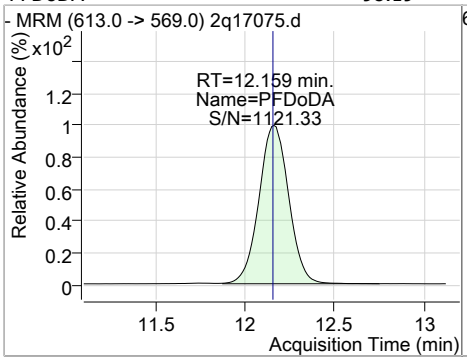


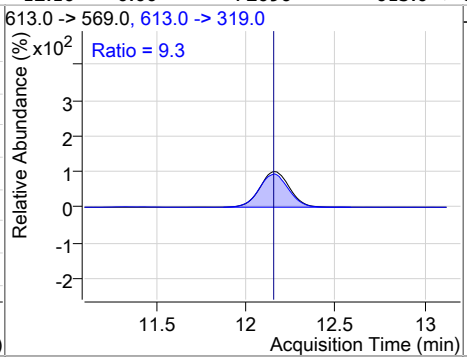


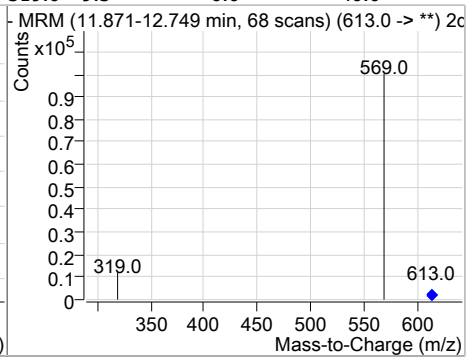


Perfluorinated Compounds by LC/MS/MS

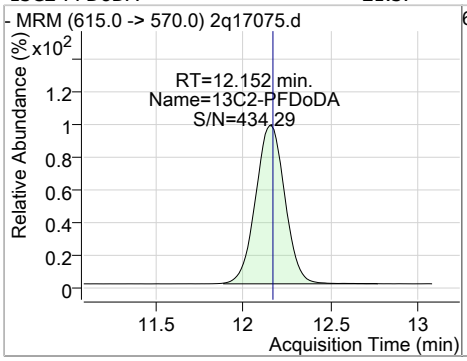
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	98.19	12.16	0.00	72696	613.0 -> 319.0	9.3	0.0	40.0

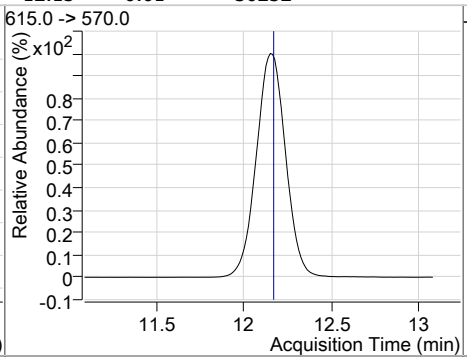


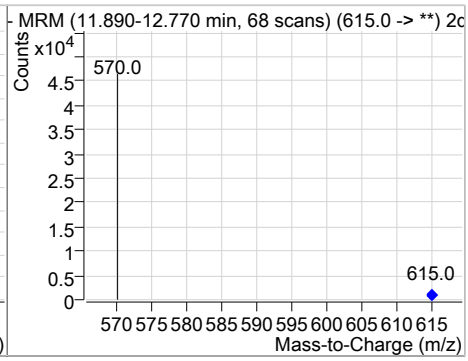




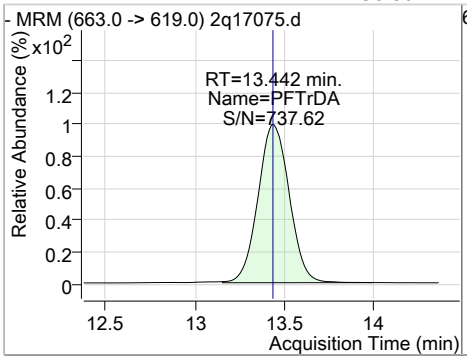
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.37	12.15	-0.01	30252				

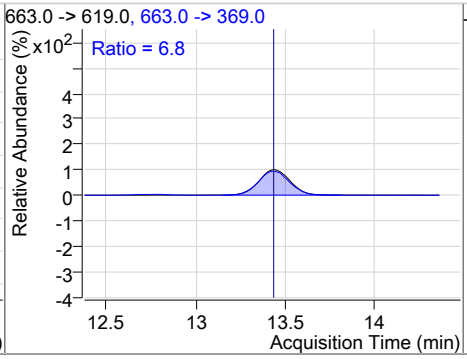


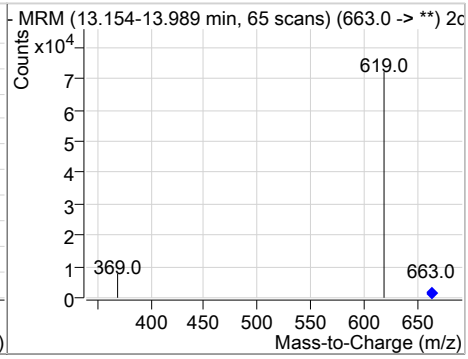




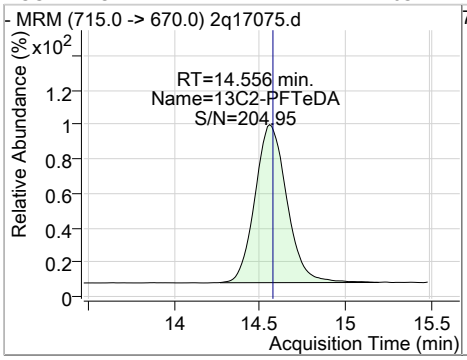
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	98.56	13.44	0.00	53672	663.0 -> 369.0	6.8	0.0	37.1

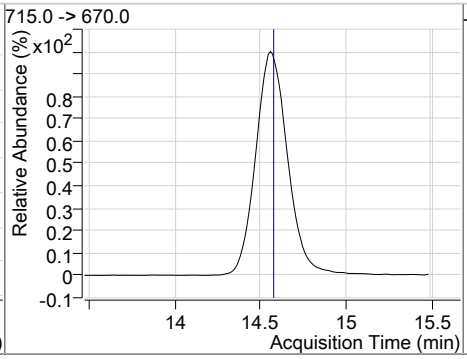


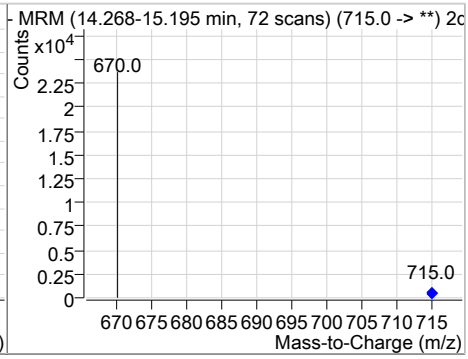




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.03	14.56	-0.01	12861				

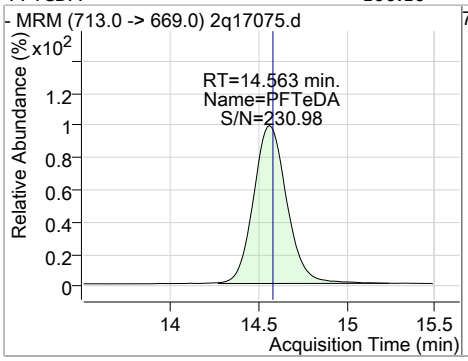


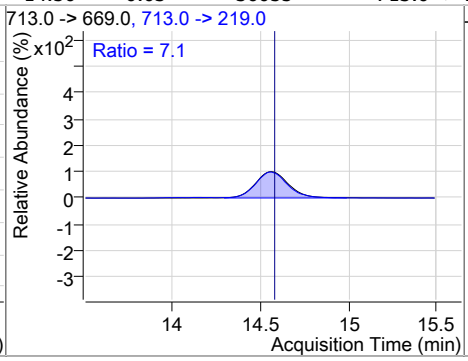


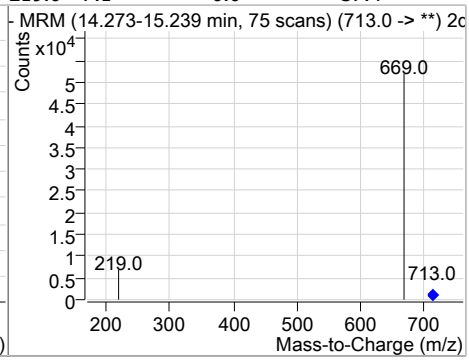


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	100.10	14.56	-0.03	36055	713.0 -> 219.0	7.1	0.0	37.4







Manual Integration Approval Summary

Sample Number:	S2Q296-IC296	**Method:**	EPA 537M BY ID
Lab FileID:	2Q17075.D	**Analyst approved:**	07/16/18 13:34 Natasha Gumtie
Injection Time:	07/13/18 14:38	**Supervisor approved:**	07/16/18 17:22 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.57	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/16/18 17:22

Perfluorinated Compounds by LC/MS/MS

Data File : 2q17077.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/13/2018 3:25:51 PM
Sample Name : icv296-20
Vial : Vial 10
DA Method File : PFC_ID_071318_S2Q296.quantmethod.xml
Batch Name : s2q296.batch.bin
Sample Information : op70790,S2Q296,1.99,,,1.0,1,soil

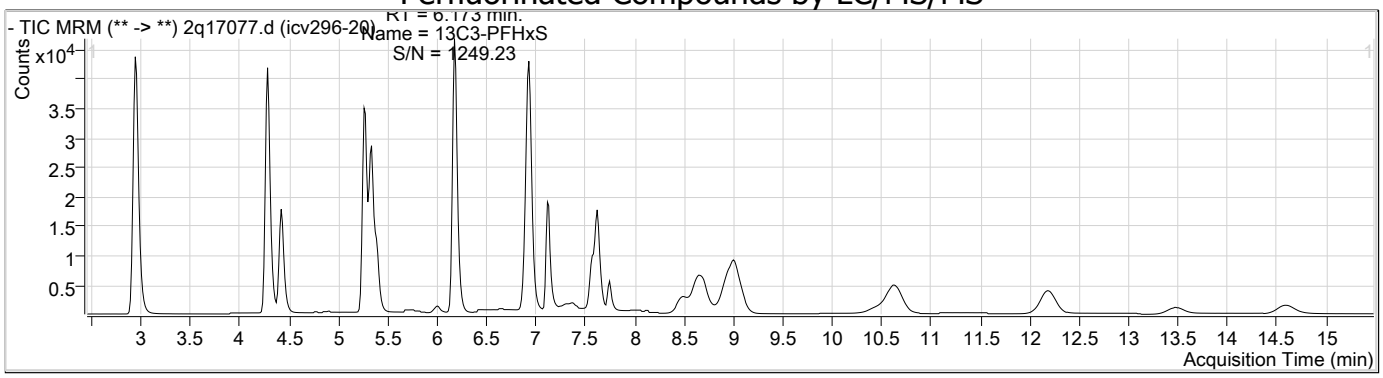
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.921	415.0 -> 370.0	21156	20.00	µg/L	0.000
13C4-PFOS	7.573	503.0 -> 80.0	10975	20.00	µg/L	0.000
M4-PFBA	2.941	217.0 -> 172.0	146273	20.00	µg/L	0.000
M5-PFPeA	4.287	268.0 -> 223.0	72930	20.00	µg/L	0.000
M5-PFHxA	5.340	318.0 -> 273.0	65812	20.00	µg/L	0.000
M4-PFHpA	6.179	367.0 -> 322.0	62304	20.00	µg/L	0.000
M8-PFOA	6.920	421.0 -> 376.0	32110	20.00	µg/L	0.000
M9-PFNA	7.640	472.0 -> 427.0	19707	20.00	µg/L	0.013
M6-PFDA	8.654	519.0 -> 474.0	44148	20.00	µg/L	0.025
M7-PFUnDA	10.629	570.0 -> 525.0	34357	20.00	µg/L	0.025
M2-PFDoDA	12.178	615.0 -> 570.0	27189	20.00	µg/L	0.013
M2-PFTeDA	14.581	715.0 -> 670.0	11714	20.00	µg/L	0.013
M8-FOSA	7.117	506.0 -> 78.0	34672	20.00	µg/L	0.000
M3-PFBS	4.418	302.0 -> 99.0	21750	20.00	µg/L	0.000
M3-PFHxS	6.173	402.0 -> 99.0	18560	20.00	µg/L	0.000
M8-PFOS	7.571	507.0 -> 99.0	9218	20.00	µg/L	0.000
M2-4:2FTS	5.260	329.0 -> 309.0	68019	20.00	µg/L	0.000
M2-6:2FTS	6.942	429.0 -> 409.0	50582	20.00	µg/L	0.013
M2-8:2FTS	8.997	529.0 -> 509.0	59391	20.00	µg/L	0.025
M3-MeFOSAA	7.620	573.0 -> 419.0	15900	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.260	329.0 -> 309.0	67979	19.57	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.8%		
13C2-6:2FTS	6.942	429.0 -> 409.0	50580	19.19	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.9%		
13C2-8:2FTS	8.997	529.0 -> 509.0	58769	18.46	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.3%		
13C2-PFDoDA	12.178	615.0 -> 570.0	27263	19.26	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.3%		
13C2-PFTeDA	14.581	715.0 -> 670.0	11699	19.13	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.7%		
13C3-PFBS	4.418	302.0 -> 99.0	21755	19.72	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.6%		
13C3-PFHxS	6.173	402.0 -> 99.0	18567	19.43	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.2%		
13C4-PFBA	2.941	217.0 -> 172.0	146221	19.50	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.5%		
13C4-PFHpA	6.179	367.0 -> 322.0	62330	19.62	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.1%		
13C5-PFHxA	5.340	318.0 -> 273.0	65788	19.67	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.3%		
13C5-PFPeA	4.287	268.0 -> 223.0	72903	19.69	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.5%		
13C6-PFDA	8.654	519.0 -> 474.0	43831	19.75	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.7%		

Perfluorinated Compounds by LC/MS/MS

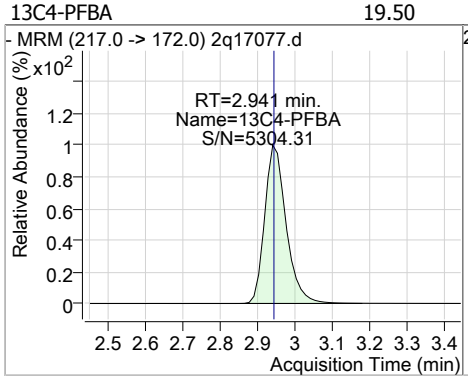
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.629	570.0 -> 525.0	34461	19.24	µg/L		0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.2%			
13C8-FOSA	7.117	506.0 -> 78.0	34699	19.37	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.8%			
13C8-PFOA	6.920	421.0 -> 376.0	32105	19.44	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.2%			
13C8-PFOS	7.571	507.0 -> 99.0	9211	19.67	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.3%			
13C9-PFNA	7.640	472.0 -> 427.0	19709	19.38	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.9%			
d3-MeFOSAA	7.620	573.0 -> 419.0	15896	19.58	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%			
M2-PFOA	6.921	415.0 -> 370.0	21164	20.01	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.573	503.0 -> 80.0	10974	20.00	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
Target Compounds							**QValue**
4:2FTS	5.263	327.0 -> 307.0	36447	20.70	µg/L		97
6:2FTS	6.944	427.0 -> 407.0	26592	20.94	µg/L		96
8:2FTS	9.000	527.0 -> 507.0	32968	20.74	µg/L		96
EtFOSAA	7.744	584.0 -> 419.0	5761	23.47	µg/L		94
FOSA	7.119	498.0 -> 78.0	19398	23.13	µg/L		98
MeFOSAA	7.622	570.0 -> 419.0	6477	22.47	µg/L		96
PFBA	2.949	213.0 -> 169.0	26638	23.04	µg/L		100
PFBS	4.422	299.0 -> 80.0	28261	19.97	µg/L		100
PFDA	8.656	513.0 -> 469.0	16697	21.21	µg/L		100
PFDoDA	12.184	613.0 -> 569.0	16166	24.27	µg/L		98
PFDS	10.437	599.0 -> 80.0	7049	21.68	µg/L		99
PFHpA	6.182	363.0 -> 319.0	50864	22.89	µg/L		100
PFHpS	6.891	449.0 -> 80.0	12019	21.67	µg/L		99
PFHxA	5.343	313.0 -> 269.0	21566	20.25	µg/L		98
PFHxS	6.176	399.0 -> 80.0	21355	19.94	µg/L	m	99
PFNA	7.641	463.0 -> 419.0	7980	21.49	µg/L		94
PFNS	8.483	549.0 -> 80.0	12856	21.55	µg/L		99
PFOA	6.922	413.0 -> 369.0	19549	23.81	µg/L		94
PFOS	7.574	499.0 -> 80.0	12425	21.69	µg/L	m	91
PFPeA	4.291	263.0 -> 219.0	74385	22.96	µg/L		100
PFPeS	5.383	349.0 -> 80.0	19971	21.29	µg/L		99
PFTeDA	14.588	713.0 -> 669.0	7345	21.07	µg/L		99
PFTrDA	13.473	663.0 -> 619.0	12566	25.24	µg/L		99
PFUnDA	10.633	563.0 -> 519.0	18881	23.36	µg/L		99

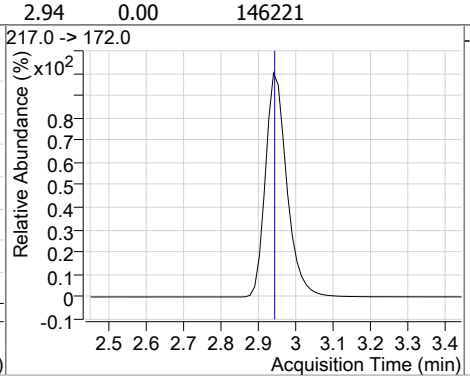
 # = Qualifier out of range, m = manually integrated, + = Area summed

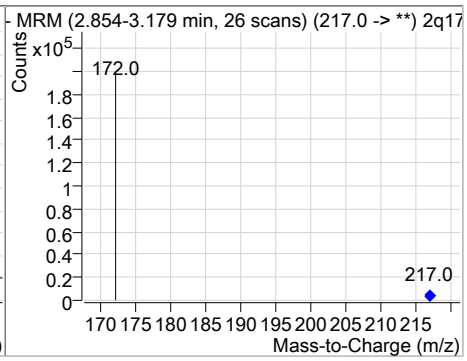
Perfluorinated Compounds by LC/MS/MS



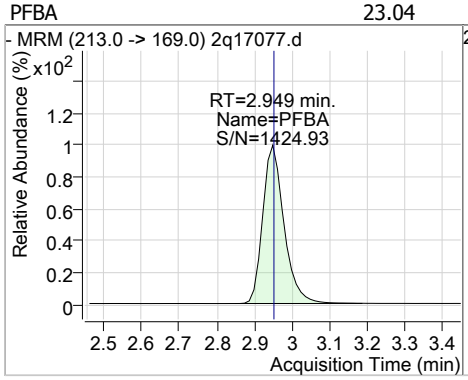
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.50	2.94	0.00	146221				

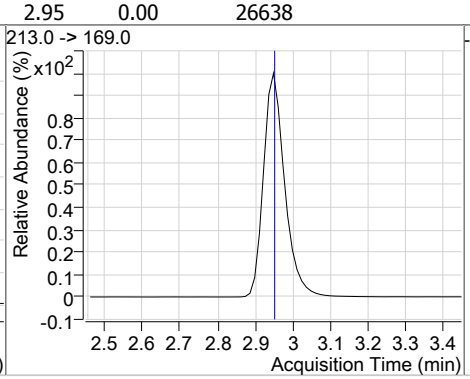


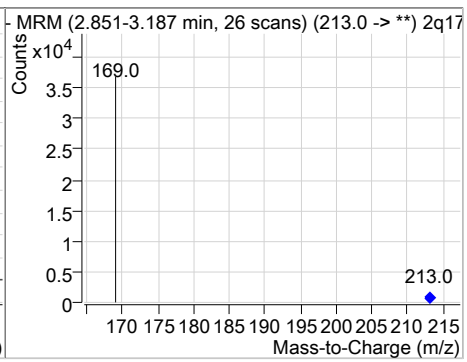




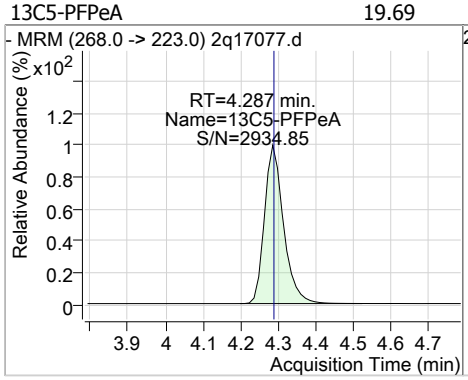
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	23.04	2.95	0.00	26638				

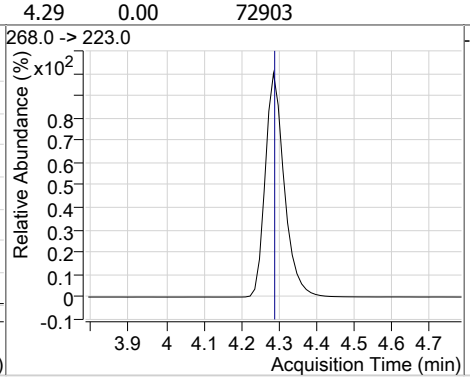


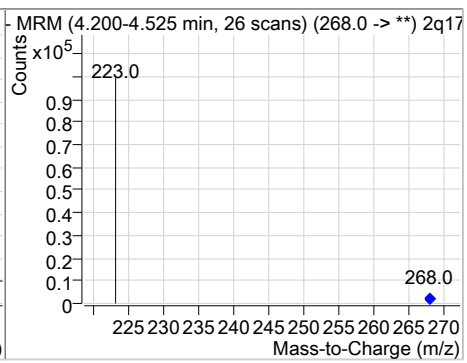




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.69	4.29	0.00	72903				

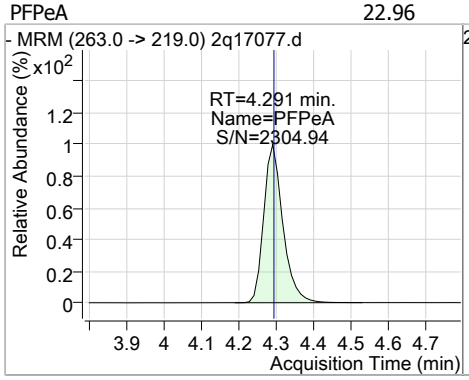


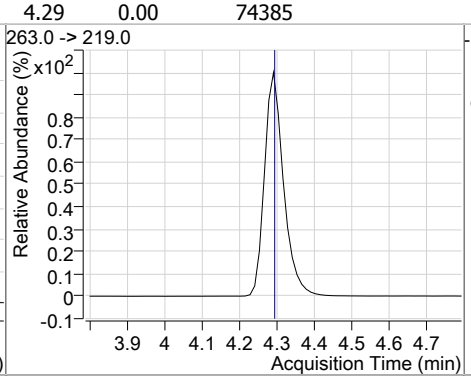


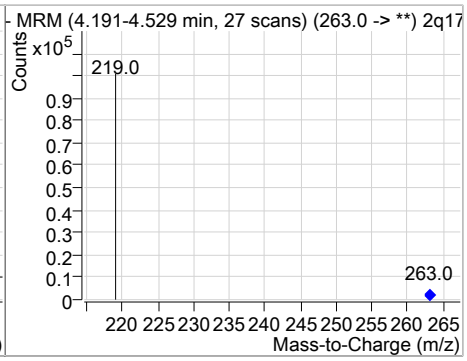


Perfluorinated Compounds by LC/MS/MS

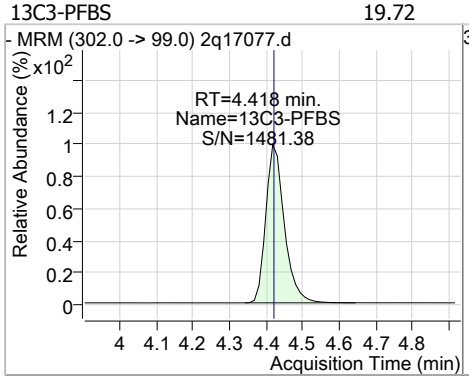
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	22.96	4.29	0.00	74385				

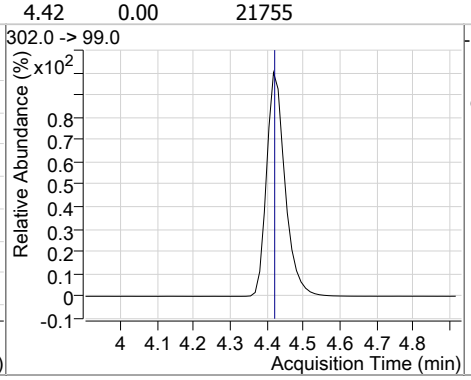


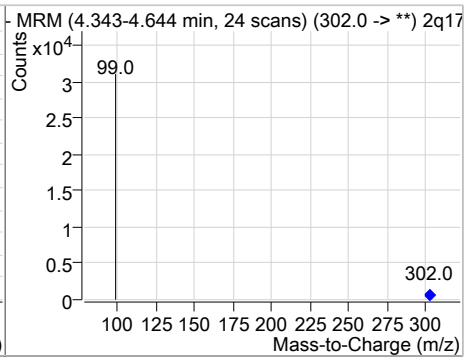




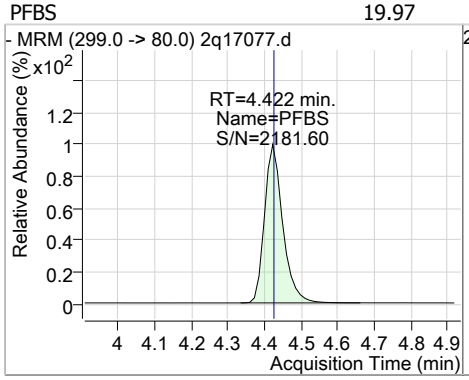
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.72	4.42	0.00	21755				

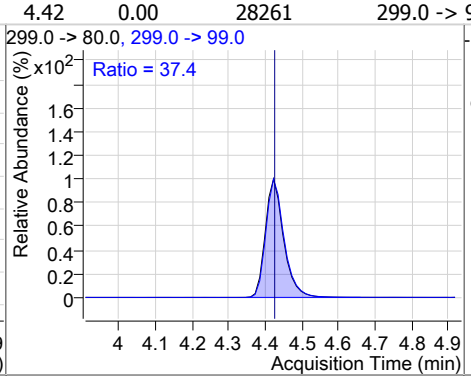


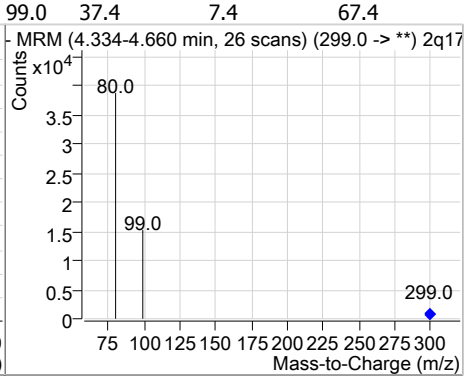




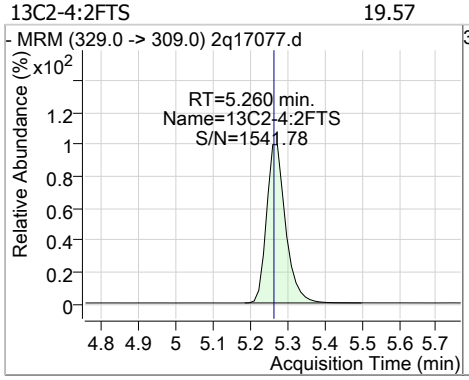
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.97	4.42	0.00	28261	299.0 -> 99.0	37.4	7.4	67.4

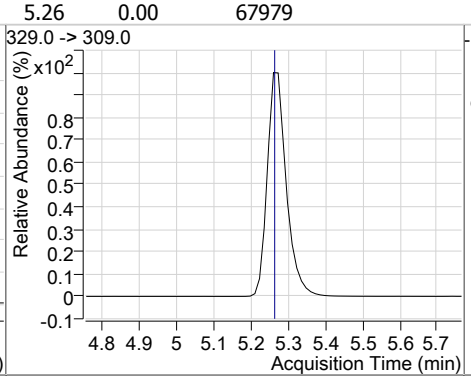


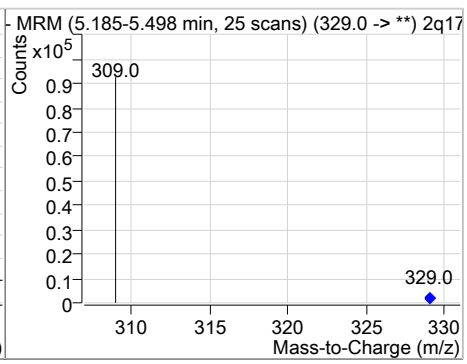




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.57	5.26	0.00	67979				

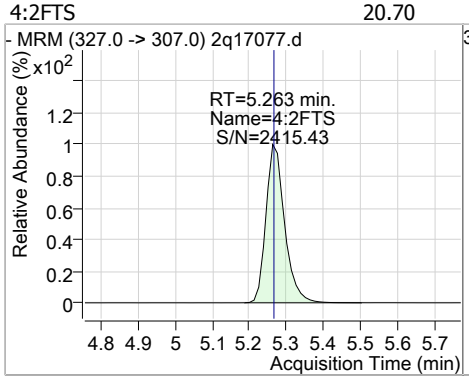


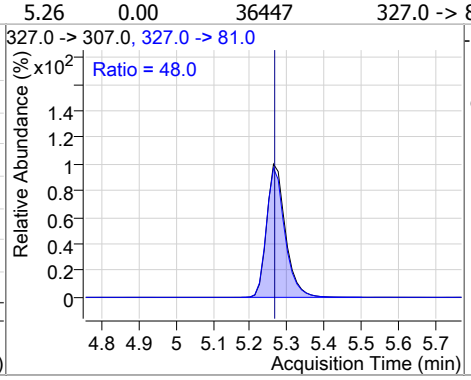


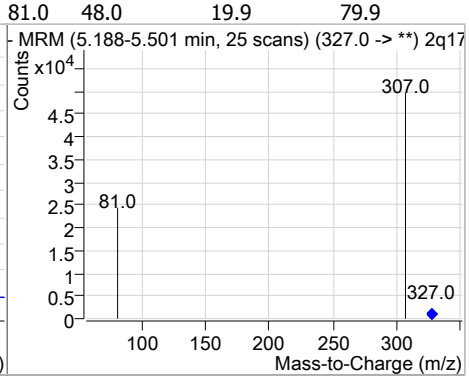


Perfluorinated Compounds by LC/MS/MS

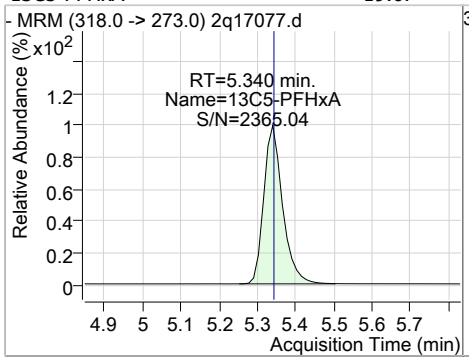
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.70	5.26	0.00	36447	327.0 -> 81.0	48.0	19.9	79.9

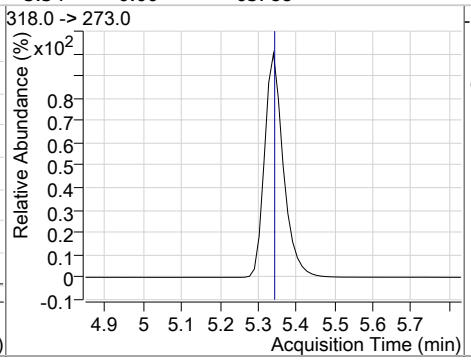


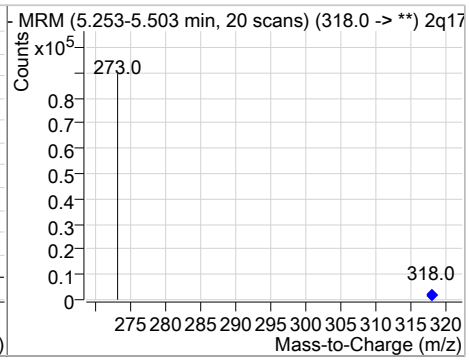




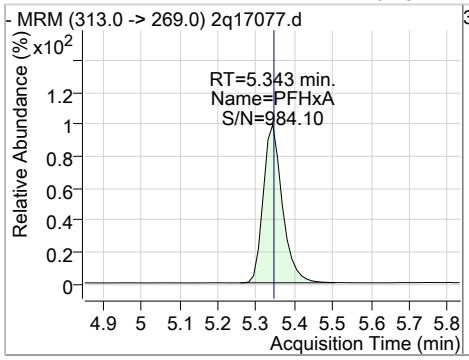
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.67	5.34	0.00	65788				

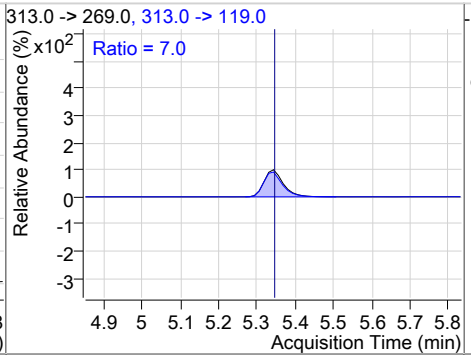


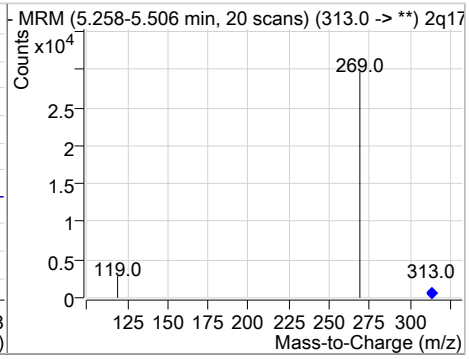




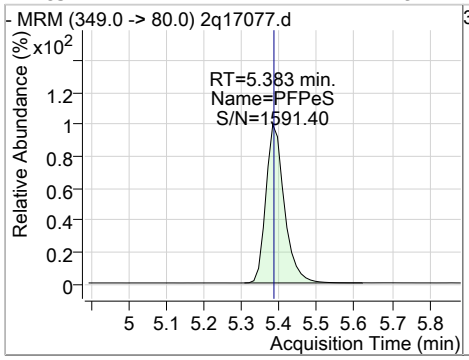
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.25	5.34	0.00	21566	313.0 -> 119.0	7.0	0.0	37.6

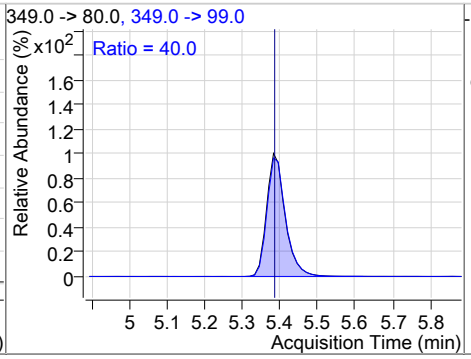


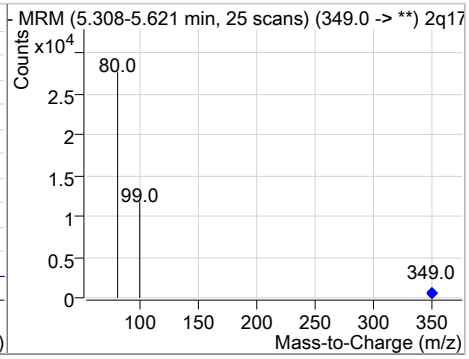




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	21.29	5.38	0.00	19971	349.0 -> 99.0	40.0	10.8	70.8

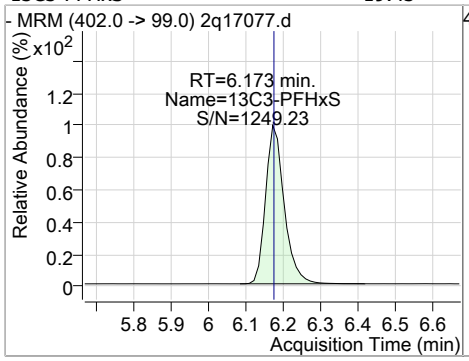


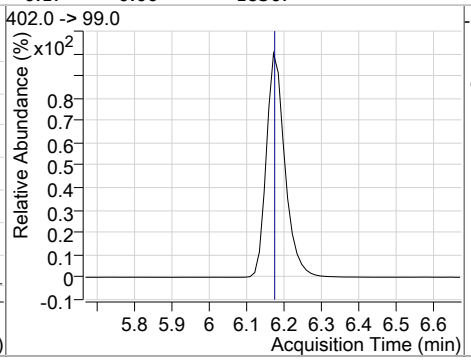


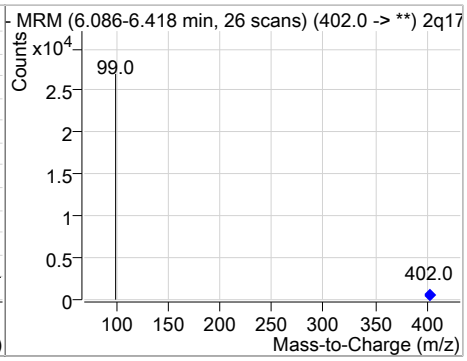


Perfluorinated Compounds by LC/MS/MS

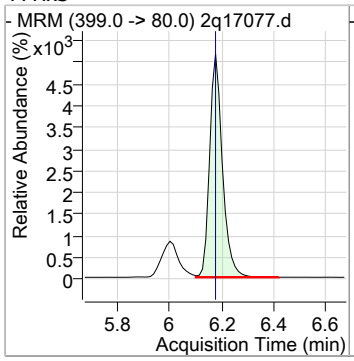
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.43	6.17	0.00	18567				

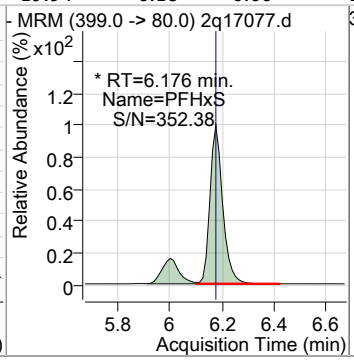


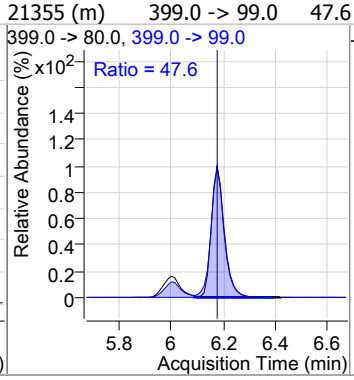


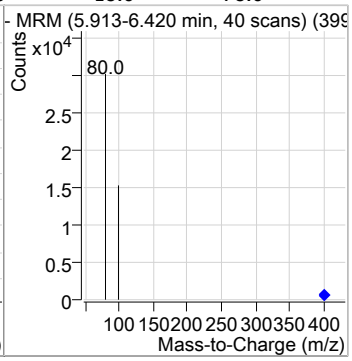


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.94	6.18	0.00	21355 (m)	399.0 -> 99.0	47.6	18.0	78.0

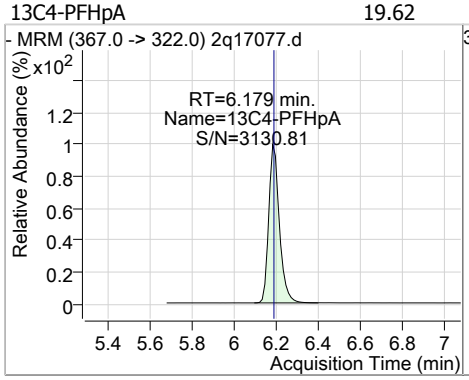


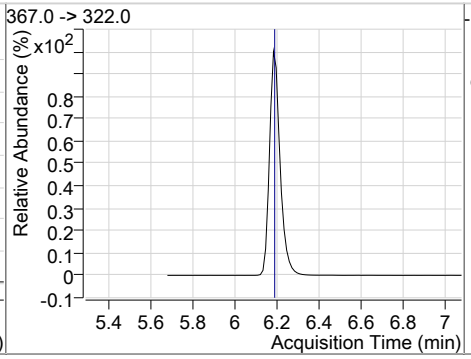


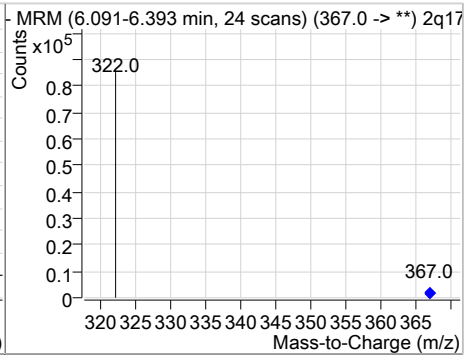




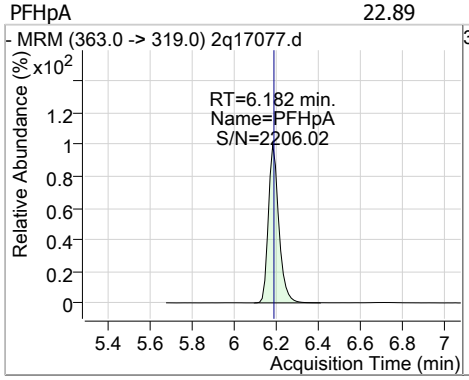
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.62	6.18	0.00	62330				

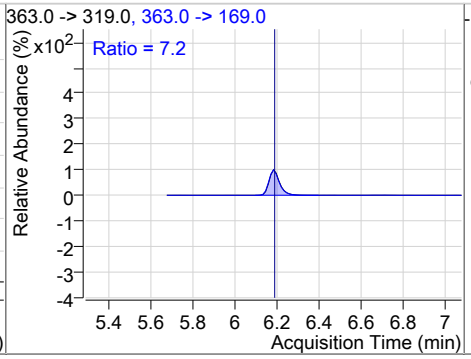


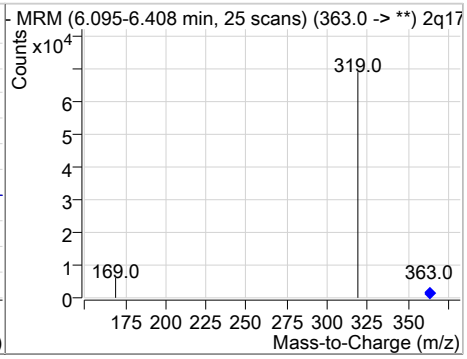




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	22.89	6.18	0.00	50864	363.0 -> 169.0	7.2	0.0	37.2

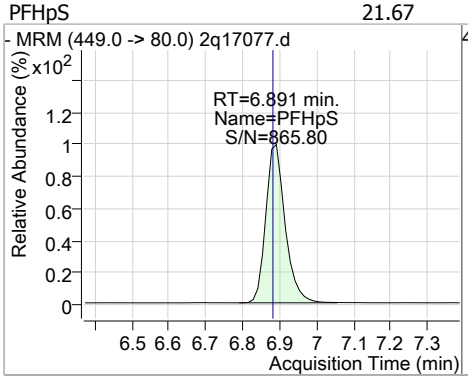


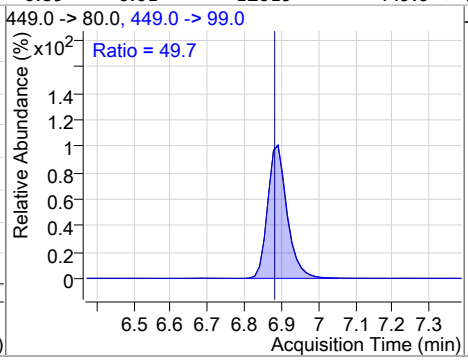


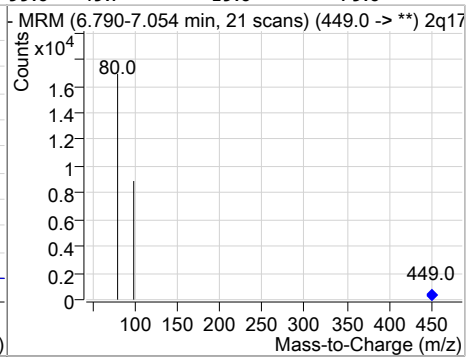


Perfluorinated Compounds by LC/MS/MS

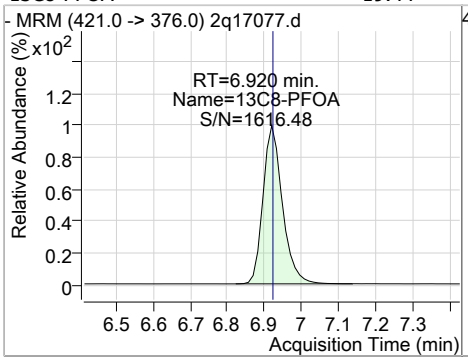
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.67	6.89	0.01	12019	449.0 -> 99.0	49.7	19.0	79.0

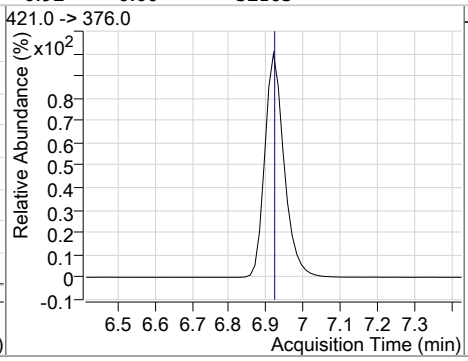


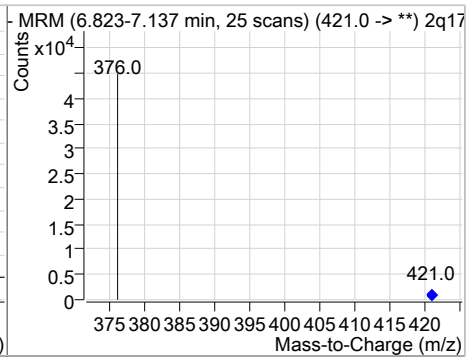




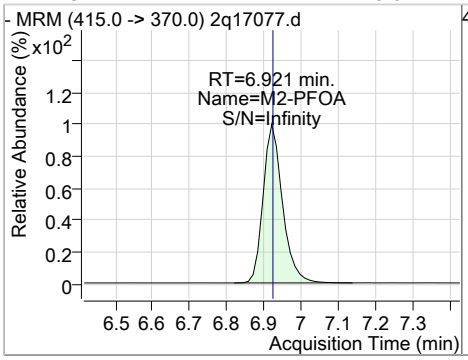
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.44	6.92	0.00	32105				

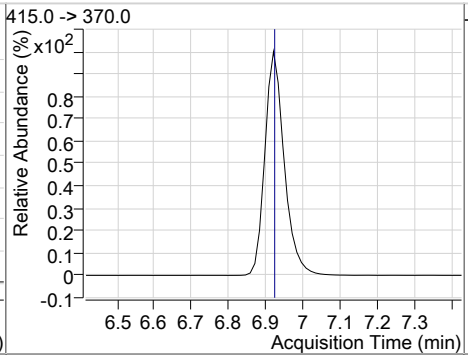


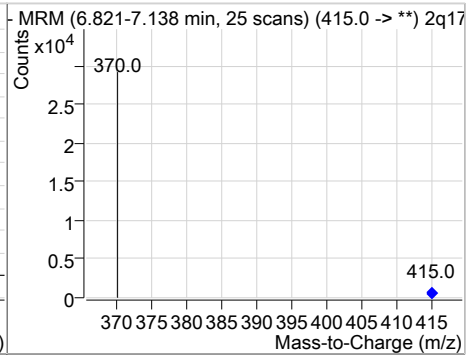




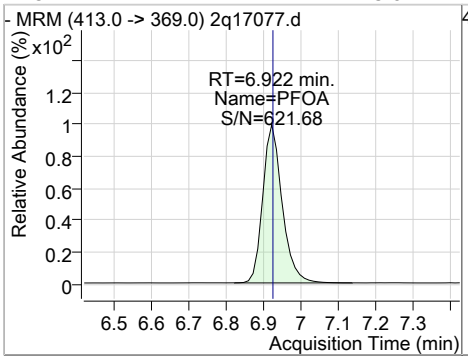
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.01	6.92	0.00	21164				

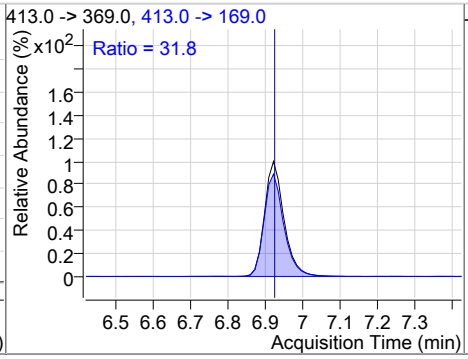


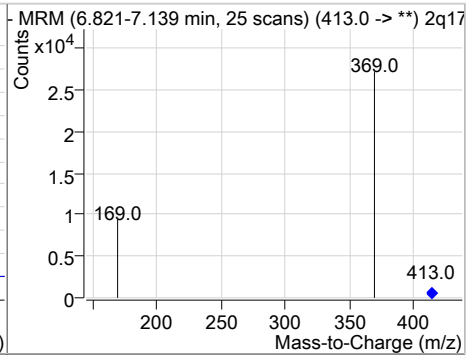




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	23.81	6.92	0.00	19549	413.0 -> 169.0	31.8	5.0	65.0

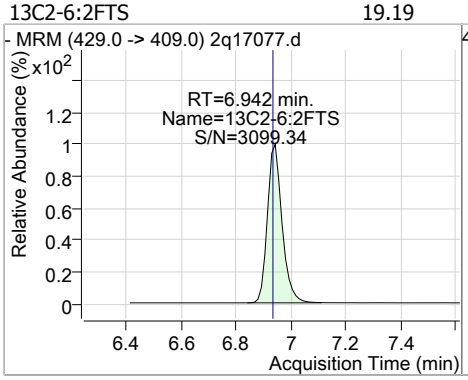


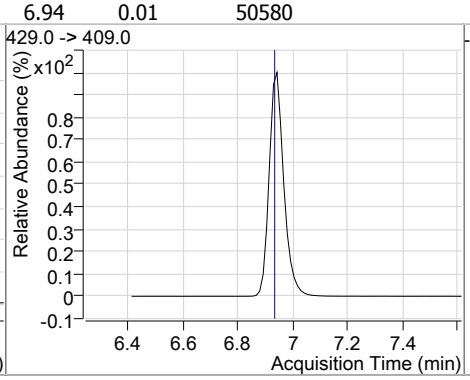


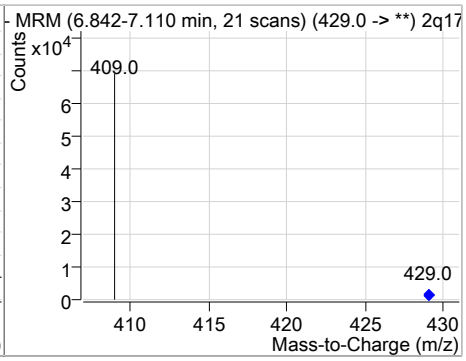


Perfluorinated Compounds by LC/MS/MS

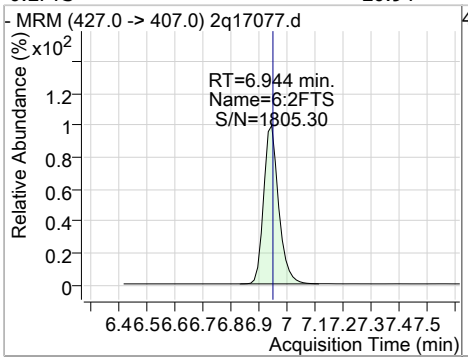
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.19	6.94	0.01	50580				

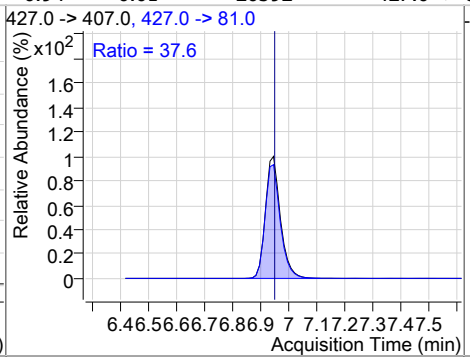


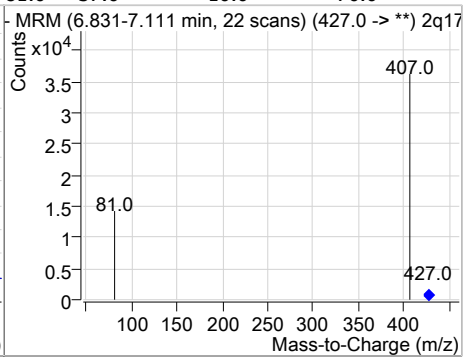




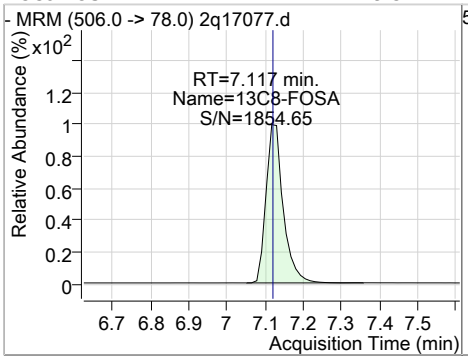
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.94	6.94	0.01	26592	427.0 -> 81.0	37.6	10.0	70.0

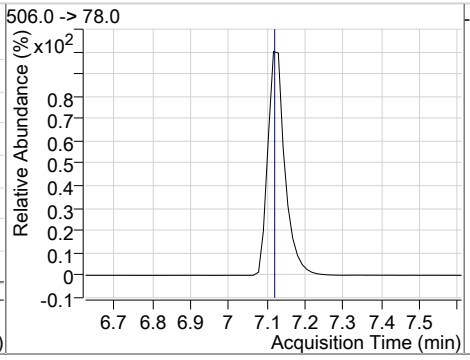


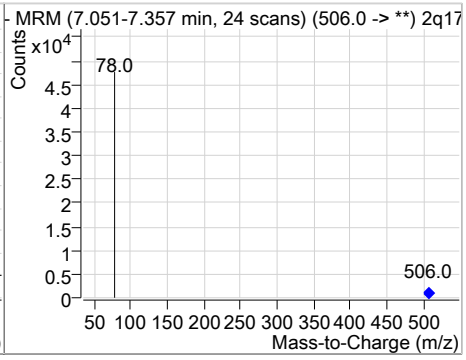




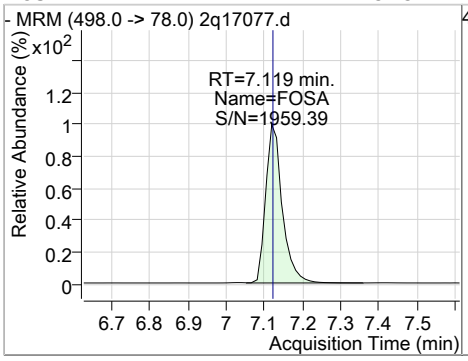
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.37	7.12	0.00	34699				

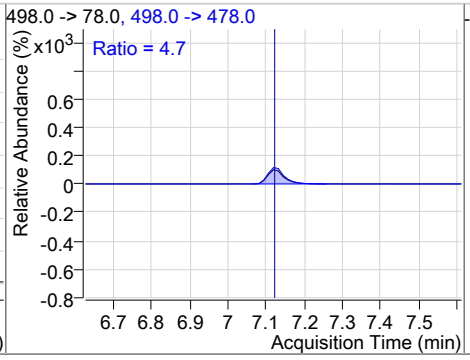


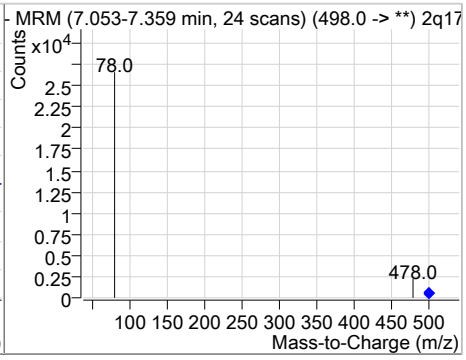




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	23.13	7.12	0.00	19398	498.0 -> 478.0	4.7	0.0	34.0

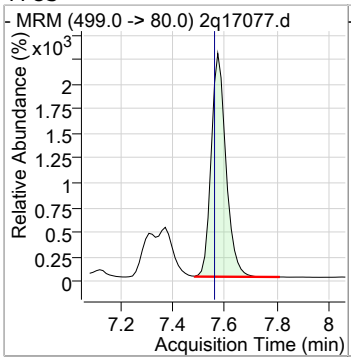


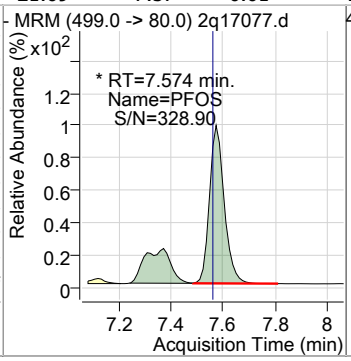


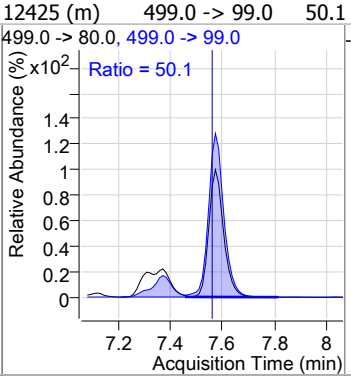


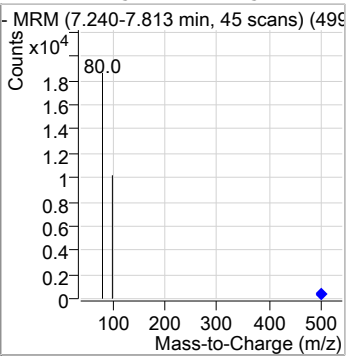
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	21.69	7.57	0.01	12425 (m)	499.0 -> 99.0	50.1	14.5	74.5

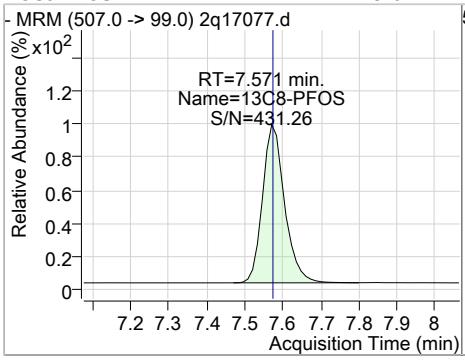


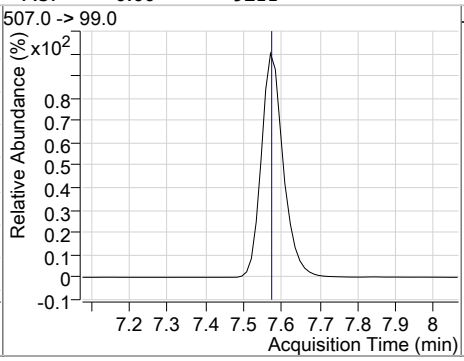


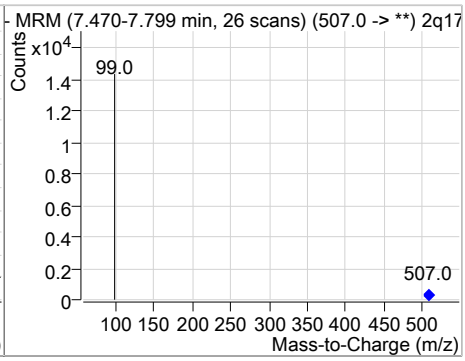




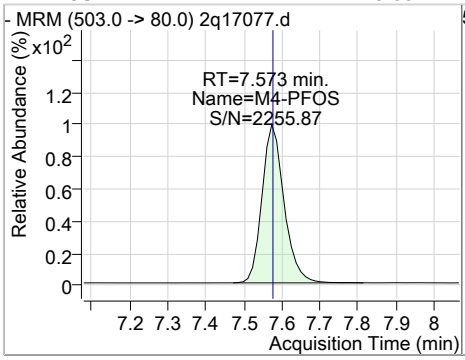
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.67	7.57	0.00	9211				

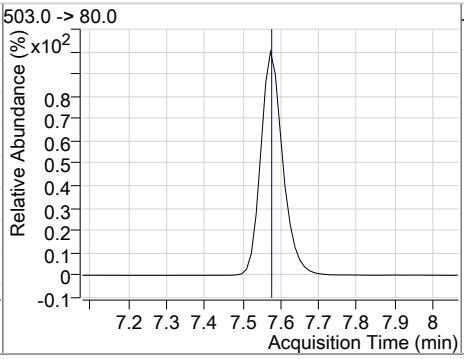


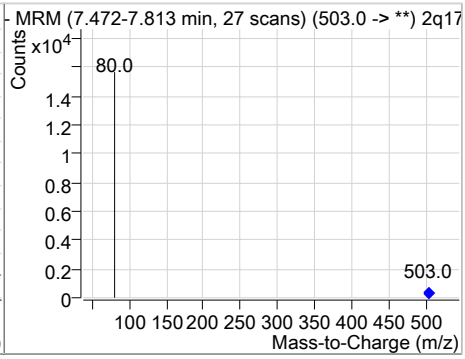




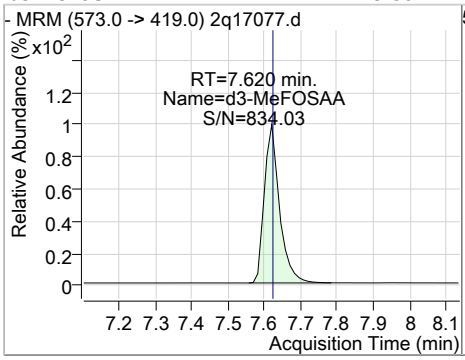
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.00	7.57	0.00	10974				

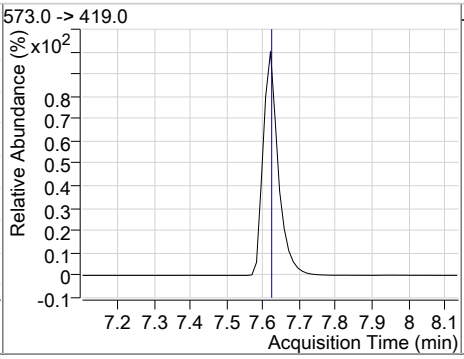


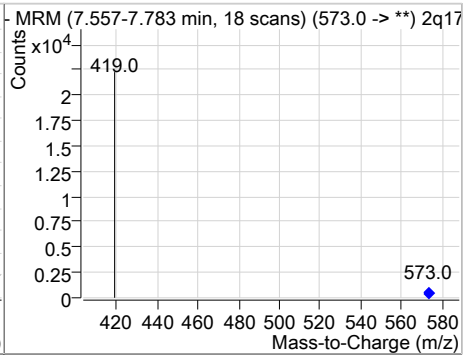




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.58	7.62	0.00	15896				

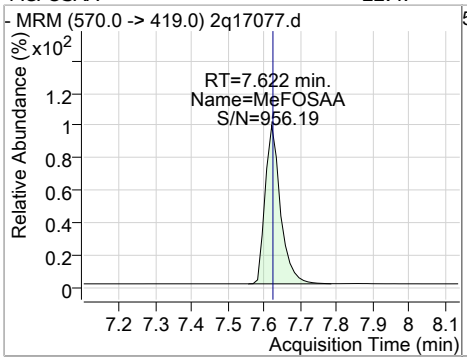


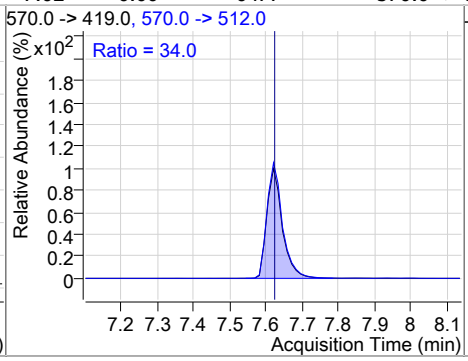


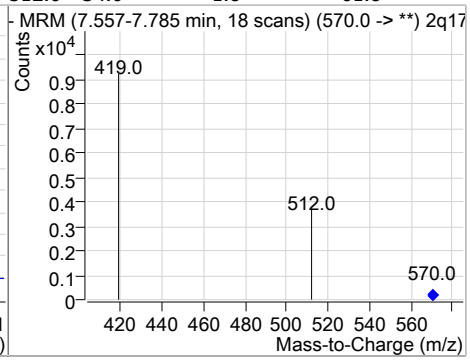


Perfluorinated Compounds by LC/MS/MS

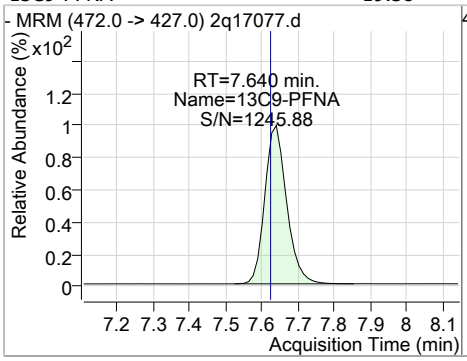
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	22.47	7.62	0.00	6477	570.0 -> 512.0	34.0	1.8	61.8

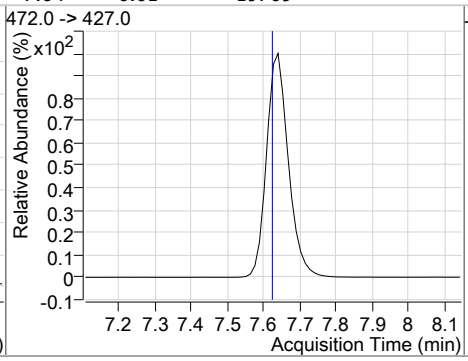


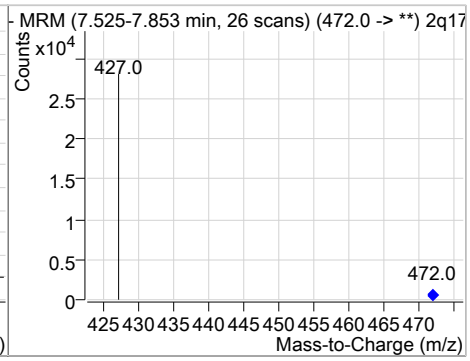




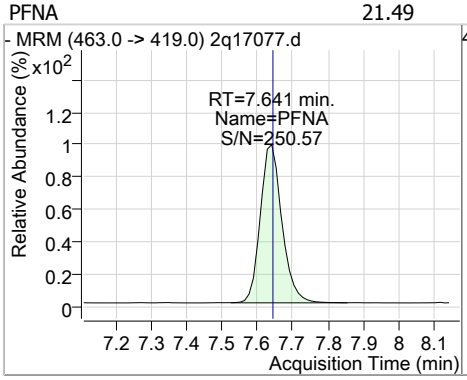
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.38	7.64	0.01	19709				

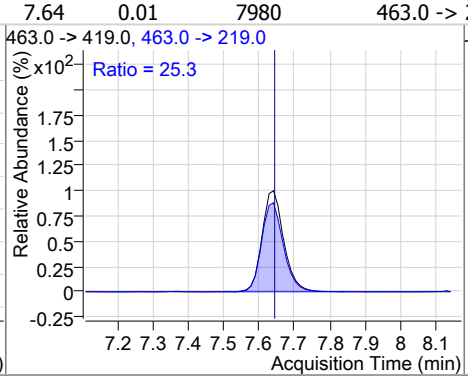


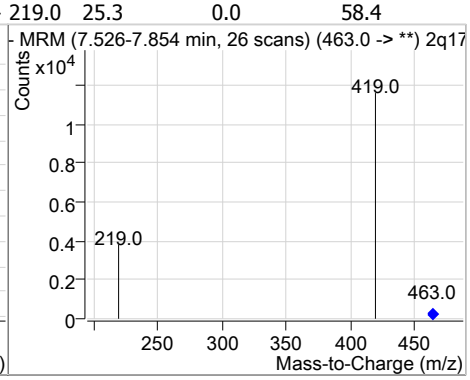




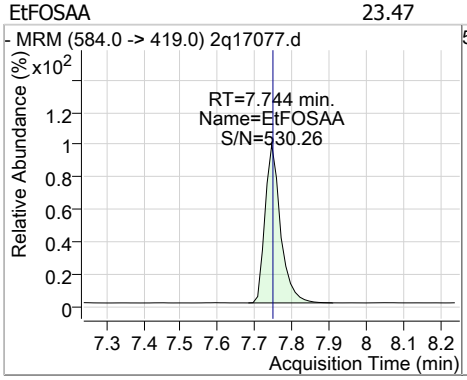
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	21.49	7.64	0.01	7980	463.0 -> 219.0	25.3	0.0	58.4

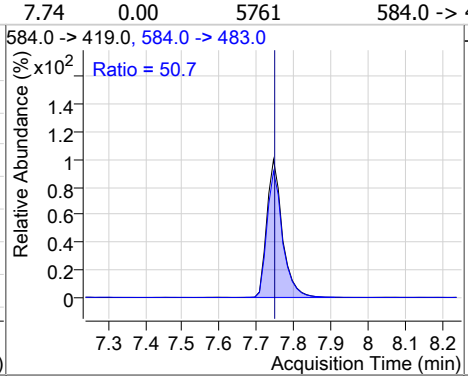


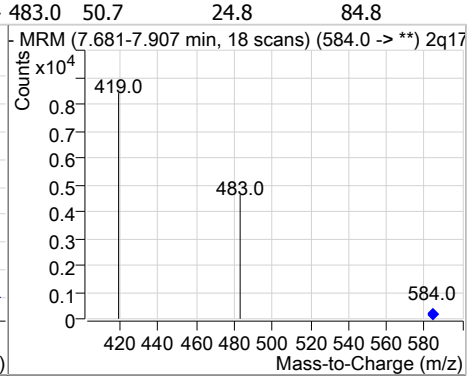




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	23.47	7.74	0.00	5761	584.0 -> 483.0	50.7	24.8	84.8

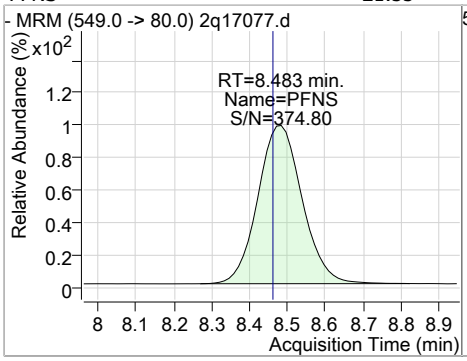


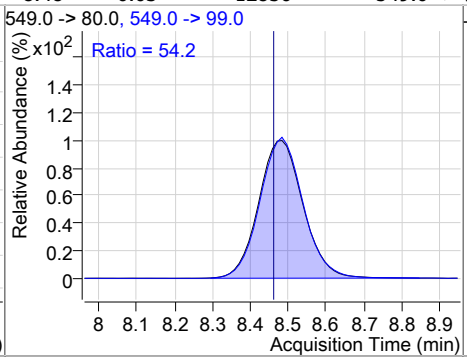


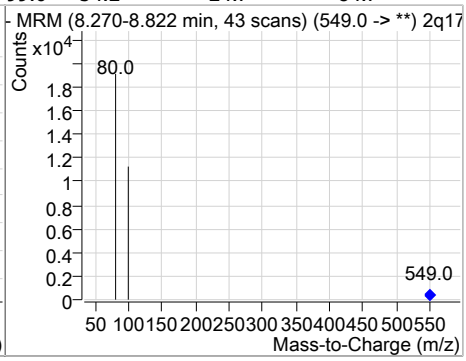


Perfluorinated Compounds by LC/MS/MS

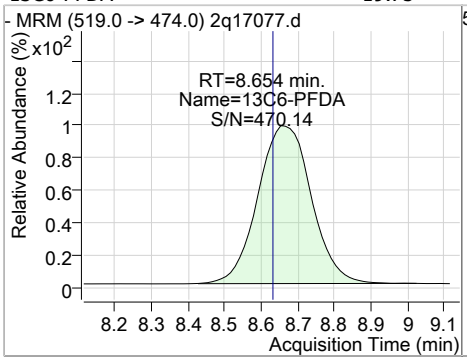
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	21.55	8.48	0.03	12856	549.0 -> 99.0	54.2	24.7	84.7

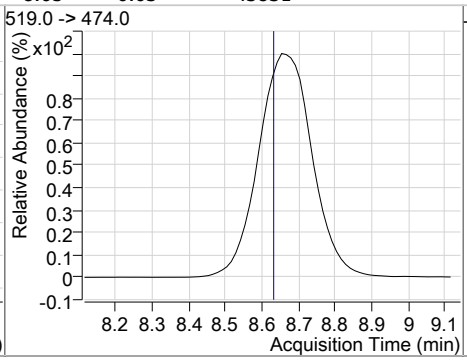


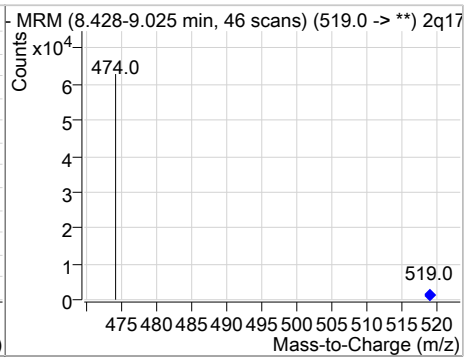




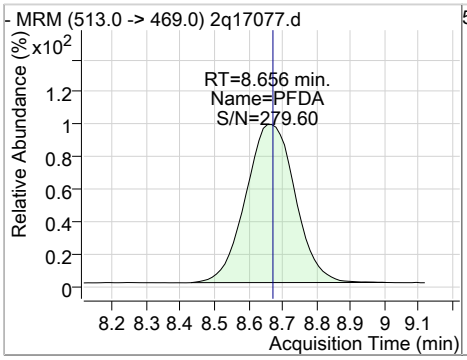
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.75	8.65	0.03	43831				

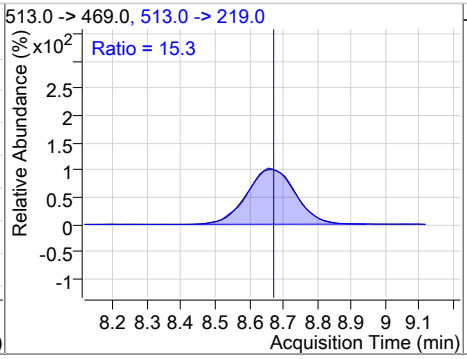


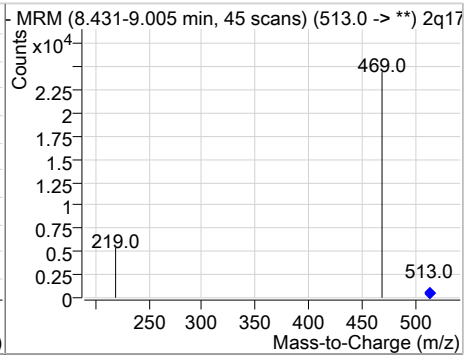




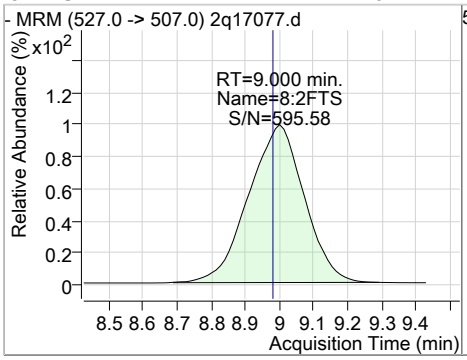
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	21.21	8.66	0.01	16697	513.0 -> 219.0	15.3	0.0	45.3

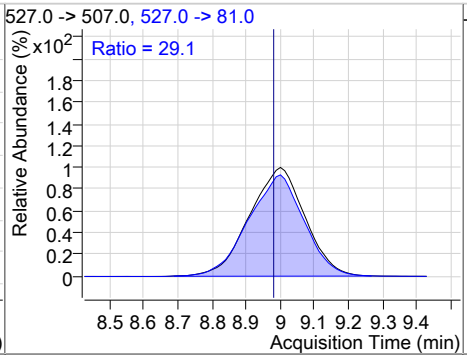


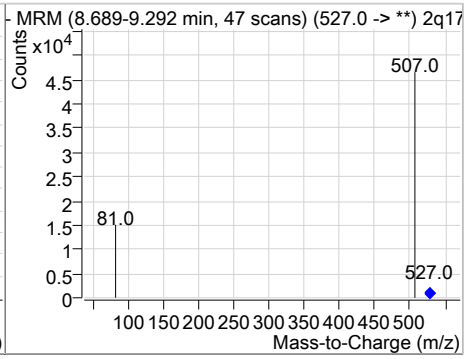




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.74	9.00	0.05	32968	527.0 -> 81.0	29.1	1.3	61.3

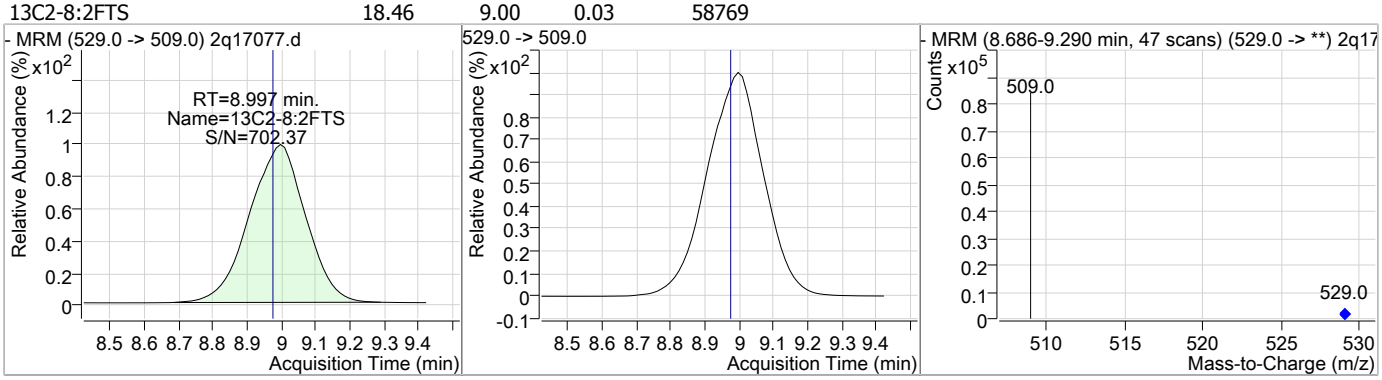




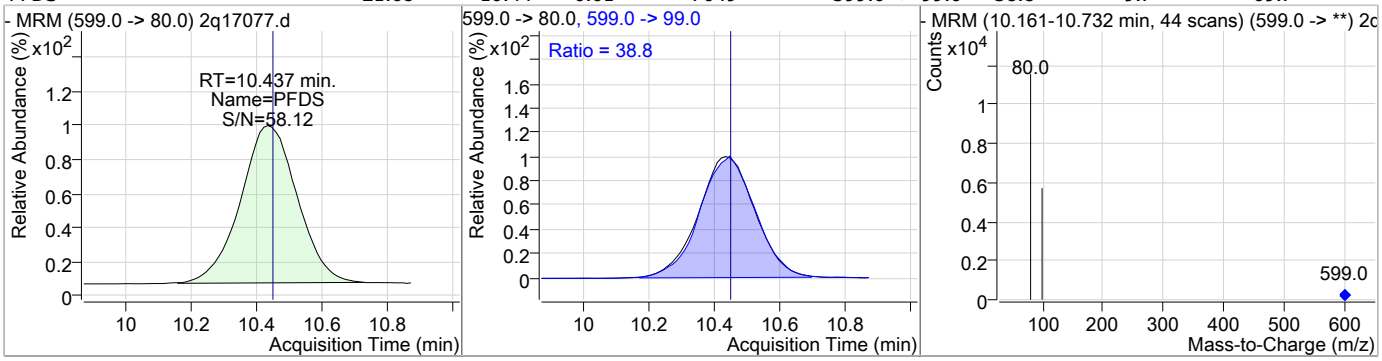


Perfluorinated Compounds by LC/MS/MS

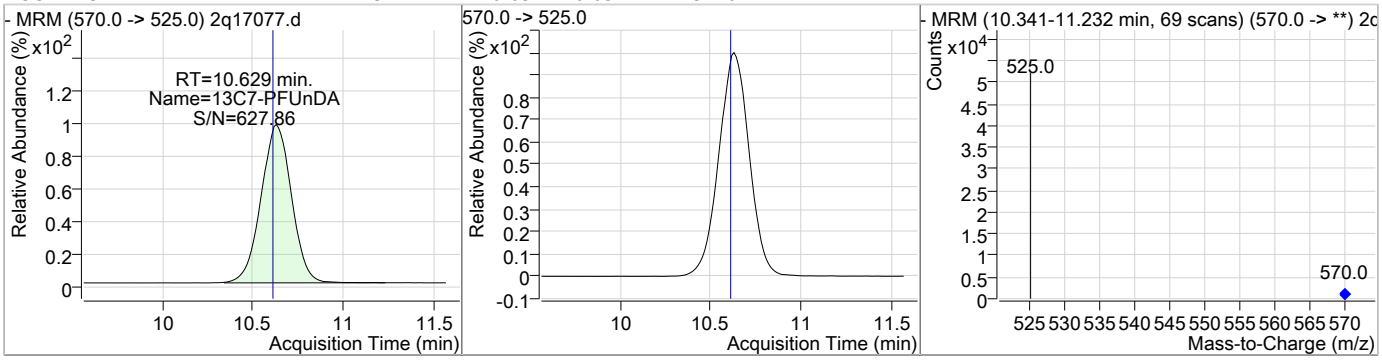
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.46	9.00	0.03	58769				



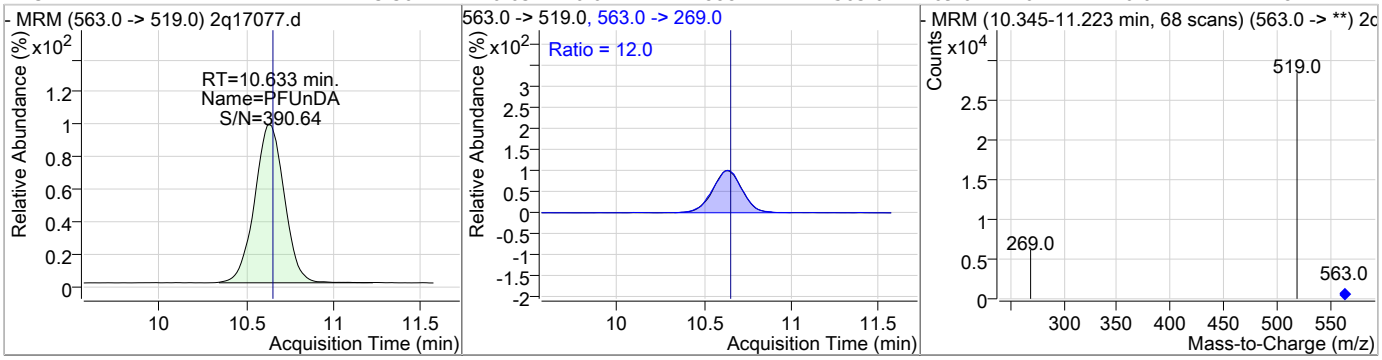
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	21.68	10.44	0.01	7049	599.0 -> 99.0	38.8	9.7	69.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.24	10.63	0.03	34461				

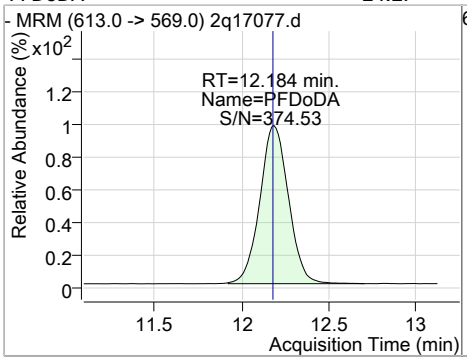


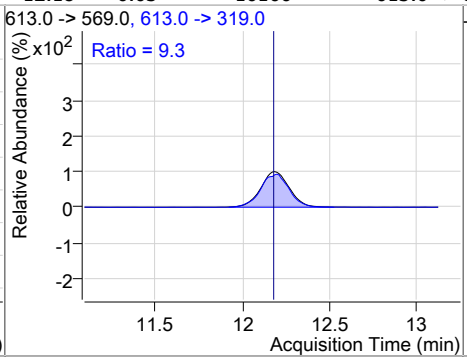
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	23.36	10.63	0.01	18881	563.0 -> 269.0	12.0	0.0	41.8

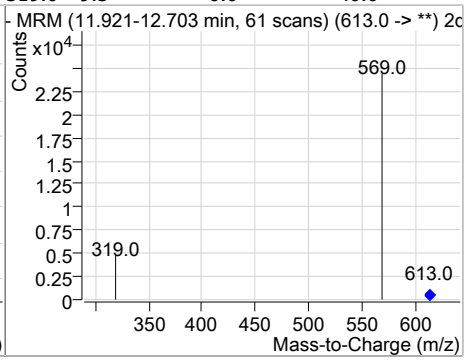


Perfluorinated Compounds by LC/MS/MS

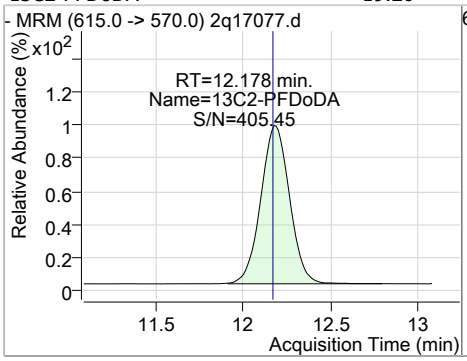
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	24.27	12.18	0.03	16166	613.0 -> 319.0	9.3	0.0	40.0

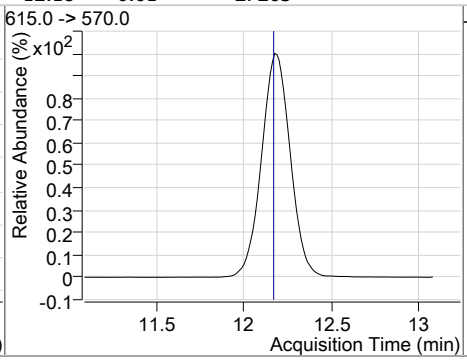


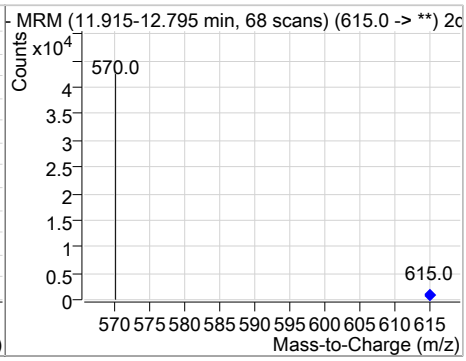




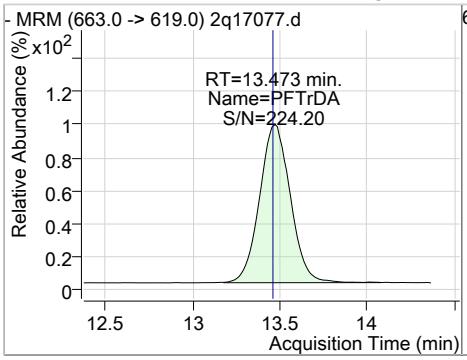
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.26	12.18	0.01	27263				

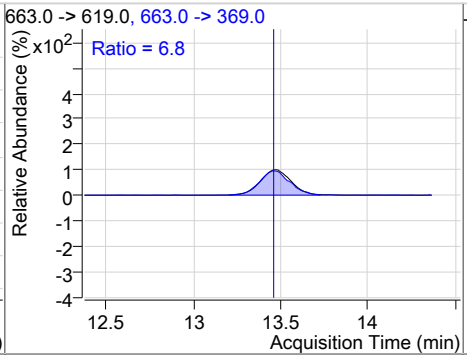


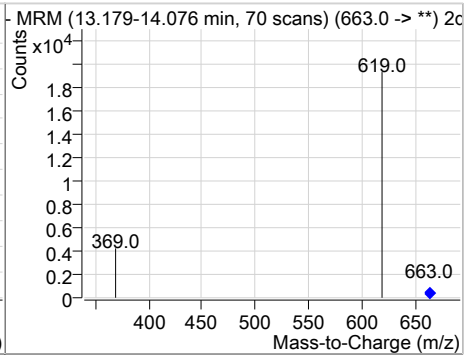




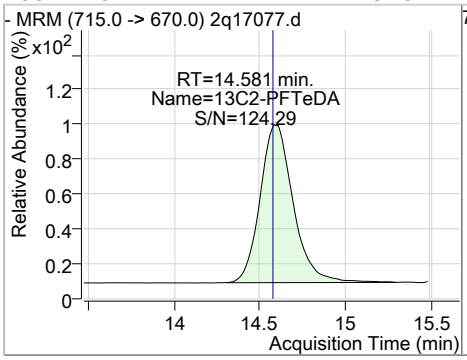
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	25.24	13.47	0.03	12566	663.0 -> 369.0	6.8	0.0	37.1

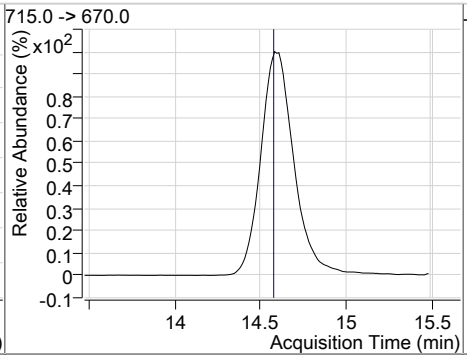


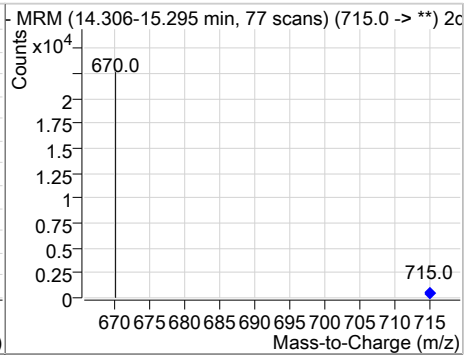




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.13	14.58	0.01	11699				

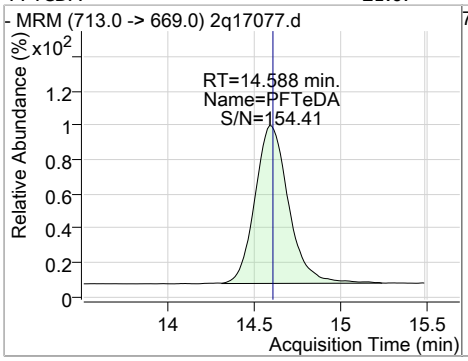


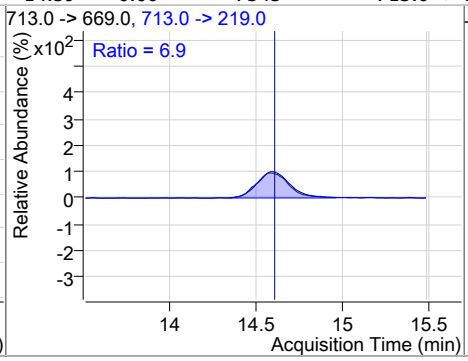


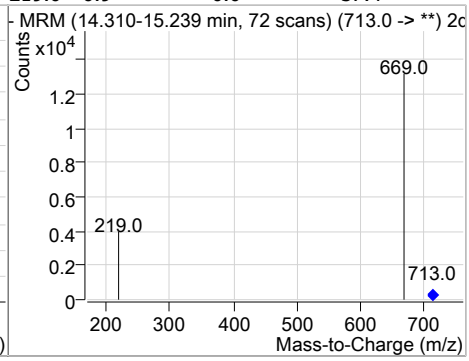


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	21.07	14.59	0.00	7345	713.0 -> 219.0	6.9	0.0	37.4







Manual Integration Approval Summary

Sample Number: S2Q296-ICV296
Lab FileID: 2Q17077.D
Injection Time: 07/13/18 15:25
Method: EPA 537M BY ID
Analyst approved: 07/16/18 13:34 Natasha Gumtie
Supervisor approved: 07/16/18 17:22 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.57	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
07/16/18 17:22

Perfluorinated Compounds by LC/MS/MS

Data File : 2q17111.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/14/2018 3:10:47 AM
Sample Name : cc296-20
Vial : Vial 7
DA Method File : PFC_ID_071318_S2Q296.quantmethod.xml
Batch Name : s2q296.batch.bin
Sample Information : op70790,S2Q296,1.99,,,1.0,1,soil

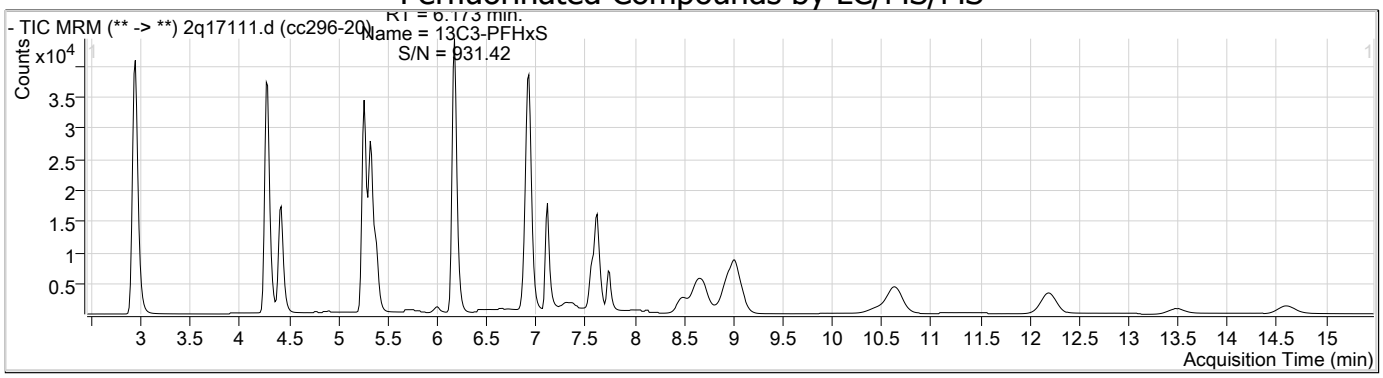
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.921	415.0 -> 370.0	18717	20.00	µg/L	0.000
13C4-PFOS	7.573	503.0 -> 80.0	9852	20.00	µg/L	0.000
M4-PFBA	2.941	217.0 -> 172.0	140028	20.00	µg/L	0.000
M5-PFPeA	4.287	268.0 -> 223.0	68939	20.00	µg/L	0.000
M5-PFHxA	5.328	318.0 -> 273.0	63355	20.00	µg/L	-0.013
M4-PFHpA	6.179	367.0 -> 322.0	60175	20.00	µg/L	0.000
M8-PFOA	6.920	421.0 -> 376.0	29723	20.00	µg/L	0.000
M9-PFNA	7.640	472.0 -> 427.0	18075	20.00	µg/L	0.013
M6-PFDA	8.666	519.0 -> 474.0	39087	20.00	µg/L	0.038
M7-PFUnDA	10.629	570.0 -> 525.0	31319	20.00	µg/L	0.025
M2-PFDoDA	12.190	615.0 -> 570.0	24437	20.00	µg/L	0.025
M2-PFTeDA	14.594	715.0 -> 670.0	10258	20.00	µg/L	0.025
M8-FOSA	7.117	506.0 -> 78.0	32559	20.00	µg/L	0.000
M3-PFBS	4.418	302.0 -> 99.0	21161	20.00	µg/L	0.000
M3-PFHxS	6.173	402.0 -> 99.0	17740	20.00	µg/L	0.000
M8-PFOS	7.571	507.0 -> 99.0	8762	20.00	µg/L	0.000
M2-4:2FTS	5.260	329.0 -> 309.0	65607	20.00	µg/L	0.000
M2-6:2FTS	6.930	429.0 -> 409.0	48245	20.00	µg/L	0.000
M2-8:2FTS	9.010	529.0 -> 509.0	56457	20.00	µg/L	0.038
M3-MeFOSAA	7.620	573.0 -> 419.0	15514	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.260	329.0 -> 309.0	65617	18.89	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.4%		
13C2-6:2FTS	6.930	429.0 -> 409.0	48245	18.30	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.5%		
13C2-8:2FTS	9.010	529.0 -> 509.0	55905	17.56	µg/L	0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.8%		
13C2-PFDoDA	12.190	615.0 -> 570.0	24456	17.28	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.4%		
13C2-PFTeDA	14.594	715.0 -> 670.0	10216	16.71	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.5%		
13C3-PFBS	4.418	302.0 -> 99.0	21162	19.18	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.9%		
13C3-PFHxS	6.173	402.0 -> 99.0	17739	18.57	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.8%		
13C4-PFBA	2.941	217.0 -> 172.0	139971	18.67	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.3%		
13C4-PFHpA	6.179	367.0 -> 322.0	60214	18.95	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.8%		
13C5-PFHxA	5.328	318.0 -> 273.0	63337	18.94	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.7%		
13C5-PFPeA	4.287	268.0 -> 223.0	68924	18.62	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.1%		
13C6-PFDA	8.666	519.0 -> 474.0	38993	17.57	µg/L	0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.8%		

Perfluorinated Compounds by LC/MS/MS

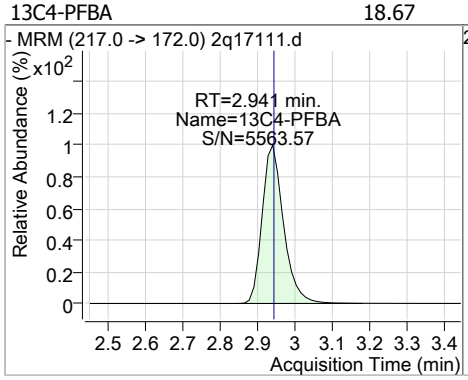
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.629	570.0 -> 525.0	31319	17.49	µg/L		0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.4%			
13C8-FOSA	7.117	506.0 -> 78.0	32561	18.18	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.9%			
13C8-PFOA	6.920	421.0 -> 376.0	29732	18.01	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.0%			
13C8-PFOS	7.571	507.0 -> 99.0	8776	18.74	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.7%			
13C9-PFNA	7.640	472.0 -> 427.0	18056	17.76	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.8%			
d3-MeFOSAA	7.620	573.0 -> 419.0	15507	19.10	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.5%			
M2-PFOA	6.921	415.0 -> 370.0	18718	20.00	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.573	503.0 -> 80.0	9866	20.03	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
Target Compounds							**QValue**
4:2FTS	5.263	327.0 -> 307.0	33887	19.91	µg/L		98
6:2FTS	6.931	427.0 -> 407.0	24464	20.16	µg/L		97
8:2FTS	9.000	527.0 -> 507.0	30562	20.20	µg/L		98
EtFOSAA	7.744	584.0 -> 419.0	5026	20.99	µg/L		98
FOSA	7.119	498.0 -> 78.0	16099	20.44	µg/L		99
MeFOSAA	7.622	570.0 -> 419.0	5873	20.89	µg/L		100
PFBA	2.937	213.0 -> 169.0	22133	20.00	µg/L		100
PFBS	4.409	299.0 -> 80.0	28619	20.79	µg/L		100
PFDA	8.669	513.0 -> 469.0	14486	20.79	µg/L		99
PFDoDA	12.196	613.0 -> 569.0	12865	21.49	µg/L		100
PFDS	10.437	599.0 -> 80.0	6320	21.32	µg/L		98
PFHpA	6.182	363.0 -> 319.0	45045	20.99	µg/L		99
PFHpS	6.878	449.0 -> 80.0	10696	20.17	µg/L		99
PFHxA	5.330	313.0 -> 269.0	21312	20.79	µg/L		98
PFHxS	6.176	399.0 -> 80.0	21436	20.95	µg/L	m	98
PFNA	7.641	463.0 -> 419.0	7495	22.01	µg/L		97
PFNS	8.483	549.0 -> 80.0	11508	20.29	µg/L		100
PFOA	6.922	413.0 -> 369.0	16430	21.62	µg/L		96
PFOS	7.574	499.0 -> 80.0	10995	20.20	µg/L	m	100
PFPeA	4.278	263.0 -> 219.0	67085	21.90	µg/L		100
PFPeS	5.383	349.0 -> 80.0	19081	20.90	µg/L		99
PFTeDA	14.588	713.0 -> 669.0	6288	20.59	µg/L		99
PFTrDA	13.473	663.0 -> 619.0	9639	22.11	µg/L		100
PFUnDA	10.646	563.0 -> 519.0	15360	20.84	µg/L		100

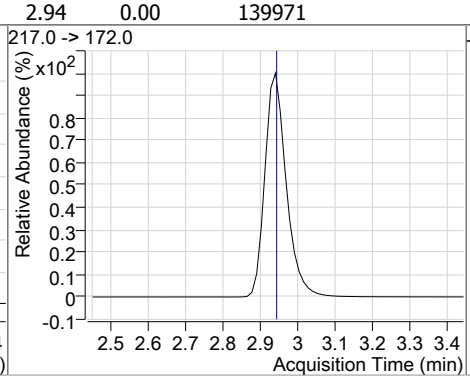
 # = Qualifier out of range, m = manually integrated, + = Area summed

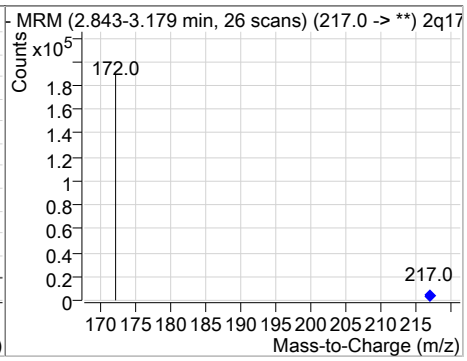
Perfluorinated Compounds by LC/MS/MS



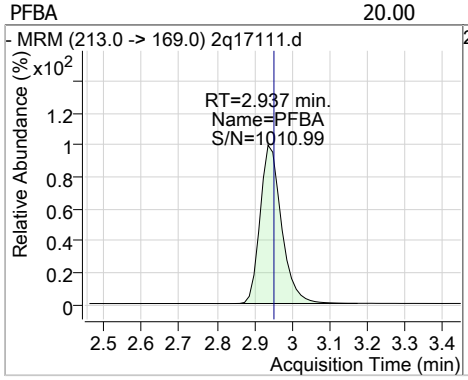
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.67	2.94	0.00	139971				

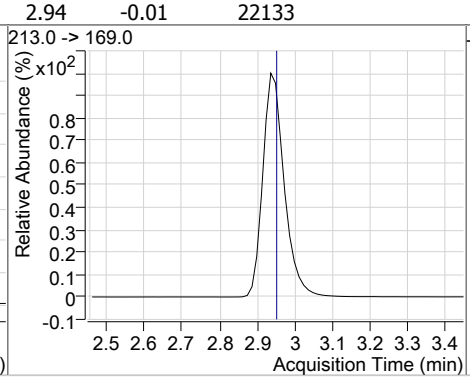


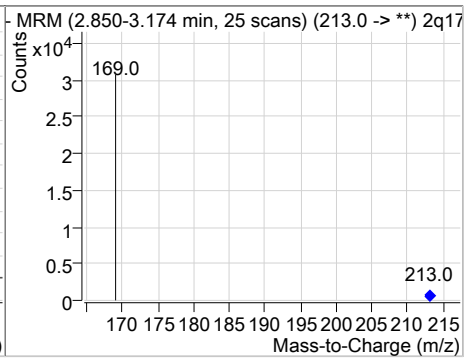




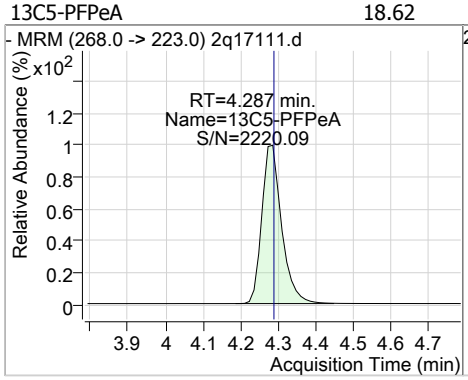
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.00	2.94	-0.01	22133				

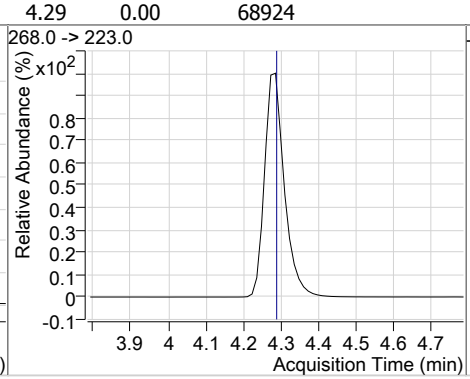


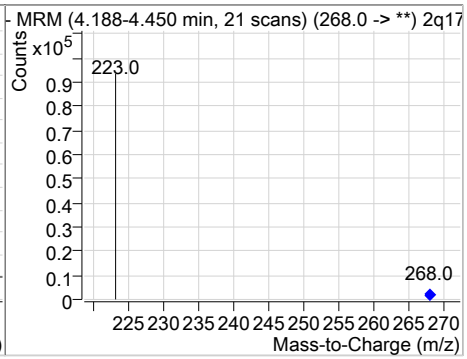




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.62	4.29	0.00	68924				

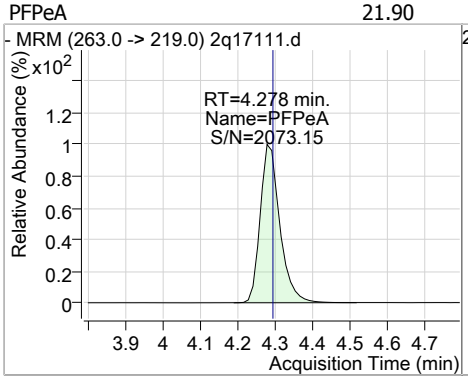


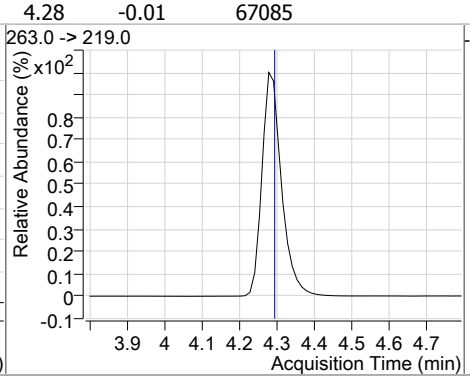


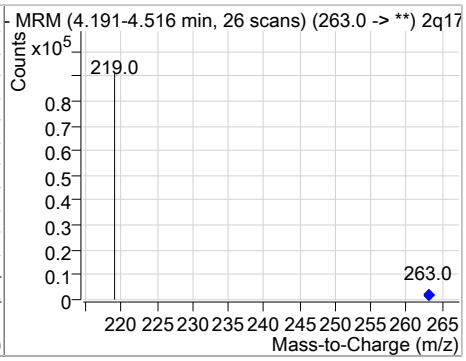


Perfluorinated Compounds by LC/MS/MS

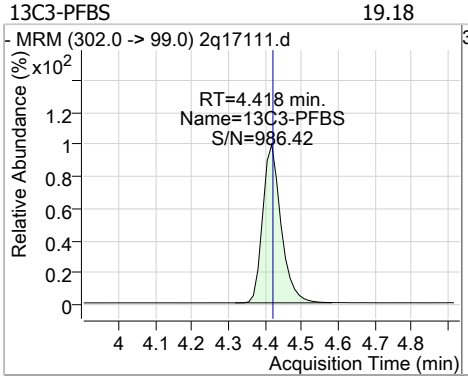
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	21.90	4.28	-0.01	67085				

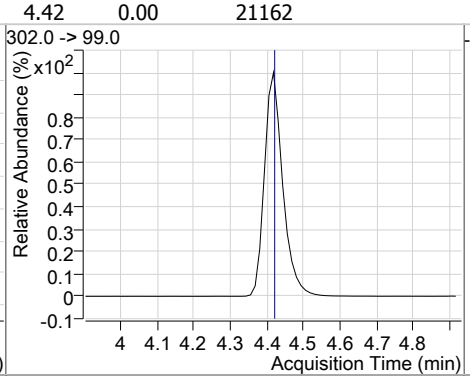


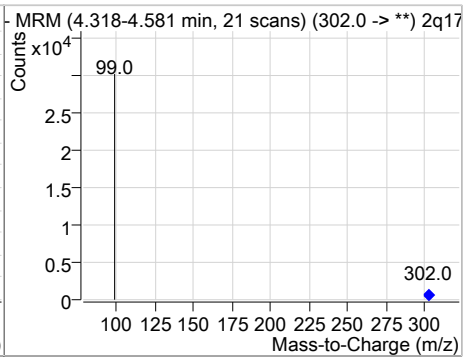




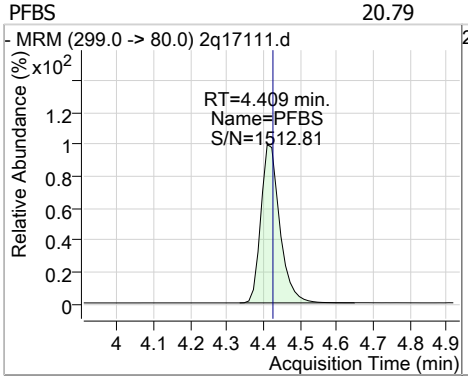
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.18	4.42	0.00	21162				

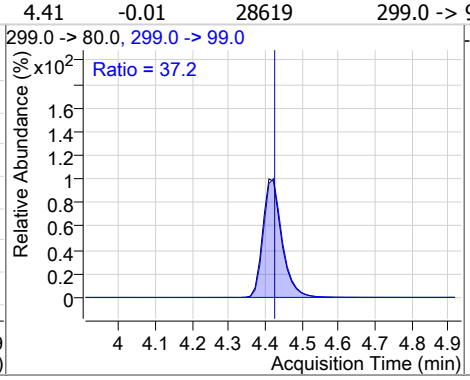


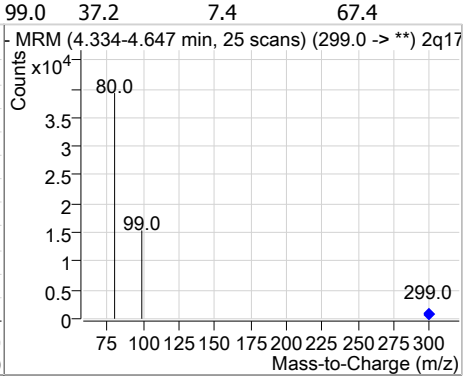




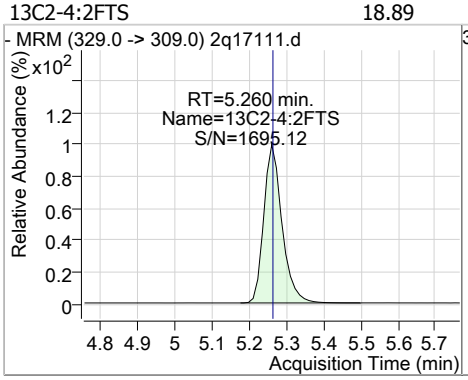
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	20.79	4.41	-0.01	28619	299.0 -> 99.0	37.2	7.4	67.4

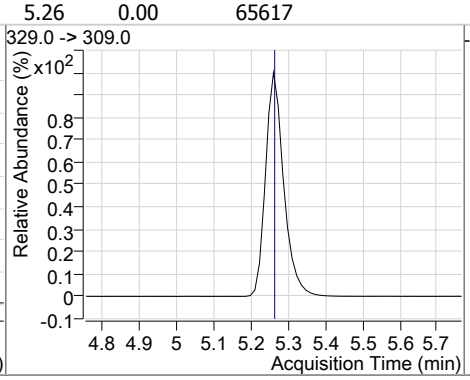


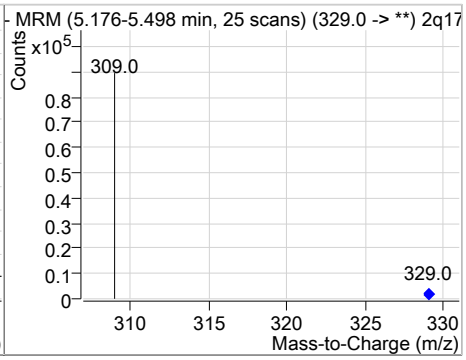




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.89	5.26	0.00	65617				

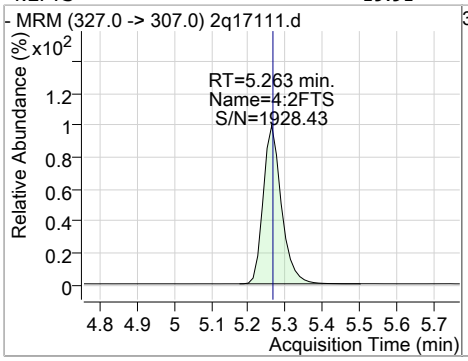


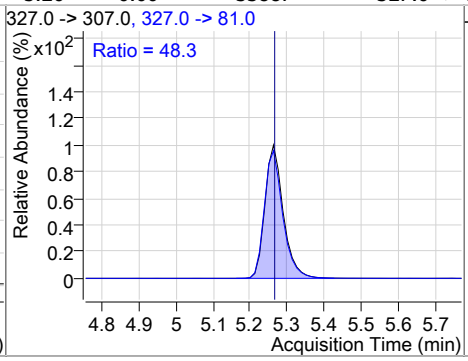


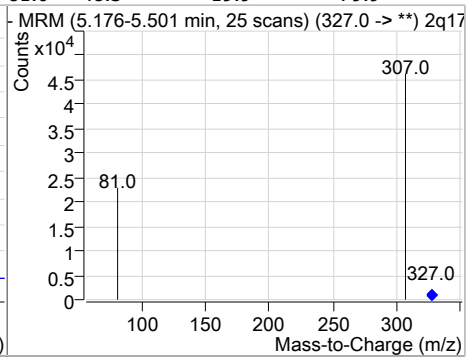


Perfluorinated Compounds by LC/MS/MS

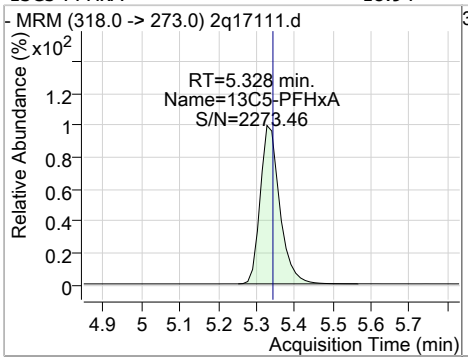
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.91	5.26	0.00	33887	327.0 -> 81.0	48.3	19.9	79.9

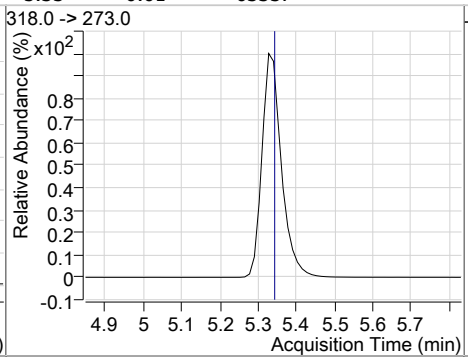


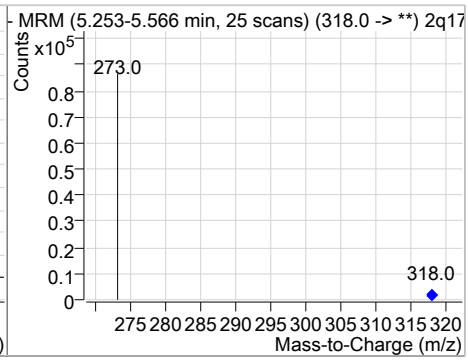




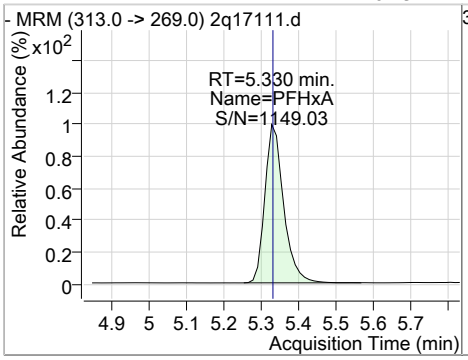
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.94	5.33	-0.01	63337				

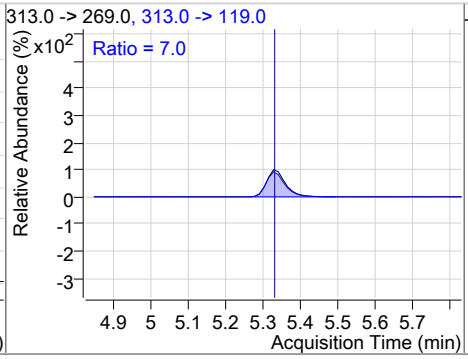


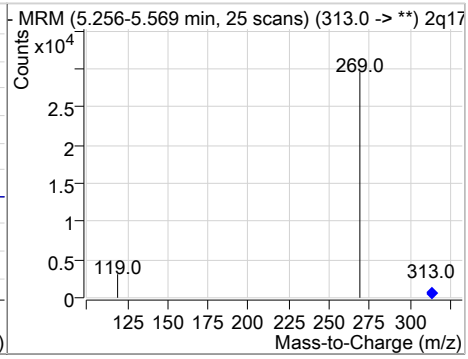




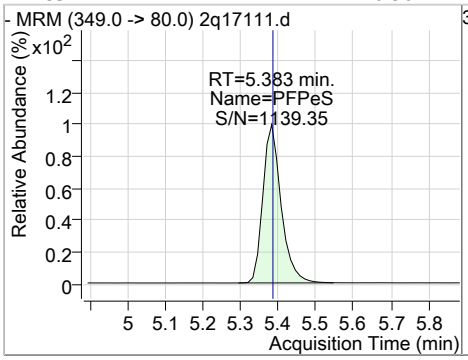
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.79	5.33	-0.01	21312	313.0 -> 119.0	7.0	0.0	37.6

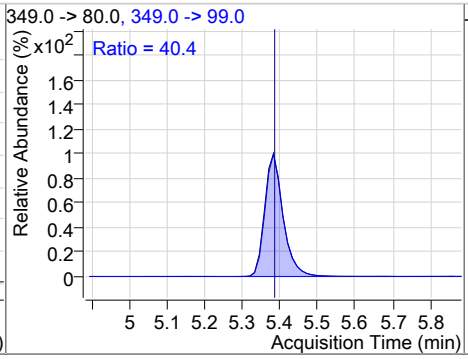


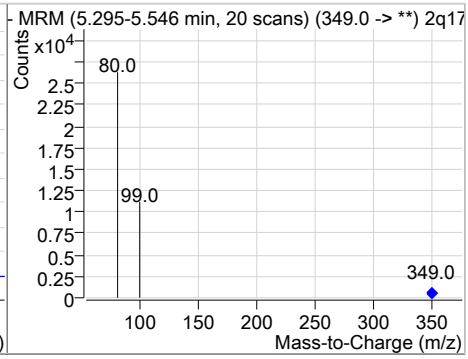




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	20.90	5.38	0.00	19081	349.0 -> 99.0	40.4	10.8	70.8

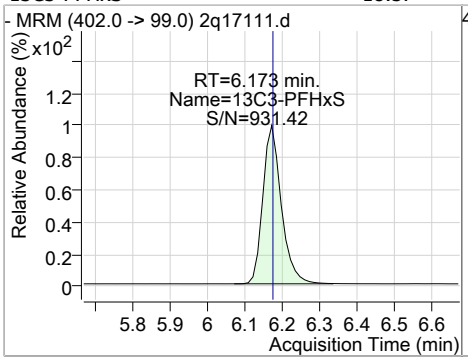


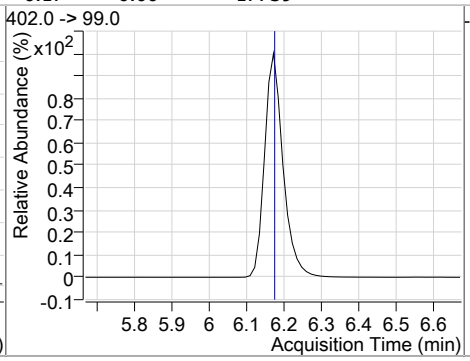


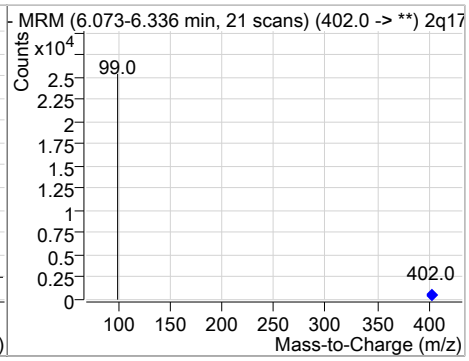


Perfluorinated Compounds by LC/MS/MS

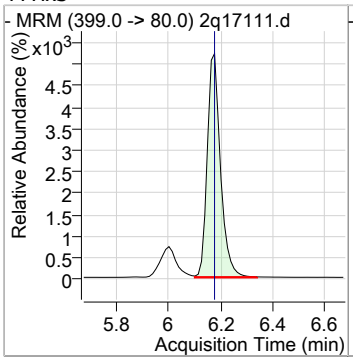
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.57	6.17	0.00	17739				

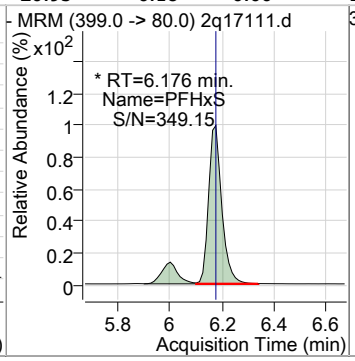


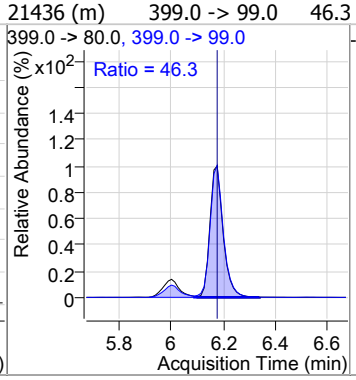


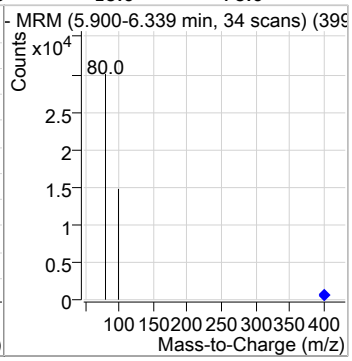


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.95	6.18	0.00	21436 (m)	399.0 -> 99.0	46.3	18.0	78.0

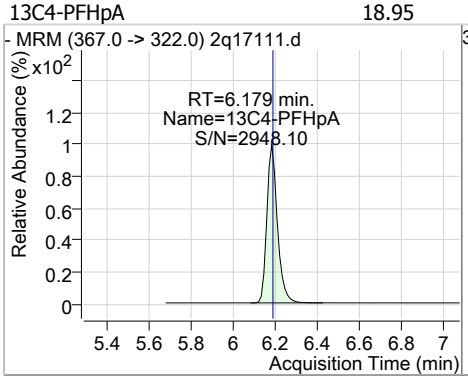


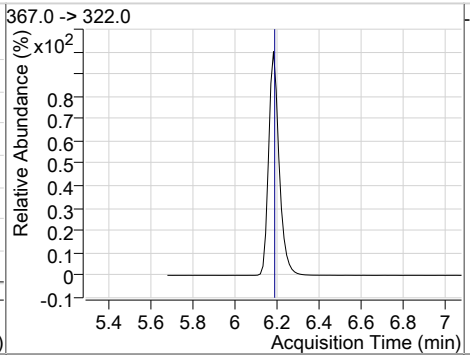


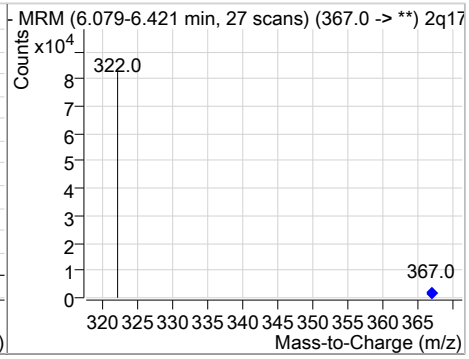




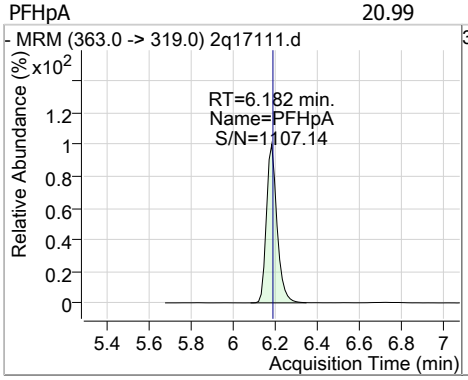
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.95	6.18	0.00	60214				

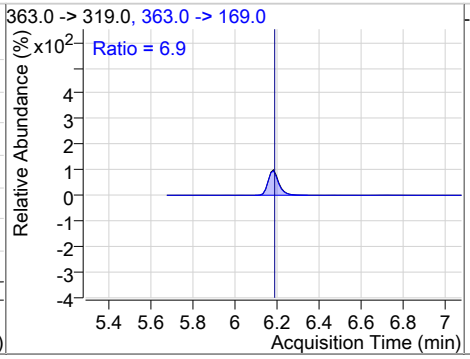


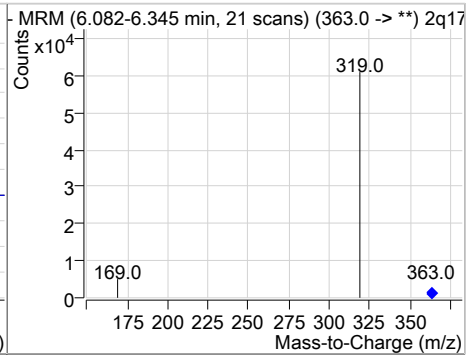




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.99	6.18	0.00	45045	363.0 -> 169.0	6.9	0.0	37.2

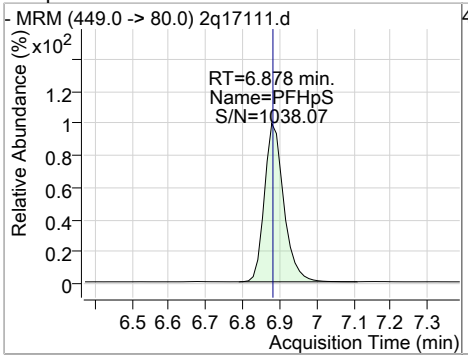


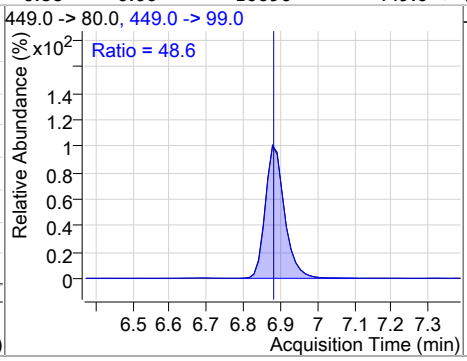


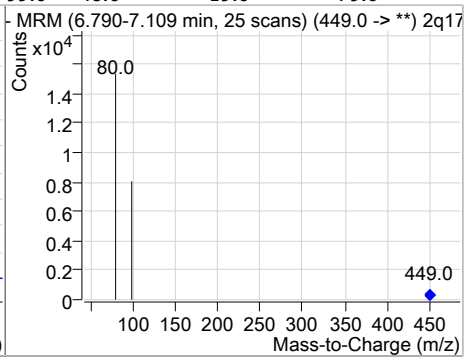


Perfluorinated Compounds by LC/MS/MS

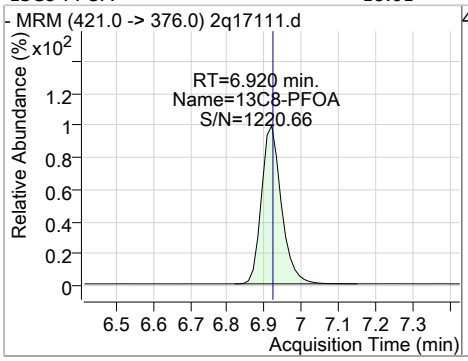
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.17	6.88	0.00	10696	449.0 -> 99.0	48.6	19.0	79.0

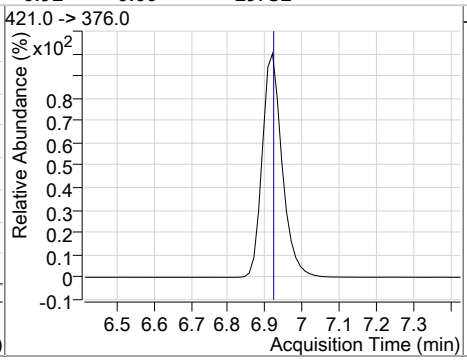


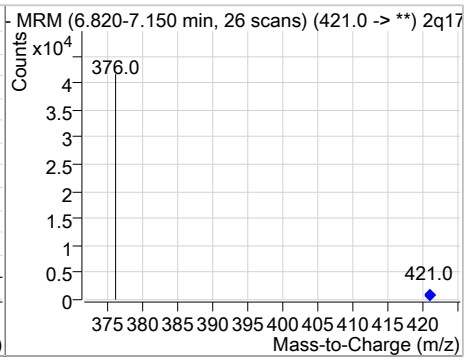




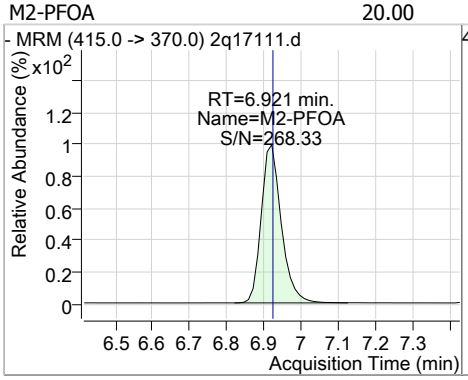
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	18.01	6.92	0.00	29732				

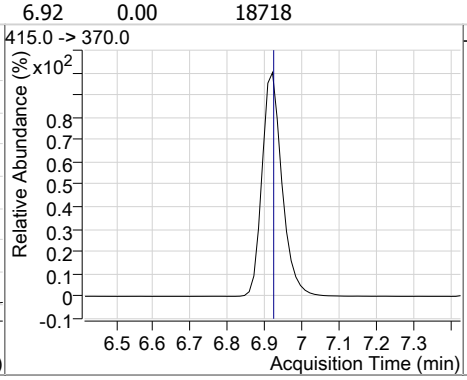


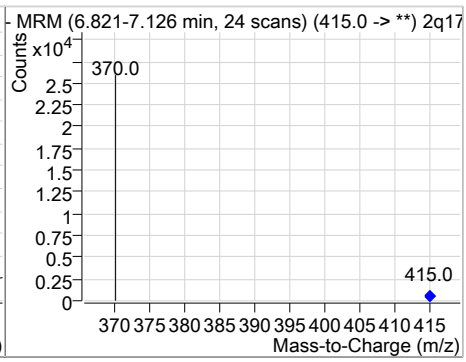




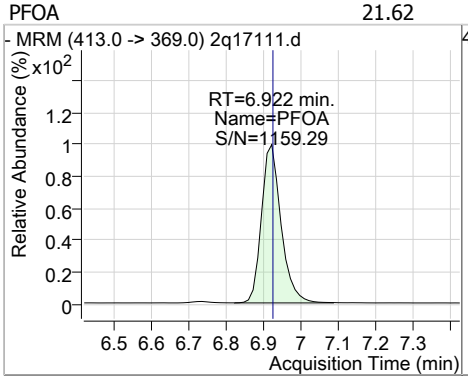
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.92	0.00	18718				

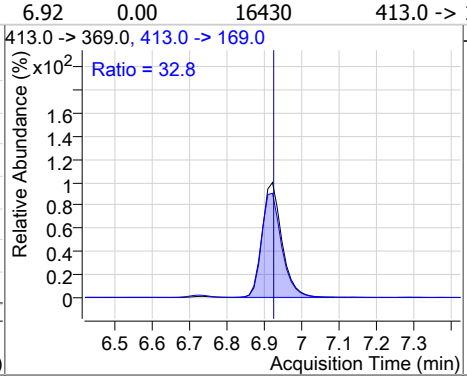


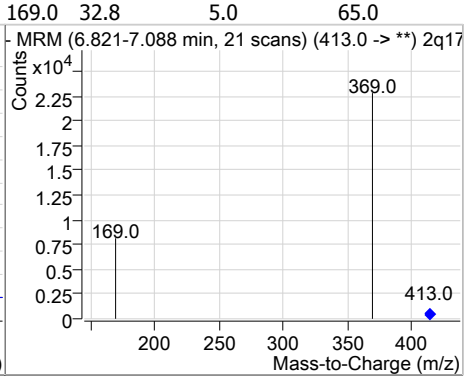




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	21.62	6.92	0.00	16430	413.0 -> 169.0	32.8	5.0	65.0

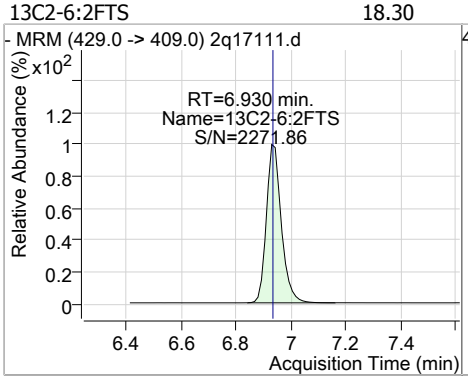


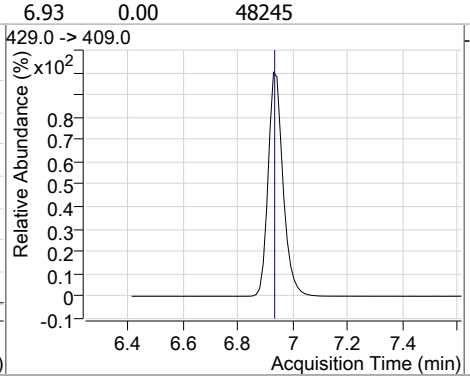


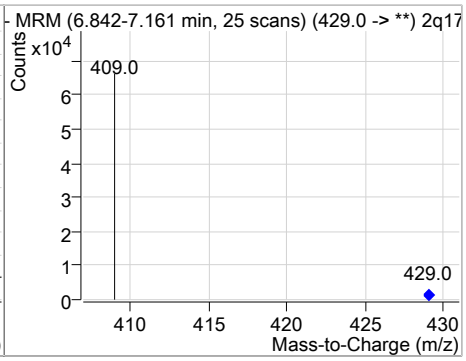


Perfluorinated Compounds by LC/MS/MS

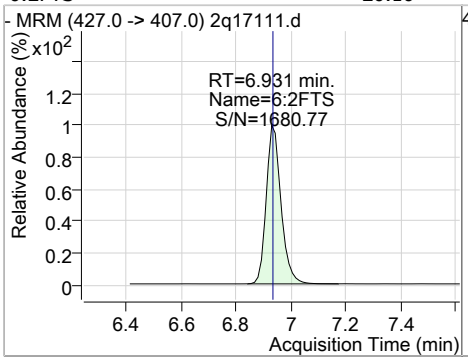
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.30	6.93	0.00	48245				

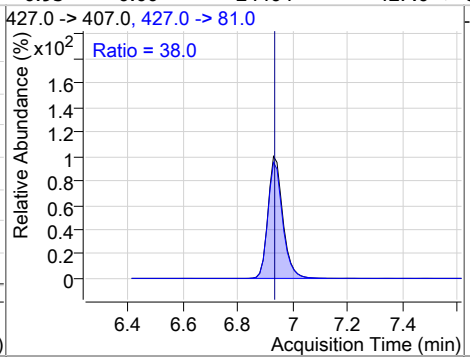


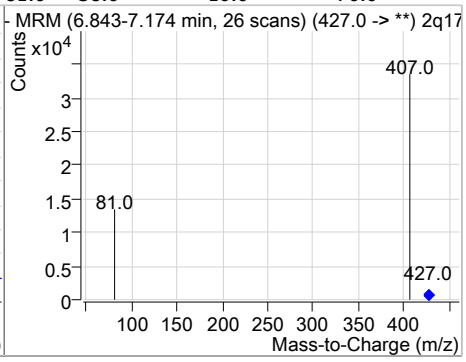




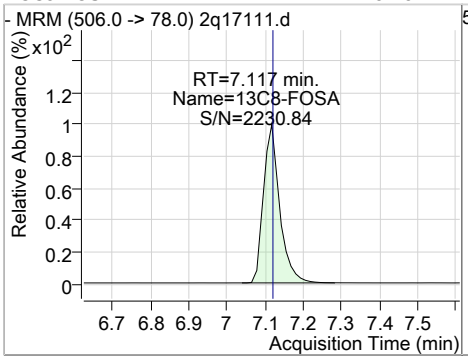
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.16	6.93	0.00	24464	427.0 -> 81.0	38.0	10.0	70.0

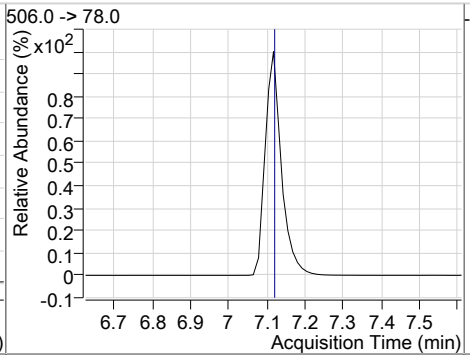


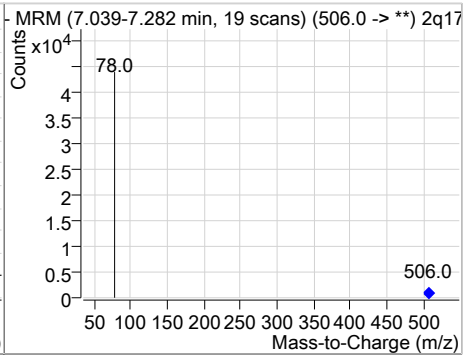




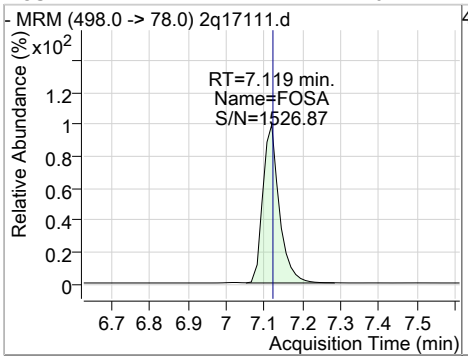
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.18	7.12	0.00	32561				

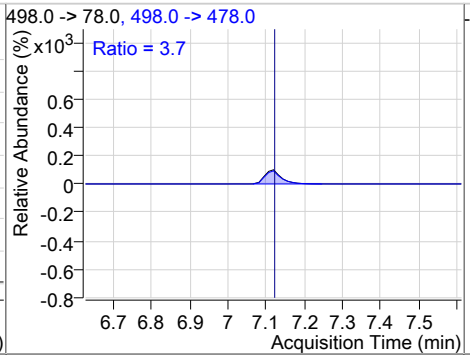


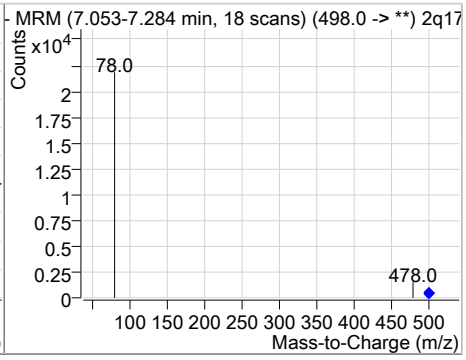




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.44	7.12	0.00	16099	498.0 -> 478.0	3.7	0.0	34.0

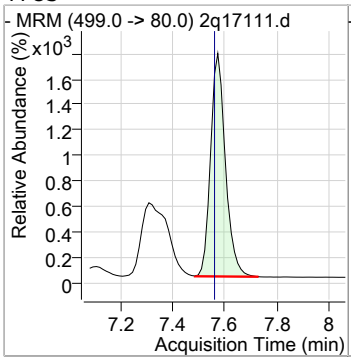


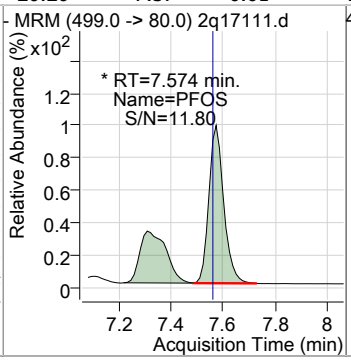


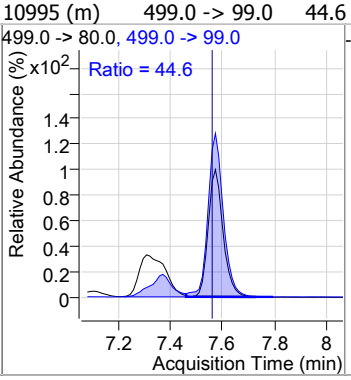


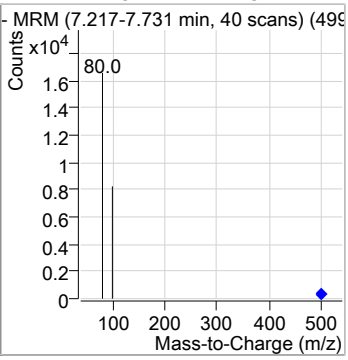
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	20.20	7.57	0.01	10995 (m)	499.0 -> 99.0	44.6	14.5	74.5

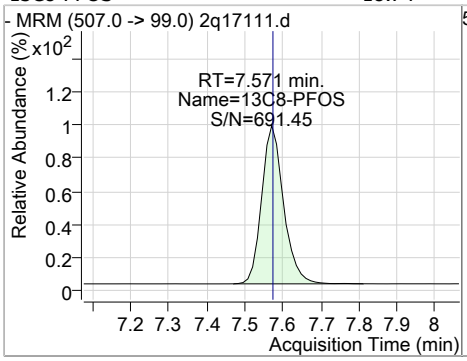


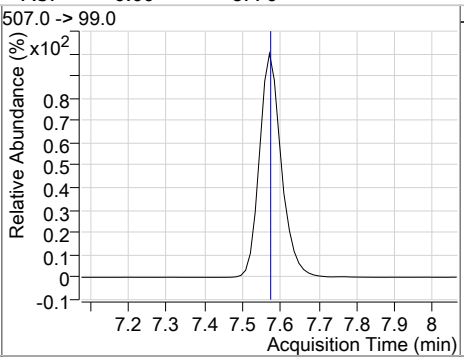


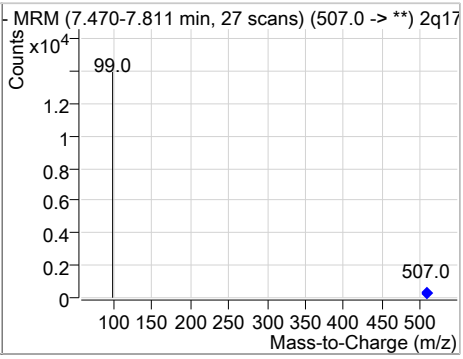




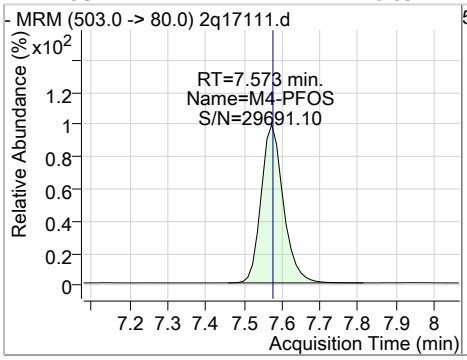
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.74	7.57	0.00	8776				

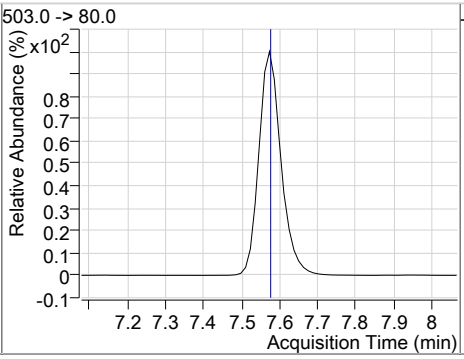


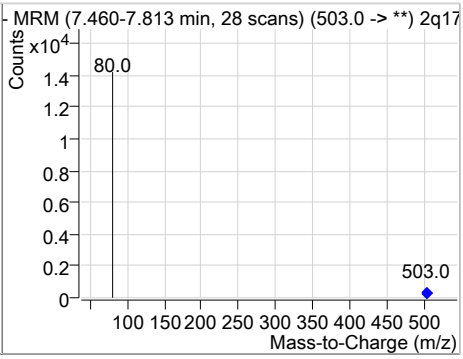




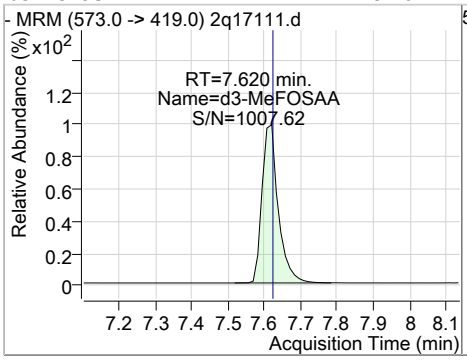
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.03	7.57	0.00	9866				

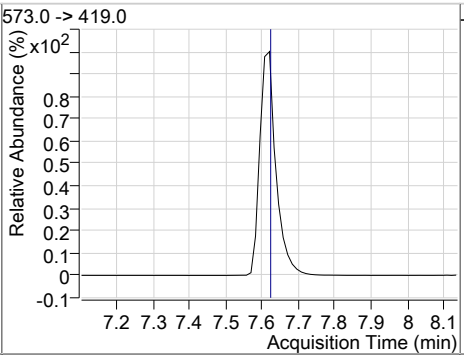


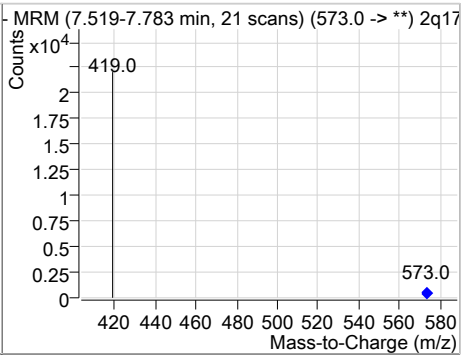




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.10	7.62	0.00	15507				

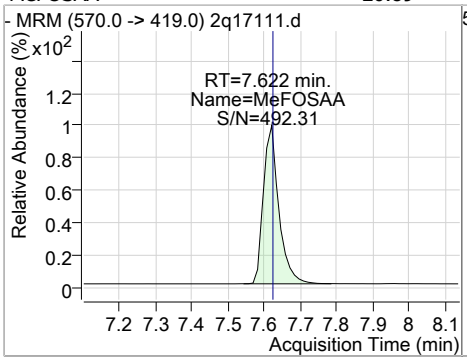


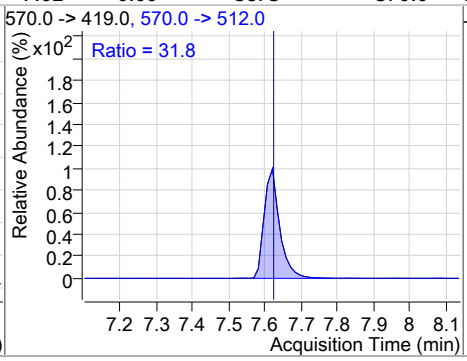


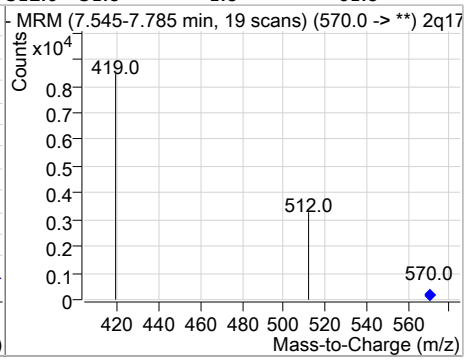


Perfluorinated Compounds by LC/MS/MS

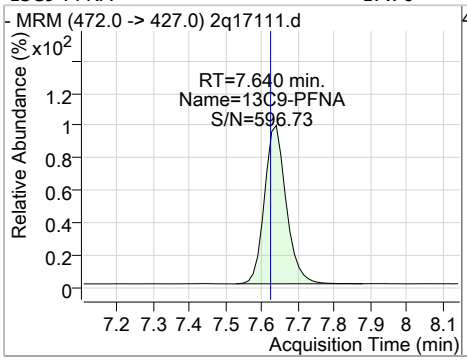
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.89	7.62	0.00	5873	570.0 -> 512.0	31.8	1.8	61.8

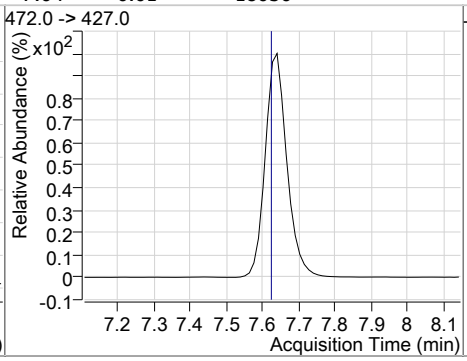


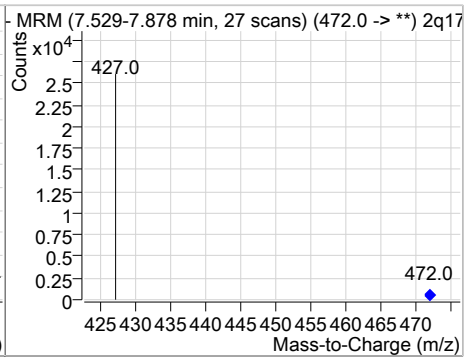




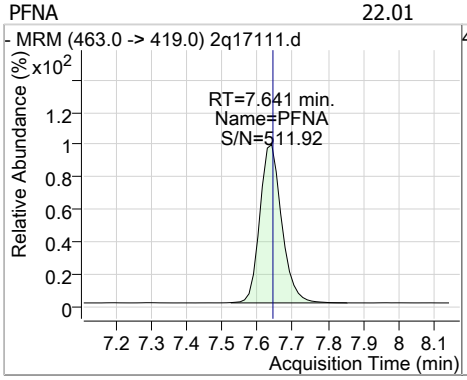
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	17.76	7.64	0.01	18056				

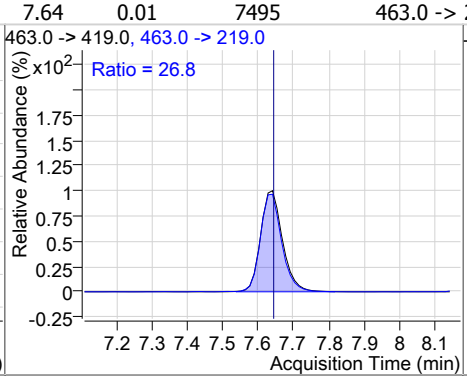


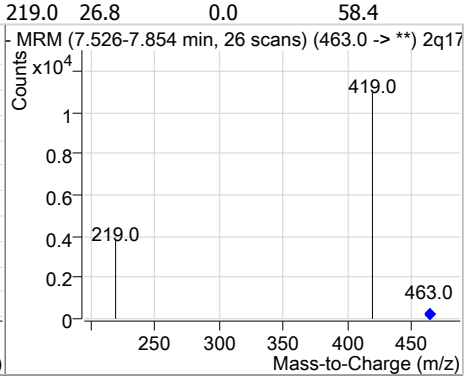




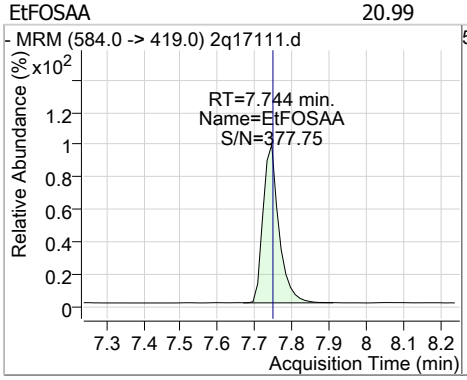
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	22.01	7.64	0.01	7495	463.0 -> 219.0	26.8	0.0	58.4

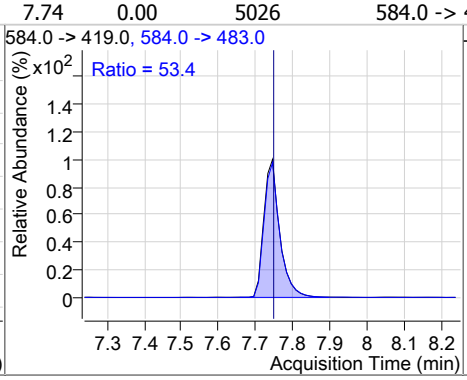


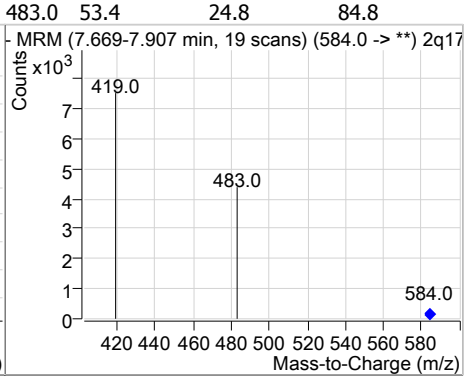




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.99	7.74	0.00	5026	584.0 -> 483.0	53.4	24.8	84.8

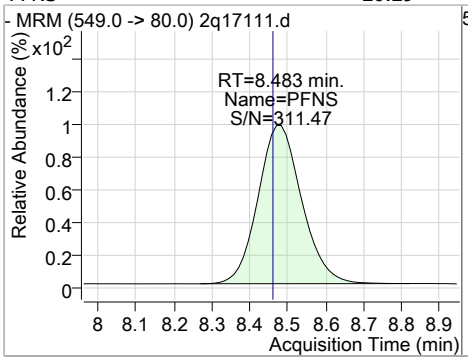


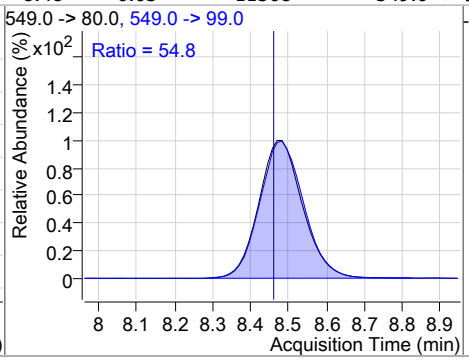


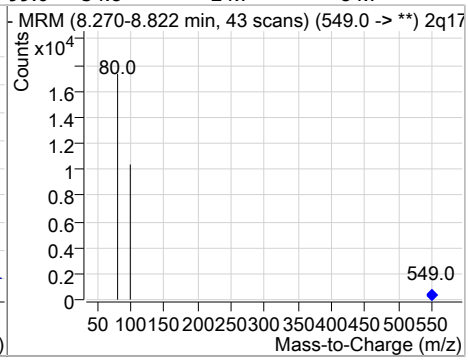


Perfluorinated Compounds by LC/MS/MS

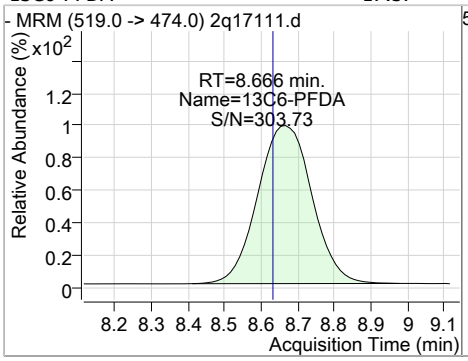
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	20.29	8.48	0.03	11508	549.0 -> 99.0	54.8	24.7	84.7

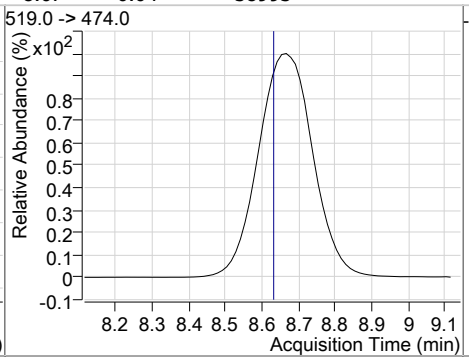


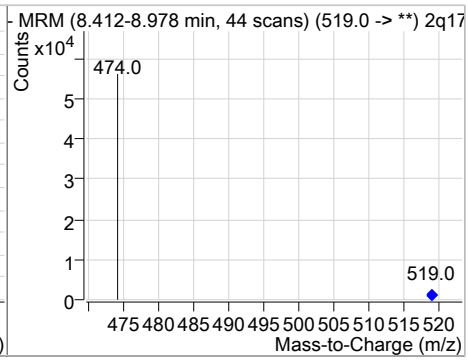




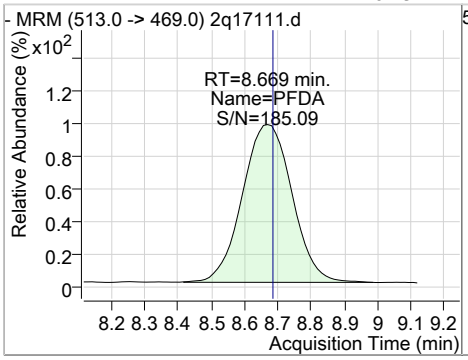
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	17.57	8.67	0.04	38993				

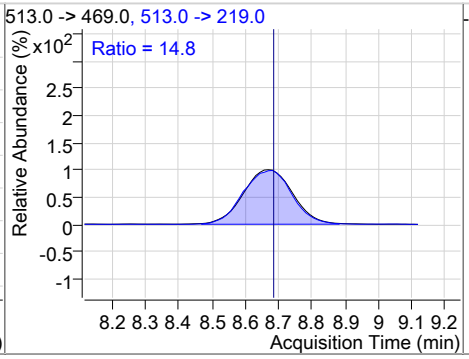


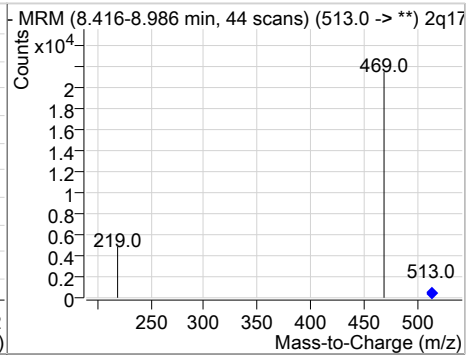




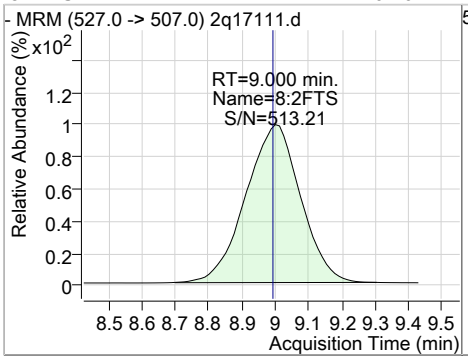
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.79	8.67	0.03	14486	513.0 -> 219.0	14.8	0.0	45.3

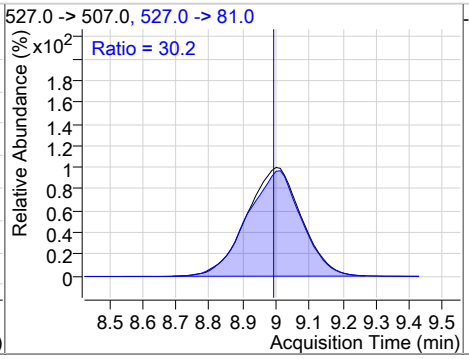


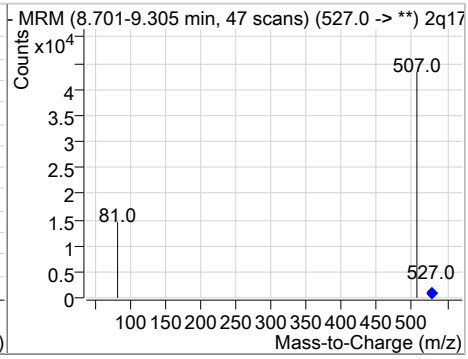




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.20	9.00	0.05	30562	527.0 -> 81.0	30.2	1.3	61.3

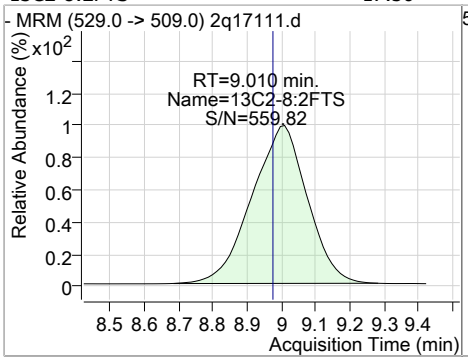


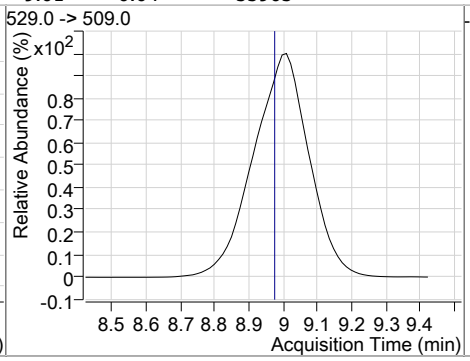


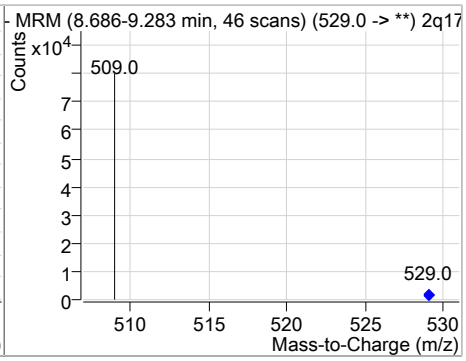


Perfluorinated Compounds by LC/MS/MS

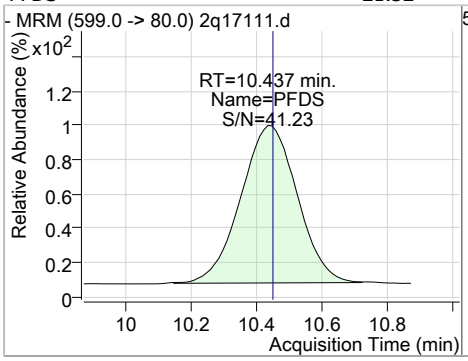
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	17.56	9.01	0.04	55905				

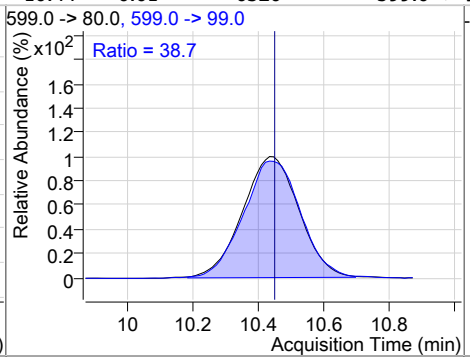


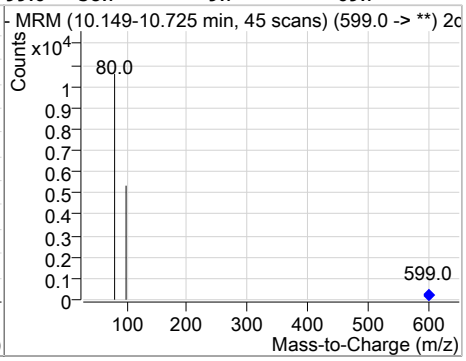




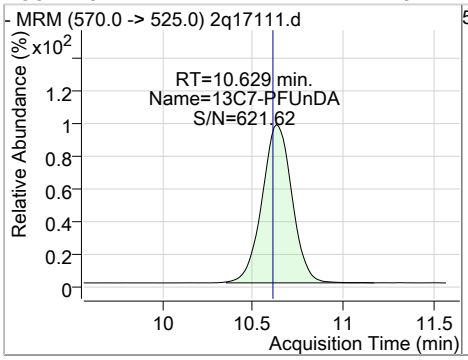
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	21.32	10.44	0.01	6320	599.0 -> 99.0	38.7	9.7	69.7

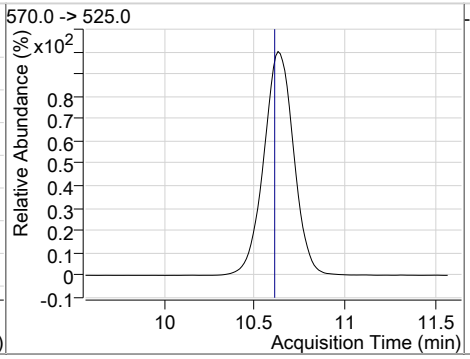


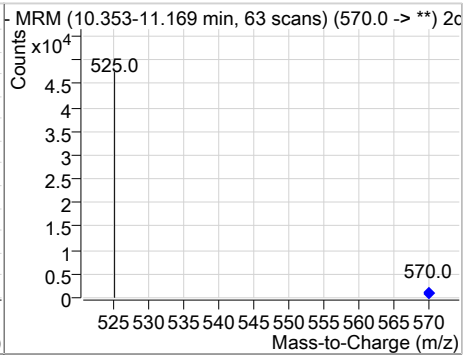




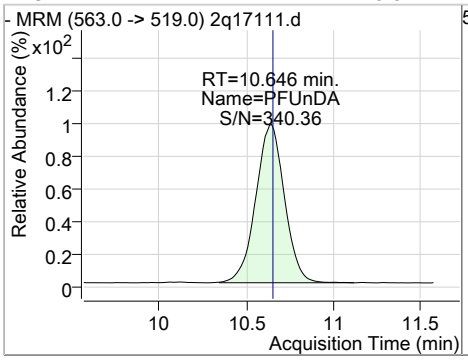
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	17.49	10.63	0.03	31319				

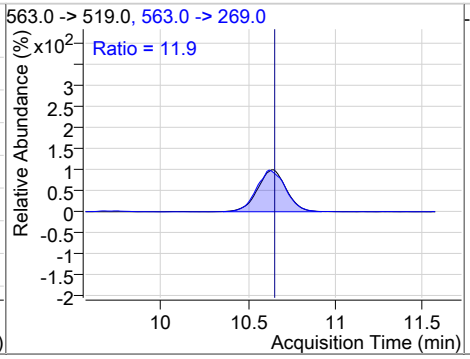


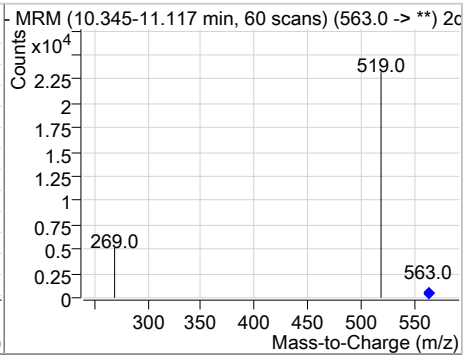




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.84	10.65	0.03	15360	563.0 -> 269.0	11.9	0.0	41.8

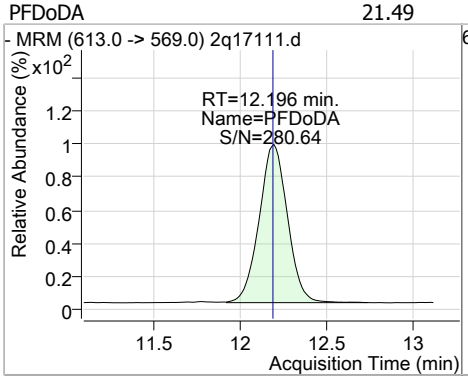


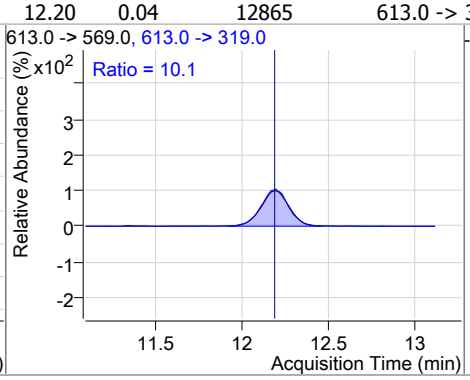


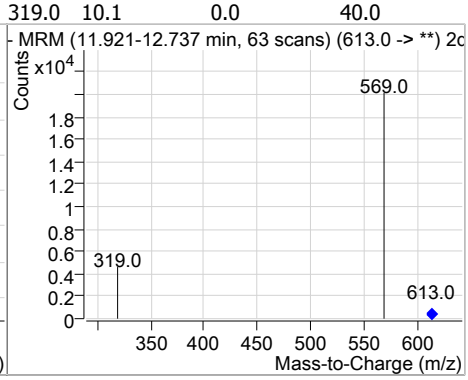


Perfluorinated Compounds by LC/MS/MS

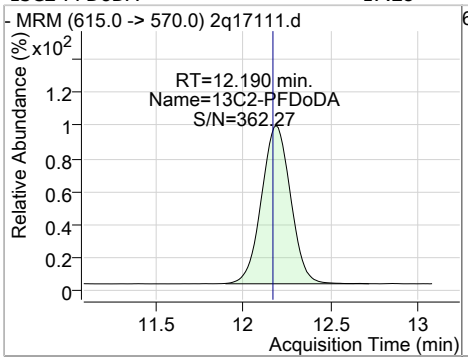
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	21.49	12.20	0.04	12865	613.0 -> 319.0	10.1	0.0	40.0

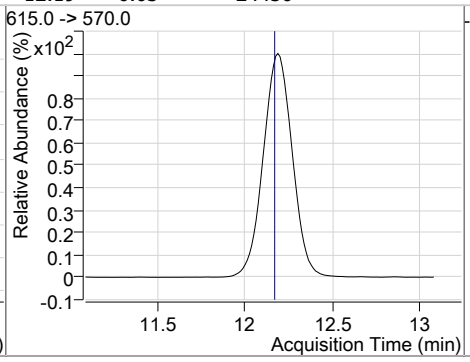


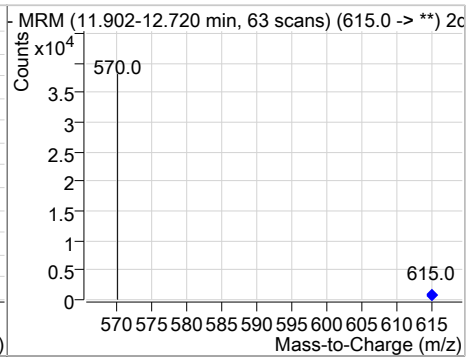




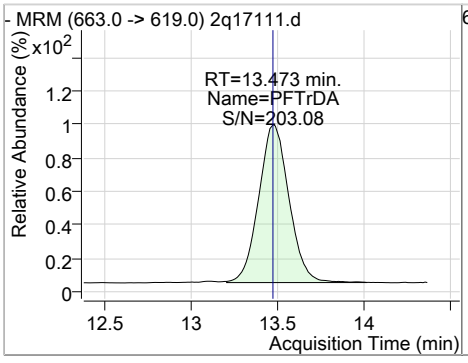
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	17.28	12.19	0.03	24456				

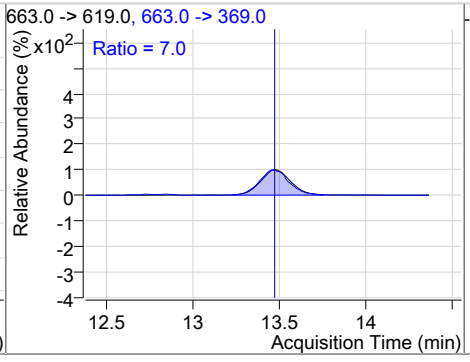


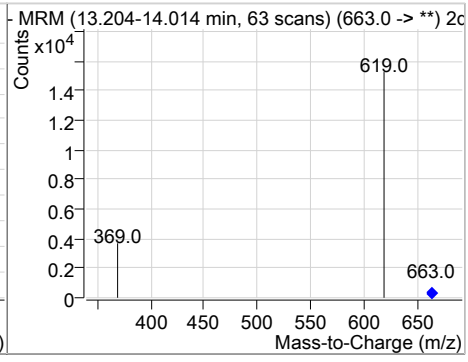




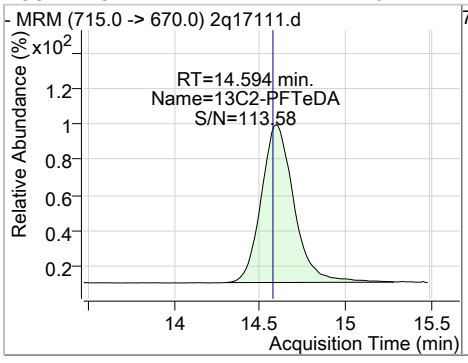
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	22.11	13.47	0.03	9639	663.0 -> 369.0	7.0	0.0	37.1

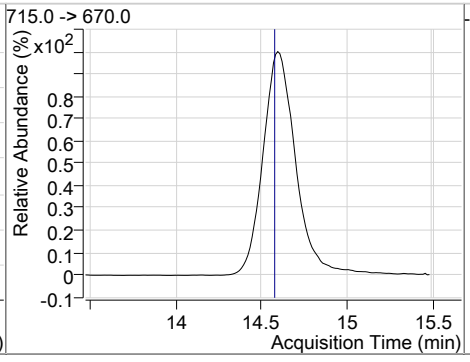


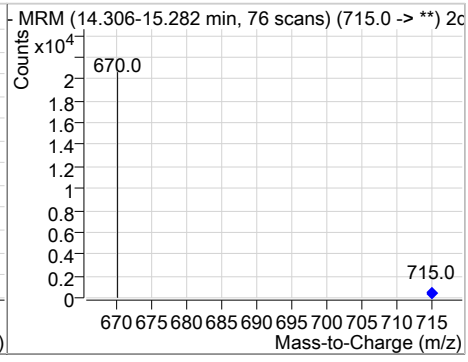




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	16.71	14.59	0.03	10216				

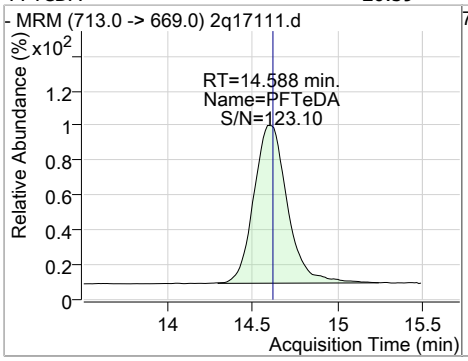


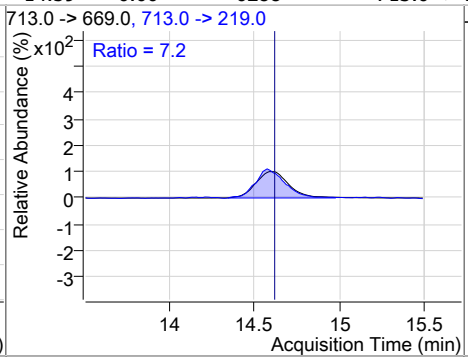


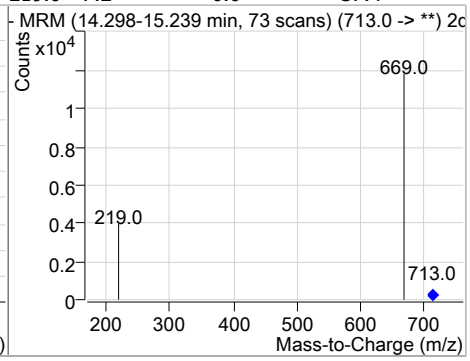


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.59	14.59	0.00	6288	713.0 -> 219.0	7.2	0.0	37.4







Manual Integration Approval Summary

Sample Number:	S2Q296-CC296	**Method:**	EPA 537M BY ID
Lab FileID:	2Q17111.D	**Analyst approved:**	07/16/18 13:34 Natasha Gumtie
Injection Time:	07/14/18 03:10	**Supervisor approved:**	07/16/18 17:22 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.57	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 07/16/18 17:22

Perfluorinated Compounds by LC/MS/MS

Data File : 2q17120.d
Operator : NATASHAG
Acq. Method : dMRM_ID_PFC.m
Acq. Date-Time : 7/14/2018 6:17:26 AM
Sample Name : cc296-20
Vial : Vial 7
DA Method File : PFC_ID_071318_S2Q296.quantmethod.xml
Batch Name : s2q296.batch.bin
Sample Information : op70790,S2Q296,1.99,,,1.0,1,soil

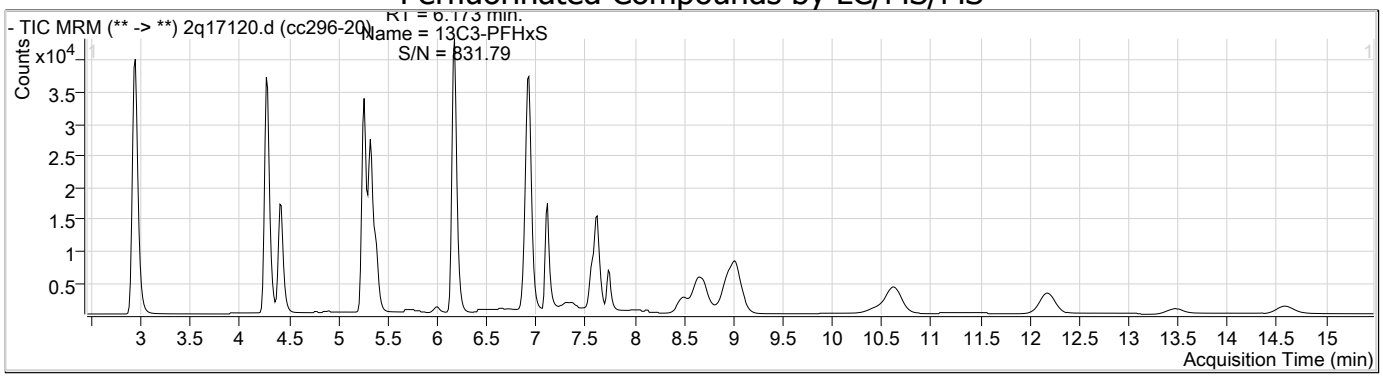
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.921	415.0 -> 370.0	17737	20.00	µg/L	0.000
13C4-PFOS	7.573	503.0 -> 80.0	9576	20.00	µg/L	0.000
M4-PFBA	2.941	217.0 -> 172.0	138477	20.00	µg/L	0.000
M5-PFPeA	4.275	268.0 -> 223.0	67515	20.00	µg/L	-0.013
M5-PFHxA	5.328	318.0 -> 273.0	62207	20.00	µg/L	-0.013
M4-PFHpA	6.179	367.0 -> 322.0	58977	20.00	µg/L	0.000
M8-PFOA	6.920	421.0 -> 376.0	29302	20.00	µg/L	0.000
M9-PFNA	7.640	472.0 -> 427.0	17352	20.00	µg/L	0.013
M6-PFDA	8.654	519.0 -> 474.0	38725	20.00	µg/L	0.025
M7-PFUnDA	10.629	570.0 -> 525.0	30900	20.00	µg/L	0.025
M2-PFDoDA	12.178	615.0 -> 570.0	23852	20.00	µg/L	0.013
M2-PFTeDA	14.581	715.0 -> 670.0	9765	20.00	µg/L	0.013
M8-FOSA	7.117	506.0 -> 78.0	32235	20.00	µg/L	0.000
M3-PFBS	4.418	302.0 -> 99.0	20919	20.00	µg/L	0.000
M3-PFHxS	6.173	402.0 -> 99.0	17315	20.00	µg/L	0.000
M8-PFOS	7.571	507.0 -> 99.0	8251	20.00	µg/L	0.000
M2-4:2FTS	5.260	329.0 -> 309.0	64665	20.00	µg/L	0.000
M2-6:2FTS	6.930	429.0 -> 409.0	47478	20.00	µg/L	0.000
M2-8:2FTS	9.010	529.0 -> 509.0	54877	20.00	µg/L	0.038
M3-MeFOSAA	7.607	573.0 -> 419.0	14956	20.00	µg/L	-0.013
System Monitoring Compounds						
13C2-4:2FTS	5.260	329.0 -> 309.0	64636	18.61	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.0%		
13C2-6:2FTS	6.930	429.0 -> 409.0	47476	18.01	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.1%		
13C2-8:2FTS	9.010	529.0 -> 509.0	54374	17.08	µg/L	0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.4%		
13C2-PFDoDA	12.178	615.0 -> 570.0	23851	16.85	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.2%		
13C2-PFTeDA	14.581	715.0 -> 670.0	9741	15.93	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.6%		
13C3-PFBS	4.418	302.0 -> 99.0	20913	18.95	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.8%		
13C3-PFHxS	6.173	402.0 -> 99.0	17339	18.15	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.7%		
13C4-PFBA	2.941	217.0 -> 172.0	138425	18.46	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.3%		
13C4-PFHpA	6.179	367.0 -> 322.0	58979	18.56	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.8%		
13C5-PFHxA	5.328	318.0 -> 273.0	62219	18.60	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.0%		
13C5-PFPeA	4.275	268.0 -> 223.0	67533	18.24	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.2%		
13C6-PFDA	8.654	519.0 -> 474.0	38674	17.42	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.1%		

Perfluorinated Compounds by LC/MS/MS

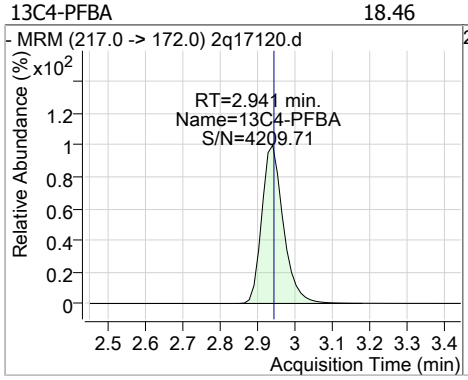
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	10.629	570.0 -> 525.0	31004	17.31	µg/L		0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.6%			
13C8-FOSA	7.117	506.0 -> 78.0	32238	18.00	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.0%			
13C8-PFOA	6.920	421.0 -> 376.0	29300	17.74	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.7%			
13C8-PFOS	7.571	507.0 -> 99.0	8259	17.64	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.2%			
13C9-PFNA	7.640	472.0 -> 427.0	17362	17.08	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.4%			
d3-MeFOSAA	7.607	573.0 -> 419.0	14945	18.41	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.1%			
M2-PFOA	6.921	415.0 -> 370.0	17733	20.00	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.573	503.0 -> 80.0	9582	20.01	ng/ml		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
Target Compounds							**QValue**
4:2FTS	5.263	327.0 -> 307.0	33453	19.94	µg/L		100
6:2FTS	6.931	427.0 -> 407.0	23505	19.66	µg/L		96
8:2FTS	9.013	527.0 -> 507.0	29800	20.27	µg/L		98
EtFOSAA	7.744	584.0 -> 419.0	4976	21.55	µg/L		96
FOSA	7.119	498.0 -> 78.0	15960	20.47	µg/L		100
MeFOSAA	7.622	570.0 -> 419.0	5579	20.58	µg/L		100
PFBA	2.937	213.0 -> 169.0	21988	20.09	µg/L		100
PFBS	4.409	299.0 -> 80.0	28932	21.26	µg/L		99
PFDA	8.669	513.0 -> 469.0	14322	20.74	µg/L		99
PFDoDA	12.184	613.0 -> 569.0	12468	21.34	µg/L		99
PFDS	10.424	599.0 -> 80.0	6083	20.80	µg/L		100
PFHpA	6.182	363.0 -> 319.0	45049	21.42	µg/L		99
PFHpS	6.878	449.0 -> 80.0	10550	20.39	µg/L		99
PFHxA	5.330	313.0 -> 269.0	20675	20.54	µg/L		100
PFHxS	6.163	399.0 -> 80.0	20862	20.88	µg/L	m	99
PFNA	7.641	463.0 -> 419.0	7386	22.59	µg/L		93
PFNS	8.483	549.0 -> 80.0	11246	21.06	µg/L		99
PFOA	6.922	413.0 -> 369.0	15484	20.66	µg/L		98
PFOS	7.574	499.0 -> 80.0	10523	20.53	µg/L	m	98
PFPeA	4.278	263.0 -> 219.0	66522	22.18	µg/L		100
PFPeS	5.383	349.0 -> 80.0	18856	20.90	µg/L		100
PFTeDA	14.588	713.0 -> 669.0	5960	20.51	µg/L		100
PFTrDA	13.454	663.0 -> 619.0	9397	22.64	µg/L		100
PFUnDA	10.621	563.0 -> 519.0	14882	20.47	µg/L		99

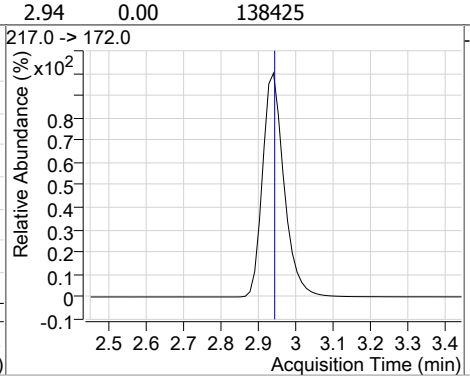
 # = Qualifier out of range, m = manually integrated, + = Area summed

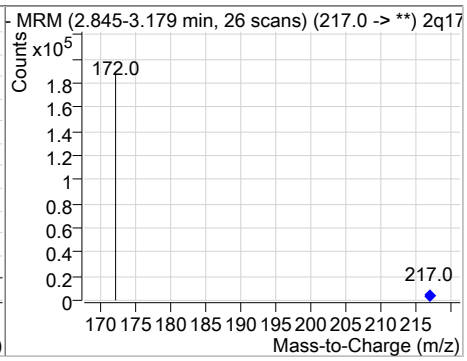
Perfluorinated Compounds by LC/MS/MS



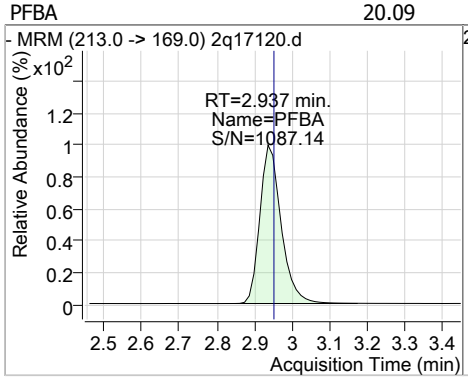
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.46	2.94	0.00	138425				

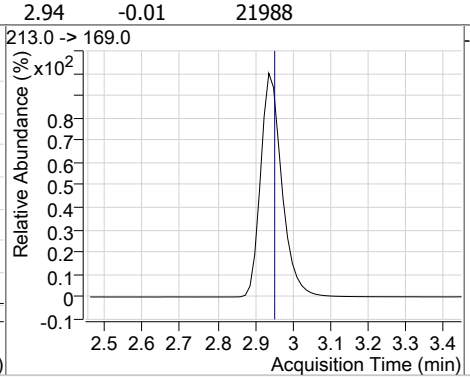


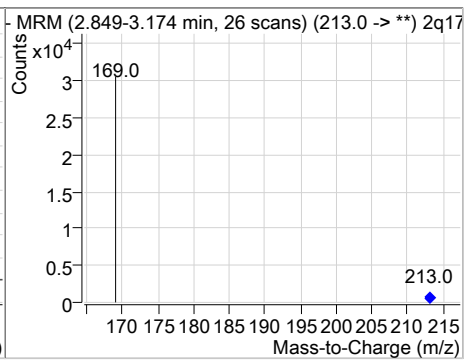




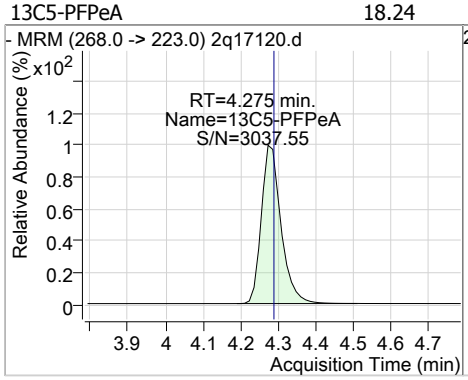
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.09	2.94	-0.01	21988				

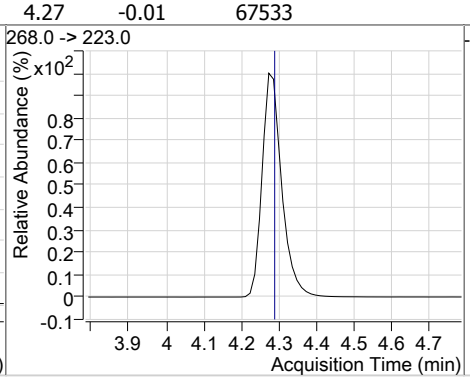


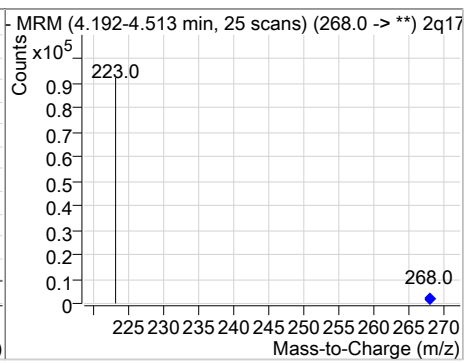




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.24	4.27	-0.01	67533				







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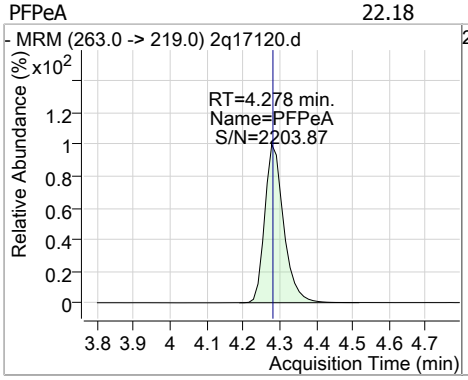
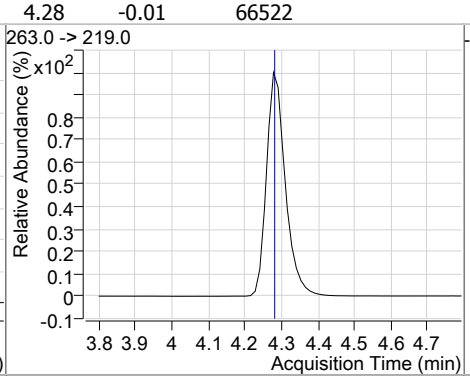
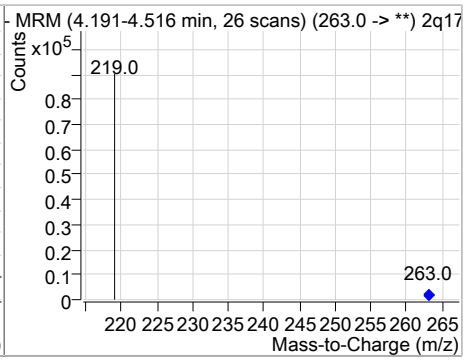
7

Perfluorinated Compounds by LC/MS/MS

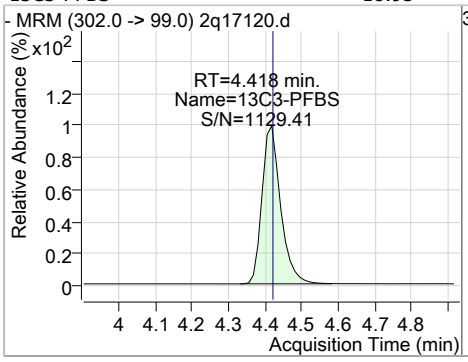
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	22.18	4.28	-0.01	66522				

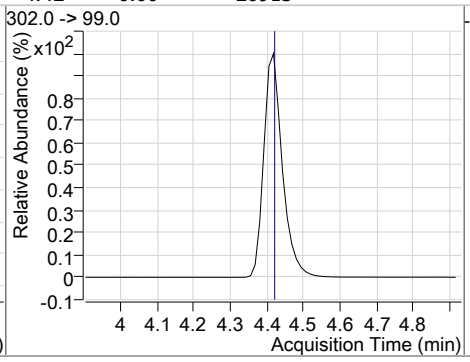


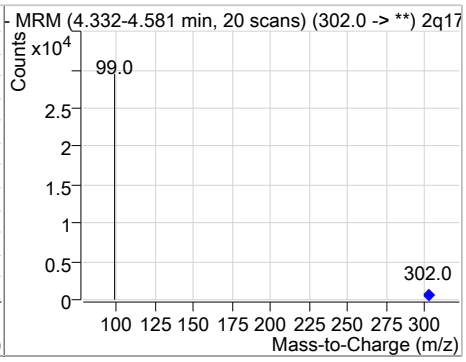




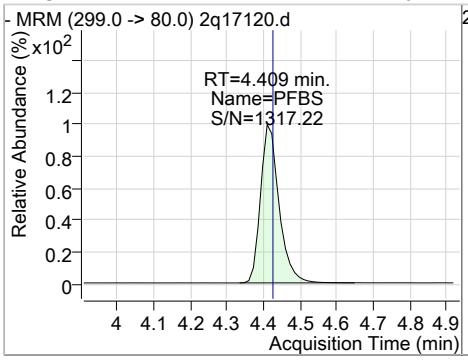
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.95	4.42	0.00	20913				

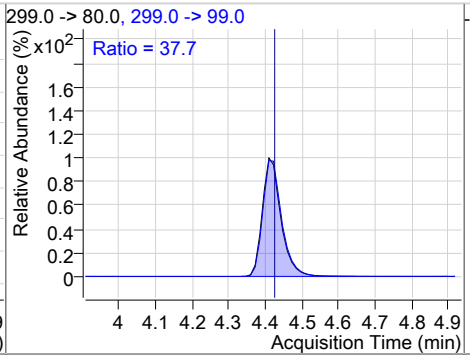


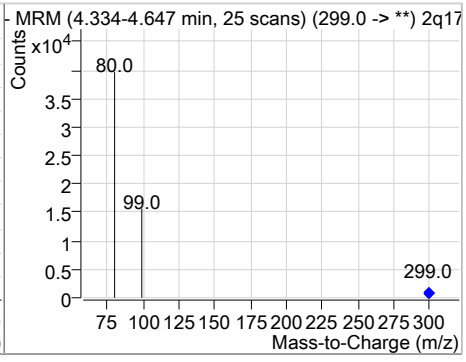




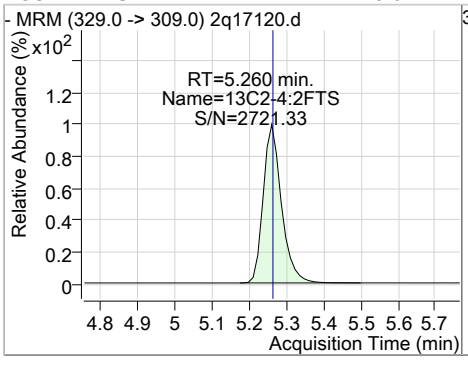
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	21.26	4.41	-0.01	28932	299.0 -> 99.0	37.7	7.4	67.4

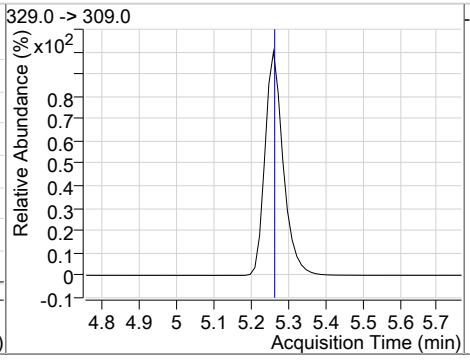


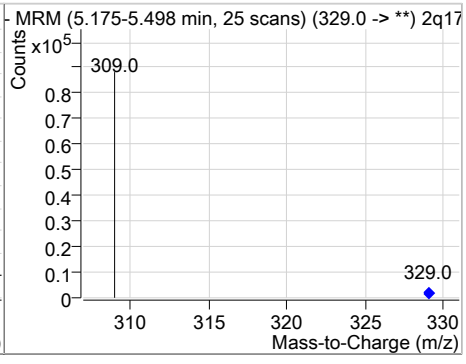




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.61	5.26	0.00	64636				

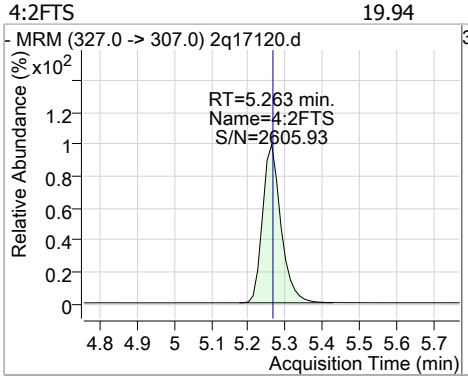


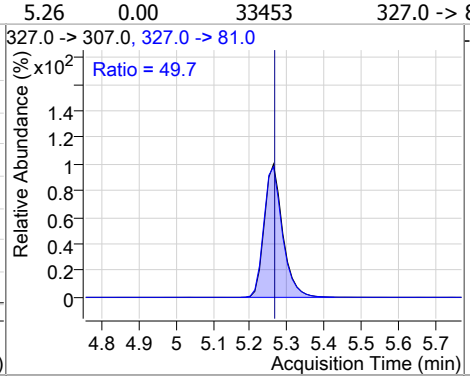


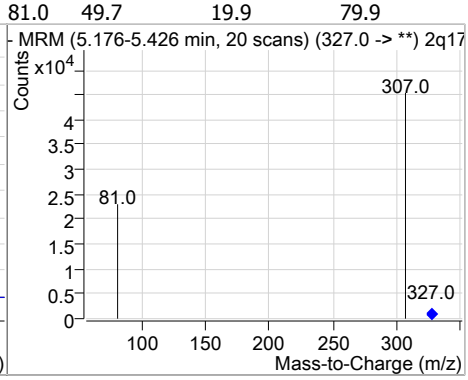


Perfluorinated Compounds by LC/MS/MS

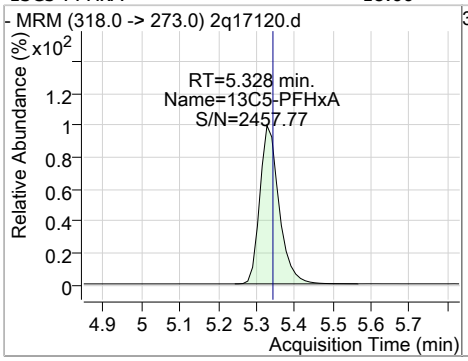
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.94	5.26	0.00	33453	327.0 -> 81.0	49.7	19.9	79.9

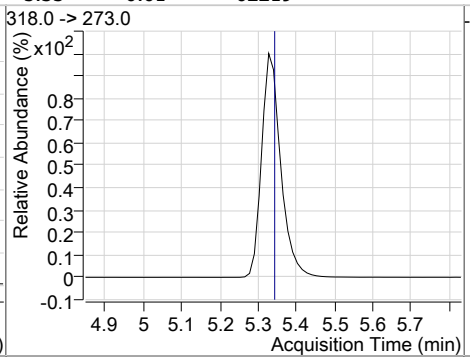


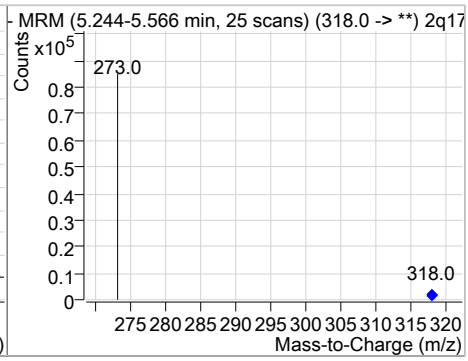




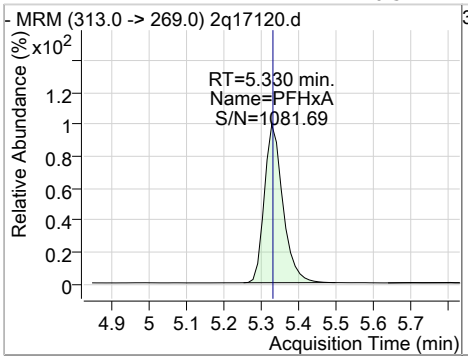
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.60	5.33	-0.01	62219				

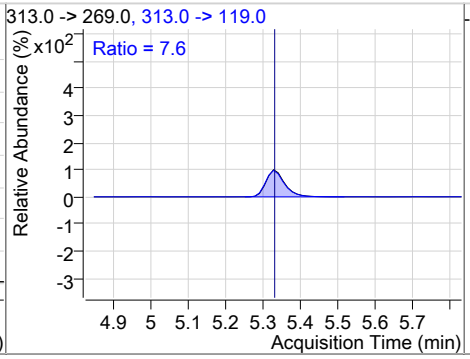


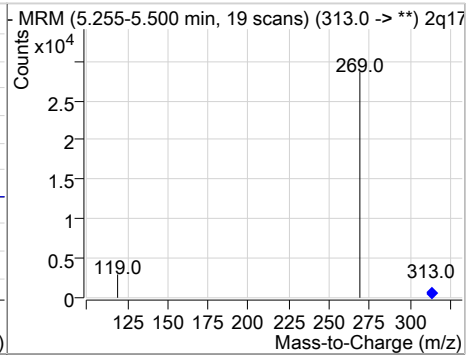




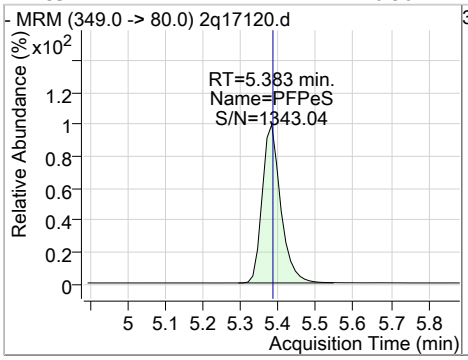
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.54	5.33	-0.01	20675	313.0 -> 119.0	7.6	0.0	37.6

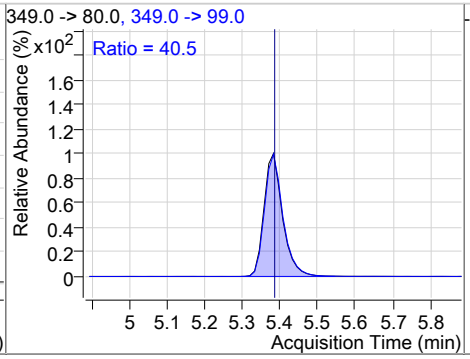


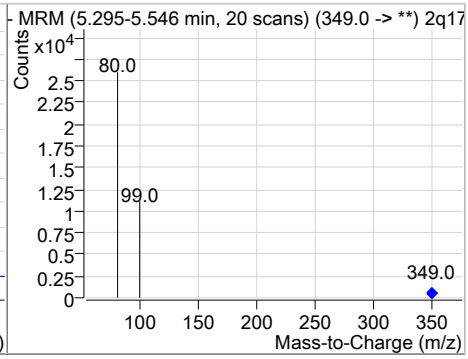




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	20.90	5.38	0.00	18856	349.0 -> 99.0	40.5	10.8	70.8

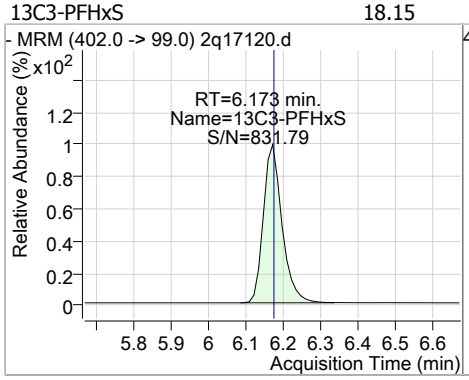


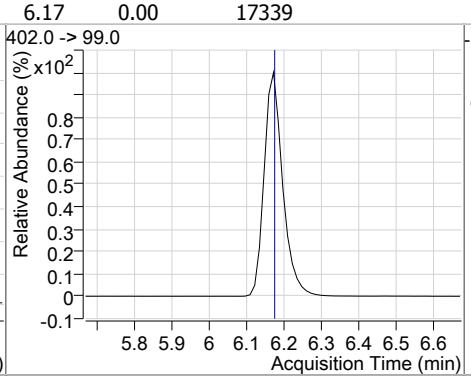


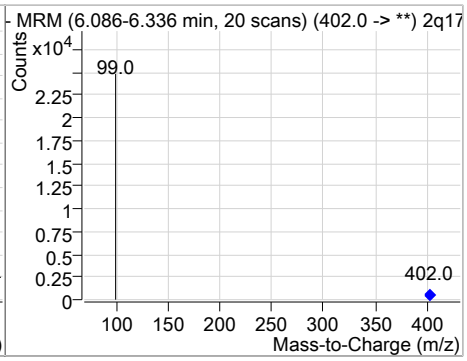


Perfluorinated Compounds by LC/MS/MS

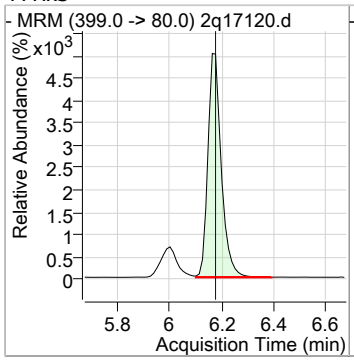
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.15	6.17	0.00	17339				

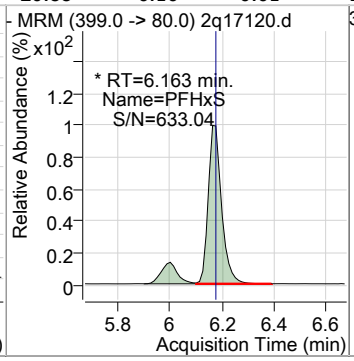


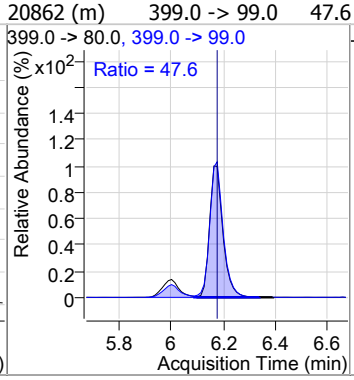


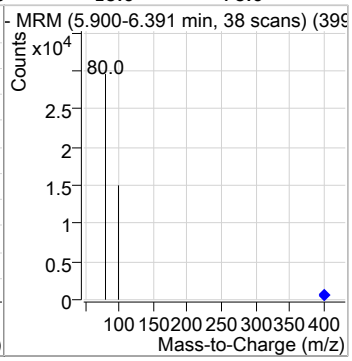


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.88	6.16	-0.01	20862 (m)	399.0 -> 99.0	47.6	18.0	78.0

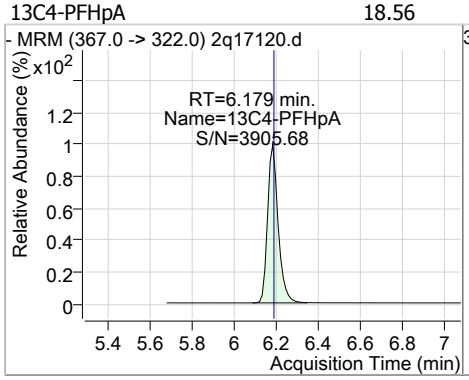


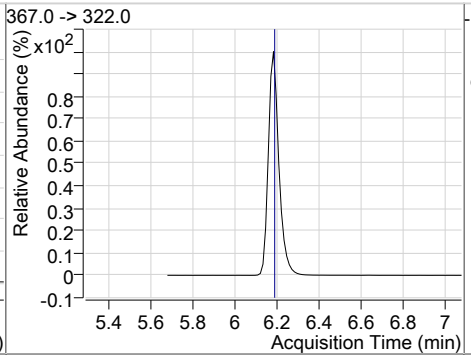


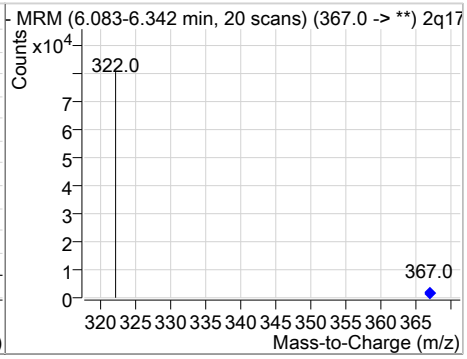




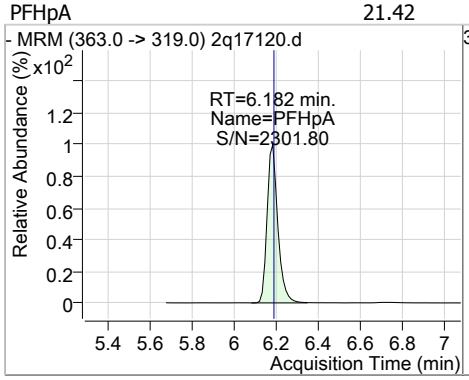
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.56	6.18	0.00	58979				

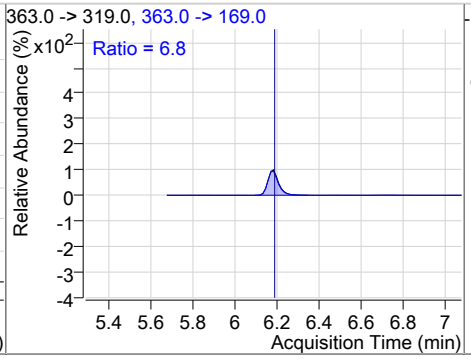


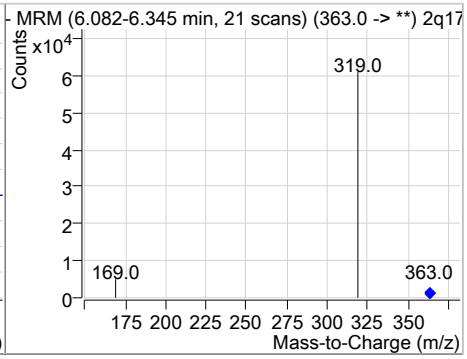




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	21.42	6.18	0.00	45049	363.0 -> 169.0	6.8	0.0	37.2

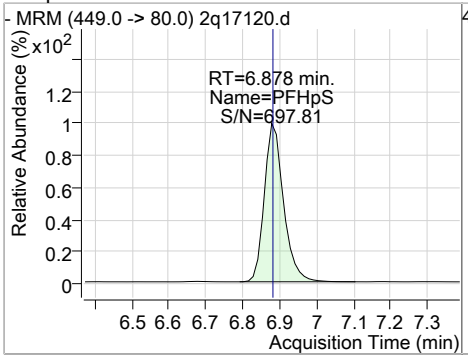


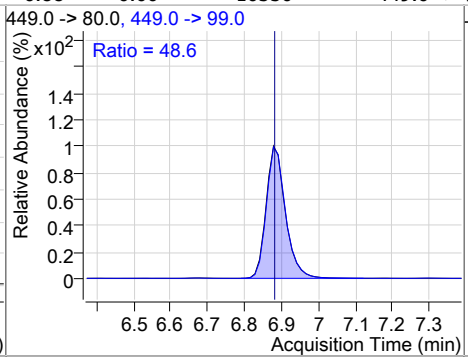


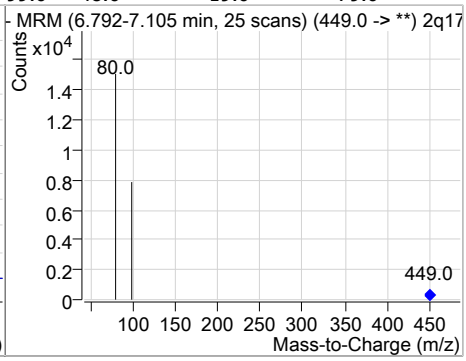


Perfluorinated Compounds by LC/MS/MS

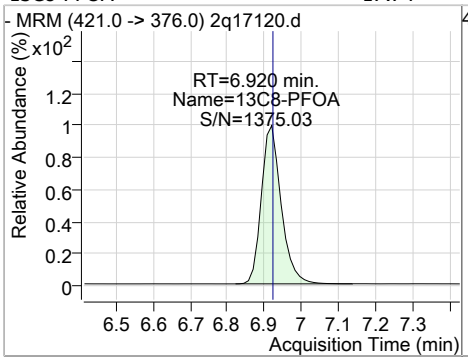
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.39	6.88	0.00	10550	449.0 -> 99.0	48.6	19.0	79.0

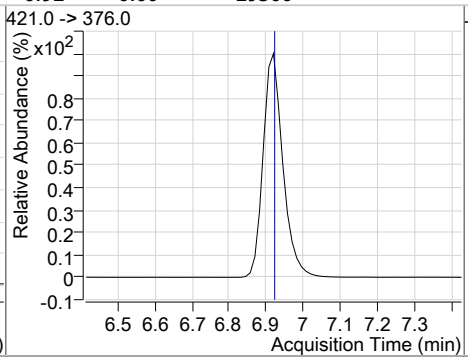


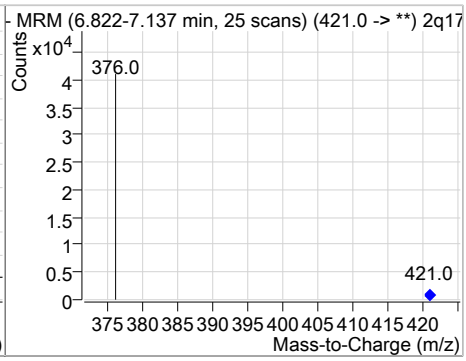




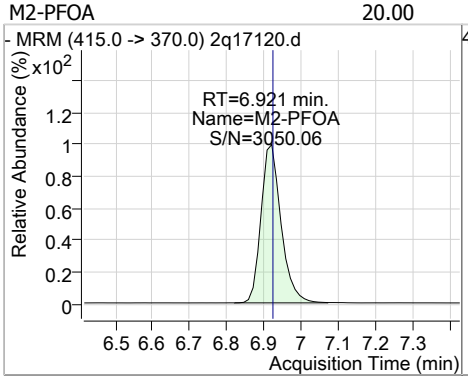
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	17.74	6.92	0.00	29300				

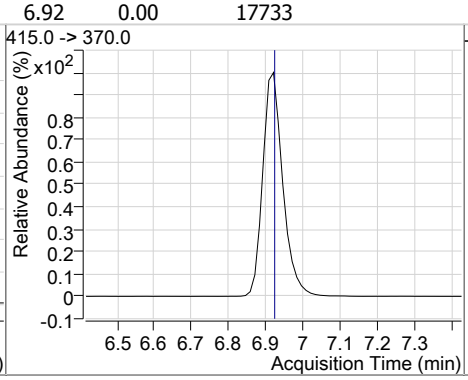


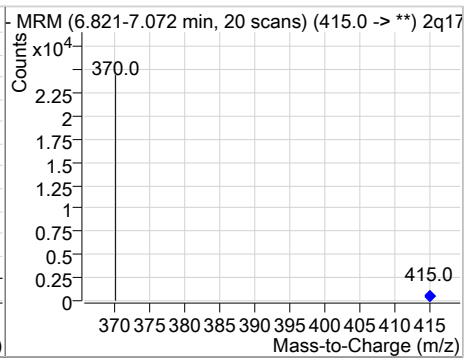




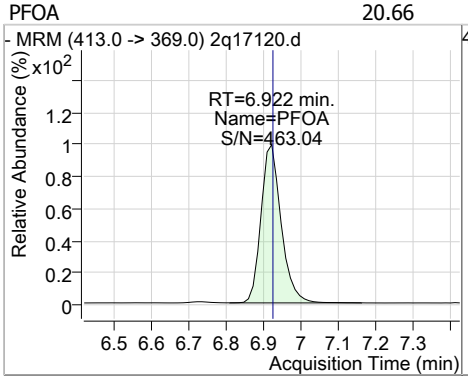
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.92	0.00	17733				

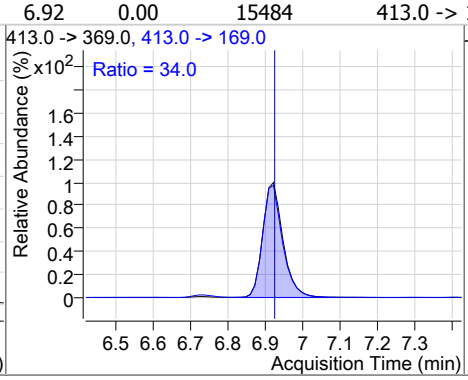


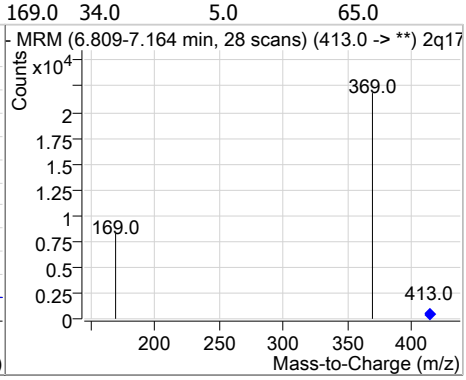




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	20.66	6.92	0.00	15484	413.0 -> 169.0	34.0	5.0	65.0

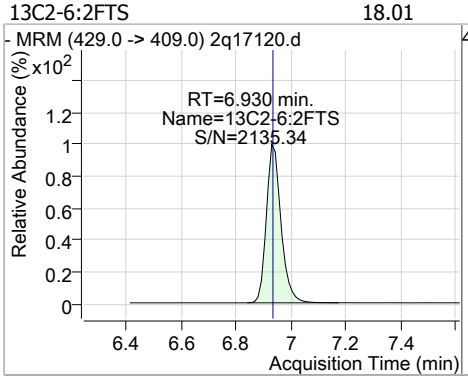


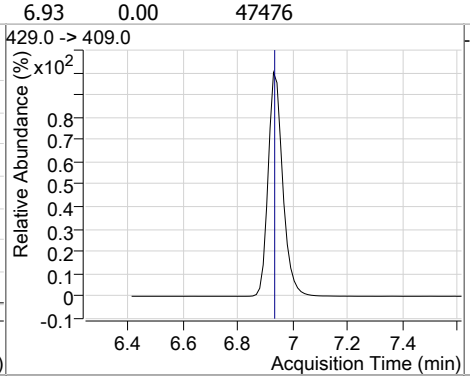


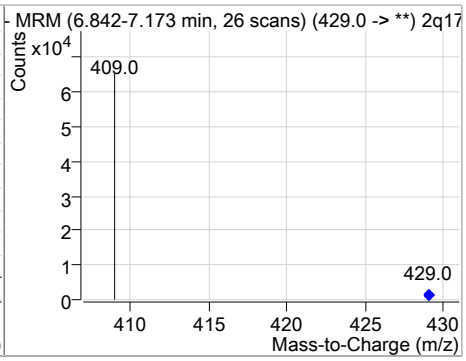


Perfluorinated Compounds by LC/MS/MS

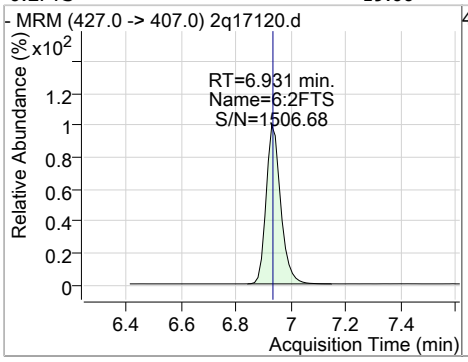
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.01	6.93	0.00	47476				

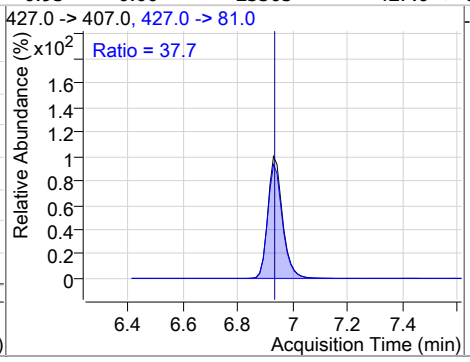


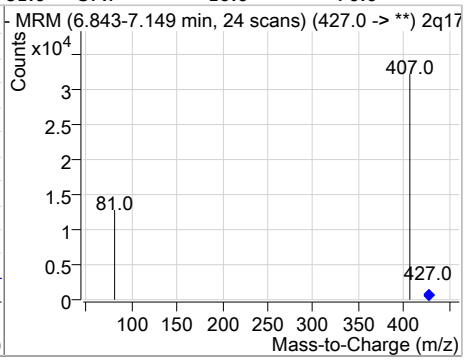




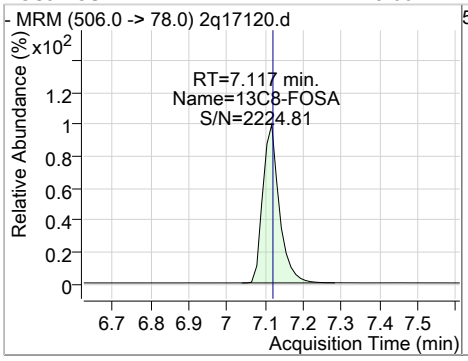
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.66	6.93	0.00	23505	427.0 -> 81.0	37.7	10.0	70.0

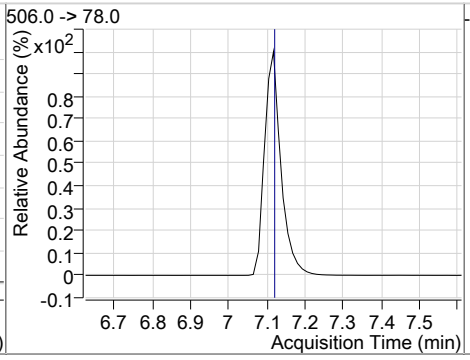


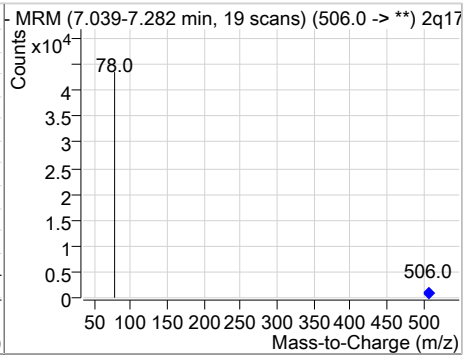




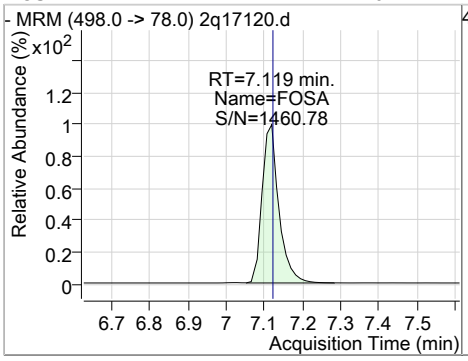
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.00	7.12	0.00	32238				

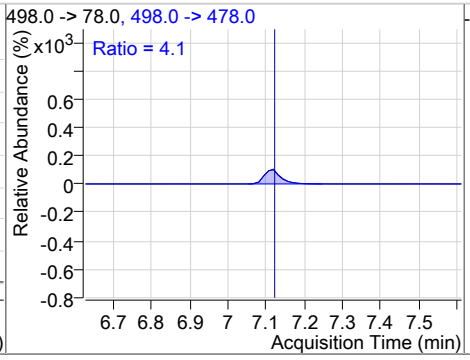


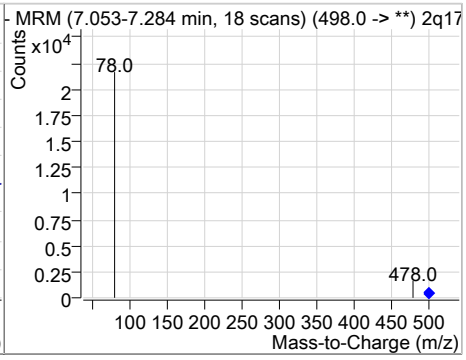




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.47	7.12	0.00	15960	498.0 -> 478.0	4.1	0.0	34.0

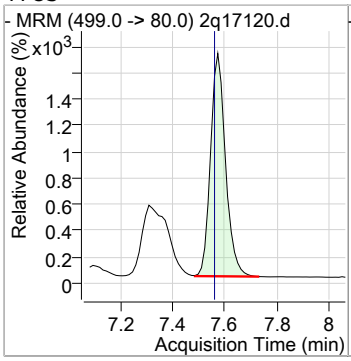


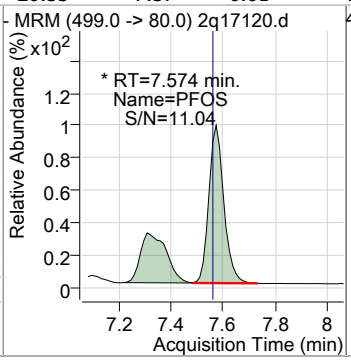


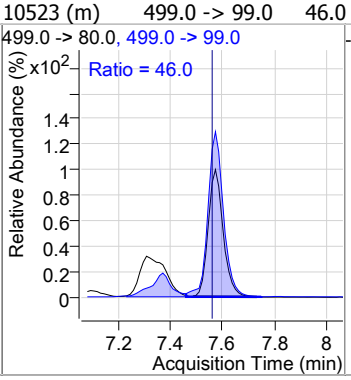


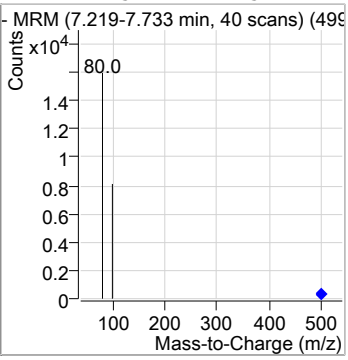
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	20.53	7.57	0.01	10523 (m)	499.0 -> 99.0	46.0	14.5	74.5

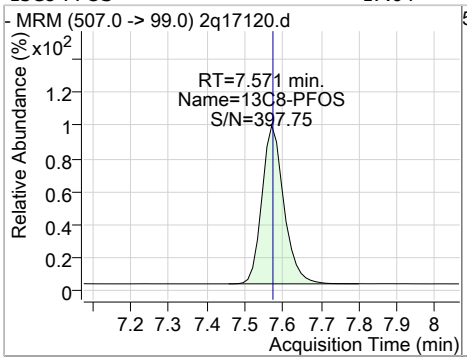


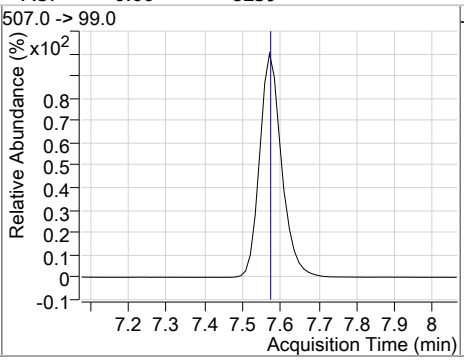


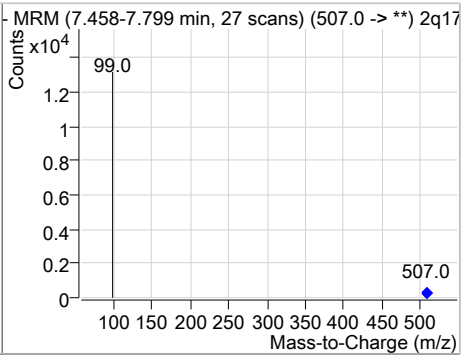




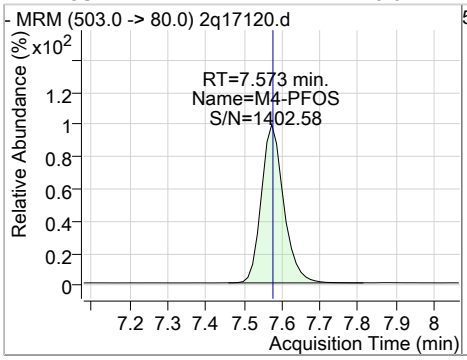
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	17.64	7.57	0.00	8259				

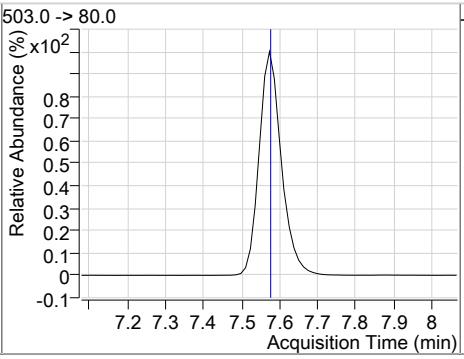


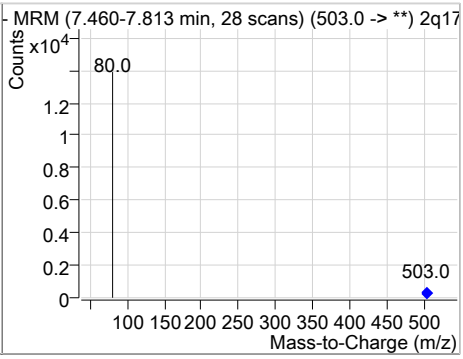




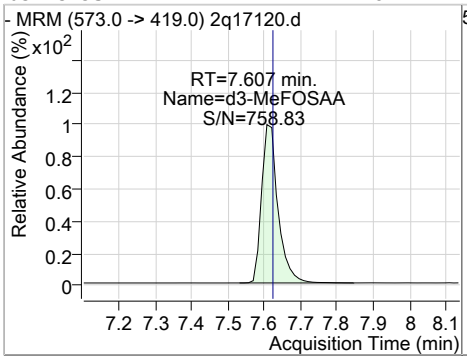
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.01	7.57	0.00	9582				

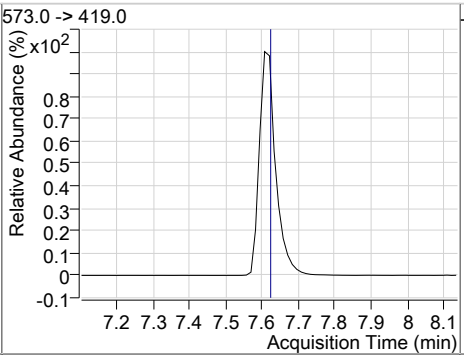


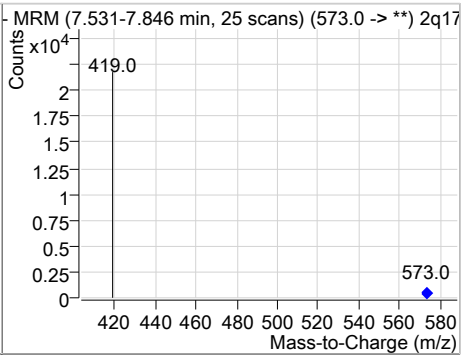




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.41	7.61	-0.01	14945				

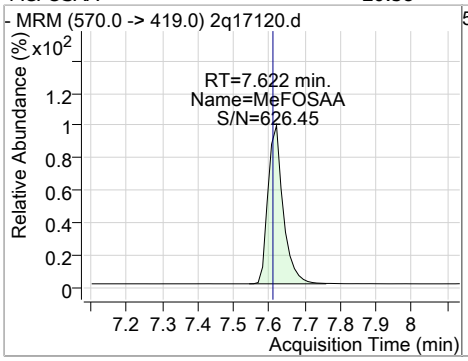


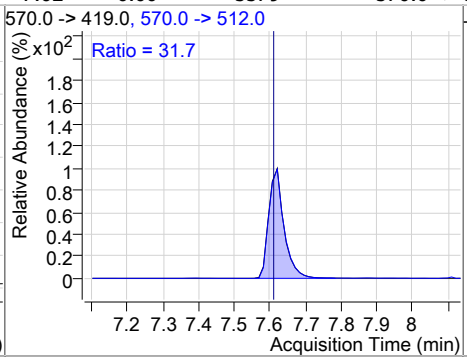


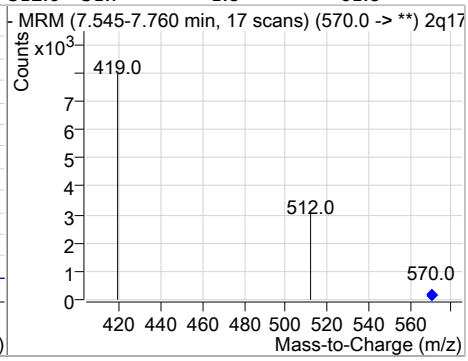


Perfluorinated Compounds by LC/MS/MS

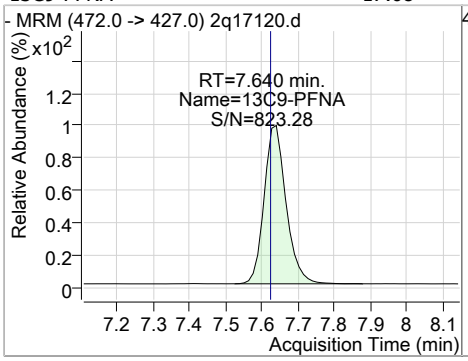
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.58	7.62	0.00	5579	570.0 -> 512.0	31.7	1.8	61.8

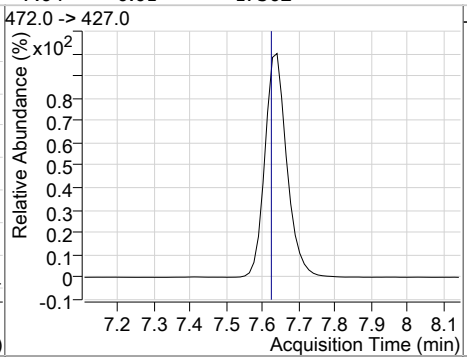


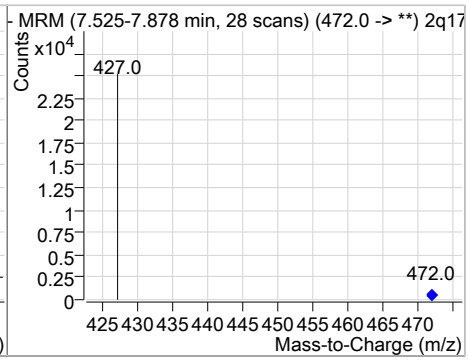




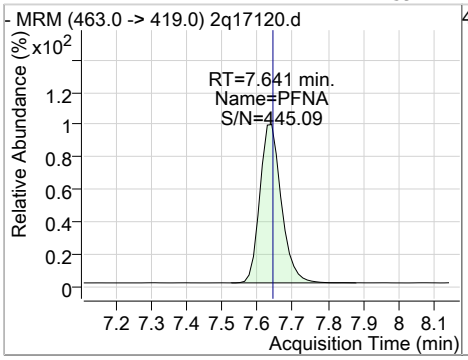
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	17.08	7.64	0.01	17362				

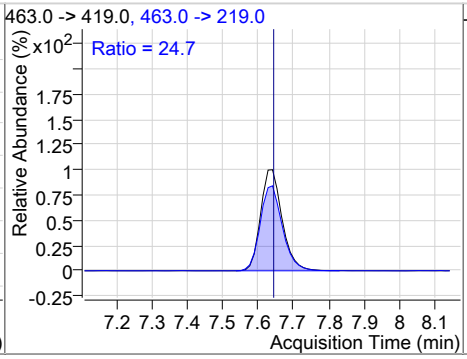


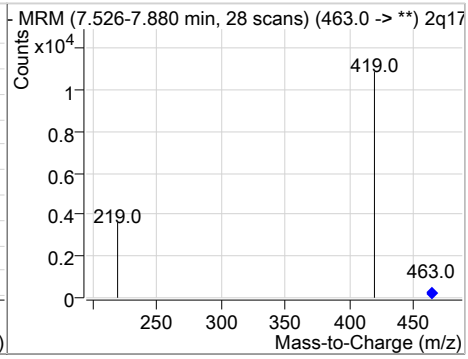




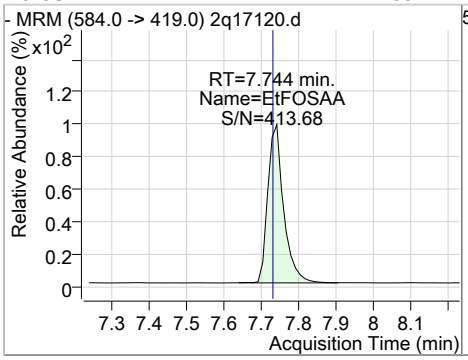
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	22.59	7.64	0.01	7386	463.0 -> 219.0	24.7	0.0	58.4

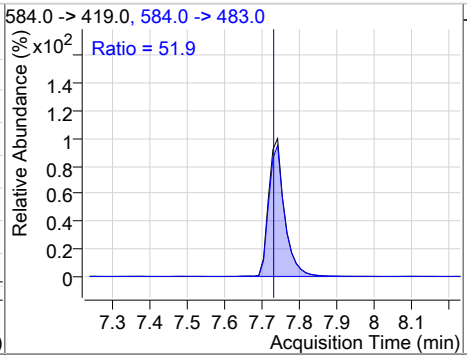


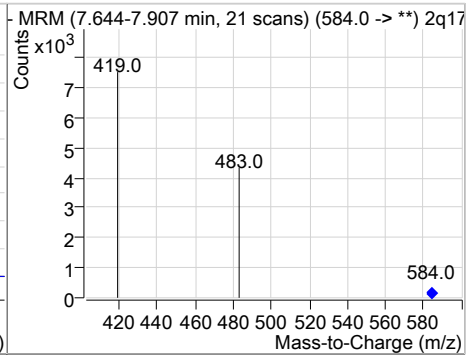




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	21.55	7.74	0.00	4976	584.0 -> 483.0	51.9	24.8	84.8

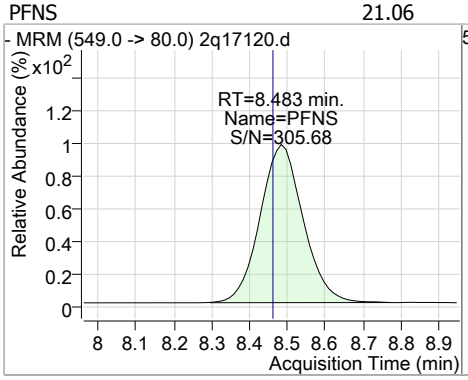


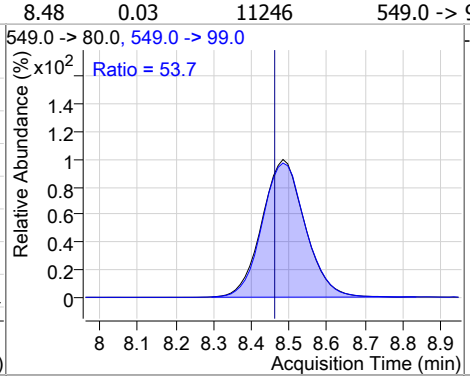


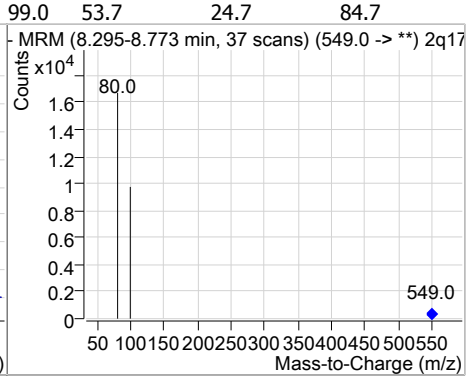


Perfluorinated Compounds by LC/MS/MS

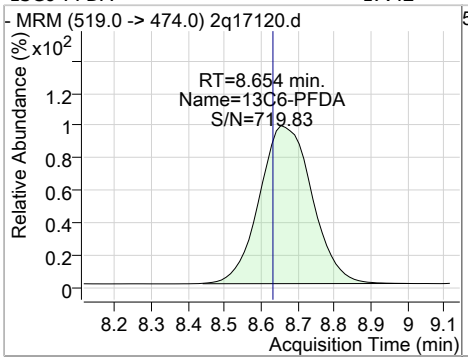
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	21.06	8.48	0.03	11246	549.0 -> 99.0	53.7	24.7	84.7

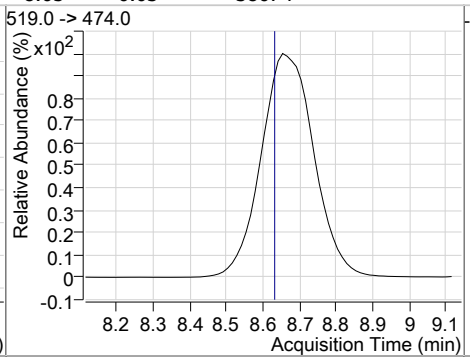


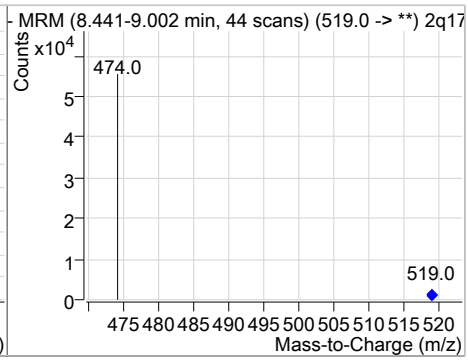




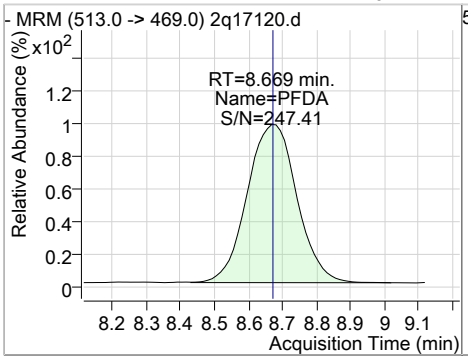
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	17.42	8.65	0.03	38674				

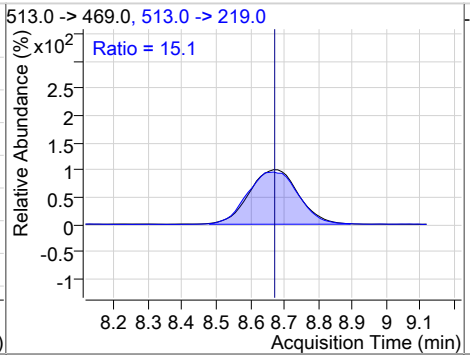


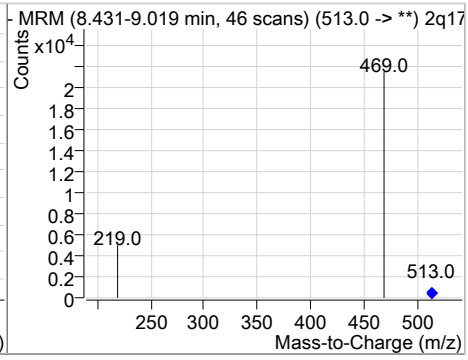




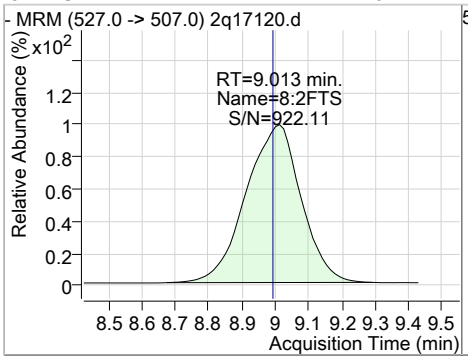
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.74	8.67	0.03	14322	513.0 -> 219.0	15.1	0.0	45.3

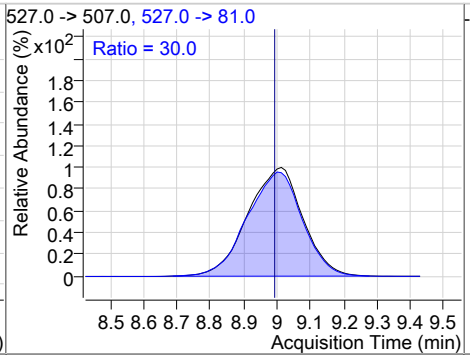


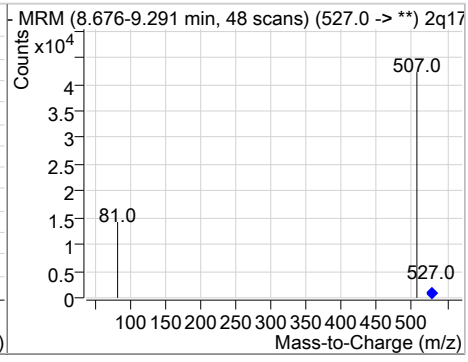




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.27	9.01	0.06	29800	527.0 -> 81.0	30.0	1.3	61.3

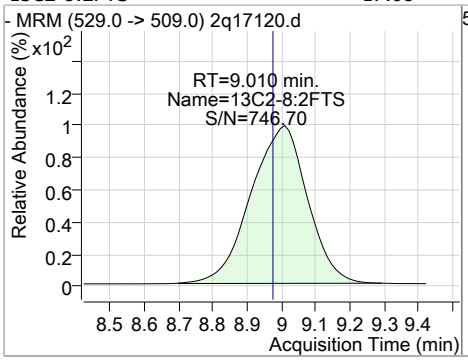


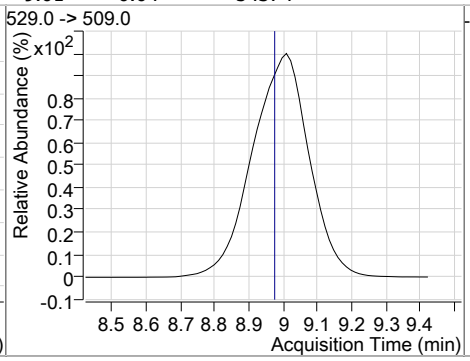


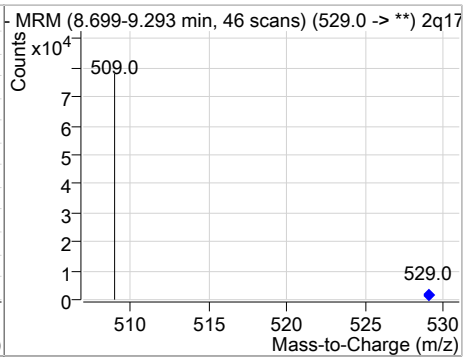


Perfluorinated Compounds by LC/MS/MS

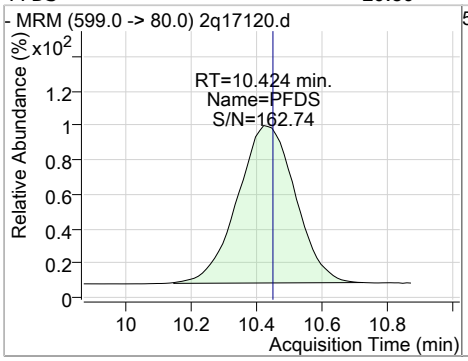
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	17.08	9.01	0.04	54374				

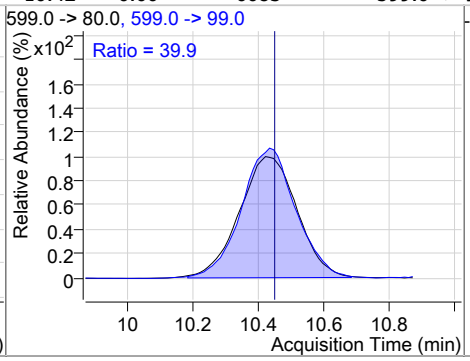


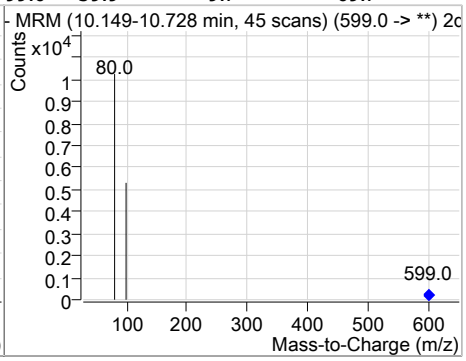




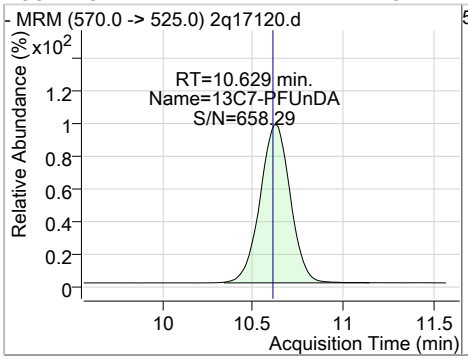
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	20.80	10.42	0.00	6083	599.0 -> 99.0	39.9	9.7	69.7

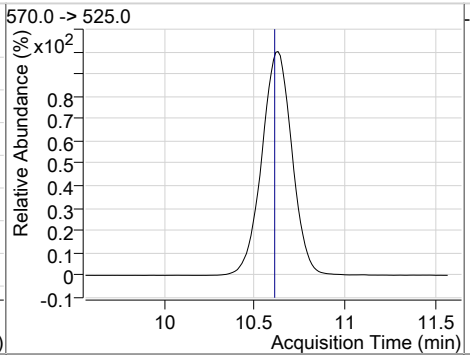


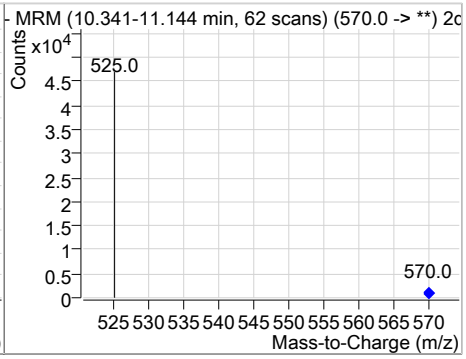




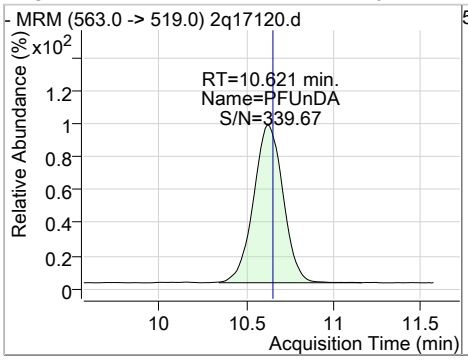
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	17.31	10.63	0.03	31004				

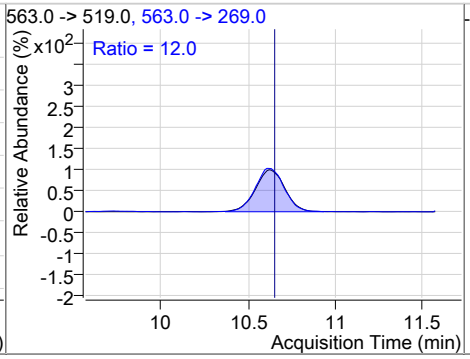


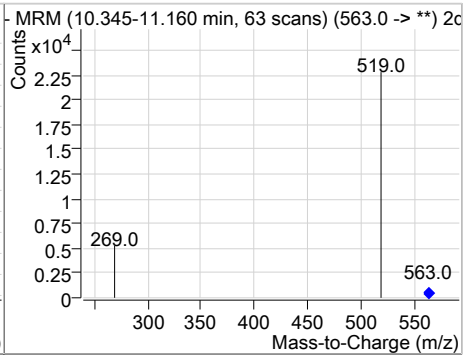




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.47	10.62	0.00	14882	563.0 -> 269.0	12.0	0.0	41.8

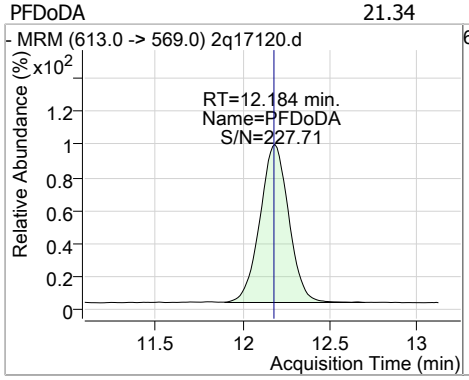


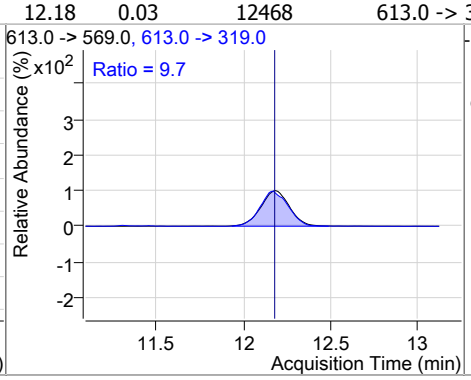


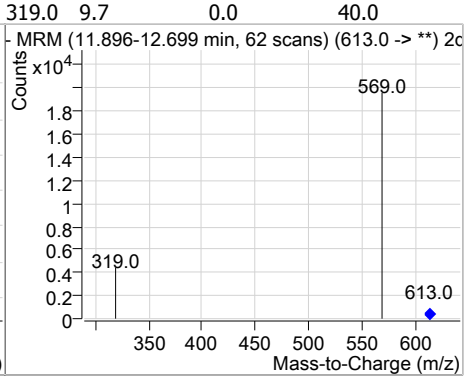


Perfluorinated Compounds by LC/MS/MS

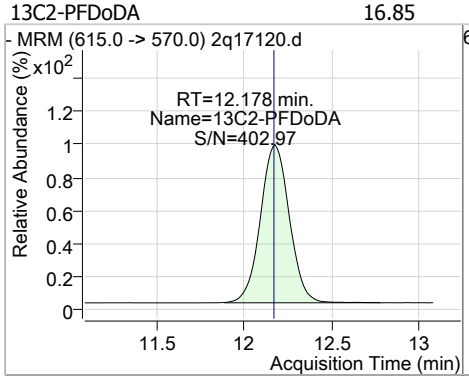
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	21.34	12.18	0.03	12468	613.0 -> 319.0	9.7	0.0	40.0

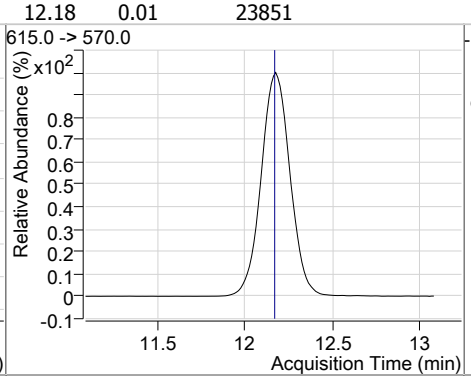


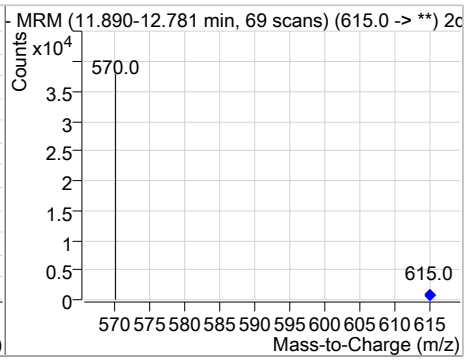




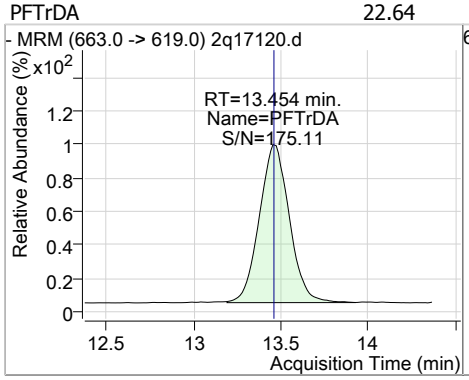
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	16.85	12.18	0.01	23851				

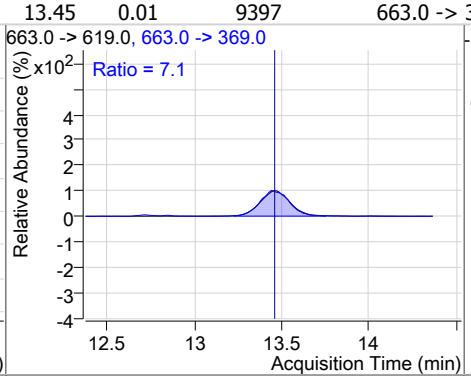


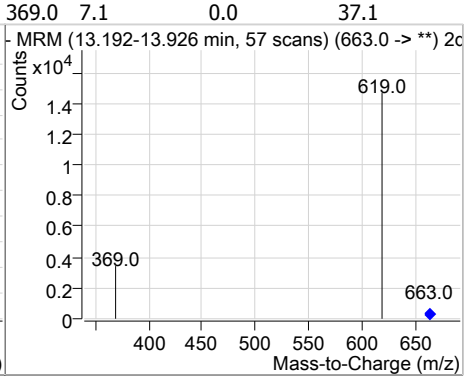




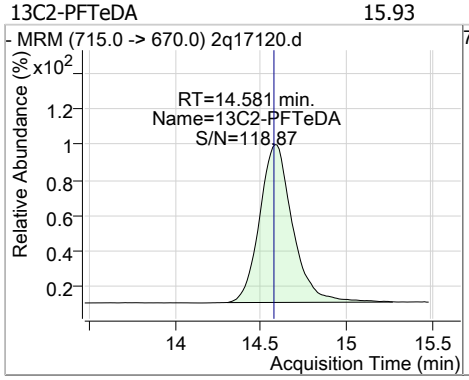
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	22.64	13.45	0.01	9397	663.0 -> 369.0	7.1	0.0	37.1

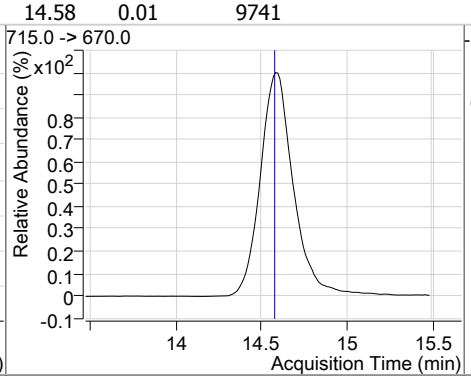


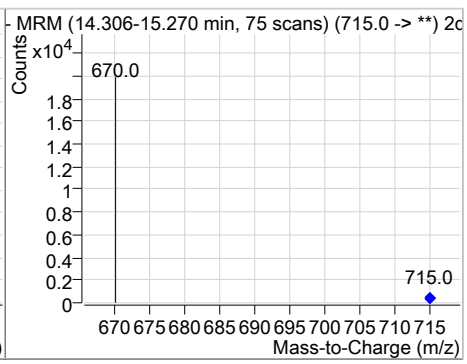




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	15.93	14.58	0.01	9741				

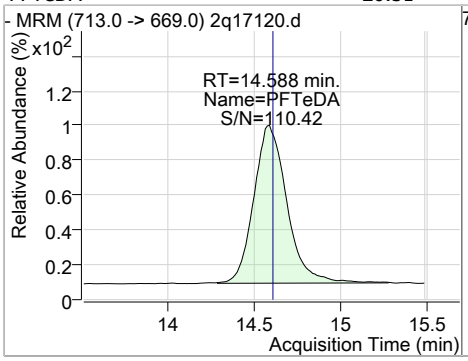


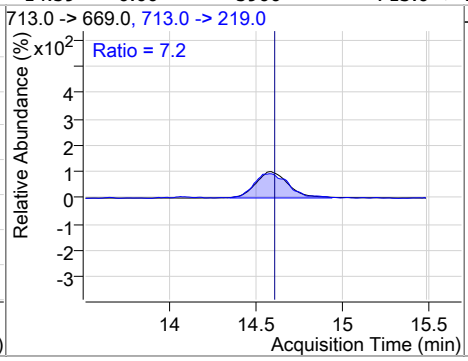


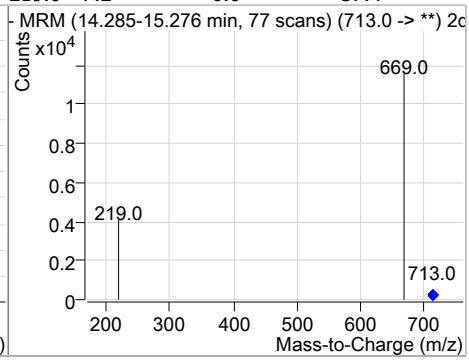


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.51	14.59	0.00	5960	713.0 -> 219.0	7.2	0.0	37.4







7.5.62

7

Manual Integration Approval Summary

Sample Number:	S2Q296-CC296	**Method:**	EPA 537M BY ID
Lab FileID:	2Q17120.D	**Analyst approved:**	07/16/18 13:34 Natasha Gumtie
Injection Time:	07/14/18 06:17	**Supervisor approved:**	07/16/18 17:22 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.16	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.57	Split peak

SGS ACCUTEST-ORLANDO

DATE:	07/05/18
COLUMN TYPE:	Pursheell EC18
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	281

LCMS2-2Q ANALYSIS LOG

METHODS:	PFC-ID
ACQ. METHOD:	AMM-ID-PFC
PROC. METHOD:	PFC-ID-070518-S2Q291
CALIB. DATE:	07/05/18
RUN BATCH: S2Q	291

ANALYST:	NG
ELUENT A LOT #:	180698 w/ Acetic Acid
ELUENT B LOT #:	178825
WATER LOT #:	180698
ISTD Lot #:	LC1077

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 160556	1	CCb	PFC-ID	—	—				—
2Q 57	—	CCb			—				—
2Q 58	—	RT			—				—
2Q 59	—	level 100			—				—
2Q 60	—	IBLK			—				—
2Q 61	—	IC291-0.5			—				—
2Q 62	—	↓ -1			—				—
2Q 63	—	-2			—				—
~~2Q~~		↓ -5							
2Q 64	2	IC291-0.5		LC1073	2.5/500				updated
2Q 65	3	↓ -1		↓	5/500				↓
2Q 66	4	-2			10/500				
2Q 67	5	-5			25/500				
2Q 68	6	↓ -10			50/500				
2Q 69	7	IC291 -20			100/500				
2Q 70	8	IC291-50			250/500				
2Q 71	9	↓ -100		↓	1X				✓
2Q 72	1	IBLK		—	—				pass
2Q 73	10	IEV291-20		LC1057B	5/500				✓ PASS
2Q 74	11	OP70743-bS	↓	OP70743	1X	DOD			

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

SGS ACCUTEST-ORLANDO

DATE:	07/05/18
COLUMN TYPE:	Poroshell EC18
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	281

LCMS2-2Q ANALYSIS LOG

METHODS:	PFC-ID
ACQ. METHOD:	dMRM-ID-PFC
PROC. METHOD:	PFC-ID-070518-SDQ291
CALIB. DATE:	07/05/18
RUN BATCH:	S2Q 291

ANALYST:	NG
ELUENT A LOT #:	180698 w/ AcetIC Acid
ELUENT B LOT #:	178825
WATER LOT #:	180698
ISTD Lot #:	LC1077

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 16575	12	OP70743-mb	PFC-ID	OP70743	1x				✓ ND
2Q 76	13	FA55069-20							✓
2Q 77	14	-22							✓
2Q 78	15	-23							✓
2Q 79	16	-25							✓
2Q 80	17	-26							✓
2Q 81	18	-28							✓
2Q 82	19	-30							✓
2Q 83	20	-34							✓
2Q 84	7	cc291-20		LC1073	100/500				pass
2Q 85	1	ccb		—					—
2Q 86	21	FA55069-42		OP70743	1x				✓
2Q 87	22	FA55430-1					TEPA, PODA, FOSA ↓		rrSx
2Q 88	23	OP70743-ms							rrSx
2Q 89	24	↓ -msd							rrSx
2Q 90	25	FA55430-2							rrSx ↓FOSA
2Q 91	26	↓ -3							✓ ↓FOSA
2Q 92	7	cc291-20		LC1073	100/500				pass
2Q 93	1	ccb		—					—
2Q ↓ 94	27	FA55430-4		OP70743	1x		↓ TEPA, FOSA		✓

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Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

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SGS ACCUTEST-ORLANDO

LCMS2-2Q ANALYSIS LOG

DATE:	07/05/18
COLUMN TYPE:	Poroshell EC18
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	281

METHODS:	PFC-ID
ACQ. METHOD:	dMRM-ID-PFC
PROC. METHOD:	PFC-ID-070518-S2Q291
CALIB. DATE:	07/05/18
RUN BATCH:	S2Q 291

ANALYST:	NG
ELUENT A LOT #:	180698 w/ Acetic Acid
ELUENT B LOT #:	178825
WATER LOT #:	180698
ISTD Lot #:	LC1077

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 165995	28	FA55430-5	PFC-ID	OP70743	1x		NG 07/05/18 ↓TeDA ↓FOSA		✓
2Q 96	29	-6	↓	↓	↓		↓ TeDA		rr 10x ecomb
2Q 97	30	-7	↓	↓	↓		↓FOSA, DODA, TeDA		rr 10x HxS
2Q 98	31	-8	↓	↓	↓		↓FOSA		rr 10x, 20x, ecomb
2Q 99	3	CC291-1	↓	LC1073	5/500				pass
2Q 166000	7	-20	↓	↓	100/500				pass
2Q 01	1	ccb	↓		—				
2Q 02	32	OP70703-bs	↓	OP70703	1x	DOD			✓ PASS
2Q 03	33	-mb	↓	↓	↓				✓ ND
2Q 04	34	FA55380-8	↓	↓	↓		↓TeDA		✓
2Q 05	35	-9	↓	↓	↓		↓ TeDA		✓
2Q 06	36	-10	↓	↓	↓				✓
2Q 07	37	-11	↓	↓	↓				✓
2Q 08	38	-12	↓	↓	↓				✓
2Q 09	39	-13	↓	↓	↓				✓
2Q 10	40	-14	↓	↓	↓				rr 2x HxS, PFOS, ecomb
2Q 11	41	-15	↓	↓	↓		↓ TeDA		✓
2Q 12	7	CC291-20	↓	LC1073	100/500				pass
2Q 13 (HARTIAL)	1	ccb	↓		—				
2Q 14	42	FA55380-16	↓	OP70703	1x		↓TeDA Confirms MS/MSD		✓

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

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LCMS2_2Q_log.xls ME rev. 06/16

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Analyst's Signature: [signature]

SGS ACCUTEST-ORLANDO

DATE:	07/05/18
COLUMN TYPE:	Poroshell EC18
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	281

LCMS2-2Q ANALYSIS LOG

METHODS:	PFC-ID
ACQ. METHOD:	PUBM-ID-PFC
PROC. METHOD:	PFC-ID-070518-S2Q291
CALIB. DATE:	07/05/18
RUN BATCH: S2Q	291

ANALYST:	NS
ELUENT A LOT #:	180698 w/ Acetic Acid
ELUENT B LOT #:	178825
WATER LOT #:	180698
ISTD Lot #:	LC1077

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 160615	43	OP70703-MS	PFC-ID	OP70703	1X				✓
2Q 16	44	↓ -msd	↓	↓	↓				✓
2Q 17	45	FAS5380-17							✓
2Q 18	46	-18					NS 07/05/18 ~~PFDA~~, TePA		✓
2Q 19	47	-19					↓ TePA		✓
2Q 20	48	-20					↓ TePA		✓
2Q 21	49	-21							✓
2Q 22	50	-22					↓ TePA		✓
2Q 23	51	-23							✓
2Q 24	7	CC291-20		LC1073	100/500				pass
2Q 25	1	ccb		—					—
2Q 26	52	FAS5380-24		OP70703	1X				✓
2Q 27	53	-25					6:2, TeDA, NaDA, PFOS, PoDA ↓		Istds ↓
2Q 28	54	-26					PFOS ↓		✓
2Q 29	55	-27							✓
2Q 30	7	CC290-20 NS 07/05/18		LC1073	100/500 NS 07/05/18				pass
2Q 31	7	CCb290-20 NS 07/05/18		↓	100/500				pass
2Q 32	91	OP70733-bs		OP70733					start new curve
2Q 33	1	ccb		—					
2Q 34	76	FAST430-1		OP70743					

re-inj

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

SGS ACCUTEST-ORLANDO

DATE:	07/05/18
COLUMN TYPE:	PoroshellEC18
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	281

LCMS2-2Q ANALYSIS LOG

METHODS:	PFC-ID
ACQ. METHOD:	dMRM-ID-PFC
PROC. METHOD:	PFC-ID-070518-S2Q291
CALIB. DATE:	07/05/18
RUN BATCH: S2Q	291

ANALYST:	NG
ELUENT A LOT #:	180698 W/ Acetic Acid
ELUENT B LOT #:	178825
WATER LOT #:	180698
ISTD Lot #:	LC1077

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 16635	79								CCV failed low
2Q 36	80								
2Q 37	81								
2Q 38	82								
2Q 39	83								
2Q 40	84								
2Q 41	85								
2Q 42	86								
2Q									
2Q									
2Q									
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2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q 16681									

SCREEN

RUN

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

Analyst's Signature: Natasha

Initial Calibration Report - Instrument 1

Method Path	D:\MassHunter\damethods
Method File	PFC_ID_070518_S2Q291.quantmethod.xml
Batch Name	D:\MassHunter\Data\0705_PFC_ID_S2Q291\QuantResults\s2q291.batch.bin
Last Calib Update	7/6/2018 10:10:52 AM

Level Name	Calibration Files	Acq. Date-Time	Level Last Update Time
1	D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16564.d	7/5/2018 4:31:07 PM	7/6/2018 10:10:52 AM
2	D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16565.d	7/5/2018 4:50:52 PM	7/6/2018 10:10:52 AM
3	D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16566.d	7/5/2018 5:10:36 PM	7/6/2018 10:10:52 AM
4	D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16567.d	7/5/2018 5:30:22 PM	7/6/2018 10:10:52 AM
5	D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16568.d	7/5/2018 5:50:06 PM	7/6/2018 10:10:52 AM
6	D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16569.d	7/5/2018 6:09:50 PM	7/6/2018 10:10:52 AM
7	D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16570.d	7/5/2018 6:29:36 PM	7/6/2018 10:10:52 AM
8	D:\MassHunter\Data\0705_PFC_ID_S2Q291\2q16571.d	7/5/2018 6:49:21 PM	7/6/2018 10:10:52 AM

Compound	1	2	3	4	5	6	7	8	Avg RF	%RSD
S 13C2-4:2FTS	2838	3233	3391	3454	3147	2858	3484	3832	3280	10.192
S 13C2-6:2FTS	2276	2611	2739	2746	2570	2310	2804	3088	2643	10.075
S 13C2-8:2FTS	2827	3194	3320	3140	3123	2879	3556	3923	3245	11.041
S 13C2-PFDoDA	1327	1555	1567	1486	1466	1297	1518	1508	1465	6.861
S 13C2-PFTeDA	561.4	639.7	654.6	633.4	625.4	556.2	642.0	651.2	620.5	6.314
S 13C3-PFBS	995.4	1153	1188	1207	1108	978.5	1114	1097	1105	7.484
S 13C3-PFHxS	914.1	1051	1082	1105	1002	880.3	1002	976.2	1002	7.789
S 13C4-PFBA	7014	7989	8298	8397	7588	6717	7621	7625	7656	7.603
S 13C4-PFHpA	2960	3410	3501	3585	3208	2844	3156	3115	3222	8.063
S 13C5-PFHxA	3020	3468	3615	3596	3314	2886	3218	3096	3277	8.228
S 13C5-PFPeA	3349	3829	3931	3997	3606	3195	3632	3613	3644	7.573
S 13C6-PFDA	1680	1976	2076	1905	1858	1640	1870	1809	1852	7.771
S 13C7-PFUnDA	1890	2143	2201	2101	2059	1817	2104	2049	2045	6.314
S 13C8-FOSA	1715	1945	2024	1874	1824	1575	1640	1488	1760	10.638
S 13C8-PFOA	1566	1833	1920	1887	1728	1547	1727	1724	1742	7.838
S 13C8-PFOS	458.0	520.3	515.6	499.3	499.2	439.0	500.4	487.5	489.9	5.716
S 13C9-PFNA	1067	1281	1281	1230	1190	1067	1215	1187	1190	7.039
S d3-MeFOSAA	819.1	904.0	955.1	911.2	884.6	786.2	880.1	884.4	878.1	6.041
I 13C2-PFOA				---------- ISTD ----------						
S M2-PFOA	1.0001	0.9996	1.0001	0.9993	0.9999	0.9998	1.0004	1.0001	0.9999	0.034
I 13C4-PFOS				---------- ISTD ----------						
S M4-PFOS	1.0000	0.9996	0.9990	0.9995	0.9996	0.9989	1.0003	1.0007	0.9997	0.061
I M4-PFBA				---------- ISTD ----------						
T PFBA	0.1586	0.1614	0.1632	0.1594	0.1603	0.1801	0.1614	0.1600	0.1630 #	4.309
I M5-PFPeA				---------- ISTD ----------						
T PFPeA		1.1288	1.0484	0.9763	0.9843	1.0958	0.9702	0.9597	1.0234 #	6.628

Generated at 10:11 AM on 7/6/2018

Initial Calibration Report - Instrument 1

Compound	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M5-PFHxA				ISTD						
T PFHxA	0.3190	0.3452	0.3124	0.3243	0.3220	0.3564	0.3231	0.3240	0.3283 #	4.486
I M4-PFHpA				ISTD						
T PFHpA	0.6796	0.7351	0.6818	0.7004	0.7108	0.8152	0.7128	0.7086	0.7180 #	6.000
I M8-PFOA				ISTD						
T PFOA	0.6463	0.5309	0.5201	0.5192	0.5046	0.5508	0.5041	0.4992	0.5344 #	9.027
I M9-PFNA				ISTD						
T PFNA	0.3863	0.3965	0.4490	0.3831	0.4096	0.4671	0.3931	0.3955	0.4100 #	7.568
I M6-PFDA				ISTD						
T PFDA	0.3939	0.3639	0.3562	0.3570	0.3526	0.4177	0.3618	0.3506	0.3692 #	6.459
I M7-PFUnDA				ISTD						
T PFDS	0.1650	0.1816	0.1748	0.1822	0.1809	0.2052	0.1760	0.1795	0.1807 #	6.294
T PFUnDA	0.4460	0.4927	0.4822	0.4718	0.4784	0.5333	0.4698	0.4684	0.4803 #	5.258
I M2-PFDoDA				ISTD						
T PFDoDA	0.5591	0.5500	0.5290	0.5089	0.5148	0.5682	0.4838	0.4848	0.5248 #	6.172
I M2-PFTeDA				ISTD						
T PFTeDA	0.6873	0.6730	0.6232	0.6057	0.6074	0.6709	0.5855	0.5549	0.6260 #	7.505
T PFTrDA	0.8655	0.9470	0.9081	0.8735	0.8625	0.9812	0.8654	0.8309	0.8918 #	5.621
I M8-FOSA				ISTD						
T FOSA	0.3783	0.4957	0.4531	0.4954	0.4699	0.5431	0.4852	0.4827	0.4754 #	9.894
I M3-PFBS				ISTD						
T PFBS	1.1991	1.3085	1.3262	1.3188	1.3390	1.5067	1.3279	1.3398	1.3333 #	6.279
T PFPeS	0.8212	0.8240	0.7771	0.8457	0.7889	0.9055	0.8152	0.8200	0.8247 #	4.727
I M3-PFHxS				ISTD						
T PFHpS	0.5354	0.5364	0.5499	0.5685	0.5632	0.6461	0.5718	0.5790	0.5688 #	6.178
T PFHxS	1.0343	1.0474	1.0740	1.1050	1.0768	1.2406	1.0870	1.1096	1.0968 #	5.793
I M8-PFOS				ISTD						
T PFNS	0.7922	0.8401	0.9719	0.9342	0.9464	1.0059	0.9053	0.9033	0.9124 #	7.607
T PFOS	1.3257	1.3412	1.2940	1.2056	1.1961	1.3597	1.1790	1.2095	1.2638 #	5.833
I M2-4:2FTS				ISTD						
T 4:2FTS	0.4842	0.5300	0.5061	0.4951	0.5011	0.5624	0.4582	0.4115	0.4935 #	9.177
I M2-6:2FTS				ISTD						
T 6:2FTS	0.4641	0.4922	0.5103	0.4899	0.4844	0.5274	0.4464	0.3978	0.4765 #	8.499
I M2-8:2FTS				ISTD						
T 8:2FTS	0.5285	0.5559	0.5790	0.5464	0.5435	0.5807	0.4842	0.4352	0.5317 #	9.314

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Initial Calibration Report - Instrument 1

Compound	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M3-MeFOSAA				---------- ISTD ----------						
T EtFOSAA	0.2876	0.3950	0.3163	0.2894	0.3004	0.3313	0.3066	0.2915	0.3148 #	11.331
T MeFOSAA	0.2851	0.3546	0.3402	0.3489	0.3510	0.4022	0.3675	0.3452	0.3493 #	9.292

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

Initial Calibration Report - Instrument 1

Compounds with Curve fitting not using Avg Response Factor:

Compound	Curve Fit	Curve Fit Formula	Curve Fit R2
S 13C2-4:2FTS	Linear	y = 3279.641536 * x	0.000000
S 13C2-6:2FTS	Linear	y = 2642.950959 * x	0.000000
S 13C2-8:2FTS	Linear	y = 3245.150103 * x	0.000000
S 13C2-PFDoDA	Linear	y = 1465.428621 * x	0.000000
S 13C2-PFTeDA	Linear	y = 620.493461 * x	0.000000
S 13C3-PFBS	Linear	y = 1105.293815 * x	0.000000
S 13C3-PFHxS	Linear	y = 1001.596124 * x	0.000000
S 13C4-PFBA	Linear	y = 7656.135805 * x	0.000000
S 13C4-PFHpA	Linear	y = 3222.384288 * x	0.000000
S 13C5-PFHxA	Linear	y = 3276.644293 * x	0.000000
S 13C5-PFPeA	Linear	y = 3643.889961 * x	0.000000
S 13C6-PFDA	Linear	y = 1851.678768 * x	0.000000
S 13C7-PFUnDA	Linear	y = 2045.326245 * x	0.000000
S 13C8-FOSA	Linear	y = 1760.405685 * x	0.000000
S 13C8-PFOA	Linear	y = 1741.512654 * x	0.000000
S 13C8-PFOS	Linear	y = 489.921534 * x	0.000000
S 13C9-PFNA	Linear	y = 1189.783572 * x	0.000000
T 4:2FTS	Quadratic	y = -0.024069 * x ^ 2 + 0.530694 * x	0.998857
T 6:2FTS	Quadratic	y = -0.023046 * x ^ 2 + 0.512242 * x	0.999428
T 8:2FTS	Quadratic	y = -0.024815 * x ^ 2 + 0.558127 * x	0.999231
S d3-MeFOSAA	Linear	y = 878.078038 * x	0.000000
S M2-PFOA	Linear	y = 0.999908 * x	0.000000
T EtFOSAA	Quadratic	y = -0.006598 * x ^ 2 + 0.324450 * x	0.999792
T FOSA	Quadratic	y = -0.004589 * x ^ 2 + 0.504894 * x	0.999486
T MeFOSAA	Linear	y = 0.351309 * x	0.998022
T PFBA	Linear	y = 0.160848 * x	0.999288
T PFBS	Linear	y = 1.342598 * x	0.999257
T PFDA	Quadratic	y = -0.007446 * x ^ 2 + 0.387273 * x	0.999235
T PFDoDA	Quadratic	y = -0.006366 * x ^ 2 + 0.515143 * x	0.998987
T PFDS	Linear	y = 0.179634 * x	0.998928
T PFHpA	Linear	y = 0.712679 * x	0.998986
T PFHpS	Linear	y = 0.579523 * x	0.999317
T PFHxA	Linear	y = 0.324829 * x	0.999538
T PFHxS	Linear	y = 1.108982 * x	0.999215
T PFNA	Linear	y = 0.397376 * x	0.998464
T PFNS	Linear	y = 0.907259 * x	0.999391
T PFOA	Linear	y = 0.501788 * x	0.999503
T PFOS	Linear	y = 1.208170 * x	0.999084
T PFPeA	Linear	y = 0.966142 * x	0.999006
T PFPeS	Linear	y = 0.821527 * x	0.999467
T PFTeDA	Quadratic	y = -0.016842 * x ^ 2 + 0.638125 * x	0.999495
T PFTrDA	Quadratic	y = -0.019690 * x ^ 2 + 0.928178 * x	0.999504
T PFUnDA	Linear	y = 0.470736 * x	0.999134

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Initial Calibration Report - Instrument 1

S M4-PFOS	Linear	y = 0.999722 * x	0.000000

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

SGS ACCUTEST-ORLANDO

DATE:	07/07/18
COLUMN TYPE:	Poroshell EC18
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	281

LCMS2-2Q ANALYSIS LOG

METHODS:	PFC-ID
ACQ. METHOD:	MRM-ID-PFC
PROC. METHOD:	PFC-ID-070718-S2Q292
CALIB. DATE:	07/07/18
RUN BATCH: S2Q	292

ANALYST:	NG
ELUENT A LOT #:	180698 w/Acetic Acid
ELUENT B LOT #:	178825
WATER LOT #:	180698
ISTD Lot #:	LC1077

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 16682	1	CCb	PFC-ID	—					—
2Q 83	1	CCb		—					—
2Q 84	2	IC292-0.5		LC1073	2.5/500				updated
2Q 85	3	-1			5/500				
2Q 86	4	-2			10/500				
2Q 87	5	-5			25/500				
2Q 88	6	-10			50/500				
2Q 89	7	ICV292-20			100/500				
2Q 90	8	IC292-50			250/500				
2Q 91	9	-100			1X				
2Q 92	1	IBLK		—					✓
2Q 93	10	ICV292-20		LC10576	5/500				pass
2Q 94	78	FA55430-1		OP70743	5X				✓
2Q 95	79	OP70743-ms			5X				✓
2Q 96	80	-msd			5X				✓
2Q 97	81	FA55430-2			5X				✓ redo, FOSA ↓
2Q 98	82	-6			10X				✓ redo, TEPA ↓
2Q 99	83	-7			10X				✓ redo, TEPA, FOSA, DCBA ↓
2Q 16700	84	-8			10X				✓ redo, FOSA ↓
2Q 01	85	-8			20X				✓

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

SGS ACCUTEST-ORLANDO

DATE:	02/07/18
COLUMN TYPE:	PoroshellEC18
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	281

LCMS2-2Q ANALYSIS LOG

METHODS:	PFC-ID
ACQ. METHOD:	dMRM-ID-PFC
PROC. METHOD:	PFC-ID-070718-S2Q292
CALIB. DATE:	02/07/18
RUN BATCH: S2Q	292

ANALYST:	NG
ELUENT A LOT #:	180698 w/Acetic Acid
ELUENT B LOT #:	178825
WATER LOT #:	180698
ISTD Lot #:	LC1077

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 16702	56	FA55380-14	PFC-ID	OP70703	2X				✓
2Q 03	7	CC292-20		LC1073	100/500				pass
2Q 04	1	ccb		—	—				—
2Q 05	56	OP70761-bs		OP70761	1X				✓ BS fail ISTDs
2Q 06	57	↓ -mb							✓
2Q 07	58	JC68362-3							✓
2Q 08	59	↓ -5							✓
2Q 09	60	JC68517-1							✓
2Q 10	61	↓ -2							✓
2Q 11	62	↓ -6							✓
2Q 12	63	JC68753-1							✓ redo BS fail
2Q 13	64	↓ -2							✓ redo
2Q 14	65	↓ -3							✓ redo
2Q 15	7	CC292-20		LC1073	100/500				pass
2Q 16	1	ccb		—	—				—
2Q 17	66	JC68753-4		OP70761	1X				✓
2Q 18	67	OP70761-ms							✓
2Q 19	68	JC68753-5							✓ redo
2Q 20	69	↓ -6							✓
2Q 21	70	OP70761-dup							✓

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SGS ACCUTEST-ORLANDO

DATE:	07/07/18
COLUMN TYPE:	PoroshellEC18
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	281

LCMS2-2Q ANALYSIS LOG

METHODS:	PFC-ID
ACQ. METHOD:	dMRM-ID-PFC
PROC. METHOD:	PFC-ID-070718-S2Q292
CALIB. DATE:	07/07/18
RUN BATCH:	S2Q 292

ANALYST:	NG
ELUENT A LOT #:	186698 w/ Acetic Acid
ELUENT B LOT #:	178825
WATER LOT #:	180698
ISTD Lot #:	LC1077

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 16722	71	JC68753-7	PFC-ID	OP70761	1x				✓ redo
2Q 23	72	-8							✓ redo
2Q 24	7	CC292-20		LC1073	100/500				pass
2Q 25	1	CCb			—				—
2Q 26	73	FA55465-10		OP70761	1x				✓
2Q 27	74	-11							✓
2Q 28	75	-12							✓
2Q 29	76	-19							✓
2Q 30	77	-20							✓
2Q 31	3	CC292-1		LC1073	5/500				pass
2Q 32	7	-20			100/500				pass
2Q 33	1	CCb			—				—
2Q 34	87	OP70763-bs		OP70763	1x				✓ PASS
2Q 35	88	-mb							✓
2Q 36	89	FA55232-4							✓
2Q 37	90	-8							✓
2Q 38	91	-12							✓
2Q 39	92	-13							✓
2Q 40	93	-22							✓
2Q 41	7	CC292-20		LC1073	100/500				pass

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Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration.
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SGS ACCUTEST-ORLANDO

DATE:	07/07/18
COLUMN TYPE:	Poroshell EC18
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	281

LCMS2-2Q ANALYSIS LOG

METHODS:	PFC-ID
ACQ. METHOD:	dMRM-ID-PFC
PROC. METHOD:	PFC-ID-070718-S2Q292
CALIB. DATE:	07/07/18
RUN BATCH: S2Q	292

ANALYST:	NG
ELUENT A LOT #:	180698 w/ Acetic Acid
ELUENT B LOT #:	178825
WATER LOT #:	180698
ISTD Lot #:	LC1077

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 16742	1	CCb	PFC-ID	—	—				—
2Q 43	94	OP70704-bs		OP70704	1X				✓ PASS
2Q 44	95	↓ -mb							✓
2Q 45	96	FA55380-28							✓
2Q 46	97	-29							✓ ↓ FOSA redo
2Q 47	98	-30							✓
2Q 48	99	-31							✓
2Q 49	100	-32							✓
2Q 50	11	-33							✓
2Q 51	12	-34							✓
2Q 52	13	-35							✓
2Q 53	7	CC292-20		LC1073	100/500				pass
2Q 54	1	CCb		—	—				—
2Q 55	14	FA55380-36		OP70704	1X				✓
2Q 56	15	OP70704-ms							✓
2Q 57	16	FA55380-37							✓
2Q 58	17	OP70704-dup							✓
2Q 59	18	FA55380-38							✓
2Q 60	19	-39							✓
2Q 61	20	-40							✓

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Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

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SGS ACCUTEST-ORLANDO

LCMS2-2Q ANALYSIS LOG

DATE:	07/07/18
COLUMN TYPE:	Broshell EC18
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	281

METHODS:	PFC-ID
ACQ. METHOD:	dMRM-ID-PFC
PROC. METHOD:	PFC-ID-070718-S2Q292
CALIB. DATE:	07/07/18
RUN BATCH: S2Q	292

ANALYST:	NG
ELUENT A LOT #:	180698 w/ Acetic Acid
ELUENT B LOT #:	178825 ↓
WATER LOT #:	180698
ISTD Lot #:	LC1077

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 167762	21	FA55380-41	PFC-ID	OP70704	1X				✓
2Q 63	22	↓ -42	↓	↓	↓				✓ ↓ FOSA redo
2Q 64	23	↓ -43	↓	↓	↓				✓ rr 10X PFOA, ecomb
2Q 65	7	CC292-20	↓	LC1073	100/500				pass
2Q 66	1	ccb	↓	—	—				—
2Q 67	24	FA55380-44	↓	OP70704	1X				✓
2Q 68	25	↓ -45	↓	↓	↓				✓
2Q 69	26	↓ -46	↓	↓	↓				✓
2Q 70	27	↓ -47	↓	↓	↓				✓
2Q 71	7	CC292-20	↓	LC1073	100/500				pass
2Q 72	1	ccb	↓	—	—				—
2Q 73	28	OP70766-bs	↓	OP70766	1X				✓ PASS
2Q 74	29	↓ -mb	↓	↓	↓				✓
2Q 75	30	JC68818-1	↓	↓	↓				✓ ↑ ISTDs
2Q 76	31	↓ -2	↓	↓	↓				✓
2Q 77	32	↓ -3	↓	↓	↓				✓ ↓ PFBA
2Q 78	33	↓ -4	↓	↓	↓				✓
2Q 79	34	↓ -5	↓	↓	↓				✓ ~~↓ UnDA, DoDA~~ NG 07/07/18
2Q 80	35	↓ -6	↓	↓	↓				✓
2Q 81	36	↓ -7	↓	↓	↓				✓

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

Analyst's Signature: [signature]

SGS ACCUTEST-ORLANDO

DATE:	07/07/18
COLUMN TYPE:	Poroshell EC18
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	281

LCMS2-2Q ANALYSIS LOG

METHODS:	PFC-ID
ACQ. METHOD:	dMRM-ID-PFC
PROC. METHOD:	PFC-ID-070718-S2Q292
CALIB. DATE:	07/07/18
RUN BATCH: S2Q	292

ANALYST:	NG
ELUENT A LOT #:	180698 w/ Acetic Acid
ELUENT B LOT #:	178825 ↓
WATER LOT #:	180698
ISTD Lot #:	LC1077

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 160782	37	JC68818-8	PFC-ID	OP70766	1x				✓
2Q 83	7	CC292-20		LC1073	100/500				pass
2Q 84	1	ccb		—					—
2Q 85	38	JC69096-1		OP70766	1X				✓
2Q 86	39	OP70766-ms							✓
2Q 87	40	↓ -msd							✓
2Q 88	41	JC69096-2							✓
2Q 89	42	-3							✓
2Q 90	43	-4							✓
2Q 91	44	~~-5~~ 7							✓ redo ↓ under, poor
2Q 92	45	~~-6~~ 5							✓
2Q 93	46	~~-7~~ 6		↓	↓				✓
2Q 94	7	CC292-20		LC1073	100/500				pass
2Q 95	1	ccb		—					—
2Q 96	47	FA55437-2		OP70766	10X				rr1X
2Q 97	48	-3			10X				rr1X
2Q 98	49	-4			10X				rr1X
2Q 99	50	-5			1X				✓
2Q 160800	51	-6		↓	10X				rr1X
2Q 01	7	ECC292-20	↓	LC1073	100/500				pass
2Q 02	1	ccb		—					—

* Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

LCMS2_2Q_log.xls ME rev. 06/16

Analyst's Signature: [signature]

SGS ACCUTEST-ORLANDO

DATE:	07/10/18
COLUMN TYPE:	Poroshell ec18
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	275

LCMS2-2Q ANALYSIS LOG

METHODS:	PFC-ID
ACQ. METHOD:	MRM-ID-PFC
PROC. METHOD:	PFC-ID-071018-S2Q294
CALIB. DATE:	07/10/18
RUN BATCH: S2Q	294

ANALYST:	NG 7/10/18
ELUENT A LOT #:	181720 181916 ul Acetic Ac
ELUENT B LOT #:	181720
WATER LOT #:	181916
ISTD Lot #:	LC1077

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 160883	1	ccb	PFC-ID	—					—
2Q ↓	7	rt		—					—
2Q 160887	1	ccb		—					—
2Q 88	2	ics294-0.5		LC1073	2.5/500				updated
2Q 89	3	-1			5/500				
2Q 90	4	-2			10/500				
2Q 91	5	-5			25/500				
2Q 92	6	-10			50/500				
2Q 93	7	ics294-20			100/500				
2Q 94	8	ics294-50			250/500				
2Q 95	9	-100			1x				
2Q 96	1	IBLK		—					✓
2Q 97	10	ICV294-20		LC1057B	5/500				pass
2Q 98	55	OP70705-bs		OP70705	1x	PFHpA, PFDoDA, PFTrDA, PFOS, MeFOSAA ↑			✓
2Q 99	56	-mb							✓ ND
2Q 160900	57	FA55376-1							✓ redo ↑BS
2Q 01	58	-2							✓
2Q 02	59	-3							✓
2Q 03	60	-4							✓
2Q 04	61	-5							✓

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Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

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SGS ACCUTEST-ORLANDO

DATE:	07/10/18
COLUMN TYPE:	Poroshell EC18
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	275

LCMS2-2Q ANALYSIS LOG

METHODS:	PFC-ID
ACQ. METHOD:	dMRM-ID-PFC
PROC. METHOD:	PFC-ID-071018-S2Q294
CALIB. DATE:	07/10/18
RUN BATCH: S2Q	294

ANALYST:	NG
ELUENT A LOT #:	181916 w/ Acetic Acid
ELUENT B LOT #:	181172
WATER LOT #:	181916
ISTD Lot #:	LC1077

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 16905	62	FA55431-1	PFC-ID	OP70705	1X				✓ redo
2Q 06	63	OP70705-ms		↓	↓				✓
2Q 07	64	↓ -msd		↓	↓				✓
2Q 08	7	CC294-20		LC1073	100/500				pass
2Q 09	1	CCb		—					—
2Q 10	65	FA55431-2		OP70705	1X		↓TEDA		✓ redo
2Q 11	66	↓ -3		↓	↓		↓TEDA		✓ redo
2Q 12	7	CC294-20		LC1073	100/500				pass
2Q 13	1	CCb		—					—
2Q 14	67	FA55804-3		OP70704	10X				✓
2Q 15	68	FA55437-2		OP70766	1X				✓
2Q 16	69	-3		↓	↓				✓
2Q 17	70	-4		↓	↓				✓
2Q 18	71	↓ -6		↓	↓				✓
2Q 19	3	CC294-1		LC1073	5/500				rr level 1 CCV
2Q 20	7	↓ -20		↓	100/500				pass
2Q 21	1	CCb		—					—
2Q 22	72	OP70782-bs		OP70782	1X		PFTrDA ↑		✓
2Q 23	73	↓ -mb		↓	↓				✓ ND
2Q 24	74	FA55232-16		↓	↓				✓

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

Analyst's Signature: Natalia

SGS ACCUTEST-ORLANDO

DATE:	07/10/18
COLUMN TYPE:	Poroshell 120
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	275

LCMS2-2Q ANALYSIS LOG

METHODS:	PFC-ID
ACQ. METHOD:	dMRM-ID-PFC
PROC. METHOD:	PFC-ID-071018-S2Q294
CALIB. DATE:	07/10/18
RUN BATCH: S2Q	294

ANALYST:	NG
ELUENT A LOT #:	181916 w/ Acetic Acid
ELUENT B LOT #:	181172
WATER LOT #:	181916
ISTD Lot #:	LC1077

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 16925	75	FAS5232-23	PFC-ID	OP70782	1X				✓
2Q 26	76	-29							✓
2Q 27	77	-33							✓
2Q 28	78	FAS5417-1					(out of hold) OOH		✓ rr 5x PFOS
2Q 29	79	-2					OOH		✓ rr 5x PFOS
2Q 30	80	-4							✓ rr 2x PFOS
2Q 31	81	-6							✓ rr 2x PFOS
2Q 32	7	CC294-20		LC1073	100/500				pass
2Q 33	1	CCb							—
2Q 34	82	FAS5417-8		OP70782	1X				✓
2Q 35	83	-11							✓
2Q 36	84	-12							✓
2Q 37	85	-13							✓
2Q 38	86	FAS5453-21							✓
2Q 39	87	-22							✓
2Q 40	88	-23					DOSA ↓ TeDA ↓		✓
2Q 41	89	OP70782-ms							✓
2Q 42	90	FAS5453-24							✓
2Q 43	91	OP70782-dup							✓
2Q 44	7	CC294-~~20~~ 1 NG 07/10/18		LC1073	5 100/500 NG 07/10/18				pass

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

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SGS ACCUTEST-ORLANDO

DATE:	07/10/18
COLUMN TYPE:	Poroshell EC18
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	275

LCMS2-2Q ANALYSIS LOG

METHODS:	PFC-ID
ACQ. METHOD:	2MPM-ID-PFC
PROC. METHOD:	PFC-ID-071018-S2Q294
CALIB. DATE:	07/10/18
RUN BATCH:	S2Q 294

ANALYST:	NG NAS
ELUENT A LOT #:	181916 w/ Acetic Acid
ELUENT B LOT #:	181772
WATER LOT #:	181916
ISTD Lot #:	LC1077

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 16945	7	CC294-20	PFC-ID	LC1073	100/500				pass
2Q 46	1	ccb		—	—				—
2Q 47	30	spike test		—	—				—
2Q 48	92	FA55453-2S		OP7082	1X				recomb rr 2x PFOS, Hxs
2Q 49	93	FA55431-4							✓ FOSA ↓ redo
2Q 50	94	-5							✓
2Q 51	95	-6			↓				✓
2Q 52	26	FA55417-1			5X		OOH		✓
2Q 53	27	-2			5X		OOH		✓
2Q 54	28	-4			2X				✓
2Q 55	29	-6			2X				✓
2Q 56	31	FA55453-2S		↓	2X				✓
2Q 57	7	CC294-20		LC1073	100/500		SP		pass
2Q 58	1	CCB		—	—				BDL
2Q 59	96	OP70805-bs		OP70805	1X		SP		✓
2Q 60	97	-mb							BDL
2Q 61	98	FA55380-8							BDL
2Q 62	99	-9							BDL
2Q 63	100	-15							BDL
2Q 64	11	-18	↓	↓	↓		SP		✓

partial 7/11/18

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

SGS ACCUTEST-ORLANDO

DATE:	07-10-16
COLUMN TYPE:	Poroshell EC18
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	275

LCMS2-2Q ANALYSIS LOG

METHODS:	PFC - ID
ACQ. METHOD:	dmrm ID PFC
PROC. METHOD:	PFC ID 071016 S2Q294
CALIB. DATE:	07-10-16
RUN BATCH:	S2Q 294

ANALYST:	NG MAS
ELUENT A LOT #:	161916 w Acetic Acid
ELUENT B LOT #:	161172 L
WATER LOT #:	161916
ISTD Lot #:	LL1077

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 16967	12	FA 55380-19	PFC ID	BP70807	1				BDL
2Q 66	13	-20							BDL
2Q 67	14	-22							BDL
2Q 68	15	-25							BDL
2Q 69	3	CC294-1		LL1073	5/500		SP		POSS
2Q 70	7	CC294-20			100/500		SP		POSS
2Q 71	1	CCB							BDL
2Q 72	16	FA 55380-26		BP70807	1				*✓ISTD OFF
2Q 73	17	FA55430-3							BDL
2Q 74	18	-4							BDL
2Q 75	19	FA55587-1					SP		✓
2Q 76	20	-2					SP		✓ Rm 5X
2Q 77	21	-3					SP		✓ Rm 1X, 4X c.o
2Q 78	22	-4					SP		✓ Rm 1X c.o
2Q 79	23	-5					SP		BDL
2Q 80	24	BP70807-MS					SP		✓
2Q 81	25	-MSD					SP		✓
2Q 82	3	CC294-1		LL1073	5/500		SP		POS
2Q 83	7	CC294-20			100/500		SP		POS
2Q 84	1	CCB							BDL

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

SGS ACCUTEST-ORLANDO

LCMS2-2Q ANALYSIS LOG

DATE:	07-10-18
COLUMN TYPE:	Poroshell EC18
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	275

METHODS:	PFC ID
ACQ. METHOD:	AMRM ID PFC
PROC. METHOD:	PFC ID 071018 S2Q294
CALIB. DATE:	07-10-18
RUN BATCH:	S2Q 294

ANALYST:	NG NAS
ELUENT A LOT #:	181916 w Acetic Acid
ELUENT B LOT #:	181172 ↓
WATER LOT #:	181916
ISTD Lot #:	LC1077

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 16985	55	OP70824-bs	PFC ID	OP70824	1x				RR
2Q 86	56	-mb	↓	↓	↓				↓
2Q 87	57	FA55453-2	↓	↓	↓				↓
2Q 88	58	-9	↓	↓	↓				↓ NO ECC
2Q									Run stopped
2Q									Power out
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									

07-12-18 NAS

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

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LCMS2_2Q_log.xls ME rev. 06/16

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Analyst's Signature: [signature]

Initial Calibration Report - Instrument 1

Method Path	D:\MassHunter\damethods
Method File	PFC_ID_071018_S2Q294.quantmethod.xml
Batch Name	D:\MassHunter\Data\0710_PFC_ID_S2Q294\QuantResults\s2q294.batch.bin
Last Calib Update	7/11/2018 8:27:47 AM

Level Name	Calibration Files	Acq. Date-Time	Level Last Update Time
1	D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16888.d	7/10/2018 4:04:56 PM	7/11/2018 8:27:47 AM
2	D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16889.d	7/10/2018 4:31:22 PM	7/11/2018 8:27:47 AM
3	D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16890.d	7/10/2018 4:52:06 PM	7/11/2018 8:27:47 AM
4	D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16891.d	7/10/2018 5:12:50 PM	7/11/2018 8:27:47 AM
5	D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16892.d	7/10/2018 5:33:36 PM	7/11/2018 8:27:47 AM
6	D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16893.d	7/10/2018 5:54:21 PM	7/11/2018 8:27:47 AM
7	D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16894.d	7/10/2018 6:15:06 PM	7/11/2018 8:27:47 AM
8	D:\MassHunter\Data\0710_PFC_ID_S2Q294\2q16895.d	7/10/2018 6:35:51 PM	7/11/2018 8:27:47 AM

Compound	1	2	3	4	5	6	7	8	Avg RF	%RSD
S 13C2-4:2FTS	2218	2521	2584	2626	2713	2715	2919	3147	2681	10.250
S 13C2-6:2FTS	1718	2009	1947	2037	2081	2061	2269	2484	2076	10.848
S 13C2-8:2FTS	3593	4072	4152	4272	4399	4418	4890	5349	4393	12.098
S 13C2-PFDoDA	1670	1799	1934	1979	2018	1977	2021	1987	1923	6.467
S 13C2-PFTeDA	770.6	814.6	889.6	899.3	919.6	897.3	911.8	914.2	877.1	6.199
S 13C3-PFBS	881.0	993.4	1013	1022	1046	1007	1013	982.8	994.8	4.990
S 13C3-PFHxS	729.3	860.2	842.9	846.5	858.6	840.3	839.6	821.8	829.9	5.105
S 13C4-PFBA	5662	6465	6470	6562	6672	6492	6527	6409	6407	4.856
S 13C4-PFHpA	2443	2668	2774	2808	2811	2786	2785	2677	2719	4.580
S 13C5-PFHxA	2565	2817	2907	2981	2961	2885	2864	2706	2836	4.907
S 13C5-PFPeA	2760	3098	3207	3212	3270	3179	3187	3113	3128	5.066
S 13C6-PFDA	2529	2805	2960	3000	3086	2950	2973	2850	2894	5.907
S 13C7-PFUnDA	2084	2220	2411	2473	2529	2420	2481	2384	2375	6.301
S 13C8-FOSA	1492	1642	1659	1677	1682	1561	1490	1338	1568	7.753
S 13C8-PFOA	1214	1391	1409	1416	1466	1383	1446	1396	1390	5.512
S 13C8-PFOS	367.3	422.8	435.8	450.3	450.5	440.4	447.8	437.6	431.6	6.380
S 13C9-PFNA	832.4	919.3	949.4	1001	1015	1002	970.6	1015	963.1	6.521
S d3-MeFOSAA	679.2	749.9	766.7	774.2	803.0	781.9	770.5	727.2	756.6	5.072
I 13C2-PFOA				---------- ISTD ----------						
S M2-PFOA	1.0002	1.0002	1.0000	1.0001	1.0007	1.0001	0.9996	0.9979	0.9998	0.083
I 13C4-PFOS				---------- ISTD ----------						
S M4-PFOS	1.0009	1.0016	0.9981	1.0007	1.0002	0.9974	0.9987	1.0005	0.9998	0.150
I M4-PFBA				---------- ISTD ----------						
T PFBA	0.1598	0.1612	0.1552	0.1505	0.1442	0.1480	0.1559	0.1566	0.1539 #	3.817
I M5-PFPeA				---------- ISTD ----------						
T PFPeA		1.1025	0.9976	0.9468	0.8943	0.9155	0.9531	0.9582	0.9669 #	7.053

Initial Calibration Report - Instrument 1

Compound	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M5-PFHxA				---------- ISTD ----------						
T PFHxA	0.4034	0.3916	0.3451	0.3306	0.3110	0.3132	0.3349	0.3417	0.3464 #	9.790
I M4-PFHpA				---------- ISTD ----------						
T PFHpA	0.8133	0.7422	0.7229	0.7073	0.7003	0.7076	0.7213	0.7359	0.7314 #	4.940
I M8-PFOA				---------- ISTD ----------						
T PFOA	0.6868	0.5862	0.5690	0.5544	0.5199	0.5325	0.5484	0.5496	0.5684 #	9.148
I M9-PFNA				---------- ISTD ----------						
T PFNA	0.4865	0.4049	0.4273	0.3867	0.3806	0.3847	0.3850	0.3857	0.4052 #	8.978
I M6-PFDA				---------- ISTD ----------						
T PFDA	0.4207	0.4011	0.3544	0.3582	0.3409	0.3553	0.3674	0.3629	0.3701 #	7.252
I M7-PFUnDA				---------- ISTD ----------						
T PFDS	0.1934	0.1860	0.1755	0.1651	0.1595	0.1652	0.1667	0.1701	0.1727 #	6.716
T PFUnDA	0.5490	0.5028	0.4660	0.4633	0.4555	0.4726	0.4767	0.4874	0.4842 #	6.211
I M2-PFDoDA				---------- ISTD ----------						
T PFDoDA	0.6823	0.5891	0.5469	0.5131	0.4953	0.5050	0.5167	0.5079	0.5445 #	11.628
I M2-PFTeDA				---------- ISTD ----------						
T PFTeDA	0.8000	0.6914	0.6646	0.6034	0.5933	0.6106	0.5979	0.5825	0.6430 #	11.494
T PFTrDA	0.9705	0.9422	0.8929	0.8786	0.8416	0.8724	0.8725	0.8424	0.8892 #	5.129
I M8-FOSA				---------- ISTD ----------						
T FOSA	0.5403	0.4995	0.4751	0.4767	0.4334	0.4658	0.4855	0.4944	0.4838 #	6.317
I M3-PFBS				---------- ISTD ----------						
T PFBS	1.5004	1.3798	1.3285	1.3056	1.2497	1.3136	1.3568	1.3696	1.3505 #	5.440
T PFPeS	0.8946	0.8447	0.8815	0.8323	0.8038	0.8423	0.8720	0.8801	0.8564 #	3.580
I M3-PFHxS				---------- ISTD ----------						
T PFHpS	0.6970	0.6358	0.6053	0.5997	0.5769	0.5682	0.6152	0.6134	0.6139 #	6.493
T PFHxS	1.3093	1.2030	1.1575	1.1614	1.1055	1.1227	1.1895	1.2005	1.1812 #	5.301
I M8-PFOS				---------- ISTD ----------						
T PFNS	1.6779	1.6781	1.6426	1.5215	1.4871	1.5370	1.5647	1.5567	1.5832 #	4.637
T PFOS	1.4041	1.3621	1.2514	1.1222	1.1536	1.1926	1.2119	1.2561	1.2442 #	7.832
I M2-4:2FTS				---------- ISTD ----------						
T 4:2FTS	0.5878	0.5334	0.5168	0.5192	0.4952	0.4913	0.4783	0.4310	0.5066 #	8.972
I M2-6:2FTS				---------- ISTD ----------						
T 6:2FTS	0.4612	0.5221	0.5457	0.4795	0.4759	0.4840	0.4624	0.4208	0.4815 #	7.956
I M2-8:2FTS				---------- ISTD ----------						
T 8:2FTS	0.6099	0.6017	0.5736	0.5564	0.5222	0.5162	0.4909	0.4446	0.5394 #	10.510

Generated at 8:29 AM on 7/11/2018

Initial Calibration Report - Instrument 1

Compound	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M3-MeFOSAA				---------- ISTD ----------						
T EtFOSAA	0.3405	0.3324	0.3614	0.3143	0.3209	0.3175	0.3351	0.3389	0.3326 #	4.600
T MeFOSAA	0.4012	0.3870	0.3514	0.3796	0.3344	0.3237	0.3674	0.3568	0.3627 #	7.273

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

Initial Calibration Report - Instrument 1

Compounds with Curve fitting not using Avg Response Factor:

Compound	Curve Fit	Curve Fit Formula	Curve Fit R2
S 13C2-4:2FTS	Linear	y = 2680.513835 * x	0.000000
S 13C2-6:2FTS	Linear	y = 2075.701175 * x	0.000000
S 13C2-8:2FTS	Linear	y = 4392.957061 * x	0.000000
S 13C2-PFDoDA	Linear	y = 1922.930541 * x	0.000000
S 13C2-PFTeDA	Linear	y = 877.142237 * x	0.000000
S 13C3-PFBS	Linear	y = 994.792648 * x	0.000000
S 13C3-PFHxS	Linear	y = 829.905688 * x	0.000000
S 13C4-PFBA	Linear	y = 6407.244685 * x	0.000000
S 13C4-PFHpA	Linear	y = 2719.034020 * x	0.000000
S 13C5-PFHxA	Linear	y = 2835.766965 * x	0.000000
S 13C5-PFPeA	Linear	y = 3128.188412 * x	0.000000
S 13C6-PFDA	Linear	y = 2894.324036 * x	0.000000
S 13C7-PFUnDA	Linear	y = 2375.226418 * x	0.000000
S 13C8-FOSA	Linear	y = 1567.646939 * x	0.000000
S 13C8-PFOA	Linear	y = 1390.206734 * x	0.000000
S 13C8-PFOS	Linear	y = 431.567443 * x	0.000000
S 13C9-PFNA	Linear	y = 963.149747 * x	0.000000
T 4:2FTS	Quadratic	y = -0.017432 * x ^ 2 + 0.518483 * x	0.999943
T 6:2FTS	Quadratic	y = -0.015927 * x ^ 2 + 0.500628 * x	0.999967
T 8:2FTS	Quadratic	y = -0.018412 * x ^ 2 + 0.536638 * x	0.999982
S d3-MeFOSAA	Linear	y = 756.581764 * x	0.000000
S M2-PFOA	Linear	y = 0.999850 * x	0.000000
T EtFOSAA	Linear	y = 0.337333 * x	0.999760
T FOSA	Linear	y = 0.491281 * x	0.999629
T MeFOSAA	Linear	y = 0.357656 * x	0.999301
T PFBA	Linear	y = 0.156121 * x	0.999791
T PFBS	Linear	y = 1.364373 * x	0.999823
T PFDA	Linear	y = 0.363333 * x	0.999892
T PFDoDA	Quadratic	y = -0.001757 * x ^ 2 + 0.517044 * x	0.999936
T PFDS	Linear	y = 0.169247 * x	0.999833
T PFHpA	Linear	y = 0.731933 * x	0.999828
T PFHpS	Linear	y = 0.612039 * x	0.999709
T PFHxA	Linear	y = 0.339236 * x	0.999537
T PFHxS	Linear	y = 1.195212 * x	0.999733
T PFNA	Linear	y = 0.385484 * x	0.999989
T PFNS	Linear	y = 1.557065 * x	0.999958
T PFOA	Linear	y = 0.548635 * x	0.999921
T PFOS	Linear	y = 1.244616 * x	0.999534
T PFPeA	Linear	y = 0.955456 * x	0.999846
T PFPeS	Linear	y = 0.876677 * x	0.999816
T PFTeDA	Quadratic	y = -0.006082 * x ^ 2 + 0.612980 * x	0.999979
T PFTrDA	Quadratic	y = -0.009557 * x ^ 2 + 0.890814 * x	0.999948
T PFUnDA	Linear	y = 0.484595 * x	0.999808

Initial Calibration Report - Instrument 1

S M4-PFOS	Linear	y = 0.999769 * x	0.000000

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

SGS ACCUTEST-ORLANDO

DATE:	07-12-16
COLUMN TYPE:	Poroshell EC18
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	280

LCMS2-2Q ANALYSIS LOG

METHODS:	PFC ID
ACQ. METHOD:	dmrm ID PFC
PROC. METHOD:	PFCID 071216 S2Q295
CALIB. DATE:	07-12-16
RUN BATCH: S2Q	295

ANALYST:	MAS
ELUENT A LOT #:	181916 w Acetic Acid
ELUENT B LOT #:	181772 +
WATER LOT #:	181916
ISTD Lot #:	LC 1077

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 16989	9	high	PFCID	LC1073	1X				✓
2Q 90	1	CCB							✓
2Q 91	7	CC294-20		LC1073	100/100				✓ ISTD Trun
2Q 92	3	-1		↓	5/100				✓ curve
2Q 93	1	CCB							✓
2Q 94	4	FC 295-0.5		LC1073	2.5/500		SP		✓
2Q 95	3	-1.0			5/100		SP MD		✓
2Q 96	4	-2.0			10/100		SP		✓
2Q 97	5	-5.0			25/100		SP		✓
2Q 98	6	-10			50/100		SP		✓
2Q 99	7	FCC295-20			100/100		SP		✓
2Q 17000	8	FC295-50			200/100		SP		✓
2Q 01	9	MRL01B -100		↓	1X		SP		✓
2Q 02	1X	ibik							BDL
2Q 03	10	ICV 295-20		LC1073B	5/100		SP		Poss
2Q 04	55	OP70828-DS		OP70828	1X		SP		✓
2Q 05	56	-mb							BDL
2Q 06	57	FA55453-2							BDL
2Q 07	58	-9							BDL
2Q 08	59	-19	↓	↓	↓				BDL

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

SGS ACCUTEST-ORLANDO

DATE:	07-12-18
COLUMN TYPE:	Poroshell EC18
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	290

LCMS2-2Q ANALYSIS LOG

METHODS:	PFC ID
ACQ. METHOD:	dMRM ID PFC
PROC. METHOD:	PFC ID 071218 S2Q295
CALIB. DATE:	07-12-18
RUN BATCH:	S2Q 295

ANALYST:	NAS
ELUENT A LOT #:	181916 w/ Acetic Acid
ELUENT B LOT #:	181172 ↓
WATER LOT #:	181916
ISTD Lot #:	LC1077

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 17009	60	FA55615-1	PFC ID	OP70828	1X				BDL
2Q 10	61	-2							BDL
2Q 11	62	-3							BDL
2Q 12	63	-4					SP		✓ (5X)
2Q 13	64	-5					SP		✓ (2X)
2Q 14	7	CC295-20		LC1073	100/500		SP		Pass Do, Te surr ↑
2Q 15	1	CCB							BDL
2Q 16	65	FA55615-6		OP70828	1X				BDL Surr d3Me ↓ ISTD m3Me ↓ (R21Y)
2Q 17	66	-7							BDL
2Q 18	67	OP70828-MS					SP		✓
2Q 19	68	FA55615-8							BDL
2Q 20	69	-9					SP		✓
2Q 21	70	-10							BDL
2Q 22	71	-11							BDL
2Q 23	72	-12							BDL
2Q 24	73	-13					SP		✓
2Q 25	74	OP70828-dup					SP		✓
2Q 26	7	CC295-20		LC1073	100/500		SP +		Pass SS PFNA ↑
2Q 27	1	CCB							BDL
2Q 28	75	FA55615-14		OP70828	1X				BDL

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

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LCMS2_2Q_log.xls ME rev. 06/16

Analyst's Signature: [signature]

SGS ACCUTEST-ORLANDO

LCMS2-2Q ANALYSIS LOG

DATE:	07-12-18
COLUMN TYPE:	Poroshell EC18
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	280

METHODS:	PFC ID
ACQ. METHOD:	dMRM ID PFC
PROC. METHOD:	PFC ID 071218S2Q295
CALIB. DATE:	07-12-18
RUN BATCH:	S2Q 295

ANALYST:	NAS
ELUENT A LOT #:	181916 w/Acetic Acid
ELUENT B LOT #:	181172 ↓
WATER LOT #:	181916
ISTD Lot #:	LC 1077

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 17029	76	FA55615-15	PFC ID	OP70828	1X				X ISTD↑ RR (redo)
2Q 30	77	-16	↓	↓	↓				BDL
2Q 31	78	-17					SP		✓
2Q 32	3	CC295-1		LC1073	5/500		SP MP		Pass
2Q 33	7	-20		↓	100/500		SP		Pass
2Q 34	1	CCB		—	—				BDL
2Q 35	79	OP70810-bs		OP70810	1X		SP		✓
2Q 36	80	-mb							BDL
2Q 37	81	FA55380-29							X ISTD ↓ RR redo
2Q 38	82	-42							BDL
2Q 39	83	FA55430-2					SP		✓ RR 5X
2Q 40	84	-5					~~SP~~ MO713.8		BDL TL ISTD ↓ Redo
2Q 41	85	-6					SP		✓ RR 10X IS SS ME ↓ ↓
2Q 42	86	-7					SP I		✓ RR 10X IS FOSA ↓
2Q 43	87	-8		↓	↓		SP		✓ RR 20X
2Q 44	7	CC295-20		LC1073	100/500		SP		Pass
2Q 45	1	CCB		—	—				BDL
2Q 46	11	FA55587-2		OP70805	5X		SP		✓
2Q 47	12	-3			1X		SP		✓
2Q 48	13	-3	↓	↓	2X		SP		✓

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

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LCMS2_2Q_log.xls ME rev. 06/16

Analyst's Signature: [signature]

SGS ACCUTEST-ORLANDO

DATE:	07-12-18
COLUMN TYPE:	Poroshell Eclg
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	280

LCMS2-2Q ANALYSIS LOG

METHODS:	PFC ID
ACQ. METHOD:	dmam EC PFC
PROC. METHOD:	PFC ID 071218 S2Q295
CALIB. DATE:	07-12-18
RUN BATCH: S2Q	295

ANALYST:	NAS
ELUENT A LOT #:	181916 w/ Acetic Acid
ELUENT B LOT #:	181172 +
WATER LOT #:	181916
ISTD Lot #:	LC 1077

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 17044	14	FA55587-4	PFC ID	OP70805	1x		SD		✓
2Q 50	7	ECL295-20		LC1073	100/100		SP		Poss
2Q 51	1	CCB		—	—				BNL
2Q 52	88	OP70814-bs		OP70814	1x				RR
2Q 53	89	-mb							
2Q 54	90	JL68753-1							
2Q 55	91	-2							
2Q 56	92	-3							
2Q 57	93	-5							
2Q 58	94	JL68818-1							
2Q 59	95	-3							
2Q 60	96	-7		+	+				
2Q 61	97	~~LC1082~~		LC1082	25/50				RT Δ
2Q 62	7	CCL295-20		LC1073	100/100				RT Δ
2Q 63	1	CCB		—	—				✓
2Q 64	7	RT		LC1073	100/50				✓
2Q 65	7	RT							
2Q									
2Q									
2Q							NAS 07-13-18		

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

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Analyst's Signature:

Initial Calibration Report - Instrument 1

Method Path	D:\MassHunter\damethods
Method File	PFC_ID_071218_S2Q295.quantmethod.xml
Batch Name	D:\MassHunter\Data\0712_PFC_ID_S2Q295\QuantResults\s2q295.batch.bin
Last Calib Update	7/13/2018 9:28:04 AM

Level Name	Calibration Files	Acq. Date-Time	Level Last Update Time
1	D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16994.d	7/12/2018 9:19:49 AM	7/13/2018 9:28:03 AM
2	D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16995.d	7/12/2018 9:40:34 AM	7/13/2018 9:28:03 AM
3	D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16996.d	7/12/2018 10:01:33 AM	7/13/2018 9:28:03 AM
4	D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16997.d	7/12/2018 10:22:18 AM	7/13/2018 9:28:03 AM
5	D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16998.d	7/12/2018 10:43:02 AM	7/13/2018 9:28:03 AM
6	D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q16999.d	7/12/2018 11:03:47 AM	7/13/2018 9:28:03 AM
7	D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q17000.d	7/12/2018 11:24:47 AM	7/13/2018 9:28:03 AM
8	D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q17001.d	7/12/2018 11:45:43 AM	7/13/2018 9:28:03 AM
6	D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q17003.d	7/12/2018 12:30:09 PM	7/13/2018 9:28:03 AM
6	D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q17014.d	7/12/2018 4:30:51 PM	7/13/2018 9:28:03 AM
6	D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q17026.d	7/12/2018 8:39:55 PM	7/13/2018 9:28:03 AM
2	D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q17032.d	7/12/2018 10:44:28 PM	7/13/2018 9:28:03 AM
6	D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q17033.d	7/12/2018 11:05:12 PM	7/13/2018 9:28:03 AM
6	D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q17044.d	7/13/2018 2:54:16 AM	7/13/2018 9:28:03 AM
6	D:\MassHunter\Data\0712_PFC_ID_S2Q295\2q17050.d	7/13/2018 4:58:41 AM	7/13/2018 9:28:03 AM

Compound	1	2	3	4	5	6	7	8	6	6	6	2	6	6	6	Avg RF	%RSD
S 13C2-4:2FTS	2417	2590	2701	2722	2827	3313	3004	3327	3313	3313	3313	2590	3313	3313	3313	2821	11.121
S 13C2-6:2FTS	1714	1772	1839	1846	1927	2280	2096	2368	2280	2280	2280	1772	2280	2280	2280	1952	12.311
S 13C2-8:2FTS	3070	3195	3438	3469	3621	4297	4025	4584	4297	4297	4297	3195	4297	4297	4297	3679	14.039
S 13C2-PFDoDA	1382	1607	1687	1698	1743	1886	1743	1771	1886	1886	1886	1607	1886	1886	1886	1683	9.212
S 13C2-PFTeDA	597.4	681.4	726.6	730.4	747.0	764.7	763.3	778.3	764.7	764.7	764.7	681.4	764.7	764.7	764.7	726.7	10.029
S 13C3-PFBS	960.6	1011	1074	1052	1075	1248	1042	1012	1248	1248	1248	1011	1248	1248	1248	1043	6.119
S 13C3-PFHxS	782.4	828.7	840.1	840.6	848.0	1004	841.7	831.1	1004	1004	1004	828.7	1004	1004	1004	834.8	5.855
S 13C4-PFBA	6203	6526	6723	6645	6817	7921	6682	6585	7921	7921	7921	6526	7921	7921	7921	6647	5.758
S 13C4-PFHpA	2535	2826	2899	2916	2932	3412	2843	2731	3412	3412	3412	2826	3412	3412	3412	2829	6.841
S 13C5-PFHxA	2634	2991	3048	3055	3077	3550	2963	2862	3550	3550	3550	2991	3550	3550	3550	2966	7.218
S 13C5-PFPeA	2961	3252	3334	3291	3392	3935	3315	3256	3935	3935	3935	3252	3935	3935	3935	3281	6.533
S 13C6-PFDA	2388	2628	2811	2794	2873	3137	2812	2807	3137	3137	3137	2628	3137	3137	3137	2772	8.235
S 13C7-PFUnDA	1719	2014	2084	2101	2131	2381	2088	2129	2381	2381	2381	2014	2381	2381	2381	2061	8.862
S 13C8-FOSA	1501	1734	1736	1667	1718	1970	1536	1385	1970	1970	1970	1734	1970	1970	1970	1608	8.679
S 13C8-PFOA	1191	1330	1343	1302	1364	1643	1334	1312	1643	1643	1643	1330	1643	1643	1643	1314	7.412
S 13C8-PFOS	378.5	395.9	417.0	412.2	424.2	484.9	423.8	405.1	484.9	484.9	484.9	395.9	484.9	484.9	484.9	414.9	6.544
S 13C9-PFNA	757.7	933.4	891.4	874.4	942.3	1120	897.9	899.0	1120	1120	1120	933.4	1120	1120	1120	881.8	8.976
S d3-MeFOSAA	693.4	709.5	784.7	797.0	804.8	867.1	760.1	747.6	867.1	867.1	867.1	709.5	867.1	867.1	867.1	776.8	7.450
I 13C2-PFOA	---------- ISTD ----------																
S M2-PFOA	0.9997	1.0001	1.0006	1.0002	0.9994	0.9997	1.0003	1.0002	0.9997	0.9997	0.9997	1.0001	0.9997	0.9997	0.9997	1.0000	0.040
I 13C4-PFOS	---------- ISTD ----------																

Generated at 10:20 AM on 7/13/2018

Initial Calibration Report - Instrument 1

Compound	1	2	3	4	5	6	7	8	6	6	6	2	6	6	6	Avg RF	%RSD
S M4-PFOS	1.0003	1.0009	1.0001	0.9991	0.9990	1.0005	0.9995	1.0002	1.0005	1.0005	1.0005	1.0009	1.0005	1.0005	1.0005	0.9997	0.054
I M4-PFBA	---------- ISTD ----------																
T PFBA	0.1669	0.1614	0.1568	0.1520	0.1447	0.1477	0.1567	0.1596	0.1477	0.1477	0.1477	0.1614	0.1477	0.1477	0.1477	0.1560 #	4.370
I M5-PFPeA	---------- ISTD ----------																
T PFPeA		1.1325	1.0323	0.9225	0.8858	0.9200	0.9358	0.9345	0.9200	0.9200	0.9200	1.1325	0.9200	0.9200	0.9200	0.9604 #	7.893
I M5-PFHxA	---------- ISTD ----------																
T PFHxA	0.4082	0.3427	0.3262	0.3132	0.3086	0.3238	0.3417	0.3367	0.3238	0.3238	0.3238	0.3427	0.3238	0.3238	0.3238	0.3378 #	9.087
I M4-PFHpA	---------- ISTD ----------																
T PFHpA	0.7898	0.7514	0.7399	0.6983	0.7019	0.7256	0.7384	0.7480	0.7256	0.7256	0.7256	0.7514	0.7256	0.7256	0.7256	0.7354 #	3.999
I M8-PFOA	---------- ISTD ----------																
T PFOA	0.6320	0.6147	0.4807	0.5394	0.5011	0.5173	0.5354	0.5332	0.5173	0.5173	0.5173	0.6147	0.5173	0.5173	0.5173	0.5333 #	8.338
I M9-PFNA	---------- ISTD ----------																
T PFNA	0.4682	0.3609	0.4194	0.3908	0.3534	0.3701	0.3922	0.3961	0.3701	0.3701	0.3701	0.3609	0.3701	0.3701	0.3701	0.3954 #	9.024
I M6-PFDA	---------- ISTD ----------																
T PFDA	0.4115	0.4000	0.3494	0.3596	0.3497	0.3503	0.3737	0.3737	0.3503	0.3503	0.3503	0.4000	0.3503	0.3503	0.3503	0.3695 #	5.808
I M7-PFUnDA	---------- ISTD ----------																
T PFDS	0.1768	0.1838	0.1773	0.1682	0.1636	0.1632	0.1722	0.1714	0.1632	0.1632	0.1632	0.1838	0.1632	0.1632	0.1632	0.1728 #	4.723
T PFUnDA	0.5462	0.5201	0.4920	0.4589	0.4580	0.4567	0.4937	0.4931	0.4567	0.4567	0.4567	0.5201	0.4567	0.4567	0.4567	0.4912 #	6.522
I M2-PFDoDA	---------- ISTD ----------																
T PFDoDA	0.6084	0.6125	0.5431	0.5193	0.4893	0.5008	0.5140	0.5095	0.5008	0.5008	0.5008	0.6125	0.5008	0.5008	0.5008	0.5342 #	7.919
I M2-PFTeDA	---------- ISTD ----------																
T PFTeDA	0.7173	0.7326	0.6502	0.6272	0.5666	0.5975	0.6016	0.5939	0.5975	0.5975	0.5975	0.7326	0.5975	0.5975	0.5975	0.6309 #	8.946
T PFTrDA	1.0068	0.9603	0.9138	0.8864	0.8343	0.9184	0.8881	0.8694	0.9184	0.9184	0.9184	0.9603	0.9184	0.9184	0.9184	0.9115 #	7.048
I M8-FOSA	---------- ISTD ----------																
T FOSA	0.4686	0.5097	0.4730	0.4811	0.4579	0.4693	0.4801	0.4943	0.4693	0.4693	0.4693	0.5097	0.4693	0.4693	0.4693	0.4768 #	2.377
I M3-PFBS	---------- ISTD ----------																
T PFBS	1.3946	1.3809	1.3006	1.2988	1.2651	1.3044	1.3626	1.3786	1.3044	1.3044	1.3044	1.3809	1.3044	1.3044	1.3044	1.3410 #	4.121

Initial Calibration Report - Instrument 1

Compound	1	2	3	4	5	6	7	8	6	6	6	2	6	6	6	Avg RF	%RSD
T PFPeS	0.8786	0.9012	0.9030	0.8374	0.8037	0.8261	0.8662	0.8754	0.8261	0.8261	0.8261	0.9012	0.8261	0.8261	0.8261	0.8630 #	4.428
I M3-PFHxS	---------- ISTD ----------																
T PFHpS	0.6099	0.6012	0.5488	0.5253	0.5214	0.5394	0.5594	0.5651	0.5394	0.5394	0.5394	0.6012	0.5394	0.5394	0.5394	0.5502 #	5.199
T PFHxS	1.2442	1.1935	1.1856	1.1373	1.1004	1.1410	1.1891	1.1865	1.1410	1.1410	1.1410	1.1935	1.1410	1.1410	1.1410	1.1782 #	4.087
I M8-PFOS	---------- ISTD ----------																
T PFNS	1.7997	1.7962	1.8977	1.7814	1.7149	1.6320	1.7791	1.8647	1.6320	1.6320	1.6320	1.7962	1.6320	1.6320	1.6320	1.7887 #	3.594
T PFOS	1.5913	1.3571	1.2174	1.2132	1.1560	1.1895	1.2064	1.2663	1.1895	1.1895	1.1895	1.3571	1.1895	1.1895	1.1895	1.2592 #	10.934
I M2-4:2FTS	---------- ISTD ----------																
T 4:2FTS	0.5183	0.5288	0.5568	0.5102	0.4891	0.4869	0.4819	0.4289	0.4869	0.4869	0.4869	0.5288	0.4869	0.4869	0.4869	0.5059 #	8.926
I M2-6:2FTS	---------- ISTD ----------																
T 6:2FTS	0.5892	0.5814	0.5593	0.5000	0.4901	0.4796	0.4662	0.4190	0.4796	0.4796	0.4796	0.5814	0.4796	0.4796	0.4796	0.5063 #	11.157
I M2-8:2FTS	---------- ISTD ----------																
T 8:2FTS	0.6504	0.6234	0.5769	0.5623	0.5159	0.5041	0.4926	0.4441	0.5041	0.5041	0.5041	0.6234	0.5041	0.5041	0.5041	0.5470 #	12.569
I M3-MeFOSAA	---------- ISTD ----------																
T EtFOSAA	0.2684	0.3450	0.3540	0.3229	0.3087	0.3271	0.3316	0.3217	0.3271	0.3271	0.3271	0.3450	0.3271	0.3271	0.3271	0.3202 #	8.167
T MeFOSAA	0.4019	0.3568	0.4250	0.3606	0.3620	0.3650	0.3694	0.3693	0.3650	0.3650	0.3650	0.3568	0.3650	0.3650	0.3650	0.3809 #	6.966

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

Initial Calibration Report - Instrument 1

Compounds with Curve fitting not using Avg Response Factor:

Compound	Curve Fit	Curve Fit Formula	Curve Fit R2
S 13C2-4:2FTS	Linear	y = 2821.486135 * x	0.000000
S 13C2-6:2FTS	Linear	y = 1951.506816 * x	0.000000
S 13C2-8:2FTS	Linear	y = 3678.564303 * x	0.000000
S 13C2-PFDoDA	Linear	y = 1683.281952 * x	0.000000
S 13C2-PFTeDA	Linear	y = 726.658907 * x	0.000000
S 13C3-PFBS	Linear	y = 1042.638967 * x	0.000000
S 13C3-PFHxS	Linear	y = 834.758696 * x	0.000000
S 13C4-PFBA	Linear	y = 6646.517835 * x	0.000000
S 13C4-PFHpA	Linear	y = 2829.232020 * x	0.000000
S 13C5-PFHxA	Linear	y = 2965.865476 * x	0.000000
S 13C5-PFPeA	Linear	y = 3280.525038 * x	0.000000
S 13C6-PFDA	Linear	y = 2772.179154 * x	0.000000
S 13C7-PFUnDA	Linear	y = 2060.899107 * x	0.000000
S 13C8-FOSA	Linear	y = 1608.384530 * x	0.000000
S 13C8-PFOA	Linear	y = 1313.691998 * x	0.000000
S 13C8-PFOS	Linear	y = 414.854316 * x	0.000000
S 13C9-PFNA	Linear	y = 881.775798 * x	0.000000
T 4:2FTS	Quadratic	y = -0.018731 * x ^ 2 + 0.523106 * x	0.999849
T 6:2FTS	Quadratic	y = -0.017198 * x ^ 2 + 0.505348 * x	0.999912
T 8:2FTS	Quadratic	y = -0.018617 * x ^ 2 + 0.537374 * x	0.999953
S d3-MeFOSAA	Linear	y = 776.807358 * x	0.000000
S M2-PFOA	Linear	y = 1.000011 * x	0.000000
T EtFOSAA	Linear	y = 0.323131 * x	0.999669
T FOSA	Linear	y = 0.490630 * x	0.999687
T MeFOSAA	Linear	y = 0.368727 * x	0.999885
T PFBA	Linear	y = 0.158638 * x	0.999711
T PFBS	Linear	y = 1.372329 * x	0.999778
T PFDA	Linear	y = 0.372875 * x	0.999812
T PFDoDA	Linear	y = 0.510065 * x	0.999948
T PFDS	Linear	y = 0.171251 * x	0.999883
T PFHpA	Linear	y = 0.744793 * x	0.999853
T PFHpS	Linear	y = 0.562674 * x	0.999796
T PFHxA	Linear	y = 0.337270 * x	0.999835
T PFHxS	Linear	y = 1.185111 * x	0.999888
T PFNA	Linear	y = 0.394484 * x	0.999760
T PFNS	Linear	y = 1.842980 * x	0.999278
T PFOA	Linear	y = 0.532972 * x	0.999919
T PFOS	Linear	y = 1.252612 * x	0.999378
T PFPeA	Linear	y = 0.933782 * x	0.999933
T PFPeS	Linear	y = 0.871478 * x	0.999762
T PFTeDA	Linear	y = 0.594927 * x	0.999898
T PFTrDA	Linear	y = 0.873148 * x	0.999860
T PFUnDA	Linear	y = 0.491967 * x	0.999755

S M4-PFOS	Linear	y = 0.999714 * x	0.000000

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

SGS ACCUTEST – ORLANDO ANALYTICAL RUN NARRATIVE

Instrument Run ID S2Q295 Analyst NAS Date 07/12/18 Reviewer Checklist:

Are there Manual Integrations on any Calibration Files? YES X NO _____

If YES, the Calibration files MUST be finalized BEFORE the Initial Calibration update! YES X ☐

Initial Calibration met method criteria except as noted: YES X NO (comment required) _____ ☐

Initial Calibration RT's checked and data files correctly match ICAL summary report: YES X ☐

Initial Calibration Verification met method criteria: YES X NO (comment required) _____ ☐

All Continuing Calibration Check(s) met method criteria: YES _____ NO (comment required) X ☐

2Q17014 PFDoDA, PFTeDA SURR HIGH; 2Q17026 PFNA SURR HIGH. NO COMMENTS PUT IN LIMS

Acceptable Calibration Checks bracketed all samples with detected target analytes: YES X ☐
NO (comment required) _____

QC Samples (MB, BS, MS, MSD, etc.) met method criteria: YES _____ NO (comment required) X ☐

OP70828-BS PFTrDA HIGH, SAMPLES ND; OP70810-BS PFDoDA, PFTrDA HIGH, SAMPLES ND.

BS verified against DoD QSM Limits? YES X NO _____ (If Not applicable.) ☐

If YES, were exceedences noted? YES X NO _____ ☐

All Weights, Volumes and Dilution factors verified? YES X NO _____ ☐

All PDFs were reviewed for accuracy and labeled as QT reviewed: YES X ☐

All hits were reviewed for accuracy (Spectral matches, RT matches, suspected carryover): YES X ☐

Were any samples in this run scheduled for re-extraction (SEMI'S)? NO ____ YES (comment) X ☐

FA55615-15 ISTD HIGH.

Were any sample results reported as "Analyzed or extracted beyond holdtime"? NO X YES (comment) ___ ☐

Manual Integrations were performed in accordance with the Manual Integration SOP: YES X ☐

Note any unusual run occurrences below: RERUNNING SAMPLES WITH LOW ISTDS. ☐
FA55380-29 RE-EXT ISTD LOWER THAN ORIGINAL, RERUNNING ORIGINAL;
FA55380-42 RE-EXT ND, ORIGINAL HAD J VALUES. NOT SURE WHAT TO REPORT

Reviewer _____ Analytical run log page(s) _____ reviewed for accuracy _____

SGS ACCUTEST-ORLANDO

DATE:	07/13/18
COLUMN TYPE:	poroshell EC18
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	280

LCMS2-2Q ANALYSIS LOG

METHODS:	PFC-ID
ACQ. METHOD:	dMRM-ID-PFC
PROC. METHOD:	PFC-ID-07~~18~~-S2Q296
CALIB. DATE:	07/13/18
RUN BATCH: S2Q	296

NG 07/13/18

ANALYST:	NG/NAS
ELUENT A LOT #:	181916 w/Aerp Aerp
ELUENT B LOT #:	181172
WATER LOT #:	181916
ISTD Lot #:	LC1077

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 170666	1	ccb	PFC-ID	—	—				—
2Q 67	2	ic296-0.5		—	—				—
2Q 68	3	-1		LC1073	5/500				updated
2Q 69	4	-2			10/500				
2Q 70	5	-5			25/500				
2Q 71	6	-10			50/500				
2Q 72	2	-0.5			2.5/500				
2Q 73	7	icc296-20			100/500				
2Q 74	8	ic296 -50			250/500				
2Q 75	9	-100			1X				
2Q 76	1	IBLK		—	—				—
2Q 77	10	ICV296-20		LC1051	5/500				pass
2Q 78	11	LC1052 OP70830-mb	NG 07/13/18	LC1052 OP70830	1X				ND
2Q 8079	12	13 ↓ -50							✓
2Q 8180	13	FAS4994-16LR							✓ rrsx ecomb
2Q 8281	14	OP70830-ms							rrsx
2Q 8382	15	FAS4994-17LR							✓ rr2x ecomb
2Q 8483	16	OP70830-dup							rr2x
2Q 8584	17	CC296-20		LC1073	100/500				pass
2Q 85	7	ccb							

NG 07/13/18

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

SGS ACCUTEST-ORLANDO

DATE:	07/13/18
COLUMN TYPE:	Poroshell EC18
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	280

LCMS2-2Q ANALYSIS LOG

METHODS:	PFC-ID
ACQ. METHOD:	dMRM-ID-PFC
PROC. METHOD:	PFC-ID-07138-S2Q296
CALIB. DATE:	07/13/18
RUN BATCH: S2Q	296

ANALYST:	NG/NAS
ELUENT A LOT #:	181916 (5mM Acetic Acid)
ELUENT B LOT #:	181172
WATER LOT #:	181916
ISTD Lot #:	LC1077

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 17086	1	ccb	PFC-ID	—					—
2Q 87	18	OP70814-bs		OP70814	1X				✓
2Q 88	19	↓ -mb							ND
2Q 89	20	JC68753-1							✓
2Q 90	21	-2							✓
2Q 91	22	-3							✓
2Q 92	23	↓ -5							✓
2Q 93	24	JC68818-1							✓
2Q 94	25	↓ -3							✓
2Q 95	26	JC68753-7		↓	↓				✓
2Q 96	7	CC296-20		LC1073	100/500				pass
2Q 97	1	ccb		—					—
2Q 98	27	JC68753-8		OP70814	1X				✓
2Q ↓ 99	28	JC69096 ~~5~~ 7		↓	↓		JC69096-7		✓
2Q 17100	29	JC69122-1							✓
2Q 01	30	OP70814-ms		↓	↓				✓
2Q 02	7	CC296-20		LC1073	100/500				pass
2Q 03	3	↓ -1.0		↓	5/500				pass
2Q 04	1	ccb		—					—
2Q ↓ 05	35	FA55615-4	↓	OP70825	5X				✓

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

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Analyst's Signature: [signature]

SGS ACCUTEST-ORLANDO

DATE:	07/13/18
COLUMN TYPE:	PoroshellEC18
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	080

LCMS2-2Q ANALYSIS LOG

METHODS:	PFC-ID
ACQ. METHOD:	dMRM-ID-PFC
PROC. METHOD:	PFC-ID-071318_S2Q296
CALIB. DATE:	07/13/18
RUN BATCH:	S2Q 296

ANALYST:	NG/NAS
ELUENT A LOT #:	181916 w/ Acetic Acid
ELUENT B LOT #:	181172 ↓
WATER LOT #:	181916
ISTD Lot #:	LC1077

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q17106	36	FA55615-5	PFC-ID	~~OP70828~~ OP70874 NG 07/13/18	2X				✓
2Q07	37	↓ -6	↓	↓	1X				UnDA, DoDA, TeDA ↓ redo
2Q08	38	-15			↓				— re-ext in new batch
2Q09	39	FA55380-29							rr 1X
2Q10	40	↓ -42							✓
2Q11	7	CC296-20		LC1073	100/500				pass
2Q12	1	ccb		~~—~~	~~—~~ 810 NG 07/13/18				—
2Q13	41	FA55430-2		OP70874	5X				✓
2Q14	42	↓ -5		↓	1X				✓
2Q15	43	-6			1X				✓
2Q16	44	-6			10X				✓
2Q17	45	-7			1X				✓
2Q18	46	-7			10X				✓
2Q19	47	-8			20X				✓
2Q20	7	CC296-20		LC1073	100/500				pass
2Q21	1	ccb		—					—
2Q22	48	OP70832-bs		OP70832	1X				PFTrDA ↑
2Q23	49	↓ -mb		↓	↓				ND
2Q24	50	JC68926-1							✓
2Q25 ↓	51	↓ -2	↓						✓

*< Conductivity Limit For Perchlorate by SW846 6850
Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration
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LCMS2_2Q_log.xls ME rev. 06/16

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Analyst's Signature: [signature]

SGS ACCUTEST-ORLANDO

DATE: 07/13/18	
COLUMN TYPE: Poroshell EC18	
AMOUNT INJECTED: 5 ul	
INSTRUMENT: LCMS2-2Q	
HEAD PRESSURE: 280	

LCMS2-2Q ANALYSIS LOG

METHODS: PFC-ID	
ACQ. METHOD: dMRM-ID-PFC	
PROC. METHOD: PFC-ID-071318-S2Q296	
CALIB. DATE: 07/13/18	
RUN BATCH: S2Q 296	

ANALYST: NG / NAS	
ELUENT A LOT #: 181916 w/ Acetic Acid	
ELUENT B LOT #: 181172	
WATER LOT #: 181916	
ISTD Lot #: LC1077	

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 17126	52	OP70832-ms	PFC-ID	OP70832	1x				✓
2Q 27	53	↓ -msd							✓
2Q 28	54	JC68926-3							✓
2Q 29	55	-4							✓ rr 2x ecomb
2Q 30	56	-5							✓ ~~rr 1x e/o~~ NG 07/13/18
2Q 31	57	↓ -6		↓	↓				✓
2Q 32	7	CC296-20		LC1073	100/500				pass
2Q 33	1	ccb		—					—
2Q 34	58	JC68926-7		OP70832	1X				✓
2Q 35	59	↓ -8							✓
2Q 36	60	FA55589-1			↓				✓
2Q 37	61	↓ 86-1			10X				✓
2Q 38	62	FA55437-1		↓	1X				✓
2Q 39	7	CC296-20		LC1073	100/500				pass
2Q 40	1	ccb		—					—
2Q 41	31	blank vial		—					—
2Q 42	32	wax test		—					—
2Q 43	33	test slow		—					—
2Q 44	34	test fast		—					—
2Q ↓ 45	7	CC296-20	↓	LC1073	100/500				pass

*< Conductivity Limit For Perchlorate by SW846 6850
Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration
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LCMS2_2Q_log.xls ME rev. 06/16

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Analyst's Signature: [signature]

SGS ACCUTEST-ORLANDO

DATE:	07/13/18
COLUMN TYPE:	Poroshell EC18
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	280

LCMS2-2Q ANALYSIS LOG

METHODS:	PFC-ID
ACQ. METHOD:	dMRM-ID-PFC
PROC. METHOD:	PFC-ID-071318-S2Q296
CALIB. DATE:	07/13/18
RUN BATCH: S2Q	296

ANALYST:	NG/NAS
ELUENT A LOT #:	181916 w/Acetic Acid
ELUENT B LOT #:	181712
WATER LOT #:	181916
ISTD Lot #:	LC1077

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 171146	3	CC 296-1.0	PFC-ID	LC1073	5/500				pass
2Q 47	1	CCb		—	—				—
2Q 48	63	OP70855-bs		OP70855	1x				✓
2Q 49	64	↓ -mb		↓	↓				ND
2Q 50	65	FA55431-4		↓	↓				✓
2Q 51	7	CC 296 20		LC1073	100/500				pass
2Q 52	1	CCb		—	—				—
2Q 53	66	OP70849-bs		OP70849	1x				PFTrDA ↑
2Q 54	67	↓ -mb		↓	↓				ND
2Q 55	68	FA55685-1		↓	↓				TeDA ↓ redo
2Q 56	69	↓ -2		↓	↓				DoDA, TeDA ↓ redo
2Q 57	70	↓ -3		↓	↓				✓
2Q 58	71	FA55651-1		↓	↓				✓
2Q 59	72	↓ -3		↓	↓				TeDA ↓ redo
2Q 60	73	↓ -4		↓	↓				TeDA, DoDA ↓ redo
2Q 61	74	↓ -5		↓	↓				✓
2Q 62	75	↓ -5		↓	↓				TeDA ↓ redo
2Q 63	7	CC 296-20		LC1073	100/500		NG 07/13/18		~~TeDA, UnDA, DoDA ↓~~ pass
2Q 64	1	CCb		—	—				—
2Q 65	76	FA55651-6		OP70849	1x				TeDA, UnDA, DoDA ↓ redo

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

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Analyst's Signature: Natasha A.

SGS ACCUTEST-ORLANDO

DATE:	07/13/18
COLUMN TYPE:	PoroshellEC18
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	280

LCMS2-2Q ANALYSIS LOG

METHODS:	PFC-ID
ACQ. METHOD:	dMRM-ID-PFC
PROC. METHOD:	PFC-ID-071318_S2Q296
CALIB. DATE:	07/13/18
RUN BATCH: S2Q	296

ANALYST:	NG/NAS
ELUENT A LOT #:	181916 w/ Acetic Acid
ELUENT B LOT #:	181172
WATER LOT #:	181916
ISTD Lot #:	LC1077

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 171166	77	FA55651-7	PFC-ID	OP70849	1X				↓Istds redo
2Q 67	78	-8							↓DODA redo
2Q 68	79	-9							✓
2Q 69	80	-10							low Istds redo
2Q 70	81	-11							low Istds redo
2Q 71	82	-12							PFOS ↓ redo
2Q 72	7	CC296-20		LC1073	100/500				pass
2Q 73	3	-1.0			5/500				pass
2Q 74	1	ccb			—				—
2Q 75	83	FA55651-13		OP70849	1X				↓TEDA redo
2Q 76	84	-14							✓
2Q 77	85	OP70849-MS							✓
2Q 78	86	-msd							✓
2Q 79	87	FA55651-15							↓TEDA redo
2Q 80	88	-16							↓TEDA, DODA redo
2Q 81	89	-17							↓TEDA redo
2Q 82	7	CC296-20		LC1073	100/500				pass
2Q 83	1	ccb			—				—
2Q 84	90	OP70856-bs		OP70856	1X				✓
2Q 85	91	-mb							NO

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SGS ACCUTEST-ORLANDO

DATE:	07/13/18
COLUMN TYPE:	Poroshell EC18
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	880

LCMS2-2Q ANALYSIS LOG

METHODS:	PFC-ID
ACQ. METHOD:	dMRM-ID-PFC
PROC. METHOD:	PFC-ID-071318-S2Q296
CALIB. DATE:	07/13/18
RUN BATCH: S2Q	296

ANALYST:	NG / NAS
ELUENT A LOT #:	181916 w/ Acetic Acid
ELUENT B LOT #:	181172
WATER LOT #:	181916
ISTD Lot #:	LC1077

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 171806	92	FA55057-1	PFC-ID	OP70856	1x				✓
2Q 87	93	OP70856-MS	↓	↓	↓				✓
2Q 88	1	ICC296-20		LC1073	100/500				pass
2Q 89	1	ccb		—	—				—
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
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2Q									
2Q									
2Q									
2Q									

NG 07/13/18

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

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SGS - ORLANDO

SPE LIQUID SAMPLE PREP REPORT

Date/Time: 07/03/18 0930 Started {mm/dd/yy 24:00}

Date/Time: 07/05/18 9:35 Finished {mm/dd/yy 24:00}

Prep Method: 3535A or 537 or (537MOD) (circle)

Analytical Method: LC 537 RE-EXT

Batch#: OP 70743 Ext. By: MB Conc. By: MV Vialed By: MB

Sample ID	Bottle Number	Amount Extracted (ml)	Initial pH	Adjusted pH	Surrogate Amount	Spike Amount	Final Volume (ml)	Manifold ID	Comments
OP 70743 MB	X	130	6	N/A	20ul		1ml	A	
OP 70743 BS	X	130	↓	↓	↓	50ul	↓	↓	
FAS5069-20	2	130							
-22	2	130							
-23	2	130							
-25	2	130							
-26	2	130							
-28	2	130							
-30	2	130							
-34	2	130							
-42	2	130						↓	
FAS5430-1	1	130						B	
-2	1	130							
-3	1	130							
-4	1	130							
-5	1	130							
-6	1	130							
-7	1	120							
-8	1	130	↓	↓	↓		↓	↓	
FAS5430-1 MS	2	130	6	N/A	20ul	50ul	1ml	B	
-1 MSD	3	130	↓	↓	↓	↓	↓	↓	
DUP									

Comments:

Surr.1 ID: LC10784 Conc: 1ppm Exp. Date: 07/03/19 Inj. By: MB Ver. By MB

Spk.1 ID: LC1075 Conc: 400ppb Exp. Date: 12/29/18 Inj. By: MB Ver. By MB

Spk.2 ID: / Conc: / Exp. Date: / Inj. By: / Ver. By /

Spk.3 ID: / Conc: / Exp. Date: / Inj. By: / Ver. By /

TurboVap Temp (Therm ID): / N-Evap Temp (Therm ID): NEVAP

Observed Temp °C: / Corr. Temp °C: / Observed Temp °C: 35c Corr. Temp °C: /

Methanol Lot # 181172 SPE Lot # 6179381294 pH Paper # 215517

Acetonitrile Lot # / Syringe filter Lot # / Reagent # /

Water Lot# OP70467 Pre-filter Lot# / Reagent # 2% NH4OH 7117040 MeOH 180357

Solvent# / Carbon Lot# 103371 Other /

Relinquished By: Date: 7/05/18

Accepted By: Date: 07/05/18 09:45

ORLD-EXT-0001-3-08-FORM-extwater_spe.xls 032718

SGS - ORLANDO

SPE LIQUID SAMPLE PREP REPORT

Date/Time: 07/09/18 1600 (Started {mm/dd/yy 24:00}) 9:35

Date/Time: 07/10/18 (Finished {mm/dd/yy 24:00})

Prep Method: 3535A or 537 or (537MOD) (circle)

Analytical Method: LC537

Batch#: OP-70805 Ext. By: AF Conc. By: MV Vialed By:

Sample ID	Bottle Number	Amount Extracted (ml)	Initial pH	Adjusted pH	Surrogate Amount	Spike Amount	Final Volume (ml)	Manifold ID	Comments
OP 70805 MB		120	6	N.A.	20 µl		1	C	
OP 70805 BS		120	↓	↓	↓	50 µl	↓	↓	
FA55380-8RE	2	120	↓	↓	↓	↓	↓	↓	
-9RE	2	120	↓	↓	↓	↓	↓	↓	
-15RE	2	120	↓	↓	↓	↓	↓	↓	
-18RE	2	110	↓	↓	↓	↓	↓	↓	
-19RE	2	120	↓	↓	↓	↓	↓	↓	
-20RE	2	120	↓	↓	↓	↓	↓	↓	
-22RE	2	120	↓	↓	↓	↓	↓	↓	
-25RE	2	110	↓	↓	↓	↓	↓	↓	
-26RE	2	110	↓	↓	↓	↓	↓	D	
FA55430-3RE	2	120	↓	↓	↓	↓	↓	↓	
-4RE	2	130	↓	↓	↓	↓	↓	↓	
FA55587-1	1	120	↓	↓	↓	↓	↓	↓	
-2	1	120	↓	↓	↓	↓	↓	↓	
-3	1	120	↓	↓	↓	↓	↓	↓	
-4	1	120	↓	↓	↓	↓	↓	↓	
-5	1	120	↓	↓	↓	↓	↓	↓	MS, MSD
FA55587-5 MS	2	120	6	N.A.	20 µl	50 µl	1	C	
FA55587-5MSD	3	120	↓	↓	↓	↓	↓	↓	
DUP									

Comments:

Surr.1 ID: LC1080B Conc: 1.0 PPM Exp. Date: 07/06/19 Inj. By: AF Ver. By AF

Spk.1 ID: LC1075 Conc: 400 PPB Exp. Date: 12/29/18 Inj. By: AF Ver. By AF

Spk.2 ID: - Conc: - Exp. Date: - Inj. By: - Ver. By -

Spk.3 ID: - Conc: - Exp. Date: - Inj. By: - Ver. By -

TurboVap Temp (Therm ID): ✓

Observed Temp °C: ✓ Corr. Temp °C: ✓

N-Evap Temp (Therm ID): NEVAP

Observed Temp °C: 33 Corr. Temp °C: ✓

Methanol Lot # 181172

Acetonitrile Lot # -

Water Lot# OP-70467

Solvent# -

SPE Lot # 07938128A

Syringe filter Lot # -

Pre-filter Lot# -

Carbon Lot# 103371

pH Paper # 215517

Reagent # NH4OH 2% MeOH

Reagent # 711040/181172

Other -

Relinquished By: [signature] Date: 7/10/18

Accepted By: [signature] Date: 07/10/18 09:30

ORLD-EXT-0001-3-08-FORM-extwater_spe.xls 032718

SGS - ORLANDO

SPE LIQUID SAMPLE PREP REPORT

Date/Time: 7/10/18 9:00 Started {mm/dd/yy 24:00}

Date/Time: 7/11/18 12:30 Finished {mm/dd/yy 24:00}

Prep Method: 3535A or 537 or 537MOD (circle)

Analytical Method: LC537

Batch#: OP70810 Ext. By: LW Conc. By: [signature] Vialed By:

Sample ID	Bottle Number	Amount Extracted (ml)	Initial pH	Adjusted pH	Surrogate Amount	Spike Amount	Final Volume (ml)	Manifold ID	Comments
OP 70810 MB	—	130	6	N/A	20 ul		1 ml	C	
OP 70810 BS	—	130	↓	↓	↓	50 ul	↓	↓	
FA55380-29 Re	2	110	↓	↓	↓	↓	↓	↓	
FA55380-42 Re	2	130	↓	↓	↓	↓	↓	↓	
FA55430-2 Re	2	130	↓	↓	↓	↓	↓	↓	
-5 Re	2	120	↓	↓	↓	↓	↓	↓	
-6 Re	2	130	↓	↓	↓	↓	↓	↓	
-7 Re	2	130	↓	↓	↓	↓	↓	↓	
-8 Re	2	120	↓	↓	↓	↓	↓	↓	
MS									
MSD									
DUP									

7/11/18

Comments:

Surr.1 ID: LC1080-B Conc: 1.0 ppm Exp. Date: 7/6/19 Inj. By: LW Ver. By MB

Spk.1 ID: LC1075 Conc: 400 ppb Exp. Date: 12/29/18 Inj. By: LW Ver. By MB

Spk.2 ID: — Conc: — Exp. Date: — Inj. By: — Ver. By —

Spk.3 ID: — Conc: — Exp. Date: — Inj. By: — Ver. By —

TurboVap Temp (Therm ID): _____

Observed Temp °C: _____ Corr. Temp °C: _____

N-Evap Temp (Therm ID): N/A

Observed Temp °C: 40C Corr. Temp °C: ✓

Methanol Lot # 181172

Acetonitrile Lot # —

Water Lot# OP70467

Solvent# —

SPE Lot # 0179381281A

Syringe filter Lot # —

Pre-filter Lot# —

Carbon Lot# 103371

pH Paper # 215517

Reagent # 2% MeOH 180357 NH_4OH 7117040

Reagent # —

Other —

Relinquished By: [signature] Date: 7/11/18

Accepted By: [signature] Date: 7/11/18

ORLD-EXT-0001-3-08-FORM-extwater_spe.xls 032718

DODCMD_ID	INSTALLATION_ID	SDG	SITE_NAME	NORM_SITE_NAME	LOCATION_NAME	LOCATION_TYPE_DESC	COORD_X	COORD_Y	CONTRACT_ID	DO_CTO_NUMBER	CONTR_NAME	SAMPLE_NAME	SAMPLE_MATRIX_DESC	SAMPLE_TYPE_DESC	COLLECT_DATE	ANALYTICAL_METHOD	ANALYTICAL_METHOD_GRP_DESC	RES_META_ID
SOUTHEAST	MID_SOUTH_NSA	FA55430	SWMU 00015	SWMU 00015	015G29UF	Monitoring well	813110.888	391743.064	N6247011D8013	JM50	RESOLUTION CONSULTANTS	015G29UF062618	Ground water	Normal (Regular)	26-Jun-18	537_MOD	Perfluoroalkyl Compounds	20180914114713.00
SOUTHEAST	MID_SOUTH_NSA	FA55430	SWMU 00015	SWMU 00015	015G31UF	Monitoring well	813106.138	391684.251	N6247011D8013	JM50	RESOLUTION CONSULTANTS	015H31UF062618	Ground water	Field duplicate	26-Jun-18	537_MOD	Perfluoroalkyl Compounds	20180914114713.00
SOUTHEAST	MID_SOUTH_NSA	FA55430	SWMU 00015	SWMU 00015	015G27UF	Monitoring well	813109.164	391790.892	N6247011D8013	JM50	RESOLUTION CONSULTANTS	015G27UF062618	Ground water	Normal (Regular)	26-Jun-18	537_MOD	Perfluoroalkyl Compounds	20180914114713.00
SOUTHEAST	MID_SOUTH_NSA	FA55430	SWMU 00015	SWMU 00015	015G31UF	Monitoring well	813106.138	391684.251	N6247011D8013	JM50	RESOLUTION CONSULTANTS	015G31UF062618	Ground water	Normal (Regular)	26-Jun-18	537_MOD	Perfluoroalkyl Compounds	20180914114713.00
SOUTHEAST	MID_SOUTH_NSA	FA55430	SWMU 00015	SWMU 00015	015G33UF	Monitoring well	813153.021	391766.861	N6247011D8013	JM50	RESOLUTION CONSULTANTS	015G33UF062718	Ground water	Normal (Regular)	27-Jun-18	537_MOD	Perfluoroalkyl Compounds	20180914114713.00
SOUTHEAST	MID_SOUTH_NSA	FA55430							N6247011D8013	JM50	RESOLUTION CONSULTANTS	TB062618	Water for QC samples	QC Sample	26-Jun-18	537_MOD	Perfluoroalkyl Compounds	20180914114713.00
SOUTHEAST	MID_SOUTH_NSA	FA55430							N6247011D8013	JM50	RESOLUTION CONSULTANTS	EB062618	Water for QC samples	QC Sample	26-Jun-18	537_MOD	Perfluoroalkyl Compounds	20180914114713.00
SOUTHEAST	MID_SOUTH_NSA	FA55430							N6247011D8013	JM50	RESOLUTION CONSULTANTS	FB062618	Water for QC samples	QC Sample	26-Jun-18	537_MOD	Perfluoroalkyl Compounds	20180914114713.00