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Automated Report

Technical Report for

AECOM, INC.

N6274223F0104 RH Fire Suppression System

60697810

SGS Job Number: FC5621

Sampling Date: 04/26/23



Report to:

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Total number of pages in report: 705



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.

Norm Farmer
Technical Director

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Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001)
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Test results relate only to samples analyzed.

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Sample Summary

AECOM, INC.

Job No: FC5621

N6274223F0104 RH Fire Suppression System
Project No: 60697810

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
FC5621-1	04/26/23	09:00	EMMM04/27/23	AQ	Ground Water	AF-RHMW225401-WGN01B-2304W4

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: AECOM, INC.

Job No: FC5621

Site: N6274223F0104 RH Fire Suppression System

Report Date: 5/4/2023 9:19:38 AM

On 04/27/2023, 1 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 1.1 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC5621 was assigned to the project.

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

MS Semi-volatiles By Method EPA DRAFT 1633

Matrix: AQ

Batch ID: OP96627

Sample(s) FC5295-5MS, FC5295-6DUP were used as the QC samples indicated.

OP96627-BS for d7-MeFOSE: Outside control limits.

OP96627-LLBS for d7-MeFOSE: Outside control limits.

OP96627-LLBS for d9-EtFOSE: Outside control limits.

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

Narrative prepared by:

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

Summary of Hits

Job Number: FC5621
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 04/26/23



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
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FC5621-1 AF-RHMW225401-WGN01B-2304W4

Perfluorohexanoic acid	0.86 J	3.5	1.8	ng/l	EPA DRAFT 1633
Perfluoroheptanoic acid	0.70 J	3.5	1.8	ng/l	EPA DRAFT 1633
Perfluorooctanoic acid	1.8 J	3.5	0.88	ng/l	EPA DRAFT 1633
Perfluorohexanesulfonic acid	1.0 J	3.5	1.8	ng/l	EPA DRAFT 1633
Perfluorooctanesulfonic acid	1.1 J	3.5	1.8	ng/l	EPA DRAFT 1633

Sample Results

Report of Analysis

SGS North America Inc.

Report of Analysis

Page 1 of 3

Client Sample ID:	AF-RHMW225401-WGN01B-2304W4		
Lab Sample ID:	FC5621-1	Date Sampled:	04/26/23
Matrix:	AQ - Ground Water	Date Received:	04/27/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q17388.D	1	05/03/23 11:00	MV	04/28/23 11:00	OP96627	S6Q261
Run #2							

Run #	Initial Volume	Final Volume
Run #1	570 ml	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.5 U	14	3.5	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	1.8 U	7.0	1.8	0.82	ng/l	
307-24-4	Perfluorohexanoic acid	0.86	3.5	1.8	0.44	ng/l	J
375-85-9	Perfluoroheptanoic acid	0.70	3.5	1.8	0.44	ng/l	J
335-67-1	Perfluorooctanoic acid	1.8	3.5	0.88	0.44	ng/l	J
375-95-1	Perfluorononanoic acid	1.8 U	3.5	1.8	0.54	ng/l	
335-76-2	Perfluorodecanoic acid	1.8 U	3.5	1.8	0.44	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	3.5	1.8	0.53	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	3.5	1.8	0.53	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	3.5	1.8	0.74	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.8 U	3.5	1.8	0.44	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	1.8 U	3.5	1.8	0.44	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.5 U	4.4	3.5	0.98	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.0	3.5	1.8	0.61	ng/l	J
375-92-8	Perfluoroheptanesulfonic acid	1.8 U	3.5	1.8	0.44	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.1	3.5	1.8	0.47	ng/l	J
68259-12-1	Perfluorononanesulfonic acid	1.8 U	3.5	1.8	0.50	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	3.5	1.8	0.56	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.5 U	4.4	3.5	1.0	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.0 U	18	7.0	2.8	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.0 U	18	7.0	3.0	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.0 U	18	7.0	3.6	ng/l	
PERFLUOROOCCTANE SULFONAMIDES							
754-91-6	PFOSA	1.8 U	3.5	1.8	0.59	ng/l	
31506-32-8	MeFOSA	3.5 U	7.0	3.5	0.88	ng/l	
4151-50-2	EtFOSA	3.5 U	7.0	3.5	0.88	ng/l	

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW225401-WGN01B-2304W4		
Lab Sample ID:	FC5621-1	Date Sampled:	04/26/23
Matrix:	AQ - Ground Water	Date Received:	04/27/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
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PERFLUOROOCCTANE SULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	3.5 U	4.4	3.5	0.88	ng/l	
2991-50-6	EtFOSAA	3.5 U	4.4	3.5	1.2	ng/l	

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	18 U	35	18	3.8	ng/l	
1691-99-2	EtFOSE	18 U	35	18	6.5	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	1.8 U	3.5	1.8	0.88	ng/l	
919005-14-4	ADONA	3.5 U	7.0	3.5	1.6	ng/l	
377-73-1	PFMPA	1.8 U	7.0	1.8	0.88	ng/l	
863090-89-5	PFMBA	3.5 U	7.0	3.5	1.0	ng/l	
151772-58-6	NFDHA	3.5 U	7.0	3.5	1.1	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.5 U	7.0	3.5	1.2	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.5 U	7.0	3.5	1.5	ng/l	
113507-82-7	PFEESA	1.8 U	7.0	1.8	0.68	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	8.8 U	18	8.8	4.0	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	88	18	7.7	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	18 U	88	18	6.9	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
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	13C4-PFBA	106%		20-150%
	13C5-PFPeA	99%		20-150%
	13C5-PFHxA	103%		20-150%
	13C4-PFHpA	106%		20-150%
	13C8-PFOA	95%		20-150%
	13C9-PFNA	115%		20-150%
	13C6-PFDA	113%		20-150%
	13C7-PFUnDA	103%		20-150%
	13C2-PFDoDA	94%		20-150%
	13C2-PFTeDA	76%		20-150%
	13C3-PFBS	98%		20-150%
	13C3-PFHxS	107%		20-150%

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

Report of Analysis

Client Sample ID:	AF-RHMW225401-WGN01B-2304W4		
Lab Sample ID:	FC5621-1	Date Sampled:	04/26/23
Matrix:	AQ - Ground Water	Date Received:	04/27/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	98%		20-150%
	13C8-FOSA	57%		20-150%
	d3-MeFOSA	41%		20-150%
	d5-EtFOSA	36%		20-150%
	d3-MeFOSAA	114%		20-150%
	d5-EtFOSAA	107%		20-150%
	d7-MeFOSE	32%		20-150%
	d9-EtFOSE	31%		20-150%
	13C2-4:2FTS	101%		20-180%
	13C2-6:2FTS	107%		20-180%
	13C2-8:2FTS	97%		20-180%
	13C3-HFPO-DA	111%		20-150%

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

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

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

SGS Sample Receipt Summary

Job Number: FC5621

Client: AECOM

Project: N6274223F0104 RH Fire Suppression System

Date / Time Received: 4/27/2023 3:00:00 PM

Delivery Method: United Cargo/Airspace

Airbill #'s: United Cargo AWB #: 016-72529822

Therm ID: IR 1;

Therm CF: -0.1;

of Coolers: 1

Cooler Temps (Raw Measured) °C: Cooler 1: (1.2);

Cooler Temps (Corrected) °C: Cooler 1: (1.1);

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 230320

pH 10-12 25BDH07

Other: (Specify) pH 1.0 - 12.0 222221

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: ZANEB

Date: 4/27/2023 3:00:00 PM

Reviewer: CD

Date: 5/1/2023

FC5621: Chain of Custody

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QC Evaluation: DOD QSM5.x Limits

Job Number: FC5621
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 04/26/23

QC Sample ID	CAS#	Analyte	Sample Result Type	Result Type	Units	Limits
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No DOD QSM5.x Limits found for methods in this job.

* Sample used for QC is not from job FC5621

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MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Instrument Blank

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q261-IBLK	6Q17291.D	1	05/02/23	MV	n/a	n/a	S6Q261

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5621-1

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0020	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0020	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0020	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0020	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0020	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0020	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0020	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0020	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0020	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0020	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0020	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0020	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0020	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0020	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0020	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0020	0.0010	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0020	0.0011	ug/l	
757124-72-44:2	Fluorotelomer sulfonate	ND	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0040	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0020	0.0010	ug/l	
31506-32-8	MeFOSA	ND	0.0020	0.0010	ug/l	
4151-50-2	EtFOSA	0.0013	0.0020	0.0010	ug/l	J
2355-31-9	MeFOSAA	ND	0.0020	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0020	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.020	0.010	ug/l	
1691-99-2	EtFOSE	ND	0.020	0.010	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0020	ug/l	
377-73-1	PFMPA	ND	0.0040	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0040	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0040	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0020	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0020	ug/l	

Instrument Blank

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q261-IBLK	6Q17291.D	1	05/02/23	MV	n/a	n/a	S6Q261

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5621-1

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0040	0.0010	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.010	0.0050	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.050	0.010	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.050	0.010	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	101% 20-150%
	13C5-PFPeA	97% 20-150%
	13C5-PFHxA	99% 20-150%
	13C4-PFHpA	103% 20-150%
	13C8-PFOA	98% 20-150%
	13C9-PFNA	95% 20-150%
	13C6-PFDA	103% 20-150%
	13C7-PFUnDA	103% 20-150%
	13C2-PFDoDA	95% 20-150%
	13C2-PFTeDA	98% 20-150%
	13C3-PFBS	98% 20-150%
	13C3-PFHxS	100% 20-150%
	13C8-PFOS	97% 20-150%
	13C8-FOSA	97% 20-150%
	d3-MeFOSA	95% 20-150%
	d5-EtFOSA	94% 20-150%
	d3-MeFOSAA	105% 20-150%
	d5-EtFOSAA	101% 20-150%
	d7-MeFOSE	94% 20-150%
	d9-EtFOSE	93% 20-150%
	13C2-4:2FTS	99% 20-180%
	13C2-6:2FTS	101% 20-180%
	13C2-8:2FTS	94% 20-180%
	13C3-HFPO-DA	103% 20-150%

6.1.1
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Continuing Calibration Blank

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q261-ICCB	6Q17383.D	1	05/03/23	MV	n/a	n/a	S6Q261

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5621-1

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-44:2	Fluorotelomer sulfonate	ND	0.020	0.0032	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.020	0.0035	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.020	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0040	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0080	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0080	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.040	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.040	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0010	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0019	ug/l	
377-73-1	PFMPA	ND	0.0080	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0080	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Continuing Calibration Blank

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q261-ICCB	6Q17383.D	1	05/03/23	MV	n/a	n/a	S6Q261

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5621-1

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.020	0.0045	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	103% 20-150%
	13C5-PFPeA	97% 20-150%
	13C5-PFHxA	103% 20-150%
	13C4-PFHpA	102% 20-150%
	13C8-PFOA	103% 20-150%
	13C9-PFNA	95% 20-150%
	13C6-PFDA	97% 20-150%
	13C7-PFUnDA	98% 20-150%
	13C2-PFDoDA	99% 20-150%
	13C2-PFTeDA	95% 20-150%
	13C3-PFBS	98% 20-150%
	13C3-PFHxS	100% 20-150%
	13C8-PFOS	103% 20-150%
	13C8-FOSA	105% 20-150%
	d3-MeFOSA	90% 20-150%
	d5-EtFOSA	98% 20-150%
	d3-MeFOSAA	110% 20-150%
	d5-EtFOSAA	109% 20-150%
	d7-MeFOSE	98% 20-150%
	d9-EtFOSE	97% 20-150%
	13C2-4:2FTS	85% 20-180%
	13C2-6:2FTS	106% 20-180%
	13C2-8:2FTS	104% 20-180%
	13C3-HFPO-DA	108% 20-150%

Continuing Calibration Blank

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q261-ICCB	6Q17390.D	1	05/03/23	MV	n/a	n/a	S6Q261

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5621-1

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-44:2	Fluorotelomer sulfonate	ND	0.020	0.0032	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.020	0.0035	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.020	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0040	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0080	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0080	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.040	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.040	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0010	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0019	ug/l	
377-73-1	PFMPA	ND	0.0080	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0080	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Continuing Calibration Blank

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q261-ICCB	6Q17390.D	1	05/03/23	MV	n/a	n/a	S6Q261

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5621-1

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.020	0.0045	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	104% 20-150%
	13C5-PFPeA	94% 20-150%
	13C5-PFHxA	98% 20-150%
	13C4-PFHpA	101% 20-150%
	13C8-PFOA	96% 20-150%
	13C9-PFNA	97% 20-150%
	13C6-PFDA	114% 20-150%
	13C7-PFUnDA	113% 20-150%
	13C2-PFDoDA	106% 20-150%
	13C2-PFTeDA	106% 20-150%
	13C3-PFBS	93% 20-150%
	13C3-PFHxS	94% 20-150%
	13C8-PFOS	107% 20-150%
	13C8-FOSA	106% 20-150%
	d3-MeFOSAA	108% 20-150%
	d5-EtFOSAA	111% 20-150%
	13C2-4:2FTS	97% 20-180%
	13C2-6:2FTS	96% 20-180%
	13C2-8:2FTS	93% 20-180%

Method Blank Summary

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96627-MB	6Q17363.D	1	05/03/23	MV	04/28/23	OP96627	S6Q261

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5621-1

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-44:2	Fluorotelomer sulfonate	ND	0.020	0.0032	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.020	0.0035	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.020	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0040	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0080	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0080	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.040	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.040	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0010	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0019	ug/l	
377-73-1	PFMPA	ND	0.0080	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0080	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Method Blank Summary

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96627-MB	6Q17363.D	1	05/03/23	MV	04/28/23	OP96627	S6Q261

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5621-1

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.020	0.0045	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	114% 20-150%
	13C5-PFPeA	103% 20-150%
	13C5-PFHxA	110% 20-150%
	13C4-PFHpA	109% 20-150%
	13C8-PFOA	113% 20-150%
	13C9-PFNA	96% 20-150%
	13C6-PFDA	112% 20-150%
	13C7-PFUnDA	109% 20-150%
	13C2-PFDoDA	98% 20-150%
	13C2-PFTeDA	93% 20-150%
	13C3-PFBS	107% 20-150%
	13C3-PFHxS	109% 20-150%
	13C8-PFOS	104% 20-150%
	13C8-FOSA	37% 20-150%
	d3-MeFOSA	28% 20-150%
	d5-EtFOSA	25% 20-150%
	d3-MeFOSAA	114% 20-150%
	d5-EtFOSAA	98% 20-150%
	d7-MeFOSE	22% 20-150%
	d9-EtFOSE	24% 20-150%
	13C2-4:2FTS	109% 20-180%
	13C2-6:2FTS	106% 20-180%
	13C2-8:2FTS	114% 20-180%
	13C3-HFPO-DA	110% 20-150%

Continuing Calibration Blank

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q261-ICCB	6Q17360.D	1	05/03/23	MV	n/a	n/a	S6Q261

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

OP96627-BS, OP96627-LLBS, OP96627-MB, OP96627-MS

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-44:2	Fluorotelomer sulfonate	ND	0.020	0.0032	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.020	0.0035	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.020	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0040	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0080	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0080	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.040	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.040	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0010	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0019	ug/l	
377-73-1	PFMPA	ND	0.0080	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0080	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Continuing Calibration Blank

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q261-ICCB	6Q17360.D	1	05/03/23	MV	n/a	n/a	S6Q261

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

OP96627-BS, OP96627-LLBS, OP96627-MB, OP96627-MS

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.020	0.0045	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	104% 20-150%
	13C5-PFPeA	97% 20-150%
	13C5-PFHxA	101% 20-150%
	13C4-PFHpA	103% 20-150%
	13C8-PFOA	100% 20-150%
	13C9-PFNA	102% 20-150%
	13C6-PFDA	103% 20-150%
	13C7-PFUnDA	100% 20-150%
	13C2-PFDoDA	94% 20-150%
	13C2-PFTeDA	92% 20-150%
	13C3-PFBS	91% 20-150%
	13C3-PFHxS	98% 20-150%
	13C8-PFOS	100% 20-150%
	13C8-FOSA	96% 20-150%
	d3-MeFOSAA	103% 20-150%
	d5-EtFOSAA	109% 20-150%
	13C2-4:2FTS	90% 20-180%
	13C2-6:2FTS	102% 20-180%
	13C2-8:2FTS	101% 20-180%

6.1.5

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Continuing Calibration Blank

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q261-ICCB	6Q17371.D	1	05/03/23	MV	n/a	n/a	S6Q261

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

OP96627-DUP

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-44:2	Fluorotelomer sulfonate	ND	0.020	0.0032	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.020	0.0035	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.020	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0040	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0080	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0080	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.040	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.040	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0010	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0019	ug/l	
377-73-1	PFMPA	ND	0.0080	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0080	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Continuing Calibration Blank

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q261-ICCB	6Q17371.D	1	05/03/23	MV	n/a	n/a	S6Q261

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

OP96627-DUP

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.020	0.0045	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	103% 20-150%
	13C5-PFPeA	94% 20-150%
	13C5-PFHxA	103% 20-150%
	13C4-PFHpA	103% 20-150%
	13C8-PFOA	103% 20-150%
	13C9-PFNA	103% 20-150%
	13C6-PFDA	107% 20-150%
	13C7-PFUnDA	109% 20-150%
	13C2-PFDoDA	102% 20-150%
	13C2-PFTeDA	103% 20-150%
	13C3-PFBS	91% 20-150%
	13C3-PFHxS	92% 20-150%
	13C8-PFOS	104% 20-150%
	13C8-FOSA	100% 20-150%
	d3-MeFOSA	93% 20-150%
	d5-EtFOSA	93% 20-150%
	d3-MeFOSAA	110% 20-150%
	d5-EtFOSAA	111% 20-150%
	d7-MeFOSE	97% 20-150%
	d9-EtFOSE	94% 20-150%
	13C2-4:2FTS	91% 20-180%
	13C2-6:2FTS	99% 20-180%
	13C2-8:2FTS	95% 20-180%
	13C3-HFPO-DA	103% 20-150%

Blank Spike Summary

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96627-LLBS	6Q17362.D	1	05/03/23	MV	04/28/23	OP96627	S6Q261

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5621-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.03	0.0296	99	40-150
2706-90-3	Perfluoropentanoic acid	0.015	0.0146	97	40-150
307-24-4	Perfluorohexanoic acid	0.0075	0.0068	91	40-150
375-85-9	Perfluoroheptanoic acid	0.0075	0.0054	72	40-150
335-67-1	Perfluorooctanoic acid	0.0075	0.0077	103	40-150
375-95-1	Perfluorononanoic acid	0.0075	0.0071	95	40-150
335-76-2	Perfluorodecanoic acid	0.0075	0.0073	97	40-150
2058-94-8	Perfluoroundecanoic acid	0.0075	0.0076	101	40-150
307-55-1	Perfluorododecanoic acid	0.0075	0.0067	89	40-150
72629-94-8	Perfluorotridecanoic acid	0.0075	0.0067	89	40-150
376-06-7	Perfluorotetradecanoic acid	0.0075	0.0068	91	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00665	0.0066	99	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00706	0.0065	92	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00686	0.0066	96	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00715	0.0068	95	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00696	0.0068	98	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00722	0.0068	94	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00724	0.0068	94	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.00728	0.0061	84	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0281	0.0282	100	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.0285	0.0265	93	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0288	0.0298	103	40-150
754-91-6	PFOSA	0.0075	0.0073	97	40-150
31506-32-8	MeFOSA	0.015	0.0168	112	40-150
4151-50-2	EtFOSA	0.015	0.0154	103	40-150
2355-31-9	MeFOSAA	0.0075	0.0069	92	40-150
2991-50-6	EtFOSAA	0.0075	0.0060	80	40-150
24448-09-7	MeFOSE	0.0375	0.0357	95	40-150
1691-99-2	EtFOSE	0.0375	0.0346	92	40-150
13252-13-6	HFPO-DA (GenX)	0.015	0.0151	101	40-150
919005-14-4	ADONA	0.0142	0.0152	107	40-150
377-73-1	PFMPA	0.015	0.0150	100	40-150
863090-89-5	PFMBA	0.015	0.0148	99	40-150
151772-58-6	NFDHA	0.015	0.0132	88	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.014	0.0143	102	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0142	0.0136	96	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96627-LLBS	6Q17362.D	1	05/03/23	MV	04/28/23	OP96627	S6Q261

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5621-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0134	0.0126	94	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.0375	0.0297	79	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.188	0.145	77	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.188	0.124	66	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	111%	20-150%
	13C5-PFPeA	102%	20-150%
	13C5-PFHxA	107%	20-150%
	13C4-PFHpA	107%	20-150%
	13C8-PFOA	107%	20-150%
	13C9-PFNA	104%	20-150%
	13C6-PFDA	113%	20-150%
	13C7-PFUnDA	111%	20-150%
	13C2-PFDoDA	105%	20-150%
	13C2-PFTeDA	92%	20-150%
	13C3-PFBS	108%	20-150%
	13C3-PFHxS	119%	20-150%
	13C8-PFOS	107%	20-150%
	13C8-FOSA	42%	20-150%
	d3-MeFOSA	27%	20-150%
	d5-EtFOSA	23%	20-150%
	d3-MeFOSAA	111%	20-150%
	d5-EtFOSAA	120%	20-150%
	d7-MeFOSE	17%* a	20-150%
	d9-EtFOSE	18%* a	20-150%
	13C2-4:2FTS	107%	20-180%
	13C2-6:2FTS	113%	20-180%
	13C2-8:2FTS	114%	20-180%
	13C3-HFPO-DA	101%	20-150%

(a) Outside control limits.

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96627-BS	6Q17361.D	1	05/03/23	MV	04/28/23	OP96627	S6Q261

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5621-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.103	103	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0514	103	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0230	92	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0248	99	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0238	95	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0248	99	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0263	105	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0240	96	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0268	107	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0243	97	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0256	102	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0235	106	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0245	104	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0235	103	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0232	97	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0230	99	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0228	95	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0238	99	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0215	89	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0938	0.0894	95	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.0815	86	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.0920	96	40-150
754-91-6	PFOSA	0.025	0.0254	102	40-150
31506-32-8	MeFOSA	0.05	0.0509	102	40-150
4151-50-2	EtFOSA	0.05	0.0485	97	40-150
2355-31-9	MeFOSAA	0.025	0.0227	91	40-150
2991-50-6	EtFOSAA	0.025	0.0249	100	40-150
24448-09-7	MeFOSE	0.125	0.127	102	40-150
1691-99-2	EtFOSE	0.125	0.126	101	40-150
13252-13-6	HFPO-DA (GenX)	0.05	0.0497	99	40-150
919005-14-4	ADONA	0.0473	0.0497	105	40-150
377-73-1	PFMPA	0.05	0.0532	106	40-150
863090-89-5	PFMBA	0.05	0.0530	106	40-150
151772-58-6	NFDHA	0.05	0.0488	98	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0468	0.0523	112	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0473	0.0476	101	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96627-BS	6Q17361.D	1	05/03/23	MV	04/28/23	OP96627	S6Q261

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5621-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0450	101	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.102	82	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.625	0.479	77	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.464	74	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	107%	20-150%
	13C5-PFPeA	100%	20-150%
	13C5-PFHxA	109%	20-150%
	13C4-PFHpA	110%	20-150%
	13C8-PFOA	104%	20-150%
	13C9-PFNA	99%	20-150%
	13C6-PFDA	106%	20-150%
	13C7-PFUnDA	99%	20-150%
	13C2-PFDoDA	91%	20-150%
	13C2-PFTeDA	81%	20-150%
	13C3-PFBS	97%	20-150%
	13C3-PFHxS	102%	20-150%
	13C8-PFOS	106%	20-150%
	13C8-FOSA	45%	20-150%
	d3-MeFOSA	43%	20-150%
	d5-EtFOSA	40%	20-150%
	d3-MeFOSAA	118%	20-150%
	d5-EtFOSAA	106%	20-150%
	d7-MeFOSE	19%* a	20-150%
	d9-EtFOSE	21%	20-150%
	13C2-4:2FTS	106%	20-180%
	13C2-6:2FTS	109%	20-180%
	13C2-8:2FTS	100%	20-180%
	13C3-HFPO-DA	107%	20-150%

(a) Outside control limits.

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96627-MS	6Q17369.D	1	05/03/23	MV	04/28/23	OP96627	S6Q261
FC5295-5	6Q17368.D	1	05/03/23	MV	04/28/23	OP96627	S6Q261

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5621-1

CAS No.	Compound	FC5295-5 ug/l	Spike Q	MS ug/l	MS %	Limits	
375-22-4	Perfluorobutanoic acid	0.014 U		0.0893	0.0922	103	40-150
2706-90-3	Perfluoropentanoic acid	0.0034 J		0.0446	0.0476	99	40-150
307-24-4	Perfluorohexanoic acid	0.00066 J		0.0223	0.0204	88	40-150
375-85-9	Perfluoroheptanoic acid	0.0036 U		0.0223	0.0226	101	40-150
335-67-1	Perfluorooctanoic acid	0.0036 U		0.0223	0.0211	95	40-150
375-95-1	Perfluorononanoic acid	0.0036 U		0.0223	0.0211	95	40-150
335-76-2	Perfluorodecanoic acid	0.0036 U		0.0223	0.0233	104	40-150
2058-94-8	Perfluoroundecanoic acid	0.0036 U		0.0223	0.0213	95	40-150
307-55-1	Perfluorododecanoic acid	0.0036 U		0.0223	0.0234	105	40-150
72629-94-8	Perfluorotridecanoic acid	0.0036 U		0.0223	0.0223	100	40-150
376-06-7	Perfluorotetradecanoic acid	0.0036 U		0.0223	0.0223	100	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0036 U		0.0198	0.0197	99	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0045 U		0.021	0.0207	99	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0036 U		0.0204	0.0202	99	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0036 U		0.0213	0.0218	102	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0036 U		0.0207	0.0201	97	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0036 U		0.0215	0.0185	86	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0036 U		0.0215	0.0179	83	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0045 U		0.0217	0.0167	77	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.018 U		0.0837	0.0797	95	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.018 U		0.0848	0.0794	94	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.018 U		0.0857	0.0728	85	40-150
754-91-6	PFOSA	0.0036 U		0.0223	0.0218	98	40-150
31506-32-8	MeFOSA	0.0071 U		0.0446	0.0475	106	40-150
4151-50-2	EtFOSA	0.0071 U		0.0446	0.0448	100	40-150
2355-31-9	MeFOSAA	0.0045 U		0.0223	0.0230	103	40-150
2991-50-6	EtFOSAA	0.0045 U		0.0223	0.0222	99	40-150
24448-09-7	MeFOSE	0.036 U		0.112	0.115	103	40-150
1691-99-2	EtFOSE	0.036 U		0.112	0.106	95	40-150
13252-13-6	HFPO-DA (GenX)	0.0036 U		0.0446	0.0423	95	40-150
919005-14-4	ADONA	0.0071 U		0.0422	0.0454	108	40-150
377-73-1	PFMPA	0.0071 U		0.0446	0.0372	83	40-150
863090-89-5	PFMBA	0.0071 U		0.0446	0.0472	106	40-150
151772-58-6	NFDHA	0.0071 U		0.0446	0.0414	93	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0071 U		0.0417	0.0406	97	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0071 U		0.0422	0.0303	72	40-150

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96627-MS	6Q17369.D	1	05/03/23	MV	04/28/23	OP96627	S6Q261
FC5295-5	6Q17368.D	1	05/03/23	MV	04/28/23	OP96627	S6Q261

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5621-1

CAS No.	Compound	FC5295-5 ug/l	Spike Q	MS ug/l	MS %	Limits
113507-82-7	PFEESA	0.0071 U	0.0397	0.0362	91	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.018 U	0.112	0.0735	66	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.089 U	0.558	0.420	75	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.089 U	0.558	0.376	67	40-150

CAS No.	ID Standard Recoveries	MS	FC5295-5	Limits
	13C4-PFBA	62%	73%	20-150%
	13C5-PFPeA	97%	98%	20-150%
	13C5-PFHxA	115%	107%	20-150%
	13C4-PFHpA	114%	110%	20-150%
	13C8-PFOA	104%	99%	20-150%
	13C9-PFNA	103%	91%	20-150%
	13C6-PFDA	99%	91%	20-150%
	13C7-PFUnDA	85%	80%	20-150%
	13C2-PFDoDA	70%	72%	20-150%
	13C2-PFTeDA	70%	65%	20-150%
	13C3-PFBS	105%	104%	20-150%
	13C3-PFHxS	106%	108%	20-150%
	13C8-PFOS	99%	93%	20-150%
	13C8-FOSA	49%	48%	20-150%
	d3-MeFOSA	32%	36%	20-150%
	d5-EtFOSA	30%	37%	20-150%
	d3-MeFOSAA	86%	90%	20-150%
	d5-EtFOSAA	81%	85%	20-150%
	d7-MeFOSE	21%	30%	20-150%
	d9-EtFOSE	24%	33%	20-150%
	13C2-4:2FTS	100%	99%	20-180%
	13C2-6:2FTS	105%	106%	20-180%
	13C2-8:2FTS	97%	95%	20-180%
	13C3-HFPO-DA	110%	108%	20-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96627-DUP	6Q17373.D	1	05/03/23	MV	04/28/23	OP96627	S6Q261
FC5295-6	6Q17372.D	1	05/03/23	MV	04/28/23	OP96627	S6Q261

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5621-1

CAS No.	Compound	FC5295-6 ug/l	DUP Q	ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.0266		0.0246	8		30
2706-90-3	Perfluoropentanoic acid	0.0803		0.0799	0		30
307-24-4	Perfluorohexanoic acid	0.0343		0.0313	9		30
375-85-9	Perfluoroheptanoic acid	0.0075		0.0076	1		30
335-67-1	Perfluorooctanoic acid	0.0062		0.0047	28		30
375-95-1	Perfluorononanoic acid	0.00083 J		0.00064 J	26		30
335-76-2	Perfluorodecanoic acid	0.0036 U		ND	nc		30
2058-94-8	Perfluoroundecanoic acid	0.0036 U		ND	nc		30
307-55-1	Perfluorododecanoic acid	0.0036 U		ND	nc		30
72629-94-8	Perfluorotridecanoic acid	0.0036 U		ND	nc		30
376-06-7	Perfluorotetradecanoic acid	0.0036 U		ND	nc		30
375-73-5	Perfluorobutanesulfonic acid	0.0133		0.0122	9		30
2706-91-4	Perfluoropentanesulfonic acid	0.0048		0.0047	2		30
355-46-4	Perfluorohexanesulfonic acid	0.0179		0.0162	10		30
375-92-8	Perfluoroheptanesulfonic acid	0.0036 U		ND	nc		30
1763-23-1	Perfluorooctanesulfonic acid	0.0097		0.0075	26		30
68259-12-1	Perfluorononanesulfonic acid	0.0036 U		ND	nc		30
335-77-3	Perfluorodecanesulfonic acid	0.0036 U		ND	nc		30
79780-39-5	Perfluorododecanesulfonic aci	0.0045 U		ND	nc		30
757124-72-44:2	Fluorotelomer sulfonate	0.018 U		ND	nc		30
27619-97-2	6:2 Fluorotelomer sulfonate	0.0153 J		0.0155 J	1		30
39108-34-4	8:2 Fluorotelomer sulfonate	0.018 U		ND	nc		30
754-91-6	PFOSA	0.0036 U		ND	nc		30
31506-32-8	MeFOSA	0.0073 U		ND	nc		30
4151-50-2	EtFOSA	0.0073 U		ND	nc		30
2355-31-9	MeFOSAA	0.0045 U		ND	nc		30
2991-50-6	EtFOSAA	0.0045 U		ND	nc		30
24448-09-7	MeFOSE	0.036 U		ND	nc		30
1691-99-2	EtFOSE	0.036 U		ND	nc		30
13252-13-6	HFPO-DA (GenX)	0.0036 U		ND	nc		30
919005-14-4	ADONA	0.0073 U		ND	nc		30
377-73-1	PFMPA	0.0073 U		ND	nc		30
863090-89-5	PFMBA	0.0073 U		ND	nc		30
151772-58-6	NFDHA	0.0073 U		ND	nc		30
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0073 U		ND	nc		30
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0073 U		ND	nc		30

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96627-DUP	6Q17373.D	1	05/03/23	MV	04/28/23	OP96627	S6Q261
FC5295-6	6Q17372.D	1	05/03/23	MV	04/28/23	OP96627	S6Q261

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5621-1

CAS No.	Compound	FC5295-6 ug/l	DUP Q	ug/l	Q	RPD	Limits
113507-82-7	PFEESA	0.0073 U	ND			nc	30
356-02-5	3:3 Fluorotelomer carboxylate	0.018 U	ND			nc	30
914637-49-35:3	Fluorotelomer carboxylate	0.091 U	ND			nc	30
812-70-4	7:3 Fluorotelomer carboxylate	0.091 U	ND			nc	30

CAS No.	ID Standard Recoveries	DUP	FC5295-6	Limits
	13C4-PFBA	94%	94%	20-150%
	13C5-PFPeA	96%	91%	20-150%
	13C5-PFHxA	109%	99%	20-150%
	13C4-PFHpA	108%	103%	20-150%
	13C8-PFOA	96%	103%	20-150%
	13C9-PFNA	99%	88%	20-150%
	13C6-PFDA	94%	79%	20-150%
	13C7-PFUnDA	81%	68%	20-150%
	13C2-PFDoDA	76%	57%	20-150%
	13C2-PFTeDA	69%	59%	20-150%
	13C3-PFBS	98%	94%	20-150%
	13C3-PFHxS	98%	96%	20-150%
	13C8-PFOS	89%	74%	20-150%
	13C8-FOSA	50%	38%	20-150%
	d3-MeFOSA	48%	36%	20-150%
	d5-EtFOSA	49%	34%	20-150%
	d3-MeFOSAA	90%	73%	20-150%
	d5-EtFOSAA	85%	69%	20-150%
	d7-MeFOSE	39%	30%	20-150%
	d9-EtFOSE	47%	35%	20-150%
	13C2-4:2FTS	89%	90%	20-180%
	13C2-6:2FTS	95%	90%	20-180%
	13C2-8:2FTS	84%	72%	20-180%
	13C3-HFPO-DA	103%	100%	20-150%

* = Outside of Control Limits.

Injection Standard Area Summary

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q261-CC258	Injection Date:	05/03/23
Lab File ID:	6Q17359.D	Injection Time:	04:00
Instrument ID:	GCMS6Q	Method:	EPA DRAFT 1633

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Initial Cal ^b	78317	2.90	58371	5.47	87768	7.06	28425	7.59	24754	8.08
Check Std ^c	75697	2.90	53148	5.47	83698	7.06	29961	7.59	22797	8.08
Upper Limit ^d	156634	3.30	116742	5.87	175536	7.46	56850	7.99	49508	8.48
Lower Limit ^e	23495	2.50	17511	5.07	26330	6.66	8528	7.19	7426	7.68

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	DF ^a
S6Q261-ICCB	75866	2.90	53398	5.47	86626	7.08	29947	7.59	24622	8.08	1
OP96627-BS	71272	2.90	50678	5.47	84697	7.06	28556	7.58	24550	8.06	1
OP96627-LLBS	71525	2.90	51917	5.47	82370	7.06	28462	7.59	22264	8.08	1
OP96627-MB	72537	2.91	52334	5.47	82338	7.06	29568	7.59	23907	8.08	1
ZZZZZZ	63900	2.90	39793	5.47	61766	7.06	26238	7.59	15602	8.08	1
ZZZZZZ	72371	2.91	53423	5.47	82328	7.08	30788	7.59	24456	8.08	1
ZZZZZZ	70220	2.90	50771	5.47	80990	7.08	27177	7.59	21604	8.08	1
ZZZZZZ	68508	2.90	50545	5.47	78933	7.06	27798	7.59	24840	8.08	1
FC5295-5	72628	2.90	51209	5.47	89135	7.06	31045	7.59	24929	8.08	1
OP96627-MS	71310	2.90	49227	5.47	86598	7.06	28785	7.58	23374	8.06	1

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

- (a) Sample areas corrected for dilution where applicable.
- (b) Initial Cal is: S6Q258-ICC258 6Q17054.D 04/28/23 13:33. Area is AVERAGE of initial cal points.
- (c) Check Std Limit = -70 to +100% of initial cal area.
- (d) Upper Limit = +100% of initial standard area; Retention time +0.4 minutes of check standard.
- (e) Lower Limit = -70% of initial standard area; Retention time -0.4 minutes of check standard.

Injection Standard Area Summary

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q261-CC258	Injection Date:	05/03/23
Lab File ID:	6Q17359.D	Injection Time:	04:00
Instrument ID:	GCMS6Q	Method:	EPA DRAFT 1633

	IS 6 AREA	RT	IS 7 AREA	RT
Initial Cal ^b	9722	7.18	15123	8.24
Check Std ^c	9296	7.18	13955	8.23
Upper Limit ^d	19444	7.58	30246	8.63
Lower Limit ^e	2917	6.78	4537	7.83

Lab Sample ID	IS 6 AREA	RT	IS 7 AREA	RT	DF ^a
S6Q261-ICCB	9710	7.18	15320	8.23	1
OP96627-BS	8986	7.16	13662	8.23	1
OP96627-LLBS	8340	7.18	13710	8.23	1
OP96627-MB	8930	7.18	14360	8.23	1
ZZZZZZ	6876	7.18	9532	8.24	1
ZZZZZZ	9125	7.18	14191	8.23	1
ZZZZZZ	8730	7.18	12134	8.23	1
ZZZZZZ	8303	7.18	12748	8.23	1
FC5295-5	9141	7.18	14914	8.23	1
OP96627-MS	8980	7.18	13103	8.23	1

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

- (a) Sample areas corrected for dilution where applicable.
- (b) Initial Cal is: S6Q258-ICC258 6Q17054.D 04/28/23 13:33. Area is AVERAGE of initial cal points.
- (c) Check Std Limit = -70 to +100% of initial cal area.
- (d) Upper Limit = +100% of initial standard area; Retention time +0.4 minutes of check standard.
- (e) Lower Limit = -70% of initial standard area; Retention time -0.4 minutes of check standard.

Injection Standard Area Summary

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q261-CC258	Injection Date:	05/03/23
Lab File ID:	6Q17370.D	Injection Time:	06:40
Instrument ID:	GCMS6Q	Method:	EPA DRAFT 1633

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Initial Cal ^b	78317	2.90	58371	5.47	87768	7.06	28425	7.59	24754	8.08
Check Std ^c	73988	2.90	53132	5.47	83892	7.06	27727	7.59	25074	8.06
Upper Limit ^d	156634	3.30	116742	5.87	175536	7.46	56850	7.99	49508	8.46
Lower Limit ^e	23495	2.50	17511	5.07	26330	6.66	8528	7.19	7426	7.66

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	DF ^a
S6Q261-ICCB	75094	2.90	53879	5.47	85817	7.06	28515	7.59	23104	8.08	1
FC5295-6	65675	2.91	51074	5.47	78208	7.08	27500	7.59	23855	8.08	1
OP96627-DUP	66949	2.91	49928	5.47	83857	7.08	28314	7.59	22562	8.08	1
ZZZZZZ	70958	2.90	52104	5.47	80251	7.08	29427	7.61	22232	8.08	1
ZZZZZZ	71076	2.90	49587	5.47	85058	7.06	28322	7.59	22038	8.08	1
ZZZZZZ	70604	2.90	52475	5.47	83115	7.08	30165	7.59	21799	8.08	1
ZZZZZZ	74182	2.91	55654	5.47	89565	7.06	29416	7.59	25494	8.06	1
ZZZZZZ	71033	2.90	50257	5.47	86259	7.06	26882	7.59	24006	8.08	1
ZZZZZZ	70399	2.90	49715	5.47	77715	7.06	29444	7.59	24464	8.08	1
ZZZZZZ	70318	2.90	48072	5.47	83767	7.06	29808	7.59	22637	8.08	1
ZZZZZZ	70962	2.91	50680	5.47	86772	7.06	28144	7.59	24167	8.08	1

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

- (a) Sample areas corrected for dilution where applicable.
- (b) Initial Cal is: S6Q258-ICC258 6Q17054.D 04/28/23 13:33. Area is AVERAGE of initial cal points.
- (c) Check Std Limit = -70 to +100% of initial cal area.
- (d) Upper Limit = +100% of initial standard area; Retention time +0.4 minutes of check standard.
- (e) Lower Limit = -70% of initial standard area; Retention time -0.4 minutes of check standard.

6.5.2
6

Injection Standard Area Summary

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q261-CC258	Injection Date:	05/03/23
Lab File ID:	6Q17370.D	Injection Time:	06:40
Instrument ID:	GCMS6Q	Method:	EPA DRAFT 1633

	IS 6 AREA	RT	IS 7 AREA	RT
Initial Cal ^b	9722	7.18	15123	8.24
Check Std ^c	9339	7.18	13497	8.23
Upper Limit ^d	19444	7.58	30246	8.63
Lower Limit ^e	2917	6.78	4537	7.83

Lab Sample ID	IS 6 AREA	RT	IS 7 AREA	RT	DF ^a
S6Q261-ICCB	9704	7.18	14603	8.23	1
FC5295-6	8962	7.18	14467	8.23	1
OP96627-DUP	9130	7.18	13558	8.24	1
ZZZZZZ	8643	7.18	12976	8.23	1
ZZZZZZ	8603	7.18	13313	8.23	1
ZZZZZZ	9122	7.18	14567	8.23	1
ZZZZZZ	9338	7.18	15161	8.23	1
ZZZZZZ	8580	7.18	13732	8.23	1
ZZZZZZ	8201	7.18	13588	8.24	1
ZZZZZZ	8876	7.18	12494	8.23	1
ZZZZZZ	8795	7.18	14114	8.23	1

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

- (a) Sample areas corrected for dilution where applicable.
- (b) Initial Cal is: S6Q258-ICC258 6Q17054.D 04/28/23 13:33. Area is AVERAGE of initial cal points.
- (c) Check Std Limit = -70 to + 100% of initial cal area.
- (d) Upper Limit = + 100% of initial standard area; Retention time + 0.4 minutes of check standard.
- (e) Lower Limit = -70% of initial standard area; Retention time -0.4 minutes of check standard.

Injection Standard Area Summary

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q261-CC258	Injection Date:	05/03/23
Lab File ID:	6Q17382.D	Injection Time:	09:33
Instrument ID:	GCMS6Q	Method:	EPA DRAFT 1633

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Initial Cal ^b	78317	2.90	58371	5.47	87768	7.06	28425	7.59	24754	8.08
Check Std ^c	73344	2.90	54122	5.47	85162	7.06	28214	7.59	23069	8.06
Upper Limit ^d	156634	3.30	116742	5.87	175536	7.46	56850	7.99	49508	8.46
Lower Limit ^e	23495	2.50	17511	5.07	26330	6.66	8528	7.19	7426	7.66

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	DF ^a
S6Q261-ICCB	75233	2.90	53082	5.47	86483	7.06	29943	7.59	24273	8.08	1
ZZZZZZ	68733	2.90	51883	5.47	81024	7.08	28425	7.59	21352	8.08	1
ZZZZZZ	71325	2.90	52209	5.47	84654	7.06	27718	7.59	23950	8.08	1
ZZZZZZ	71223	2.90	50230	5.47	81733	7.06	28951	7.59	23803	8.08	1
ZZZZZZ	65693	2.90	48020	5.47	75096	7.06	25509	7.59	21835	8.08	1
FC5621-1	68935	2.91	51832	5.47	86036	7.08	26599	7.59	22604	8.08	1
S6Q261-ECC258	73102	2.90	53048	5.47	84650	7.08	27642	7.59	23066	8.08	1

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

- (a) Sample areas corrected for dilution where applicable.
- (b) Initial Cal is: S6Q258-ICC258 6Q17054.D 04/28/23 13:33. Area is AVERAGE of initial cal points.
- (c) Check Std Limit = -70 to +100% of initial cal area.
- (d) Upper Limit = +100% of initial standard area; Retention time +0.4 minutes of check standard.
- (e) Lower Limit = -70% of initial standard area; Retention time -0.4 minutes of check standard.

6.5.3
6

Injection Standard Area Summary

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q261-CC258	Injection Date:	05/03/23
Lab File ID:	6Q17382.D	Injection Time:	09:33
Instrument ID:	GCMS6Q	Method:	EPA DRAFT 1633

	IS 6 AREA	RT	IS 7 AREA	RT
Initial Cal ^b	9722	7.18	15123	8.24
Check Std ^c	9111	7.18	13674	8.23
Upper Limit ^d	19444	7.58	30246	8.63
Lower Limit ^e	2917	6.78	4537	7.83

Lab Sample ID	IS 6 AREA	RT	IS 7 AREA	RT	DF ^a
S6Q261-ICCB	9328	7.18	14328	8.23	1
ZZZZZZ	8724	7.18	13001	8.24	1
ZZZZZZ	9131	7.18	13748	8.24	1
ZZZZZZ	8377	7.18	12679	8.23	1
ZZZZZZ	8018	7.18	12666	8.23	1
FC5621-1	8850	7.18	13650	8.23	1
S6Q261-ECC258	9102	7.19	14009	8.23	1

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

- (a) Sample areas corrected for dilution where applicable.
- (b) Initial Cal is: S6Q258-ICC258 6Q17054.D 04/28/23 13:33. Area is AVERAGE of initial cal points.
- (c) Check Std Limit = -70 to +100% of initial cal area.
- (d) Upper Limit = +100% of initial standard area; Retention time +0.4 minutes of check standard.
- (e) Lower Limit = -70% of initial standard area; Retention time -0.4 minutes of check standard.

6.5.3
6

TDCA Retention Time Check

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q258-RT	Injection Date:	04/28/23
Lab File ID:	6Q17048.D	Injection Time:	12:06
Instrument ID:	GCMS6Q		

Compound	RT (min)	RT Difference	Low Limit
PFOS	8.228	--	--
TDCA	6.775	1.453	1.000
TCDCA	6.626	1.602	1.000
TUDCA	5.774	2.454	1.000

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

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
S6Q258-IC258	6Q17050.D	04/28/23	12:35	00:29	Mass Calibration Verification
S6Q258-IC258	6Q17051.D	04/28/23	12:50	00:44	Initial cal 1
S6Q258-IC258	6Q17052.D	04/28/23	13:04	00:58	Initial cal 2
S6Q258-IC258	6Q17053.D	04/28/23	13:19	01:13	Initial cal 3
S6Q258-ICC258	6Q17054.D	04/28/23	13:33	01:27	Initial cal 4
S6Q258-IC258	6Q17055.D	04/28/23	13:48	01:42	Initial cal 5
S6Q258-IC258	6Q17056.D	04/28/23	14:02	01:56	Initial cal 6
S6Q258-IC258	6Q17057.D	04/28/23	14:17	02:11	Initial cal 7
S6Q258-IC258	6Q17058.D	04/28/23	14:31	02:25	Initial cal 8
S6Q258-IBLK	6Q17059.D	04/28/23	14:46	02:40	Instrument Blank
S6Q258-ICV258	6Q17060.D	04/28/23	15:00	02:54	Initial cal verification 4
S6Q258-ICV258	6Q17061.D	04/28/23	15:15	03:09	Initial cal verification 20
S6Q258-CC258	6Q17062.D	04/28/23	15:29	03:23	Continuing cal 4
S6Q258-CC258	6Q17063.D	04/28/23	15:44	03:38	Continuing cal 1.0LL
OP96604-BS	6Q17064.D	04/28/23	15:58	03:52	Blank Spike
OP96604-LLBS	6Q17065.D	04/28/23	16:13	04:07	Blank Spike
OP96604-MB	6Q17066.D	04/28/23	16:27	04:21	Method Blank
ZZZZZZ	6Q17067.D	04/28/23	16:42	04:36	(unrelated sample)
ZZZZZZ	6Q17068.D	04/28/23	16:56	04:50	(unrelated sample)
ZZZZZZ	6Q17069.D	04/28/23	17:11	05:05	(unrelated sample)
S6Q258-CC258	6Q17070.D	04/28/23	17:25	05:19	Continuing cal 4
S6Q258-ICCB	6Q17071.D	04/28/23	17:40	05:34	Continuing Calibration Blank
OP96603-BS	6Q17072.D	04/28/23	17:54	05:48	Blank Spike
OP96603-LLBS	6Q17073.D	04/28/23	18:09	06:03	Blank Spike
OP96603-MB	6Q17074.D	04/28/23	18:23	06:17	Method Blank
ZZZZZZ	6Q17075.D	04/28/23	18:37	06:31	(unrelated sample)
ZZZZZZ	6Q17076.D	04/28/23	18:52	06:46	(unrelated sample)
FC5514-3	6Q17077.D	04/28/23	19:06	07:00	(used for QC only; not part of job FC5621)
OP96603-MS	6Q17078.D	04/28/23	19:21	07:15	Matrix Spike
ZZZZZZ	6Q17079.D	04/28/23	19:35	07:29	(unrelated sample)
OP96603-DUP	6Q17080.D	04/28/23	19:50	07:44	Duplicate
ZZZZZZ	6Q17081.D	04/28/23	20:04	07:58	(unrelated sample)
S6Q258-CC258	6Q17082.D	04/28/23	20:19	08:13	Continuing cal 4
S6Q258-ICCB	6Q17083.D	04/28/23	20:33	08:27	Continuing Calibration Blank

TDCA Retention Time Check

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q258-RT	Injection Date:	04/28/23
Lab File ID:	6Q17048.D	Injection Time:	12:06
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	6Q17084.D	04/28/23	20:48	08:42	(unrelated sample)
ZZZZZZ	6Q17085.D	04/28/23	21:02	08:56	(unrelated sample)
ZZZZZZ	6Q17086.D	04/28/23	21:17	09:11	(unrelated sample)
FC5522-4	6Q17087.D	04/28/23	21:31	09:25	(used for QC only; not part of job FC5621)
ZZZZZZ	6Q17088.D	04/28/23	21:46	09:40	(unrelated sample)
ZZZZZZ	6Q17089.D	04/28/23	22:00	09:54	(unrelated sample)
ZZZZZZ	6Q17090.D	04/28/23	22:15	10:09	(unrelated sample)
S6Q258-CC258	6Q17091.D	04/28/23	22:29	10:23	Continuing cal 4
S6Q258-ICCB	6Q17092.D	04/28/23	22:44	10:38	Continuing Calibration Blank
OP96579-BS	6Q17093.D	04/28/23	22:58	10:52	Blank Spike
OP96579-LLBS	6Q17094.D	04/28/23	23:13	11:07	Blank Spike
OP96579-MB	6Q17095.D	04/28/23	23:27	11:21	Method Blank
ZZZZZZ	6Q17096.D	04/28/23	23:42	11:36	(unrelated sample)
ZZZZZZ	6Q17097.D	04/28/23	23:56	11:50	(unrelated sample)
ZZZZZZ	6Q17099.D	04/29/23	00:25	12:19	(unrelated sample)
FC5240-5	6Q17100.D	04/29/23	00:40	12:34	(used for QC only; not part of job FC5621)
S6Q258-CC258	6Q17103.D	04/29/23	01:23	13:17	Continuing cal 4
S6Q258-ICCB	6Q17104.D	04/29/23	01:38	13:32	Continuing Calibration Blank
ZZZZZZ	6Q17105.D	04/29/23	01:52	13:46	(unrelated sample)
ZZZZZZ	6Q17107.D	04/29/23	02:21	14:15	(unrelated sample)
ZZZZZZ	6Q17108.D	04/29/23	02:36	14:30	(unrelated sample)
ZZZZZZ	6Q17109.D	04/29/23	02:50	14:44	(unrelated sample)
ZZZZZZ	6Q17110.D	04/29/23	03:04	14:58	(unrelated sample)
ZZZZZZ	6Q17111.D	04/29/23	03:19	15:13	(unrelated sample)
ZZZZZZ	6Q17112.D	04/29/23	03:33	15:27	(unrelated sample)
ZZZZZZ	6Q17113.D	04/29/23	03:48	15:42	(unrelated sample)
ZZZZZZ	6Q17114.D	04/29/23	04:02	15:56	(unrelated sample)
S6Q258-CC258	6Q17115.D	04/29/23	04:17	16:11	Continuing cal 4
S6Q258-CC258	6Q17116.D	04/29/23	04:31	16:25	Continuing cal 1.0LL
S6Q258-ICCB	6Q17117.D	04/29/23	04:46	16:40	Continuing Calibration Blank
ZZZZZZ	6Q17118.D	04/29/23	05:00	16:54	(unrelated sample)
OP96566-BS	6Q17119.D	04/29/23	05:15	17:09	Blank Spike
OP96566-LLBS	6Q17120.D	04/29/23	05:29	17:23	Blank Spike
OP96566-MB	6Q17121.D	04/29/23	05:44	17:38	Method Blank
ZZZZZZ	6Q17122.D	04/29/23	05:58	17:52	(unrelated sample)
FC5200-2	6Q17123.D	04/29/23	06:13	18:07	(used for QC only; not part of job FC5621)
OP96566-MS	6Q17124.D	04/29/23	06:27	18:21	Matrix Spike
OP96566-MSD	6Q17125.D	04/29/23	06:42	18:36	Matrix Spike Duplicate
ZZZZZZ	6Q17126.D	04/29/23	06:56	18:50	(unrelated sample)
ZZZZZZ	6Q17127.D	04/29/23	07:11	19:05	(unrelated sample)
S6Q258-CC258	6Q17128.D	04/29/23	07:25	19:19	Continuing cal 4
S6Q258-ICCB	6Q17129.D	04/29/23	07:40	19:34	Continuing Calibration Blank
ZZZZZZ	6Q17130.D	04/29/23	07:54	19:48	(unrelated sample)
ZZZZZZ	6Q17131.D	04/29/23	08:09	20:03	(unrelated sample)

TDCA Retention Time Check

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q258-RT	Injection Date:	04/28/23
Lab File ID:	6Q17048.D	Injection Time:	12:06
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	6Q17132.D	04/29/23	08:23	20:17	(unrelated sample)
ZZZZZZ	6Q17133.D	04/29/23	08:38	20:32	(unrelated sample)
ZZZZZZ	6Q17134.D	04/29/23	08:52	20:46	(unrelated sample)
ZZZZZZ	6Q17135.D	04/29/23	09:07	21:01	(unrelated sample)
ZZZZZZ	6Q17136.D	04/29/23	09:21	21:15	(unrelated sample)
ZZZZZZ	6Q17137.D	04/29/23	09:35	21:29	(unrelated sample)
ZZZZZZ	6Q17138.D	04/29/23	09:50	21:44	(unrelated sample)
ZZZZZZ	6Q17139.D	04/29/23	10:04	21:58	(unrelated sample)
S6Q258-CC258	6Q17140.D	04/29/23	10:19	22:13	Continuing cal 4
S6Q258-ICCB	6Q17141.D	04/29/23	10:33	22:27	Continuing Calibration Blank
ZZZZZZ	6Q17142.D	04/29/23	10:48	22:42	(unrelated sample)
ZZZZZZ	6Q17143.D	04/29/23	11:02	22:56	(unrelated sample)
ZZZZZZ	6Q17144.D	04/29/23	11:17	23:11	(unrelated sample)
ZZZZZZ	6Q17145.D	04/29/23	11:31	23:25	(unrelated sample)
S6Q258-ECC258	6Q17146.D	04/29/23	11:46	23:40	Ending cal 4
S6Q258-ICCB	6Q17147.D	04/29/23	12:00	23:54	Continuing Calibration Blank

6.6.1
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TDCA Retention Time Check

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q261-RT	Injection Date:	05/02/23
Lab File ID:	6Q17288.D	Injection Time:	10:51
Instrument ID:	GCMS6Q		

Compound	RT (min)	RT Difference	Low Limit
PFOS	8.240	--	--
TDCA	6.788	1.452	1.000
TCDCA	6.626	1.614	1.000
TUDCA	5.786	2.454	1.000

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

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
S6Q261-IBLK	6Q17291.D	05/02/23	11:34	00:43	Instrument Blank
S6Q261-IBLK	6Q17291.D	05/02/23	11:34	00:43	Instrument Blank
S6Q261-CC258	6Q17292.D	05/02/23	11:49	00:58	Continuing cal 4
S6Q261-CC258	6Q17293.D	05/02/23	12:03	01:12	Continuing cal 1.0LL
OP96630-BS	6Q17294.D	05/02/23	12:18	01:27	Blank Spike
OP96630-LLBS	6Q17295.D	05/02/23	12:32	01:41	Blank Spike
OP96630-MB	6Q17296.D	05/02/23	12:47	01:56	Method Blank
ZZZZZZ	6Q17297.D	05/02/23	13:01	02:10	(unrelated sample)
ZZZZZZ	6Q17298.D	05/02/23	13:16	02:25	(unrelated sample)
JD64233-2A	6Q17299.D	05/02/23	13:30	02:39	(used for QC only; not part of job FC5621)
OP96630-MS	6Q17300.D	05/02/23	13:45	02:54	Matrix Spike
JD64233-3A	6Q17301.D	05/02/23	13:59	03:08	(used for QC only; not part of job FC5621)
OP96630-DUP	6Q17302.D	05/02/23	14:14	03:23	Duplicate
ZZZZZZ	6Q17303.D	05/02/23	14:28	03:37	(unrelated sample)
S6Q261-CC258	6Q17304.D	05/02/23	14:43	03:52	Continuing cal 4
S6Q261-ICCB	6Q17305.D	05/02/23	14:57	04:06	Continuing Calibration Blank
ZZZZZZ	6Q17306.D	05/02/23	15:12	04:21	(unrelated sample)
ZZZZZZ	6Q17307.D	05/02/23	15:26	04:35	(unrelated sample)
ZZZZZZ	6Q17308.D	05/02/23	15:41	04:50	(unrelated sample)
ZZZZZZ	6Q17309.D	05/02/23	15:55	05:04	(unrelated sample)
ZZZZZZ	6Q17310.D	05/02/23	16:10	05:19	(unrelated sample)
ZZZZZZ	6Q17311.D	05/02/23	16:24	05:33	(unrelated sample)
ZZZZZZ	6Q17312.D	05/02/23	16:39	05:48	(unrelated sample)
ZZZZZZ	6Q17313.D	05/02/23	16:53	06:02	(unrelated sample)
ZZZZZZ	6Q17314.D	05/02/23	17:08	06:17	(unrelated sample)
ZZZZZZ	6Q17315.D	05/02/23	17:22	06:31	(unrelated sample)
S6Q261-CC258	6Q17316.D	05/02/23	17:37	06:46	Continuing cal 4
S6Q261-ICCB	6Q17317.D	05/02/23	17:51	07:00	Continuing Calibration Blank
ZZZZZZ	6Q17318.D	05/02/23	18:05	07:14	(unrelated sample)
S6Q261-CC258	6Q17328.D	05/02/23	20:30	09:39	Continuing cal 4
S6Q261-ICCB	6Q17329.D	05/02/23	20:46	09:55	Continuing Calibration Blank
ZZZZZZ	6Q17330.D	05/02/23	21:00	10:09	(unrelated sample)
OP96629-BS	6Q17331.D	05/02/23	21:15	10:24	Blank Spike
OP96629-LLBS	6Q17332.D	05/02/23	21:29	10:38	Blank Spike

TDCA Retention Time Check

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q261-RT	Injection Date:	05/02/23
Lab File ID:	6Q17288.D	Injection Time:	10:51
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
OP96629-MB	6Q17333.D	05/02/23	21:44	10:53	Method Blank
ZZZZZZ	6Q17334.D	05/02/23	21:58	11:07	(unrelated sample)
ZZZZZZ	6Q17335.D	05/02/23	22:13	11:22	(unrelated sample)
ZZZZZZ	6Q17336.D	05/02/23	22:27	11:36	(unrelated sample)
ZZZZZZ	6Q17337.D	05/02/23	22:42	11:51	(unrelated sample)
ZZZZZZ	6Q17338.D	05/02/23	22:56	12:05	(unrelated sample)
ZZZZZZ	6Q17339.D	05/02/23	23:11	12:20	(unrelated sample)
S6Q261-CC258	6Q17340.D	05/02/23	23:25	12:34	Continuing cal 4
S6Q261-CC258	6Q17341.D	05/02/23	23:40	12:49	Continuing cal 1.0LL
S6Q261-ICCB	6Q17342.D	05/02/23	23:54	13:03	Continuing Calibration Blank
ZZZZZZ	6Q17343.D	05/03/23	00:09	13:18	(unrelated sample)
ZZZZZZ	6Q17344.D	05/03/23	00:23	13:32	(unrelated sample)
ZZZZZZ	6Q17345.D	05/03/23	00:38	13:47	(unrelated sample)
FC5309-10	6Q17346.D	05/03/23	00:52	14:01	(used for QC only; not part of job FC5621)
OP96629-MS	6Q17347.D	05/03/23	01:07	14:16	Matrix Spike
OP96629-MSD	6Q17348.D	05/03/23	01:21	14:30	Matrix Spike Duplicate
ZZZZZZ	6Q17349.D	05/03/23	01:36	14:45	(unrelated sample)
ZZZZZZ	6Q17350.D	05/03/23	01:50	14:59	(unrelated sample)
ZZZZZZ	6Q17351.D	05/03/23	02:05	15:14	(unrelated sample)
S6Q261-CC258	6Q17352.D	05/03/23	02:19	15:28	Continuing cal 4
ZZZZZZ	6Q17354.D	05/03/23	02:48	15:57	(unrelated sample)
ZZZZZZ	6Q17355.D	05/03/23	03:02	16:11	(unrelated sample)
ZZZZZZ	6Q17356.D	05/03/23	03:17	16:26	(unrelated sample)
ZZZZZZ	6Q17357.D	05/03/23	03:31	16:40	(unrelated sample)
ZZZZZZ	6Q17358.D	05/03/23	03:46	16:55	(unrelated sample)
S6Q261-CC258	6Q17359.D	05/03/23	04:00	17:09	Continuing cal 4
S6Q261-ICCB	6Q17360.D	05/03/23	04:15	17:24	Continuing Calibration Blank
OP96627-BS	6Q17361.D	05/03/23	04:29	17:38	Blank Spike
OP96627-LLBS	6Q17362.D	05/03/23	04:44	17:53	Blank Spike
OP96627-MB	6Q17363.D	05/03/23	04:58	18:07	Method Blank
ZZZZZZ	6Q17364.D	05/03/23	05:13	18:22	(unrelated sample)
ZZZZZZ	6Q17365.D	05/03/23	05:27	18:36	(unrelated sample)
ZZZZZZ	6Q17366.D	05/03/23	05:42	18:51	(unrelated sample)
ZZZZZZ	6Q17367.D	05/03/23	05:56	19:05	(unrelated sample)
FC5295-5	6Q17368.D	05/03/23	06:11	19:20	(used for QC only; not part of job FC5621)
OP96627-MS	6Q17369.D	05/03/23	06:25	19:34	Matrix Spike
S6Q261-CC258	6Q17370.D	05/03/23	06:40	19:49	Continuing cal 4
S6Q261-ICCB	6Q17371.D	05/03/23	06:54	20:03	Continuing Calibration Blank
FC5295-6	6Q17372.D	05/03/23	07:09	20:18	(used for QC only; not part of job FC5621)
OP96627-DUP	6Q17373.D	05/03/23	07:23	20:32	Duplicate
ZZZZZZ	6Q17374.D	05/03/23	07:38	20:47	(unrelated sample)
ZZZZZZ	6Q17375.D	05/03/23	07:52	21:01	(unrelated sample)
ZZZZZZ	6Q17376.D	05/03/23	08:07	21:16	(unrelated sample)
ZZZZZZ	6Q17377.D	05/03/23	08:21	21:30	(unrelated sample)

6.6.2
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TDCA Retention Time Check

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q261-RT	Injection Date:	05/02/23
Lab File ID:	6Q17288.D	Injection Time:	10:51
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	6Q17378.D	05/03/23	08:36	21:45	(unrelated sample)
ZZZZZZ	6Q17379.D	05/03/23	08:50	21:59	(unrelated sample)
ZZZZZZ	6Q17380.D	05/03/23	09:05	22:14	(unrelated sample)
ZZZZZZ	6Q17381.D	05/03/23	09:19	22:28	(unrelated sample)
S6Q261-CC258	6Q17382.D	05/03/23	09:33	22:42	Continuing cal 4
S6Q261-ICCB	6Q17383.D	05/03/23	09:48	22:57	Continuing Calibration Blank
ZZZZZZ	6Q17384.D	05/03/23	10:02	23:11	(unrelated sample)
ZZZZZZ	6Q17385.D	05/03/23	10:17	23:26	(unrelated sample)
ZZZZZZ	6Q17386.D	05/03/23	10:31	23:40	(unrelated sample)
ZZZZZZ	6Q17387.D	05/03/23	10:46	23:55	(unrelated sample)
FC5621-1	6Q17388.D	05/03/23	11:00	24:09	AF-RHMW225401-WGN01B-2304W4
S6Q261-ECC258	6Q17389.D	05/03/23	11:15	24:24	Ending cal 4
S6Q261-ICCB	6Q17390.D	05/03/23	11:29	24:38	Continuing Calibration Blank

6.6.2
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Ion Ratio Summary

Job Number: FC5621
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q261	Method: EPA DRAFT 1633
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Lab Sample ID	Lab File ID	Ion Ratios				
		PFHxA	PFHpA	PFOA	PFHxS	PFOS
S6Q258-ICC258	6Q17054.D	4.7	16.1	17.9	50.2	50.5
FC5621-1	6Q17388.D	5.2	18.1	12.3	52.5	47.9

6.7.1

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Isotope Dilution Standard Recovery Summary

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Method: EPA DRAFT 1633	Matrix: AQ
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6	S7	S8
FC5621-1	6Q17388.D	106	99	103	106	95	115	113	103
OP96627-BS	6Q17361.D	107	100	109	110	104	99	106	99
OP96627-DUP	6Q17373.D	94	96	109	108	96	99	94	81
OP96627-LLBS	6Q17362.D	111	102	107	107	107	104	113	111
OP96627-MB	6Q17363.D	114	103	110	109	113	96	112	109
OP96627-MS	6Q17369.D	62	97	115	114	104	103	99	85
S6Q261-ICCB	6Q17383.D	103	97	103	102	103	95	97	98
S6Q261-ICCB	6Q17390.D	104	94	98	101	96	97	114	113
S6Q261-ICCB	6Q17360.D	104	97	101	103	100	102	103	100
S6Q261-ICCB	6Q17371.D	103	94	103	103	103	103	107	109

Isotope Dilution Standards

Recovery Limits

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

Isotope Dilution Standard Recovery Summary

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Method: EPA DRAFT 1633	Matrix: AQ
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S9	S10	S11	S12	S13	S14	S15	S16
FC5621-1	6Q17388.D	94	76	98	107	98	57	41	36
OP96627-BS	6Q17361.D	91	81	97	102	106	45	43	40
OP96627-DUP	6Q17373.D	76	69	98	98	89	50	48	49
OP96627-LLBS	6Q17362.D	105	92	108	119	107	42	27	23
OP96627-MB	6Q17363.D	98	93	107	109	104	37	28	25
OP96627-MS	6Q17369.D	70	70	105	106	99	49	32	30
S6Q261-ICCB	6Q17383.D	99	95	98	100	103	105	90	98
S6Q261-ICCB	6Q17390.D	106	106	93	94	107	106		
S6Q261-ICCB	6Q17360.D	94	92	91	98	100	96		
S6Q261-ICCB	6Q17371.D	102	103	91	92	104	100	93	93

Isotope Dilution Standards

Recovery Limits

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

Isotope Dilution Standard Recovery Summary

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Method: EPA DRAFT 1633	Matrix: AQ
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S17	S18	S19	S20	S21	S22	S23	S24
FC5621-1	6Q17388.D	114	107	32	31	101	107	97	111
OP96627-BS	6Q17361.D	118	106	19* a	21	106	109	100	107
OP96627-DUP	6Q17373.D	90	85	39	47	89	95	84	103
OP96627-LLBS	6Q17362.D	111	120	17* a	18* a	107	113	114	101
OP96627-MB	6Q17363.D	114	98	22	24	109	106	114	110
OP96627-MS	6Q17369.D	86	81	21	24	100	105	97	110
S6Q261-ICCB	6Q17383.D	110	109	98	97	85	106	104	108
S6Q261-ICCB	6Q17390.D	108	111			97	96	93	
S6Q261-ICCB	6Q17360.D	103	109			90	102	101	
S6Q261-ICCB	6Q17371.D	110	111	97	94	91	99	95	103

Isotope Dilution Standards **Recovery Limits**

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

(a) Outside control limits.

Initial Calibration Summary

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q258-ICC258
 Lab FileID: 6Q17054.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
T PFDoDA	Avg RF	0.9498	1.0097	1.0351	0.9922	0.9618	0.9909	1.0005	0.9995	0.9799	5.757
T PFTfDA	Avg RF	0.8800	1.0800	1.2190	1.1538	1.0259	1.1082	1.1040	1.1060	1.0846	9.191
I M2-PFTeDA	Avg RF	1.2297	1.1654	1.2744	1.3445	1.2487	1.2752	1.2903	1.2780	1.2633	4.095
T PFTeDA	Avg RF					ISTD					
I M8-FOSA	Avg RF	0.7241	0.8823	0.9240	0.9311	0.8719	0.9530	0.9337	0.9460	0.8958	8.387
T FOSA	Avg RF					ISTD					
I M3-PFBS	Avg RF	0.9900	1.0604	1.2037	1.0909	1.1495	1.1758	1.1649	1.1391	1.1218	6.272
T PFBS	Avg RF					ISTD					
I M3-PFHxS	Avg RF	1.1142	1.3575	1.3874	1.5015	1.5088	1.5119	1.4605	1.5403	1.4227	9.850
T PFPeS	Avg RF	1.1307	1.3584	1.3234	1.4038	1.4542	1.3938	1.3439	1.4907	1.3624	8.000
T PFHxS	Avg RF					ISTD					
I M8-PFOS	Avg RF	1.2396	1.3892	1.3410	1.4022	1.2683	1.3583	1.4681	1.3727	1.3549	5.406
T PFHpS	Avg RF	1.0820	1.2982	1.2020	1.2763	1.0582	1.1692	1.3780	1.1940	1.2072	8.952
T PFOS	Avg RF	1.0741	1.3189	1.1382	1.2830	1.1067	1.2770	1.2832	1.1724	1.2067	7.842
T PFNS	Avg RF	0.6543	0.7949	0.7473	0.8889	0.7690	0.8238	0.8851	0.8109	0.7968	9.574
T PFDS	Avg RF	0.3631	0.4108	0.4266	0.4292	0.3881	0.4113	0.4587	0.4085	0.4120	6.908
T PFDoDS	Avg RF					ISTD					
I M2-4:2FTS	Avg RF	6.5839	7.6224	7.8025	7.9899	7.3204	7.4323	8.6434	7.1239	7.5648	8.115
T 4:2FTS	Avg RF					ISTD					
I M2-6:2FTS	Avg RF	4.1902	6.3557	5.4667	5.5760	5.7874	5.7764	5.7730	5.0746	5.5000	11.640
T 6:2FTS	Avg RF					ISTD					
I M2-8:2FTS	Avg RF	2.8828	3.2021	3.5036	2.7950	2.8896	3.1162	2.8608	2.5513	2.9752	9.772
T 8:2FTS	Avg RF					ISTD					
I M3-MeFOSAA	Avg RF	0.7488	0.8086	0.9885	0.9908	0.9644	1.0654	0.8877	1.0569	0.9389	12.177
T MeFOSAA	Avg RF					ISTD					
I M3-HFO-DA	Avg RF	0.7655	0.9574	0.9633	0.9421	0.9699	1.0051	0.9504	1.0235	0.9471	8.284
T HFO-DA	Avg RF	12.49	15.97	15.35	14.99	14.26	16.20	15.95	15.64	15.11	8.140
T ADONA	Avg RF	4.5509	5.4384	5.6390	5.0224	5.2393	6.0500	5.6295	5.8389	5.4260	8.840
T 9Cl-PF3ONS	Avg RF	2.9355	3.5787	3.4026	3.1114	3.3245	3.8064	3.6531	3.6416	3.4317	8.646
T 11Cl-PF3OUds	Avg RF					ISTD					
I M5-EFOSAA	Avg RF	0.8151	0.8287	0.8485	0.8176	0.8298	0.8342	0.8912	0.9334	0.8498	4.878
T EFOSAA	Avg RF					ISTD					
I M7-MeFOSE	Avg RF	0.9092	1.1285	1.0835	1.1583	1.0690	1.1657	1.2295	1.1758	1.1149	8.767
T MeFOSE	Avg RF					ISTD					
I M9-EFOSE	Avg RF	0.8167	0.9916	1.0152	1.0782	1.0195	1.1330	1.1697	1.1051	1.0411	10.546
T EFOSE	Avg RF					ISTD					

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Initial Calibration Summary

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q258-ICC258
 Lab FileID: 6Q17054.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M5-EFOSA											
T EFOSA	Avg RF	0.8405	1.0777	1.0264	1.0291	1.0321	1.0467	1.0742	1.0933	1.0275	7.751
I M3-MeFOSA											
T MeFOSA	Avg RF	0.9407	1.2197	1.1872	1.1241	1.0857	1.2316	1.1625	1.0488	1.1250	8.691
I 13C4-PFOS											
S d3-MeFOSAA	Linear	0.7903	0.7879	0.7270	0.7454	0.7269	0.7189	0.7652	0.6985	0.7450	4.476
S 13C8-PFOS	Linear	0.7137	0.7546	0.7912	0.7201	0.7735	0.8167	0.6829	0.7728	0.7532	5.909
S d5-EFOSAA	Linear	0.6302	0.6081	0.6178	0.6172	0.6210	0.6769	0.5686	0.6141	0.6192	4.797
S 13C8-FOSA	Linear	1.7538	1.5938	1.7258	1.6348	1.6338	1.6719	1.5682	1.6403	1.6528	3.784
S d7-MeFOSE	Linear	0.6867	0.6498	0.7120	0.6546	0.6687	0.6688	0.5965	0.6121	0.6561	5.736
S d3-MeFOSA	Linear	0.6243	0.5990	0.6188	0.6231	0.6151	0.6209	0.6012	0.6926	0.6244	4.675
S d9-EFOSE	Linear	0.8665	0.8296	0.8886	0.7917	0.8021	0.7952	0.7007	0.7397	0.8018	7.705
S d5-EFOSA	Linear	0.8058	0.7425	0.8013	0.7734	0.7622	0.7789	0.7360	0.7337	0.7667	3.673
I 13C3-PFBA											
S 13C4-PFBA	Linear	1.1568	1.1544	1.1564	1.1628	1.1436	1.1619	1.1553	1.1522	1.1554	0.518
I 1802-PFHxS											
S 13C2-4:2FTS	Linear	0.1129	0.1153	0.1170	0.1111	0.1183	0.1191	0.1123	0.1132	0.1149	2.588
S 13C3-PFBS	Linear	2.2665	2.3040	2.3580	2.4059	2.4195	2.3877	2.3536	2.3177	2.3516	2.248
S 13C2-6:2FTS	Linear	1.4406	0.1308	0.1465	0.1452	0.1401	0.1383	0.1339	0.1407	0.1395	3.772
S 13C3-PFHxS	Linear	1.3271	1.3864	1.3864	1.2862	1.2901	1.3283	1.3885	1.3092	1.3308	2.917
S 13C2-8:2FTS	Linear	0.1435	0.1461	0.1444	0.1534	0.1524	0.1529	0.1530	0.1545	0.1500	3.015
I 13C4-PFOA											
S 13C8-PFOA	Linear	0.9585	0.9611	0.9486	1.0038	0.9762	0.9130	0.9632	0.9945	0.9648	2.916
I 13C2-PFDA											
S 13C6-PFDA	Linear	0.7786	0.8626	0.8880	0.8692	0.7998	0.8172	0.7811	0.7994	0.8245	5.178
S 13C7-PFUDA	Linear	1.0685	0.9958	1.2025	1.0666	1.0377	1.0530	1.0243	0.9958	1.0555	6.235
S 13C2-PFDODA	Linear	1.0581	1.0451	1.0450	1.0252	1.0476	1.0464	1.0199	1.0342	1.0402	1.224
S 13C2-PFTeDA	Linear	0.7095	0.7556	0.7513	0.6867	0.6777	0.6779	0.6828	0.6881	0.7037	4.591
I 13C5-PFNA											
S 13C9-PFNA	Linear	0.9341	0.9486	0.9675	0.9838	1.0250	0.9371	0.8831	0.9444	0.9530	4.334
I 13C2-PFHxA											
S 13C5-PPeA	Linear	0.5571	0.5550	0.5831	0.5706	0.5635	0.5470	0.5535	0.5380	0.5585	2.502
S 13C5-PFHxA	Linear	1.1550	1.1888	1.2842	1.2108	1.2140	1.1963	1.2317	1.1655	1.2058	3.360
S 13C3-HPOo-DA	Linear	0.1732	0.1704	0.1838	0.1884	0.1763	0.1694	0.1790	0.1754	0.1770	3.692
S 13C4-PFHpA	Linear	1.0091	0.9868	1.1117	1.0591	1.0424	1.0061	0.9782	0.9878	1.0226	4.465

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

Initial Calibration Summary

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q258-ICC258
 Lab FileID: 6Q17054.D

Initial Calibration Report

Compounds with Curve fitting not using Avg Response Factor:

Compound	Curve Fit	Curve Fit Formula	%RSE
S 13C4-PFBA	Linear	$y = 1.155425 * x$	
S 13C5-PFPeA	Linear	$y = 0.558470 * x$	
S 13C2-4:2FTS	Linear	$y = 0.114918 * x$	
S 13C3-PFBS	Linear	$y = 2.351622 * x$	
S 13C5-PFHxA	Linear	$y = 1.205792 * x$	
S 13C3-HFPO-DA	Linear	$y = 0.176981 * x$	
S 13C4-PFHpA	Linear	$y = 1.022642 * x$	
S 13C2-6:2FTS	Linear	$y = 0.139493 * x$	
S 13C8-PFOA	Linear	$y = 0.964849 * x$	
T PFOA	Linear	$y = 1.207189 * x - 0.032197$	5.8267
S 13C3-PFHxS	Linear	$y = 1.336806 * x$	
S 13C9-PFNA	Linear	$y = 0.952962 * x$	
S 13C2-8:2FTS	Linear	$y = 0.150038 * x$	
S 13C6-PFDA	Linear	$y = 0.824480 * x$	
S d3-MeFOSAA	Linear	$y = 0.745011 * x$	
S 13C8-PFOS	Linear	$y = 0.753188 * x$	
S d5-EFOSAA	Linear	$y = 0.619235 * x$	
S 13C7-PFUnDA	Linear	$y = 1.055532 * x$	
S 13C2-PFDoDA	Linear	$y = 1.040185 * x$	
S 13C8-FOSA	Linear	$y = 1.652821 * x$	
S 13C2-PFTeDA	Linear	$y = 0.703707 * x$	
S d7-MeFOSE	Linear	$y = 0.656143 * x$	
S d3-MeFOSA	Linear	$y = 0.624386 * x$	
S d9-EFOSE	Linear	$y = 0.801762 * x$	
S d5-EFOSA	Linear	$y = 0.766720 * x$	

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

Initial Calibration Verification

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q258-ICV258
 Lab FileID: 6Q17060.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\042823_1633_S6Q258\s6q258.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\042823_1633_S6Q258\6Q17051.d
 2:D:\MassHunter\Data\042823_1633_S6Q258\6Q17052.d
 3:D:\MassHunter\Data\042823_1633_S6Q258\6Q17053.d
 4:D:\MassHunter\Data\042823_1633_S6Q258\6Q17054.d
 5:D:\MassHunter\Data\042823_1633_S6Q258\6Q17055.d
 6:D:\MassHunter\Data\042823_1633_S6Q258\6Q17056.d
 7:D:\MassHunter\Data\042823_1633_S6Q258\6Q17057.d
 8:D:\MassHunter\Data\042823_1633_S6Q258\6Q17058.d

Data File: 6Q17060
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.234	4.7	104.7
13C2-6:2FTS	5.000	5.301	6.0	106.0
13C2-8:2FTS	5.000	4.809	-3.8	96.2
13C2-PFDoDA	1.250	1.183	-5.4	94.6
13C2-PFTeDA	1.250	1.244	-0.4	99.6
13C3-PFBS	2.500	2.504	0.1	100.1
13C3-PFHxS	2.500	2.427	-2.9	97.1
13C4-PFBA	10.000	10.046	0.5	100.5
13C4-PFHpA	2.500	2.558	2.3	102.3
13C5-PFHxA	2.500	2.530	1.2	101.2
13C5-PFPeA	5.000	5.075	1.5	101.5
13C6-PFDA	1.250	1.242	-0.6	99.4
13C7-PFUnDA	1.250	1.170	-6.4	93.6
13C8-FOSA	2.500	2.671	6.9	106.9
13C8-PFOA	2.500	2.446	-2.2	97.8
13C8-PFOS	2.500	2.730	9.2	109.2
13C9-PFNA	1.250	1.182	-5.5	94.5
4:2FTS	9.375	9.308	-0.7	99.3
6:2FTS	9.500	9.660	1.7	101.7
8:2FTS	9.600	10.700	11.5	111.5
d3-MeFOSAA	5.000	5.154	3.1	103.1
EtFOSAA	2.500	2.414	-3.4	96.6
FOSA	2.500	2.487	-0.5	99.5
MeFOSAA	2.500	2.554	2.1	102.1
PFBA	10.000	10.284	2.8	102.8
PFBS	2.218	2.313	4.3	104.3
PFDA	2.500	2.799	12.0	112.0
PFDoDA	2.500	2.618	4.7	104.7
PFDS	2.413	2.277	-5.6	94.4
PFHpA	2.500	2.604	4.2	104.2
PFHpS	2.383	2.331	-2.2	97.8
PFHxA	2.500	2.460	-1.6	98.4
PFHxS	2.285	2.364	3.4	103.4
PFNA	2.500	2.371	-5.1	94.9
PFNS	2.405	2.305	-4.2	95.8
PFOA	2.500	2.418	-3.3	96.7
PFOS	2.320	2.101	-9.5	90.5

Initial Calibration Verification

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q258-ICV258
 Lab FileID: 6Q17060.D

PFPeA	5.000	5.052	1.0	101.0
PFPeS	2.353	2.508	6.6	106.6
PFTeDA	2.500	2.513	0.5	100.5
PFTTrDA	2.500	2.674	7.0	107.0
PFUnDA	2.500	2.679	7.2	107.2
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDODA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	4.725	4.865	3.0	103.0
13C3-HFPO-DA	10.000	9.937	-0.6	99.4
9C1-PF3ONS	4.675	4.608	-1.4	98.6
ADONA	4.725	5.002	5.9	105.9
HFPO-DA	5.000	4.983	-0.3	99.7
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	12.498	0.1	100.1
5:3FTCA	62.400	65.148	4.4	104.4
7:3FTCA	62.400	62.032	-0.6	99.4
d3-MeFOSA	2.500	2.506	0.2	100.2
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.761	-4.8	95.2
EtFOSE	12.500	12.382	-0.9	99.1
MeFOSA	5.000	5.161	3.2	103.2
MeFOSE	12.500	12.211	-2.3	97.7
PFDODS	2.425	2.321	-4.3	95.7
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.349	7.0	107.0
d7-MeFOSE	25.000	26.758	7.0	107.0
d9-EtFOSE	25.000	25.966	3.9	103.9
d5-EtFOSA	2.500	2.685	7.4	107.4
NFDHA	5.000	5.183	3.7	103.7
PFMBA	5.000	5.052	1.0	101.0
PFMPA	5.000	5.075	1.5	101.5
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.519	1.6	101.6

CC Criteria: +/- 30%

Initial Calibration Verification

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q258-ICV258
 Lab FileID: 6Q17061.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\042823_1633_S6Q258\s6q258.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\042823_1633_S6Q258\6Q17051.d
 2:D:\MassHunter\Data\042823_1633_S6Q258\6Q17052.d
 3:D:\MassHunter\Data\042823_1633_S6Q258\6Q17053.d
 4:D:\MassHunter\Data\042823_1633_S6Q258\6Q17054.d
 5:D:\MassHunter\Data\042823_1633_S6Q258\6Q17055.d
 6:D:\MassHunter\Data\042823_1633_S6Q258\6Q17056.d
 7:D:\MassHunter\Data\042823_1633_S6Q258\6Q17057.d
 8:D:\MassHunter\Data\042823_1633_S6Q258\6Q17058.d

Data File: 6Q17061
 Type : QC
 Level : 20

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	4.978	-0.4	99.6
13C2-6:2FTS	5.000	5.087	1.7	101.7
13C2-8:2FTS	5.000	5.498	10.0	110.0
13C2-PFDoDA	1.250	1.324	5.9	105.9
13C2-PFTeDA	1.250	1.283	2.6	102.6
13C3-PFBS	2.500	2.511	0.4	100.4
13C3-PFHxS	2.500	2.501	0.0	100.0
13C4-PFBA	10.000	10.058	0.6	100.6
13C4-PFHpA	2.500	2.401	-4.0	96.0
13C5-PFHxA	2.500	2.424	-3.0	97.0
13C5-PFPeA	5.000	5.018	0.4	100.4
13C6-PFDA	1.250	1.293	3.5	103.5
13C7-PFUnDA	1.250	1.247	-0.3	99.7
13C8-FOSA	2.500	2.609	4.4	104.4
13C8-PFOA	2.500	2.400	-4.0	96.0
13C8-PFOS	2.500	2.644	5.8	105.8
13C9-PFNA	1.250	1.152	-7.8	92.2
4:2FTS	20.000	22.440	12.2	112.2
6:2FTS	20.000	20.540	2.7	102.7
8:2FTS	20.000	18.805	-6.0	94.0
d3-MeFOSAA	5.000	5.415	8.3	108.3
EtFOSAA	20.000	20.650	3.3	103.3
FOSA	20.000	22.297	11.5	111.5
MeFOSAA	20.000	21.114	5.6	105.6
PFBA	20.000	20.356	1.8	101.8
PFBS	20.000	22.108	10.5	110.5
PFDA	20.000	22.578	12.9	112.9
PFDoDA	20.000	16.948	-15.3	84.7
PFDS	20.000	21.172	5.9	105.9
PFHpA	20.000	21.830	9.1	109.1
PFHpS	20.000	20.356	1.8	101.8
PFHxA	20.000	21.281	6.4	106.4
PFHxS	20.000	22.516	12.6	112.6
PFNA	20.000	20.748	3.7	103.7
PFNS	20.000	22.361	11.8	111.8
PFOA	20.000	20.811	4.1	104.1
PFOS	20.000	19.189	-4.1	95.9

Initial Calibration Verification

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q258-ICV258
 Lab FileID: 6Q17061.D

PFPeA	20.000	22.219	11.1	111.1
PFPeS	20.000	22.436	12.2	112.2
PFTeDA	20.000	21.508	7.5	107.5
PFTTrDA	20.000	18.424	-7.9	92.1
PFUnDA	20.000	21.105	5.5	105.5
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	20.000	20.934	4.7	104.7
13C3-HFPO-DA	10.000	10.271	2.7	102.7
9C1-PF3ONS	20.000	21.243	6.2	106.2
ADONA	20.000	20.743	3.7	103.7
HFPO-DA	20.000	18.852	-5.7	94.3
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	20.000	20.761	3.8	103.8
5:3FTCA	20.000	24.581	22.9	122.9
7:3FTCA	20.000	22.291	11.5	111.5
d3-MeFOSA	2.500	2.648	5.9	105.9
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	20.000	20.742	3.7	103.7
EtFOSE	100.000	110.844	10.8	110.8
MeFOSA	20.000	20.657	3.3	103.3
MeFOSE	100.000	112.253	12.3	112.3
PFDoDS	20.000	20.303	1.5	101.5
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.698	14.0	114.0
d7-MeFOSE	25.000	25.753	3.0	103.0
d9-EtFOSE	25.000	25.659	2.6	102.6
d5-EtFOSA	2.500	2.632	5.3	105.3
NFDHA	20.000	22.831	14.2	114.2
PFMBA	20.000	21.829	9.1	109.1
PFMPA	20.000	21.503	7.5	107.5
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	20.000	19.879	-0.6	99.4

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q261-CC258
 Lab FileID: 6Q17341.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\050223_1633_S6Q261\s6q261.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\042823_1633_S6Q258\6Q17051.d
 2:D:\MassHunter\Data\042823_1633_S6Q258\6Q17052.d
 3:D:\MassHunter\Data\042823_1633_S6Q258\6Q17053.d
 4:D:\MassHunter\Data\042823_1633_S6Q258\6Q17054.d
 5:D:\MassHunter\Data\042823_1633_S6Q258\6Q17055.d
 6:D:\MassHunter\Data\042823_1633_S6Q258\6Q17056.d
 7:D:\MassHunter\Data\042823_1633_S6Q258\6Q17057.d
 8:D:\MassHunter\Data\042823_1633_S6Q258\6Q17058.d

Data File: 6Q17341
 Type : QC
 Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	4.776	-4.5	95.5
13C2-6:2FTS	5.000	5.073	1.5	101.5
13C2-8:2FTS	5.000	4.658	-6.8	93.2
13C2-PFDoDA	1.250	1.167	-6.6	93.4
13C2-PFTeDA	1.250	1.182	-5.4	94.6
13C3-PFBS	2.500	2.495	-0.2	99.8
13C3-PFHxS	2.500	2.493	-0.3	99.7
13C4-PFBA	10.000	10.368	3.7	103.7
13C4-PFHpA	2.500	2.544	1.7	101.7
13C5-PFHxA	2.500	2.382	-4.7	95.3
13C5-PFPeA	5.000	4.748	-5.0	95.0
13C6-PFDA	1.250	1.279	2.3	102.3
13C7-PFUnDA	1.250	1.176	-5.9	94.1
13C8-FOSA	2.500	2.333	-6.7	93.3
13C8-PFOA	2.500	2.298	-8.1	91.9
13C8-PFOS	2.500	2.432	-2.7	97.3
13C9-PFNA	1.250	1.218	-2.6	97.4
4:2FTS	0.750	0.803	7.1	107.1
6:2FTS	0.760	0.826	8.7	108.7
8:2FTS	0.768	0.794	3.4	103.4
d3-MeFOSAA	5.000	5.347	6.9	106.9
EtFOSAA	0.200	0.222	11.0	111.0
FOSA	0.200	0.203	1.3	101.3
MeFOSAA	0.200	0.201	0.4	100.4
PFBA	0.800	0.838	4.7	104.7
PFBS	0.177	0.194	9.9	109.9
PFDA	0.200	0.184	-8.0	92.0
PFDoDA	0.200	0.222	11.1	111.1
PFDS	0.193	0.205	6.0	106.0
PFHpA	0.200	0.194	-2.9	97.1
PFHpS	0.191	0.183	-4.4	95.6
PFHxA	0.200	0.215	7.3	107.3
PFHxS	0.183	0.202	10.3	110.3
PFNA	0.200	0.197	-1.3	98.7
PFNS	0.192	0.189	-1.4	98.6
PFOA	0.200	0.241	20.7	120.7
PFOS	0.186	0.199	7.2	107.2

Continuing Calibration Summary

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q261-CC258
 Lab FileID: 6Q17341.D

PFPeA	0.400	0.399	-0.3	99.7
PFPeS	0.188	0.207	10.0	110.0
PFTeDA	0.200	0.208	4.1	104.1
PFTTrDA	0.200	0.216	7.8	107.8
PFUnDA	0.200	0.152	-24.1	75.9
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--		
11Cl-PF3OUdS	0.378	0.422	11.5	111.5
13C3-HFPO-DA	10.000	9.665	-3.3	96.7
9C1-PF3ONS	0.367	0.428	16.6	116.6
ADONA	0.378	0.403	6.7	106.7
HFPO-DA	0.400	0.418	4.6	104.6
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	0.998	1.036	3.8	103.8
5:3FTCA	4.992	5.809	16.4	116.4
7:3FTCA	4.992	5.483	9.8	109.8
d3-MeFOSA	2.500	2.238	-10.5	89.5
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	0.400	0.448	12.0	112.0
EtFOSE	1.000	1.088	8.8	108.8
MeFOSA	0.400	0.445	11.1	111.1
MeFOSE	1.000	1.029	2.9	102.9
PFDoDS	0.194	0.175	-9.6	90.4
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.067	1.3	101.3
d7-MeFOSE	25.000	22.872	-8.5	91.5
d9-EtFOSE	25.000	22.125	-11.5	88.5
d5-EtFOSA	2.500	2.201	-12.0	88.0
NFDHA	0.400	0.435	8.7	108.7
PFMBA	0.400	0.424	5.9	105.9
PFMPA	0.400	0.434	8.6	108.6
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	0.356	0.368	3.4	103.4

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q261-CC258
 Lab FileID: 6Q17352.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\050223_1633_S6Q261\s6q261.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\042823_1633_S6Q258\6Q17051.d
 2:D:\MassHunter\Data\042823_1633_S6Q258\6Q17052.d
 3:D:\MassHunter\Data\042823_1633_S6Q258\6Q17053.d
 4:D:\MassHunter\Data\042823_1633_S6Q258\6Q17054.d
 5:D:\MassHunter\Data\042823_1633_S6Q258\6Q17055.d
 6:D:\MassHunter\Data\042823_1633_S6Q258\6Q17056.d
 7:D:\MassHunter\Data\042823_1633_S6Q258\6Q17057.d
 8:D:\MassHunter\Data\042823_1633_S6Q258\6Q17058.d

Data File: 6Q17352
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	4.789	-4.2	95.8
13C2-6:2FTS	5.000	5.071	1.4	101.4
13C2-8:2FTS	5.000	4.862	-2.8	97.2
13C2-PFDoDA	1.250	1.247	-0.2	99.8
13C2-PFTeDA	1.250	1.272	1.8	101.8
13C3-PFBS	2.500	2.448	-2.1	97.9
13C3-PFHxS	2.500	2.648	5.9	105.9
13C4-PFBA	10.000	10.374	3.7	103.7
13C4-PFHpA	2.500	2.572	2.9	102.9
13C5-PFHxA	2.500	2.575	3.0	103.0
13C5-PFPeA	5.000	4.762	-4.8	95.2
13C6-PFDA	1.250	1.280	2.4	102.4
13C7-PFUnDA	1.250	1.277	2.1	102.1
13C8-FOSA	2.500	2.687	7.5	107.5
13C8-PFOA	2.500	2.331	-6.8	93.2
13C8-PFOS	2.500	2.783	11.3	111.3
13C9-PFNA	1.250	1.220	-2.4	97.6
4:2FTS	9.375	9.787	4.4	104.4
6:2FTS	9.500	9.514	0.1	100.1
8:2FTS	9.600	9.814	2.2	102.2
d3-MeFOSAA	5.000	5.848	17.0	117.0
EtFOSAA	2.500	2.279	-8.9	91.1
FOSA	2.500	2.511	0.4	100.4
MeFOSAA	2.500	2.455	-1.8	98.2
PFBA	10.000	10.384	3.8	103.8
PFBS	2.218	2.250	1.5	101.5
PFDA	2.500	2.618	4.7	104.7
PFDoDA	2.500	2.313	-7.5	92.5
PFDS	2.413	2.320	-3.8	96.2
PFHpA	2.500	2.476	-1.0	99.0
PFHpS	2.383	2.128	-10.7	89.3
PFHxA	2.500	2.283	-8.7	91.3
PFHxS	2.285	2.135	-6.5	93.5
PFNA	2.500	2.550	2.0	102.0
PFNS	2.405	2.352	-2.2	97.8
PFOA	2.500	2.655	6.2	106.2
PFOS	2.320	2.066	-11.0	89.0

Continuing Calibration Summary

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q261-CC258
 Lab FileID: 6Q17352.D

PFPeA	5.000	5.282	5.6	105.6
PFPeS	2.353	2.169	-7.8	92.2
PFTeDA	2.500	2.471	-1.2	98.8
PFTTrDA	2.500	2.708	8.3	108.3
PFUnDA	2.500	2.399	-4.0	96.0
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--		
11C1-PF3OUdS	4.725	4.963	5.0	105.0
13C3-HFPO-DA	10.000	9.953	-0.5	99.5
9C1-PF3ONS	4.675	5.248	12.3	112.3
ADONA	4.725	5.297	12.1	112.1
HFPO-DA	5.000	5.088	1.8	101.8
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	12.809	2.6	102.6
5:3FTCA	62.400	65.655	5.2	105.2
7:3FTCA	62.400	66.198	6.1	106.1
d3-MeFOSA	2.500	2.495	-0.2	99.8
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	5.114	2.3	102.3
EtFOSE	12.500	12.728	1.8	101.8
MeFOSA	5.000	5.264	5.3	105.3
MeFOSE	12.500	13.112	4.9	104.9
PFDODS	2.425	2.474	2.0	102.0
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	6.011	20.2	120.2
d7-MeFOSE	25.000	25.658	2.6	102.6
d9-EtFOSE	25.000	25.801	3.2	103.2
d5-EtFOSA	2.500	2.541	1.6	101.6
NFDHA	5.000	4.730	-5.4	94.6
PFMBA	5.000	5.299	6.0	106.0
PFMPA	5.000	5.285	5.7	105.7
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.574	2.8	102.8

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q261-CC258
 Lab FileID: 6Q17359.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\050223_1633_S6Q261\s6q261.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\042823_1633_S6Q258\6Q17051.d
 2:D:\MassHunter\Data\042823_1633_S6Q258\6Q17052.d
 3:D:\MassHunter\Data\042823_1633_S6Q258\6Q17053.d
 4:D:\MassHunter\Data\042823_1633_S6Q258\6Q17054.d
 5:D:\MassHunter\Data\042823_1633_S6Q258\6Q17055.d
 6:D:\MassHunter\Data\042823_1633_S6Q258\6Q17056.d
 7:D:\MassHunter\Data\042823_1633_S6Q258\6Q17057.d
 8:D:\MassHunter\Data\042823_1633_S6Q258\6Q17058.d

Data File: 6Q17359
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	4.738	-5.2	94.8
13C2-6:2FTS	5.000	4.756	-4.9	95.1
13C2-8:2FTS	5.000	5.126	2.5	102.5
13C2-PFDoDA	1.250	1.260	0.8	100.8
13C2-PFTeDA	1.250	1.281	2.5	102.5
13C3-PFBS	2.500	2.308	-7.7	92.3
13C3-PFHxS	2.500	2.535	1.4	101.4
13C4-PFBA	10.000	10.216	2.2	102.2
13C4-PFHpA	2.500	2.543	1.7	101.7
13C5-PFHxA	2.500	2.566	2.6	102.6
13C5-PFPeA	5.000	4.792	-4.2	95.8
13C6-PFDA	1.250	1.355	8.4	108.4
13C7-PFUnDA	1.250	1.299	4.0	104.0
13C8-FOSA	2.500	2.638	5.5	105.5
13C8-PFOA	2.500	2.712	8.5	108.5
13C8-PFOS	2.500	2.685	7.4	107.4
13C9-PFNA	1.250	1.210	-3.2	96.8
4:2FTS	9.375	9.537	1.7	101.7
6:2FTS	9.500	10.829	14.0	114.0
8:2FTS	9.600	9.742	1.5	101.5
d3-MeFOSAA	5.000	5.222	4.4	104.4
EtFOSAA	2.500	2.568	2.7	102.7
FOSA	2.500	2.525	1.0	101.0
MeFOSAA	2.500	2.801	12.0	112.0
PFBA	10.000	10.464	4.6	104.6
PFBS	2.218	2.388	7.7	107.7
PFDA	2.500	2.617	4.7	104.7
PFDoDA	2.500	2.425	-3.0	97.0
PFDS	2.413	2.374	-1.6	98.4
PFHpA	2.500	2.609	4.4	104.4
PFHpS	2.383	2.114	-11.3	88.7
PFHxA	2.500	2.412	-3.5	96.5
PFHxS	2.285	2.290	0.2	100.2
PFNA	2.500	2.347	-6.1	93.9
PFNS	2.405	2.399	-0.2	99.8
PFOA	2.500	2.405	-3.8	96.2
PFOS	2.320	2.348	1.2	101.2

Continuing Calibration Summary

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q261-CC258
 Lab FileID: 6Q17359.D

PFPeA	5.000	5.171	3.4	103.4
PFPeS	2.353	2.382	1.2	101.2
PFTeDA	2.500	2.645	5.8	105.8
PFTTrDA	2.500	2.603	4.1	104.1
PFUnDA	2.500	2.493	-0.3	99.7
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	4.725	4.729	0.1	100.1
13C3-HFPO-DA	10.000	10.594	5.9	105.9
9C1-PF3ONS	4.675	4.856	3.9	103.9
ADONA	4.725	4.848	2.6	102.6
HFPO-DA	5.000	5.039	0.8	100.8
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	12.803	2.6	102.6
5:3FTCA	62.400	61.872	-0.8	99.2
7:3FTCA	62.400	64.069	2.7	102.7
d3-MeFOSA	2.500	2.481	-0.8	99.2
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.828	-3.4	96.6
EtFOSE	12.500	12.394	-0.8	99.2
MeFOSA	5.000	5.208	4.2	104.2
MeFOSE	12.500	12.006	-4.0	96.0
PFDoDS	2.425	2.574	6.2	106.2
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.453	9.1	109.1
d7-MeFOSE	25.000	25.432	1.7	101.7
d9-EtFOSE	25.000	25.382	1.5	101.5
d5-EtFOSA	2.500	2.519	0.8	100.8
NFDHA	5.000	5.154	3.1	103.1
PFMBA	5.000	5.285	5.7	105.7
PFMPA	5.000	5.345	6.9	106.9
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.495	1.0	101.0

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q261-CC258
 Lab FileID: 6Q17370.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\050223_1633_S6Q261\s6q261.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\042823_1633_S6Q258\6Q17051.d
 2:D:\MassHunter\Data\042823_1633_S6Q258\6Q17052.d
 3:D:\MassHunter\Data\042823_1633_S6Q258\6Q17053.d
 4:D:\MassHunter\Data\042823_1633_S6Q258\6Q17054.d
 5:D:\MassHunter\Data\042823_1633_S6Q258\6Q17055.d
 6:D:\MassHunter\Data\042823_1633_S6Q258\6Q17056.d
 7:D:\MassHunter\Data\042823_1633_S6Q258\6Q17057.d
 8:D:\MassHunter\Data\042823_1633_S6Q258\6Q17058.d

Data File: 6Q17370
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	4.760	-4.8	95.2
13C2-6:2FTS	5.000	4.653	-6.9	93.1
13C2-8:2FTS	5.000	4.684	-6.3	93.7
13C2-PFDoDA	1.250	1.140	-8.8	91.2
13C2-PFTeDA	1.250	1.147	-8.2	91.8
13C3-PFBS	2.500	2.294	-8.3	91.7
13C3-PFHxS	2.500	2.470	-1.2	98.8
13C4-PFBA	10.000	10.276	2.8	102.8
13C4-PFHpA	2.500	2.536	1.4	101.4
13C5-PFHxA	2.500	2.388	-4.5	95.5
13C5-PFPeA	5.000	4.677	-6.5	93.5
13C6-PFDA	1.250	1.254	0.3	100.3
13C7-PFUnDA	1.250	1.245	-0.4	99.6
13C8-FOSA	2.500	2.757	10.3	110.3
13C8-PFOA	2.500	2.495	-0.2	99.8
13C8-PFOS	2.500	2.746	9.9	109.9
13C9-PFNA	1.250	1.308	4.7	104.7
4:2FTS	9.375	9.112	-2.8	97.2
6:2FTS	9.500	9.381	-1.3	98.7
8:2FTS	9.600	9.874	2.9	102.9
d3-MeFOSAA	5.000	6.010	20.2	120.2
EtFOSAA	2.500	2.543	1.7	101.7
FOSA	2.500	2.406	-3.7	96.3
MeFOSAA	2.500	2.490	-0.4	99.6
PFBA	10.000	10.586	5.9	105.9
PFBS	2.218	2.417	9.0	109.0
PFDA	2.500	2.679	7.2	107.2
PFDoDA	2.500	2.544	1.8	101.8
PFDS	2.413	2.306	-4.4	95.6
PFHpA	2.500	2.506	0.2	100.2
PFHpS	2.383	2.236	-6.2	93.8
PFHxA	2.500	2.493	-0.3	99.7
PFHxS	2.285	2.336	2.3	102.3
PFNA	2.500	2.541	1.6	101.6
PFNS	2.405	2.319	-3.6	96.4
PFOA	2.500	2.580	3.2	103.2
PFOS	2.320	2.214	-4.6	95.4

Continuing Calibration Summary

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q261-CC258
 Lab FileID: 6Q17370.D

PFPeA	5.000	5.246	4.9	104.9
PFPeS	2.353	2.344	-0.4	99.6
PFTeDA	2.500	2.718	8.7	108.7
PFTTrDA	2.500	2.584	3.3	103.3
PFUnDA	2.500	2.360	-5.6	94.4
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--		
11C1-PF3OUdS	4.725	4.963	5.0	105.0
13C3-HFPO-DA	10.000	10.503	5.0	105.0
9C1-PF3ONS	4.675	4.843	3.6	103.6
ADONA	4.725	4.696	-0.6	99.4
HFPO-DA	5.000	4.986	-0.3	99.7
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	12.845	2.9	102.9
5:3FTCA	62.400	65.729	5.3	105.3
7:3FTCA	62.400	67.787	8.6	108.6
d3-MeFOSA	2.500	2.462	-1.5	98.5
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.960	-0.8	99.2
EtFOSE	12.500	13.545	8.4	108.4
MeFOSA	5.000	5.304	6.1	106.1
MeFOSE	12.500	12.828	2.6	102.6
PFDoDS	2.425	2.427	0.1	100.1
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.729	14.6	114.6
d7-MeFOSE	25.000	25.327	1.3	101.3
d9-EtFOSE	25.000	25.352	1.4	101.4
d5-EtFOSA	2.500	2.581	3.2	103.2
NFDHA	5.000	5.225	4.5	104.5
PFMBA	5.000	5.346	6.9	106.9
PFMPA	5.000	5.382	7.6	107.6
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.755	6.9	106.9

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q261-CC258
 Lab FileID: 6Q17382.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\050223_1633_S6Q261\s6q261.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\042823_1633_S6Q258\6Q17051.d
 2:D:\MassHunter\Data\042823_1633_S6Q258\6Q17052.d
 3:D:\MassHunter\Data\042823_1633_S6Q258\6Q17053.d
 4:D:\MassHunter\Data\042823_1633_S6Q258\6Q17054.d
 5:D:\MassHunter\Data\042823_1633_S6Q258\6Q17055.d
 6:D:\MassHunter\Data\042823_1633_S6Q258\6Q17056.d
 7:D:\MassHunter\Data\042823_1633_S6Q258\6Q17057.d
 8:D:\MassHunter\Data\042823_1633_S6Q258\6Q17058.d

Data File: 6Q17382
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	4.840	-3.2	96.8
13C2-6:2FTS	5.000	5.349	7.0	107.0
13C2-8:2FTS	5.000	4.427	-11.5	88.5
13C2-PFDoDA	1.250	1.225	-2.0	98.0
13C2-PFTeDA	1.250	1.247	-0.2	99.8
13C3-PFBS	2.500	2.404	-3.8	96.2
13C3-PFHxS	2.500	2.538	1.5	101.5
13C4-PFBA	10.000	10.460	4.6	104.6
13C4-PFHpA	2.500	2.542	1.7	101.7
13C5-PFHxA	2.500	2.338	-6.5	93.5
13C5-PFPeA	5.000	4.735	-5.3	94.7
13C6-PFDA	1.250	1.351	8.1	108.1
13C7-PFUnDA	1.250	1.424	14.0	114.0
13C8-FOSA	2.500	2.655	6.2	106.2
13C8-PFOA	2.500	2.468	-1.3	98.7
13C8-PFOS	2.500	2.618	4.7	104.7
13C9-PFNA	1.250	1.267	1.4	101.4
4:2FTS	9.375	9.236	-1.5	98.5
6:2FTS	9.500	9.497	0.0	100.0
8:2FTS	9.600	10.436	8.7	108.7
d3-MeFOSAA	5.000	5.581	11.6	111.6
EtFOSAA	2.500	2.468	-1.3	98.7
FOSA	2.500	2.539	1.6	101.6
MeFOSAA	2.500	2.601	4.0	104.0
PFBA	10.000	10.308	3.1	103.1
PFBS	2.218	2.340	5.5	105.5
PFDA	2.500	2.384	-4.6	95.4
PFDoDA	2.500	2.632	5.3	105.3
PFDS	2.413	2.491	3.2	103.2
PFHpA	2.500	2.424	-3.1	96.9
PFHpS	2.383	2.273	-4.6	95.4
PFHxA	2.500	2.479	-0.8	99.2
PFHxS	2.285	2.358	3.2	103.2
PFNA	2.500	2.483	-0.7	99.3
PFNS	2.405	2.431	1.1	101.1
PFOA	2.500	2.583	3.3	103.3
PFOS	2.320	2.223	-4.2	95.8

Continuing Calibration Summary

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q261-CC258
 Lab FileID: 6Q17382.D

PFPeA	5.000	5.119	2.4	102.4
PFPeS	2.353	2.367	0.6	100.6
PFTeDA	2.500	2.610	4.4	104.4
PFTTrDA	2.500	2.713	8.5	108.5
PFUnDA	2.500	2.393	-4.3	95.7
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	4.725	4.951	4.8	104.8
13C3-HFPO-DA	10.000	9.798	-2.0	98.0
9C1-PF3ONS	4.675	5.268	12.7	112.7
ADONA	4.725	5.155	9.1	109.1
HFPO-DA	5.000	5.031	0.6	100.6
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	12.447	-0.3	99.7
5:3FTCA	62.400	64.910	4.0	104.0
7:3FTCA	62.400	68.810	10.3	110.3
d3-MeFOSA	2.500	2.474	-1.0	99.0
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	5.271	5.4	105.4
EtFOSE	12.500	12.504	0.0	100.0
MeFOSA	5.000	5.276	5.5	105.5
MeFOSE	12.500	13.465	7.7	107.7
PFDoDS	2.425	2.541	4.8	104.8
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.650	13.0	113.0
d7-MeFOSE	25.000	24.557	-1.8	98.2
d9-EtFOSE	25.000	25.173	0.7	100.7
d5-EtFOSA	2.500	2.443	-2.3	97.7
NFDHA	5.000	5.519	10.4	110.4
PFMBA	5.000	5.307	6.1	106.1
PFMPA	5.000	5.276	5.5	105.5
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.717	6.0	106.0

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q261-ECC258
 Lab FileID: 6Q17389.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\050223_1633_S6Q261\s6q261.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\042823_1633_S6Q258\6Q17051.d
 2:D:\MassHunter\Data\042823_1633_S6Q258\6Q17052.d
 3:D:\MassHunter\Data\042823_1633_S6Q258\6Q17053.d
 4:D:\MassHunter\Data\042823_1633_S6Q258\6Q17054.d
 5:D:\MassHunter\Data\042823_1633_S6Q258\6Q17055.d
 6:D:\MassHunter\Data\042823_1633_S6Q258\6Q17056.d
 7:D:\MassHunter\Data\042823_1633_S6Q258\6Q17057.d
 8:D:\MassHunter\Data\042823_1633_S6Q258\6Q17058.d

Data File: 6Q17389
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	4.985	-0.3	99.7
13C2-6:2FTS	5.000	4.699	-6.0	94.0
13C2-8:2FTS	5.000	4.662	-6.8	93.2
13C2-PFDoDA	1.250	1.195	-4.4	95.6
13C2-PFTeDA	1.250	1.250	0.0	100.0
13C3-PFBS	2.500	2.308	-7.7	92.3
13C3-PFHxS	2.500	2.671	6.8	106.8
13C4-PFBA	10.000	10.400	4.0	104.0
13C4-PFHpA	2.500	2.546	1.8	101.8
13C5-PFHxA	2.500	2.401	-3.9	96.1
13C5-PFPeA	5.000	4.715	-5.7	94.3
13C6-PFDA	1.250	1.237	-1.0	99.0
13C7-PFUnDA	1.250	1.267	1.3	101.3
13C8-FOSA	2.500	2.541	1.6	101.6
13C8-PFOA	2.500	2.449	-2.0	98.0
13C8-PFOS	2.500	2.568	2.7	102.7
13C9-PFNA	1.250	1.325	6.0	106.0
4:2FTS	9.375	9.170	-2.2	97.8
6:2FTS	9.500	10.478	10.3	110.3
8:2FTS	9.600	10.353	7.8	107.8
d3-MeFOSAA	5.000	5.314	6.3	106.3
EtFOSAA	2.500	2.398	-4.1	95.9
FOSA	2.500	2.475	-1.0	99.0
MeFOSAA	2.500	2.645	5.8	105.8
PFBA	10.000	10.478	4.8	104.8
PFBS	2.218	2.444	10.2	110.2
PFDA	2.500	2.748	9.9	109.9
PFDoDA	2.500	2.503	0.1	100.1
PFDS	2.413	2.482	2.9	102.9
PFHpA	2.500	2.520	0.8	100.8
PFHpS	2.383	2.174	-8.8	91.2
PFHxA	2.500	2.469	-1.2	98.8
PFHxS	2.285	2.213	-3.1	96.9
PFNA	2.500	2.484	-0.6	99.4
PFNS	2.405	2.259	-6.1	93.9
PFOA	2.500	2.410	-3.6	96.4
PFOS	2.320	2.300	-0.9	99.1

Continuing Calibration Summary

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q261-ECC258
 Lab FileID: 6Q17389.D

PFPeA	5.000	5.139	2.8	102.8
PFPeS	2.353	2.124	-9.7	90.3
PFTeDA	2.500	2.487	-0.5	99.5
PFTTrDA	2.500	2.699	7.9	107.9
PFUnDA	2.500	2.641	5.6	105.6
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	4.725	5.067	7.2	107.2
13C3-HFPO-DA	10.000	10.297	3.0	103.0
9C1-PF3ONS	4.675	4.920	5.2	105.2
ADONA	4.725	4.883	3.4	103.4
HFPO-DA	5.000	4.937	-1.3	98.7
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	12.947	3.7	103.7
5:3FTCA	62.400	67.022	7.4	107.4
7:3FTCA	62.400	67.781	8.6	108.6
d3-MeFOSA	2.500	2.331	-6.8	93.2
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	5.022	0.4	100.4
EtFOSE	12.500	12.687	1.5	101.5
MeFOSA	5.000	5.372	7.4	107.4
MeFOSE	12.500	12.855	2.8	102.8
PFDoDS	2.425	2.623	8.2	108.2
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.743	14.9	114.9
d7-MeFOSE	25.000	24.684	-1.3	98.7
d9-EtFOSE	25.000	24.918	-0.3	99.7
d5-EtFOSA	2.500	2.477	-0.9	99.1
NFDHA	5.000	5.355	7.1	107.1
PFMBA	5.000	5.260	5.2	105.2
PFMPA	5.000	5.364	7.3	107.3
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.723	6.1	106.1

CC Criteria: +/- 30%

Run Sequence Report

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q258	Method: EPA DRAFT 1633	Instrument ID: GCMS6Q		
Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S6Q258-RT	6Q17048.D	04/28/23 12:06	n/a	Retention Time Marker
S6Q258-RT	6Q17049.D	04/28/23 12:21	n/a	Retention Time Marker
S6Q258-IC258	6Q17050.D	04/28/23 12:35	n/a	Mass Calibration Verification
S6Q258-IC258	6Q17051.D	04/28/23 12:50	n/a	Initial cal 1
S6Q258-IC258	6Q17052.D	04/28/23 13:04	n/a	Initial cal 2
S6Q258-IC258	6Q17053.D	04/28/23 13:19	n/a	Initial cal 3
S6Q258-ICC258	6Q17054.D	04/28/23 13:33	n/a	Initial cal 4
S6Q258-IC258	6Q17055.D	04/28/23 13:48	n/a	Initial cal 5
S6Q258-IC258	6Q17056.D	04/28/23 14:02	n/a	Initial cal 6
S6Q258-IC258	6Q17057.D	04/28/23 14:17	n/a	Initial cal 7
S6Q258-IC258	6Q17058.D	04/28/23 14:31	n/a	Initial cal 8
S6Q258-IBLK	6Q17059.D	04/28/23 14:46	n/a	Instrument Blank
S6Q258-ICV258	6Q17060.D	04/28/23 15:00	n/a	Initial cal verification 4
S6Q258-ICV258	6Q17061.D	04/28/23 15:15	n/a	Initial cal verification 20
S6Q258-CC258	6Q17062.D	04/28/23 15:29	n/a	Continuing cal 4
S6Q258-CC258	6Q17063.D	04/28/23 15:44	n/a	Continuing cal 1.0LL
OP96604-BS	6Q17064.D	04/28/23 15:58	OP96604	Blank Spike
OP96604-LLBS	6Q17065.D	04/28/23 16:13	OP96604	Blank Spike
OP96604-MB	6Q17066.D	04/28/23 16:27	OP96604	Method Blank
ZZZZZZ	6Q17067.D	04/28/23 16:42	OP96604	(unrelated sample)
ZZZZZZ	6Q17068.D	04/28/23 16:56	OP96604	(unrelated sample)
ZZZZZZ	6Q17069.D	04/28/23 17:11	OP96604	(unrelated sample)
S6Q258-CC258	6Q17070.D	04/28/23 17:25	n/a	Continuing cal 4
S6Q258-ICCB	6Q17071.D	04/28/23 17:40	n/a	Continuing Calibration Blank
OP96603-BS	6Q17072.D	04/28/23 17:54	OP96603	Blank Spike
OP96603-LLBS	6Q17073.D	04/28/23 18:09	OP96603	Blank Spike
OP96603-MB	6Q17074.D	04/28/23 18:23	OP96603	Method Blank
ZZZZZZ	6Q17075.D	04/28/23 18:37	OP96603	(unrelated sample)
ZZZZZZ	6Q17076.D	04/28/23 18:52	OP96603	(unrelated sample)
FC5514-3	6Q17077.D	04/28/23 19:06	OP96603	(used for QC only; not part of job FC5621)
OP96603-MS	6Q17078.D	04/28/23 19:21	OP96603	Matrix Spike
ZZZZZZ	6Q17079.D	04/28/23 19:35	OP96603	(unrelated sample)
OP96603-DUP	6Q17080.D	04/28/23 19:50	OP96603	Duplicate
ZZZZZZ	6Q17081.D	04/28/23 20:04	OP96603	(unrelated sample)
S6Q258-CC258	6Q17082.D	04/28/23 20:19	n/a	Continuing cal 4
S6Q258-ICCB	6Q17083.D	04/28/23 20:33	n/a	Continuing Calibration Blank
ZZZZZZ	6Q17084.D	04/28/23 20:48	OP96603	(unrelated sample)
ZZZZZZ	6Q17085.D	04/28/23 21:02	OP96603	(unrelated sample)
ZZZZZZ	6Q17086.D	04/28/23 21:17	OP96603	(unrelated sample)
FC5522-4	6Q17087.D	04/28/23 21:31	OP96603	(used for QC only; not part of job FC5621)
ZZZZZZ	6Q17088.D	04/28/23 21:46	OP96603	(unrelated sample)
ZZZZZZ	6Q17089.D	04/28/23 22:00	OP96603	(unrelated sample)
ZZZZZZ	6Q17090.D	04/28/23 22:15	OP96603	(unrelated sample)
S6Q258-CC258	6Q17091.D	04/28/23 22:29	n/a	Continuing cal 4
S6Q258-ICCB	6Q17092.D	04/28/23 22:44	n/a	Continuing Calibration Blank
OP96579-BS	6Q17093.D	04/28/23 22:58	OP96579	Blank Spike

Run Sequence Report

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q258	Method: EPA DRAFT 1633	Instrument ID: GCMS6Q
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Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
OP96579-LLBS	6Q17094.D	04/28/23 23:13	OP96579	Blank Spike
OP96579-MB	6Q17095.D	04/28/23 23:27	OP96579	Method Blank
ZZZZZZ	6Q17096.D	04/28/23 23:42	OP96579	(unrelated sample)
ZZZZZZ	6Q17097.D	04/28/23 23:56	OP96579	(unrelated sample)
ZZZZZZ	6Q17099.D	04/29/23 00:25	OP96579	(unrelated sample)
FC5240-5	6Q17100.D	04/29/23 00:40	OP96579	(used for QC only; not part of job FC5621)
S6Q258-CC258	6Q17103.D	04/29/23 01:23	n/a	Continuing cal 4
S6Q258-ICCB	6Q17104.D	04/29/23 01:38	n/a	Continuing Calibration Blank
ZZZZZZ	6Q17105.D	04/29/23 01:52	OP96579	(unrelated sample)
ZZZZZZ	6Q17107.D	04/29/23 02:21	OP96579	(unrelated sample)
ZZZZZZ	6Q17108.D	04/29/23 02:36	OP96579	(unrelated sample)
ZZZZZZ	6Q17109.D	04/29/23 02:50	OP96579	(unrelated sample)
ZZZZZZ	6Q17110.D	04/29/23 03:04	OP96579	(unrelated sample)
ZZZZZZ	6Q17111.D	04/29/23 03:19	OP96579	(unrelated sample)
ZZZZZZ	6Q17112.D	04/29/23 03:33	OP96579	(unrelated sample)
ZZZZZZ	6Q17113.D	04/29/23 03:48	OP96579	(unrelated sample)
ZZZZZZ	6Q17114.D	04/29/23 04:02	OP96579	(unrelated sample)
S6Q258-CC258	6Q17115.D	04/29/23 04:17	n/a	Continuing cal 4
S6Q258-CC258	6Q17116.D	04/29/23 04:31	n/a	Continuing cal 1.0LL
S6Q258-ICCB	6Q17117.D	04/29/23 04:46	n/a	Continuing Calibration Blank
ZZZZZZ	6Q17118.D	04/29/23 05:00	OP96491	(unrelated sample)
OP96566-BB	6Q17119.D	04/29/23 05:15	OP96566	Blank Spike
OP96566-LLBS	6Q17120.D	04/29/23 05:29	OP96566	Blank Spike
OP96566-MB	6Q17121.D	04/29/23 05:44	OP96566	Method Blank
ZZZZZZ	6Q17122.D	04/29/23 05:58	OP96566	(unrelated sample)
FC5200-2	6Q17123.D	04/29/23 06:13	OP96566	(used for QC only; not part of job FC5621)
OP96566-MS	6Q17124.D	04/29/23 06:27	OP96566	Matrix Spike
OP96566-MSD	6Q17125.D	04/29/23 06:42	OP96566	Matrix Spike Duplicate
ZZZZZZ	6Q17126.D	04/29/23 06:56	OP96566	(unrelated sample)
ZZZZZZ	6Q17127.D	04/29/23 07:11	OP96566	(unrelated sample)
S6Q258-CC258	6Q17128.D	04/29/23 07:25	n/a	Continuing cal 4
S6Q258-ICCB	6Q17129.D	04/29/23 07:40	n/a	Continuing Calibration Blank
ZZZZZZ	6Q17130.D	04/29/23 07:54	OP96566	(unrelated sample)
ZZZZZZ	6Q17131.D	04/29/23 08:09	OP96566	(unrelated sample)
ZZZZZZ	6Q17132.D	04/29/23 08:23	OP96566	(unrelated sample)
ZZZZZZ	6Q17133.D	04/29/23 08:38	OP96566	(unrelated sample)
ZZZZZZ	6Q17134.D	04/29/23 08:52	OP96566	(unrelated sample)
ZZZZZZ	6Q17135.D	04/29/23 09:07	OP96566	(unrelated sample)
ZZZZZZ	6Q17136.D	04/29/23 09:21	OP96566	(unrelated sample)
ZZZZZZ	6Q17137.D	04/29/23 09:35	OP96566	(unrelated sample)
ZZZZZZ	6Q17138.D	04/29/23 09:50	OP96566	(unrelated sample)
ZZZZZZ	6Q17139.D	04/29/23 10:04	OP96566	(unrelated sample)
S6Q258-CC258	6Q17140.D	04/29/23 10:19	n/a	Continuing cal 4
S6Q258-ICCB	6Q17141.D	04/29/23 10:33	n/a	Continuing Calibration Blank
ZZZZZZ	6Q17142.D	04/29/23 10:48	OP96566	(unrelated sample)
ZZZZZZ	6Q17143.D	04/29/23 11:02	OP96566	(unrelated sample)

Run Sequence Report

Job Number: FC5621
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q258	Method: EPA DRAFT 1633	Instrument ID: GCMS6Q
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Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
ZZZZZZ	6Q17144.D	04/29/23 11:17	OP96566	(unrelated sample)
ZZZZZZ	6Q17145.D	04/29/23 11:31	OP96566	(unrelated sample)
S6Q258-ECC258	6Q17146.D	04/29/23 11:46	n/a	Ending cal 4
S6Q258-ICCB	6Q17147.D	04/29/23 12:00	n/a	Continuing Calibration Blank

6.10.1

6

Run Sequence Report

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q261	Method: EPA DRAFT 1633	Instrument ID: GCMS6Q		
Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S6Q261-RT	6Q17288.D	05/02/23 10:51	n/a	Retention Time Marker
S6Q261-RT	6Q17289.D	05/02/23 11:05	n/a	Retention Time Marker
S6Q261-IBLK	6Q17291.D	05/02/23 11:34	n/a	Instrument Blank
S6Q261-IBLK	6Q17291.D	05/02/23 11:34	n/a	Instrument Blank
S6Q261-CC258	6Q17292.D	05/02/23 11:49	n/a	Continuing cal 4
S6Q261-CC258	6Q17293.D	05/02/23 12:03	n/a	Continuing cal 1.0LL
OP96630-BS	6Q17294.D	05/02/23 12:18	OP96630	Blank Spike
OP96630-LLBS	6Q17295.D	05/02/23 12:32	OP96630	Blank Spike
OP96630-MB	6Q17296.D	05/02/23 12:47	OP96630	Method Blank
ZZZZZZ	6Q17297.D	05/02/23 13:01	OP96630	(unrelated sample)
ZZZZZZ	6Q17298.D	05/02/23 13:16	OP96630	(unrelated sample)
JD64233-2A	6Q17299.D	05/02/23 13:30	OP96630	(used for QC only; not part of job FC5621)
OP96630-MS	6Q17300.D	05/02/23 13:45	OP96630	Matrix Spike
JD64233-3A	6Q17301.D	05/02/23 13:59	OP96630	(used for QC only; not part of job FC5621)
OP96630-DUP	6Q17302.D	05/02/23 14:14	OP96630	Duplicate
ZZZZZZ	6Q17303.D	05/02/23 14:28	OP96630	(unrelated sample)
S6Q261-CC258	6Q17304.D	05/02/23 14:43	n/a	Continuing cal 4
S6Q261-ICCB	6Q17305.D	05/02/23 14:57	n/a	Continuing Calibration Blank
ZZZZZZ	6Q17306.D	05/02/23 15:12	OP96630	(unrelated sample)
ZZZZZZ	6Q17307.D	05/02/23 15:26	OP96630	(unrelated sample)
ZZZZZZ	6Q17308.D	05/02/23 15:41	OP96630	(unrelated sample)
ZZZZZZ	6Q17309.D	05/02/23 15:55	OP96630	(unrelated sample)
ZZZZZZ	6Q17310.D	05/02/23 16:10	OP96630	(unrelated sample)
ZZZZZZ	6Q17311.D	05/02/23 16:24	OP96630	(unrelated sample)
ZZZZZZ	6Q17312.D	05/02/23 16:39	OP96630	(unrelated sample)
ZZZZZZ	6Q17313.D	05/02/23 16:53	OP96630	(unrelated sample)
ZZZZZZ	6Q17314.D	05/02/23 17:08	OP96630	(unrelated sample)
ZZZZZZ	6Q17315.D	05/02/23 17:22	OP96630	(unrelated sample)
S6Q261-CC258	6Q17316.D	05/02/23 17:37	n/a	Continuing cal 4
S6Q261-ICCB	6Q17317.D	05/02/23 17:51	n/a	Continuing Calibration Blank
ZZZZZZ	6Q17318.D	05/02/23 18:05	OP96579	(unrelated sample)
S6Q261-CC258	6Q17328.D	05/02/23 20:30	n/a	Continuing cal 4
S6Q261-ICCB	6Q17329.D	05/02/23 20:46	n/a	Continuing Calibration Blank
ZZZZZZ	6Q17330.D	05/02/23 21:00	OP96581	(unrelated sample)
OP96629-BS	6Q17331.D	05/02/23 21:15	OP96629	Blank Spike
OP96629-LLBS	6Q17332.D	05/02/23 21:29	OP96629	Blank Spike
OP96629-MB	6Q17333.D	05/02/23 21:44	OP96629	Method Blank
ZZZZZZ	6Q17334.D	05/02/23 21:58	OP96629	(unrelated sample)
ZZZZZZ	6Q17335.D	05/02/23 22:13	OP96629	(unrelated sample)
ZZZZZZ	6Q17336.D	05/02/23 22:27	OP96629	(unrelated sample)
ZZZZZZ	6Q17337.D	05/02/23 22:42	OP96629	(unrelated sample)
ZZZZZZ	6Q17338.D	05/02/23 22:56	OP96629	(unrelated sample)
ZZZZZZ	6Q17339.D	05/02/23 23:11	OP96629	(unrelated sample)
S6Q261-CC258	6Q17340.D	05/02/23 23:25	n/a	Continuing cal 4
S6Q261-CC258	6Q17341.D	05/02/23 23:40	n/a	Continuing cal 1.0LL
S6Q261-ICCB	6Q17342.D	05/02/23 23:54	n/a	Continuing Calibration Blank

Run Sequence Report

Job Number: FC5621
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q261	Method: EPA DRAFT 1633	Instrument ID: GCMS6Q
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Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
ZZZZZZ	6Q17343.D	05/03/23 00:09	OP96629	(unrelated sample)
ZZZZZZ	6Q17344.D	05/03/23 00:23	OP96629	(unrelated sample)
ZZZZZZ	6Q17345.D	05/03/23 00:38	OP96629	(unrelated sample)
FC5309-10	6Q17346.D	05/03/23 00:52	OP96629	(used for QC only; not part of job FC5621)
OP96629-MS	6Q17347.D	05/03/23 01:07	OP96629	Matrix Spike
OP96629-MSD	6Q17348.D	05/03/23 01:21	OP96629	Matrix Spike Duplicate
ZZZZZZ	6Q17349.D	05/03/23 01:36	OP96629	(unrelated sample)
ZZZZZZ	6Q17350.D	05/03/23 01:50	OP96629	(unrelated sample)
ZZZZZZ	6Q17351.D	05/03/23 02:05	OP96629	(unrelated sample)
S6Q261-CC258	6Q17352.D	05/03/23 02:19	n/a	Continuing cal 4
ZZZZZZ	6Q17354.D	05/03/23 02:48	OP96629	(unrelated sample)
ZZZZZZ	6Q17355.D	05/03/23 03:02	OP96629	(unrelated sample)
ZZZZZZ	6Q17356.D	05/03/23 03:17	OP96629	(unrelated sample)
ZZZZZZ	6Q17357.D	05/03/23 03:31	OP96629	(unrelated sample)
ZZZZZZ	6Q17358.D	05/03/23 03:46	OP96629	(unrelated sample)
S6Q261-CC258	6Q17359.D	05/03/23 04:00	n/a	Continuing cal 4
S6Q261-ICCB	6Q17360.D	05/03/23 04:15	n/a	Continuing Calibration Blank
OP96627-BS	6Q17361.D	05/03/23 04:29	OP96627	Blank Spike
OP96627-LLBS	6Q17362.D	05/03/23 04:44	OP96627	Blank Spike
OP96627-MB	6Q17363.D	05/03/23 04:58	OP96627	Method Blank
ZZZZZZ	6Q17364.D	05/03/23 05:13	OP96627	(unrelated sample)
ZZZZZZ	6Q17365.D	05/03/23 05:27	OP96627	(unrelated sample)
ZZZZZZ	6Q17366.D	05/03/23 05:42	OP96627	(unrelated sample)
ZZZZZZ	6Q17367.D	05/03/23 05:56	OP96627	(unrelated sample)
FC5295-5	6Q17368.D	05/03/23 06:11	OP96627	(used for QC only; not part of job FC5621)
OP96627-MS	6Q17369.D	05/03/23 06:25	OP96627	Matrix Spike
S6Q261-CC258	6Q17370.D	05/03/23 06:40	n/a	Continuing cal 4
S6Q261-ICCB	6Q17371.D	05/03/23 06:54	n/a	Continuing Calibration Blank
FC5295-6	6Q17372.D	05/03/23 07:09	OP96627	(used for QC only; not part of job FC5621)
OP96627-DUP	6Q17373.D	05/03/23 07:23	OP96627	Duplicate
ZZZZZZ	6Q17374.D	05/03/23 07:38	OP96627	(unrelated sample)
ZZZZZZ	6Q17375.D	05/03/23 07:52	OP96627	(unrelated sample)
ZZZZZZ	6Q17376.D	05/03/23 08:07	OP96627	(unrelated sample)
ZZZZZZ	6Q17377.D	05/03/23 08:21	OP96627	(unrelated sample)
ZZZZZZ	6Q17378.D	05/03/23 08:36	OP96627	(unrelated sample)
ZZZZZZ	6Q17379.D	05/03/23 08:50	OP96627	(unrelated sample)
ZZZZZZ	6Q17380.D	05/03/23 09:05	OP96627	(unrelated sample)
ZZZZZZ	6Q17381.D	05/03/23 09:19	OP96627	(unrelated sample)
S6Q261-CC258	6Q17382.D	05/03/23 09:33	n/a	Continuing cal 4
S6Q261-ICCB	6Q17383.D	05/03/23 09:48	n/a	Continuing Calibration Blank
ZZZZZZ	6Q17384.D	05/03/23 10:02	OP96627	(unrelated sample)
ZZZZZZ	6Q17385.D	05/03/23 10:17	OP96627	(unrelated sample)
ZZZZZZ	6Q17386.D	05/03/23 10:31	OP96627	(unrelated sample)
ZZZZZZ	6Q17387.D	05/03/23 10:46	OP96627	(unrelated sample)
FC5621-1	6Q17388.D	05/03/23 11:00	OP96627	AF-RHMW225401-WGN01B-2304W4
S6Q261-ECC258	6Q17389.D	05/03/23 11:15	n/a	Ending cal 4

6:10.2

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Run Sequence Report

Job Number: FC5621
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q261	Method: EPA DRAFT 1633	Instrument ID: GCMS6Q
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Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S6Q261-ICCB	6Q17390.D	05/03/23 11:29	n/a	Continuing Calibration Blank

6.10.2

6

MS Semi-volatiles

Raw Data

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17388.d
Operator : marthav
Acq. Method : 1633full.m
Acq. Date-Time : 5/3/2023 11:00:51 AM
Sample Name : FC5621-1
Vial : P4-B6
DA Method File : 1633_042823_S6Q258.quantmethod.xml
Batch Name : s6q261.batch.bin
Sample Information : OP96627,S6Q261,570,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.910	216.8 -> 171.9	169465	10.00 µg/L	0.000
M5-PFPeA	4.270	268.3 -> 223.0	57027	5.00 µg/L	0.000
M5-PFHxA	5.468	318.0 -> 273.0	64498	2.50 µg/L	-0.012
M4-PFHpA	6.431	367.1 -> 322.0	56075	2.50 µg/L	0.000
M8-PFOA	7.074	421.1 -> 376.0	78702	2.50 µg/L	0.000
M9-PFNA	7.594	472.1 -> 427.0	29227	1.25 µg/L	0.000
M6-PFDA	8.076	519.1 -> 474.1	21005	1.25 µg/L	0.000
M7-PFUnDA	8.530	570.0 -> 525.1	24636	1.25 µg/L	0.000
M2-PFDoDA	8.960	615.1 -> 570.0	22039	1.25 µg/L	0.000
M2-PFTeDA	9.677	715.2 -> 670.0	12042	1.25 µg/L	-0.012
M8-FOSA	9.623	506.1 -> 77.8	12946	2.50 µg/L	0.000
M3-PFBS	5.398	302.1 -> 79.9	20342	2.50 µg/L	-0.012
M3-PFHxS	7.179	402.1 -> 79.9	12546	2.50 µg/L	0.000
M8-PFOS	8.226	507.1 -> 79.9	10038	2.50 µg/L	-0.012
M2-4:2FTS	5.144	329.1 -> 80.9	2063	5.00 µg/L	-0.012
M2-6:2FTS	6.851	429.1 -> 80.9	2633	5.00 µg/L	0.000
M2-8:2FTS	7.864	529.1 -> 80.9	2570	5.00 µg/L	-0.012
M3-MeFOSAA	8.134	573.2 -> 419.0	23146	5.00 µg/L	0.000
M3-HFPO-DA	5.845	286.9 -> 168.9	40905	10.00 µg/L	0.000
M5-EtFOSAA	8.330	589.2 -> 419.0	18116	5.00 µg/L	0.000
M7-MeFOSE	10.647	623.2 -> 58.9	28929	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	34088	25.00 µg/L	0.000
M5-EtFOSA	10.973	531.1 -> 219.0	3760	2.50 µg/L	0.000
M3-MeFOSA	10.741	515.0 -> 219.0	3502	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	13650	2.50 µg/L	-0.012
13C3-PFBA	2.914	216.0 -> 172.0	68935	5.00 µg/L	0.012
18O2-PFHxS	7.177	403.0 -> 83.9	8850	2.50 µg/L	0.000
13C4-PFOA	7.075	417.1 -> 372.0	86036	2.50 µg/L	0.000
13C2-PFDA	8.076	515.1 -> 470.1	22604	1.25 µg/L	0.000
13C5-PFNA	7.595	468.0 -> 423.0	26599	1.25 µg/L	0.000
13C2-PFHxA	5.469	315.1 -> 270.0	51832	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.144	329.1 -> 80.9	2063	5.07 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.4%		
13C2-6:2FTS	6.851	429.1 -> 80.9	2633	5.33 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.7%		
13C2-8:2FTS	7.864	529.1 -> 80.9	2570	4.84 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.8%		
13C2-PFDoDA	8.960	615.1 -> 570.0	22039	1.17 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 93.7%		
13C2-PFTeDA	9.677	715.2 -> 670.0	12042	0.95 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 75.7%		
13C3-PFBS	5.398	302.1 -> 79.9	20342	2.44 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.7%		
13C3-PFHxS	7.179	402.1 -> 79.9	12546	2.66 µg/L	0.000

7.1.1
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.5%	
13C4-PFBA	2.910	216.8 -> 171.9	169465	10.64 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.4%	
13C4-PFHpA	6.431	367.1 -> 322.0	56075	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.8%	
13C5-PFHxA	5.468	318.0 -> 273.0	64498	2.58 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.2%	
13C5-PFPeA	4.270	268.3 -> 223.0	57027	4.93 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.5%	
13C6-PFDA	8.076	519.1 -> 474.1	21005	1.41 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 112.7%	
13C7-PFUnDA	8.530	570.0 -> 525.1	24636	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.3%	
13C8-FOSA	9.623	506.1 -> 77.8	12946	1.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 57.4%	
13C8-PFOA	7.074	421.1 -> 376.0	78702	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.8%	
13C8-PFOS	8.226	507.1 -> 79.9	10038	2.44 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.6%	
13C9-PFNA	7.594	472.1 -> 427.0	29227	1.44 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 115.3%	
d3-MeFOSAA	8.134	573.2 -> 419.0	23146	5.69 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 113.8%	
13C3-HFPO-DA	5.845	286.9 -> 168.9	40905	11.15 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 111.5%	
d3-MeFOSA	10.741	515.0 -> 219.0	3502	1.03 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 41.1%	
d5-EtFOSAA	8.330	589.2 -> 419.0	18116	5.36 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.2%	
d7-MeFOSE	10.647	623.2 -> 58.9	28929	8.07 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 32.3%	
d9-EtFOSE	10.894	639.2 -> 58.9	34088	7.79 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 31.1%	
d5-EtFOSA	10.973	531.1 -> 219.0	3760	0.90 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 35.9%	

Target Compounds

Compound	RT	Transition	Response	Conc. Units	QValue
4:2FTS	-	327.1 -> 307.0	-	N.D.	
		327.1 -> 80.9			
6:2FTS	-	427.1 -> 407.0	-	N.D.	
		427.1 -> 80.9			
8:2FTS	-	527.1 -> 507.0	-	N.D.	
		527.1 -> 80.8			
EtFOSAA	-	584.2 -> 419.1	-	N.D.	
		584.2 -> 526.0			
FOSA	-	498.1 -> 77.9	-	N.D.	
		498.1 -> 478.0			
MeFOSAA	-	570.1 -> 419.0	-	N.D.	
		570.1 -> 483.0			
PFBA	-	212.8 -> 168.9	-	N.D.	
PFBS	-	298.7 -> 79.9	-	N.D.	
		298.7 -> 98.8			
PFDA	8.670	512.9 -> 469.0	0	µg/L m	1
		512.9 -> 219.0	0		
PFDODA	-	613.1 -> 569.0	-	N.D.	
		613.1 -> 319.0			
PFDS	-	599.0 -> 79.9	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)	
PFHpA	6.420	599.0 -> 98.8					
		363.1 -> 319.0	2198	0.08	µg/L	m	94
PFHpS	-	363.1 -> 169.0	399				
		449.0 -> 79.9	-	N.D.			
PFHxA	5.483	449.0 -> 98.9					
		313.0 -> 269.0	2508	0.10	µg/L		99
PFHxS	7.180	313.0 -> 118.9	130				
		398.7 -> 79.9	791	0.12	µg/L	m	97
PFNA	8.168	398.7 -> 98.9	415				
		463.0 -> 419.0	0		µg/L	m	1
PFNS	-	463.0 -> 219.0	0				
		548.8 -> 79.9	-	N.D.			
PFOA	7.076	548.8 -> 98.9					
		413.0 -> 369.0	5085	0.20	µg/L	m	87
PFOS	8.215	413.0 -> 169.0	628				
		498.9 -> 79.9	593	0.12	µg/L	m	90
PFPeA	-	498.9 -> 98.8	284				
		263.0 -> 219.0	-	N.D.			
PFPeS	-	349.1 -> 79.9	-	N.D.			
		349.1 -> 98.9					
PFTeDA	-	713.1 -> 669.0	-	N.D.			
		713.1 -> 168.9					
PFTrDA	9.904	663.0 -> 619.0	0		µg/L	m	1
		663.0 -> 168.9	0				
PFUnDA	9.127	563.1 -> 519.0	0		µg/L	m	1
		563.1 -> 269.1	0				
11CI-PF3OUdS	-	630.9 -> 450.9	-	N.D.			
		632.9 -> 452.9					
9CI-PF3ONS	-	530.8 -> 351.0	-	N.D.			
		532.8 -> 353.0					
ADONA	-	376.9 -> 250.9	-	N.D.			
		376.9 -> 84.8					
HFPO-DA	-	284.9 -> 168.9	-	N.D.			
		284.9 -> 184.9					
3:3FTCA	-	241.0 -> 177.0	-	N.D.			
		241.0 -> 117.0					
5:3FTCA	-	341.0 -> 237.1	-	N.D.			
		341.0 -> 217.0					
7:3FTCA	-	441.0 -> 316.9	-	N.D.			
		441.0 -> 336.9					
EtFOSA	-	526.0 -> 219.0	-	N.D.			
		526.0 -> 169.0					
EtFOSE	-	630.0 -> 58.9	-	N.D.			
		511.9 -> 219.0	-	N.D.			
MeFOSA	-	511.9 -> 169.0					
		616.1 -> 58.9	-	N.D.			
MeFOSE	-	699.1 -> 79.9	-	N.D.			
		699.1 -> 98.8					
PFDoDS	-	295.0 -> 201.0	-	N.D.			
		295.0 -> 84.9					
NFDHA	-	279.0 -> 85.1	-	N.D.			
		229.0 -> 84.9	-	N.D.			
PFMBA	-	314.8 -> 134.9	-	N.D.			
		314.8 -> 82.9					
PFMBA	-	279.0 -> 85.1	-	N.D.			
		229.0 -> 84.9	-	N.D.			
PFMPA	-	314.8 -> 134.9	-	N.D.			
		314.8 -> 82.9					
PFEESA	-	279.0 -> 85.1	-	N.D.			
		229.0 -> 84.9	-	N.D.			

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

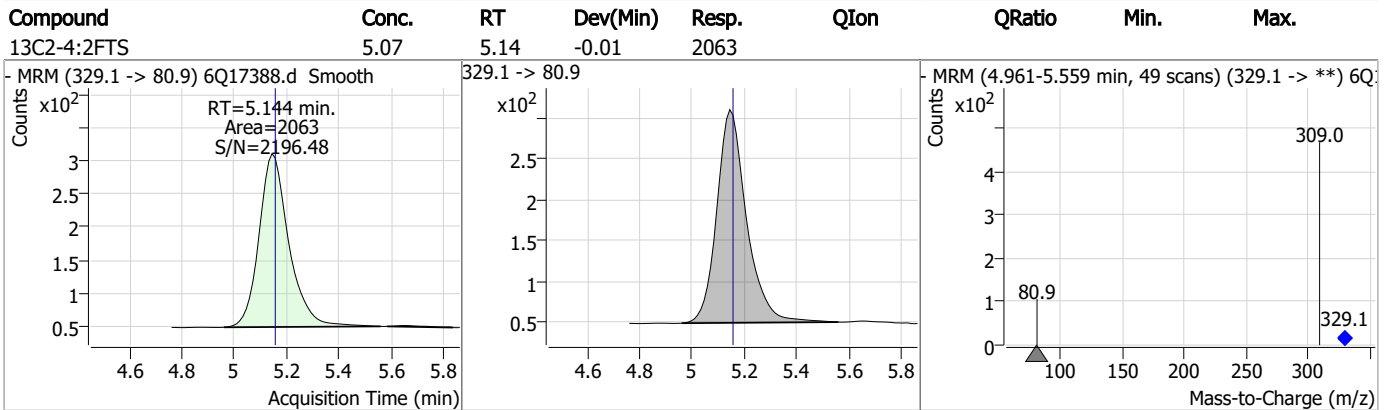
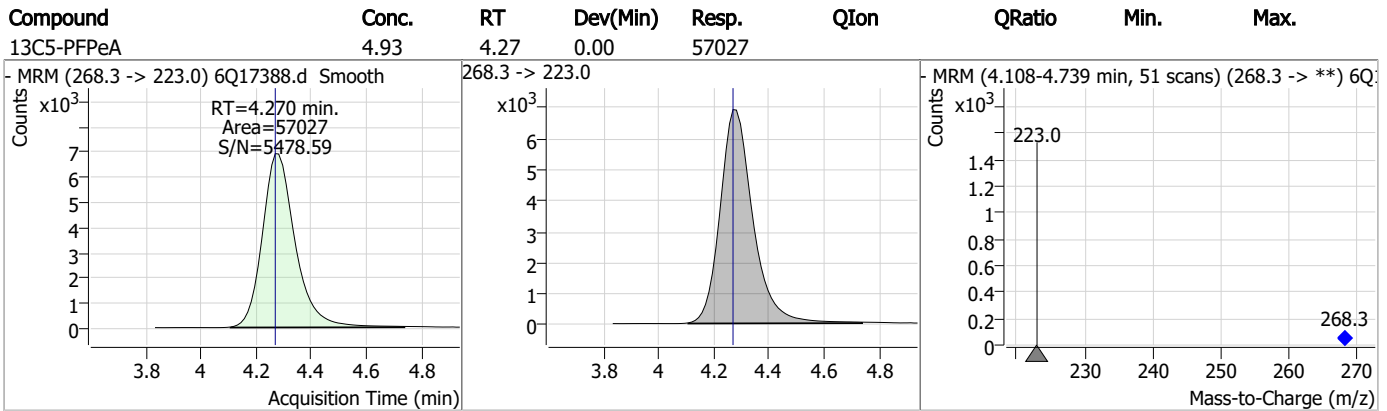
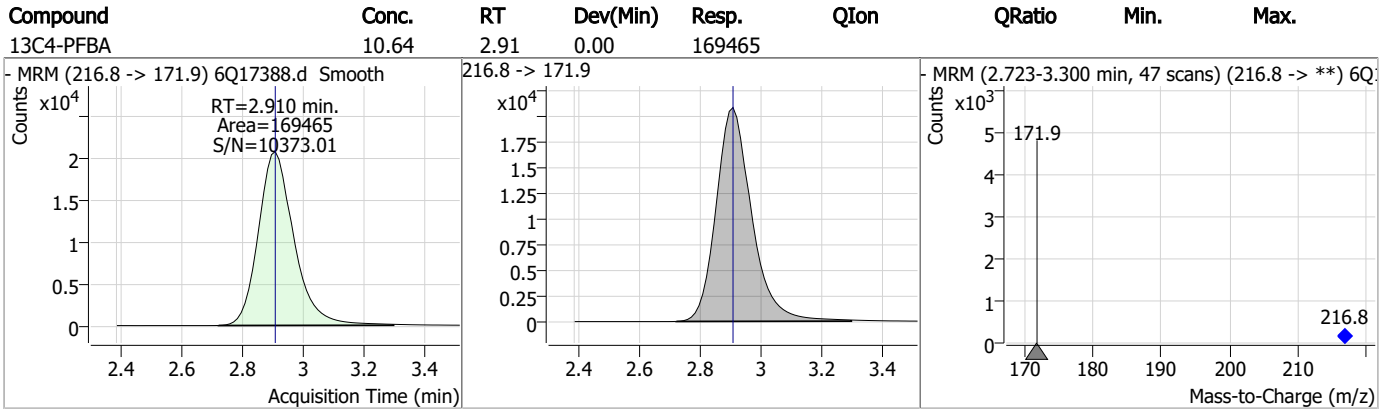
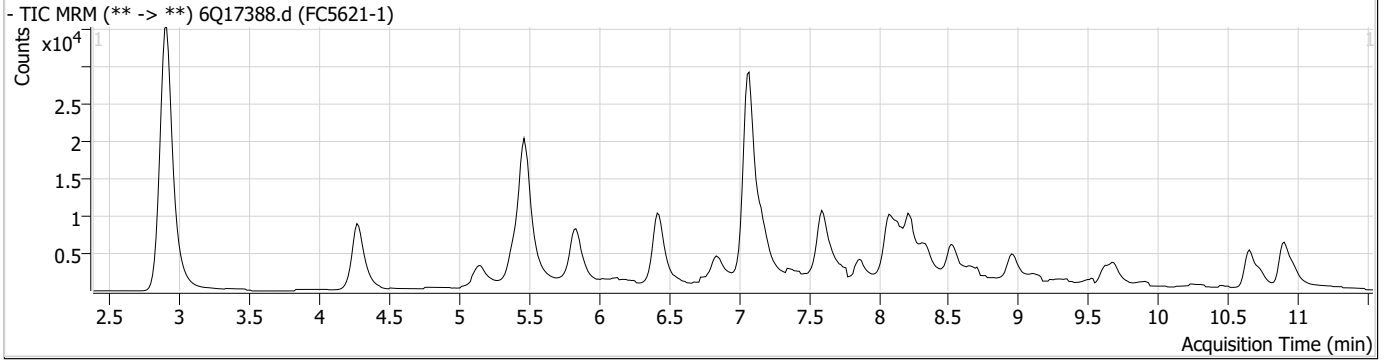
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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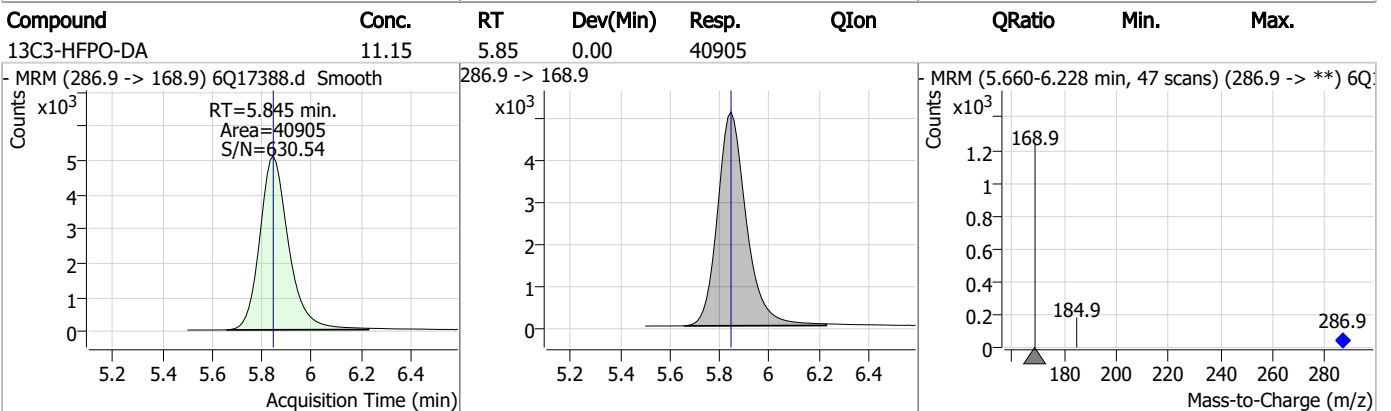
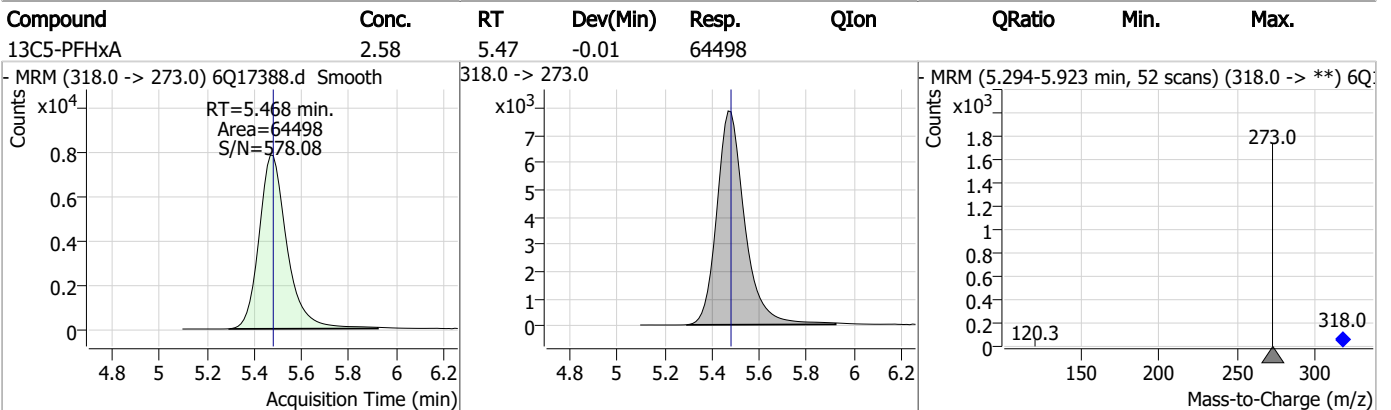
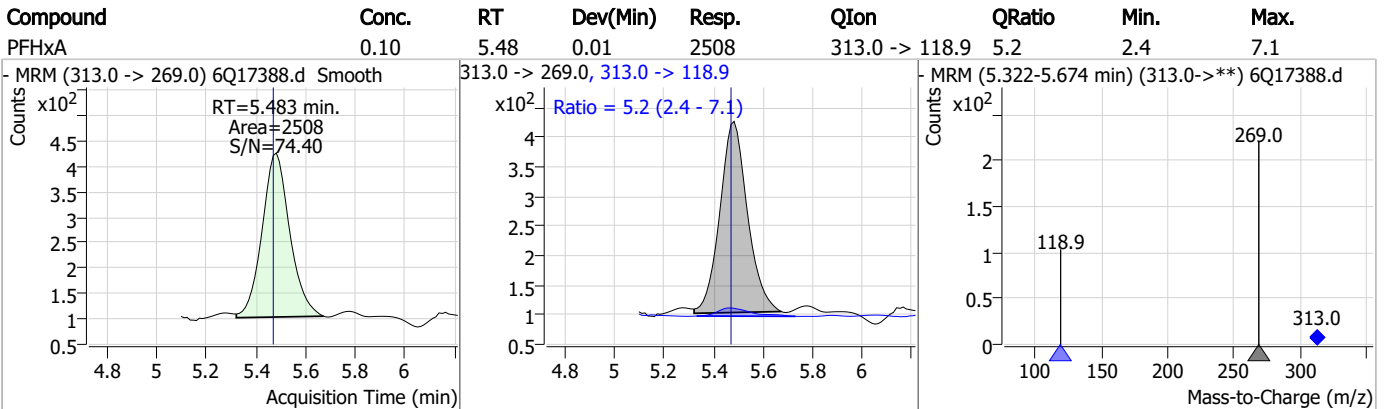
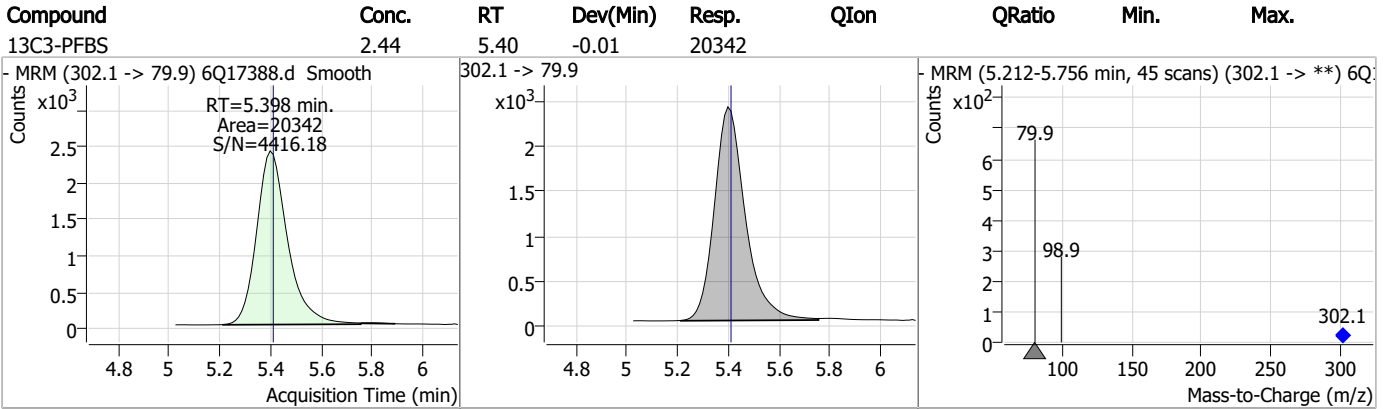
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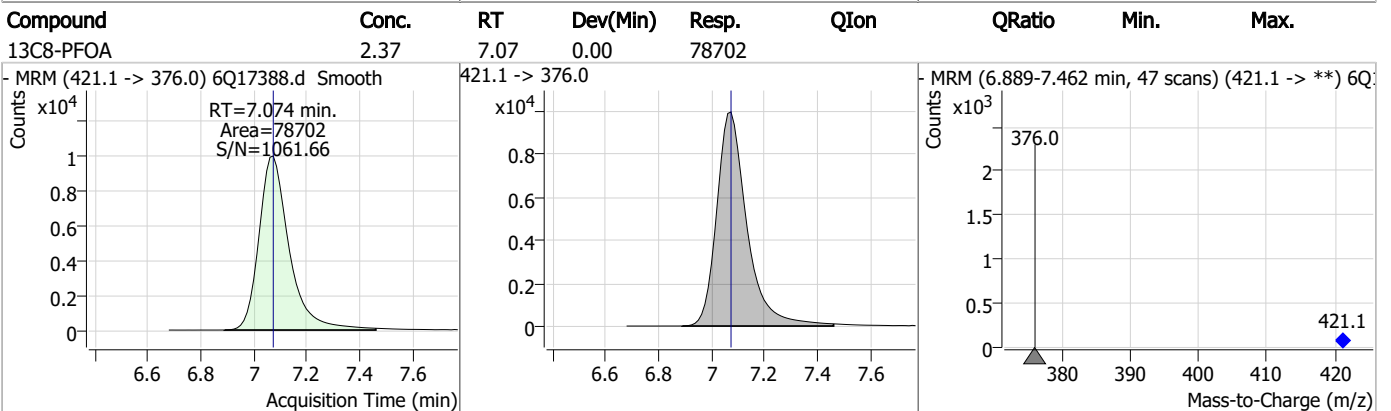
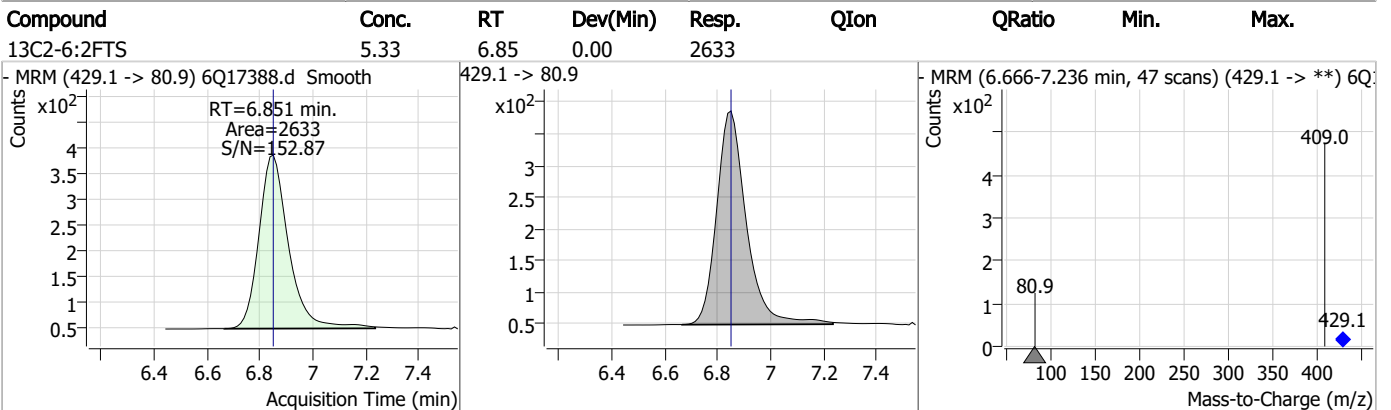
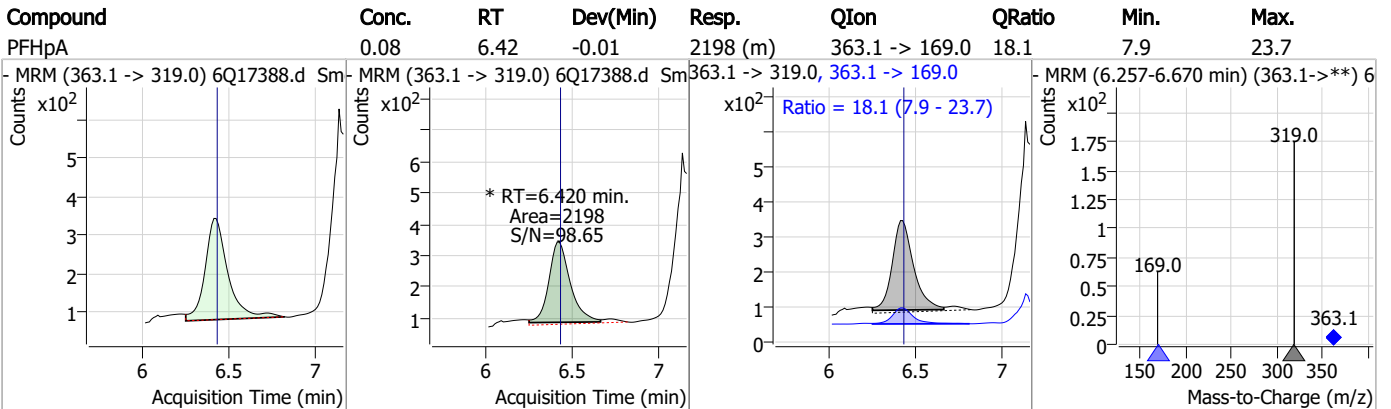
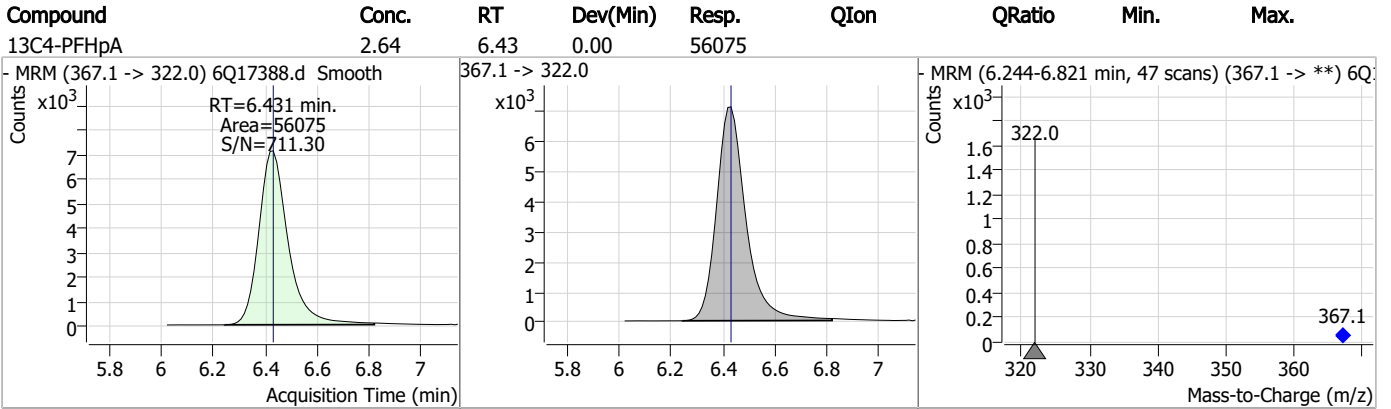
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

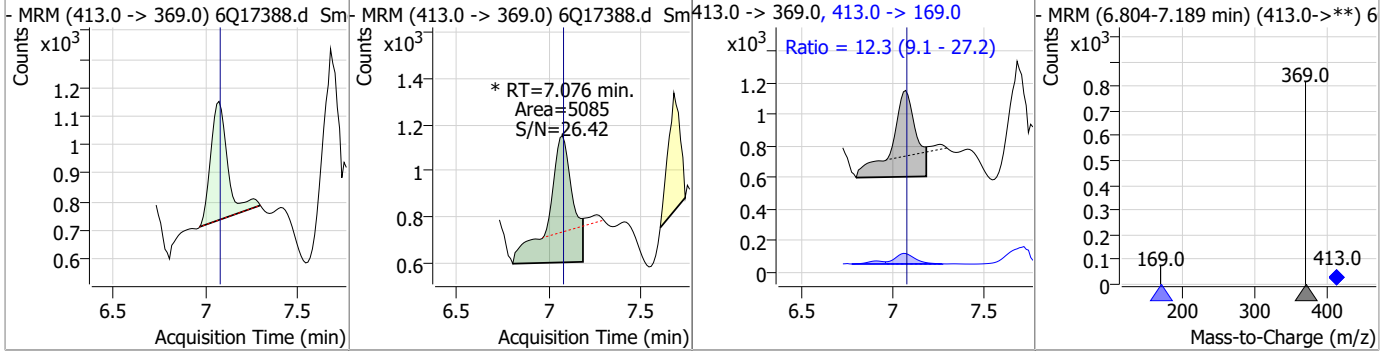


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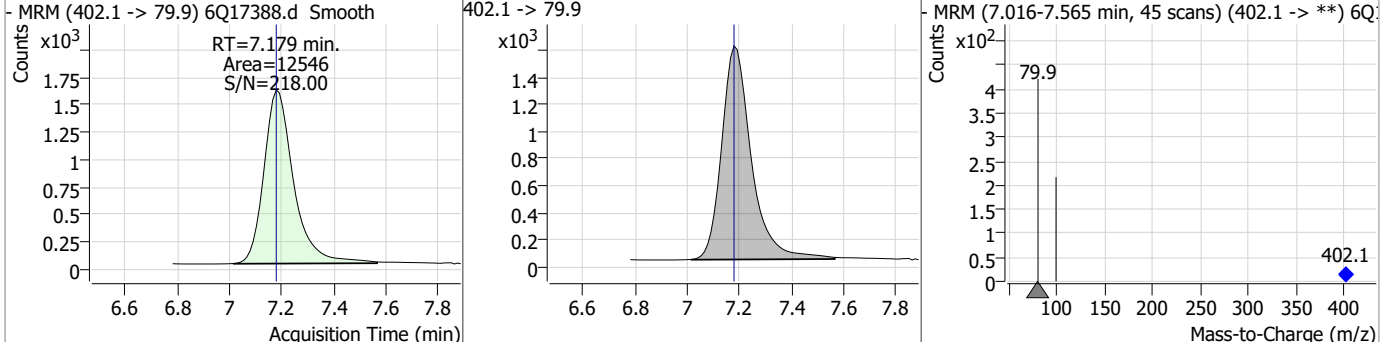


Perfluorinated Compounds by LC/MS/MS

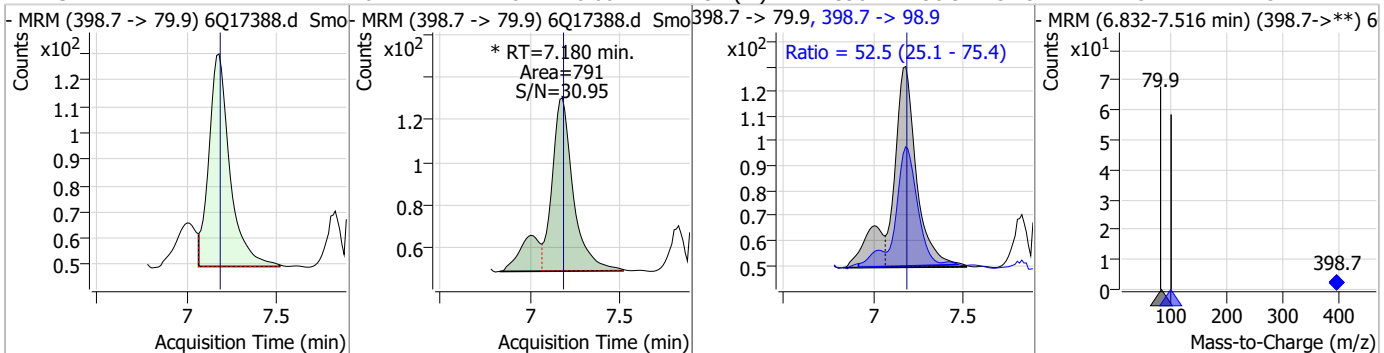
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.20	7.08	0.00	5085 (m)	413.0 -> 169.0	12.3	9.1	27.2



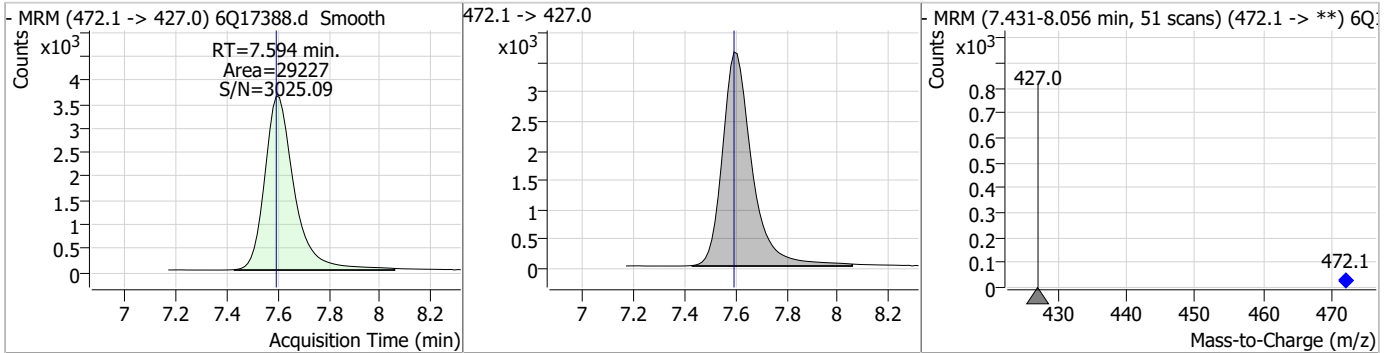
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.66	7.18	0.00	12546				



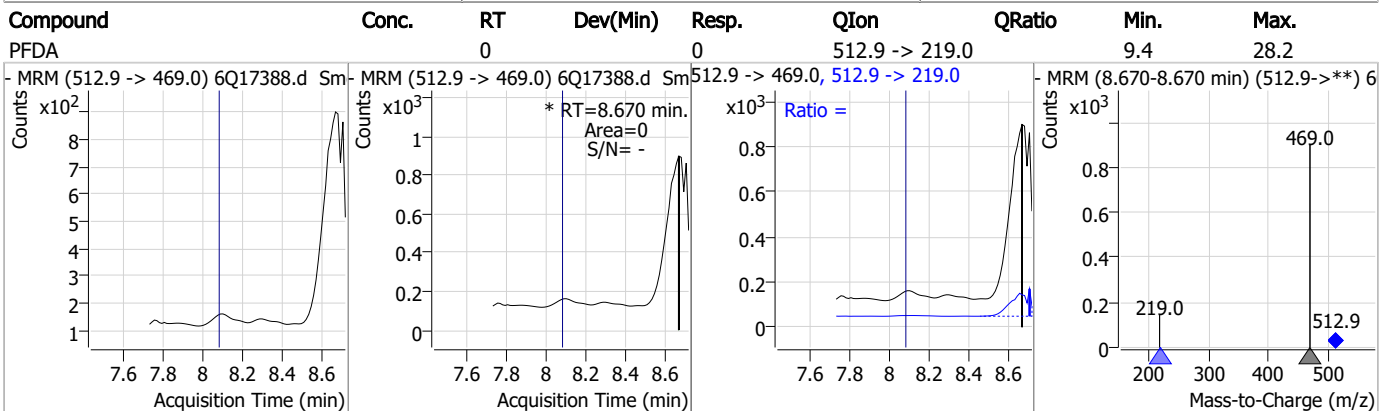
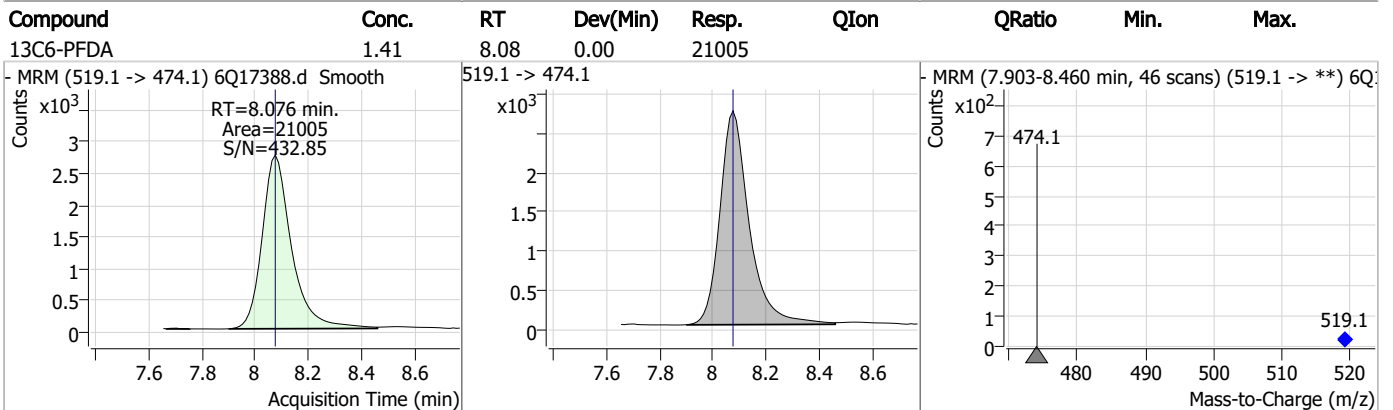
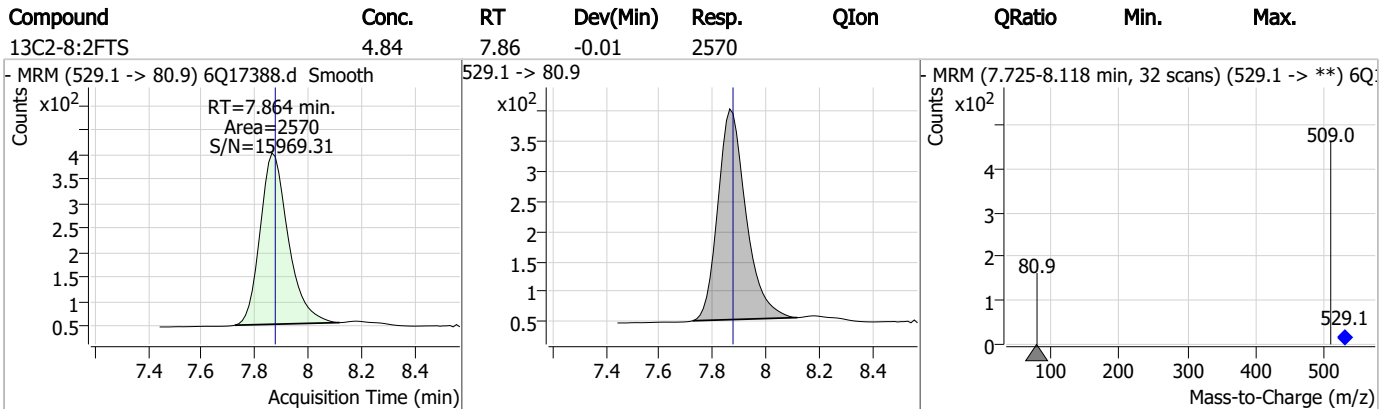
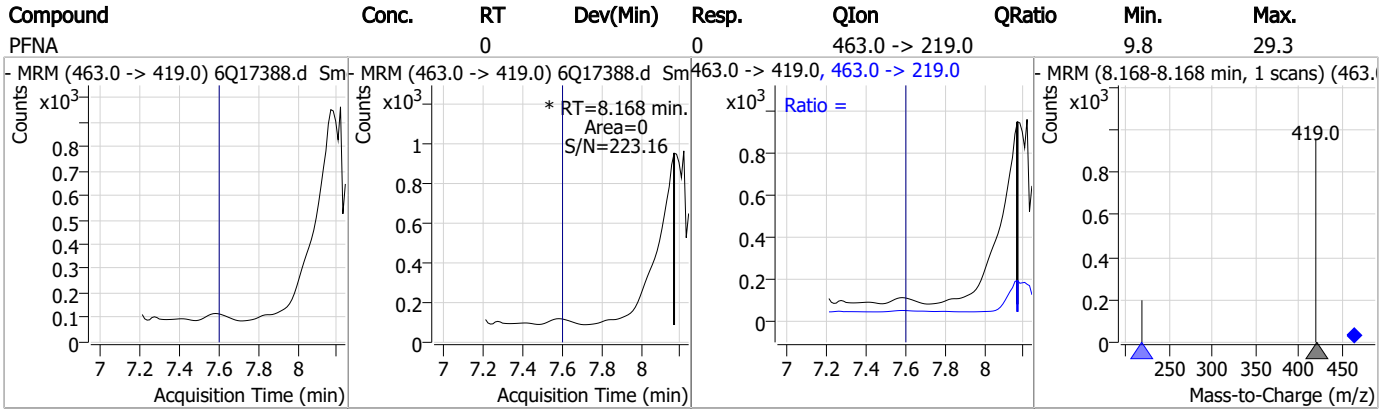
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.12	7.18	0.00	791 (m)	398.7 -> 98.9	52.5	25.1	75.4



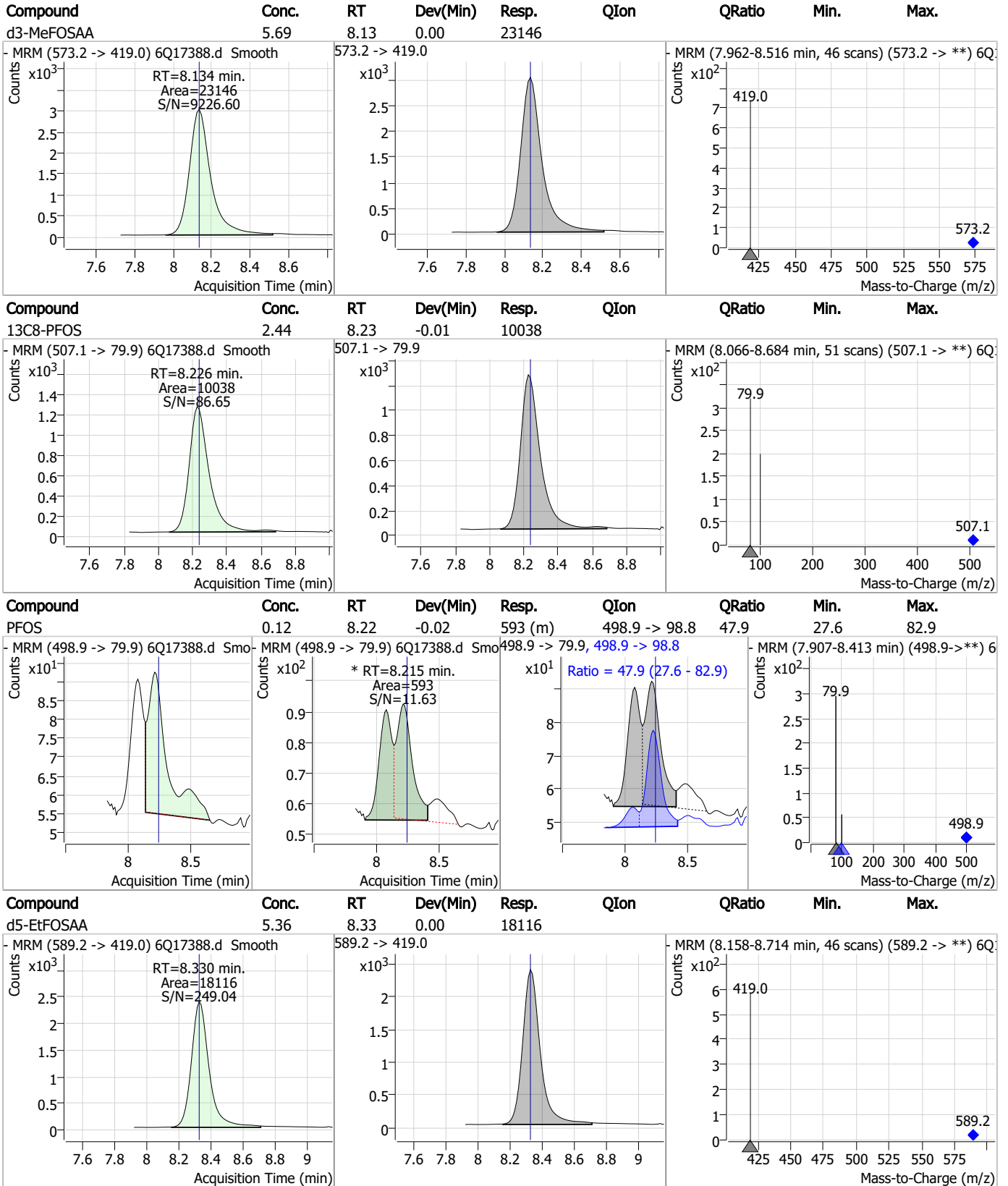
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.44	7.59	0.00	29227				



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

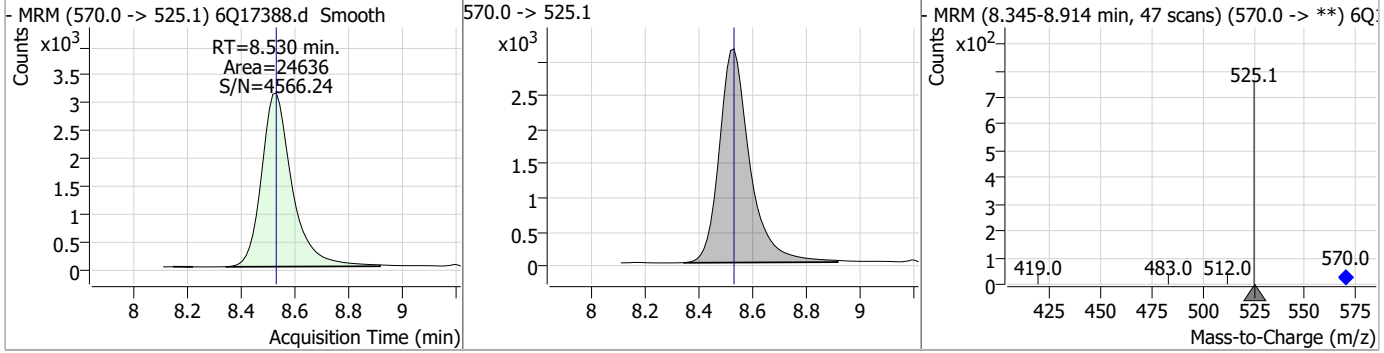


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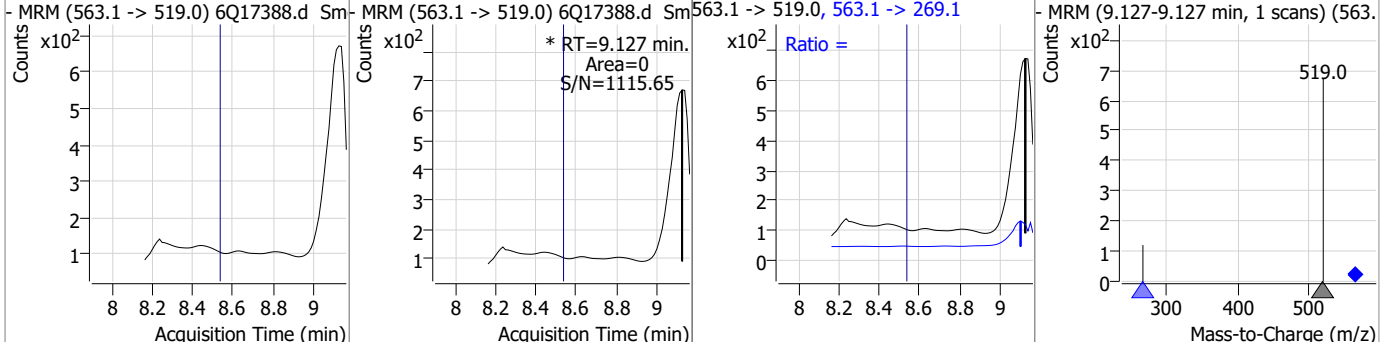


Perfluorinated Compounds by LC/MS/MS

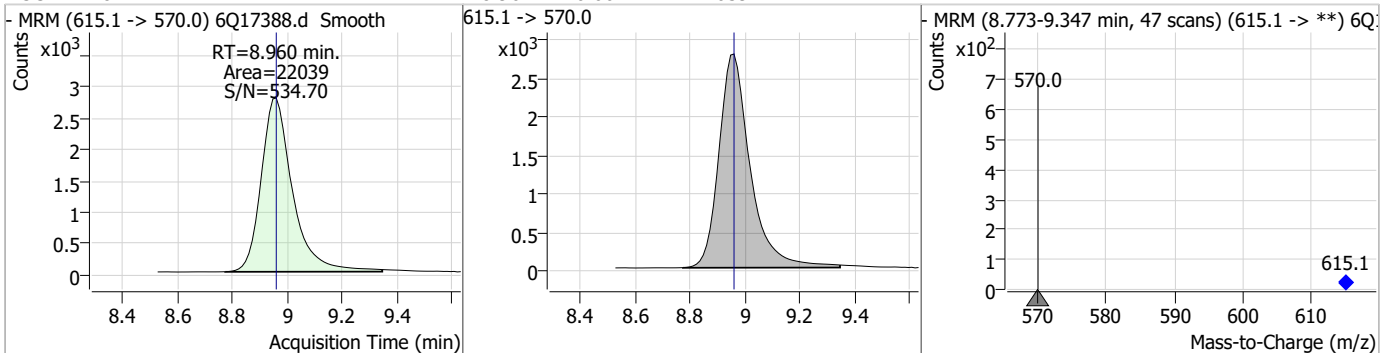
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.29	8.53	0.00	24636				



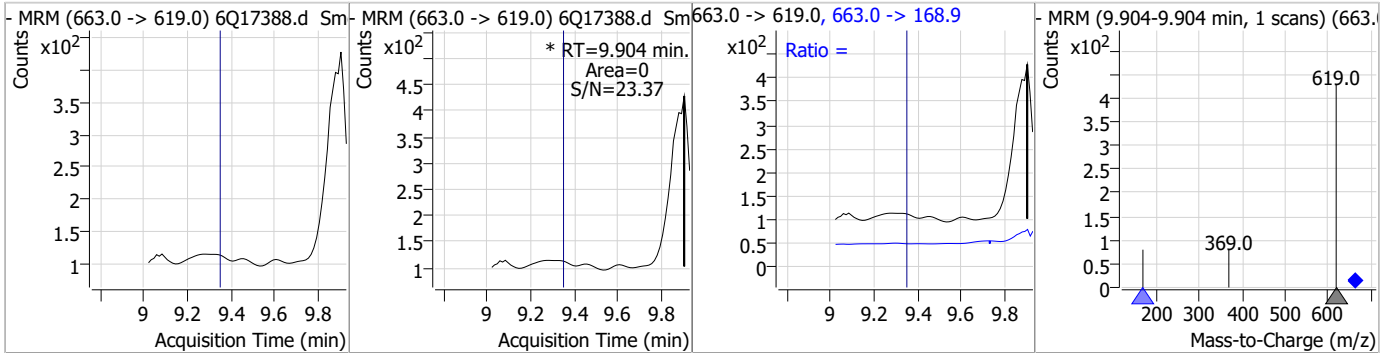
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0	0	0	0	563.1 -> 269.1		9.2	27.7



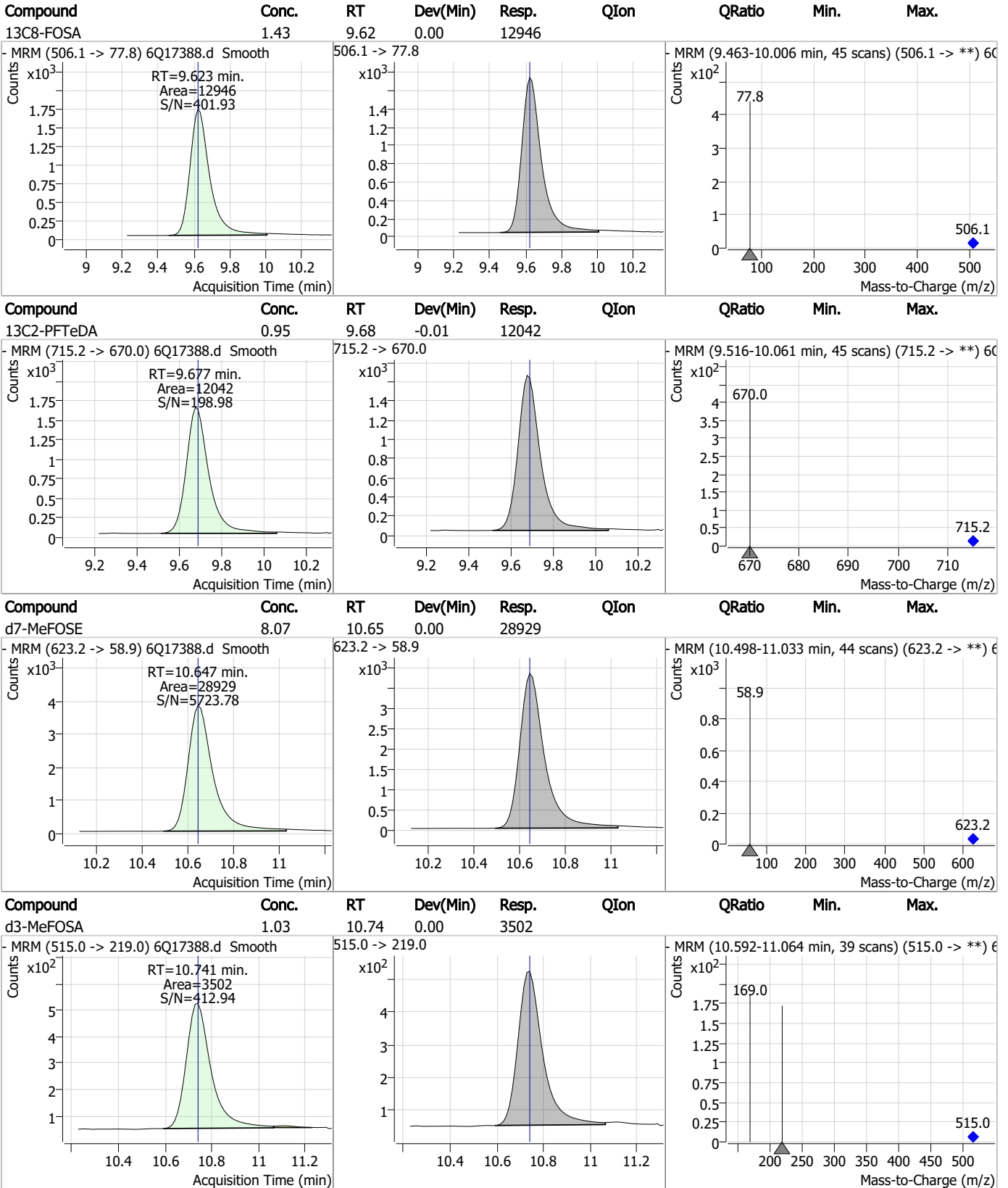
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.17	8.96	0.00	22039				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0	0	0	0	663.0 -> 168.9		4.6	13.7

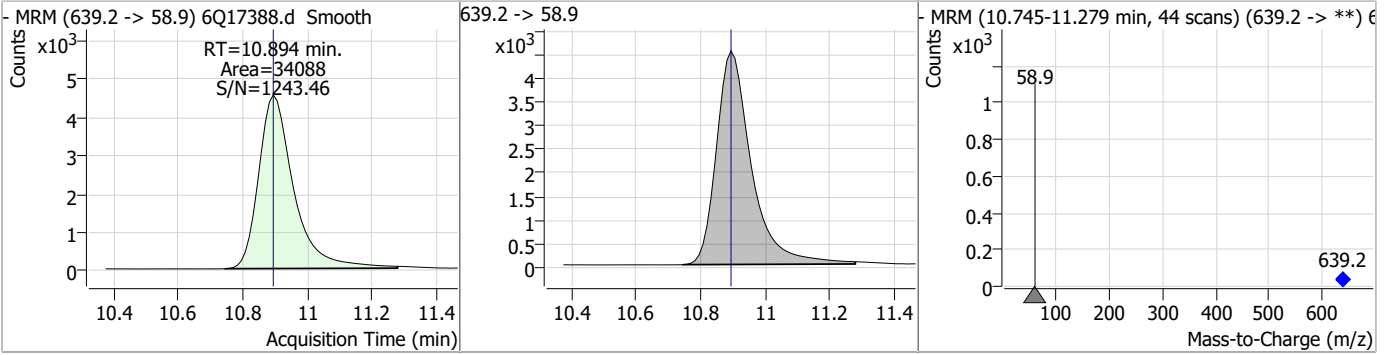


Perfluorinated Compounds by LC/MS/MS

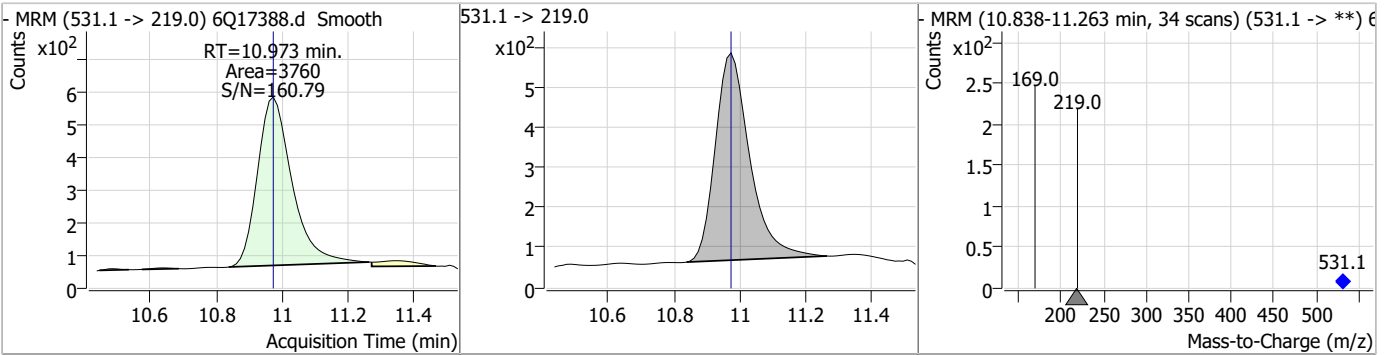


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	7.79	10.89	0.00	34088				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOFA	0.90	10.97	0.00	3760				



7.1.1

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Manual Integration Approval Summary

Sample Number: FC5621-1 Method: EPA DRAFT 1633
Lab FileID: 6Q17388.D Analyst approved: 05/03/23 14:27 Martha Valls
Injection Time: 05/03/23 11:00 Supervisor approved: 05/03/23 19:48 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoroheptanoic acid	375-85-9		6.42	Split peak
Perfluorooctanoic acid	335-67-1		7.08	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.21	Split peak

7.1.1.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17291.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/2/2023 11:34:52 AM
 Sample Name : iblk
 Vial : P1-A1
 DA Method File : 1633_042823_S6Q258.quantmethod.xml
 Batch Name : s6q261.batch.bin
 Sample Information : OP96630,S6Q261,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.910	216.8 -> 171.9	178983	10.00 µg/L	0.000
M5-PFPeA	4.283	268.3 -> 223.0	58850	5.00 µg/L	0.012
M5-PFHxA	5.480	318.0 -> 273.0	64915	2.50 µg/L	0.000
M4-PFHpA	6.431	367.1 -> 322.0	57083	2.50 µg/L	0.000
M8-PFOA	7.074	421.1 -> 376.0	79364	2.50 µg/L	0.000
M9-PFNA	7.607	472.1 -> 427.0	25424	1.25 µg/L	0.012
M6-PFDA	8.076	519.1 -> 474.1	20452	1.25 µg/L	0.000
M7-PFUnDA	8.530	570.0 -> 525.1	26266	1.25 µg/L	0.000
M2-PFDoDA	8.960	615.1 -> 570.0	23902	1.25 µg/L	0.000
M2-PFTeDA	9.689	715.2 -> 670.0	16700	1.25 µg/L	0.000
M8-FOSA	9.623	506.1 -> 77.8	24207	2.50 µg/L	0.000
M3-PFBS	5.411	302.1 -> 79.9	21012	2.50 µg/L	0.000
M3-PFHxS	7.179	402.1 -> 79.9	12105	2.50 µg/L	0.000
M8-PFOS	8.239	507.1 -> 79.9	10991	2.50 µg/L	0.000
M2-4:2FTS	5.144	329.1 -> 80.9	2061	5.00 µg/L	-0.012
M2-6:2FTS	6.839	429.1 -> 80.9	2567	5.00 µg/L	-0.012
M2-8:2FTS	7.877	529.1 -> 80.9	2567	5.00 µg/L	0.000
M3-MeFOSAA	8.134	573.2 -> 419.0	23604	5.00 µg/L	0.000
M3-HFPO-DA	5.845	286.9 -> 168.9	39788	10.00 µg/L	0.000
M5-EtFOSAA	8.330	589.2 -> 419.0	18939	5.00 µg/L	0.000
M7-MeFOSE	10.647	623.2 -> 58.9	93406	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	112543	25.00 µg/L	0.000
M5-EtFOSA	10.973	531.1 -> 219.0	10863	2.50 µg/L	0.000
M3-MeFOSA	10.741	515.0 -> 219.0	8917	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	15095	2.50 µg/L	-0.012
13C3-PFBA	2.914	216.0 -> 172.0	76792	5.00 µg/L	0.012
18O2-PFHxS	7.177	403.0 -> 83.9	9084	2.50 µg/L	0.000
13C4-PFOA	7.075	417.1 -> 372.0	83523	2.50 µg/L	0.000
13C2-PFDA	8.076	515.1 -> 470.1	24162	1.25 µg/L	0.000
13C5-PFNA	7.595	468.0 -> 423.0	27993	1.25 µg/L	0.000
13C2-PFHxA	5.482	315.1 -> 270.0	54426	2.50 µg/L	0.012
System Monitoring Compounds					
13C2-4:2FTS	5.144	329.1 -> 80.9	2061	4.94 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.7%		
13C2-6:2FTS	6.839	429.1 -> 80.9	2567	5.06 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.3%		
13C2-8:2FTS	7.877	529.1 -> 80.9	2567	4.71 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.2%		
13C2-PFDoDA	8.960	615.1 -> 570.0	23902	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.1%		
13C2-PFTeDA	9.689	715.2 -> 670.0	16700	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.2%		
13C3-PFBS	5.411	302.1 -> 79.9	21012	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.4%		
13C3-PFHxS	7.179	402.1 -> 79.9	12105	2.50 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C4-PFBA	2.910	216.8 -> 171.9	178983	10.09 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C4-PFHpA	6.431	367.1 -> 322.0	57083	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C5-PFHxA	5.480	318.0 -> 273.0	64915	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.9%	
13C5-PFPeA	4.283	268.3 -> 223.0	58850	4.84 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.8%	
13C6-PFDA	8.076	519.1 -> 474.1	20452	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C7-PFUnDA	8.530	570.0 -> 525.1	26266	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.0%	
13C8-FOSA	9.623	506.1 -> 77.8	24207	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.0%	
13C8-PFOA	7.074	421.1 -> 376.0	79364	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.5%	
13C8-PFOS	8.239	507.1 -> 79.9	10991	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.7%	
13C9-PFNA	7.607	472.1 -> 427.0	25424	1.19 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.3%	
d3-MeFOSAA	8.134	573.2 -> 419.0	23604	5.25 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.9%	
13C3-HFPO-DA	5.845	286.9 -> 168.9	39788	10.33 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.3%	
d3-MeFOSA	10.741	515.0 -> 219.0	8917	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.6%	
d5-EtFOSAA	8.330	589.2 -> 419.0	18939	5.07 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
d7-MeFOSE	10.647	623.2 -> 58.9	93406	23.58 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 94.3%	
d9-EtFOSE	10.894	639.2 -> 58.9	112543	23.25 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 93.0%	
d5-EtFOSA	10.973	531.1 -> 219.0	10863	2.35 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.9%	

Target Compounds	RT	Transition	Response	Conc. Units	QValue
4:2FTS	-	327.1 -> 307.0	-	N.D.	
		327.1 -> 80.9			
6:2FTS	-	427.1 -> 407.0	-	N.D.	
		427.1 -> 80.9			
8:2FTS	-	527.1 -> 507.0	-	N.D.	
		527.1 -> 80.8			
EtFOSAA	-	584.2 -> 419.1	-	N.D.	
		584.2 -> 526.0			
FOSA	-	498.1 -> 77.9	-	N.D.	
		498.1 -> 478.0			
MeFOSAA	-	570.1 -> 419.0	-	N.D.	
		570.1 -> 483.0			
PFBA	-	212.8 -> 168.9	-	N.D.	
PFBS	-	298.7 -> 79.9	-	N.D.	
		298.7 -> 98.8			
PFDA	8.670	512.9 -> 469.0	0	µg/L m	1
		512.9 -> 219.0	0		
PFDODA	8.936	613.1 -> 569.0	0	µg/L m	1
		613.1 -> 319.0			
PFDS	-	599.0 -> 79.9	-	N.D.	

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	-	599.0 -> 98.8	-	N.D.		
		363.1 -> 319.0				
PFHpS	-	363.1 -> 169.0	-	N.D.		
		449.0 -> 79.9				
PFHxA	-	449.0 -> 98.9	-	N.D.		
		313.0 -> 269.0				
PFHxS	-	313.0 -> 118.9	-	N.D.		
		398.7 -> 79.9				
PFNA	8.168	398.7 -> 98.9	0	µg/L	m	1
		463.0 -> 419.0				
PFNS	-	463.0 -> 219.0	0	N.D.		
		548.8 -> 79.9				
PFOA	7.687	548.8 -> 98.9	0	µg/L	m	1
		413.0 -> 369.0				
PFOS	-	413.0 -> 169.0	0	N.D.		
		498.9 -> 79.9				
PFPeA	-	498.9 -> 98.8	-	N.D.		
		263.0 -> 219.0				
PFPeS	-	349.1 -> 79.9	-	N.D.		
		349.1 -> 98.9				
PFTeDA	-	713.1 -> 669.0	-	N.D.		
		713.1 -> 168.9				
PFTrDA	9.904	663.0 -> 619.0	0	µg/L	m	1
		663.0 -> 168.9				
PFUnDA	9.127	563.1 -> 519.0	0	µg/L	m	1
		563.1 -> 269.1				
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.		
		532.8 -> 353.0				
ADONA	-	376.9 -> 250.9	-	N.D.		
		376.9 -> 84.8				
HFPO-DA	-	284.9 -> 168.9	-	N.D.		
		284.9 -> 184.9				
3:3FTCA	-	241.0 -> 177.0	-	N.D.		
		241.0 -> 117.0				
5:3FTCA	-	341.0 -> 237.1	-	N.D.		
		341.0 -> 217.0				
7:3FTCA	-	441.0 -> 316.9	-	N.D.		
		441.0 -> 336.9				
EtFOSA	10.975	526.0 -> 219.0	570	0.13 µg/L	m	82
		526.0 -> 169.0	605			
EtFOSE	10.907	630.0 -> 58.9	1116	0.24 µg/L	m	100
		511.9 -> 219.0	-			
MeFOSA	-	511.9 -> 169.0	-	N.D.		
		616.1 -> 58.9				
MeFOSE	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
PFDoDS	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
NFDHA	-	279.0 -> 85.1	-	N.D.		
		229.0 -> 84.9				
PFMBA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

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



7.2.1
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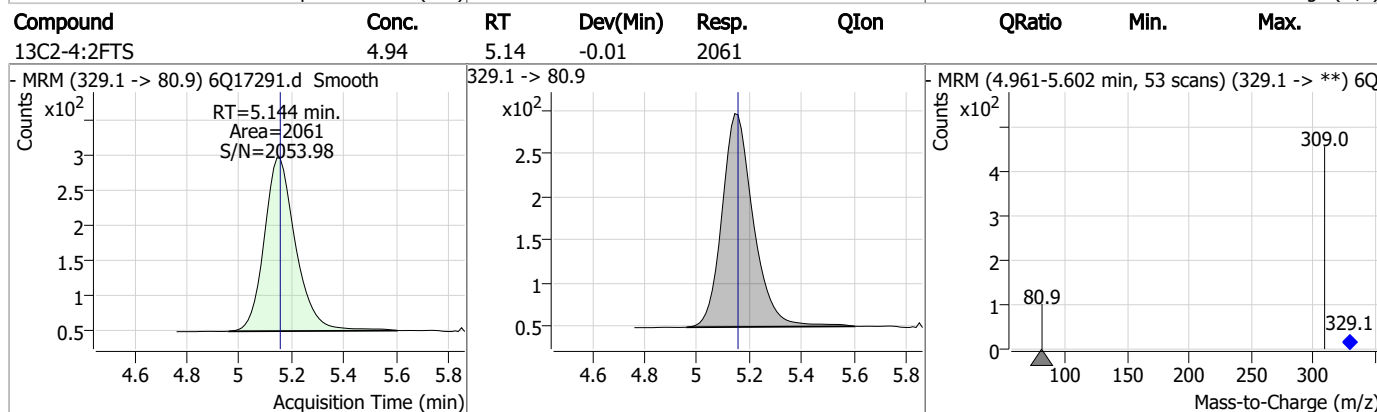
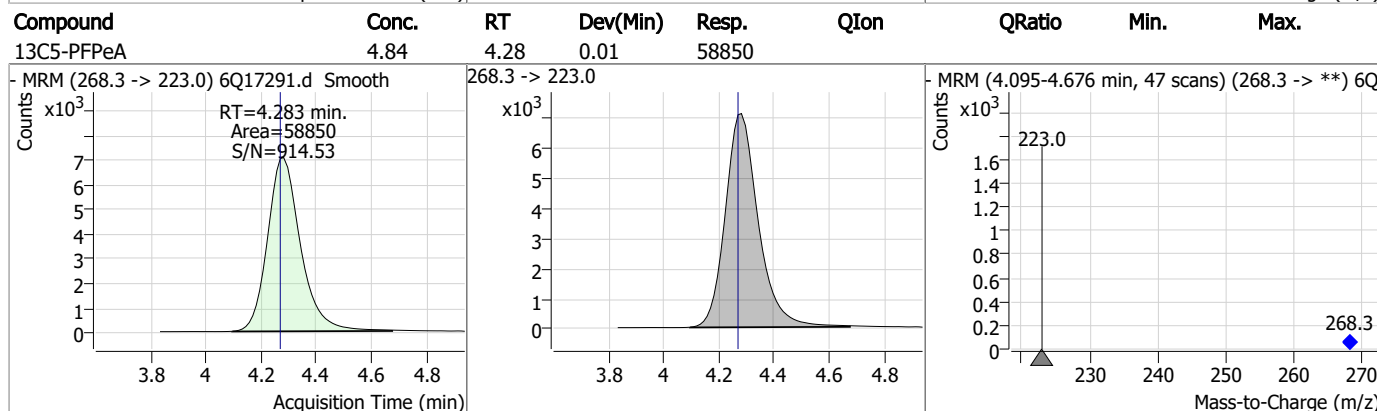
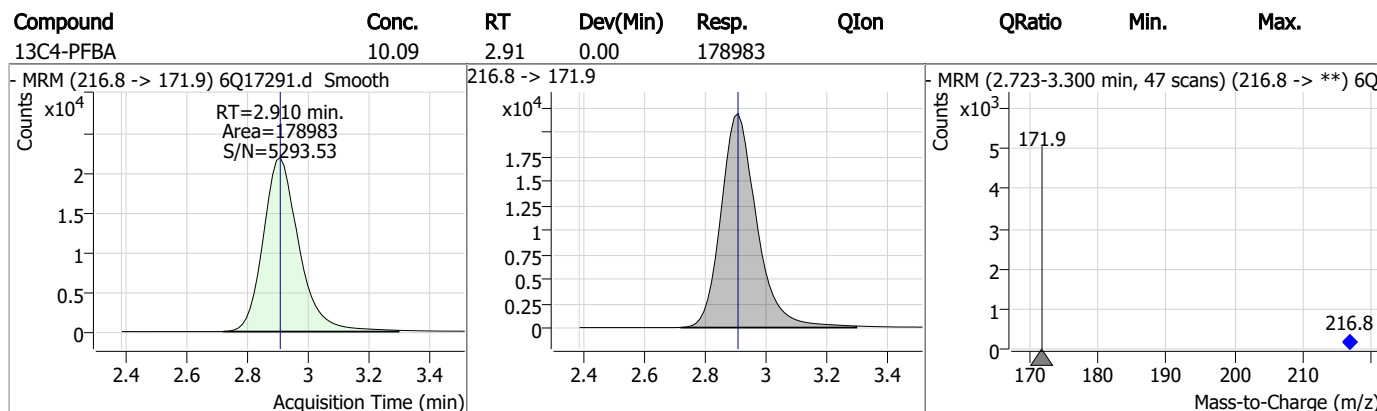
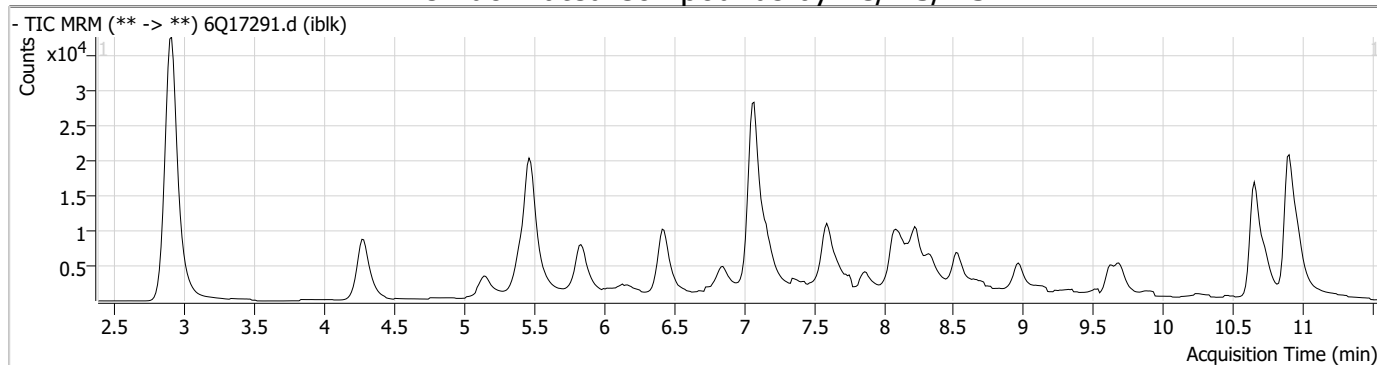
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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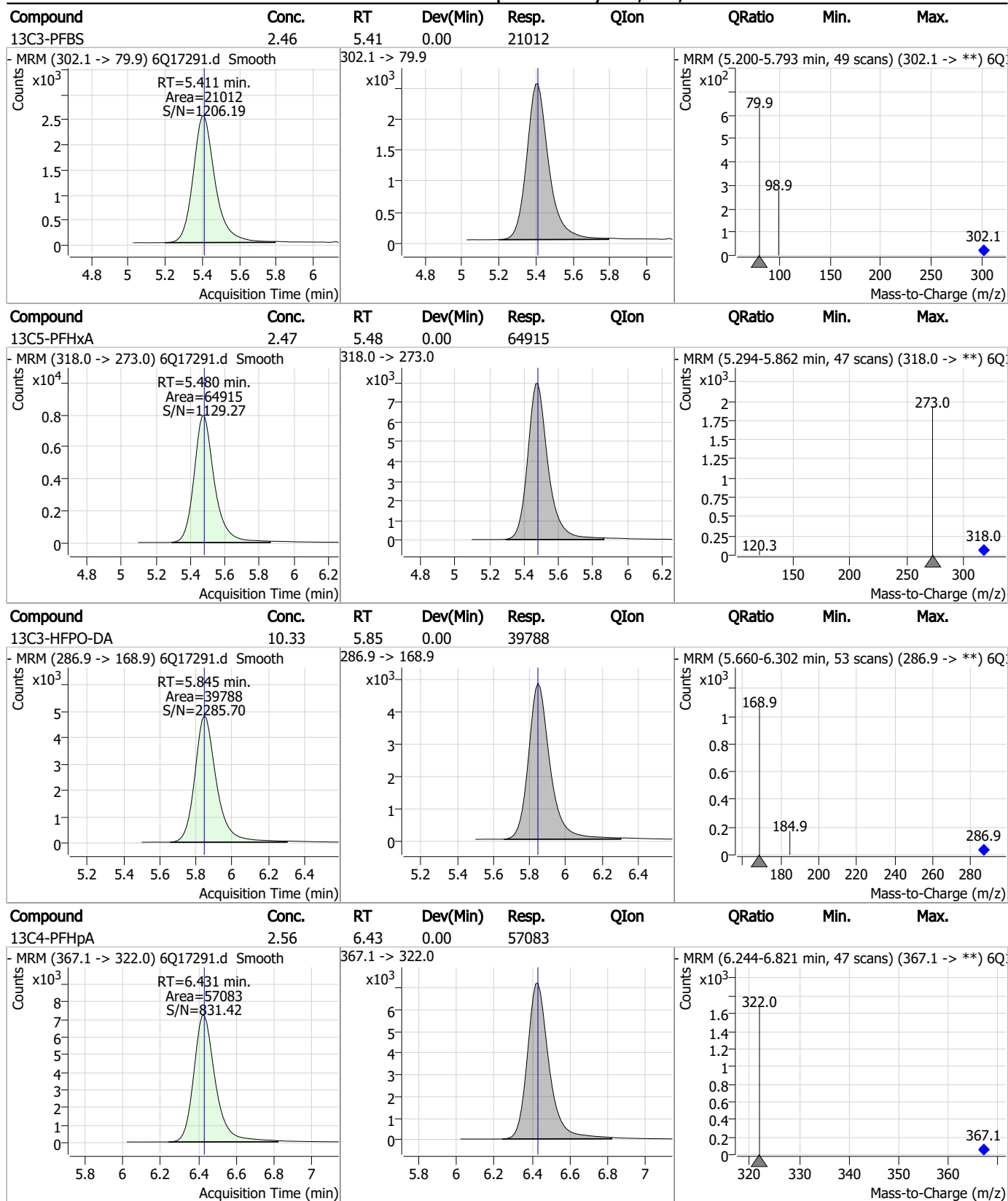
7.2.1

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Perfluorinated Compounds by LC/MS/MS

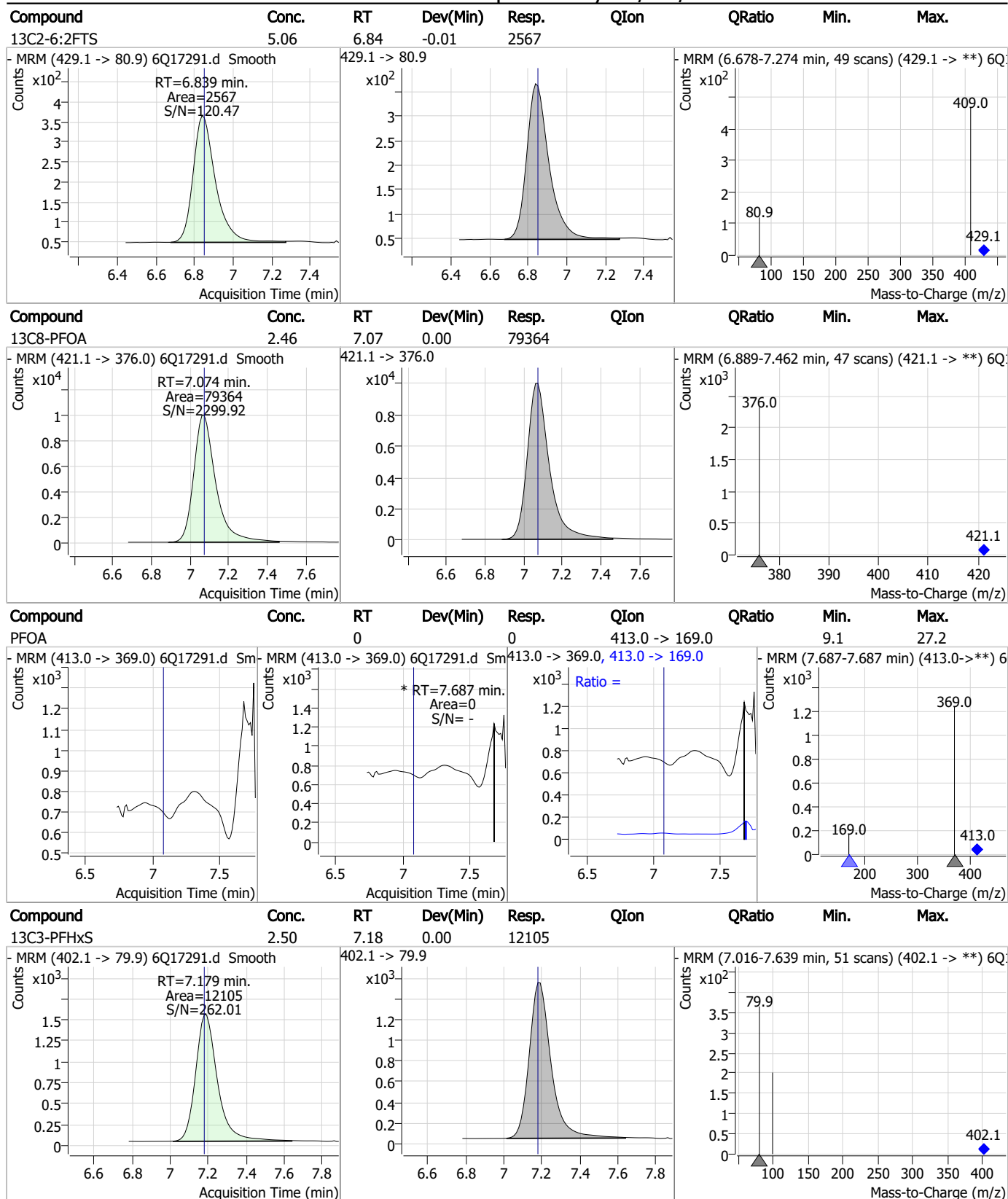


Perfluorinated Compounds by LC/MS/MS



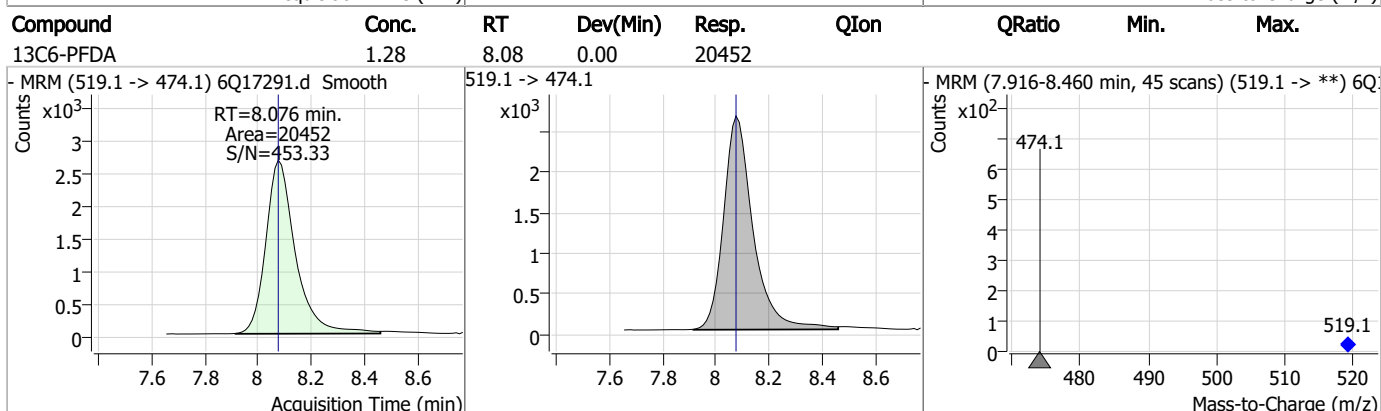
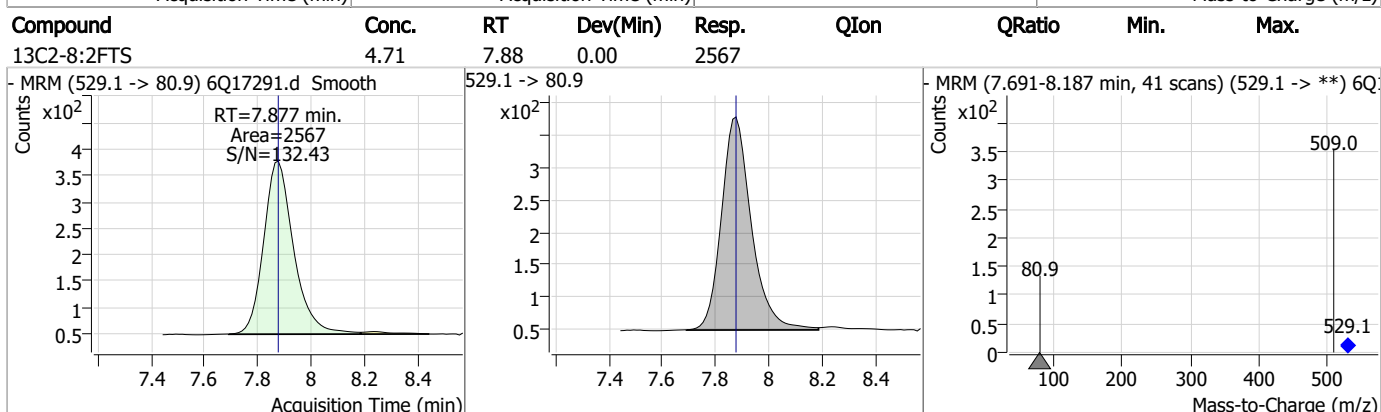
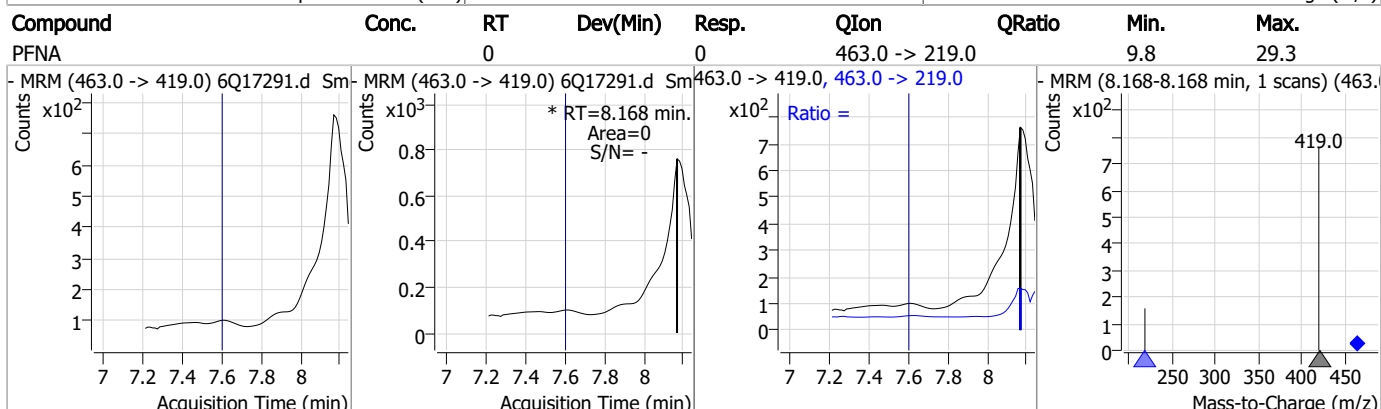
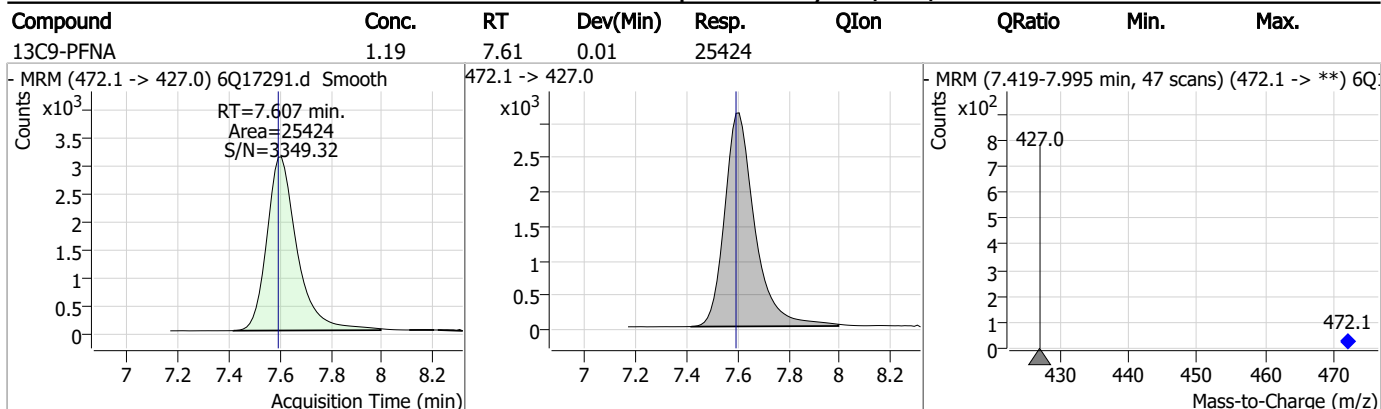
7.2.1
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Perfluorinated Compounds by LC/MS/MS



7.2.1
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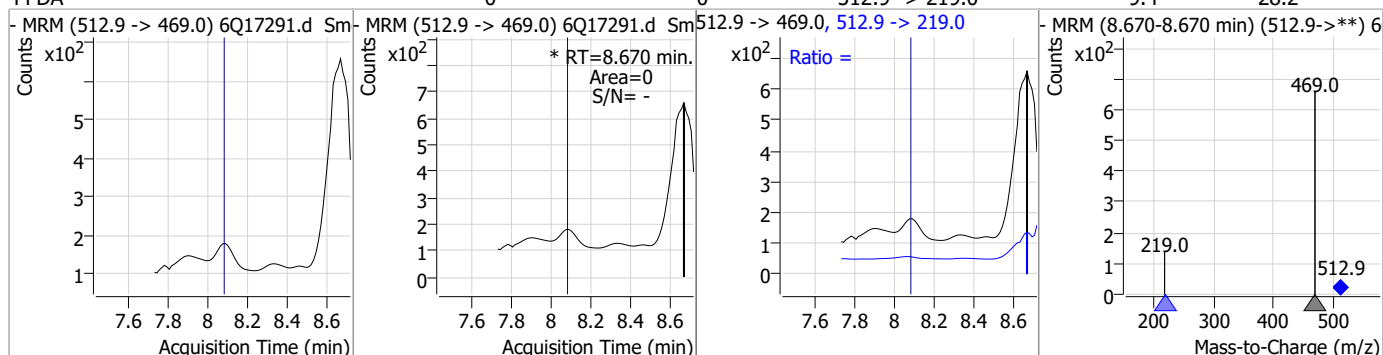
Perfluorinated Compounds by LC/MS/MS



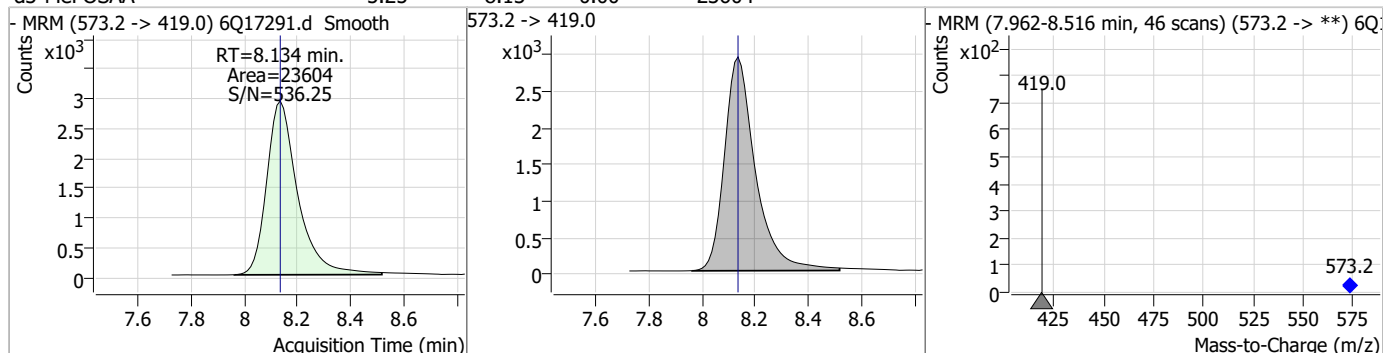
7.2.1
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Perfluorinated Compounds by LC/MS/MS

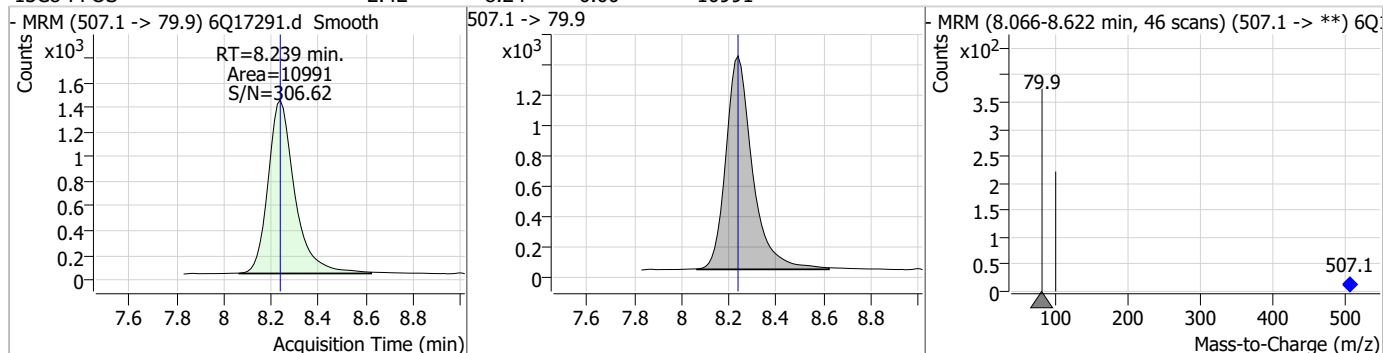
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0	0		0	512.9 -> 219.0		9.4	28.2



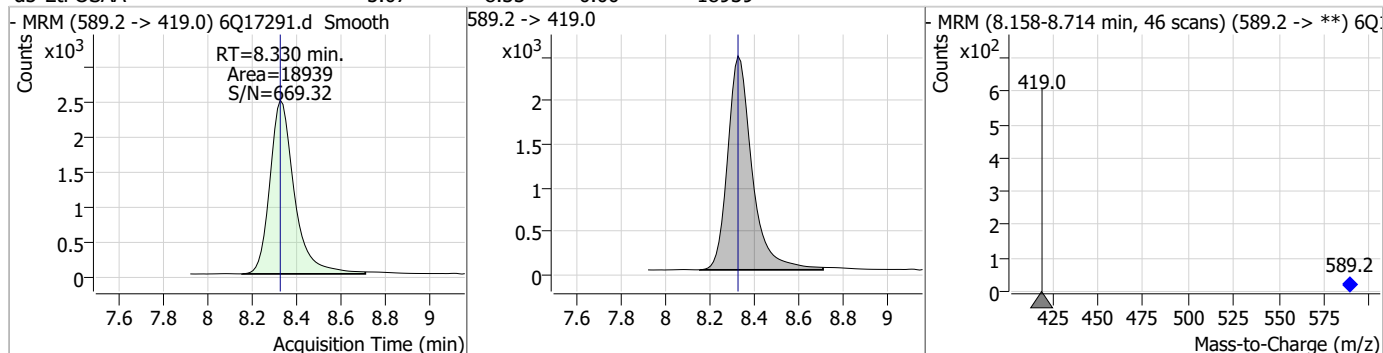
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.25	8.13	0.00	23604				



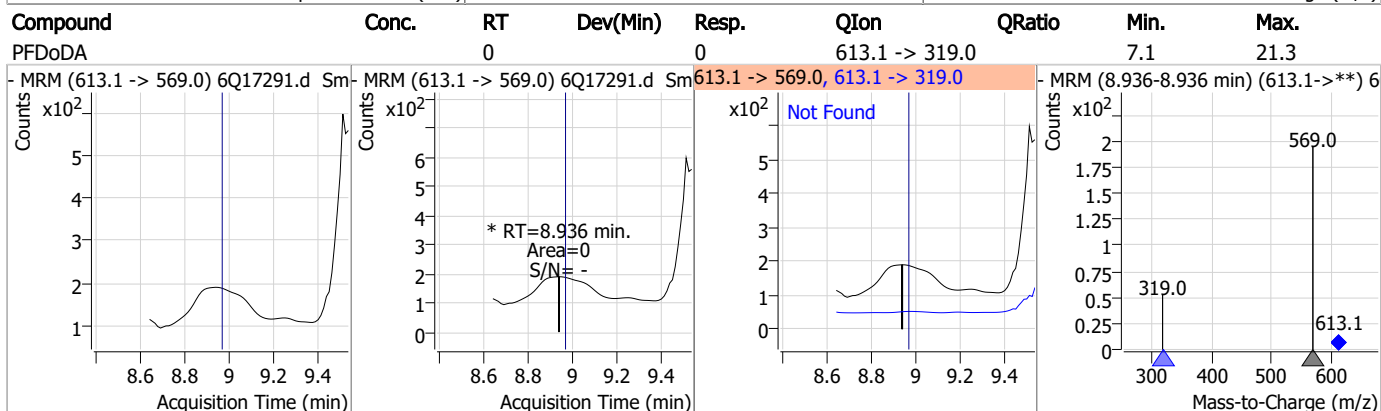
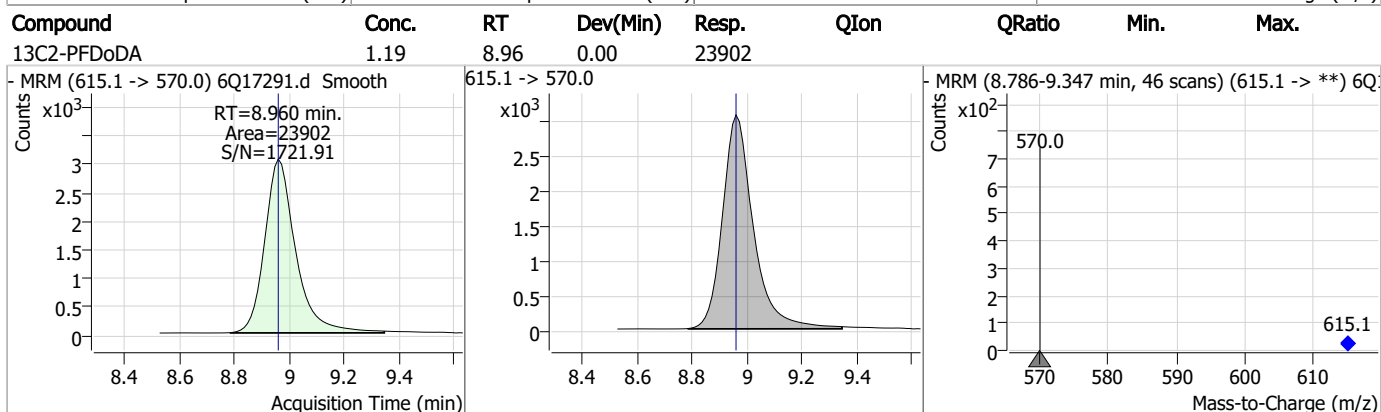
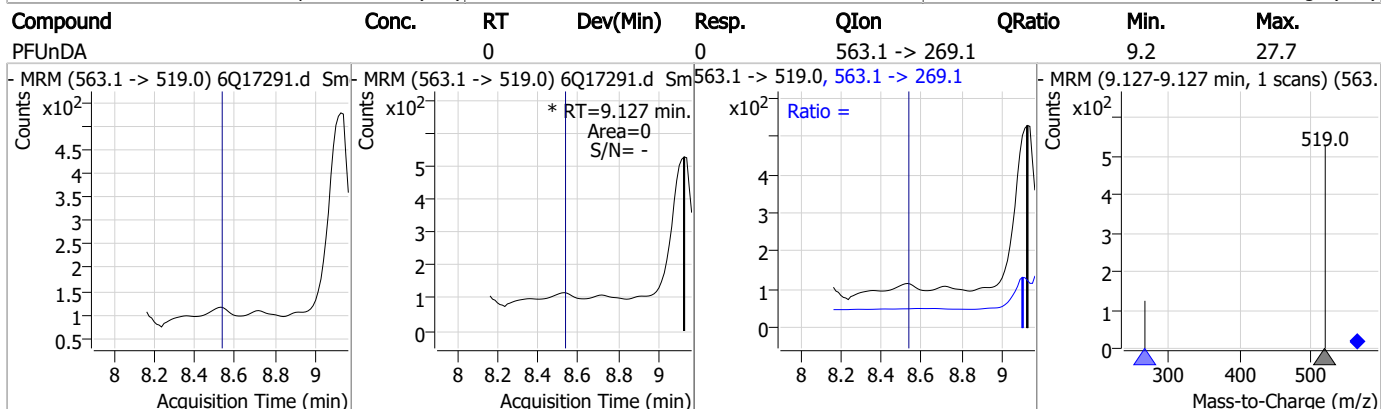
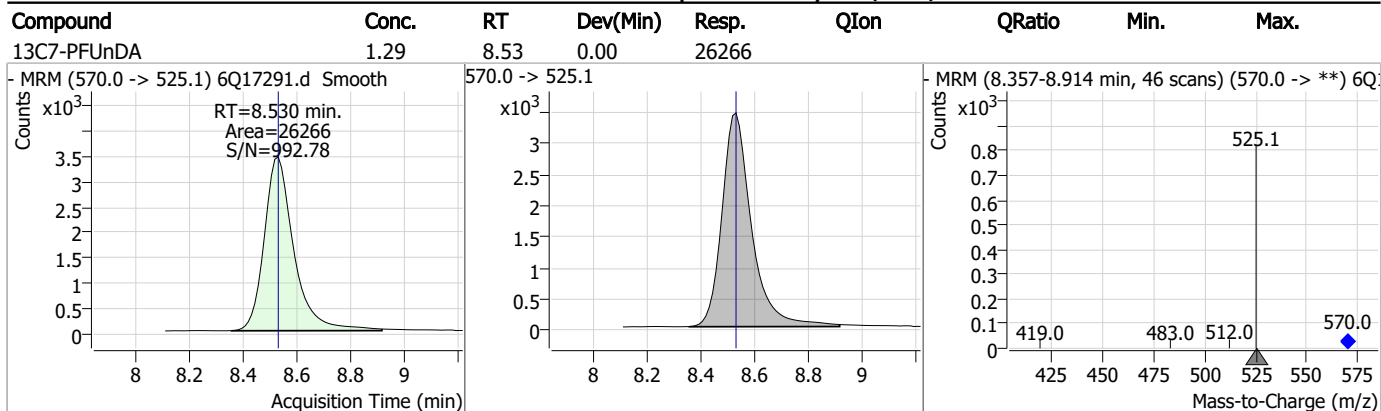
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.42	8.24	0.00	10991				



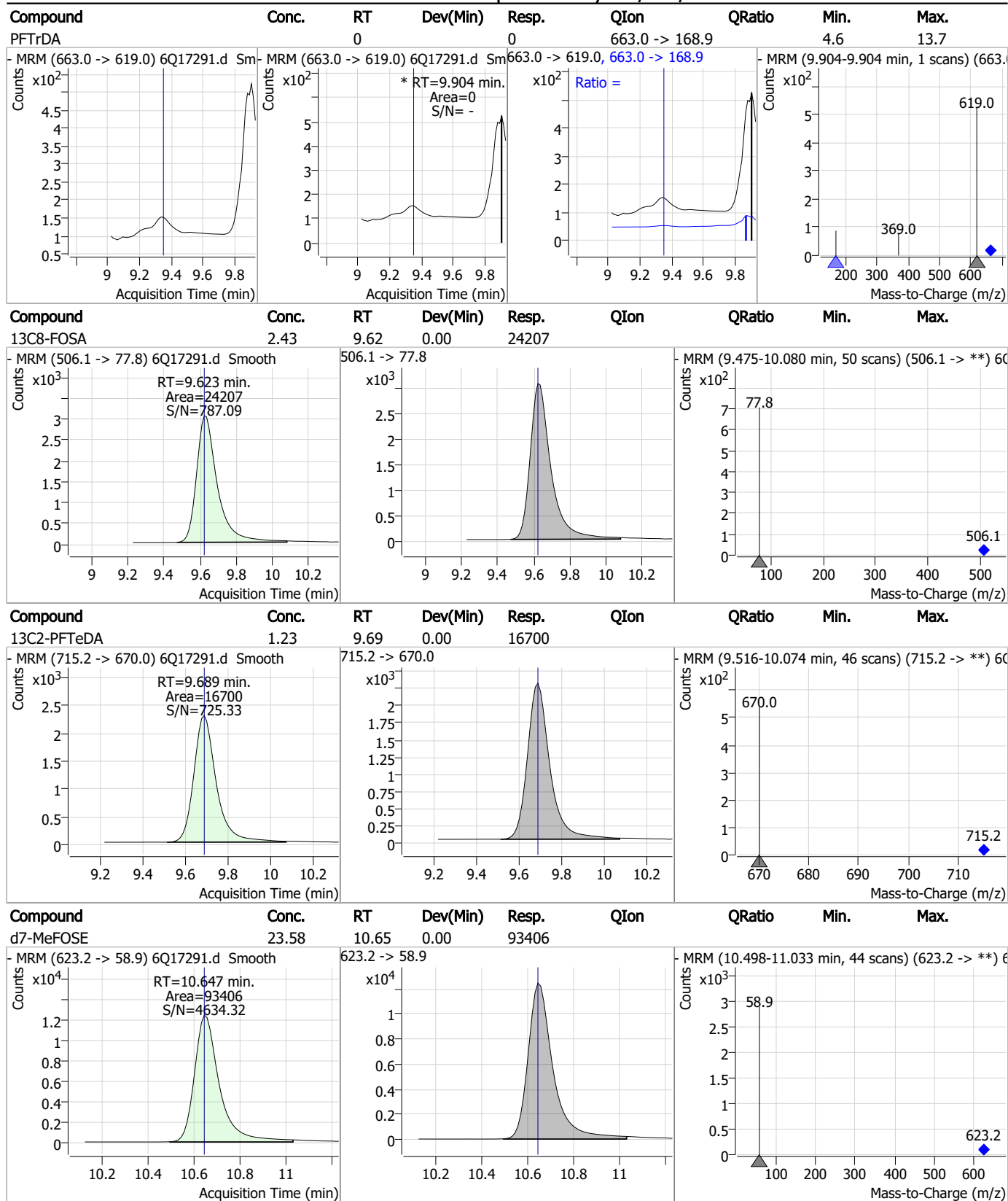
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.07	8.33	0.00	18939				



Perfluorinated Compounds by LC/MS/MS

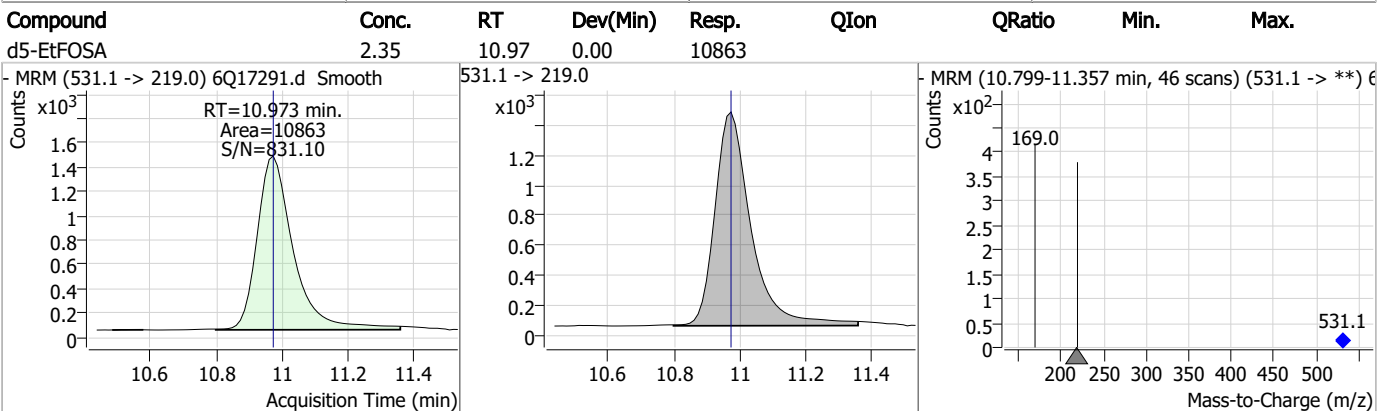
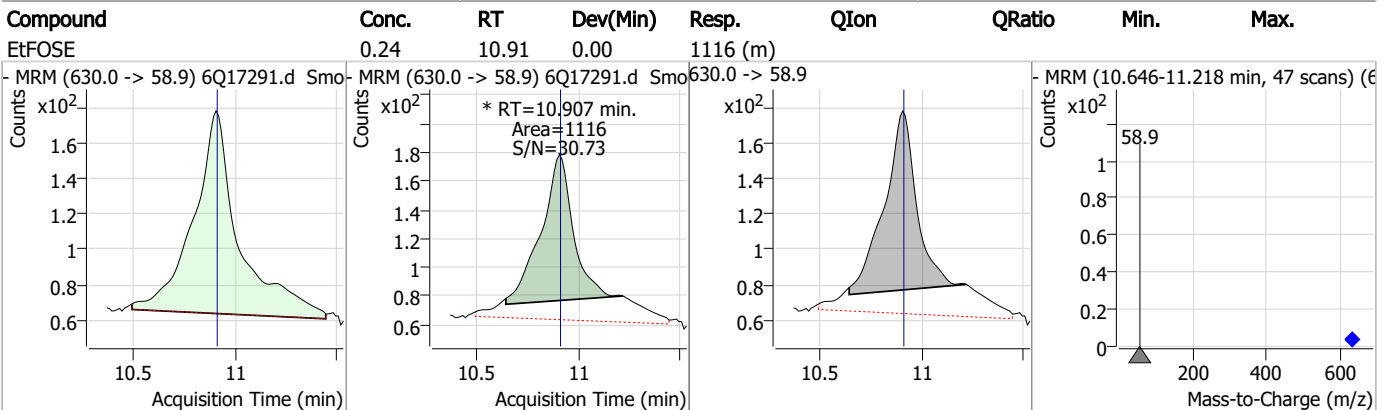
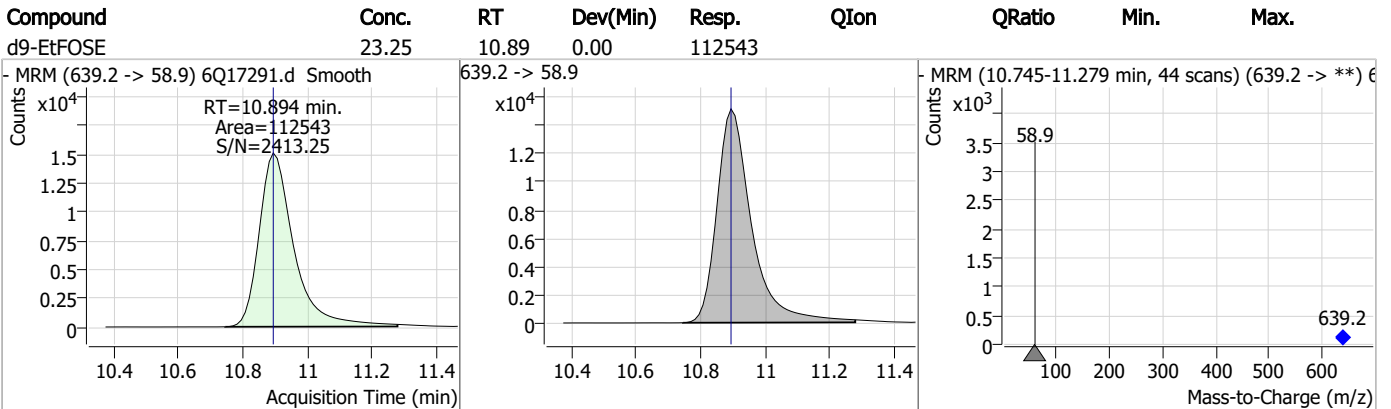
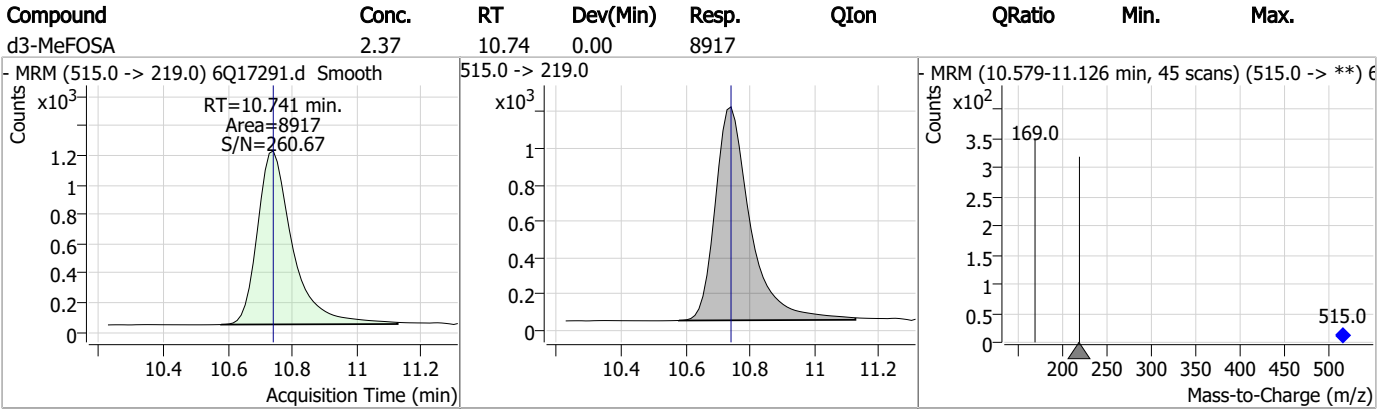


Perfluorinated Compounds by LC/MS/MS



7.2.1
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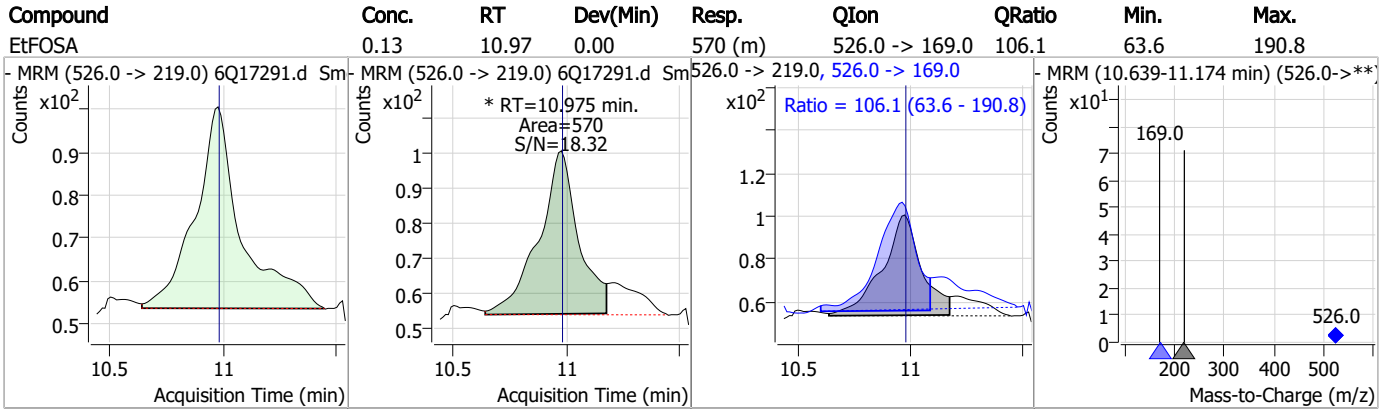
Perfluorinated Compounds by LC/MS/MS



7.2.1

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Perfluorinated Compounds by LC/MS/MS



7.2.1

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Manual Integration Approval Summary

Sample Number: S6Q261-IBLK Method: EPA DRAFT 1633
Lab FileID: 6Q17291.D Analyst approved: 05/02/23 20:40 Martha Valls
Injection Time: 05/02/23 11:34 Supervisor approved: 05/03/23 19:39 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
EiFOSE	1691-99-2		10.91	Split peak
EiFOSA	4151-50-2		10.97	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17363.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/3/2023 4:58:48 AM
 Sample Name : op96627-mb
 Vial : P3-F2
 DA Method File : 1633_042823_S6Q258.quantmethod.xml
 Batch Name : s6q261.batch.bin
 Sample Information : OP96627,S6Q261,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.910	216.8 -> 171.9	190438	10.00 µg/L	0.000
M5-PFPeA	4.270	268.3 -> 223.0	60368	5.00 µg/L	0.000
M5-PFHxA	5.468	318.0 -> 273.0	69483	2.50 µg/L	-0.012
M4-PFHpA	6.419	367.1 -> 322.0	58479	2.50 µg/L	-0.012
M8-PFOA	7.062	421.1 -> 376.0	89419	2.50 µg/L	-0.012
M9-PFNA	7.594	472.1 -> 427.0	26942	1.25 µg/L	0.000
M6-PFDA	8.076	519.1 -> 474.1	22021	1.25 µg/L	0.000
M7-PFUnDA	8.517	570.0 -> 525.1	27468	1.25 µg/L	-0.013
M2-PFDoDA	8.960	615.1 -> 570.0	24372	1.25 µg/L	0.000
M2-PFTeDA	9.677	715.2 -> 670.0	15620	1.25 µg/L	-0.012
M8-FOSA	9.623	506.1 -> 77.8	8737	2.50 µg/L	0.000
M3-PFBS	5.398	302.1 -> 79.9	22519	2.50 µg/L	-0.012
M3-PFHxS	7.179	402.1 -> 79.9	12903	2.50 µg/L	0.000
M8-PFOS	8.226	507.1 -> 79.9	11238	2.50 µg/L	-0.012
M2-4:2FTS	5.144	329.1 -> 80.9	2233	5.00 µg/L	-0.012
M2-6:2FTS	6.839	429.1 -> 80.9	2635	5.00 µg/L	-0.012
M2-8:2FTS	7.864	529.1 -> 80.9	3043	5.00 µg/L	-0.012
M3-MeFOSAA	8.134	573.2 -> 419.0	24384	5.00 µg/L	0.000
M3-HFPO-DA	5.845	286.9 -> 168.9	40639	10.00 µg/L	0.000
M5-EtFOSAA	8.330	589.2 -> 419.0	17421	5.00 µg/L	0.000
M7-MeFOSE	10.647	623.2 -> 58.9	20289	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	27779	25.00 µg/L	0.000
M5-EtFOSA	10.973	531.1 -> 219.0	2804	2.50 µg/L	0.000
M3-MeFOSA	10.741	515.0 -> 219.0	2471	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	14360	2.50 µg/L	-0.012
13C3-PFBA	2.914	216.0 -> 172.0	72537	5.00 µg/L	0.012
18O2-PFHxS	7.177	403.0 -> 83.9	8930	2.50 µg/L	0.000
13C4-PFOA	7.063	417.1 -> 372.0	82338	2.50 µg/L	-0.012
13C2-PFDA	8.076	515.1 -> 470.1	23907	1.25 µg/L	0.000
13C5-PFNA	7.595	468.0 -> 423.0	29568	1.25 µg/L	0.000
13C2-PFHxA	5.469	315.1 -> 270.0	52334	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.144	329.1 -> 80.9	2233	5.44 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.8%		
13C2-6:2FTS	6.839	429.1 -> 80.9	2635	5.29 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.8%		
13C2-8:2FTS	7.864	529.1 -> 80.9	3043	5.68 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.5%		
13C2-PFDoDA	8.960	615.1 -> 570.0	24372	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.0%		
13C2-PFTeDA	9.677	715.2 -> 670.0	15620	1.16 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 92.8%		
13C3-PFBS	5.398	302.1 -> 79.9	22519	2.68 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 107.2%		
13C3-PFHxS	7.179	402.1 -> 79.9	12903	2.71 µg/L	0.000

7.2.2
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.6%	
13C4-PFBA	2.910	216.8 -> 171.9	190438	11.36 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 113.6%	
13C4-PFHpA	6.419	367.1 -> 322.0	58479	2.73 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.3%	
13C5-PFHxA	5.468	318.0 -> 273.0	69483	2.75 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.1%	
13C5-PFPeA	4.270	268.3 -> 223.0	60368	5.16 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.3%	
13C6-PFDA	8.076	519.1 -> 474.1	22021	1.40 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 111.7%	
13C7-PFUnDA	8.517	570.0 -> 525.1	27468	1.36 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.9%	
13C8-FOSA	9.623	506.1 -> 77.8	8737	0.92 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 36.8%	
13C8-PFOA	7.062	421.1 -> 376.0	89419	2.81 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 112.6%	
13C8-PFOS	8.226	507.1 -> 79.9	11238	2.60 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.9%	
13C9-PFNA	7.594	472.1 -> 427.0	26942	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.6%	
d3-MeFOSAA	8.134	573.2 -> 419.0	24384	5.70 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 114.0%	
13C3-HFPO-DA	5.845	286.9 -> 168.9	40639	10.97 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.7%	
d3-MeFOSA	10.741	515.0 -> 219.0	2471	0.69 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 27.6%	
d5-EtFOSAA	8.330	589.2 -> 419.0	17421	4.90 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.0%	
d7-MeFOSE	10.647	623.2 -> 58.9	20289	5.38 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 21.5%	
d9-EtFOSE	10.894	639.2 -> 58.9	27779	6.03 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 24.1%	
d5-EtFOSA	10.973	531.1 -> 219.0	2804	0.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 25.5%	

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

7.2.2
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	-	599.0 -> 98.8	-	N.D.		
		363.1 -> 319.0				
PFHpS	-	363.1 -> 169.0	-	N.D.		
		449.0 -> 79.9				
PFHxA	-	449.0 -> 98.9	-	N.D.		
		313.0 -> 269.0				
PFHxS	-	313.0 -> 118.9	-	N.D.		
		398.7 -> 79.9				
PFNA	8.168	398.7 -> 98.9	0	µg/L	m	1
		463.0 -> 419.0				
PFNS	-	463.0 -> 219.0	0	N.D.		
		548.8 -> 79.9				
PFOA	7.699	548.8 -> 98.9	0	µg/L	m	1
		413.0 -> 369.0				
PFOS	-	413.0 -> 169.0	0	N.D.		
		498.9 -> 79.9				
PFPeA	-	498.9 -> 98.8	-	N.D.		
		263.0 -> 219.0				
PFPeS	-	349.1 -> 79.9	-	N.D.		
		349.1 -> 98.9				
PFTeDA	-	713.1 -> 669.0	-	N.D.		
		713.1 -> 168.9				
PFTrDA	9.904	663.0 -> 619.0	0	µg/L	m	1
		663.0 -> 168.9				
PFUnDA	9.102	563.1 -> 519.0	0	µg/L	m	1
		563.1 -> 269.1				
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.		
		532.8 -> 353.0				
ADONA	-	376.9 -> 250.9	-	N.D.		
		376.9 -> 84.8				
HFPO-DA	-	284.9 -> 168.9	-	N.D.		
		284.9 -> 184.9				
3:3FTCA	-	241.0 -> 177.0	-	N.D.		
		241.0 -> 117.0				
5:3FTCA	-	341.0 -> 237.1	-	N.D.		
		341.0 -> 217.0				
7:3FTCA	-	441.0 -> 316.9	-	N.D.		
		441.0 -> 336.9				
EtFOSA	-	526.0 -> 219.0	-	N.D.		
		526.0 -> 169.0				
EtFOSE	-	630.0 -> 58.9	-	N.D.		
		511.9 -> 219.0				
MeFOSA	-	511.9 -> 169.0	-	N.D.		
		616.1 -> 58.9				
MeFOSE	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
PFDoDS	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
NFDHA	-	279.0 -> 85.1	-	N.D.		
		229.0 -> 84.9				
PFMBA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

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



7.2.2
7

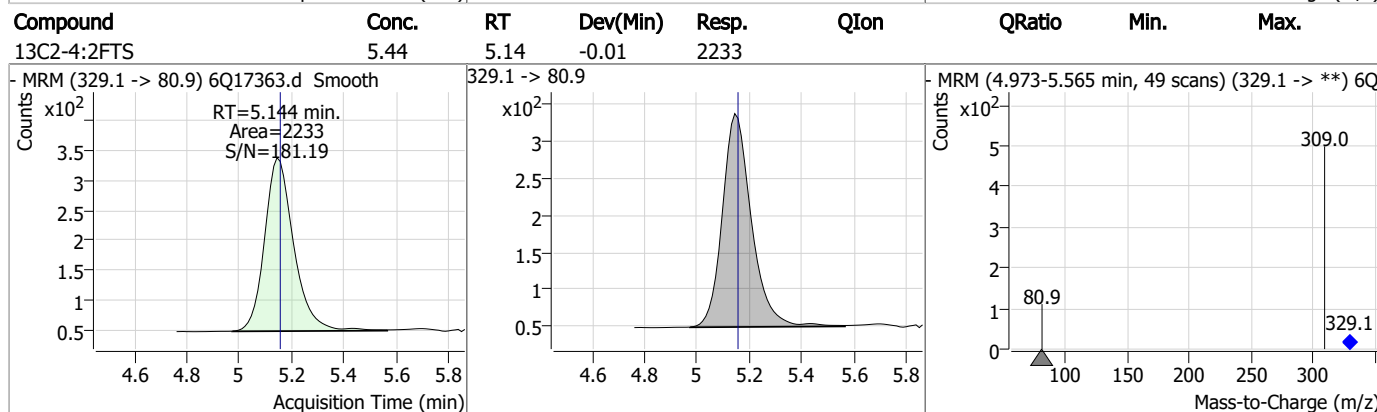
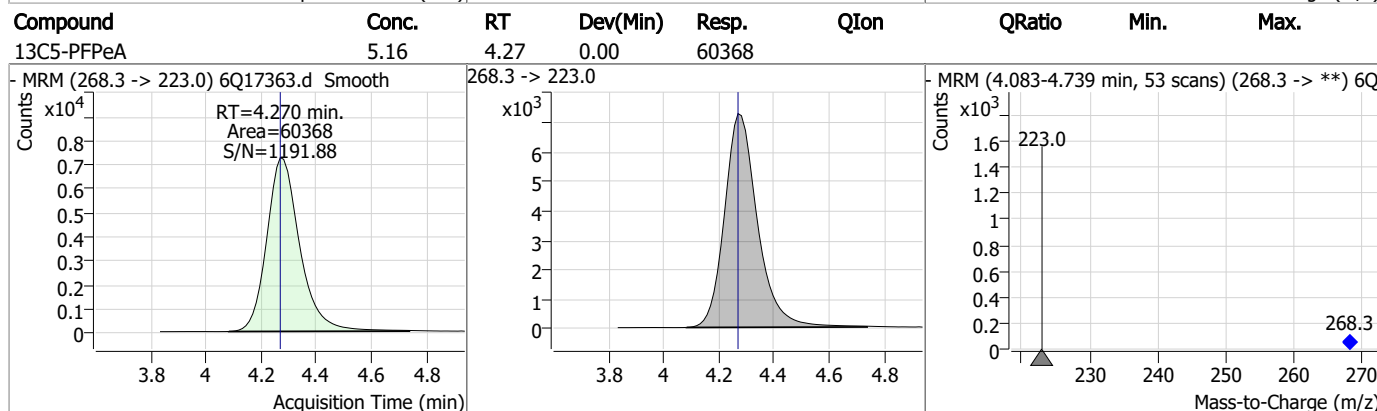
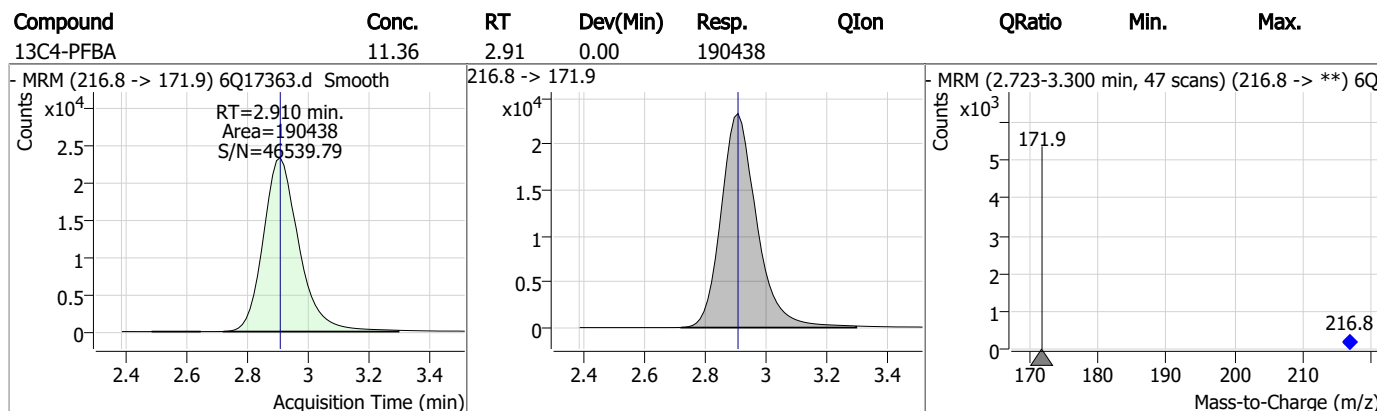
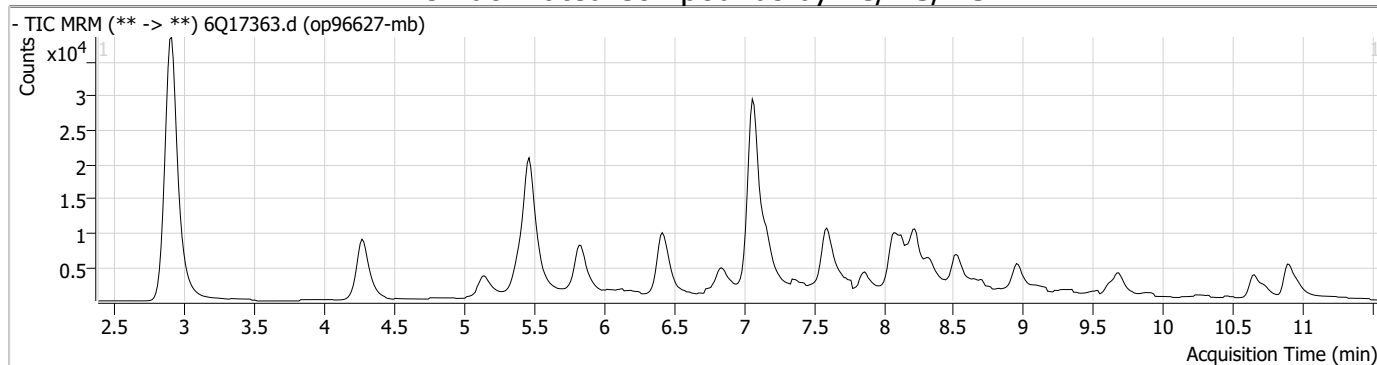
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.2.2

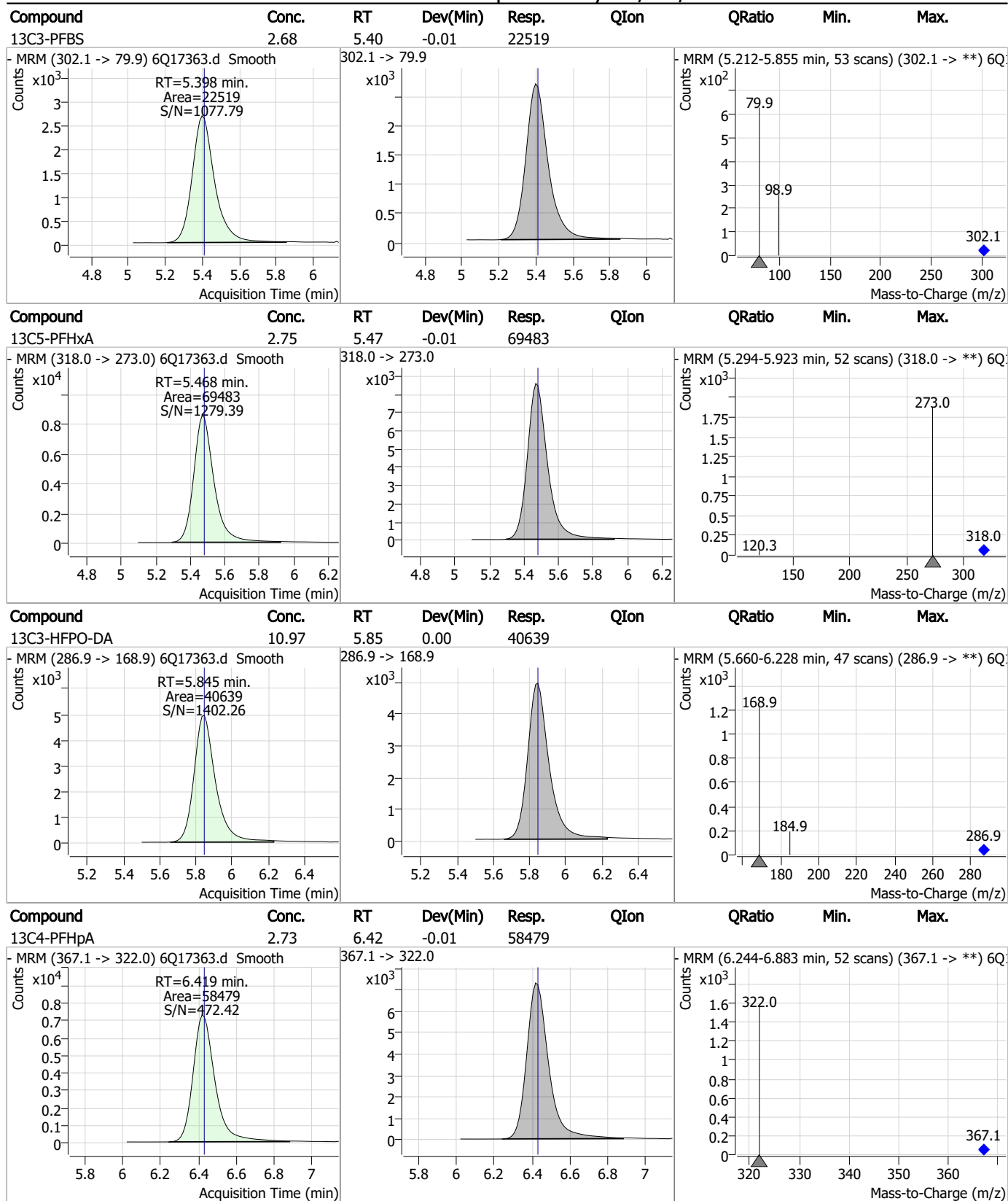
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Perfluorinated Compounds by LC/MS/MS



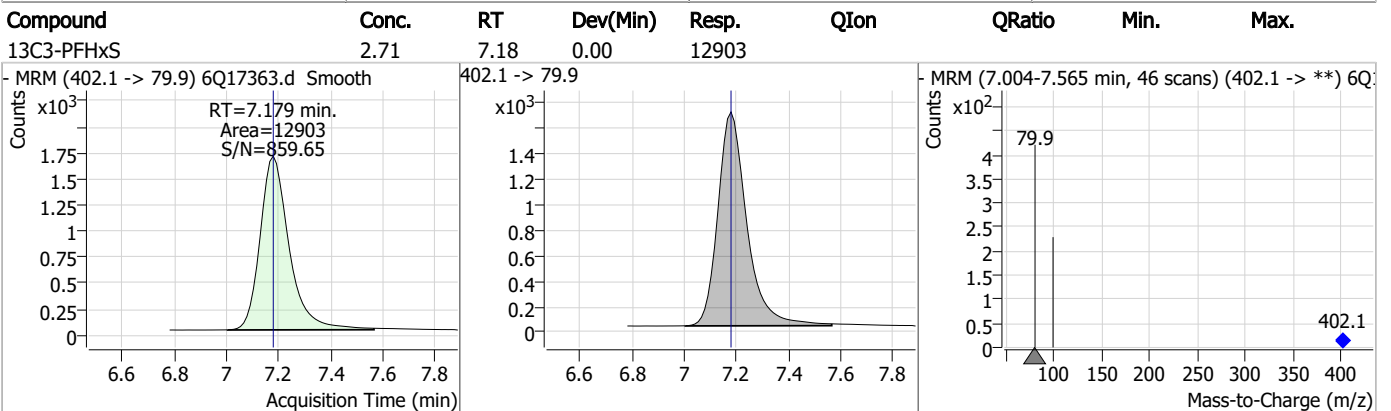
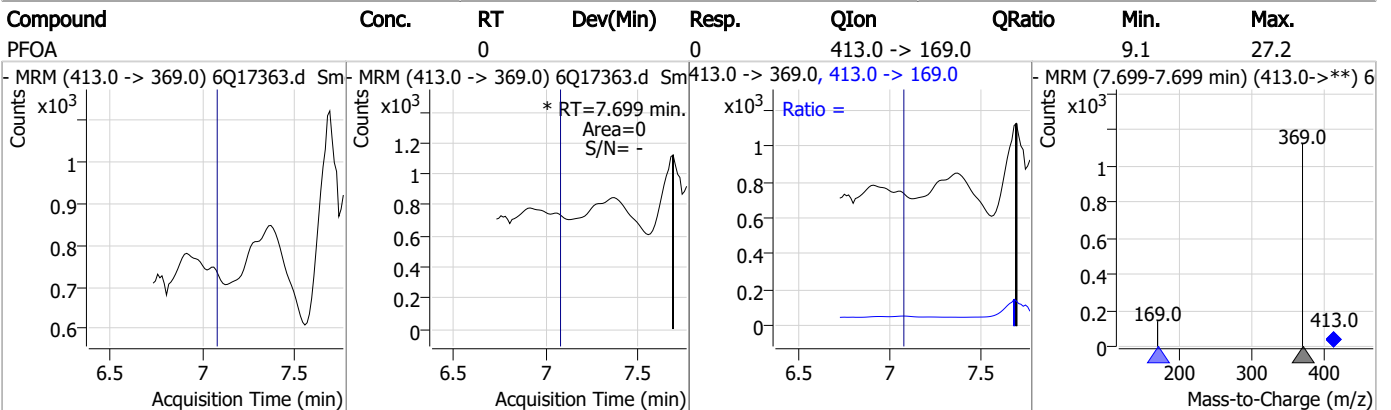
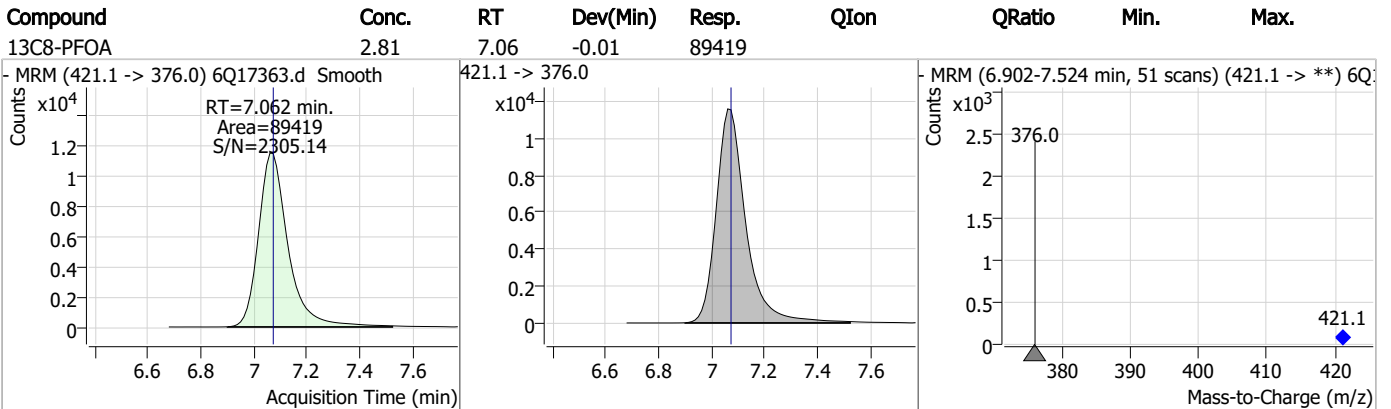
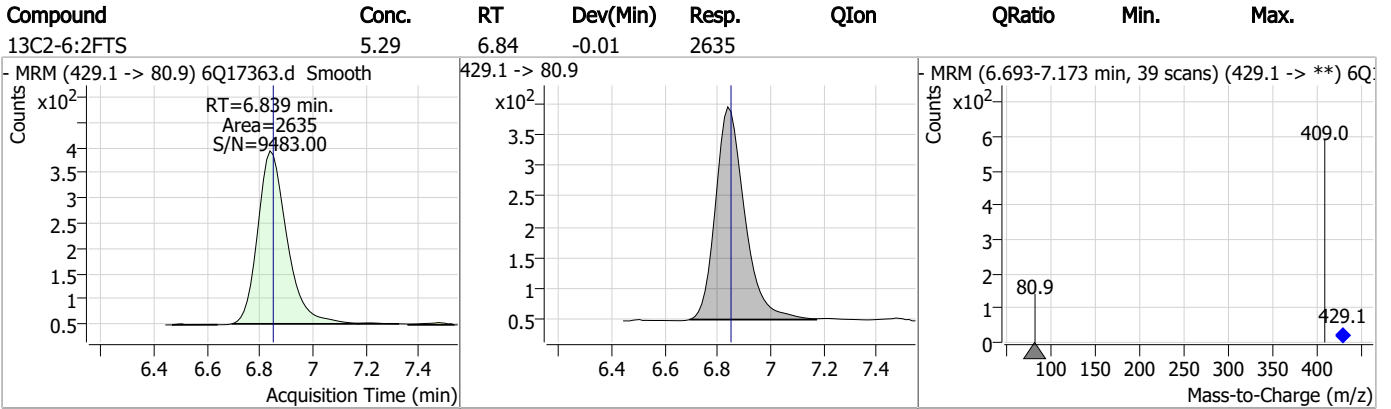
7.2.2
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Perfluorinated Compounds by LC/MS/MS



7.2.2
7

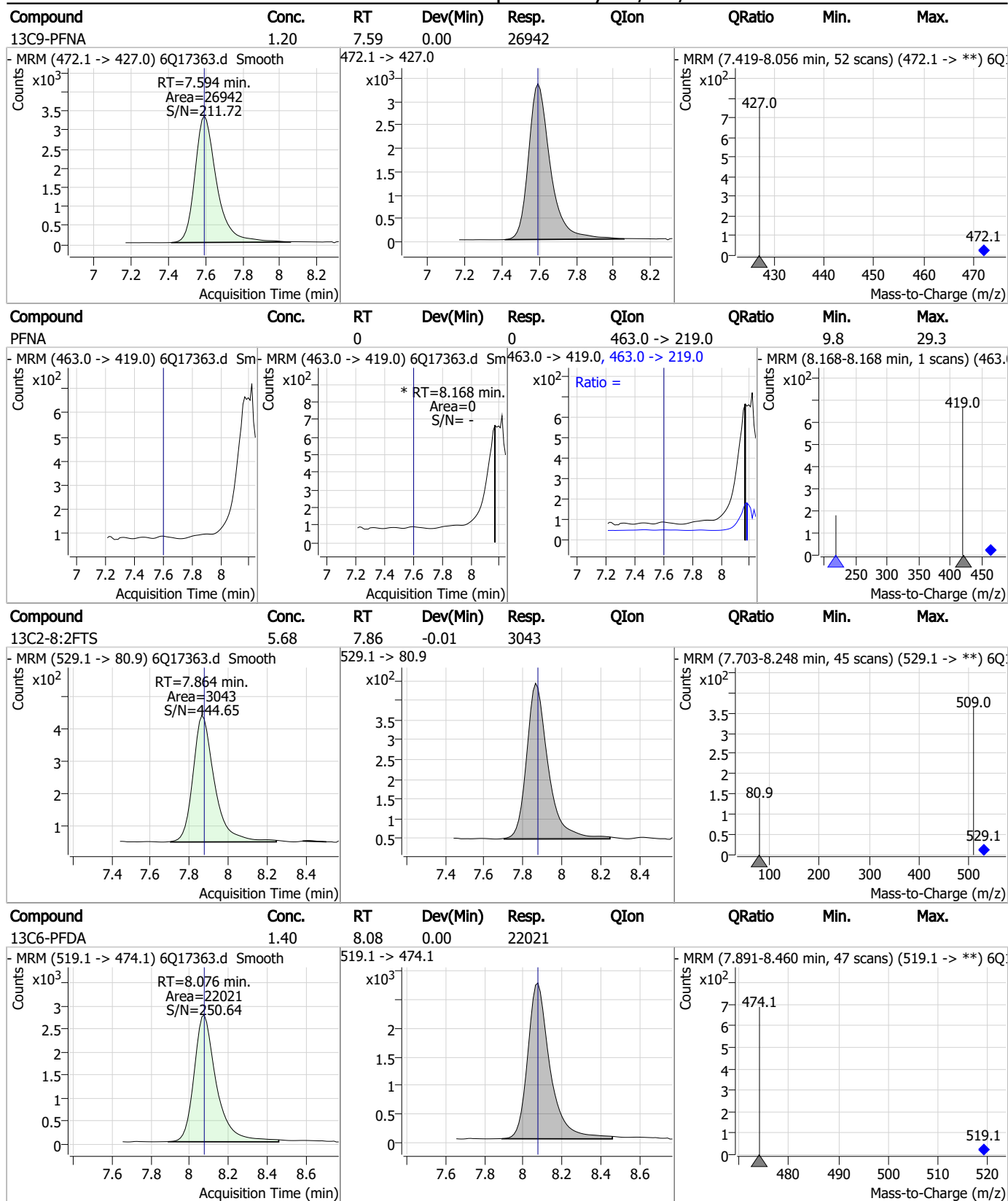
Perfluorinated Compounds by LC/MS/MS



7.2.2

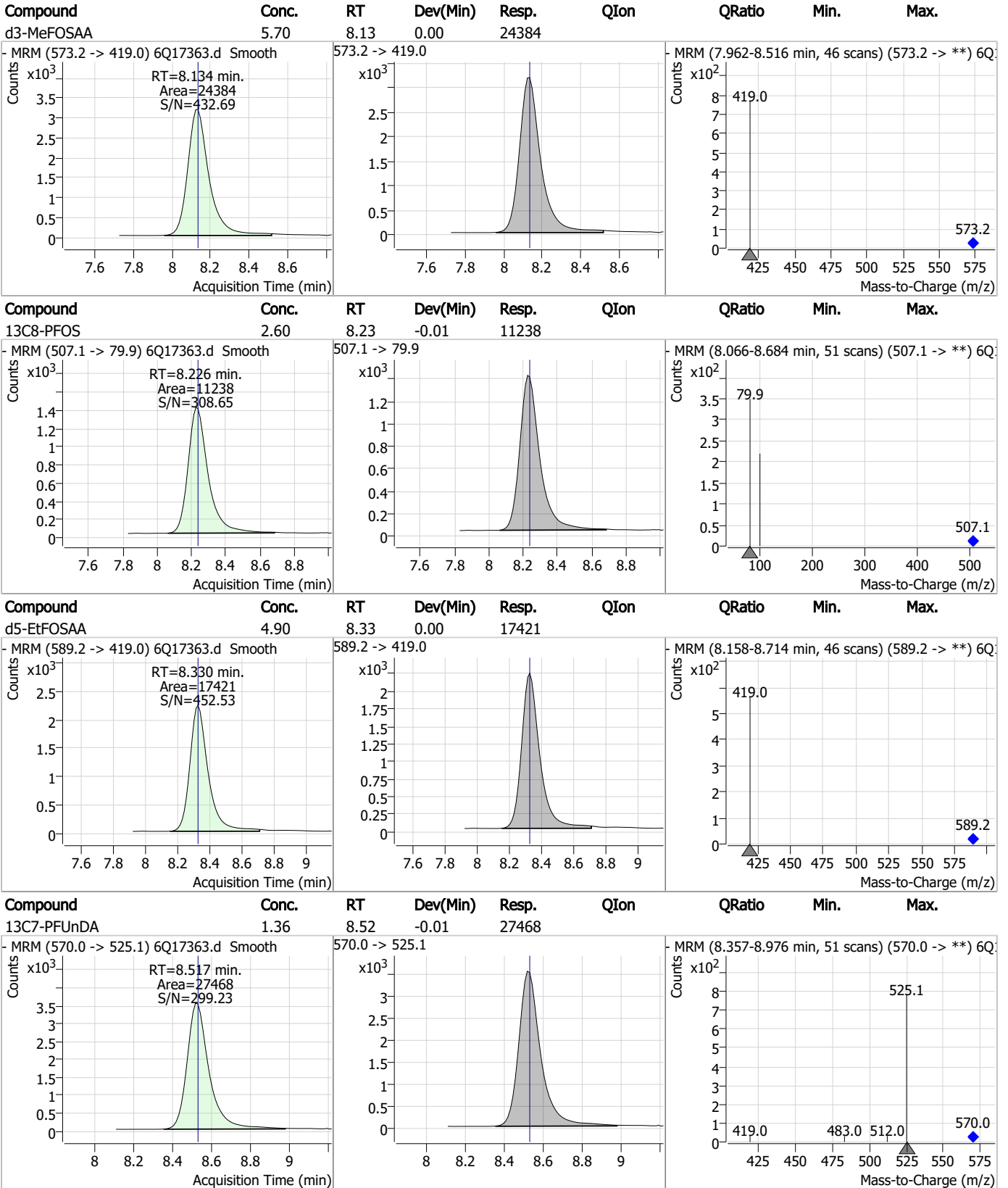
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Perfluorinated Compounds by LC/MS/MS



7.2.2
7

Perfluorinated Compounds by LC/MS/MS



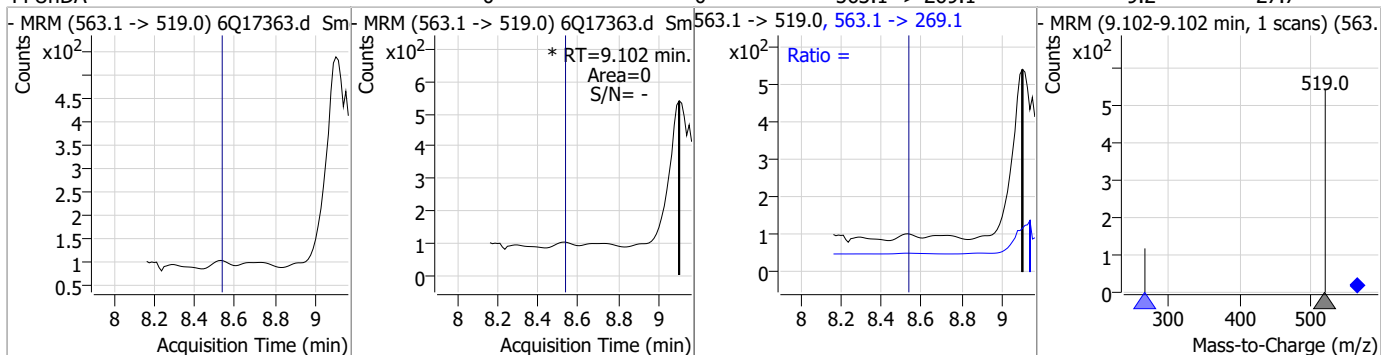
7.2.2

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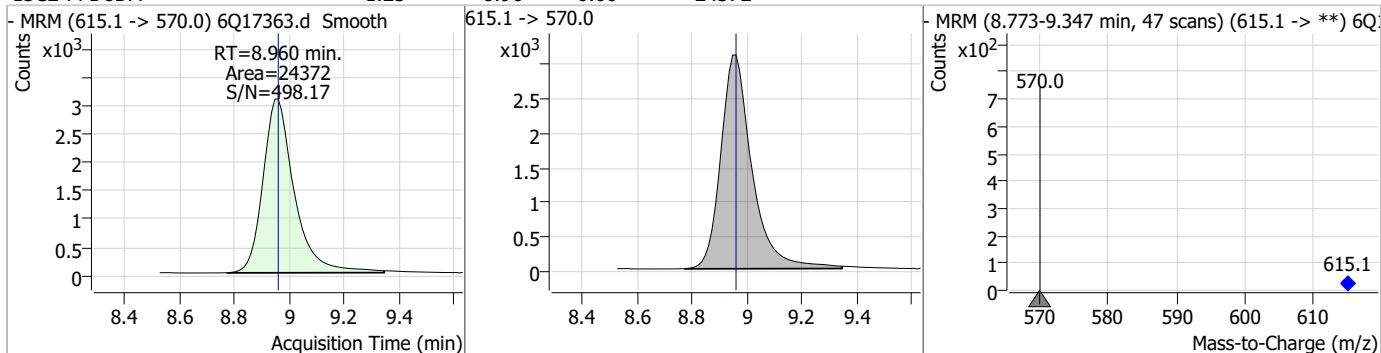


Perfluorinated Compounds by LC/MS/MS

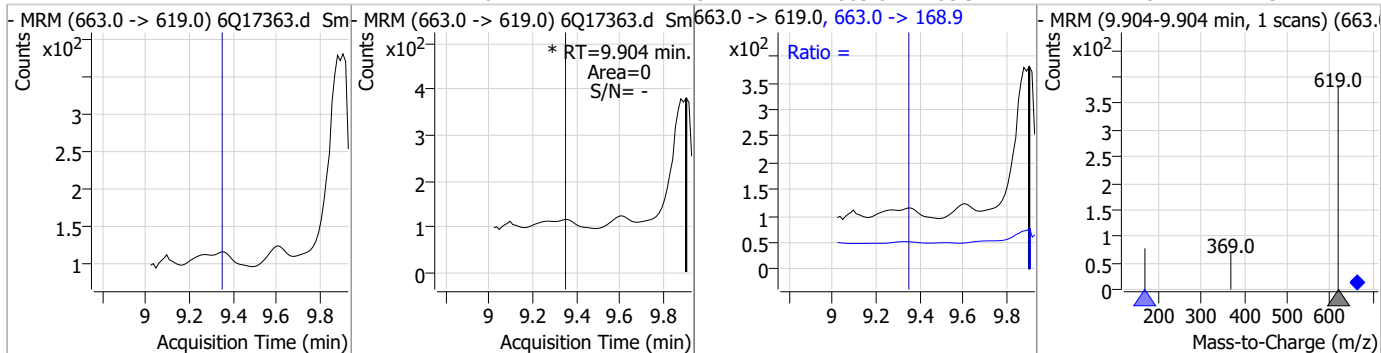
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0	0		0	563.1 -> 269.1		9.2	27.7



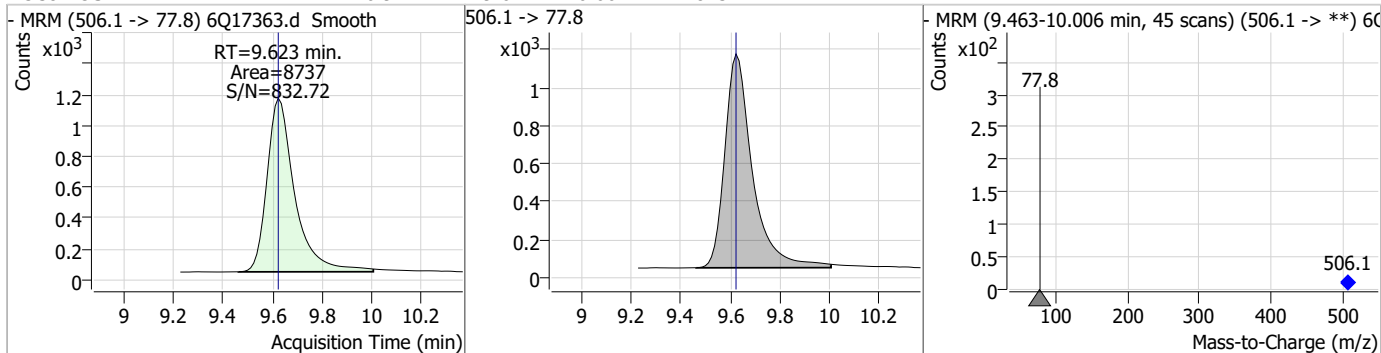
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.23	8.96	0.00	24372				



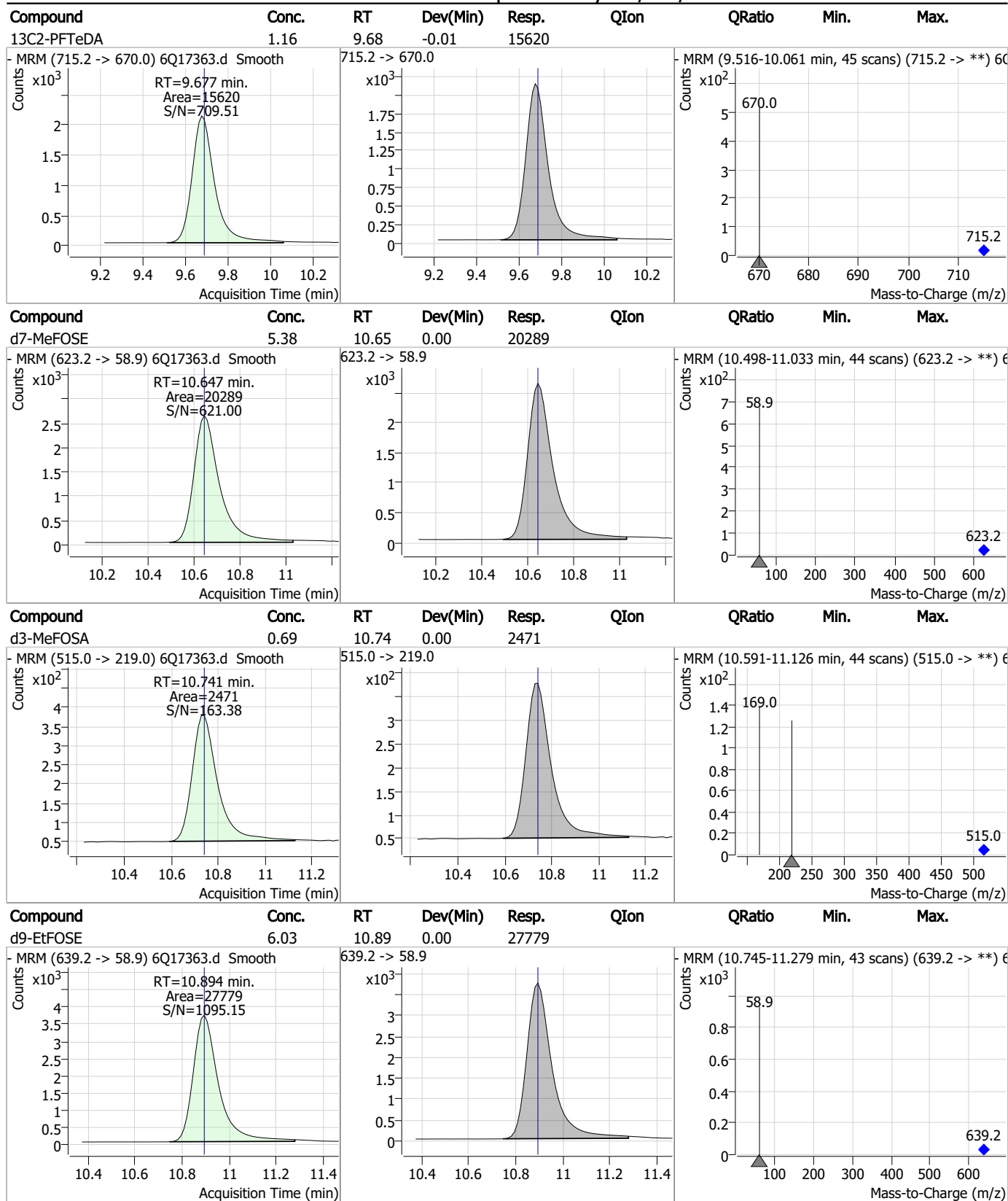
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0	0		0	663.0 -> 168.9		4.6	13.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	0.92	9.62	0.00	8737				

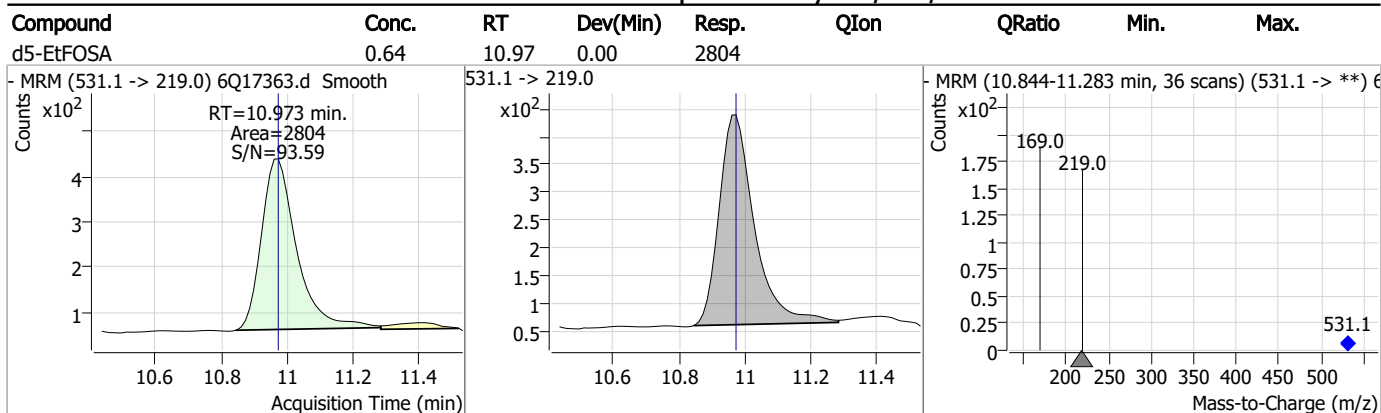


Perfluorinated Compounds by LC/MS/MS



7.2.2
7

Perfluorinated Compounds by LC/MS/MS



7.2.2
7



Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17383.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/3/2023 9:48:27 AM
 Sample Name : iccb
 Vial : P1-A1
 DA Method File : 1633_042823_S6Q258.quantmethod.xml
 Batch Name : s6q261.batch.bin
 Sample Information : OP96301,S6Q261,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.897	216.8 -> 171.9	179803	10.00 µg/L	-0.012
M5-PFPeA	4.270	268.3 -> 223.0	57506	5.00 µg/L	0.000
M5-PFHxA	5.468	318.0 -> 273.0	66138	2.50 µg/L	-0.012
M4-PFHpA	6.419	367.1 -> 322.0	55525	2.50 µg/L	-0.012
M8-PFOA	7.062	421.1 -> 376.0	85916	2.50 µg/L	-0.012
M9-PFNA	7.594	472.1 -> 427.0	27058	1.25 µg/L	0.000
M6-PFDA	8.064	519.1 -> 474.1	19388	1.25 µg/L	-0.012
M7-PFUnDA	8.517	570.0 -> 525.1	25212	1.25 µg/L	-0.013
M2-PFDoDA	8.948	615.1 -> 570.0	24970	1.25 µg/L	-0.012
M2-PFTeDA	9.677	715.2 -> 670.0	16268	1.25 µg/L	-0.012
M8-FOSA	9.623	506.1 -> 77.8	24844	2.50 µg/L	0.000
M3-PFBS	5.398	302.1 -> 79.9	21588	2.50 µg/L	-0.012
M3-PFHxS	7.179	402.1 -> 79.9	12430	2.50 µg/L	0.000
M8-PFOS	8.226	507.1 -> 79.9	11074	2.50 µg/L	-0.012
M2-4:2FTS	5.144	329.1 -> 80.9	1832	5.00 µg/L	-0.012
M2-6:2FTS	6.839	429.1 -> 80.9	2762	5.00 µg/L	-0.012
M2-8:2FTS	7.864	529.1 -> 80.9	2901	5.00 µg/L	-0.012
M3-MeFOSAA	8.122	573.2 -> 419.0	23383	5.00 µg/L	-0.012
M3-HFPO-DA	5.833	286.9 -> 168.9	40443	10.00 µg/L	-0.012
M5-EtFOSAA	8.330	589.2 -> 419.0	19353	5.00 µg/L	0.000
M7-MeFOSE	10.647	623.2 -> 58.9	92127	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	111251	25.00 µg/L	0.000
M5-EtFOSA	10.973	531.1 -> 219.0	10725	2.50 µg/L	0.000
M3-MeFOSA	10.728	515.0 -> 219.0	8055	2.50 µg/L	-0.012
13C4-PFOS	8.227	502.8 -> 79.9	14328	2.50 µg/L	-0.012
13C3-PFBA	2.902	216.0 -> 172.0	75233	5.00 µg/L	0.000
18O2-PFHxS	7.177	403.0 -> 83.9	9328	2.50 µg/L	0.000
13C4-PFOA	7.063	417.1 -> 372.0	86483	2.50 µg/L	-0.012
13C2-PFDA	8.076	515.1 -> 470.1	24273	1.25 µg/L	0.000
13C5-PFNA	7.595	468.0 -> 423.0	29943	1.25 µg/L	0.000
13C2-PFHxA	5.469	315.1 -> 270.0	53082	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.144	329.1 -> 80.9	1832	4.27 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 85.5%		
13C2-6:2FTS	6.839	429.1 -> 80.9	2762	5.31 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.1%		
13C2-8:2FTS	7.864	529.1 -> 80.9	2901	5.18 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.6%		
13C2-PFDoDA	8.948	615.1 -> 570.0	24970	1.24 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.9%		
13C2-PFTeDA	9.677	715.2 -> 670.0	16268	1.19 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.2%		
13C3-PFBS	5.398	302.1 -> 79.9	21588	2.46 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.4%		
13C3-PFHxS	7.179	402.1 -> 79.9	12430	2.50 µg/L	0.000

7.2.3
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C4-PFBA	2.897	216.8 -> 171.9	179803	10.34 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.4%	
13C4-PFHpA	6.419	367.1 -> 322.0	55525	2.56 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C5-PFHxA	5.468	318.0 -> 273.0	66138	2.58 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.3%	
13C5-PFPeA	4.270	268.3 -> 223.0	57506	4.85 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.0%	
13C6-PFDA	8.064	519.1 -> 474.1	19388	1.21 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.9%	
13C7-PFUnDA	8.517	570.0 -> 525.1	25212	1.23 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C8-FOSA	9.623	506.1 -> 77.8	24844	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.9%	
13C8-PFOA	7.062	421.1 -> 376.0	85916	2.57 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.0%	
13C8-PFOS	8.226	507.1 -> 79.9	11074	2.57 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C9-PFNA	7.594	472.1 -> 427.0	27058	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.8%	
d3-MeFOSAA	8.122	573.2 -> 419.0	23383	5.48 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 109.5%	
13C3-HFPO-DA	5.833	286.9 -> 168.9	40443	10.76 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.6%	
d3-MeFOSA	10.728	515.0 -> 219.0	8055	2.25 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 90.0%	
d5-EtFOSAA	8.330	589.2 -> 419.0	19353	5.45 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 109.1%	
d7-MeFOSE	10.647	623.2 -> 58.9	92127	24.50 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.0%	
d9-EtFOSE	10.894	639.2 -> 58.9	111251	24.21 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.8%	
d5-EtFOSA	10.973	531.1 -> 219.0	10725	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.6%	

Target Compounds

Target Compounds	RT	Transition	Response	Conc. Units	QValue
4:2FTS	-	327.1 -> 307.0	-	N.D.	
		327.1 -> 80.9			
6:2FTS	-	427.1 -> 407.0	-	N.D.	
		427.1 -> 80.9			
8:2FTS	-	527.1 -> 507.0	-	N.D.	
		527.1 -> 80.8			
EtFOSAA	-	584.2 -> 419.1	-	N.D.	
		584.2 -> 526.0			
FOSA	-	498.1 -> 77.9	-	N.D.	
		498.1 -> 478.0			
MeFOSAA	-	570.1 -> 419.0	-	N.D.	
		570.1 -> 483.0			
PFBA	-	212.8 -> 168.9	-	N.D.	
PFBS	-	298.7 -> 79.9	-	N.D.	
		298.7 -> 98.8			
PFDA	8.646	512.9 -> 469.0	0	µg/L m	1
		512.9 -> 219.0	0		
PFDODA	-	613.1 -> 569.0	-	N.D.	
		613.1 -> 319.0			
PFDS	-	599.0 -> 79.9	-	N.D.	

7.2.3
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8				
PFHpA	-	363.1 -> 319.0	-	N.D.		
		363.1 -> 169.0				
PFHpS	-	449.0 -> 79.9	-	N.D.		
		449.0 -> 98.9				
PFHxA	-	313.0 -> 269.0	-	N.D.		
		313.0 -> 118.9				
PFHxS	-	398.7 -> 79.9	-	N.D.		
		398.7 -> 98.9				
PFNA	8.168	463.0 -> 419.0	0	µg/L	m	1
		463.0 -> 219.0	0			
PFNS	-	548.8 -> 79.9	-	N.D.		
		548.8 -> 98.9				
PFOA	7.699	413.0 -> 369.0	0	µg/L	m	1
		413.0 -> 169.0	0			
PFOS	-	498.9 -> 79.9	-	N.D.		
		498.9 -> 98.8				
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.1 -> 79.9	-	N.D.		
		349.1 -> 98.9				
PFTeDA	-	713.1 -> 669.0	-	N.D.		
		713.1 -> 168.9				
PFTTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 168.9				
PFUnDA	9.115	563.1 -> 519.0	0	µg/L	m	1
		563.1 -> 269.1	0			
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.		
		532.8 -> 353.0				
ADONA	-	376.9 -> 250.9	-	N.D.		
		376.9 -> 84.8				
HFPO-DA	-	284.9 -> 168.9	-	N.D.		
		284.9 -> 184.9				
3:3FTCA	-	241.0 -> 177.0	-	N.D.		
		241.0 -> 117.0				
5:3FTCA	-	341.0 -> 237.1	-	N.D.		
		341.0 -> 217.0				
7:3FTCA	-	441.0 -> 316.9	-	N.D.		
		441.0 -> 336.9				
EtFOSA	-	526.0 -> 219.0	-	N.D.		
		526.0 -> 169.0				
EtFOSE	-	630.0 -> 58.9	-	N.D.		
MeFOSA	-	511.9 -> 219.0	-	N.D.		
		511.9 -> 169.0				
MeFOSE	-	616.1 -> 58.9	-	N.D.		
PFDoDS	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
NFDHA	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
PFMBA	-	279.0 -> 85.1	-	N.D.		
PFMPA	-	229.0 -> 84.9	-	N.D.		
PFEESA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

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

7.2.3
7

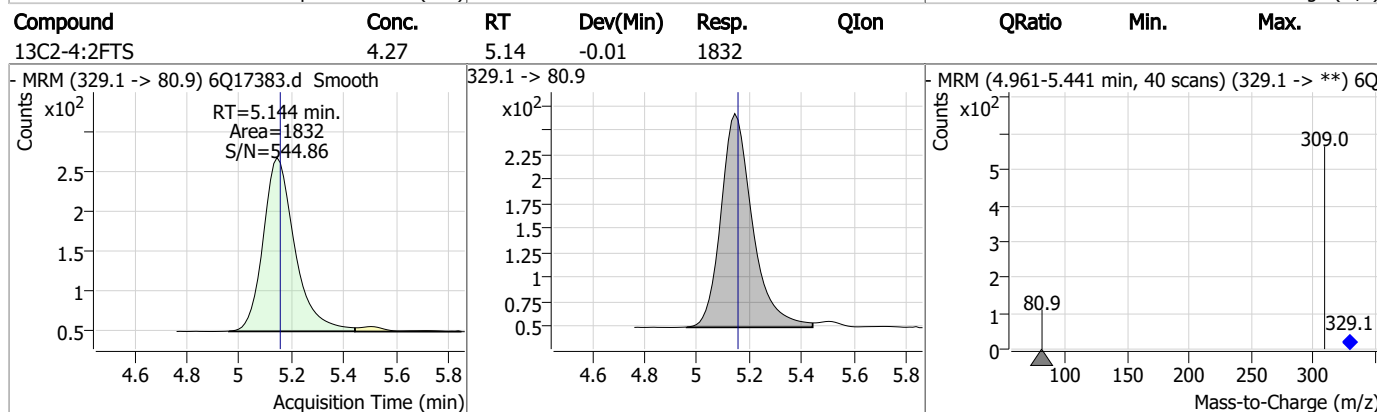
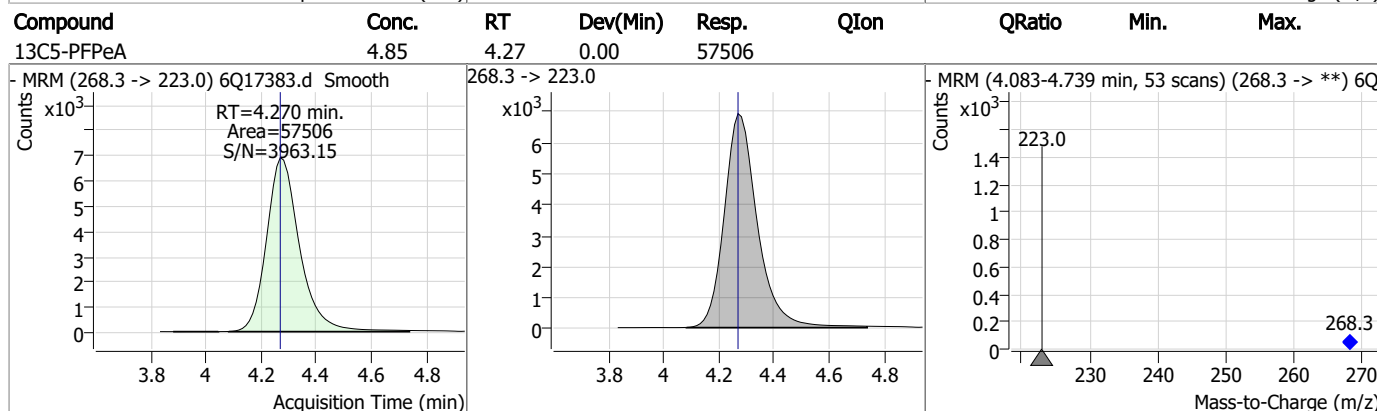
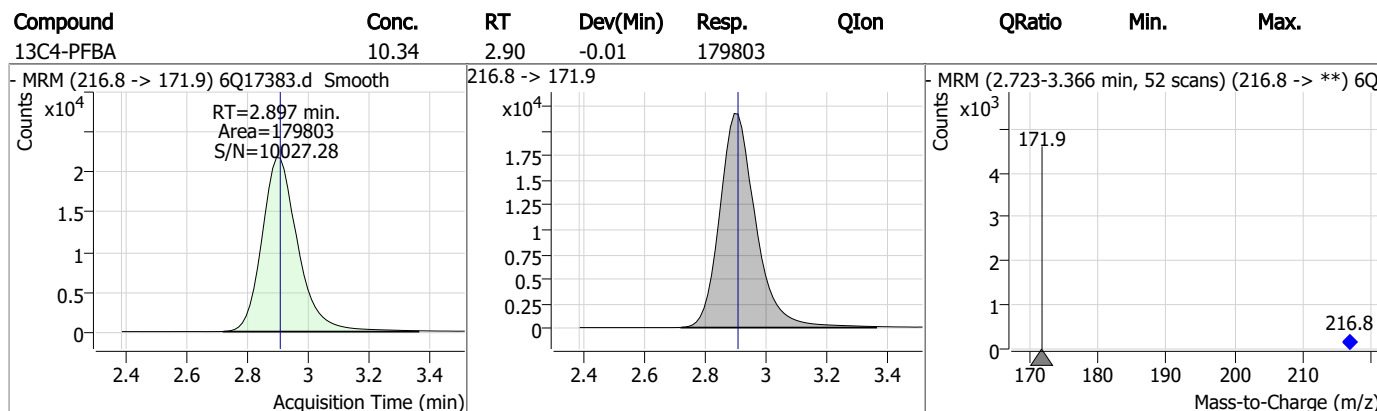
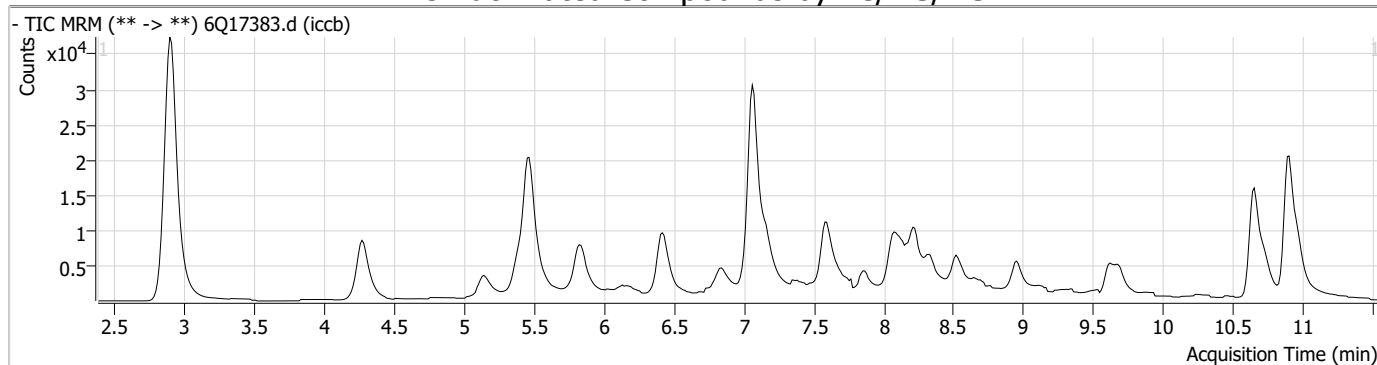
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.2.3

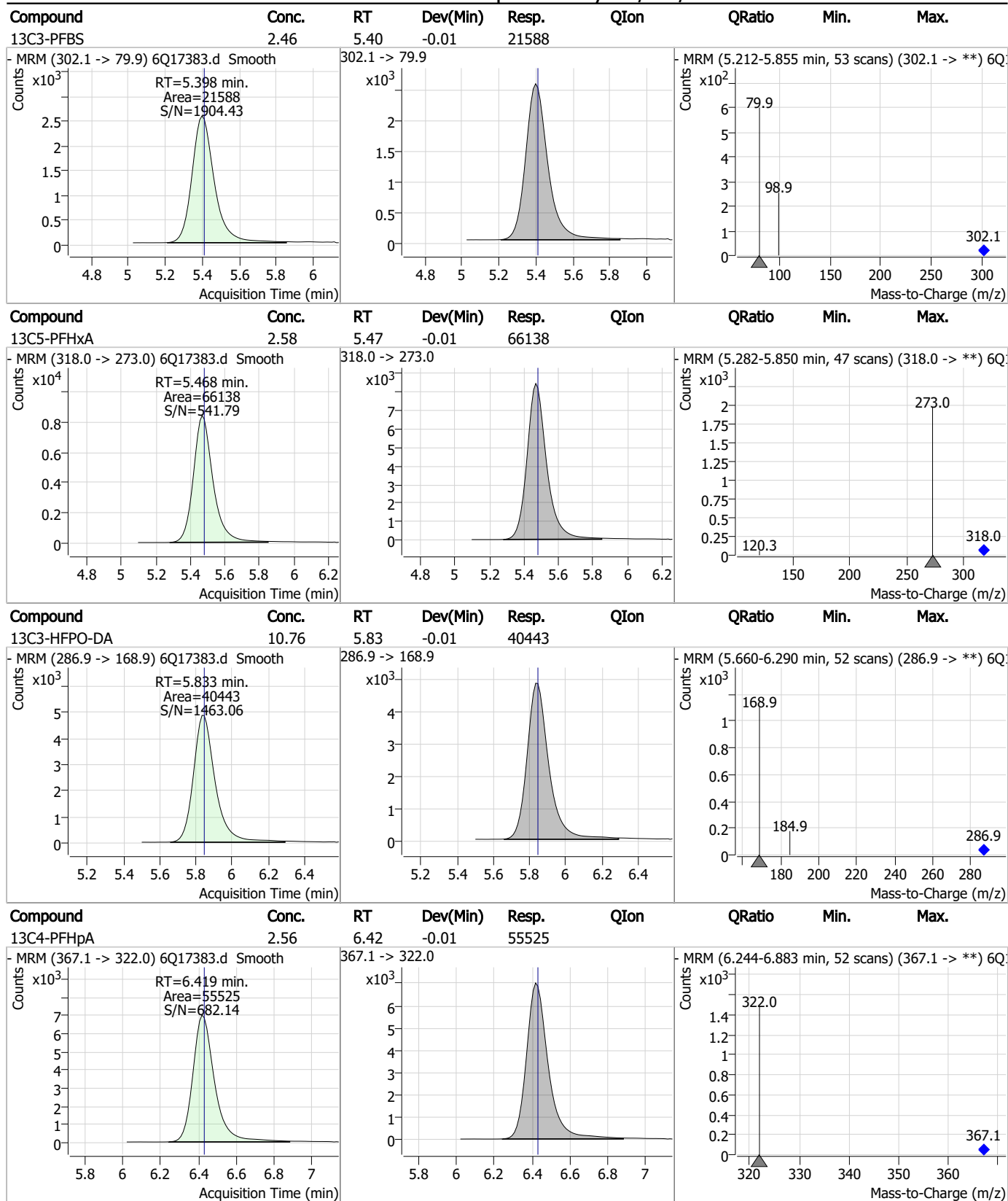
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Perfluorinated Compounds by LC/MS/MS



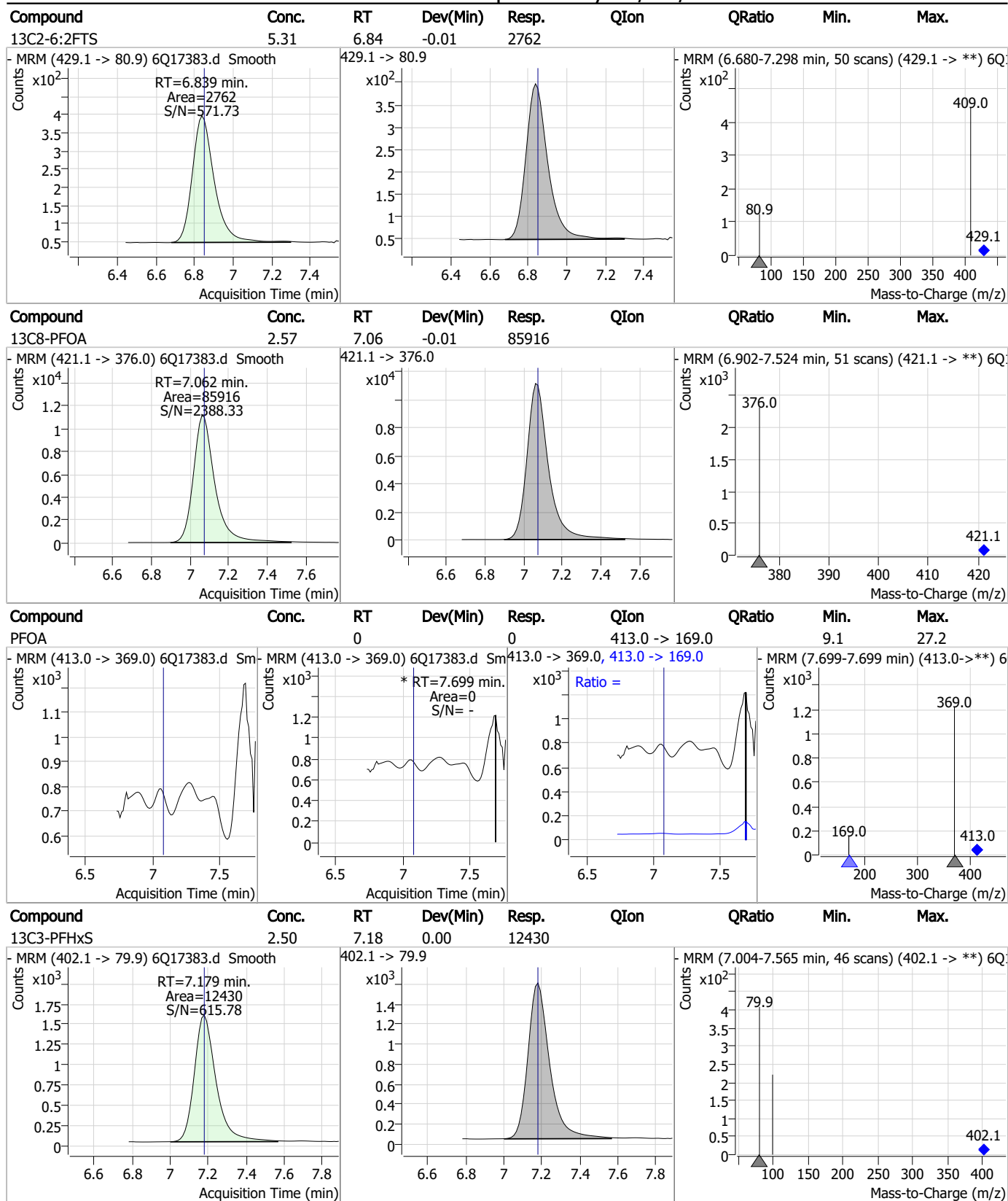
7.2.3
7

Perfluorinated Compounds by LC/MS/MS



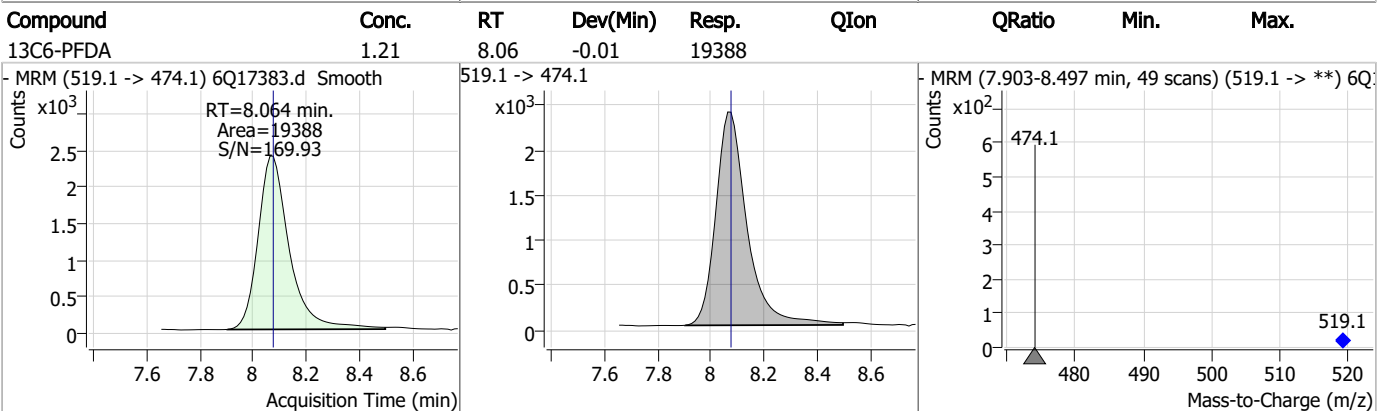
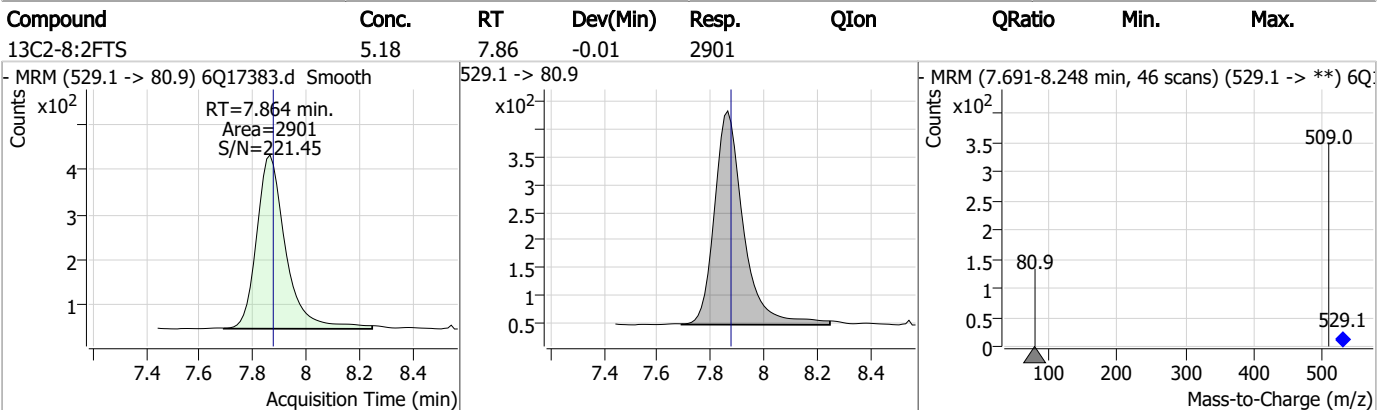
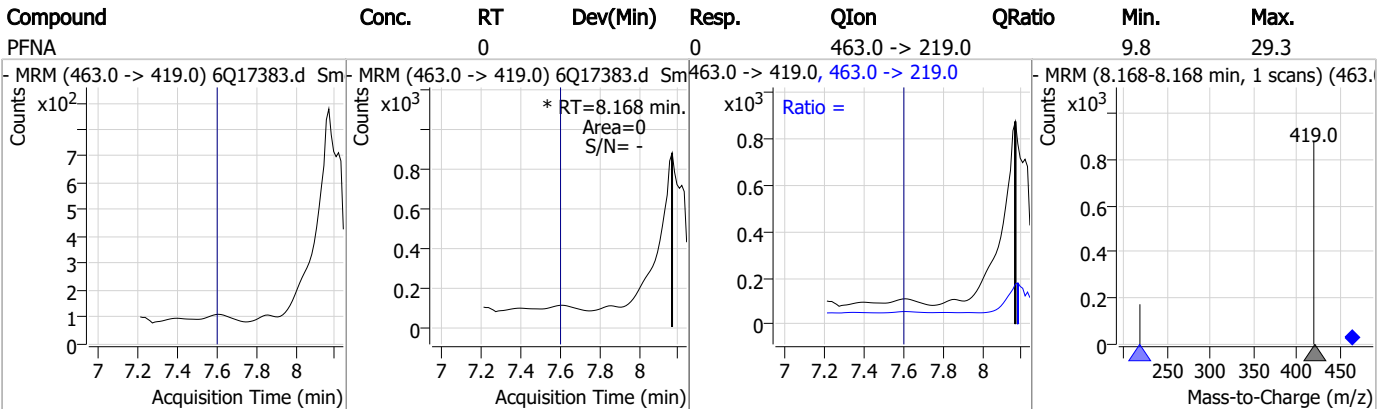
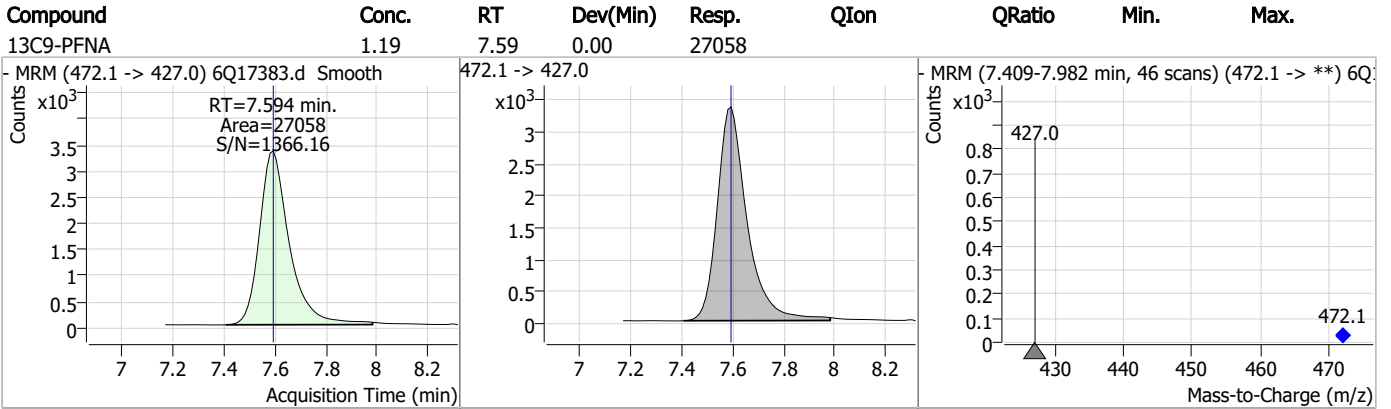
7.2.3
7

Perfluorinated Compounds by LC/MS/MS



7.2.3
7

Perfluorinated Compounds by LC/MS/MS

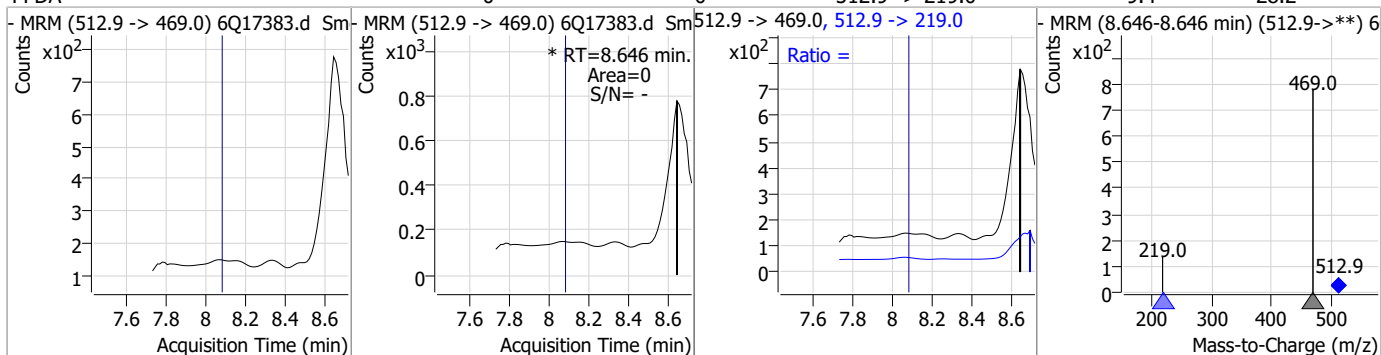


7.2.3

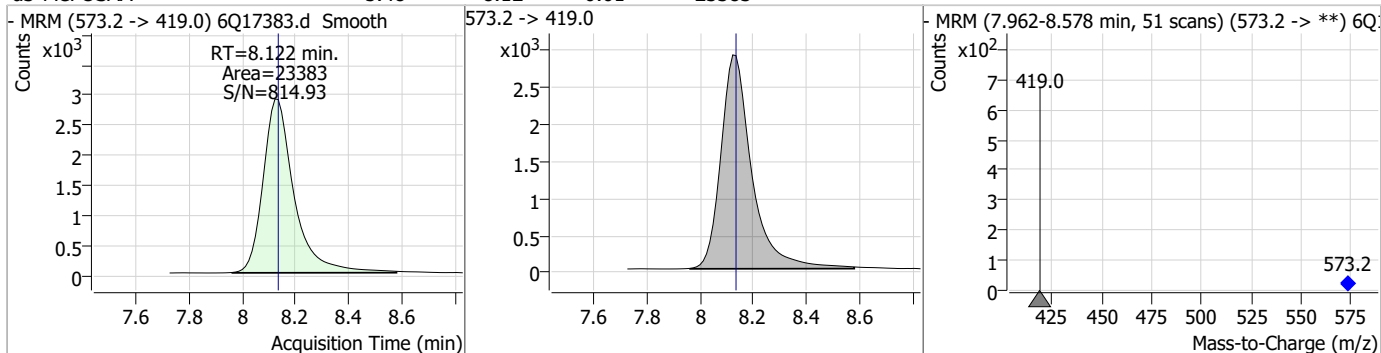
7

Perfluorinated Compounds by LC/MS/MS

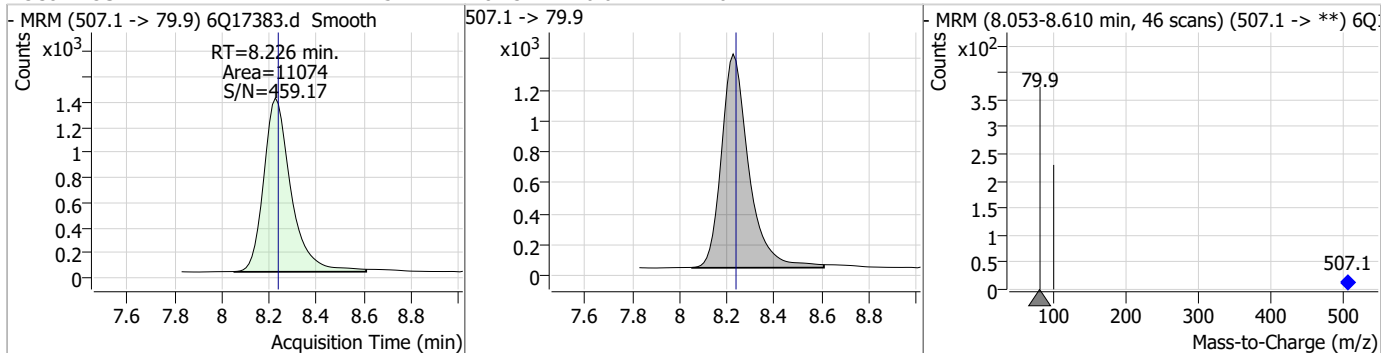
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0	0		0	512.9 -> 219.0		9.4	28.2



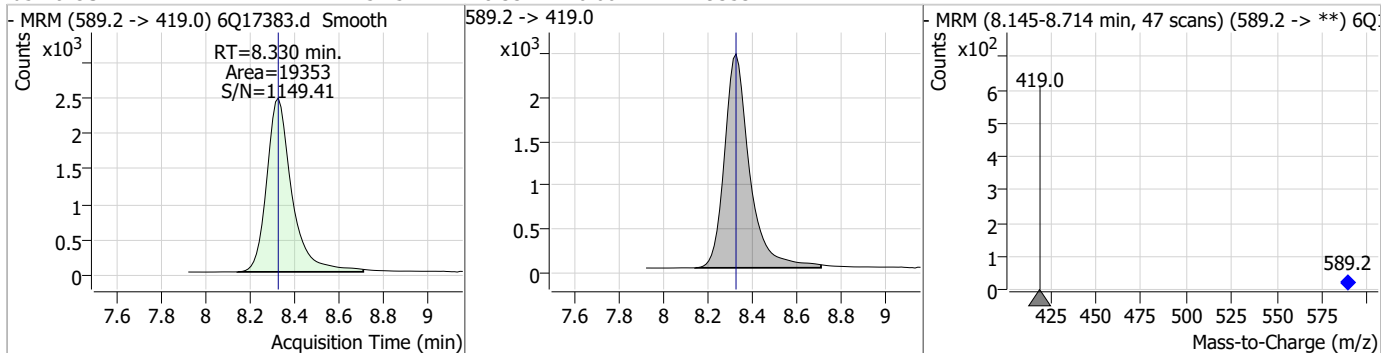
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.48	8.12	-0.01	23383				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.57	8.23	-0.01	11074				

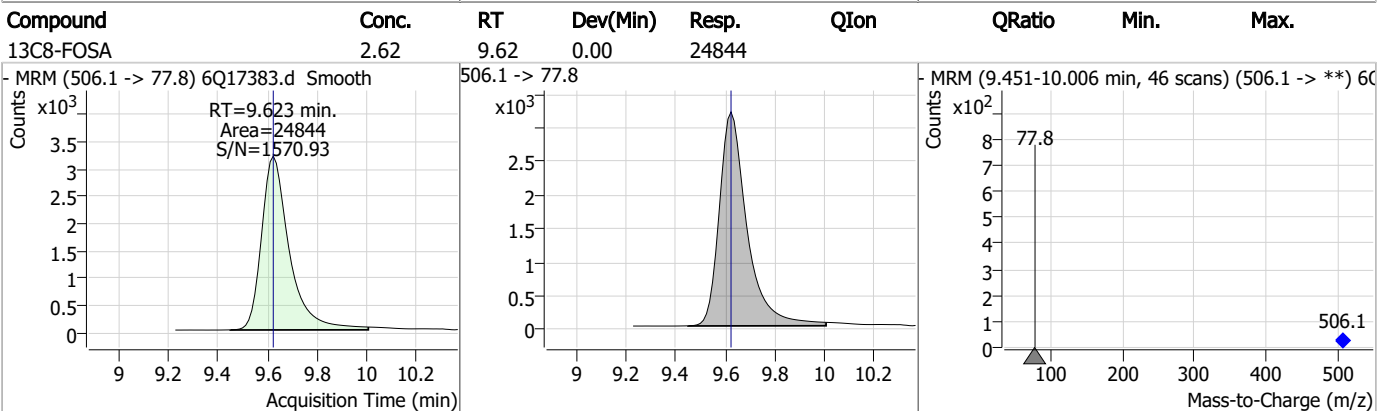
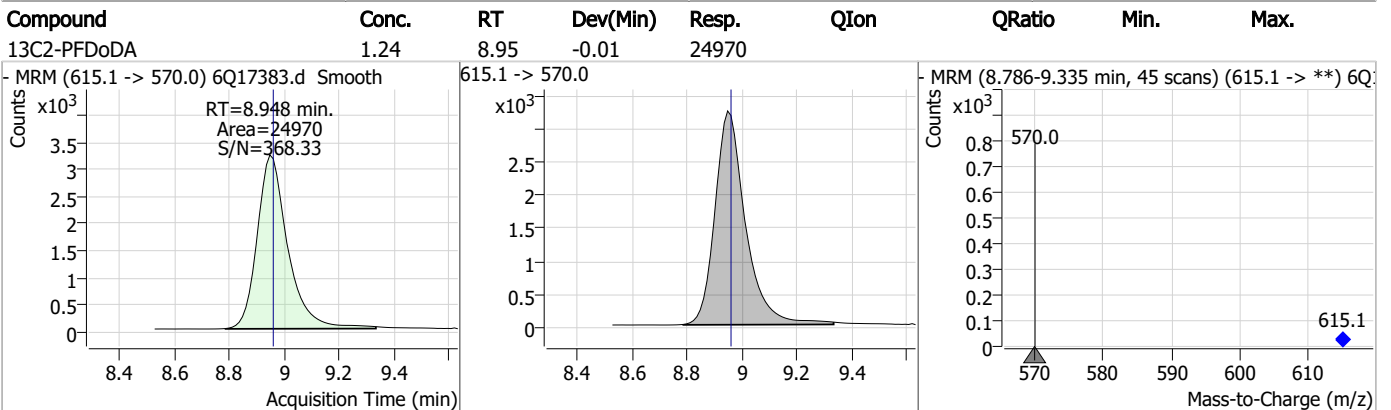
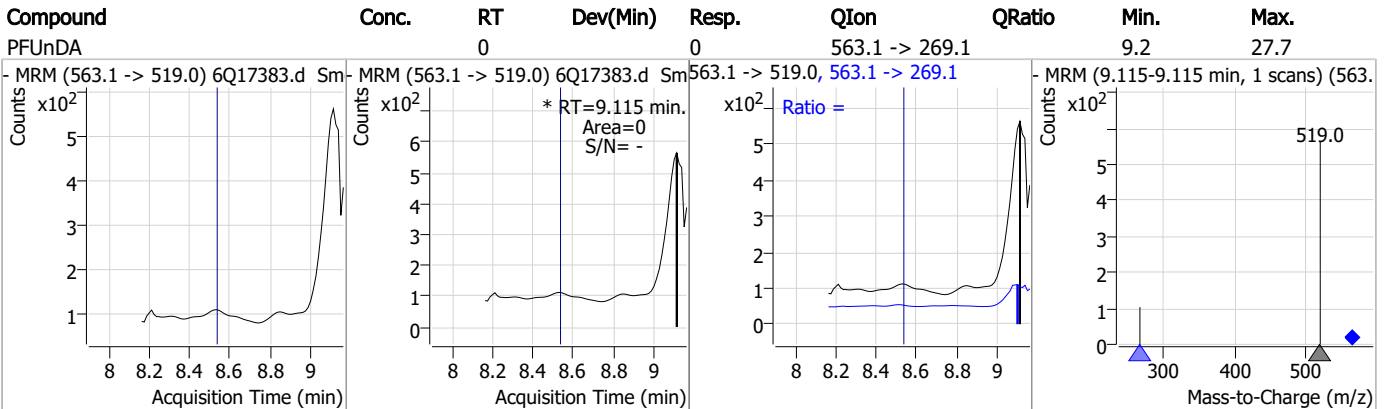
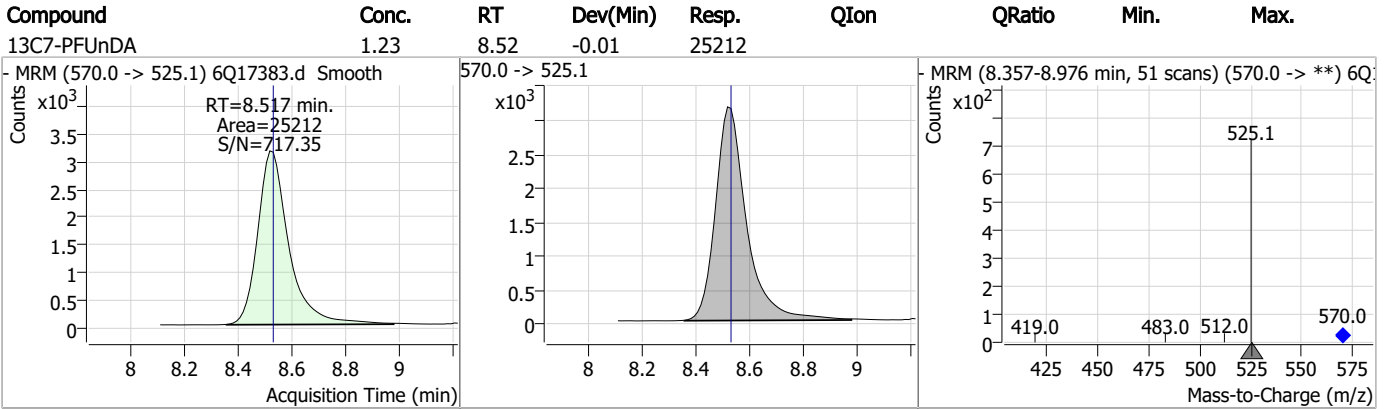


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.45	8.33	0.00	19353				

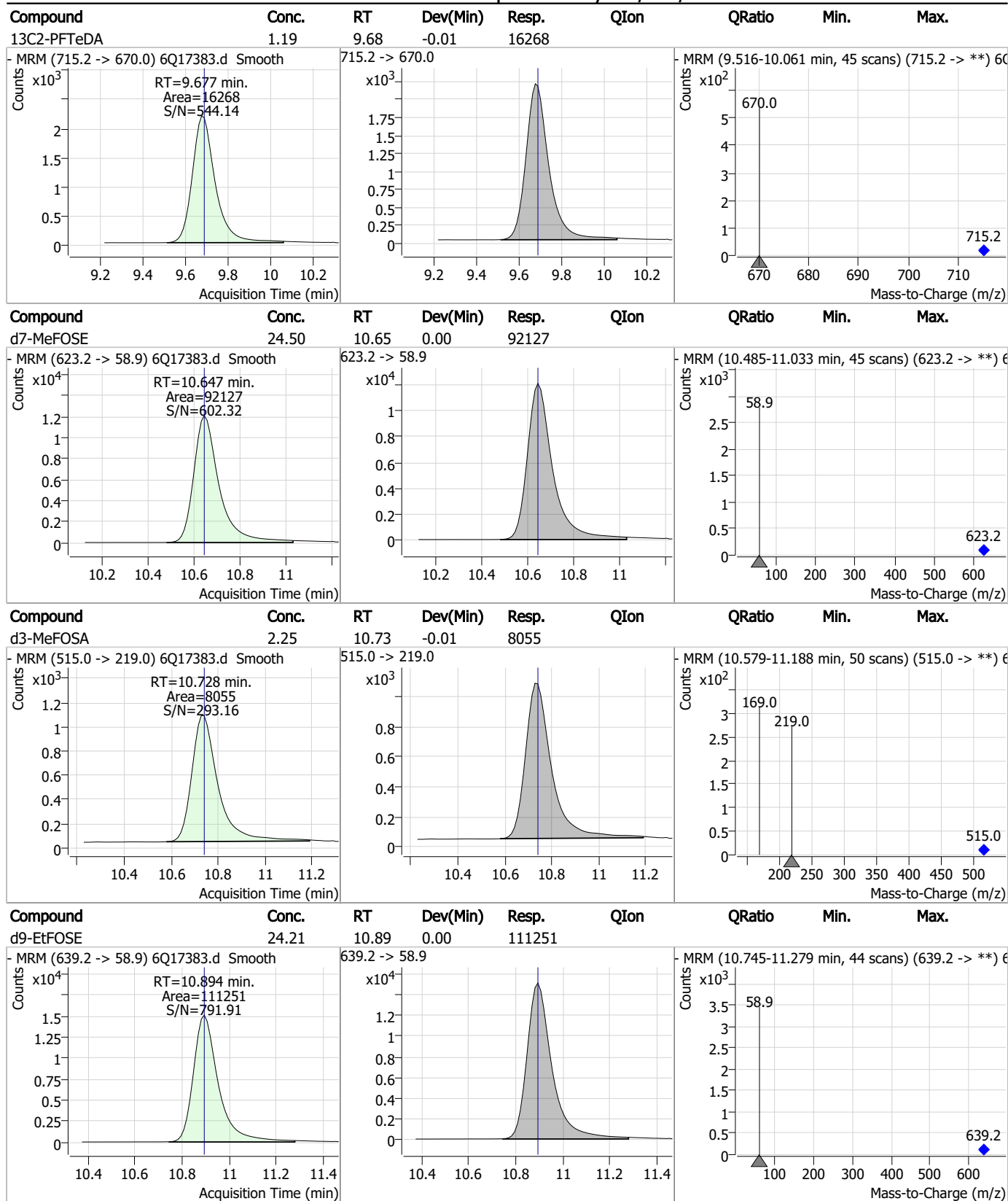


7.2.3
7

Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

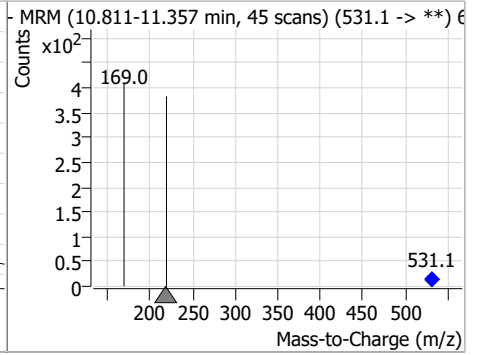
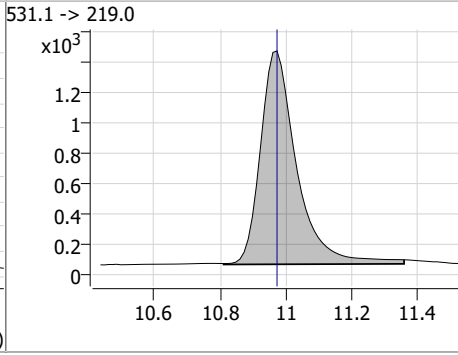
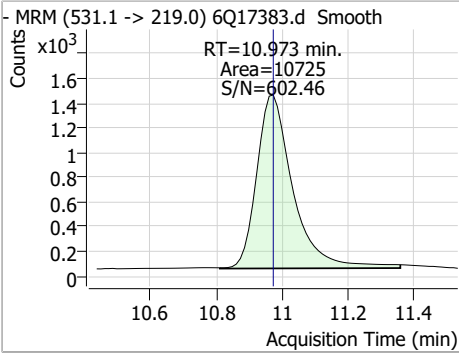


7.2.3

7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.44	10.97	0.00	10725				



7.2.3
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17390.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/3/2023 11:29:52 AM
 Sample Name : iccb
 Vial : P1-A1
 DA Method File : 1633_042823_S6Q258.quantmethod.xml
 Batch Name : s6q261.batch.bin
 Sample Information : OP96301,S6Q261,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.897	216.8 -> 171.9	178577	10.00 µg/L	-0.012
M5-PFPeA	4.270	268.3 -> 223.0	56453	5.00 µg/L	0.000
M5-PFHxA	5.468	318.0 -> 273.0	63738	2.50 µg/L	-0.012
M4-PFHpA	6.419	367.1 -> 322.0	55706	2.50 µg/L	-0.012
M8-PFOA	7.074	421.1 -> 376.0	81622	2.50 µg/L	0.000
M9-PFNA	7.594	472.1 -> 427.0	27263	1.25 µg/L	0.000
M6-PFDA	8.076	519.1 -> 474.1	21168	1.25 µg/L	0.000
M7-PFUnDA	8.530	570.0 -> 525.1	26812	1.25 µg/L	0.000
M2-PFDoDA	8.960	615.1 -> 570.0	24959	1.25 µg/L	0.000
M2-PFTeDA	9.689	715.2 -> 670.0	16862	1.25 µg/L	0.000
M8-FOSA	9.623	506.1 -> 77.8	24568	2.50 µg/L	0.000
M3-PFBS	5.398	302.1 -> 79.9	21364	2.50 µg/L	-0.012
M3-PFHxS	7.179	402.1 -> 79.9	12145	2.50 µg/L	0.000
M8-PFOS	8.226	507.1 -> 79.9	11313	2.50 µg/L	-0.012
M2-4:2FTS	5.144	329.1 -> 80.9	2174	5.00 µg/L	-0.012
M2-6:2FTS	6.839	429.1 -> 80.9	2618	5.00 µg/L	-0.012
M2-8:2FTS	7.864	529.1 -> 80.9	2724	5.00 µg/L	-0.012
M3-MeFOSAA	8.134	573.2 -> 419.0	22498	5.00 µg/L	0.000
M3-HFPO-DA	5.833	286.9 -> 168.9	40252	10.00 µg/L	-0.012
M5-EtFOSAA	8.330	589.2 -> 419.0	19166	5.00 µg/L	0.000
M7-MeFOSE	10.647	623.2 -> 58.9	92142	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	113682	25.00 µg/L	0.000
M5-EtFOSA	10.973	531.1 -> 219.0	10904	2.50 µg/L	0.000
M3-MeFOSA	10.741	515.0 -> 219.0	8471	2.50 µg/L	0.000
13C4-PFOS	8.239	502.8 -> 79.9	13989	2.50 µg/L	0.000
13C3-PFBA	2.902	216.0 -> 172.0	74362	5.00 µg/L	0.000
18O2-PFHxS	7.177	403.0 -> 83.9	9732	2.50 µg/L	0.000
13C4-PFOA	7.075	417.1 -> 372.0	88057	2.50 µg/L	0.000
13C2-PFDA	8.076	515.1 -> 470.1	22567	1.25 µg/L	0.000
13C5-PFNA	7.595	468.0 -> 423.0	29409	1.25 µg/L	0.000
13C2-PFHxA	5.469	315.1 -> 270.0	53798	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.144	329.1 -> 80.9	2174	4.86 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.2%		
13C2-6:2FTS	6.839	429.1 -> 80.9	2618	4.82 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.4%		
13C2-8:2FTS	7.864	529.1 -> 80.9	2724	4.66 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 93.3%		
13C2-PFDoDA	8.960	615.1 -> 570.0	24959	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 106.3%		
13C2-PFTeDA	9.689	715.2 -> 670.0	16862	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 106.2%		
13C3-PFBS	5.398	302.1 -> 79.9	21364	2.33 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 93.4%		
13C3-PFHxS	7.179	402.1 -> 79.9	12145	2.34 µg/L	0.000

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7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.8%	
13C4-PFBA	2.897	216.8 -> 171.9	178577	10.39 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.9%	
13C4-PFHpA	6.419	367.1 -> 322.0	55706	2.53 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C5-PFHxA	5.468	318.0 -> 273.0	63738	2.46 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.3%	
13C5-PFPeA	4.270	268.3 -> 223.0	56453	4.70 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.9%	
13C6-PFDA	8.076	519.1 -> 474.1	21168	1.42 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 113.8%	
13C7-PFUnDA	8.530	570.0 -> 525.1	26812	1.41 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 112.6%	
13C8-FOSA	9.623	506.1 -> 77.8	24568	2.66 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.3%	
13C8-PFOA	7.074	421.1 -> 376.0	81622	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.1%	
13C8-PFOS	8.226	507.1 -> 79.9	11313	2.68 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.4%	
13C9-PFNA	7.594	472.1 -> 427.0	27263	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.3%	
d3-MeFOSAA	8.134	573.2 -> 419.0	22498	5.40 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.9%	
13C3-HFPO-DA	5.833	286.9 -> 168.9	40252	10.57 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.7%	
d3-MeFOSA	10.741	515.0 -> 219.0	8471	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.0%	
d5-EtFOSAA	8.330	589.2 -> 419.0	19166	5.53 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 110.6%	
d7-MeFOSE	10.647	623.2 -> 58.9	92142	25.10 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
d9-EtFOSE	10.894	639.2 -> 58.9	113682	25.34 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.4%	
d5-EtFOSA	10.973	531.1 -> 219.0	10904	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%	

Target Compounds	RT	Transition	Response	Conc. Units	QValue
4:2FTS	-	327.1 -> 307.0	-	N.D.	
		327.1 -> 80.9			
6:2FTS	-	427.1 -> 407.0	-	N.D.	
		427.1 -> 80.9			
8:2FTS	-	527.1 -> 507.0	-	N.D.	
		527.1 -> 80.8			
EtFOSAA	-	584.2 -> 419.1	-	N.D.	
		584.2 -> 526.0			
FOSA	-	498.1 -> 77.9	-	N.D.	
		498.1 -> 478.0			
MeFOSAA	-	570.1 -> 419.0	-	N.D.	
		570.1 -> 483.0			
PFBA	-	212.8 -> 168.9	-	N.D.	
PFBS	-	298.7 -> 79.9	-	N.D.	
		298.7 -> 98.8			
PFDA	8.695	512.9 -> 469.0	0	µg/L m	1
		512.9 -> 219.0	0		
PFDODA	-	613.1 -> 569.0	-	N.D.	
		613.1 -> 319.0			
PFDS	-	599.0 -> 79.9	-	N.D.	

7.2.4
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	-	599.0 -> 98.8	-	N.D.		
		363.1 -> 319.0				
PFHpS	-	363.1 -> 169.0	-	N.D.		
		449.0 -> 79.9				
PFHxA	-	449.0 -> 98.9	-	N.D.		
		313.0 -> 269.0				
PFHxS	-	313.0 -> 118.9	-	N.D.		
		398.7 -> 79.9				
PFNA	8.193	398.7 -> 98.9	0	µg/L	m	1
		463.0 -> 419.0				
PFNS	-	463.0 -> 219.0	-	N.D.		
		548.8 -> 79.9				
PFOA	7.687	548.8 -> 98.9	0	µg/L	m	1
		413.0 -> 369.0				
PFOS	-	413.0 -> 169.0	-	N.D.		
		498.9 -> 79.9				
PFPeA	-	498.9 -> 98.8	-	N.D.		
		263.0 -> 219.0				
PFPeS	-	349.1 -> 79.9	-	N.D.		
		349.1 -> 98.9				
PFTeDA	-	713.1 -> 669.0	-	N.D.		
		713.1 -> 168.9				
PFTrDA	9.904	663.0 -> 619.0	0	µg/L	m	1
		663.0 -> 168.9				
PFUnDA	9.139	563.1 -> 519.0	0	µg/L	m	1
		563.1 -> 269.1				
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.		
		532.8 -> 353.0				
ADONA	-	376.9 -> 250.9	-	N.D.		
		376.9 -> 84.8				
HFPO-DA	-	284.9 -> 168.9	-	N.D.		
		284.9 -> 184.9				
3:3FTCA	-	241.0 -> 177.0	-	N.D.		
		241.0 -> 117.0				
5:3FTCA	-	341.0 -> 237.1	-	N.D.		
		341.0 -> 217.0				
7:3FTCA	-	441.0 -> 316.9	-	N.D.		
		441.0 -> 336.9				
EtFOSA	-	526.0 -> 219.0	-	N.D.		
		526.0 -> 169.0				
EtFOSE	-	630.0 -> 58.9	-	N.D.		
		511.9 -> 219.0				
MeFOSA	-	511.9 -> 169.0	-	N.D.		
		616.1 -> 58.9				
MeFOSE	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
PFDoDS	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
NFDHA	-	279.0 -> 85.1	-	N.D.		
		229.0 -> 84.9				
PFMBA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

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

7.2.4
7

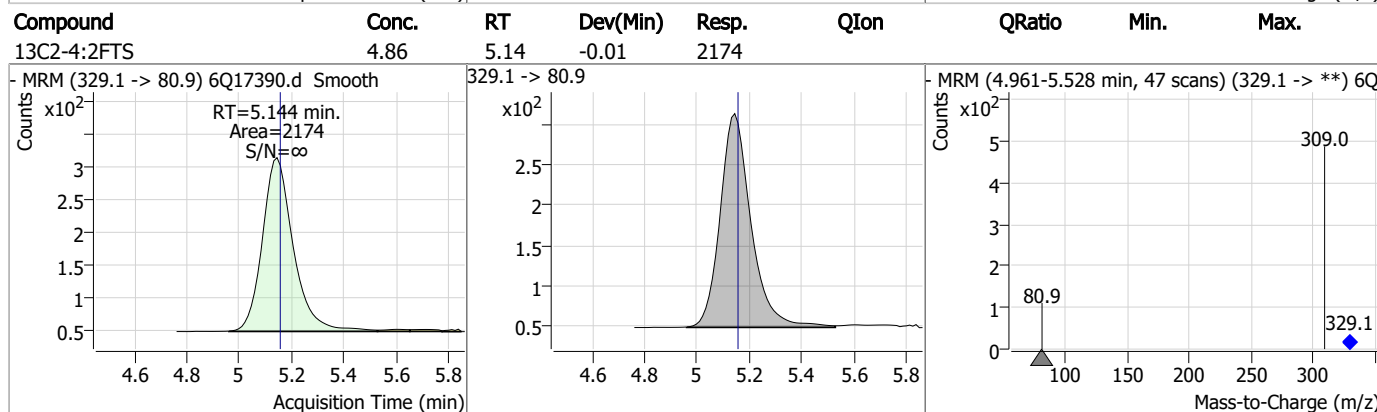
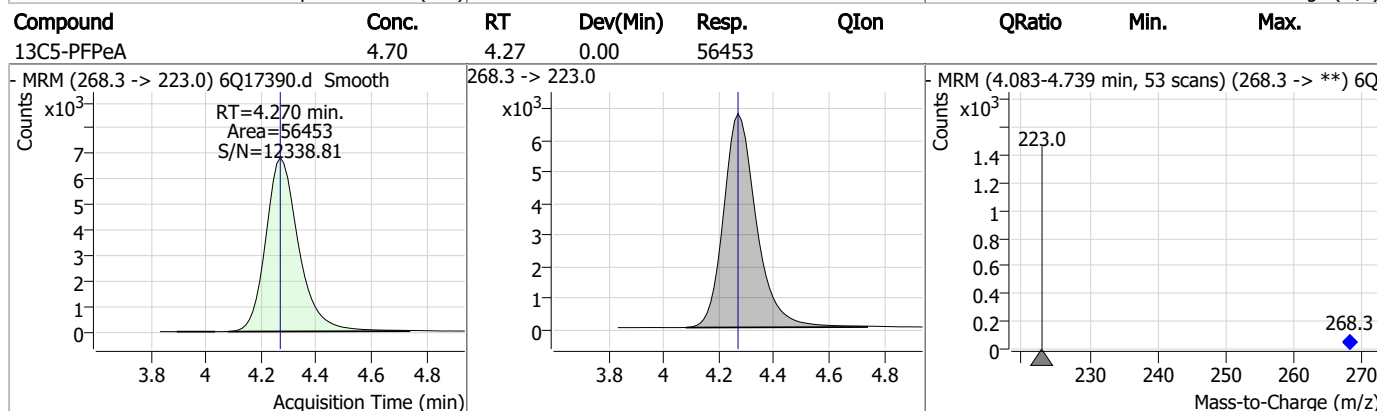
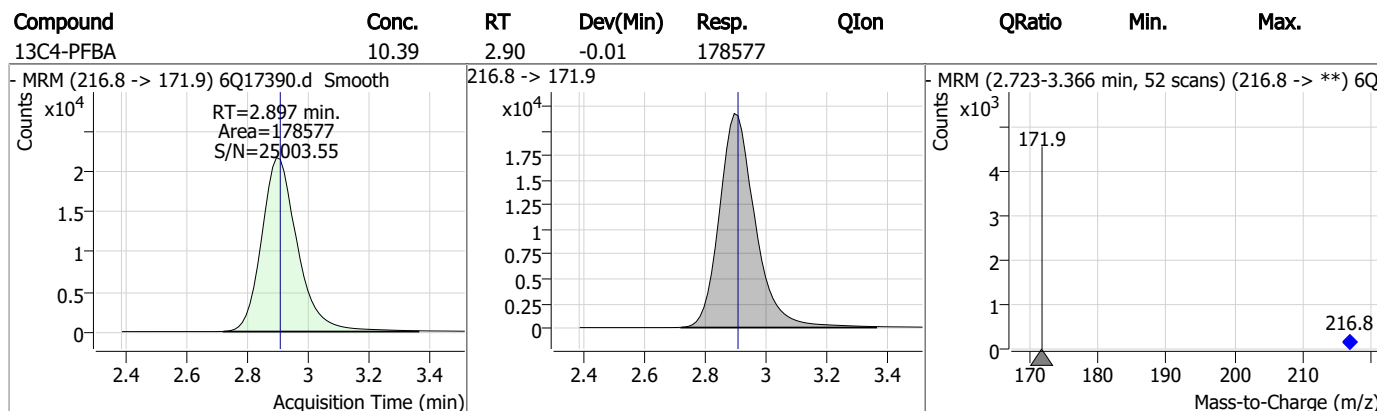
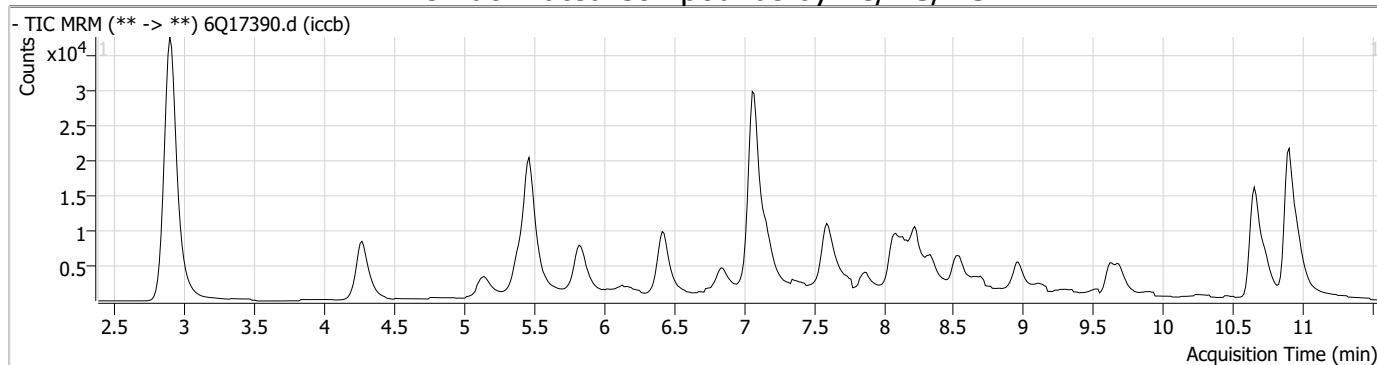
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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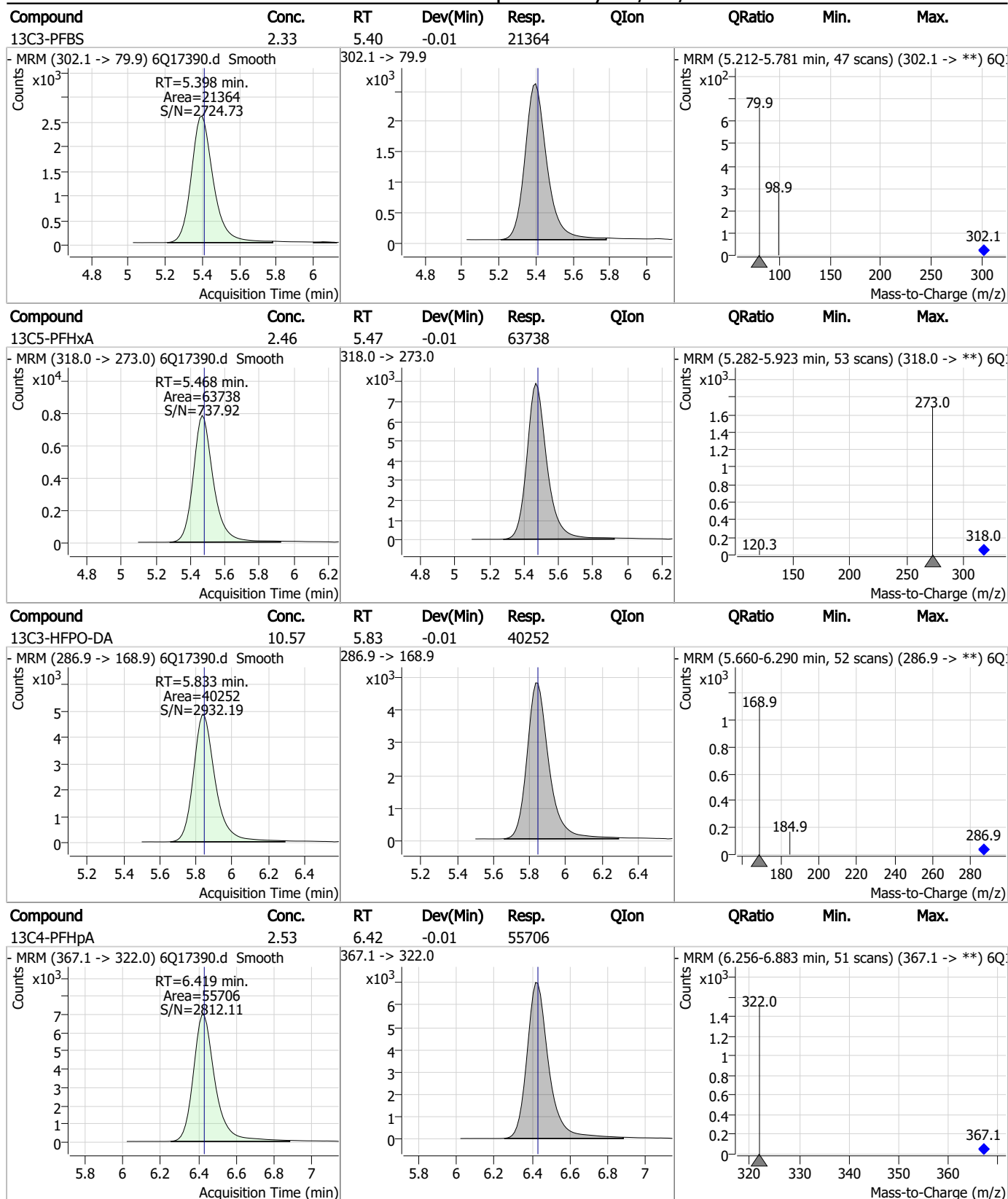
7.2.4

7

Perfluorinated Compounds by LC/MS/MS

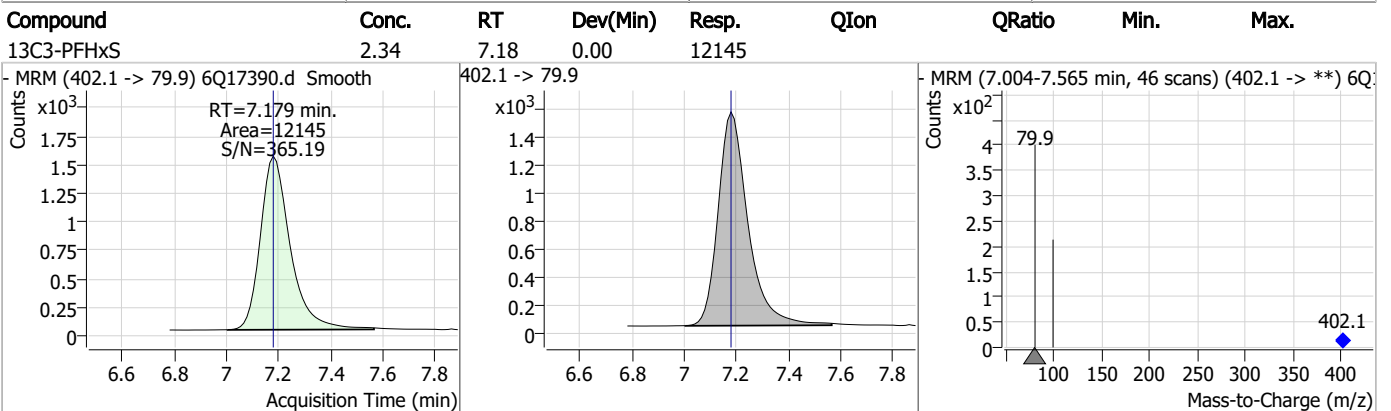
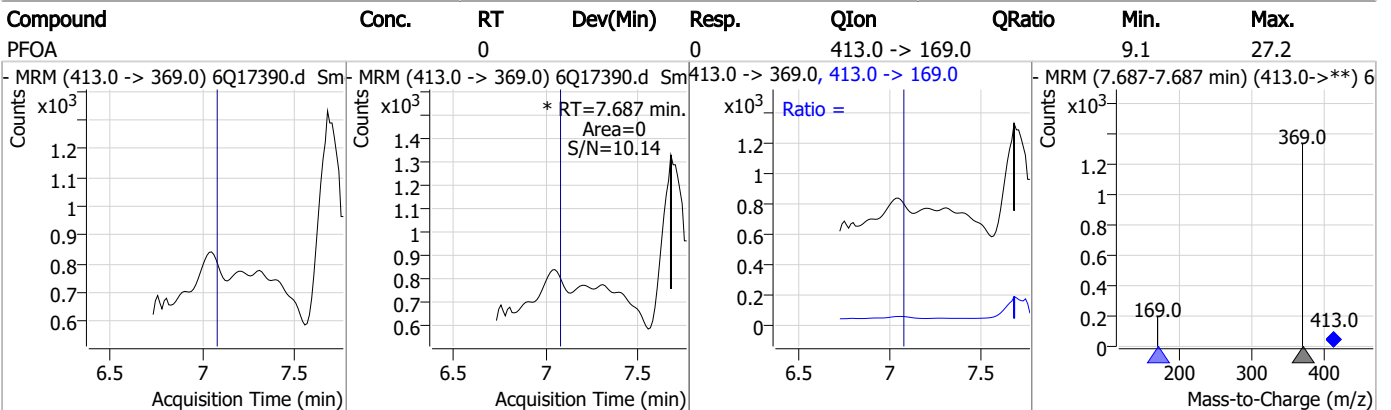
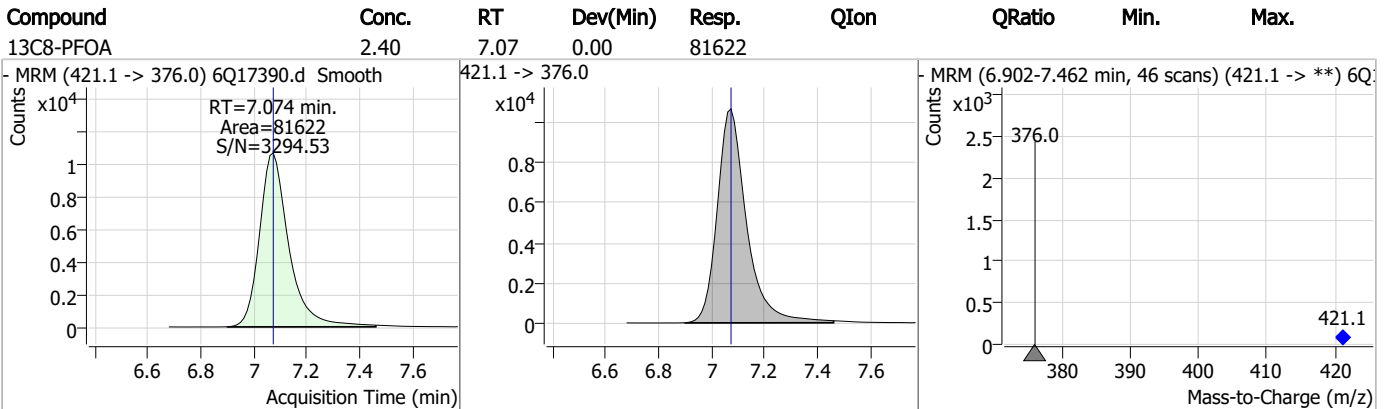
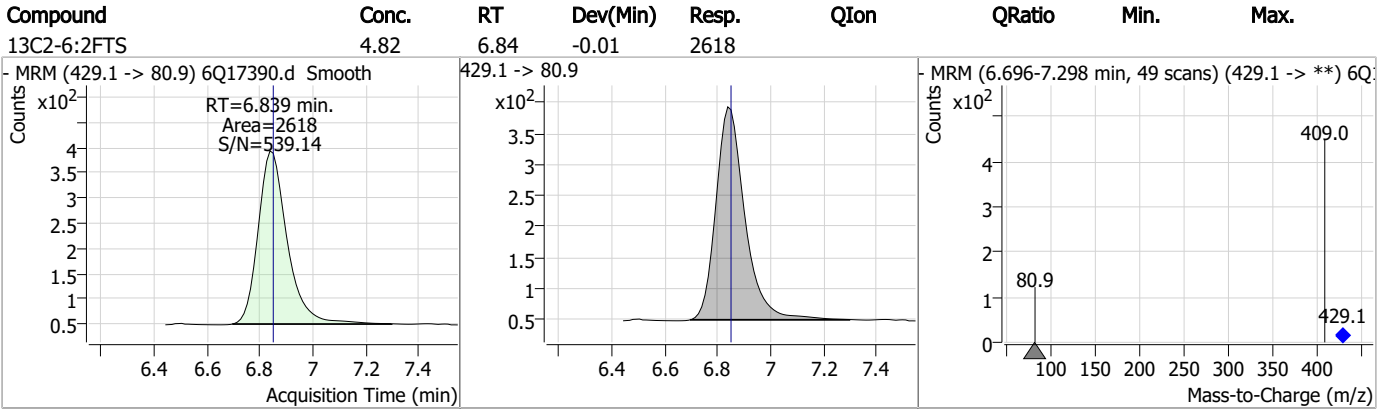


Perfluorinated Compounds by LC/MS/MS



7.2.4
7

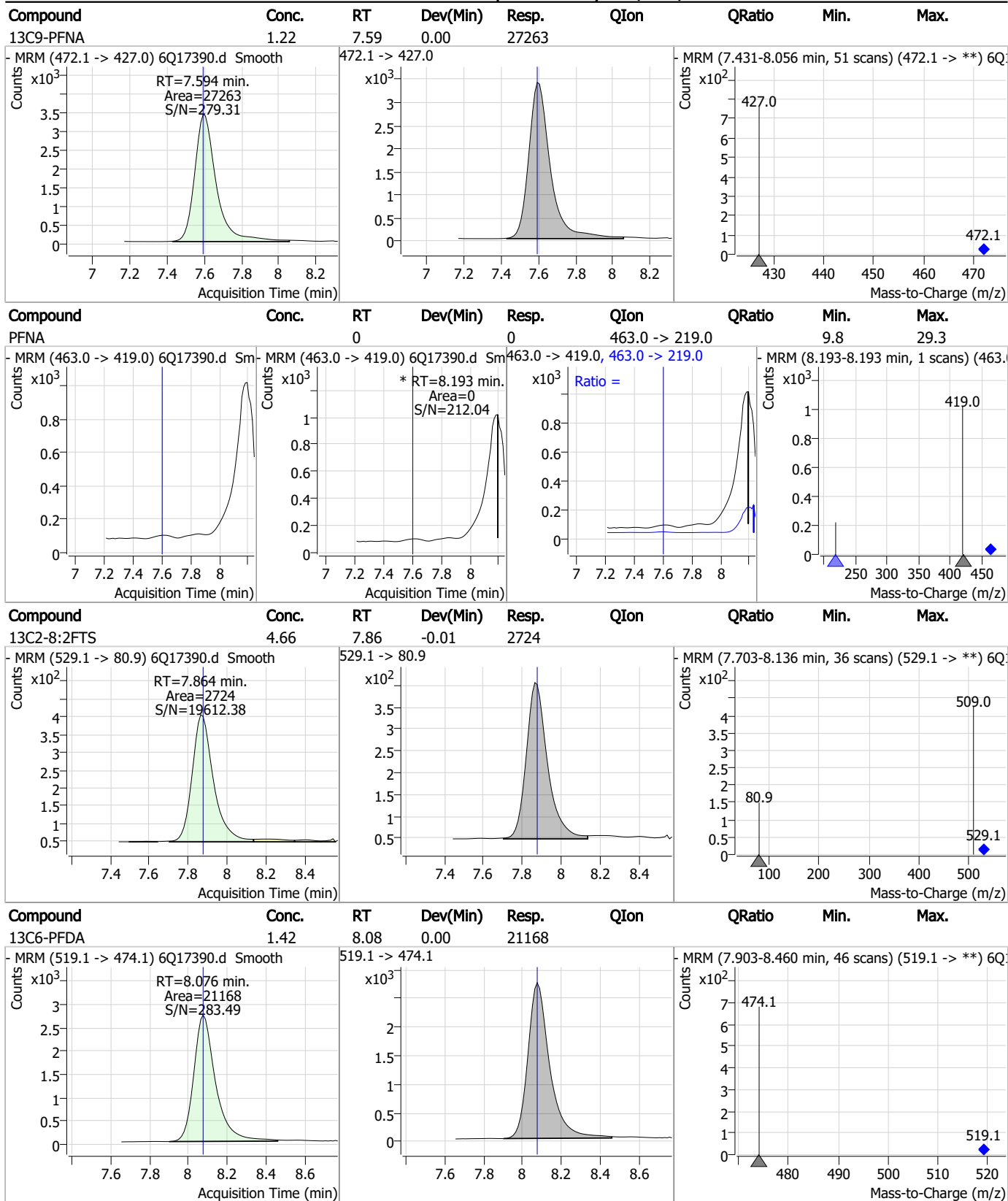
Perfluorinated Compounds by LC/MS/MS



7.2.4

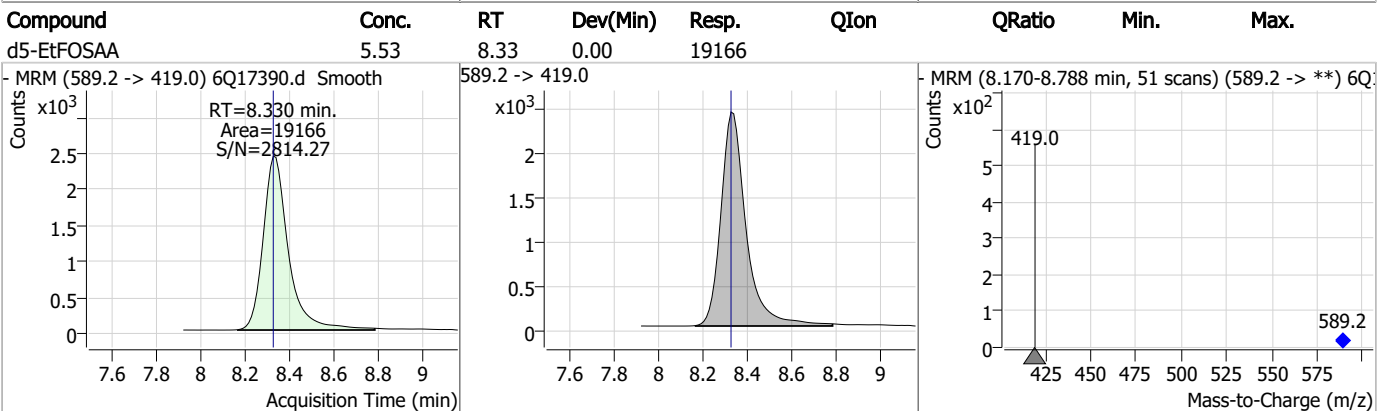
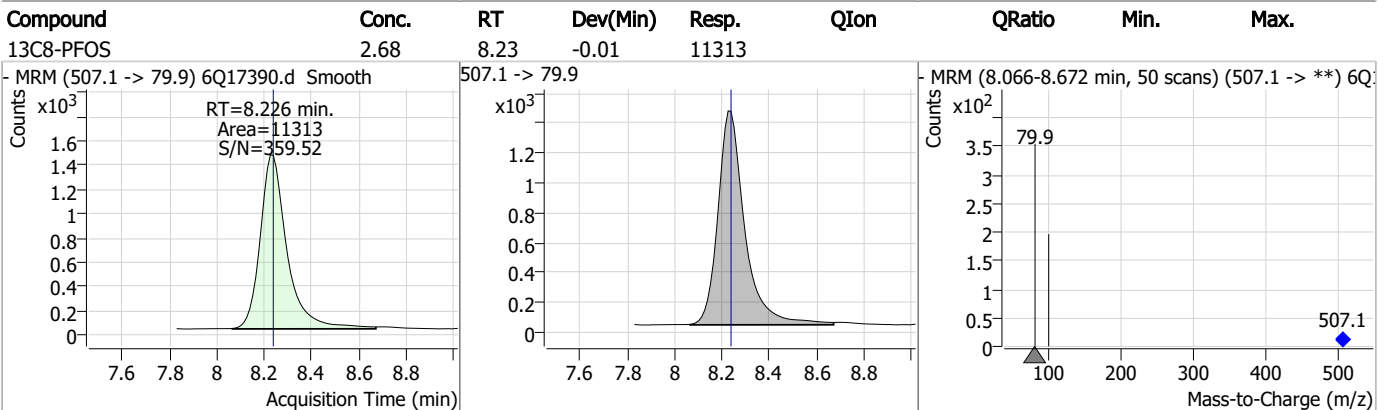
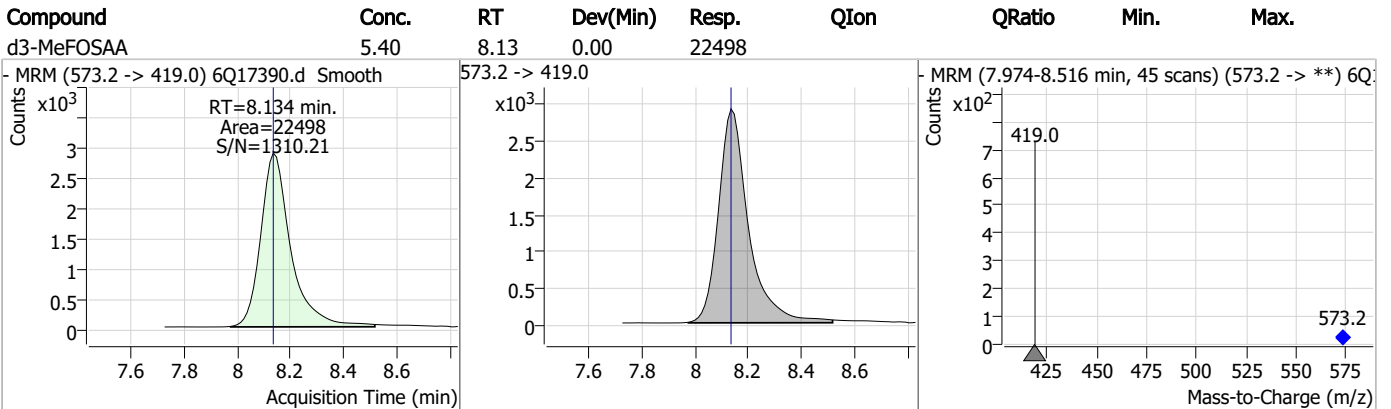
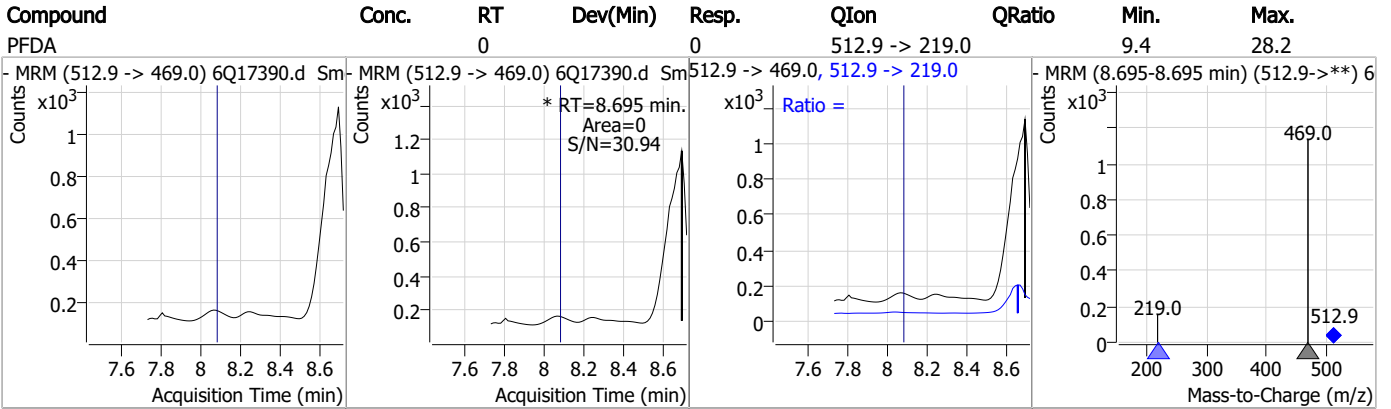
7

Perfluorinated Compounds by LC/MS/MS



7.24
7

Perfluorinated Compounds by LC/MS/MS

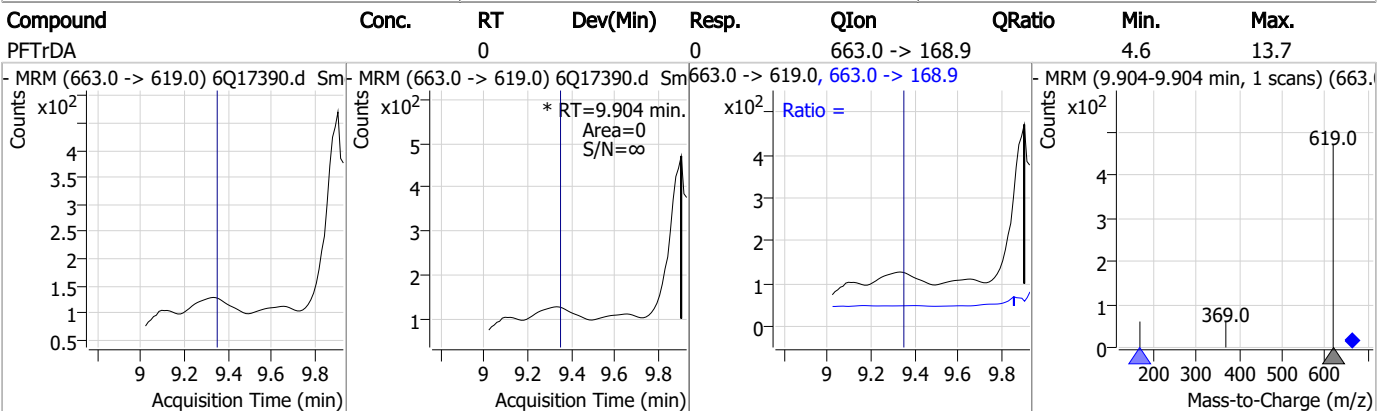
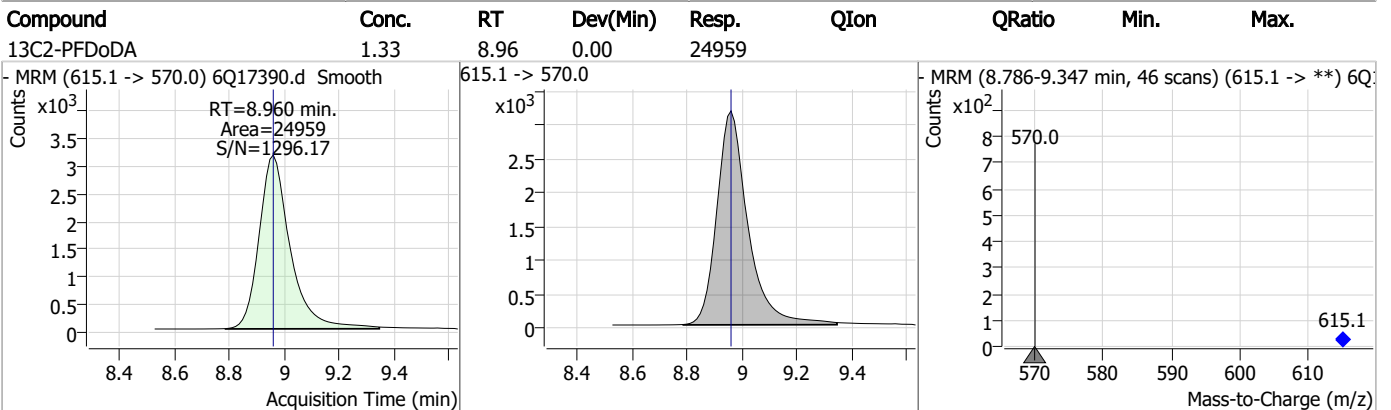
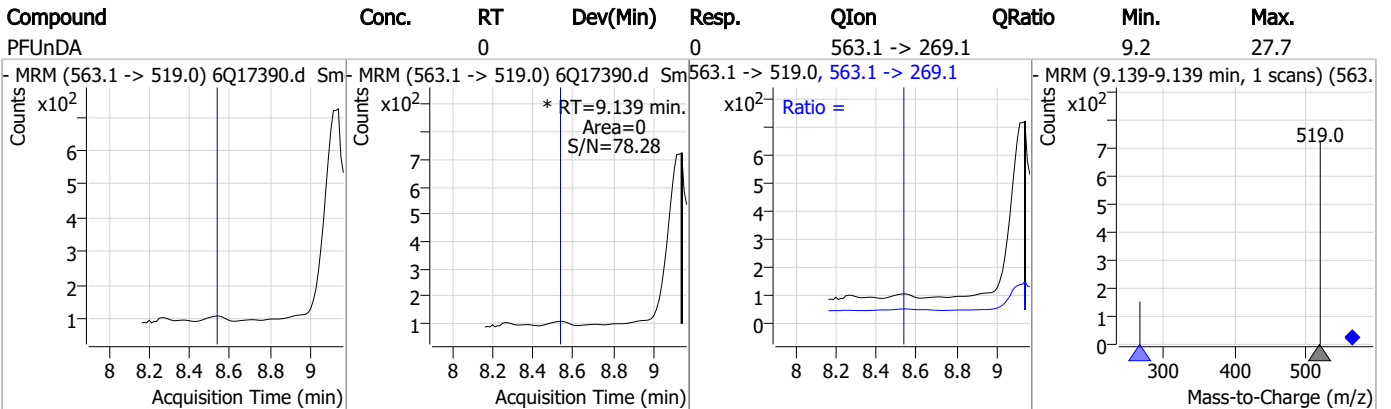
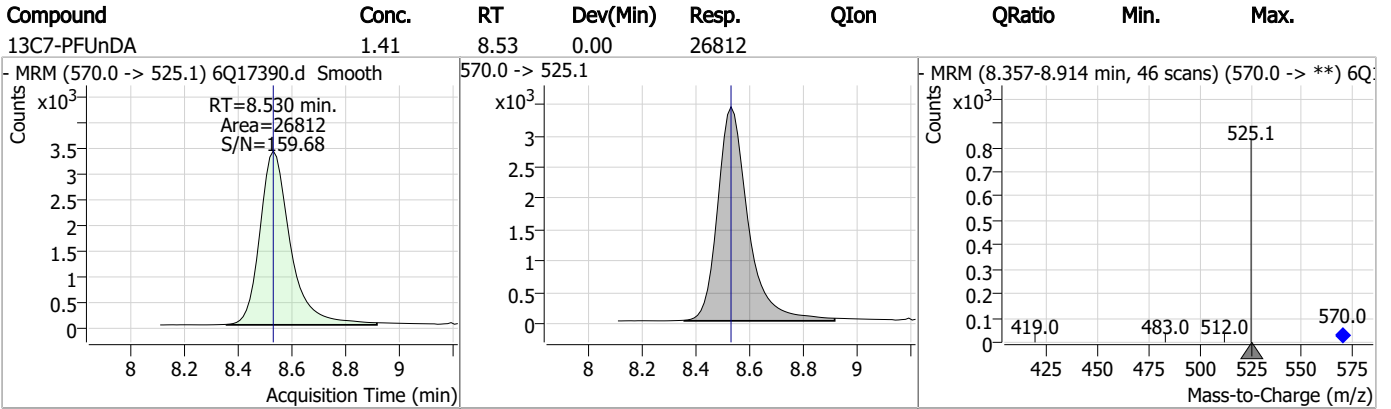


7.2.4

7



Perfluorinated Compounds by LC/MS/MS



7.2.4

7

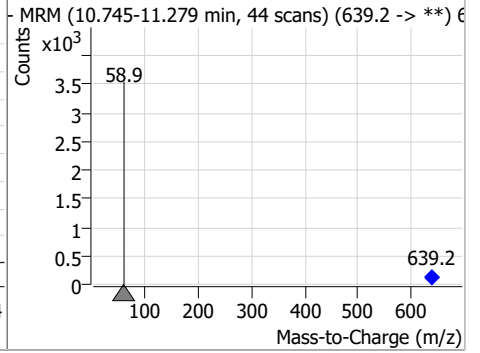
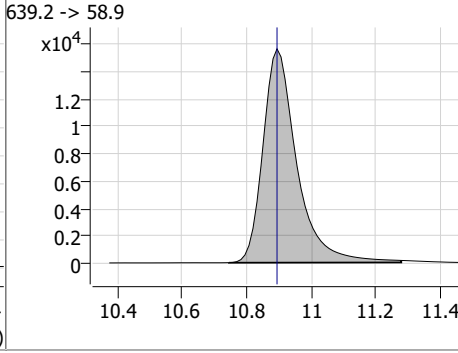
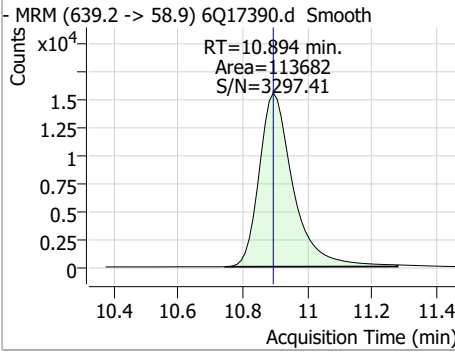
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.66	9.62	0.00	24568				
13C2-PFTeDA	1.33	9.69	0.00	16862				
d7-MeFOSE	25.10	10.65	0.00	92142				
d3-MeFOSA	2.42	10.74	0.00	8471				

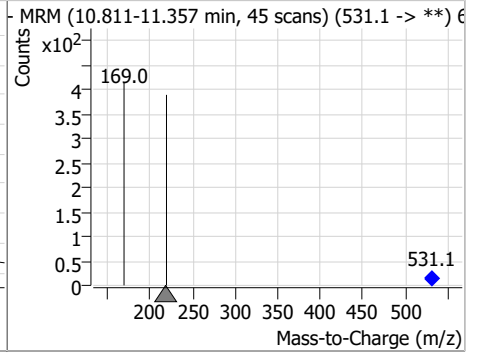
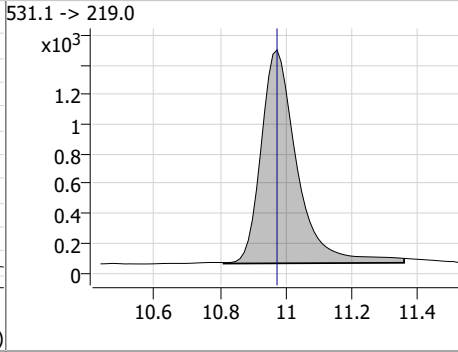
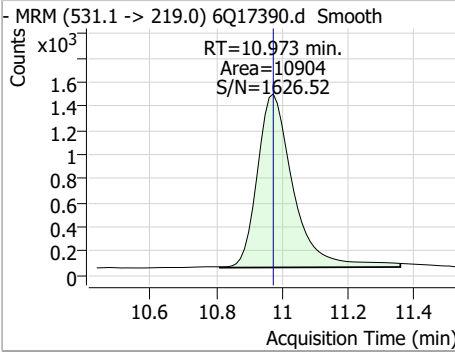
7.2.4
7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.34	10.89	0.00	113682				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOFA	2.54	10.97	0.00	10904				



7.2.4

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17360.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/3/2023 4:15:22 AM
 Sample Name : iccb
 Vial : P1-A1
 DA Method File : 1633_042823_S6Q258.quantmethod.xml
 Batch Name : s6q261.batch.bin
 Sample Information : OP96301,S6Q261,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.897	216.8 -> 171.9	181600	10.00 µg/L	-0.012
M5-PFPeA	4.270	268.3 -> 223.0	57614	5.00 µg/L	0.000
M5-PFHxA	5.468	318.0 -> 273.0	64709	2.50 µg/L	-0.012
M4-PFHpA	6.419	367.1 -> 322.0	56016	2.50 µg/L	-0.012
M8-PFOA	7.074	421.1 -> 376.0	83244	2.50 µg/L	0.000
M9-PFNA	7.594	472.1 -> 427.0	29226	1.25 µg/L	0.000
M6-PFDA	8.076	519.1 -> 474.1	20923	1.25 µg/L	0.000
M7-PFUnDA	8.530	570.0 -> 525.1	25913	1.25 µg/L	0.000
M2-PFDoDA	8.960	615.1 -> 570.0	24144	1.25 µg/L	0.000
M2-PFTeDA	9.689	715.2 -> 670.0	15914	1.25 µg/L	0.000
M8-FOSA	9.623	506.1 -> 77.8	24411	2.50 µg/L	0.000
M3-PFBS	5.398	302.1 -> 79.9	20776	2.50 µg/L	-0.012
M3-PFHxS	7.179	402.1 -> 79.9	12637	2.50 µg/L	0.000
M8-PFOS	8.239	507.1 -> 79.9	11561	2.50 µg/L	0.000
M2-4:2FTS	5.144	329.1 -> 80.9	2017	5.00 µg/L	-0.012
M2-6:2FTS	6.839	429.1 -> 80.9	2777	5.00 µg/L	-0.012
M2-8:2FTS	7.864	529.1 -> 80.9	2939	5.00 µg/L	-0.012
M3-MeFOSAA	8.134	573.2 -> 419.0	23427	5.00 µg/L	0.000
M3-HFPO-DA	5.833	286.9 -> 168.9	39237	10.00 µg/L	-0.012
M5-EtFOSAA	8.330	589.2 -> 419.0	20594	5.00 µg/L	0.000
M7-MeFOSE	10.647	623.2 -> 58.9	93368	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	107988	25.00 µg/L	0.000
M5-EtFOSA	10.973	531.1 -> 219.0	10720	2.50 µg/L	0.000
M3-MeFOSA	10.728	515.0 -> 219.0	8871	2.50 µg/L	-0.012
13C4-PFOS	8.227	502.8 -> 79.9	15320	2.50 µg/L	-0.012
13C3-PFBA	2.902	216.0 -> 172.0	75866	5.00 µg/L	0.000
18O2-PFHxS	7.177	403.0 -> 83.9	9710	2.50 µg/L	0.000
13C4-PFOA	7.075	417.1 -> 372.0	86626	2.50 µg/L	0.000
13C2-PFDA	8.076	515.1 -> 470.1	24622	1.25 µg/L	0.000
13C5-PFNA	7.595	468.0 -> 423.0	29947	1.25 µg/L	0.000
13C2-PFHxA	5.469	315.1 -> 270.0	53398	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.144	329.1 -> 80.9	2017	4.52 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 90.4%		
13C2-6:2FTS	6.839	429.1 -> 80.9	2777	5.12 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.5%		
13C2-8:2FTS	7.864	529.1 -> 80.9	2939	5.04 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.9%		
13C2-PFDoDA	8.960	615.1 -> 570.0	24144	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.3%		
13C2-PFTeDA	9.689	715.2 -> 670.0	15914	1.15 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 91.8%		
13C3-PFBS	5.398	302.1 -> 79.9	20776	2.27 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 91.0%		
13C3-PFHxS	7.179	402.1 -> 79.9	12637	2.44 µg/L	0.000

7.2.5
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.8%	
13C4-PFBA	2.897	216.8 -> 171.9	181600	10.36 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.6%	
13C4-PFHpA	6.419	367.1 -> 322.0	56016	2.56 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C5-PFHxA	5.468	318.0 -> 273.0	64709	2.51 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C5-PFPeA	4.270	268.3 -> 223.0	57614	4.83 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.6%	
13C6-PFDA	8.076	519.1 -> 474.1	20923	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.1%	
13C7-PFUnDA	8.530	570.0 -> 525.1	25913	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C8-FOSA	9.623	506.1 -> 77.8	24411	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.4%	
13C8-PFOA	7.074	421.1 -> 376.0	83244	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C8-PFOS	8.239	507.1 -> 79.9	11561	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C9-PFNA	7.594	472.1 -> 427.0	29226	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.4%	
d3-MeFOSAA	8.134	573.2 -> 419.0	23427	5.13 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C3-HFPO-DA	5.833	286.9 -> 168.9	39237	10.38 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.8%	
d3-MeFOSA	10.728	515.0 -> 219.0	8871	2.32 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.7%	
d5-EtFOSAA	8.330	589.2 -> 419.0	20594	5.43 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.5%	
d7-MeFOSE	10.647	623.2 -> 58.9	93368	23.22 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 92.9%	
d9-EtFOSE	10.894	639.2 -> 58.9	107988	21.98 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 87.9%	
d5-EtFOSA	10.973	531.1 -> 219.0	10720	2.28 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.3%	

Target Compounds

Compound	RT	Transition	Response	Conc. Units	QValue
4:2FTS	-	327.1 -> 307.0	-	N.D.	
		327.1 -> 80.9			
6:2FTS	-	427.1 -> 407.0	-	N.D.	
		427.1 -> 80.9			
8:2FTS	-	527.1 -> 507.0	-	N.D.	
		527.1 -> 80.8			
EtFOSAA	-	584.2 -> 419.1	-	N.D.	
		584.2 -> 526.0			
FOSA	-	498.1 -> 77.9	-	N.D.	
		498.1 -> 478.0			
MeFOSAA	-	570.1 -> 419.0	-	N.D.	
		570.1 -> 483.0			
PFBA	-	212.8 -> 168.9	-	N.D.	
PFBS	-	298.7 -> 79.9	-	N.D.	
		298.7 -> 98.8			
PFDA	8.695	512.9 -> 469.0	0	µg/L m	1
		512.9 -> 219.0	0		
PFDODA	-	613.1 -> 569.0	-	N.D.	
		613.1 -> 319.0			
PFDS	-	599.0 -> 79.9	-	N.D.	



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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	-	599.0 -> 98.8	-	N.D.		
		363.1 -> 319.0				
PFHpS	-	363.1 -> 169.0	-	N.D.		
		449.0 -> 79.9				
PFHxA	-	449.0 -> 98.9	-	N.D.		
		313.0 -> 269.0				
PFHxS	-	313.0 -> 118.9	-	N.D.		
		398.7 -> 79.9				
PFNA	8.193	398.7 -> 98.9	0	µg/L	m	1
		463.0 -> 419.0				
PFNS	-	463.0 -> 219.0	-	N.D.		
		548.8 -> 79.9				
PFOA	-	548.8 -> 98.9	-	N.D.		
		413.0 -> 369.0				
PFOS	-	413.0 -> 169.0	-	N.D.		
		498.9 -> 79.9				
PFPeA	-	498.9 -> 98.8	-	N.D.		
		263.0 -> 219.0				
PFPeS	-	349.1 -> 79.9	-	N.D.		
		349.1 -> 98.9				
PFTeDA	-	713.1 -> 669.0	-	N.D.		
		713.1 -> 168.9				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 168.9				
PFUnDA	9.115	563.1 -> 519.0	0	µg/L	m	1
		563.1 -> 269.1				
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.		
		532.8 -> 353.0				
ADONA	-	376.9 -> 250.9	-	N.D.		
		376.9 -> 84.8				
HFPO-DA	-	284.9 -> 168.9	-	N.D.		
		284.9 -> 184.9				
3:3FTCA	-	241.0 -> 177.0	-	N.D.		
		241.0 -> 117.0				
5:3FTCA	-	341.0 -> 237.1	-	N.D.		
		341.0 -> 217.0				
7:3FTCA	-	441.0 -> 316.9	-	N.D.		
		441.0 -> 336.9				
EtFOSA	-	526.0 -> 219.0	-	N.D.		
		526.0 -> 169.0				
EtFOSE	-	630.0 -> 58.9	-	N.D.		
		511.9 -> 219.0				
MeFOSA	-	511.9 -> 169.0	-	N.D.		
		616.1 -> 58.9				
MeFOSE	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
PFDoDS	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
NFDHA	-	279.0 -> 85.1	-	N.D.		
		229.0 -> 84.9				
PFMBA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

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

7.2.5
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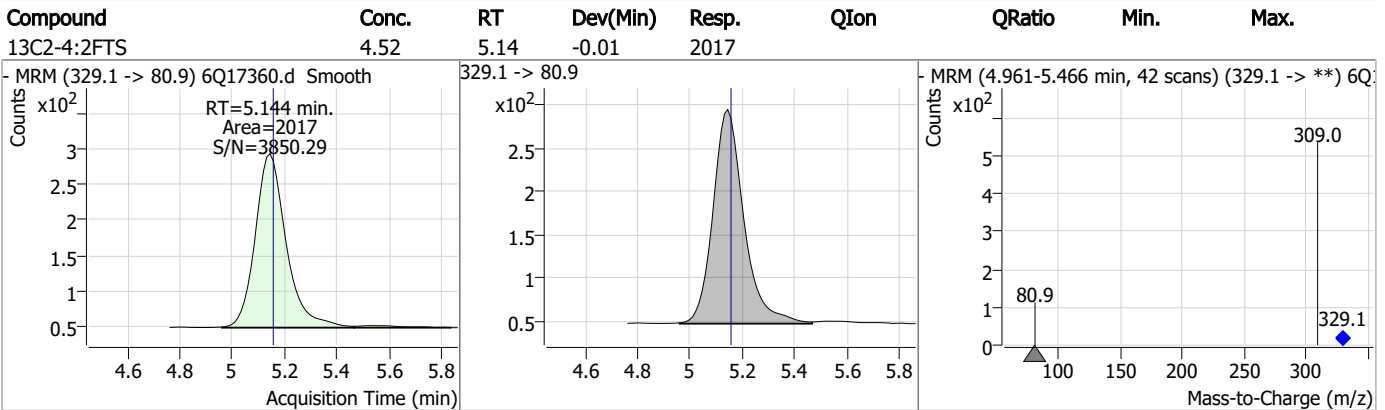
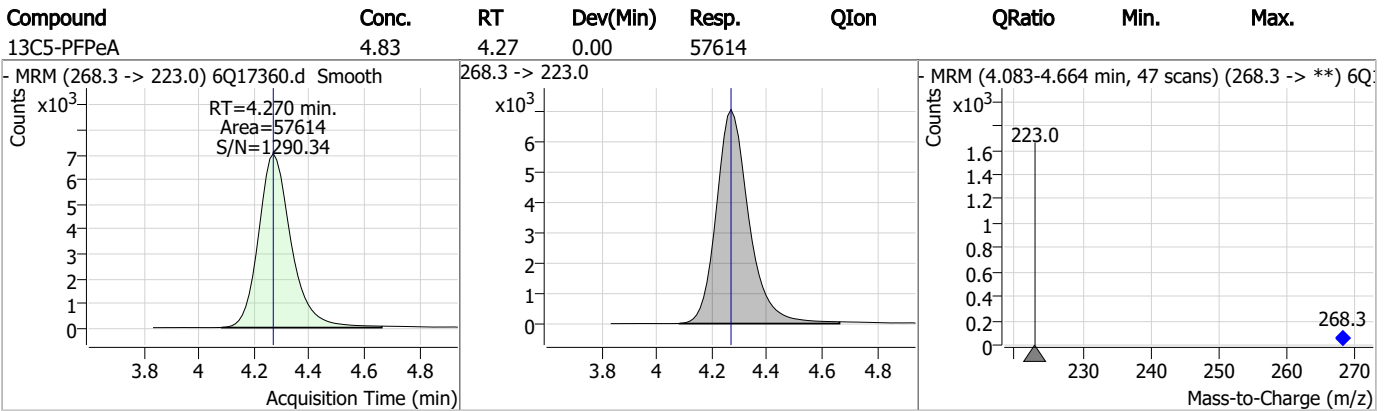
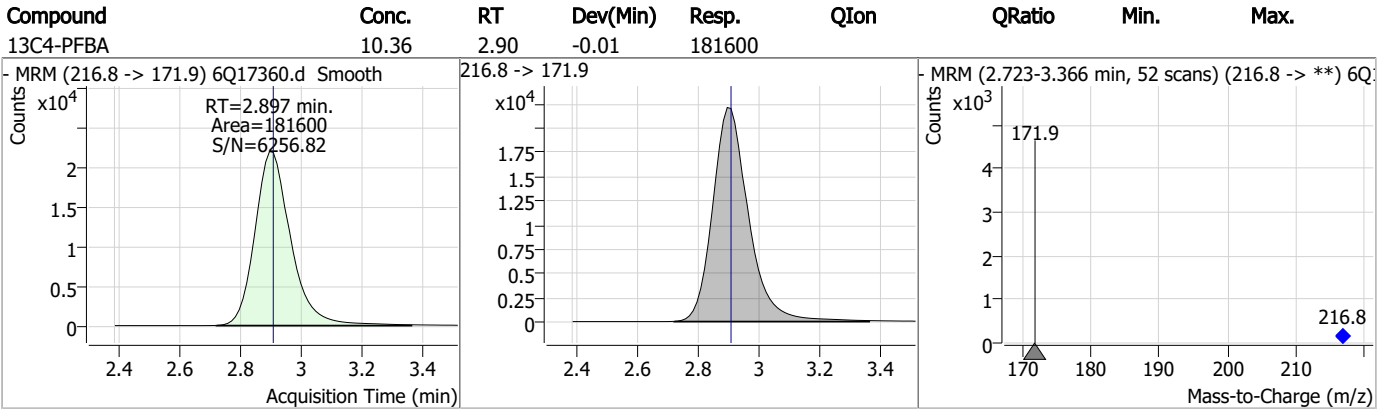
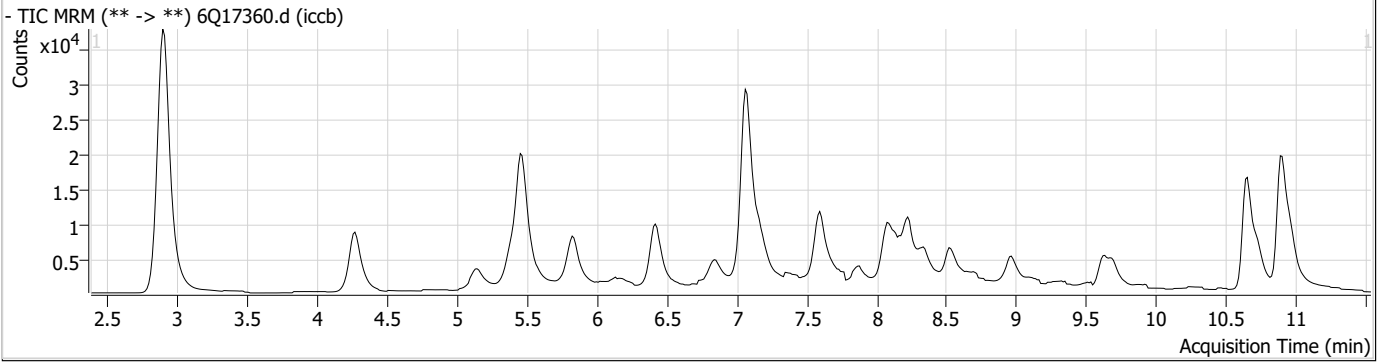
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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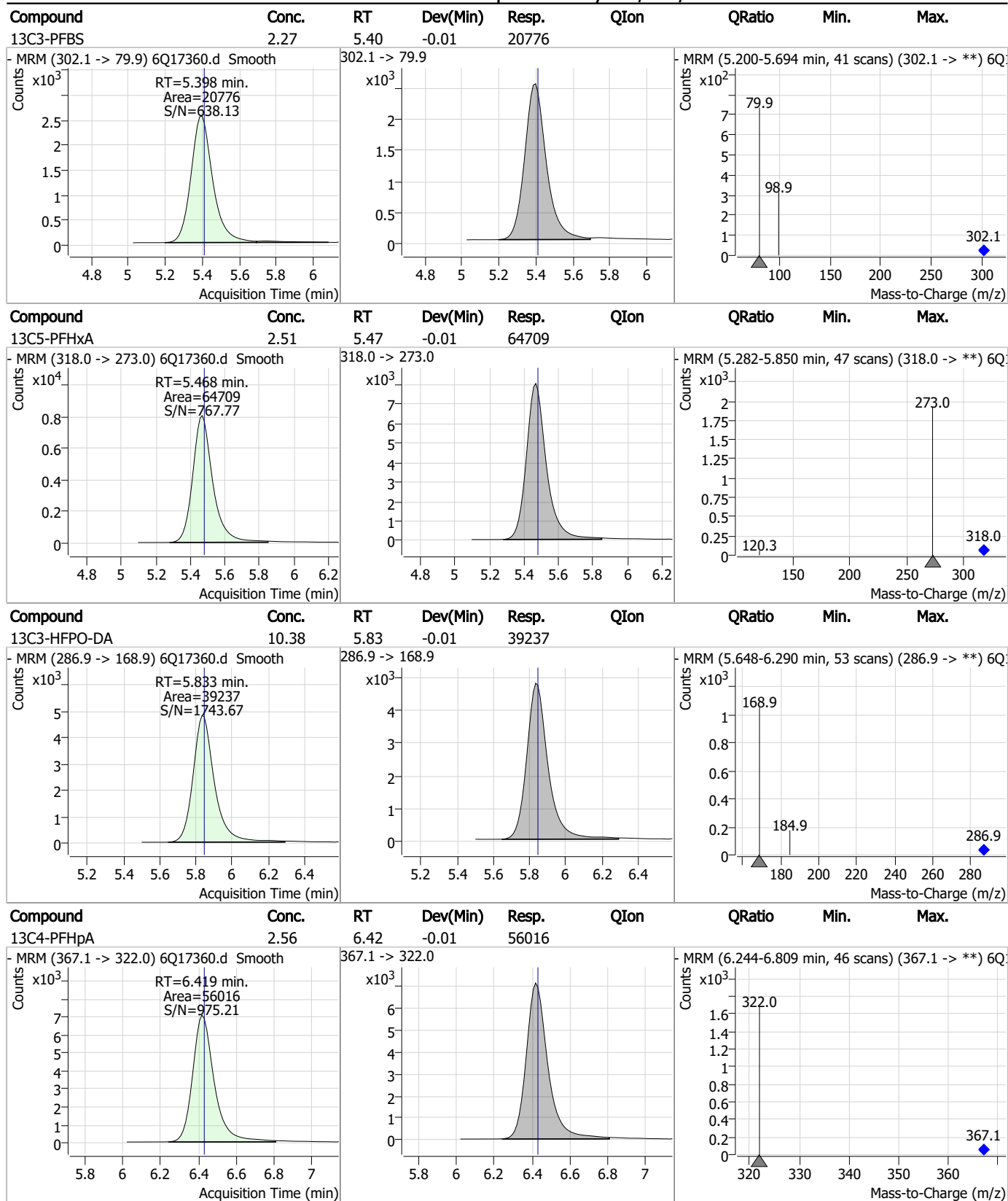
7.2.5

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Perfluorinated Compounds by LC/MS/MS

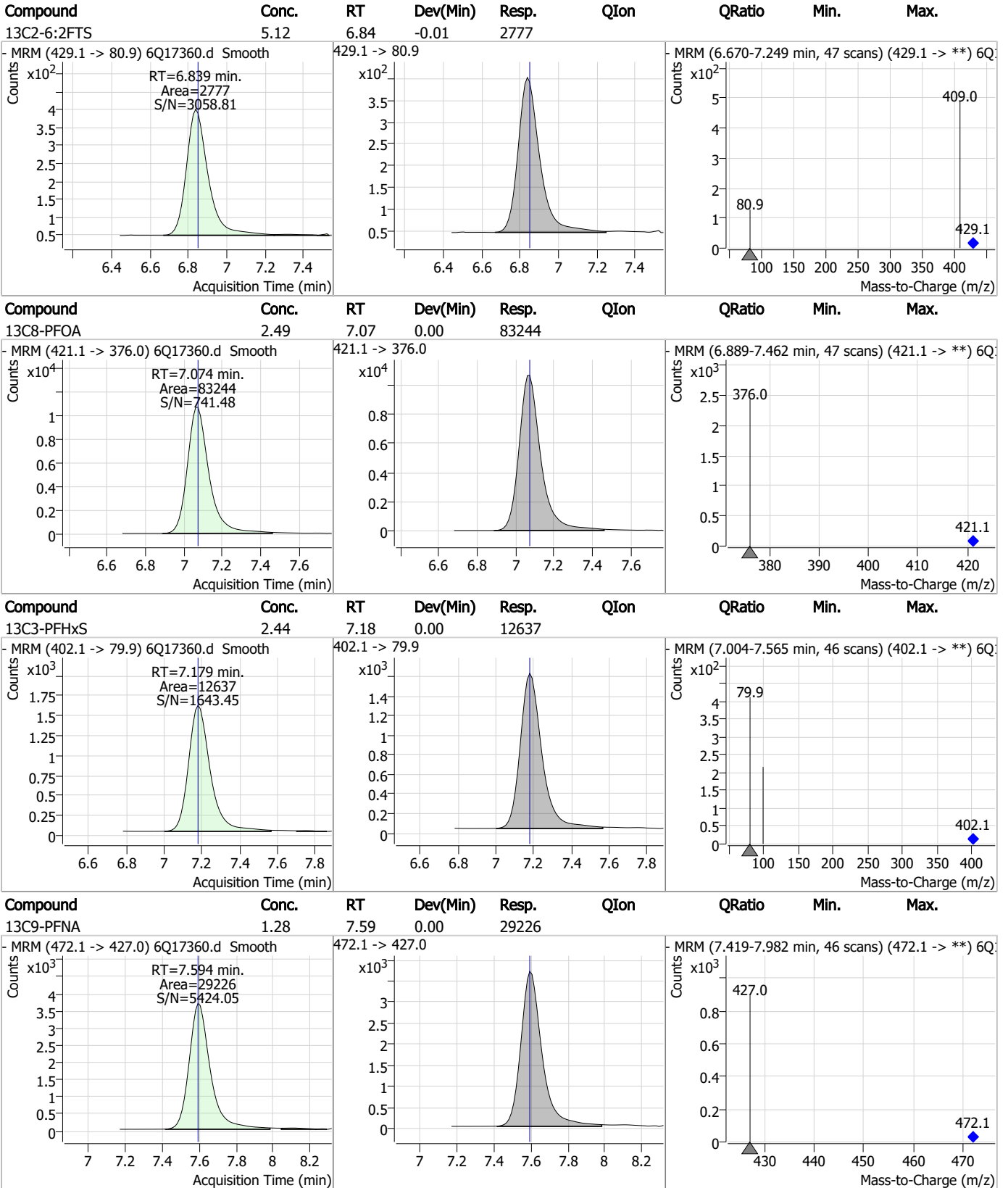


Perfluorinated Compounds by LC/MS/MS



7.2.5
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Perfluorinated Compounds by LC/MS/MS



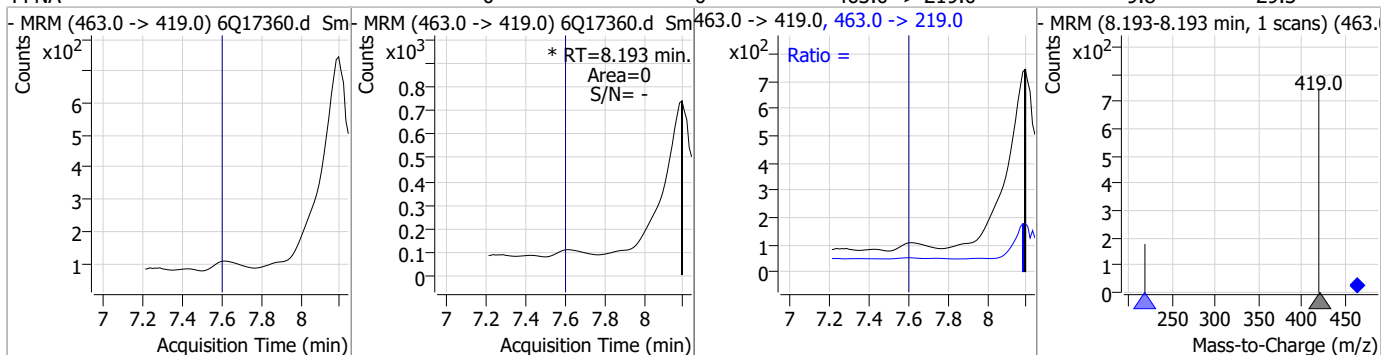
7.25

7

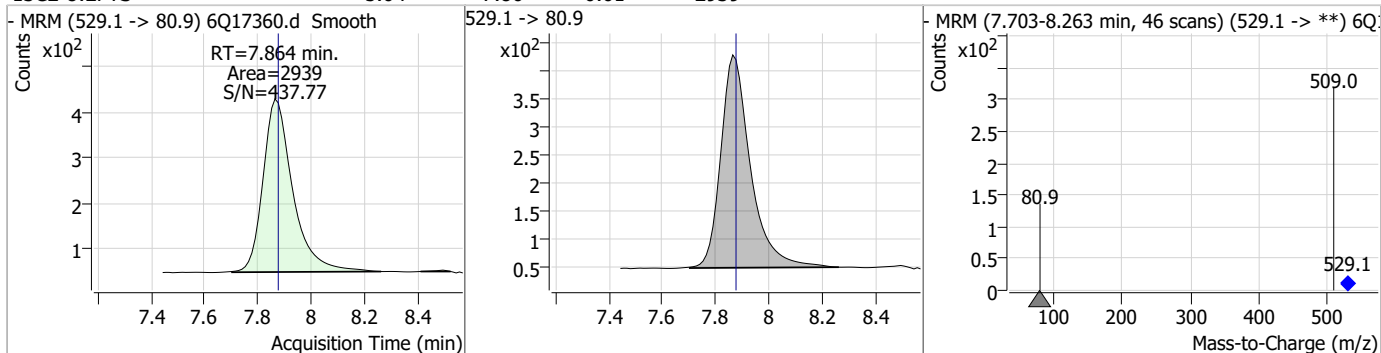


Perfluorinated Compounds by LC/MS/MS

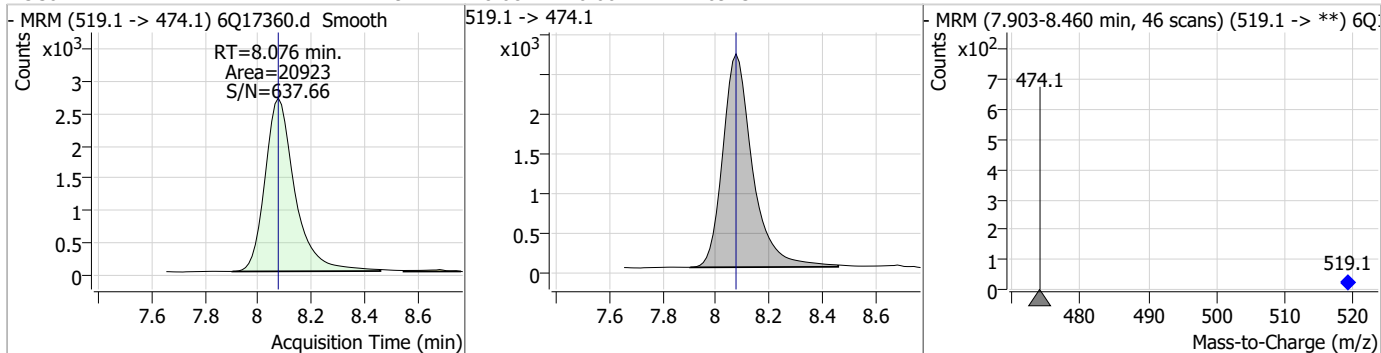
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0	0	0	0	463.0 -> 219.0		9.8	29.3



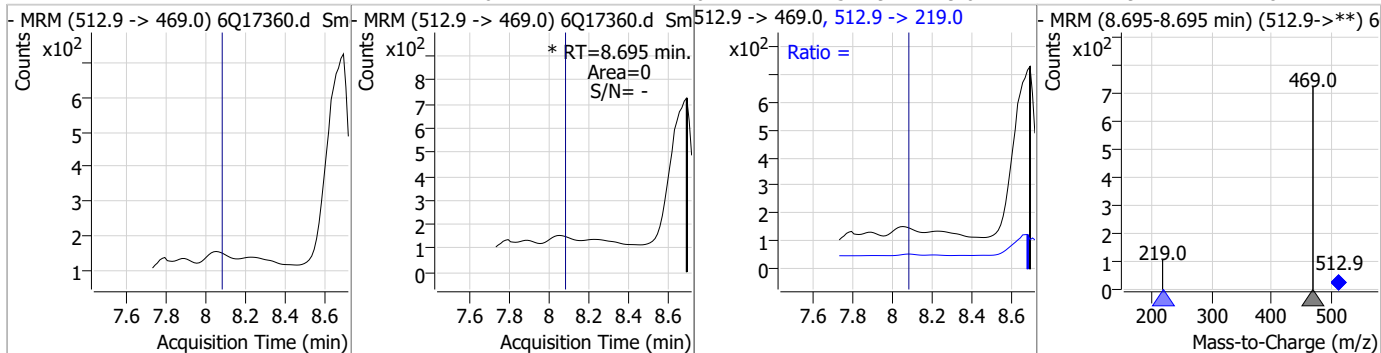
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.04	7.86	-0.01	2939				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.29	8.08	0.00	20923				

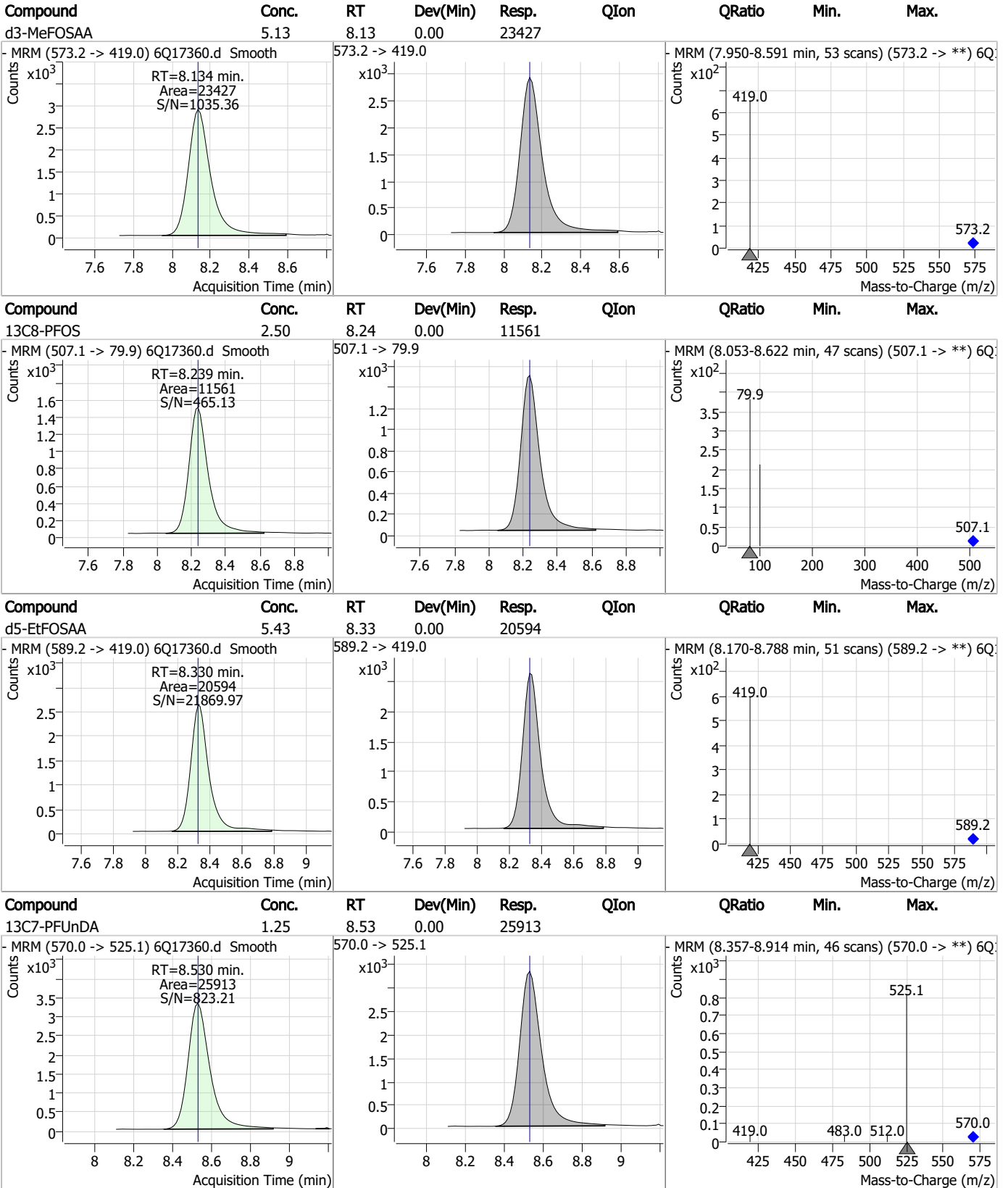


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0	0	0	0	512.9 -> 219.0		9.4	28.2



7.25
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Perfluorinated Compounds by LC/MS/MS

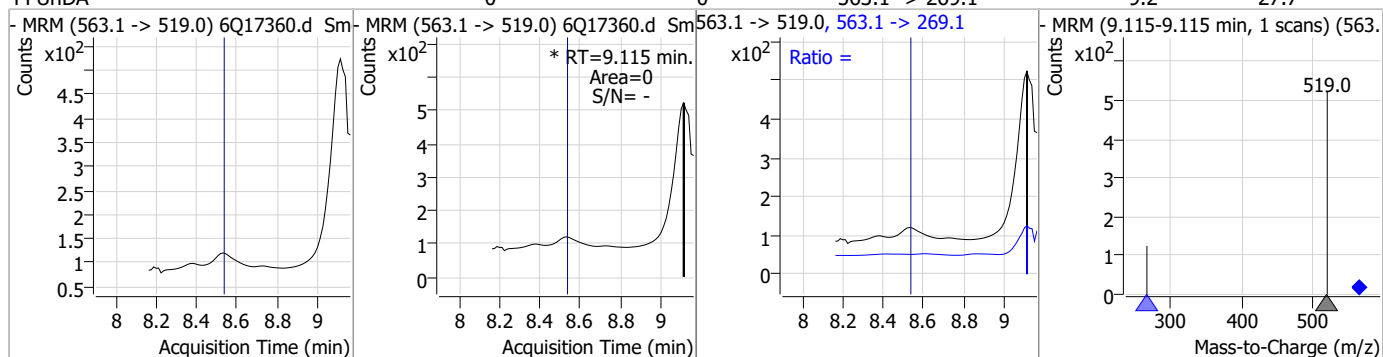


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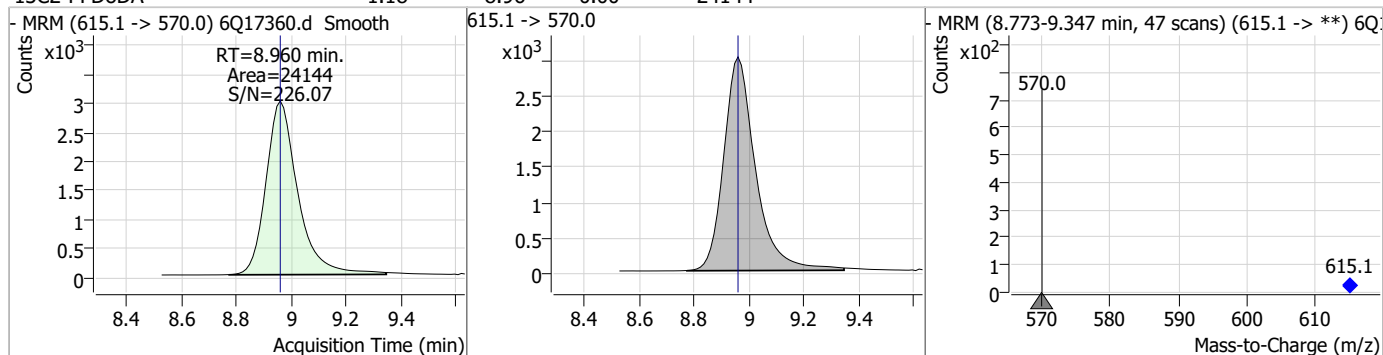
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Perfluorinated Compounds by LC/MS/MS

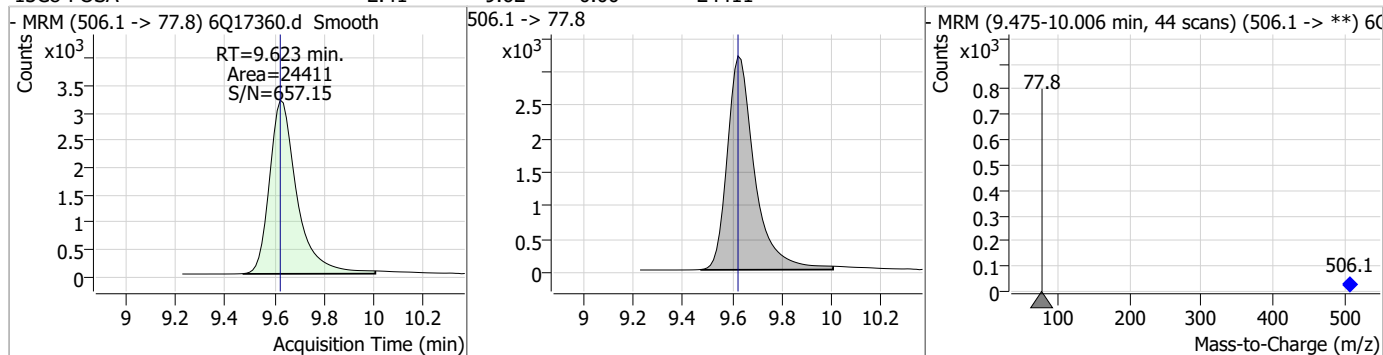
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0	0		0	563.1 -> 269.1		9.2	27.7



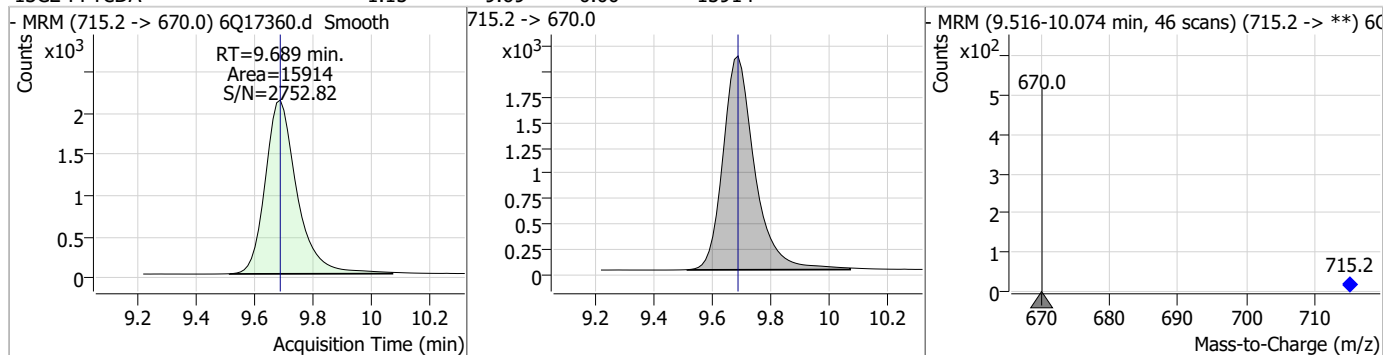
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.18	8.96	0.00	24144				



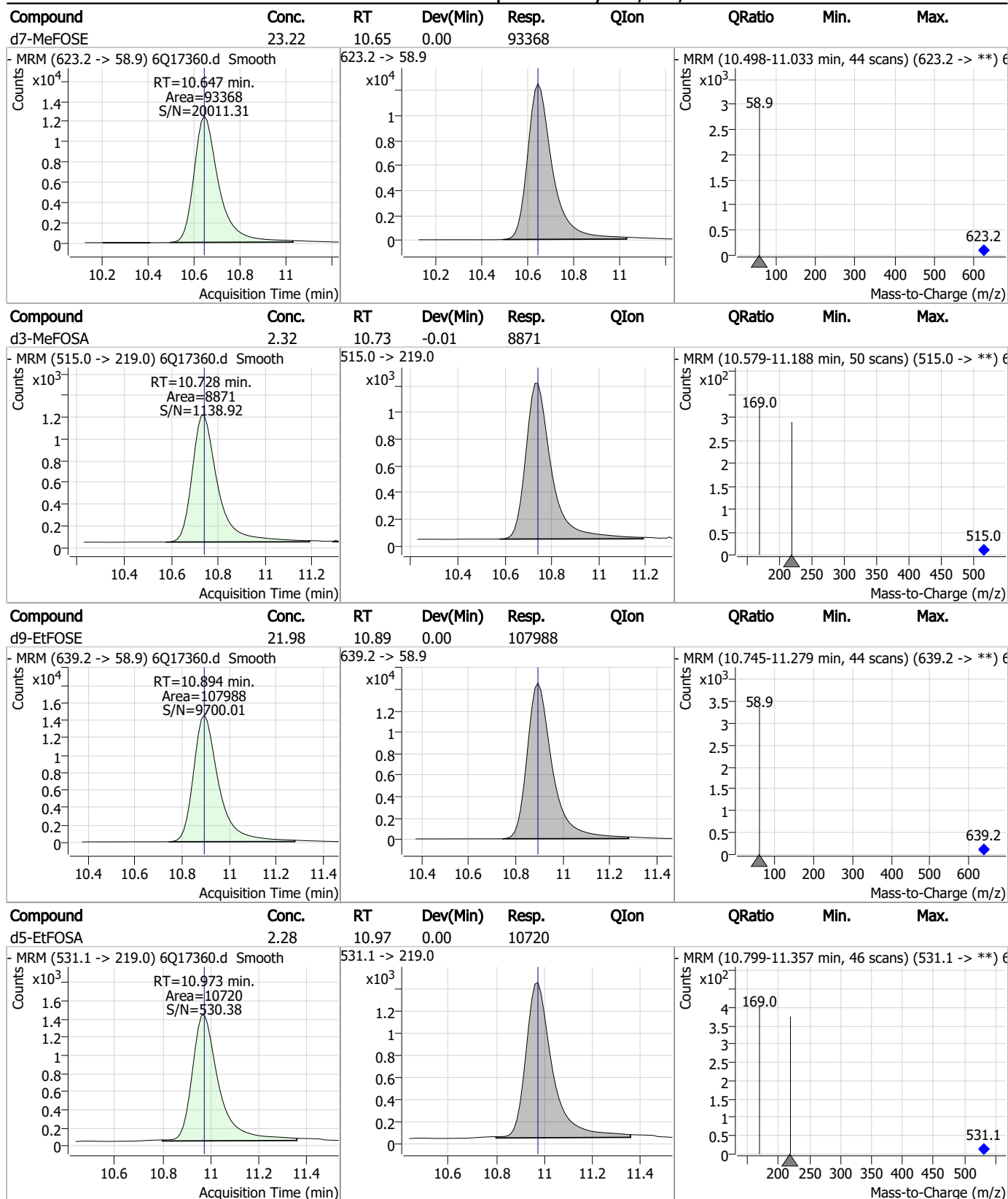
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.41	9.62	0.00	24411				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.15	9.69	0.00	15914				



Perfluorinated Compounds by LC/MS/MS



7.2.5
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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17371.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/3/2023 6:54:39 AM
 Sample Name : iccb
 Vial : P1-A1
 DA Method File : 1633_042823_S6Q258.quantmethod.xml
 Batch Name : s6q261.batch.bin
 Sample Information : OP96301,S6Q261,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.910	216.8 -> 171.9	178644	10.00 µg/L	0.000
M5-PFPeA	4.270	268.3 -> 223.0	56547	5.00 µg/L	0.000
M5-PFHxA	5.468	318.0 -> 273.0	66620	2.50 µg/L	-0.012
M4-PFHpA	6.419	367.1 -> 322.0	56931	2.50 µg/L	-0.012
M8-PFOA	7.062	421.1 -> 376.0	85044	2.50 µg/L	-0.012
M9-PFNA	7.594	472.1 -> 427.0	28066	1.25 µg/L	0.000
M6-PFDA	8.064	519.1 -> 474.1	20297	1.25 µg/L	-0.012
M7-PFUnDA	8.517	570.0 -> 525.1	26514	1.25 µg/L	-0.013
M2-PFDoDA	8.948	615.1 -> 570.0	24542	1.25 µg/L	-0.012
M2-PFTeDA	9.677	715.2 -> 670.0	16736	1.25 µg/L	-0.012
M8-FOSA	9.623	506.1 -> 77.8	24120	2.50 µg/L	0.000
M3-PFBS	5.398	302.1 -> 79.9	20792	2.50 µg/L	-0.012
M3-PFHxS	7.179	402.1 -> 79.9	11937	2.50 µg/L	0.000
M8-PFOS	8.226	507.1 -> 79.9	11407	2.50 µg/L	-0.012
M2-4:2FTS	5.144	329.1 -> 80.9	2020	5.00 µg/L	-0.012
M2-6:2FTS	6.839	429.1 -> 80.9	2678	5.00 µg/L	-0.012
M2-8:2FTS	7.864	529.1 -> 80.9	2755	5.00 µg/L	-0.012
M3-MeFOSAA	8.122	573.2 -> 419.0	23904	5.00 µg/L	-0.012
M3-HFPO-DA	5.845	286.9 -> 168.9	39193	10.00 µg/L	0.000
M5-EtFOSAA	8.318	589.2 -> 419.0	20098	5.00 µg/L	-0.012
M7-MeFOSE	10.647	623.2 -> 58.9	93099	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	110063	25.00 µg/L	0.000
M5-EtFOSA	10.973	531.1 -> 219.0	10437	2.50 µg/L	0.000
M3-MeFOSA	10.728	515.0 -> 219.0	8469	2.50 µg/L	-0.012
13C4-PFOS	8.227	502.8 -> 79.9	14603	2.50 µg/L	-0.012
13C3-PFBA	2.902	216.0 -> 172.0	75094	5.00 µg/L	0.000
18O2-PFHxS	7.177	403.0 -> 83.9	9704	2.50 µg/L	0.000
13C4-PFOA	7.063	417.1 -> 372.0	85817	2.50 µg/L	-0.012
13C2-PFDA	8.076	515.1 -> 470.1	23104	1.25 µg/L	0.000
13C5-PFNA	7.595	468.0 -> 423.0	28515	1.25 µg/L	0.000
13C2-PFHxA	5.469	315.1 -> 270.0	53879	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.144	329.1 -> 80.9	2020	4.53 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 90.6%		
13C2-6:2FTS	6.839	429.1 -> 80.9	2678	4.95 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.9%		
13C2-8:2FTS	7.864	529.1 -> 80.9	2755	4.73 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.6%		
13C2-PFDoDA	8.948	615.1 -> 570.0	24542	1.28 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.1%		
13C2-PFTeDA	9.677	715.2 -> 670.0	16736	1.29 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.9%		
13C3-PFBS	5.398	302.1 -> 79.9	20792	2.28 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 91.1%		
13C3-PFHxS	7.179	402.1 -> 79.9	11937	2.31 µg/L	0.000

7.2.6
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.4%	
13C4-PFBA	2.910	216.8 -> 171.9	178644	10.29 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.9%	
13C4-PFHpA	6.419	367.1 -> 322.0	56931	2.58 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.3%	
13C5-PFHxA	5.468	318.0 -> 273.0	66620	2.56 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C5-PFPeA	4.270	268.3 -> 223.0	56547	4.70 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.0%	
13C6-PFDA	8.064	519.1 -> 474.1	20297	1.33 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.6%	
13C7-PFUnDA	8.517	570.0 -> 525.1	26514	1.36 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.7%	
13C8-FOSA	9.623	506.1 -> 77.8	24120	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C8-PFOA	7.062	421.1 -> 376.0	85044	2.57 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C8-PFOS	8.226	507.1 -> 79.9	11407	2.59 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.7%	
13C9-PFNA	7.594	472.1 -> 427.0	28066	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.3%	
d3-MeFOSAA	8.122	573.2 -> 419.0	23904	5.49 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 109.9%	
13C3-HFPO-DA	5.845	286.9 -> 168.9	39193	10.28 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.8%	
d3-MeFOSA	10.728	515.0 -> 219.0	8469	2.32 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.9%	
d5-EtFOSAA	8.318	589.2 -> 419.0	20098	5.56 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 111.1%	
d7-MeFOSE	10.647	623.2 -> 58.9	93099	24.29 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.2%	
d9-EtFOSE	10.894	639.2 -> 58.9	110063	23.50 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 94.0%	
d5-EtFOSA	10.973	531.1 -> 219.0	10437	2.33 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.2%	

Target Compounds

Target Compounds	RT	Transition	Response	Conc. Units	QValue
4:2FTS	-	327.1 -> 307.0	-	N.D.	
		327.1 -> 80.9			
6:2FTS	-	427.1 -> 407.0	-	N.D.	
		427.1 -> 80.9			
8:2FTS	-	527.1 -> 507.0	-	N.D.	
		527.1 -> 80.8			
EtFOSAA	-	584.2 -> 419.1	-	N.D.	
		584.2 -> 526.0			
FOSA	-	498.1 -> 77.9	-	N.D.	
		498.1 -> 478.0			
MeFOSAA	-	570.1 -> 419.0	-	N.D.	
		570.1 -> 483.0			
PFBA	-	212.8 -> 168.9	-	N.D.	
PFBS	-	298.7 -> 79.9	-	N.D.	
		298.7 -> 98.8			
PFDA	8.646	512.9 -> 469.0	0	µg/L m	1
		512.9 -> 219.0	0		
PFDODA	-	613.1 -> 569.0	-	N.D.	
		613.1 -> 319.0			
PFDS	-	599.0 -> 79.9	-	N.D.	



7.2.6
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	-	599.0 -> 98.8	-	N.D.		
		363.1 -> 319.0				
PFHpS	-	363.1 -> 169.0	-	N.D.		
		449.0 -> 79.9				
PFHxA	-	449.0 -> 98.9	-	N.D.		
		313.0 -> 269.0				
PFHxS	-	313.0 -> 118.9	-	N.D.		
		398.7 -> 79.9				
PFNA	8.180	398.7 -> 98.9	0	µg/L	m	1
		463.0 -> 419.0				
PFNS	-	463.0 -> 219.0	-	N.D.		
		548.8 -> 79.9				
PFOA	7.289	548.8 -> 98.9	0	µg/L	m	1
		413.0 -> 369.0				
PFOS	-	413.0 -> 169.0	-	N.D.		
		498.9 -> 79.9				
PFPeA	-	498.9 -> 98.8	-	N.D.		
		263.0 -> 219.0				
PFPeS	-	349.1 -> 79.9	-	N.D.		
		349.1 -> 98.9				
PFTeDA	-	713.1 -> 669.0	-	N.D.		
		713.1 -> 168.9				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 168.9				
PFUnDA	9.102	563.1 -> 519.0	0	µg/L	m	1
		563.1 -> 269.1				
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.		
		532.8 -> 353.0				
ADONA	-	376.9 -> 250.9	-	N.D.		
		376.9 -> 84.8				
HFPO-DA	-	284.9 -> 168.9	-	N.D.		
		284.9 -> 184.9				
3:3FTCA	-	241.0 -> 177.0	-	N.D.		
		241.0 -> 117.0				
5:3FTCA	-	341.0 -> 237.1	-	N.D.		
		341.0 -> 217.0				
7:3FTCA	-	441.0 -> 316.9	-	N.D.		
		441.0 -> 336.9				
EtFOSA	-	526.0 -> 219.0	-	N.D.		
		526.0 -> 169.0				
EtFOSE	-	630.0 -> 58.9	-	N.D.		
		511.9 -> 219.0				
MeFOSA	-	511.9 -> 169.0	-	N.D.		
		616.1 -> 58.9				
MeFOSE	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
PFDoDS	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
NFDHA	-	279.0 -> 85.1	-	N.D.		
		229.0 -> 84.9				
PFMBA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

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

7.2.6
7

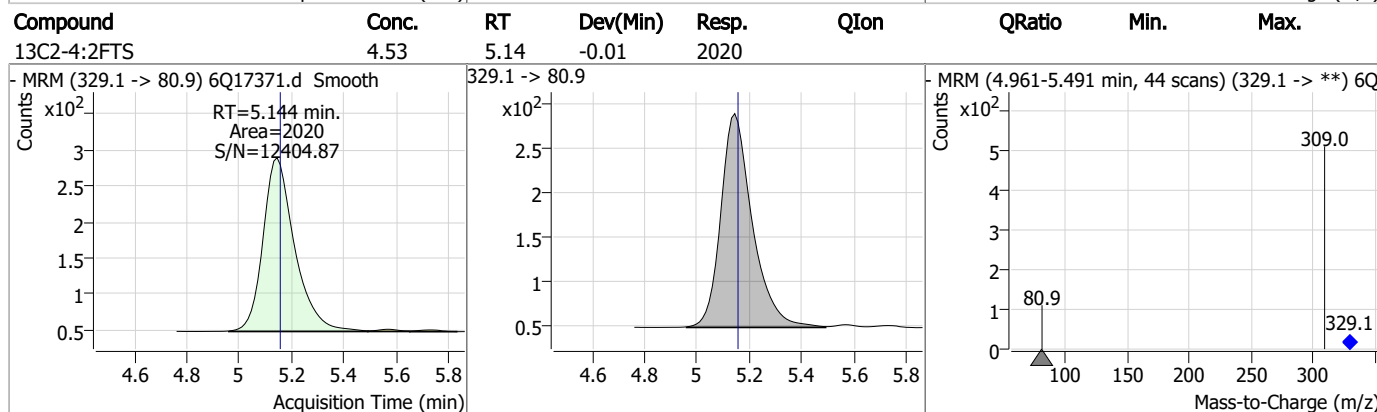
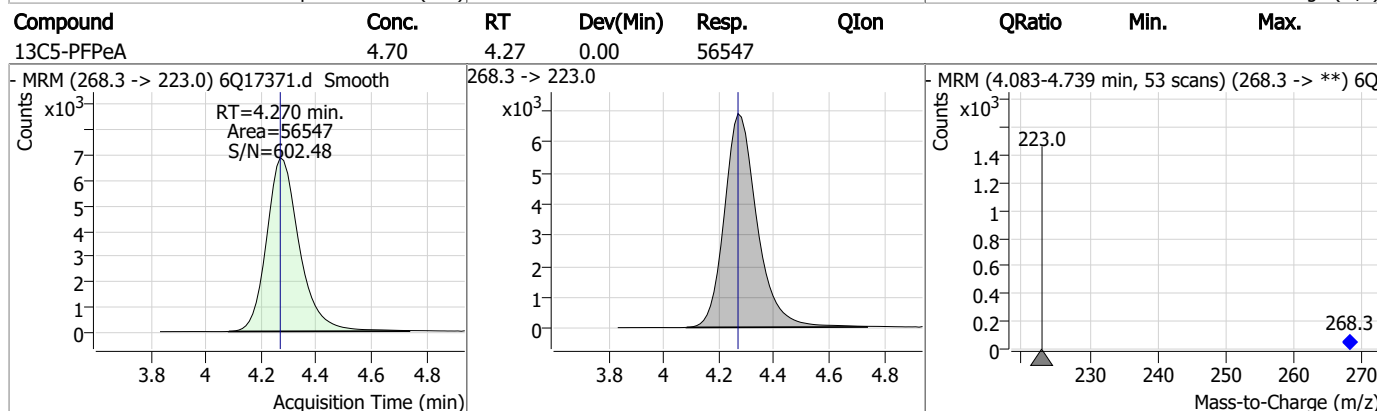
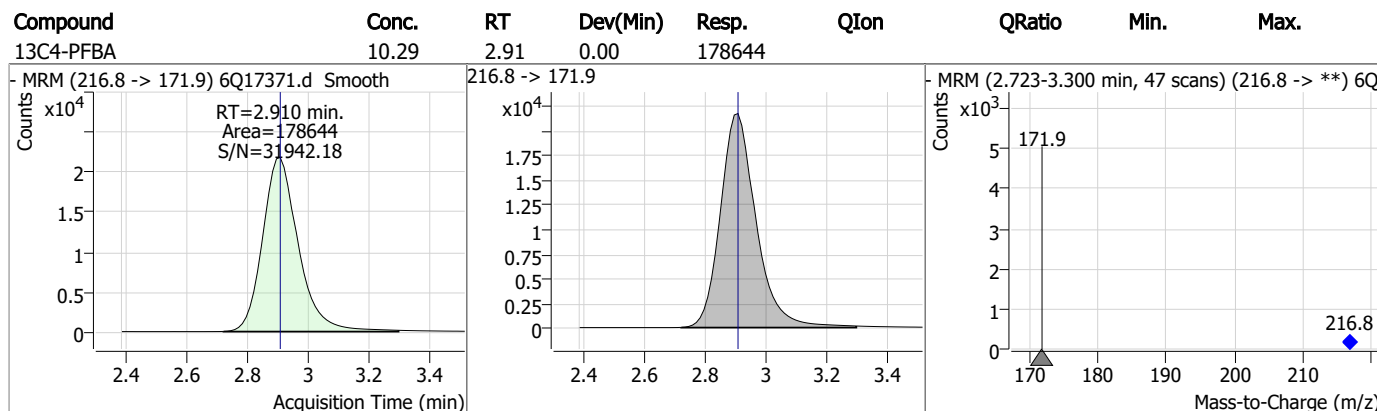
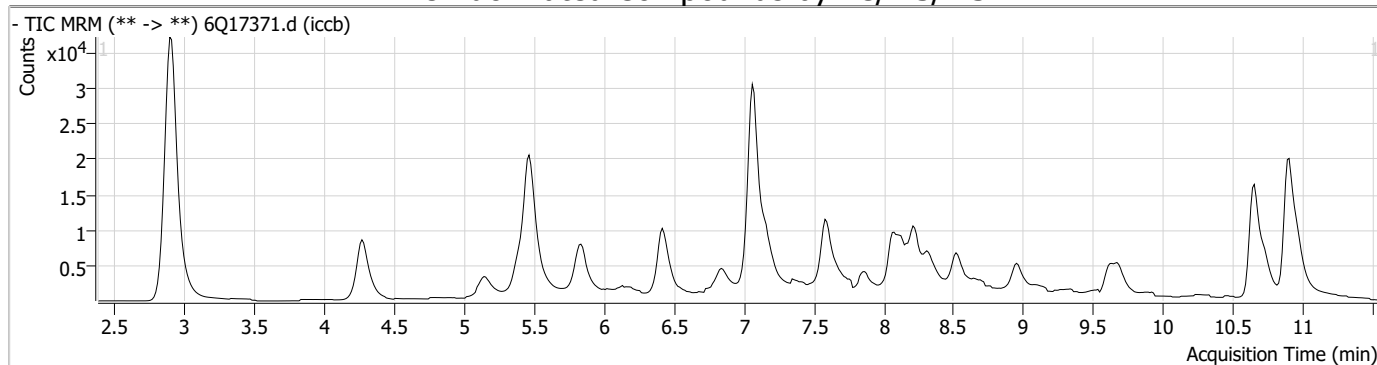
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.2.6

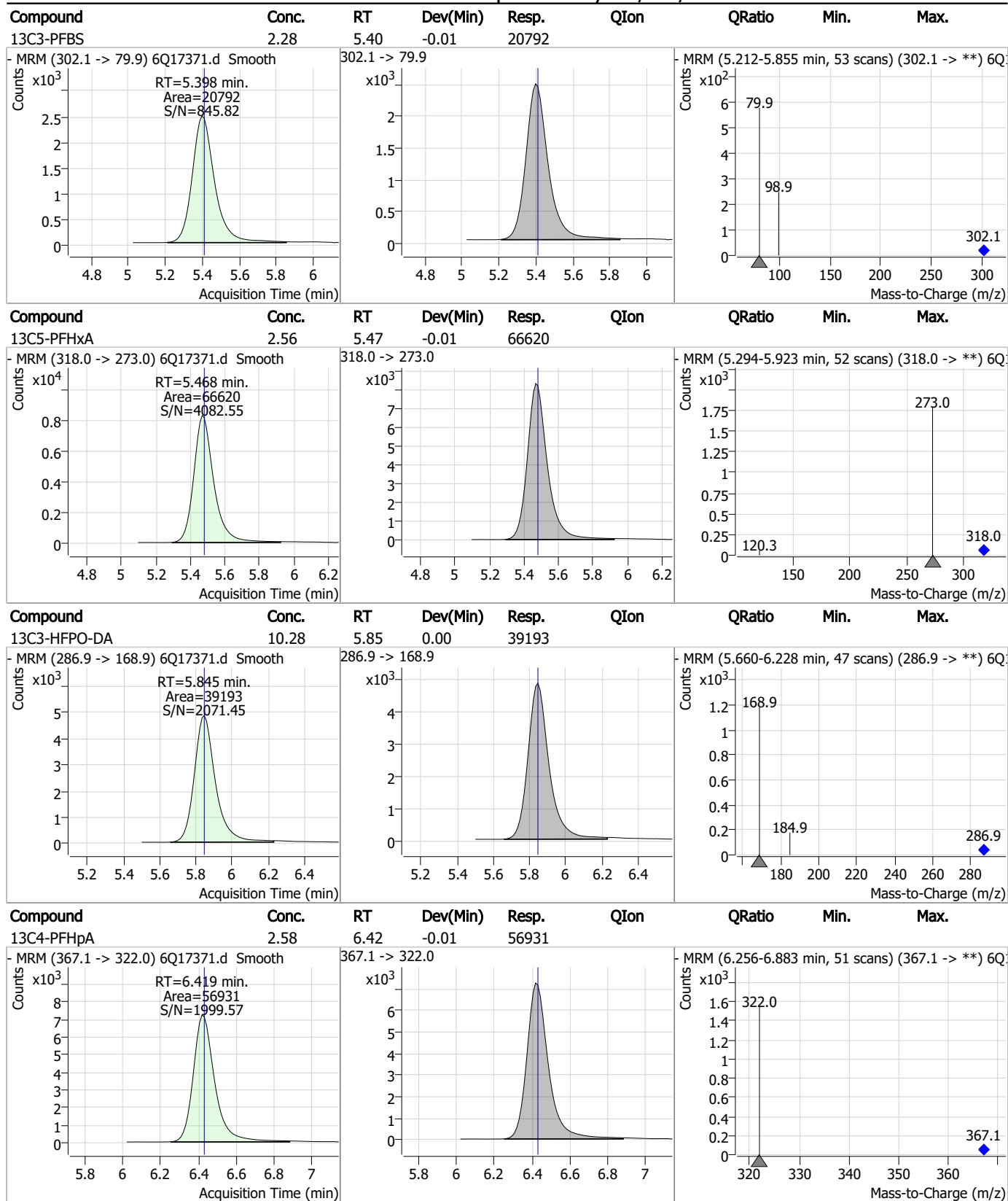
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Perfluorinated Compounds by LC/MS/MS



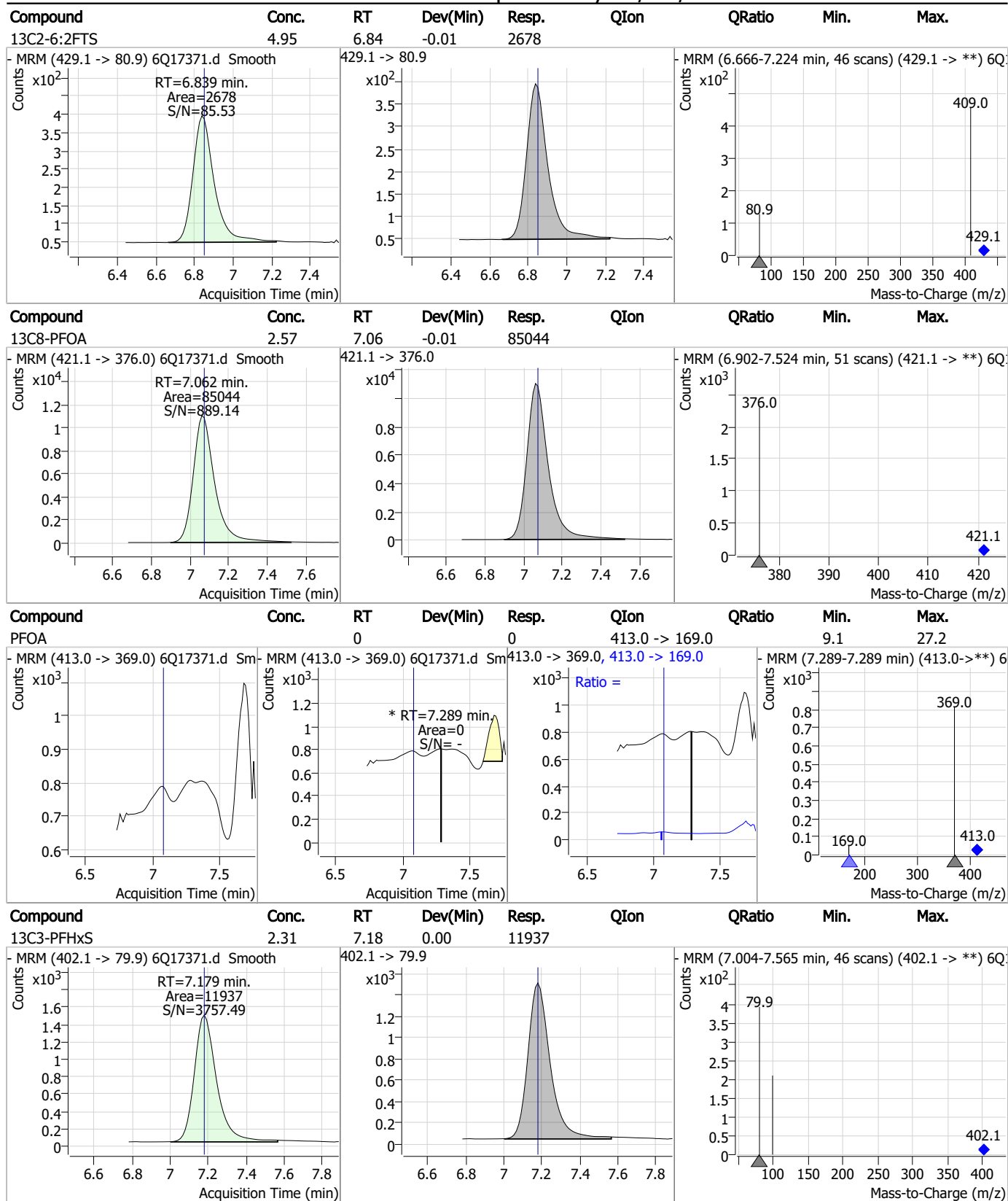
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Perfluorinated Compounds by LC/MS/MS



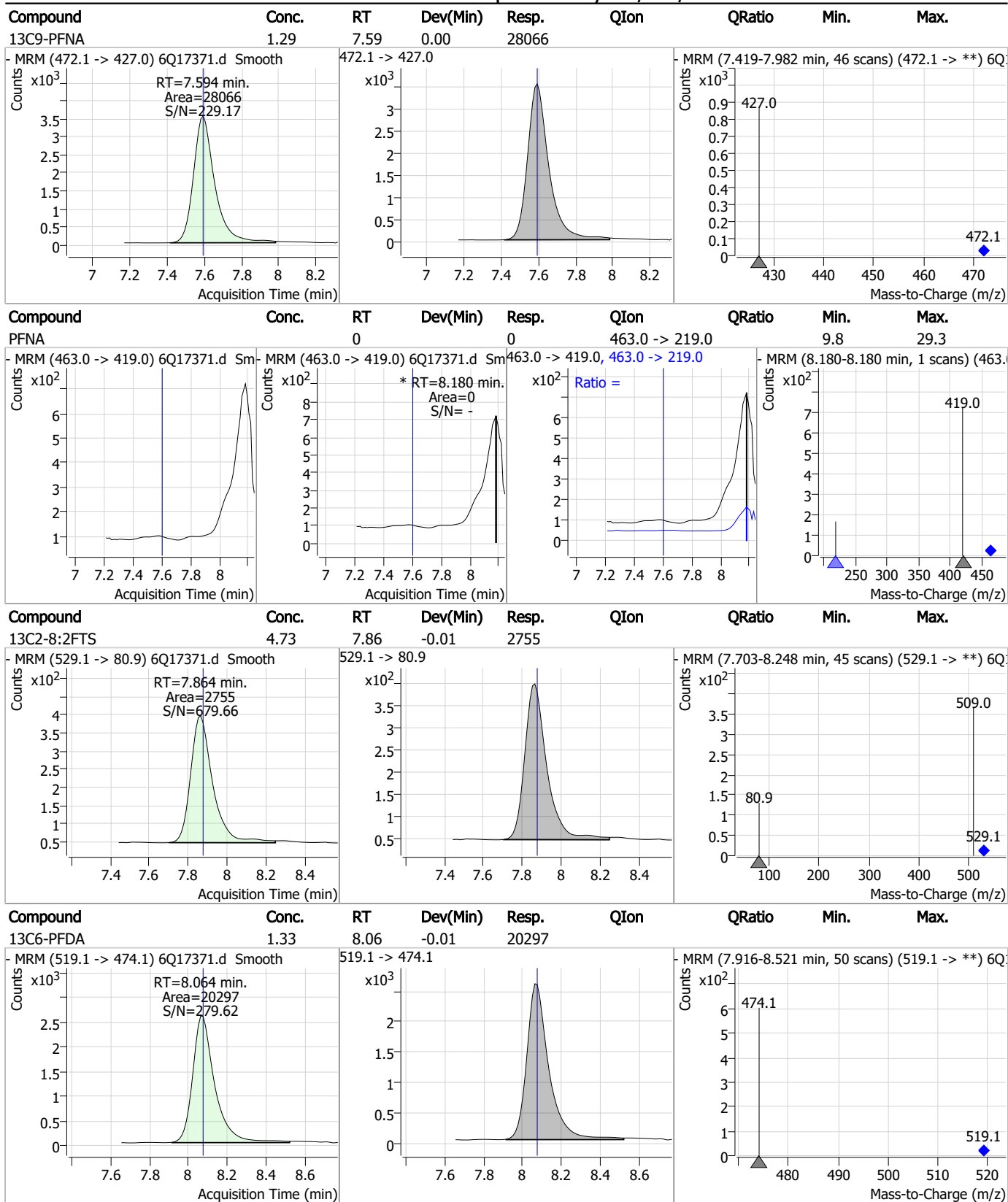
7.2.6
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Perfluorinated Compounds by LC/MS/MS

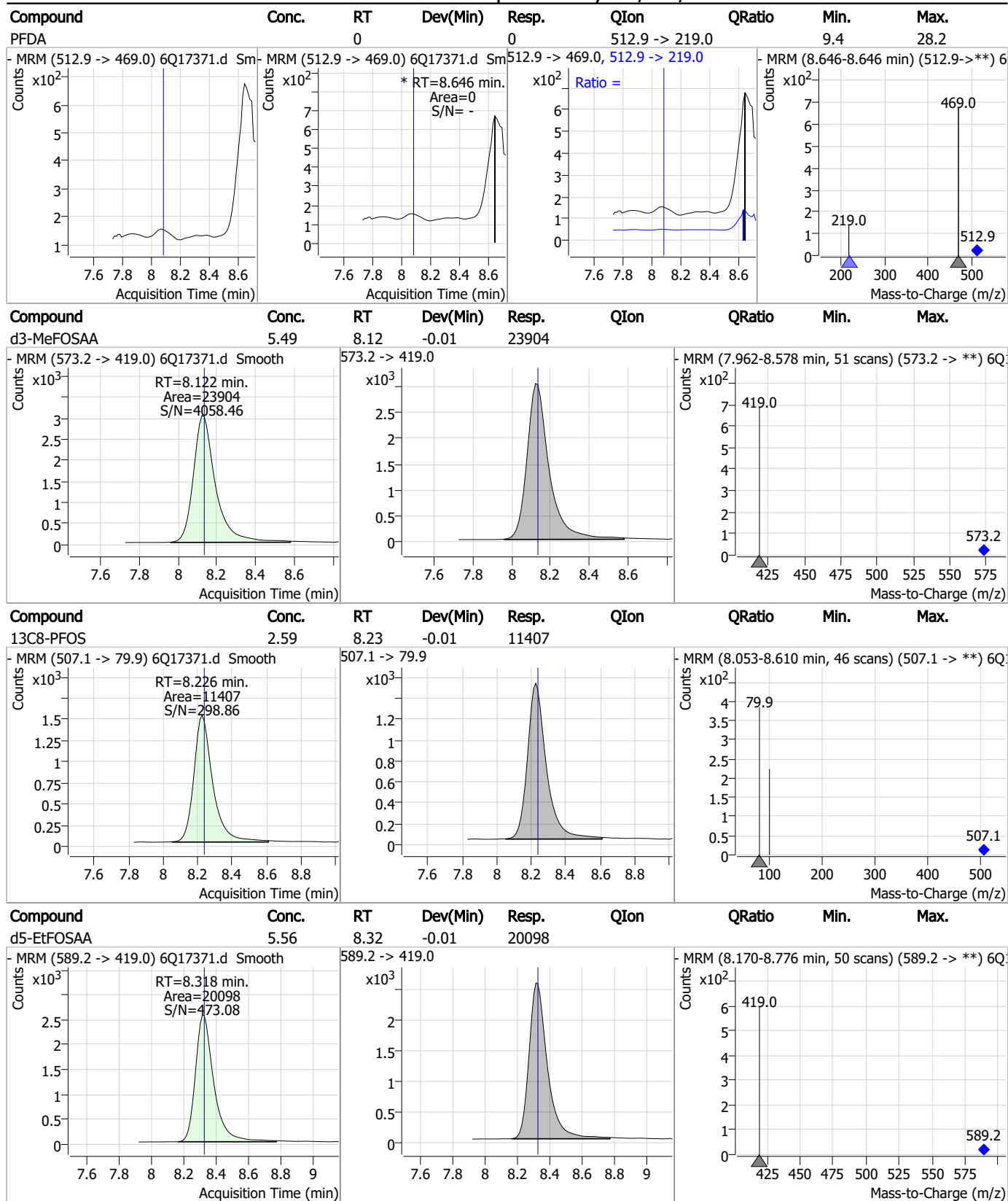


7.2.6
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Perfluorinated Compounds by LC/MS/MS

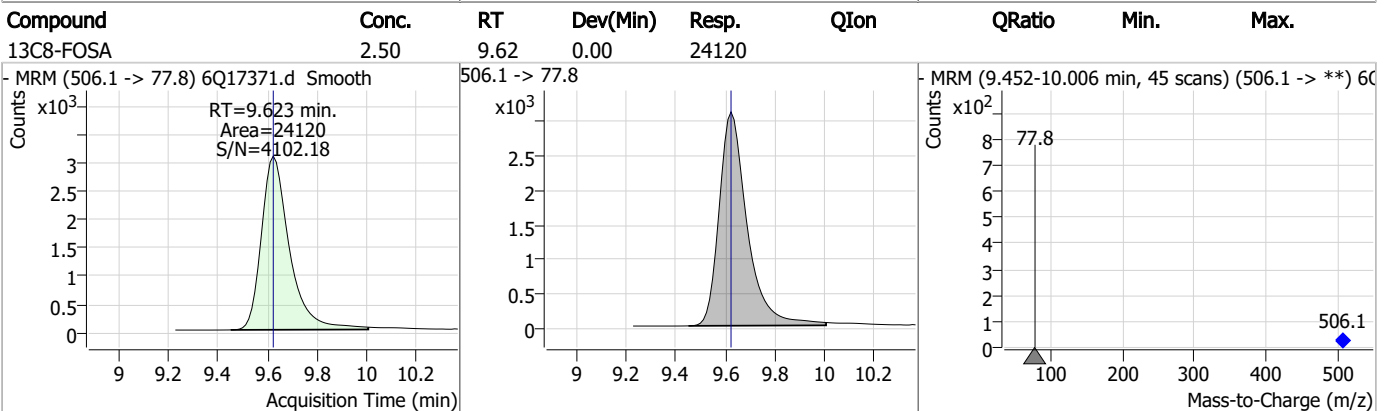
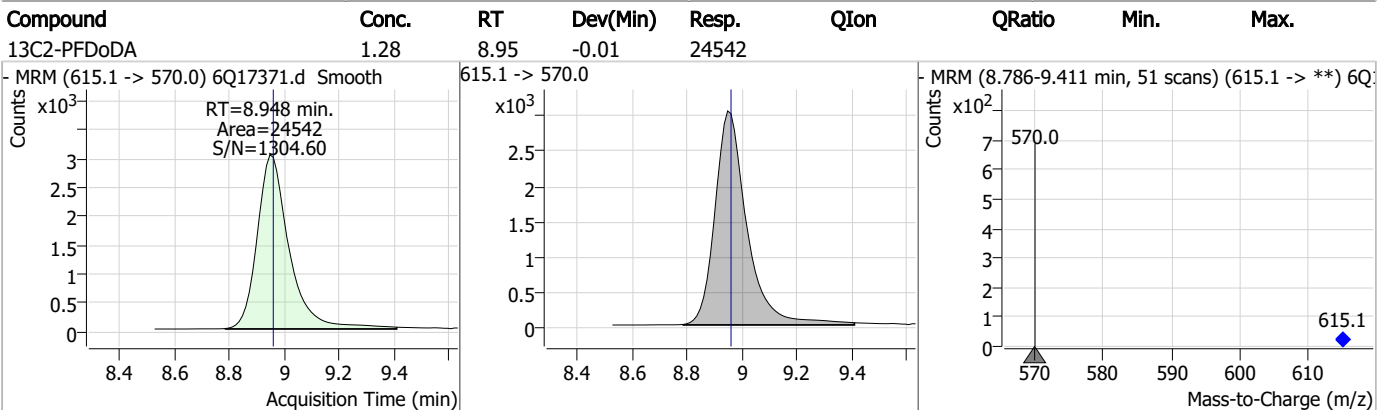
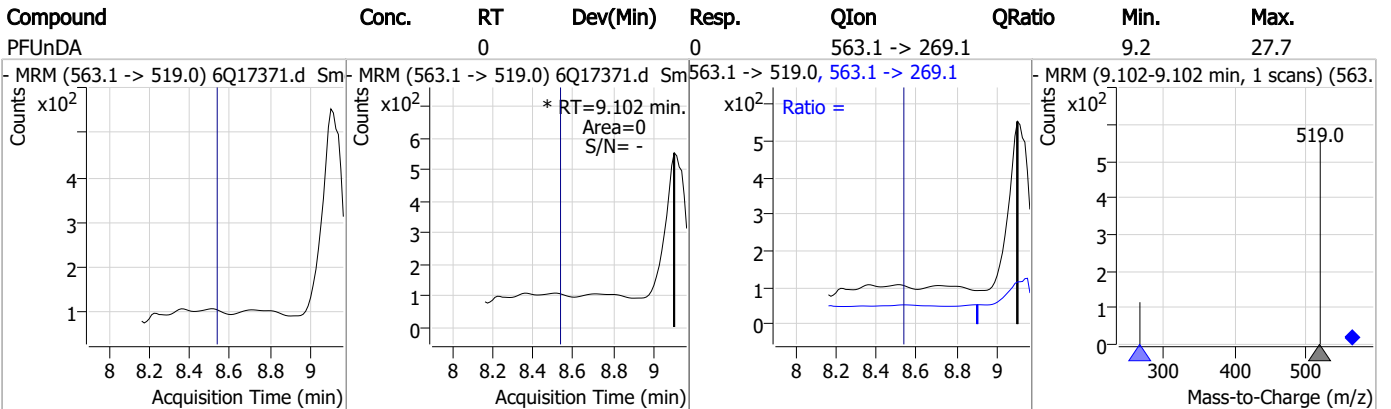
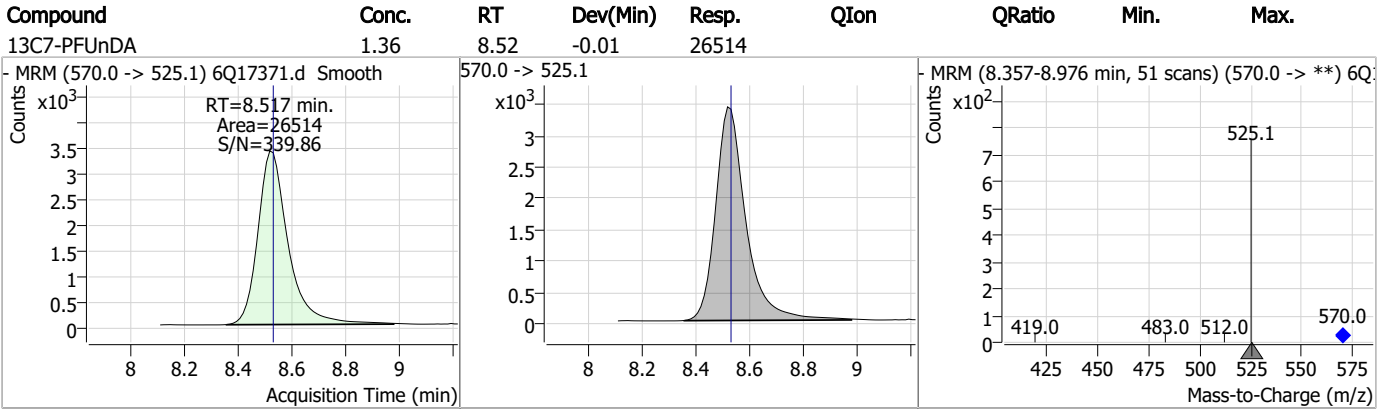


Perfluorinated Compounds by LC/MS/MS

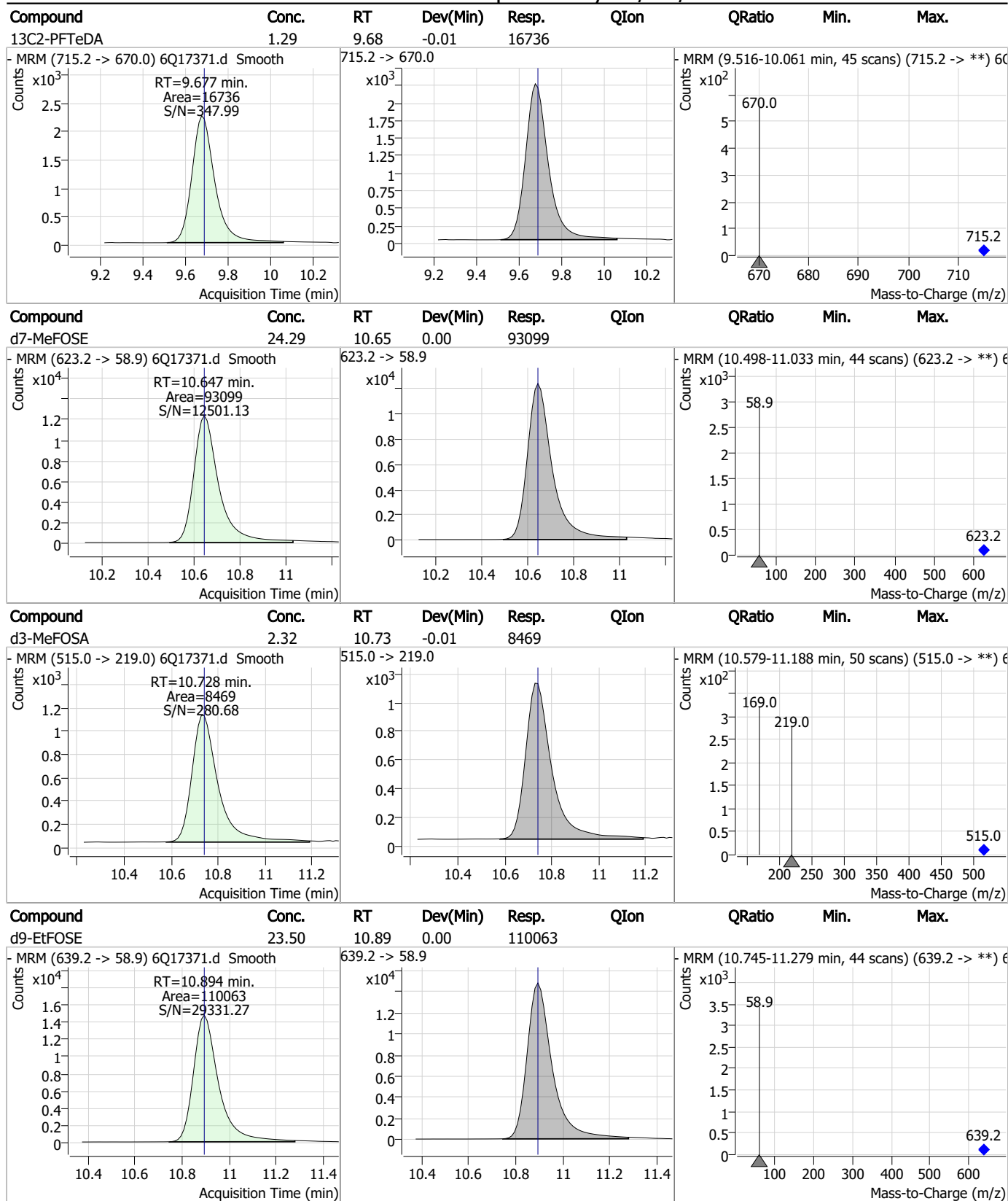


7.2.6
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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

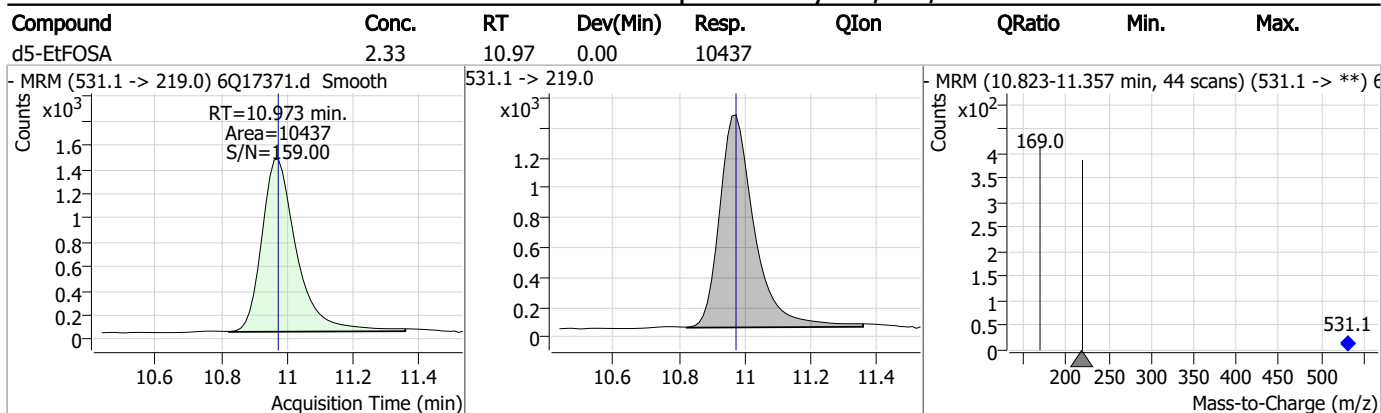


7.2.6

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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17361.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/3/2023 4:29:51 AM
 Sample Name : op96627-bs
 Vial : P3-E9
 DA Method File : 1633_042823_S6Q258.quantmethod.xml
 Batch Name : s6q261.batch.bin
 Sample Information : OP96627,S6Q261,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.910	216.8 -> 171.9	176678	10.00 µg/L	0.000
M5-PFPeA	4.270	268.3 -> 223.0	56769	5.00 µg/L	0.000
M5-PFHxA	5.468	318.0 -> 273.0	66351	2.50 µg/L	-0.012
M4-PFHpA	6.419	367.1 -> 322.0	56886	2.50 µg/L	-0.012
M8-PFOA	7.062	421.1 -> 376.0	85102	2.50 µg/L	-0.012
M9-PFNA	7.582	472.1 -> 427.0	26973	1.25 µg/L	-0.012
M6-PFDA	8.064	519.1 -> 474.1	21370	1.25 µg/L	-0.012
M7-PFUnDA	8.517	570.0 -> 525.1	25549	1.25 µg/L	-0.013
M2-PFDoDA	8.960	615.1 -> 570.0	23164	1.25 µg/L	0.000
M2-PFTeDA	9.677	715.2 -> 670.0	13996	1.25 µg/L	-0.012
M8-FOSA	9.623	506.1 -> 77.8	10205	2.50 µg/L	0.000
M3-PFBS	5.398	302.1 -> 79.9	20426	2.50 µg/L	-0.012
M3-PFHxS	7.165	402.1 -> 79.9	12239	2.50 µg/L	-0.013
M8-PFOS	8.226	507.1 -> 79.9	10912	2.50 µg/L	-0.012
M2-4:2FTS	5.144	329.1 -> 80.9	2189	5.00 µg/L	-0.012
M2-6:2FTS	6.826	429.1 -> 80.9	2740	5.00 µg/L	-0.025
M2-8:2FTS	7.852	529.1 -> 80.9	2705	5.00 µg/L	-0.025
M3-MeFOSAA	8.122	573.2 -> 419.0	24099	5.00 µg/L	-0.012
M3-HFPO-DA	5.833	286.9 -> 168.9	38455	10.00 µg/L	-0.012
M5-EtFOSAA	8.330	589.2 -> 419.0	17910	5.00 µg/L	0.000
M7-MeFOSE	10.647	623.2 -> 58.9	16774	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	22657	25.00 µg/L	0.000
M5-EtFOSA	10.973	531.1 -> 219.0	4239	2.50 µg/L	0.000
M3-MeFOSA	10.741	515.0 -> 219.0	3660	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	13662	2.50 µg/L	-0.012
13C3-PFBA	2.902	216.0 -> 172.0	71272	5.00 µg/L	0.000
18O2-PFHxS	7.164	403.0 -> 83.9	8986	2.50 µg/L	-0.013
13C4-PFOA	7.063	417.1 -> 372.0	84697	2.50 µg/L	-0.012
13C2-PFDA	8.064	515.1 -> 470.1	24550	1.25 µg/L	-0.012
13C5-PFNA	7.582	468.0 -> 423.0	28556	1.25 µg/L	-0.012
13C2-PFHxA	5.469	315.1 -> 270.0	50678	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.144	329.1 -> 80.9	2189	5.30 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.0%		
13C2-6:2FTS	6.826	429.1 -> 80.9	2740	5.46 µg/L	-0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.3%		
13C2-8:2FTS	7.852	529.1 -> 80.9	2705	5.02 µg/L	-0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.3%		
13C2-PFDoDA	8.960	615.1 -> 570.0	23164	1.13 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 90.7%		
13C2-PFTeDA	9.677	715.2 -> 670.0	13996	1.01 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 81.0%		
13C3-PFBS	5.398	302.1 -> 79.9	20426	2.42 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.7%		
13C3-PFHxS	7.165	402.1 -> 79.9	12239	2.56 µg/L	-0.013

7.3.1
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C4-PFBA	2.910	216.8 -> 171.9	176678	10.73 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.3%	
13C4-PFHpA	6.419	367.1 -> 322.0	56886	2.74 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.8%	
13C5-PFHxA	5.468	318.0 -> 273.0	66351	2.71 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.6%	
13C5-PFPeA	4.270	268.3 -> 223.0	56769	5.01 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C6-PFDA	8.064	519.1 -> 474.1	21370	1.32 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.6%	
13C7-PFUnDA	8.517	570.0 -> 525.1	25549	1.23 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C8-FOSA	9.623	506.1 -> 77.8	10205	1.13 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 45.2%	
13C8-PFOA	7.062	421.1 -> 376.0	85102	2.60 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.1%	
13C8-PFOS	8.226	507.1 -> 79.9	10912	2.65 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.0%	
13C9-PFNA	7.582	472.1 -> 427.0	26973	1.24 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.1%	
d3-MeFOSAA	8.122	573.2 -> 419.0	24099	5.92 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 118.4%	
13C3-HFPO-DA	5.833	286.9 -> 168.9	38455	10.72 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.2%	
d3-MeFOSA	10.741	515.0 -> 219.0	3660	1.07 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 42.9%	
d5-EtFOSAA	8.330	589.2 -> 419.0	17910	5.29 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.8%	
d7-MeFOSE	10.647	623.2 -> 58.9	16774	4.68 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 18.7%	
d9-EtFOSE	10.894	639.2 -> 58.9	22657	5.17 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 20.7%	
d5-EtFOSA	10.973	531.1 -> 219.0	4239	1.01 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 40.5%	
Target Compounds					QValue
4:2FTS	5.132	327.1 -> 307.0	29623	8.94 µg/L	99
		327.1 -> 80.9	10827		
6:2FTS	6.839	427.1 -> 407.0	24560	8.15 µg/L	95
		427.1 -> 80.9	8350		
8:2FTS	7.853	527.1 -> 507.0	14814	9.20 µg/L	92
		527.1 -> 80.8	6501		
EtFOSAA	8.331	584.2 -> 419.1	7579	2.49 µg/L	82
		584.2 -> 526.0	4417		
FOSA	9.627	498.1 -> 77.9	9274	2.54 µg/L	99
		498.1 -> 478.0	289		
MeFOSAA	8.136	570.1 -> 419.0	10288	2.27 µg/L	95
		570.1 -> 483.0	1921		
PFBA	2.906	212.8 -> 168.9	60898	10.28 µg/L	100
PFBS	5.400	298.7 -> 79.9	21492	2.34 µg/L	98
		298.7 -> 98.8	8245		
PFDA	8.064	512.9 -> 469.0	61096	2.63 µg/L	93
		512.9 -> 219.0	9483		
PFDODA	8.961	613.1 -> 569.0	48713	2.68 µg/L	99
		613.1 -> 319.0	6660		
PFDS	9.113	599.0 -> 79.9	8266	2.38 µg/L	91

7.3.1
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.420	599.0 -> 98.8	4258	2.48	µg/L	100
		363.1 -> 319.0	69495			
PFHpS	7.734	363.1 -> 169.0	10900	2.32	µg/L	100
		449.0 -> 79.9	13737			
PFHxA	5.470	449.0 -> 98.9	6782	2.30	µg/L	100
		313.0 -> 269.0	60386			
PFHxS	7.166	313.0 -> 118.9	2755	2.35	µg/L	m
		398.7 -> 79.9	15670			
PFNA	7.583	398.7 -> 98.9	7459	2.48	µg/L	98
		463.0 -> 419.0	46230			
PFNS	8.694	463.0 -> 219.0	9563	2.28	µg/L	90
		548.8 -> 79.9	12032			
PFOA	7.063	548.8 -> 98.9	6763	2.38	µg/L	97
		413.0 -> 369.0	95039			
PFOS	8.228	413.0 -> 169.0	16135	2.30	µg/L	m
		498.9 -> 79.9	12129			
PFPeA	4.273	498.9 -> 98.8	6582	5.14	µg/L	100
		263.0 -> 219.0	79520			
PFPeS	6.472	349.1 -> 79.9	17046	2.45	µg/L	92
		349.1 -> 98.9	7162			
PFTeDA	9.690	713.1 -> 669.0	36242	2.56	µg/L	100
		713.1 -> 168.9	2710			
PFTrDA	9.345	663.0 -> 619.0	48807	2.43	µg/L	100
		663.0 -> 168.9	4443			
PFUnDA	8.518	563.1 -> 519.0	42482	2.40	µg/L	96
		563.1 -> 269.1	7131			
11CI-PF3OUdS	9.398	630.9 -> 450.9	62824	4.76	µg/L	98
		632.9 -> 452.9	18651			
9CI-PF3ONS	8.557	530.8 -> 351.0	109126	5.23	µg/L	94
		532.8 -> 353.0	32359			
ADONA	6.668	376.9 -> 250.9	288789	4.97	µg/L	97
		376.9 -> 84.8	74297			
HFPO-DA	5.834	284.9 -> 168.9	18092	4.97	µg/L	100
		284.9 -> 184.9	2380			
3:3FTCA	3.784	241.0 -> 177.0	9883	10.22	µg/L	99
		241.0 -> 117.0	1245			
5:3FTCA	6.160	341.0 -> 237.1	203491	47.93	µg/L	93
		341.0 -> 217.0	151540			
7:3FTCA	7.573	441.0 -> 316.9	89456	46.38	µg/L	97
		441.0 -> 336.9	185540			
EtFOSA	10.962	526.0 -> 219.0	8445	4.85	µg/L	96
		526.0 -> 169.0	11093			
EtFOSE	10.907	630.0 -> 58.9	11843	12.55	µg/L	100
		511.9 -> 219.0	8382			
MeFOSA	10.730	511.9 -> 169.0	10825	5.09	µg/L	88
		616.1 -> 58.9	9537			
MeFOSE	10.661	699.1 -> 79.9	3869	12.75	µg/L	100
		699.1 -> 98.8	2131			
PFDoDS	9.817	295.0 -> 201.0	13887	2.15	µg/L	100
		295.0 -> 84.9	3633			
NFDHA	5.350	279.0 -> 85.1	54993	4.88	µg/L	98
		229.0 -> 84.9	41144			
PFMBA	4.687	314.8 -> 134.9	148843	5.30	µg/L	100
		314.8 -> 82.9	5006			
PFMPA	3.438			5.32	µg/L	100
PFEESA	5.937			4.50	µg/L	100

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

7.3.1
7

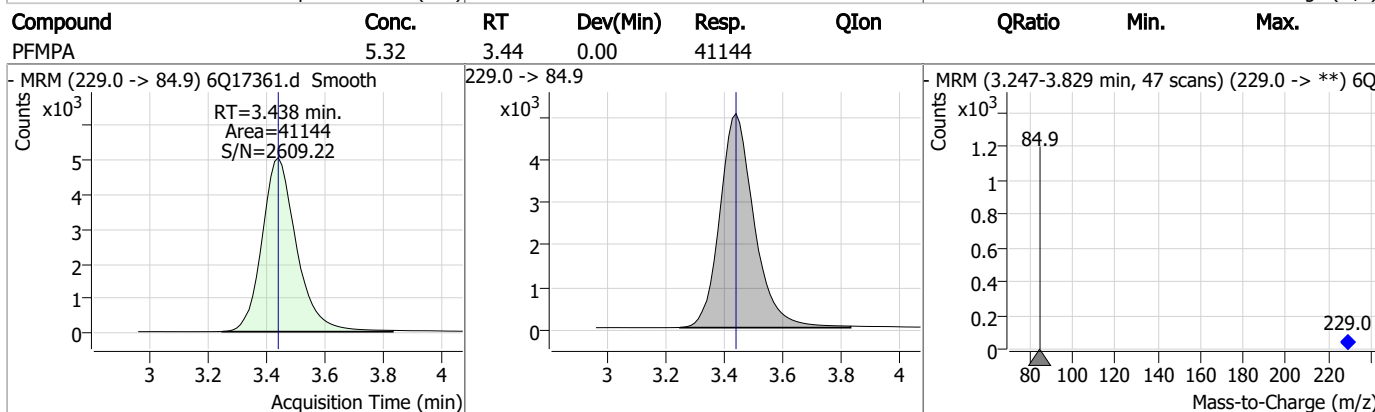
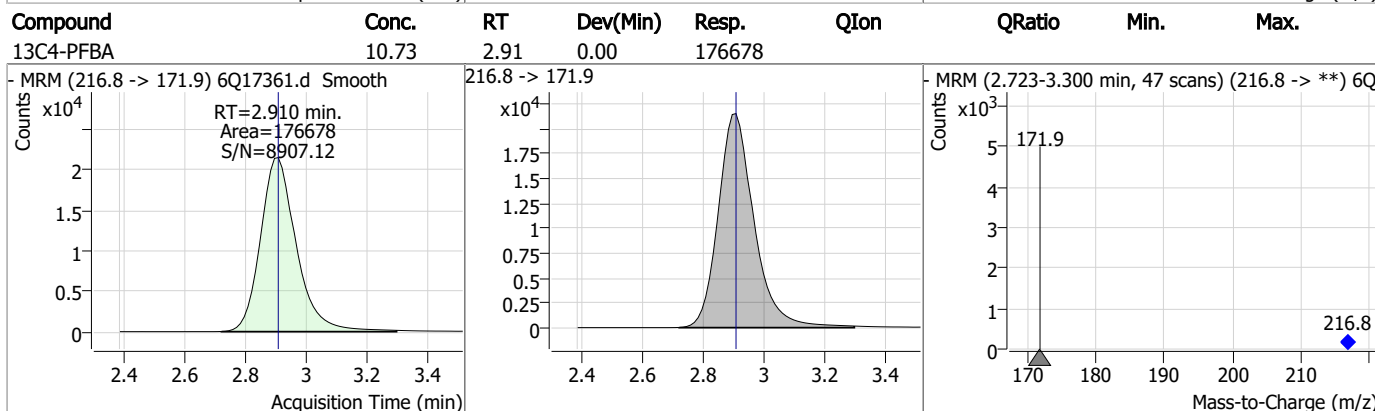
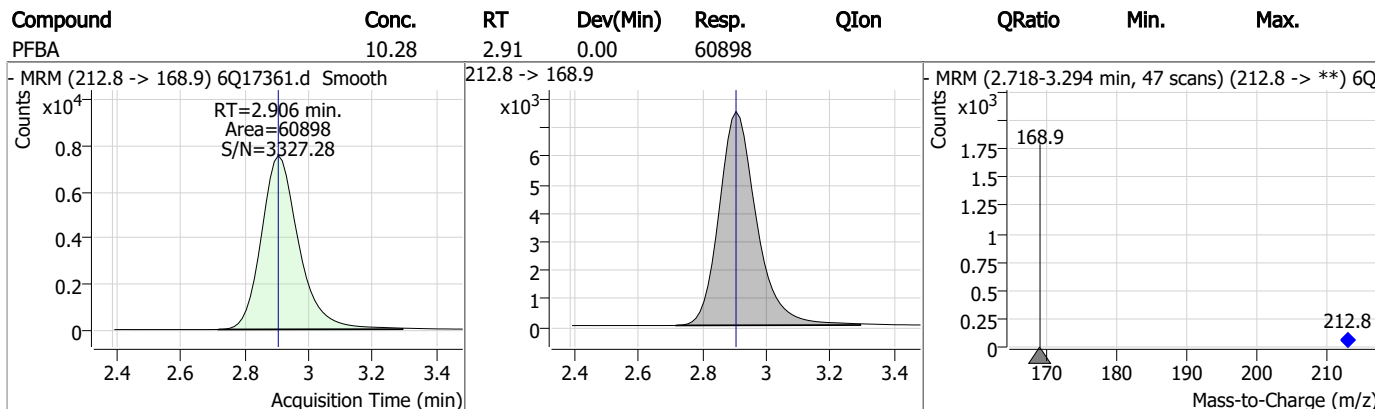
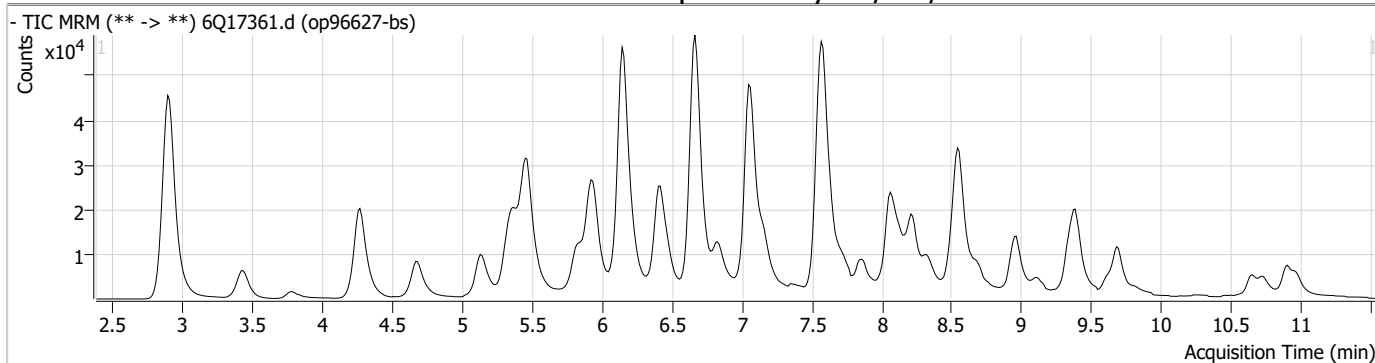
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.3.1

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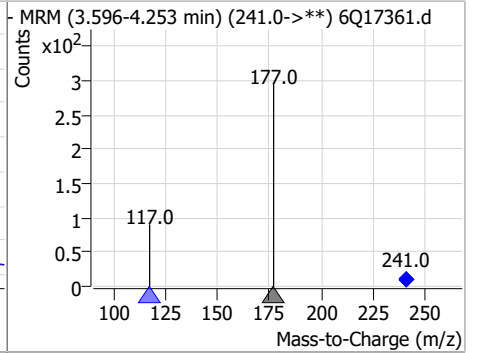
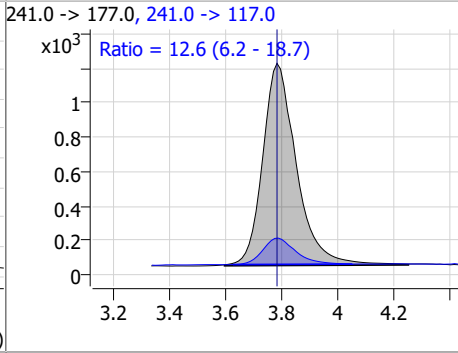
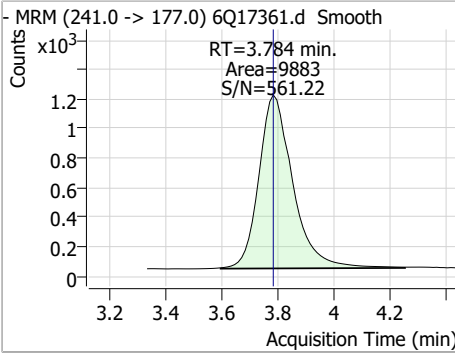
Perfluorinated Compounds by LC/MS/MS



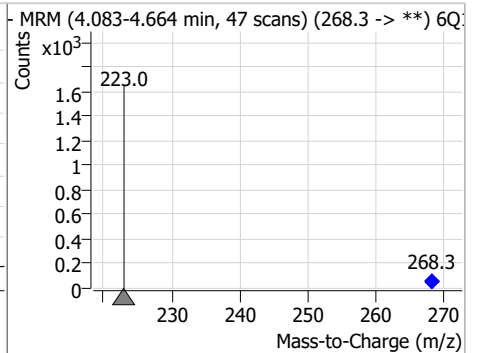
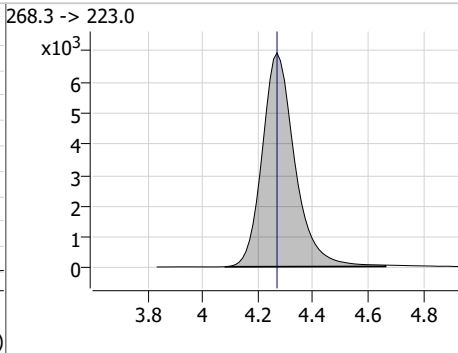
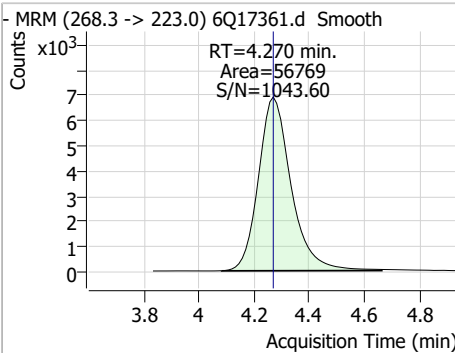
7.3.1
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Perfluorinated Compounds by LC/MS/MS

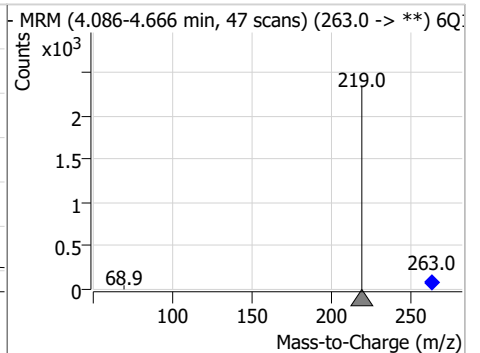
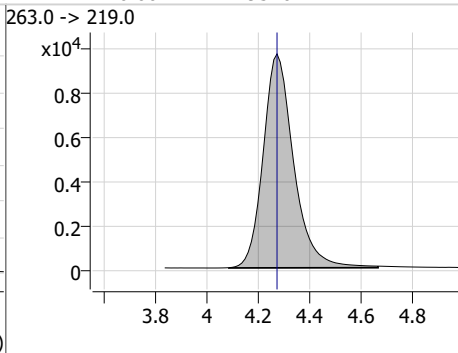
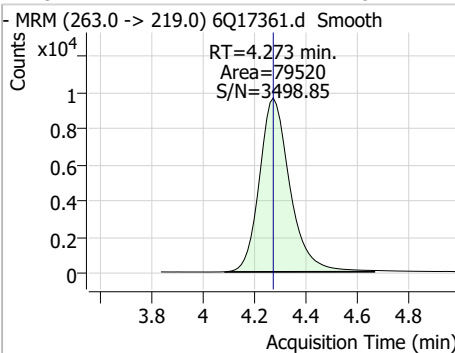
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	10.22	3.78	0.00	9883	241.0 -> 117.0	12.6	6.2	18.7



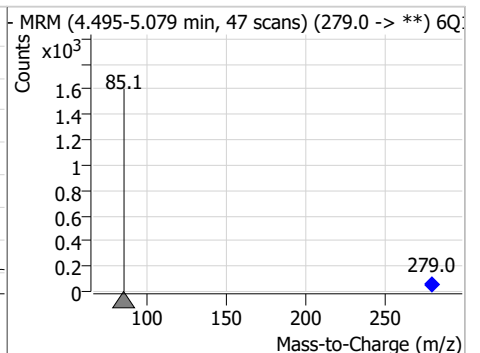
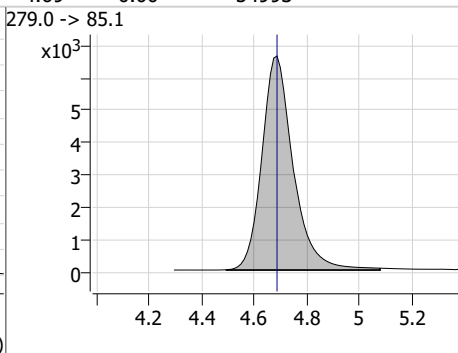
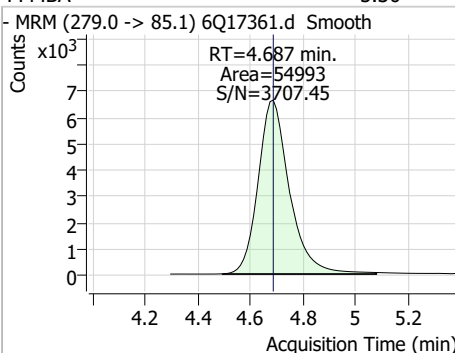
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.01	4.27	0.00	56769	268.3 -> 223.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	5.14	4.27	0.00	79520	263.0 -> 219.0			

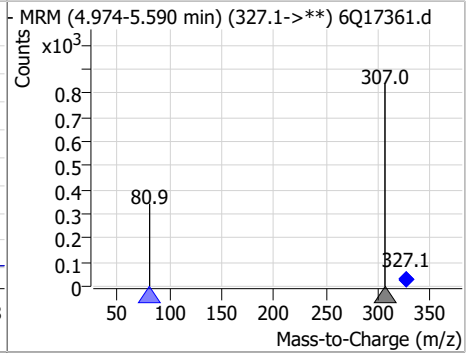
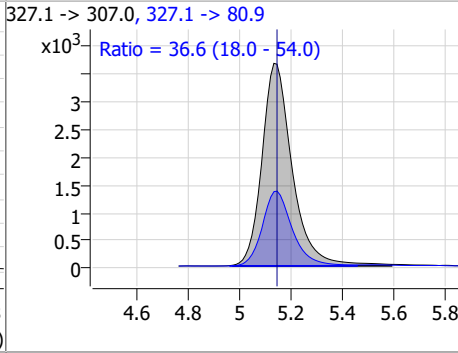
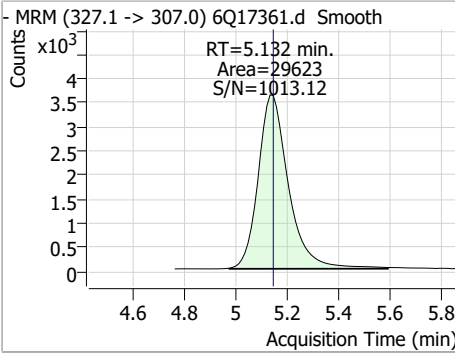


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	5.30	4.69	0.00	54993	279.0 -> 85.1			

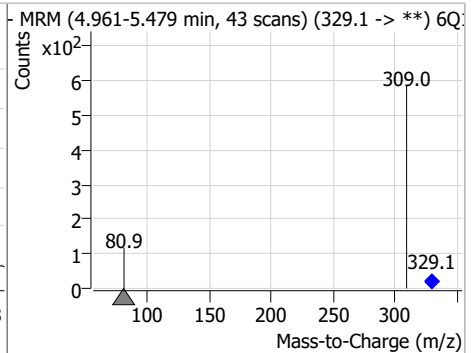
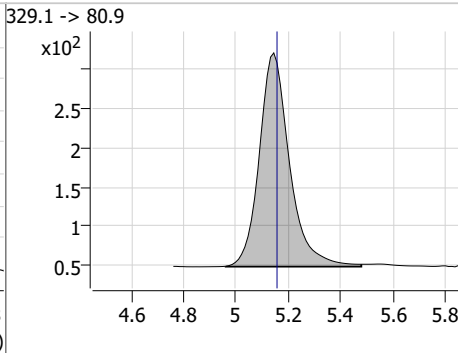
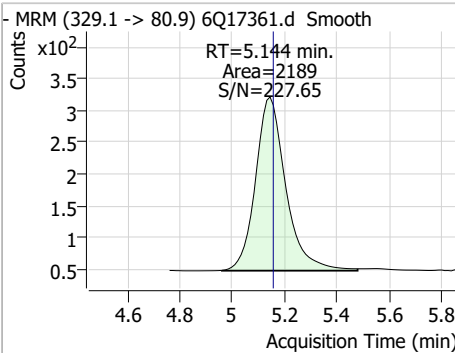


Perfluorinated Compounds by LC/MS/MS

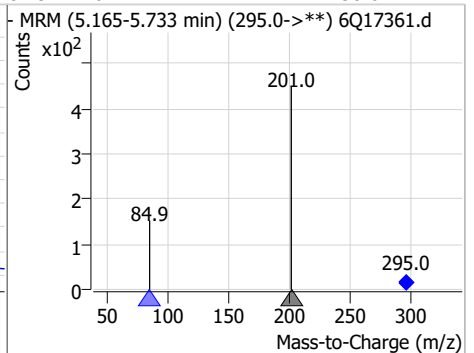
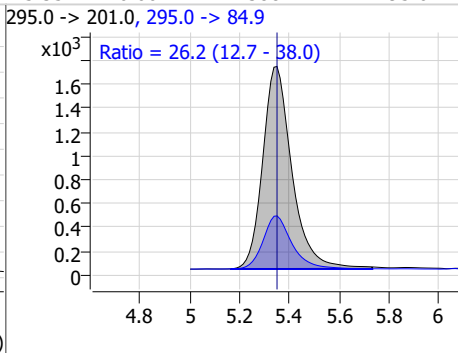
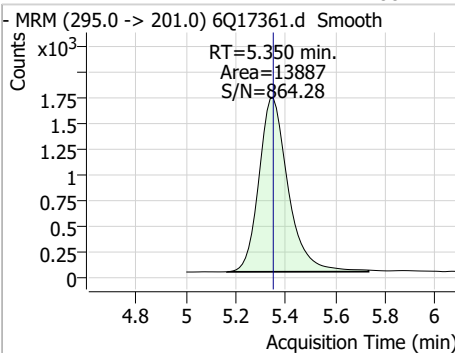
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	8.94	5.13	-0.01	29623	327.1 -> 80.9	36.6	18.0	54.0



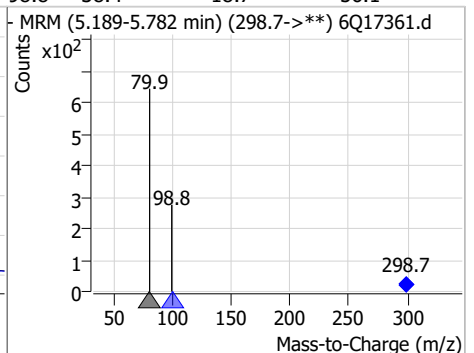
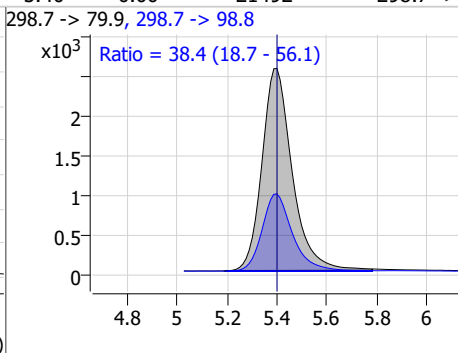
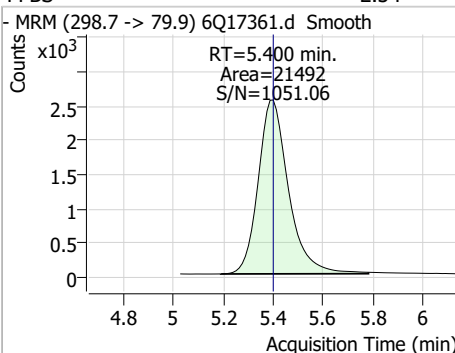
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.30	5.14	-0.01	2189	329.1 -> 80.9			



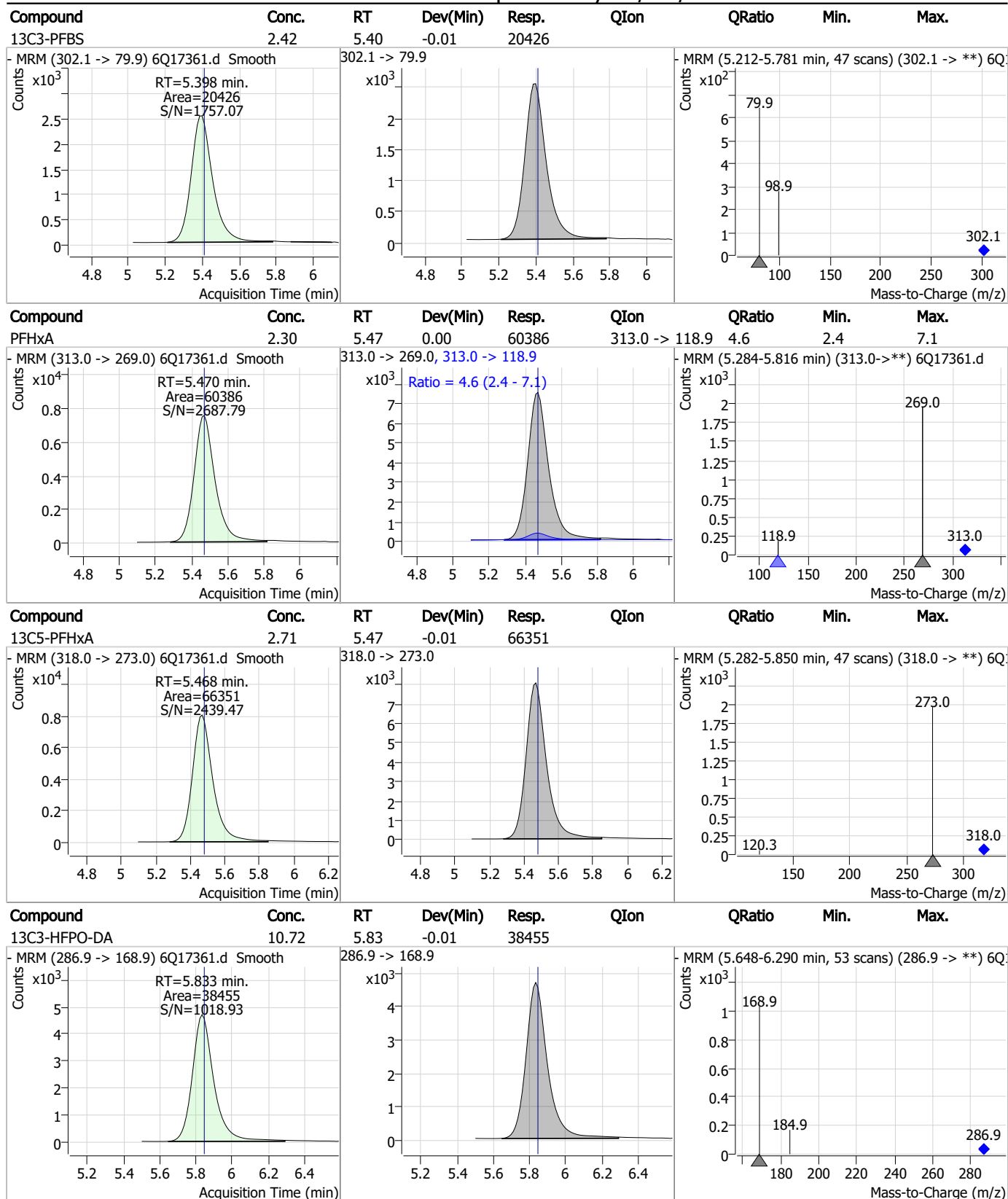
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	4.88	5.35	0.00	13887	295.0 -> 84.9	26.2	12.7	38.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.34	5.40	0.00	21492	298.7 -> 98.8	38.4	18.7	56.1

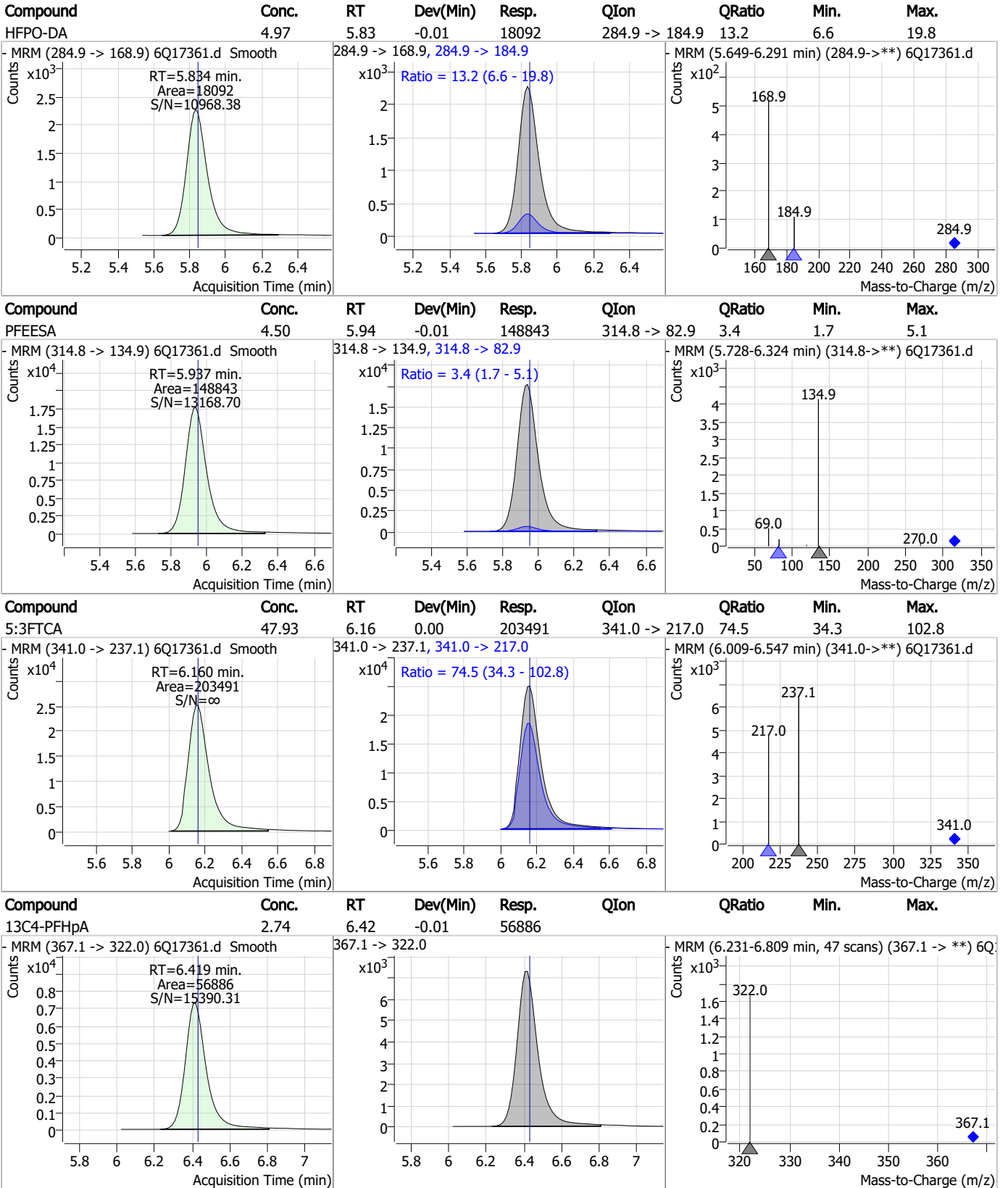


Perfluorinated Compounds by LC/MS/MS



7.3.1
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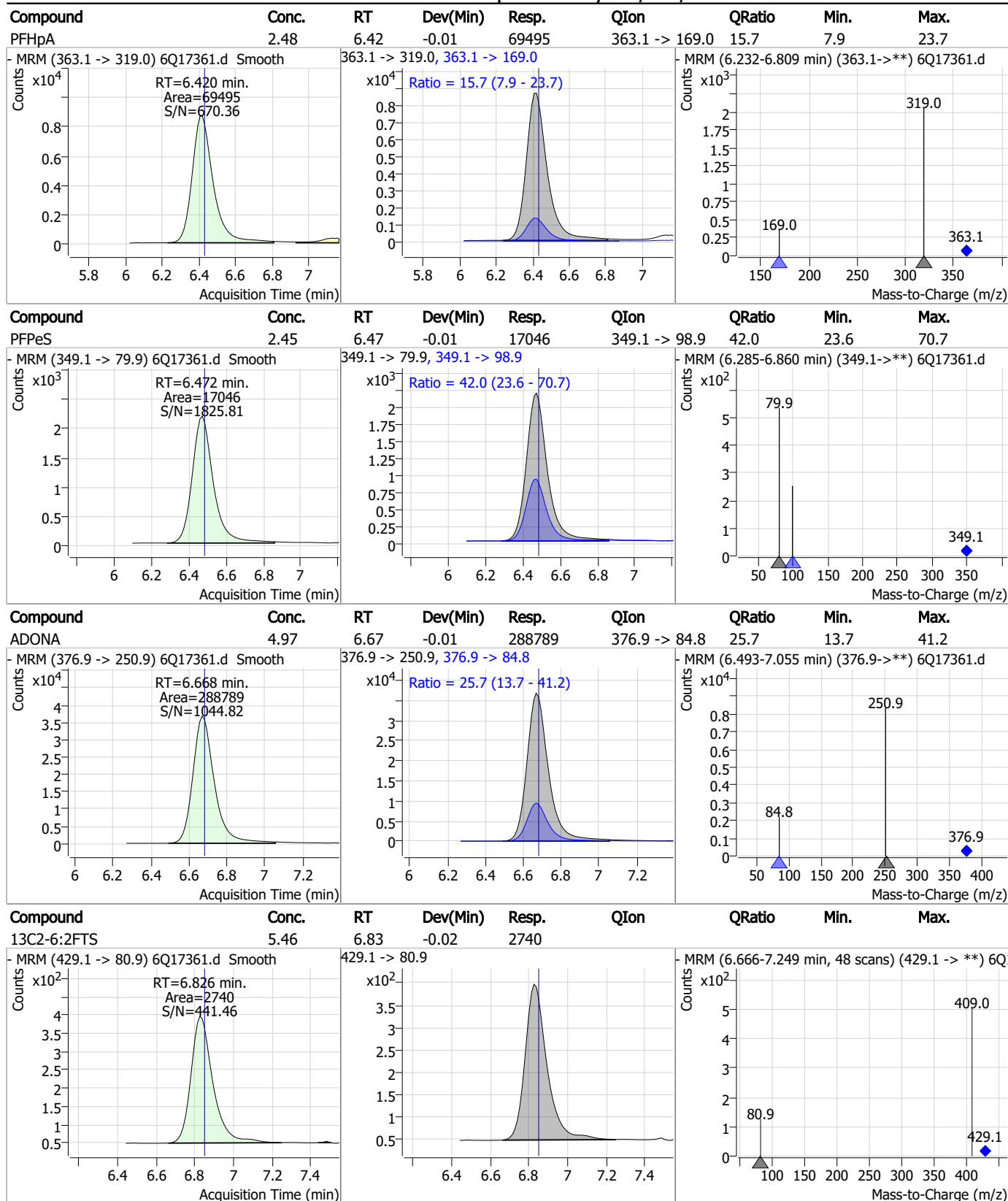
Perfluorinated Compounds by LC/MS/MS



7.3.1

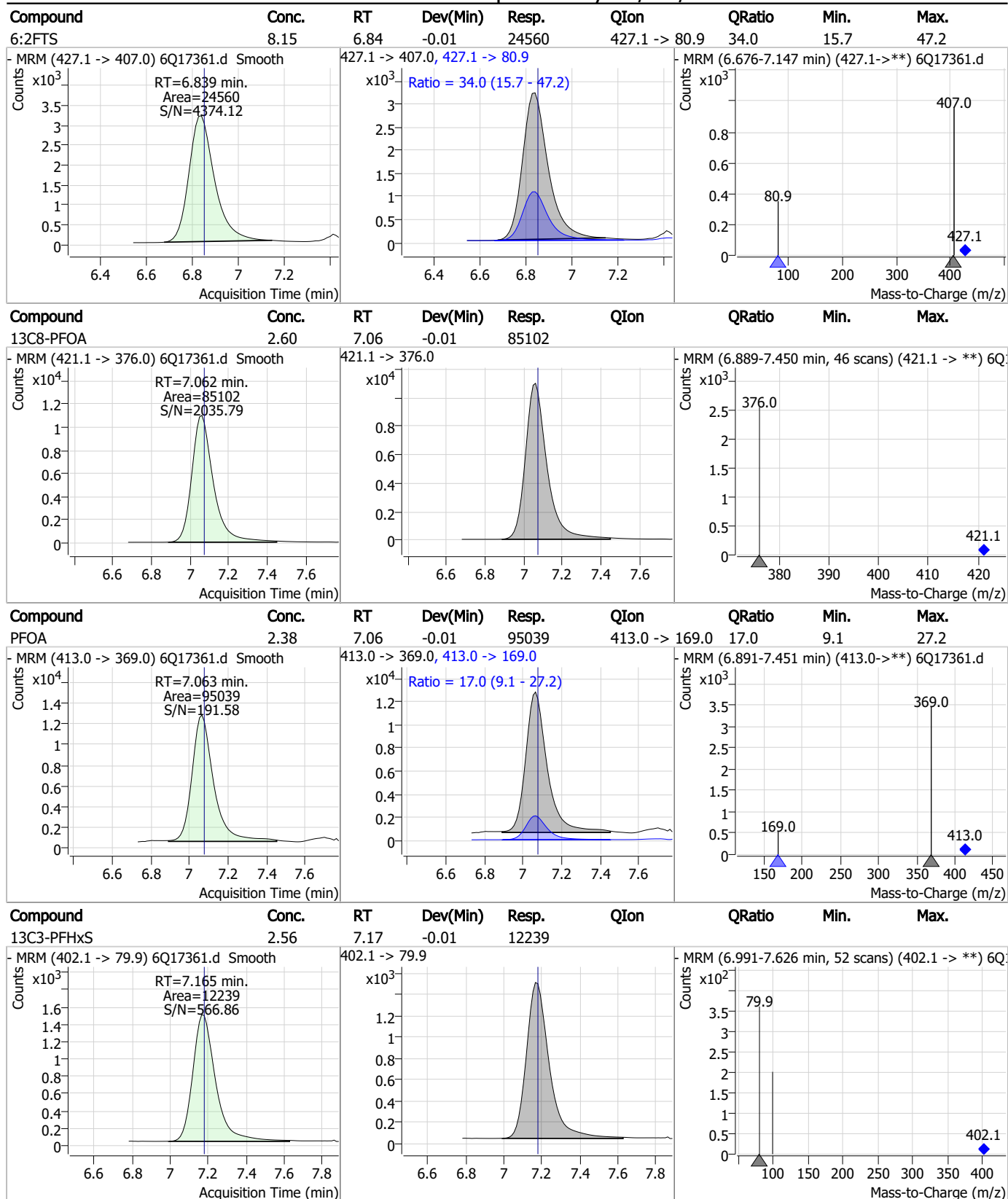
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Perfluorinated Compounds by LC/MS/MS



7.3.1
7

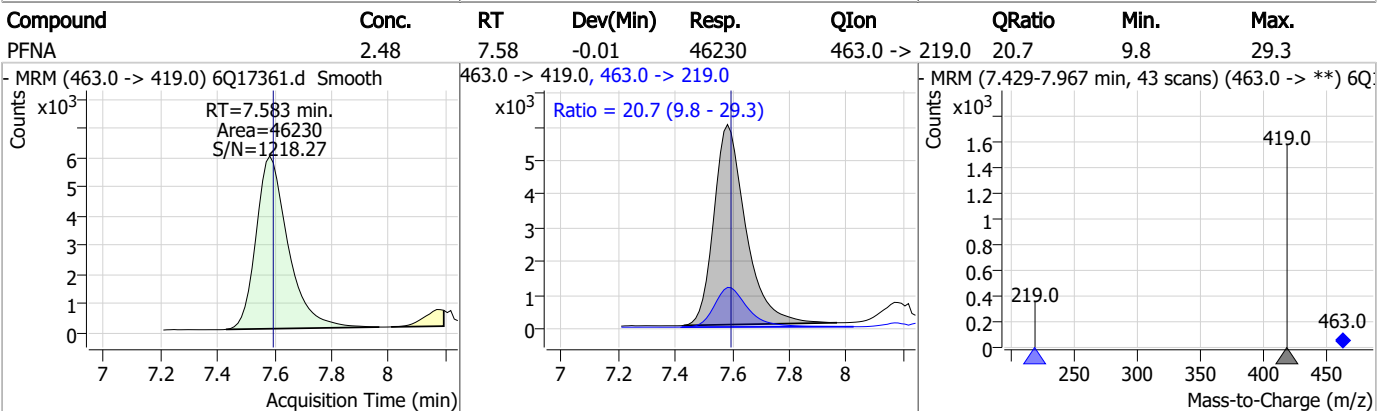
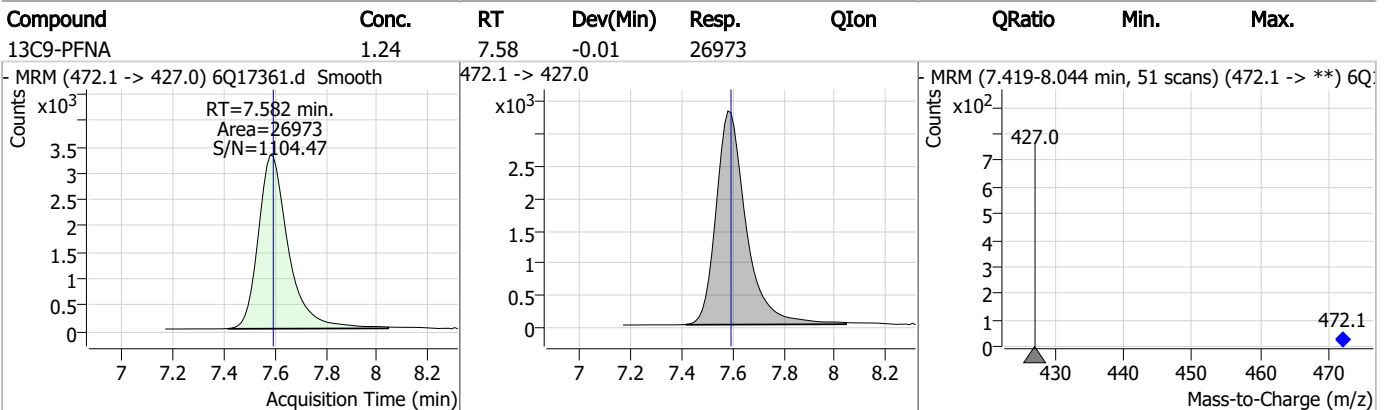
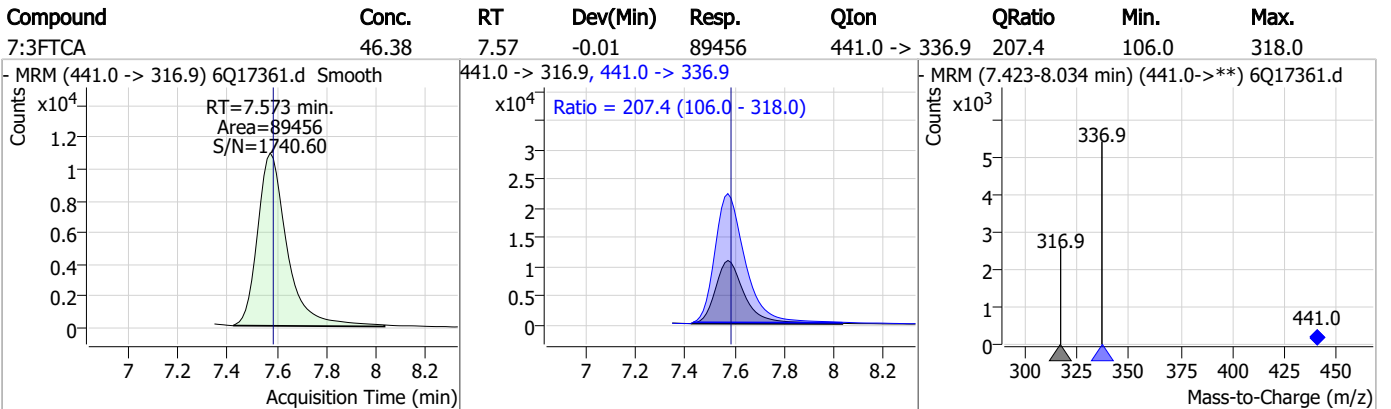
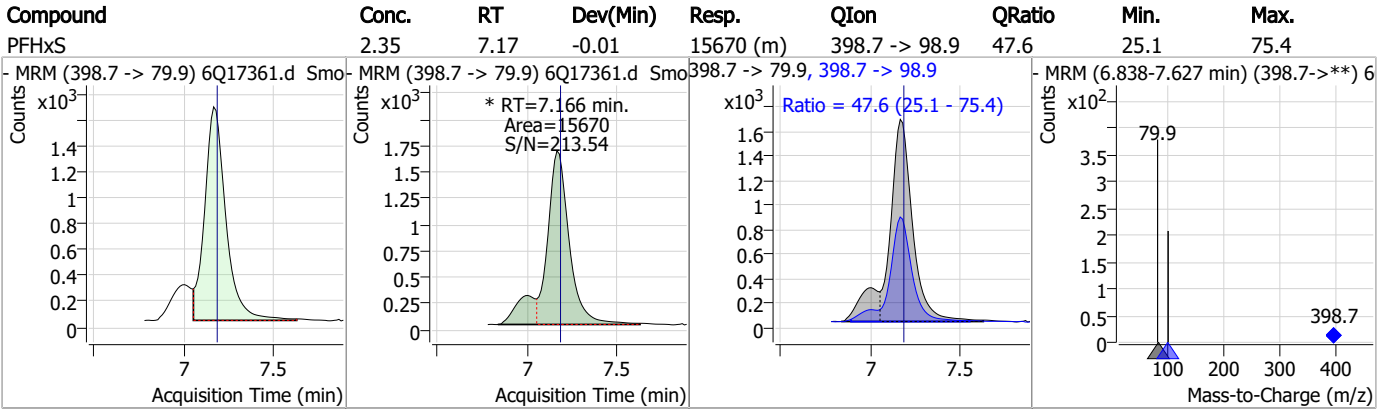
Perfluorinated Compounds by LC/MS/MS



7.3.1

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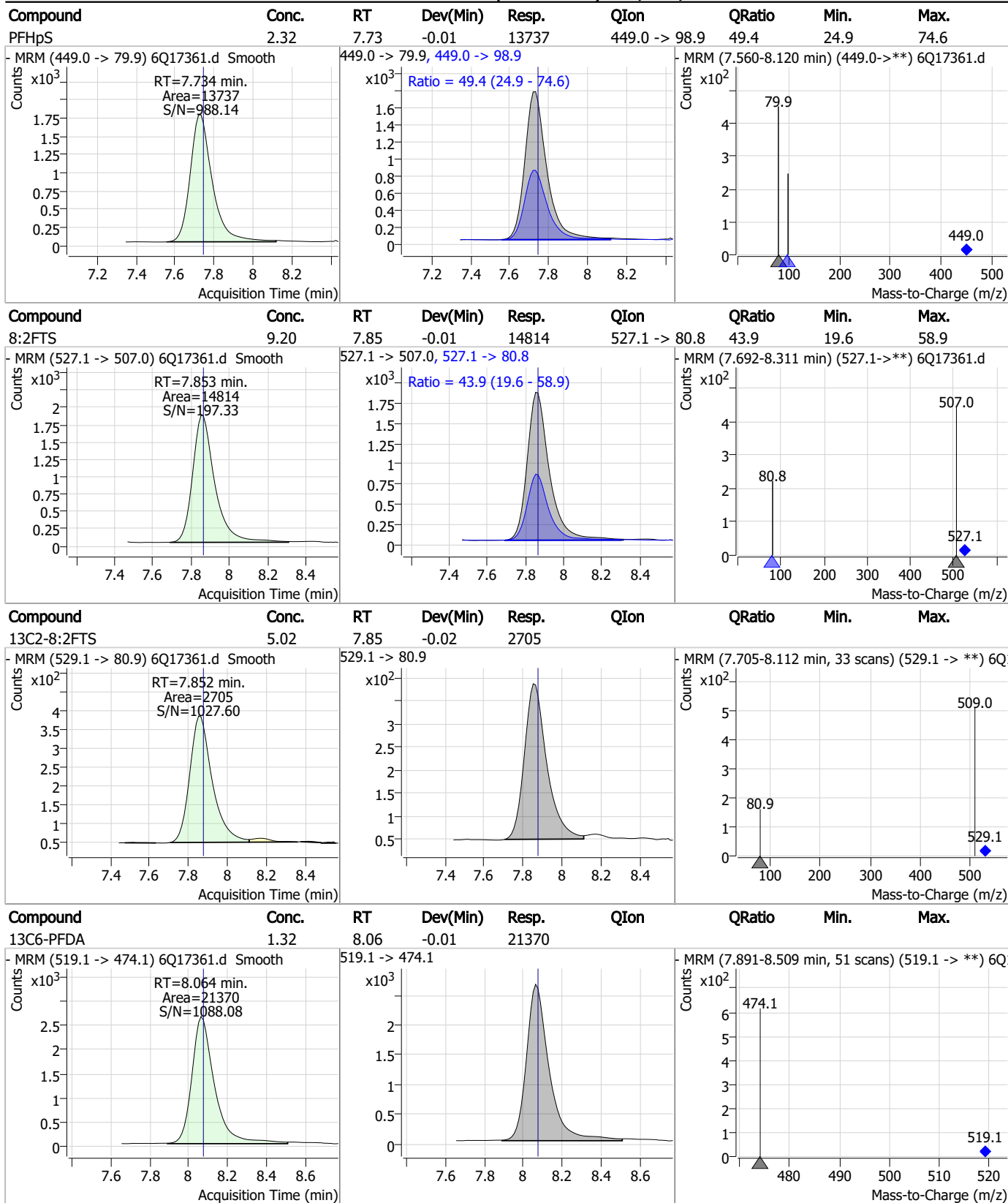
Perfluorinated Compounds by LC/MS/MS



7.3.1

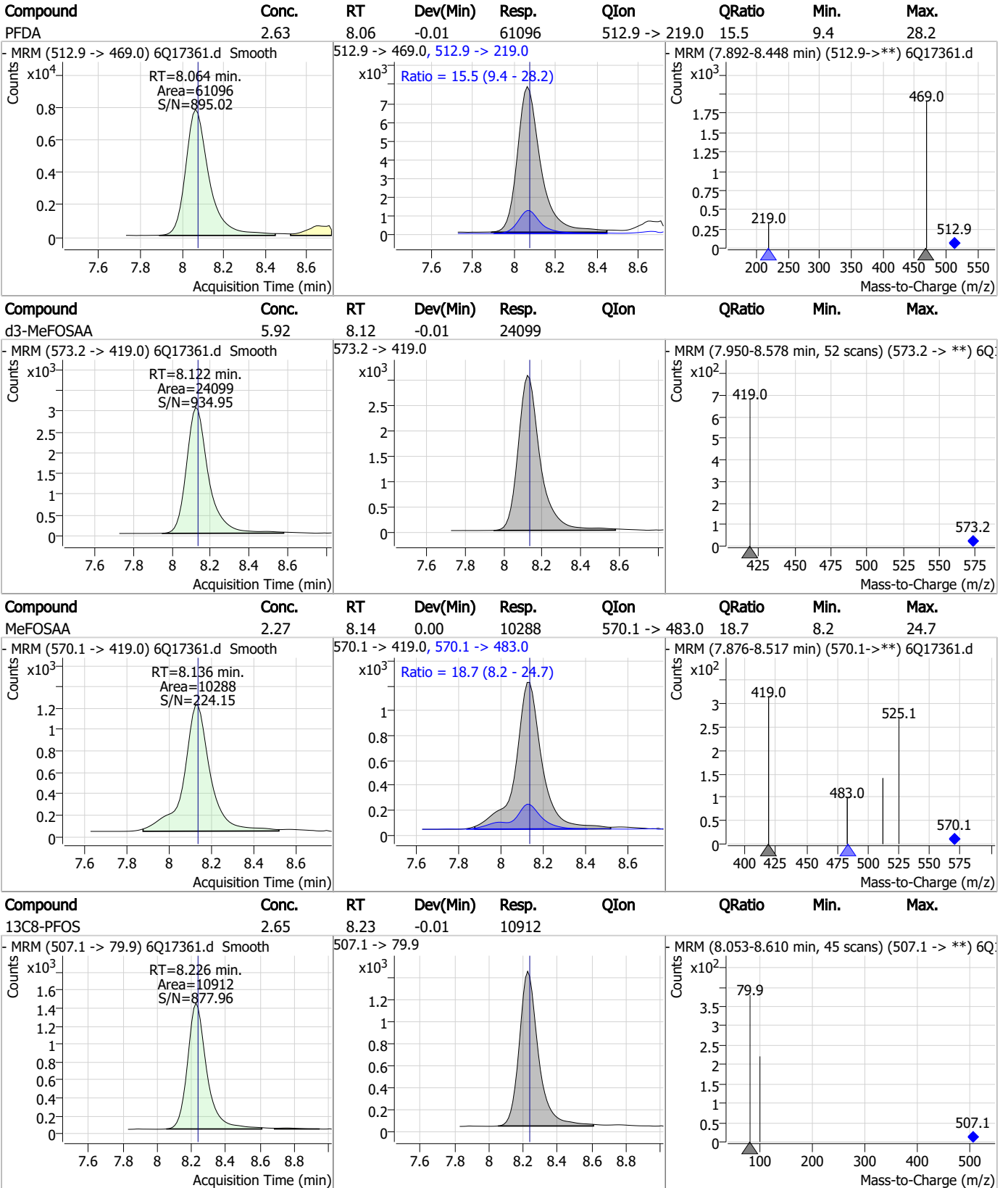
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Perfluorinated Compounds by LC/MS/MS



7.3.1
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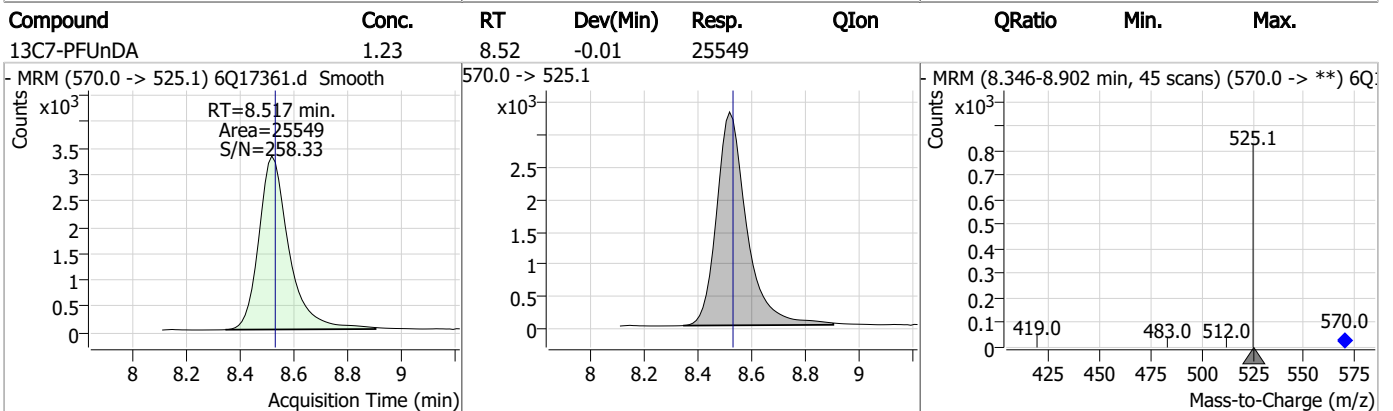
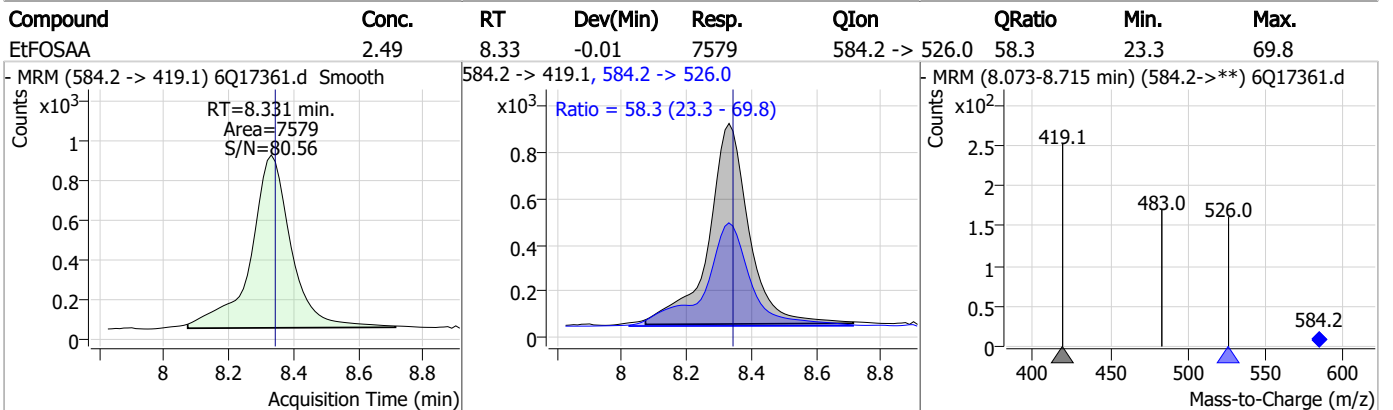
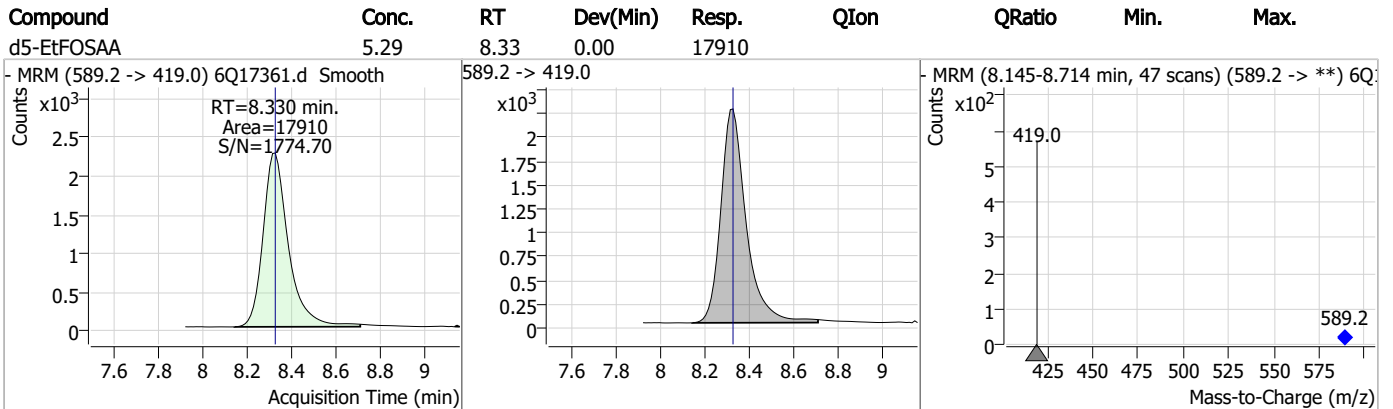
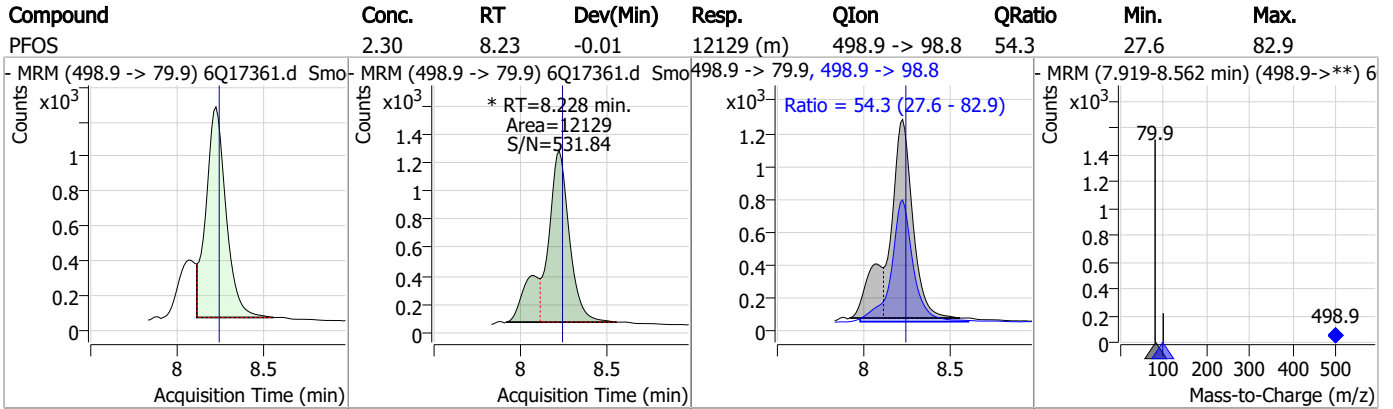
Perfluorinated Compounds by LC/MS/MS



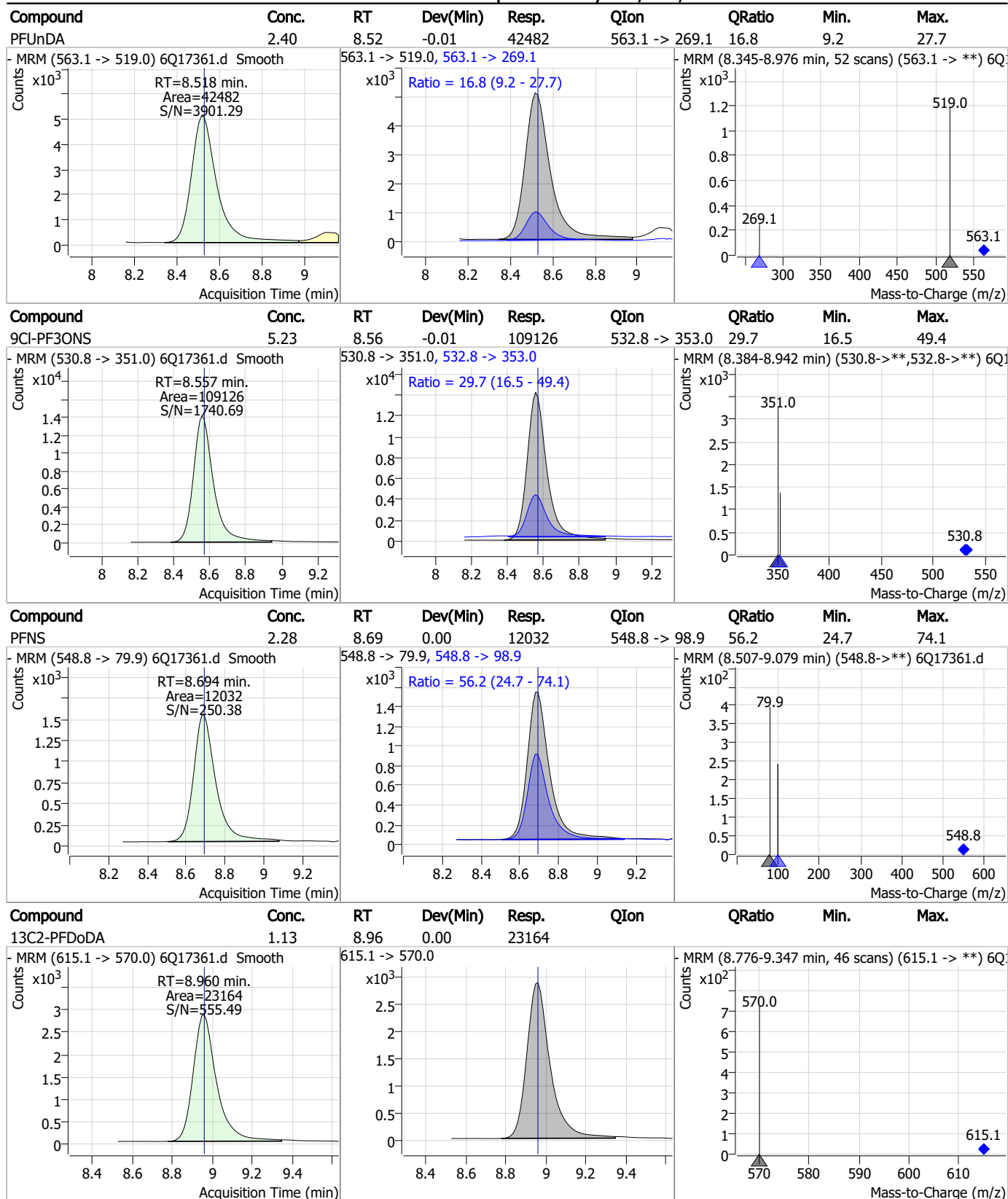
7.3.1

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Perfluorinated Compounds by LC/MS/MS

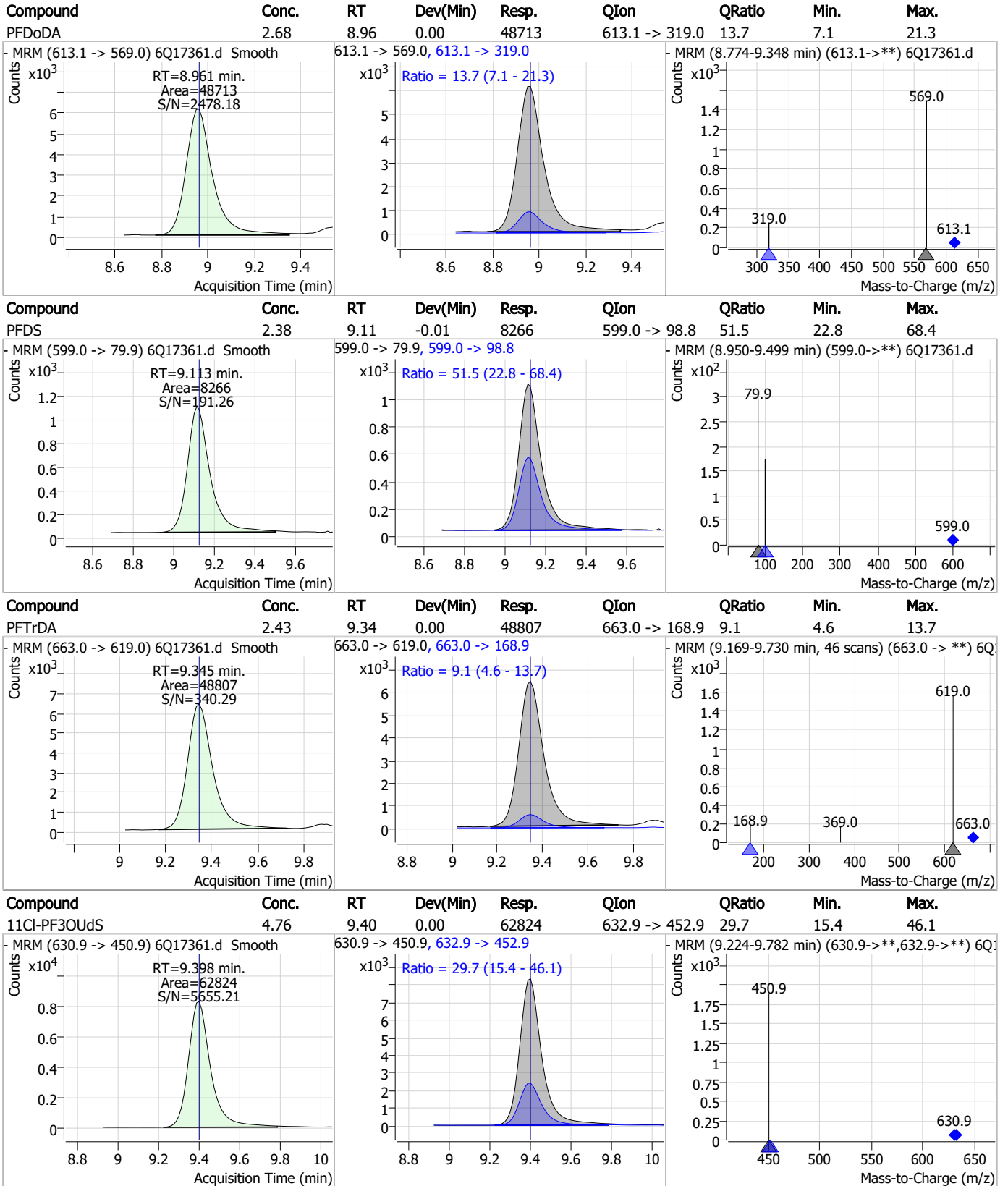


Perfluorinated Compounds by LC/MS/MS



7.3.1
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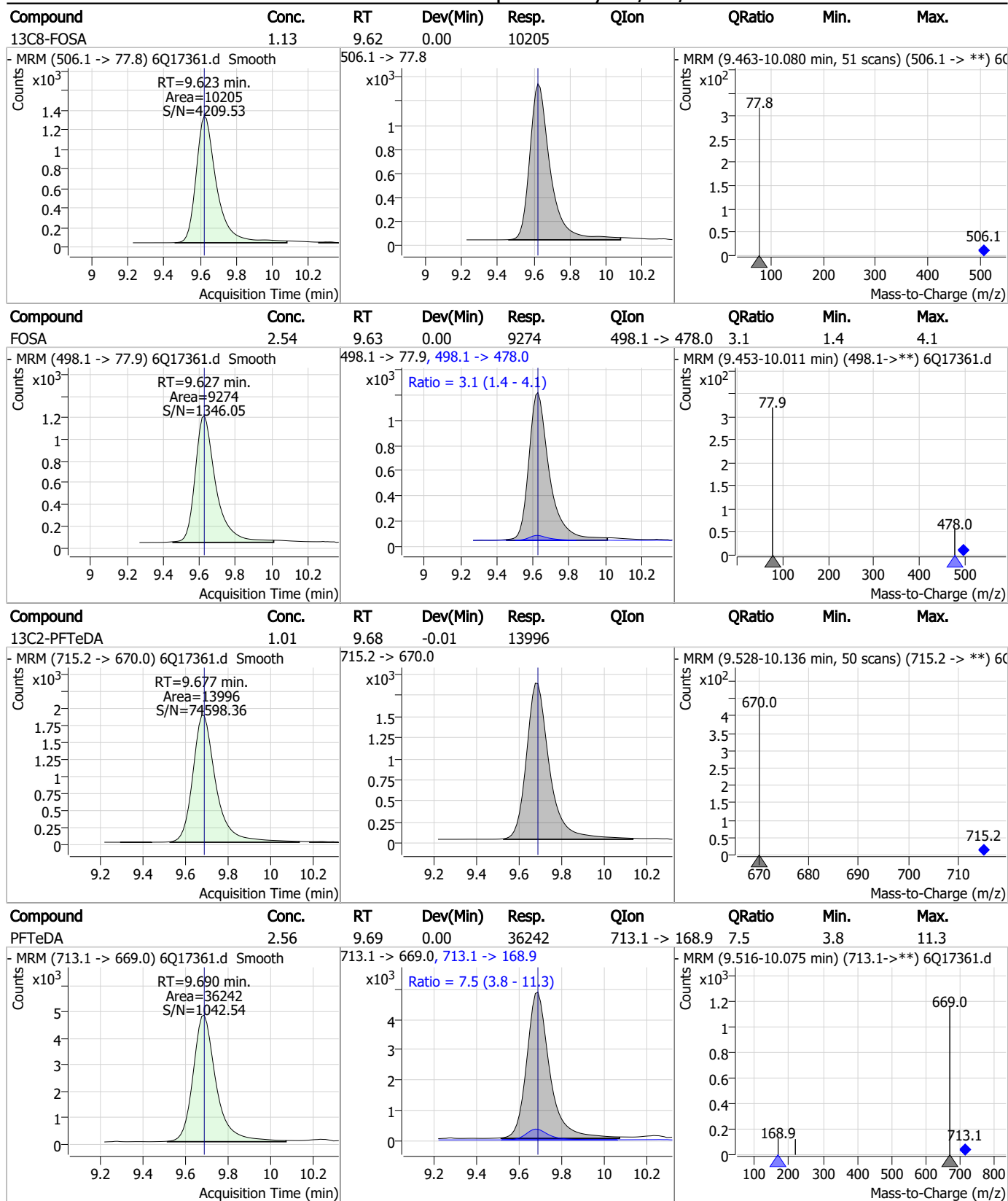
Perfluorinated Compounds by LC/MS/MS



7.3.1

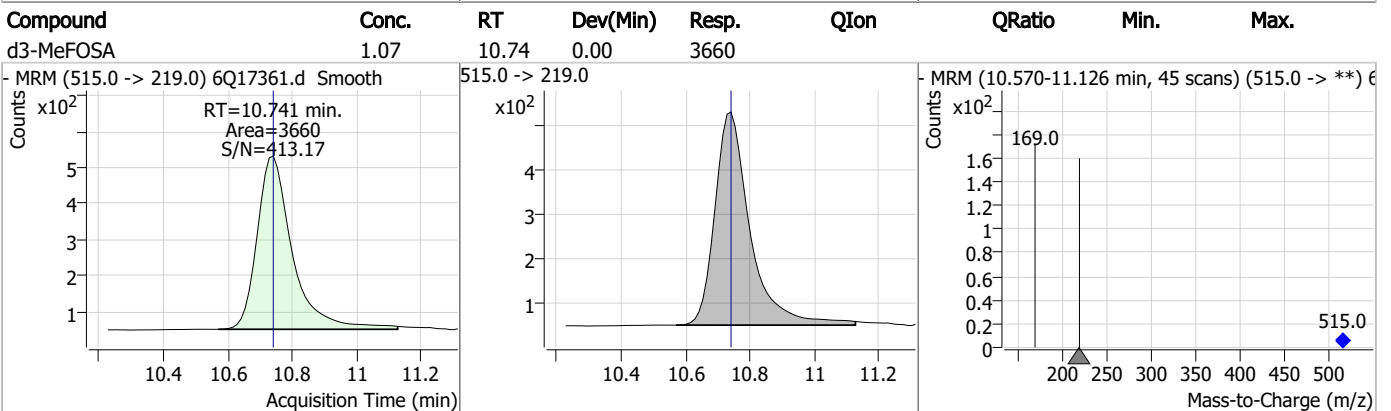
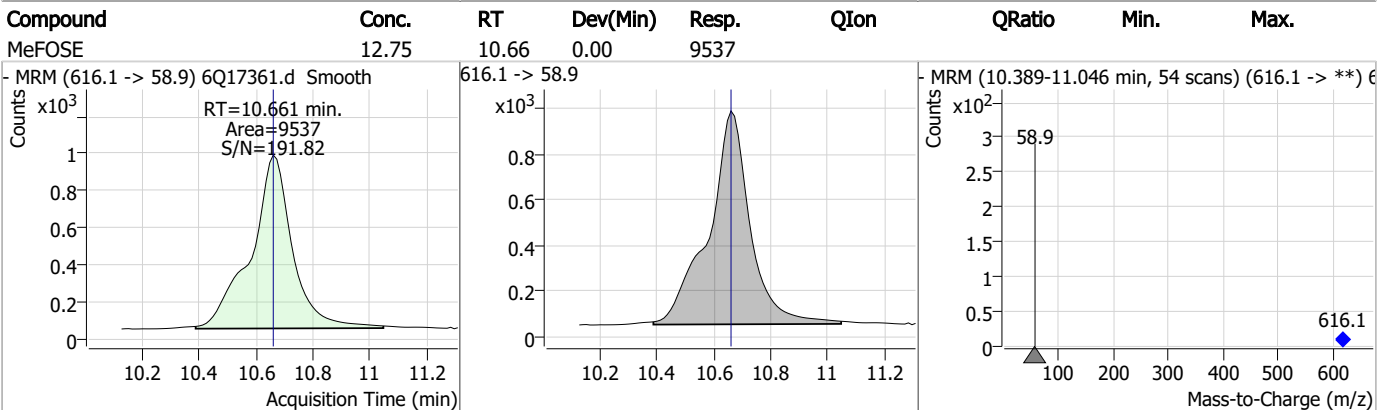
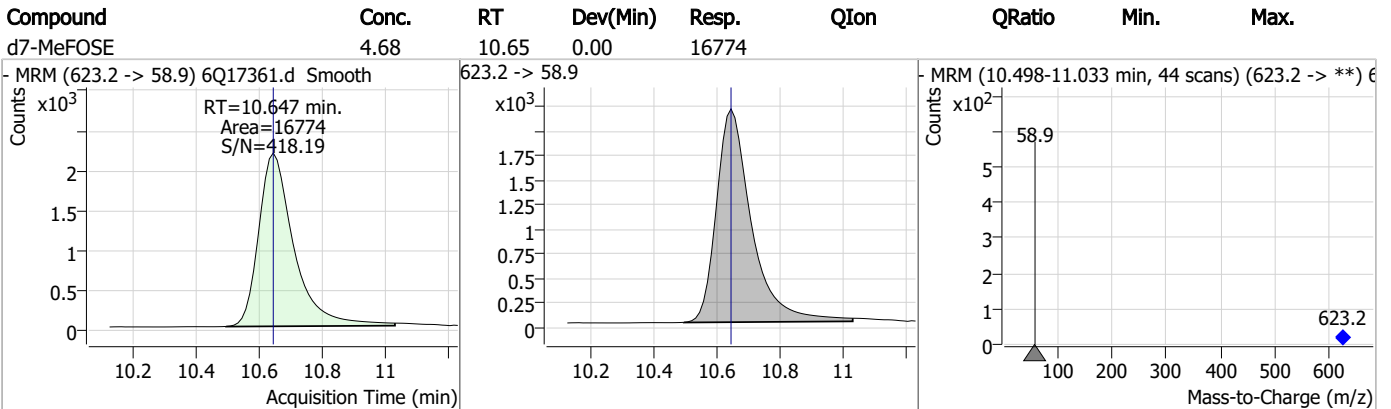
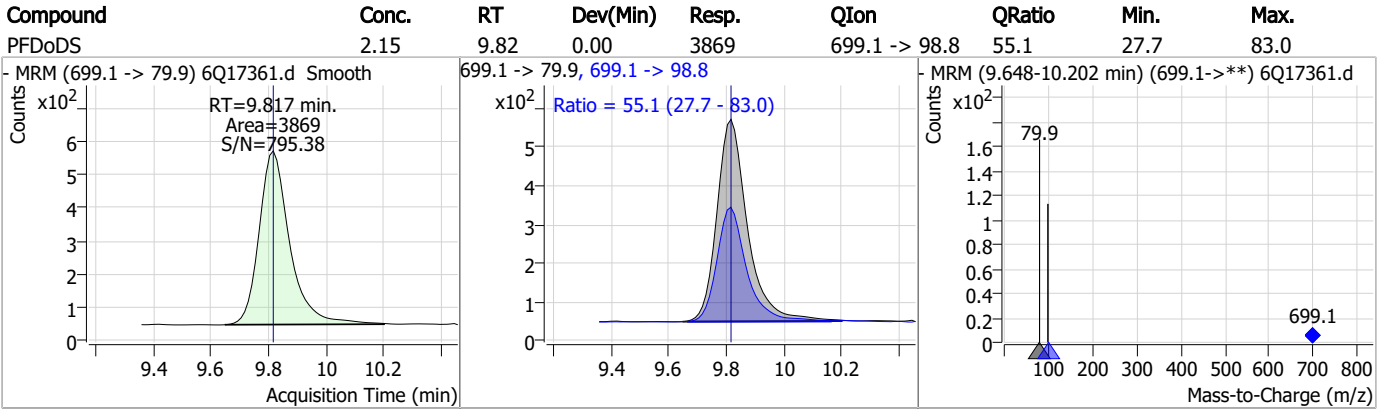
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Perfluorinated Compounds by LC/MS/MS



7.3.1
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Perfluorinated Compounds by LC/MS/MS

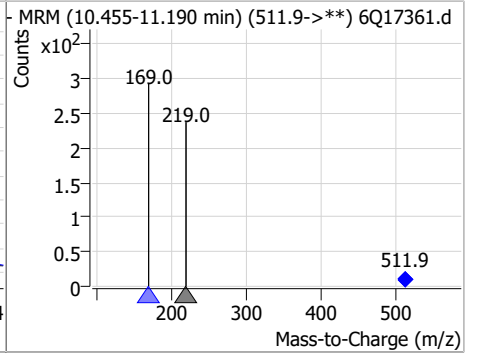
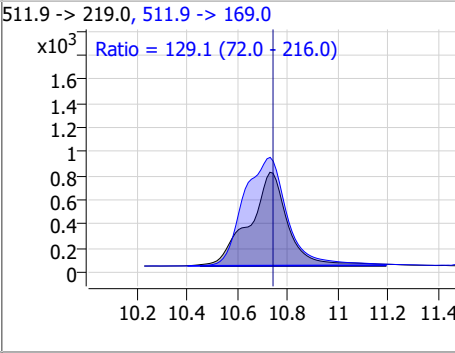
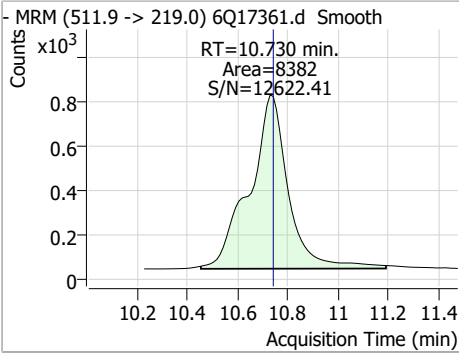


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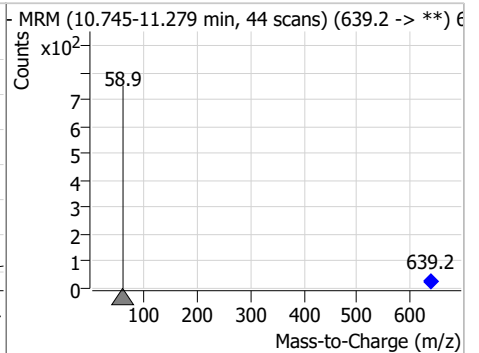
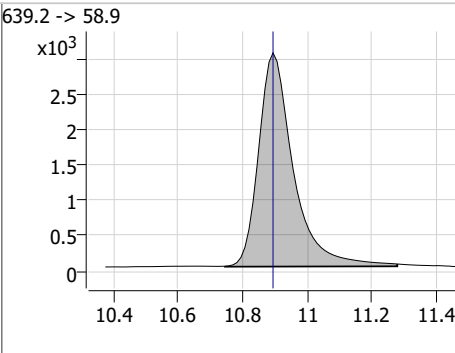
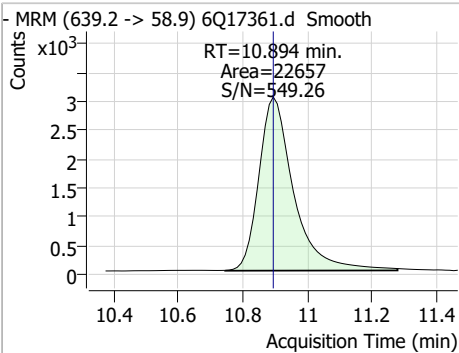
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Perfluorinated Compounds by LC/MS/MS

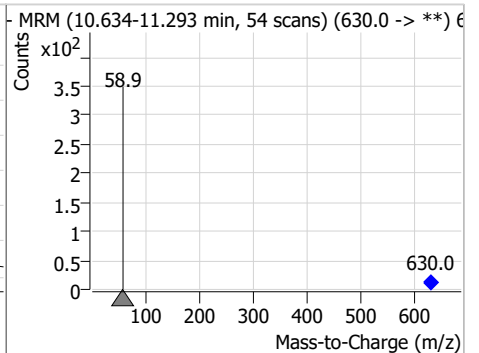
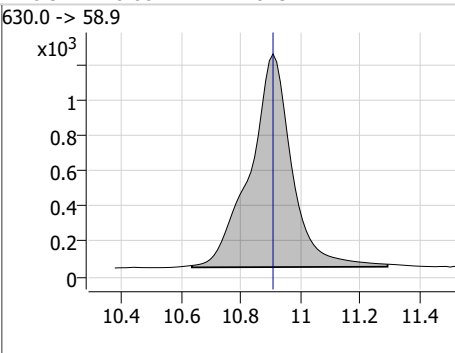
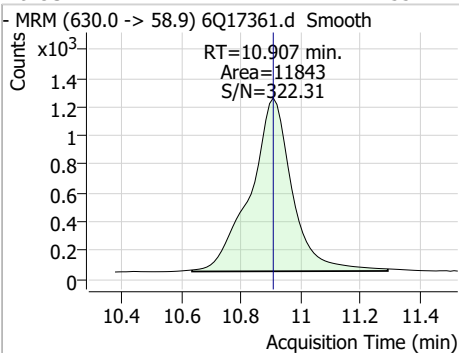
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOFA	5.09	10.73	-0.01	8382	511.9 -> 169.0	129.1	72.0	216.0



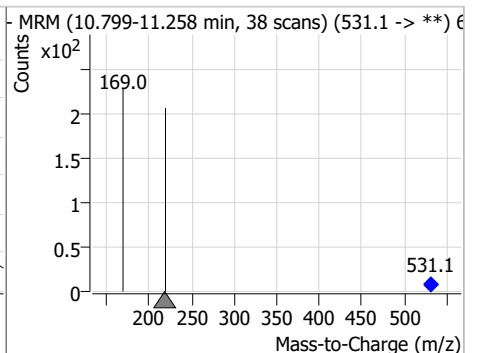
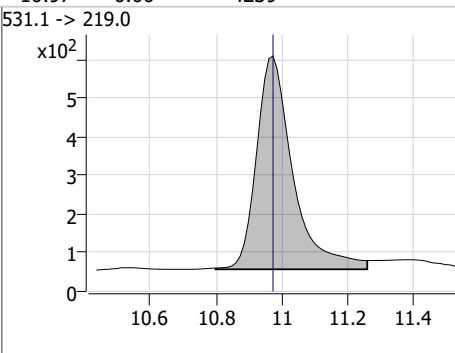
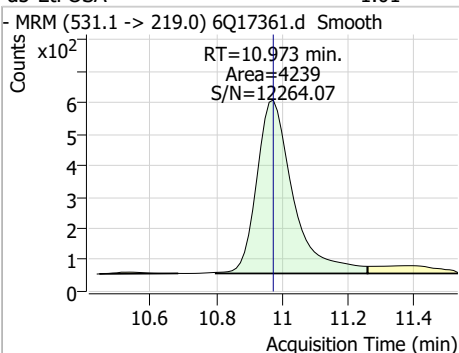
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	5.17	10.89	0.00	22657				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	12.55	10.91	0.00	11843				



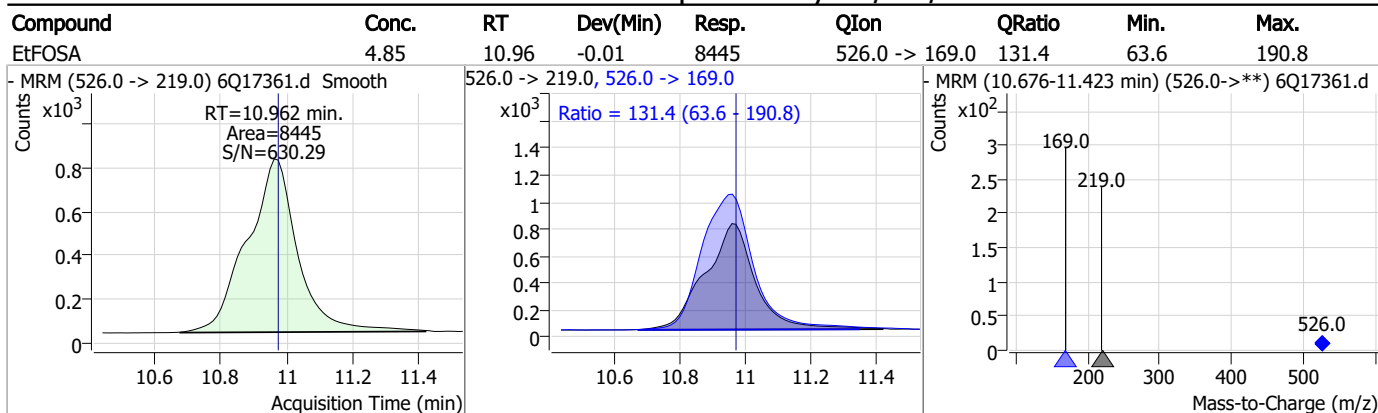
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOFA	1.01	10.97	0.00	4239				



7.3.1

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Perfluorinated Compounds by LC/MS/MS



7.3.1

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Manual Integration Approval Summary

Sample Number: OP96627-BS Method: EPA DRAFT 1633
Lab FileID: 6Q17361.D Analyst approved: 05/03/23 13:49 Martha Valls
Injection Time: 05/03/23 04:29 Supervisor approved: 05/03/23 19:48 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.17	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.23	Split peak

7.3.1.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17362.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/3/2023 4:44:20 AM
 Sample Name : op96627-llbs:3
 Vial : P3-F1
 DA Method File : 1633_042823_S6Q258.quantmethod.xml
 Batch Name : s6q261.batch.bin
 Sample Information : OP96627,S6Q261,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.910	216.8 -> 171.9	184136	10.00 µg/L	0.000
M5-PFPeA	4.270	268.3 -> 223.0	59254	5.00 µg/L	0.000
M5-PFHxA	5.468	318.0 -> 273.0	66920	2.50 µg/L	-0.012
M4-PFHpA	6.419	367.1 -> 322.0	56851	2.50 µg/L	-0.012
M8-PFOA	7.062	421.1 -> 376.0	85330	2.50 µg/L	-0.012
M9-PFNA	7.594	472.1 -> 427.0	28168	1.25 µg/L	0.000
M6-PFDA	8.076	519.1 -> 474.1	20662	1.25 µg/L	0.000
M7-PFUnDA	8.517	570.0 -> 525.1	26120	1.25 µg/L	-0.013
M2-PFDoDA	8.960	615.1 -> 570.0	24415	1.25 µg/L	0.000
M2-PFTeDA	9.677	715.2 -> 670.0	14483	1.25 µg/L	-0.012
M8-FOSA	9.623	506.1 -> 77.8	9546	2.50 µg/L	0.000
M3-PFBS	5.398	302.1 -> 79.9	21108	2.50 µg/L	-0.012
M3-PFHxS	7.179	402.1 -> 79.9	13208	2.50 µg/L	0.000
M8-PFOS	8.226	507.1 -> 79.9	11050	2.50 µg/L	-0.012
M2-4:2FTS	5.144	329.1 -> 80.9	2046	5.00 µg/L	-0.012
M2-6:2FTS	6.839	429.1 -> 80.9	2626	5.00 µg/L	-0.012
M2-8:2FTS	7.864	529.1 -> 80.9	2848	5.00 µg/L	-0.012
M3-MeFOSAA	8.122	573.2 -> 419.0	22676	5.00 µg/L	-0.012
M3-HFPO-DA	5.845	286.9 -> 168.9	36992	10.00 µg/L	0.000
M5-EtFOSAA	8.330	589.2 -> 419.0	20402	5.00 µg/L	0.000
M7-MeFOSE	10.647	623.2 -> 58.9	14885	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	19488	25.00 µg/L	0.000
M5-EtFOSA	10.973	531.1 -> 219.0	2434	2.50 µg/L	0.000
M3-MeFOSA	10.741	515.0 -> 219.0	2297	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	13710	2.50 µg/L	-0.012
13C3-PFBA	2.902	216.0 -> 172.0	71525	5.00 µg/L	0.000
18O2-PFHxS	7.177	403.0 -> 83.9	8340	2.50 µg/L	0.000
13C4-PFOA	7.063	417.1 -> 372.0	82370	2.50 µg/L	-0.012
13C2-PFDA	8.076	515.1 -> 470.1	22264	1.25 µg/L	0.000
13C5-PFNA	7.595	468.0 -> 423.0	28462	1.25 µg/L	0.000
13C2-PFHxA	5.469	315.1 -> 270.0	51917	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.144	329.1 -> 80.9	2046	5.34 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.7%		
13C2-6:2FTS	6.839	429.1 -> 80.9	2626	5.64 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.9%		
13C2-8:2FTS	7.864	529.1 -> 80.9	2848	5.69 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.8%		
13C2-PFDoDA	8.960	615.1 -> 570.0	24415	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.4%		
13C2-PFTeDA	9.677	715.2 -> 670.0	14483	1.16 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 92.4%		
13C3-PFBS	5.398	302.1 -> 79.9	21108	2.69 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 107.6%		
13C3-PFHxS	7.179	402.1 -> 79.9	13208	2.98 µg/L	0.000

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7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 119.0%	
13C4-PFBA	2.910	216.8 -> 171.9	184136	11.14 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 111.4%	
13C4-PFHpA	6.419	367.1 -> 322.0	56851	2.68 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.1%	
13C5-PFHxA	5.468	318.0 -> 273.0	66920	2.67 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.9%	
13C5-PFPeA	4.270	268.3 -> 223.0	59254	5.11 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C6-PFDA	8.076	519.1 -> 474.1	20662	1.41 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 112.6%	
13C7-PFUnDA	8.517	570.0 -> 525.1	26120	1.39 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 111.1%	
13C8-FOSA	9.623	506.1 -> 77.8	9546	1.05 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 42.1%	
13C8-PFOA	7.062	421.1 -> 376.0	85330	2.68 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.4%	
13C8-PFOS	8.226	507.1 -> 79.9	11050	2.68 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.0%	
13C9-PFNA	7.594	472.1 -> 427.0	28168	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.9%	
d3-MeFOSAA	8.122	573.2 -> 419.0	22676	5.55 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 111.0%	
13C3-HFPO-DA	5.845	286.9 -> 168.9	36992	10.06 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
d3-MeFOSA	10.741	515.0 -> 219.0	2297	0.67 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 26.8%	
d5-EtFOSAA	8.330	589.2 -> 419.0	20402	6.01 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 120.2%	
d7-MeFOSE	10.647	623.2 -> 58.9	14885	4.14 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 16.5%	
d9-EtFOSE	10.894	639.2 -> 58.9	19488	4.43 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 17.7%	
d5-EtFOSA	10.973	531.1 -> 219.0	2434	0.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 23.2%	
Target Compounds					QValue
4:2FTS	5.145	327.1 -> 307.0	8727	2.82 µg/L	99
		327.1 -> 80.9	3099		
6:2FTS	6.839	427.1 -> 407.0	7666	2.65 µg/L	91
		427.1 -> 80.9	2789		
8:2FTS	7.865	527.1 -> 507.0	5049	2.98 µg/L	96
		527.1 -> 80.8	1860		
EtFOSAA	8.331	584.2 -> 419.1	2068	0.60 µg/L	75
		584.2 -> 526.0	1299		
FOSA	9.627	498.1 -> 77.9	2503	0.73 µg/L	99
		498.1 -> 478.0	78		
MeFOSAA	8.136	570.1 -> 419.0	2951	0.69 µg/L	87
		570.1 -> 483.0	650		
PFBA	2.906	212.8 -> 168.9	18257	2.96 µg/L	100
PFBS	5.400	298.7 -> 79.9	6211	0.66 µg/L	96
		298.7 -> 98.8	2474		
PFDA	8.077	512.9 -> 469.0	16311	0.73 µg/L	92
		512.9 -> 219.0	2486		
PFDODA	8.948	613.1 -> 569.0	12840	0.67 µg/L	97
		613.1 -> 319.0	1979		
PFDS	9.113	599.0 -> 79.9	2378	0.68 µg/L	96

7.3.2
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	1140			
PFHpA	6.420	363.1 -> 319.0	15189	0.54	µg/L	87
		363.1 -> 169.0	3220			
PFHpS	7.734	449.0 -> 79.9	4068	0.68	µg/L	95
		449.0 -> 98.9	1873			
PFHxA	5.470	313.0 -> 269.0	17892	0.68	µg/L	100
		313.0 -> 118.9	840			
PFHxS	7.180	398.7 -> 79.9	4723	0.66	µg/L	m 95
		398.7 -> 98.9	2225			
PFNA	7.595	463.0 -> 419.0	13799	0.71	µg/L	97
		463.0 -> 219.0	2878			
PFNS	8.694	548.8 -> 79.9	3610	0.68	µg/L	99
		548.8 -> 98.9	1801			
PFOA	7.063	413.0 -> 369.0	28986	0.77	µg/L	91
		413.0 -> 169.0	4056			
PFOS	8.228	498.9 -> 79.9	3626	0.68	µg/L	m 100
		498.9 -> 98.8	2015			
PFPeA	4.273	263.0 -> 219.0	23494	1.46	µg/L	100
PFPeS	6.472	349.1 -> 79.9	4882	0.65	µg/L	97
		349.1 -> 98.9	2205			
PFTeDA	9.677	713.1 -> 669.0	9974	0.68	µg/L	99
		713.1 -> 168.9	773			
PFTrDA	9.345	663.0 -> 619.0	14194	0.67	µg/L	99
		663.0 -> 168.9	1234			
PFUnDA	8.518	563.1 -> 519.0	13822	0.76	µg/L	86
		563.1 -> 269.1	1718			
11CI-PF3OUdS	9.385	630.9 -> 450.9	17297	1.36	µg/L	97
		632.9 -> 452.9	5574			
9CI-PF3ONS	8.557	530.8 -> 351.0	28640	1.43	µg/L	95
		532.8 -> 353.0	8650			
ADONA	6.681	376.9 -> 250.9	85121	1.52	µg/L	96
		376.9 -> 84.8	21624			
HFPO-DA	5.846	284.9 -> 168.9	5300	1.51	µg/L	99
		284.9 -> 184.9	729			
3:3FTCA	3.784	241.0 -> 177.0	2996	2.97	µg/L	96
		241.0 -> 117.0	415			
5:3FTCA	6.160	341.0 -> 237.1	62279	14.54	µg/L	99
		341.0 -> 217.0	42123			
7:3FTCA	7.573	441.0 -> 316.9	24137	12.41	µg/L	88
		441.0 -> 336.9	55827			
EtFOSA	10.975	526.0 -> 219.0	1536	1.54	µg/L	95
		526.0 -> 169.0	1864			
EtFOSE	10.907	630.0 -> 58.9	2806	3.46	µg/L	100
MeFOSA	10.730	511.9 -> 219.0	1735	1.68	µg/L	84
		511.9 -> 169.0	2147			
MeFOSE	10.661	616.1 -> 58.9	2370	3.57	µg/L	100
PFDoDS	9.817	699.1 -> 79.9	1110	0.61	µg/L	100
		699.1 -> 98.8	613			
NFDHA	5.350	295.0 -> 201.0	3785	1.32	µg/L	95
		295.0 -> 84.9	1057			
PFMBA	4.687	279.0 -> 85.1	16060	1.48	µg/L	100
PFMPA	3.438	229.0 -> 84.9	12127	1.50	µg/L	100
PFEESA	5.937	314.8 -> 134.9	41917	1.26	µg/L	100
		314.8 -> 82.9	1409			

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

7.3.2
7

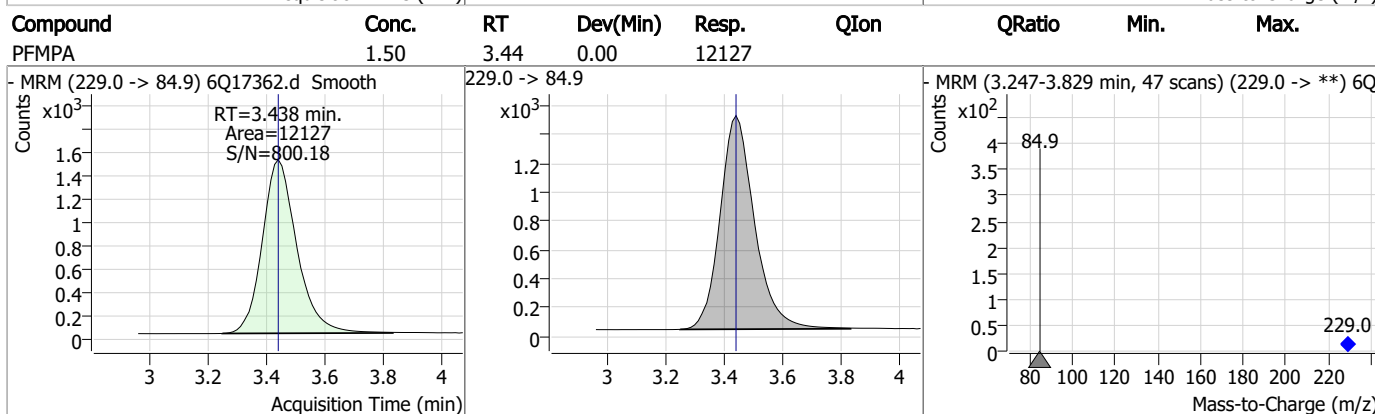
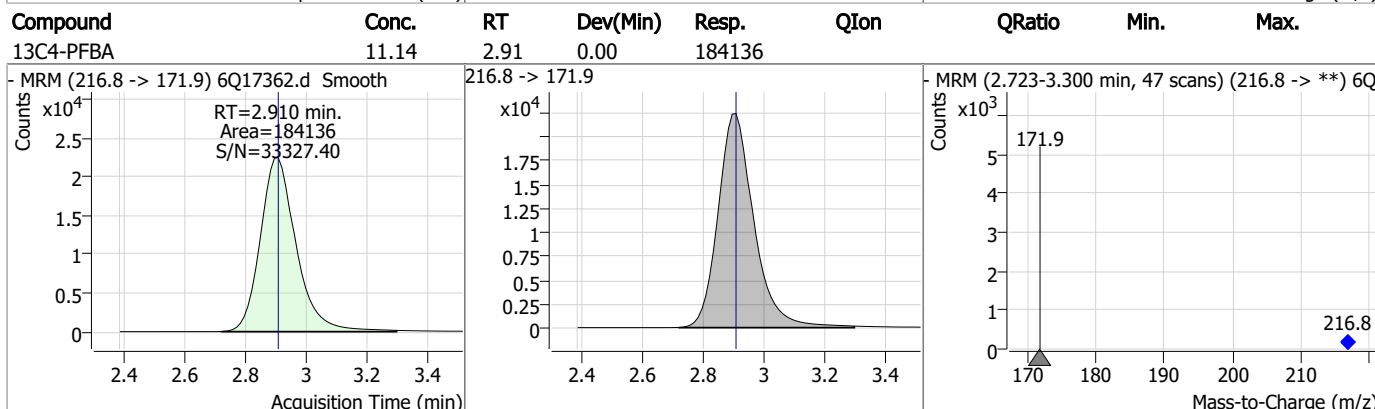
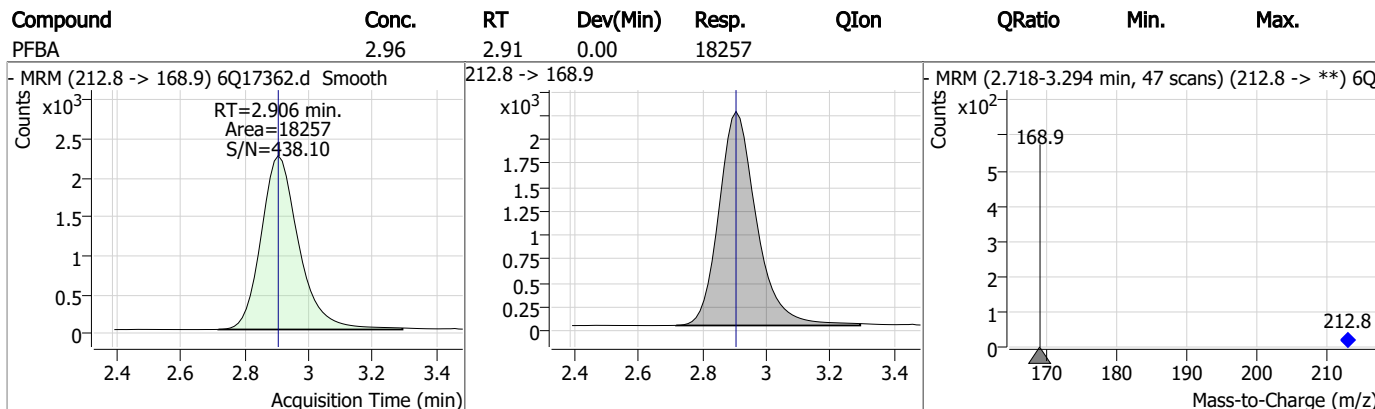
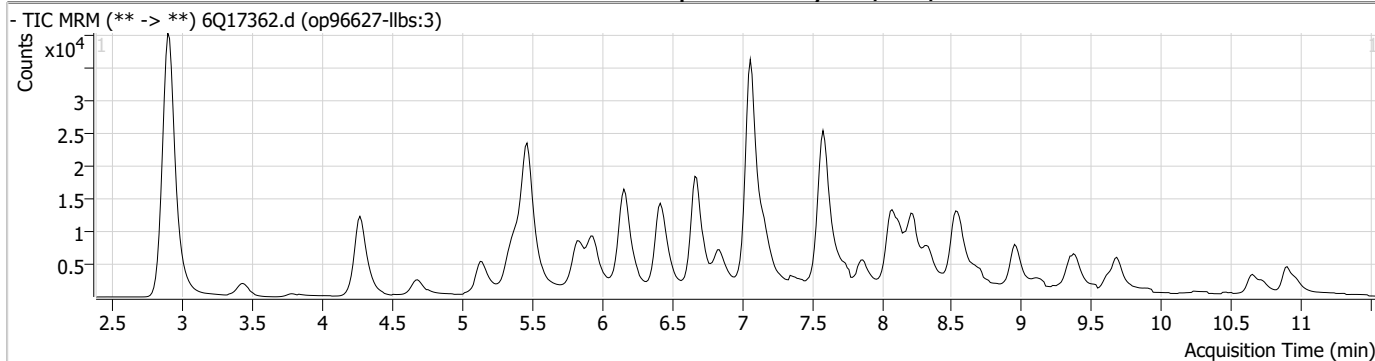
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.3.2

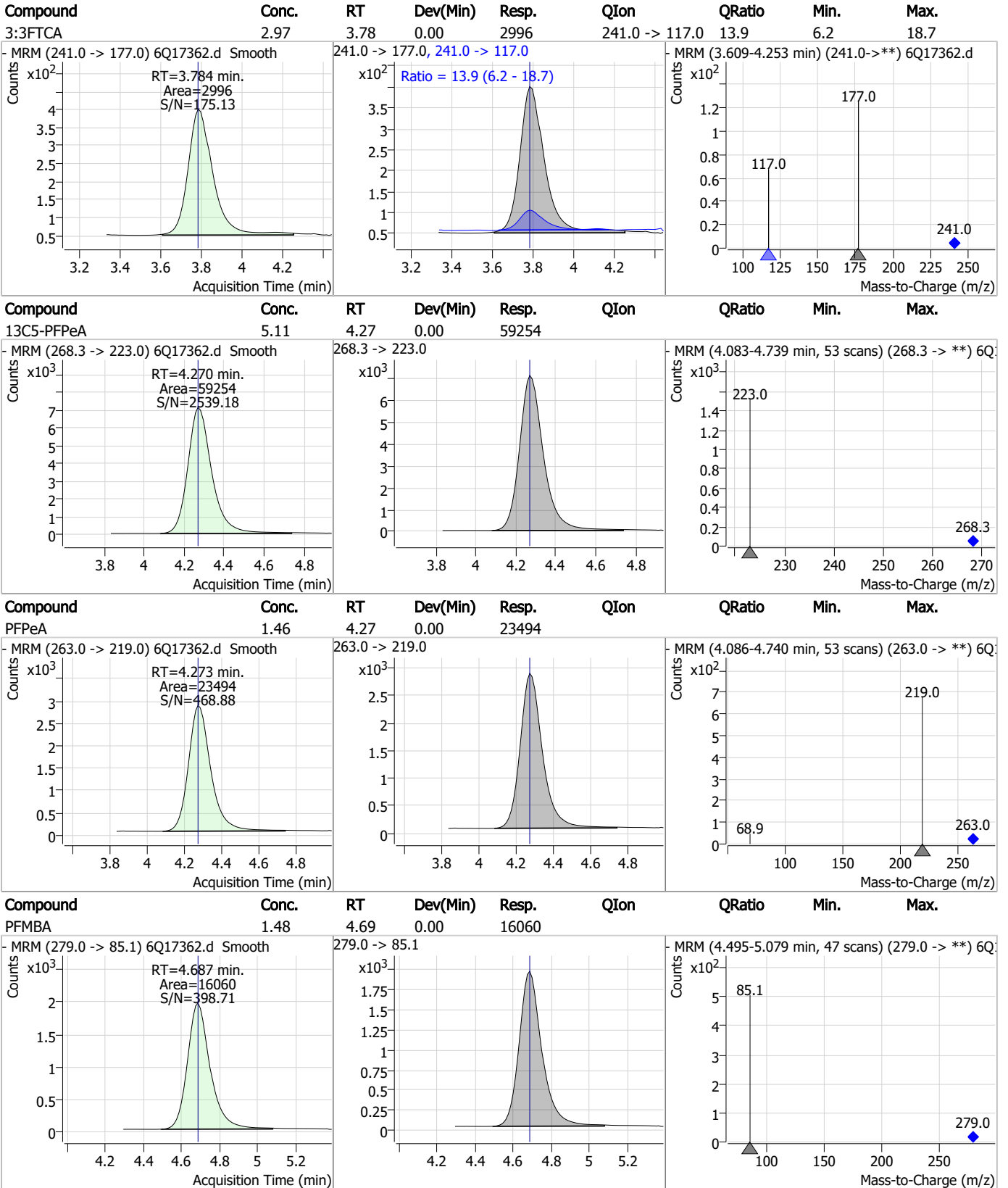
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Perfluorinated Compounds by LC/MS/MS



7.3.2
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Perfluorinated Compounds by LC/MS/MS

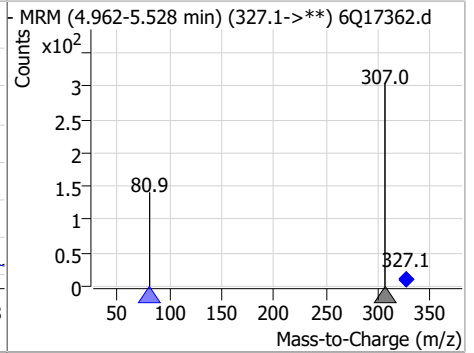
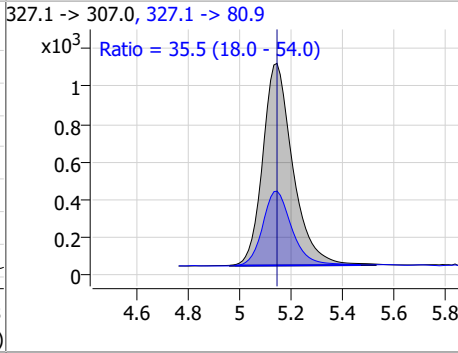
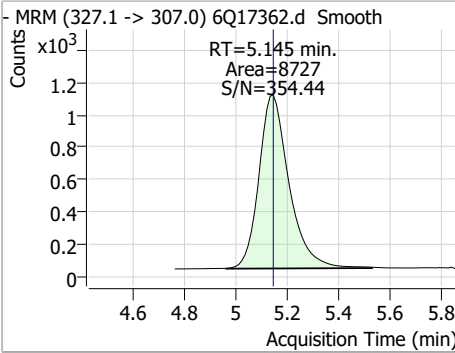


7.3.2 7

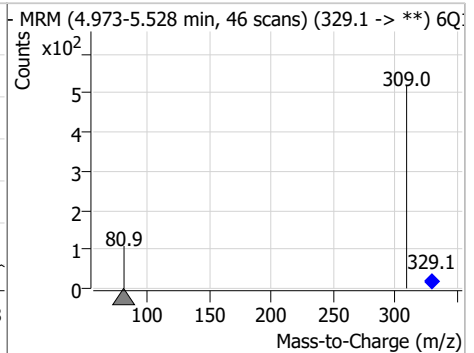
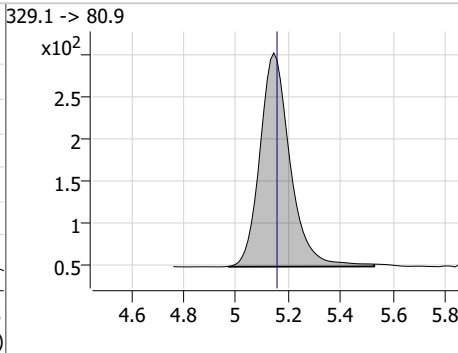
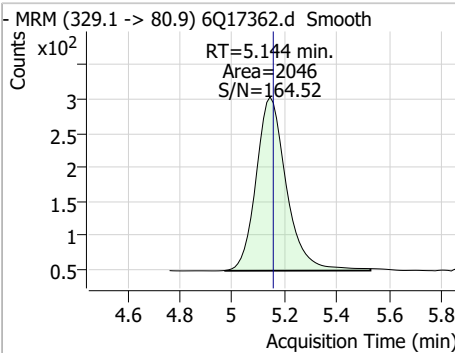


Perfluorinated Compounds by LC/MS/MS

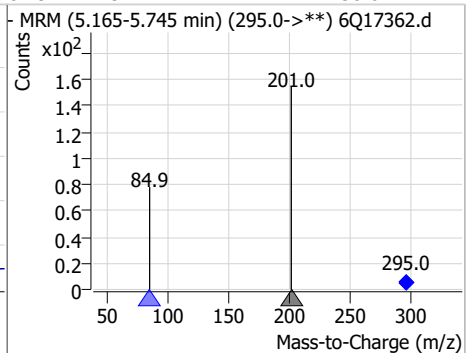
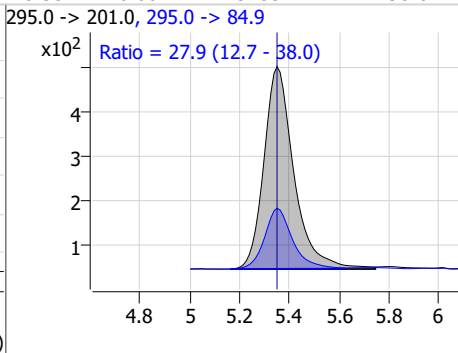
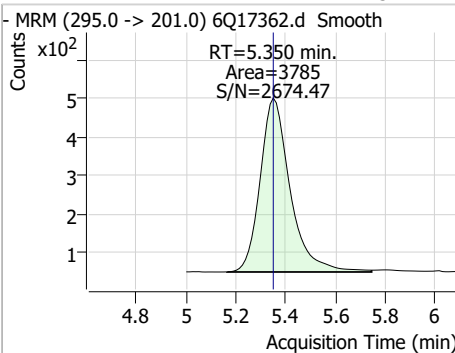
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	2.82	5.14	0.00	8727	327.1 -> 80.9	35.5	18.0	54.0



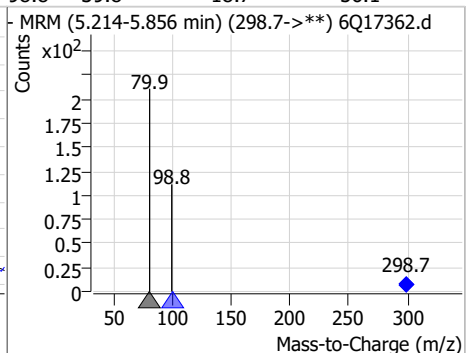
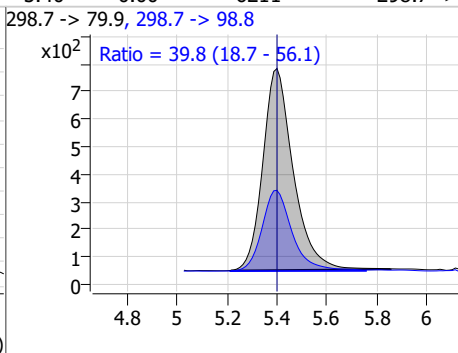
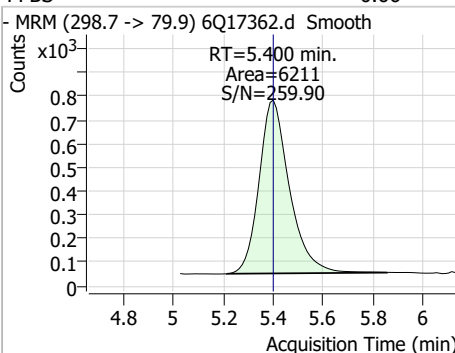
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.34	5.14	-0.01	2046	329.1 -> 80.9			



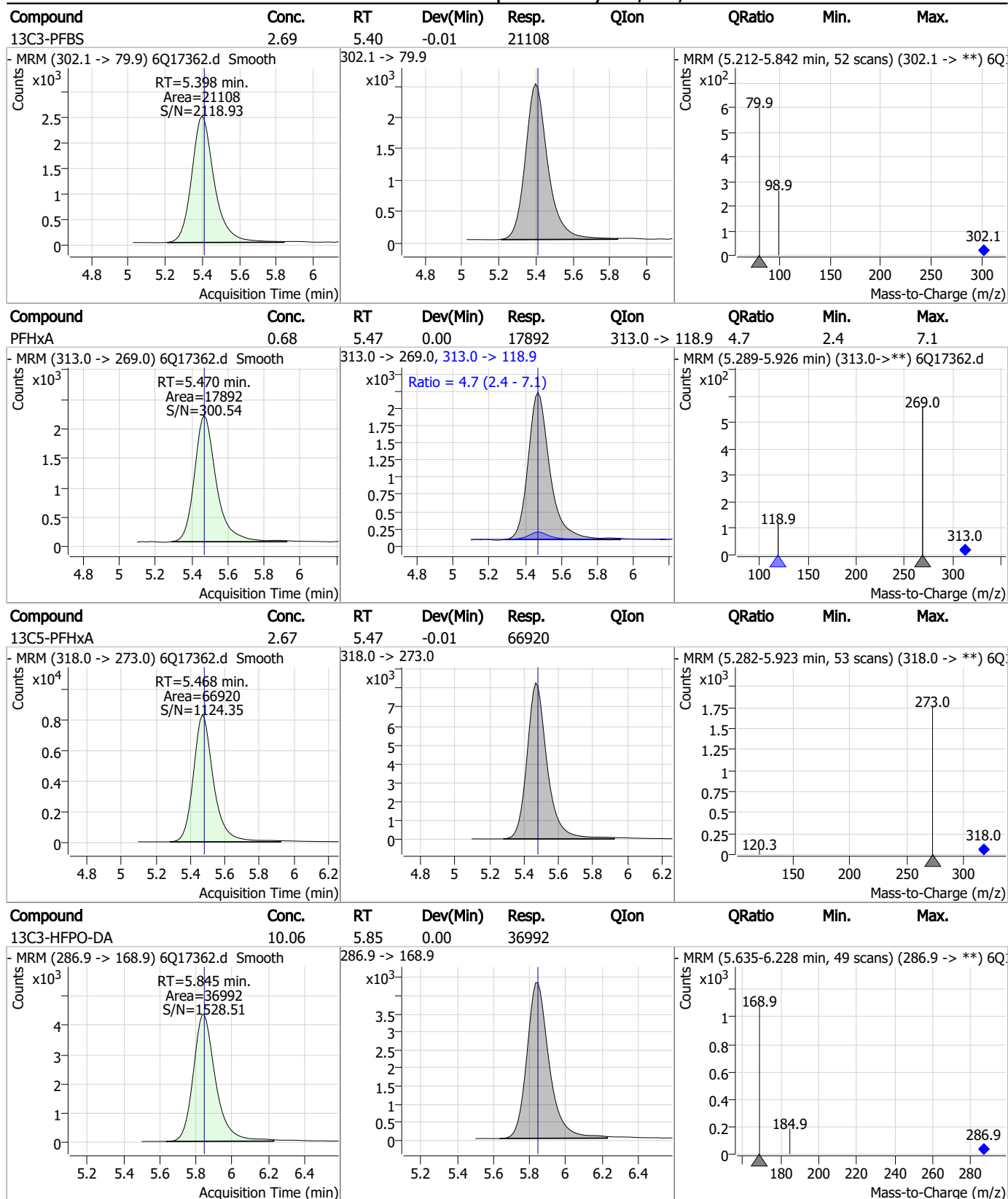
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	1.32	5.35	0.00	3785	295.0 -> 84.9	27.9	12.7	38.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.66	5.40	0.00	6211	298.7 -> 98.8	39.8	18.7	56.1



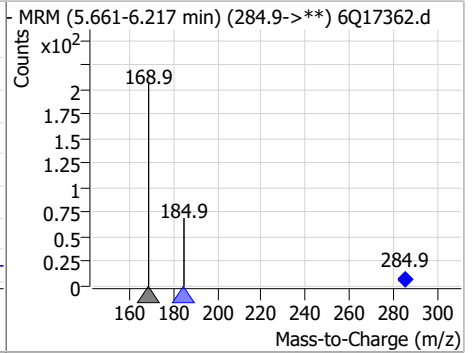
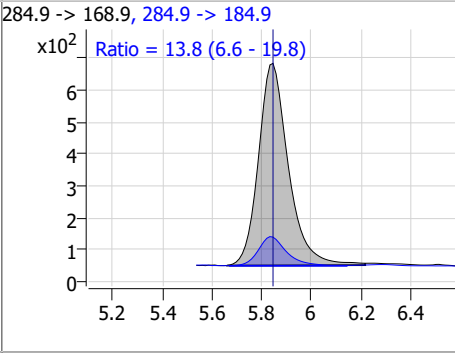
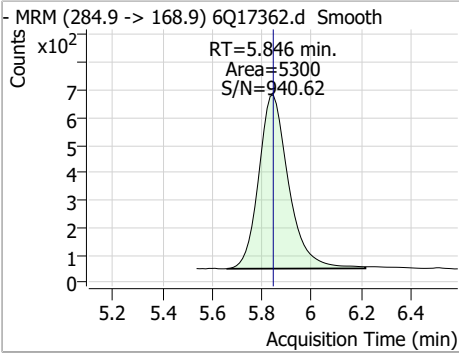
Perfluorinated Compounds by LC/MS/MS



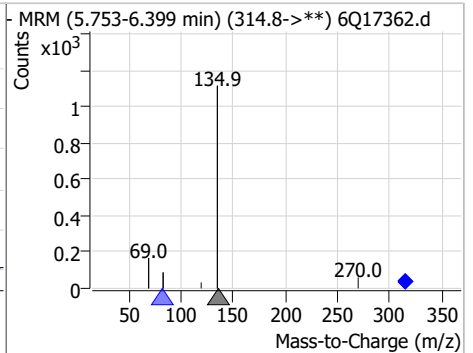
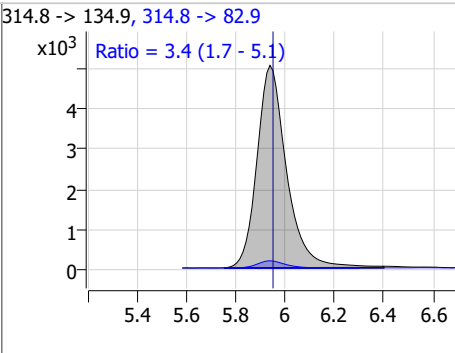
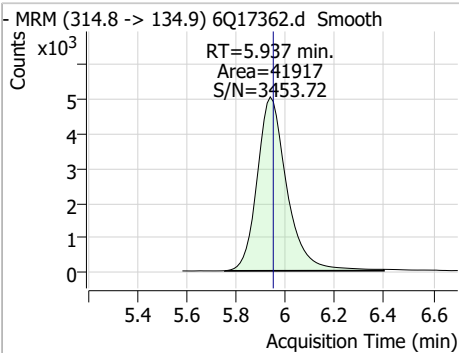
7.3.2
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Perfluorinated Compounds by LC/MS/MS

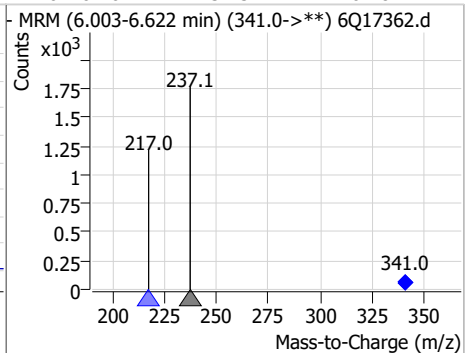
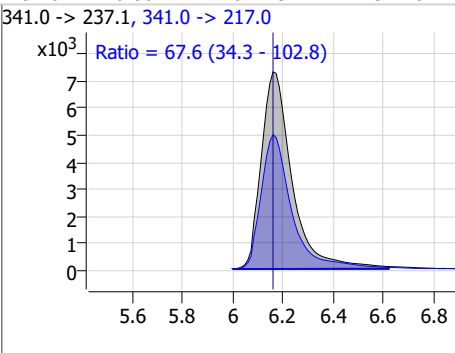
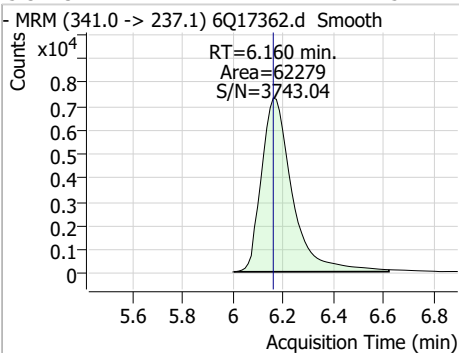
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	1.51	5.85	0.00	5300	284.9 -> 184.9	13.8	6.6	19.8



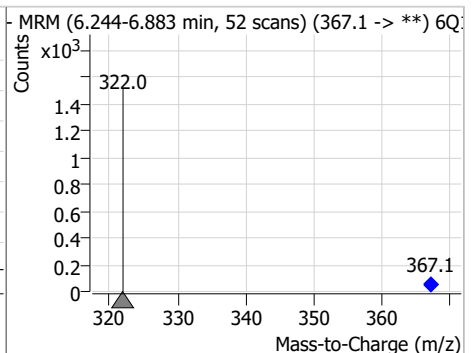
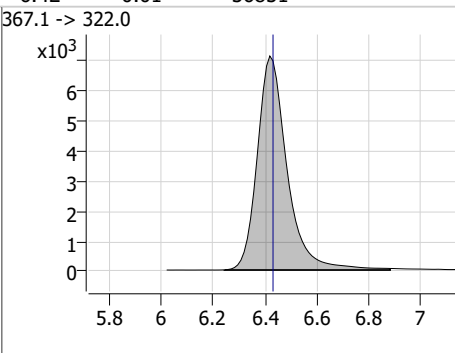
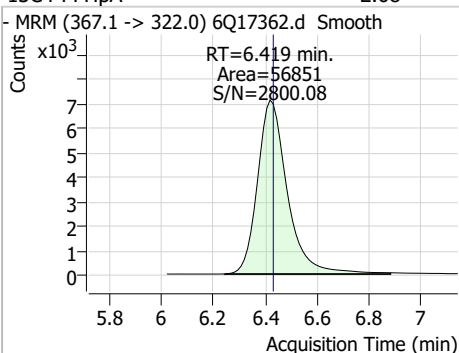
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	1.26	5.94	-0.01	41917	314.8 -> 82.9	3.4	1.7	5.1



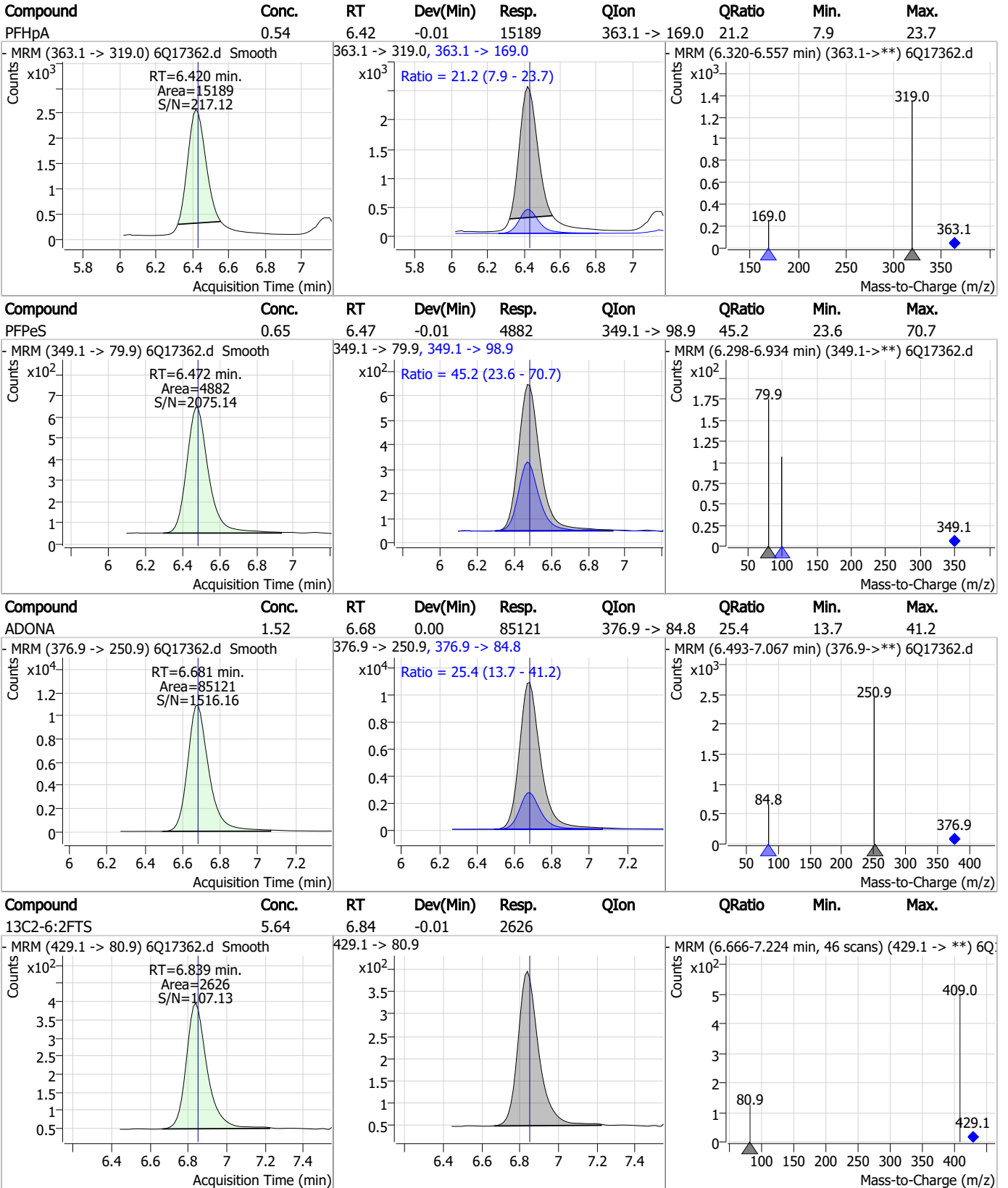
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	14.54	6.16	0.00	62279	341.0 -> 217.0	67.6	34.3	102.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.68	6.42	-0.01	56851	367.1 -> 322.0			



Perfluorinated Compounds by LC/MS/MS

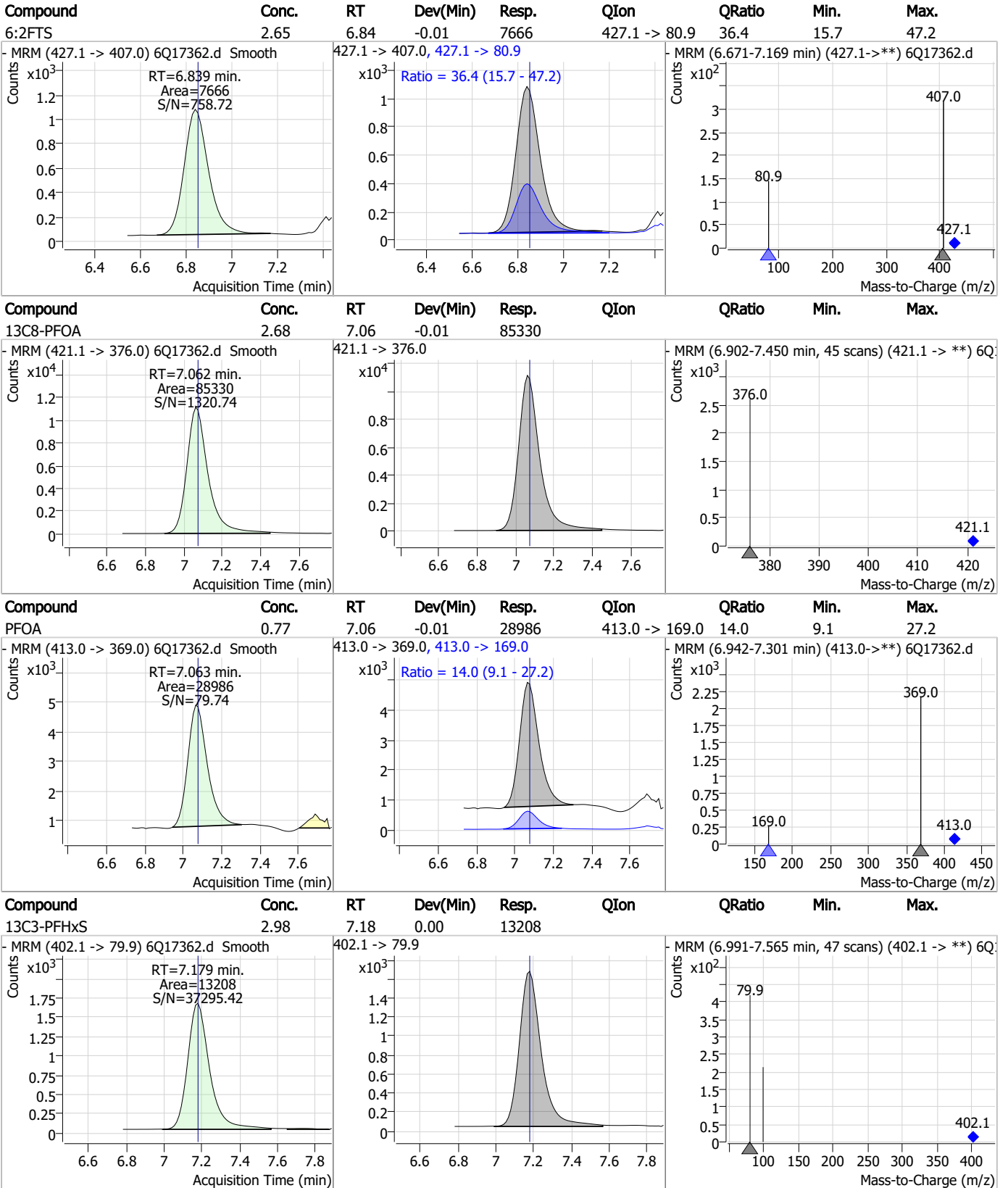


7.3.2

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Perfluorinated Compounds by LC/MS/MS

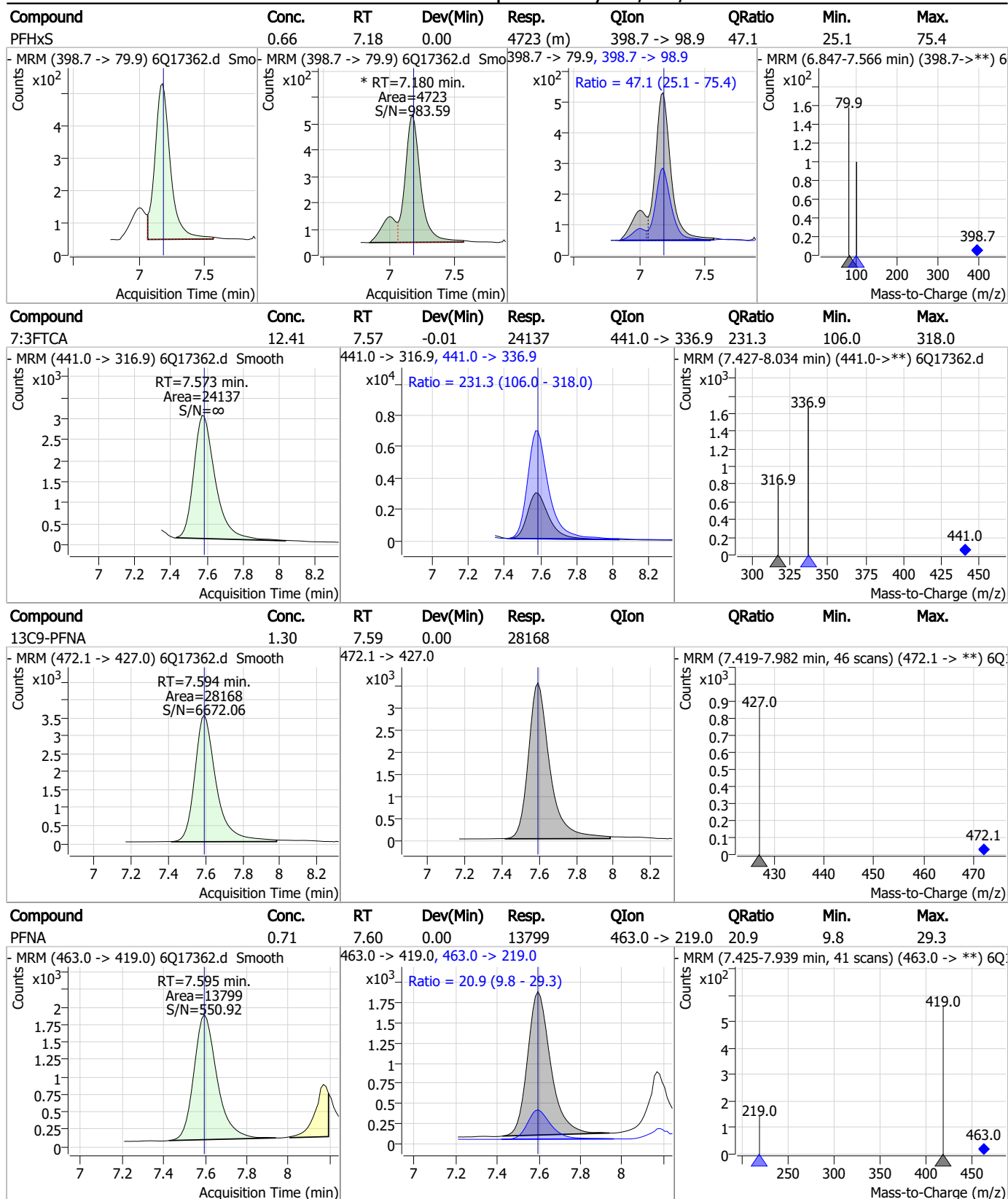


7.3.2

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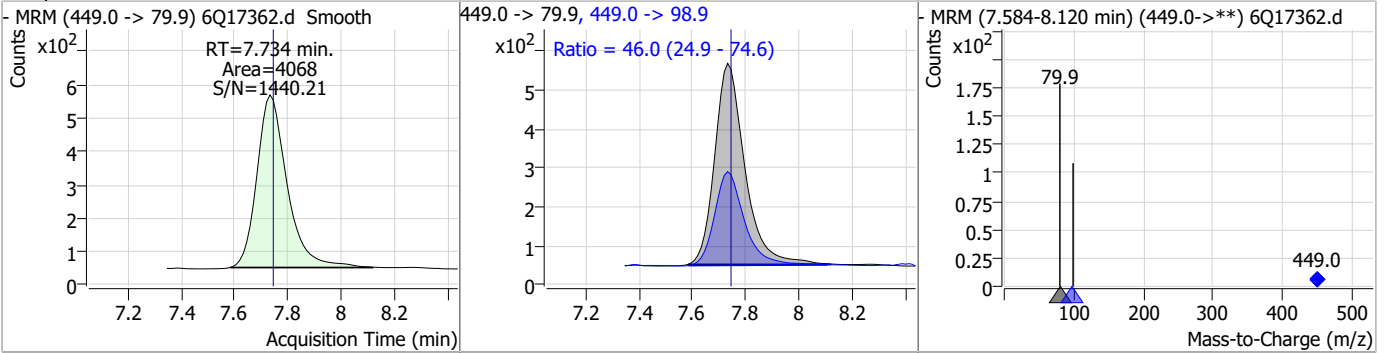
Perfluorinated Compounds by LC/MS/MS



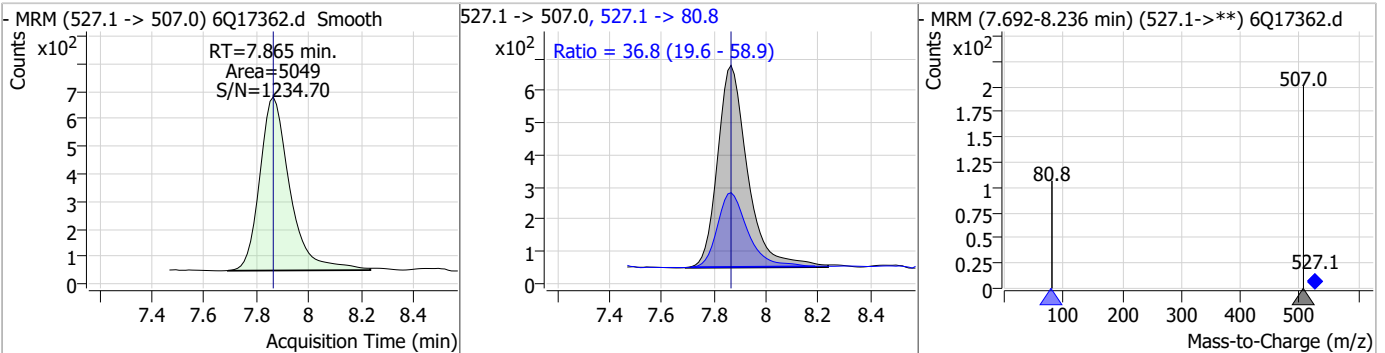
7.3.2
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Perfluorinated Compounds by LC/MS/MS

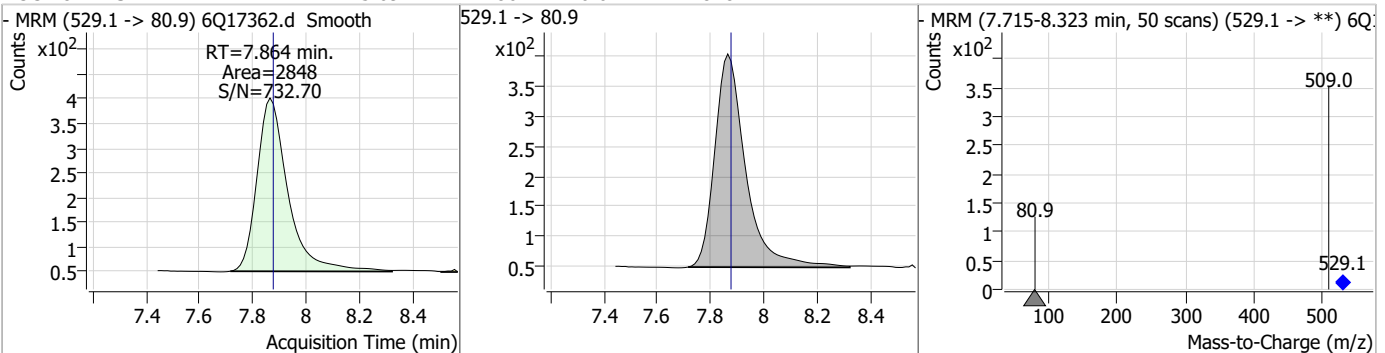
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.68	7.73	-0.01	4068	449.0 -> 98.9	46.0	24.9	74.6



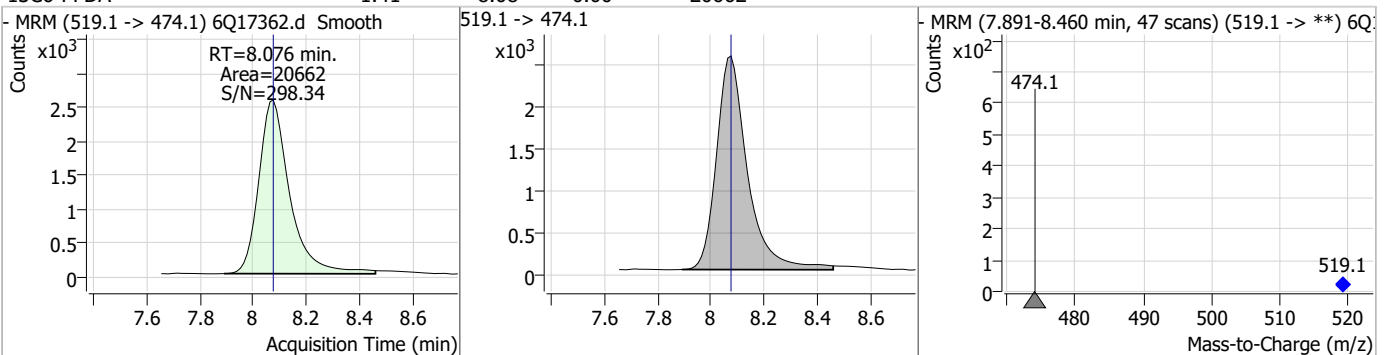
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	2.98	7.87	0.00	5049	527.1 -> 80.8	36.8	19.6	58.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.69	7.86	-0.01	2848	529.1 -> 80.9			

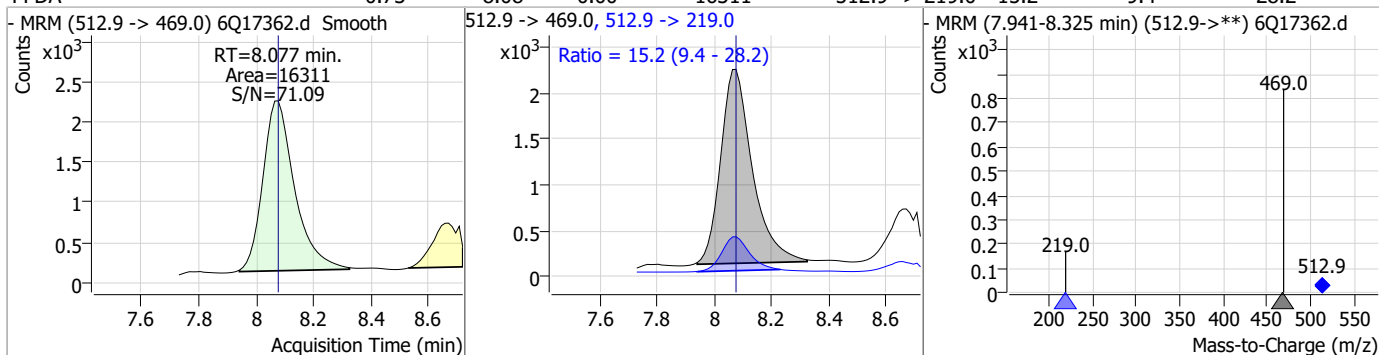


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.41	8.08	0.00	20662	519.1 -> 474.1			

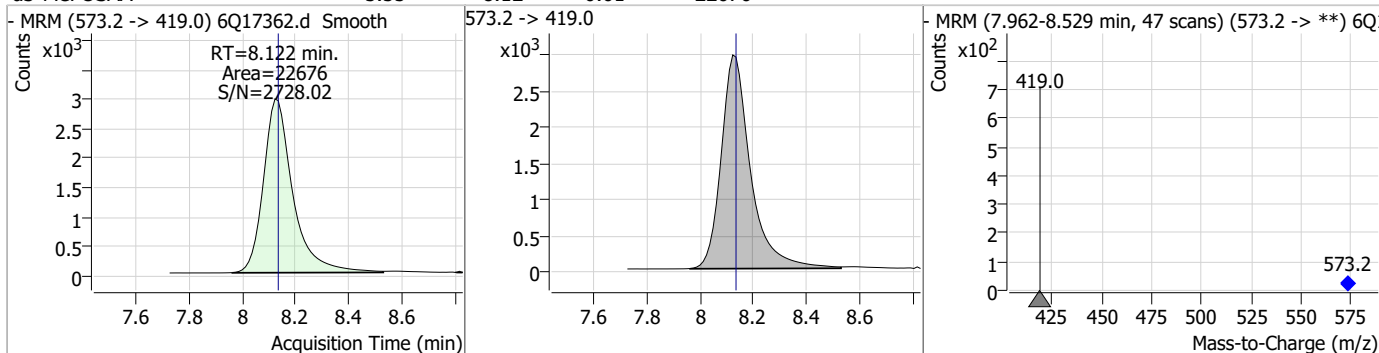


Perfluorinated Compounds by LC/MS/MS

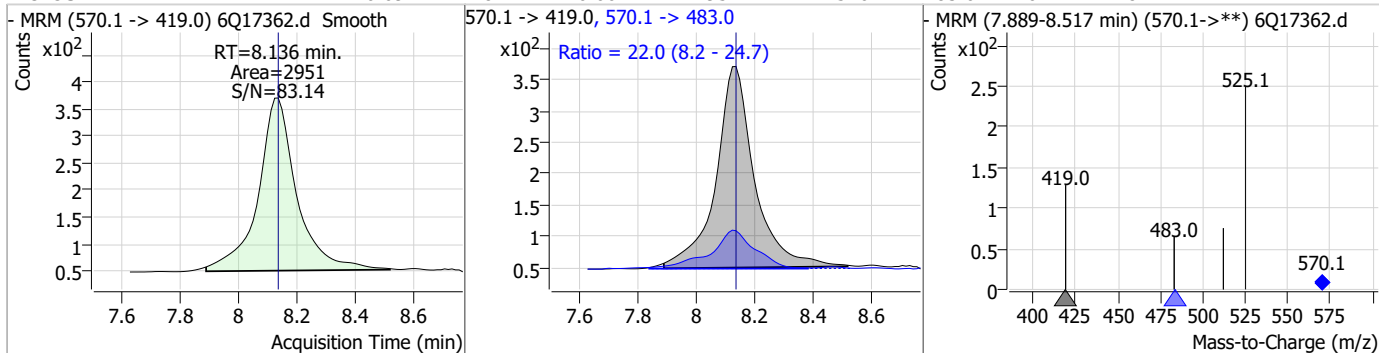
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.73	8.08	0.00	16311	512.9 -> 219.0	15.2	9.4	28.2



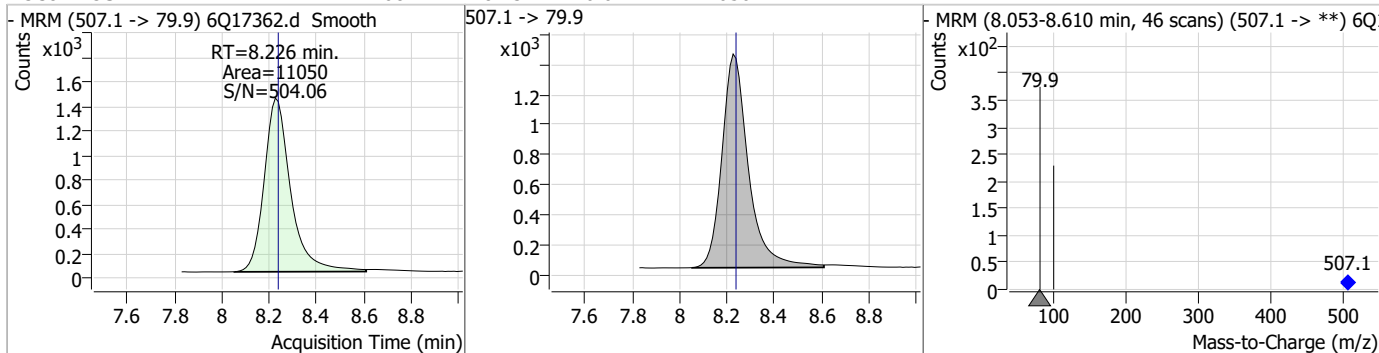
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.55	8.12	-0.01	22676				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.69	8.14	0.00	2951	570.1 -> 483.0	22.0	8.2	24.7

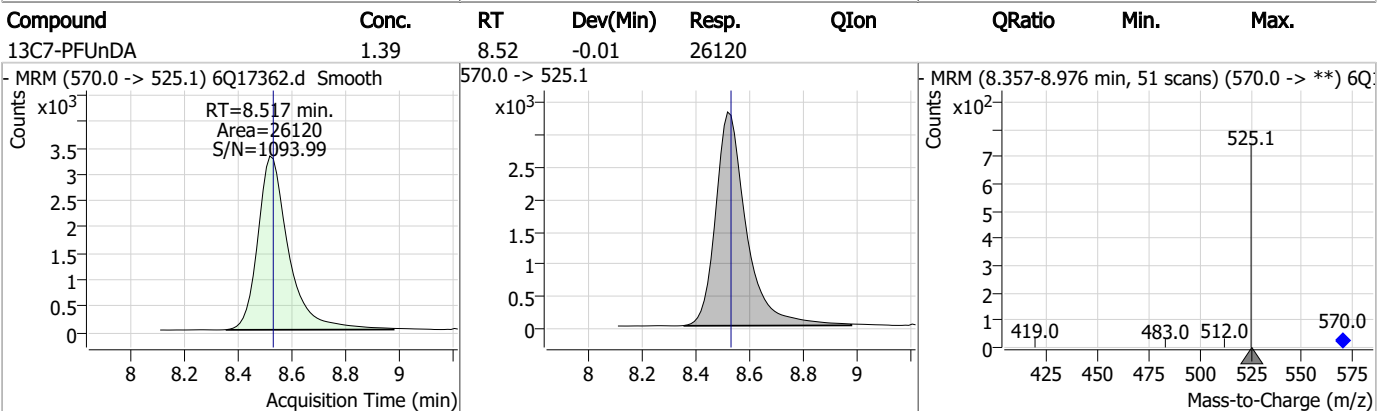
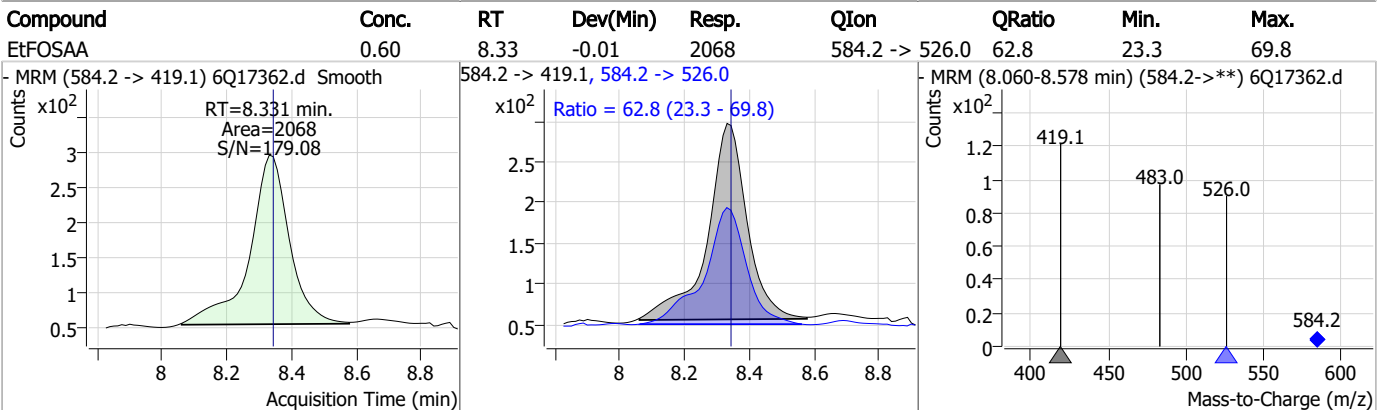
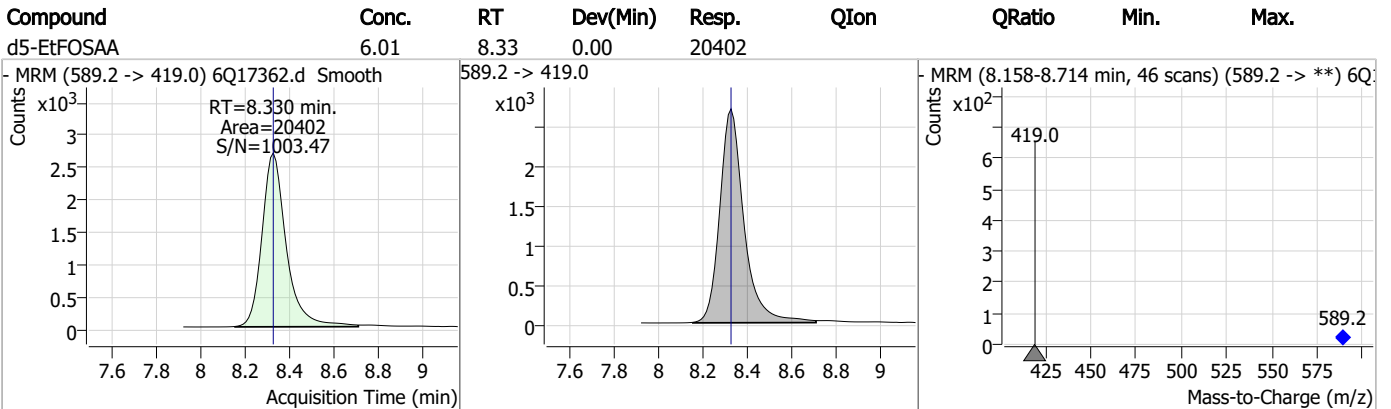
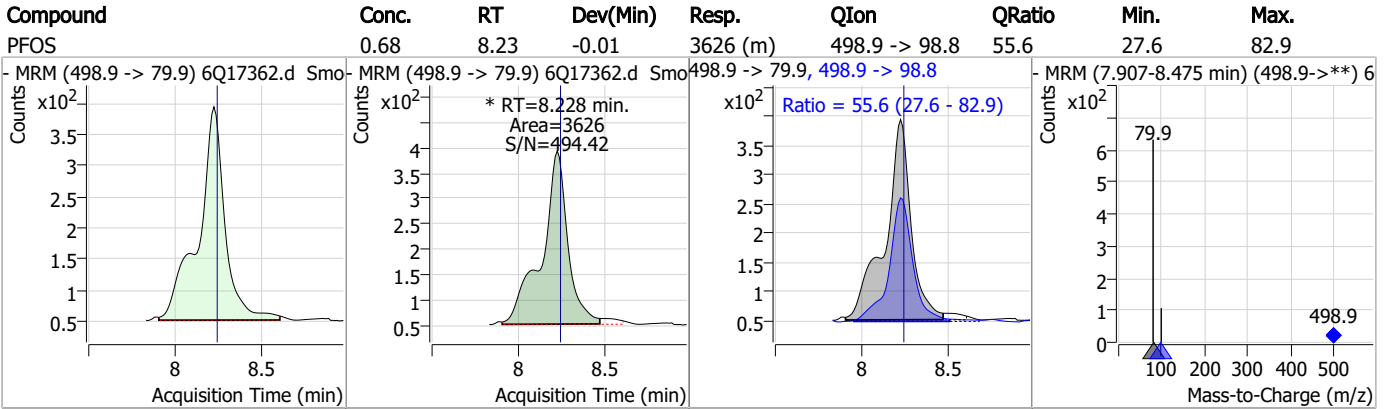


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.68	8.23	-0.01	11050				

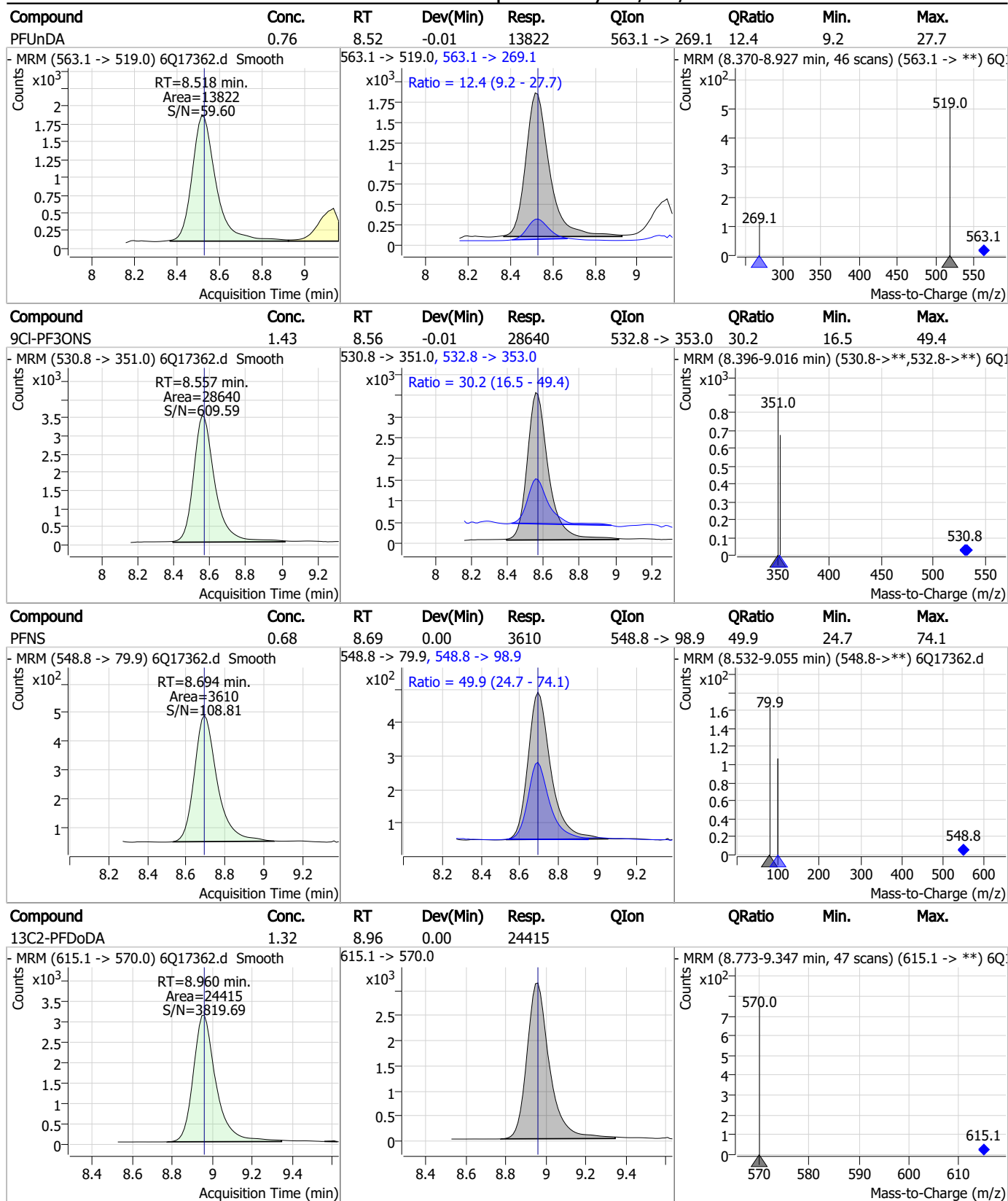


7.3.2
7

Perfluorinated Compounds by LC/MS/MS

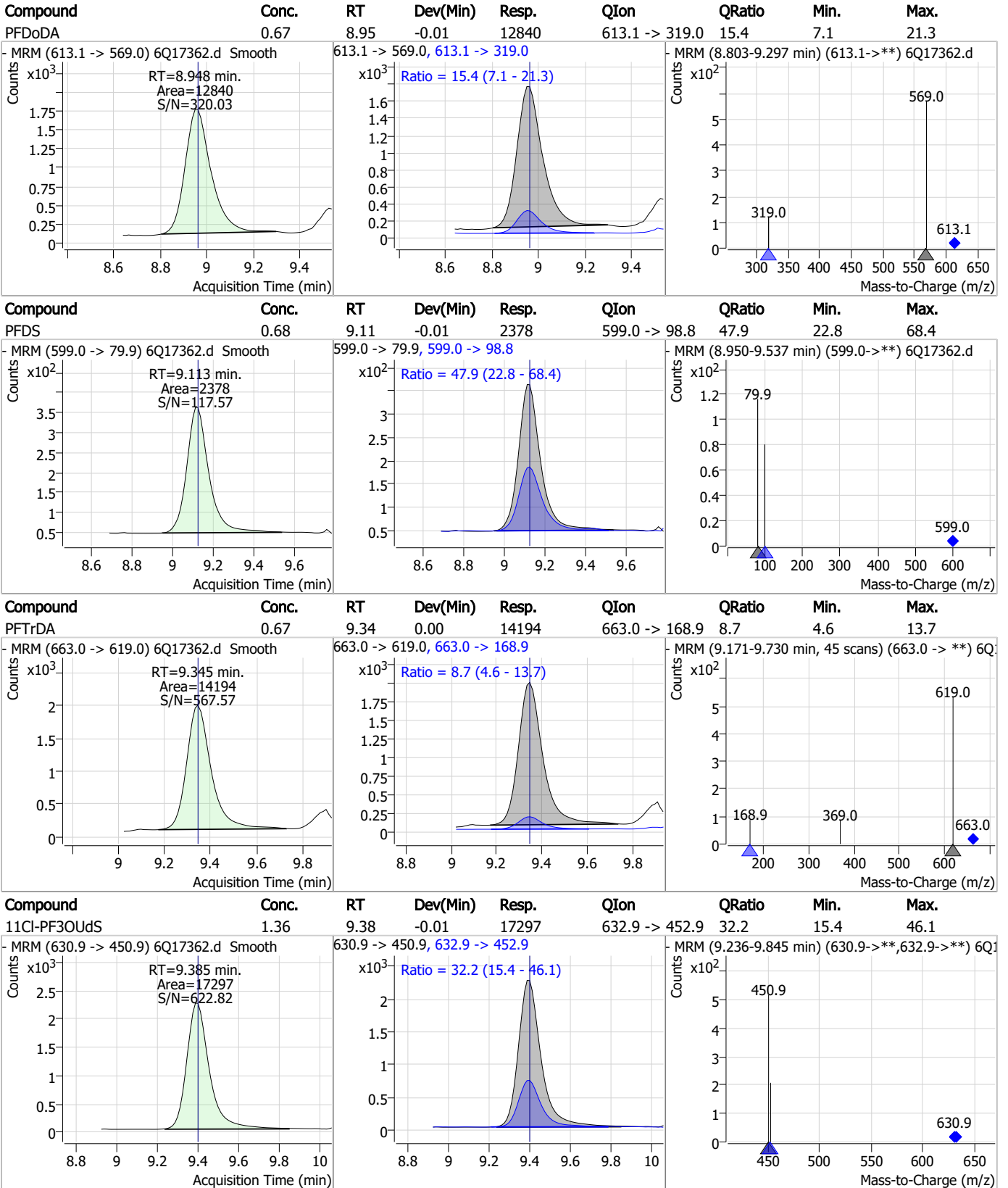


Perfluorinated Compounds by LC/MS/MS



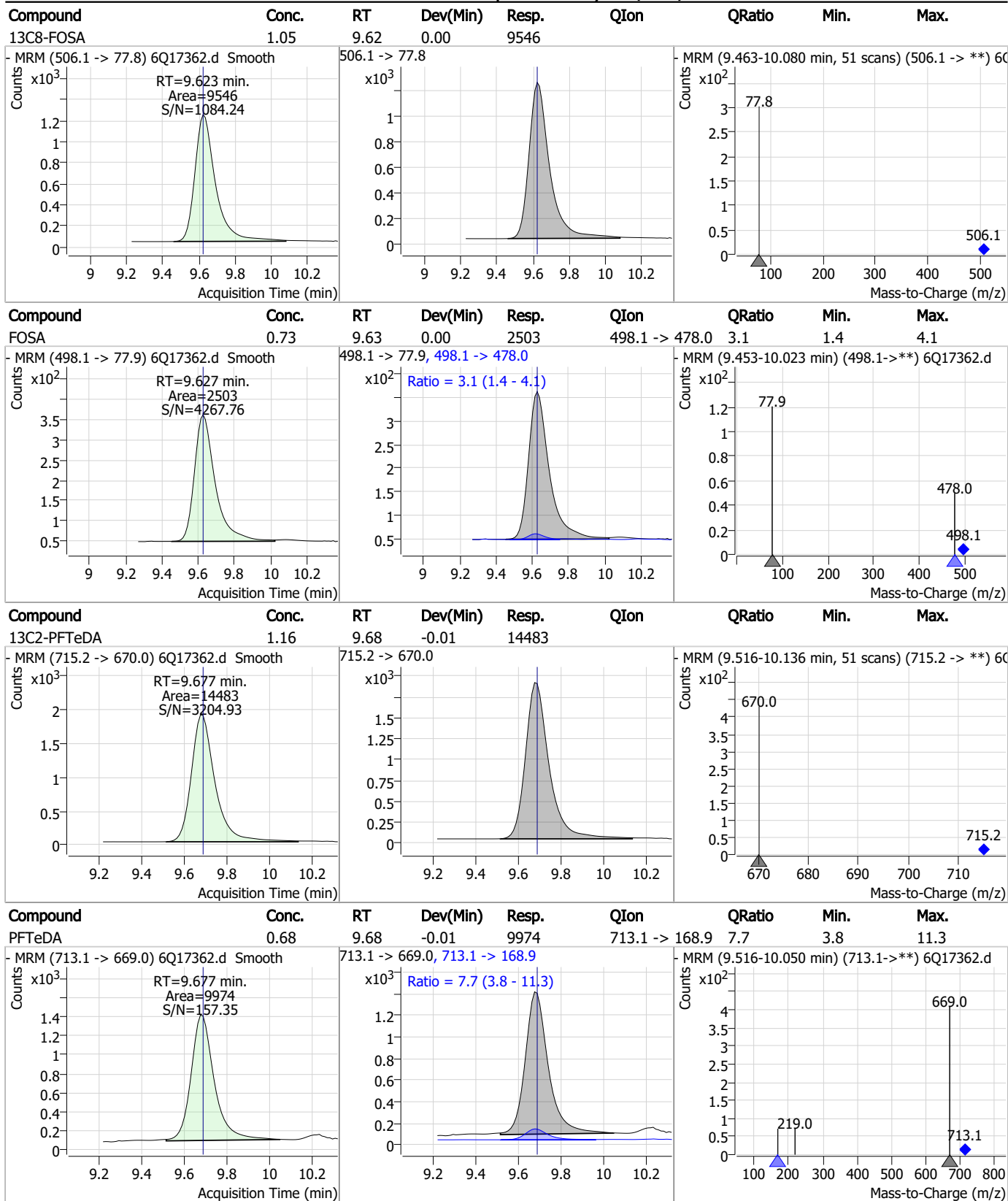
7.3.2
7

Perfluorinated Compounds by LC/MS/MS



7.3.2
7

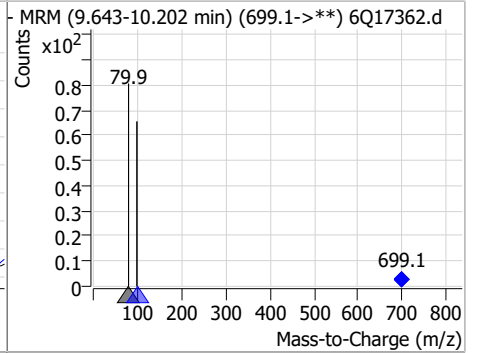
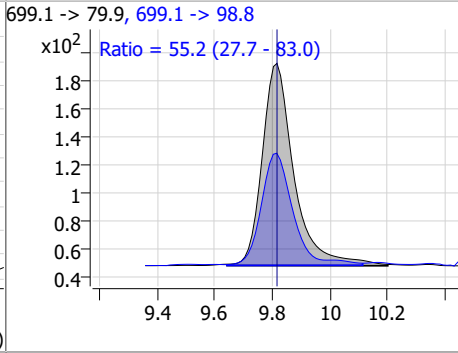
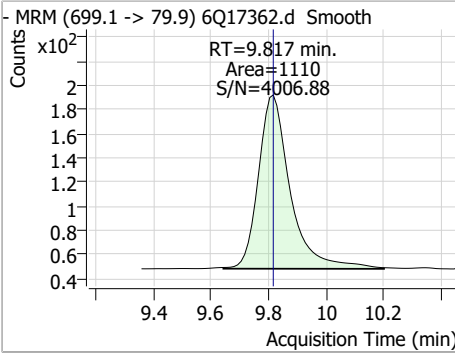
Perfluorinated Compounds by LC/MS/MS



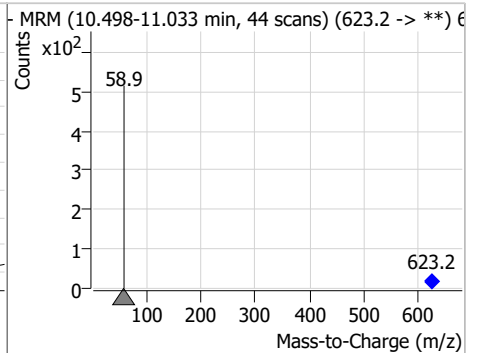
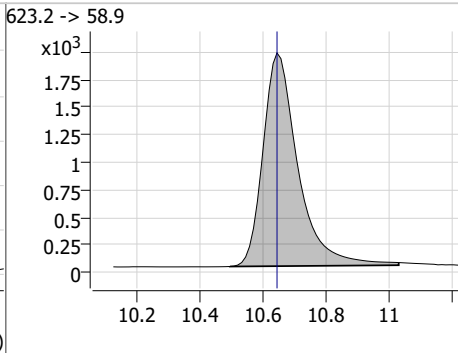
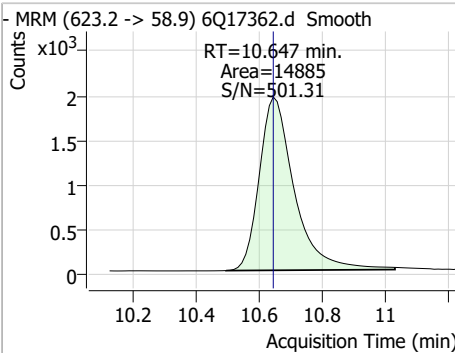
7.3.2
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Perfluorinated Compounds by LC/MS/MS

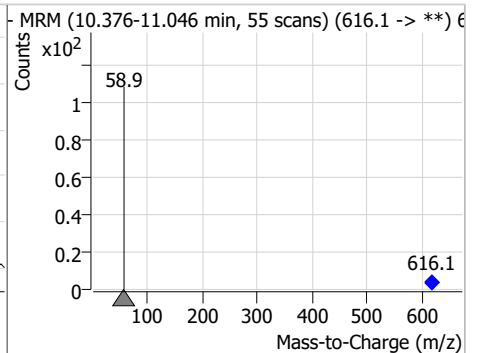
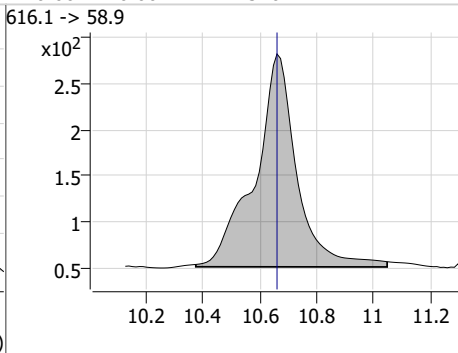
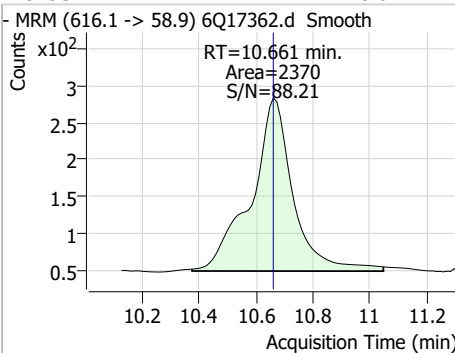
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFD _o DS	0.61	9.82	0.00	1110	699.1 -> 98.8	55.2	27.7	83.0



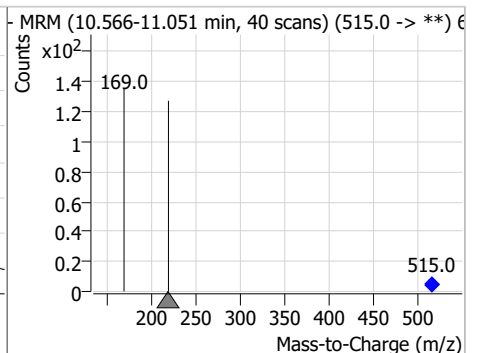
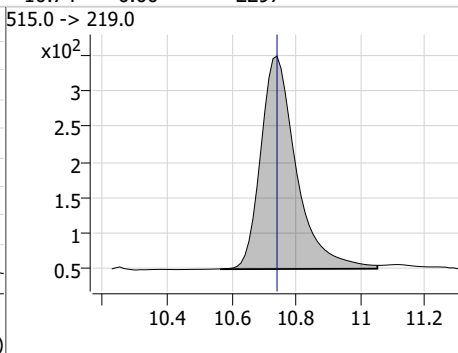
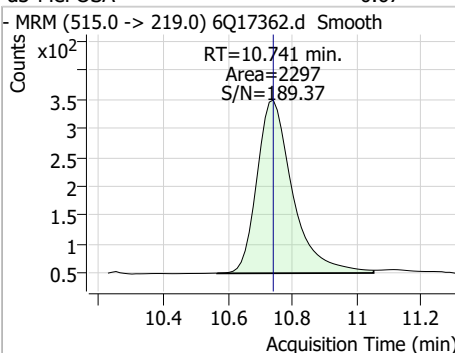
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	4.14	10.65	0.00	14885				



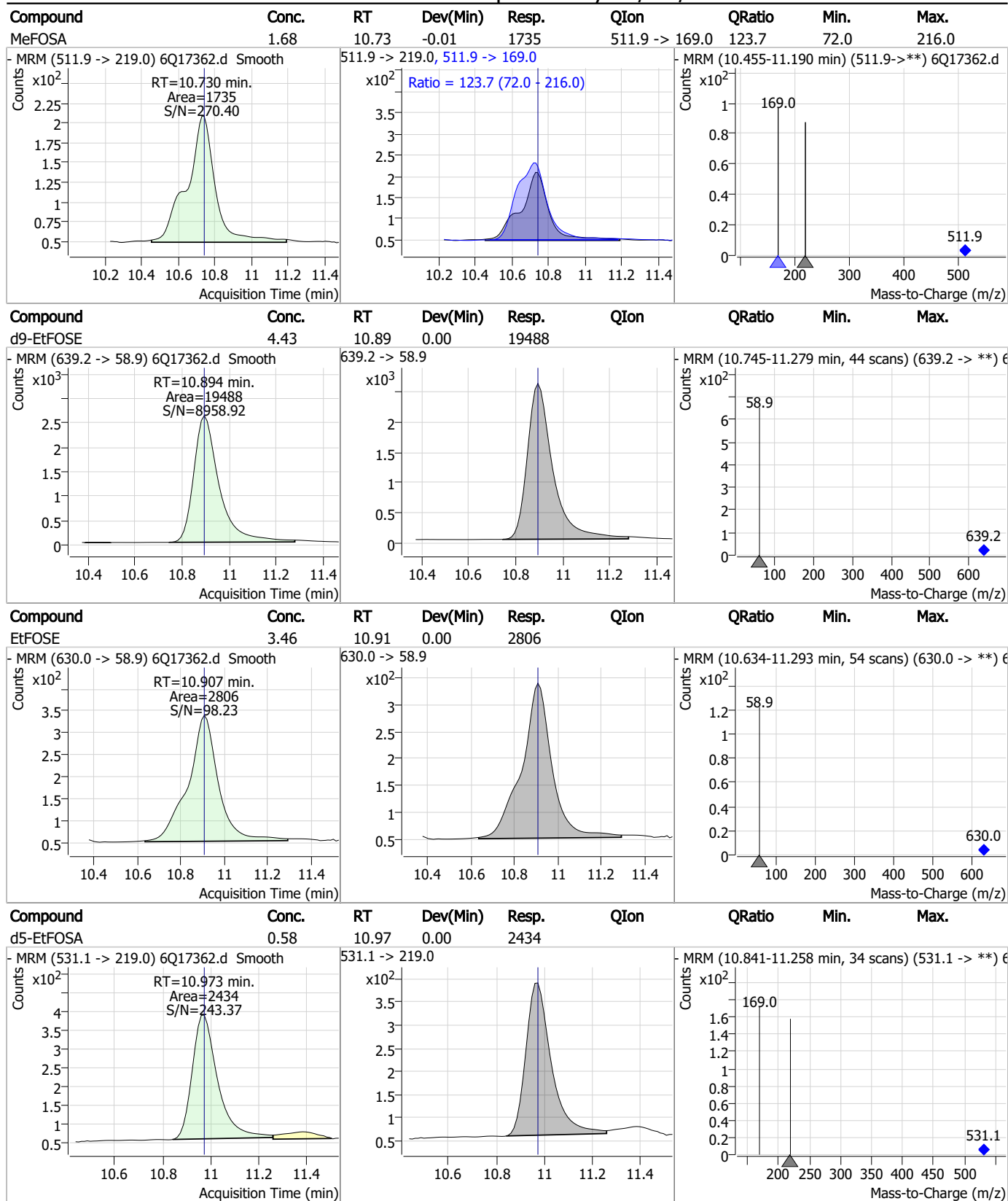
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	3.57	10.66	0.00	2370				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	0.67	10.74	0.00	2297				



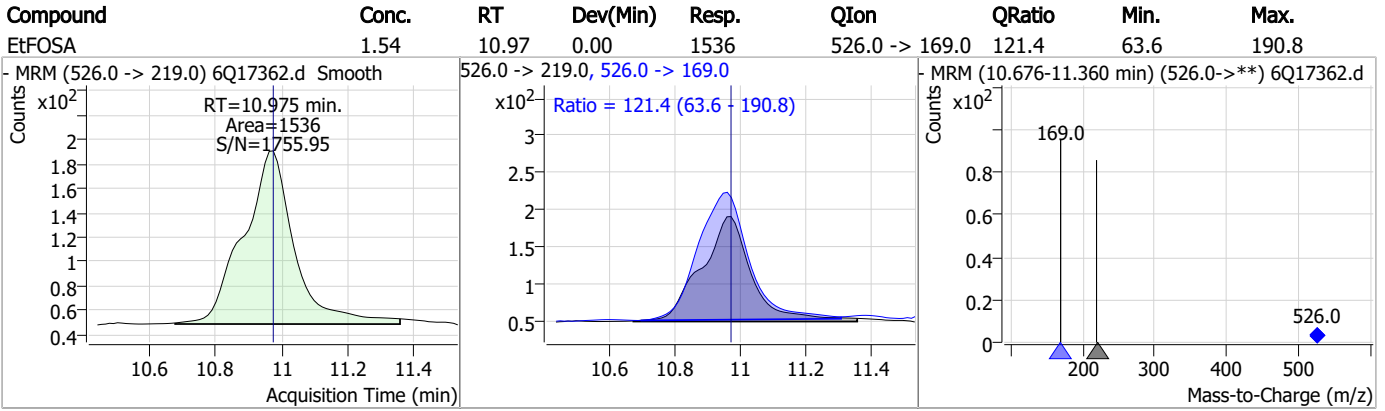
Perfluorinated Compounds by LC/MS/MS



7.3.2
7



Perfluorinated Compounds by LC/MS/MS



7.3.2

7

Manual Integration Approval Summary

Sample Number: OP96627-LLBS Method: EPA DRAFT 1633
Lab FileID: 6Q17362.D Analyst approved: 05/03/23 13:49 Martha Valls
Injection Time: 05/03/23 04:44 Supervisor approved: 05/03/23 19:48 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.23	Split peak

7.3.2.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17369.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/3/2023 6:25:42 AM
 Sample Name : op96627-ms
 Vial : P3-F8
 DA Method File : 1633_042823_S6Q258.quantmethod.xml
 Batch Name : s6q261.batch.bin
 Sample Information : OP96627,S6Q261,560,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.910	216.8 -> 171.9	101836	10.00 µg/L	0.000
M5-PFPeA	4.270	268.3 -> 223.0	53581	5.00 µg/L	0.000
M5-PFHxA	5.468	318.0 -> 273.0	68287	2.50 µg/L	-0.012
M4-PFHpA	6.419	367.1 -> 322.0	57409	2.50 µg/L	-0.012
M8-PFOA	7.062	421.1 -> 376.0	87286	2.50 µg/L	-0.012
M9-PFNA	7.582	472.1 -> 427.0	28120	1.25 µg/L	-0.012
M6-PFDA	8.076	519.1 -> 474.1	19069	1.25 µg/L	0.000
M7-PFUnDA	8.517	570.0 -> 525.1	20905	1.25 µg/L	-0.013
M2-PFDoDA	8.960	615.1 -> 570.0	16949	1.25 µg/L	0.000
M2-PFTeDA	9.677	715.2 -> 670.0	11502	1.25 µg/L	-0.012
M8-FOSA	9.623	506.1 -> 77.8	10559	2.50 µg/L	0.000
M3-PFBS	5.398	302.1 -> 79.9	22158	2.50 µg/L	-0.012
M3-PFHxS	7.179	402.1 -> 79.9	12609	2.50 µg/L	0.000
M8-PFOS	8.226	507.1 -> 79.9	9792	2.50 µg/L	-0.012
M2-4:2FTS	5.144	329.1 -> 80.9	2063	5.00 µg/L	-0.012
M2-6:2FTS	6.826	429.1 -> 80.9	2631	5.00 µg/L	-0.025
M2-8:2FTS	7.864	529.1 -> 80.9	2615	5.00 µg/L	-0.012
M3-MeFOSAA	8.122	573.2 -> 419.0	16806	5.00 µg/L	-0.012
M3-HFPO-DA	5.833	286.9 -> 168.9	38161	10.00 µg/L	-0.012
M5-EtFOSAA	8.330	589.2 -> 419.0	13152	5.00 µg/L	0.000
M7-MeFOSE	10.647	623.2 -> 58.9	17721	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	25363	25.00 µg/L	0.000
M5-EtFOSA	10.973	531.1 -> 219.0	3000	2.50 µg/L	0.000
M3-MeFOSA	10.741	515.0 -> 219.0	2657	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	13103	2.50 µg/L	-0.012
13C3-PFBA	2.902	216.0 -> 172.0	71310	5.00 µg/L	0.000
18O2-PFHxS	7.177	403.0 -> 83.9	8980	2.50 µg/L	0.000
13C4-PFOA	7.063	417.1 -> 372.0	86598	2.50 µg/L	-0.012
13C2-PFDA	8.064	515.1 -> 470.1	23374	1.25 µg/L	-0.012
13C5-PFNA	7.582	468.0 -> 423.0	28785	1.25 µg/L	-0.012
13C2-PFHxA	5.469	315.1 -> 270.0	49227	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.144	329.1 -> 80.9	2063	5.00 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.9%		
13C2-6:2FTS	6.826	429.1 -> 80.9	2631	5.25 µg/L	-0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.0%		
13C2-8:2FTS	7.864	529.1 -> 80.9	2615	4.85 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.0%		
13C2-PFDoDA	8.960	615.1 -> 570.0	16949	0.87 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 69.7%		
13C2-PFTeDA	9.677	715.2 -> 670.0	11502	0.87 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 69.9%		
13C3-PFBS	5.398	302.1 -> 79.9	22158	2.62 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.9%		
13C3-PFHxS	7.179	402.1 -> 79.9	12609	2.64 µg/L	0.000

7.4.1
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.5%	
13C4-PFBA	2.910	216.8 -> 171.9	101836	6.18 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 61.8%	
13C4-PFHpA	6.419	367.1 -> 322.0	57409	2.85 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 114.0%	
13C5-PFHxA	5.468	318.0 -> 273.0	68287	2.88 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 115.0%	
13C5-PFPeA	4.270	268.3 -> 223.0	53581	4.87 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.4%	
13C6-PFDA	8.076	519.1 -> 474.1	19069	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.9%	
13C7-PFUnDA	8.517	570.0 -> 525.1	20905	1.06 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 84.7%	
13C8-FOSA	9.623	506.1 -> 77.8	10559	1.22 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 48.8%	
13C8-PFOA	7.062	421.1 -> 376.0	87286	2.61 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.5%	
13C8-PFOS	8.226	507.1 -> 79.9	9792	2.48 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C9-PFNA	7.582	472.1 -> 427.0	28120	1.28 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.5%	
d3-MeFOSAA	8.122	573.2 -> 419.0	16806	4.30 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 86.1%	
13C3-HFPO-DA	5.833	286.9 -> 168.9	38161	10.95 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.5%	
d3-MeFOSA	10.741	515.0 -> 219.0	2657	0.81 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 32.5%	
d5-EtFOSAA	8.330	589.2 -> 419.0	13152	4.05 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 81.0%	
d7-MeFOSE	10.647	623.2 -> 58.9	17721	5.15 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 20.6%	
d9-EtFOSE	10.894	639.2 -> 58.9	25363	6.04 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 24.1%	
d5-EtFOSA	10.973	531.1 -> 219.0	3000	0.75 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 29.9%	
Target Compounds					QValue
4:2FTS	5.145	327.1 -> 307.0	27869	8.93 µg/L	96
		327.1 -> 80.9	10621		
6:2FTS	6.839	427.1 -> 407.0	25748	8.90 µg/L	93
		427.1 -> 80.9	9120		
8:2FTS	7.865	527.1 -> 507.0	12685	8.15 µg/L	96
		527.1 -> 80.8	5250		
EtFOSAA	8.331	584.2 -> 419.1	5551	2.48 µg/L	76
		584.2 -> 526.0	3458		
FOSA	9.627	498.1 -> 77.9	9221	2.44 µg/L	100
		498.1 -> 478.0	243		
MeFOSAA	8.123	570.1 -> 419.0	8138	2.58 µg/L	89
		570.1 -> 483.0	1743		
PFBA	2.906	212.8 -> 168.9	35269	10.33 µg/L	100
PFBS	5.400	298.7 -> 79.9	21941	2.21 µg/L	97
		298.7 -> 98.8	8594		
PFDA	8.064	512.9 -> 469.0	53992	2.61 µg/L	94
		512.9 -> 219.0	8670		
PFDODA	8.948	613.1 -> 569.0	34789	2.62 µg/L	97
		613.1 -> 319.0	4533		
PFDS	9.113	599.0 -> 79.9	6272	2.01 µg/L	95

7.4.1
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.420	599.0 -> 98.8	3064	2.53	µg/L	98
		363.1 -> 319.0	71722			
PFHpS	7.734	363.1 -> 169.0	10735	2.44	µg/L	94
		449.0 -> 79.9	12966			
PFHxA	5.470	449.0 -> 98.9	6979	2.28	µg/L	100
		313.0 -> 269.0	61653			
PFHxS	7.166	313.0 -> 118.9	2915	2.26	µg/L	m
		398.7 -> 79.9	15563			
PFNA	7.595	398.7 -> 98.9	7687	2.37	µg/L	98
		463.0 -> 419.0	46030			
PFNS	8.694	463.0 -> 219.0	9467	2.07	µg/L	88
		548.8 -> 79.9	9777			
PFOA	7.063	548.8 -> 98.9	5614	2.36	µg/L	98
		413.0 -> 369.0	96727			
PFOS	8.228	413.0 -> 169.0	16611	2.25	µg/L	m
		498.9 -> 79.9	10654			
PFPeA	4.273	498.9 -> 98.8	6154	5.33	µg/L	100
		263.0 -> 219.0	77803			
PFPeS	6.472	349.1 -> 79.9	16614	2.32	µg/L	97
		349.1 -> 98.9	7536			
PFTeDA	9.690	713.1 -> 669.0	29055	2.50	µg/L	99
		713.1 -> 168.9	2260			
PFTrDA	9.345	663.0 -> 619.0	36806	2.50	µg/L	99
		663.0 -> 168.9	3494			
PFUnDA	8.518	563.1 -> 519.0	34543	2.38	µg/L	96
		563.1 -> 269.1	5713			
11CI-PF3OUdS	9.398	630.9 -> 450.9	44398	3.39	µg/L	96
		632.9 -> 452.9	14647			
9CI-PF3ONS	8.557	530.8 -> 351.0	94127	4.55	µg/L	99
		532.8 -> 353.0	30230			
ADONA	6.668	376.9 -> 250.9	293123	5.08	µg/L	96
		376.9 -> 84.8	74180			
HFPO-DA	5.834	284.9 -> 168.9	17116	4.74	µg/L	98
		284.9 -> 184.9	2402			
3:3FTCA	3.796	241.0 -> 177.0	7509	8.23	µg/L	99
		241.0 -> 117.0	956			
5:3FTCA	6.160	341.0 -> 237.1	205477	47.03	µg/L	98
		341.0 -> 217.0	143676			
7:3FTCA	7.573	441.0 -> 316.9	83702	42.17	µg/L	91
		441.0 -> 336.9	189172			
EtFOSA	10.962	526.0 -> 219.0	6185	5.02	µg/L	100
		526.0 -> 169.0	7843			
EtFOSE	10.907	630.0 -> 58.9	12570	11.90	µg/L	100
		511.9 -> 219.0	6356			
MeFOSA	10.730	511.9 -> 169.0	8510	5.32	µg/L	92
		616.1 -> 58.9	10140			
MeFOSE	10.661	699.1 -> 79.9	3016	12.83	µg/L	100
		699.1 -> 98.8	1469			
PFDoDS	9.817	295.0 -> 201.0	13558	1.87	µg/L	91
		295.0 -> 84.9	3626			
NFDHA	5.350	279.0 -> 85.1	51776	4.63	µg/L	97
		229.0 -> 84.9	30404			
PFMBA	4.687	314.8 -> 134.9	138116	5.29	µg/L	100
		314.8 -> 82.9	5065			
PFMPA	3.438			4.16	µg/L	100
PFEESA	5.937			4.05	µg/L	99

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

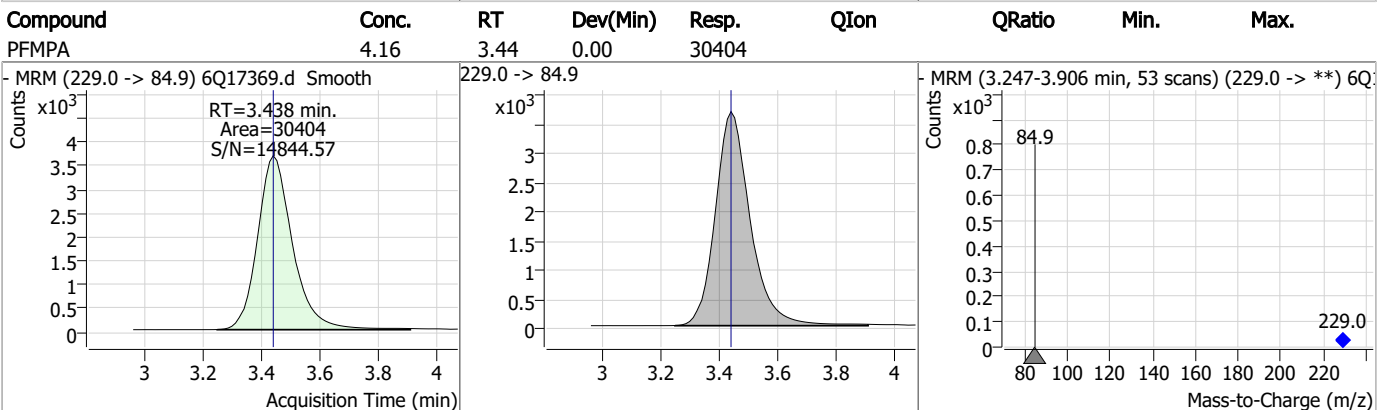
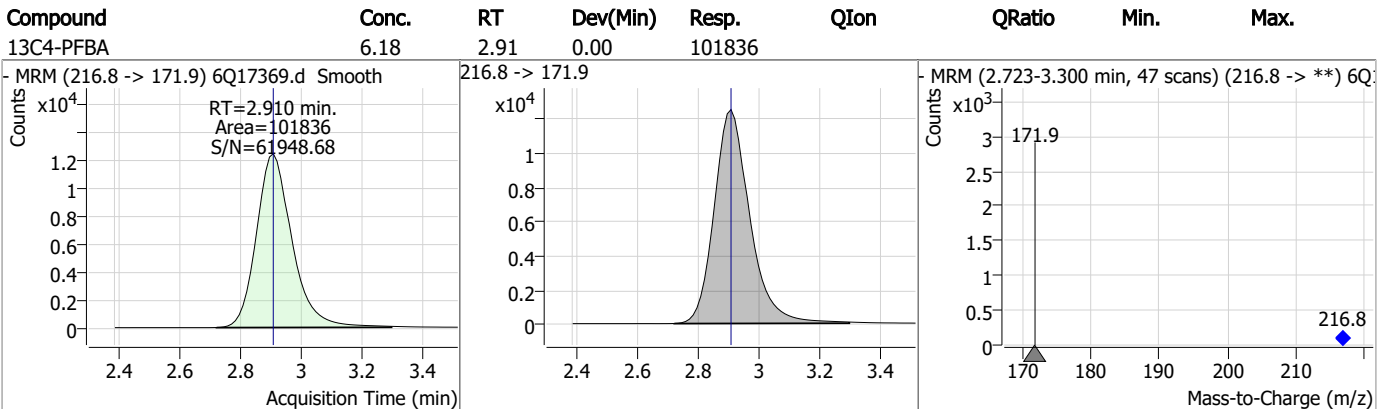
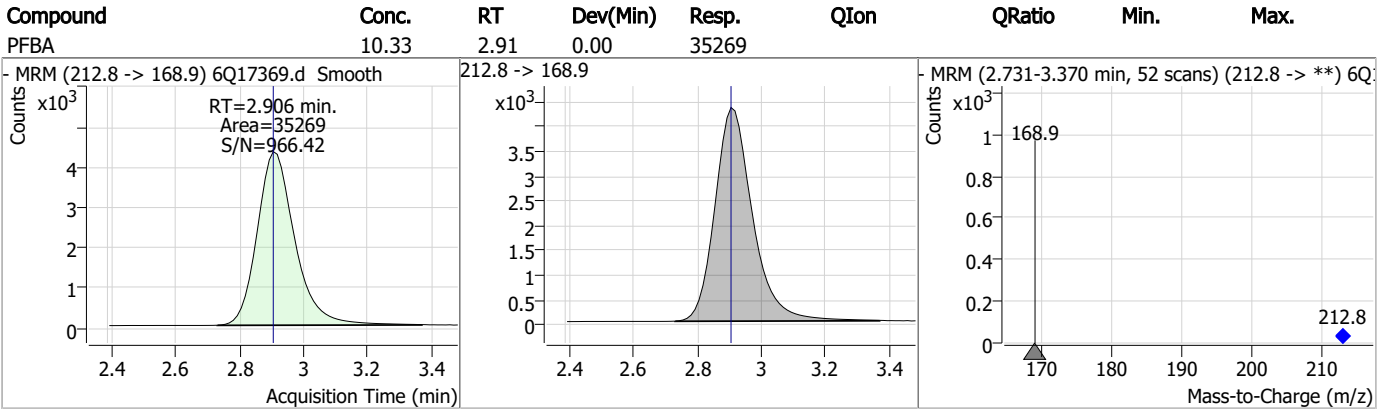
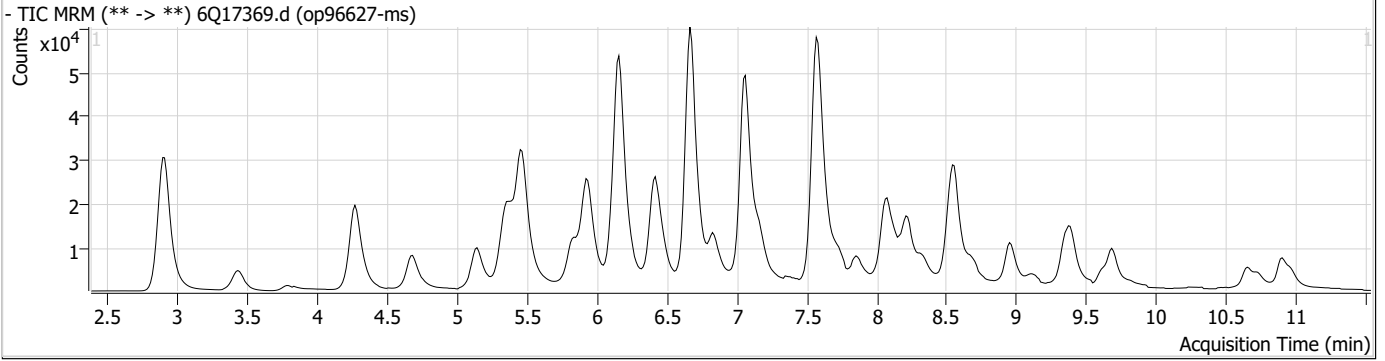
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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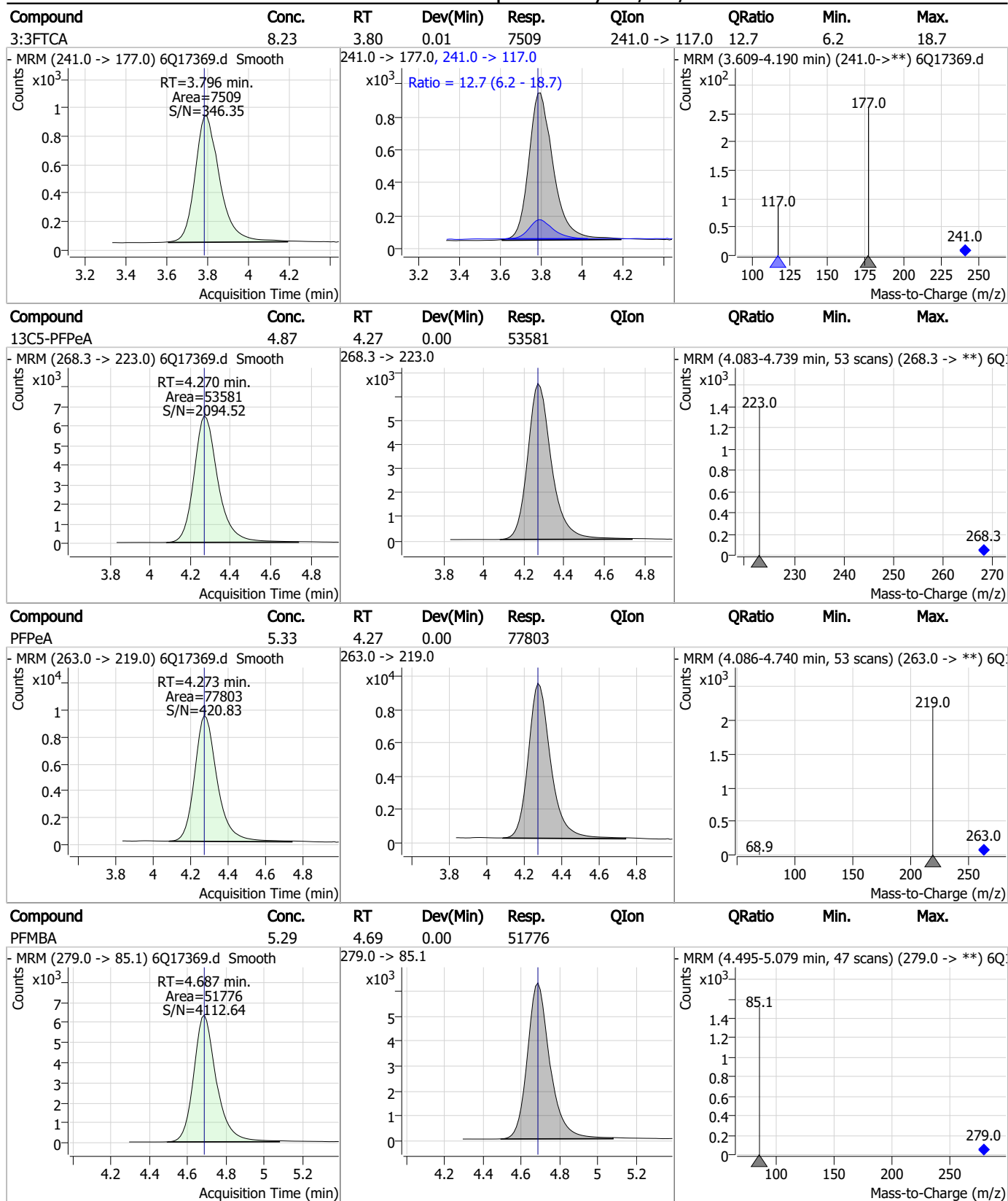
7.4.1

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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

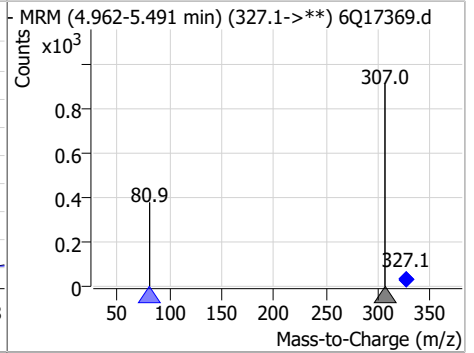
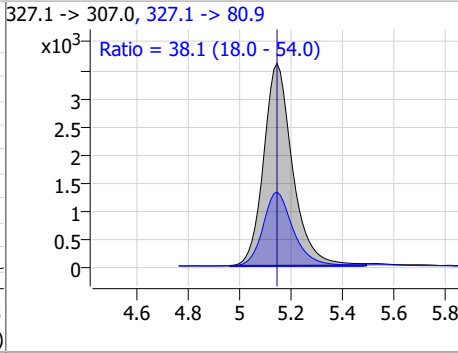
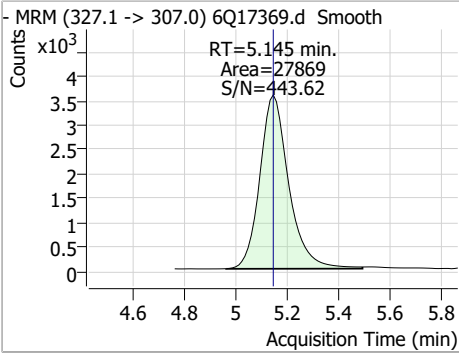


7.4.1
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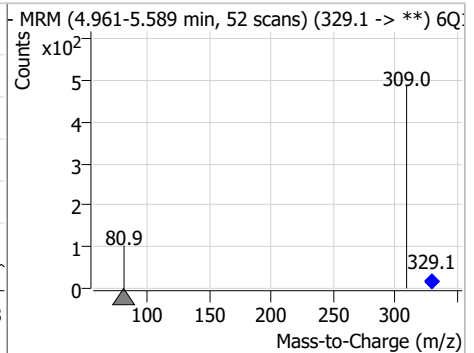
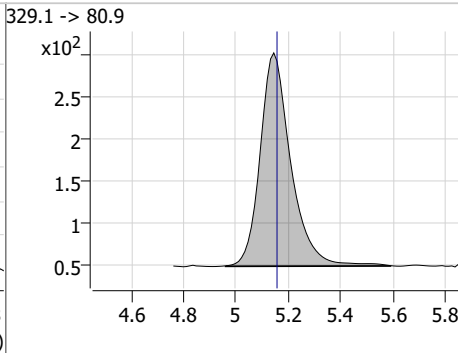
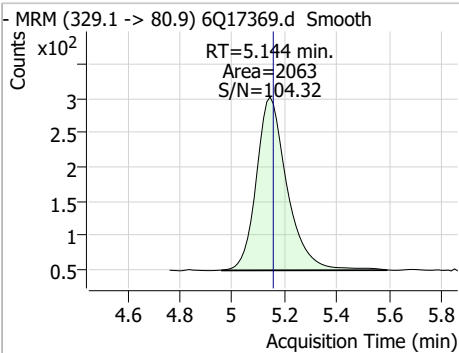


Perfluorinated Compounds by LC/MS/MS

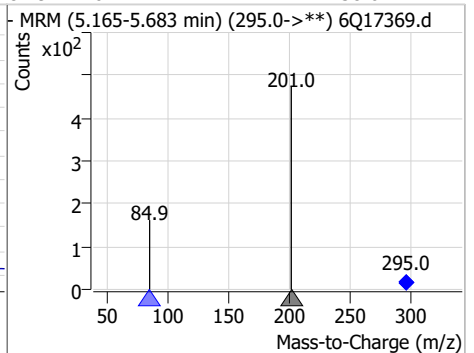
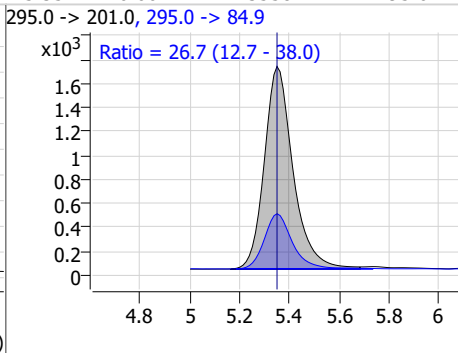
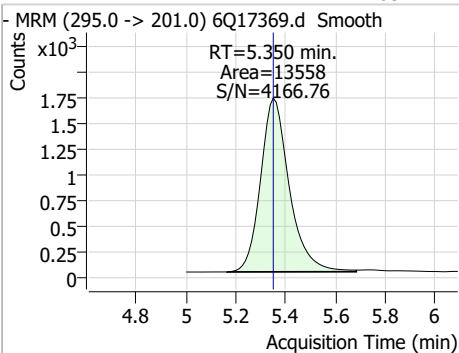
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	8.93	5.14	0.00	27869	327.1 -> 80.9	38.1	18.0	54.0



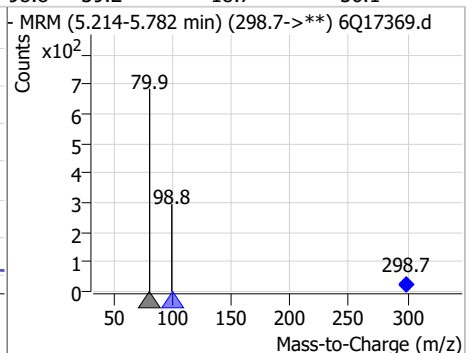
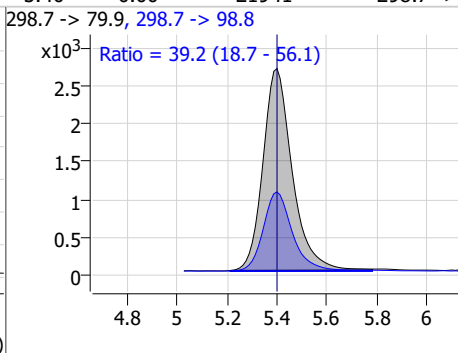
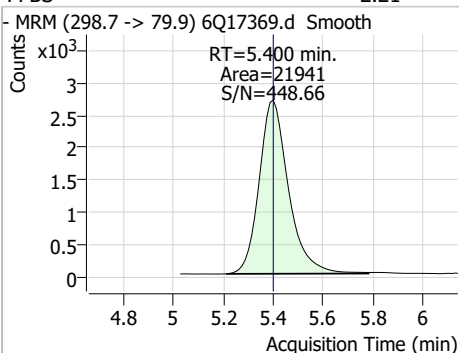
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.00	5.14	-0.01	2063	329.1 -> 80.9			



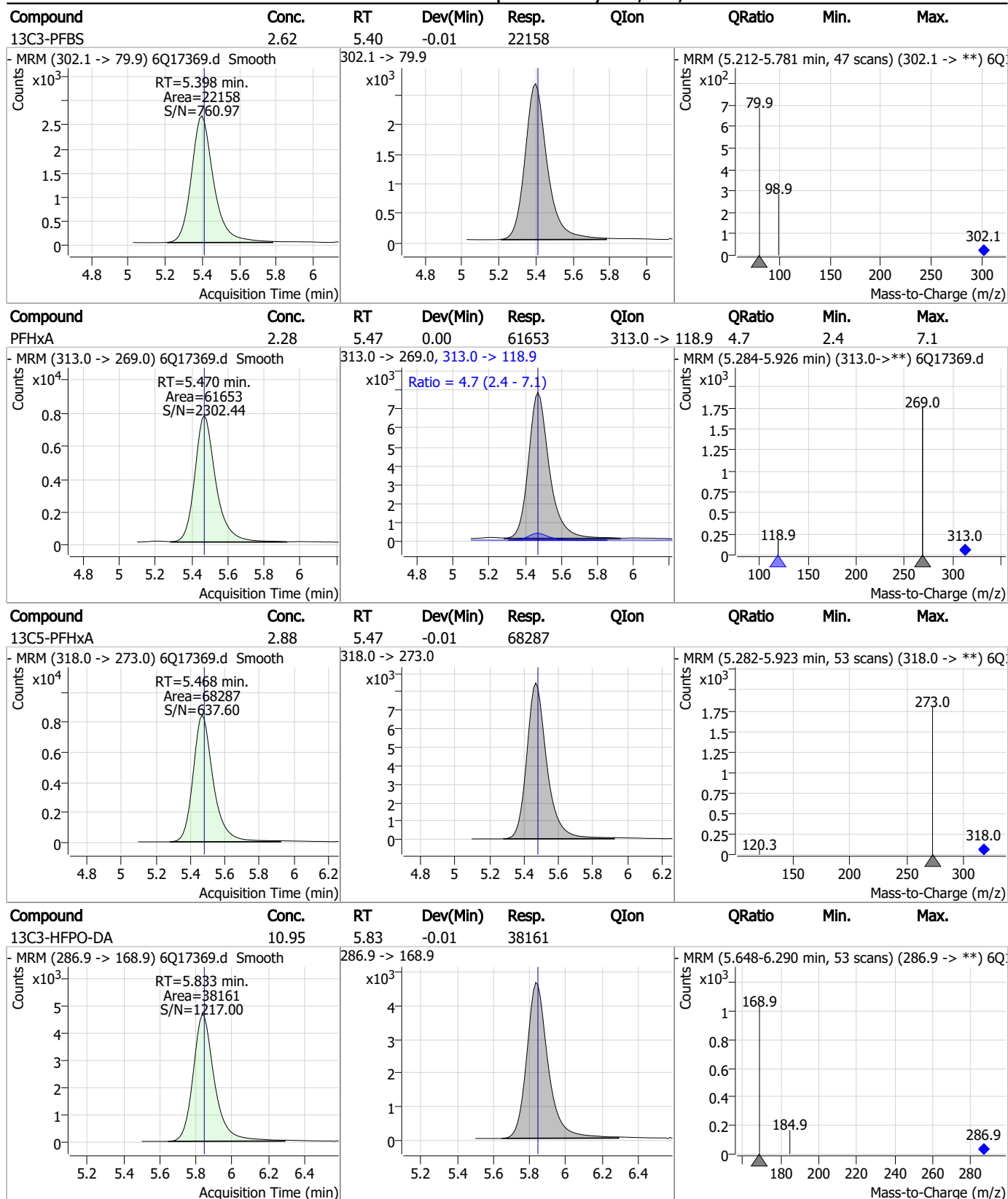
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	4.63	5.35	0.00	13558	295.0 -> 84.9	26.7	12.7	38.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.21	5.40	0.00	21941	298.7 -> 98.8	39.2	18.7	56.1



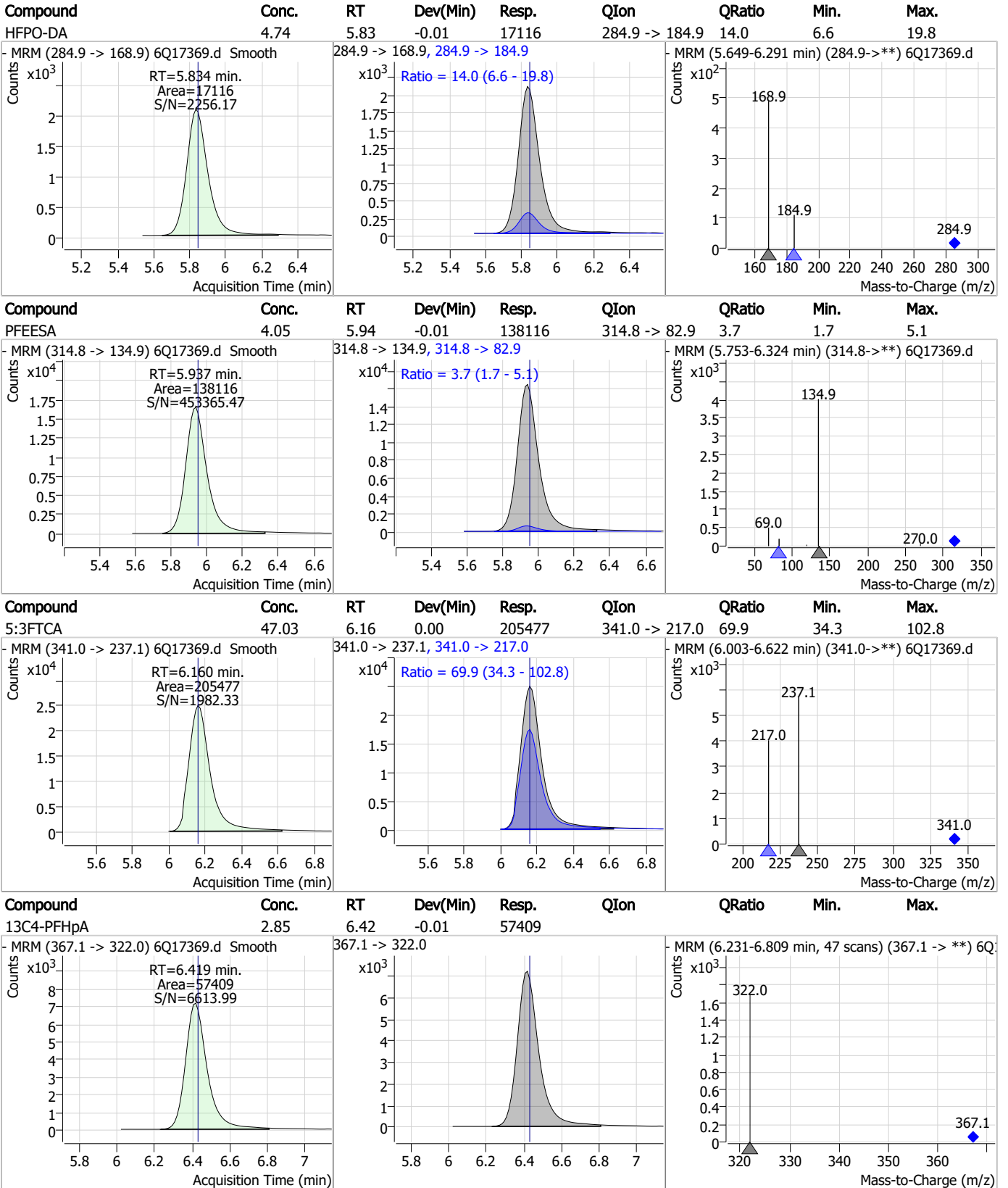
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

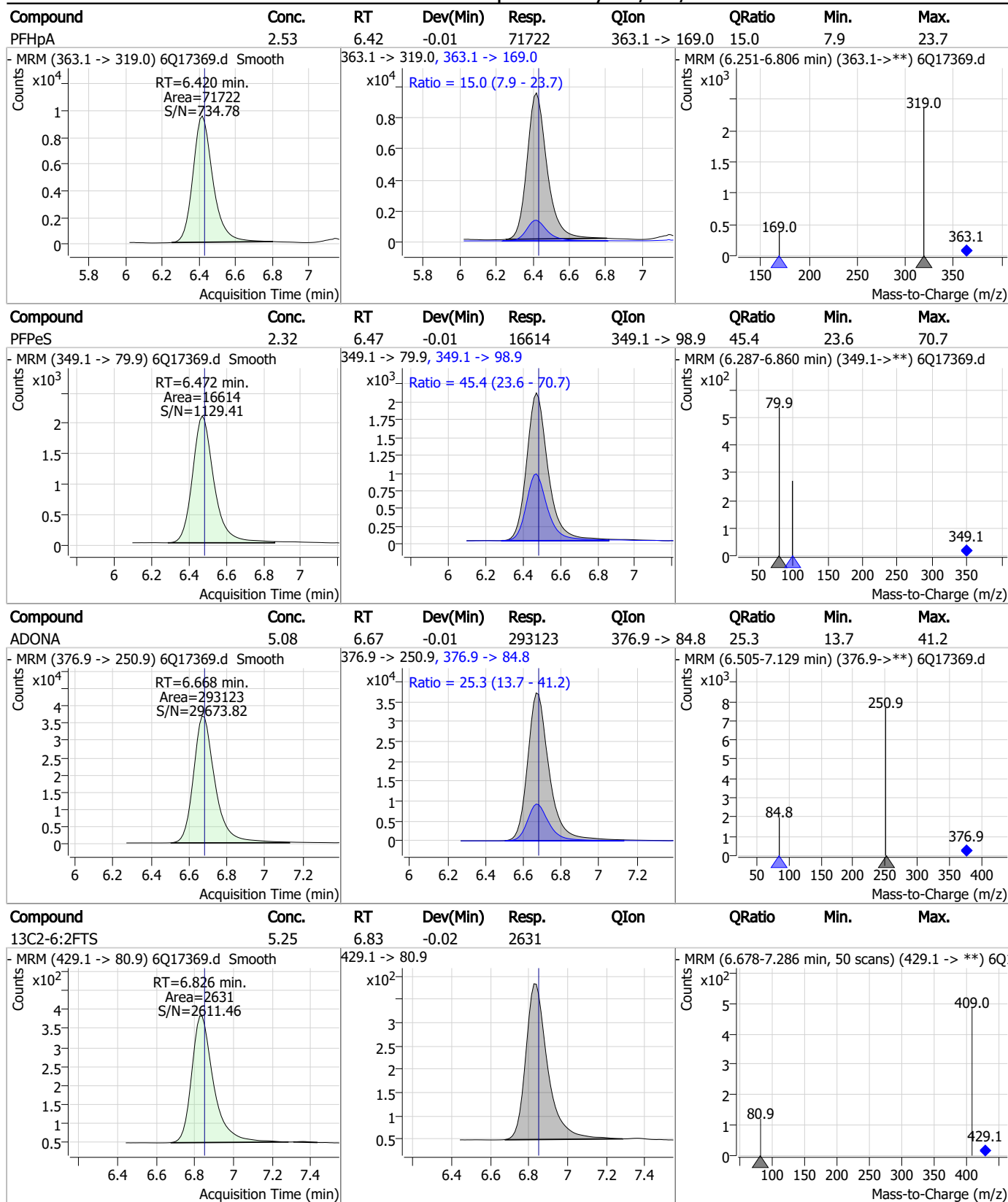


7.4.1

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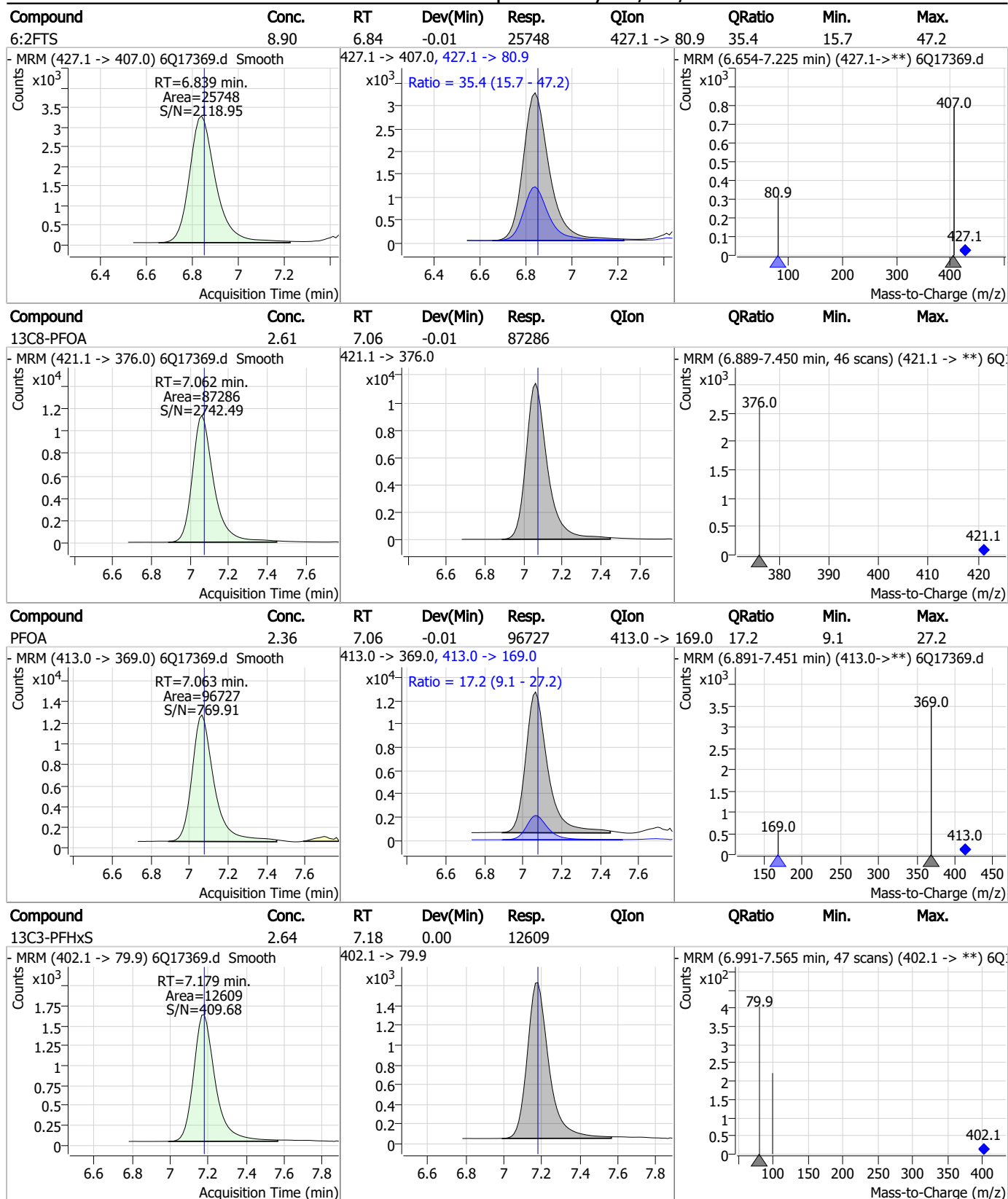


Perfluorinated Compounds by LC/MS/MS



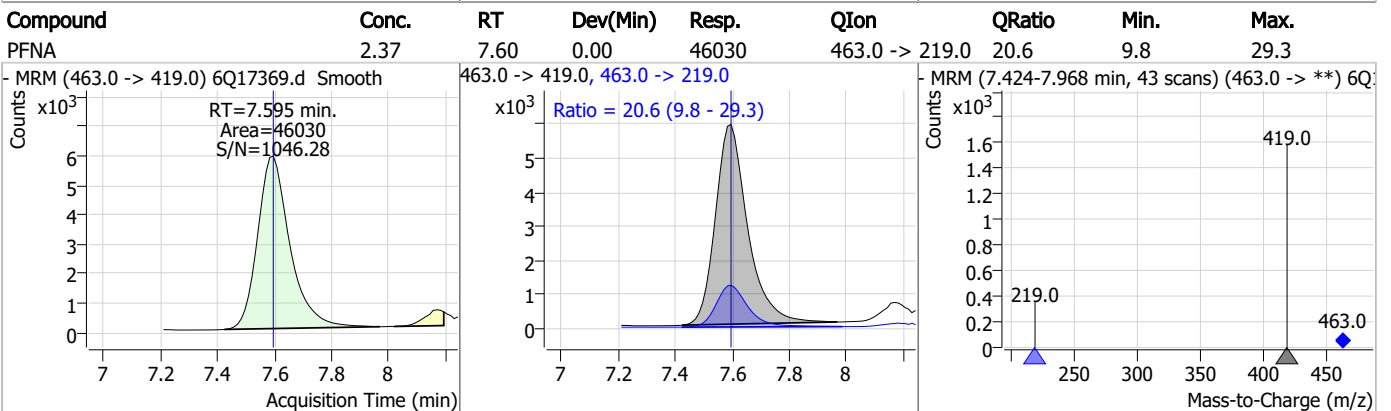
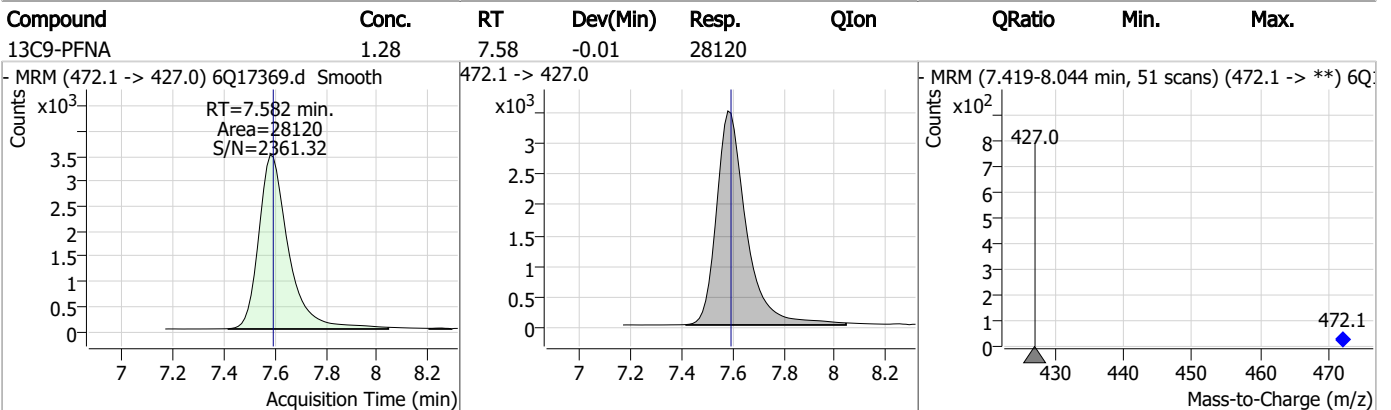
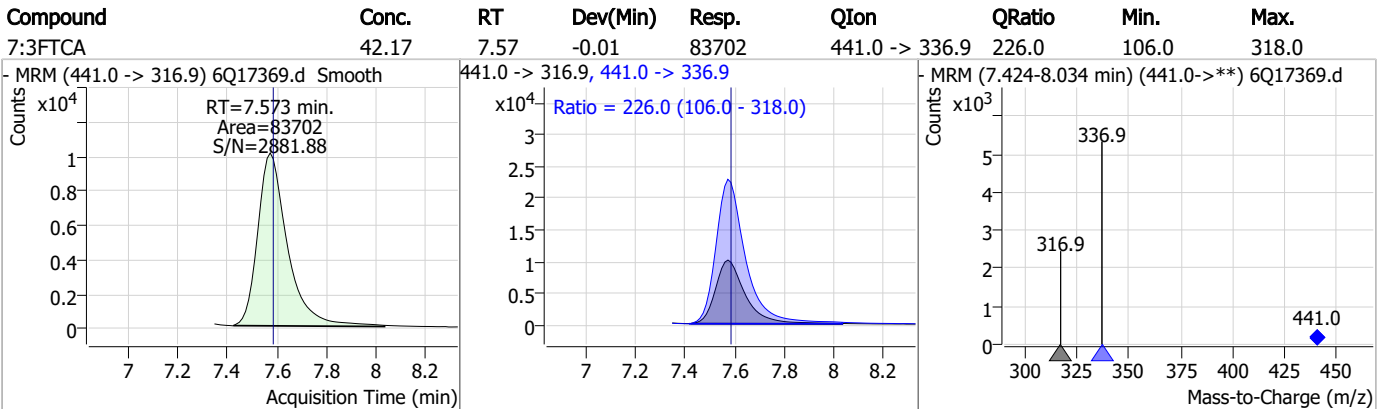
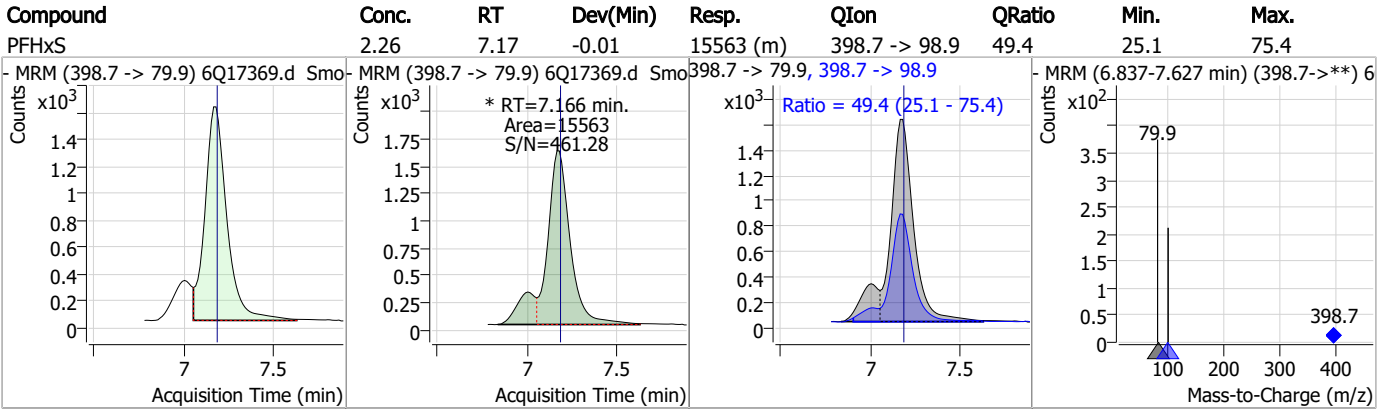
7.4.1
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Perfluorinated Compounds by LC/MS/MS



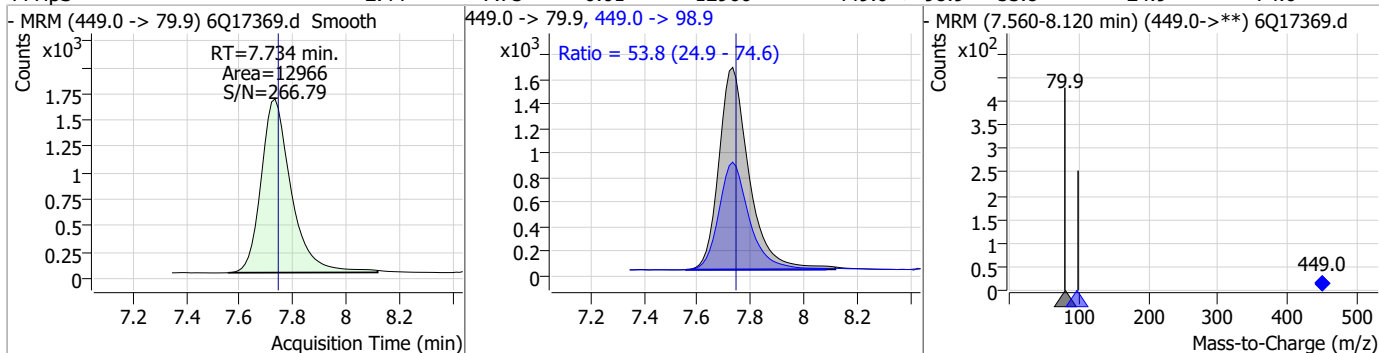
7.4.1
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Perfluorinated Compounds by LC/MS/MS

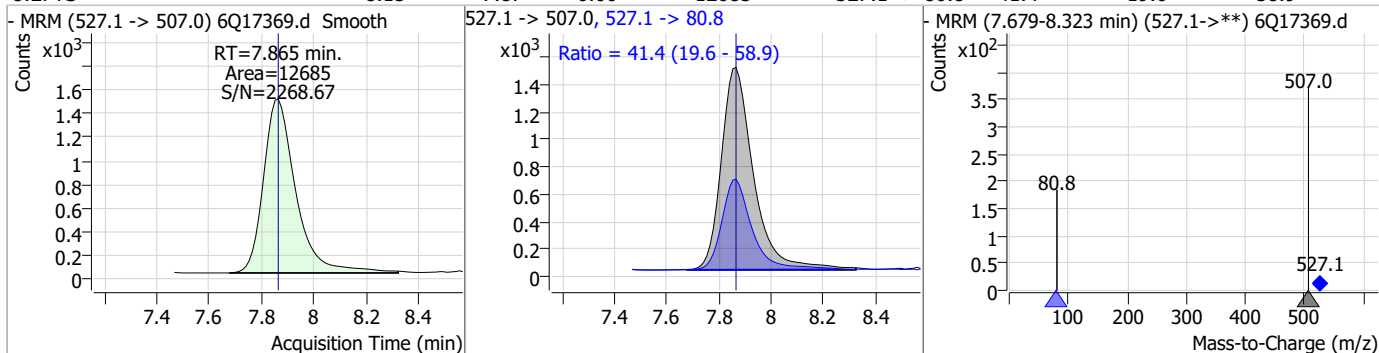


Perfluorinated Compounds by LC/MS/MS

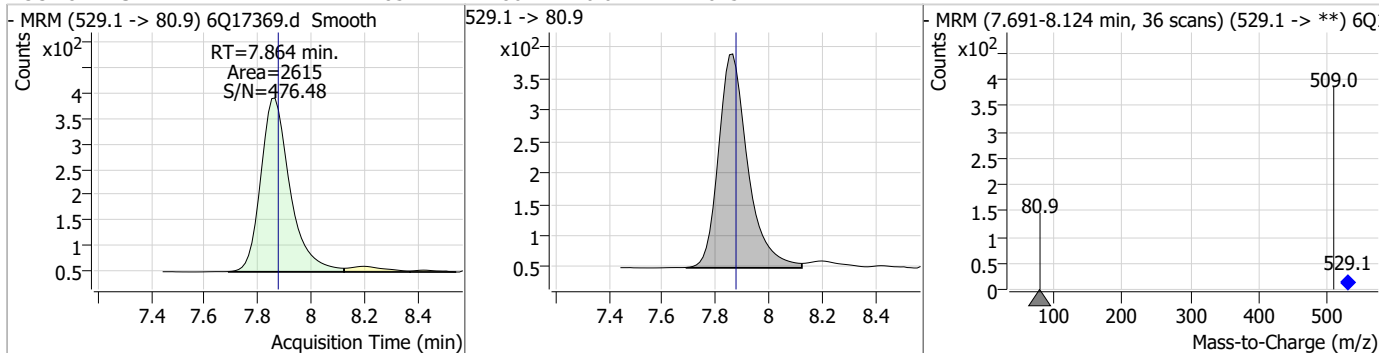
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.44	7.73	-0.01	12966	449.0 -> 98.9	53.8	24.9	74.6



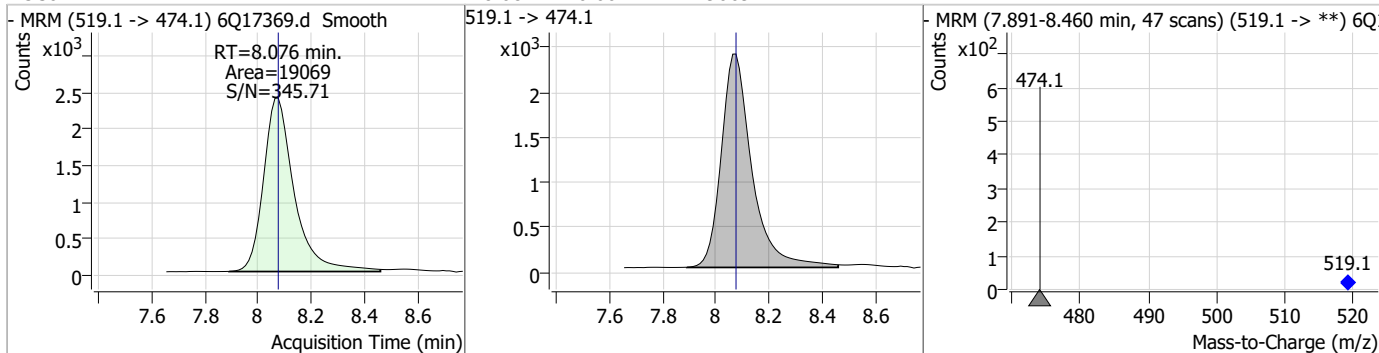
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	8.15	7.87	0.00	12685	527.1 -> 80.8	41.4	19.6	58.9



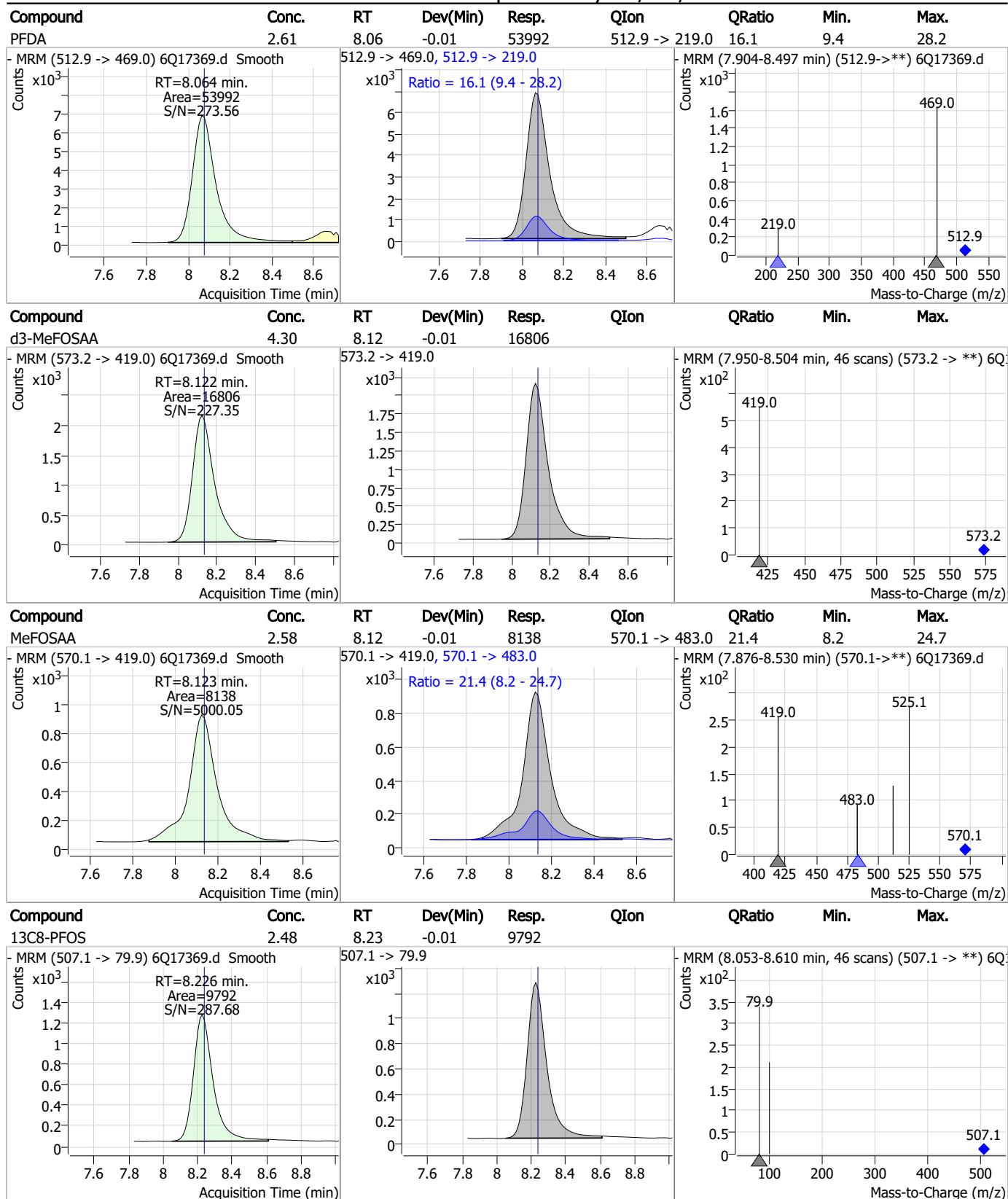
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	4.85	7.86	-0.01	2615	529.1 -> 80.9			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.24	8.08	0.00	19069	519.1 -> 474.1			



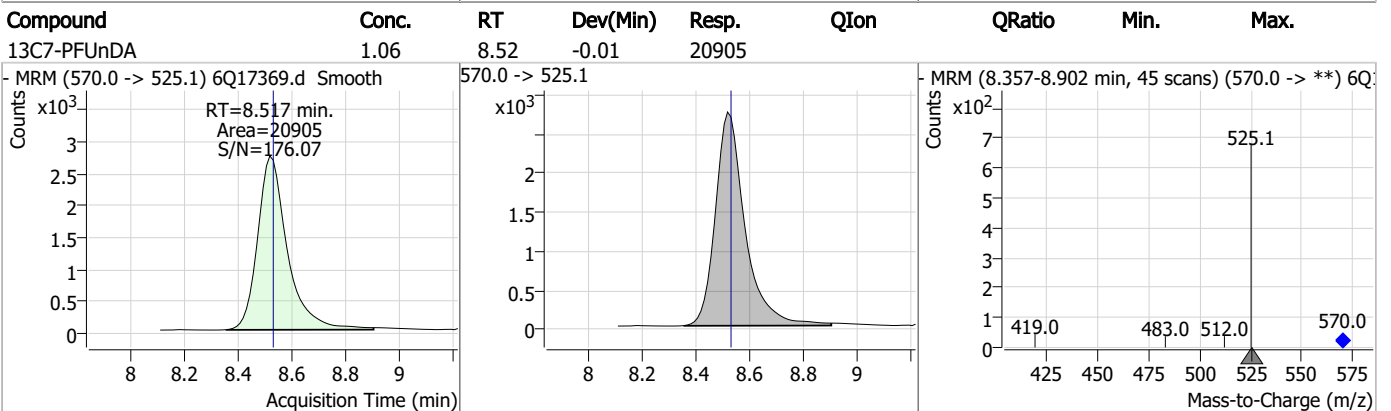
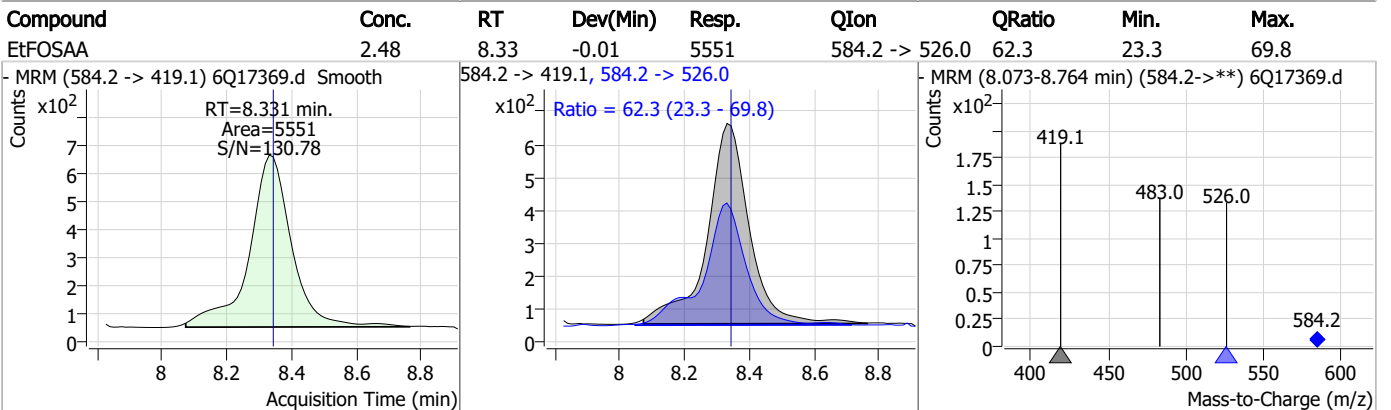
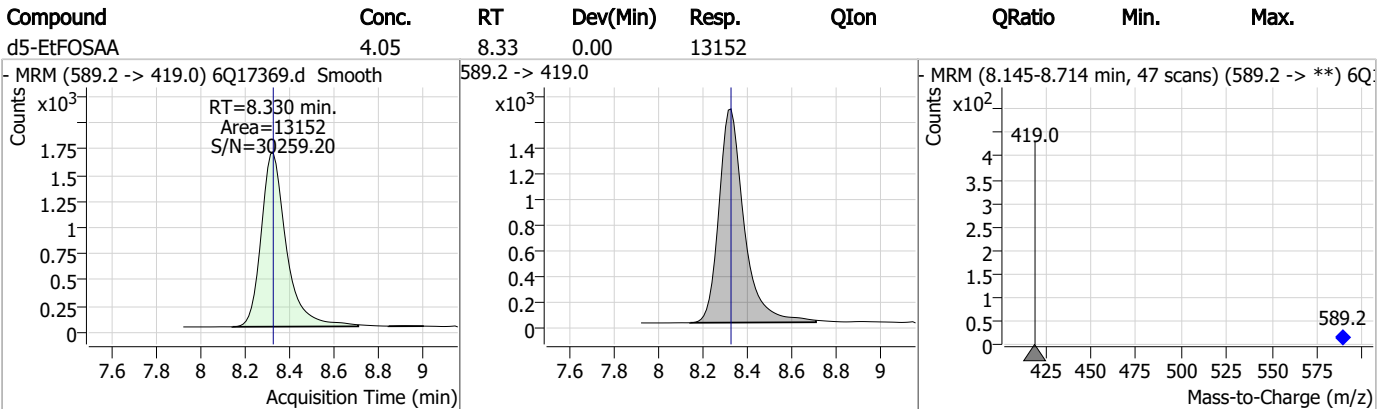
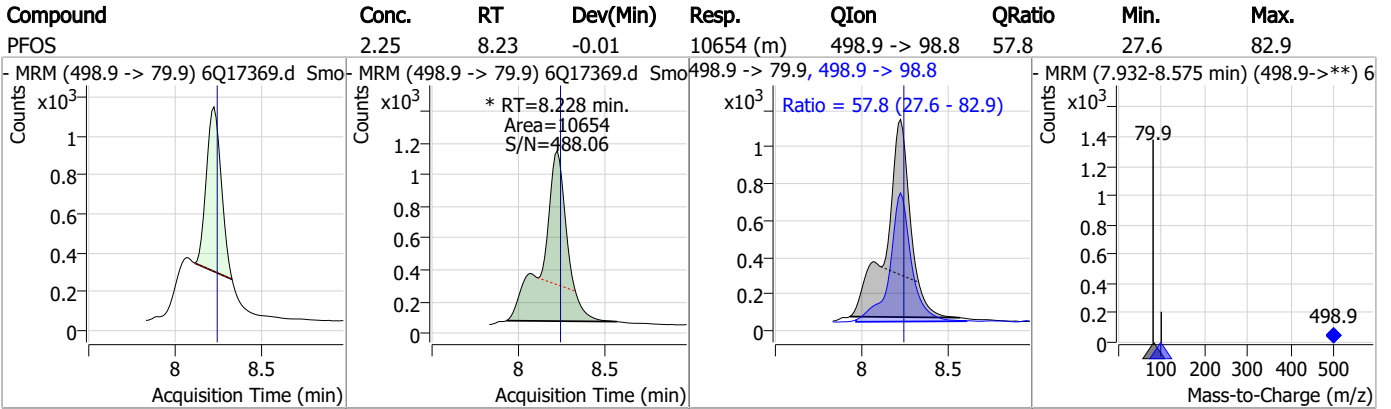
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

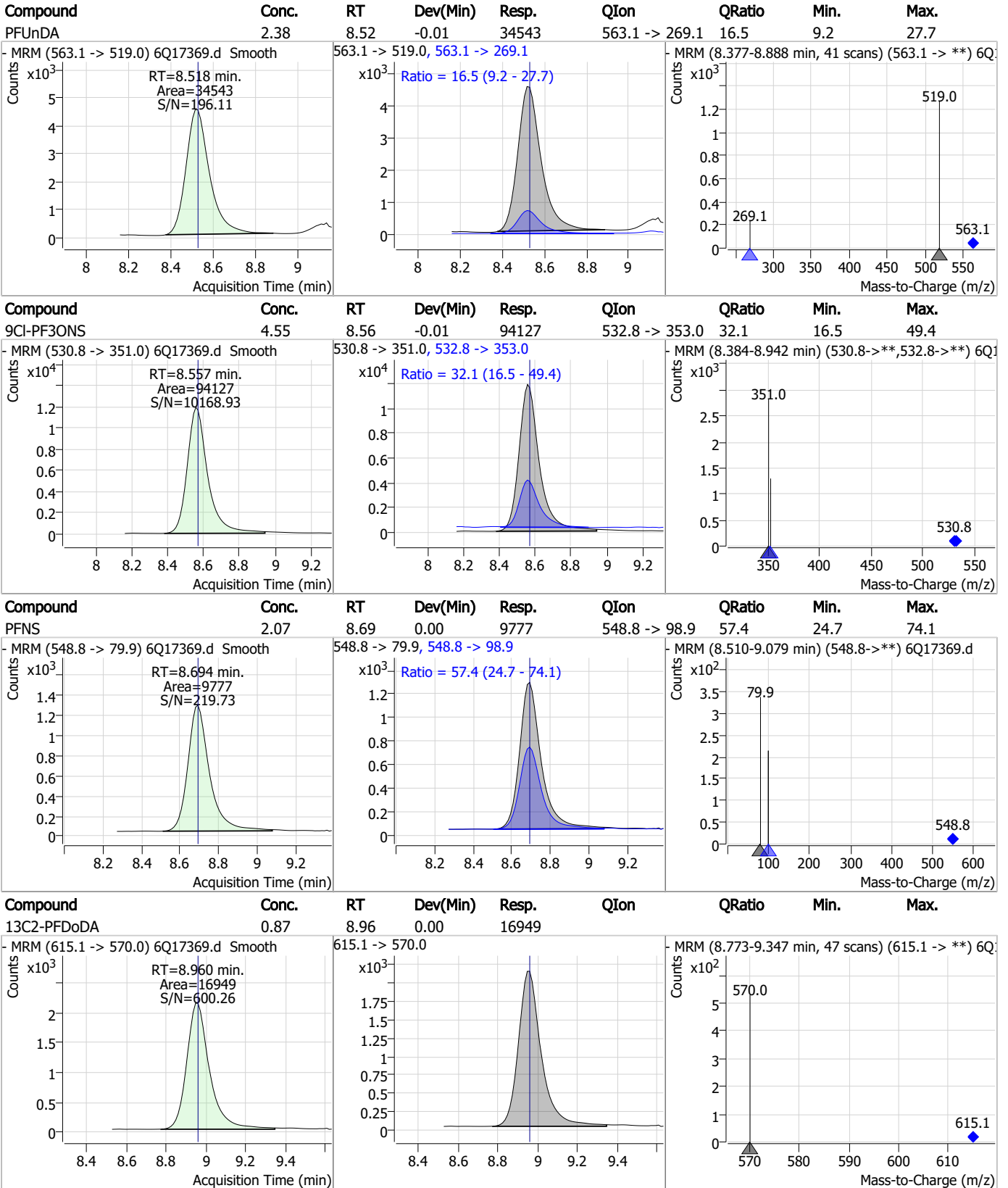


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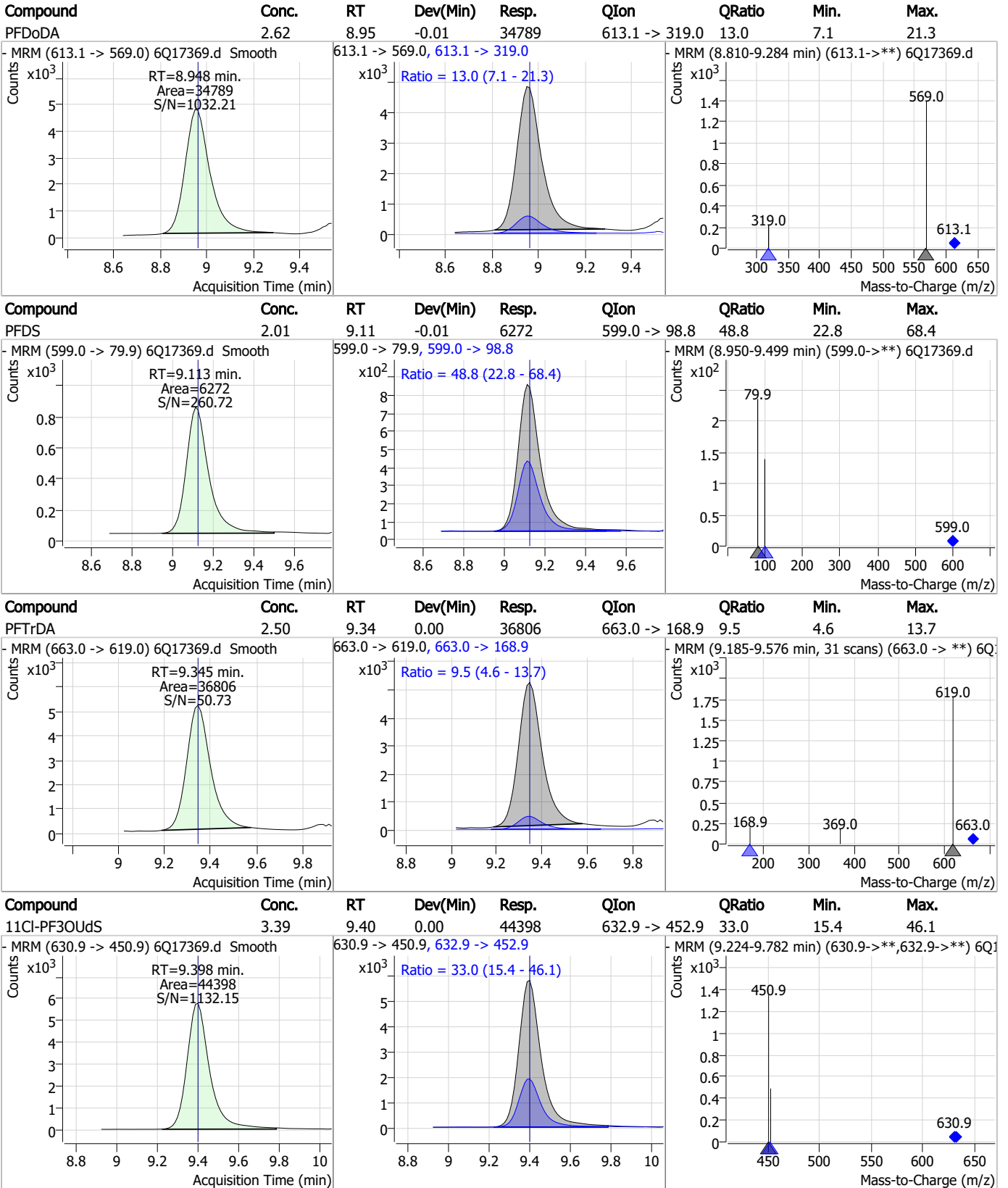
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

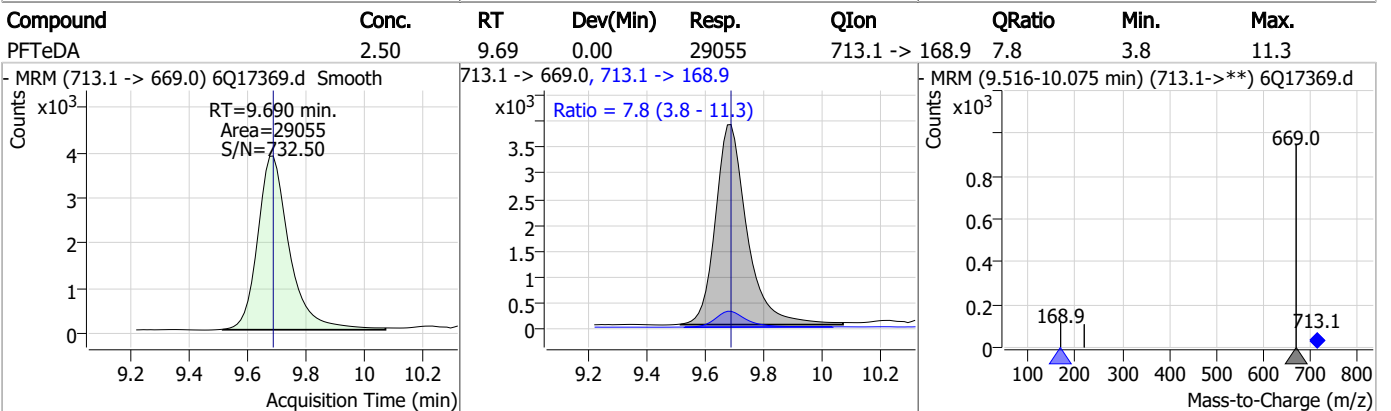
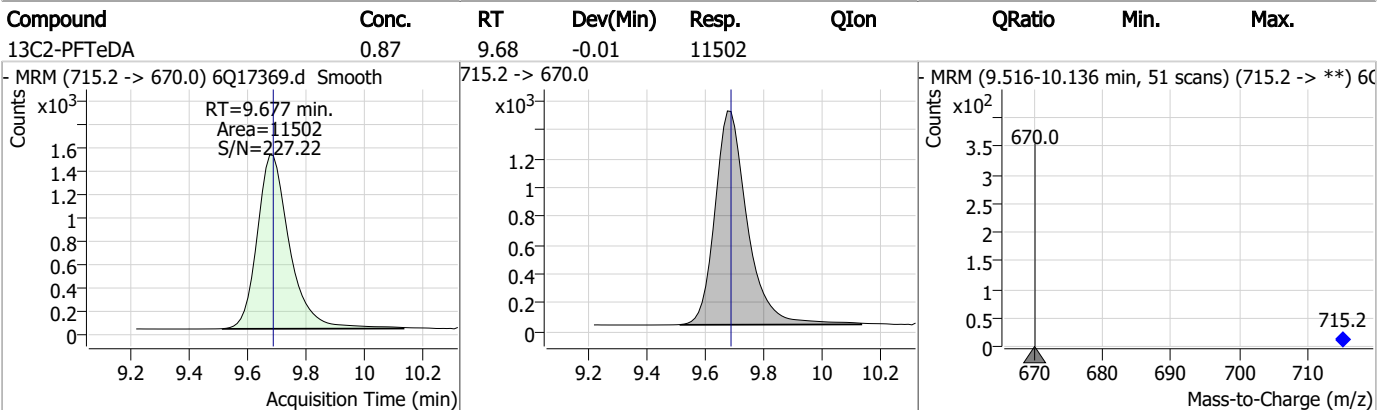
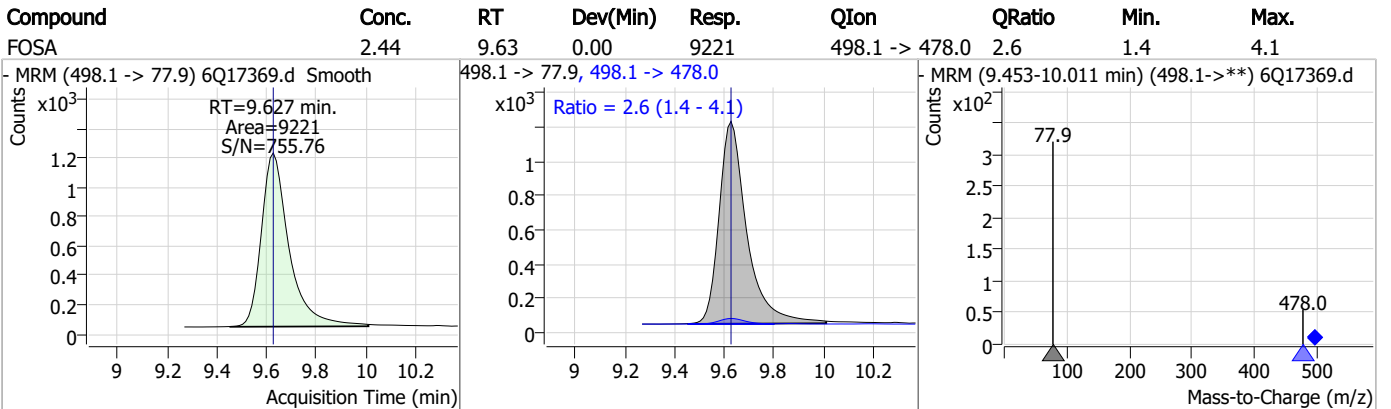
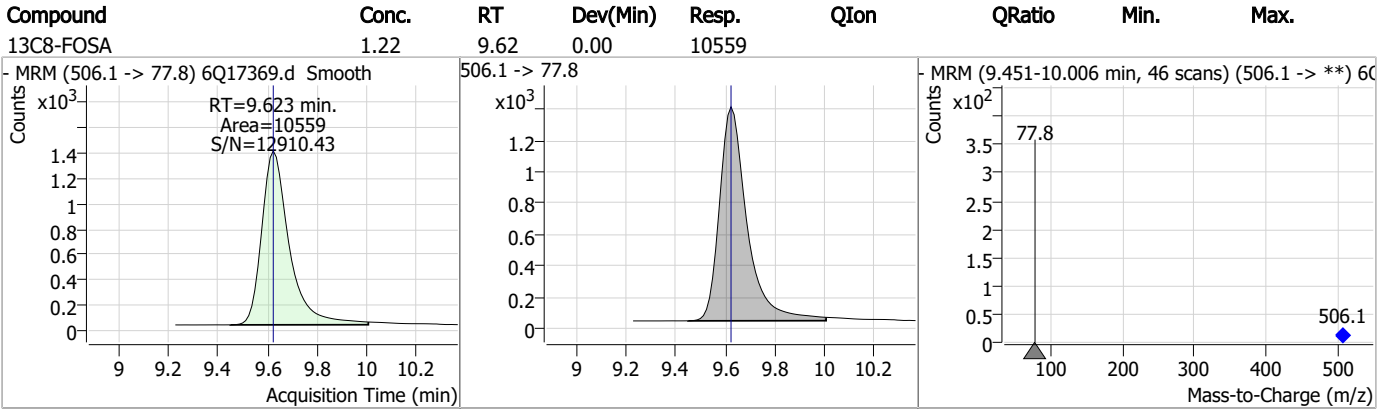


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Perfluorinated Compounds by LC/MS/MS

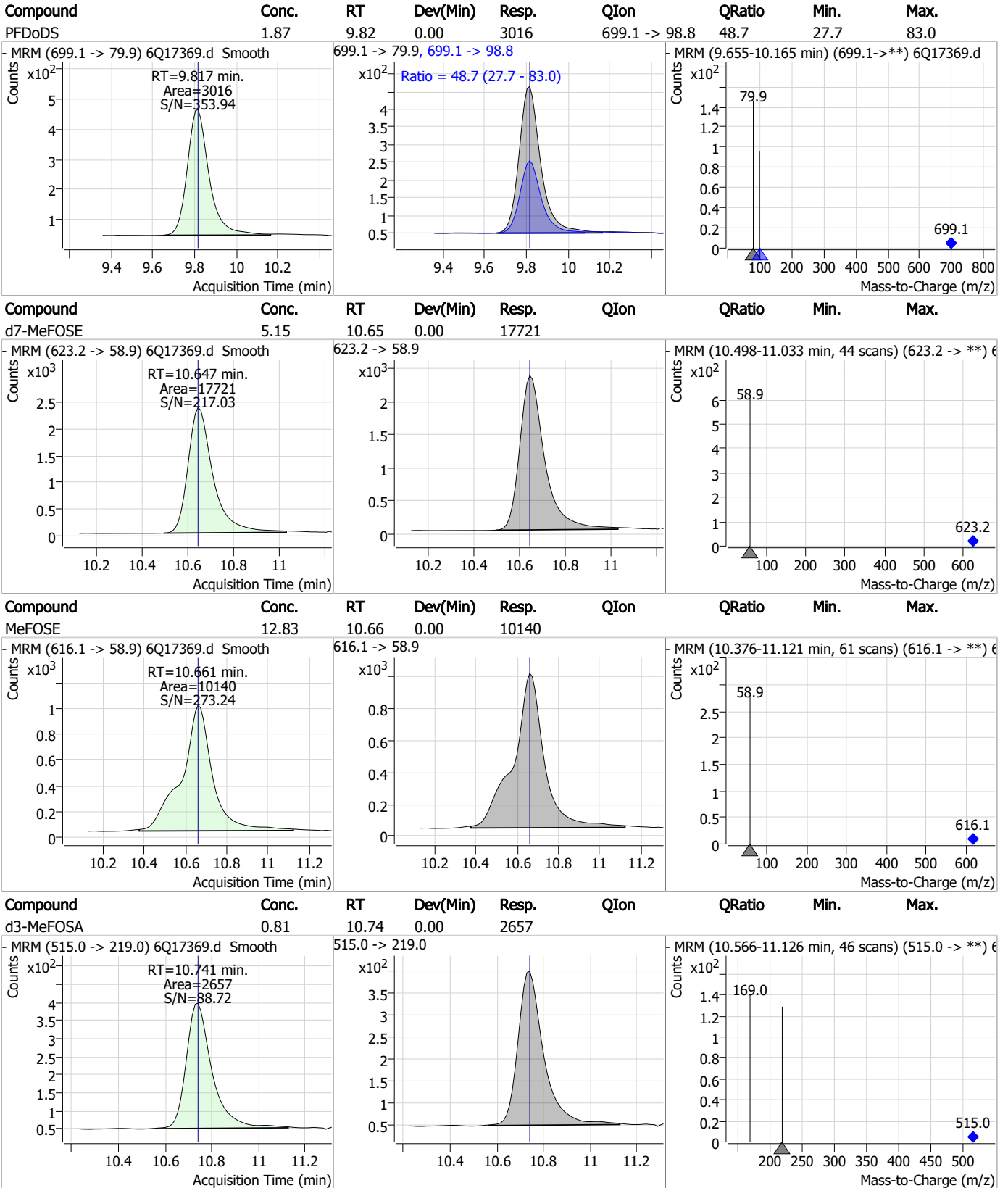


7.4.1

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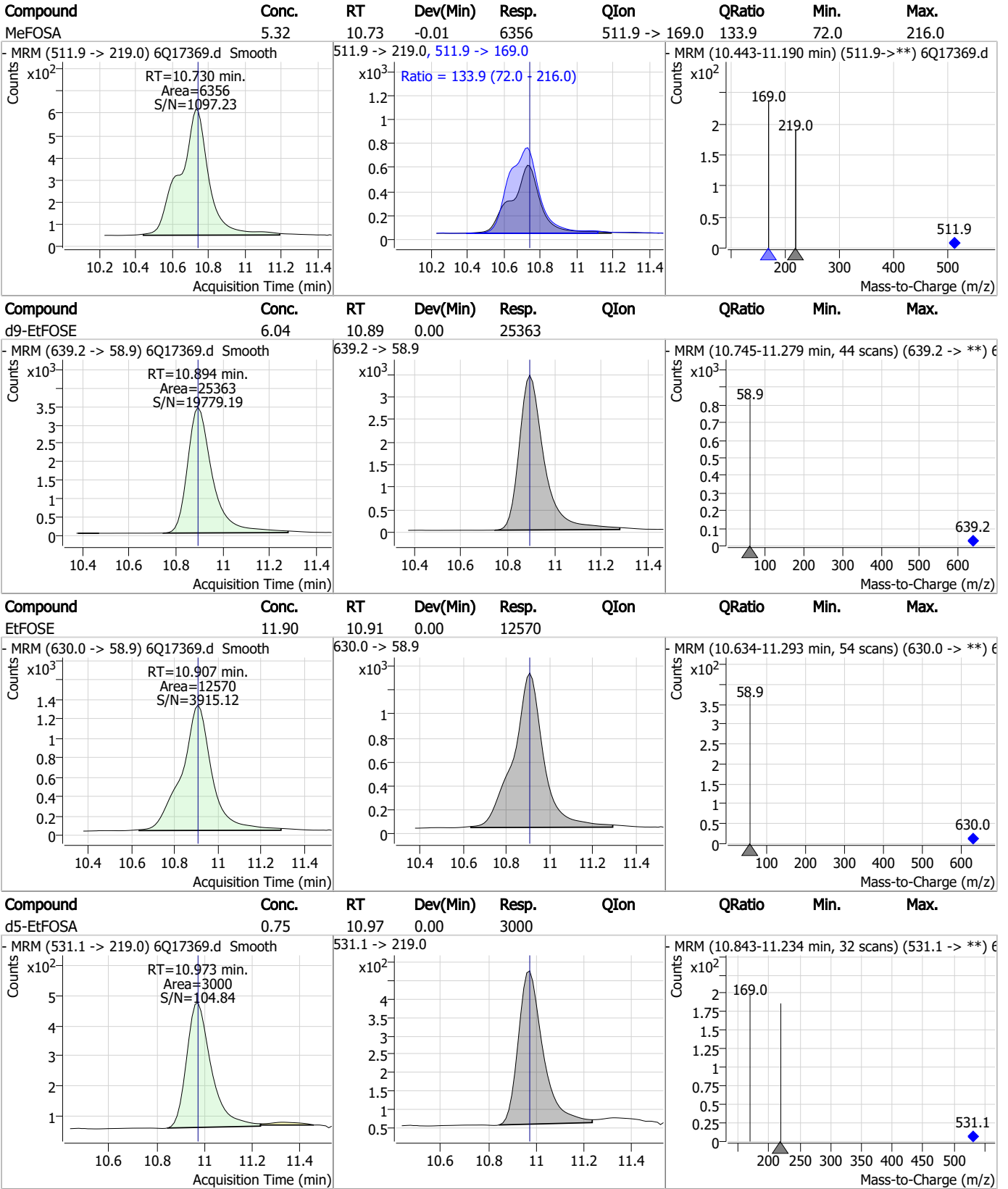
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

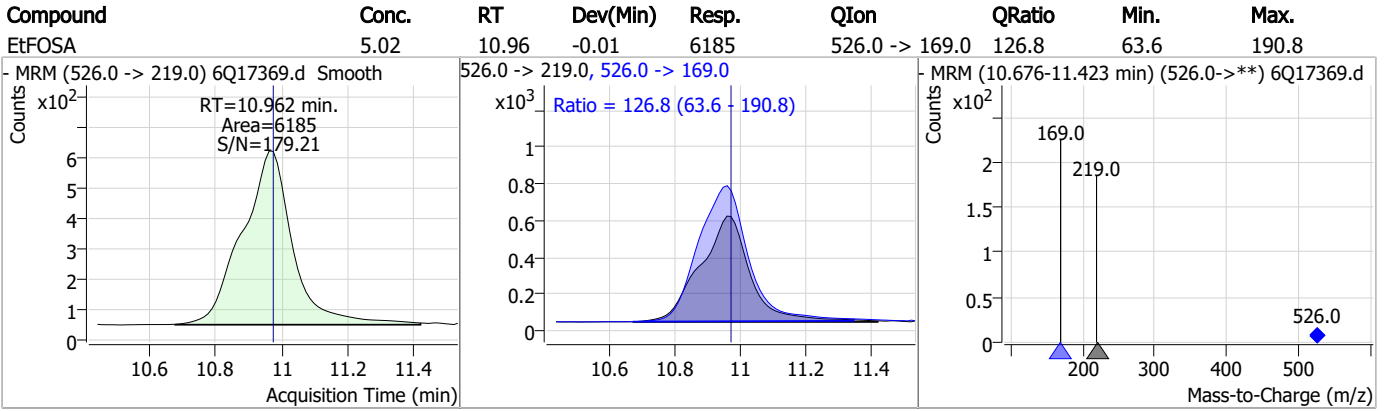


7.4.1

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Perfluorinated Compounds by LC/MS/MS



7.4.1

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Manual Integration Approval Summary

Sample Number: OP96627-MS Method: EPA DRAFT 1633
Lab FileID: 6Q17369.D Analyst approved: 05/03/23 14:27 Martha Valls
Injection Time: 05/03/23 06:25 Supervisor approved: 05/03/23 19:48 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.17	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.23	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17373.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/3/2023 7:23:36 AM
 Sample Name : op96627-dup
 Vial : P4-A2
 DA Method File : 1633_042823_S6Q258.quantmethod.xml
 Batch Name : s6q261.batch.bin
 Sample Information : OP96627,S6Q261,550,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.910	216.8 -> 171.9	144853	10.00 µg/L	0.000
M5-PFPeA	4.270	268.3 -> 223.0	53602	5.00 µg/L	0.000
M5-PFHxA	5.480	318.0 -> 273.0	65514	2.50 µg/L	0.000
M4-PFHpA	6.431	367.1 -> 322.0	55244	2.50 µg/L	0.000
M8-PFOA	7.074	421.1 -> 376.0	77302	2.50 µg/L	0.000
M9-PFNA	7.594	472.1 -> 427.0	26803	1.25 µg/L	0.000
M6-PFDA	8.076	519.1 -> 474.1	17573	1.25 µg/L	0.000
M7-PFUnDA	8.530	570.0 -> 525.1	19297	1.25 µg/L	0.000
M2-PFDoDA	8.960	615.1 -> 570.0	17866	1.25 µg/L	0.000
M2-PFTeDA	9.677	715.2 -> 670.0	10915	1.25 µg/L	-0.012
M8-FOSA	9.623	506.1 -> 77.8	11098	2.50 µg/L	0.000
M3-PFBS	5.398	302.1 -> 79.9	21071	2.50 µg/L	-0.012
M3-PFHxS	7.191	402.1 -> 79.9	11906	2.50 µg/L	0.012
M8-PFOS	8.239	507.1 -> 79.9	9078	2.50 µg/L	0.000
M2-4:2FTS	5.144	329.1 -> 80.9	1871	5.00 µg/L	-0.012
M2-6:2FTS	6.839	429.1 -> 80.9	2419	5.00 µg/L	-0.012
M2-8:2FTS	7.864	529.1 -> 80.9	2296	5.00 µg/L	-0.012
M3-MeFOSAA	8.134	573.2 -> 419.0	18126	5.00 µg/L	0.000
M3-HFPO-DA	5.845	286.9 -> 168.9	36278	10.00 µg/L	0.000
M5-EtFOSAA	8.330	589.2 -> 419.0	14253	5.00 µg/L	0.000
M7-MeFOSE	10.647	623.2 -> 58.9	34837	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	51252	25.00 µg/L	0.000
M5-EtFOSA	10.960	531.1 -> 219.0	5048	2.50 µg/L	-0.012
M3-MeFOSA	10.741	515.0 -> 219.0	4028	2.50 µg/L	0.000
13C4-PFOS	8.239	502.8 -> 79.9	13558	2.50 µg/L	0.000
13C3-PFBA	2.914	216.0 -> 172.0	66949	5.00 µg/L	0.012
18O2-PFHxS	7.177	403.0 -> 83.9	9130	2.50 µg/L	0.000
13C4-PFOA	7.075	417.1 -> 372.0	83857	2.50 µg/L	0.000
13C2-PFDA	8.076	515.1 -> 470.1	22562	1.25 µg/L	0.000
13C5-PFNA	7.595	468.0 -> 423.0	28314	1.25 µg/L	0.000
13C2-PFHxA	5.469	315.1 -> 270.0	49928	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.144	329.1 -> 80.9	1871	4.46 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 89.1%		
13C2-6:2FTS	6.839	429.1 -> 80.9	2419	4.75 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 95.0%		
13C2-8:2FTS	7.864	529.1 -> 80.9	2296	4.19 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 83.8%		
13C2-PFDoDA	8.960	615.1 -> 570.0	17866	0.95 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 76.1%		
13C2-PFTeDA	9.677	715.2 -> 670.0	10915	0.86 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 68.8%		
13C3-PFBS	5.398	302.1 -> 79.9	21071	2.45 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.1%		
13C3-PFHxS	7.191	402.1 -> 79.9	11906	2.45 µg/L	0.012

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.0%	
13C4-PFBA	2.910	216.8 -> 171.9	144853	9.36 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.6%	
13C4-PFHpA	6.431	367.1 -> 322.0	55244	2.70 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.2%	
13C5-PFHxA	5.480	318.0 -> 273.0	65514	2.72 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.8%	
13C5-PFPeA	4.270	268.3 -> 223.0	53602	4.81 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.1%	
13C6-PFDA	8.076	519.1 -> 474.1	17573	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.5%	
13C7-PFUnDA	8.530	570.0 -> 525.1	19297	1.01 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 81.0%	
13C8-FOSA	9.623	506.1 -> 77.8	11098	1.24 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 49.5%	
13C8-PFOA	7.074	421.1 -> 376.0	77302	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.5%	
13C8-PFOS	8.239	507.1 -> 79.9	9078	2.22 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 88.9%	
13C9-PFNA	7.594	472.1 -> 427.0	26803	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.3%	
d3-MeFOSAA	8.134	573.2 -> 419.0	18126	4.49 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 89.7%	
13C3-HFPO-DA	5.845	286.9 -> 168.9	36278	10.26 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.6%	
d3-MeFOSA	10.741	515.0 -> 219.0	4028	1.19 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 47.6%	
d5-EtFOSAA	8.330	589.2 -> 419.0	14253	4.24 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 84.9%	
d7-MeFOSE	10.647	623.2 -> 58.9	34837	9.79 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 39.2%	
d9-EtFOSE	10.894	639.2 -> 58.9	51252	11.79 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 47.1%	
d5-EtFOSA	10.960	531.1 -> 219.0	5048	1.21 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 48.6%	

Target Compounds

Compound	RT	Transition	Response	Conc. Units	QValue
4:2FTS	-	327.1 -> 307.0	-	N.D.	
		327.1 -> 80.9			
6:2FTS	6.851	427.1 -> 407.0	4552	1.71 µg/L	95
		427.1 -> 80.9	1563		
8:2FTS	-	527.1 -> 507.0	-	N.D.	
		527.1 -> 80.8			
EtFOSAA	-	584.2 -> 419.1	-	N.D.	
		584.2 -> 526.0			
FOSA	-	498.1 -> 77.9	-	N.D.	
		498.1 -> 478.0			
MeFOSAA	-	570.1 -> 419.0	-	N.D.	
		570.1 -> 483.0			
PFBA	2.906	212.8 -> 168.9	13142	2.71 µg/L	100
PFBS	5.400	298.7 -> 79.9	12697	1.34 µg/L	m 94
		298.7 -> 98.8	5183		
PFDA	8.670	512.9 -> 469.0	0	µg/L	m 1
		512.9 -> 219.0	0		
PFDODA	-	613.1 -> 569.0	-	N.D.	
		613.1 -> 319.0			
PFDS	-	599.0 -> 79.9	-	N.D.	



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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)	
PFHpA	6.432	599.0 -> 98.8					
		363.1 -> 319.0	22914	0.84	µg/L	99	
PFHpS	-	363.1 -> 169.0	3530				
		449.0 -> 79.9	-	N.D.			
PFHxA	5.483	449.0 -> 98.9					
		313.0 -> 269.0	89059	3.44	µg/L	100	
PFHxS	7.192	313.0 -> 118.9	4159				
		398.7 -> 79.9	11575	1.78	µg/L	m	100
PFNA	7.607	398.7 -> 98.9	5843				
		463.0 -> 419.0	1302	0.07	µg/L		93
PFNS	-	463.0 -> 219.0	212				
		548.8 -> 79.9	-	N.D.			
PFOA	7.076	548.8 -> 98.9					
		413.0 -> 369.0	16659	0.51	µg/L		95
PFOS	8.228	413.0 -> 169.0	3390				
		498.9 -> 79.9	3599	0.82	µg/L	m	96
PFPeA	4.273	498.9 -> 98.8	2096				
		263.0 -> 219.0	128381	8.79	µg/L		100
PFPeS	6.484	349.1 -> 79.9	3466	0.51	µg/L	m	99
		349.1 -> 98.9	1601				
PFTeDA	-	713.1 -> 669.0	-	N.D.			
		713.1 -> 168.9					
PFTrDA	-	663.0 -> 619.0	-	N.D.			
		663.0 -> 168.9					
PFUnDA	9.139	563.1 -> 519.0	0		µg/L	m	1
		563.1 -> 269.1	0				
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.			
		632.9 -> 452.9					
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.			
		532.8 -> 353.0					
ADONA	-	376.9 -> 250.9	-	N.D.			
		376.9 -> 84.8					
HFPO-DA	-	284.9 -> 168.9	-	N.D.			
		284.9 -> 184.9					
3:3FTCA	-	241.0 -> 177.0	-	N.D.			
		241.0 -> 117.0					
5:3FTCA	-	341.0 -> 237.1	-	N.D.			
		341.0 -> 217.0					
7:3FTCA	-	441.0 -> 316.9	-	N.D.			
		441.0 -> 336.9					
EtFOSA	-	526.0 -> 219.0	-	N.D.			
		526.0 -> 169.0					
EtFOSE	-	630.0 -> 58.9	-	N.D.			
		511.9 -> 219.0	-	N.D.			
MeFOSA	-	511.9 -> 169.0					
		616.1 -> 58.9	-	N.D.			
MeFOSE	-	699.1 -> 79.9	-	N.D.			
		699.1 -> 98.8					
PFDoDS	-	295.0 -> 201.0	-	N.D.			
		295.0 -> 84.9					
NFDHA	-	279.0 -> 85.1	-	N.D.			
		229.0 -> 84.9	-	N.D.			
PFMBA	-	314.8 -> 134.9	-	N.D.			
		314.8 -> 82.9					

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



7.5.1
7

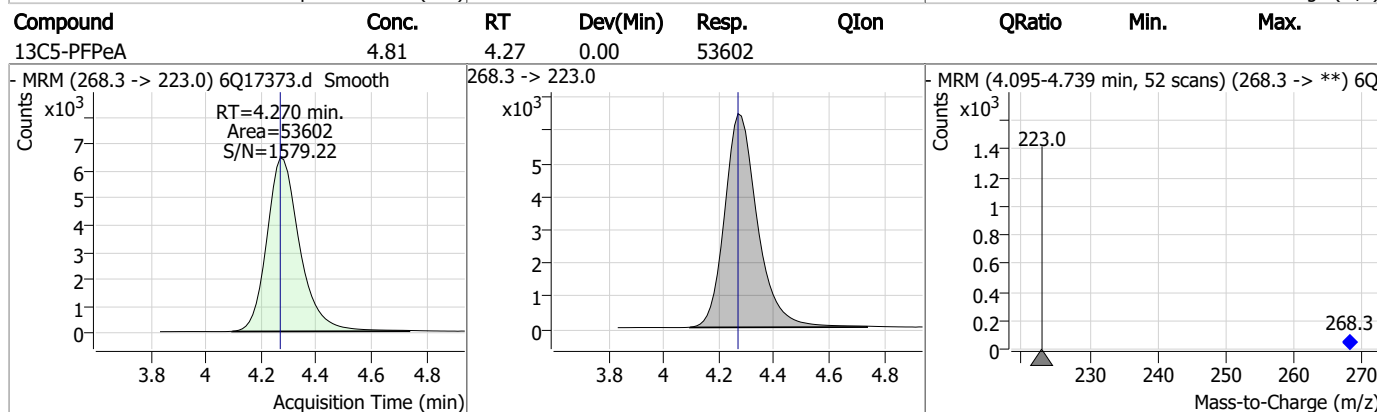
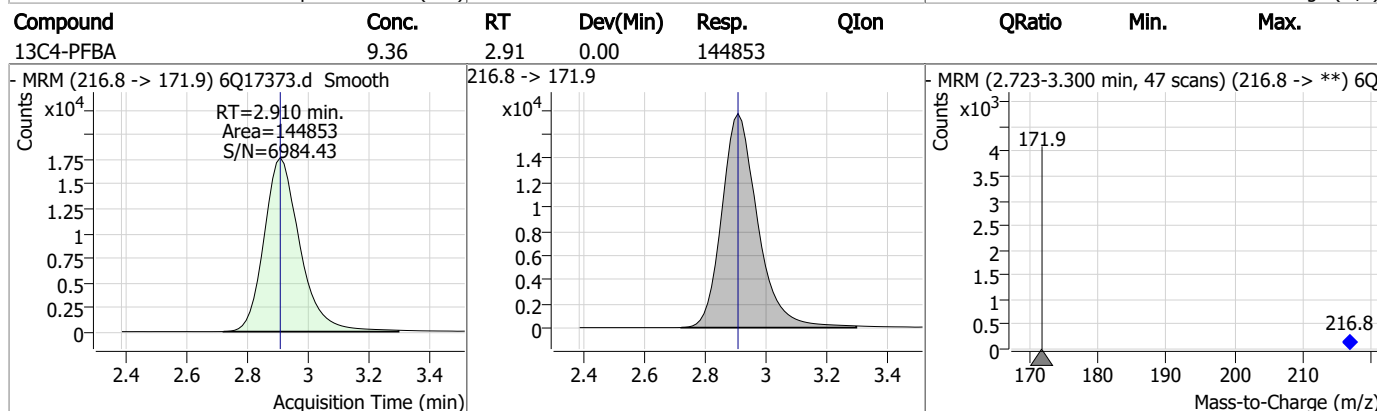
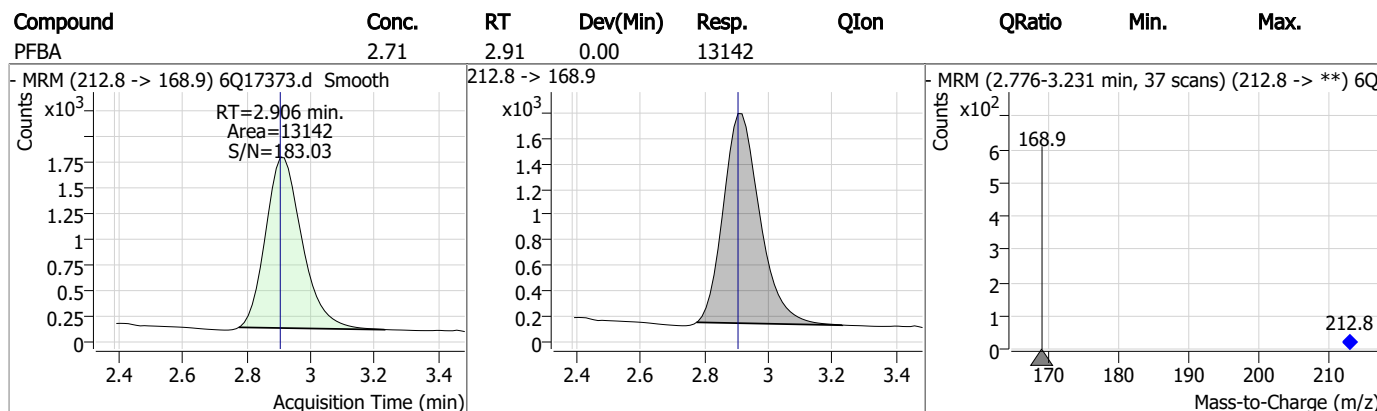
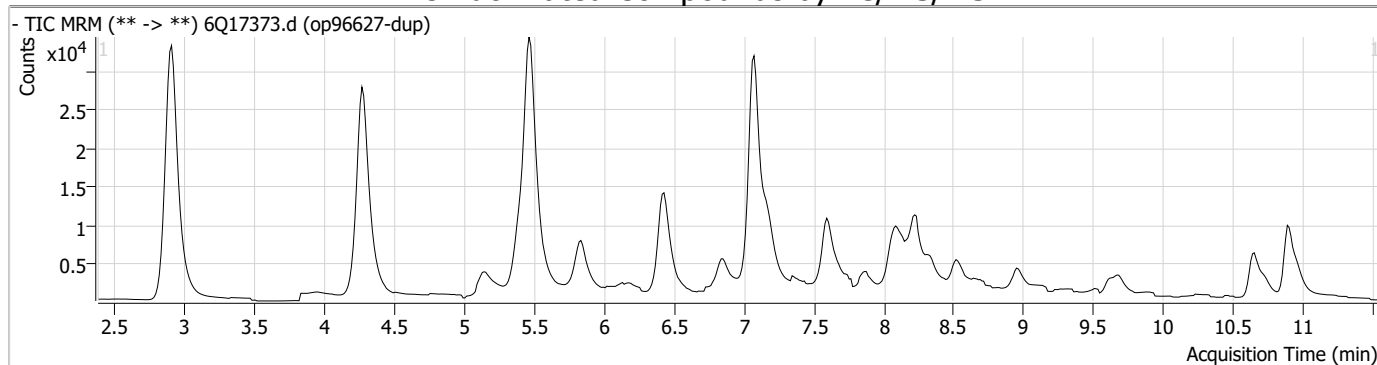
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.5.1

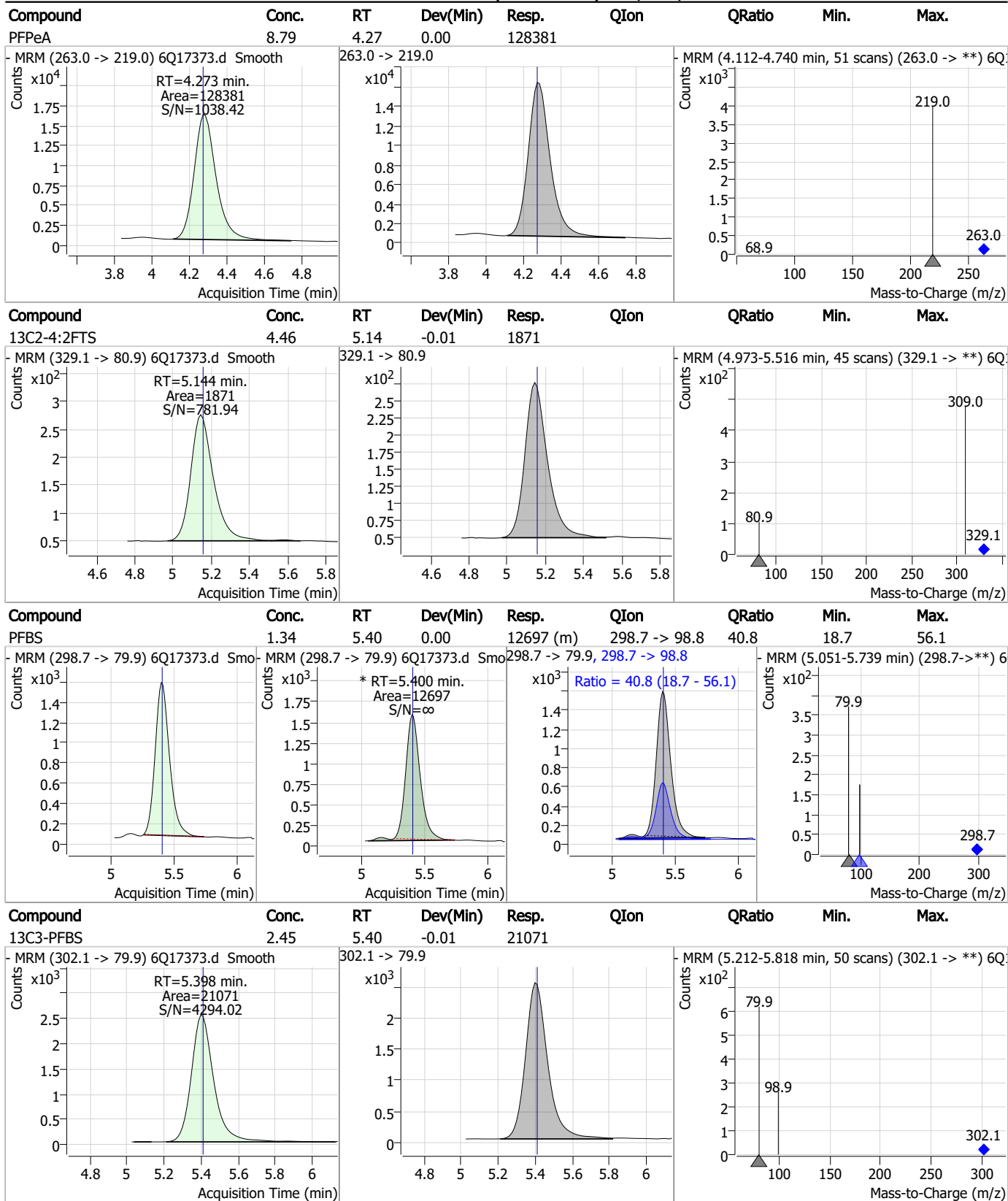
7

Perfluorinated Compounds by LC/MS/MS



7.5.1
7

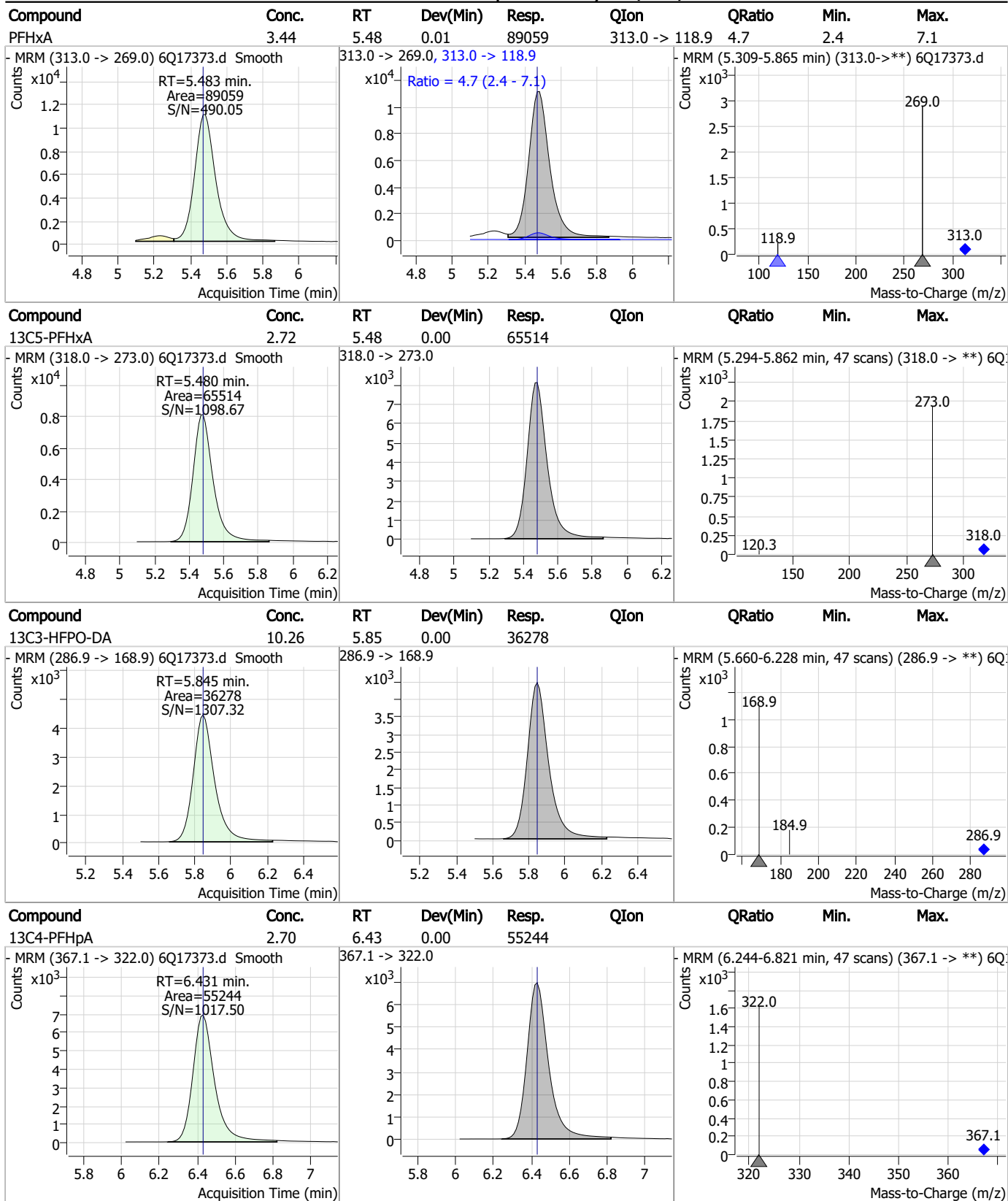
Perfluorinated Compounds by LC/MS/MS



7.5.1
7



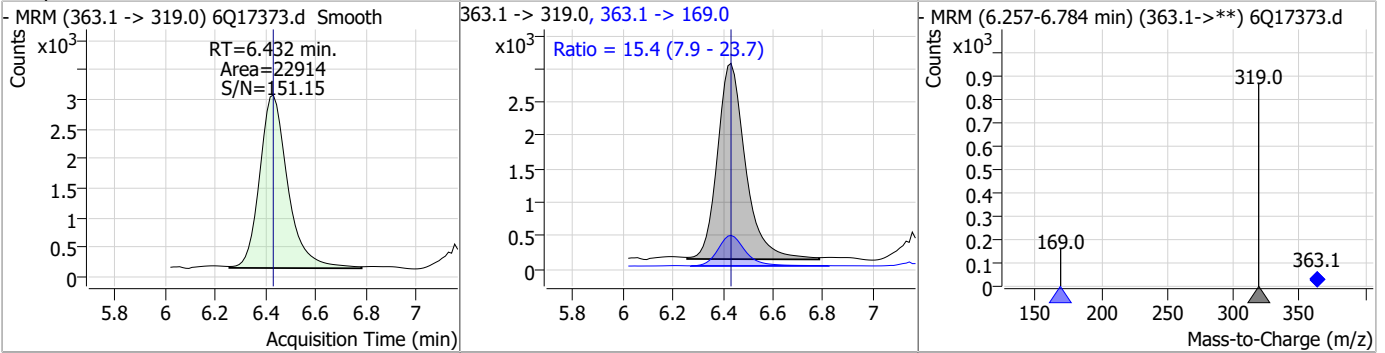
Perfluorinated Compounds by LC/MS/MS



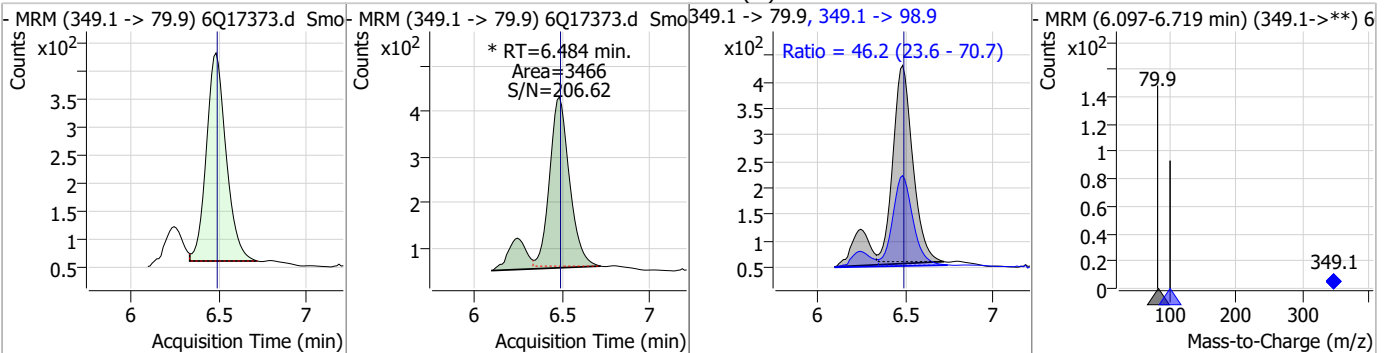
7.5.1
7

Perfluorinated Compounds by LC/MS/MS

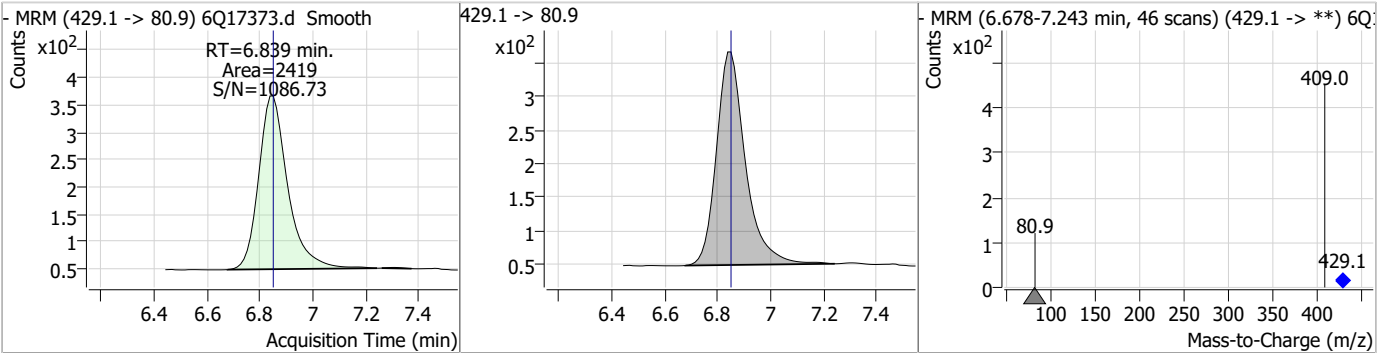
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.84	6.43	0.00	22914	363.1 -> 169.0	15.4	7.9	23.7



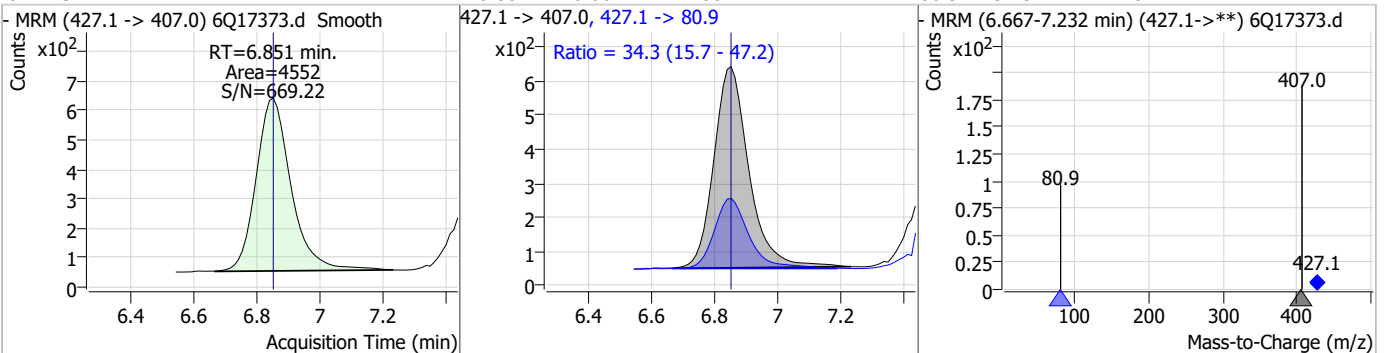
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.51	6.48	0.00	3466 (m)	349.1 -> 98.9	46.2	23.6	70.7



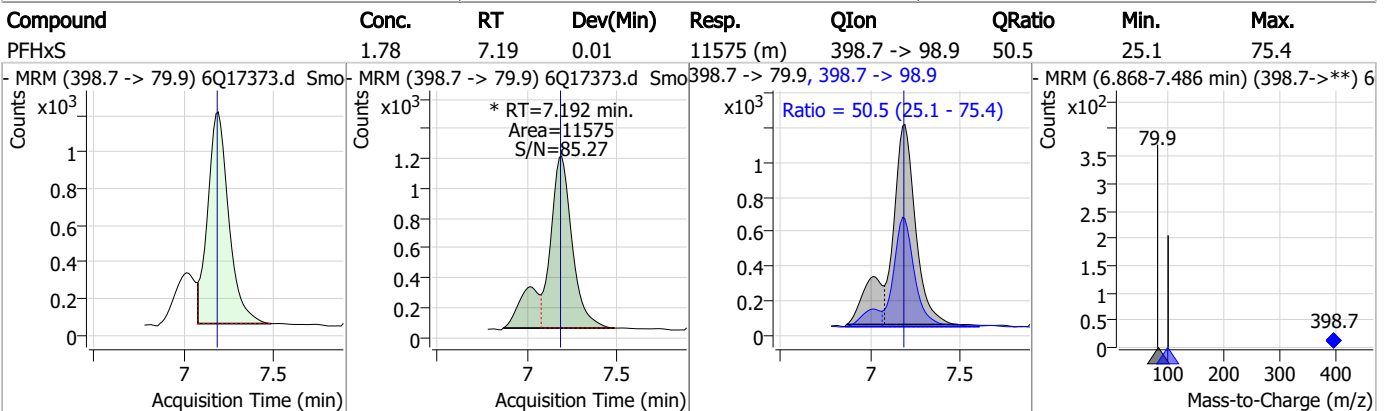
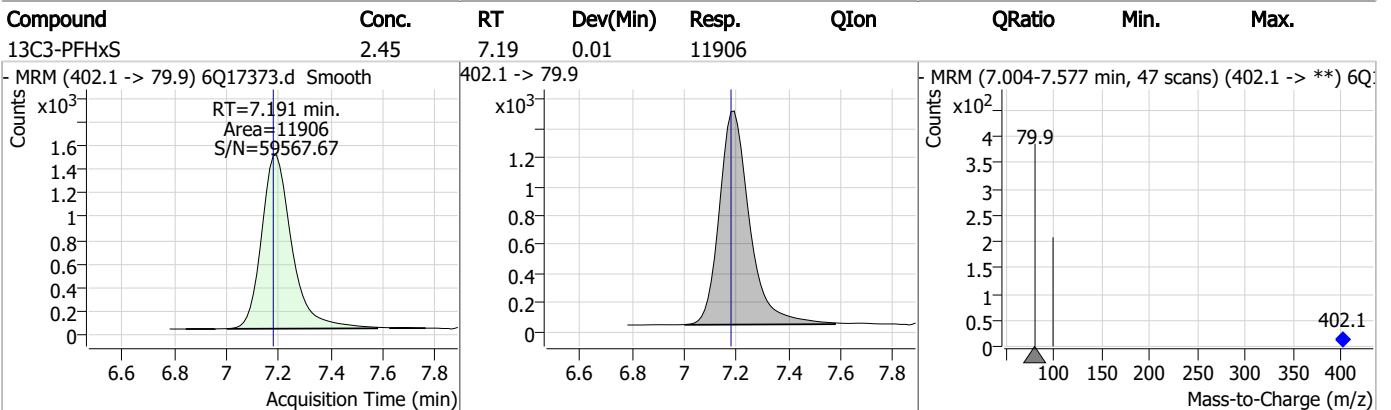
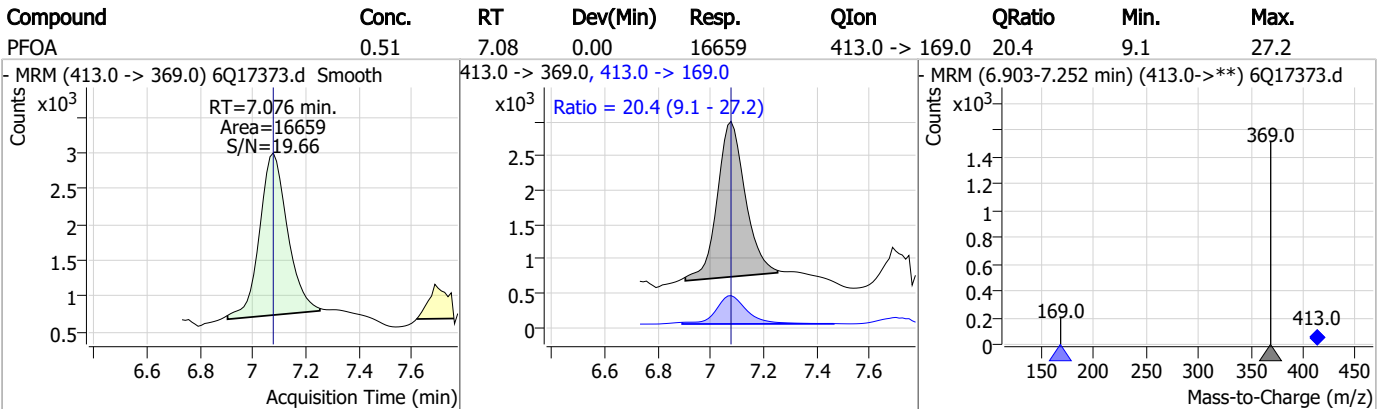
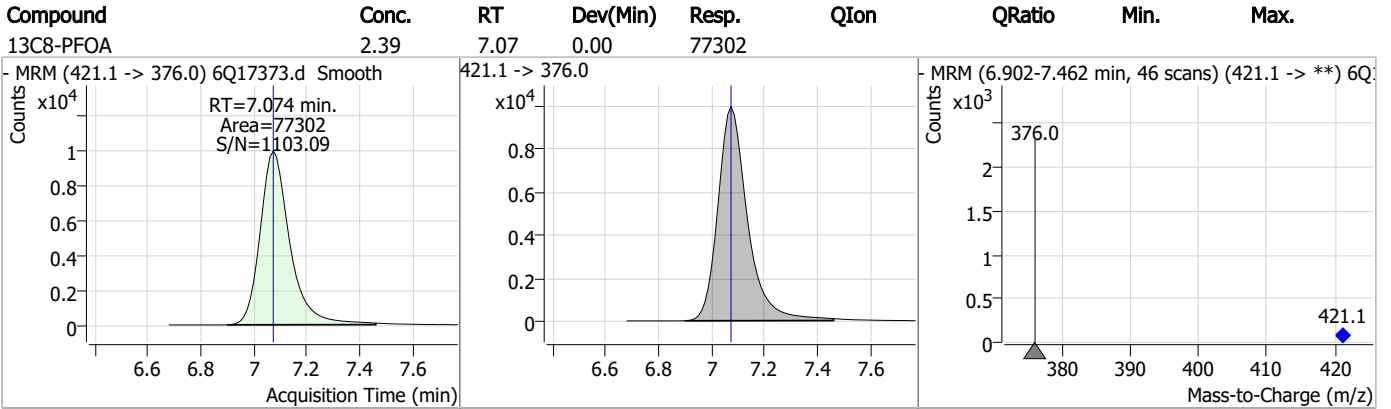
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	4.75	6.84	-0.01	2419				



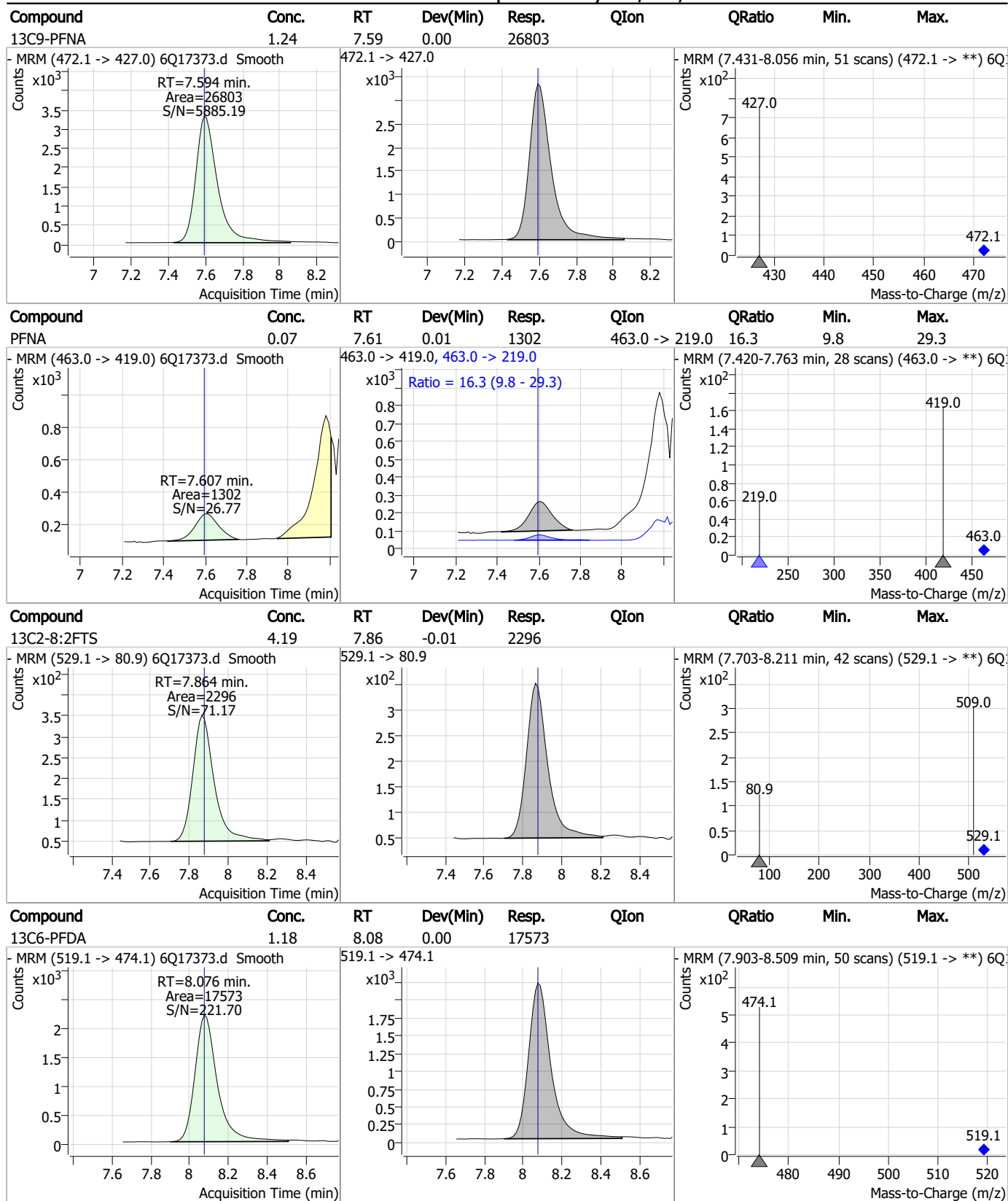
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.71	6.85	0.00	4552	427.1 -> 80.9	34.3	15.7	47.2



Perfluorinated Compounds by LC/MS/MS



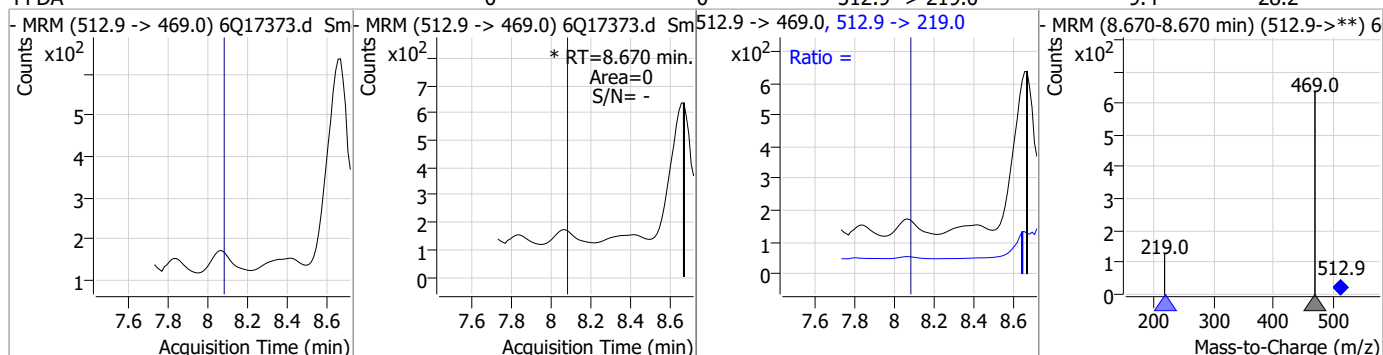
Perfluorinated Compounds by LC/MS/MS



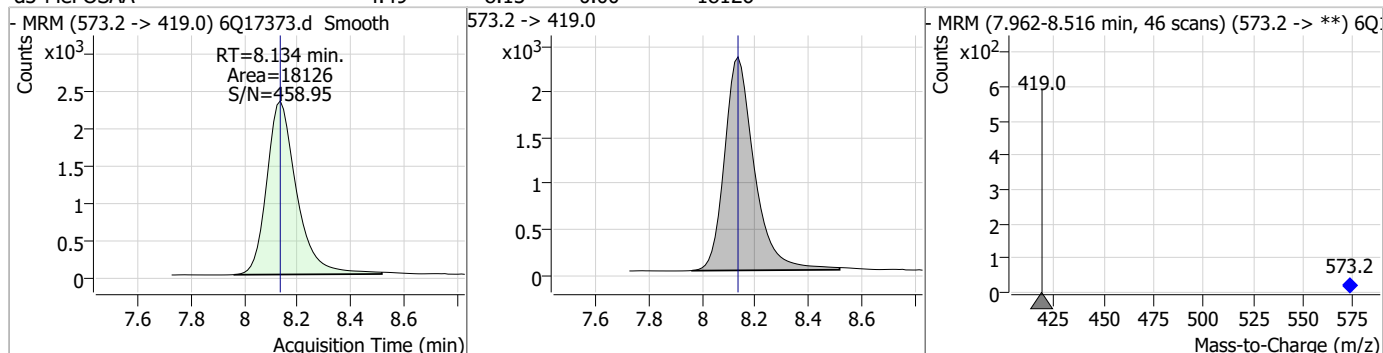
7.5.1
7

Perfluorinated Compounds by LC/MS/MS

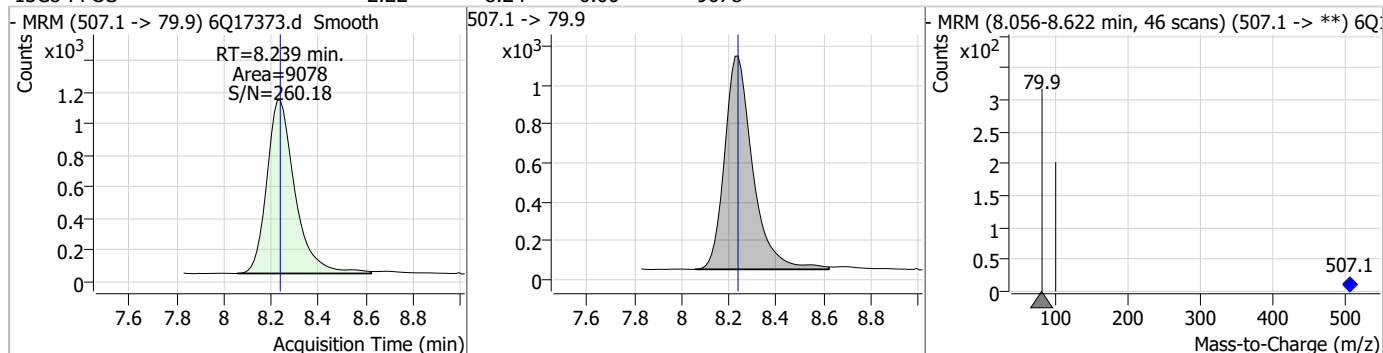
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0	0		0	512.9 -> 219.0		9.4	28.2



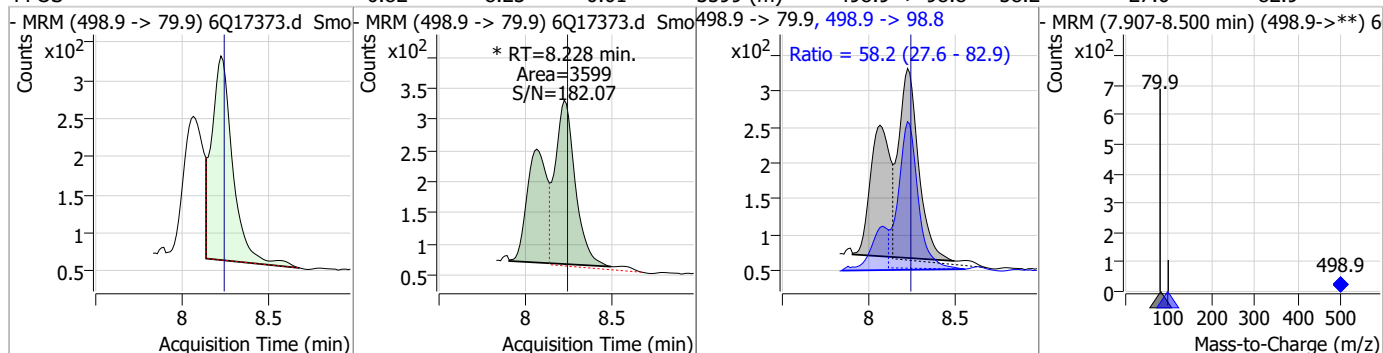
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.49	8.13	0.00	18126				



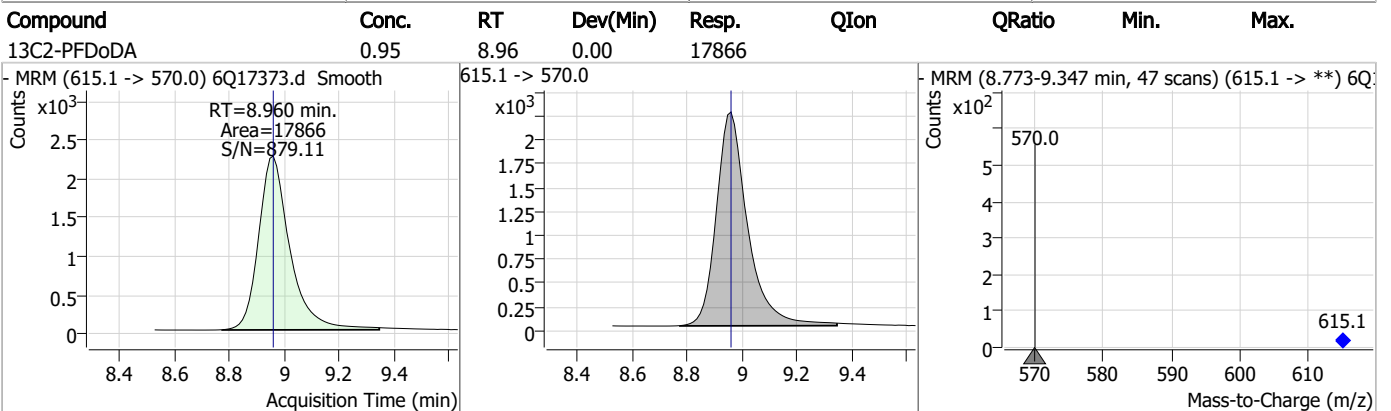
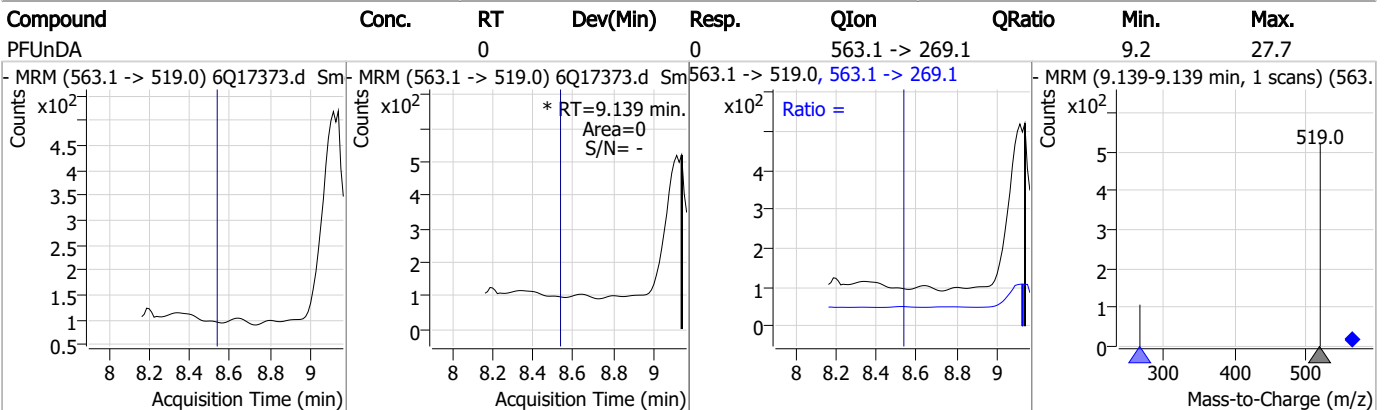
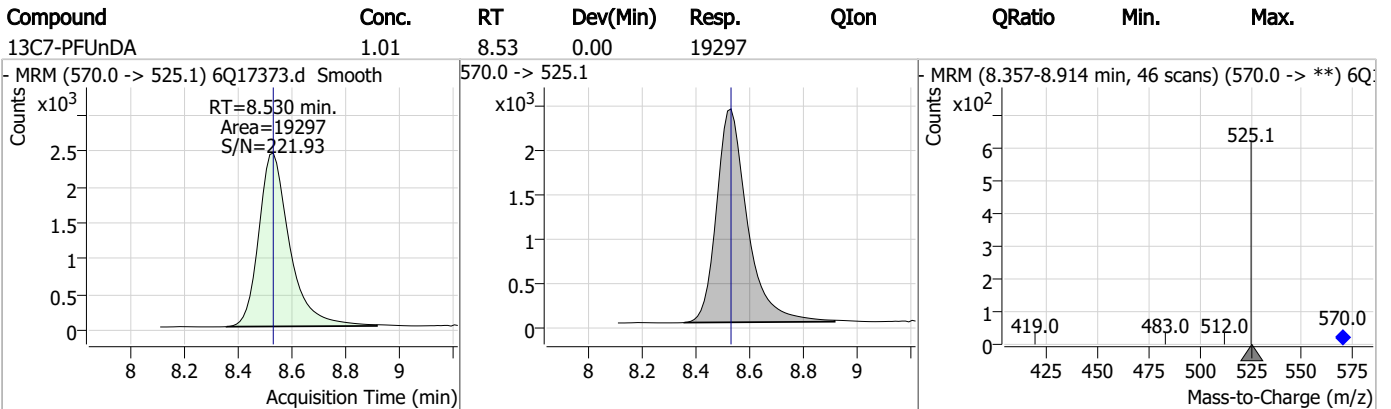
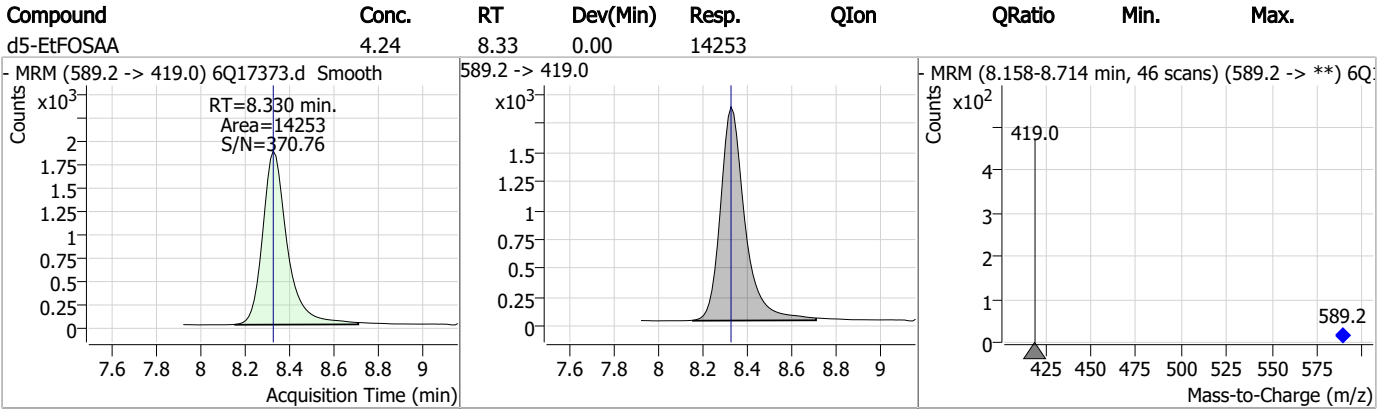
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.22	8.24	0.00	9078				



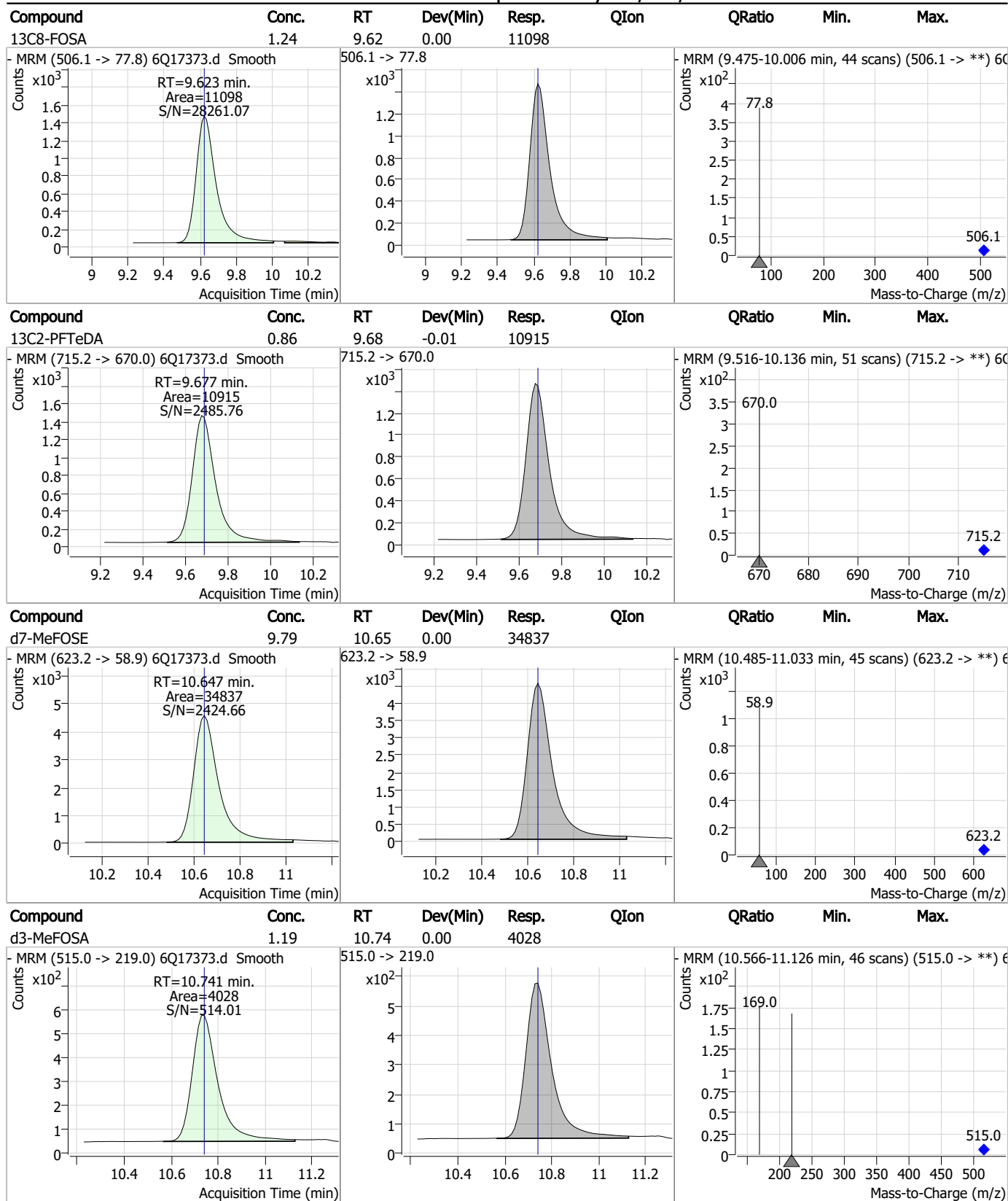
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.82	8.23	-0.01	3599 (m)	498.9 -> 98.8	58.2	27.6	82.9



Perfluorinated Compounds by LC/MS/MS



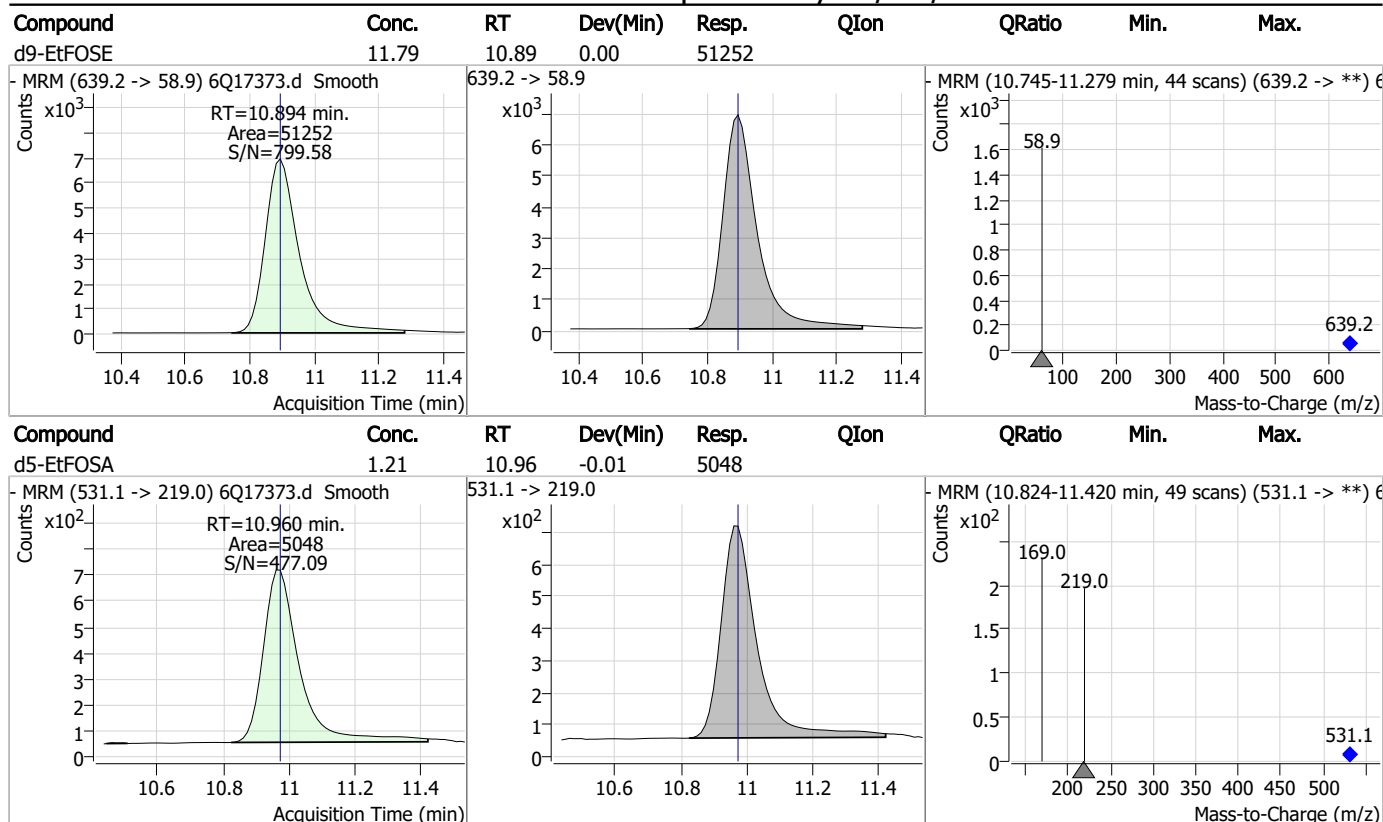
Perfluorinated Compounds by LC/MS/MS



7.5.1

7

Perfluorinated Compounds by LC/MS/MS



7.5.1
7



Manual Integration Approval Summary

Sample Number: OP96627-DUP Method: EPA DRAFT 1633
Lab FileID: 6Q17373.D Analyst approved: 05/03/23 14:27 Martha Valls
Injection Time: 05/03/23 07:23 Supervisor approved: 05/03/23 19:48 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorobutanesulfonic acid	375-73-5		5.40	Split peak
Perfluoropentanesulfonic acid	2706-91-4		6.48	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.19	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.23	Split peak

7.5.1.1

7

Manual Integrations
APPROVED
 (compounds with "m" flag)
 Norman Farmer
 04/30/23 23:39

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17048.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/28/2023 12:06:49 PM
 Sample Name : RT TDCA
 Vial : P1-B3
 DA Method File : TDCA.quantmethod.xml
 Batch Name : s6q258 TDCA.batch.bin
 Sample Information : OP96301,S6Q258,500,,,5.0,1,water

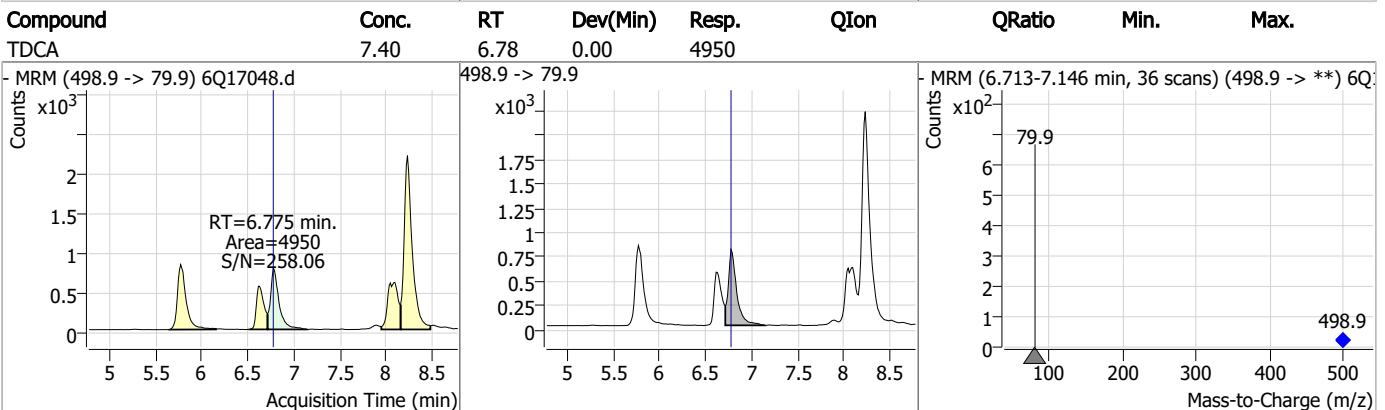
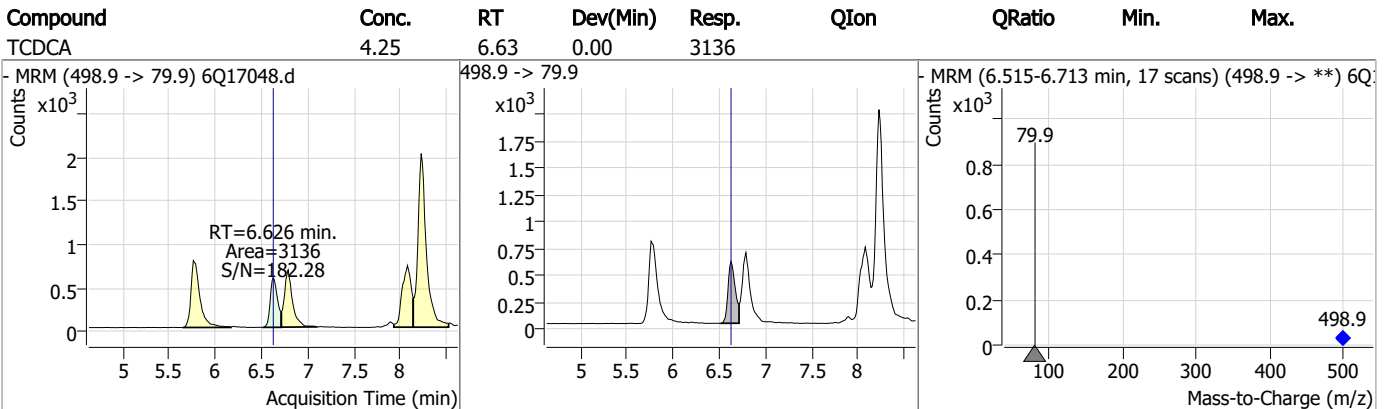
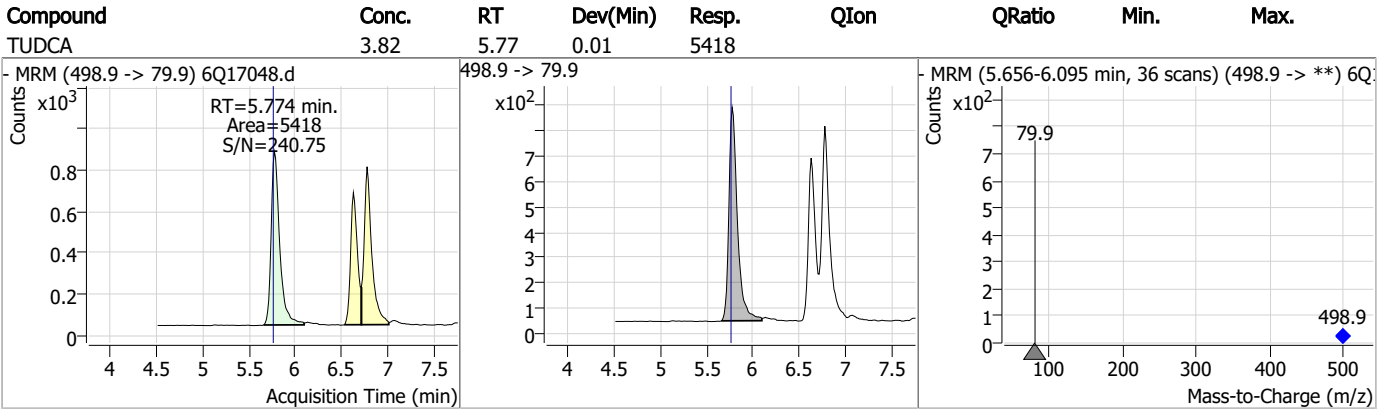
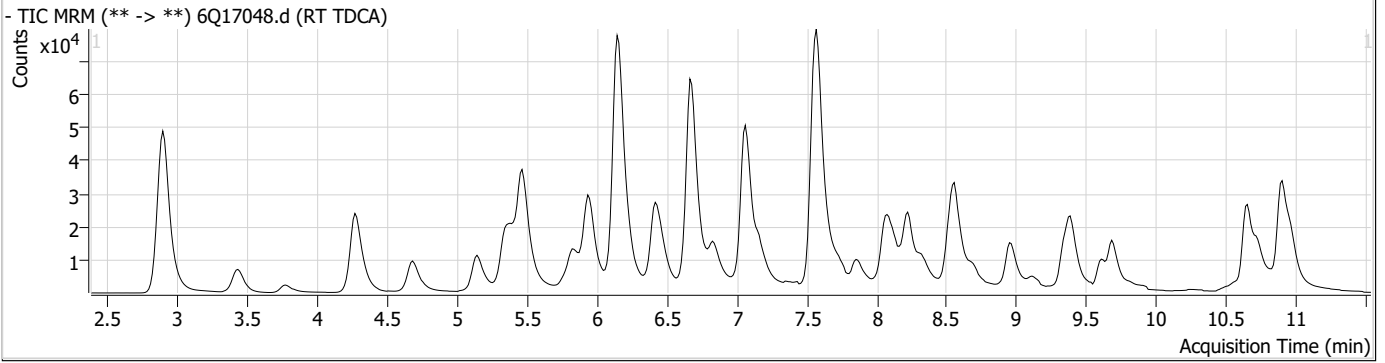
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)	QValue
Internal Standards							
M8-PFOS	8.226	507.1 -> 79.9	16002	2.50	µg/L	-0.012	
13C4-PFOS	8.227	502.8 -> 79.9	20090	2.50	µg/L	-0.012	
System Monitoring Compounds							
13C8-PFOS	8.226	507.1 -> 79.9	16002	2.02	µg/L	-0.012	
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 80.8%				
Target Compounds							
PFOS	8.228	498.9 -> 79.9 498.9 -> 98.8	16996 8673	3.11	µg/L m		82
TCDCa	6.626	498.9 -> 79.9	3136	4.25	ng/ml		100
TDCA	6.775	498.9 -> 79.9	4950	7.40	ng/ml		100
TUDCA	5.774	498.9 -> 79.9	5418	3.82	ng/ml		100

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

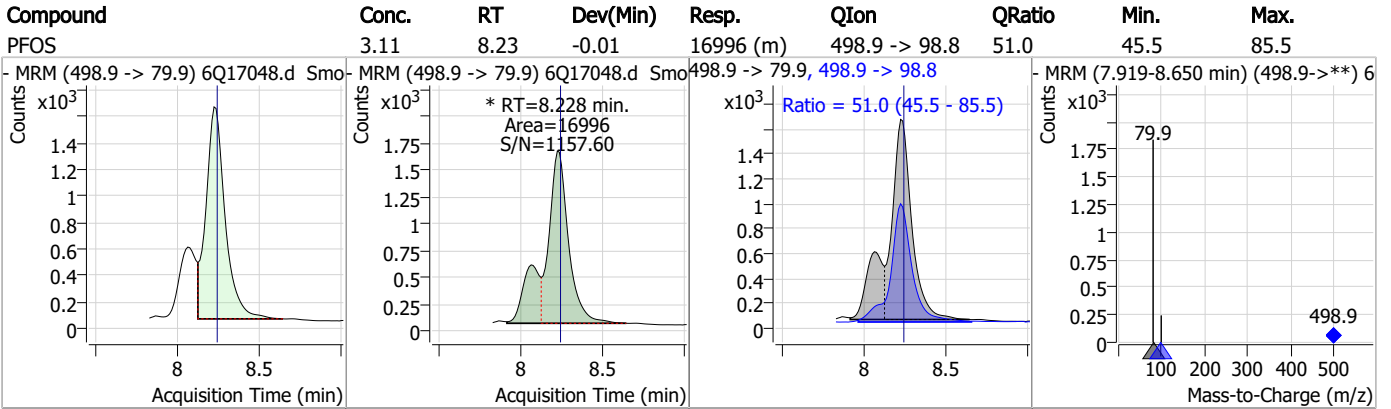
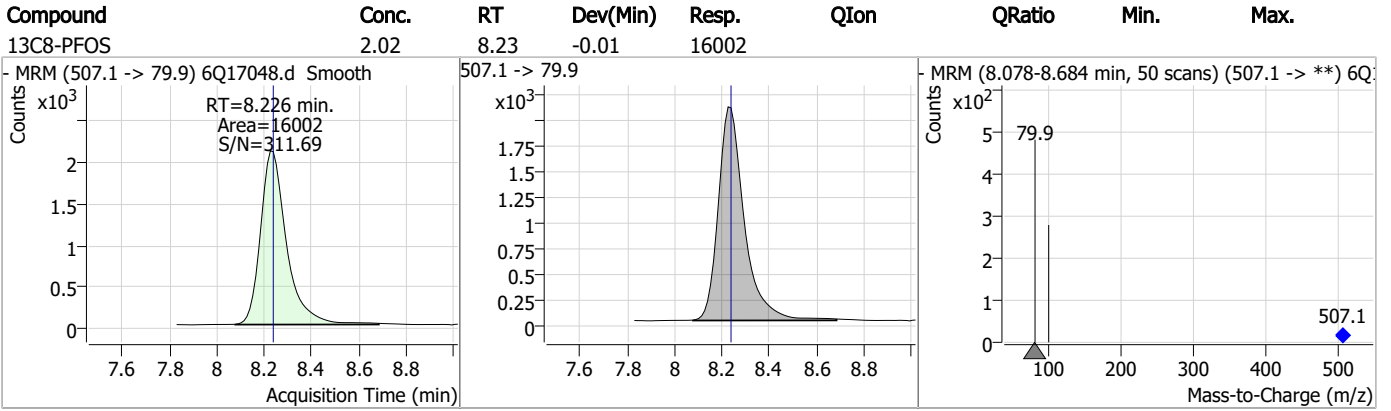
7.6.1
7



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.6.1
7



Manual Integration Approval Summary

Sample Number: S6Q258-RT Method: EPA DRAFT 1633
Lab FileID: 6Q17048.D Analyst approved: 04/30/23 23:33 Natasha Gumtie
Injection Time: 04/28/23 12:06 Supervisor approved: 04/30/23 23:39 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.23	Split peak

7.6.1.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17049.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/28/2023 12:21:19 PM
 Sample Name : RT BR-LN
 Vial : P1-B4
 DA Method File : 1633_042823_S6Q258.quantmethod.xml
 Batch Name : s6q258.batch.bin
 Sample Information : OP96301,S6Q258,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.910	216.8 -> 171.9	171083	10.00 µg/L	0.012
M5-PFPeA	4.270	268.3 -> 223.0	62201	5.00 µg/L	0.000
M5-PFHxA	5.468	318.0 -> 273.0	64326	2.50 µg/L	0.000
M4-PFHpA	6.419	367.1 -> 322.0	57751	2.50 µg/L	0.000
M8-PFOA	7.074	421.1 -> 376.0	79741	2.50 µg/L	0.012
M9-PFNA	7.594	472.1 -> 427.0	25663	1.25 µg/L	0.000
M6-PFDA	8.076	519.1 -> 474.1	20362	1.25 µg/L	0.000
M7-PFUnDA	8.530	570.0 -> 525.1	26150	1.25 µg/L	0.000
M2-PFDoDA	8.960	615.1 -> 570.0	25196	1.25 µg/L	0.000
M2-PFTeDA	9.689	715.2 -> 670.0	17054	1.25 µg/L	0.000
M8-FOSA	9.623	506.1 -> 77.8	24114	2.50 µg/L	0.000
M3-PFBS	5.398	302.1 -> 79.9	22749	2.50 µg/L	0.000
M3-PFHxS	7.179	402.1 -> 79.9	11896	2.50 µg/L	0.000
M8-PFOS	8.239	507.1 -> 79.9	10763	2.50 µg/L	0.000
M2-4:2FTS	5.157	329.1 -> 80.9	2117	5.00 µg/L	0.012
M2-6:2FTS	6.839	429.1 -> 80.9	2602	5.00 µg/L	0.000
M2-8:2FTS	7.864	529.1 -> 80.9	2983	5.00 µg/L	0.000
M3-MeFOSAA	8.134	573.2 -> 419.0	19657	5.00 µg/L	0.000
M3-HFPO-DA	5.845	286.9 -> 168.9	39060	10.00 µg/L	0.000
M5-EtFOSAA	8.330	589.2 -> 419.0	18274	5.00 µg/L	0.000
M7-MeFOSE	10.647	623.2 -> 58.9	89275	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	110708	25.00 µg/L	0.000
M5-EtFOSA	10.960	531.1 -> 219.0	10680	2.50 µg/L	-0.012
M3-MeFOSA	10.728	515.0 -> 219.0	9461	2.50 µg/L	0.000
13C4-PFOS	8.239	502.8 -> 79.9	14092	2.50 µg/L	0.000
13C3-PFBA	2.902	216.0 -> 172.0	75322	5.00 µg/L	0.000
18O2-PFHxS	7.177	403.0 -> 83.9	9185	2.50 µg/L	0.000
13C4-PFOA	7.063	417.1 -> 372.0	83641	2.50 µg/L	0.000
13C2-PFDA	8.076	515.1 -> 470.1	22953	1.25 µg/L	0.000
13C5-PFNA	7.595	468.0 -> 423.0	26302	1.25 µg/L	0.000
13C2-PFHxA	5.469	315.1 -> 270.0	55131	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.157	329.1 -> 80.9	2117	5.01 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.3%		
13C2-6:2FTS	6.839	429.1 -> 80.9	2602	5.08 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.6%		
13C2-8:2FTS	7.864	529.1 -> 80.9	2983	5.41 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.2%		
13C2-PFDoDA	8.960	615.1 -> 570.0	25196	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.5%		
13C2-PFTeDA	9.689	715.2 -> 670.0	17054	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.6%		
13C3-PFBS	5.398	302.1 -> 79.9	22749	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.3%		
13C3-PFHxS	7.179	402.1 -> 79.9	11896	2.43 µg/L	0.000



7.6.2
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.3%	
13C4-PFBA	2.910	216.8 -> 171.9	171083	9.83 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.3%	
13C4-PFHpA	6.419	367.1 -> 322.0	57751	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C5-PFHxA	5.468	318.0 -> 273.0	64326	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.8%	
13C5-PFPeA	4.270	268.3 -> 223.0	62201	5.05 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C6-PFDA	8.076	519.1 -> 474.1	20362	1.34 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.6%	
13C7-PFUnDA	8.530	570.0 -> 525.1	26150	1.35 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.9%	
13C8-FOSA	9.623	506.1 -> 77.8	24114	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.5%	
13C8-PFOA	7.074	421.1 -> 376.0	79741	2.47 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.8%	
13C8-PFOS	8.239	507.1 -> 79.9	10763	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.4%	
13C9-PFNA	7.594	472.1 -> 427.0	25663	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.4%	
d3-MeFOSAA	8.134	573.2 -> 419.0	19657	4.68 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.6%	
13C3-HFPO-DA	5.845	286.9 -> 168.9	39060	10.01 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
d3-MeFOSA	10.728	515.0 -> 219.0	9461	2.69 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.5%	
d5-EtFOSAA	8.330	589.2 -> 419.0	18274	5.24 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.7%	
d7-MeFOSE	10.647	623.2 -> 58.9	89275	24.14 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.6%	
d9-EtFOSE	10.894	639.2 -> 58.9	110708	24.50 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.0%	
d5-EtFOSA	10.960	531.1 -> 219.0	10680	2.47 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.9%	
Target Compounds					QValue
4:2FTS	5.145	327.1 -> 307.0	161089	50.29 µg/L	100
		327.1 -> 80.9	59753		
6:2FTS	6.839	427.1 -> 407.0	144708	50.55 µg/L	95
		427.1 -> 80.9	47633		
8:2FTS	7.865	527.1 -> 507.0	85122	47.96 µg/L	99
		527.1 -> 80.8	35097		
EtFOSAA	8.331	584.2 -> 419.1	41169	13.26 µg/L	99
		584.2 -> 526.0	21718		
FOSA	9.614	498.1 -> 77.9	277513	32.12 µg/L	99
		498.1 -> 478.0	7576		
MeFOSAA	8.136	570.1 -> 419.0	54891	14.87 µg/L	89
		570.1 -> 483.0	10430		
PFBA	2.906	212.8 -> 168.9	313891	54.71 µg/L	100
PFBS	5.400	298.7 -> 79.9	115522	11.32 µg/L	96
		298.7 -> 98.8	44913		
PFDA	8.077	512.9 -> 469.0	309357	13.98 µg/L	100
		512.9 -> 219.0	51661		
PFDoDA	8.961	613.1 -> 569.0	267403	13.54 µg/L	99
		613.1 -> 319.0	37690		
PFDS	9.125	599.0 -> 79.9	45824	13.36 µg/L	98

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
PFHpA	6.420	599.0 -> 98.8	23398	13.30 µg/L	98
		363.1 -> 319.0	379066		
PFHpS	7.734	363.1 -> 169.0	58738	13.09 µg/L	95
		449.0 -> 79.9	76363		
PFHxA	5.470	449.0 -> 98.9	36076	14.33 µg/L	99
		313.0 -> 269.0	364382		
PFHxS	7.180	313.0 -> 118.9	16079	10.74 µg/L	98
		398.7 -> 79.9	69625		
PFNA	7.583	398.7 -> 98.9	34896	15.37 µg/L	100
		463.0 -> 419.0	272781		
PFNS	8.694	463.0 -> 219.0	56502	13.37 µg/L	100
		548.8 -> 79.9	69480		
PFOA	7.063	548.8 -> 98.9	38403	26.58 µg/L	99
		413.0 -> 369.0	1020780		
PFOS	8.240	413.0 -> 169.0	172403	10.43 µg/L	98
		498.9 -> 79.9	54204		
PFPeA	4.273	498.9 -> 98.8	34321	26.99 µg/L	100
		263.0 -> 219.0	457335		
PFPeS	6.484	349.1 -> 79.9	84715	12.51 µg/L	98
		349.1 -> 98.9	40297		
PFTeDA	9.690	713.1 -> 669.0	236649	13.73 µg/L	99
		713.1 -> 168.9	17343		
PFTrDA	9.345	663.0 -> 619.0	304546	13.93 µg/L	99
		663.0 -> 168.9	26425		
PFUnDA	8.531	563.1 -> 519.0	226163	12.47 µg/L	99
		563.1 -> 269.1	40725		
11Cl-PF3OUdS	9.398	630.9 -> 450.9	349446	26.07 µg/L	98
		632.9 -> 452.9	107433		
9Cl-PF3ONS	8.569	530.8 -> 351.0	553273	26.10 µg/L	98
		532.8 -> 353.0	171603		
ADONA	6.681	376.9 -> 250.9	1485563	25.18 µg/L	98
		376.9 -> 84.8	397204		
HFPO-DA	5.846	284.9 -> 168.9	96123	25.98 µg/L	98
		284.9 -> 184.9	12798		
3:3FTCA	3.784	241.0 -> 177.0	70658	66.70 µg/L	97
		241.0 -> 117.0	8689		
5:3FTCA	6.160	341.0 -> 237.1	1422375	345.57 µg/L	97
		341.0 -> 217.0	991188		
7:3FTCA	7.573	441.0 -> 316.9	673865	360.39 µg/L	95
		441.0 -> 336.9	1403411		
EtFOSA	10.962	526.0 -> 219.0	208567	47.51 µg/L	91
		526.0 -> 169.0	275120		
EtFOSE	10.907	630.0 -> 58.9	410058	88.94 µg/L	100
		511.9 -> 219.0	184326		
MeFOSA	10.730	511.9 -> 169.0	251723	43.29 µg/L	99
		616.1 -> 58.9	369093		
MeFOSE	10.661	699.1 -> 79.9	23237	92.70 µg/L	100
		699.1 -> 98.8	12700		
PFDoDS	9.817	295.0 -> 201.0	74421	13.10 µg/L	97
		295.0 -> 84.9	19459		
NFDHA	5.350	279.0 -> 85.1	309902	27.00 µg/L	96
		229.0 -> 84.9	228374		
PFMBA	4.687	314.8 -> 134.9	813277	27.27 µg/L	100
		314.8 -> 82.9	26166		
PFMPA	3.438			26.93 µg/L	100
PFEESA	5.937			25.34 µg/L	99

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

7.6.2
7

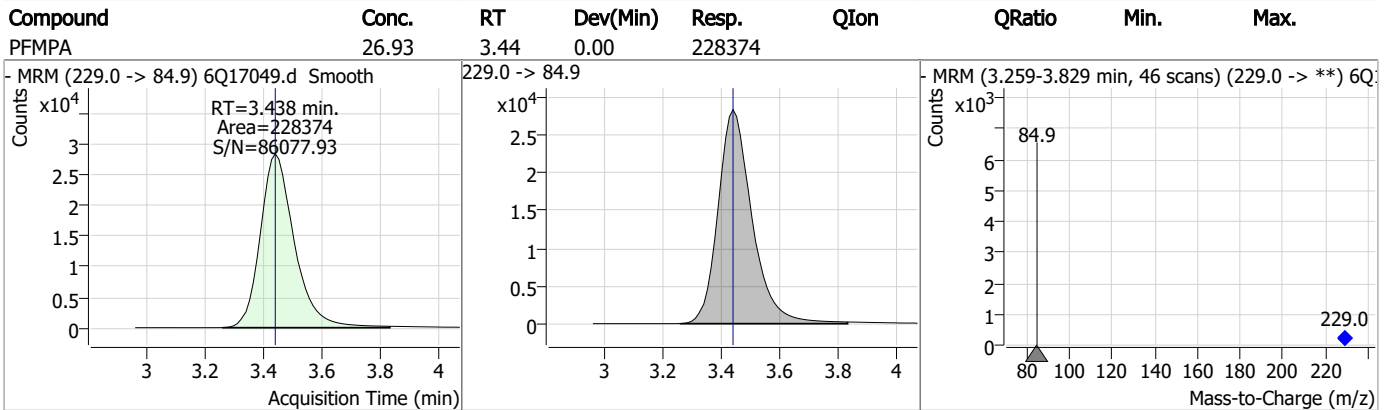
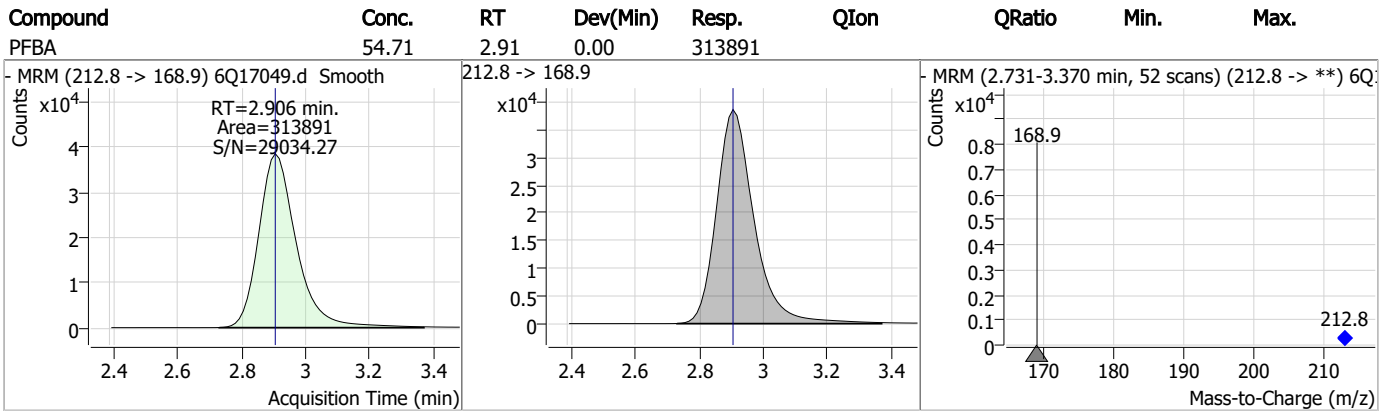
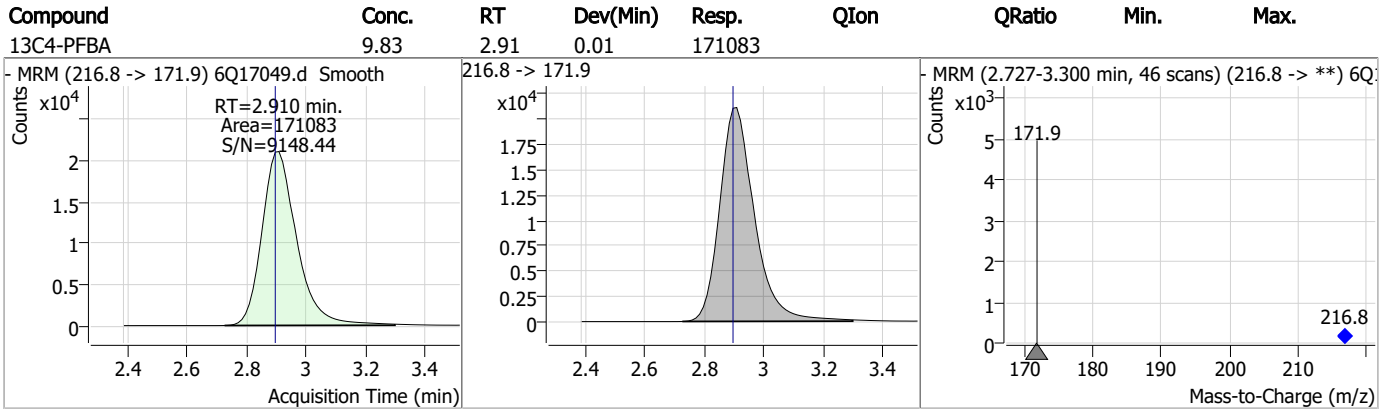
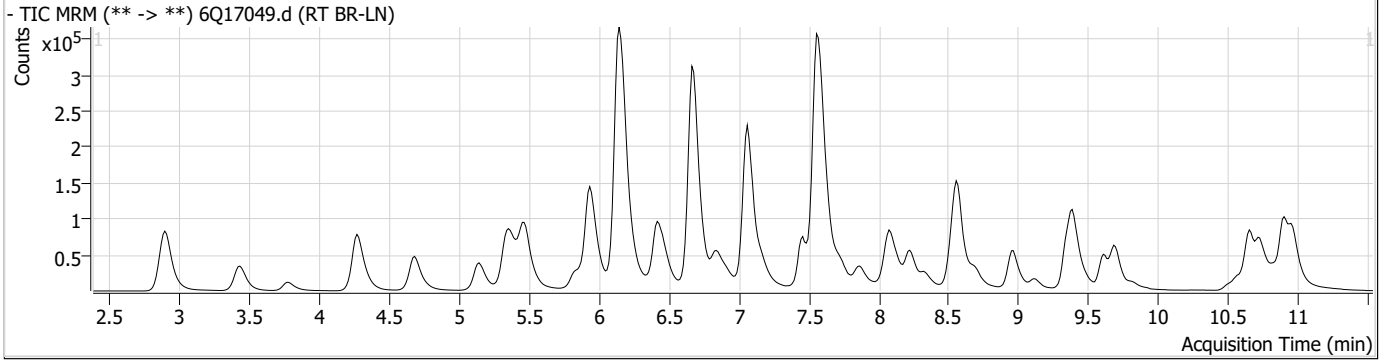
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.6.2

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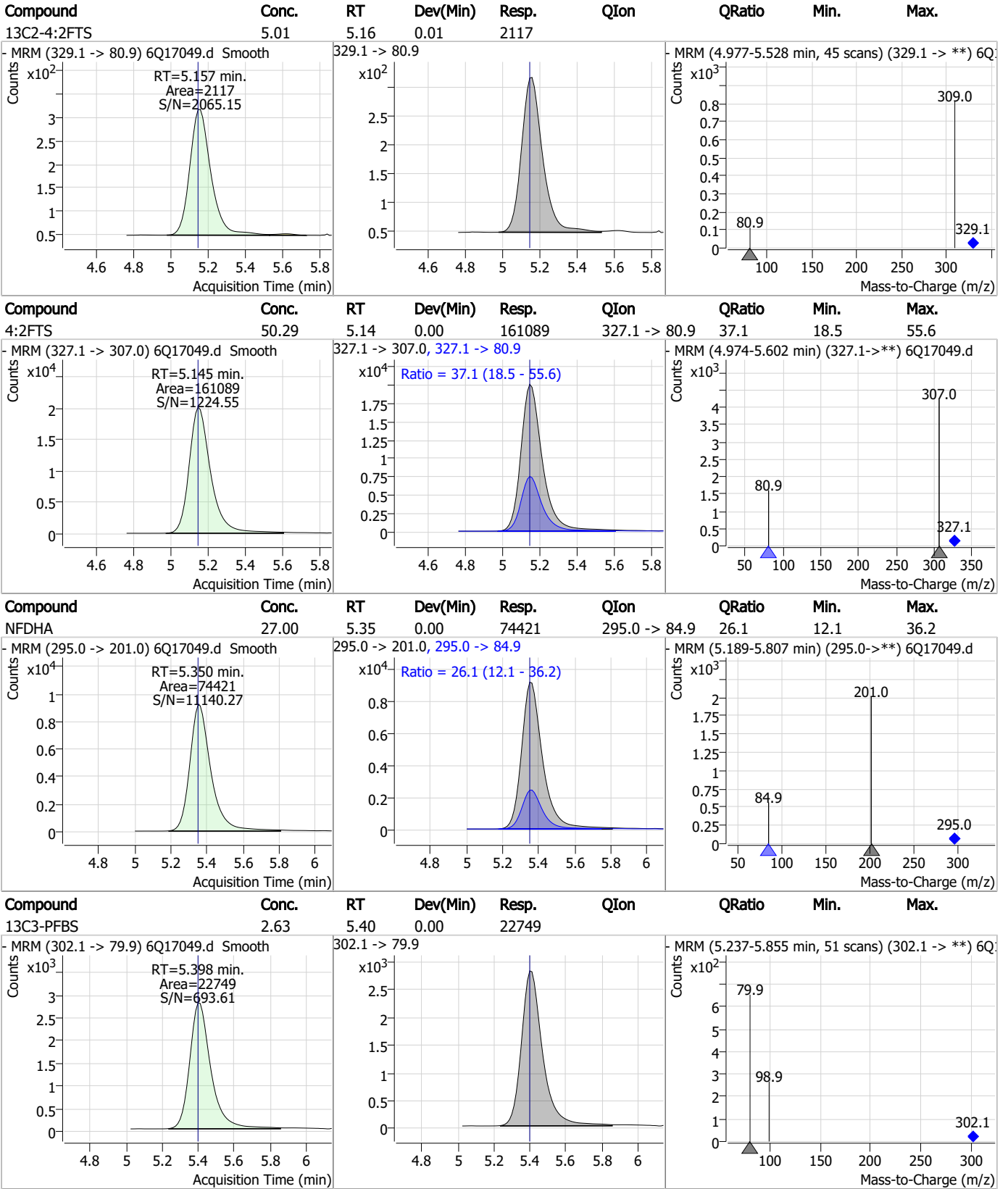
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

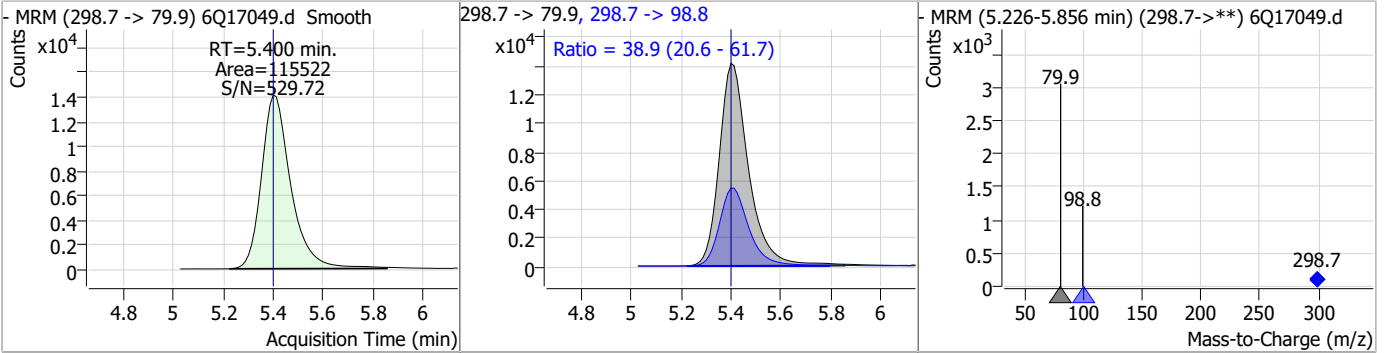
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	66.70	3.78	0.00	70658	241.0 -> 117.0	12.3	6.7	20.0
13C5-PFPeA	5.05	4.27	0.00	62201	268.3 -> 223.0	-	-	-
PFPeA	26.99	4.27	0.00	457335	263.0 -> 219.0	-	-	-
PFMBA	27.27	4.69	0.00	309902	279.0 -> 85.1	-	-	-

Perfluorinated Compounds by LC/MS/MS

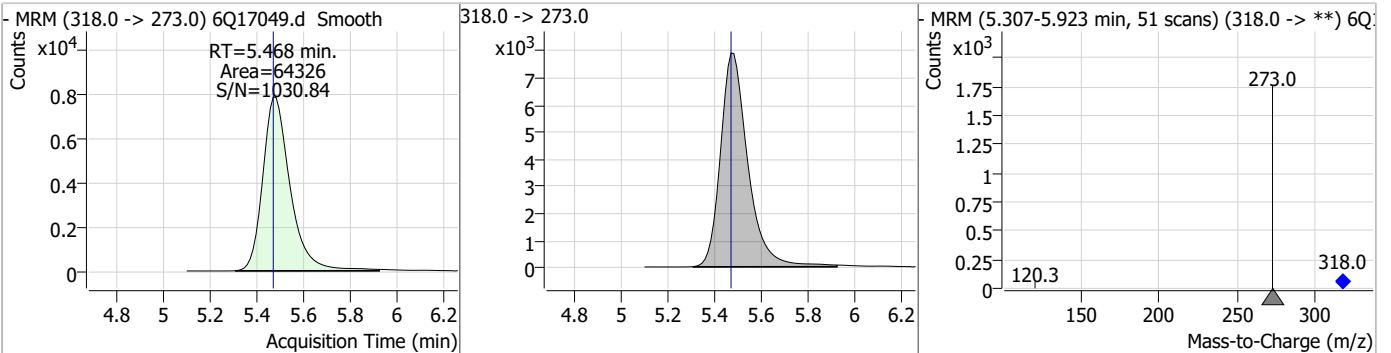


Perfluorinated Compounds by LC/MS/MS

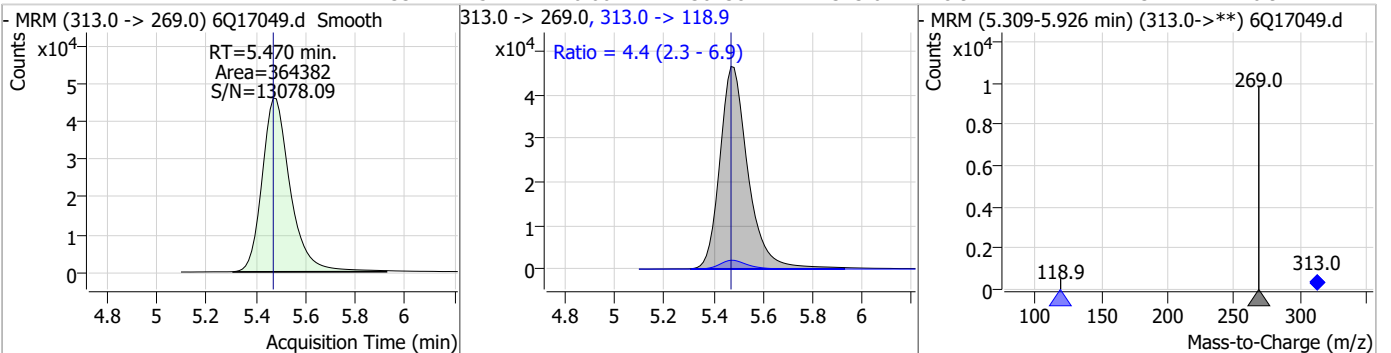
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	11.32	5.40	0.00	115522	298.7 -> 98.8	38.9	20.6	61.7



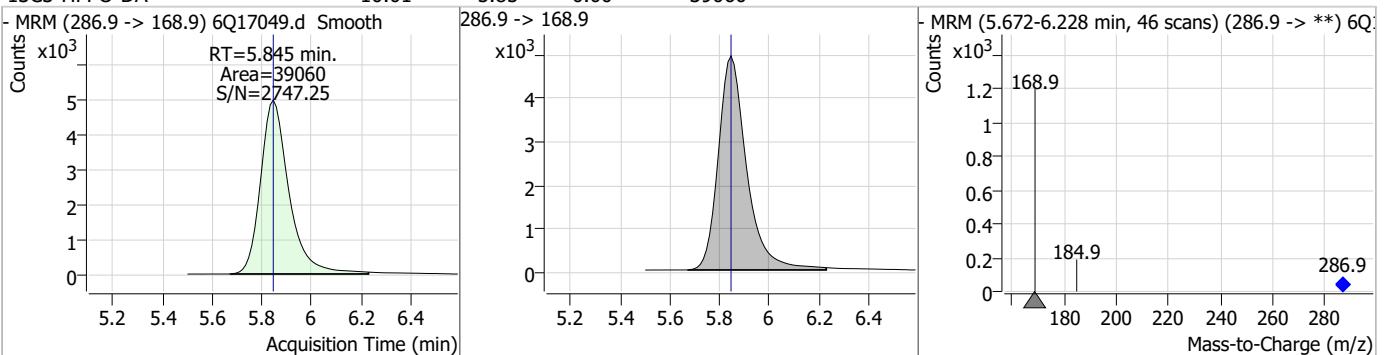
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.42	5.47	0.00	64326				



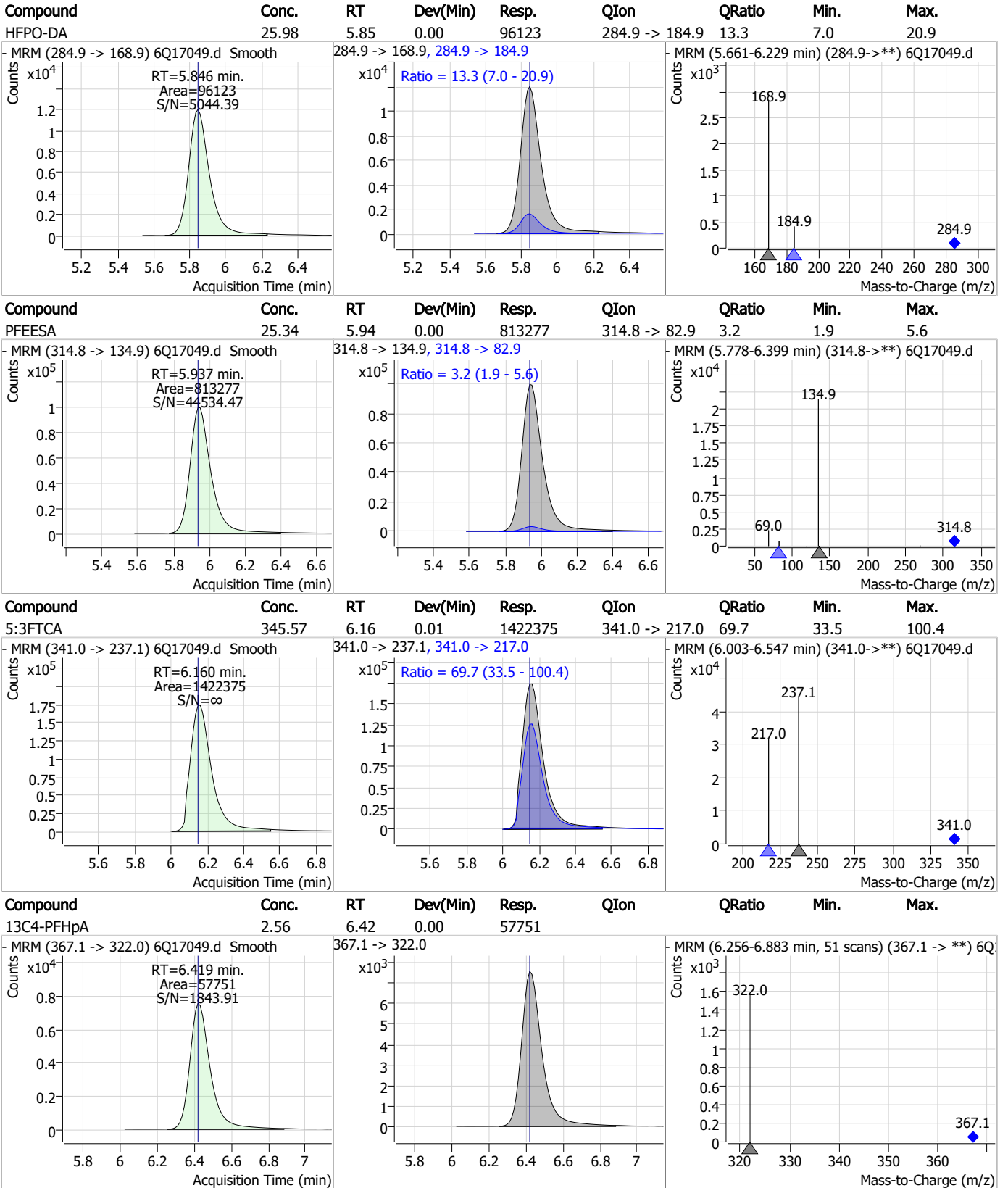
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	14.33	5.47	0.00	364382	313.0 -> 118.9	4.4	2.3	6.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.01	5.85	0.00	39060				



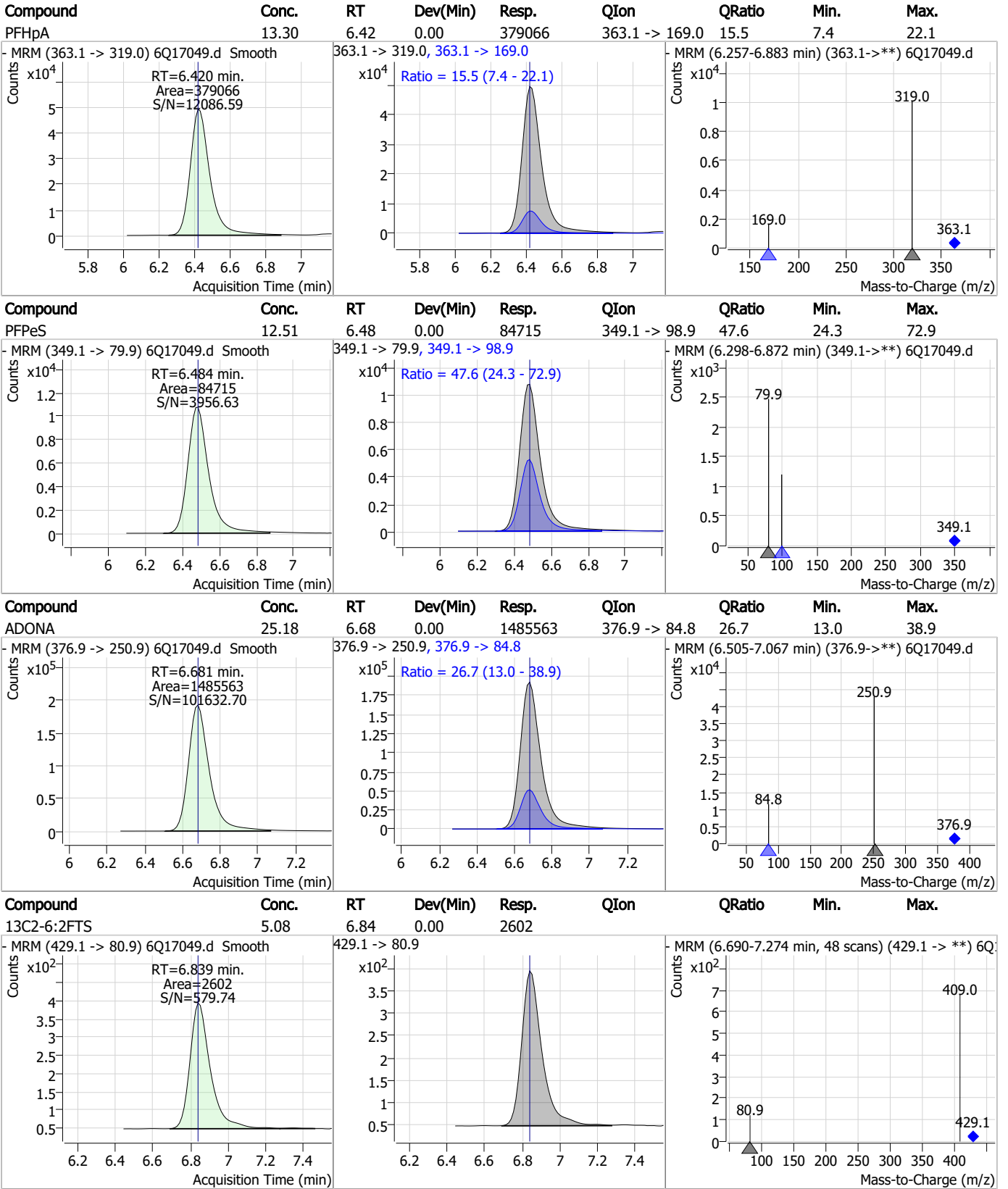
Perfluorinated Compounds by LC/MS/MS



7.6.2

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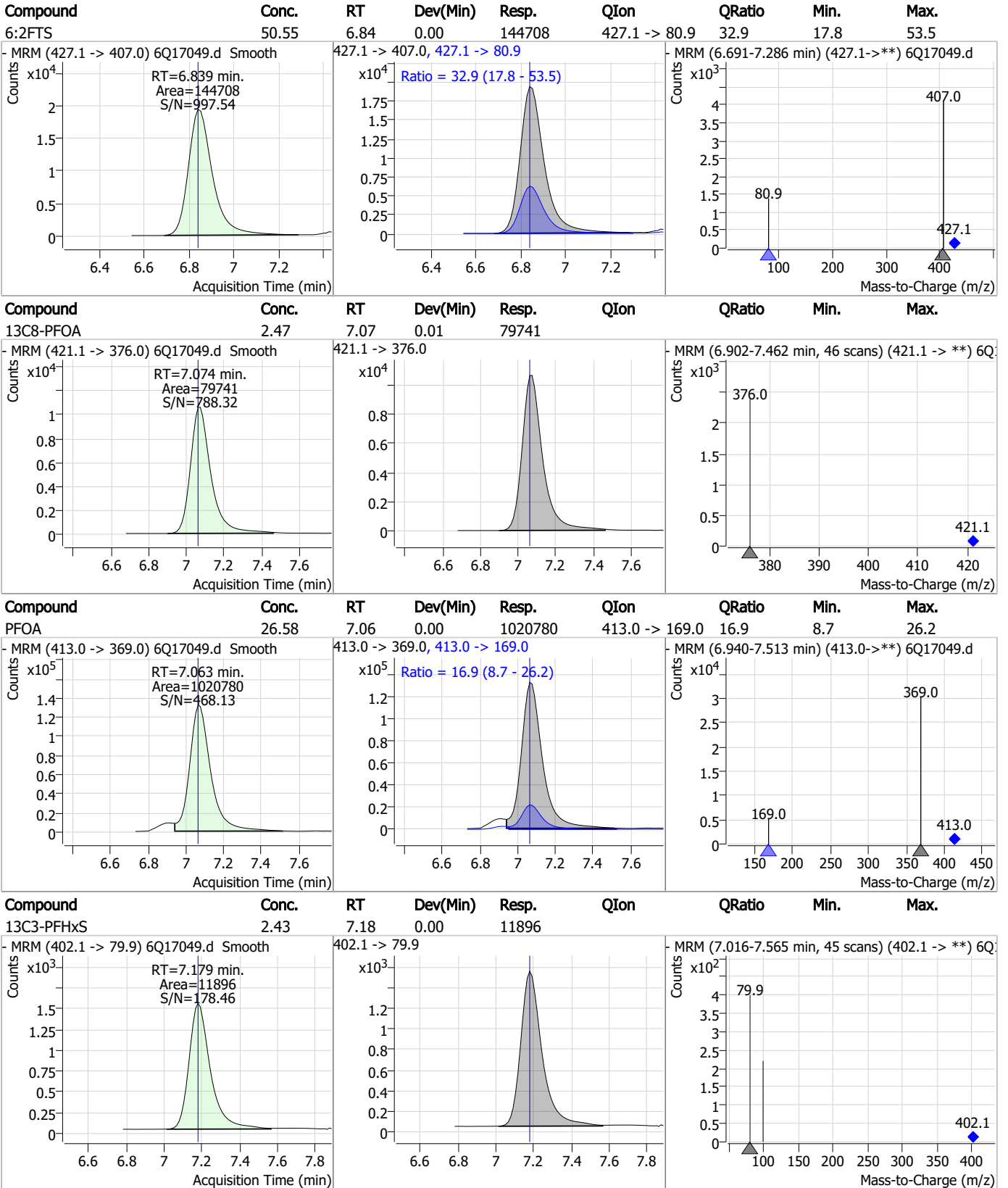
Perfluorinated Compounds by LC/MS/MS



7.6.2

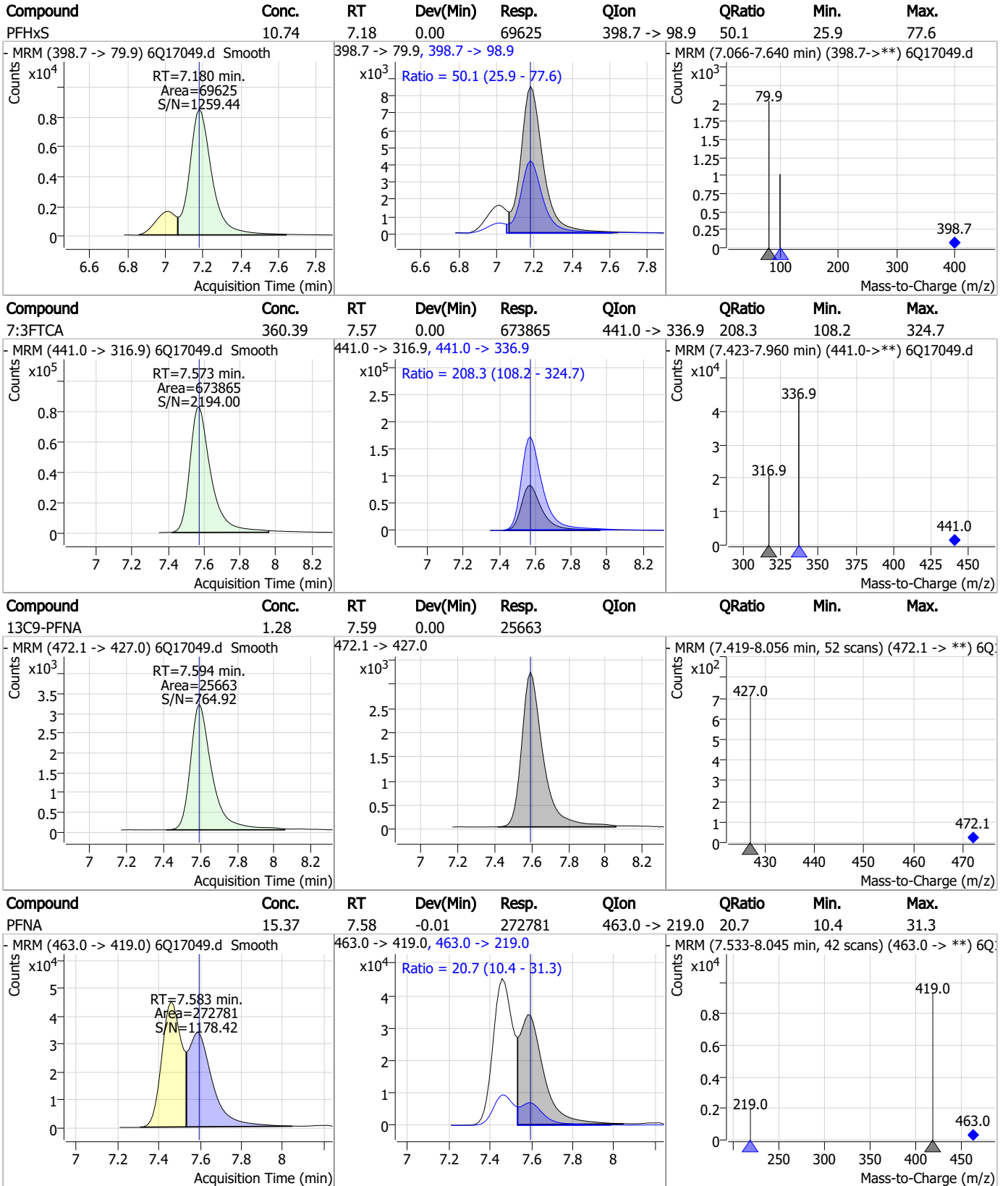
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Perfluorinated Compounds by LC/MS/MS



7.6.2
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Perfluorinated Compounds by LC/MS/MS



7.6.2

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Perfluorinated Compounds by LC/MS/MS

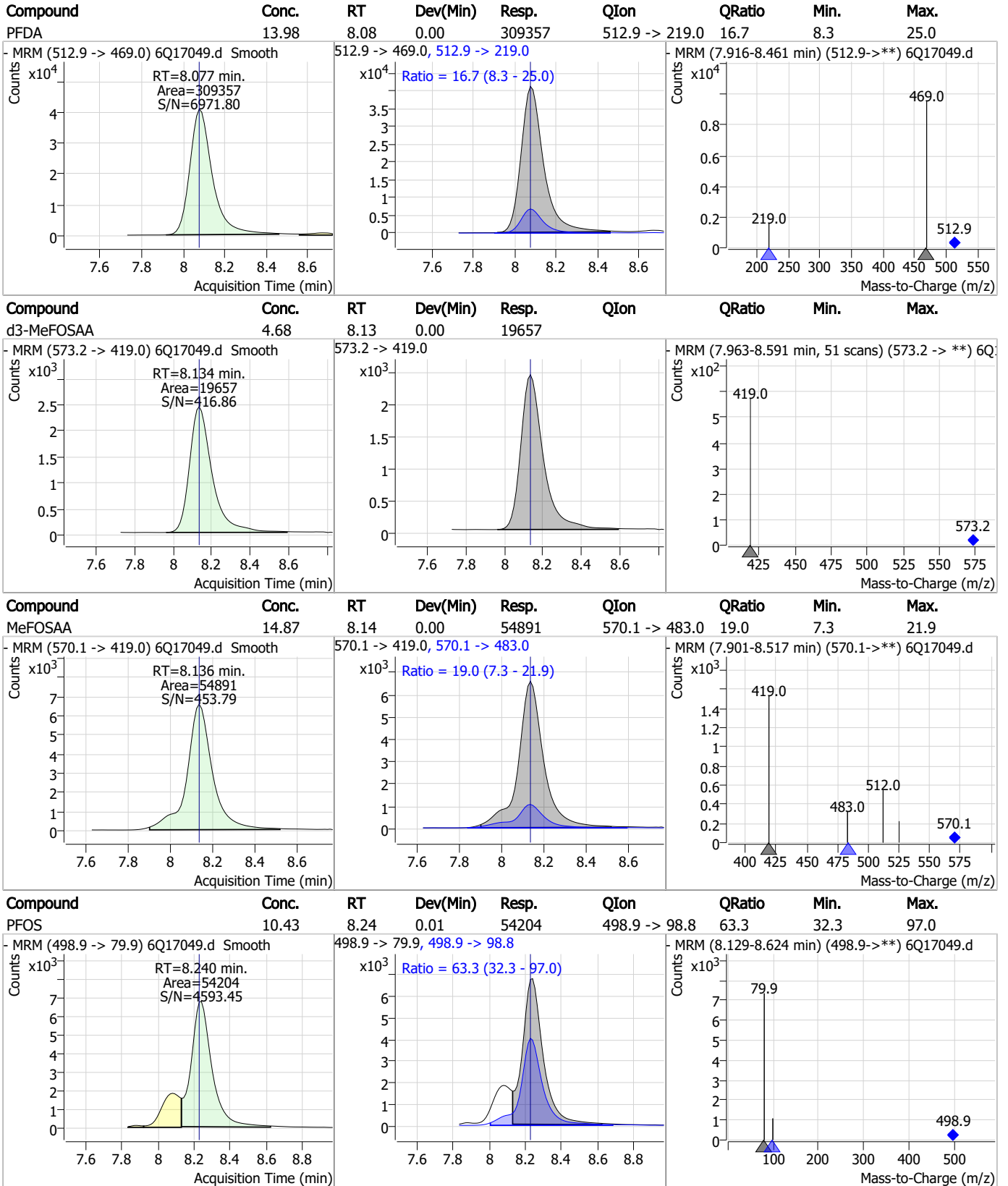
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	13.09	7.73	0.00	76363	449.0 -> 98.9	47.2	25.4	76.1
13C2-8:2FTS	5.41	7.86	0.00	2983	529.1 -> 80.9			
8:2FTS	47.96	7.87	0.00	85122	527.1 -> 80.8	41.2	20.3	61.0
13C6-PFDA	1.34	8.08	0.00	20362	519.1 -> 474.1			

7.6.2

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Perfluorinated Compounds by LC/MS/MS

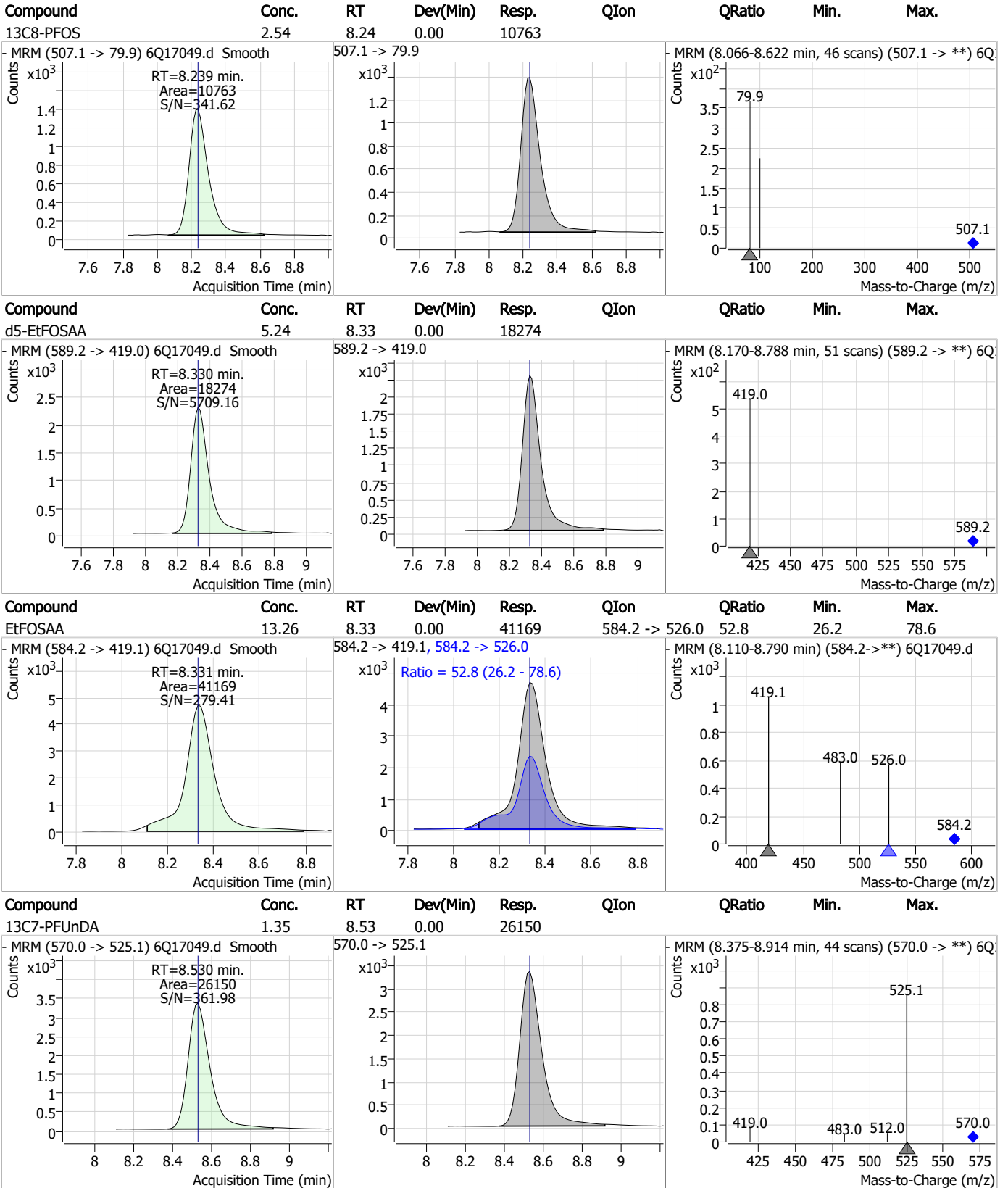


7.6.2

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Perfluorinated Compounds by LC/MS/MS

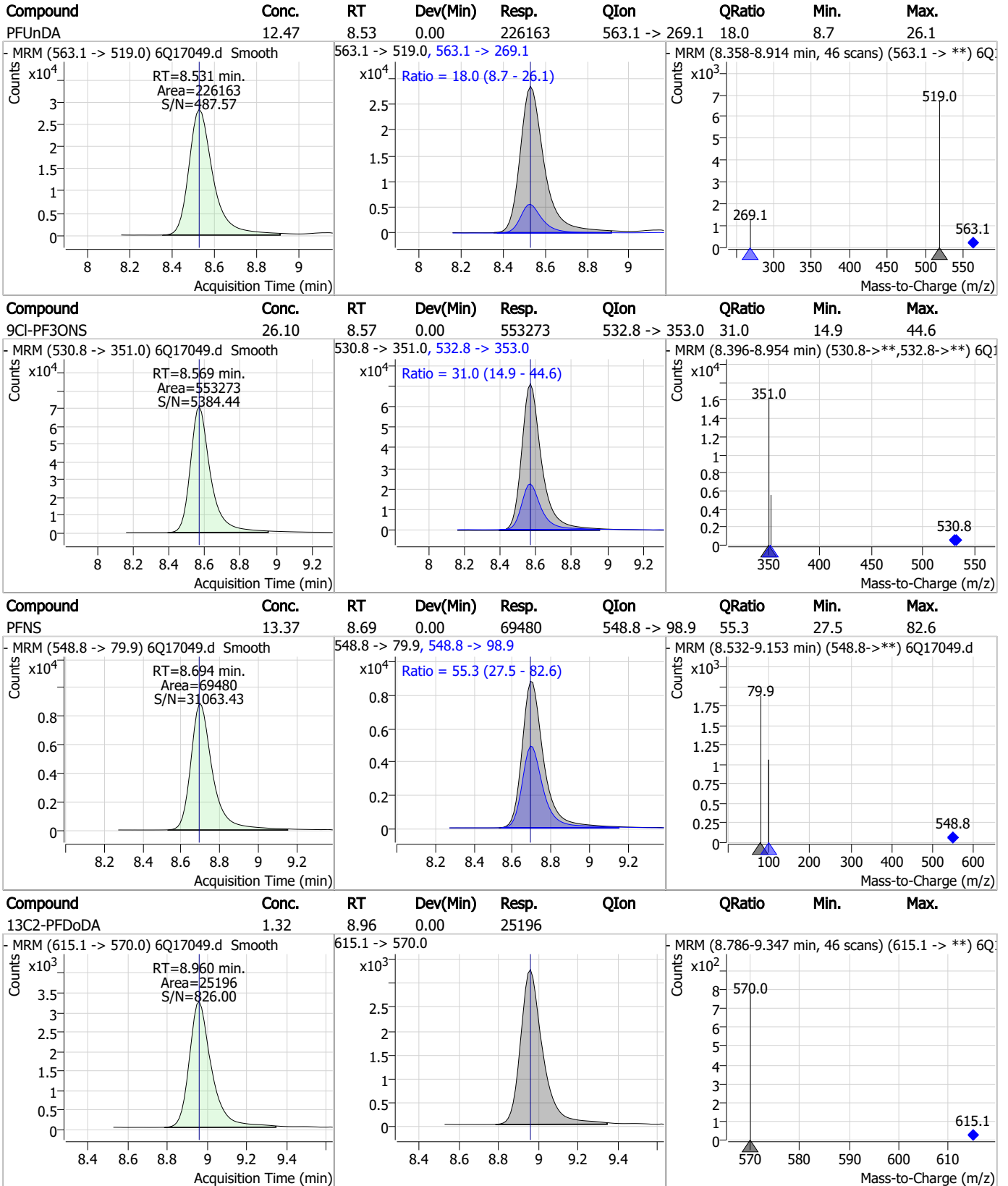


7.6.2

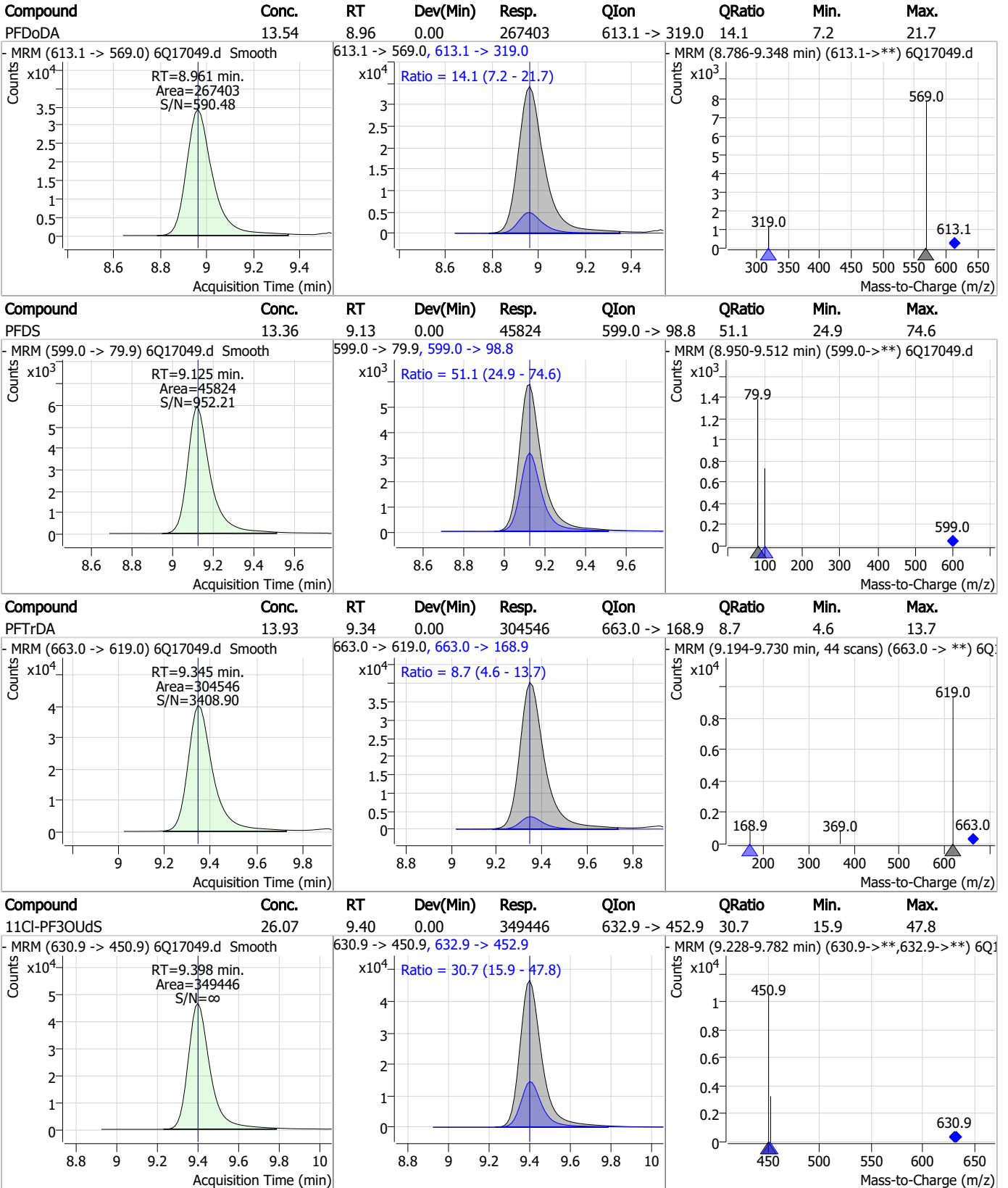
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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

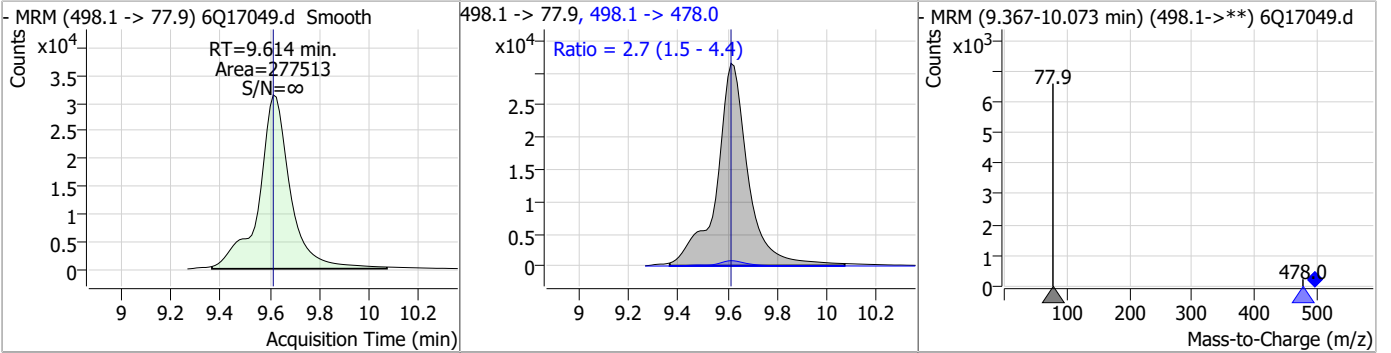


7.6.2

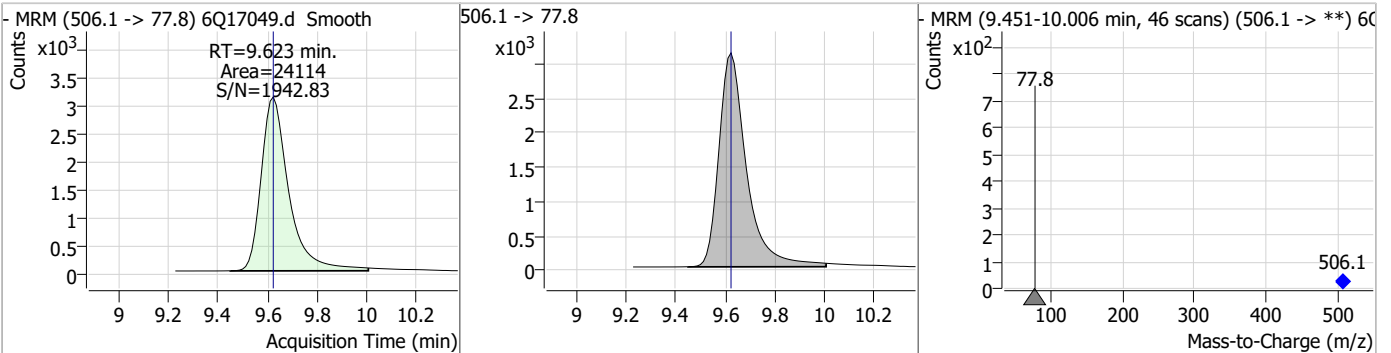
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Perfluorinated Compounds by LC/MS/MS

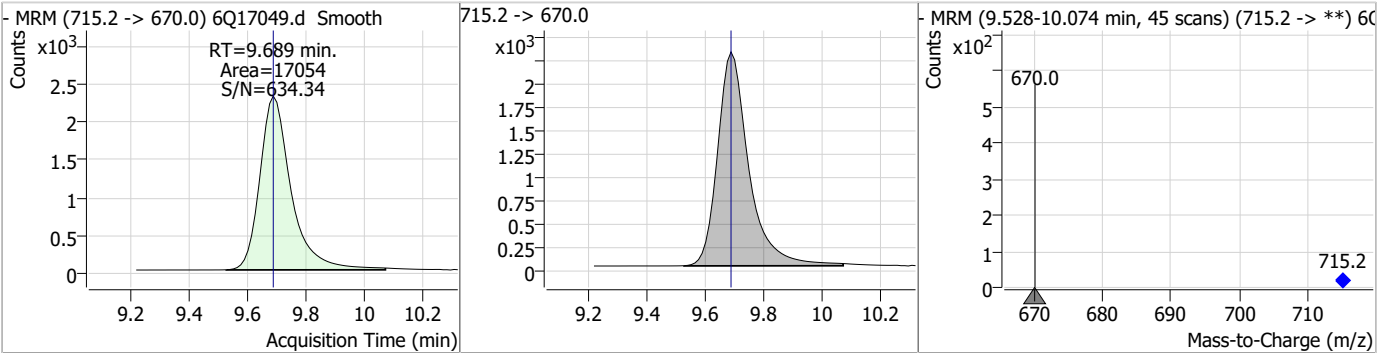
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	32.12	9.61	0.00	277513	498.1 -> 478.0	2.7	1.5	4.4



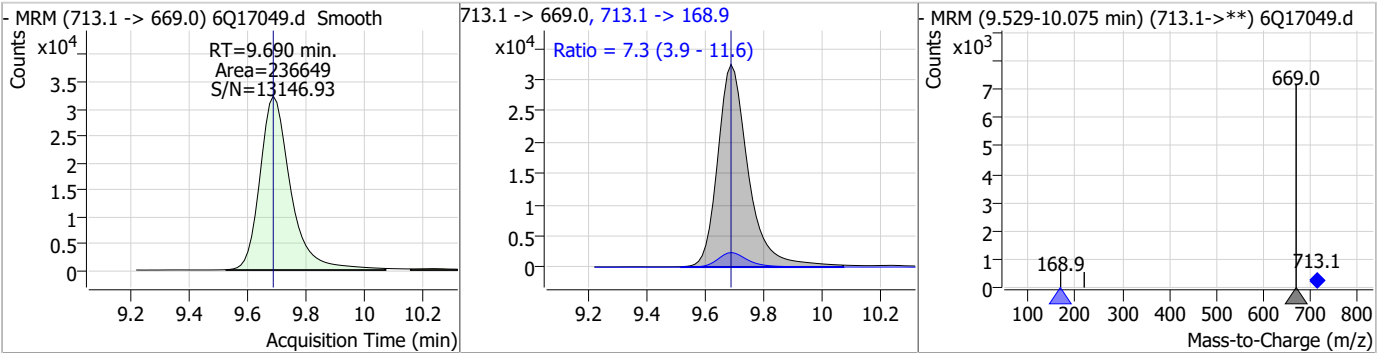
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.59	9.62	0.00	24114				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.32	9.69	0.00	17054				

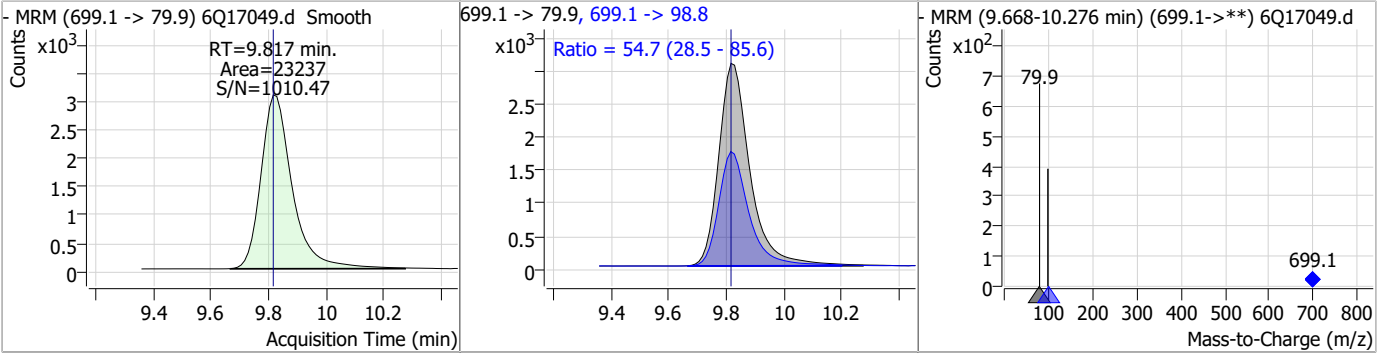


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	13.73	9.69	0.00	236649	713.1 -> 168.9	7.3	3.9	11.6

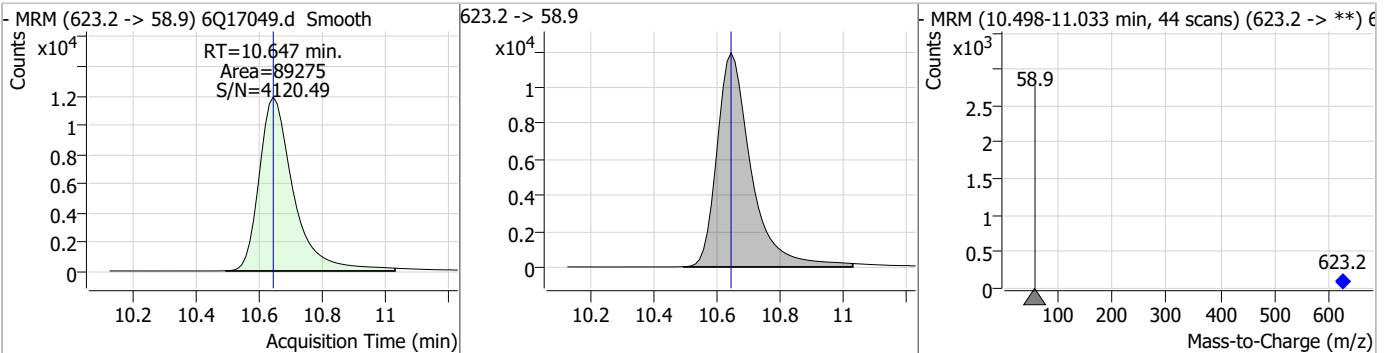


Perfluorinated Compounds by LC/MS/MS

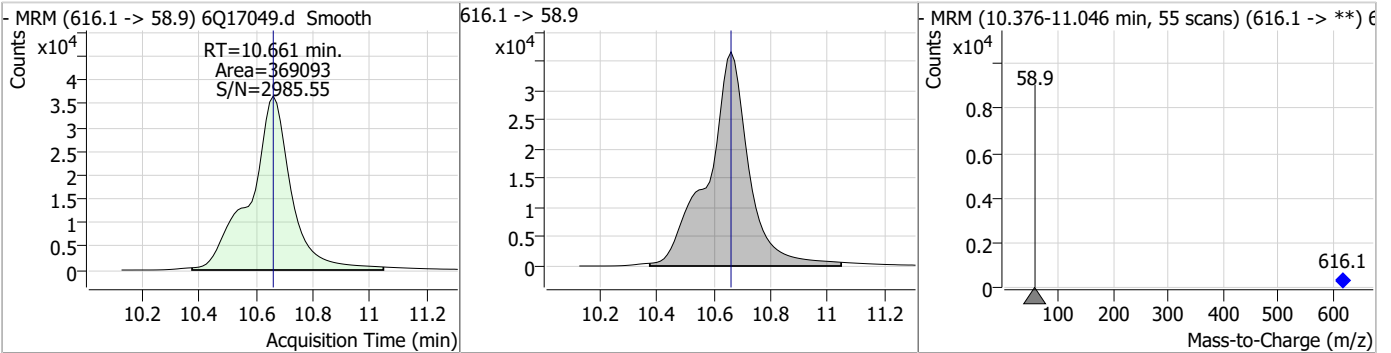
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	13.10	9.82	0.00	23237	699.1 -> 98.8	54.7	28.5	85.6



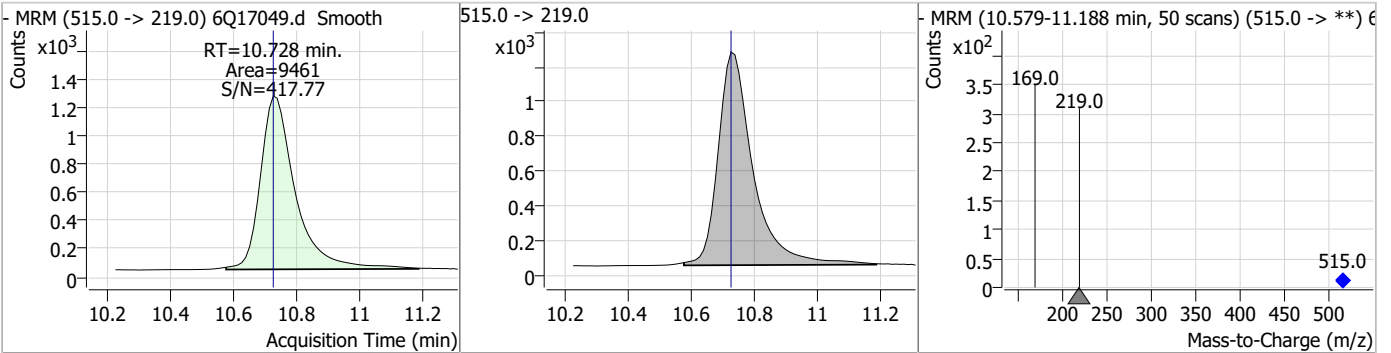
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.14	10.65	0.00	89275				



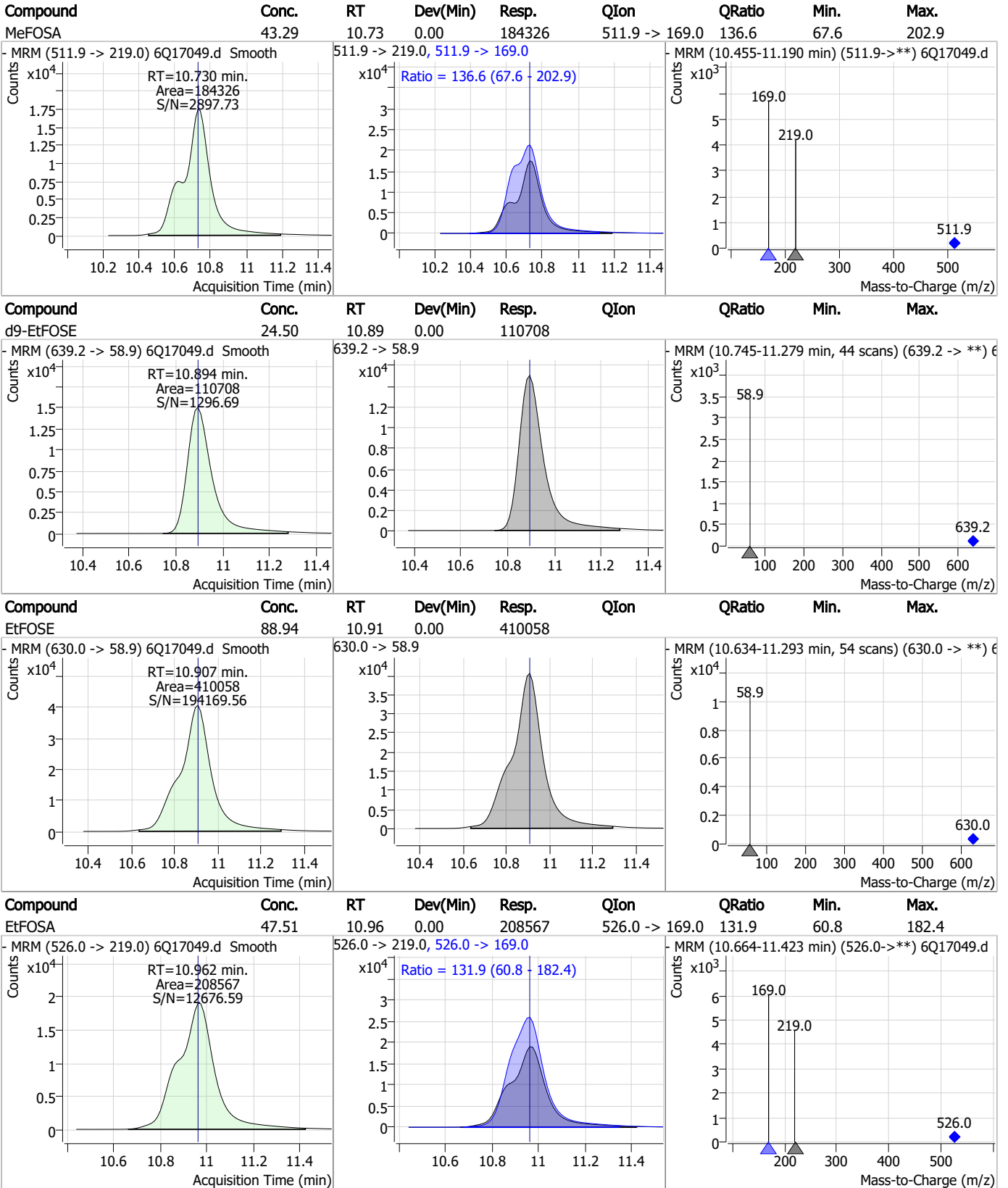
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	92.70	10.66	0.00	369093				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.69	10.73	0.00	9461				



Perfluorinated Compounds by LC/MS/MS

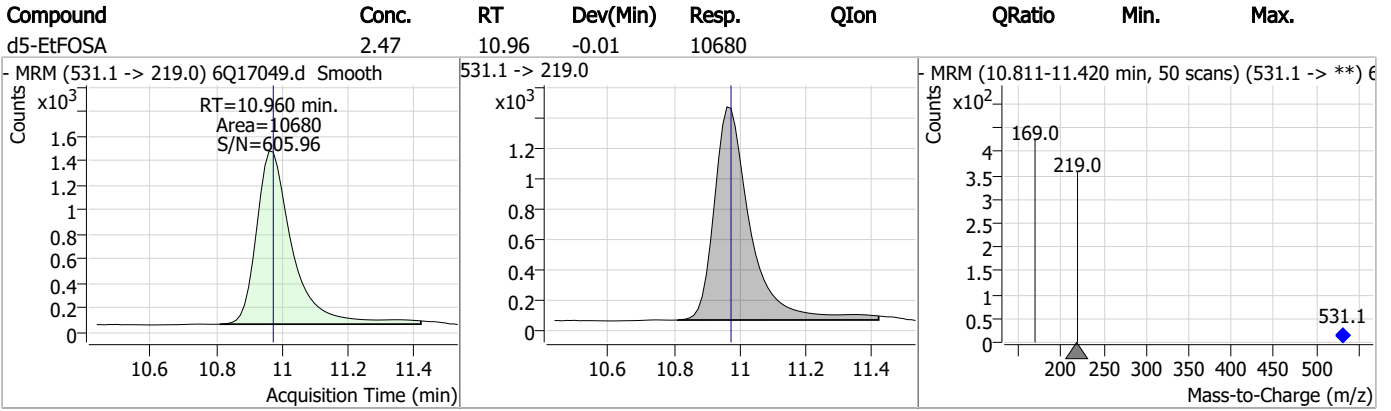


7.6.2

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Perfluorinated Compounds by LC/MS/MS



7.6.2

7



Manual Integrations
APPROVED
 (compounds with "m" flag)
 Norman Farmer
 05/03/23 19:39

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17288.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/2/2023 10:51:20 AM
 Sample Name : RT TDCA
 Vial : P1-B3
 DA Method File : TDCA.quantmethod.xml
 Batch Name : s6q261 TDCA.batch.bin
 Sample Information : OP96630,S6Q261,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)	QValue
Internal Standards							
M8-PFOS	8.239	507.1 -> 79.9	15266	2.50	µg/L	0.000	
13C4-PFOS	8.239	502.8 -> 79.9	19894	2.50	µg/L	0.000	
System Monitoring Compounds							
13C8-PFOS	8.239	507.1 -> 79.9	15266	1.95	µg/L	0.000	
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 77.9%				
Target Compounds							
PFOS	8.240	498.9 -> 79.9 498.9 -> 98.8	15704 8440	3.01	µg/L	m	85
TCDCa	6.626	498.9 -> 79.9	3055	4.34	ng/ml		100
TDCA	6.788	498.9 -> 79.9	3612	5.66	ng/ml		100
TUDCA	5.786	498.9 -> 79.9	4875	3.60	ng/ml		100

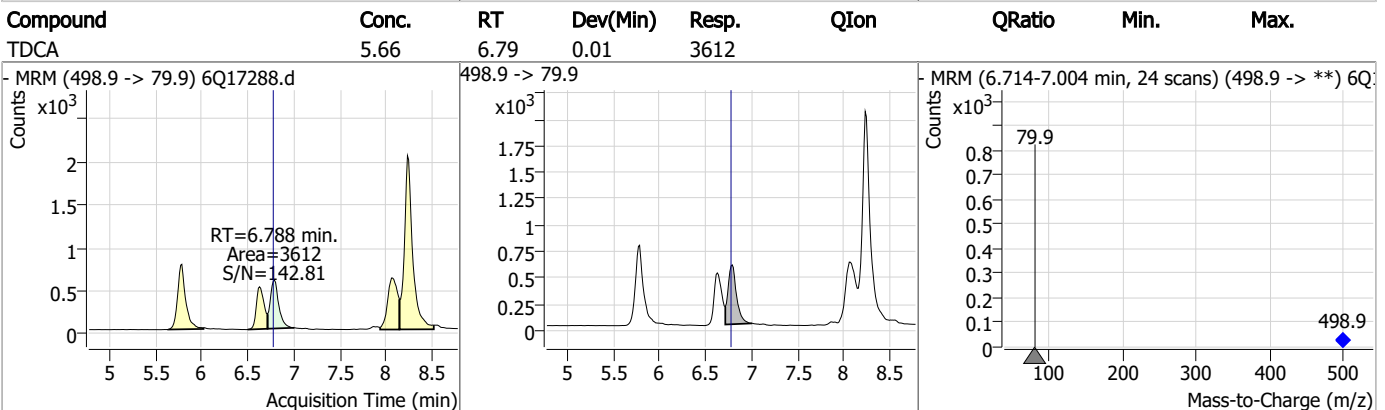
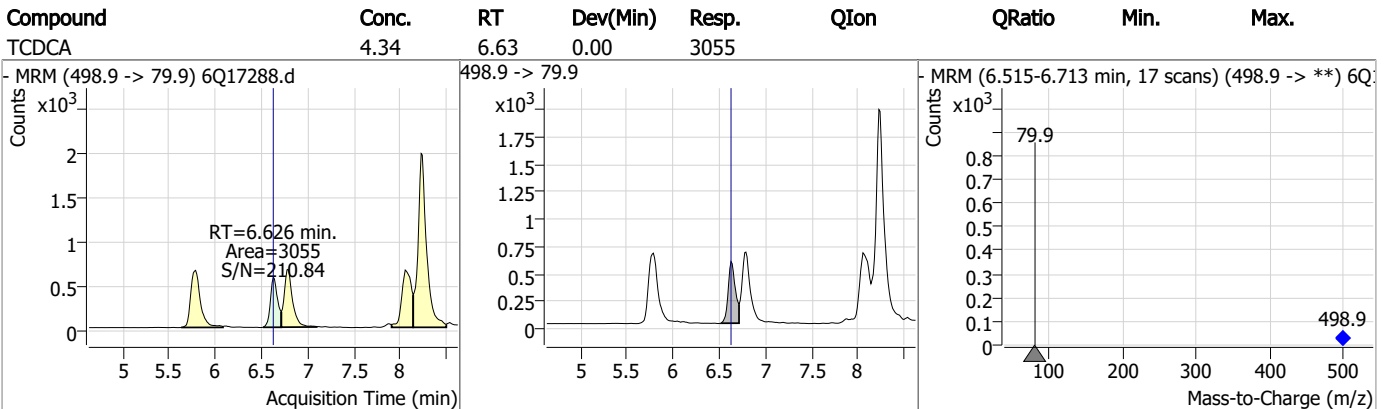
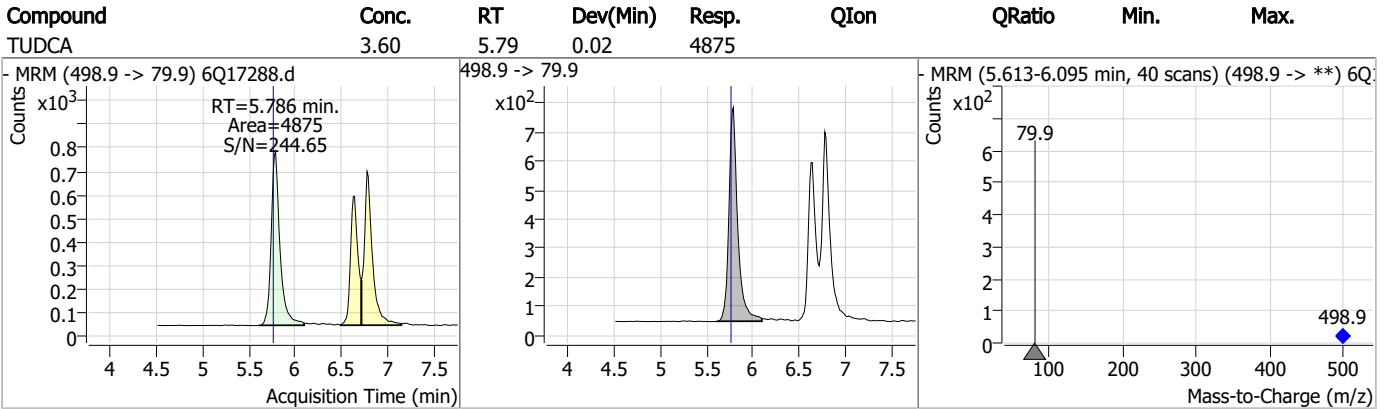
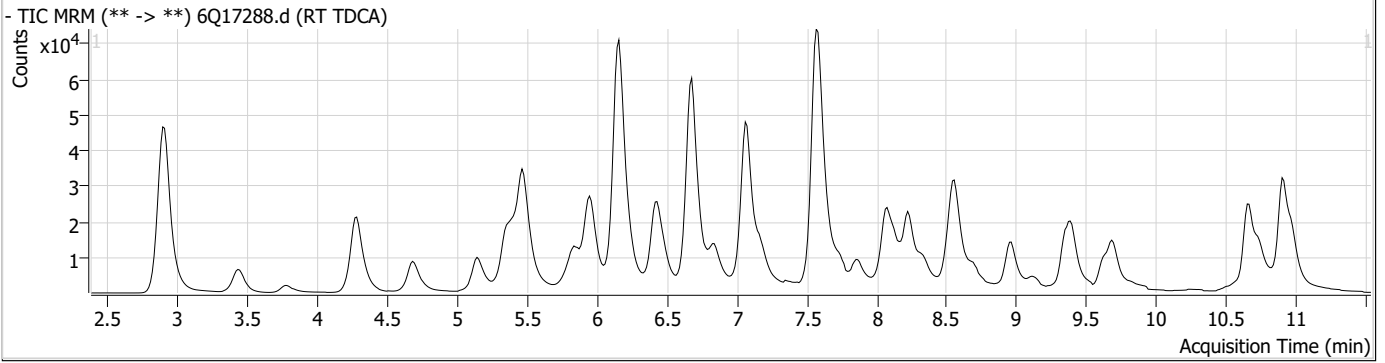
= Qualifier out of range, m = manually integrated, + = Area summed

7.6.3

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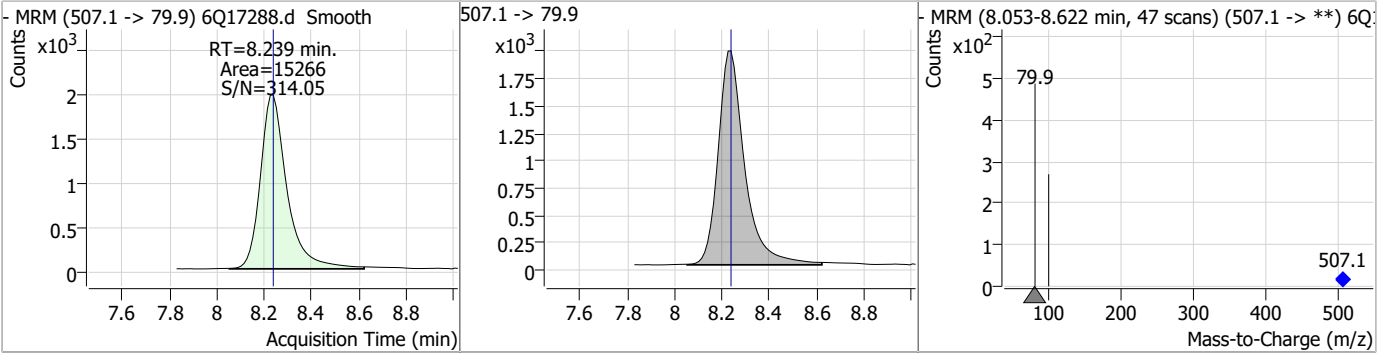


Perfluorinated Compounds by LC/MS/MS

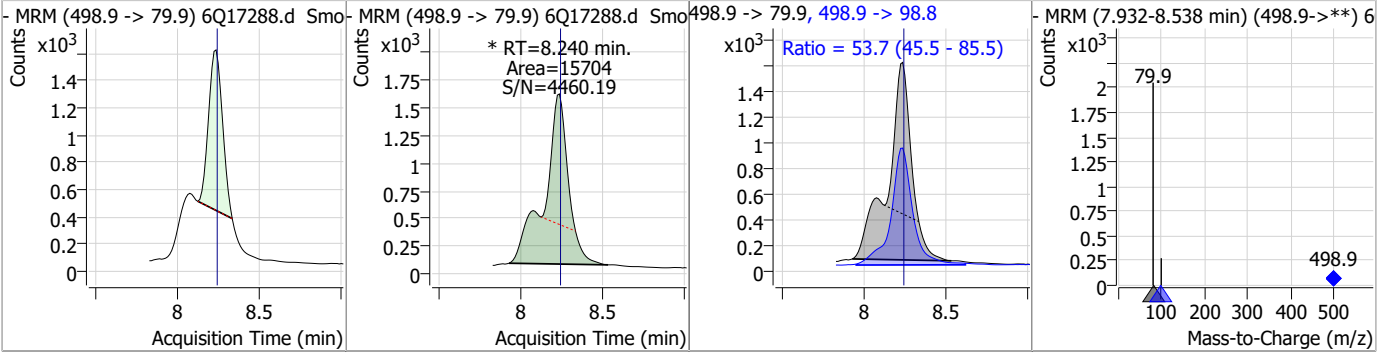


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	1.95	8.24	0.00	15266				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	3.01	8.24	0.00	15704 (m)	498.9 -> 98.8	53.7	45.5	85.5



7.6.3

7

Manual Integration Approval Summary

Sample Number: S6Q261-RT Method: EPA DRAFT 1633
Lab FileID: 6Q17288.D Analyst approved: 05/02/23 20:40 Martha Valls
Injection Time: 05/02/23 10:51 Supervisor approved: 05/03/23 19:39 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.24	Split peak

7.6.3.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17289.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/2/2023 11:05:53 AM
 Sample Name : RT BR-LN
 Vial : P1-B4
 DA Method File : 1633_042823_S6Q258.quantmethod.xml
 Batch Name : s6q261.batch.bin
 Sample Information : OP96630,S6Q261,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.910	216.8 -> 171.9	168234	10.00 µg/L	0.000
M5-PFPeA	4.283	268.3 -> 223.0	56325	5.00 µg/L	0.012
M5-PFHxA	5.480	318.0 -> 273.0	63065	2.50 µg/L	0.000
M4-PFHpA	6.419	367.1 -> 322.0	55174	2.50 µg/L	-0.012
M8-PFOA	7.062	421.1 -> 376.0	75555	2.50 µg/L	-0.012
M9-PFNA	7.594	472.1 -> 427.0	25004	1.25 µg/L	0.000
M6-PFDA	8.076	519.1 -> 474.1	18080	1.25 µg/L	0.000
M7-PFUnDA	8.517	570.0 -> 525.1	23659	1.25 µg/L	-0.013
M2-PFDoDA	8.960	615.1 -> 570.0	24817	1.25 µg/L	0.000
M2-PFTeDA	9.689	715.2 -> 670.0	16316	1.25 µg/L	0.000
M8-FOSA	9.623	506.1 -> 77.8	24573	2.50 µg/L	0.000
M3-PFBS	5.411	302.1 -> 79.9	21447	2.50 µg/L	0.000
M3-PFHxS	7.179	402.1 -> 79.9	11572	2.50 µg/L	0.000
M8-PFOS	8.226	507.1 -> 79.9	10987	2.50 µg/L	-0.012
M2-4:2FTS	5.144	329.1 -> 80.9	1883	5.00 µg/L	-0.012
M2-6:2FTS	6.839	429.1 -> 80.9	2423	5.00 µg/L	-0.012
M2-8:2FTS	7.864	529.1 -> 80.9	2520	5.00 µg/L	-0.012
M3-MeFOSAA	8.134	573.2 -> 419.0	22590	5.00 µg/L	0.000
M3-HFPO-DA	5.845	286.9 -> 168.9	38963	10.00 µg/L	0.000
M5-EtFOSAA	8.330	589.2 -> 419.0	16805	5.00 µg/L	0.000
M7-MeFOSE	10.647	623.2 -> 58.9	92454	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	109751	25.00 µg/L	0.000
M5-EtFOSA	10.973	531.1 -> 219.0	10542	2.50 µg/L	0.000
M3-MeFOSA	10.741	515.0 -> 219.0	9230	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	13503	2.50 µg/L	-0.012
13C3-PFBA	2.914	216.0 -> 172.0	71690	5.00 µg/L	0.012
18O2-PFHxS	7.177	403.0 -> 83.9	8897	2.50 µg/L	0.000
13C4-PFOA	7.063	417.1 -> 372.0	84386	2.50 µg/L	-0.012
13C2-PFDA	8.076	515.1 -> 470.1	22434	1.25 µg/L	0.000
13C5-PFNA	7.595	468.0 -> 423.0	26861	1.25 µg/L	0.000
13C2-PFHxA	5.482	315.1 -> 270.0	53233	2.50 µg/L	0.012
System Monitoring Compounds					
13C2-4:2FTS	5.144	329.1 -> 80.9	1883	4.61 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 92.1%		
13C2-6:2FTS	6.839	429.1 -> 80.9	2423	4.88 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.6%		
13C2-8:2FTS	7.864	529.1 -> 80.9	2520	4.72 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.4%		
13C2-PFDoDA	8.960	615.1 -> 570.0	24817	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 106.3%		
13C2-PFTeDA	9.689	715.2 -> 670.0	16316	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.4%		
13C3-PFBS	5.411	302.1 -> 79.9	21447	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.5%		
13C3-PFHxS	7.179	402.1 -> 79.9	11572	2.44 µg/L	0.000

7.6.4
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.7%	
13C4-PFBA	2.910	216.8 -> 171.9	168234	10.16 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C4-PFHpA	6.419	367.1 -> 322.0	55174	2.53 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.4%	
13C5-PFHxA	5.480	318.0 -> 273.0	63065	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.2%	
13C5-PFPeA	4.283	268.3 -> 223.0	56325	4.74 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.7%	
13C6-PFDA	8.076	519.1 -> 474.1	18080	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.7%	
13C7-PFUnDA	8.517	570.0 -> 525.1	23659	1.25 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C8-FOSA	9.623	506.1 -> 77.8	24573	2.75 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.1%	
13C8-PFOA	7.062	421.1 -> 376.0	75555	2.32 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.8%	
13C8-PFOS	8.226	507.1 -> 79.9	10987	2.70 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.0%	
13C9-PFNA	7.594	472.1 -> 427.0	25004	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.7%	
d3-MeFOSAA	8.134	573.2 -> 419.0	22590	5.61 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 112.3%	
13C3-HFPO-DA	5.845	286.9 -> 168.9	38963	10.34 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.4%	
d3-MeFOSA	10.741	515.0 -> 219.0	9230	2.74 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.5%	
d5-EtFOSAA	8.330	589.2 -> 419.0	16805	5.02 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
d7-MeFOSE	10.647	623.2 -> 58.9	92454	26.09 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 104.4%	
d9-EtFOSE	10.894	639.2 -> 58.9	109751	25.34 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.4%	
d5-EtFOSA	10.973	531.1 -> 219.0	10542	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.8%	
Target Compounds					QValue
4:2FTS	5.157	327.1 -> 307.0	135777	47.65 µg/L	93
		327.1 -> 80.9	54479		
6:2FTS	6.839	427.1 -> 407.0	130718	49.04 µg/L	95
		427.1 -> 80.9	44748		
8:2FTS	7.865	527.1 -> 507.0	74476	49.67 µg/L	97
		527.1 -> 80.8	28039		
EtFOSAA	8.331	584.2 -> 419.1	39381	13.79 µg/L	88
		584.2 -> 526.0	21582		
FOSA	9.626	498.1 -> 77.9	264798	30.08 µg/L	100
		498.1 -> 478.0	7233		
MeFOSAA	8.136	570.1 -> 419.0	54961	12.96 µg/L	95
		570.1 -> 483.0	10195		
PFBA	2.906	212.8 -> 168.9	308223	54.63 µg/L	100
PFBS	5.412	298.7 -> 79.9	115116	11.96 µg/L	98
		298.7 -> 98.8	41879		
PFDA	8.077	512.9 -> 469.0	294926	15.01 µg/L	94
		512.9 -> 219.0	47381		
PFDoDA	8.961	613.1 -> 569.0	227311	11.68 µg/L	98
		613.1 -> 319.0	34454		
PFDS	9.125	599.0 -> 79.9	45463	12.98 µg/L	99

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	20401			
PFHpA	6.420	363.1 -> 319.0	352814	12.96	µg/L	99
		363.1 -> 169.0	54379			
PFHpS	7.734	449.0 -> 79.9	72545	12.18	µg/L	99
		449.0 -> 98.9	35492			
PFHxA	5.483	313.0 -> 269.0	323412	12.97	µg/L	100
		313.0 -> 118.9	14759			
PFHxS	7.180	398.7 -> 79.9	79127	12.55	µg/L	m 96
		398.7 -> 98.9	37812			
PFNA	7.458	463.0 -> 419.0	562031	32.49	µg/L	m 95
		463.0 -> 219.0	123090			
PFNS	8.694	548.8 -> 79.9	67533	12.73	µg/L	100
		548.8 -> 98.9	33228			
PFOA	7.063	413.0 -> 369.0	1043793	28.68	µg/L	m 99
		413.0 -> 169.0	183978			
PFOS	8.228	498.9 -> 79.9	59793	11.27	µg/L	m 99
		498.9 -> 98.8	33331			
PFPeA	4.285	263.0 -> 219.0	416091	27.12	µg/L	100
PFPeS	6.484	349.1 -> 79.9	88226	13.40	µg/L	93
		349.1 -> 98.9	37259			
PFTeDA	9.690	713.1 -> 669.0	221707	13.45	µg/L	99
		713.1 -> 168.9	17176			
PFTrDA	9.345	663.0 -> 619.0	272808	12.67	µg/L	100
		663.0 -> 168.9	24709			
PFUnDA	8.531	563.1 -> 519.0	218450	13.31	µg/L	96
		563.1 -> 269.1	36160			
11CI-PF3OUdS	9.398	630.9 -> 450.9	342691	25.63	µg/L	100
		632.9 -> 452.9	105703			
9CI-PF3ONS	8.569	530.8 -> 351.0	521010	24.64	µg/L	99
		532.8 -> 353.0	173768			
ADONA	6.681	376.9 -> 250.9	1420254	24.13	µg/L	100
		376.9 -> 84.8	388387			
HFPO-DA	5.846	284.9 -> 168.9	90997	24.66	µg/L	99
		284.9 -> 184.9	12309			
3:3FTCA	3.784	241.0 -> 177.0	64783	67.53	µg/L	100
		241.0 -> 117.0	8100			
5:3FTCA	6.160	341.0 -> 237.1	1355351	335.88	µg/L	95
		341.0 -> 217.0	977971			
7:3FTCA	7.573	441.0 -> 316.9	615876	335.97	µg/L	97
		441.0 -> 336.9	1333720			
EtFOSA	10.975	526.0 -> 219.0	190190	43.90	µg/L	95
		526.0 -> 169.0	253863			
EtFOSE	10.907	630.0 -> 58.9	384499	84.13	µg/L	100
MeFOSA	10.743	511.9 -> 219.0	174342	41.97	µg/L	m 97
		511.9 -> 169.0	244473			
MeFOSE	10.661	616.1 -> 58.9	339814	82.42	µg/L	100
PFDoDS	9.817	699.1 -> 79.9	22795	12.59	µg/L	98
		699.1 -> 98.8	12925			
NFDHA	5.363	295.0 -> 201.0	72797	26.94	µg/L	99
		295.0 -> 84.9	18229			
PFMBA	4.687	279.0 -> 85.1	286650	27.85	µg/L	100
PFMPA	3.438	229.0 -> 84.9	217126	28.28	µg/L	100
PFEESA	5.949	314.8 -> 134.9	768667	24.43	µg/L	100
		314.8 -> 82.9	26260			

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

7.6.4
7

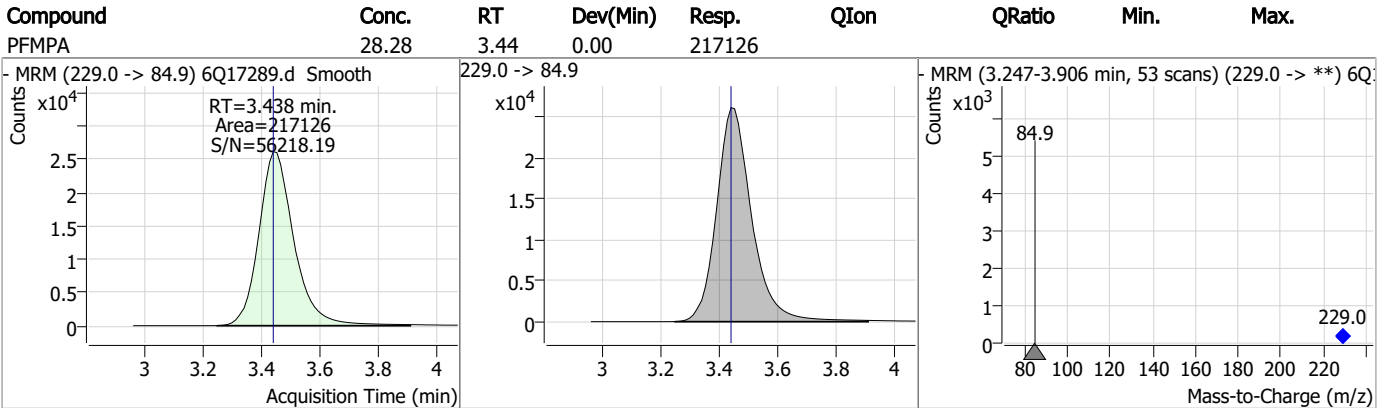
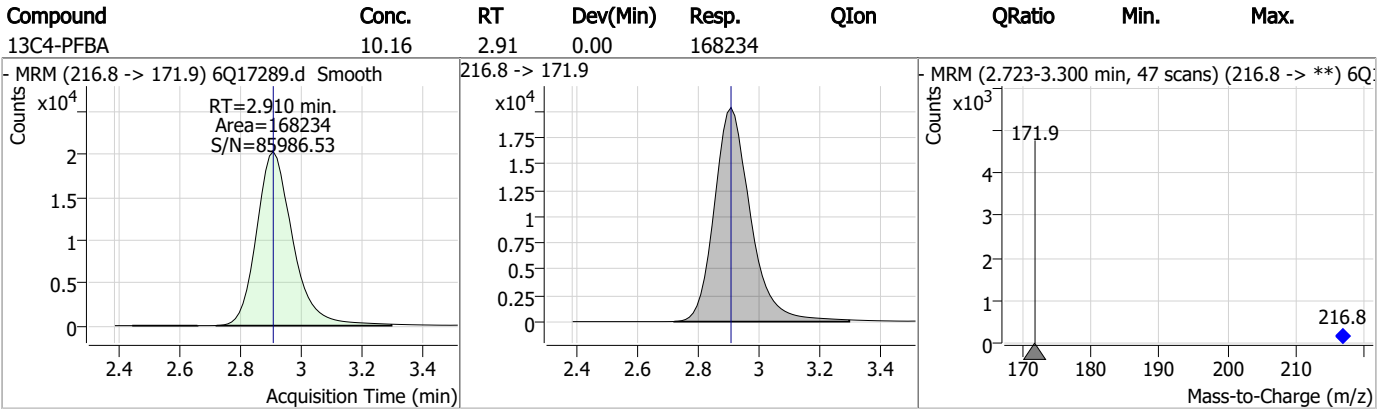
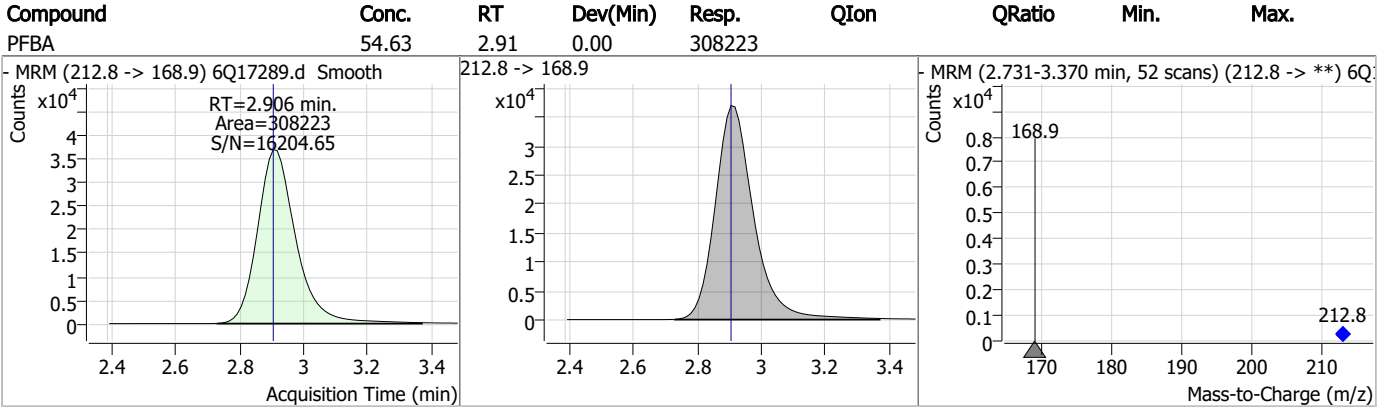
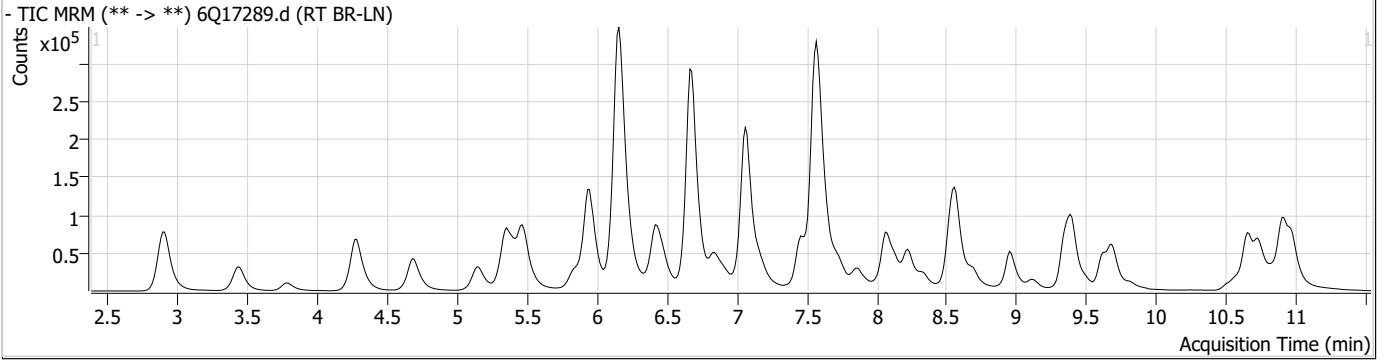
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.6.4

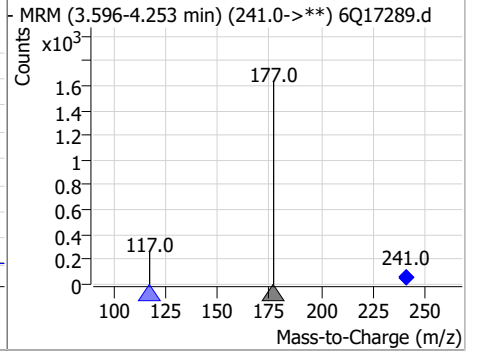
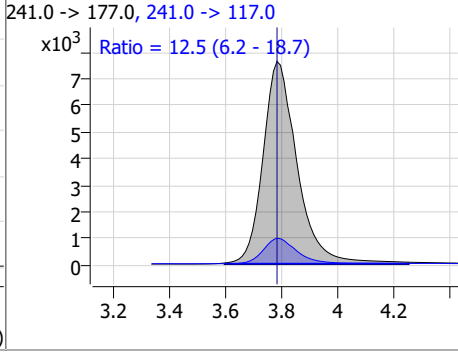
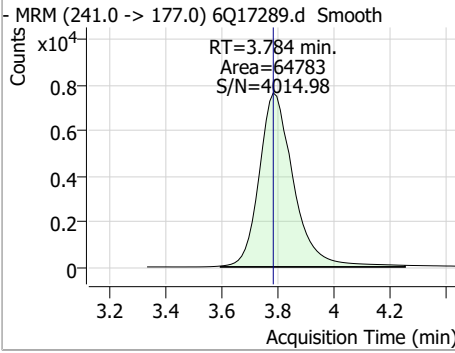
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Perfluorinated Compounds by LC/MS/MS

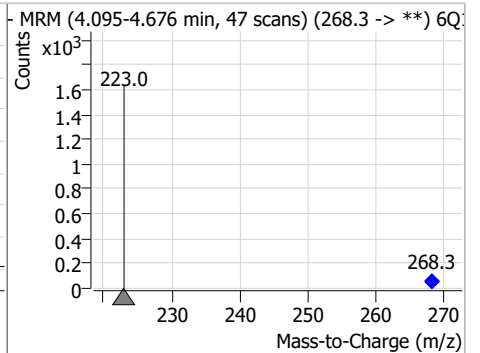
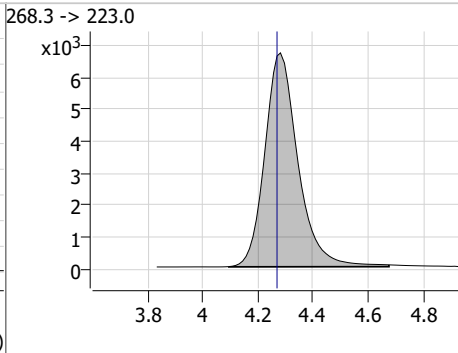
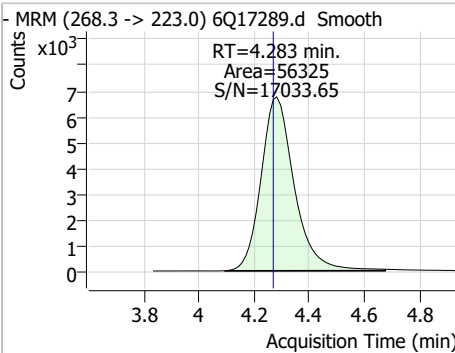


Perfluorinated Compounds by LC/MS/MS

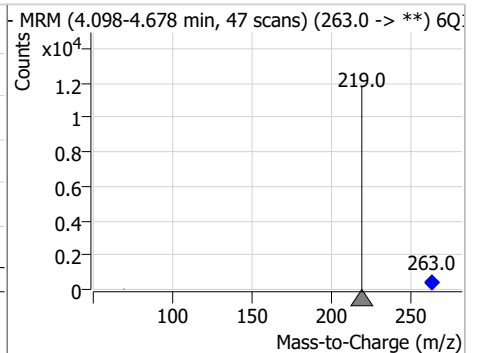
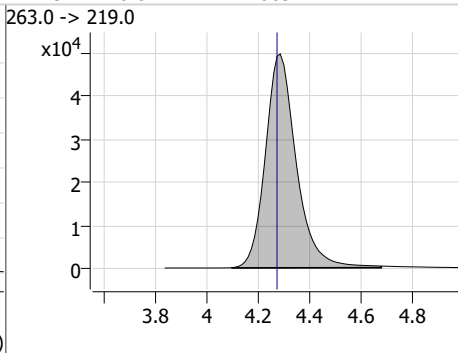
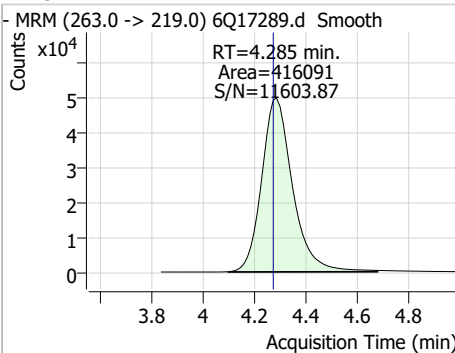
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	67.53	3.78	0.00	64783	241.0 -> 117.0	12.5	6.2	18.7



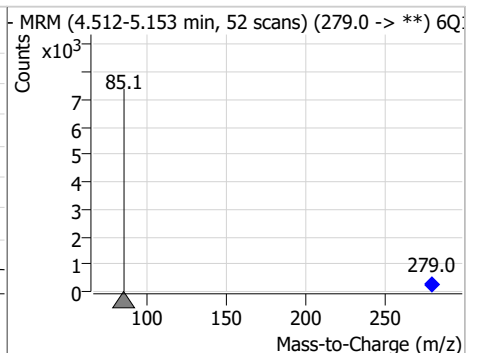
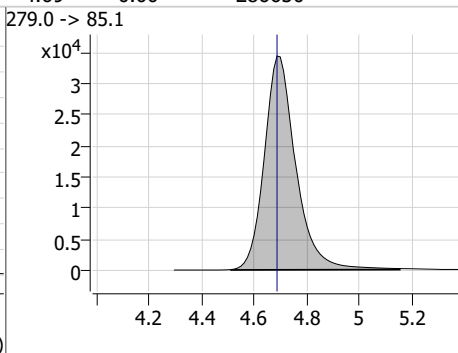
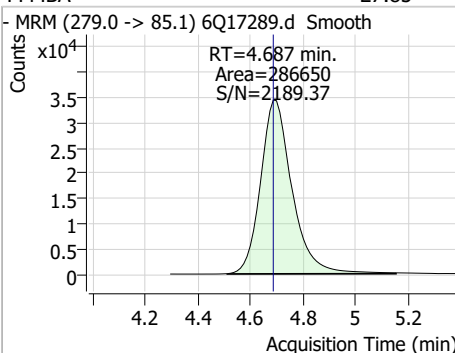
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.74	4.28	0.01	56325				



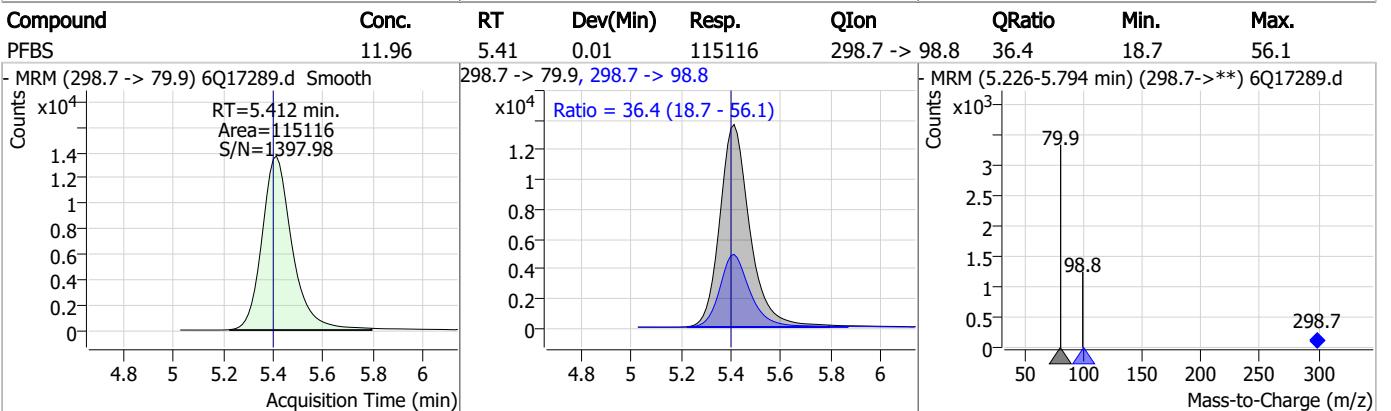
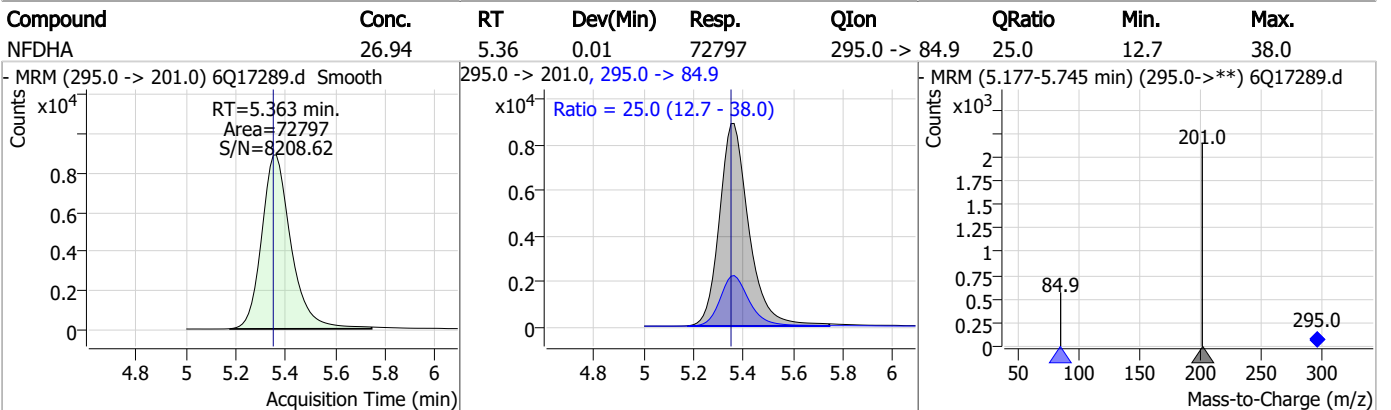
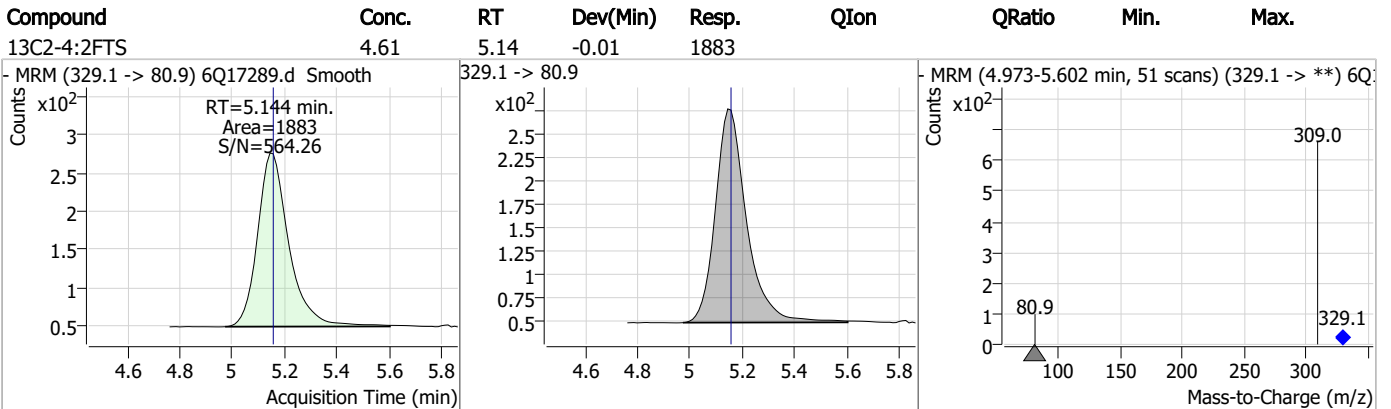
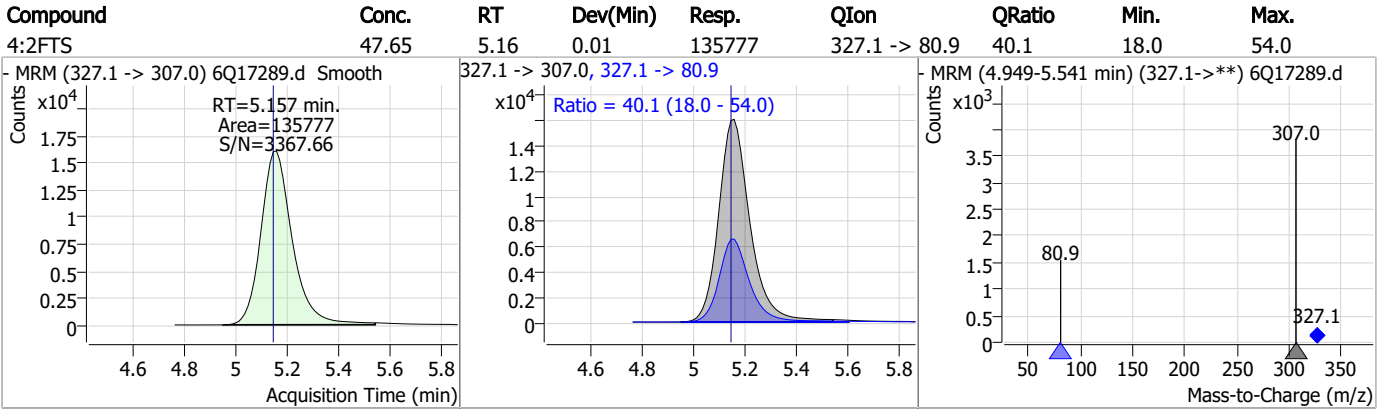
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	27.12	4.29	0.01	416091				



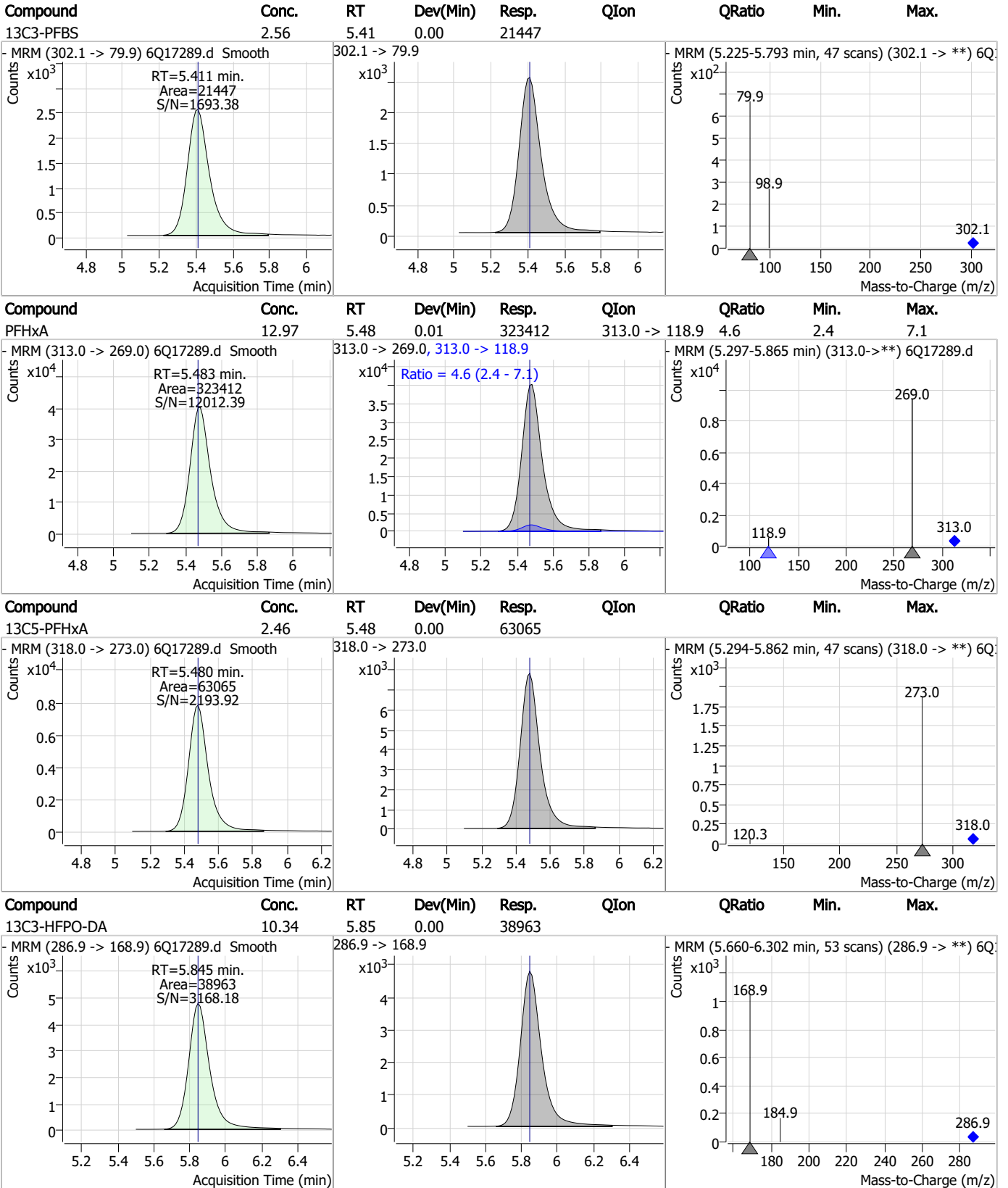
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	27.85	4.69	0.00	286650				



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



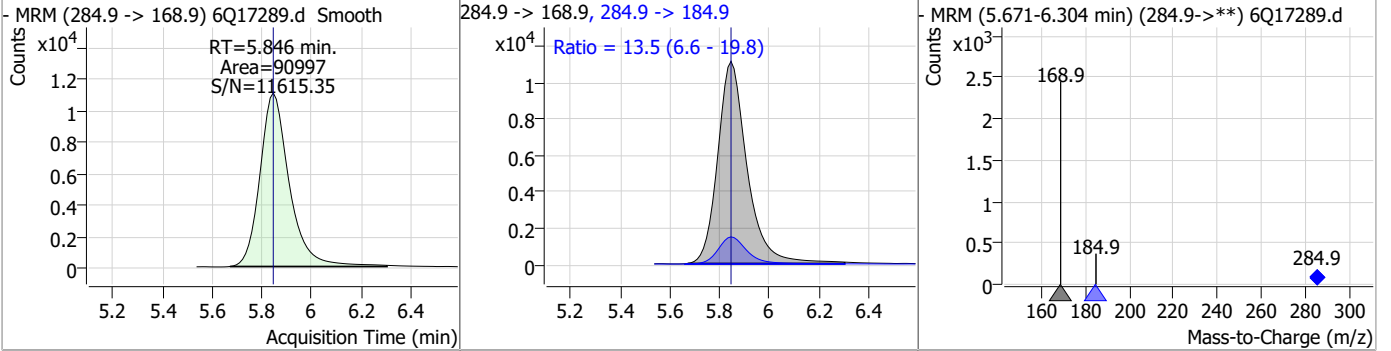
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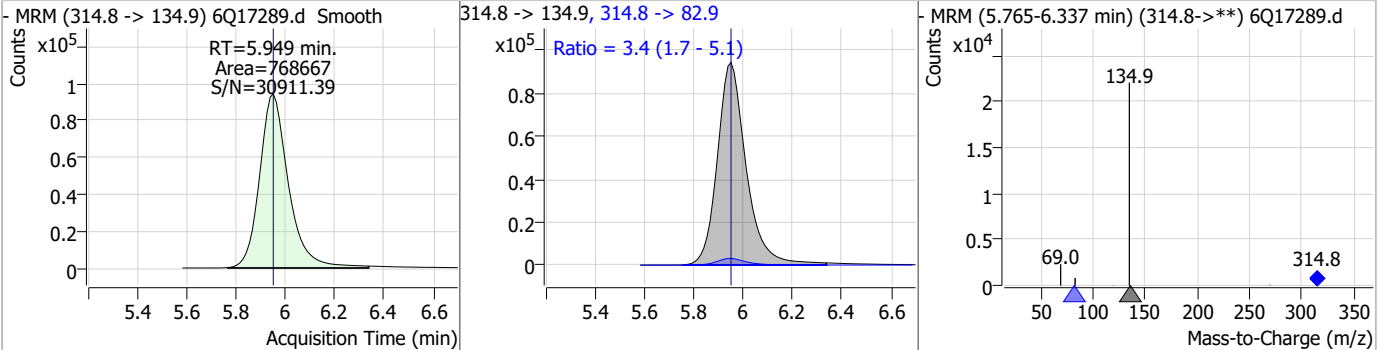


Perfluorinated Compounds by LC/MS/MS

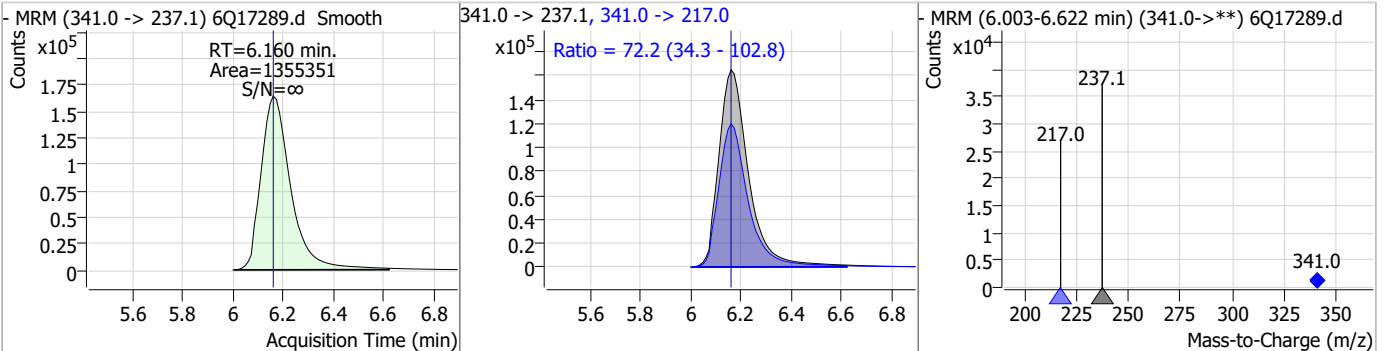
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	24.66	5.85	0.00	90997	284.9 -> 184.9	13.5	6.6	19.8



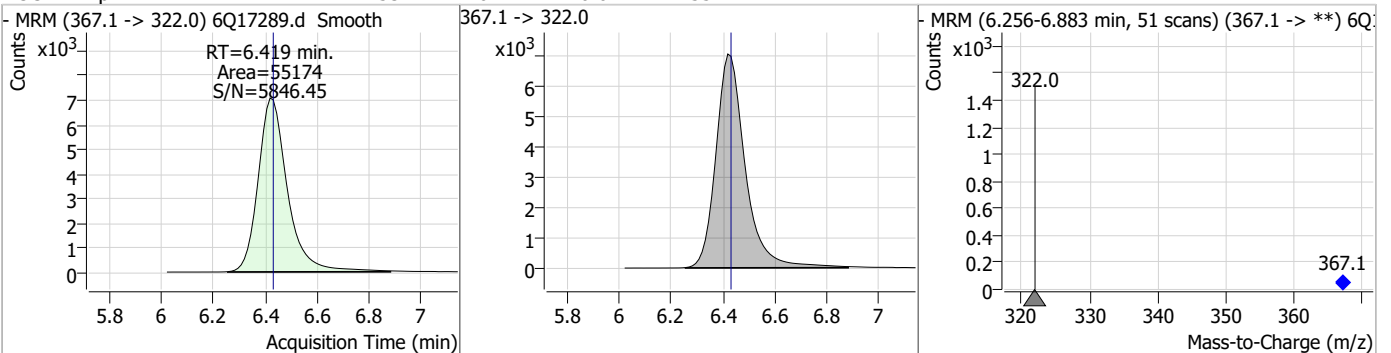
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	24.43	5.95	0.00	768667	314.8 -> 82.9	3.4	1.7	5.1



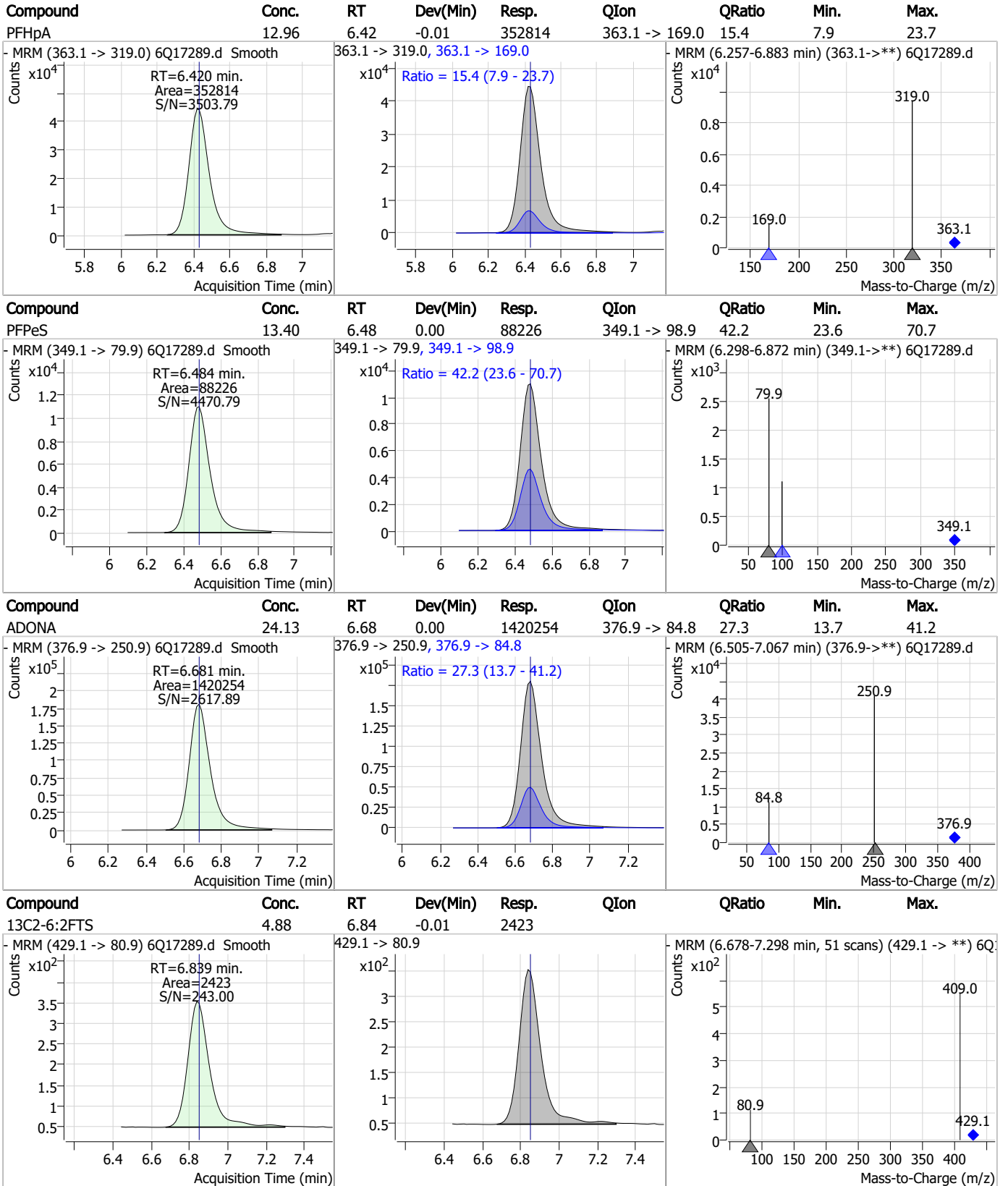
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	335.88	6.16	0.00	1355351	341.0 -> 217.0	72.2	34.3	102.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpa	2.53	6.42	-0.01	55174	367.1 -> 322.0	-	-	-



Perfluorinated Compounds by LC/MS/MS

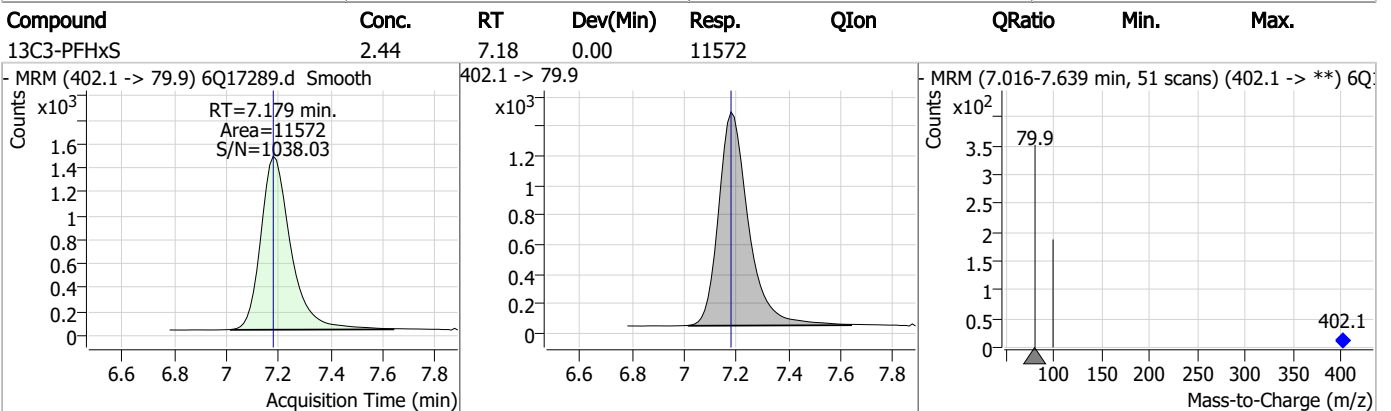
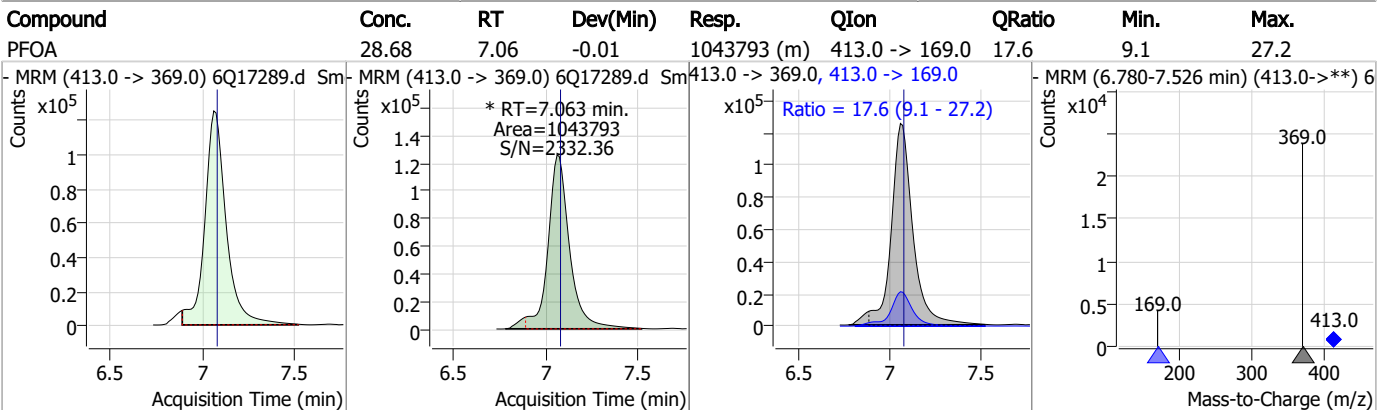
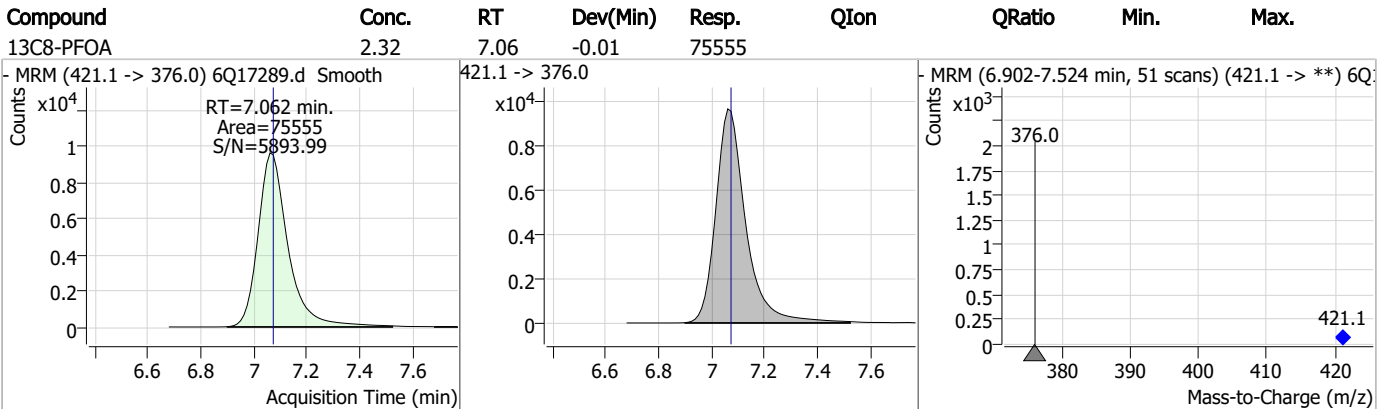
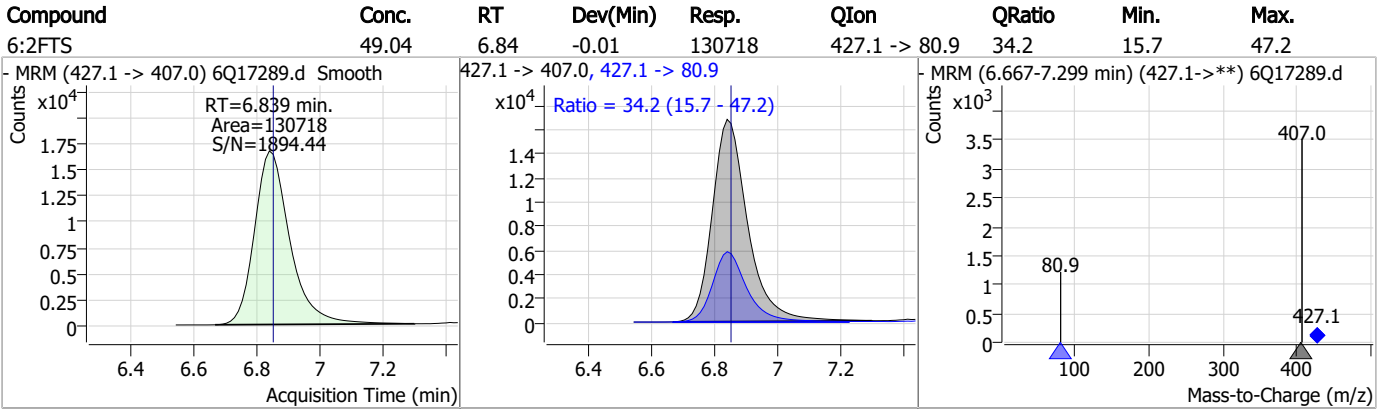


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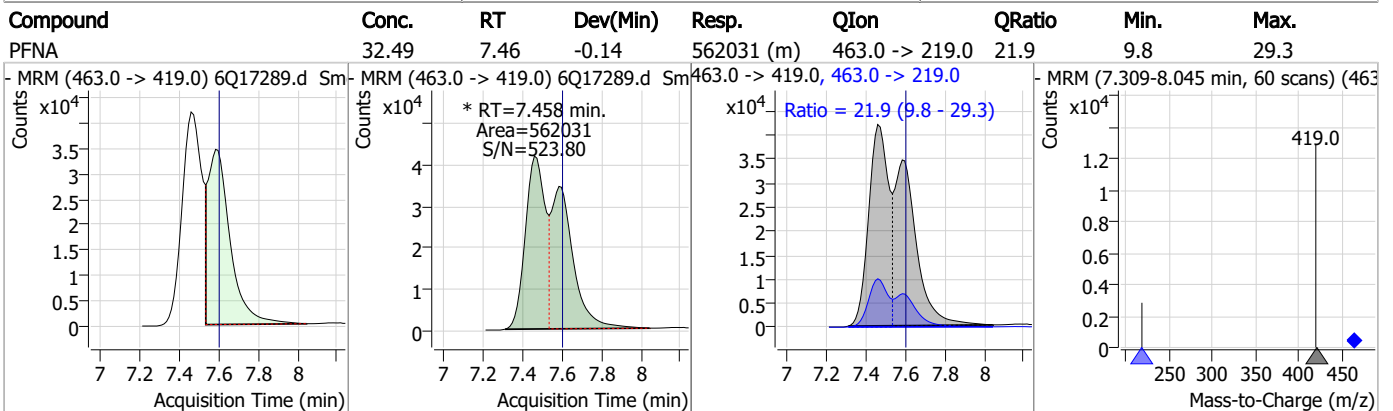
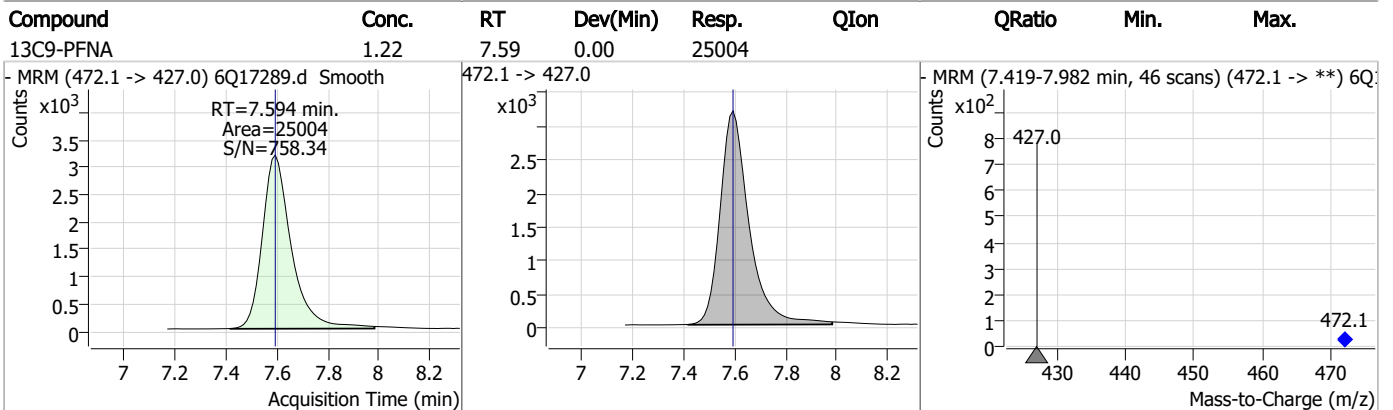
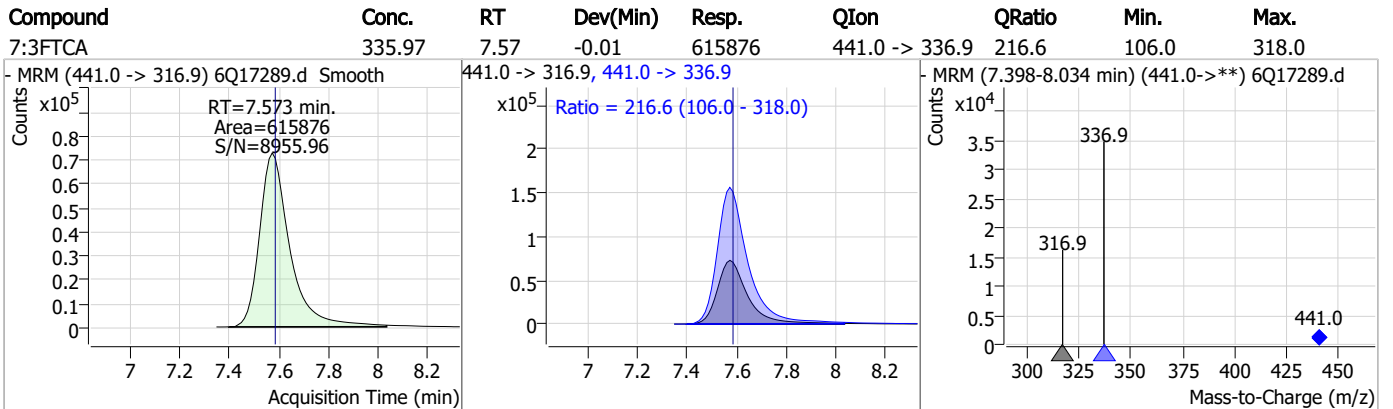
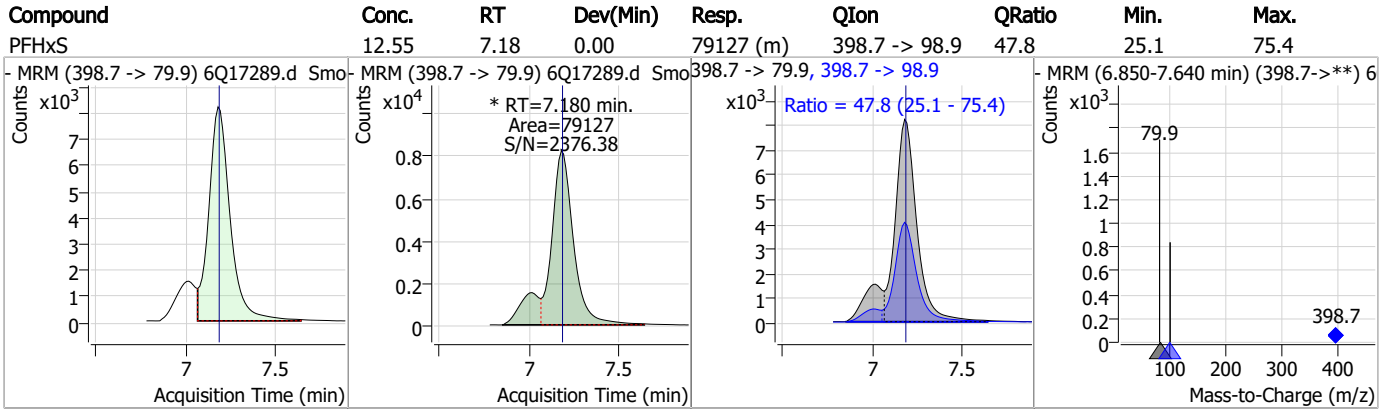
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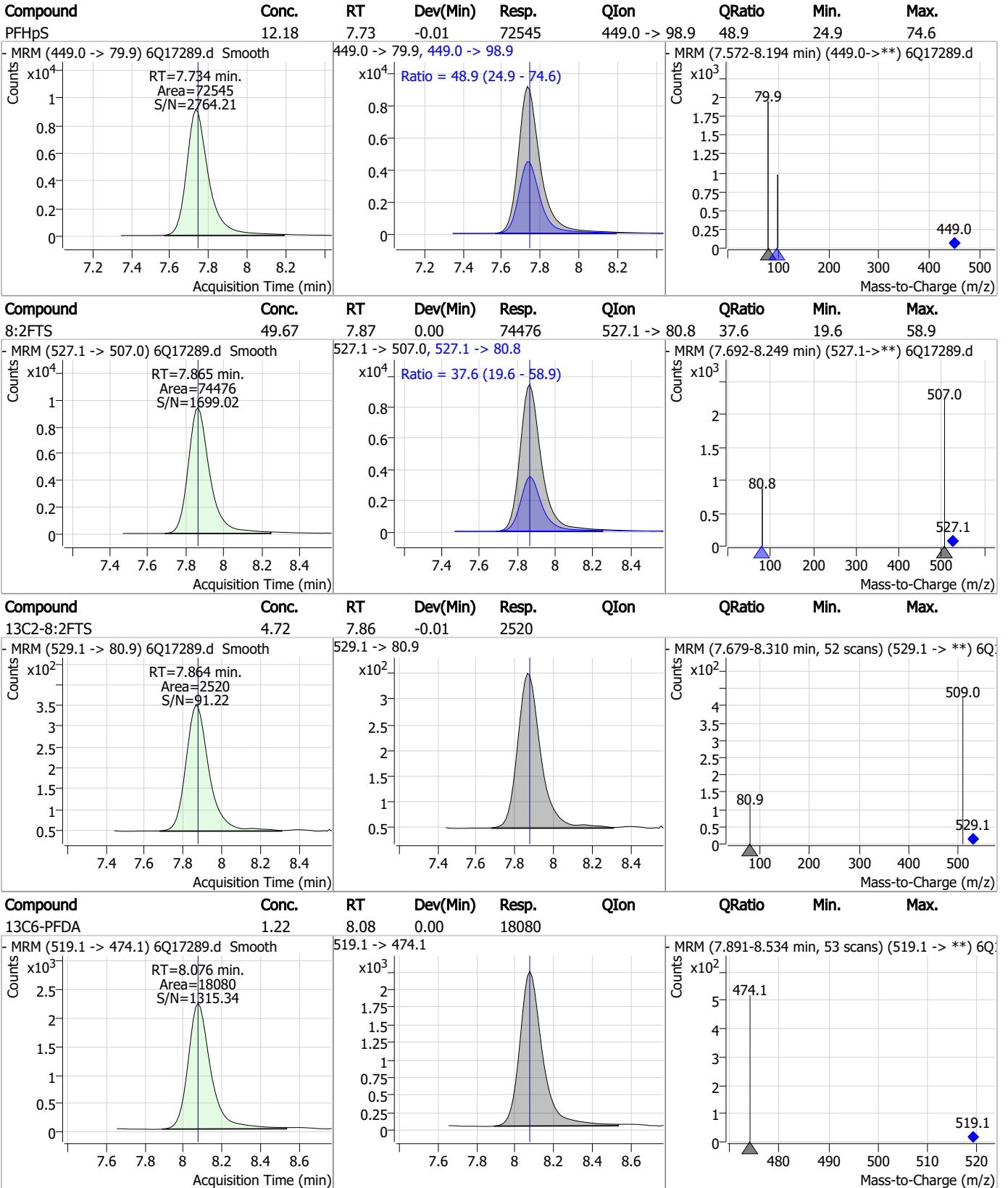
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



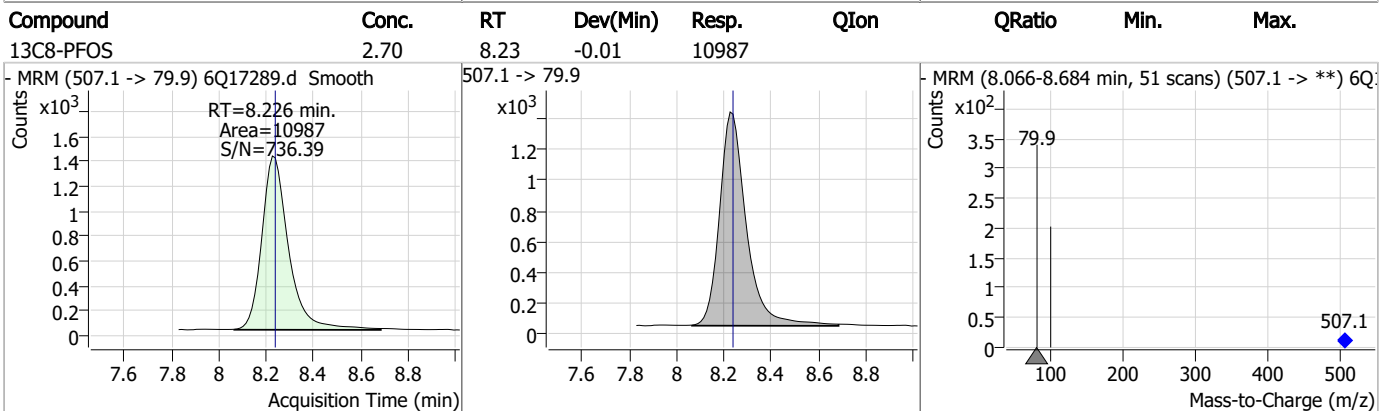
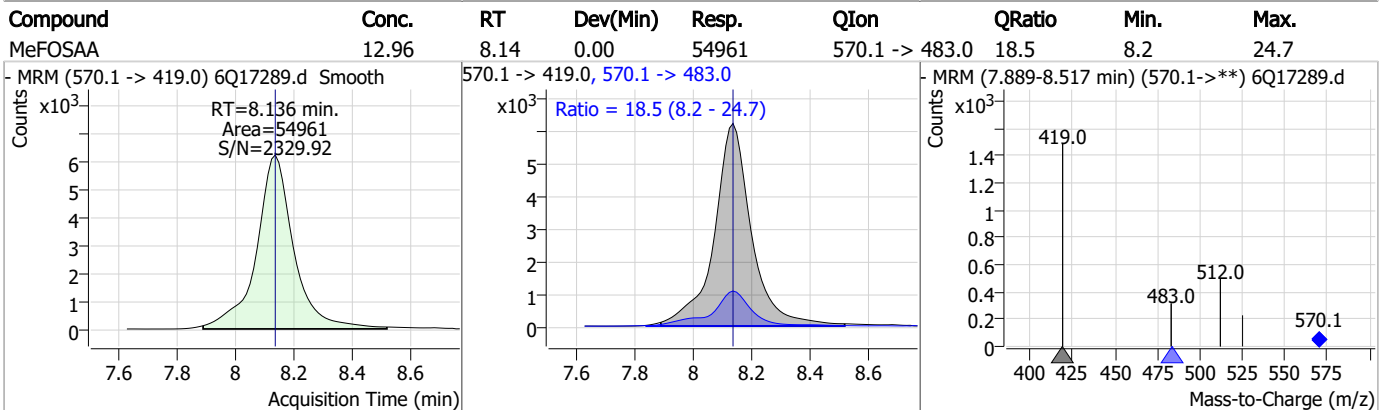
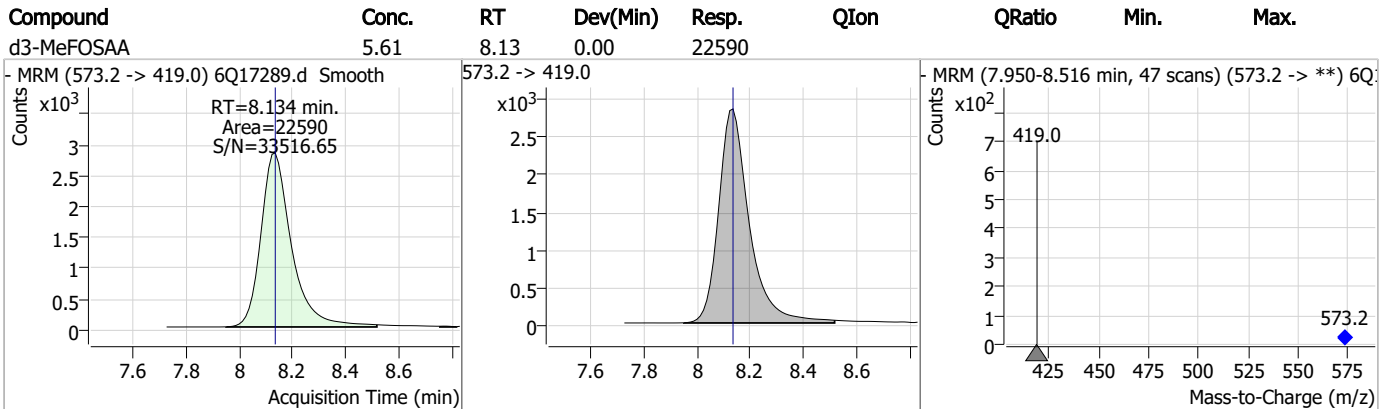
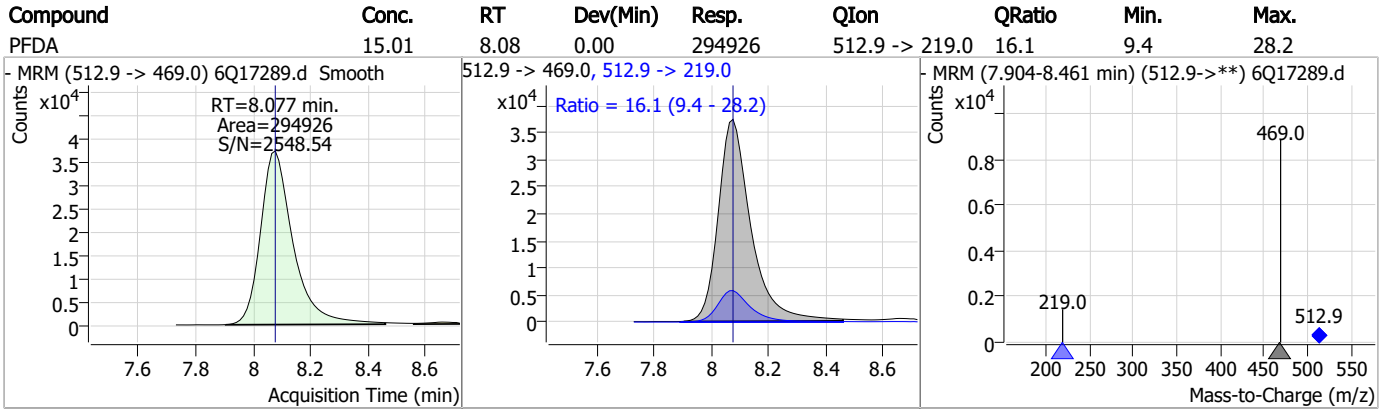
Perfluorinated Compounds by LC/MS/MS



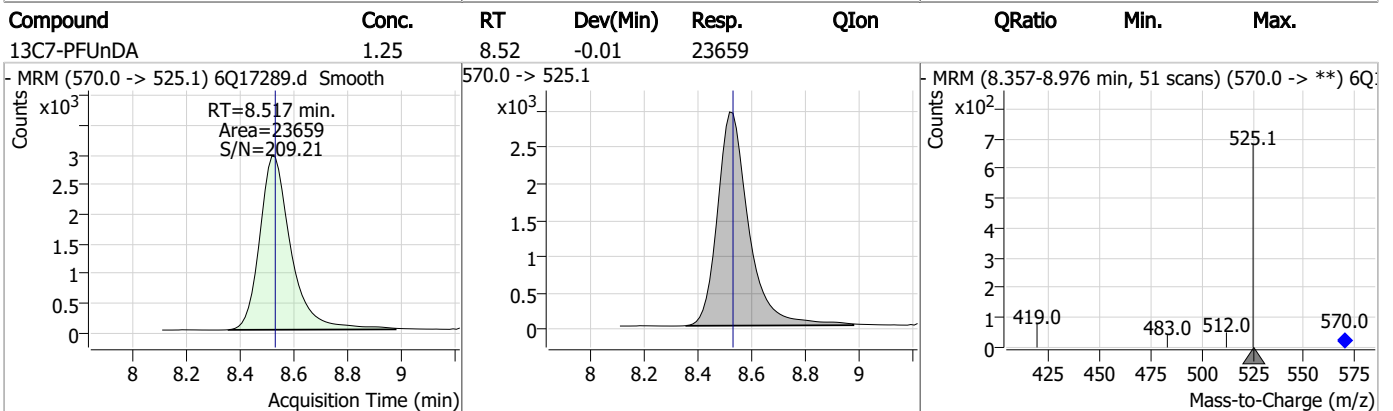
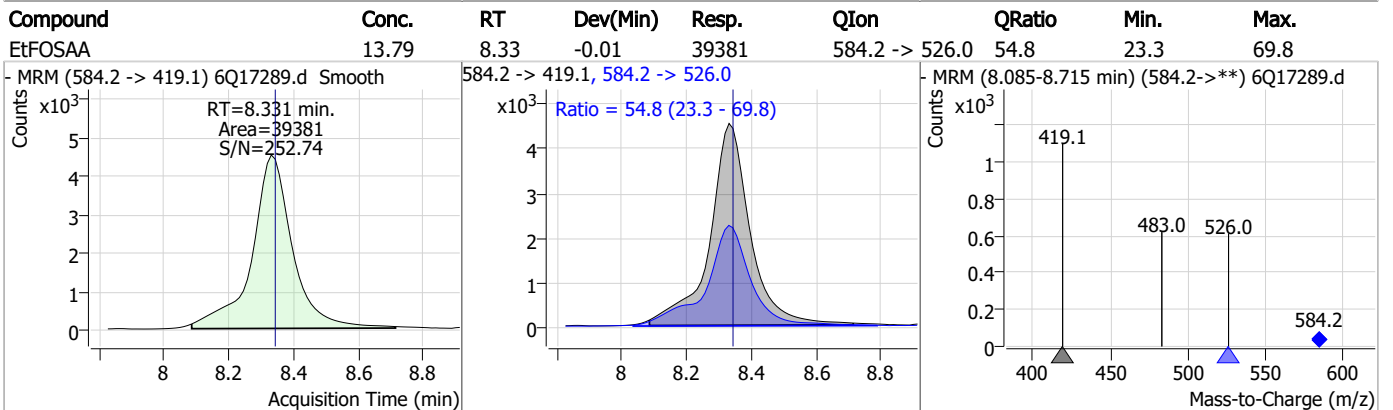
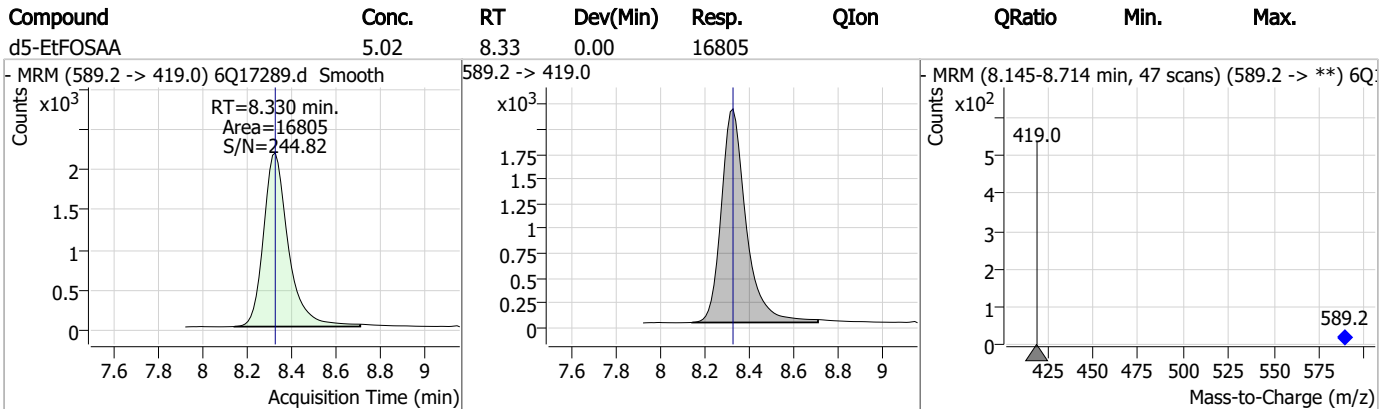
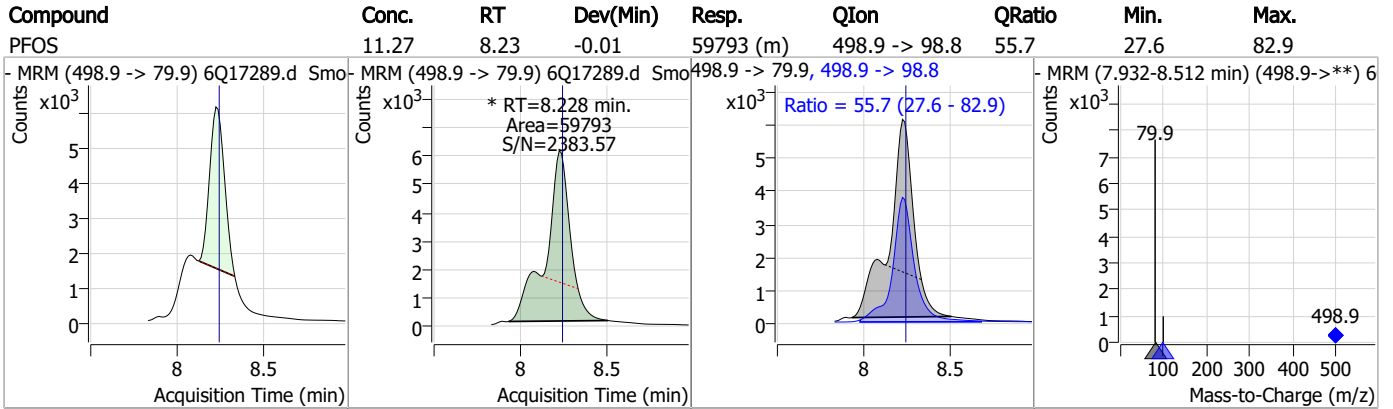
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Perfluorinated Compounds by LC/MS/MS

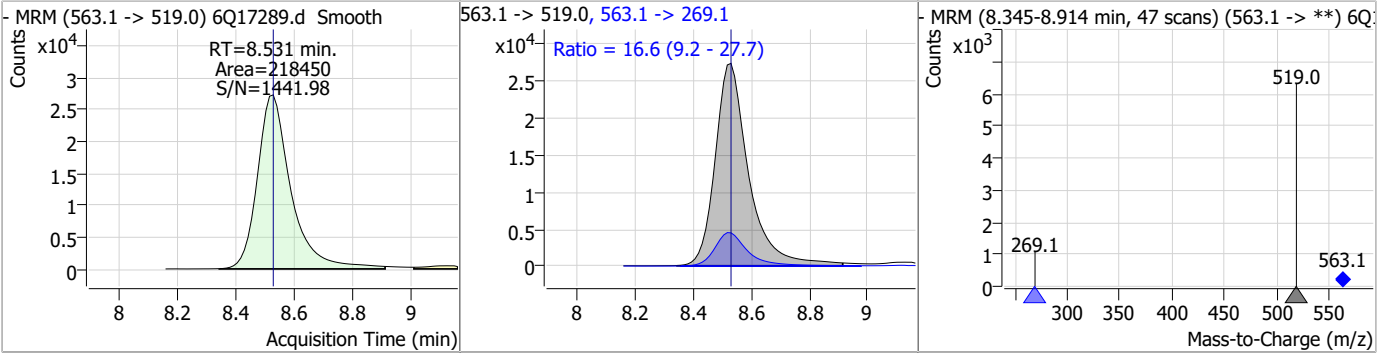


Perfluorinated Compounds by LC/MS/MS

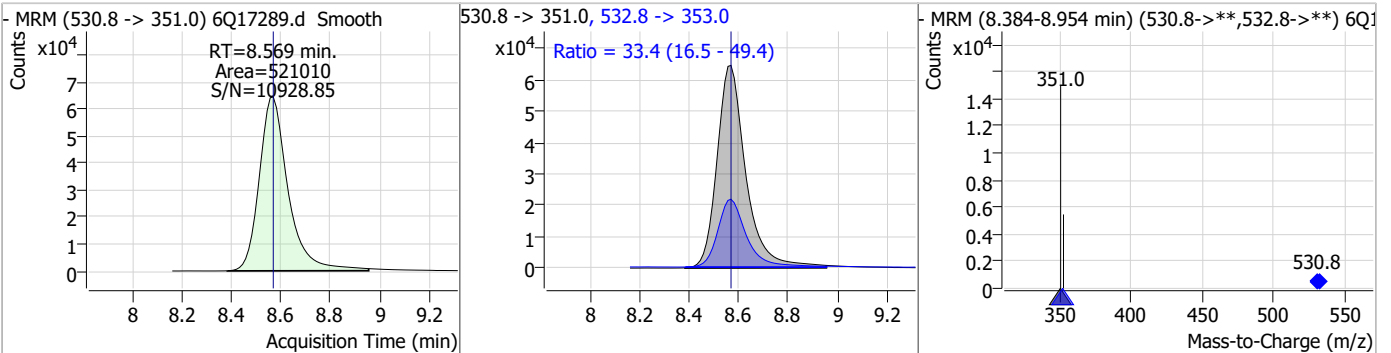


Perfluorinated Compounds by LC/MS/MS

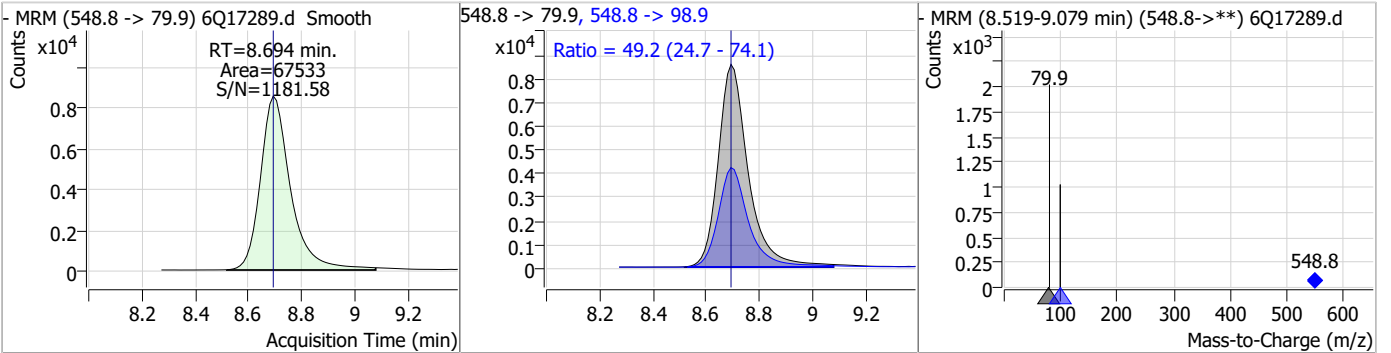
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	13.31	8.53	0.00	218450	563.1 -> 269.1	16.6	9.2	27.7



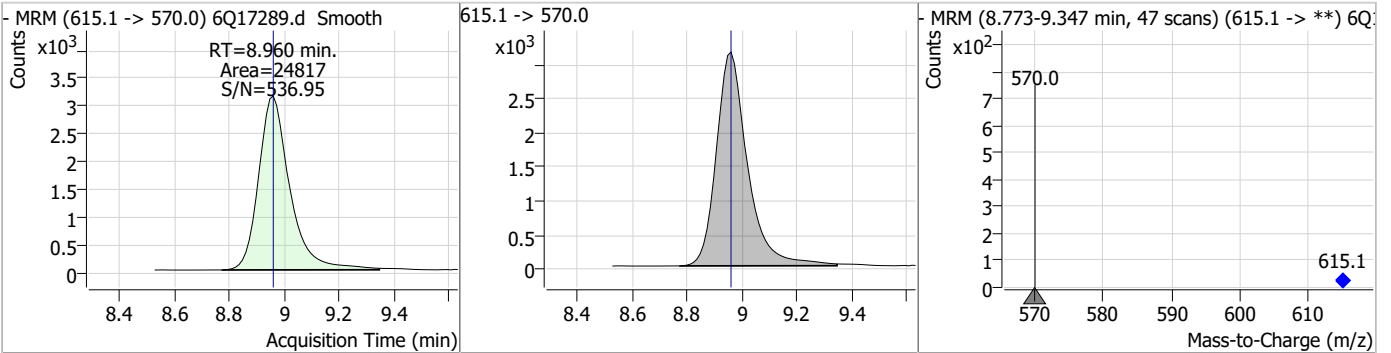
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	24.64	8.57	0.00	521010	532.8 -> 353.0	33.4	16.5	49.4



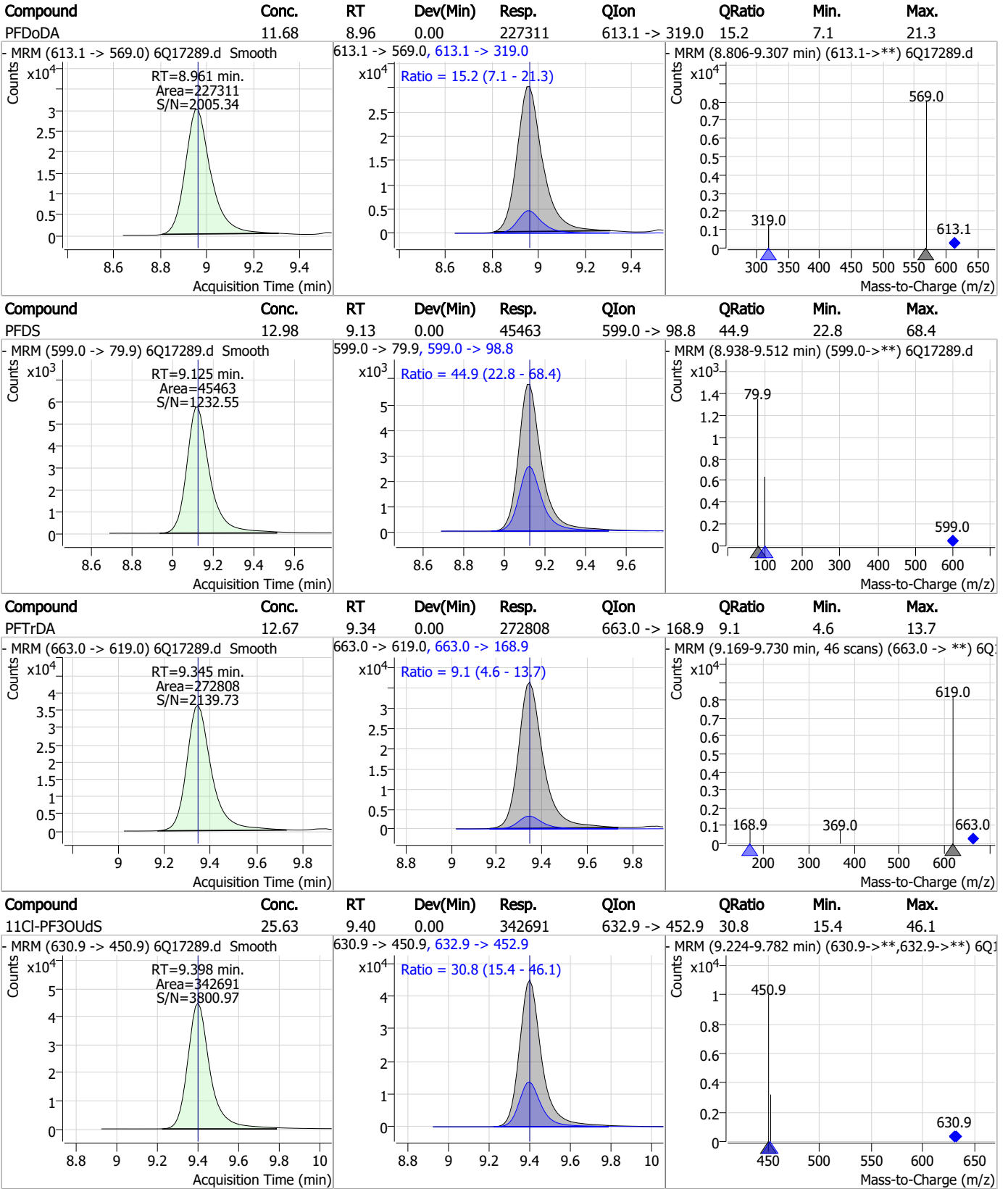
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	12.73	8.69	0.00	67533	548.8 -> 98.9	49.2	24.7	74.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.33	8.96	0.00	24817	615.1 -> 570.0			



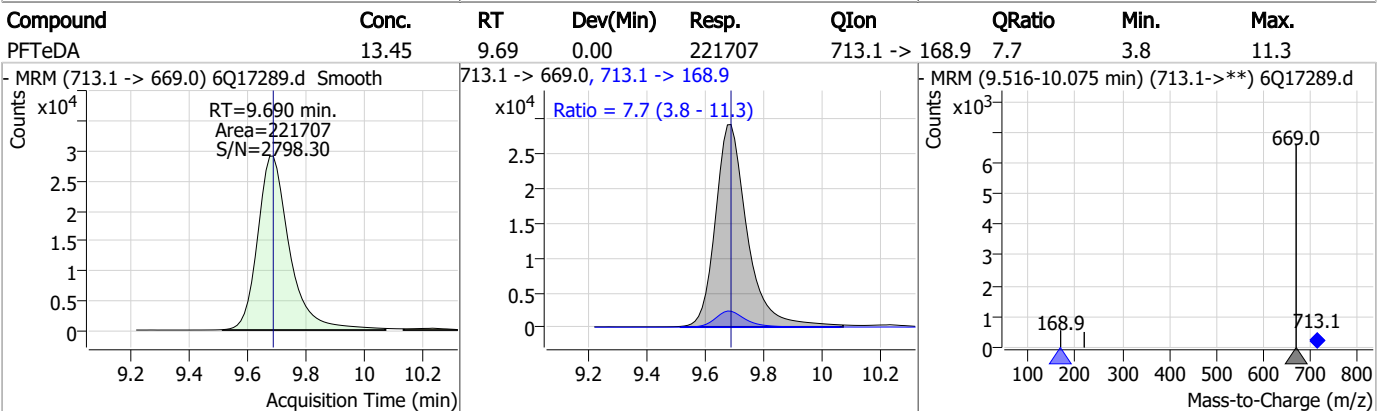
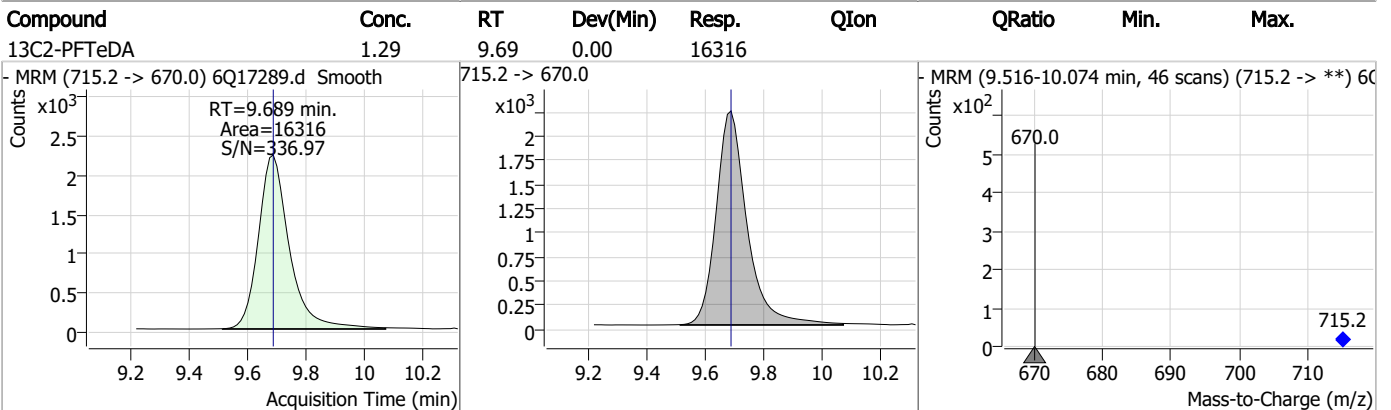
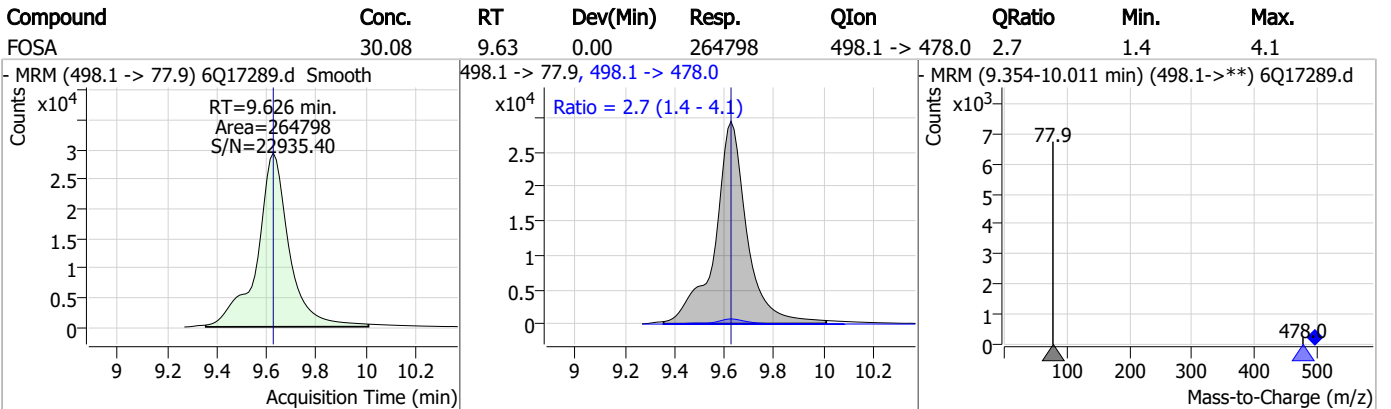
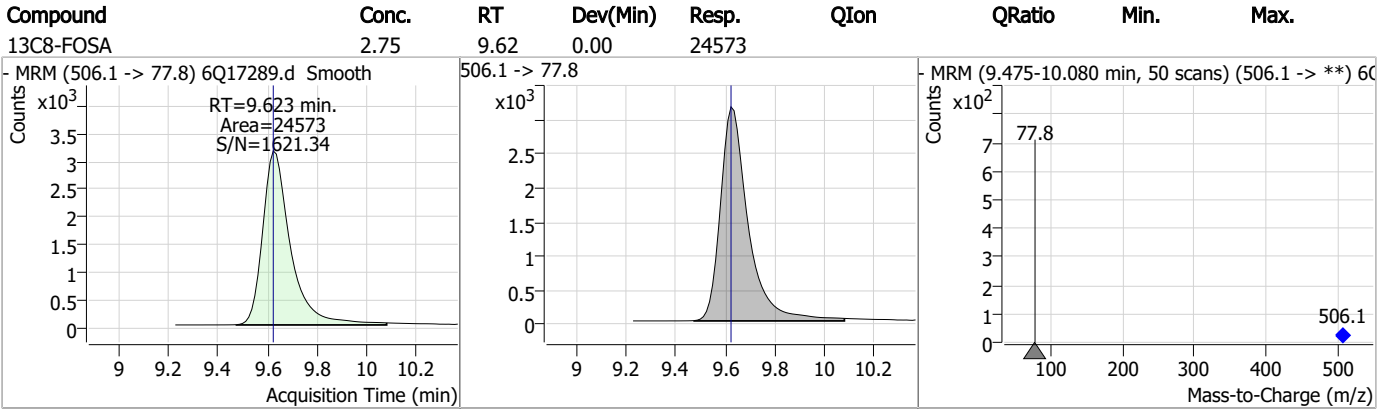
Perfluorinated Compounds by LC/MS/MS



7.6.4

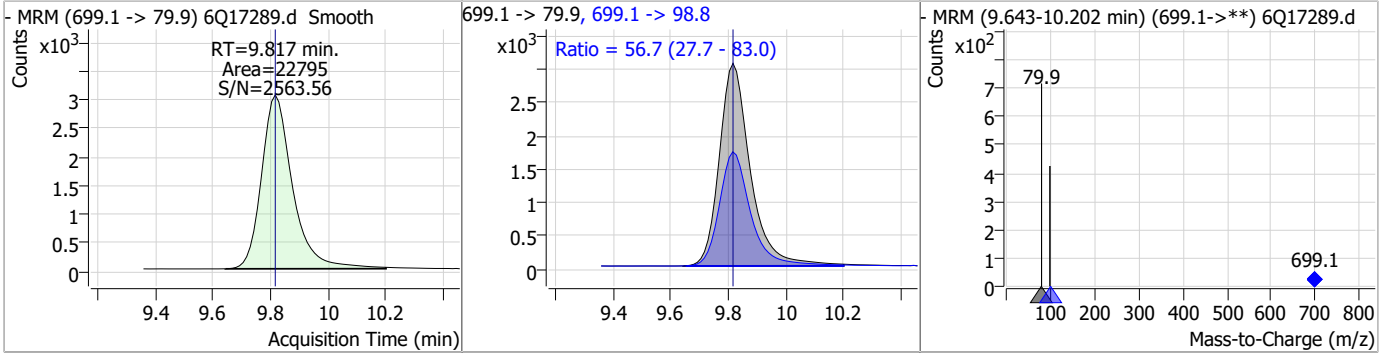
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Perfluorinated Compounds by LC/MS/MS

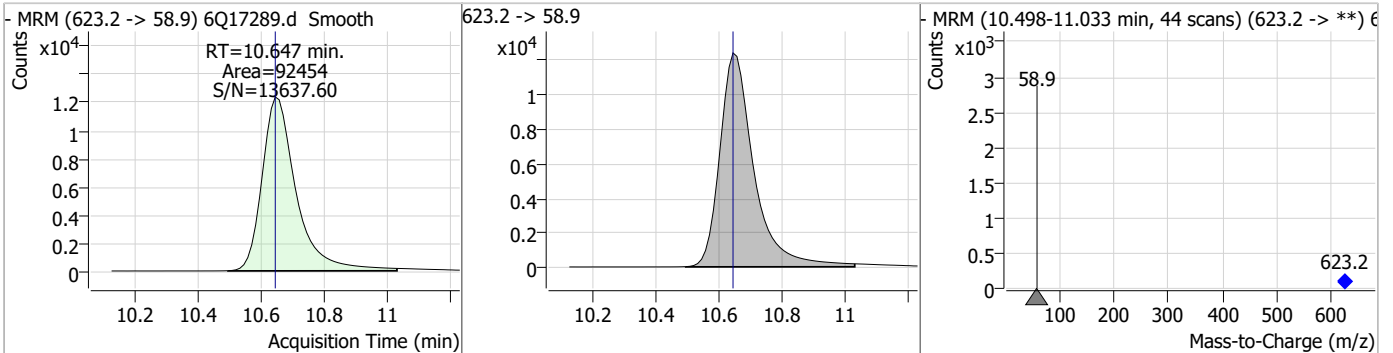


Perfluorinated Compounds by LC/MS/MS

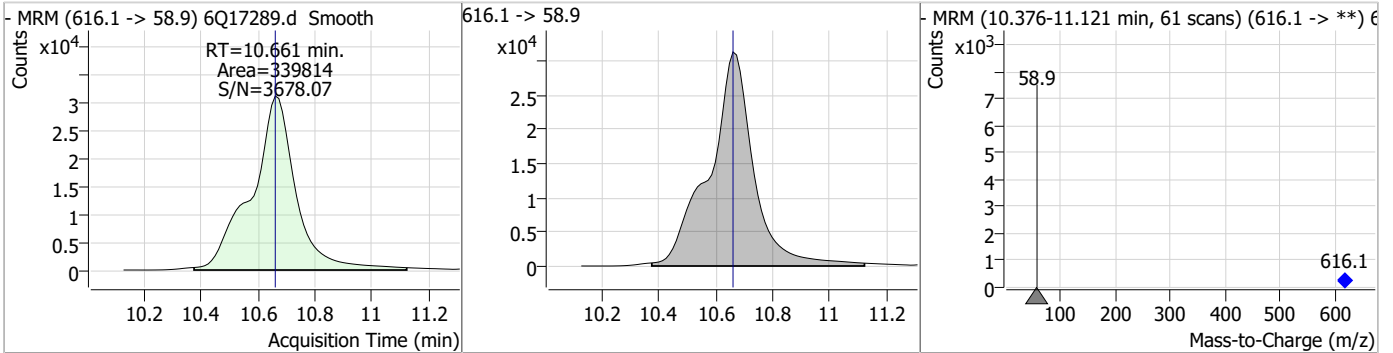
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	12.59	9.82	0.00	22795	699.1 -> 98.8	56.7	27.7	83.0



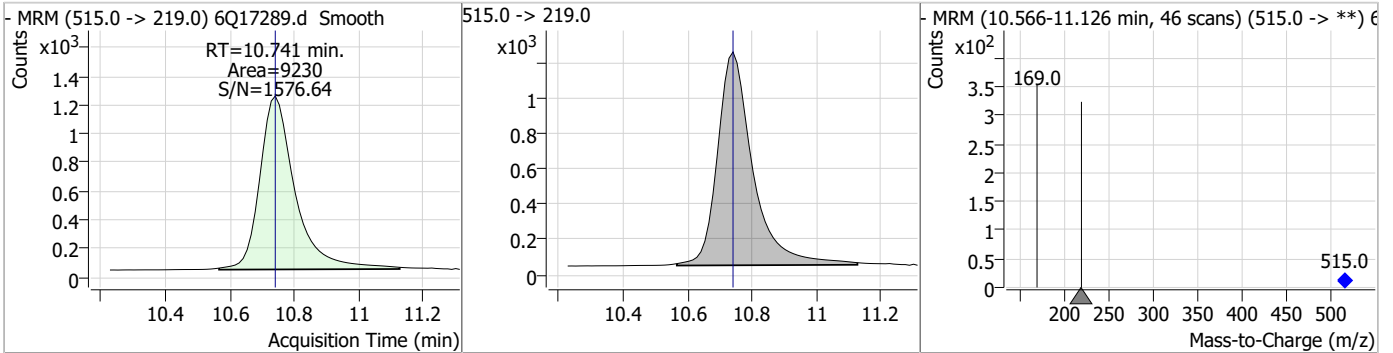
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	26.09	10.65	0.00	92454				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	82.42	10.66	0.00	339814				

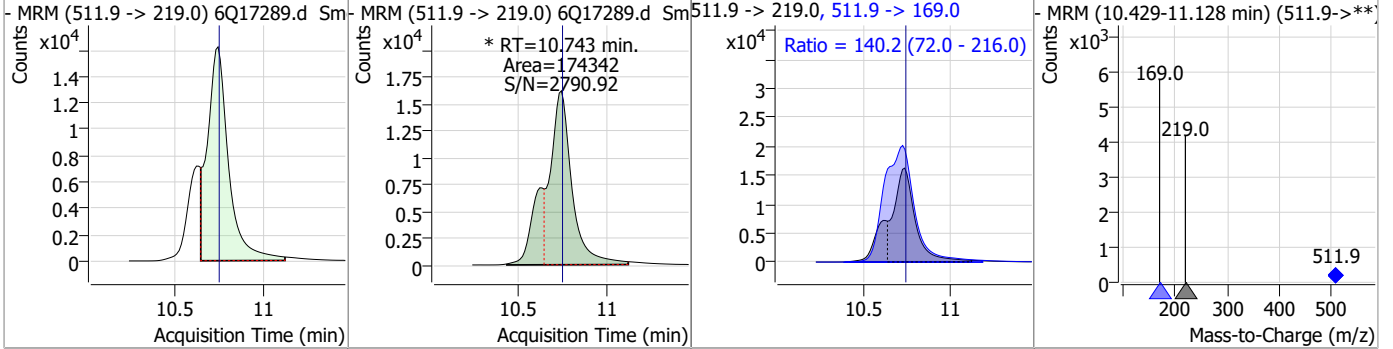


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.74	10.74	0.00	9230				

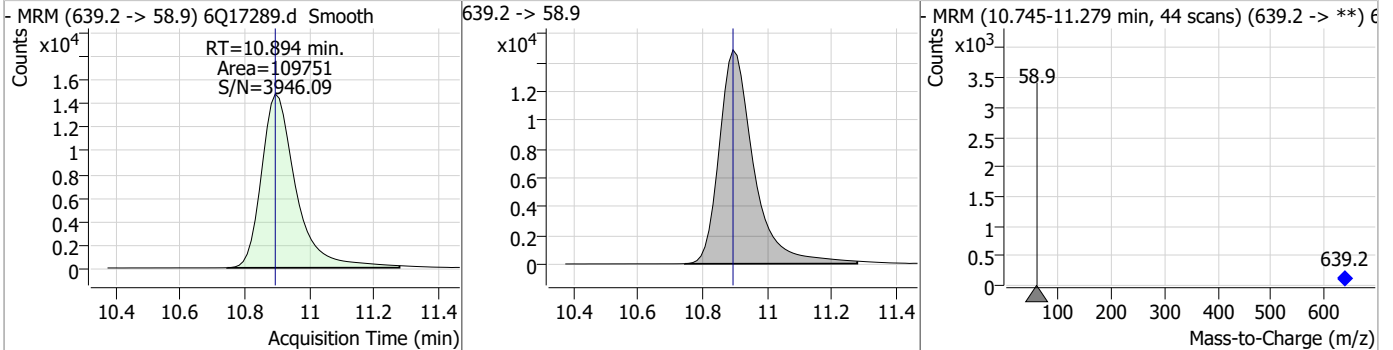


Perfluorinated Compounds by LC/MS/MS

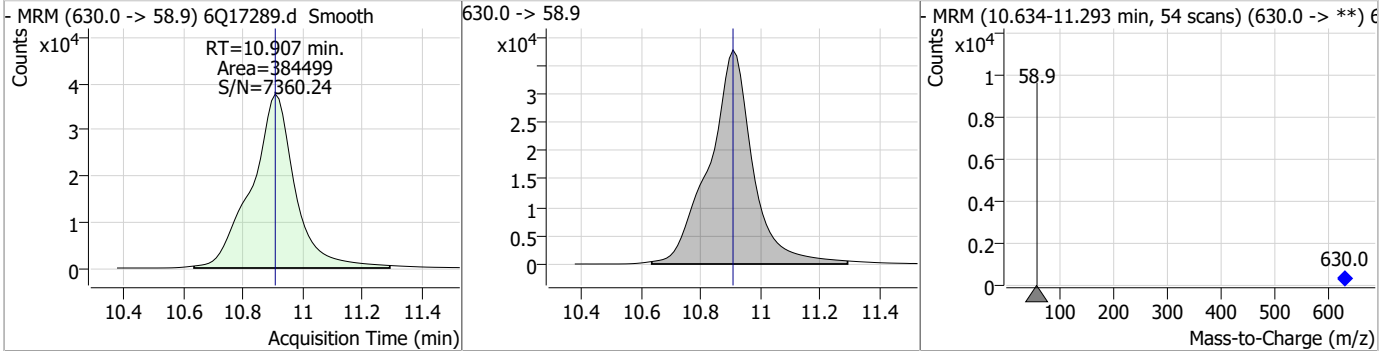
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	41.97	10.74	0.00	174342 (m)	511.9 -> 169.0	140.2	72.0	216.0



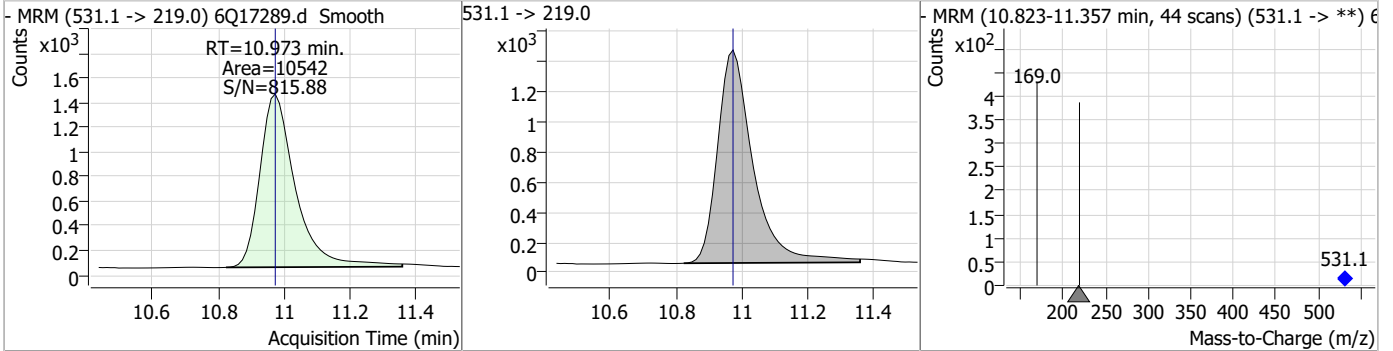
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.34	10.89	0.00	109751				



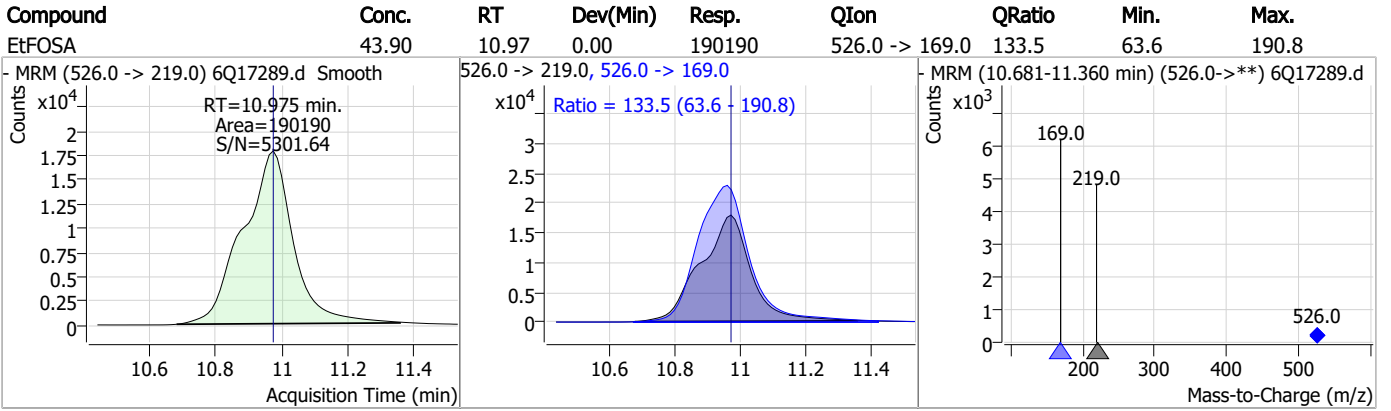
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	84.13	10.91	0.00	384499				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.55	10.97	0.00	10542				



Perfluorinated Compounds by LC/MS/MS



7.6.4

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Manual Integration Approval Summary

Sample Number: S6Q261-RT Method: EPA DRAFT 1633
Lab FileID: 6Q17289.D Analyst approved: 05/02/23 20:40 Martha Valls
Injection Time: 05/02/23 11:05 Supervisor approved: 05/03/23 19:39 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.06	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.18	Split peak
Perfluorononanoic acid	375-95-1		7.46	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.23	Split peak
MeFOSA	31506-32-8		10.74	Split peak

7.6.4.1

7

QQQ Check Tune Report



Instrument Name LCMS Q6
MS Model G6495B
MS Instrument Serial SG1752D103
Software_Firmware Version 10.1.67, FW: A.00.08.112
Tune Date & Time 21 April 2023 16:42:07
File Path D:\MassHunter\Tune\QQQ\G6495B\atunes.TUNE.XML
Ion Source AJS ESI
Ionization Mode AJS ESI
Tuned Resolution All
Vacuum Pressure 1.73E+0 [R] (Torr); 3.15E-5 [H] (Torr)

Source Parameters

Parameter	Positive	Negative
Gas Temp (°C)	220	220
Gas Flow (l/min)	14	14
Nebulizer (psi)	20	20
Capillary (V)	3000	3000
Nozzle Voltage (V)	1500	1500
Sheath Gas Temp (°C)	250	250
Sheath Gas Flow (l/min)	11	11

Positive Results

Analyzer: MS1 Polarity: Positive Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
118.09	118.11	0.02	Pass	0.70	0.68	-0.02	Pass	1712349
322.05	322.09	0.04	Pass	0.70	0.69	-0.01	Pass	1367900
622.03	621.91	-0.12	Pass	0.70	0.70	0.00	Pass	1874880
922.01	921.91	-0.10	Pass	0.70	0.70	0.00	Pass	1041451
1521.97	1521.86	-0.11	Pass	0.70	0.66	-0.04	Pass	158214
2121.93	2121.78	-0.15	Pass	0.70	0.70	0.00	Pass	43141

Analyzer: MS2 Polarity: Positive Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
58.07	58.14	0.07	Pass	0.70	0.57	-0.13	Pass	556605
118.09	118.06	-0.03	Pass	0.70	0.63	-0.07	Pass	1970997
322.05	322.01	-0.04	Pass	0.70	0.71	0.01	Pass	1666060
622.03	621.98	-0.05	Pass	0.70	0.71	0.01	Pass	1905375
922.01	921.91	-0.10	Pass	0.70	0.75	0.05	Pass	819505
1521.97	1521.90	-0.07	Pass	0.70	0.72	0.02	Pass	190618
2121.93	2121.83	-0.10	Pass	0.70	0.71	0.01	Pass	48061

Analyzer: MS1 Polarity: Positive Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
118.09	118.13	0.04	Pass	1.20	1.40	0.20	Pass	3602917
322.05	322.00	-0.05	Pass	1.20	1.52	0.32	Pass	2388617
622.03	622.00	-0.03	Pass	1.20	1.53	0.33	Pass	3421723
922.01	921.93	-0.08	Pass	1.20	1.40	0.20	Pass	2494574
1521.97	1521.88	-0.09	Pass	1.20	1.29	0.09	Pass	531796
2121.93	2121.82	-0.11	Pass	1.20	1.11	-0.09	Pass	207195

Analyzer: MS2 Polarity: Positive Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
58.07	58.11	0.04	Pass	1.20	1.16	-0.04	Pass	909874
118.09	118.03	-0.06	Pass	1.20	1.26	0.06	Pass	2956146
322.05	322.09	0.04	Pass	1.20	1.43	0.23	Pass	2346697
622.03	621.90	-0.13	Pass	1.20	1.24	0.04	Pass	3186612
922.01	922.01	0.00	Pass	1.20	1.34	0.14	Pass	1549696
1521.97	1521.92	-0.05	Pass	1.20	1.29	0.09	Pass	390217
2121.93	2121.75	-0.18	Pass	1.20	1.23	0.03	Pass	134355

Analyzer: MS1 Polarity: Positive Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
118.09	117.89	-0.20	Pass	2.50	2.50	0.00	Pass	5097401
322.05	321.99	-0.06	Pass	2.50	3.17	0.67	Pass	3138893
622.03	621.96	-0.07	Pass	2.50	3.03	0.53	Pass	4167132
922.01	921.90	-0.11	Pass	2.50	3.00	0.50	Pass	3418628
1521.97	1521.84	-0.13	Pass	2.50	2.71	0.21	Pass	1054324
2121.93	2121.60	-0.33	Pass	2.50	2.73	0.23	Pass	577744

7.7.1
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QQQ Check Tune Report



Analyzer: MS2 Polarity: Positive Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
58.07	57.92	-0.15	Pass	2.50	2.59	0.09	Pass	1318333
118.09	118.00	-0.09	Pass	2.50	2.63	0.13	Pass	5069616
322.05	322.23	0.18	Pass	2.50	2.82	0.32	Pass	3102879
622.03	621.99	-0.04	Pass	2.50	2.72	0.22	Pass	4250991
922.01	922.01	0.00	Pass	2.50	2.73	0.23	Pass	2895443
1521.97	1521.89	-0.08	Pass	2.50	2.84	0.34	Pass	1085946
2121.93	2121.74	-0.19	Pass	2.50	2.84	0.34	Pass	675885

7.7.1

7

QQQ Check Tune Report



Negative Results

Analyzer: MS1 Polarity: Negative Width: Unit

m/z	m/z	Delta	Result	FWHM	FWHM	Delta	Result	Abundance
Expected	Measured			Expected	Measured			
112.99	112.97	-0.02	Pass	0.70	0.70	0.00	Pass	280663
302.00	301.94	-0.06	Pass	0.70	0.77	0.07	Pass	1174361
601.98	601.95	-0.03	Pass	0.70	0.74	0.04	Pass	3314113
1033.99	1033.95	-0.04	Pass	0.70	0.66	-0.04	Pass	1111513
1633.95	1633.89	-0.06	Pass	0.70	0.68	-0.02	Pass	1041900
2233.91	2233.76	-0.15	Pass	0.70	0.72	0.02	Pass	475314

Analyzer: MS2 Polarity: Negative Width: Unit

m/z	m/z	Delta	Result	FWHM	FWHM	Delta	Result	Abundance
Expected	Measured			Expected	Measured			
69.00	69.02	0.02	Pass	0.70	0.74	0.04	Pass	79084
112.99	112.97	-0.02	Pass	0.70	0.75	0.05	Pass	336048
302.00	301.94	-0.06	Pass	0.70	0.63	-0.07	Pass	1854456
601.98	601.99	0.01	Pass	0.70	0.66	-0.04	Pass	3616583
1033.99	1033.85	-0.14	Pass	0.70	0.78	0.08	Pass	1197307
1633.95	1633.76	-0.19	Pass	0.70	0.80	0.10	Pass	1551614
2233.91	2233.69	-0.22	Pass	0.70	0.80	0.10	Pass	879381

Analyzer: MS1 Polarity: Negative Width: Wide

m/z	m/z	Delta	Result	FWHM	FWHM	Delta	Result	Abundance
Expected	Measured			Expected	Measured			
112.99	112.88	-0.11	Pass	1.20	1.14	-0.06	Pass	371210
302.00	301.96	-0.04	Pass	1.20	1.54	0.34	Pass	1841827
601.98	601.93	-0.05	Pass	1.20	1.72	0.52	Pass	4338111
1033.99	1033.98	-0.01	Pass	1.20	1.63	0.43	Pass	1752240
1633.95	1633.73	-0.22	Pass	1.20	1.51	0.31	Pass	2128895
2233.91	2233.90	-0.01	Pass	1.20	1.47	0.27	Pass	1236282

Analyzer: MS2 Polarity: Negative Width: Wide

m/z	m/z	Delta	Result	FWHM	FWHM	Delta	Result	Abundance
Expected	Measured			Expected	Measured			
69.00	69.09	0.09	Pass	1.20	1.13	-0.07	Pass	132092
112.99	113.04	0.05	Pass	1.20	1.21	0.01	Pass	432295
302.00	301.95	-0.05	Pass	1.20	1.22	0.02	Pass	2083166
601.98	602.00	0.02	Pass	1.20	1.30	0.10	Pass	4539558
1033.99	1034.01	0.02	Pass	1.20	1.23	0.03	Pass	1859414
1633.95	1633.89	-0.06	Pass	1.20	1.17	-0.03	Pass	2404725
2233.91	2233.80	-0.11	Pass	1.20	1.06	-0.14	Pass	1445876

Analyzer: MS1 Polarity: Negative Width: Widest

m/z	m/z	Delta	Result	FWHM	FWHM	Delta	Result	Abundance
Expected	Measured			Expected	Measured			
112.99	113.11	0.12	Pass	2.50	2.40	-0.10	Pass	332508
302.00	301.99	-0.01	Pass	2.50	2.53	0.03	Pass	1674144
601.98	601.94	-0.04	Pass	2.50	2.57	0.07	Pass	5262626
1033.99	1034.04	0.05	Pass	2.50	2.37	-0.13	Pass	2286888
1633.95	1633.92	-0.03	Pass	2.50	2.69	0.19	Pass	2589242
2233.91	2233.71	-0.20	Pass	2.50	2.72	0.22	Pass	1428495

Analyzer: MS2 Polarity: Negative Width: Widest

m/z	m/z	Delta	Result	FWHM	FWHM	Delta	Result	Abundance
Expected	Measured			Expected	Measured			
69.00	68.99	-0.01	Pass	2.50	2.65	0.15	Pass	168726
112.99	112.91	-0.08	Pass	2.50	2.48	-0.02	Pass	829124
302.00	301.92	-0.08	Pass	2.50	2.58	0.08	Pass	2833231
601.98	601.93	-0.05	Pass	2.50	2.82	0.32	Pass	6188038
1033.99	1033.90	-0.09	Pass	2.50	2.35	-0.15	Pass	3393113
1633.95	1633.83	-0.12	Pass	2.50	2.27	-0.23	Pass	5263089
2233.91	2233.57	-0.34	Pass	2.50	2.27	-0.23	Pass	3433253

7.7.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17051.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/28/2023 12:50:16 PM
 Sample Name : ic258-1
 Vial : P1-A2
 DA Method File : 1633_042823_S6Q258.quantmethod.xml
 Batch Name : s6q258.batch.bin
 Sample Information : OP96301,S6Q258,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.910	216.8 -> 171.9	186819	10.00 µg/L	0.012
M5-PFPeA	4.270	268.3 -> 223.0	66641	5.00 µg/L	0.000
M5-PFHxA	5.468	318.0 -> 273.0	69077	2.50 µg/L	0.000
M4-PFHpA	6.419	367.1 -> 322.0	60355	2.50 µg/L	0.000
M8-PFOA	7.062	421.1 -> 376.0	84734	2.50 µg/L	0.000
M9-PFNA	7.594	472.1 -> 427.0	27394	1.25 µg/L	0.000
M6-PFDA	8.076	519.1 -> 474.1	18971	1.25 µg/L	0.000
M7-PFUnDA	8.530	570.0 -> 525.1	26035	1.25 µg/L	0.000
M2-PFDoDA	8.960	615.1 -> 570.0	25781	1.25 µg/L	0.000
M2-PFTeDA	9.689	715.2 -> 670.0	17287	1.25 µg/L	0.000
M8-FOSA	9.623	506.1 -> 77.8	26073	2.50 µg/L	0.000
M3-PFBS	5.398	302.1 -> 79.9	22557	2.50 µg/L	0.000
M3-PFHxS	7.179	402.1 -> 79.9	13242	2.50 µg/L	0.000
M8-PFOS	8.226	507.1 -> 79.9	10610	2.50 µg/L	-0.012
M2-4:2FTS	5.144	329.1 -> 80.9	2247	5.00 µg/L	0.000
M2-6:2FTS	6.839	429.1 -> 80.9	2798	5.00 µg/L	0.000
M2-8:2FTS	7.864	529.1 -> 80.9	2856	5.00 µg/L	0.000
M3-MeFOSAA	8.134	573.2 -> 419.0	23497	5.00 µg/L	0.000
M3-HFPO-DA	5.845	286.9 -> 168.9	41439	10.00 µg/L	0.000
M5-EtFOSAA	8.330	589.2 -> 419.0	18738	5.00 µg/L	0.000
M7-MeFOSE	10.647	623.2 -> 58.9	102084	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	128810	25.00 µg/L	0.000
M5-EtFOSA	10.973	531.1 -> 219.0	11979	2.50 µg/L	0.000
M3-MeFOSA	10.741	515.0 -> 219.0	9281	2.50 µg/L	0.012
13C4-PFOS	8.239	502.8 -> 79.9	14866	2.50 µg/L	0.000
13C3-PFBA	2.902	216.0 -> 172.0	80751	5.00 µg/L	0.000
18O2-PFHxS	7.177	403.0 -> 83.9	9952	2.50 µg/L	0.000
13C4-PFOA	7.063	417.1 -> 372.0	88403	2.50 µg/L	0.000
13C2-PFDA	8.076	515.1 -> 470.1	24365	1.25 µg/L	0.000
13C5-PFNA	7.595	468.0 -> 423.0	29325	1.25 µg/L	0.000
13C2-PFHxA	5.469	315.1 -> 270.0	59809	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.144	329.1 -> 80.9	2247	4.91 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.2%		
13C2-6:2FTS	6.839	429.1 -> 80.9	2798	5.04 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.8%		
13C2-8:2FTS	7.864	529.1 -> 80.9	2856	4.78 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 95.6%		
13C2-PFDoDA	8.960	615.1 -> 570.0	25781	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.7%		
13C2-PFTeDA	9.689	715.2 -> 670.0	17287	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.8%		
13C3-PFBS	5.398	302.1 -> 79.9	22557	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.4%		
13C3-PFHxS	7.179	402.1 -> 79.9	13242	2.50 µg/L	0.000

7.7.2
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C4-PFBA	2.910	216.8 -> 171.9	186819	10.01 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C4-PFHpA	6.419	367.1 -> 322.0	60355	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.7%	
13C5-PFHxA	5.468	318.0 -> 273.0	69077	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.8%	
13C5-PFPeA	4.270	268.3 -> 223.0	66641	4.99 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C6-PFDA	8.076	519.1 -> 474.1	18971	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.4%	
13C7-PFUnDA	8.530	570.0 -> 525.1	26035	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C8-FOSA	9.623	506.1 -> 77.8	26073	2.65 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.1%	
13C8-PFOA	7.062	421.1 -> 376.0	84734	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C8-PFOS	8.226	507.1 -> 79.9	10610	2.37 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.8%	
13C9-PFNA	7.594	472.1 -> 427.0	27394	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.0%	
d3-MeFOSAA	8.134	573.2 -> 419.0	23497	5.30 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.1%	
13C3-HFPO-DA	5.845	286.9 -> 168.9	41439	9.79 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.9%	
d3-MeFOSA	10.741	515.0 -> 219.0	9281	2.50 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%	
d5-EtFOSAA	8.330	589.2 -> 419.0	18738	5.09 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.8%	
d7-MeFOSE	10.647	623.2 -> 58.9	102084	26.16 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 104.7%	
d9-EtFOSE	10.894	639.2 -> 58.9	128810	27.02 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 108.1%	
d5-EtFOSA	10.973	531.1 -> 219.0	11979	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.1%	
Target Compounds					QValue
4:2FTS	5.145	327.1 -> 307.0	2219	0.65 µg/L	95
		327.1 -> 80.9	754		
6:2FTS	6.839	427.1 -> 407.0	1782	0.58 µg/L	m 93
		427.1 -> 80.9	710		
8:2FTS	7.865	527.1 -> 507.0	1265	0.74 µg/L	93
		527.1 -> 80.8	457		
EtFOSAA	8.331	584.2 -> 419.1	611	0.19 µg/L	96
		584.2 -> 526.0	337		
FOSA	9.614	498.1 -> 77.9	1510	0.16 µg/L	98
		498.1 -> 478.0	54		
MeFOSAA	8.136	570.1 -> 419.0	704	0.16 µg/L	100
		570.1 -> 483.0	103		
PFBA	2.906	212.8 -> 168.9	4004	0.64 µg/L	100
PFBS	5.400	298.7 -> 79.9	1581	0.16 µg/L	100
		298.7 -> 98.8	651		
PFDA	8.077	512.9 -> 469.0	3202	0.16 µg/L	84
		512.9 -> 219.0	751		
PFDODA	8.961	613.1 -> 569.0	3505	0.17 µg/L	92
		613.1 -> 319.0	395		
PFDS	9.125	599.0 -> 79.9	536	0.16 µg/L	m 91

7.7.2
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	233			
PFHpA	6.420	363.1 -> 319.0	4833	0.16	µg/L	99
		363.1 -> 169.0	705			
PFHpS	7.734	449.0 -> 79.9	1005	0.17	µg/L	84
		449.0 -> 98.9	402			
PFHxA	5.470	313.0 -> 269.0	5160	0.19	µg/L	99
		313.0 -> 118.9	224			
PFHxS	7.180	398.7 -> 79.9	1096	0.15	µg/L	m 98
		398.7 -> 98.9	553			
PFNA	7.595	463.0 -> 419.0	2858	0.15	µg/L	99
		463.0 -> 219.0	590			
PFNS	8.694	548.8 -> 79.9	875	0.17	µg/L	82
		548.8 -> 98.9	370			
PFOA	7.063	413.0 -> 369.0	5042	0.19	µg/L	m 90
		413.0 -> 169.0	1111			
PFOS	8.253	498.9 -> 79.9	854	0.17	µg/L	m 87
		498.9 -> 98.8	463			
PFPeA	4.273	263.0 -> 219.0	5806	0.32	µg/L	100
PFPeS	6.472	349.1 -> 79.9	1110	0.15	µg/L	100
		349.1 -> 98.9	536			
PFTeDA	9.690	713.1 -> 669.0	3401	0.19	µg/L	99
		713.1 -> 168.9	251			
PFTrDA	9.358	663.0 -> 619.0	3630	0.16	µg/L	97
		663.0 -> 168.9	293			
PFUnDA	8.531	563.1 -> 519.0	3096	0.17	µg/L	93
		563.1 -> 269.1	444			
11Cl-PF3OUdS	9.398	630.9 -> 450.9	4598	0.32	µg/L	93
		632.9 -> 452.9	1288			
9Cl-PF3ONS	8.569	530.8 -> 351.0	6928	0.31	µg/L	79
		532.8 -> 353.0	2844			
ADONA	6.681	376.9 -> 250.9	19563	0.31	µg/L	99
		376.9 -> 84.8	4948			
HFPO-DA	5.846	284.9 -> 168.9	1269	0.32	µg/L	100
		284.9 -> 184.9	176			
3:3FTCA	3.784	241.0 -> 177.0	938	0.83	µg/L	95
		241.0 -> 117.0	144			
5:3FTCA	6.160	341.0 -> 237.1	19892	4.50	µg/L	92
		341.0 -> 217.0	14528			
7:3FTCA	7.573	441.0 -> 316.9	8675	4.32	µg/L	99
		441.0 -> 336.9	18680			
EtFOSA	10.975	526.0 -> 219.0	1611	0.33	µg/L	94
		526.0 -> 169.0	1849			
EtFOSE	10.907	630.0 -> 58.9	4208	0.78	µg/L	100
MeFOSA	10.730	511.9 -> 219.0	1397	0.33	µg/L	100
		511.9 -> 169.0	1895			
MeFOSE	10.661	616.1 -> 58.9	3713	0.82	µg/L	100
PFDoDS	9.817	699.1 -> 79.9	299	0.17	µg/L	92
		699.1 -> 98.8	189			
NFDHA	5.350	295.0 -> 201.0	1022	0.35	µg/L	85
		295.0 -> 84.9	324			
PFMBA	4.687	279.0 -> 85.1	3886	0.32	µg/L	100
PFMPA	3.438	229.0 -> 84.9	2950	0.32	µg/L	100
PFEESA	5.937	314.8 -> 134.9	10269	0.30	µg/L	98
		314.8 -> 82.9	433			

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

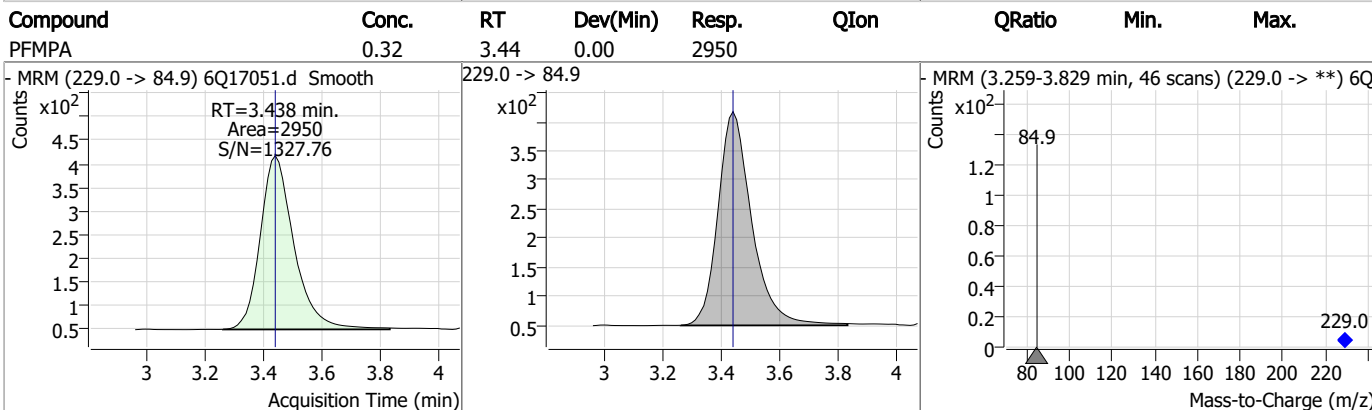
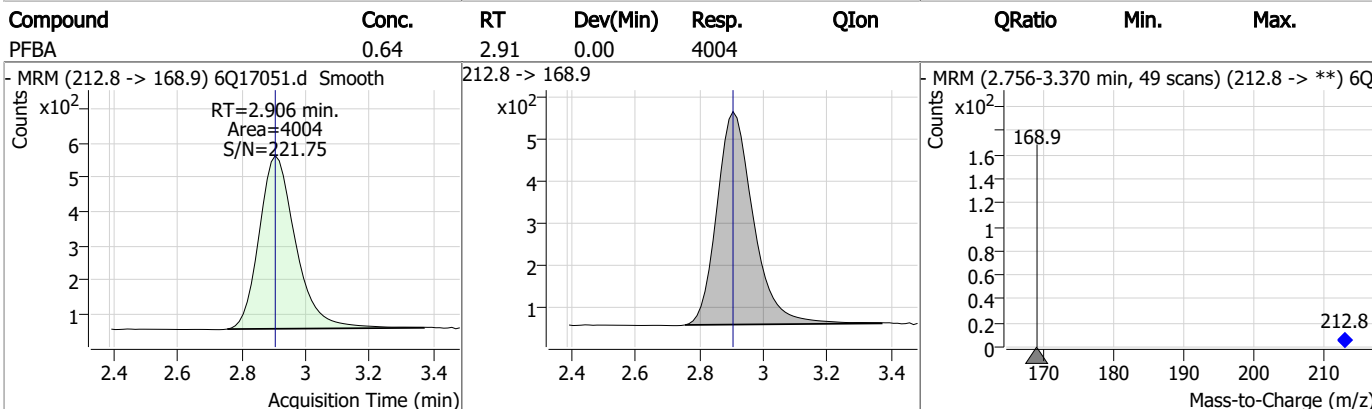
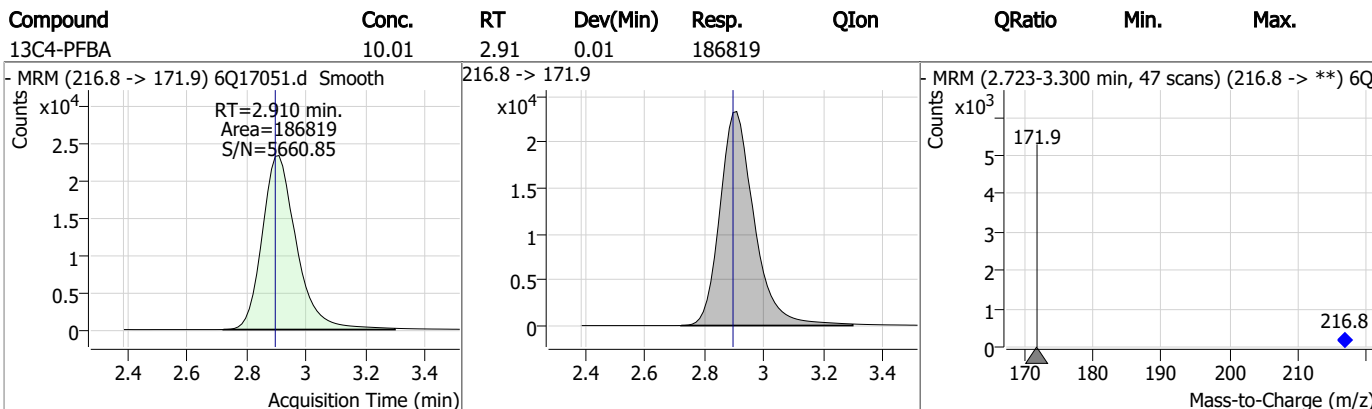
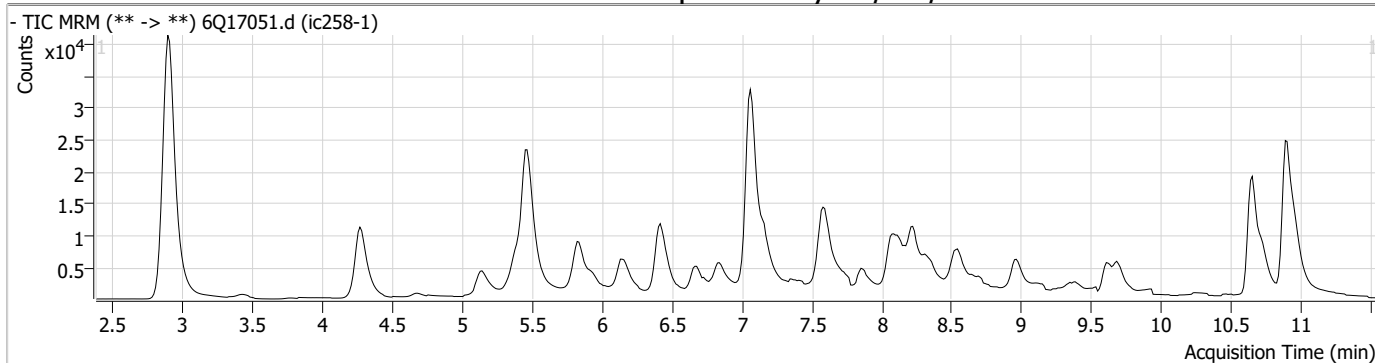
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.2
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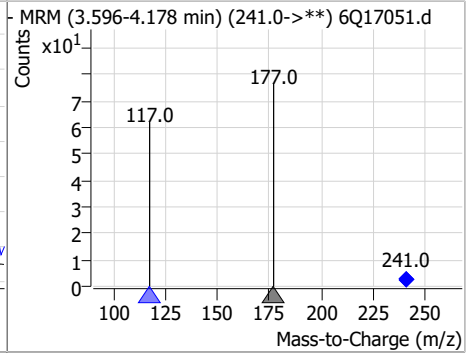
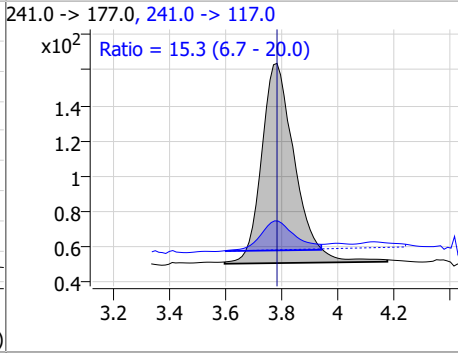
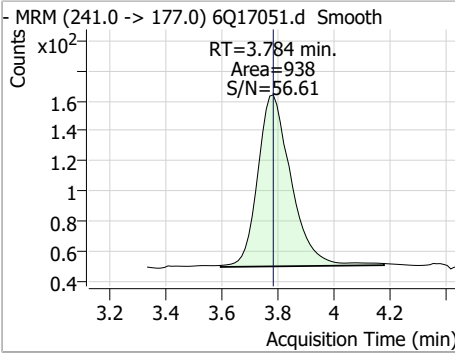
Perfluorinated Compounds by LC/MS/MS



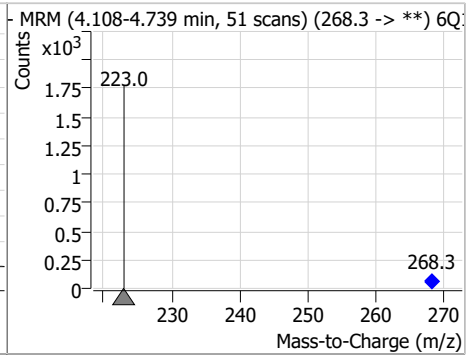
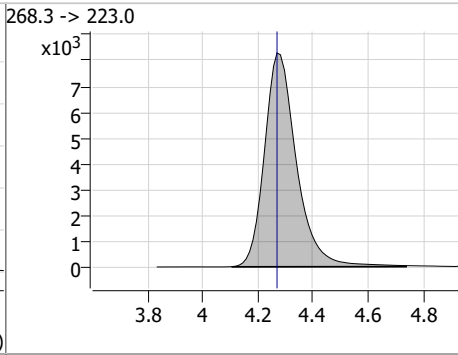
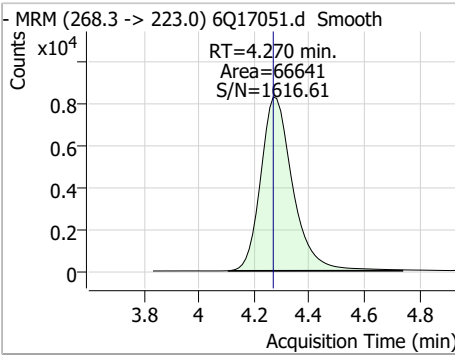
7.7.2
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Perfluorinated Compounds by LC/MS/MS

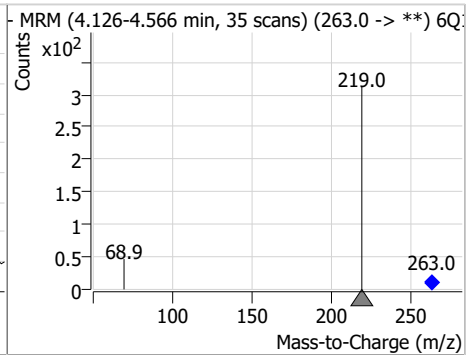
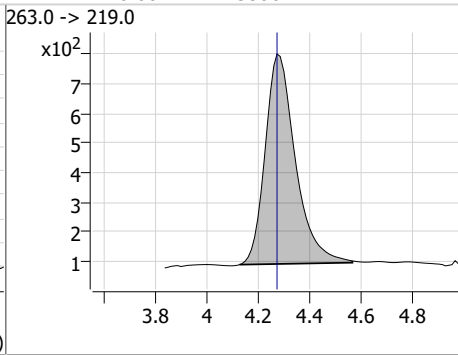
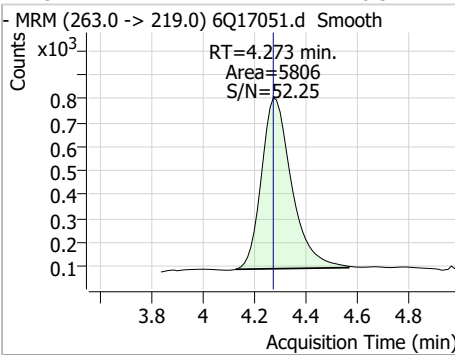
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	0.83	3.78	0.00	938	241.0 -> 117.0	15.3	6.7	20.0



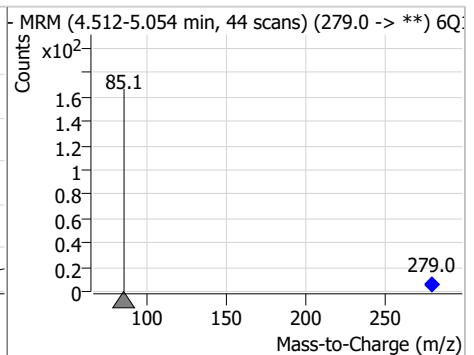
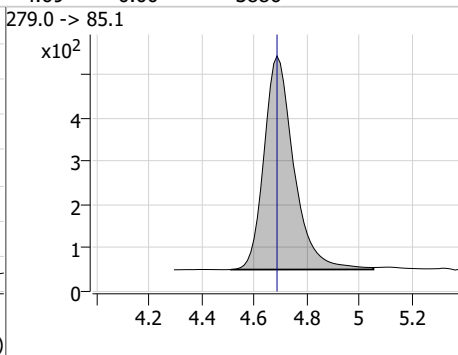
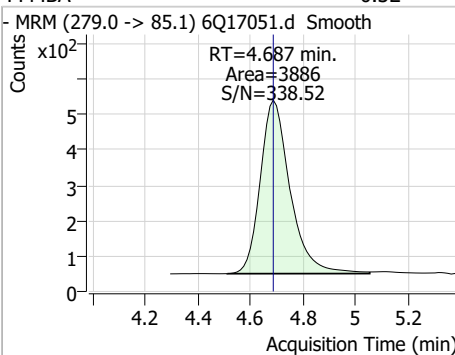
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.99	4.27	0.00	66641				



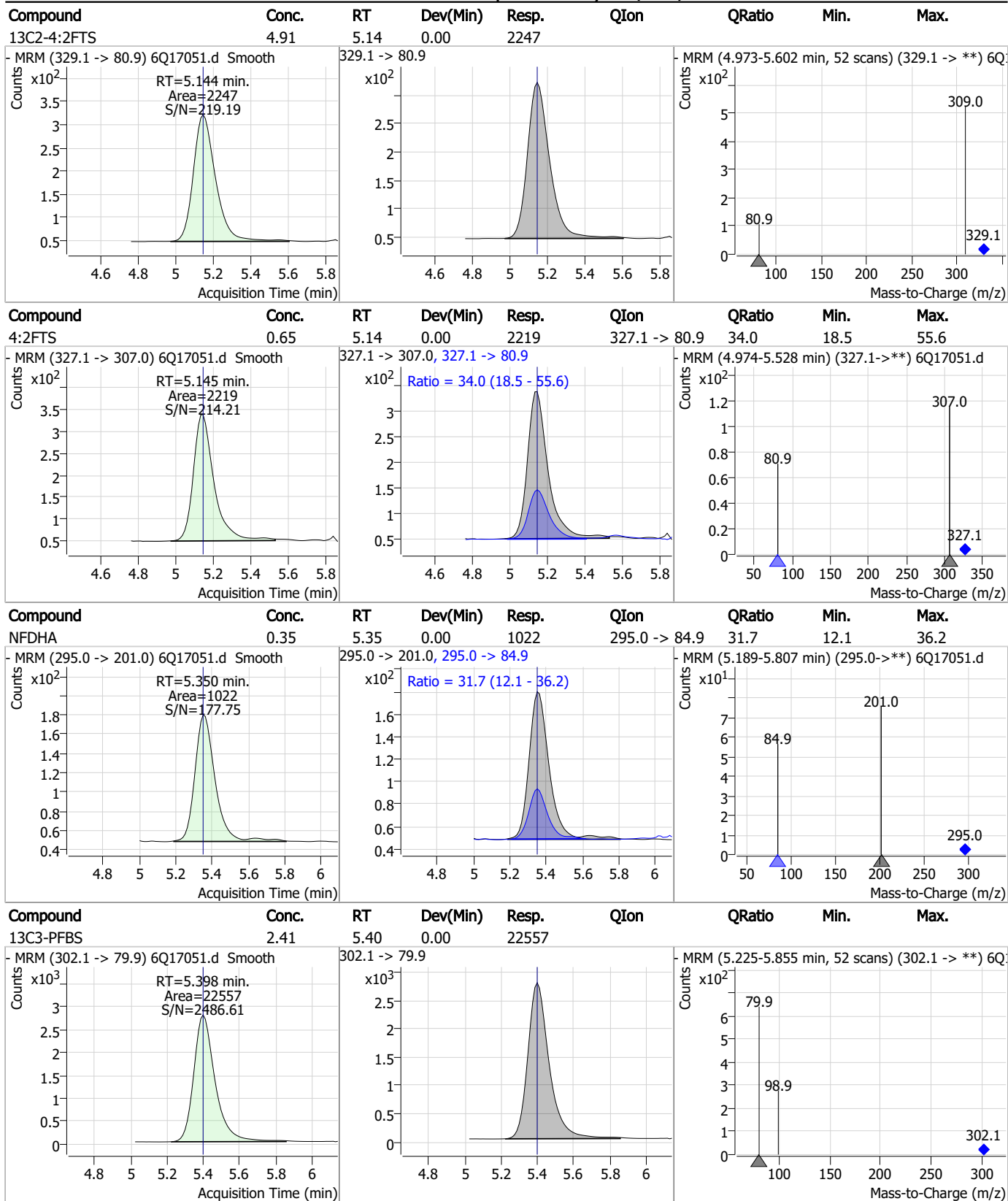
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.32	4.27	0.00	5806				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	0.32	4.69	0.00	3886				



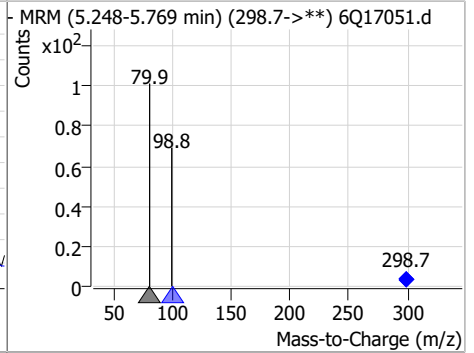
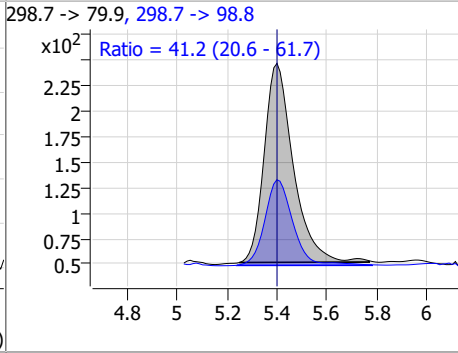
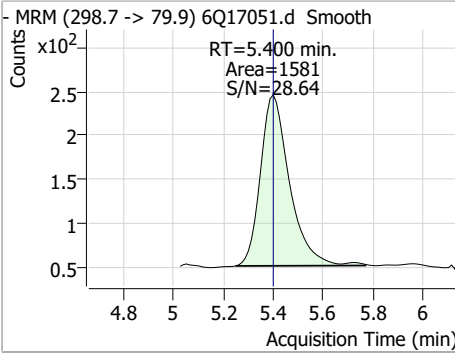
Perfluorinated Compounds by LC/MS/MS



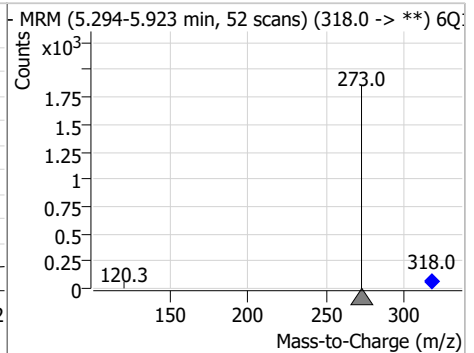
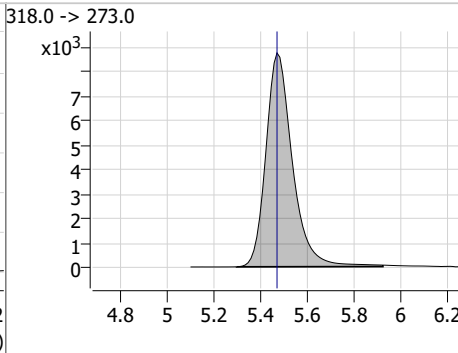
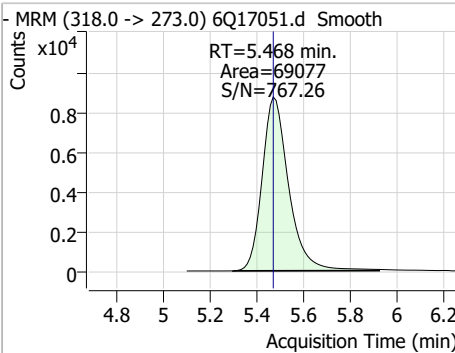
7.7.2
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Perfluorinated Compounds by LC/MS/MS

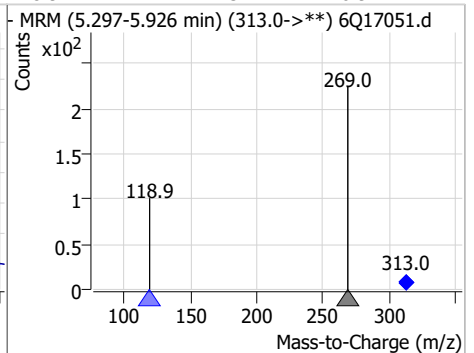
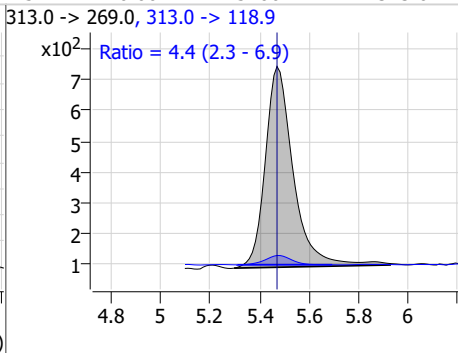
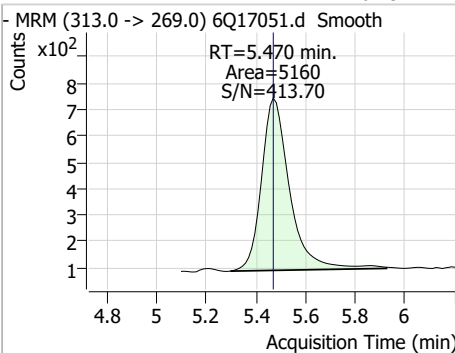
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.16	5.40	0.00	1581	298.7 -> 98.8	41.2	20.6	61.7



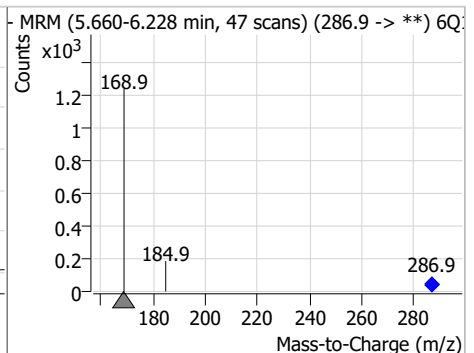
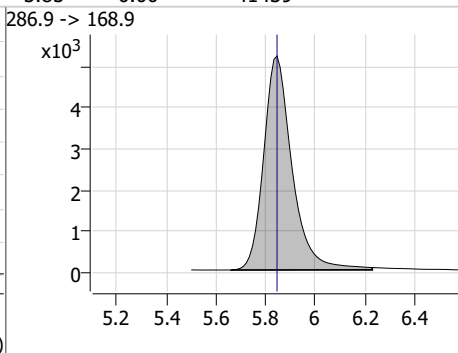
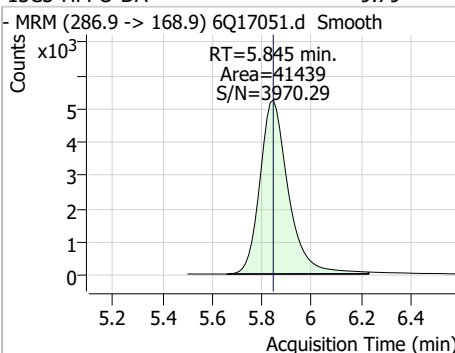
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.39	5.47	0.00	69077				



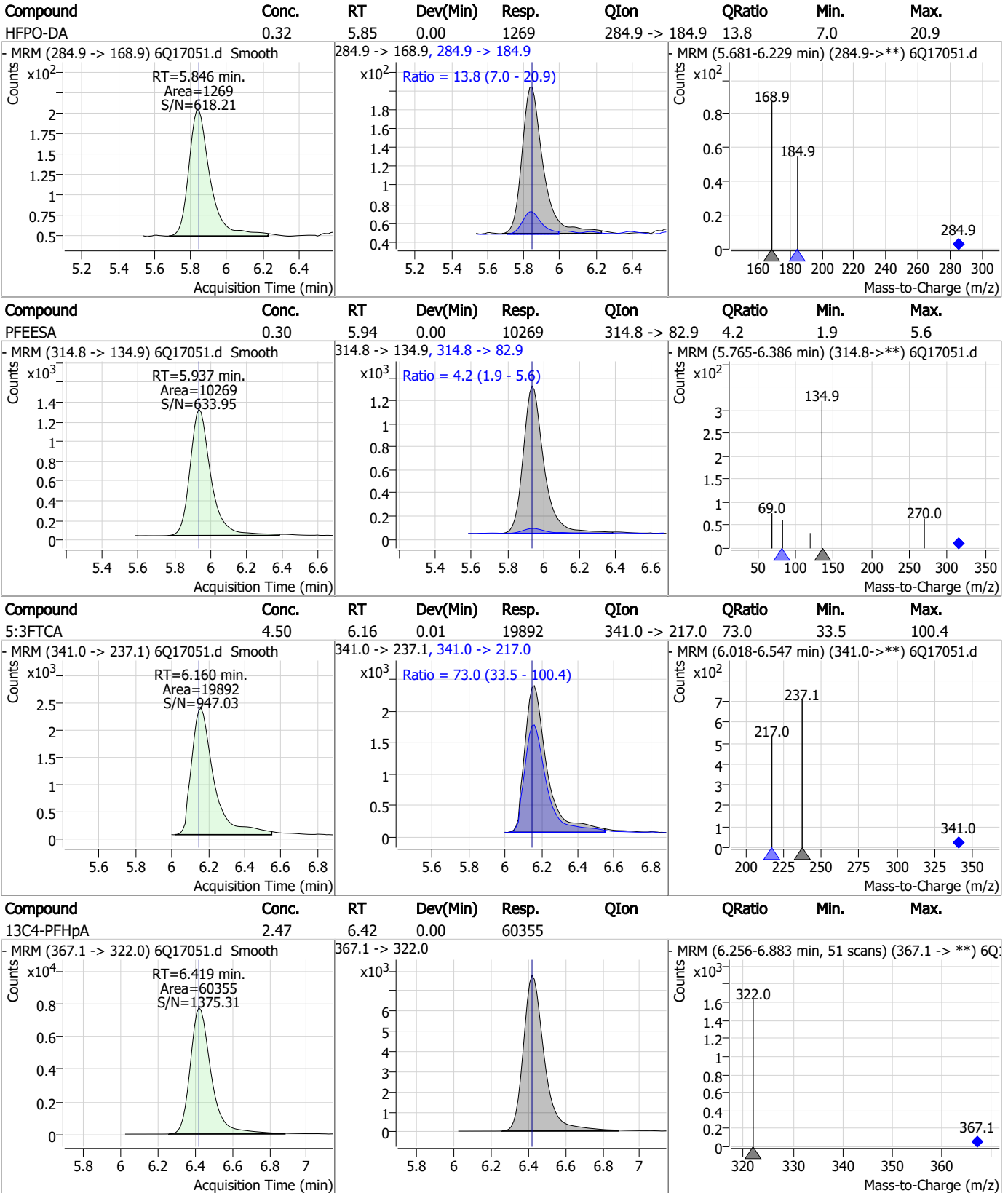
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.19	5.47	0.00	5160	313.0 -> 118.9	4.4	2.3	6.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.79	5.85	0.00	41439				



Perfluorinated Compounds by LC/MS/MS

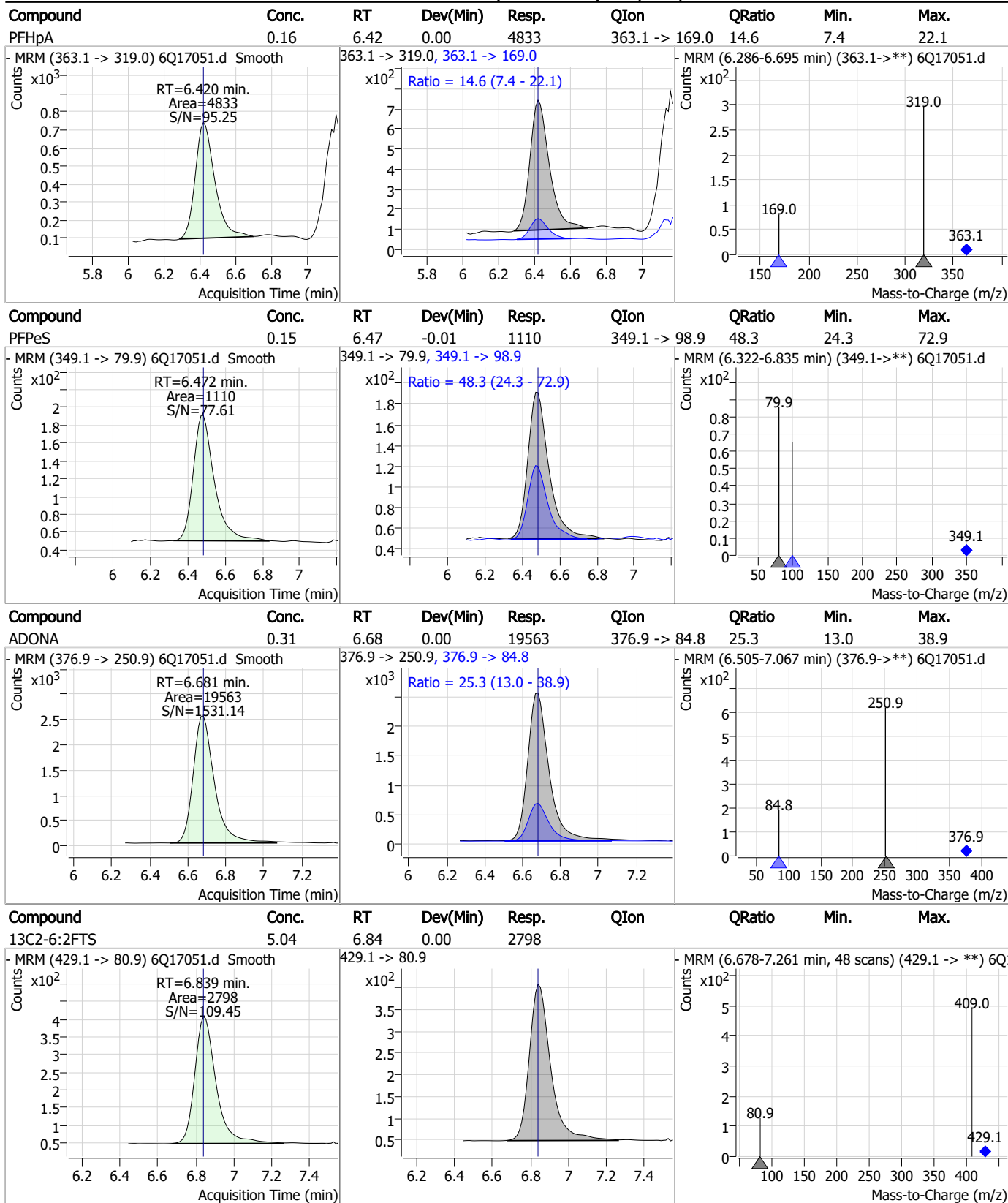


7.7.2

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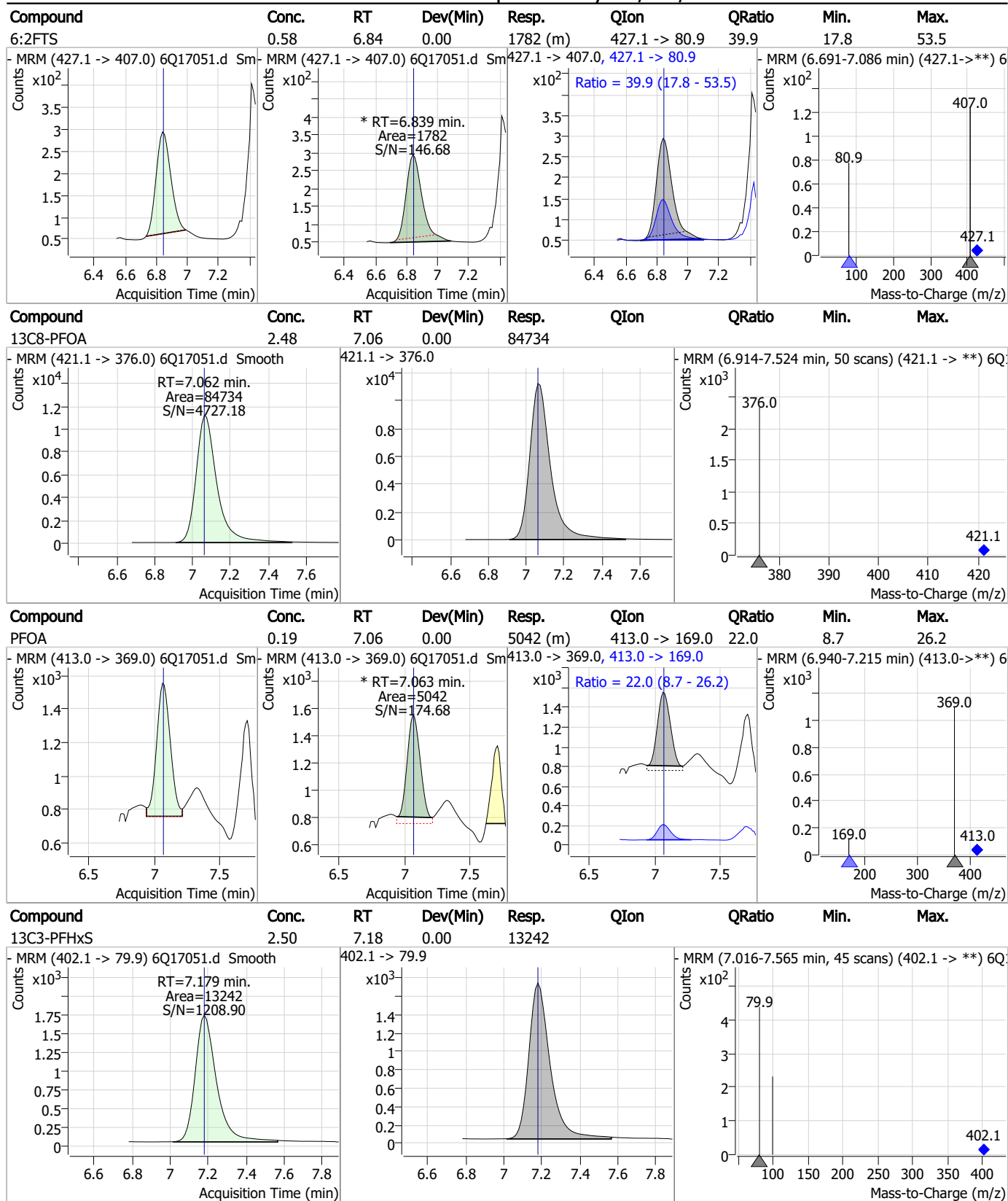


Perfluorinated Compounds by LC/MS/MS



7.7.2
7

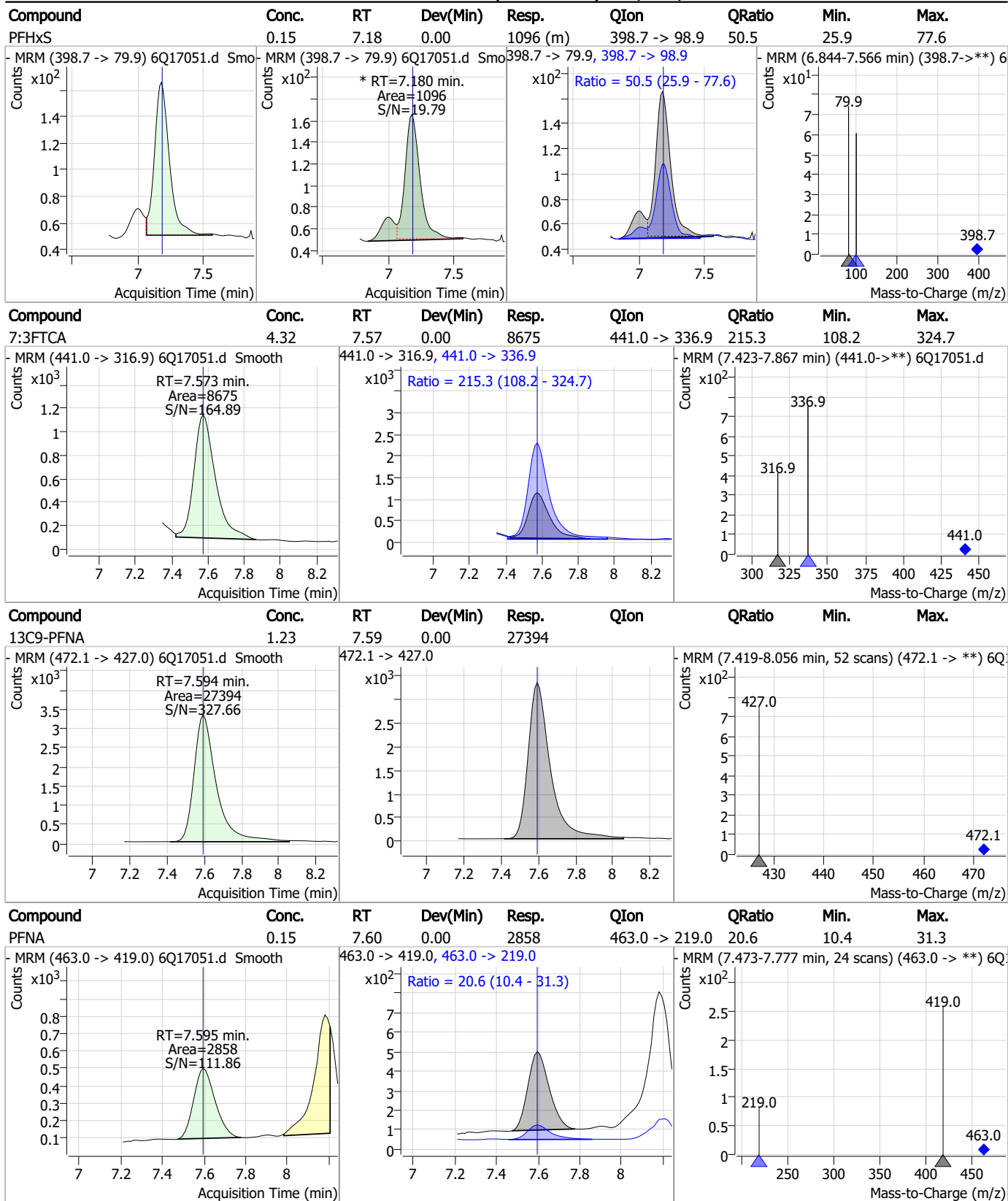
Perfluorinated Compounds by LC/MS/MS



7.7.2
7

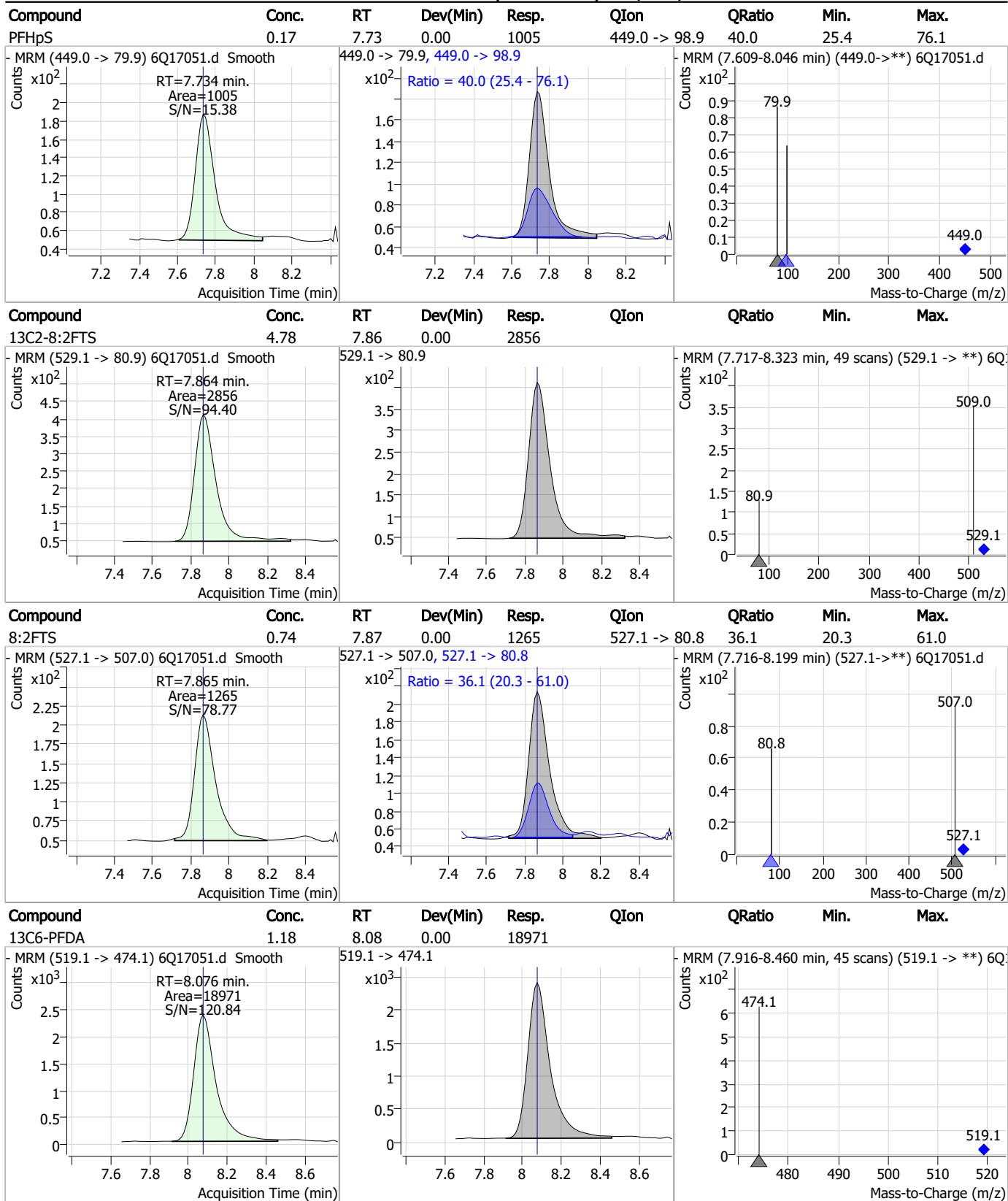


Perfluorinated Compounds by LC/MS/MS



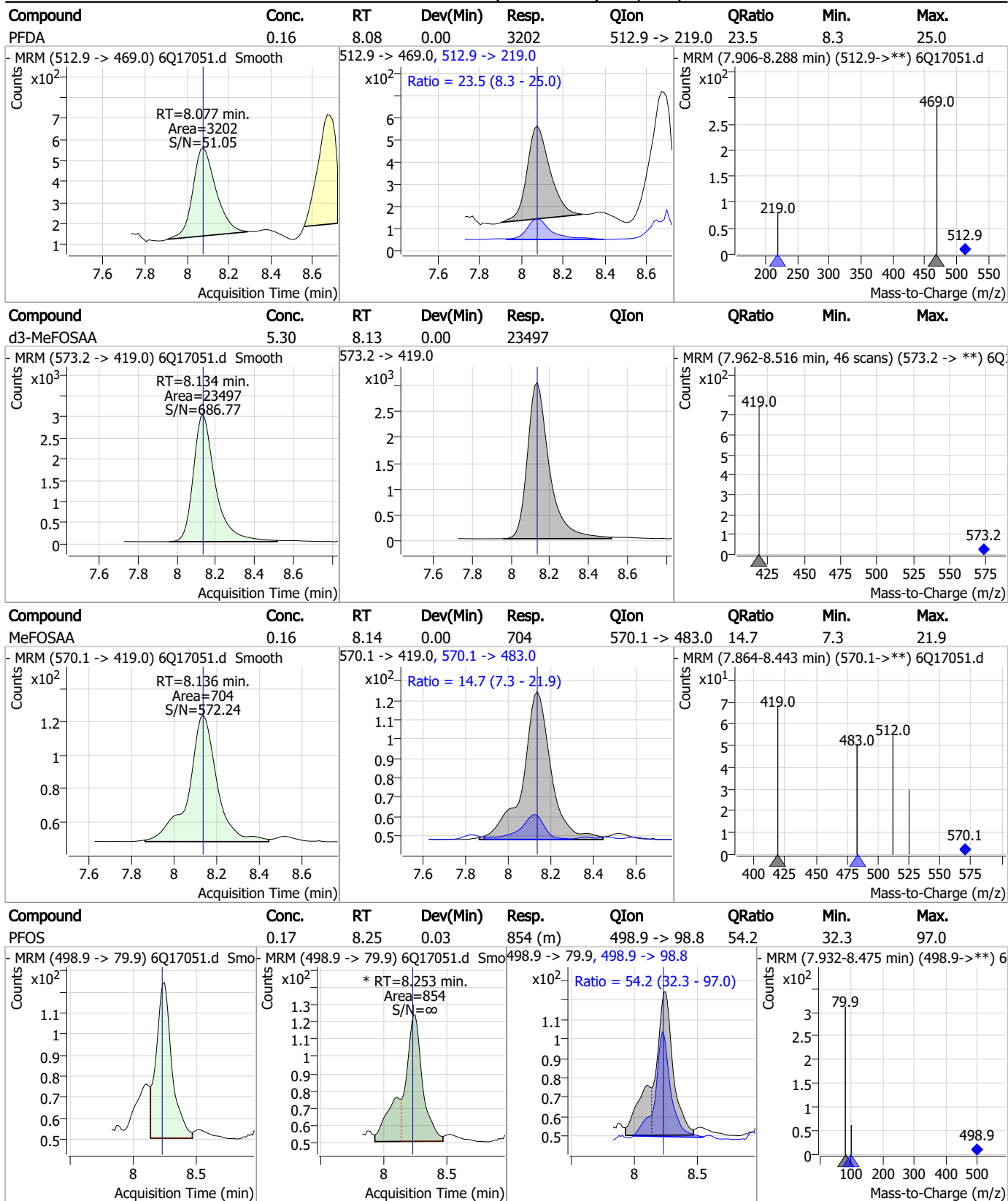
7.7.2
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Perfluorinated Compounds by LC/MS/MS



7.7.2
7

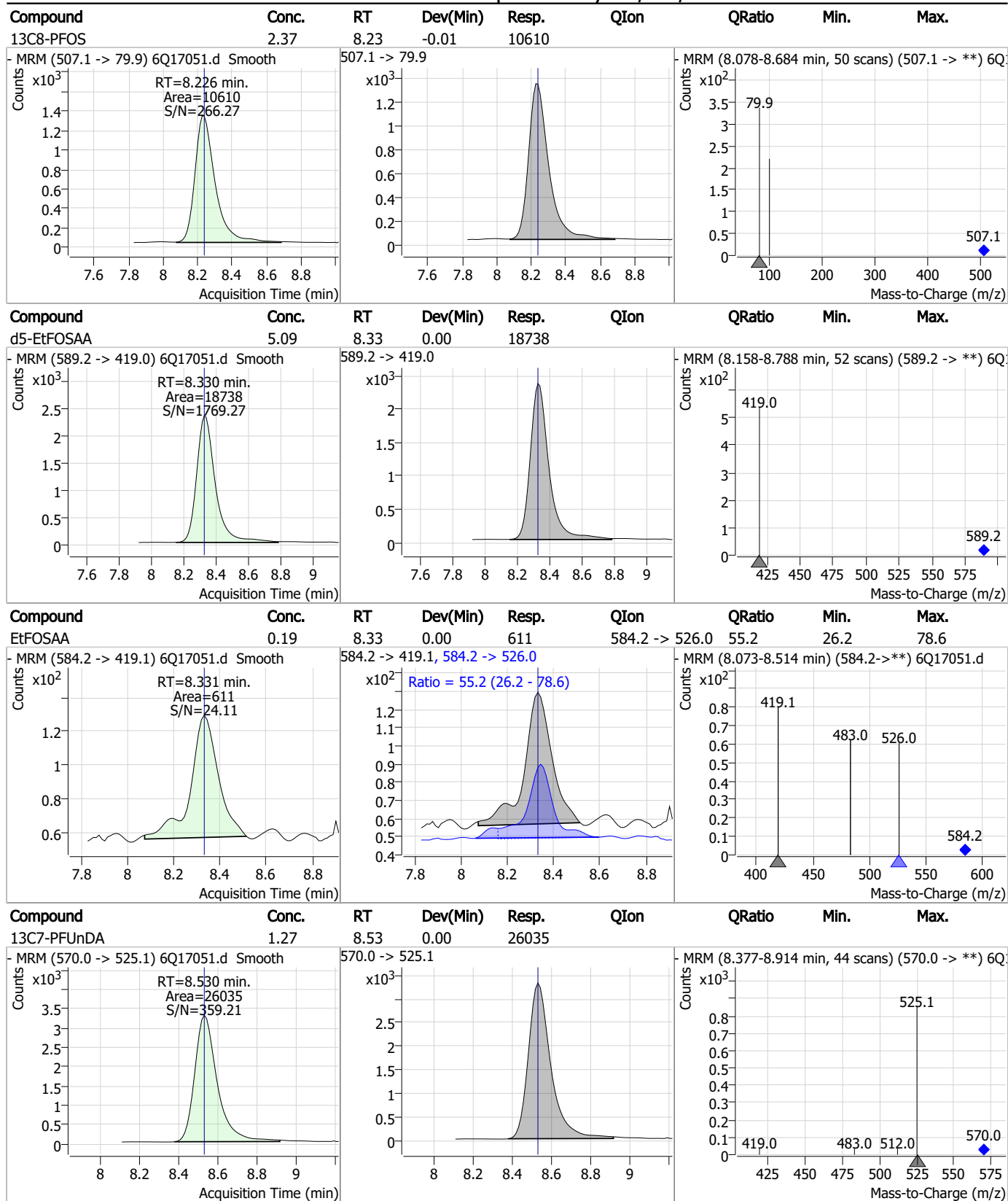
Perfluorinated Compounds by LC/MS/MS



7.7.2
7



Perfluorinated Compounds by LC/MS/MS

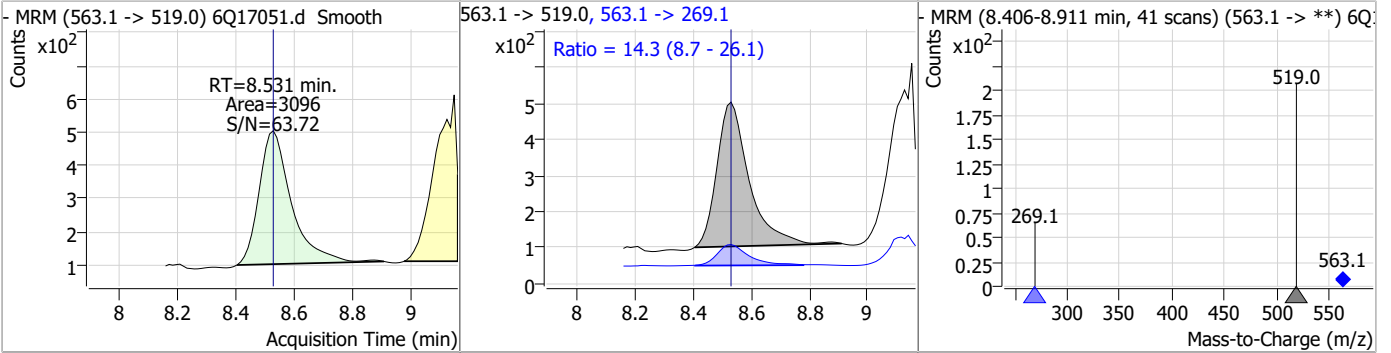


7.7.2
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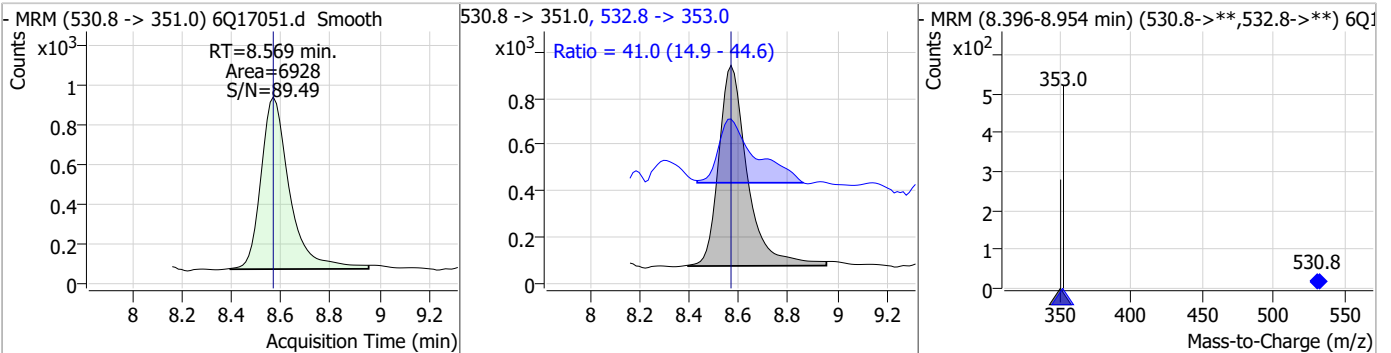


Perfluorinated Compounds by LC/MS/MS

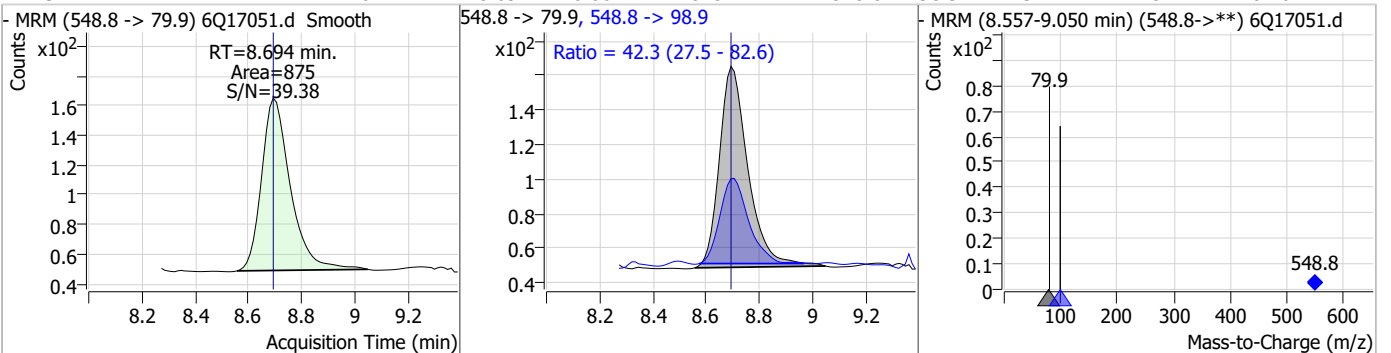
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.17	8.53	0.00	3096	563.1 -> 269.1	14.3	8.7	26.1



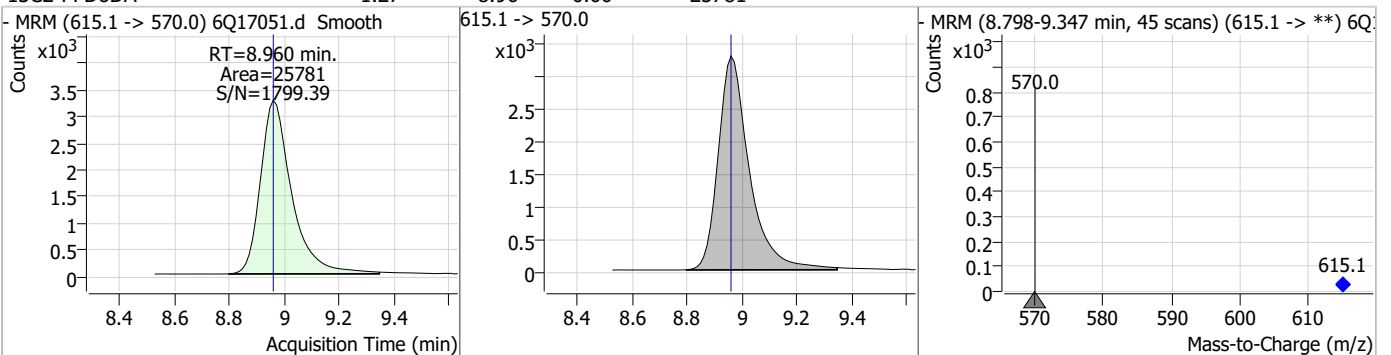
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	0.31	8.57	0.00	6928	532.8 -> 353.0	41.0	14.9	44.6



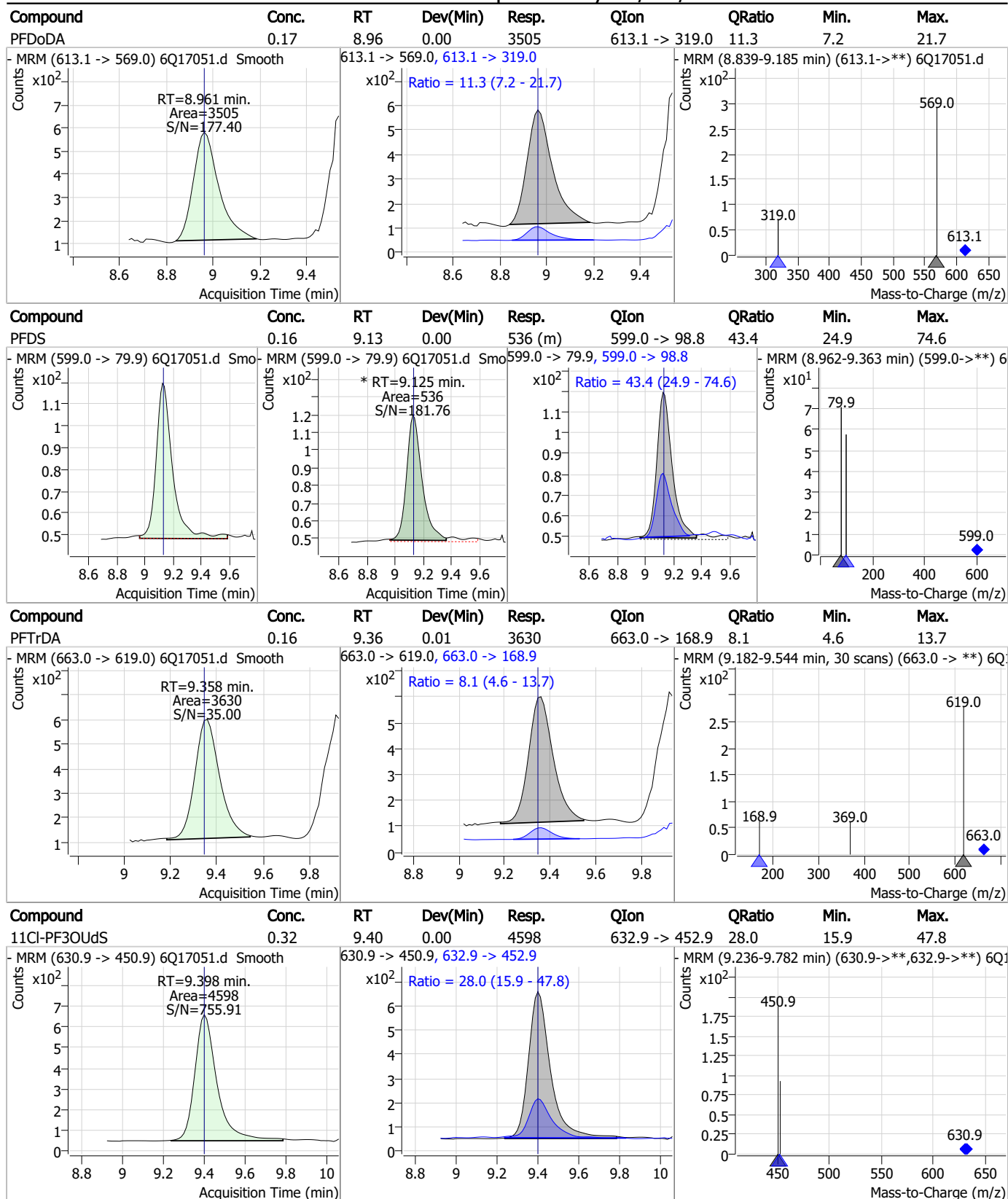
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.17	8.69	0.00	875	548.8 -> 98.9	42.3	27.5	82.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.27	8.96	0.00	25781	615.1 -> 570.0			



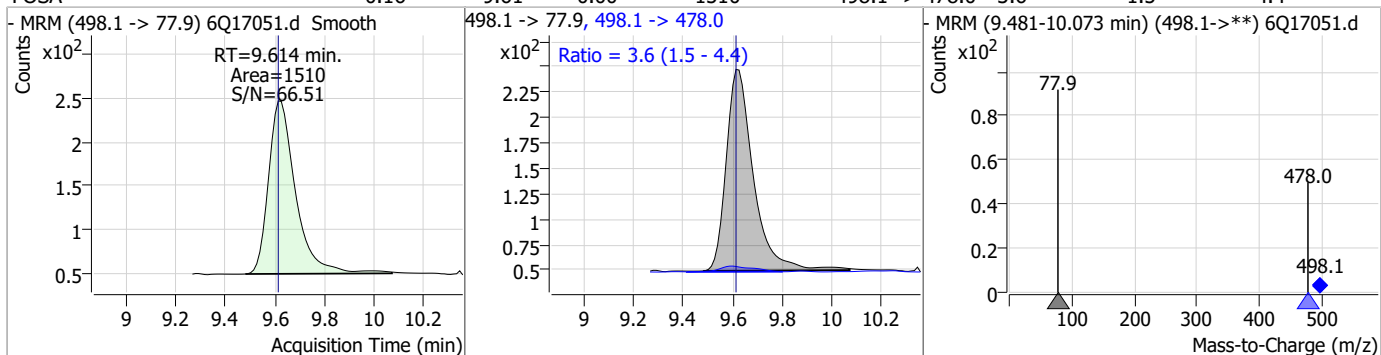
Perfluorinated Compounds by LC/MS/MS



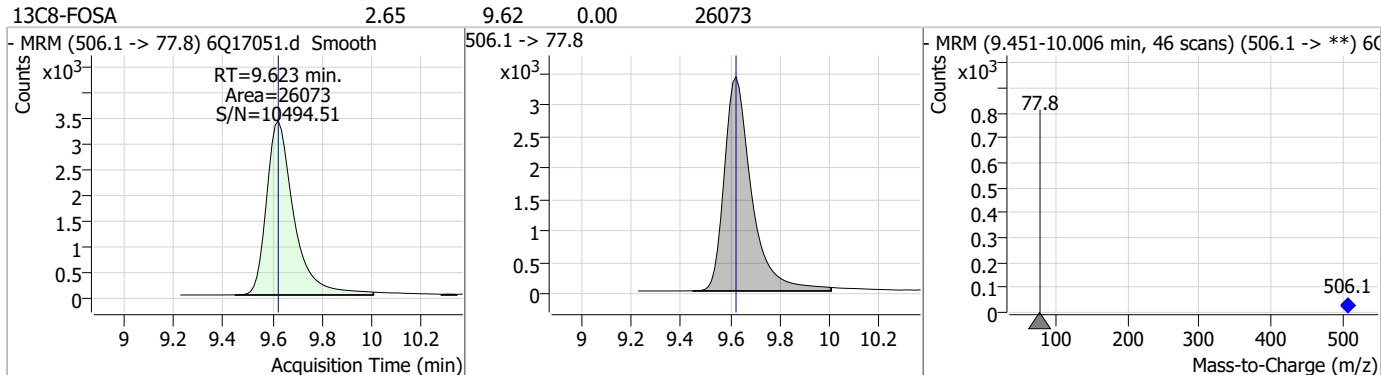
7.7.2
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Perfluorinated Compounds by LC/MS/MS

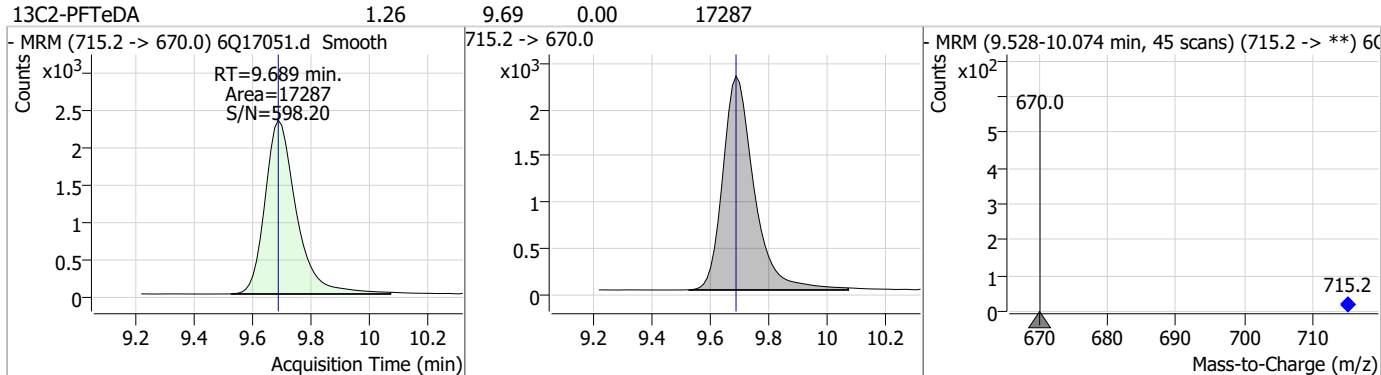
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.16	9.61	0.00	1510	498.1 -> 478.0	3.6	1.5	4.4



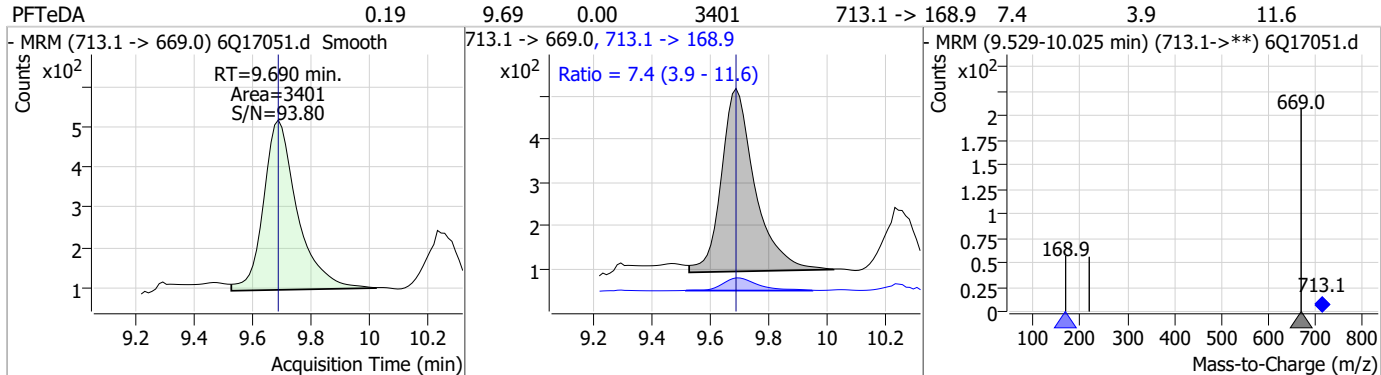
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.65	9.62	0.00	26073				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.26	9.69	0.00	17287				

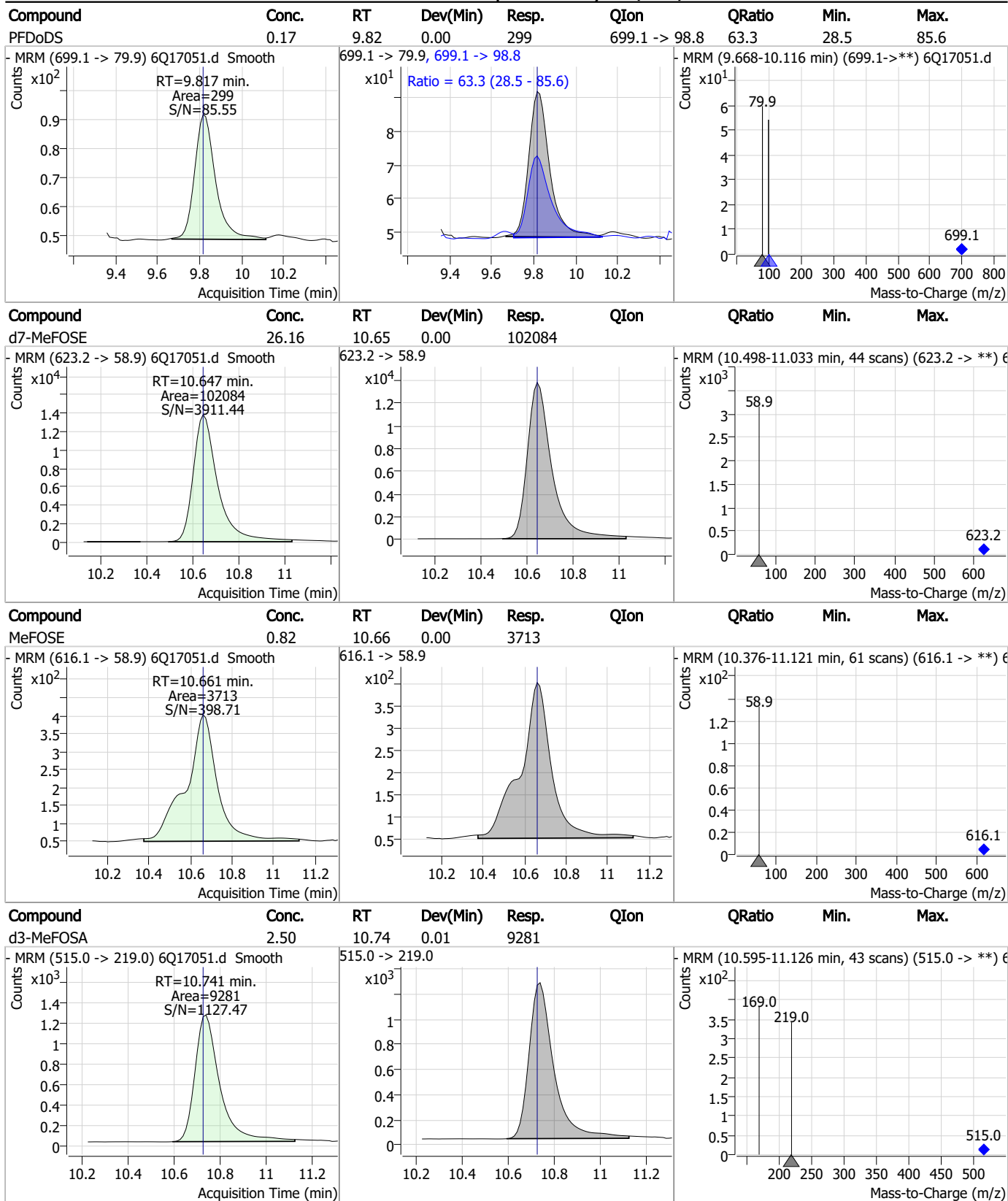


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.19	9.69	0.00	3401	713.1 -> 168.9	7.4	3.9	11.6



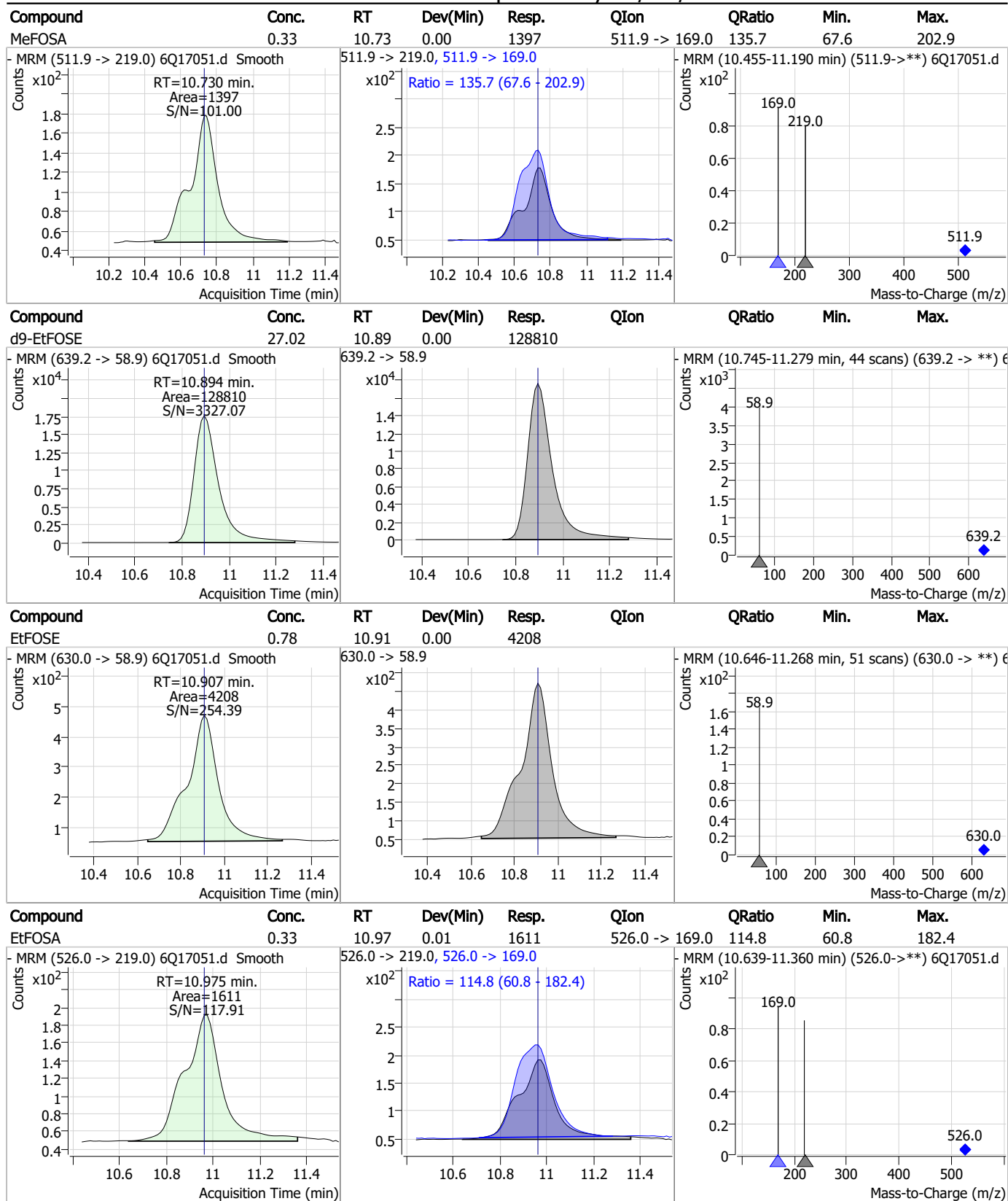
7.7.2
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Perfluorinated Compounds by LC/MS/MS



7.7.2
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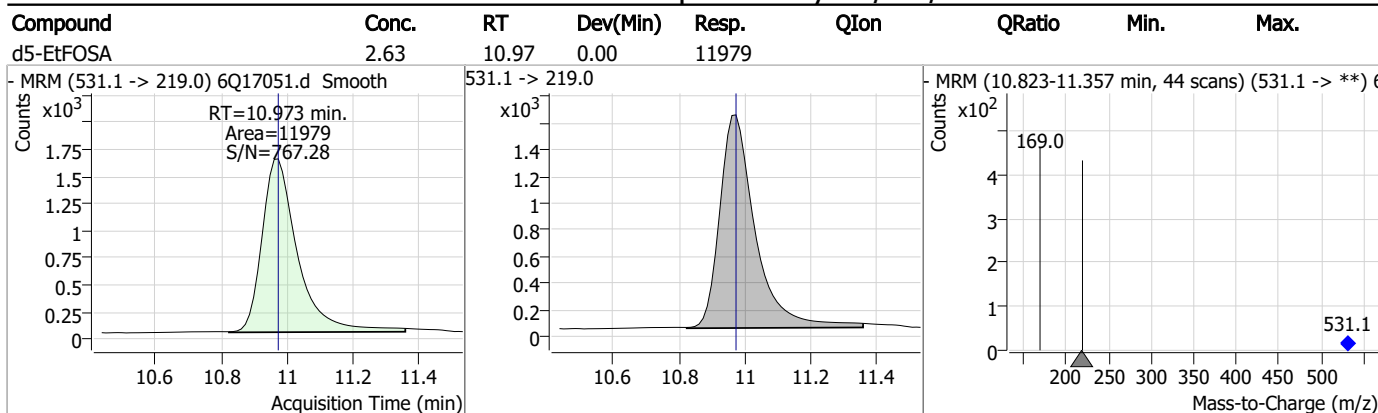
Perfluorinated Compounds by LC/MS/MS



7.7.2

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Perfluorinated Compounds by LC/MS/MS



7.7.2
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Manual Integration Approval Summary

Sample Number: S6Q258-IC258 Method: EPA DRAFT 1633
Lab FileID: 6Q17051.D Analyst approved: 04/30/23 23:33 Natasha Gumtie
Injection Time: 04/28/23 12:50 Supervisor approved: 04/30/23 23:52 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
6:2 Fluorotelomer sulfonate	27619-97-2		6.84	Poor instrument integration
Perfluorooctanoic acid	335-67-1		7.06	Poor instrument integration
Perfluorohexanesulfonic acid	355-46-4		7.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.25	Split peak
Perfluorodecanesulfonic acid	335-77-3		9.12	Poor instrument integration

7.7.2.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17052.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/28/2023 1:04:45 PM
 Sample Name : ic258-2
 Vial : P1-A3
 DA Method File : 1633_042823_S6Q258.quantmethod.xml
 Batch Name : s6q258.batch.bin
 Sample Information : OP96301,S6Q258,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.910	216.8 -> 171.9	191249	10.00 µg/L	0.012
M5-PFPeA	4.270	268.3 -> 223.0	68489	5.00 µg/L	0.000
M5-PFHxA	5.480	318.0 -> 273.0	73356	2.50 µg/L	0.012
M4-PFHpA	6.431	367.1 -> 322.0	60888	2.50 µg/L	0.012
M8-PFOA	7.074	421.1 -> 376.0	87189	2.50 µg/L	0.012
M9-PFNA	7.594	472.1 -> 427.0	27968	1.25 µg/L	0.000
M6-PFDA	8.076	519.1 -> 474.1	22037	1.25 µg/L	0.000
M7-PFUnDA	8.530	570.0 -> 525.1	25442	1.25 µg/L	0.000
M2-PFDoDA	8.960	615.1 -> 570.0	26702	1.25 µg/L	0.000
M2-PFTeDA	9.689	715.2 -> 670.0	19305	1.25 µg/L	0.000
M8-FOSA	9.611	506.1 -> 77.8	25553	2.50 µg/L	-0.012
M3-PFBS	5.398	302.1 -> 79.9	23778	2.50 µg/L	0.000
M3-PFHxS	7.179	402.1 -> 79.9	13696	2.50 µg/L	0.000
M8-PFOS	8.239	507.1 -> 79.9	12098	2.50 µg/L	0.000
M2-4:2FTS	5.144	329.1 -> 80.9	2380	5.00 µg/L	0.000
M2-6:2FTS	6.851	429.1 -> 80.9	2699	5.00 µg/L	0.012
M2-8:2FTS	7.864	529.1 -> 80.9	3016	5.00 µg/L	0.000
M3-MeFOSAA	8.134	573.2 -> 419.0	25263	5.00 µg/L	0.000
M3-HFPO-DA	5.845	286.9 -> 168.9	42056	10.00 µg/L	0.000
M5-EtFOSAA	8.330	589.2 -> 419.0	19497	5.00 µg/L	0.000
M7-MeFOSE	10.647	623.2 -> 58.9	104174	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	133008	25.00 µg/L	0.000
M5-EtFOSA	10.960	531.1 -> 219.0	11903	2.50 µg/L	-0.012
M3-MeFOSA	10.728	515.0 -> 219.0	9604	2.50 µg/L	0.000
13C4-PFOS	8.239	502.8 -> 79.9	16032	2.50 µg/L	0.000
13C3-PFBA	2.902	216.0 -> 172.0	82834	5.00 µg/L	0.000
18O2-PFHxS	7.177	403.0 -> 83.9	10320	2.50 µg/L	0.000
13C4-PFOA	7.075	417.1 -> 372.0	90721	2.50 µg/L	0.012
13C2-PFDA	8.076	515.1 -> 470.1	25548	1.25 µg/L	0.000
13C5-PFNA	7.595	468.0 -> 423.0	29483	1.25 µg/L	0.000
13C2-PFHxA	5.469	315.1 -> 270.0	61704	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.144	329.1 -> 80.9	2380	5.02 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.3%		
13C2-6:2FTS	6.851	429.1 -> 80.9	2699	4.69 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 93.7%		
13C2-8:2FTS	7.864	529.1 -> 80.9	3016	4.87 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.4%		
13C2-PFDoDA	8.960	615.1 -> 570.0	26702	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.5%		
13C2-PFTeDA	9.689	715.2 -> 670.0	19305	1.34 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 107.4%		
13C3-PFBS	5.398	302.1 -> 79.9	23778	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.0%		
13C3-PFHxS	7.179	402.1 -> 79.9	13696	2.49 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C4-PFBA	2.910	216.8 -> 171.9	191249	9.99 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C4-PFHpA	6.431	367.1 -> 322.0	60888	2.41 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.5%	
13C5-PFHxA	5.480	318.0 -> 273.0	73356	2.46 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C5-PFPeA	4.270	268.3 -> 223.0	68489	4.97 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C6-PFDA	8.076	519.1 -> 474.1	22037	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.6%	
13C7-PFUnDA	8.530	570.0 -> 525.1	25442	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.3%	
13C8-FOSA	9.611	506.1 -> 77.8	25553	2.41 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.4%	
13C8-PFOA	7.074	421.1 -> 376.0	87189	2.49 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C8-PFOS	8.239	507.1 -> 79.9	12098	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C9-PFNA	7.594	472.1 -> 427.0	27968	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.5%	
d3-MeFOSAA	8.134	573.2 -> 419.0	25263	5.29 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.8%	
13C3-HFPO-DA	5.845	286.9 -> 168.9	42056	9.63 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.3%	
d3-MeFOSA	10.728	515.0 -> 219.0	9604	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.9%	
d5-EtFOSAA	8.330	589.2 -> 419.0	19497	4.91 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.2%	
d7-MeFOSE	10.647	623.2 -> 58.9	104174	24.76 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
d9-EtFOSE	10.894	639.2 -> 58.9	133008	25.87 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.5%	
d5-EtFOSA	10.960	531.1 -> 219.0	11903	2.42 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.8%	
Target Compounds					QValue
4:2FTS	5.145	327.1 -> 307.0	5443	1.51 µg/L	93
		327.1 -> 80.9	2238		
6:2FTS	6.839	427.1 -> 407.0	5215	1.76 µg/L	93
		427.1 -> 80.9	1642		
8:2FTS	7.865	527.1 -> 507.0	2967	1.65 µg/L	92
		527.1 -> 80.8	1064		
EtFOSAA	8.343	584.2 -> 419.1	1293	0.39 µg/L	92
		584.2 -> 526.0	747		
FOSA	9.614	498.1 -> 77.9	3607	0.39 µg/L	97
		498.1 -> 478.0	67		
MeFOSAA	8.136	570.1 -> 419.0	1634	0.34 µg/L	83
		570.1 -> 483.0	351		
PFBA	2.906	212.8 -> 168.9	10438	1.63 µg/L	100
PFBS	5.412	298.7 -> 79.9	3580	0.34 µg/L	99
		298.7 -> 98.8	1498		
PFDA	8.077	512.9 -> 469.0	7589	0.32 µg/L	96
		512.9 -> 219.0	1386		
PFDODA	8.961	613.1 -> 569.0	8628	0.41 µg/L	96
		613.1 -> 319.0	1115		
PFDS	9.125	599.0 -> 79.9	1485	0.39 µg/L	95

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	689			
PFHpA	6.432	363.1 -> 319.0	11942	0.40	µg/L	93
		363.1 -> 169.0	2110			
PFHpS	7.746	449.0 -> 79.9	2561	0.39	µg/L	91
		449.0 -> 98.9	1149			
PFHxA	5.483	313.0 -> 269.0	11443	0.39	µg/L	98
		313.0 -> 118.9	596			
PFHxS	7.180	398.7 -> 79.9	2724	0.36	µg/L	m 87
		398.7 -> 98.9	1152			
PFNA	7.595	463.0 -> 419.0	7817	0.40	µg/L	96
		463.0 -> 219.0	1768			
PFNS	8.694	548.8 -> 79.9	2457	0.42	µg/L	89
		548.8 -> 98.9	1167			
PFOA	7.063	413.0 -> 369.0	15132	0.43	µg/L	m 97
		413.0 -> 169.0	2836			
PFOS	8.228	498.9 -> 79.9	2331	0.40	µg/L	m 84
		498.9 -> 98.8	1216			
PFPeA	4.273	263.0 -> 219.0	15471	0.83	µg/L	100
PFPeS	6.484	349.1 -> 79.9	2796	0.36	µg/L	100
		349.1 -> 98.9	1356			
PFTeDA	9.690	713.1 -> 669.0	7199	0.37	µg/L	100
		713.1 -> 168.9	555			
PFTrDA	9.345	663.0 -> 619.0	9228	0.40	µg/L	98
		663.0 -> 168.9	779			
PFUnDA	8.531	563.1 -> 519.0	7041	0.40	µg/L	99
		563.1 -> 269.1	1250			
11Cl-PF3OUdS	9.398	630.9 -> 450.9	11378	0.79	µg/L	95
		632.9 -> 452.9	3287			
9Cl-PF3ONS	8.569	530.8 -> 351.0	17108	0.75	µg/L	88
		532.8 -> 353.0	3995			
ADONA	6.681	376.9 -> 250.9	50774	0.80	µg/L	99
		376.9 -> 84.8	12974			
HFPO-DA	5.846	284.9 -> 168.9	3221	0.81	µg/L	99
		284.9 -> 184.9	468			
3:3FTCA	3.784	241.0 -> 177.0	2332	2.00	µg/L	96
		241.0 -> 117.0	269			
5:3FTCA	6.160	341.0 -> 237.1	48920	10.42	µg/L	88
		341.0 -> 217.0	37403			
7:3FTCA	7.573	441.0 -> 316.9	21351	10.01	µg/L	89
		441.0 -> 336.9	42303			
EtFOSA	10.962	526.0 -> 219.0	4105	0.84	µg/L	97
		526.0 -> 169.0	5149			
EtFOSE	10.907	630.0 -> 58.9	10551	1.90	µg/L	100
MeFOSA	10.730	511.9 -> 219.0	3748	0.87	µg/L	95
		511.9 -> 169.0	4864			
MeFOSE	10.661	616.1 -> 58.9	9404	2.02	µg/L	100
PFDoDS	9.817	699.1 -> 79.9	771	0.39	µg/L	94
		699.1 -> 98.8	473			
NFDHA	5.350	295.0 -> 201.0	2486	0.79	µg/L	98
		295.0 -> 84.9	632			
PFMBA	4.687	279.0 -> 85.1	10270	0.82	µg/L	100
PFMPA	3.438	229.0 -> 84.9	7625	0.82	µg/L	100
PFEESA	5.949	314.8 -> 134.9	26589	0.73	µg/L	100
		314.8 -> 82.9	1021			

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

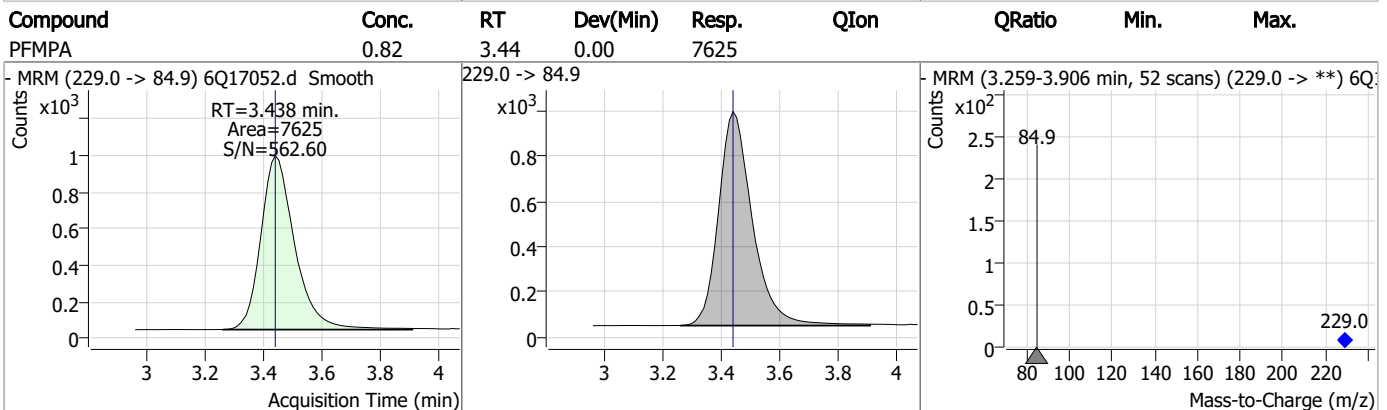
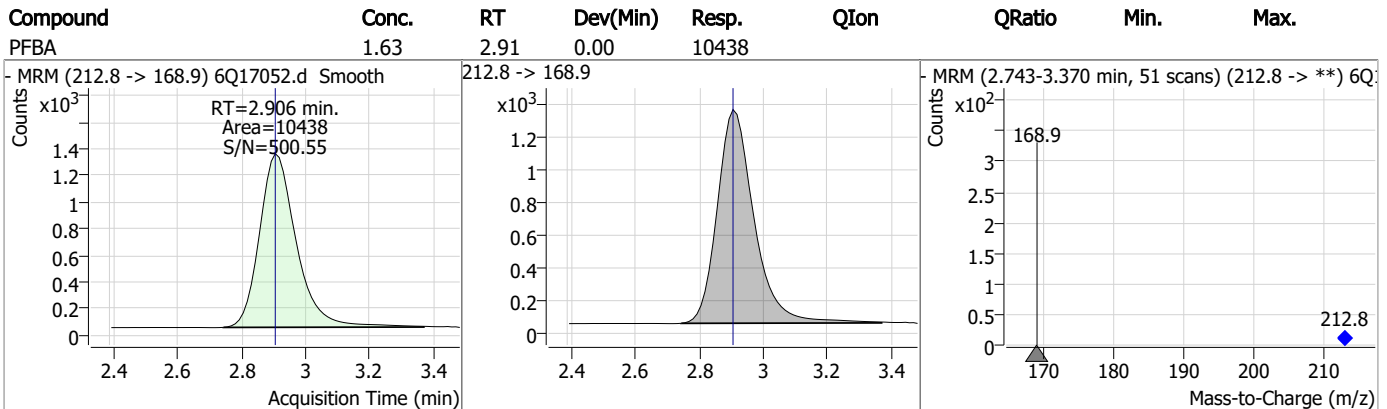
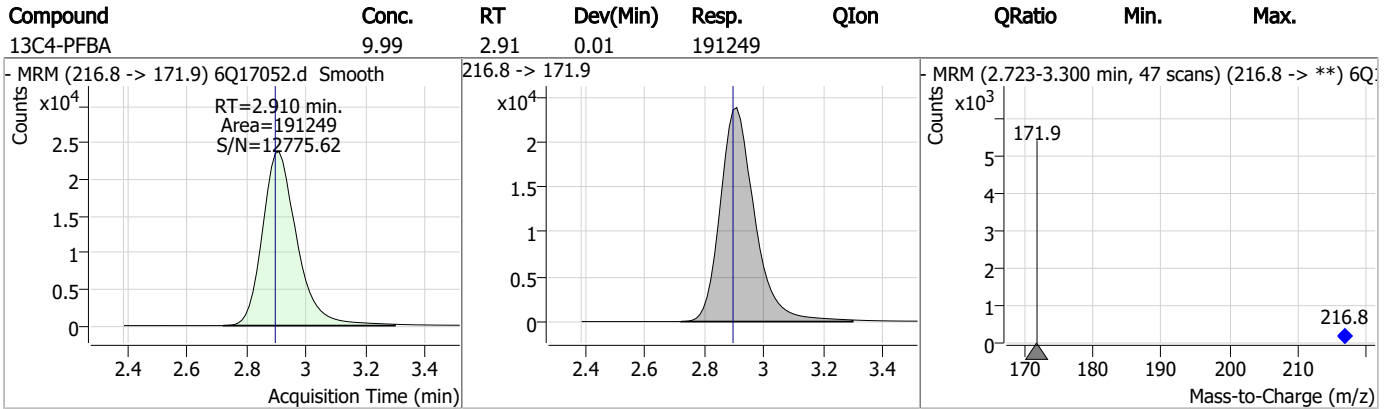
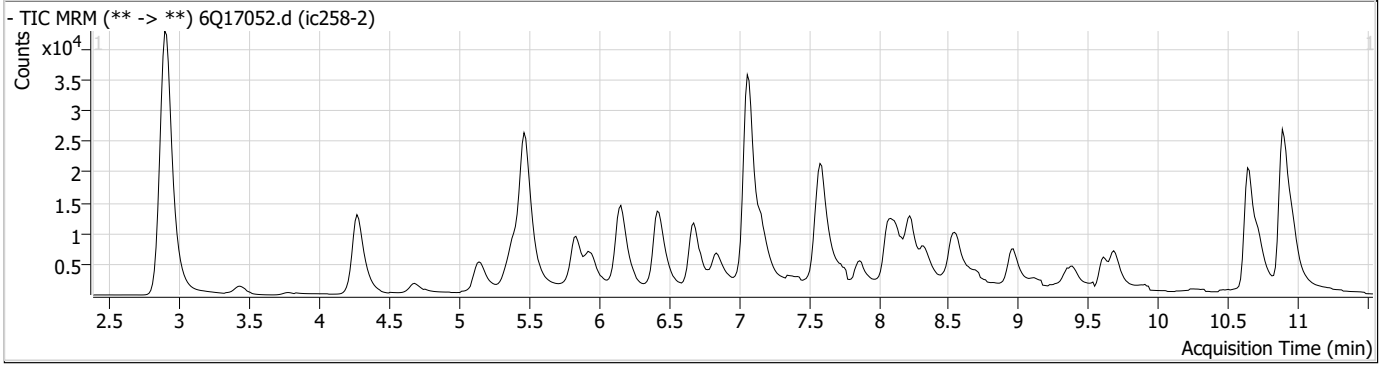
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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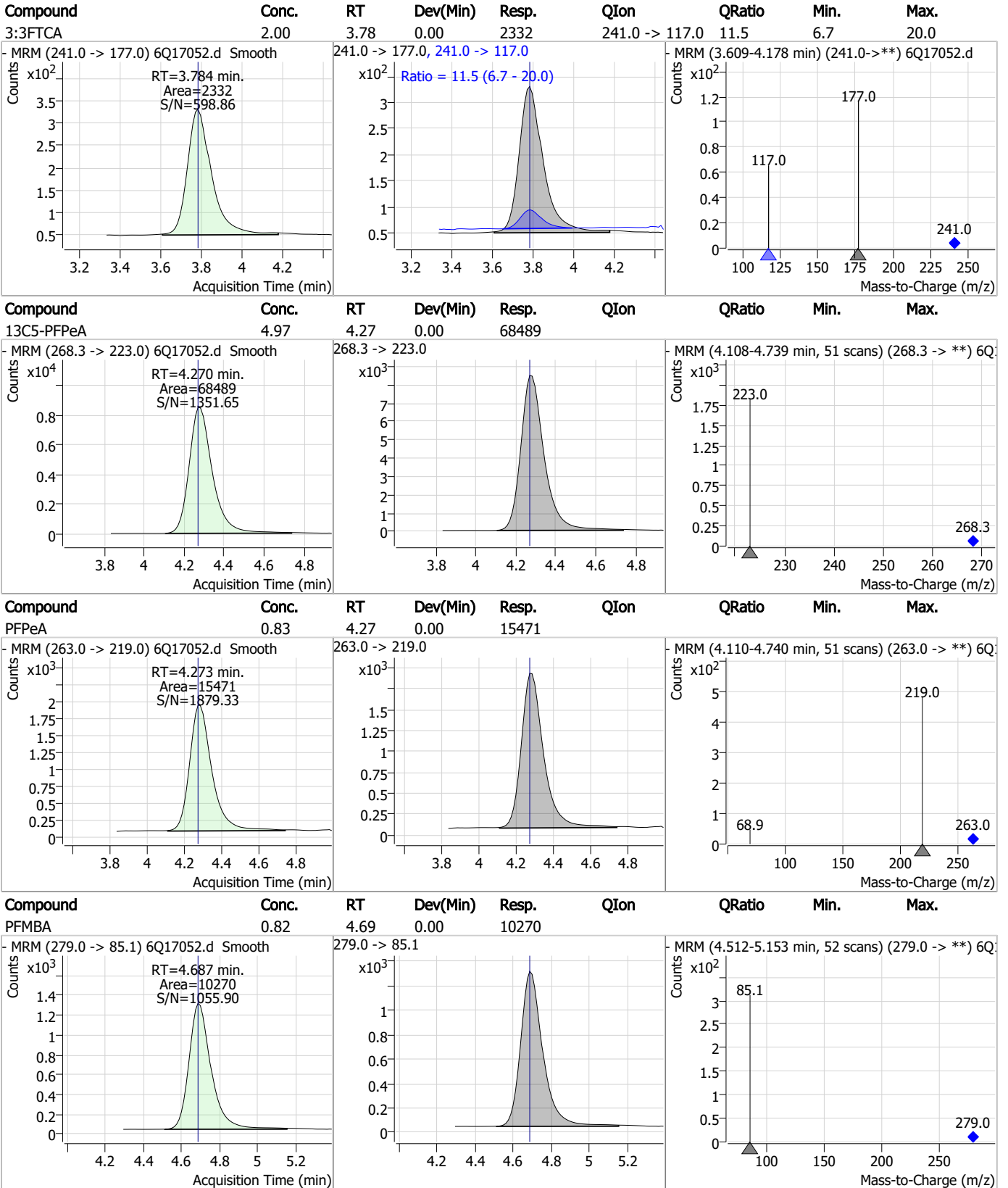
7.7.3

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Perfluorinated Compounds by LC/MS/MS



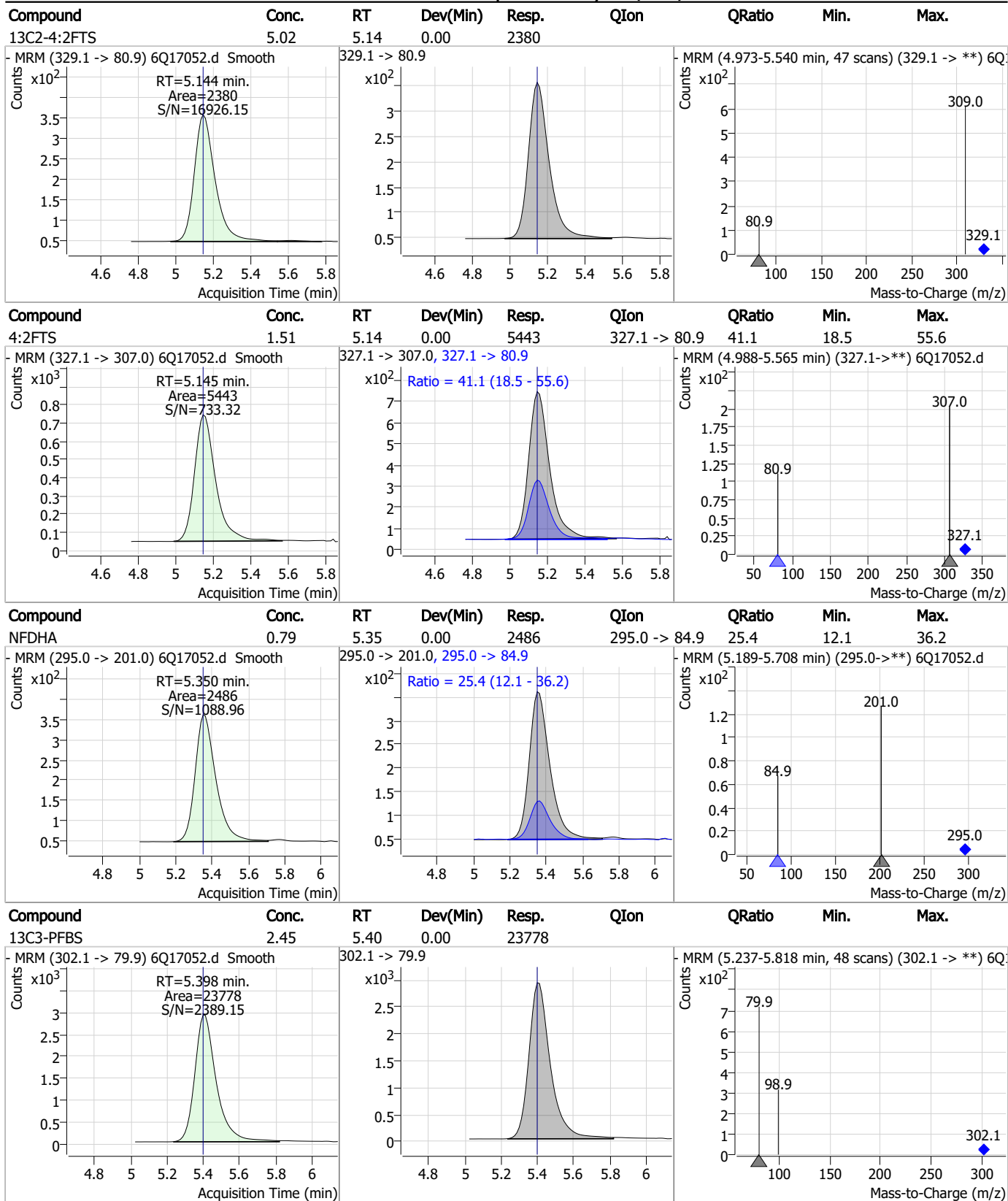
Perfluorinated Compounds by LC/MS/MS



7.7.3

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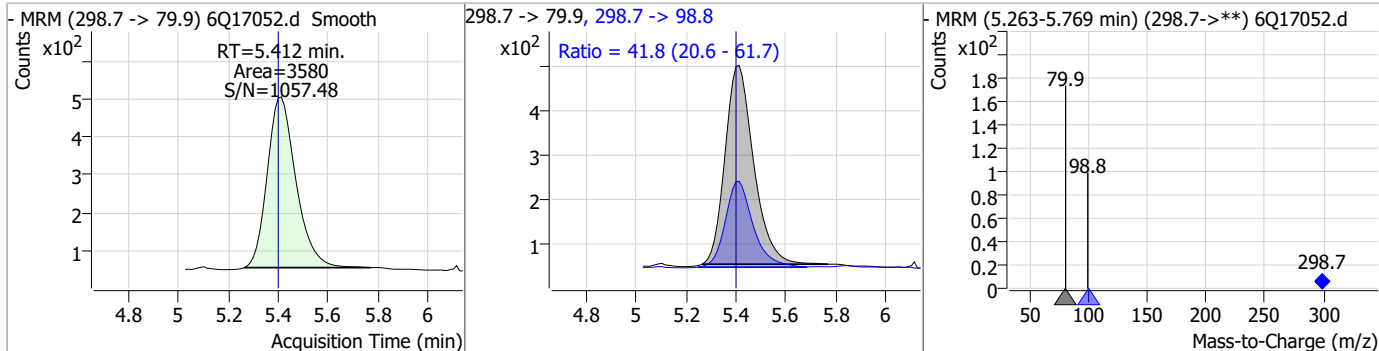
Perfluorinated Compounds by LC/MS/MS



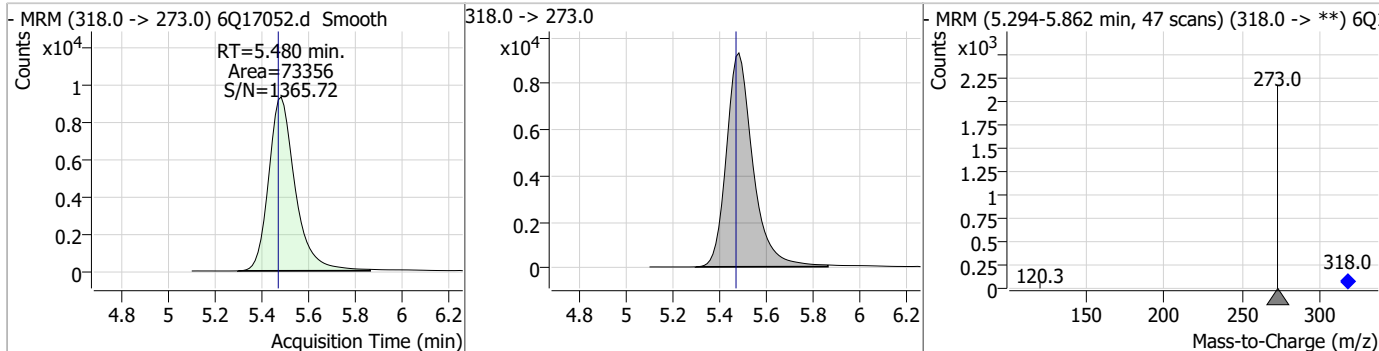
7.7.3
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Perfluorinated Compounds by LC/MS/MS

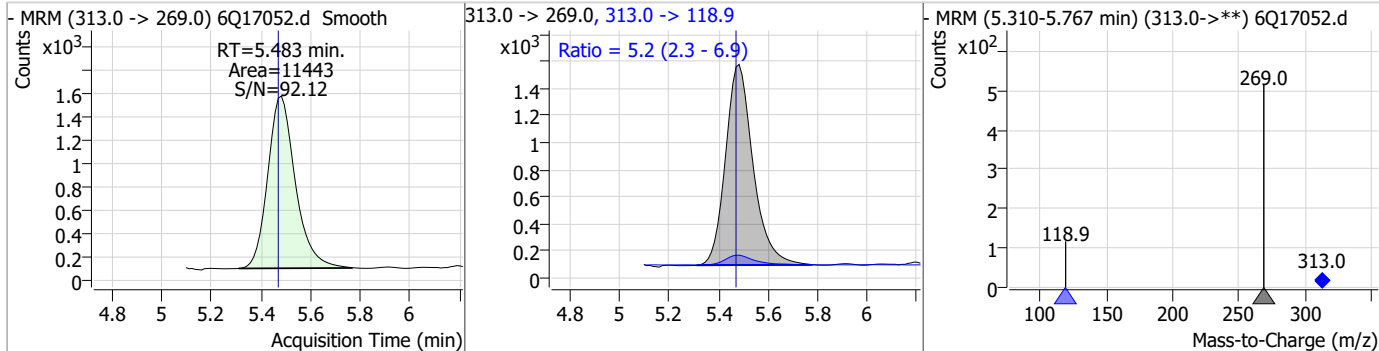
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.34	5.41	0.01	3580	298.7 -> 98.8	41.8	20.6	61.7



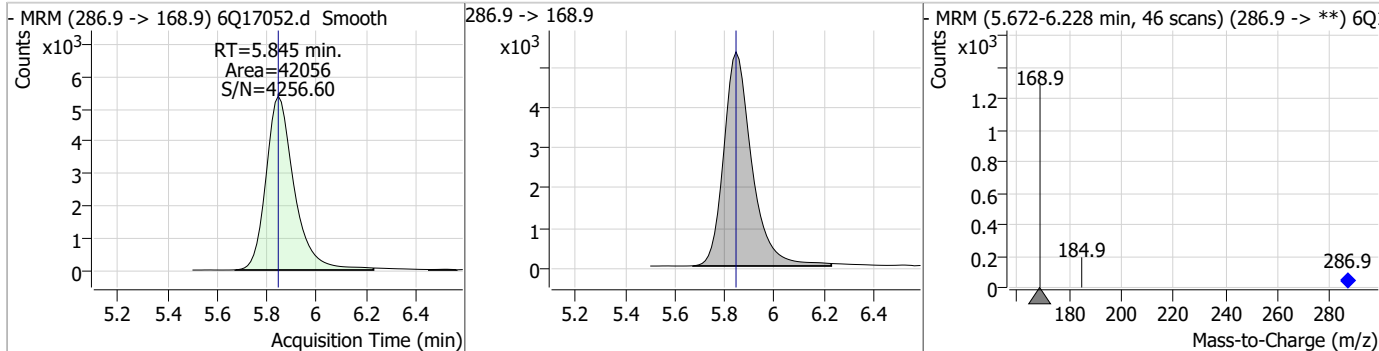
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.46	5.48	0.01	73356	318.0 -> 273.0	5.2	2.3	6.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.39	5.48	0.01	11443	313.0 -> 118.9	5.2	2.3	6.9

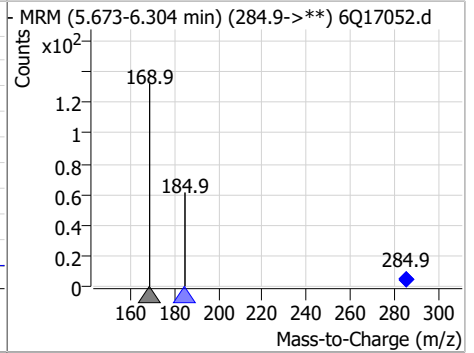
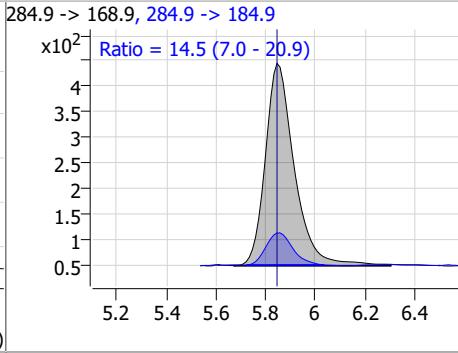
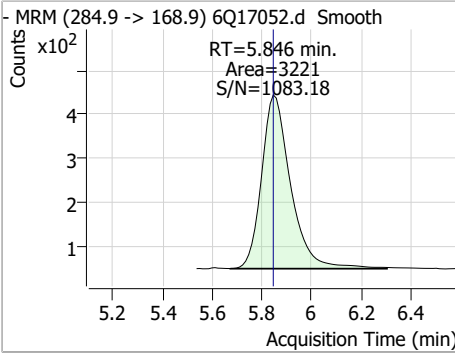


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.63	5.85	0.00	42056	286.9 -> 168.9	5.2	2.3	6.9

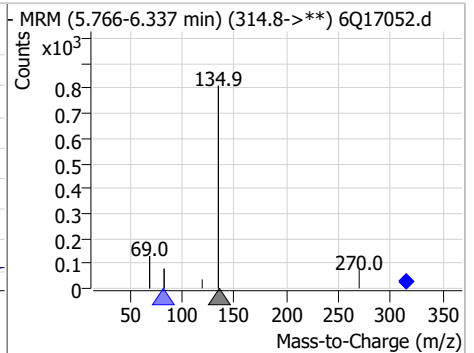
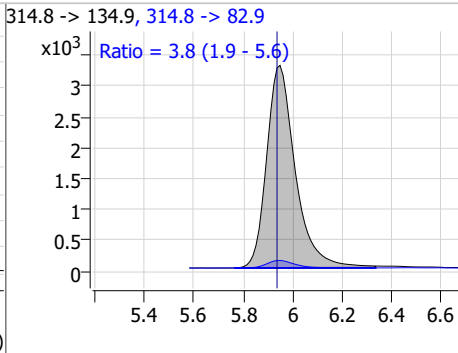
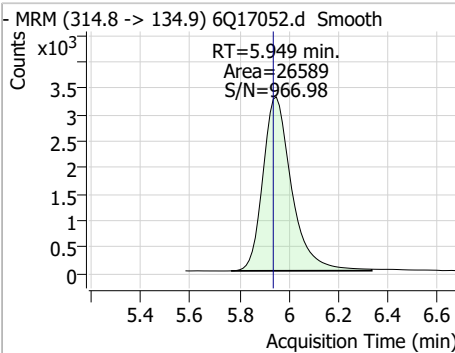


Perfluorinated Compounds by LC/MS/MS

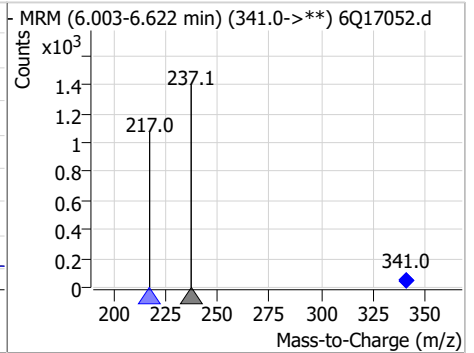
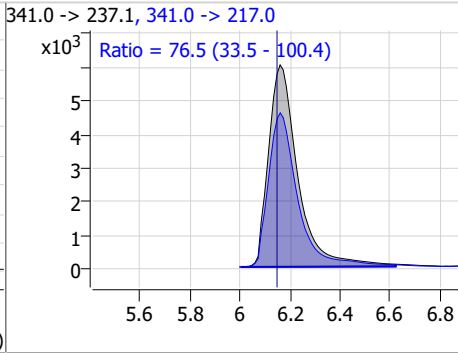
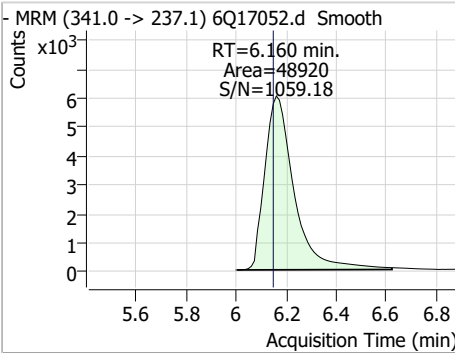
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.81	5.85	0.00	3221	284.9 -> 184.9	14.5	7.0	20.9



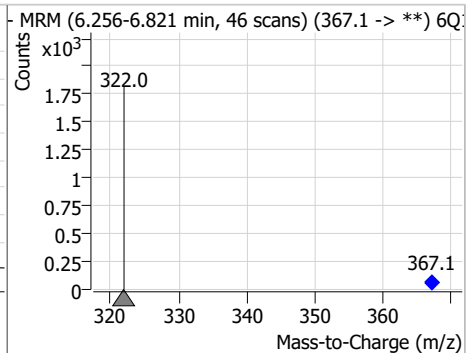
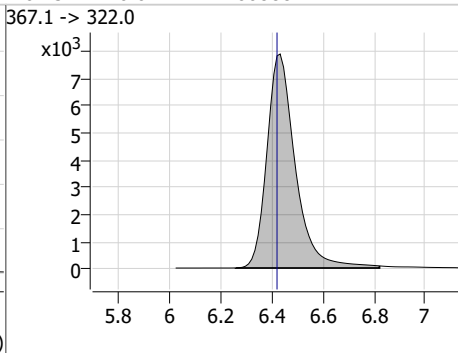
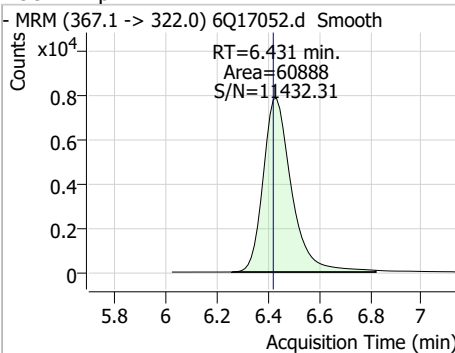
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	0.73	5.95	0.01	26589	314.8 -> 82.9	3.8	1.9	5.6



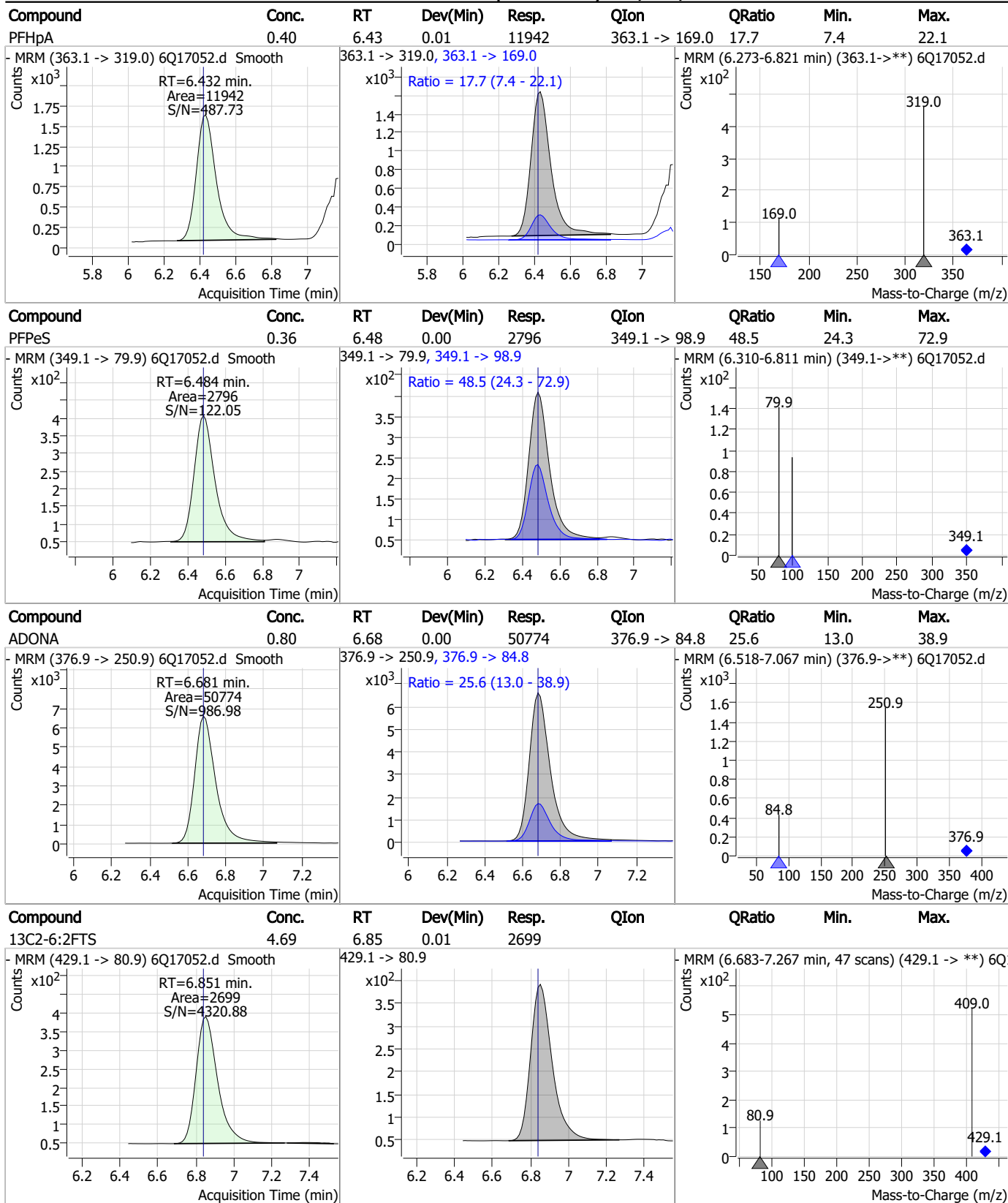
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	10.42	6.16	0.01	48920	341.0 -> 217.0	76.5	33.5	100.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpa	2.41	6.43	0.01	60888	367.1 -> 322.0			

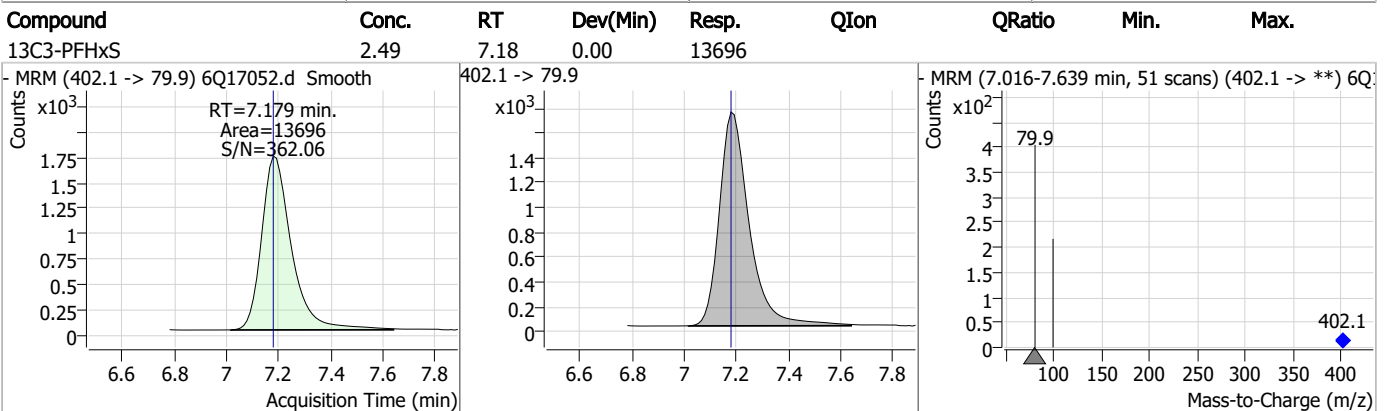
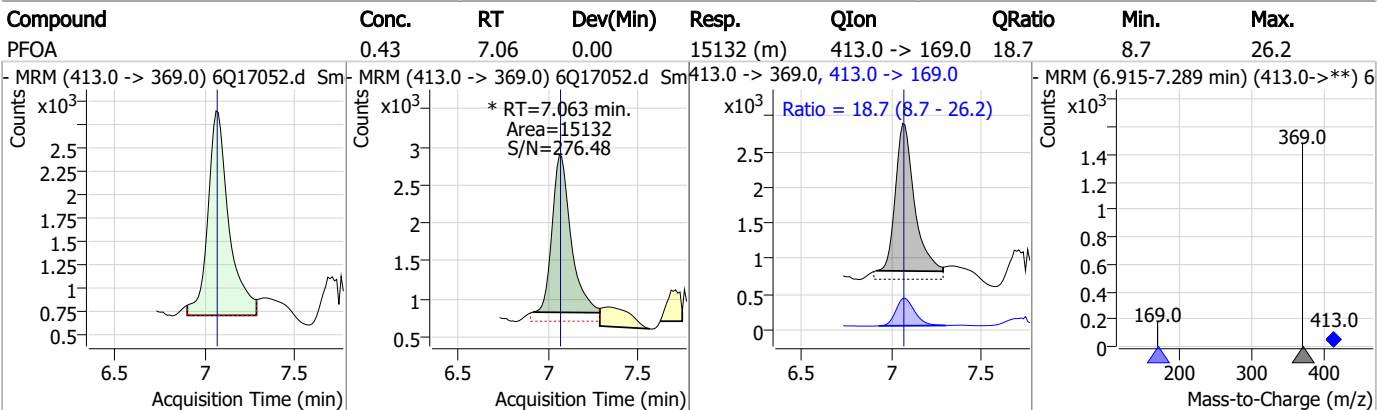
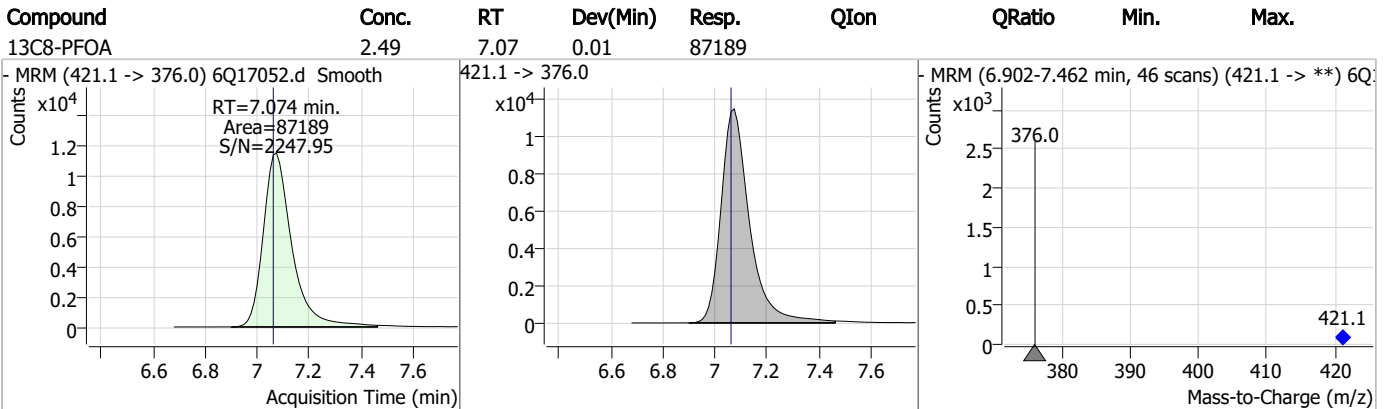
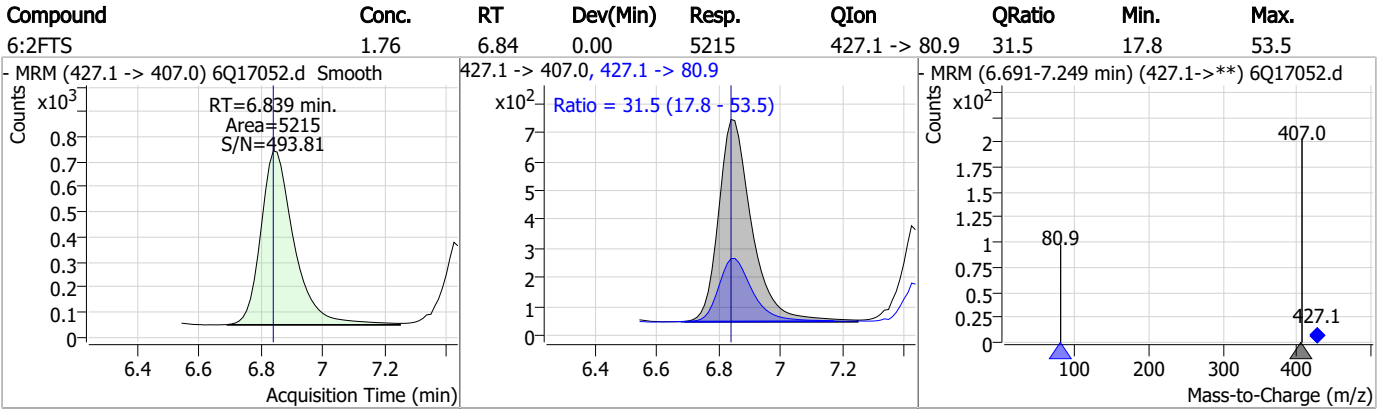


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

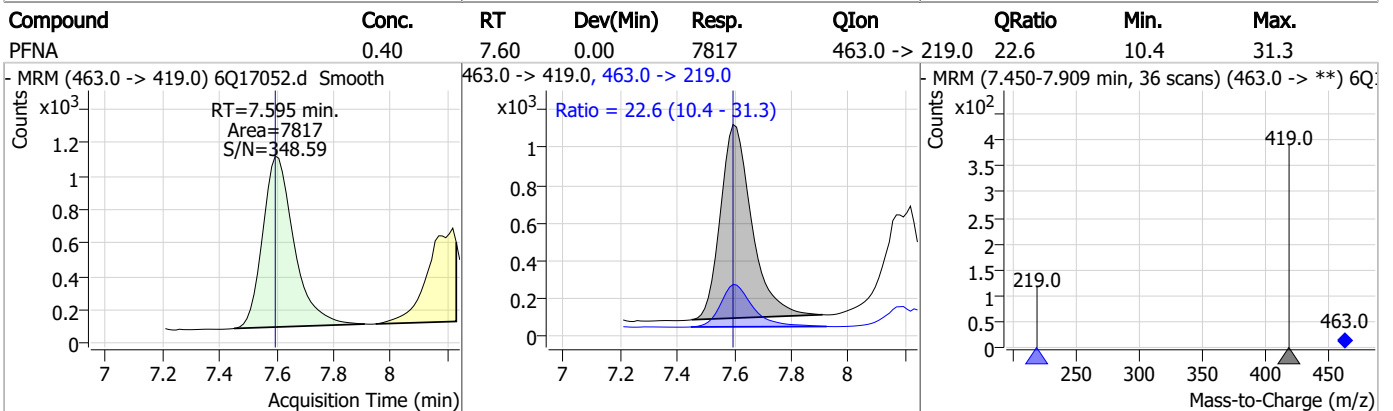
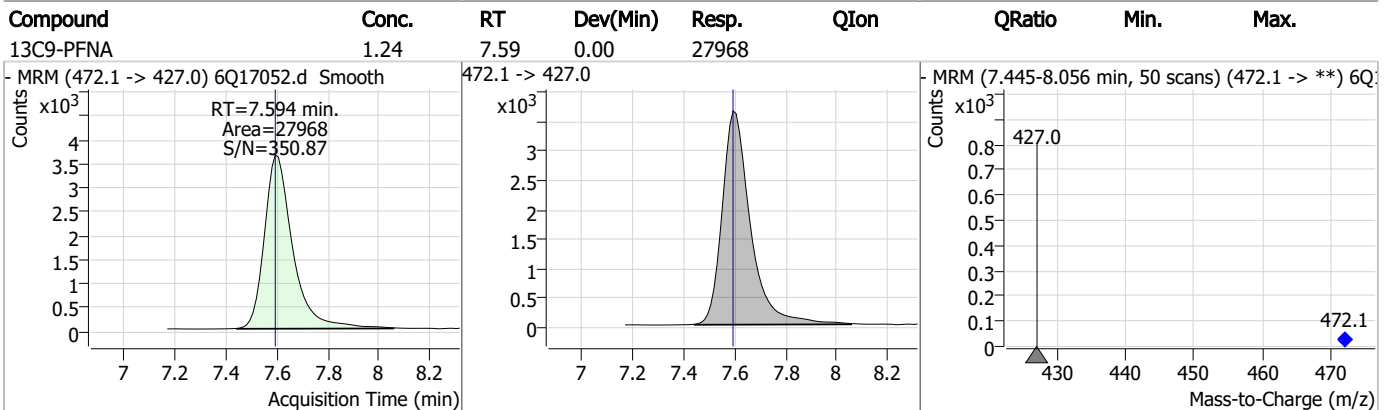
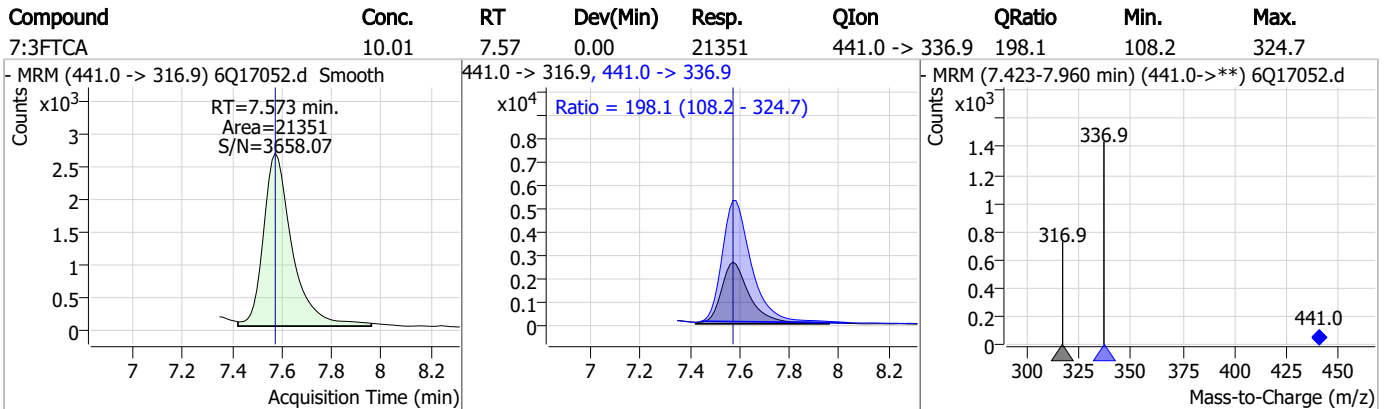
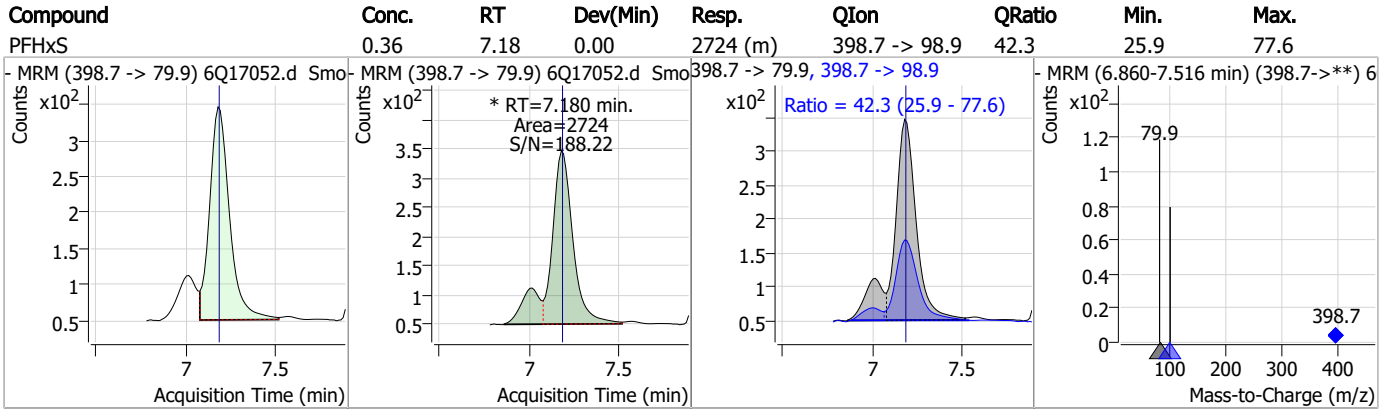


7.7.3

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Perfluorinated Compounds by LC/MS/MS



7.7.3

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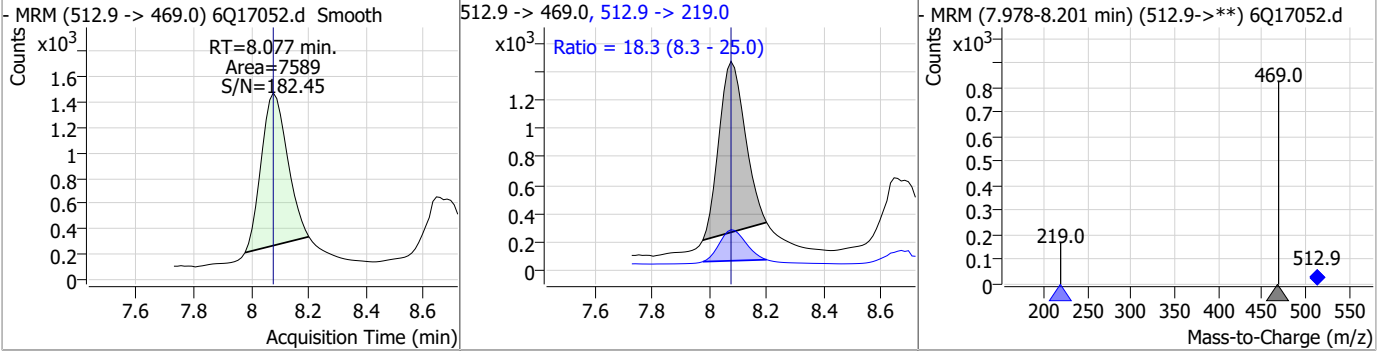
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.39	7.75	0.01	2561	449.0 -> 98.9	44.9	25.4	76.1
13C2-8:2FTS	4.87	7.86	0.00	3016	529.1 -> 80.9			
8:2FTS	1.65	7.87	0.00	2967	527.1 -> 80.8	35.9	20.3	61.0
13C6-PFDA	1.31	8.08	0.00	22037	519.1 -> 474.1			

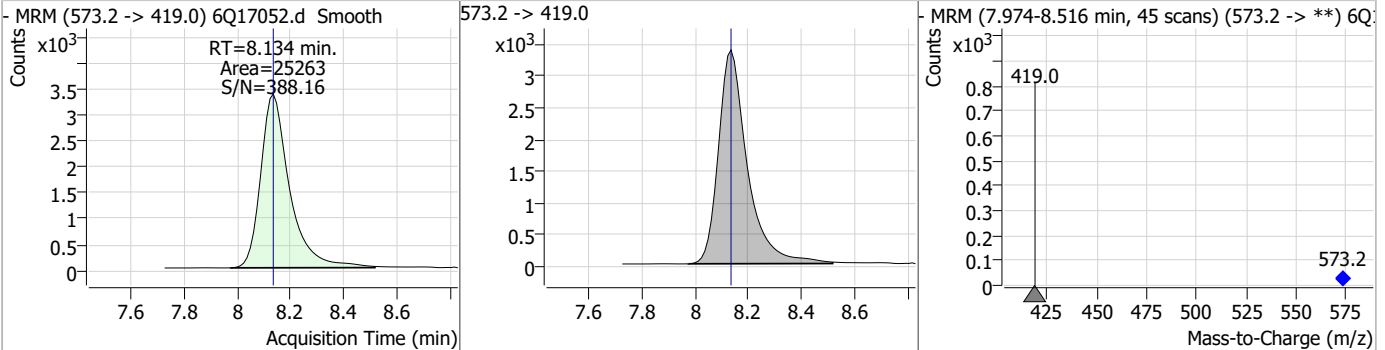
7.7.3
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Perfluorinated Compounds by LC/MS/MS

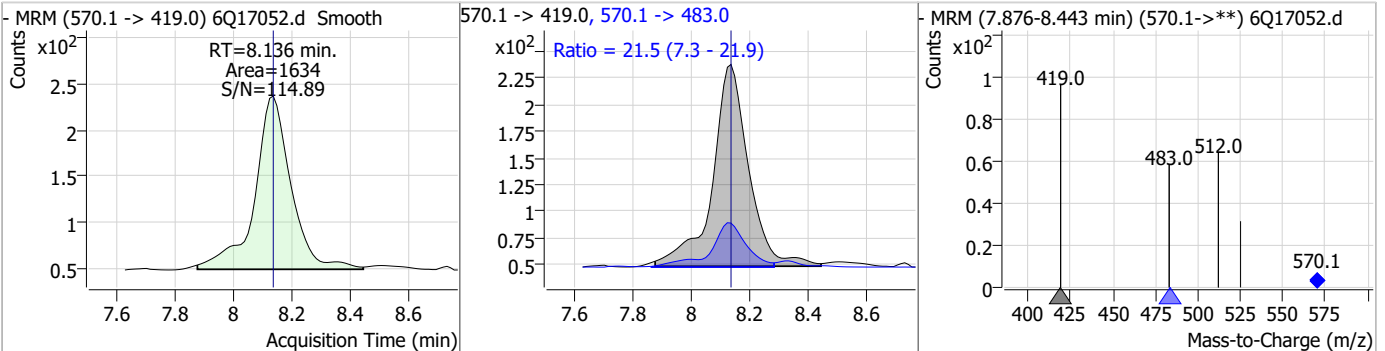
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.32	8.08	0.00	7589	512.9 -> 219.0	18.3	8.3	25.0



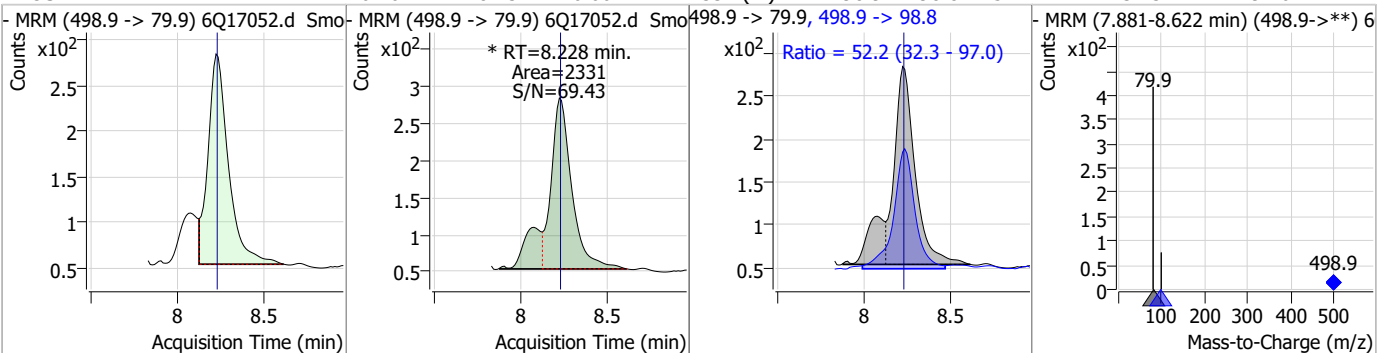
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.29	8.13	0.00	25263				



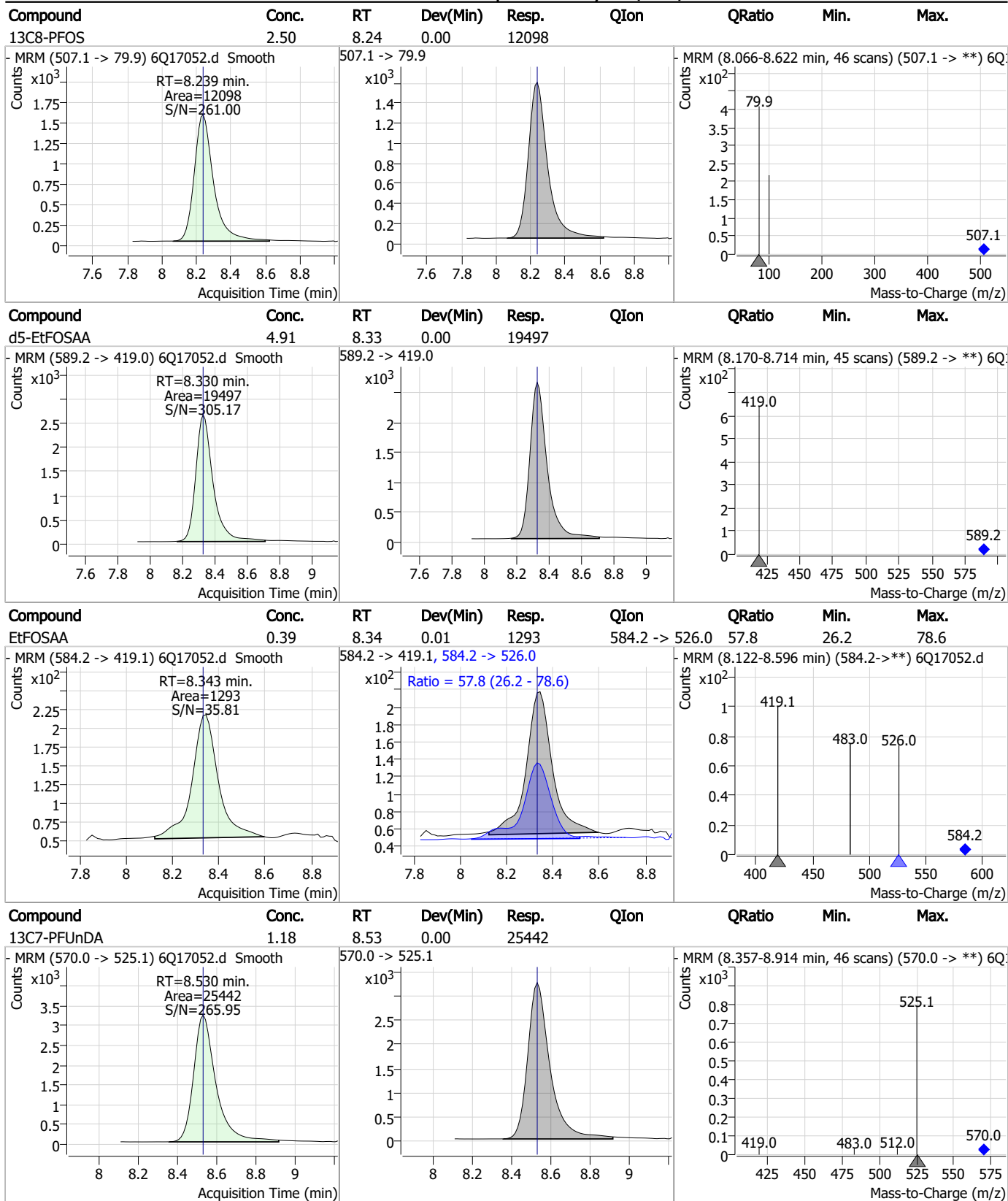
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.34	8.14	0.00	1634	570.1 -> 483.0	21.5	7.3	21.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.40	8.23	0.00	2331 (m)	498.9 -> 98.8	52.2	32.3	97.0

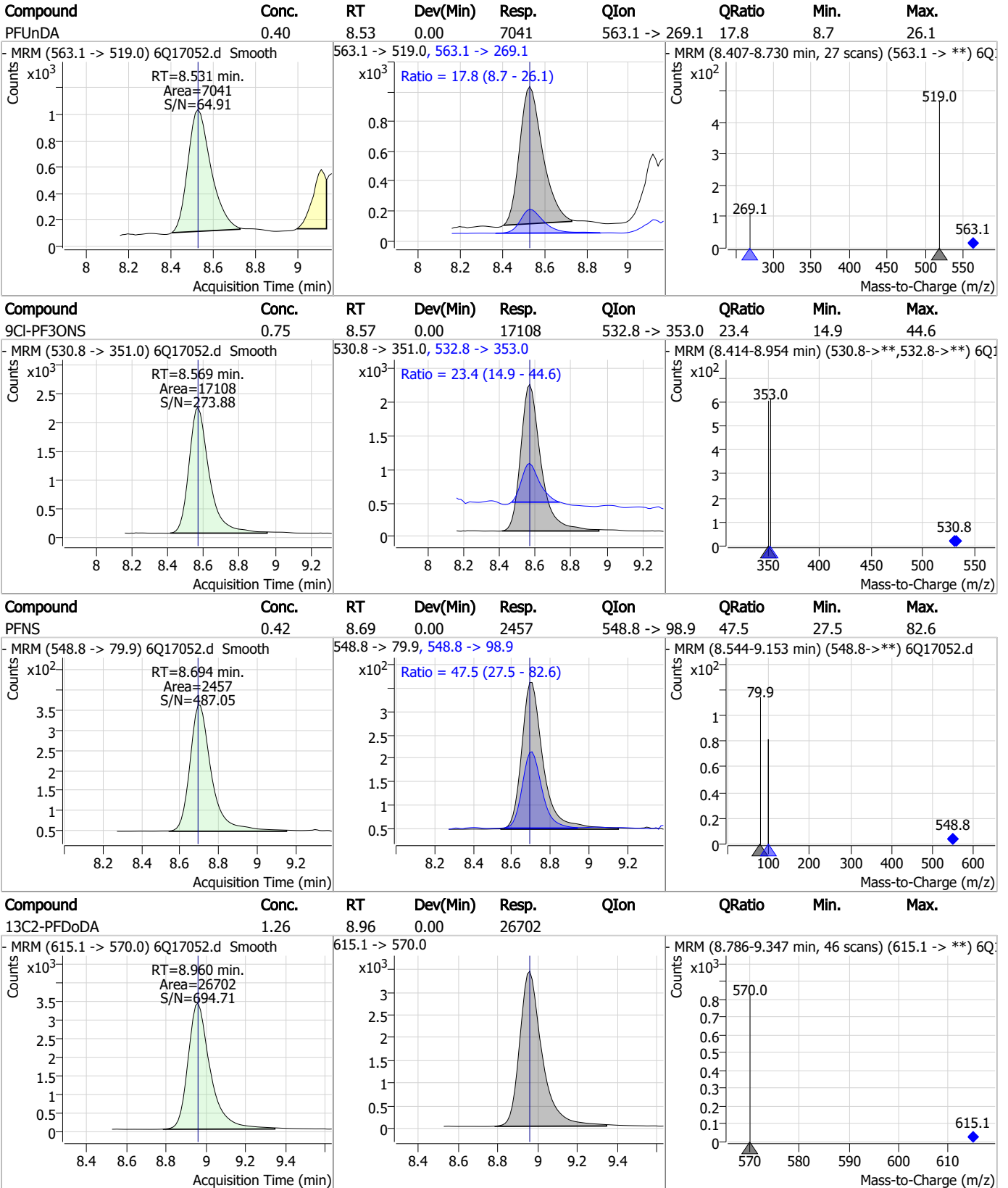


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

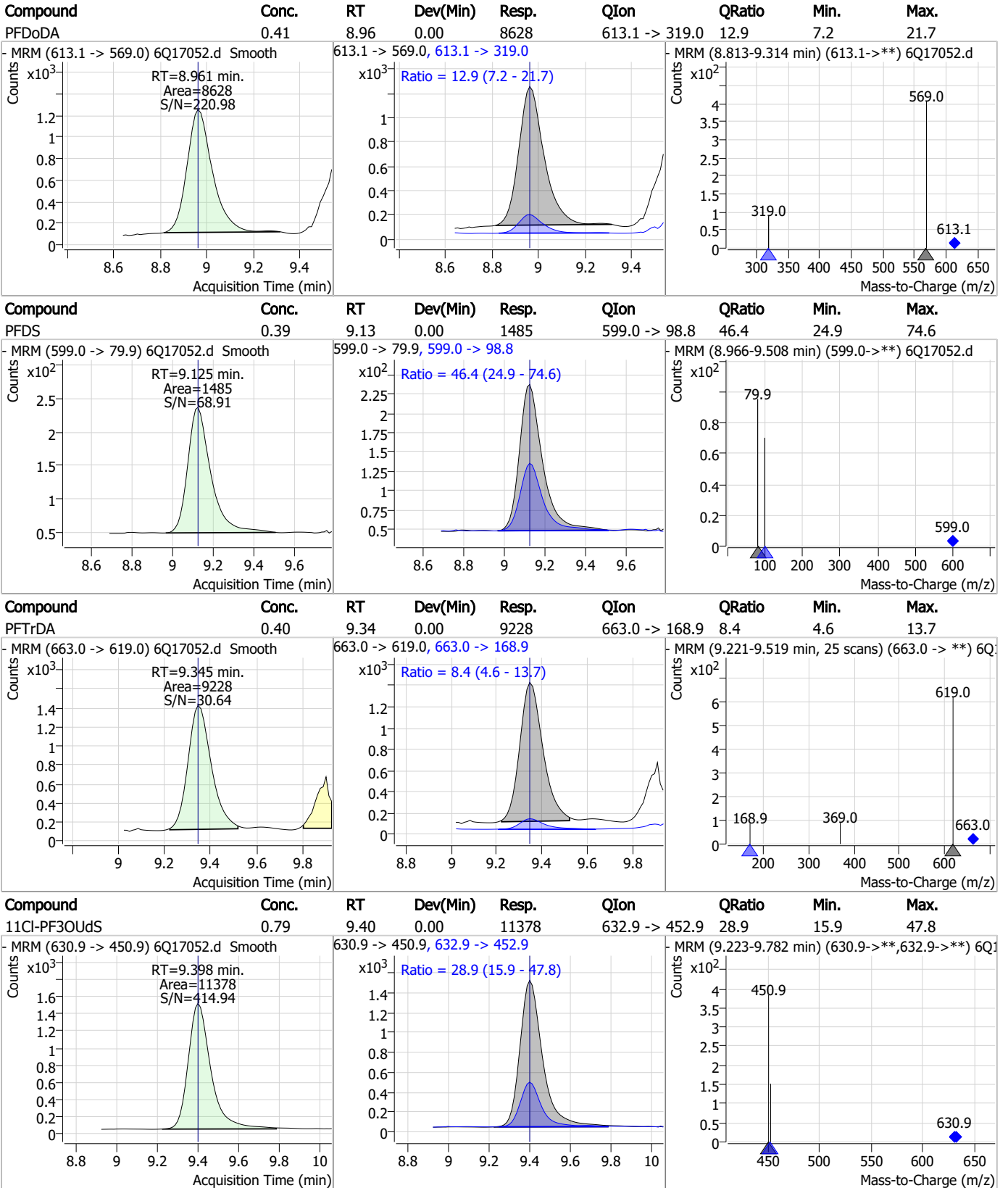


7.7.3

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Perfluorinated Compounds by LC/MS/MS



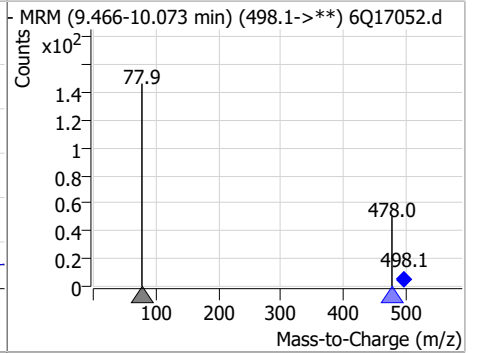
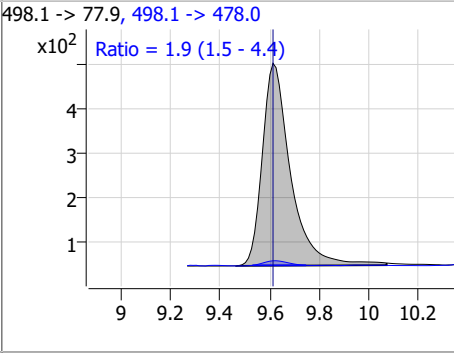
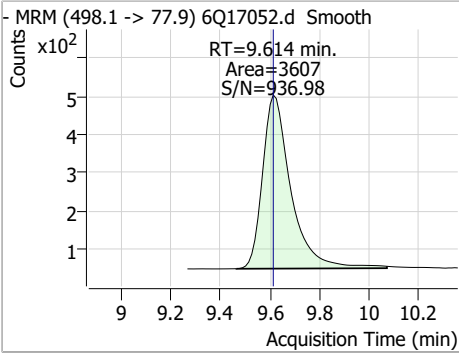
7.7.3

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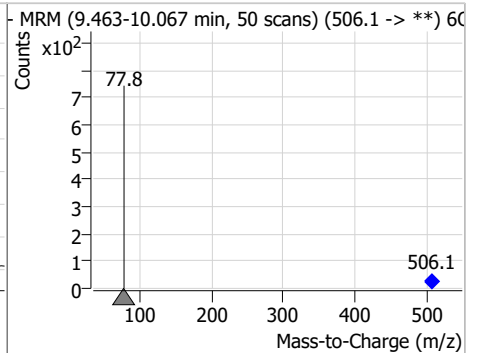
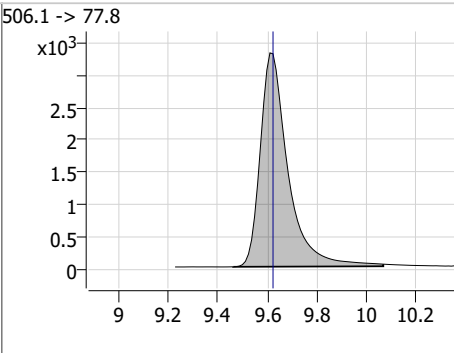
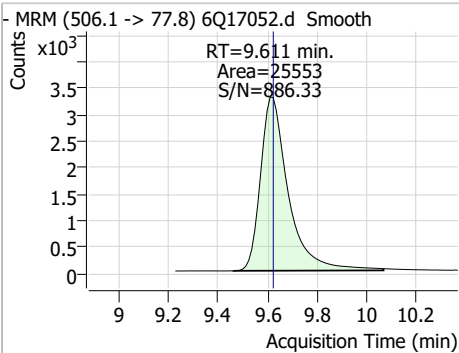


Perfluorinated Compounds by LC/MS/MS

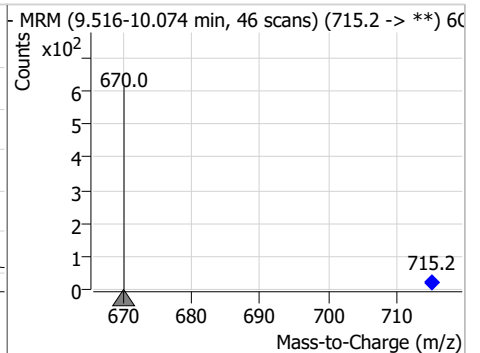
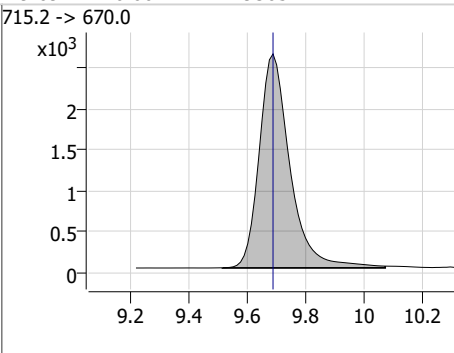
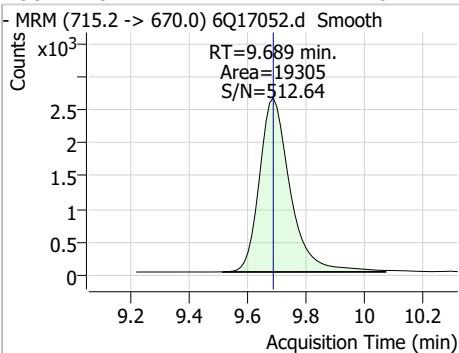
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.39	9.61	0.00	3607	498.1 -> 478.0	1.9	1.5	4.4



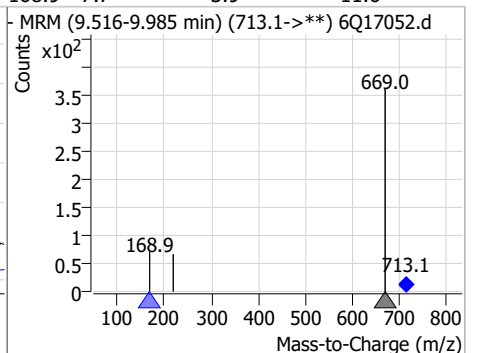
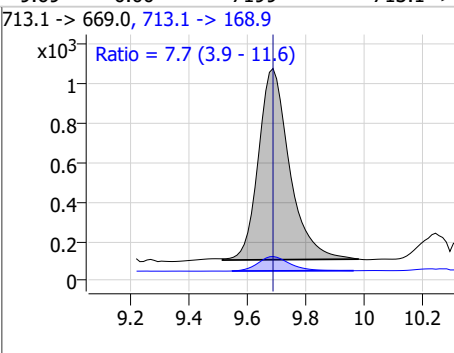
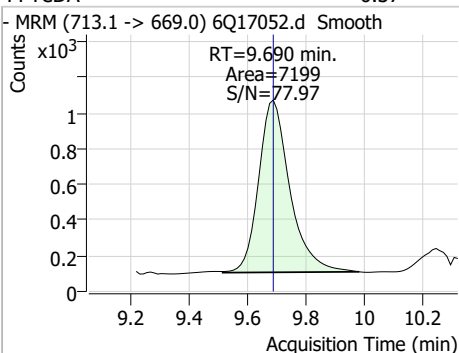
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.41	9.61	-0.01	25553				



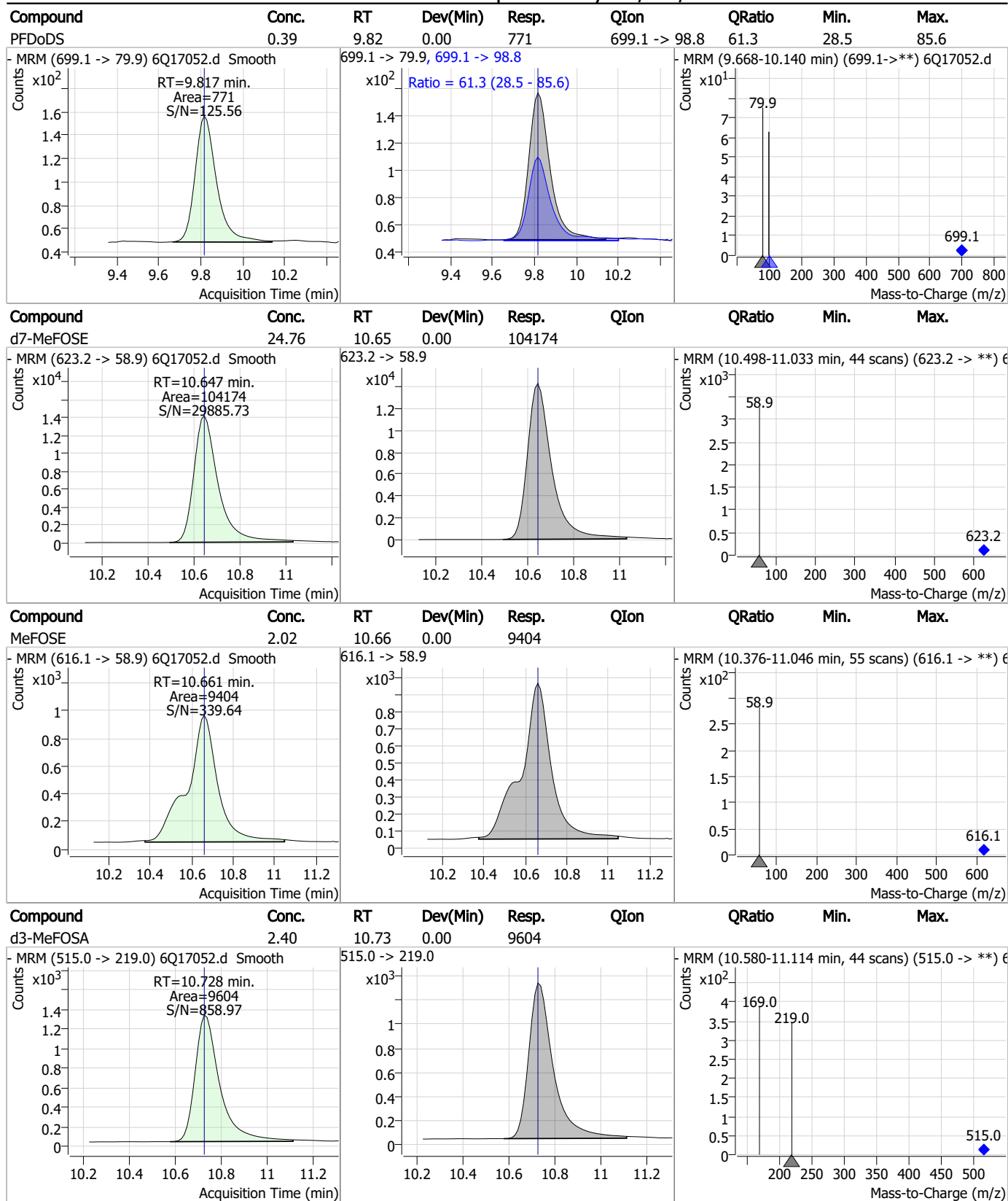
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.34	9.69	0.00	19305				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.37	9.69	0.00	7199	713.1 -> 168.9	7.7	3.9	11.6



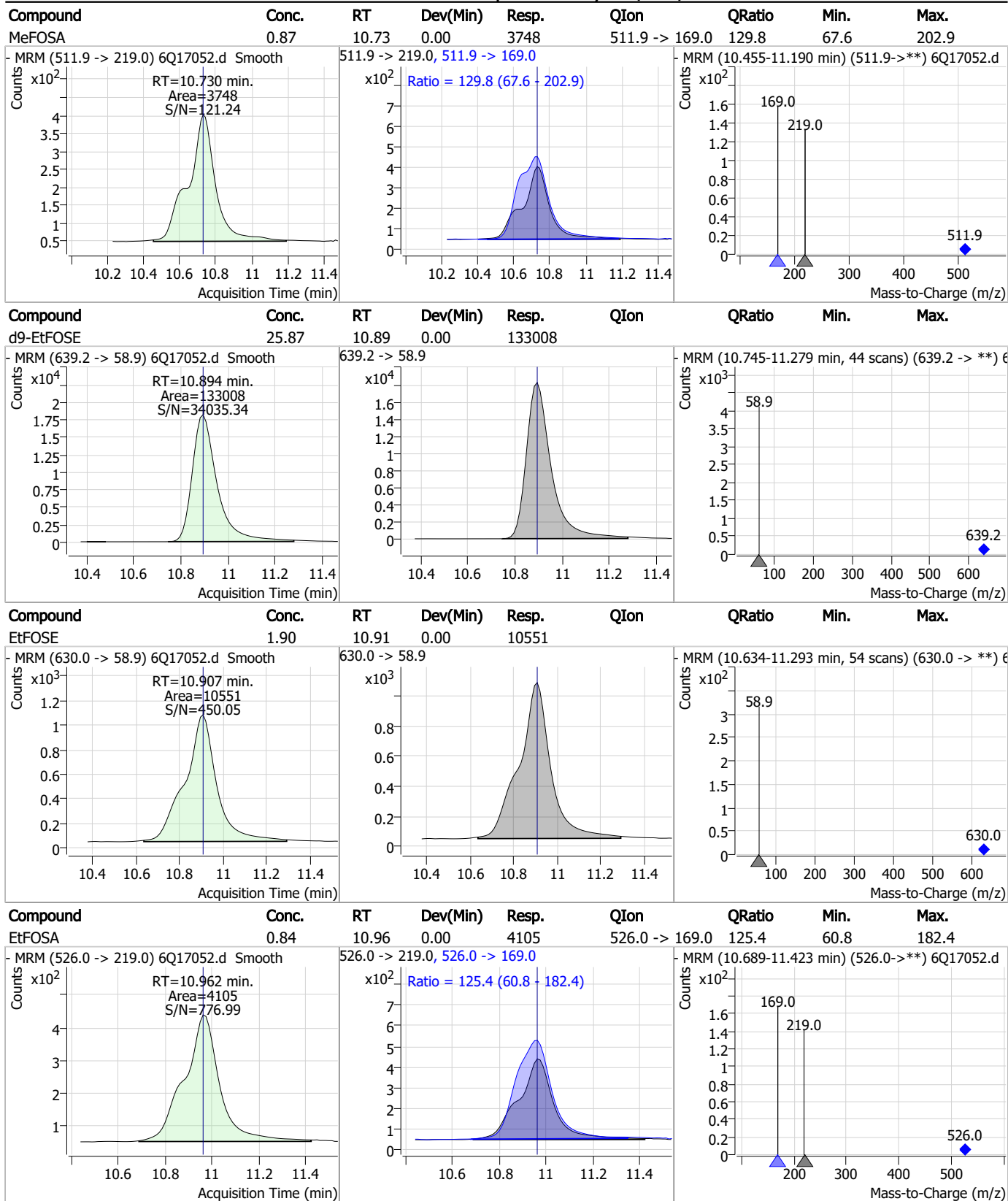
Perfluorinated Compounds by LC/MS/MS



7.7.3
7

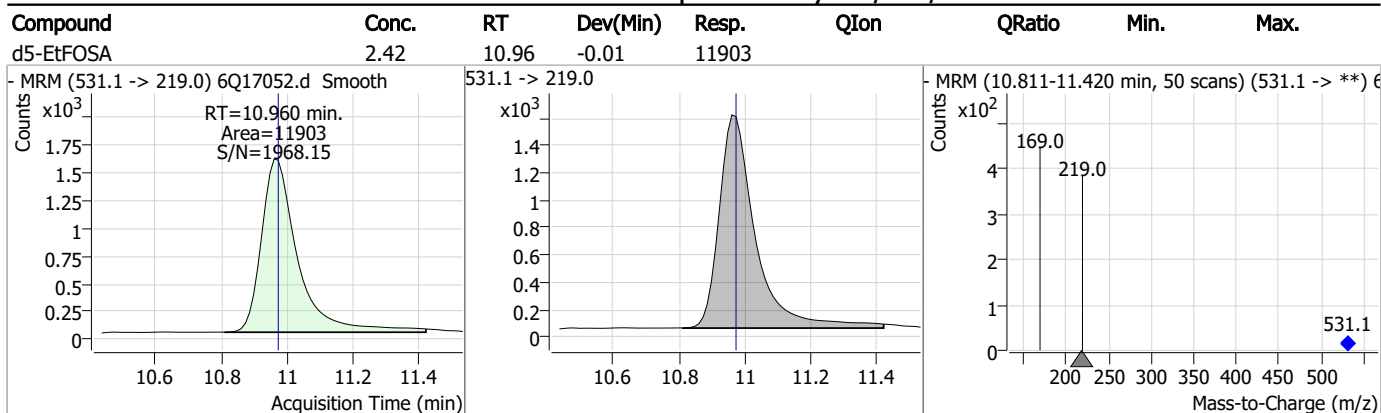


Perfluorinated Compounds by LC/MS/MS



7.7.3
7

Perfluorinated Compounds by LC/MS/MS



7.7.3
7

Manual Integration Approval Summary

Sample Number: S6Q258-IC258 Method: EPA DRAFT 1633
Lab FileID: 6Q17052.D Analyst approved: 04/30/23 23:33 Natasha Gumtie
Injection Time: 04/28/23 13:04 Supervisor approved: 04/30/23 23:52 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.06	Poor instrument integration
Perfluorohexanesulfonic acid	355-46-4		7.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.23	Split peak

7.7.3.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17053.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/28/2023 1:19:14 PM
 Sample Name : ic258-3
 Vial : P1-A4
 DA Method File : 1633_042823_S6Q258.quantmethod.xml
 Batch Name : s6q258.batch.bin
 Sample Information : OP96301,S6Q258,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.910	216.8 -> 171.9	191572	10.00 µg/L	0.012
M5-PFPeA	4.270	268.3 -> 223.0	67974	5.00 µg/L	0.000
M5-PFHxA	5.468	318.0 -> 273.0	74853	2.50 µg/L	0.000
M4-PFHpA	6.431	367.1 -> 322.0	64801	2.50 µg/L	0.012
M8-PFOA	7.074	421.1 -> 376.0	85689	2.50 µg/L	0.012
M9-PFNA	7.594	472.1 -> 427.0	28510	1.25 µg/L	0.000
M6-PFDA	8.076	519.1 -> 474.1	21004	1.25 µg/L	0.000
M7-PFUnDA	8.530	570.0 -> 525.1	28444	1.25 µg/L	0.000
M2-PFDoDA	8.960	615.1 -> 570.0	24718	1.25 µg/L	0.000
M2-PFTeDA	9.689	715.2 -> 670.0	17772	1.25 µg/L	0.000
M8-FOSA	9.623	506.1 -> 77.8	26081	2.50 µg/L	0.000
M3-PFBS	5.398	302.1 -> 79.9	23225	2.50 µg/L	0.000
M3-PFHxS	7.191	402.1 -> 79.9	13656	2.50 µg/L	0.012
M8-PFOS	8.239	507.1 -> 79.9	11956	2.50 µg/L	0.000
M2-4:2FTS	5.144	329.1 -> 80.9	2305	5.00 µg/L	0.000
M2-6:2FTS	6.851	429.1 -> 80.9	2886	5.00 µg/L	0.012
M2-8:2FTS	7.864	529.1 -> 80.9	2845	5.00 µg/L	0.000
M3-MeFOSAA	8.134	573.2 -> 419.0	21974	5.00 µg/L	0.000
M3-HFPO-DA	5.845	286.9 -> 168.9	42854	10.00 µg/L	0.000
M5-EtFOSAA	8.330	589.2 -> 419.0	18672	5.00 µg/L	0.000
M7-MeFOSE	10.647	623.2 -> 58.9	107605	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	134292	25.00 µg/L	0.000
M5-EtFOSA	10.960	531.1 -> 219.0	12109	2.50 µg/L	-0.012
M3-MeFOSA	10.728	515.0 -> 219.0	9352	2.50 µg/L	0.000
13C4-PFOS	8.239	502.8 -> 79.9	15112	2.50 µg/L	0.000
13C3-PFBA	2.902	216.0 -> 172.0	82831	5.00 µg/L	0.000
18O2-PFHxS	7.190	403.0 -> 83.9	9850	2.50 µg/L	0.012
13C4-PFOA	7.075	417.1 -> 372.0	90328	2.50 µg/L	0.012
13C2-PFDA	8.076	515.1 -> 470.1	23654	1.25 µg/L	0.000
13C5-PFNA	7.595	468.0 -> 423.0	29469	1.25 µg/L	0.000
13C2-PFHxA	5.469	315.1 -> 270.0	58289	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.144	329.1 -> 80.9	2305	5.09 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.8%		
13C2-6:2FTS	6.851	429.1 -> 80.9	2886	5.25 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.0%		
13C2-8:2FTS	7.864	529.1 -> 80.9	2845	4.81 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.3%		
13C2-PFDoDA	8.960	615.1 -> 570.0	24718	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.5%		
13C2-PFTeDA	9.689	715.2 -> 670.0	17772	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 106.8%		
13C3-PFBS	5.398	302.1 -> 79.9	23225	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.3%		
13C3-PFHxS	7.191	402.1 -> 79.9	13656	2.60 µg/L	0.012

7.7.4
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.2%	
13C4-PFBA	2.910	216.8 -> 171.9	191572	10.01 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C4-PFHpA	6.431	367.1 -> 322.0	64801	2.72 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.7%	
13C5-PFHxA	5.468	318.0 -> 273.0	74853	2.66 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.5%	
13C5-PFPeA	4.270	268.3 -> 223.0	67974	5.22 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.4%	
13C6-PFDA	8.076	519.1 -> 474.1	21004	1.35 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.7%	
13C7-PFUnDA	8.530	570.0 -> 525.1	28444	1.42 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 113.9%	
13C8-FOSA	9.623	506.1 -> 77.8	26081	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.4%	
13C8-PFOA	7.074	421.1 -> 376.0	85689	2.46 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.3%	
13C8-PFOS	8.239	507.1 -> 79.9	11956	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.0%	
13C9-PFNA	7.594	472.1 -> 427.0	28510	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.5%	
d3-MeFOSAA	8.134	573.2 -> 419.0	21974	4.88 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.6%	
13C3-HFPO-DA	5.845	286.9 -> 168.9	42854	10.39 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.9%	
d3-MeFOSA	10.728	515.0 -> 219.0	9352	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.1%	
d5-EtFOSAA	8.330	589.2 -> 419.0	18672	4.99 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
d7-MeFOSE	10.647	623.2 -> 58.9	107605	27.13 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 108.5%	
d9-EtFOSE	10.894	639.2 -> 58.9	134292	27.71 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 110.8%	
d5-EtFOSA	10.960	531.1 -> 219.0	12109	2.61 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.5%	
Target Compounds					QValue
4:2FTS	5.145	327.1 -> 307.0	16860	4.84 µg/L	98
		327.1 -> 80.9	6076		
6:2FTS	6.851	427.1 -> 407.0	14989	4.72 µg/L	99
		427.1 -> 80.9	5421		
8:2FTS	7.865	527.1 -> 507.0	9570	5.65 µg/L	94
		527.1 -> 80.8	3539		
EtFOSAA	8.343	584.2 -> 419.1	3961	1.25 µg/L	92
		584.2 -> 526.0	2303		
FOSA	9.614	498.1 -> 77.9	12049	1.29 µg/L	99
		498.1 -> 478.0	383		
MeFOSAA	8.136	570.1 -> 419.0	5431	1.32 µg/L	87
		570.1 -> 483.0	1089		
PFBA	2.906	212.8 -> 168.9	32090	4.99 µg/L	100
PFBS	5.400	298.7 -> 79.9	12402	1.19 µg/L	97
		298.7 -> 98.8	4874		
PFDA	8.077	512.9 -> 469.0	27773	1.22 µg/L	94
		512.9 -> 219.0	5281		
PFDODA	8.961	613.1 -> 569.0	25585	1.32 µg/L	98
		613.1 -> 319.0	3480		
PFDS	9.125	599.0 -> 79.9	4310	1.13 µg/L	100

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	2140			
PFHpA	6.432	363.1 -> 319.0	37275	1.17	µg/L	95
		363.1 -> 169.0	6278			
PFHpS	7.746	449.0 -> 79.9	7638	1.18	µg/L	97
		449.0 -> 98.9	4032			
PFHxA	5.470	313.0 -> 269.0	36373	1.23	µg/L	100
		313.0 -> 118.9	1707			
PFHxS	7.192	398.7 -> 79.9	8263	1.11	µg/L	m 99
		398.7 -> 98.9	4186			
PFNA	7.595	463.0 -> 419.0	23263	1.18	µg/L	100
		463.0 -> 219.0	4812			
PFNS	8.706	548.8 -> 79.9	6549	1.13	µg/L	98
		548.8 -> 98.9	3506			
PFOA	7.076	413.0 -> 369.0	47697	1.22	µg/L	97
		413.0 -> 169.0	8907			
PFOS	8.240	498.9 -> 79.9	6668	1.15	µg/L	m 84
		498.9 -> 98.8	3482			
PFPeA	4.273	263.0 -> 219.0	45980	2.48	µg/L	100
PFPeS	6.484	349.1 -> 79.9	8912	1.15	µg/L	99
		349.1 -> 98.9	4281			
PFTeDA	9.690	713.1 -> 669.0	22648	1.26	µg/L	99
		713.1 -> 168.9	1703			
PFTrDA	9.358	663.0 -> 619.0	30131	1.40	µg/L	96
		663.0 -> 168.9	2293			
PFUnDA	8.531	563.1 -> 519.0	23133	1.17	µg/L	98
		563.1 -> 269.1	3831			
11Cl-PF3OUdS	9.398	630.9 -> 450.9	34449	2.34	µg/L	96
		632.9 -> 452.9	11770			
9Cl-PF3ONS	8.569	530.8 -> 351.0	56487	2.43	µg/L	99
		532.8 -> 353.0	16982			
ADONA	6.681	376.9 -> 250.9	155433	2.40	µg/L	97
		376.9 -> 84.8	42362			
HFPO-DA	5.846	284.9 -> 168.9	10320	2.54	µg/L	94
		284.9 -> 184.9	1174			
3:3FTCA	3.784	241.0 -> 177.0	7118	6.15	µg/L	99
		241.0 -> 117.0	920			
5:3FTCA	6.160	341.0 -> 237.1	150845	31.49	µg/L	92
		341.0 -> 217.0	111042			
7:3FTCA	7.573	441.0 -> 316.9	68001	31.25	µg/L	99
		441.0 -> 336.9	146321			
EtFOSA	10.962	526.0 -> 219.0	12429	2.50	µg/L	93
		526.0 -> 169.0	16155			
EtFOSE	10.907	630.0 -> 58.9	34082	6.09	µg/L	100
MeFOSA	10.730	511.9 -> 219.0	11103	2.64	µg/L	100
		511.9 -> 169.0	15014			
MeFOSE	10.661	616.1 -> 58.9	29147	6.07	µg/L	100
PFDoDS	9.817	699.1 -> 79.9	2475	1.26	µg/L	94
		699.1 -> 98.8	1298			
NFDHA	5.350	295.0 -> 201.0	8125	2.53	µg/L	99
		295.0 -> 84.9	1939			
PFMBA	4.687	279.0 -> 85.1	31615	2.55	µg/L	100
PFMPA	3.438	229.0 -> 84.9	22901	2.47	µg/L	100
PFEESA	5.949	314.8 -> 134.9	82814	2.22	µg/L	99
		314.8 -> 82.9	2883			

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

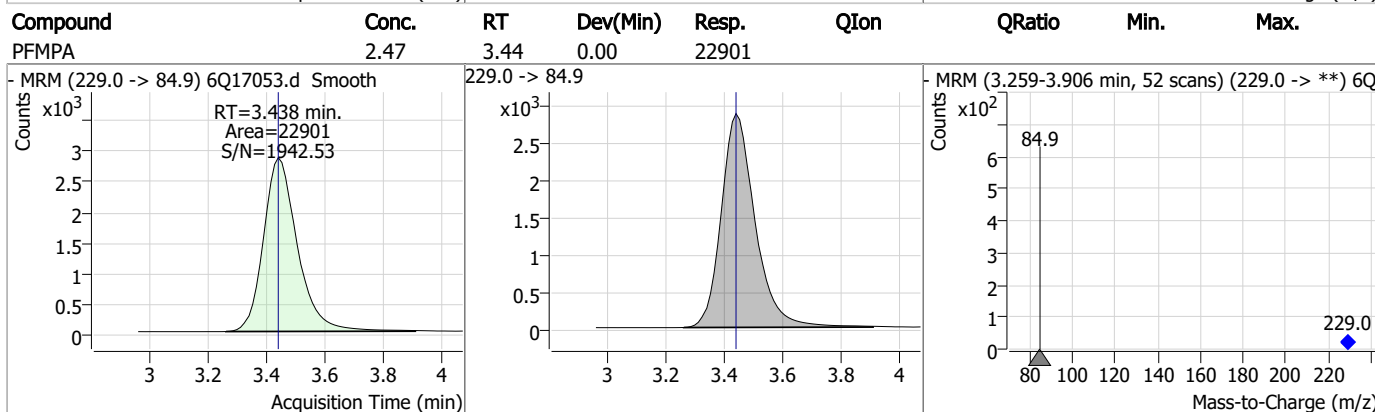
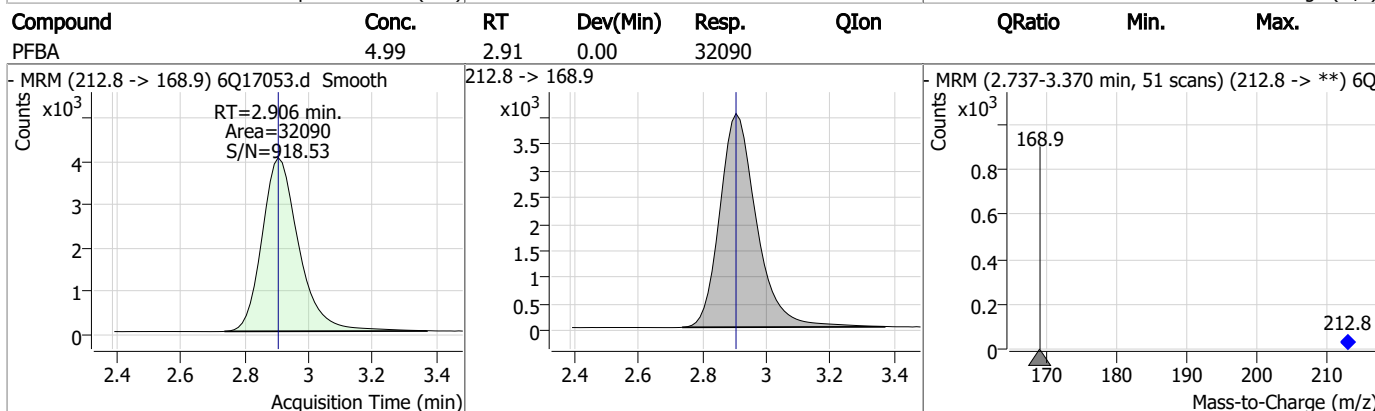
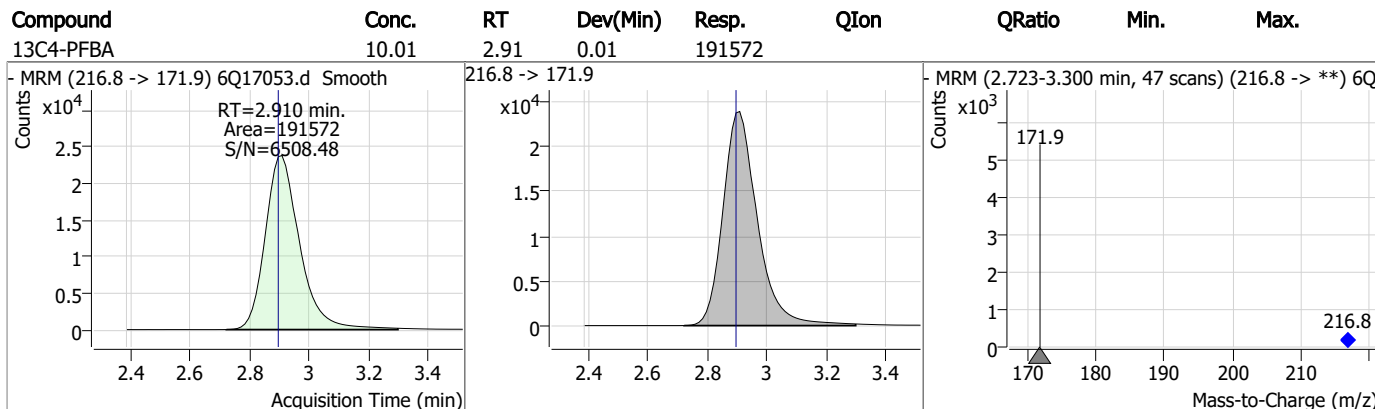
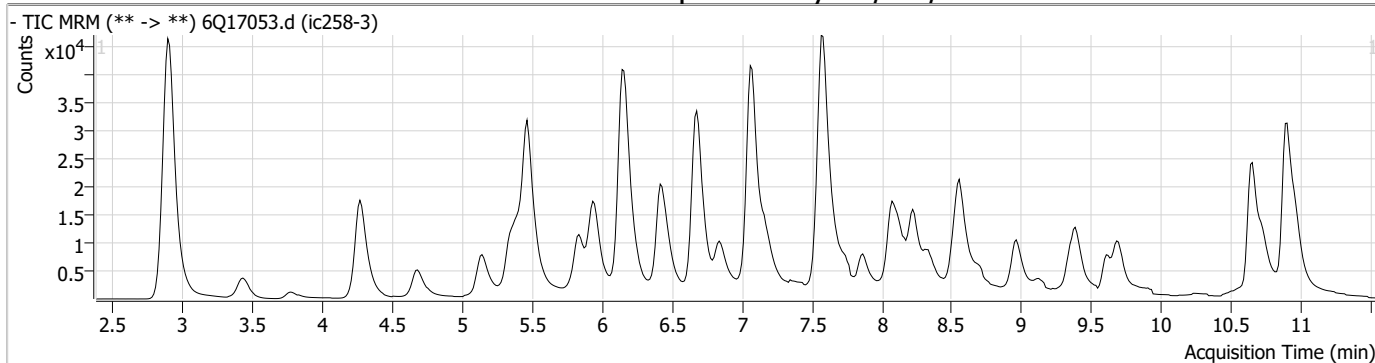
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.4

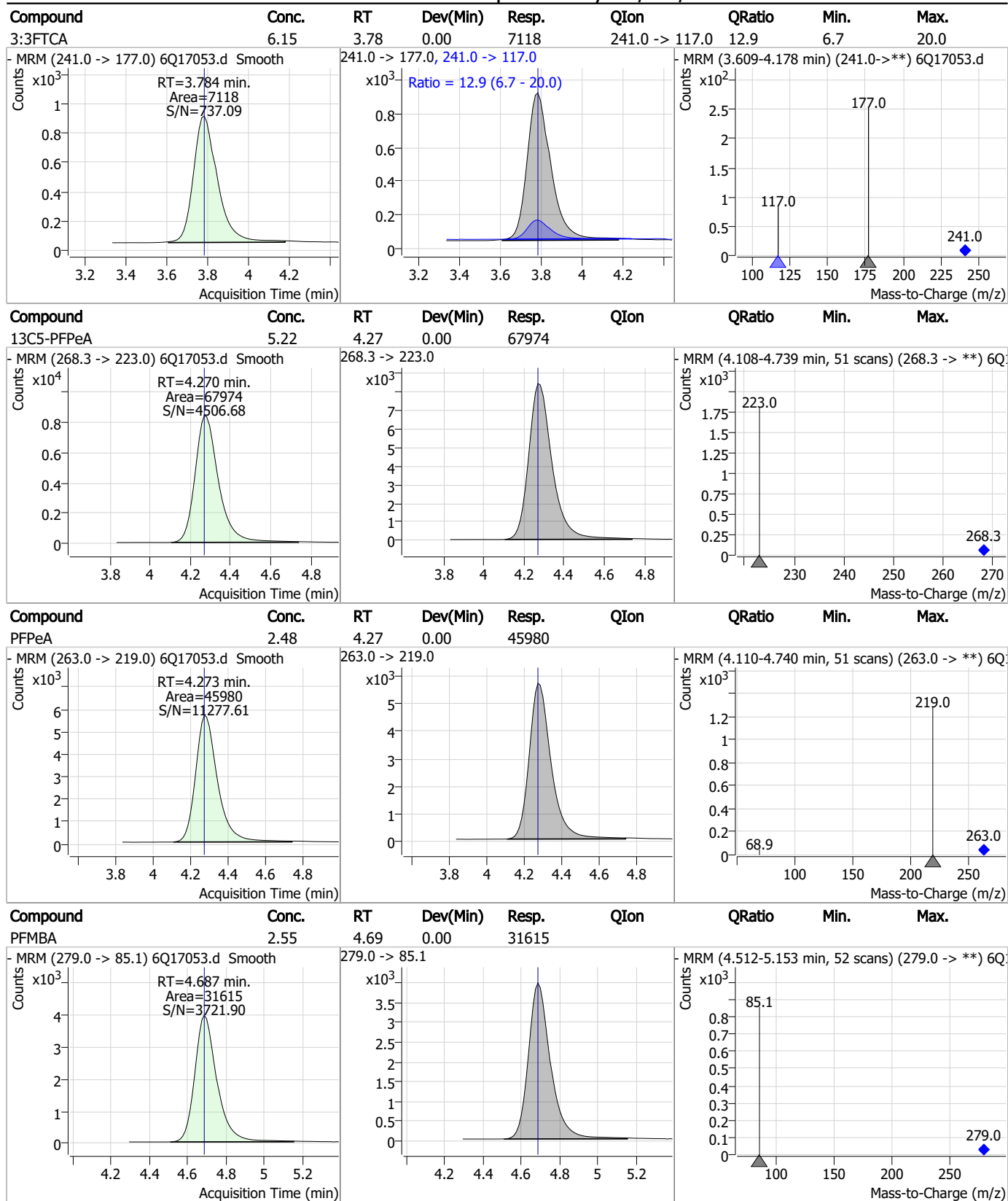
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Perfluorinated Compounds by LC/MS/MS



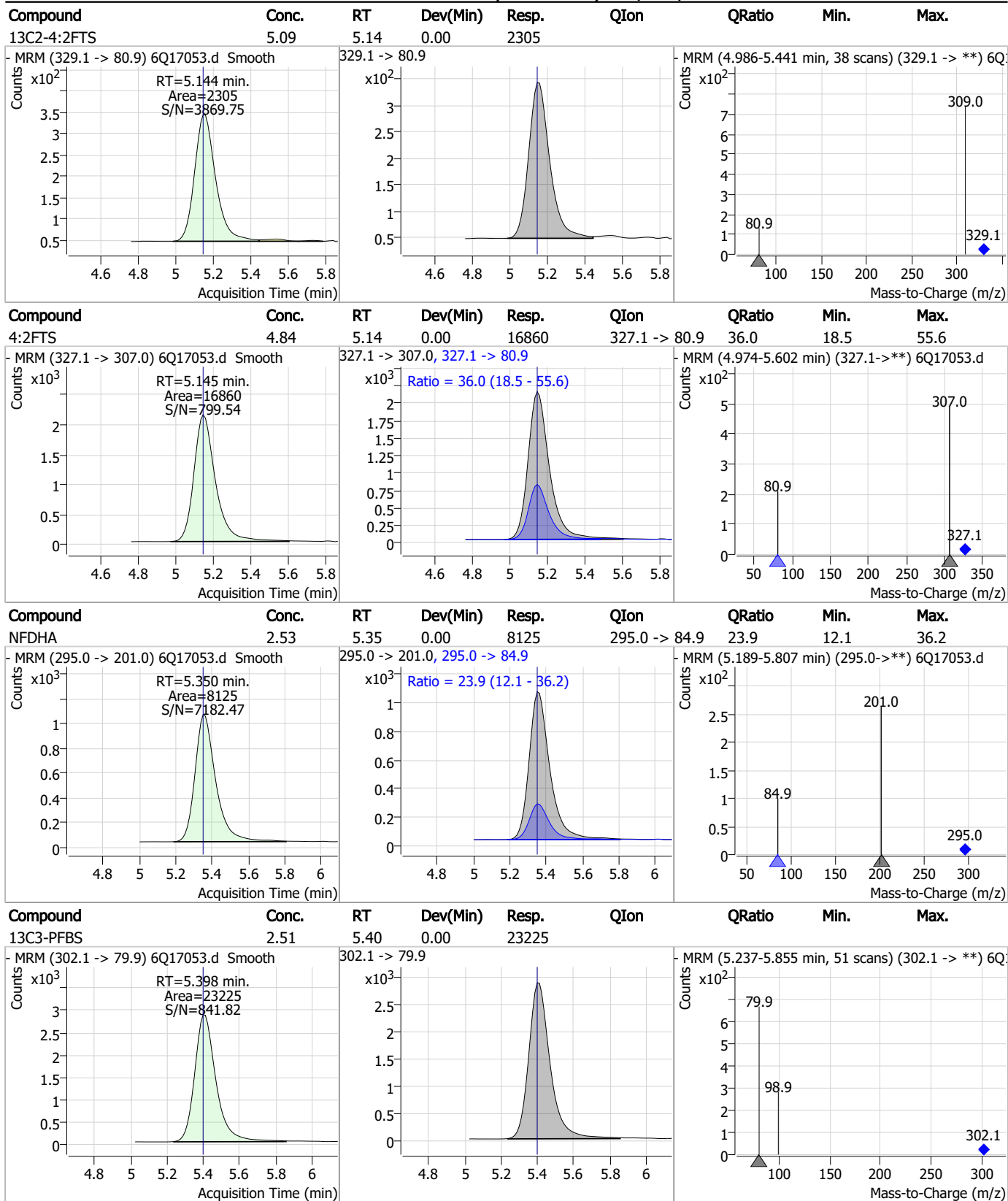
7.7.4
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Perfluorinated Compounds by LC/MS/MS



7.7.4
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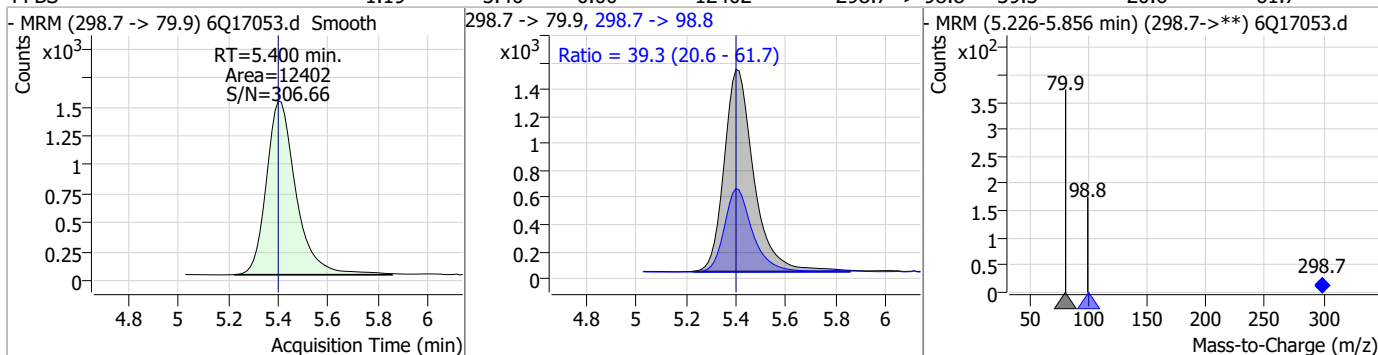
Perfluorinated Compounds by LC/MS/MS



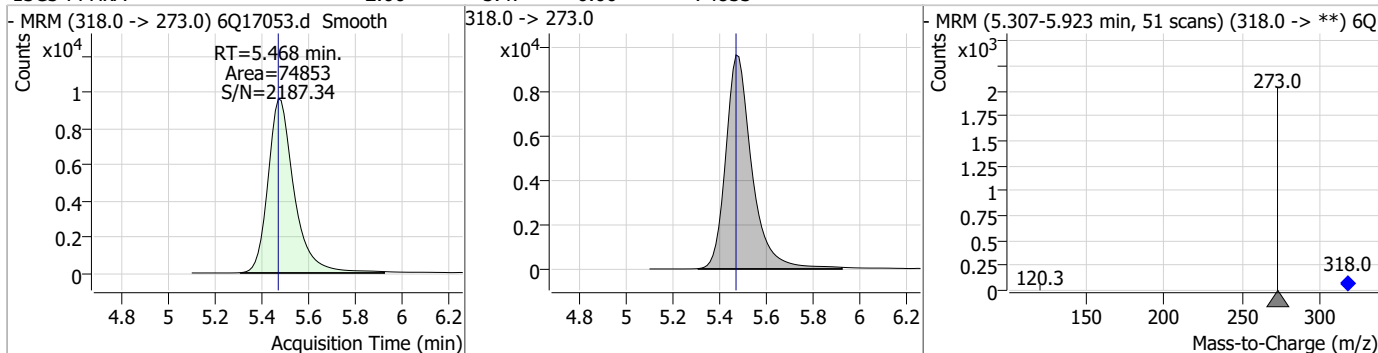
7.7.4
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Perfluorinated Compounds by LC/MS/MS

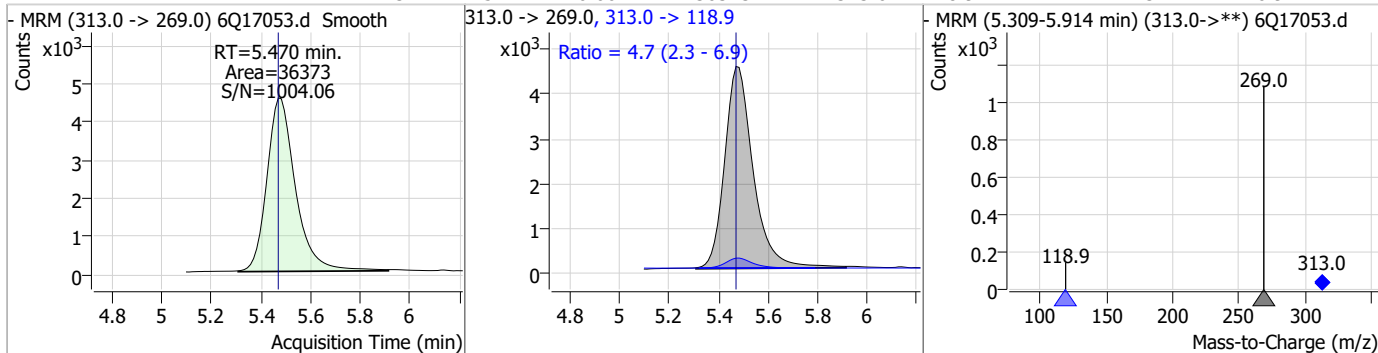
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.19	5.40	0.00	12402	298.7 -> 98.8	39.3	20.6	61.7



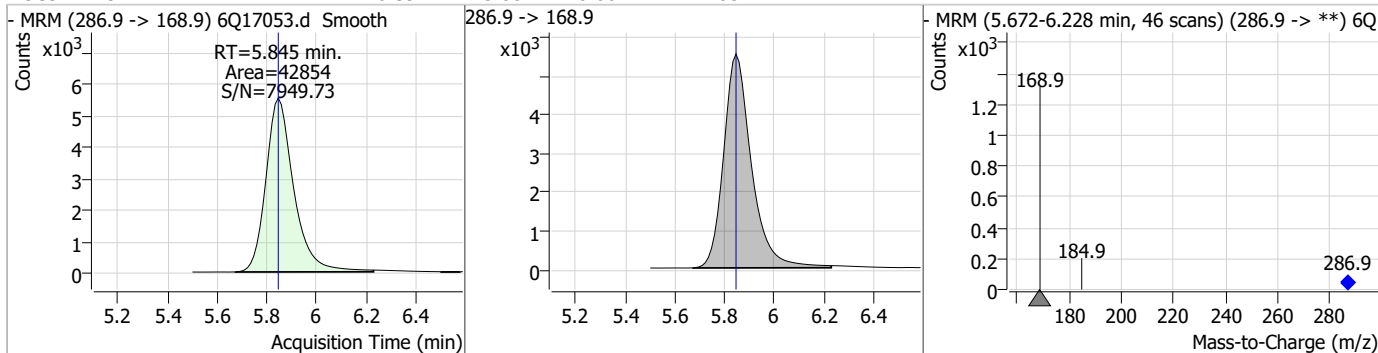
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.66	5.47	0.00	74853				



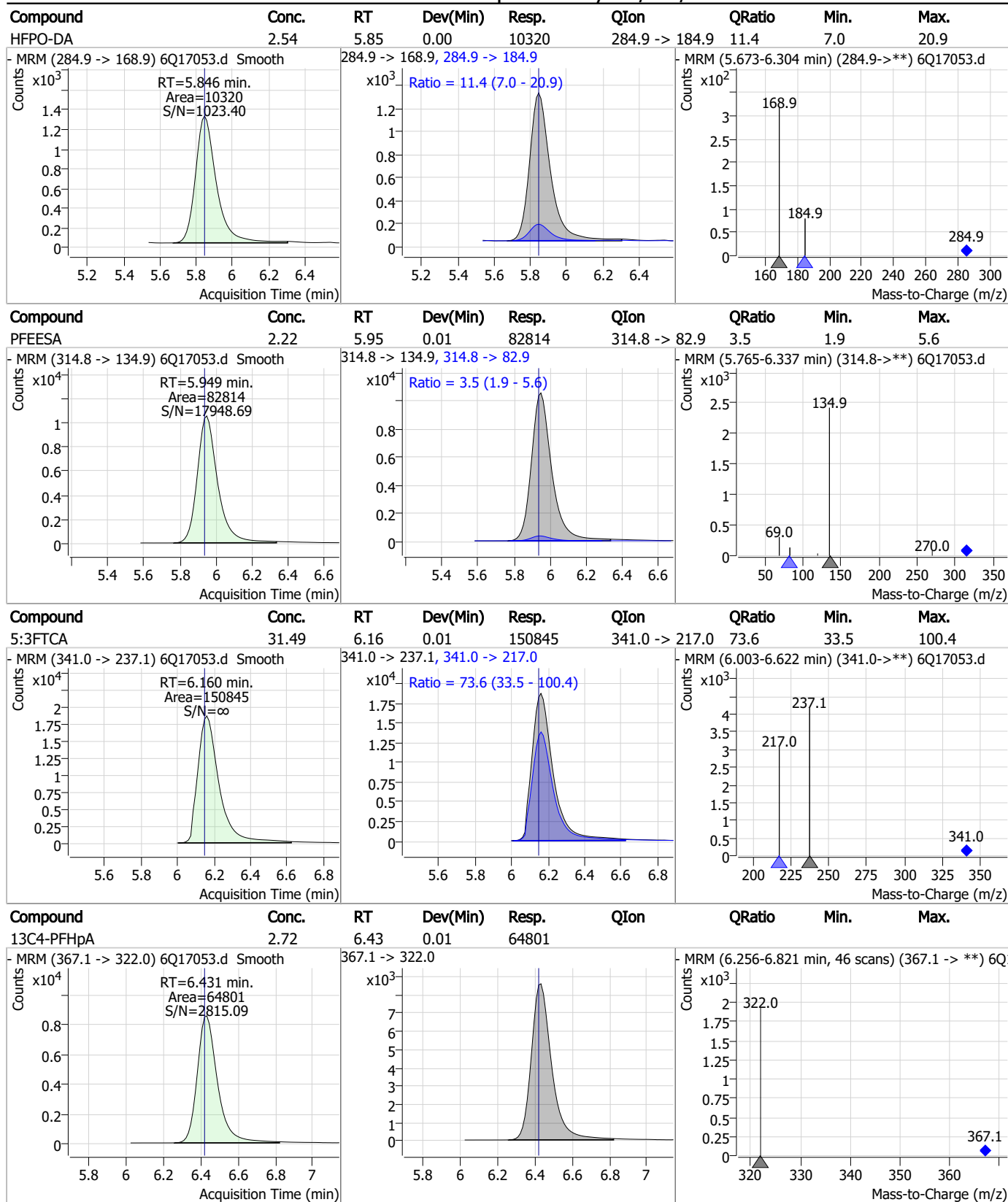
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.23	5.47	0.00	36373	313.0 -> 118.9	4.7	2.3	6.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.39	5.85	0.00	42854				

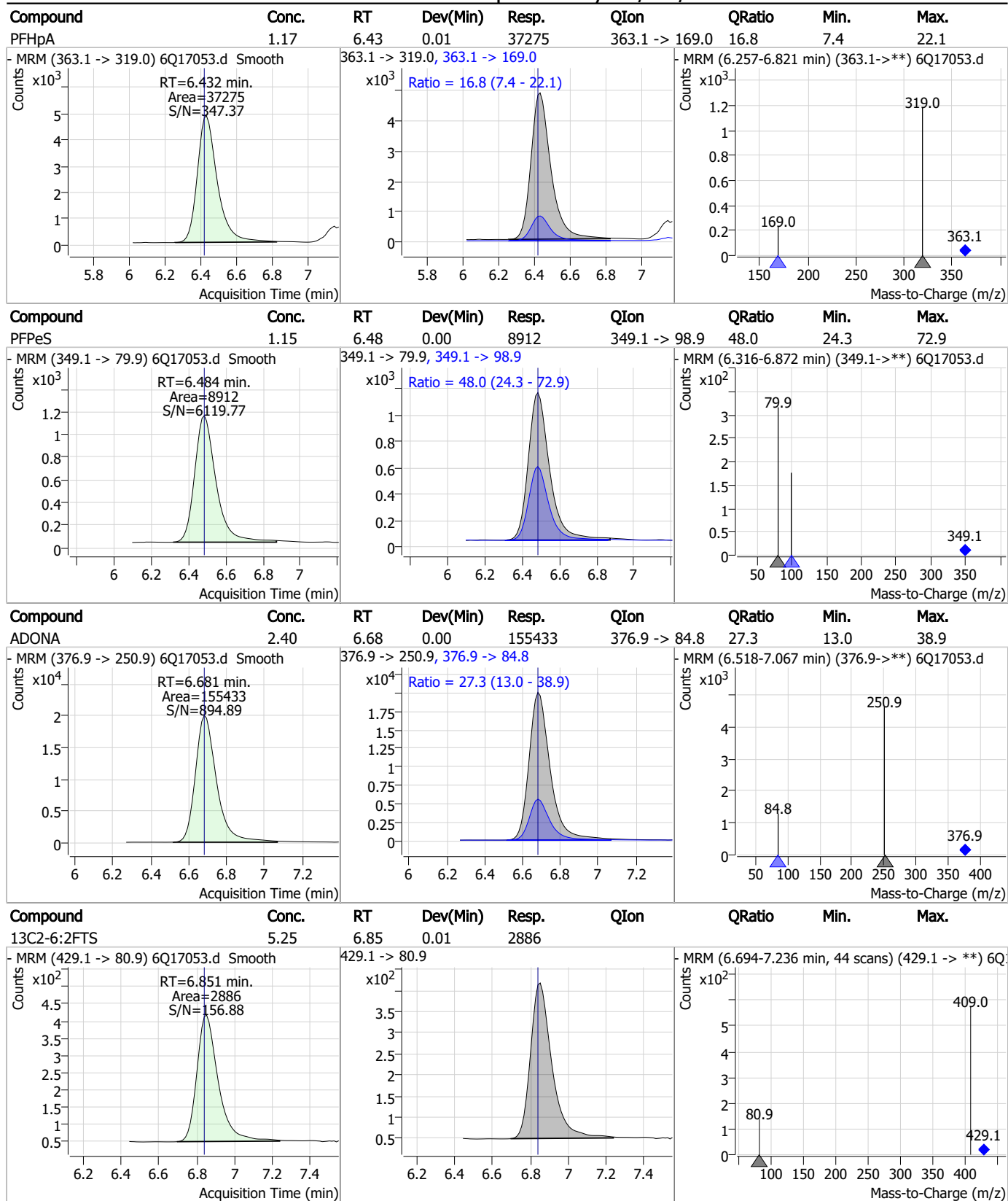


Perfluorinated Compounds by LC/MS/MS



7.7.4
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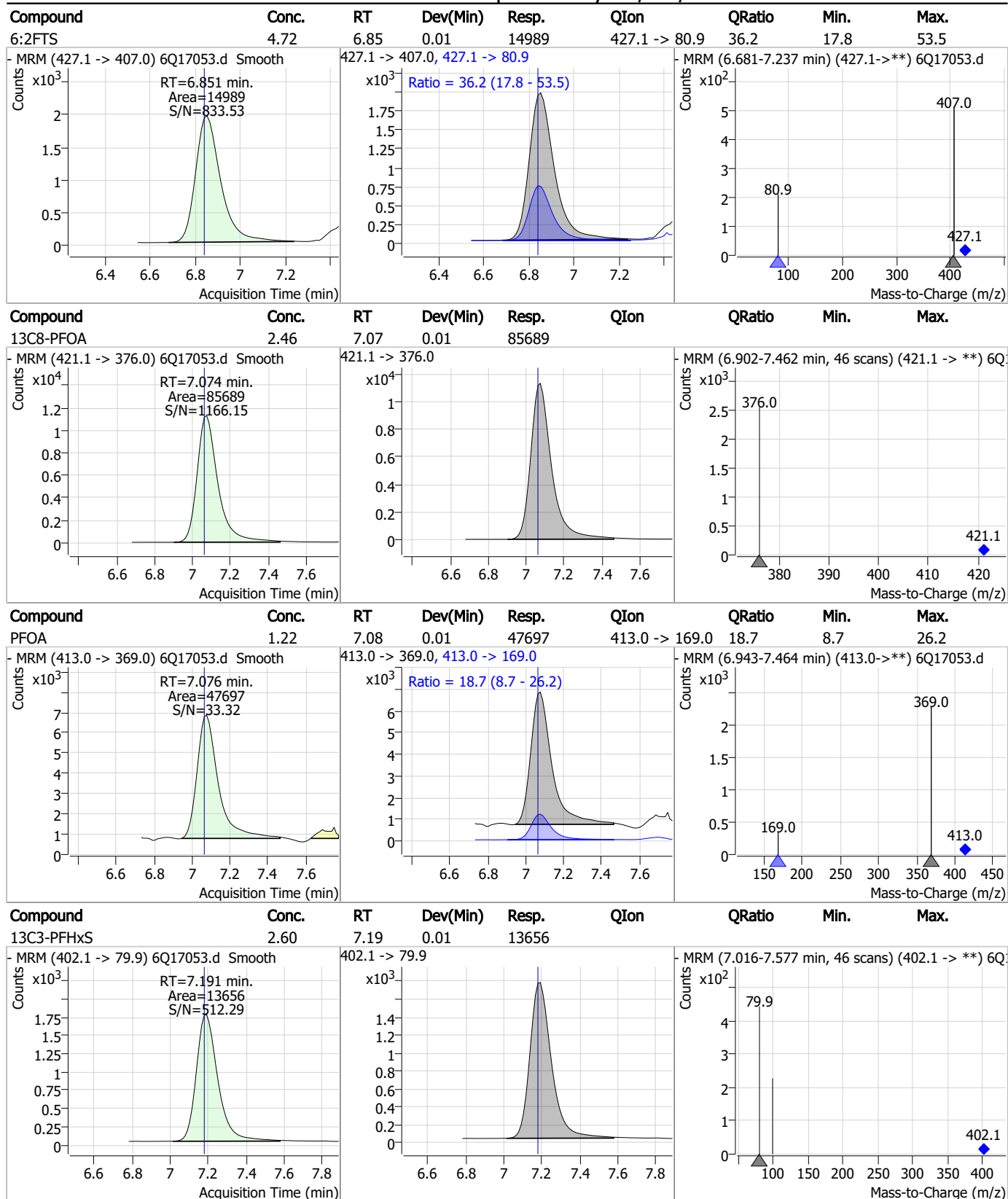
Perfluorinated Compounds by LC/MS/MS



7.7.4
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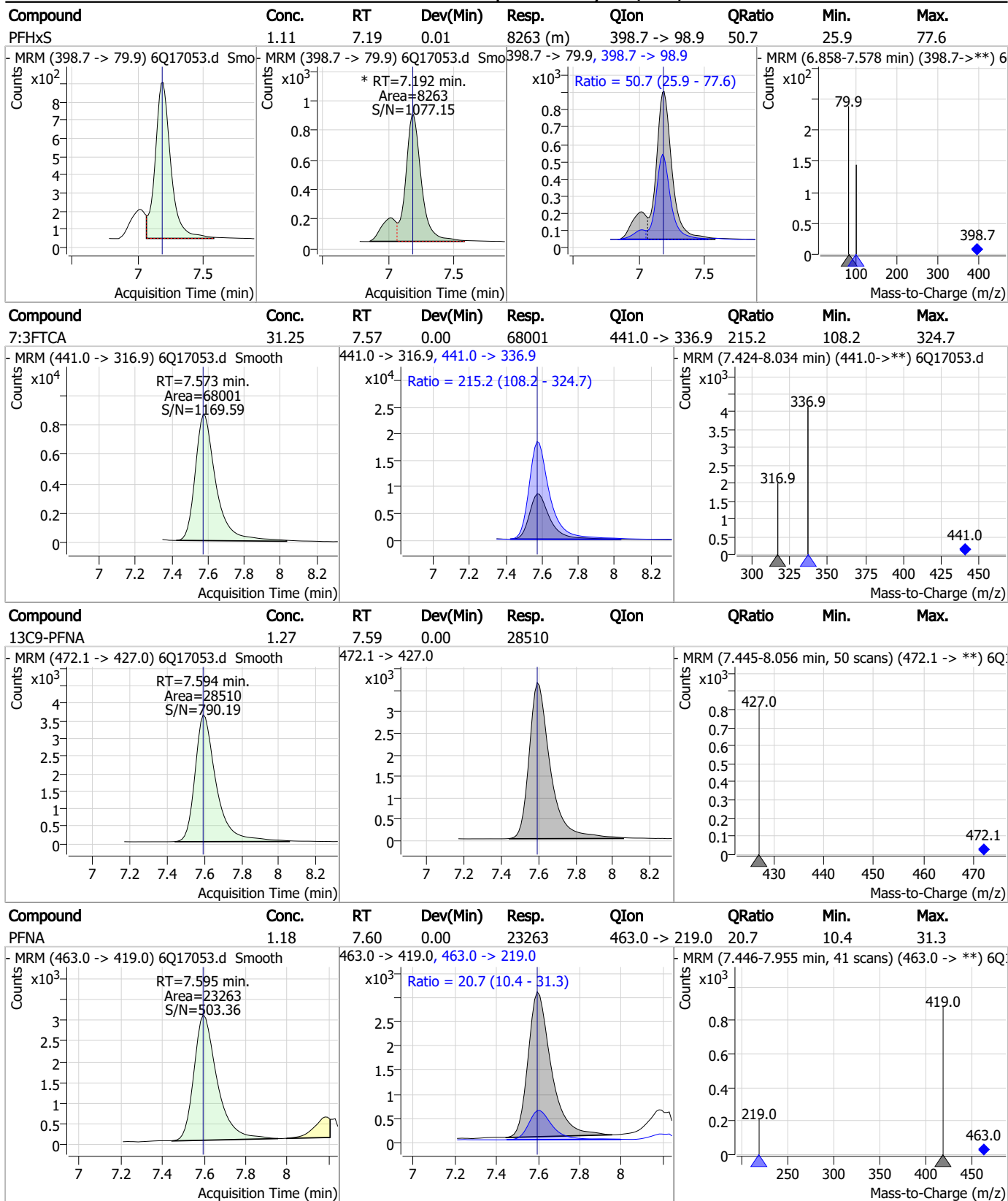


Perfluorinated Compounds by LC/MS/MS



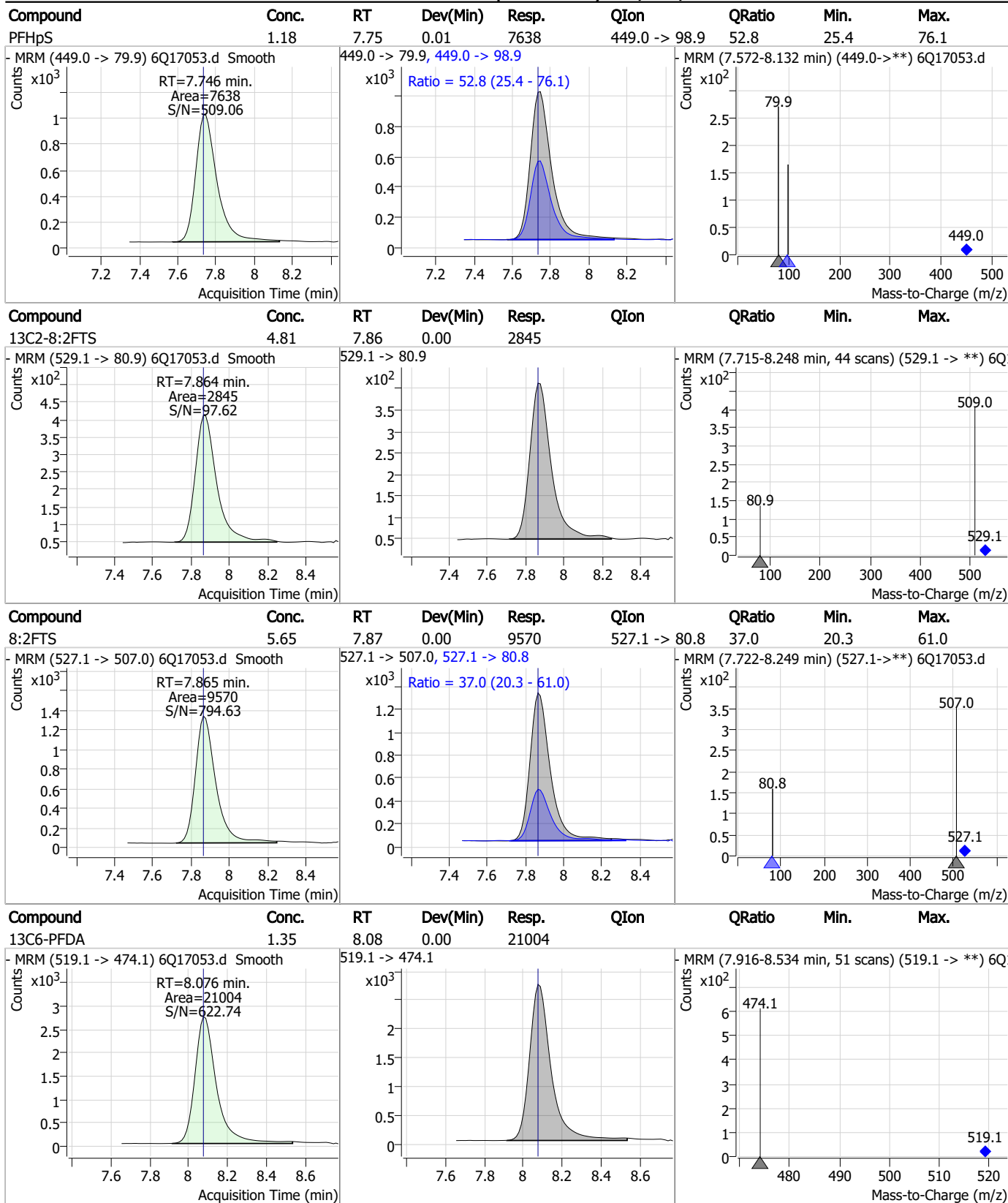
7.7.4
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Perfluorinated Compounds by LC/MS/MS



7.7.4
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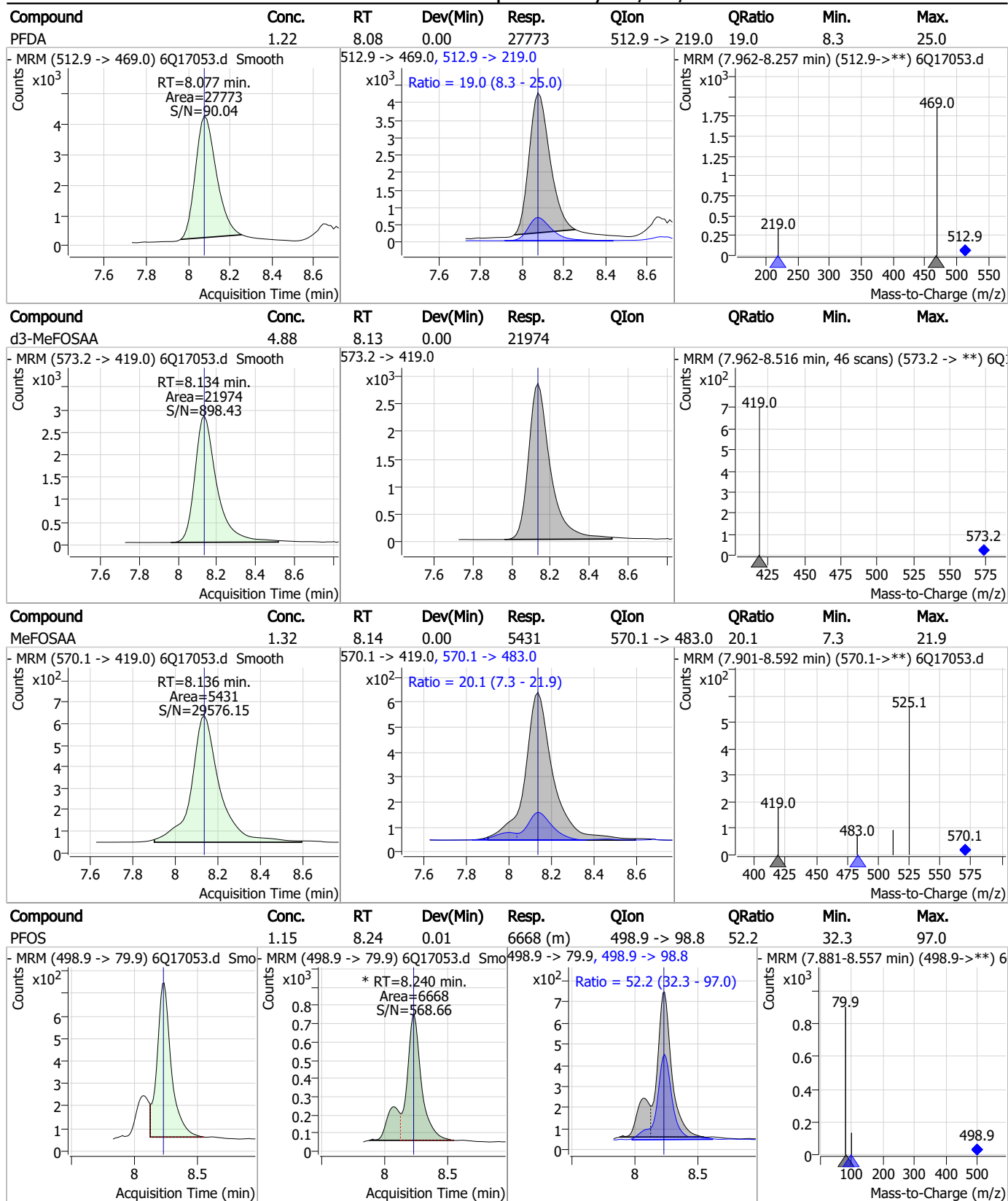
Perfluorinated Compounds by LC/MS/MS



7.7.4

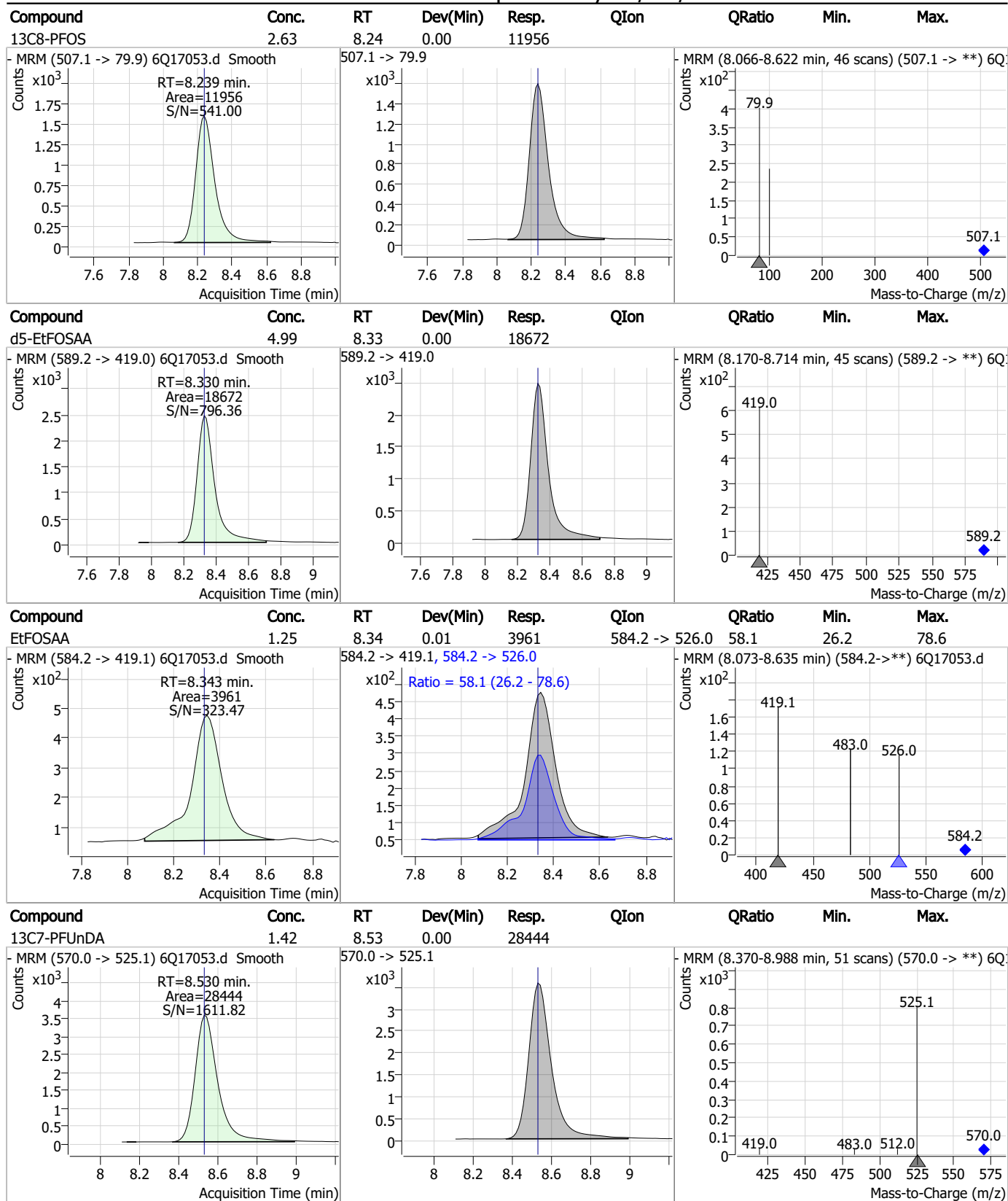
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Perfluorinated Compounds by LC/MS/MS



7.7.4
7

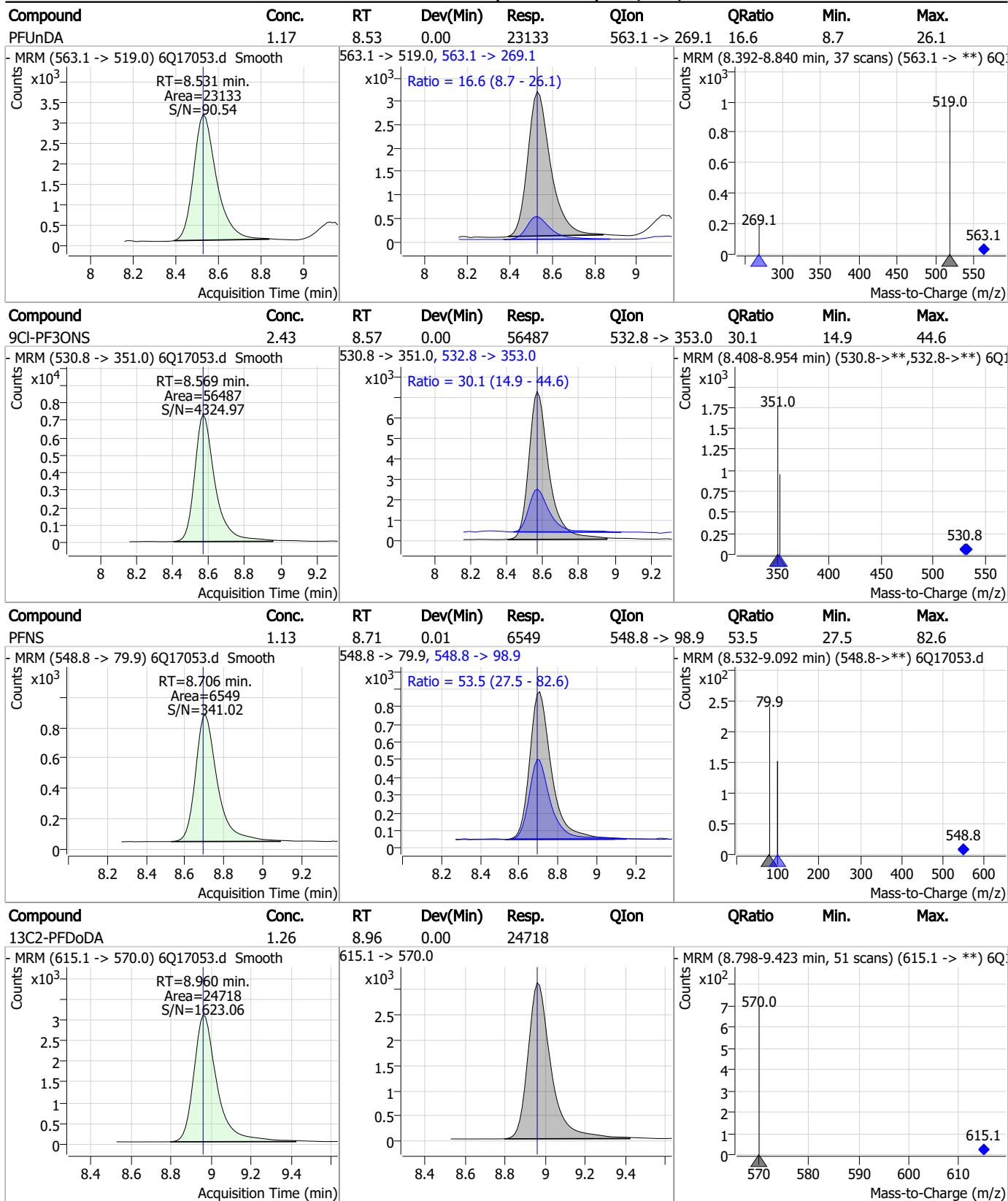
Perfluorinated Compounds by LC/MS/MS



7.7.4

7

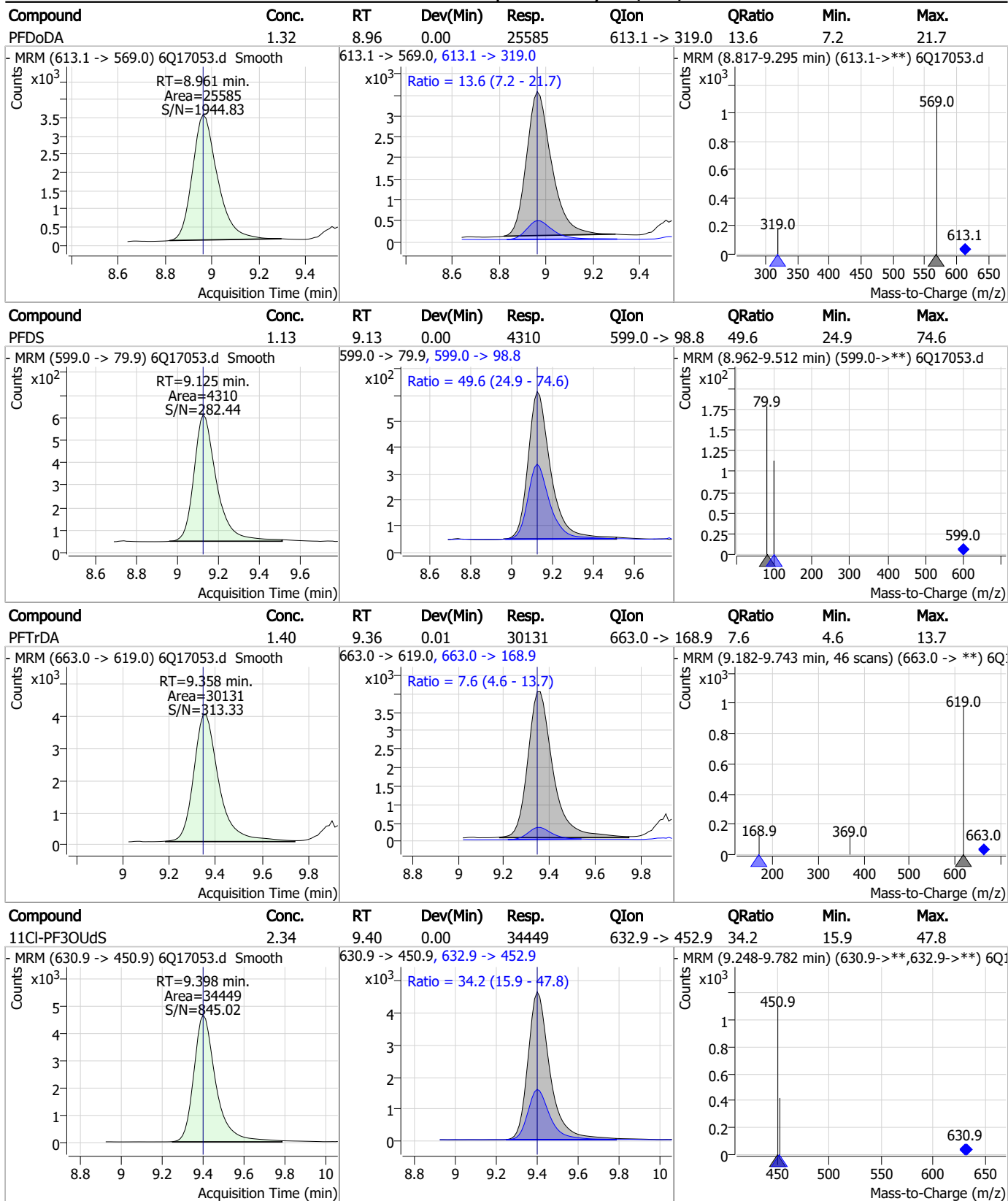
Perfluorinated Compounds by LC/MS/MS



7.7.4
7



Perfluorinated Compounds by LC/MS/MS



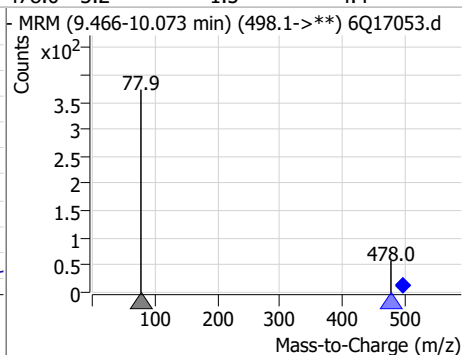
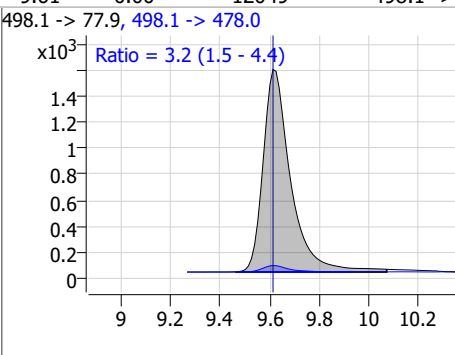
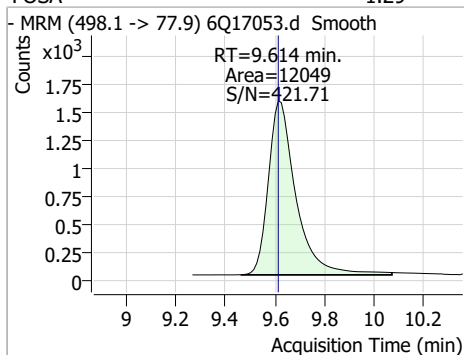
7.7.4

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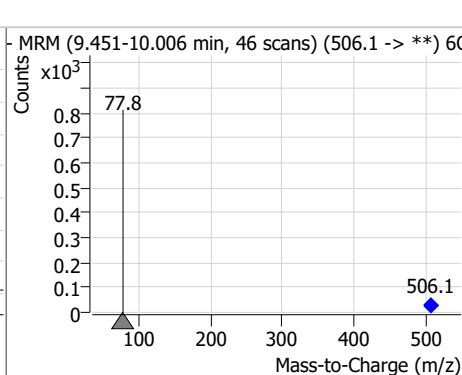
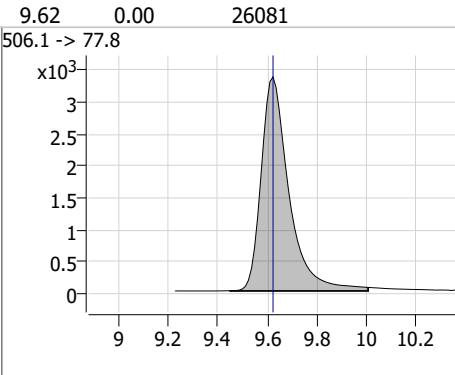
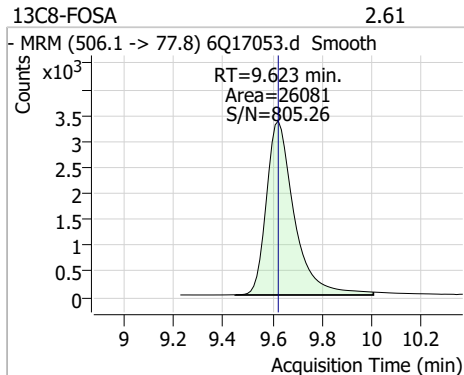


Perfluorinated Compounds by LC/MS/MS

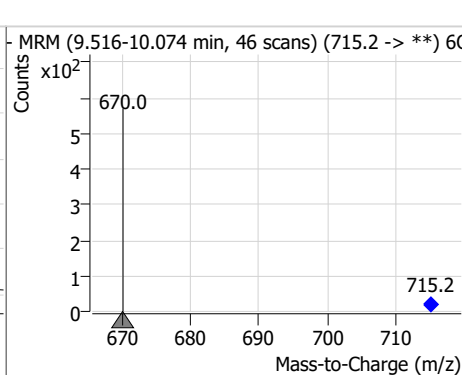
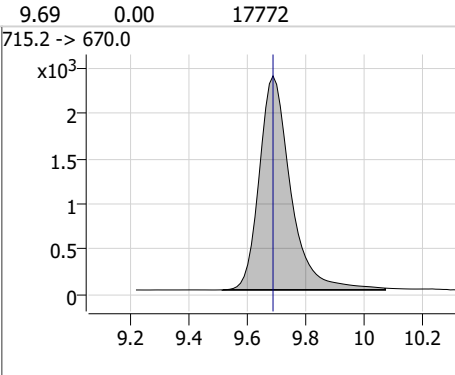
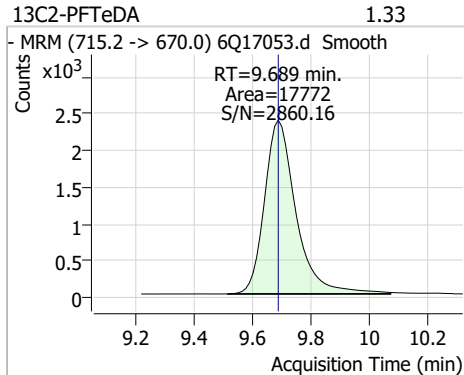
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.29	9.61	0.00	12049	498.1 -> 478.0	3.2	1.5	4.4



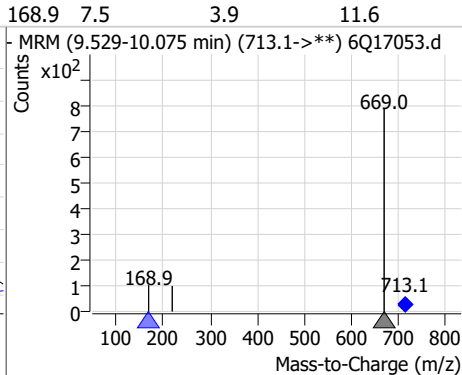
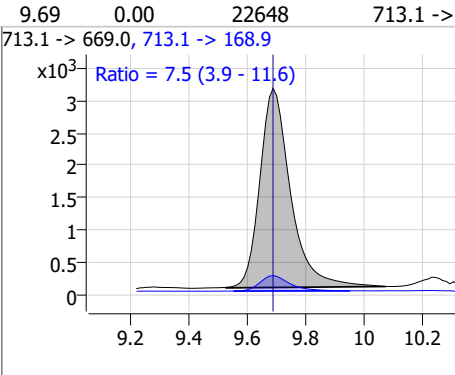
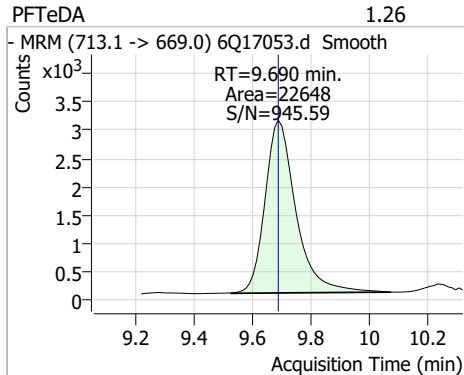
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.61	9.62	0.00	26081				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.33	9.69	0.00	17772				

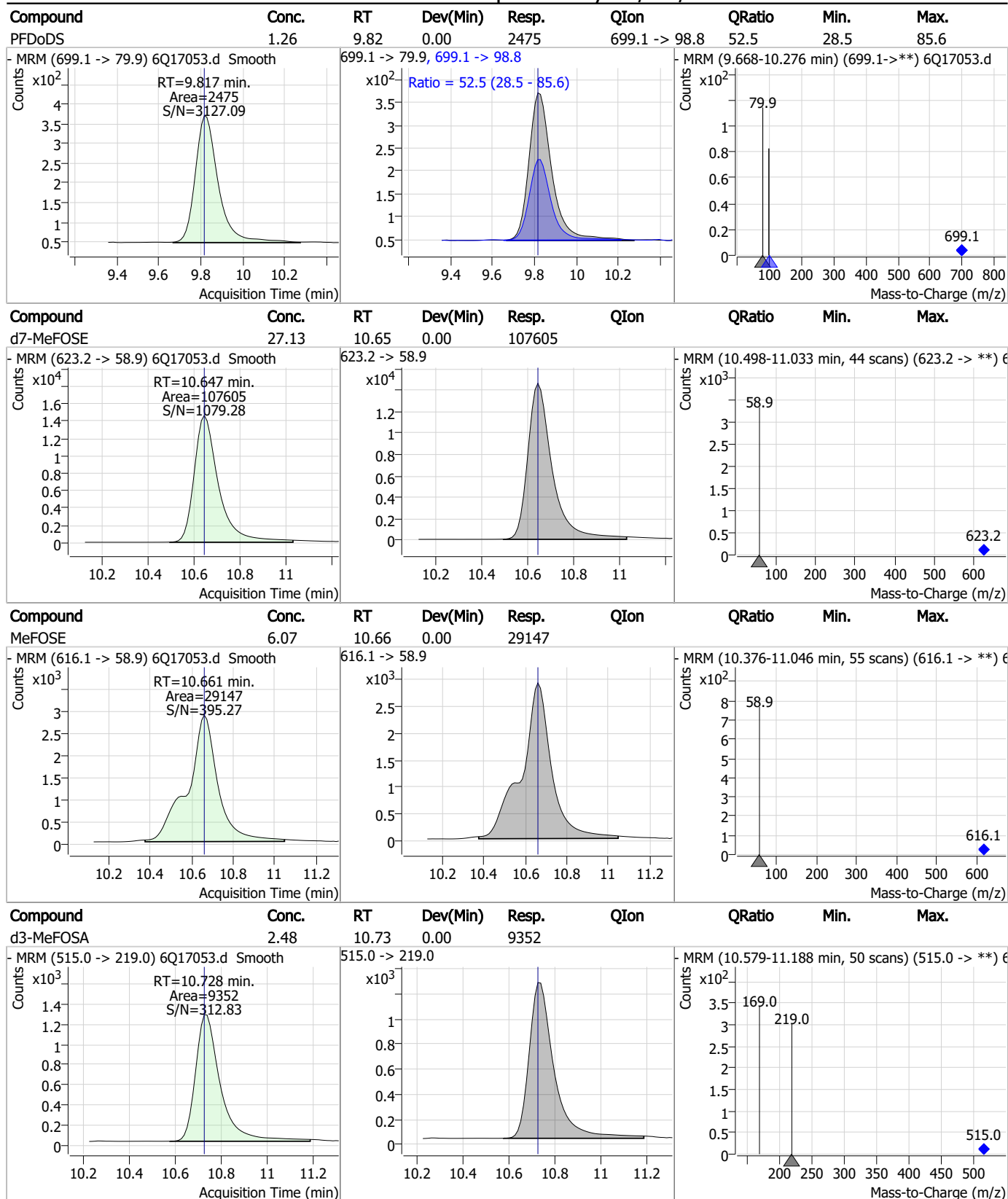


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.26	9.69	0.00	22648	713.1 -> 168.9	7.5	3.9	11.6



7.7.4
7

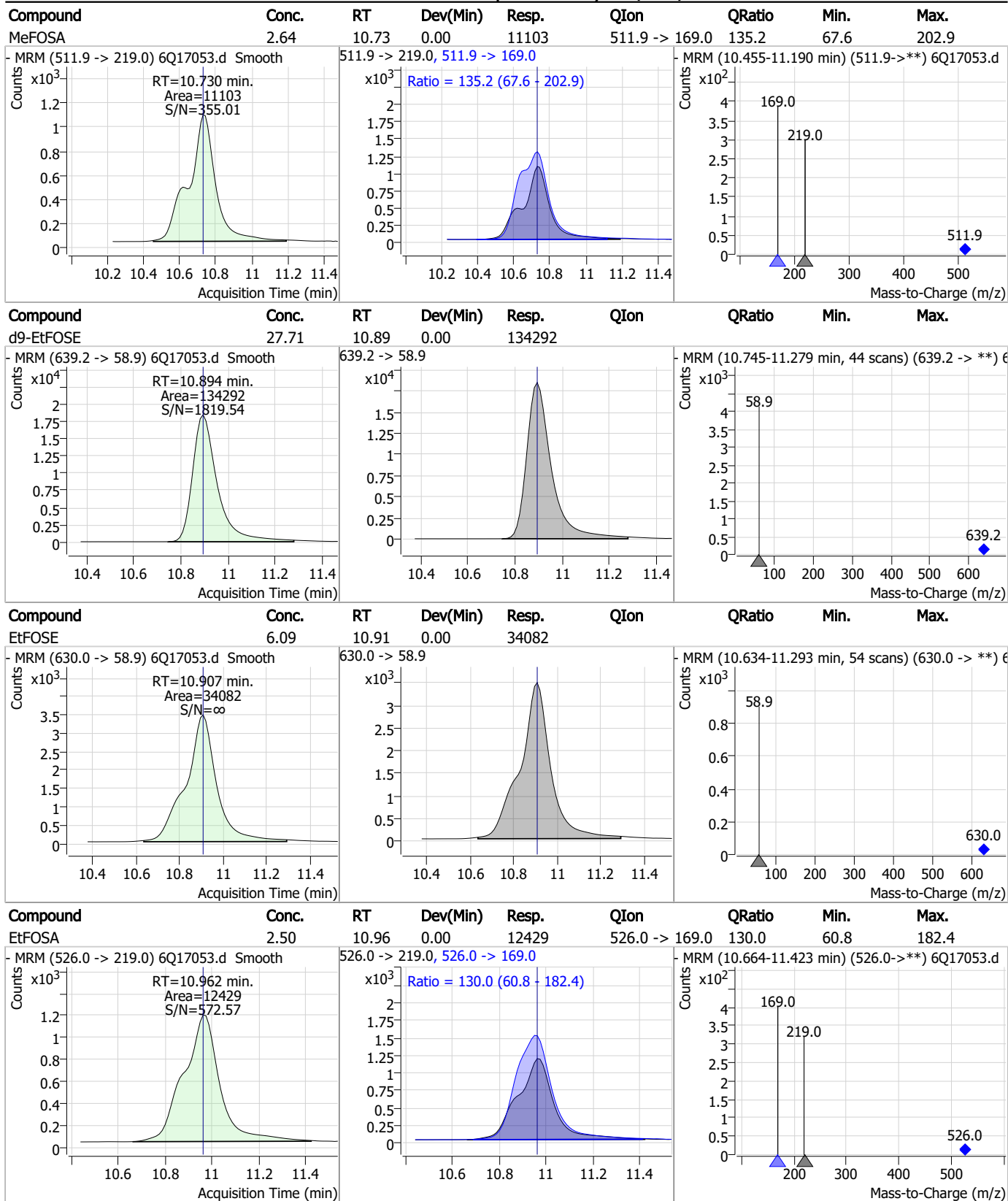
Perfluorinated Compounds by LC/MS/MS



7.7.4

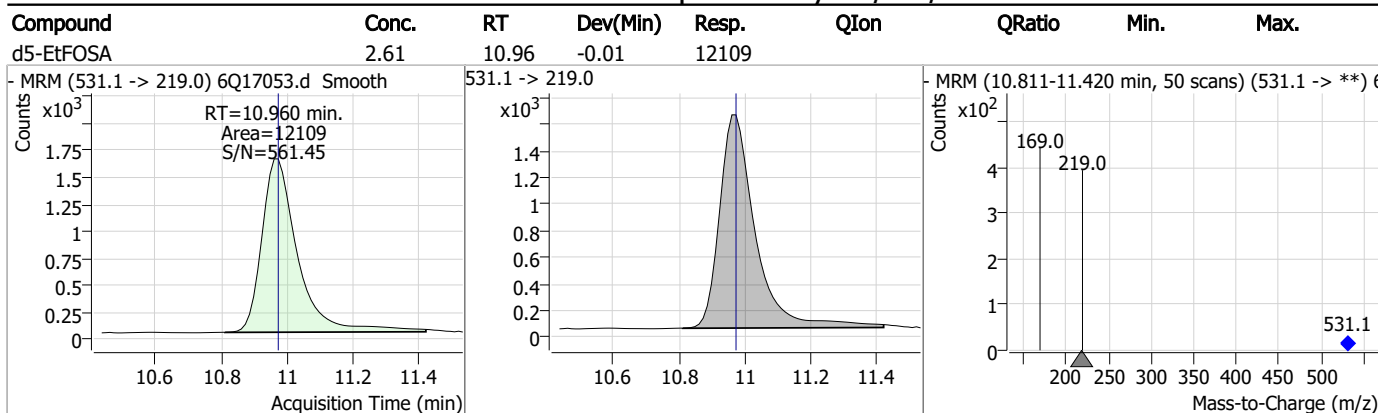
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Perfluorinated Compounds by LC/MS/MS



7.7.4
7

Perfluorinated Compounds by LC/MS/MS



7.7.4

7

Manual Integration Approval Summary

Sample Number: S6Q258-IC258 Method: EPA DRAFT 1633
Lab FileID: 6Q17053.D Analyst approved: 04/30/23 23:33 Natasha Gumtie
Injection Time: 04/28/23 13:19 Supervisor approved: 04/30/23 23:52 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.19	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.24	Split peak

7.7.4.1

7

Manual Integrations
APPROVED
 (compounds with "m" flag)

Norman Farmer
04/30/23 23:52

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17054.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/28/2023 1:33:42 PM
 Sample Name : icc258-4
 Vial : P1-A5
 DA Method File : 1633_042823_S6Q258.quantmethod.xml
 Batch Name : s6q258.batch.bin
 Sample Information : OP96301,S6Q258,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.897	216.8 -> 171.9	184703	10.00 µg/L	0.000
M5-PFPeA	4.270	268.3 -> 223.0	64257	5.00 µg/L	0.000
M5-PFHxA	5.468	318.0 -> 273.0	68171	2.50 µg/L	0.000
M4-PFHpA	6.419	367.1 -> 322.0	59630	2.50 µg/L	0.000
M8-PFOA	7.062	421.1 -> 376.0	86144	2.50 µg/L	0.000
M9-PFNA	7.594	472.1 -> 427.0	27345	1.25 µg/L	0.000
M6-PFDA	8.076	519.1 -> 474.1	20912	1.25 µg/L	0.000
M7-PFUnDA	8.530	570.0 -> 525.1	25662	1.25 µg/L	0.000
M2-PFDoDA	8.960	615.1 -> 570.0	24665	1.25 µg/L	0.000
M2-PFTeDA	9.689	715.2 -> 670.0	16522	1.25 µg/L	0.000
M8-FOSA	9.623	506.1 -> 77.8	24136	2.50 µg/L	0.000
M3-PFBS	5.398	302.1 -> 79.9	22860	2.50 µg/L	0.000
M3-PFHxS	7.179	402.1 -> 79.9	12221	2.50 µg/L	0.000
M8-PFOS	8.239	507.1 -> 79.9	10632	2.50 µg/L	0.000
M2-4:2FTS	5.144	329.1 -> 80.9	2112	5.00 µg/L	0.000
M2-6:2FTS	6.839	429.1 -> 80.9	2758	5.00 µg/L	0.000
M2-8:2FTS	7.864	529.1 -> 80.9	2915	5.00 µg/L	0.000
M3-MeFOSAA	8.134	573.2 -> 419.0	22010	5.00 µg/L	0.000
M3-HFPO-DA	5.845	286.9 -> 168.9	42432	10.00 µg/L	0.000
M5-EtFOSAA	8.330	589.2 -> 419.0	18224	5.00 µg/L	0.000
M7-MeFOSE	10.647	623.2 -> 58.9	96650	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	116881	25.00 µg/L	0.000
M5-EtFOSA	10.973	531.1 -> 219.0	11419	2.50 µg/L	0.000
M3-MeFOSA	10.728	515.0 -> 219.0	9200	2.50 µg/L	0.000
13C4-PFOS	8.239	502.8 -> 79.9	14764	2.50 µg/L	0.000
13C3-PFBA	2.902	216.0 -> 172.0	79420	5.00 µg/L	0.000
18O2-PFHxS	7.177	403.0 -> 83.9	9502	2.50 µg/L	0.000
13C4-PFOA	7.063	417.1 -> 372.0	85814	2.50 µg/L	0.000
13C2-PFDA	8.076	515.1 -> 470.1	24059	1.25 µg/L	0.000
13C5-PFNA	7.595	468.0 -> 423.0	27794	1.25 µg/L	0.000
13C2-PFHxA	5.469	315.1 -> 270.0	56303	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.144	329.1 -> 80.9	2112	4.83 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.7%		
13C2-6:2FTS	6.839	429.1 -> 80.9	2758	5.20 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.1%		
13C2-8:2FTS	7.864	529.1 -> 80.9	2915	5.11 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.2%		
13C2-PFDoDA	8.960	615.1 -> 570.0	24665	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.6%		
13C2-PFTeDA	9.689	715.2 -> 670.0	16522	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.6%		
13C3-PFBS	5.398	302.1 -> 79.9	22860	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.3%		
13C3-PFHxS	7.179	402.1 -> 79.9	12221	2.42 µg/L	0.000

7.7.5
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.6%	
13C4-PFBA	2.897	216.8 -> 171.9	184703	10.06 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C4-PFHpA	6.419	367.1 -> 322.0	59630	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.6%	
13C5-PFHxA	5.468	318.0 -> 273.0	68171	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C5-PFPeA	4.270	268.3 -> 223.0	64257	5.11 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C6-PFDA	8.076	519.1 -> 474.1	20912	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.4%	
13C7-PFUnDA	8.530	570.0 -> 525.1	25662	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C8-FOSA	9.623	506.1 -> 77.8	24136	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.9%	
13C8-PFOA	7.062	421.1 -> 376.0	86144	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.0%	
13C8-PFOS	8.239	507.1 -> 79.9	10632	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.6%	
13C9-PFNA	7.594	472.1 -> 427.0	27345	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.2%	
d3-MeFOSAA	8.134	573.2 -> 419.0	22010	5.00 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C3-HFPO-DA	5.845	286.9 -> 168.9	42432	10.65 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.5%	
d3-MeFOSA	10.728	515.0 -> 219.0	9200	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
d5-EtFOSAA	8.330	589.2 -> 419.0	18224	4.98 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
d7-MeFOSE	10.647	623.2 -> 58.9	96650	24.94 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
d9-EtFOSE	10.894	639.2 -> 58.9	116881	24.69 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.7%	
d5-EtFOSA	10.973	531.1 -> 219.0	11419	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.9%	
Target Compounds					QValue
4:2FTS	5.145	327.1 -> 307.0	31634	9.90 µg/L	99
		327.1 -> 80.9	11565		
6:2FTS	6.839	427.1 -> 407.0	29224	9.63 µg/L	96
		427.1 -> 80.9	9755		
8:2FTS	7.865	527.1 -> 507.0	15642	9.02 µg/L	97
		527.1 -> 80.8	6632		
EtFOSAA	8.331	584.2 -> 419.1	7450	2.41 µg/L	99
		584.2 -> 526.0	3971		
FOSA	9.614	498.1 -> 77.9	22474	2.60 µg/L	100
		498.1 -> 478.0	660		
MeFOSAA	8.136	570.1 -> 419.0	10904	2.64 µg/L	93
		570.1 -> 483.0	1913		
PFBA	2.906	212.8 -> 168.9	61789	9.97 µg/L	100
PFBS	5.400	298.7 -> 79.9	22126	2.16 µg/L	97
		298.7 -> 98.8	8757		
PFDA	8.077	512.9 -> 469.0	56192	2.47 µg/L	99
		512.9 -> 219.0	9652		
PFDODA	8.961	613.1 -> 569.0	48944	2.53 µg/L	98
		613.1 -> 319.0	6726		
PFDS	9.125	599.0 -> 79.9	9122	2.69 µg/L	99

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	4569			
PFHpA	6.420	363.1 -> 319.0	74210	2.52	µg/L	97
		363.1 -> 169.0	11979			
PFHpS	7.734	449.0 -> 79.9	14210	2.47	µg/L	97
		449.0 -> 98.9	6874			
PFHxA	5.470	313.0 -> 269.0	69863	2.59	µg/L	100
		313.0 -> 118.9	3277			
PFHxS	7.180	398.7 -> 79.9	15681	2.35	µg/L	m 98
		398.7 -> 98.9	7867			
PFNA	7.595	463.0 -> 419.0	48450	2.56	µg/L	98
		463.0 -> 219.0	9629			
PFNS	8.694	548.8 -> 79.9	13122	2.56	µg/L	96
		548.8 -> 98.9	6808			
PFOA	7.063	413.0 -> 369.0	92206	2.28	µg/L	m 99
		413.0 -> 169.0	16505			
PFOS	8.228	498.9 -> 79.9	12592	2.45	µg/L	m 82
		498.9 -> 98.8	6356			
PFPeA	4.273	263.0 -> 219.0	89627	5.12	µg/L	100
PFPeS	6.484	349.1 -> 79.9	17271	2.48	µg/L	95
		349.1 -> 98.9	7790			
PFTeDA	9.690	713.1 -> 669.0	44428	2.66	µg/L	100
		713.1 -> 168.9	3381			
PFTrDA	9.345	663.0 -> 619.0	56915	2.66	µg/L	99
		663.0 -> 168.9	4995			
PFUnDA	8.531	563.1 -> 519.0	45629	2.56	µg/L	98
		563.1 -> 269.1	7616			
11Cl-PF3OUdS	9.398	630.9 -> 450.9	62380	4.28	µg/L	96
		632.9 -> 452.9	21239			
9Cl-PF3ONS	8.569	530.8 -> 351.0	99628	4.33	µg/L	92
		532.8 -> 353.0	34108			
ADONA	6.681	376.9 -> 250.9	300603	4.69	µg/L	98
		376.9 -> 84.8	80229			
HFPO-DA	5.846	284.9 -> 168.9	19987	4.97	µg/L	94
		284.9 -> 184.9	2276			
3:3FTCA	3.784	241.0 -> 177.0	13690	12.51	µg/L	100
		241.0 -> 117.0	1805			
5:3FTCA	6.147	341.0 -> 237.1	275832	63.24	µg/L	90
		341.0 -> 217.0	207449			
7:3FTCA	7.573	441.0 -> 316.9	127781	64.48	µg/L	98
		441.0 -> 336.9	271844			
EtFOSA	10.962	526.0 -> 219.0	23501	5.01	µg/L	96
		526.0 -> 169.0	27543			
EtFOSE	10.907	630.0 -> 58.9	63011	12.95	µg/L	100
MeFOSA	10.730	511.9 -> 219.0	20684	5.00	µg/L	98
		511.9 -> 169.0	27591			
MeFOSE	10.661	616.1 -> 58.9	55974	12.99	µg/L	100
PFDoDS	9.817	699.1 -> 79.9	4426	2.53	µg/L	98
		699.1 -> 98.8	2609			
NFDHA	5.350	295.0 -> 201.0	15515	5.31	µg/L	96
		295.0 -> 84.9	4053			
PFMBA	4.687	279.0 -> 85.1	58229	4.96	µg/L	100
PFMPA	3.438	229.0 -> 84.9	44504	5.08	µg/L	100
PFEESA	5.937	314.8 -> 134.9	154629	4.55	µg/L	99
		314.8 -> 82.9	5261			

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

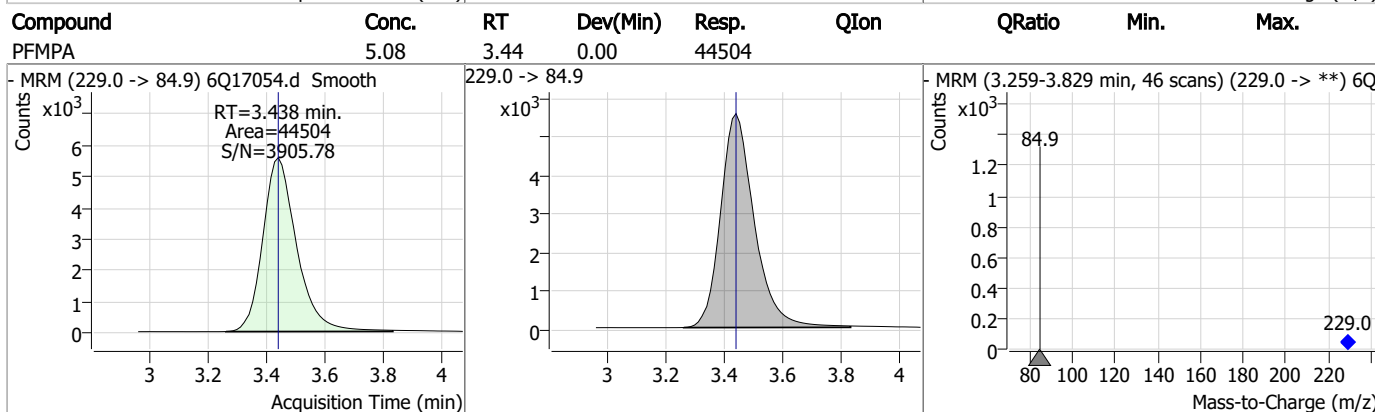
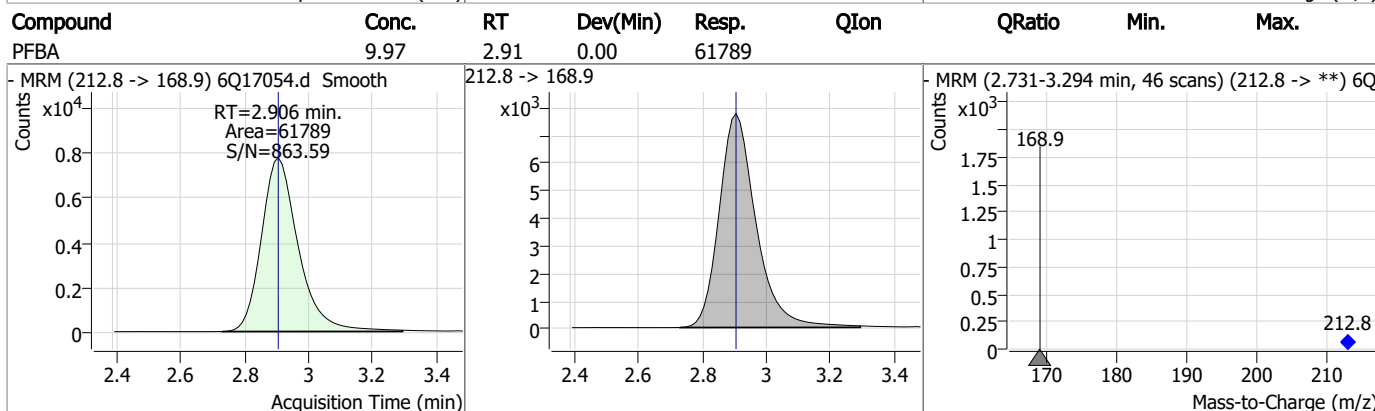
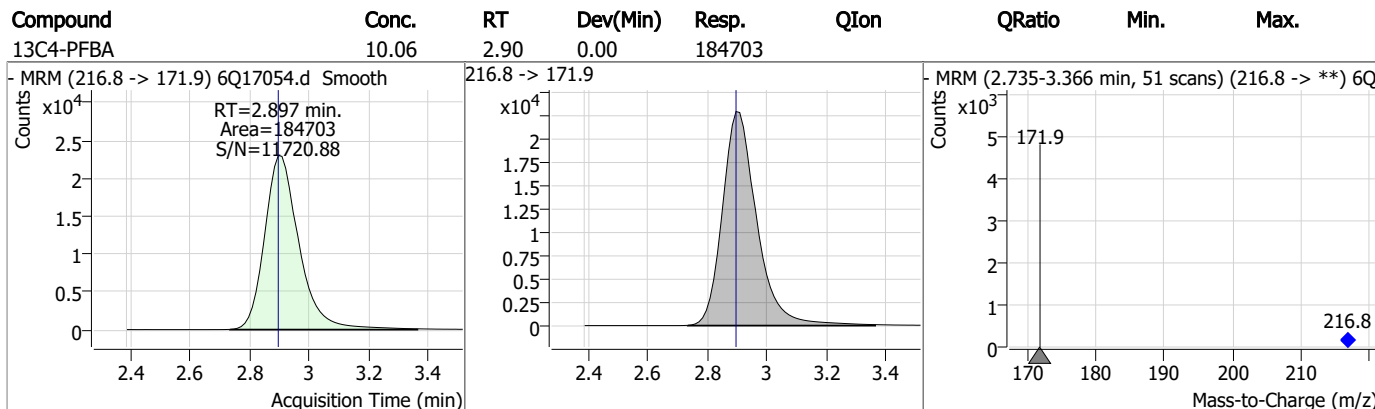
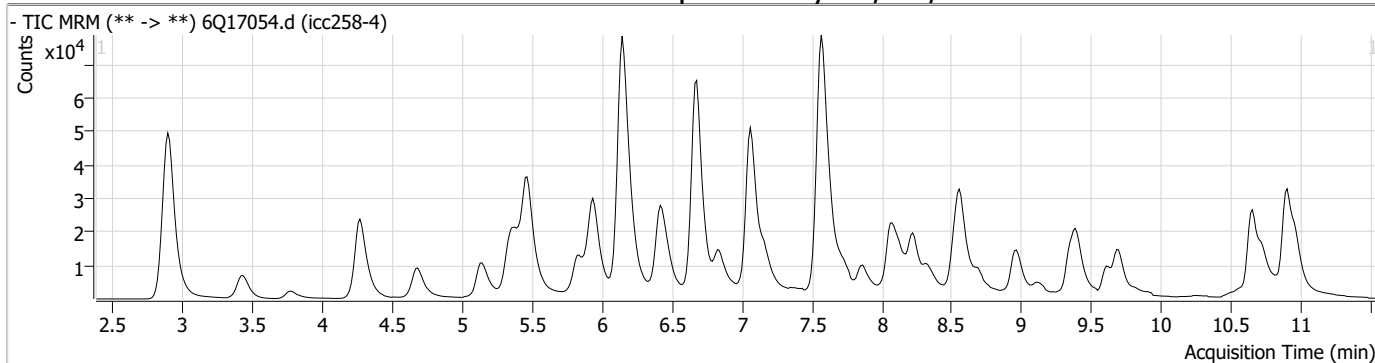
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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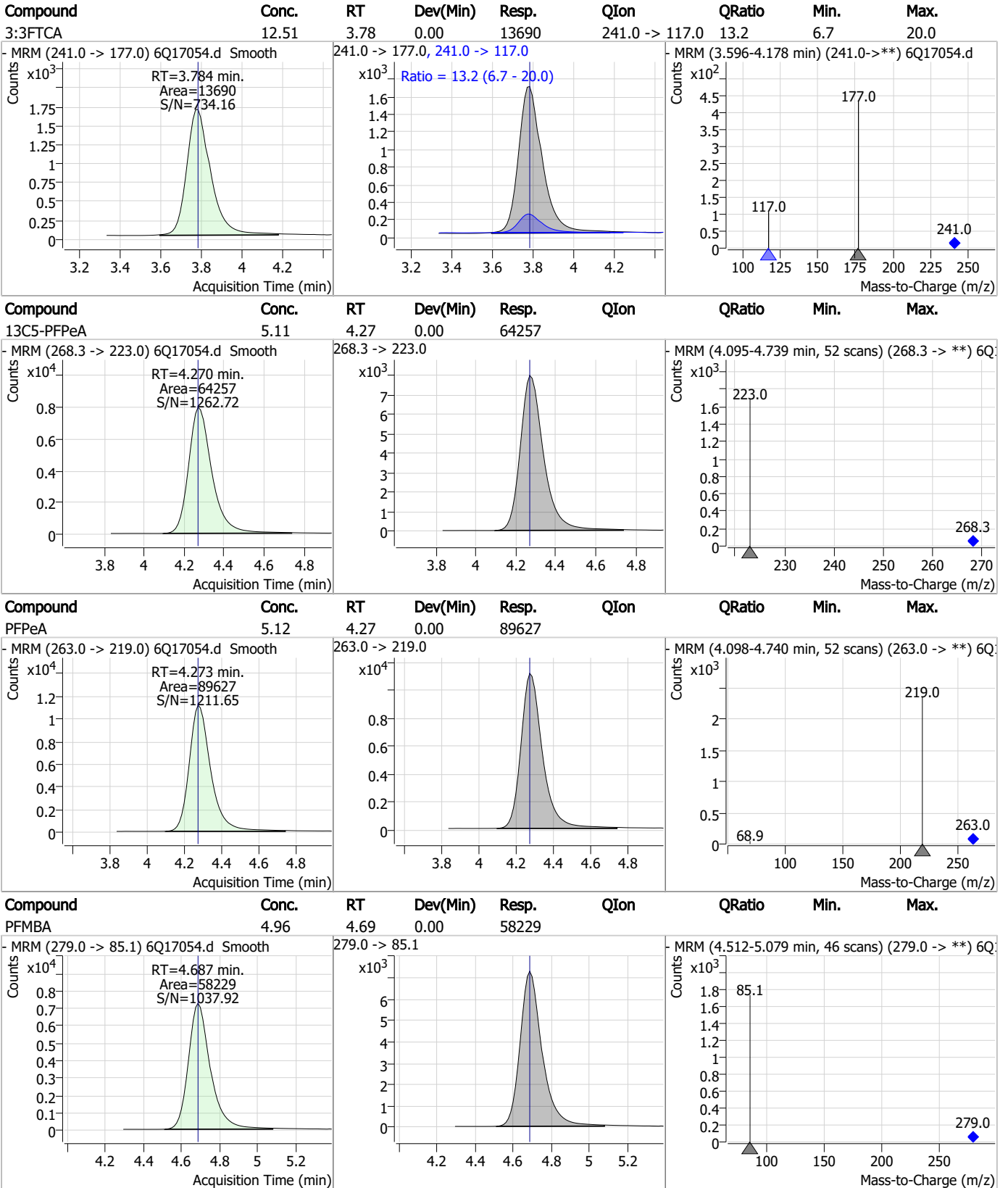
7.7.5
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Perfluorinated Compounds by LC/MS/MS



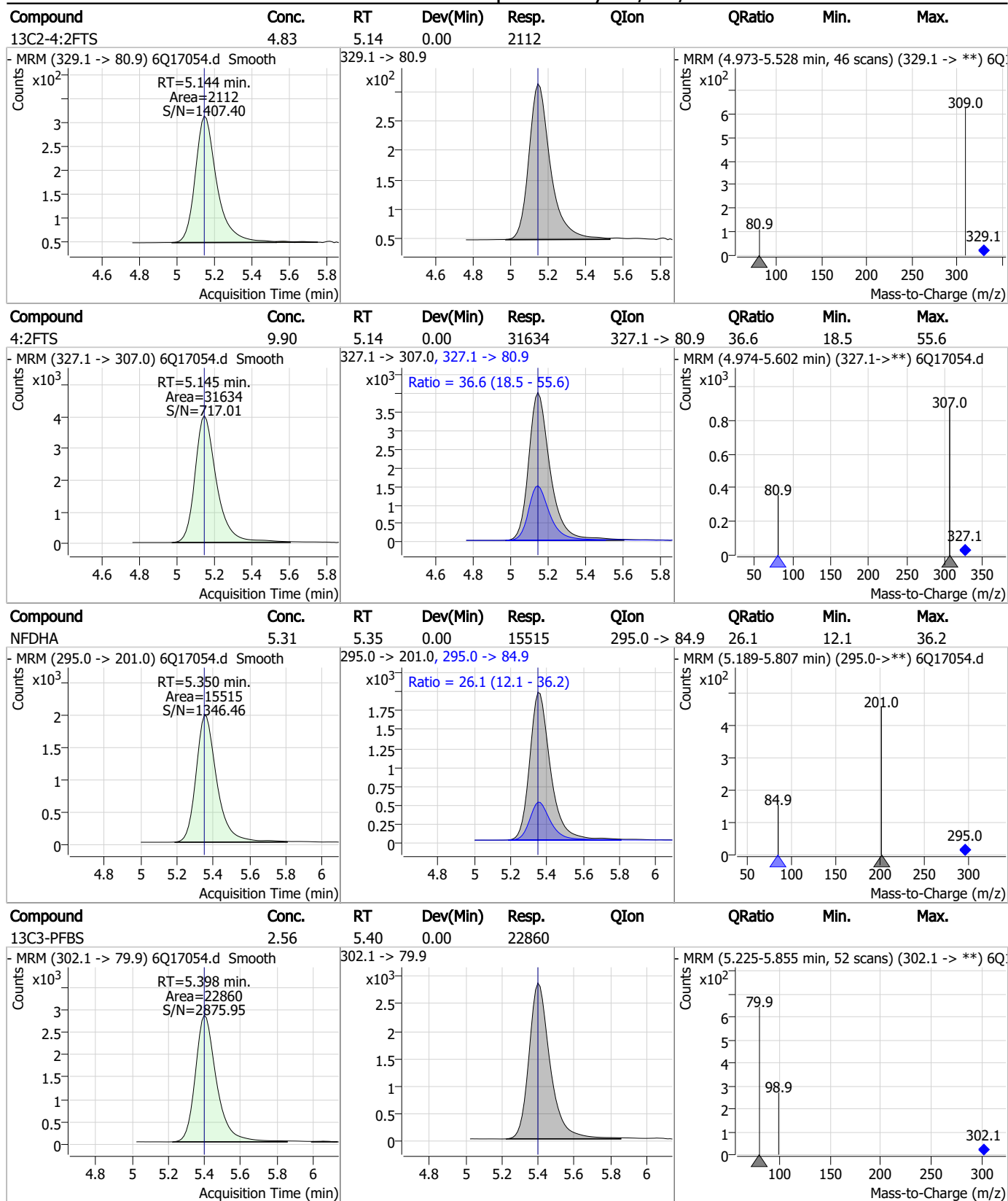
Perfluorinated Compounds by LC/MS/MS



7.7.5

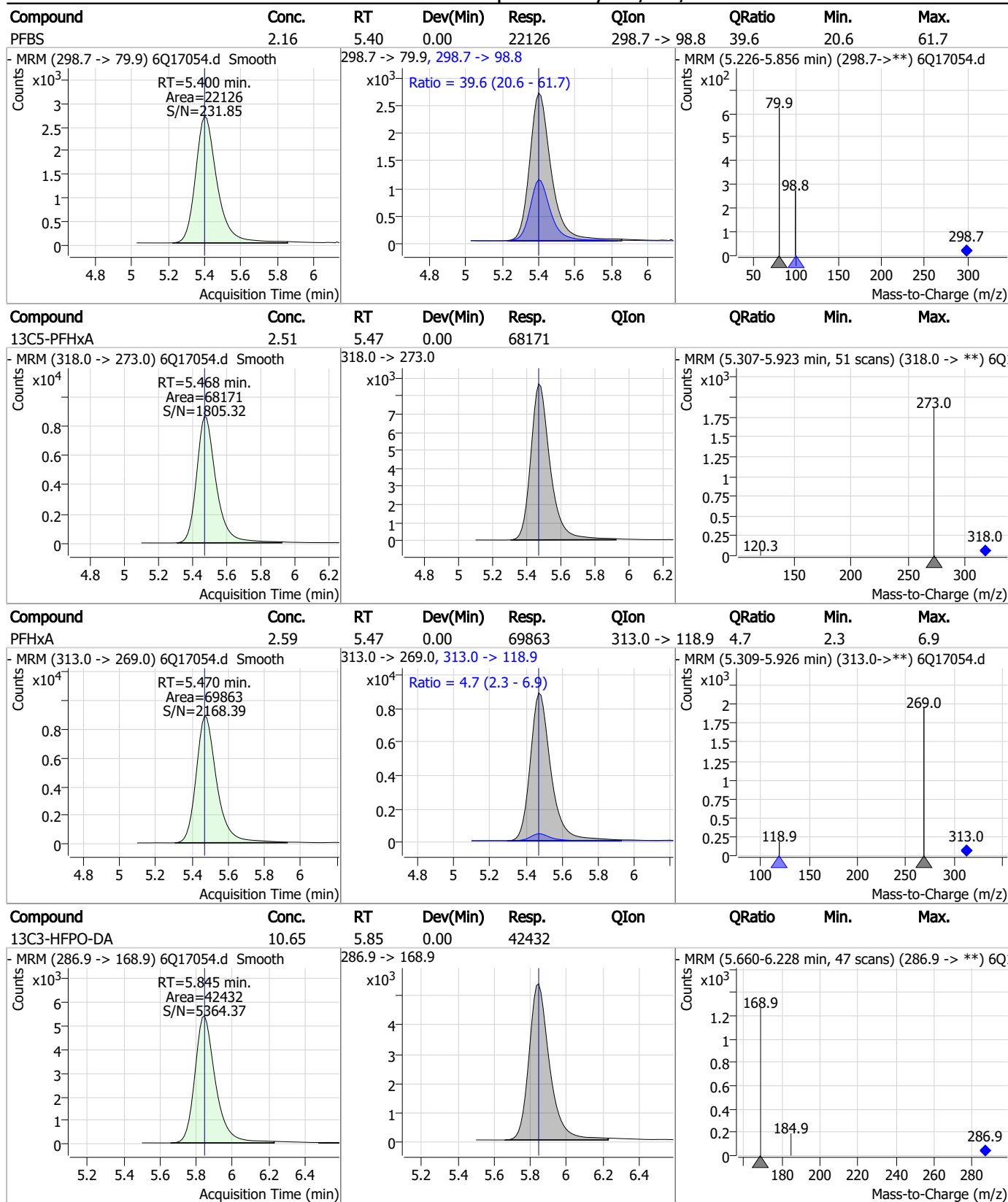
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Perfluorinated Compounds by LC/MS/MS



7.7.5
7

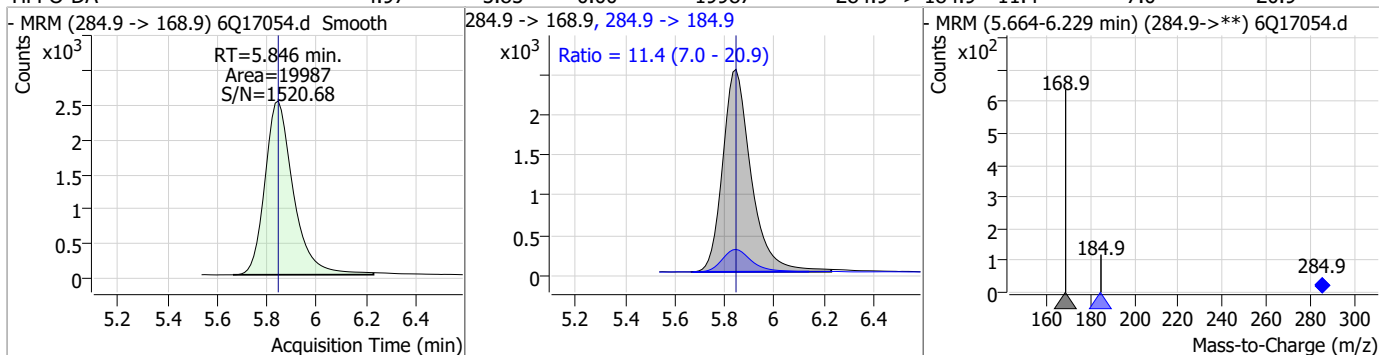
Perfluorinated Compounds by LC/MS/MS



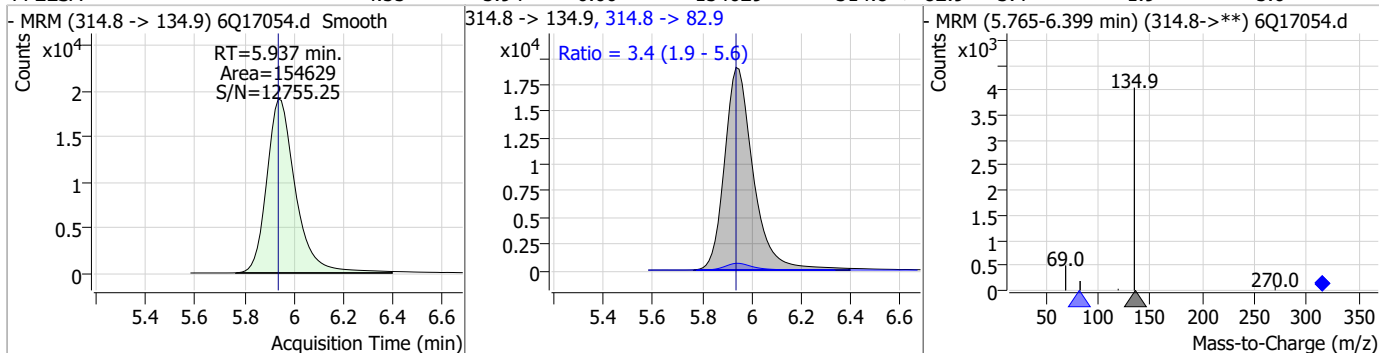
7.7.5
7

Perfluorinated Compounds by LC/MS/MS

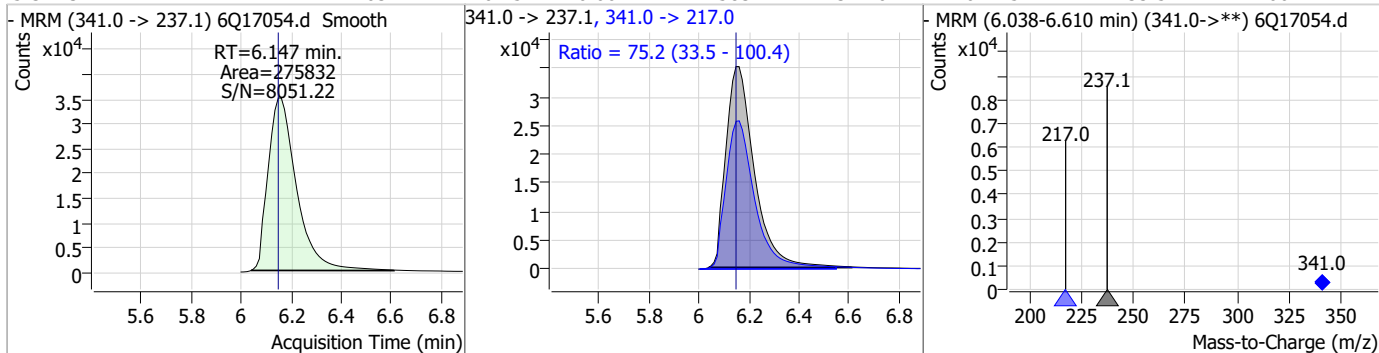
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.97	5.85	0.00	19987	284.9 -> 184.9	11.4	7.0	20.9



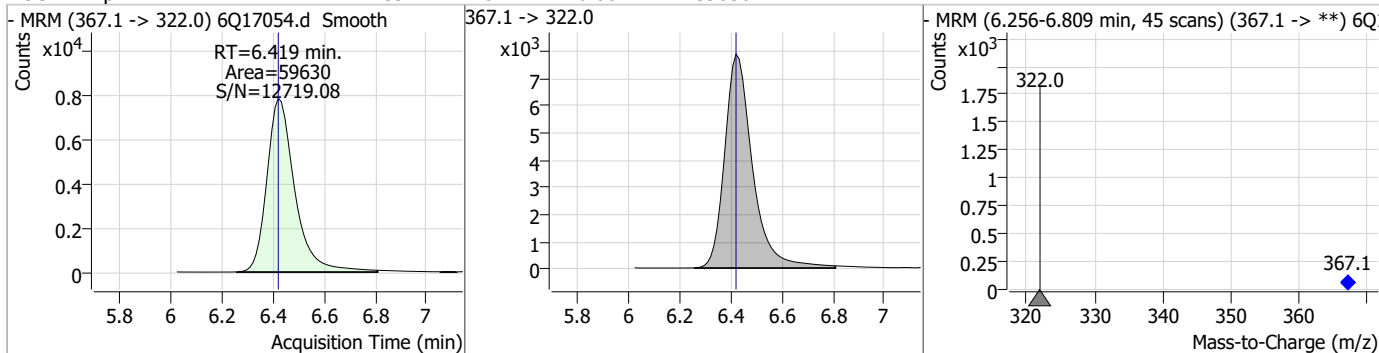
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.55	5.94	0.00	154629	314.8 -> 82.9	3.4	1.9	5.6



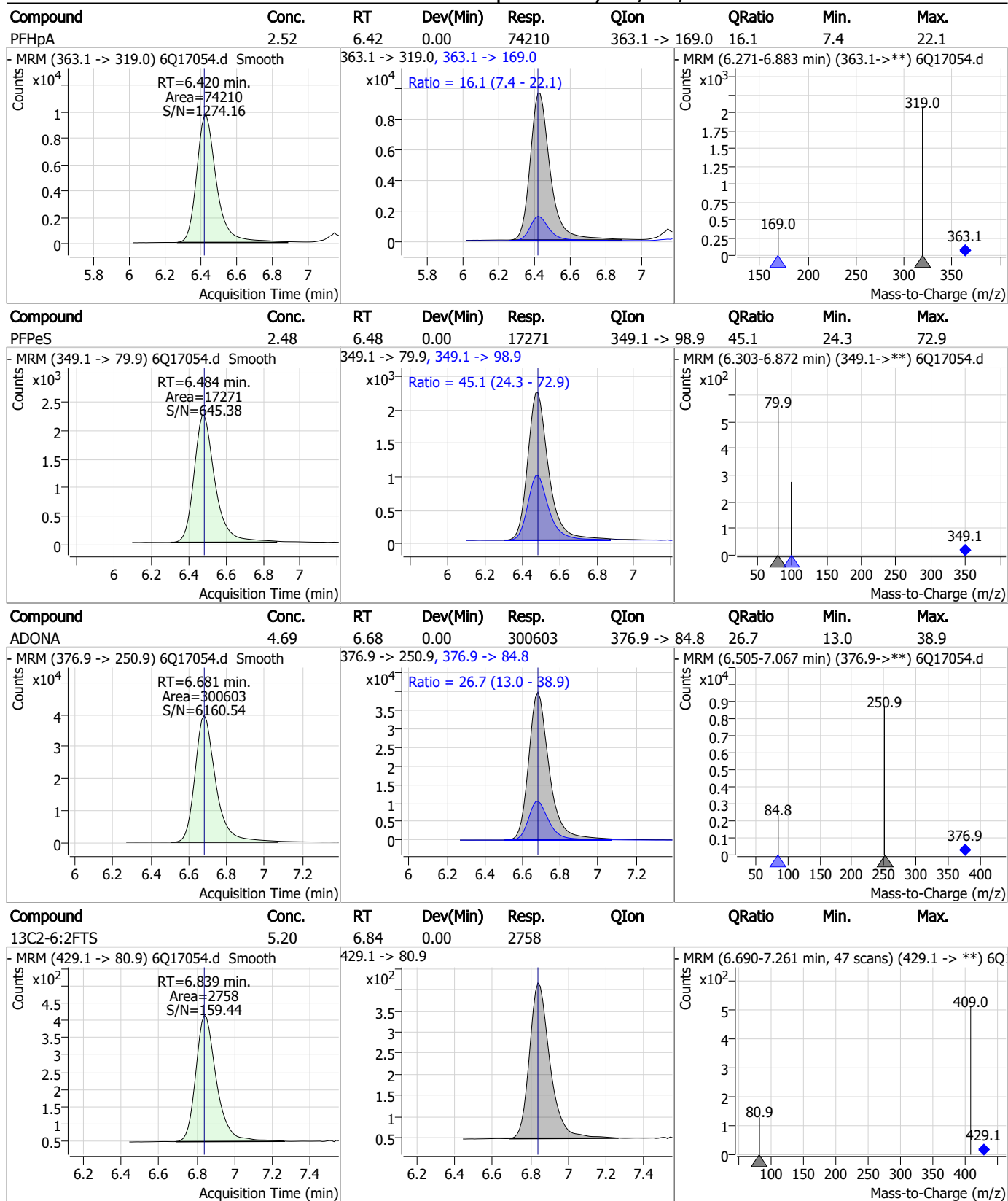
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	63.24	6.15	0.00	275832	341.0 -> 217.0	75.2	33.5	100.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpa	2.59	6.42	0.00	59630	367.1 -> 322.0			



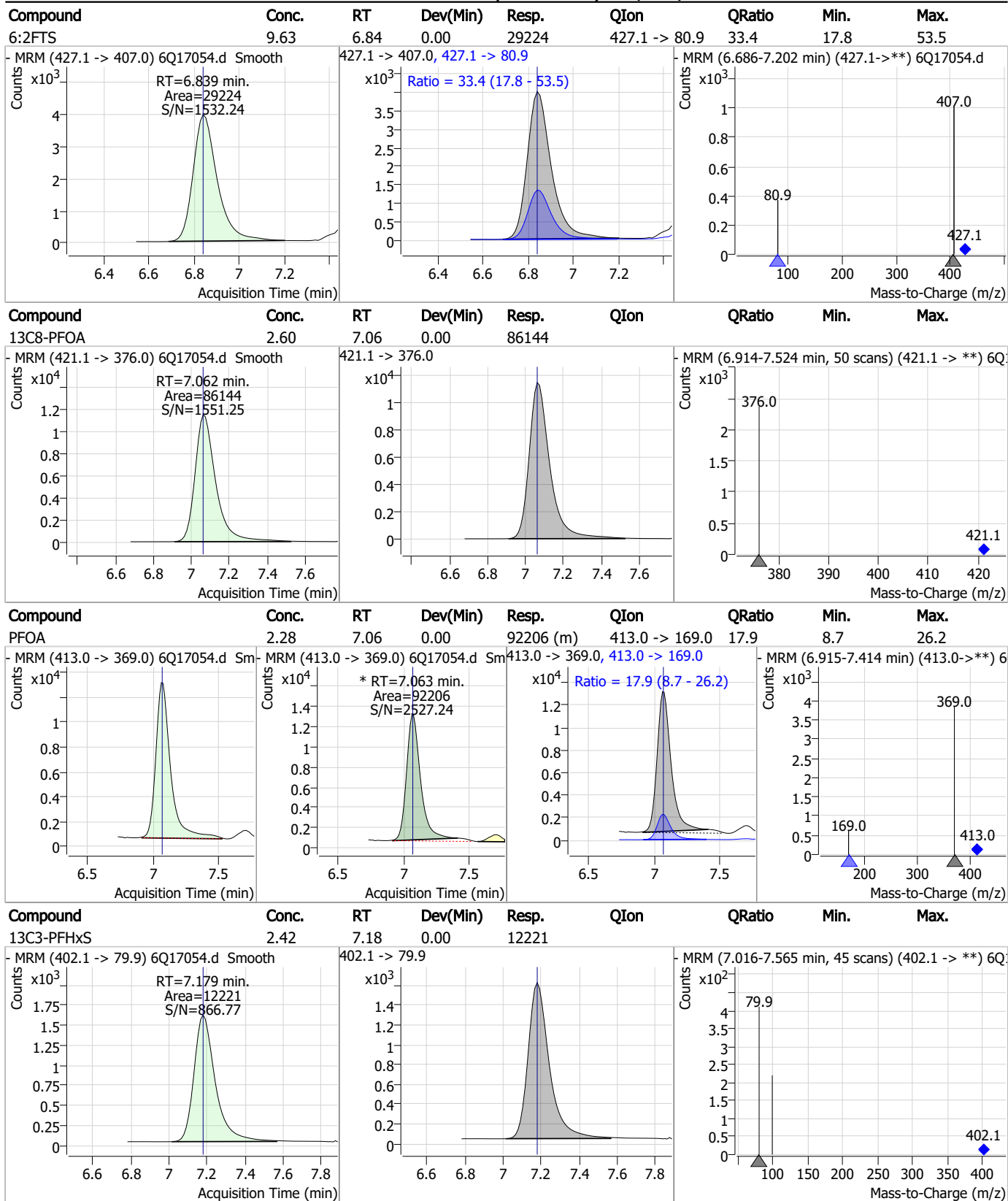
Perfluorinated Compounds by LC/MS/MS



7.7.5
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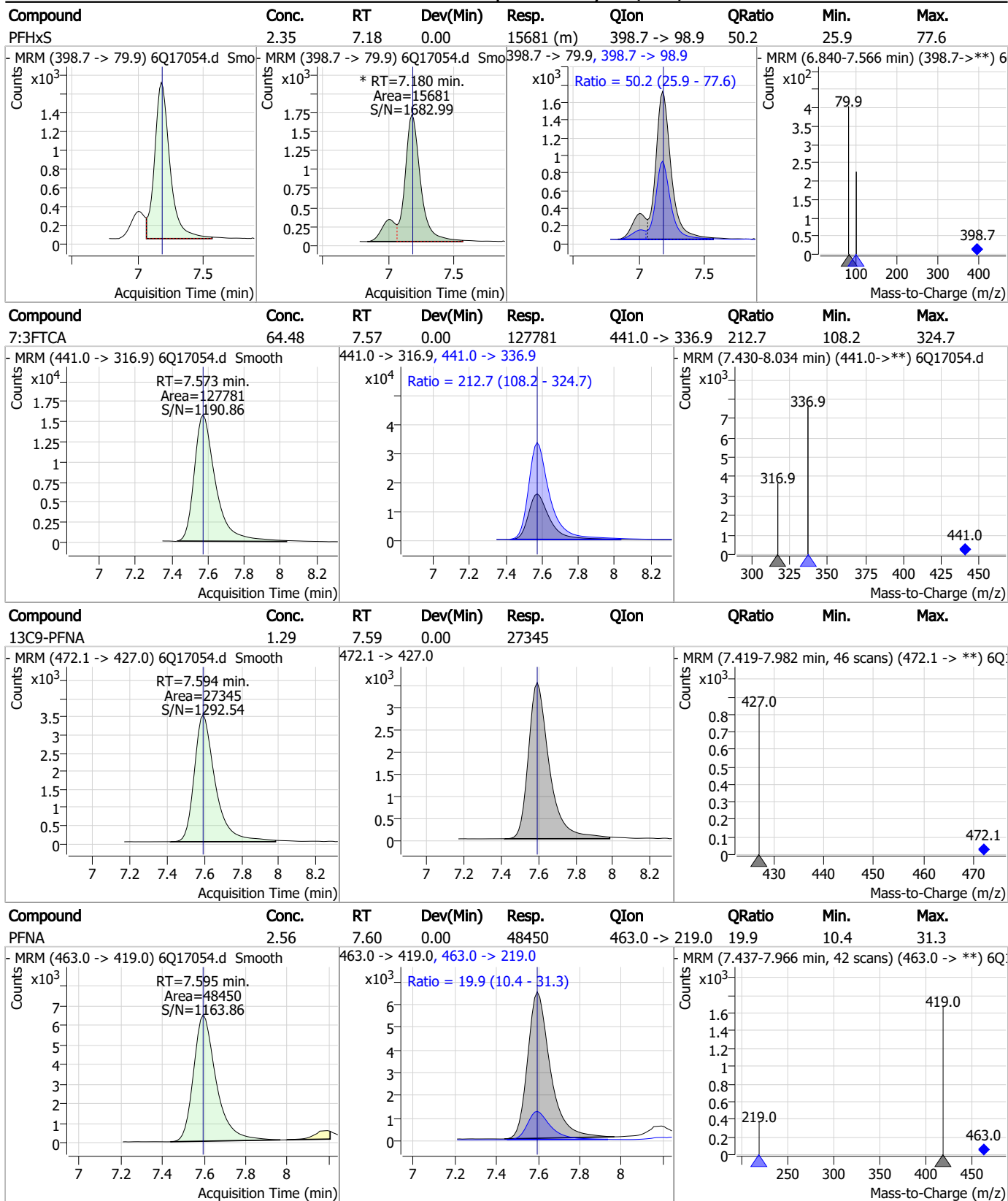


Perfluorinated Compounds by LC/MS/MS



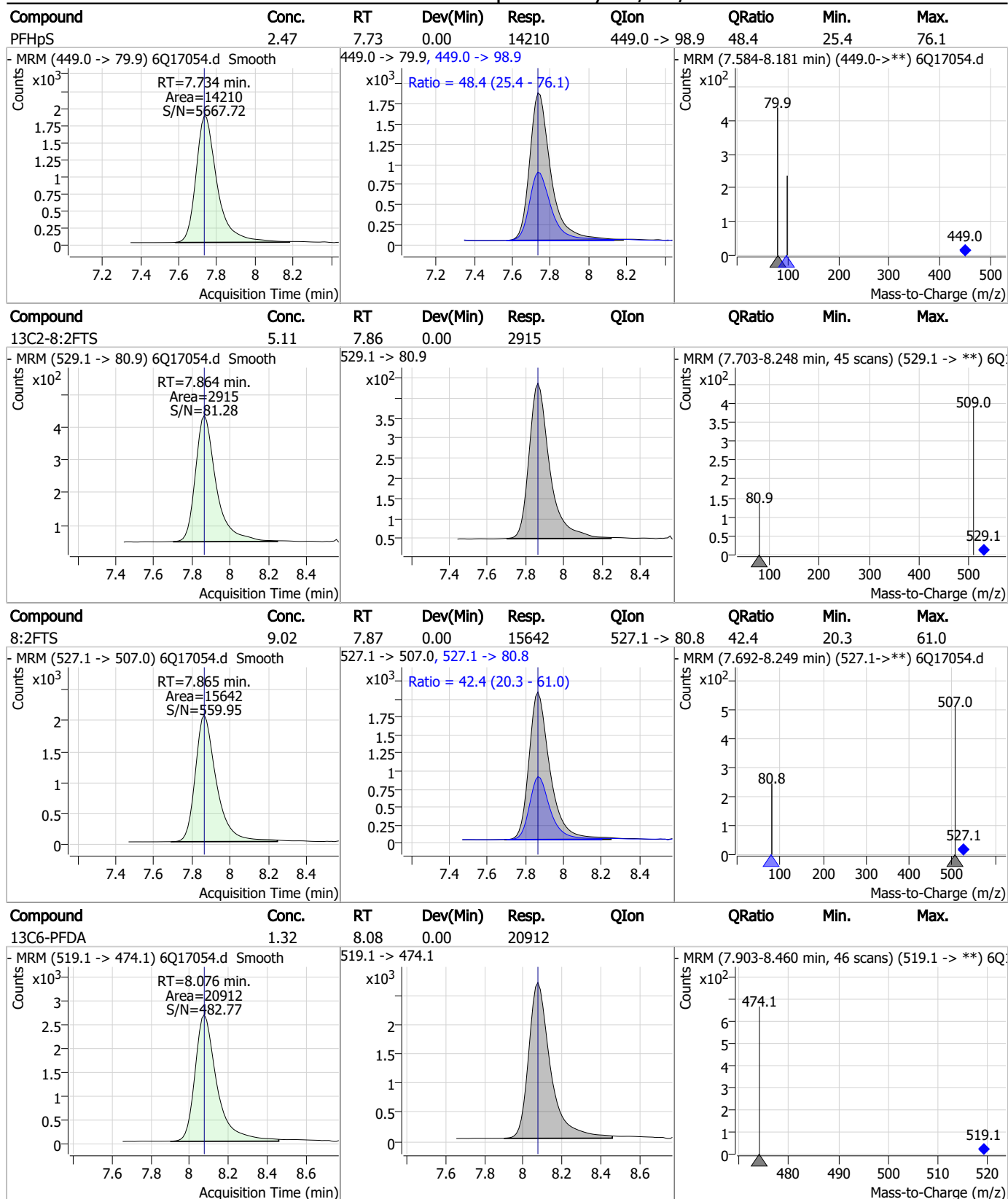
7.7.5
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Perfluorinated Compounds by LC/MS/MS



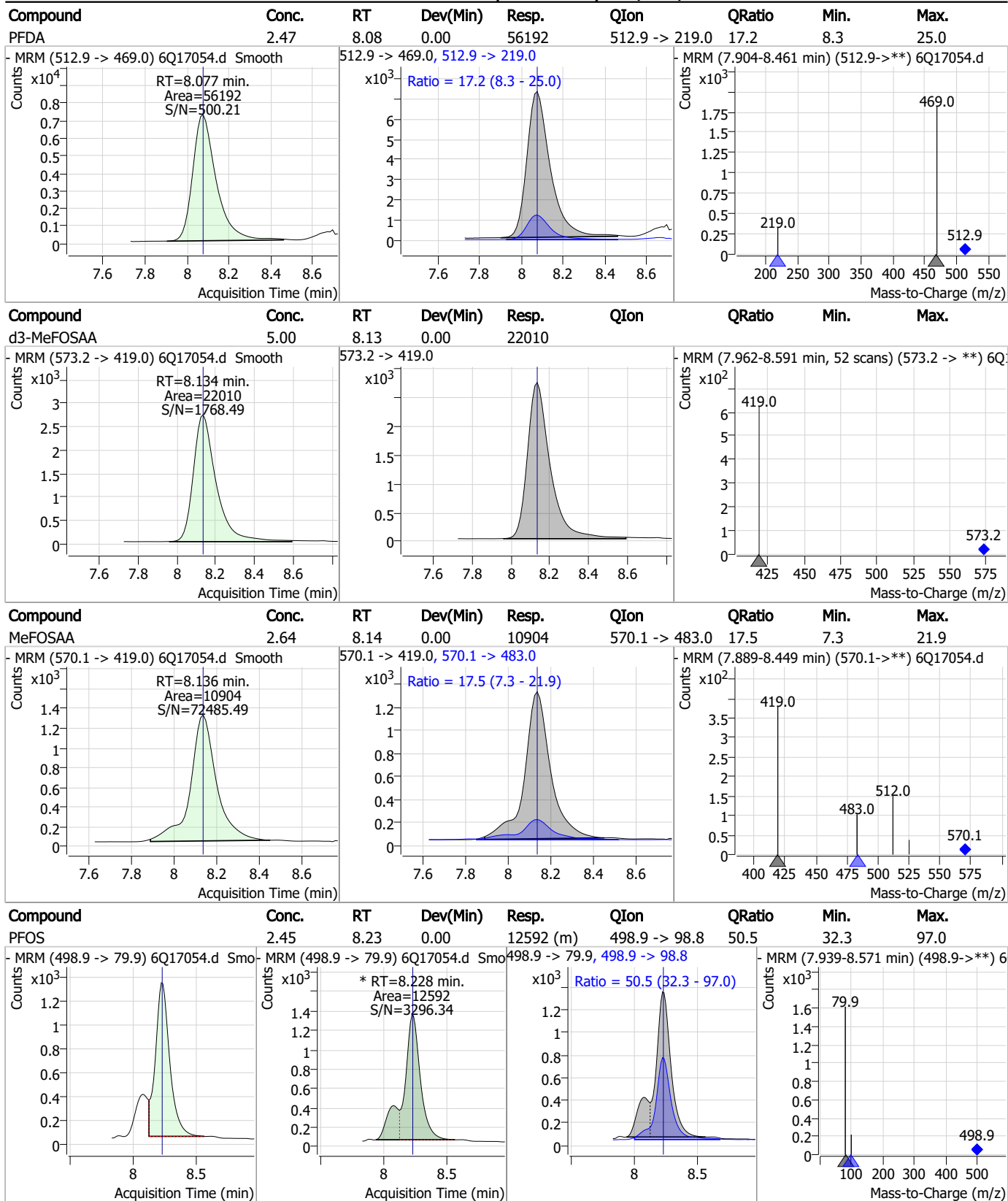
7.7.5
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Perfluorinated Compounds by LC/MS/MS



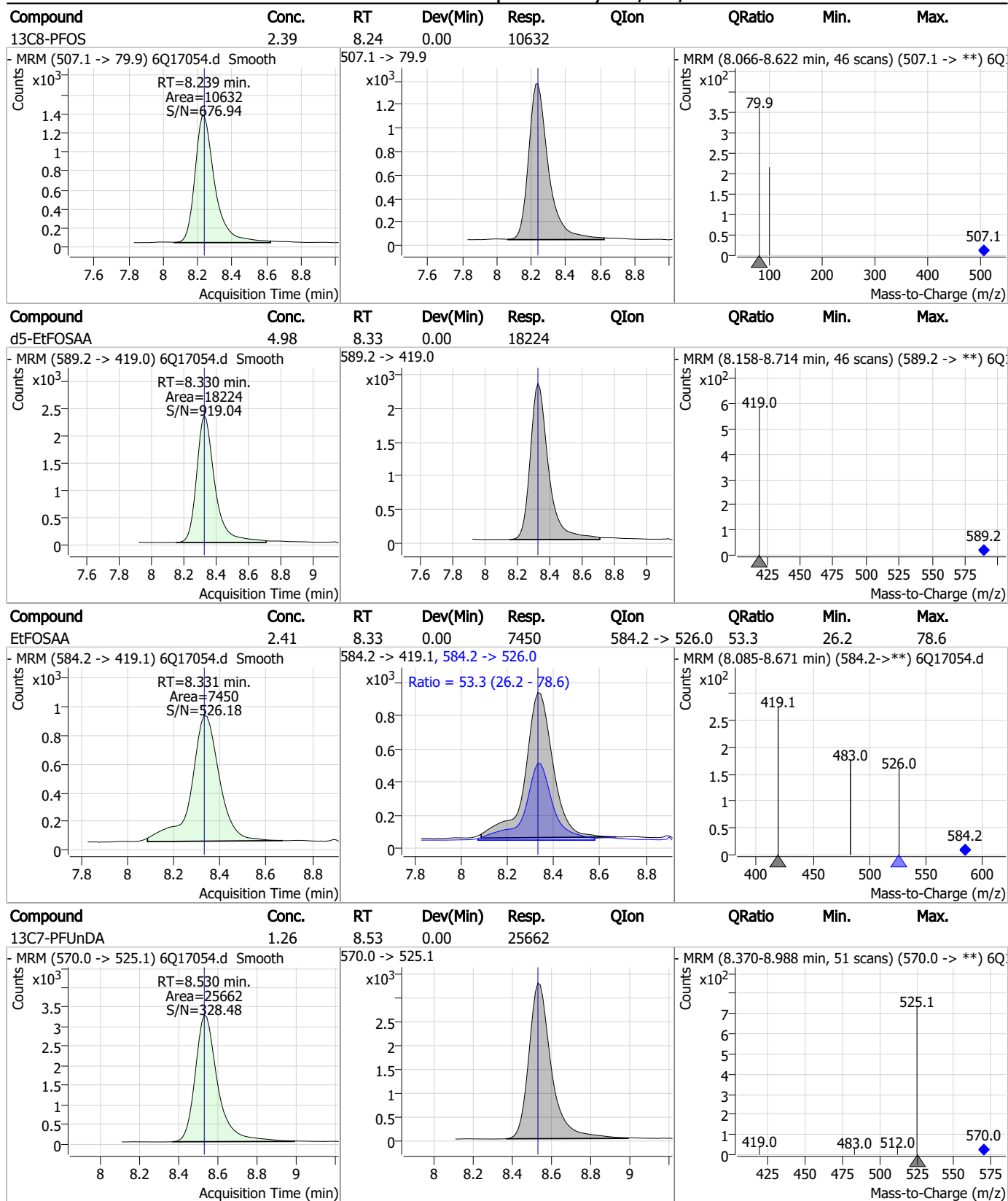
7.7.5
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Perfluorinated Compounds by LC/MS/MS



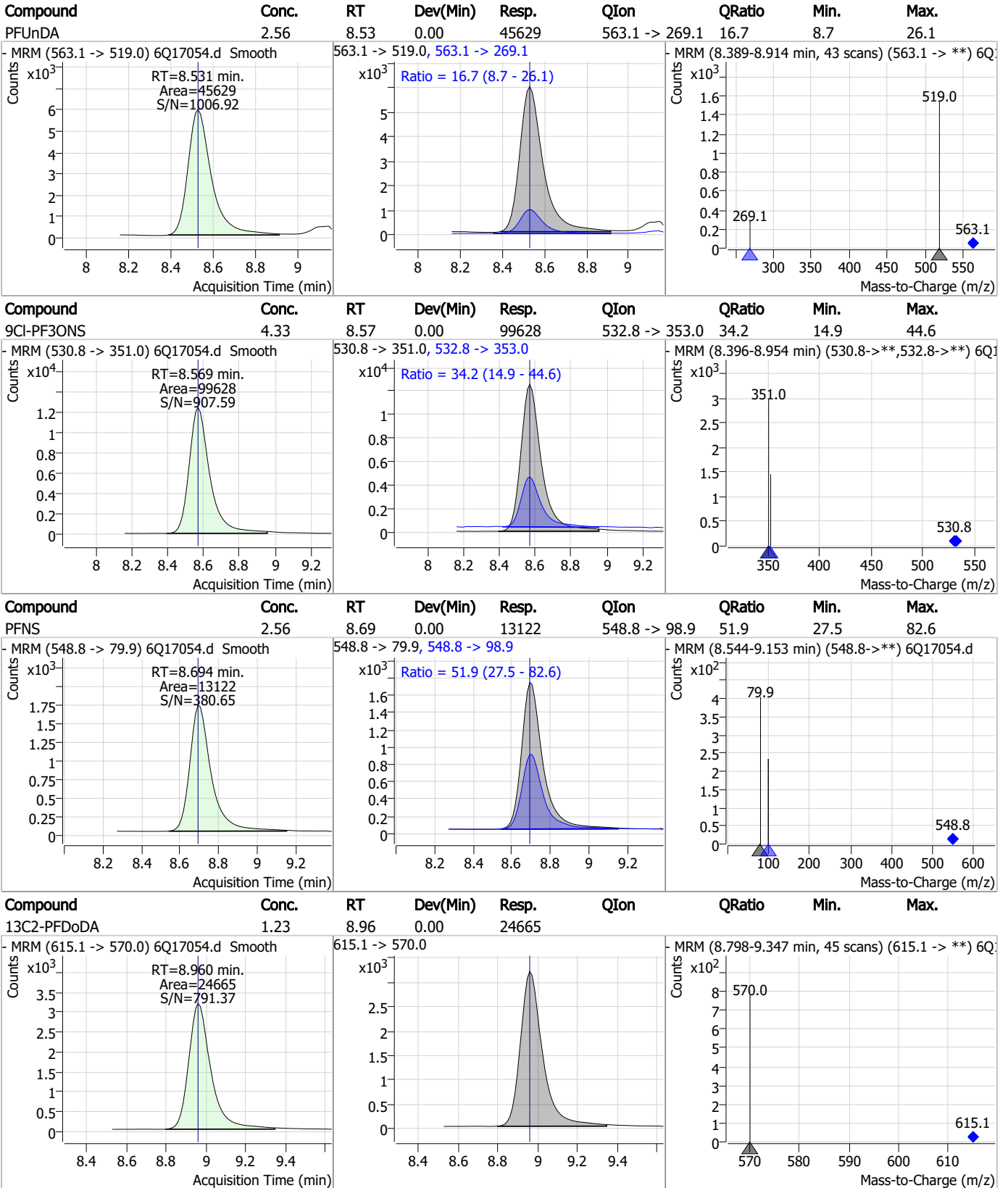
7.7.5
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Perfluorinated Compounds by LC/MS/MS



7.7.5
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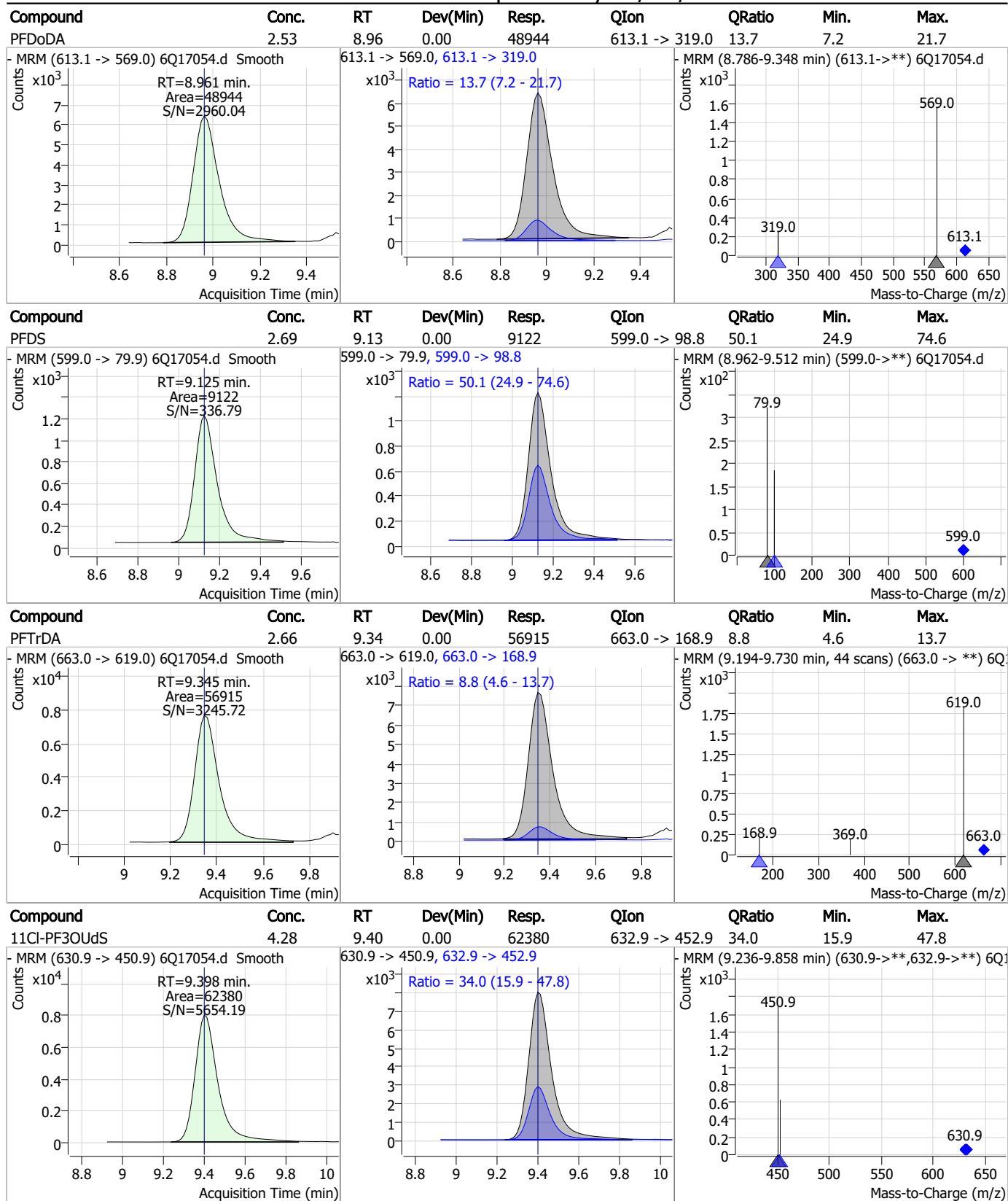
Perfluorinated Compounds by LC/MS/MS



7.7.5

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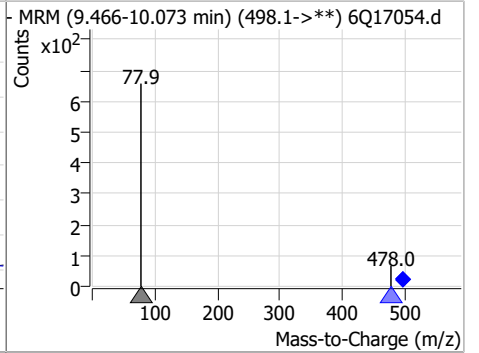
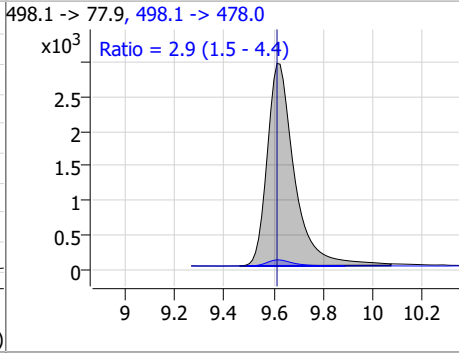
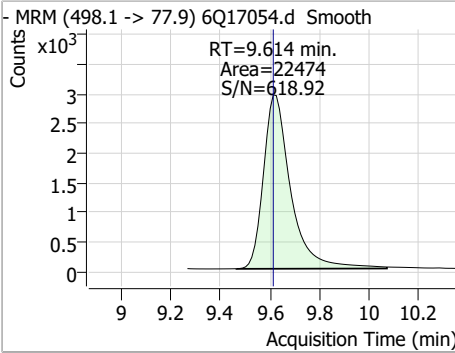
Perfluorinated Compounds by LC/MS/MS



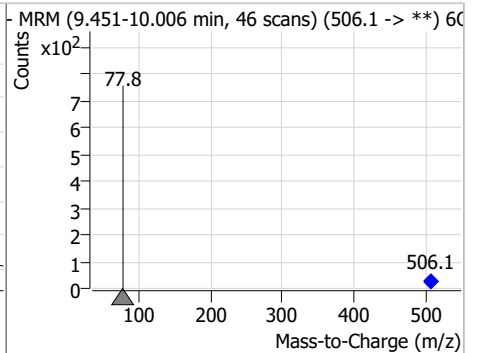
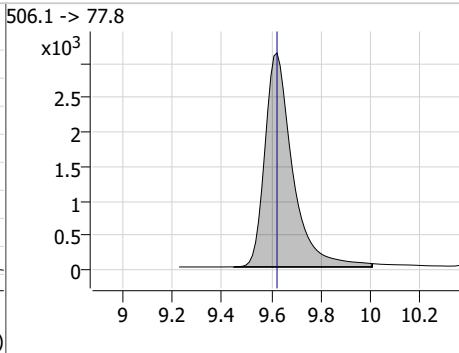
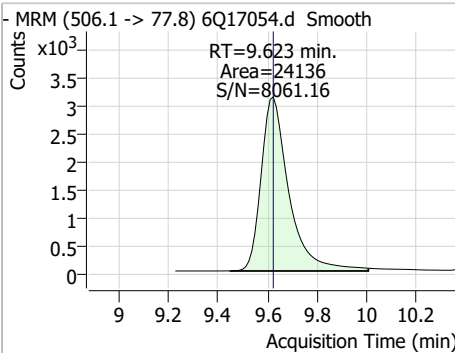
7.7.5
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Perfluorinated Compounds by LC/MS/MS

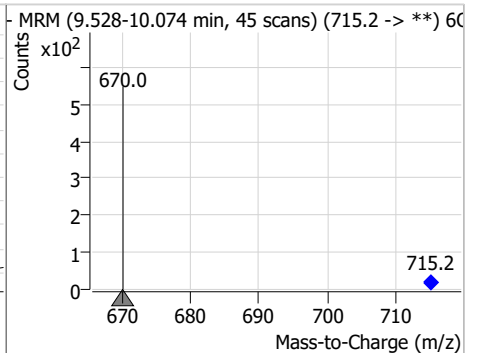
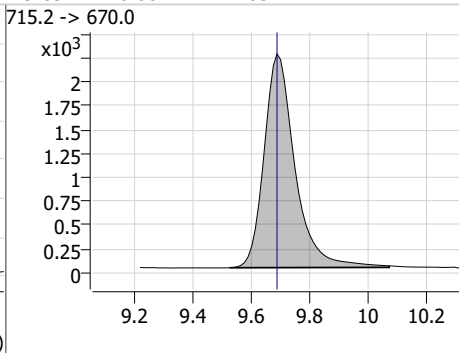
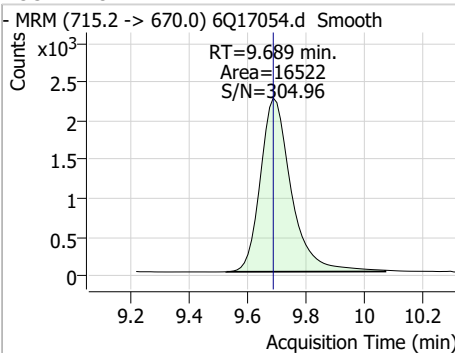
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.60	9.61	0.00	22474	498.1 -> 478.0	2.9	1.5	4.4



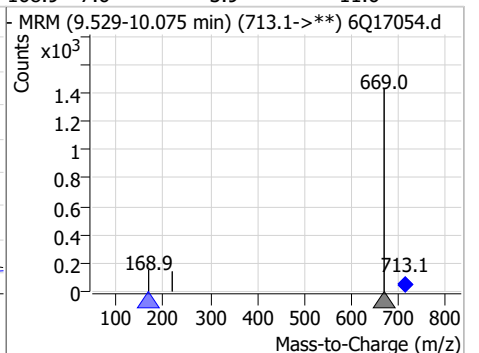
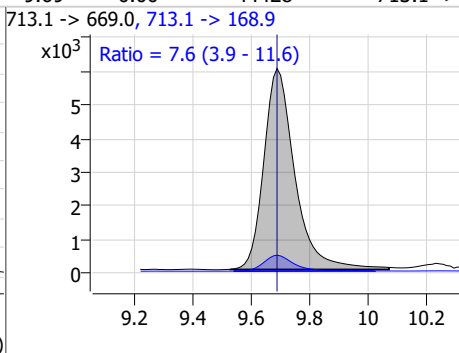
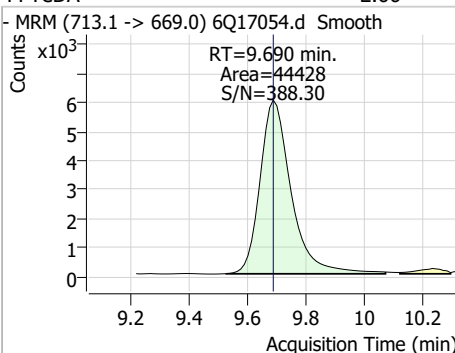
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.47	9.62	0.00	24136				



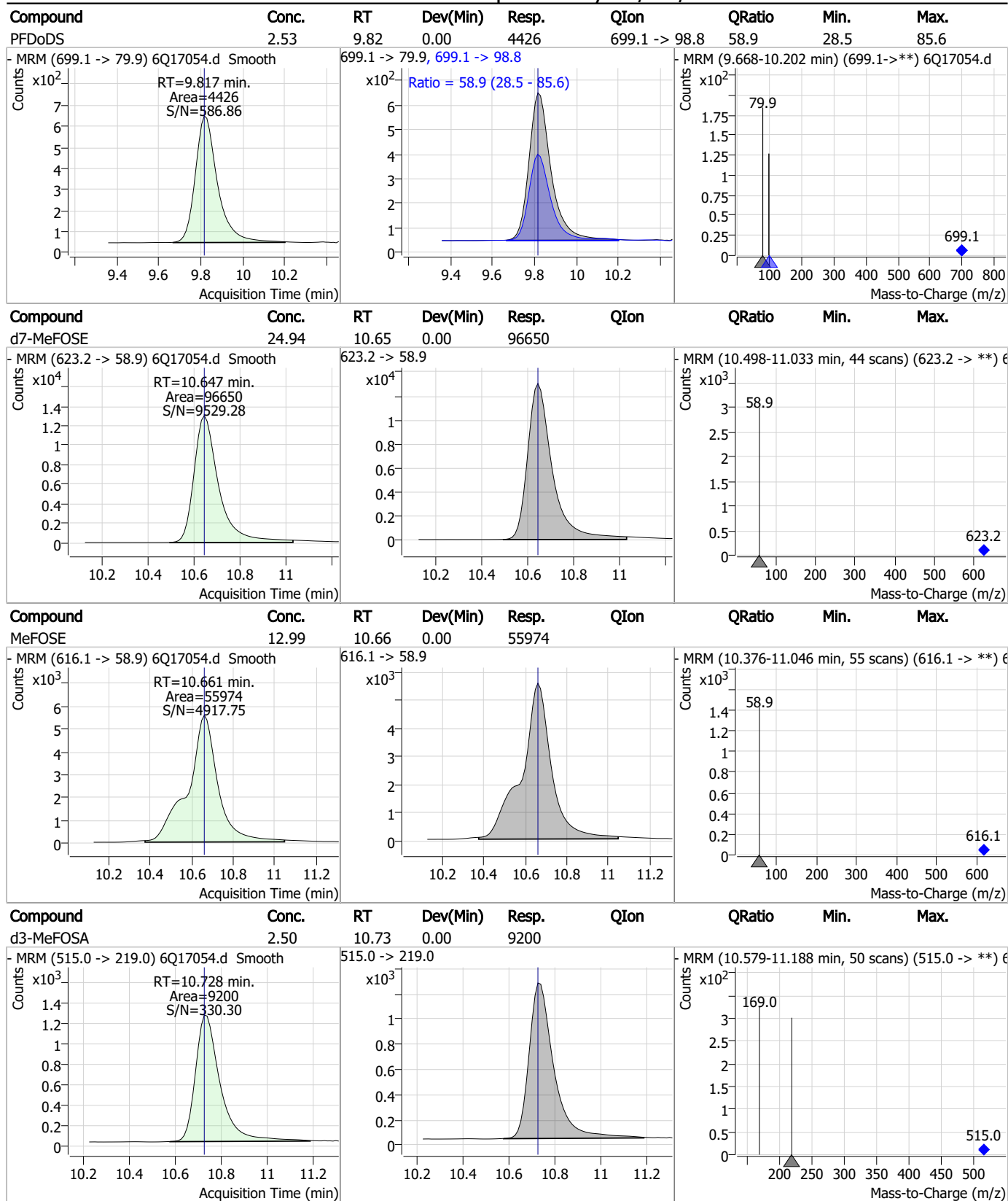
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.22	9.69	0.00	16522				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.66	9.69	0.00	44428	713.1 -> 168.9	7.6	3.9	11.6

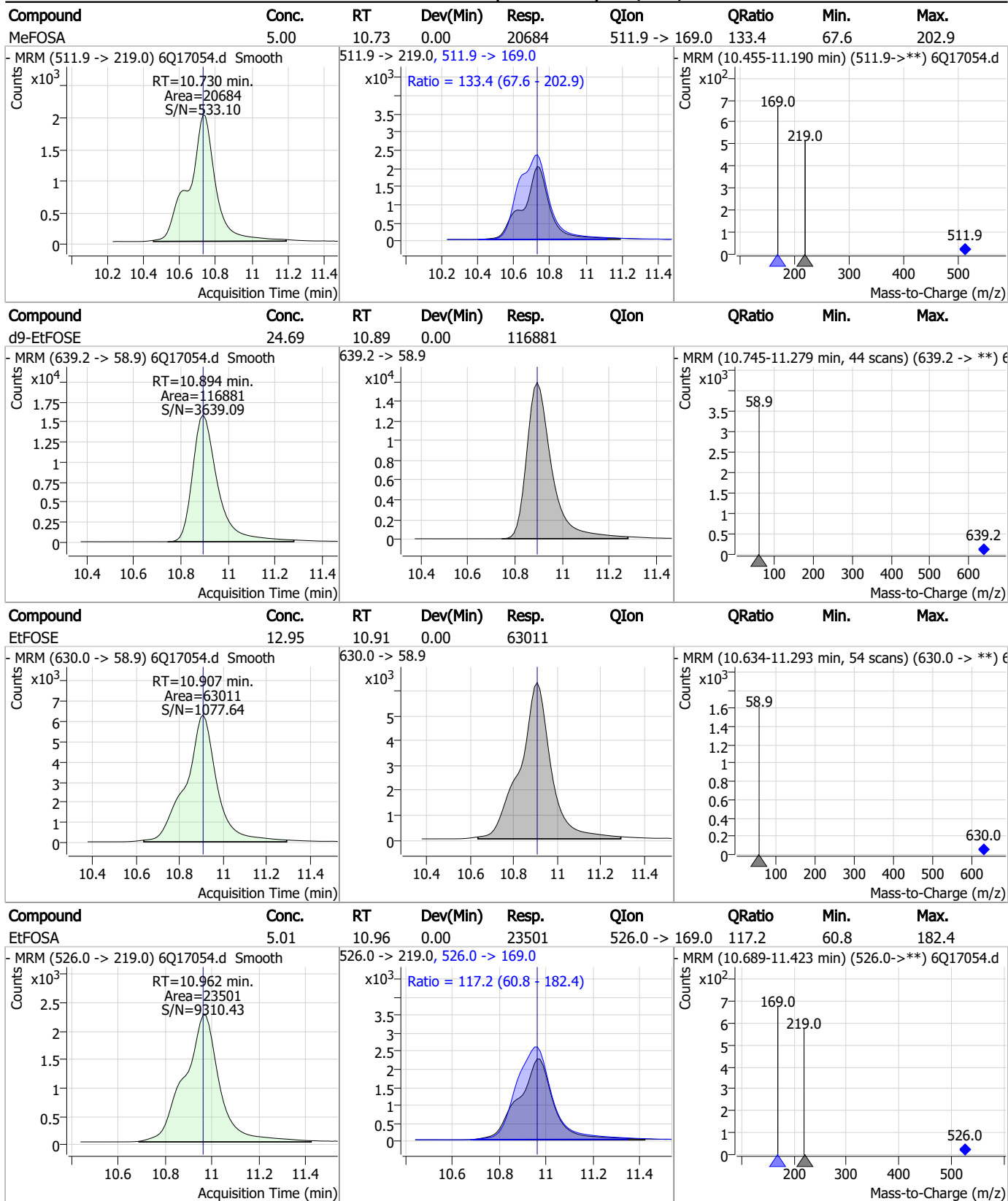


Perfluorinated Compounds by LC/MS/MS



7.7.5
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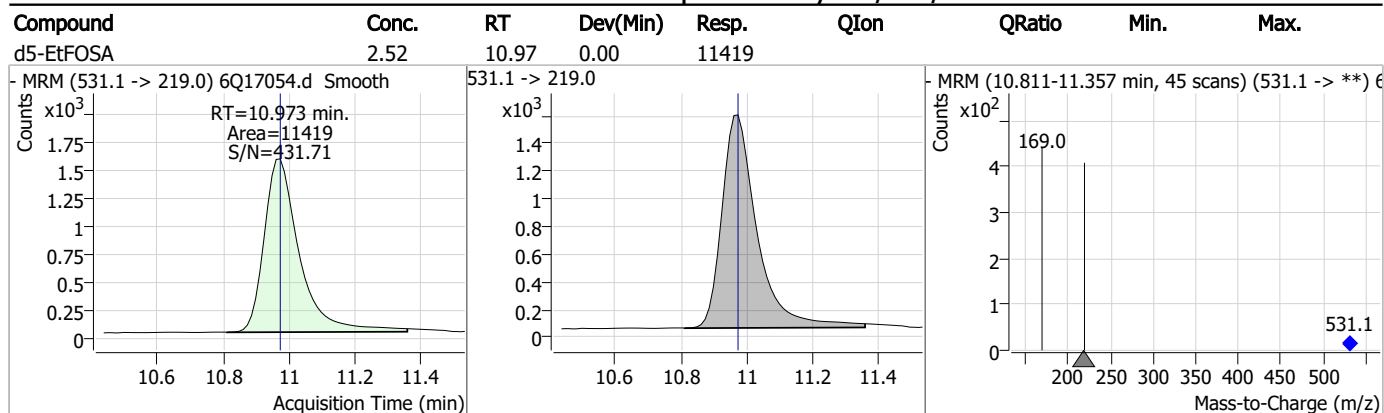
Perfluorinated Compounds by LC/MS/MS



7.7.5

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Perfluorinated Compounds by LC/MS/MS



7.7.5
7

Manual Integration Approval Summary

Sample Number: S6Q258-ICC258 Method: EPA DRAFT 1633
Lab FileID: 6Q17054.D Analyst approved: 04/30/23 23:33 Natasha Gumtie
Injection Time: 04/28/23 13:33 Supervisor approved: 04/30/23 23:52 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.06	Poor instrument integration
Perfluorohexanesulfonic acid	355-46-4		7.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.23	Split peak

7.7.5.1

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Manual Integrations
APPROVED
 (compounds with "m" flag)

Norman Farmer
04/30/23 23:52

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17055.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/28/2023 1:48:12 PM
 Sample Name : ic258-5
 Vial : P1-A6
 DA Method File : 1633_042823_S6Q258.quantmethod.xml
 Batch Name : s6q258.batch.bin
 Sample Information : OP96301,S6Q258,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.910	216.8 -> 171.9	187834	10.00 µg/L	0.012
M5-PFPeA	4.270	268.3 -> 223.0	67131	5.00 µg/L	0.000
M5-PFHxA	5.468	318.0 -> 273.0	72319	2.50 µg/L	0.000
M4-PFHpA	6.419	367.1 -> 322.0	62097	2.50 µg/L	0.000
M8-PFOA	7.062	421.1 -> 376.0	87518	2.50 µg/L	0.000
M9-PFNA	7.594	472.1 -> 427.0	29148	1.25 µg/L	0.000
M6-PFDA	8.076	519.1 -> 474.1	20839	1.25 µg/L	0.000
M7-PFUnDA	8.530	570.0 -> 525.1	27037	1.25 µg/L	0.000
M2-PFDoDA	8.960	615.1 -> 570.0	27295	1.25 µg/L	0.000
M2-PFTeDA	9.689	715.2 -> 670.0	17658	1.25 µg/L	0.000
M8-FOSA	9.623	506.1 -> 77.8	25318	2.50 µg/L	0.000
M3-PFBS	5.398	302.1 -> 79.9	23288	2.50 µg/L	0.000
M3-PFHxS	7.179	402.1 -> 79.9	12418	2.50 µg/L	0.000
M8-PFOS	8.226	507.1 -> 79.9	11986	2.50 µg/L	-0.012
M2-4:2FTS	5.144	329.1 -> 80.9	2278	5.00 µg/L	0.000
M2-6:2FTS	6.839	429.1 -> 80.9	2696	5.00 µg/L	0.000
M2-8:2FTS	7.864	529.1 -> 80.9	2934	5.00 µg/L	0.000
M3-MeFOSAA	8.134	573.2 -> 419.0	22528	5.00 µg/L	0.000
M3-HFPO-DA	5.845	286.9 -> 168.9	41999	10.00 µg/L	0.000
M5-EtFOSAA	8.330	589.2 -> 419.0	19246	5.00 µg/L	0.000
M7-MeFOSE	10.647	623.2 -> 58.9	103618	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	124290	25.00 µg/L	0.000
M5-EtFOSA	10.973	531.1 -> 219.0	11811	2.50 µg/L	0.000
M3-MeFOSA	10.741	515.0 -> 219.0	9531	2.50 µg/L	0.012
13C4-PFOS	8.227	502.8 -> 79.9	15496	2.50 µg/L	-0.012
13C3-PFBA	2.902	216.0 -> 172.0	82123	5.00 µg/L	0.000
18O2-PFHxS	7.177	403.0 -> 83.9	9625	2.50 µg/L	0.000
13C4-PFOA	7.063	417.1 -> 372.0	89654	2.50 µg/L	0.000
13C2-PFDA	8.076	515.1 -> 470.1	26055	1.25 µg/L	0.000
13C5-PFNA	7.595	468.0 -> 423.0	28436	1.25 µg/L	0.000
13C2-PFHxA	5.469	315.1 -> 270.0	59569	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.144	329.1 -> 80.9	2278	5.15 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.0%		
13C2-6:2FTS	6.839	429.1 -> 80.9	2696	5.02 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.4%		
13C2-8:2FTS	7.864	529.1 -> 80.9	2934	5.08 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.6%		
13C2-PFDoDA	8.960	615.1 -> 570.0	27295	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.7%		
13C2-PFTeDA	9.689	715.2 -> 670.0	17658	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.3%		
13C3-PFBS	5.398	302.1 -> 79.9	23288	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.9%		
13C3-PFHxS	7.179	402.1 -> 79.9	12418	2.42 µg/L	0.000

7.7.6
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.9%	
13C4-PFBA	2.910	216.8 -> 171.9	187834	9.90 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C4-PFHpA	6.419	367.1 -> 322.0	62097	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.9%	
13C5-PFHxA	5.468	318.0 -> 273.0	72319	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C5-PFPeA	4.270	268.3 -> 223.0	67131	5.04 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C6-PFDA	8.076	519.1 -> 474.1	20839	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.0%	
13C7-PFUnDA	8.530	570.0 -> 525.1	27037	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.3%	
13C8-FOSA	9.623	506.1 -> 77.8	25318	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.9%	
13C8-PFOA	7.062	421.1 -> 376.0	87518	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C8-PFOS	8.226	507.1 -> 79.9	11986	2.57 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C9-PFNA	7.594	472.1 -> 427.0	29148	1.34 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.6%	
d3-MeFOSAA	8.134	573.2 -> 419.0	22528	4.88 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.6%	
13C3-HFPO-DA	5.845	286.9 -> 168.9	41999	9.96 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.6%	
d3-MeFOSA	10.741	515.0 -> 219.0	9531	2.46 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.5%	
d5-EtFOSAA	8.330	589.2 -> 419.0	19246	5.01 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.3%	
d7-MeFOSE	10.647	623.2 -> 58.9	103618	25.48 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.9%	
d9-EtFOSE	10.894	639.2 -> 58.9	124290	25.01 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
d5-EtFOSA	10.973	531.1 -> 219.0	11811	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.4%	
Target Compounds					QValue
4:2FTS	5.145	327.1 -> 307.0	62523	18.14 µg/L	98
		327.1 -> 80.9	24036		
6:2FTS	6.839	427.1 -> 407.0	59295	19.99 µg/L	94
		427.1 -> 80.9	19117		
8:2FTS	7.865	527.1 -> 507.0	32560	18.65 µg/L	100
		527.1 -> 80.8	13155		
EtFOSAA	8.331	584.2 -> 419.1	15971	4.88 µg/L	98
		584.2 -> 526.0	8649		
FOSA	9.614	498.1 -> 77.9	44148	4.87 µg/L	99
		498.1 -> 478.0	1356		
MeFOSAA	8.136	570.1 -> 419.0	21727	5.14 µg/L	93
		570.1 -> 483.0	3790		
PFBA	2.906	212.8 -> 168.9	125595	19.94 µg/L	100
PFBS	5.400	298.7 -> 79.9	47488	4.54 µg/L	94
		298.7 -> 98.8	17896		
PFDA	8.077	512.9 -> 469.0	126808	5.60 µg/L	98
		512.9 -> 219.0	20008		
PFDoDA	8.961	613.1 -> 569.0	105006	4.91 µg/L	98
		613.1 -> 319.0	14169		
PFDS	9.125	599.0 -> 79.9	17788	4.66 µg/L	98

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	8603			
PFHpA	6.420	363.1 -> 319.0	149038	4.86	µg/L	96
		363.1 -> 169.0	24368			
PFHpS	7.734	449.0 -> 79.9	28974	4.46	µg/L	94
		449.0 -> 98.9	13472			
PFHxA	5.470	313.0 -> 269.0	135832	4.75	µg/L	100
		313.0 -> 118.9	6251			
PFHxS	7.180	398.7 -> 79.9	33010	4.88	µg/L	m 94
		398.7 -> 98.9	15590			
PFNA	7.595	463.0 -> 419.0	98776	4.90	µg/L	95
		463.0 -> 219.0	18524			
PFNS	8.694	548.8 -> 79.9	25522	4.41	µg/L	98
		548.8 -> 98.9	13722			
PFOA	7.063	413.0 -> 369.0	199591	4.79	µg/L	97
		413.0 -> 169.0	32419			
PFOS	8.228	498.9 -> 79.9	23540	4.07	µg/L	m 91
		498.9 -> 98.8	13635			
PFPeA	4.273	263.0 -> 219.0	181387	9.92	µg/L	100
PFPeS	6.472	349.1 -> 79.9	35261	4.99	µg/L	96
		349.1 -> 98.9	16209			
PFTeDA	9.690	713.1 -> 669.0	88197	4.94	µg/L	99
		713.1 -> 168.9	6619			
PFTrDA	9.345	663.0 -> 619.0	112010	4.73	µg/L	99
		663.0 -> 168.9	10737			
PFUnDA	8.531	563.1 -> 519.0	95301	5.08	µg/L	95
		563.1 -> 269.1	14657			
11Cl-PF3OUdS	9.398	630.9 -> 450.9	131944	9.15	µg/L	100
		632.9 -> 452.9	41738			
9Cl-PF3ONS	8.569	530.8 -> 351.0	205740	9.03	µg/L	94
		532.8 -> 353.0	67919			
ADONA	6.681	376.9 -> 250.9	565822	8.92	µg/L	94
		376.9 -> 84.8	164194			
HFPO-DA	5.846	284.9 -> 168.9	40734	10.24	µg/L	97
		284.9 -> 184.9	5195			
3:3FTCA	3.784	241.0 -> 177.0	27887	24.39	µg/L	98
		241.0 -> 117.0	3443			
5:3FTCA	6.160	341.0 -> 237.1	553365	119.58	µg/L	87
		341.0 -> 217.0	428689			
7:3FTCA	7.573	441.0 -> 316.9	263175	125.19	µg/L	99
		441.0 -> 336.9	564965			
EtFOSA	10.975	526.0 -> 219.0	48759	10.04	µg/L	98
		526.0 -> 169.0	60417			
EtFOSE	10.907	630.0 -> 58.9	126711	24.48	µg/L	100
MeFOSA	10.730	511.9 -> 219.0	41390	9.65	µg/L	96
		511.9 -> 169.0	58201			
MeFOSE	10.661	616.1 -> 58.9	110770	23.97	µg/L	100
PFDoDS	9.817	699.1 -> 79.9	9024	4.57	µg/L	98
		699.1 -> 98.8	5006			
NFDHA	5.350	295.0 -> 201.0	30939	9.98	µg/L	98
		295.0 -> 84.9	7843			
PFMBA	4.687	279.0 -> 85.1	120834	9.85	µg/L	100
PFMPA	3.438	229.0 -> 84.9	90216	9.86	µg/L	100
PFEESA	5.937	314.8 -> 134.9	310054	8.59	µg/L	100
		314.8 -> 82.9	11310			

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

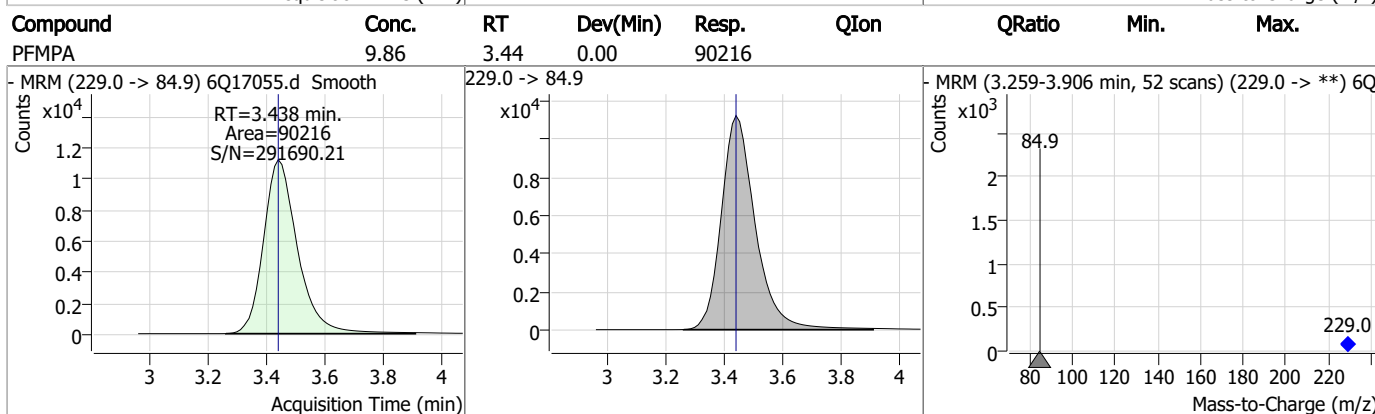
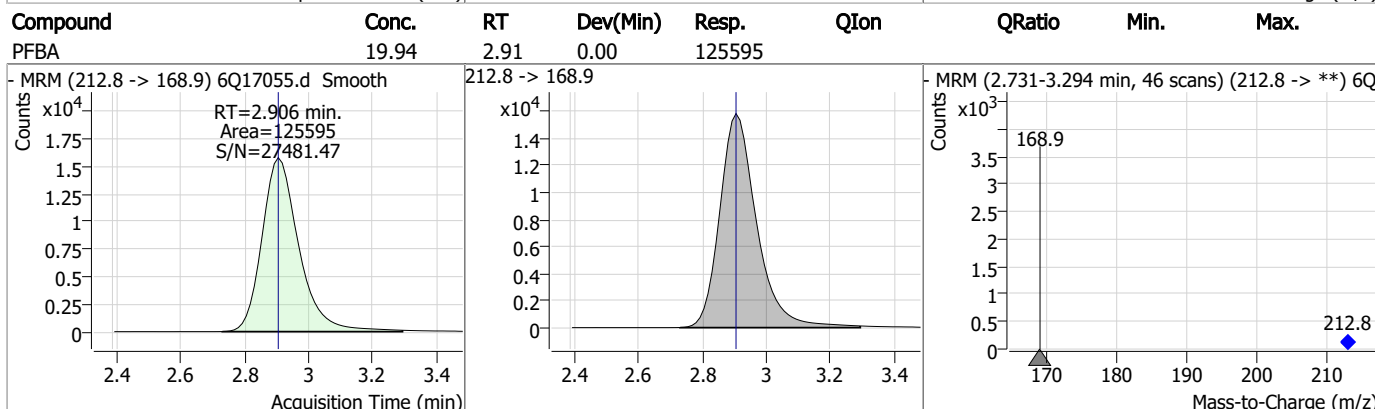
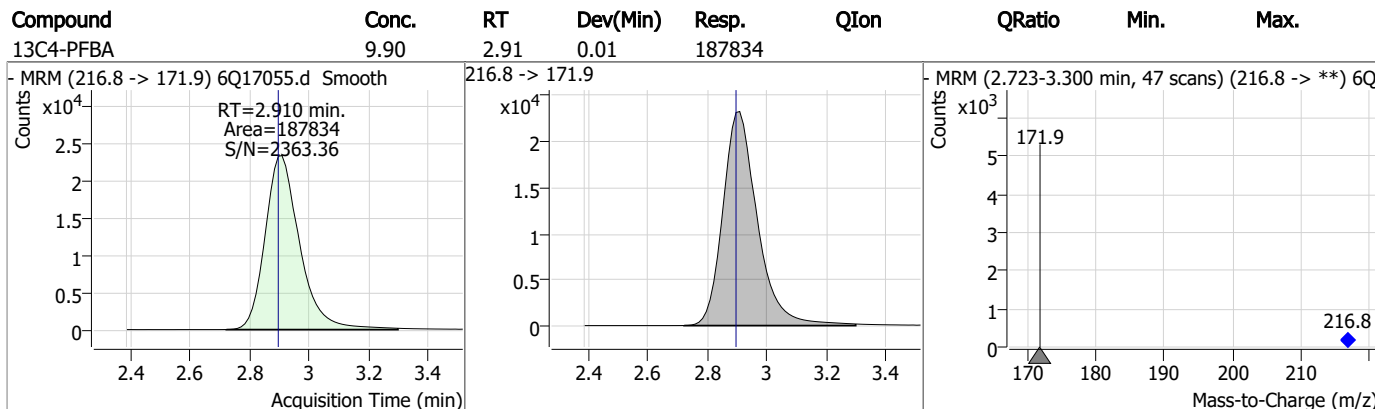
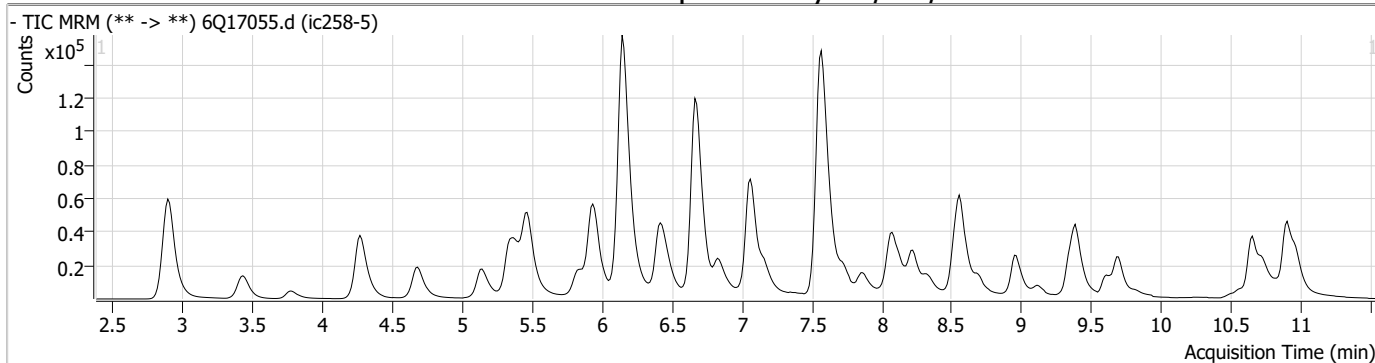
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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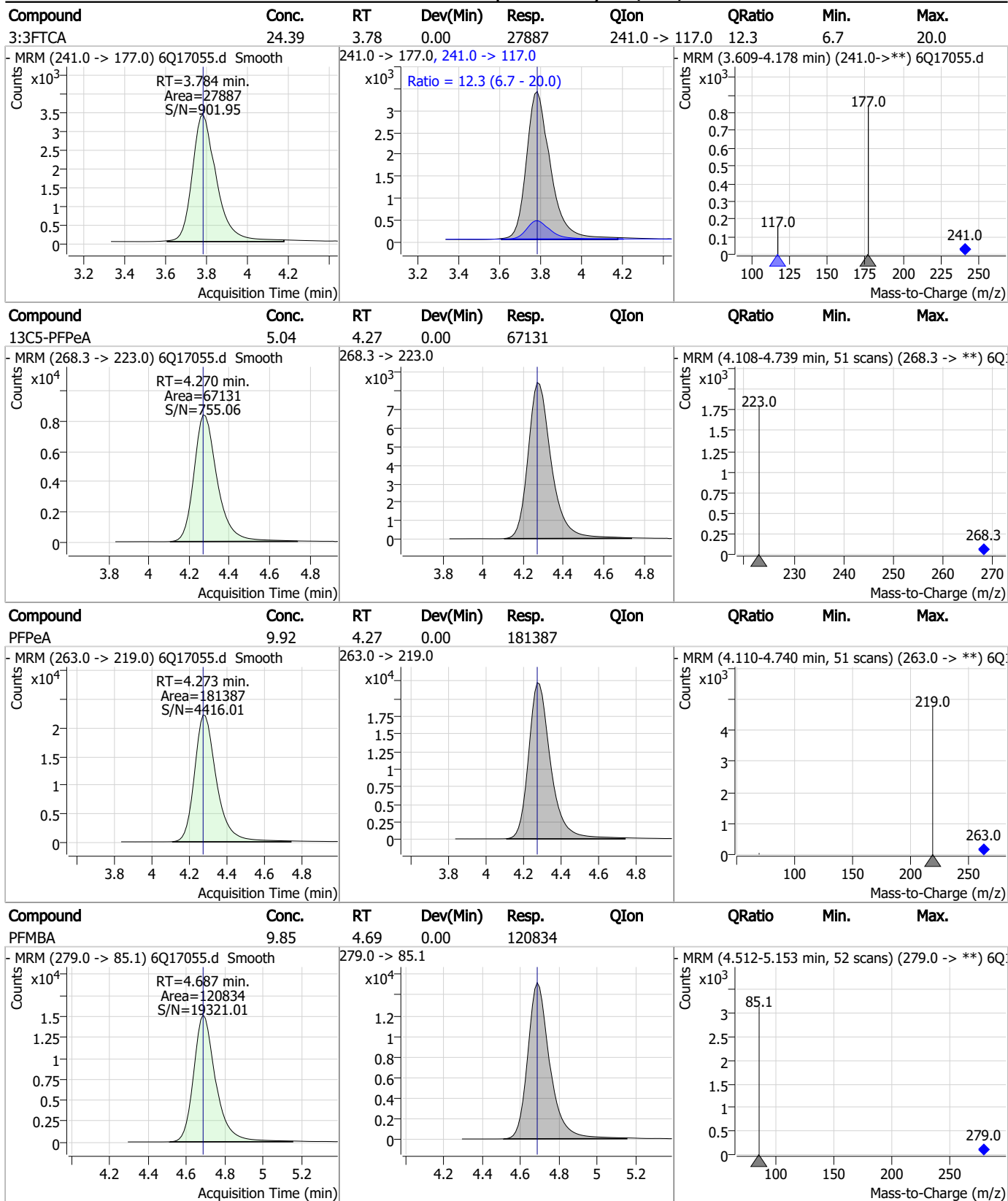
7.7.6

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Perfluorinated Compounds by LC/MS/MS

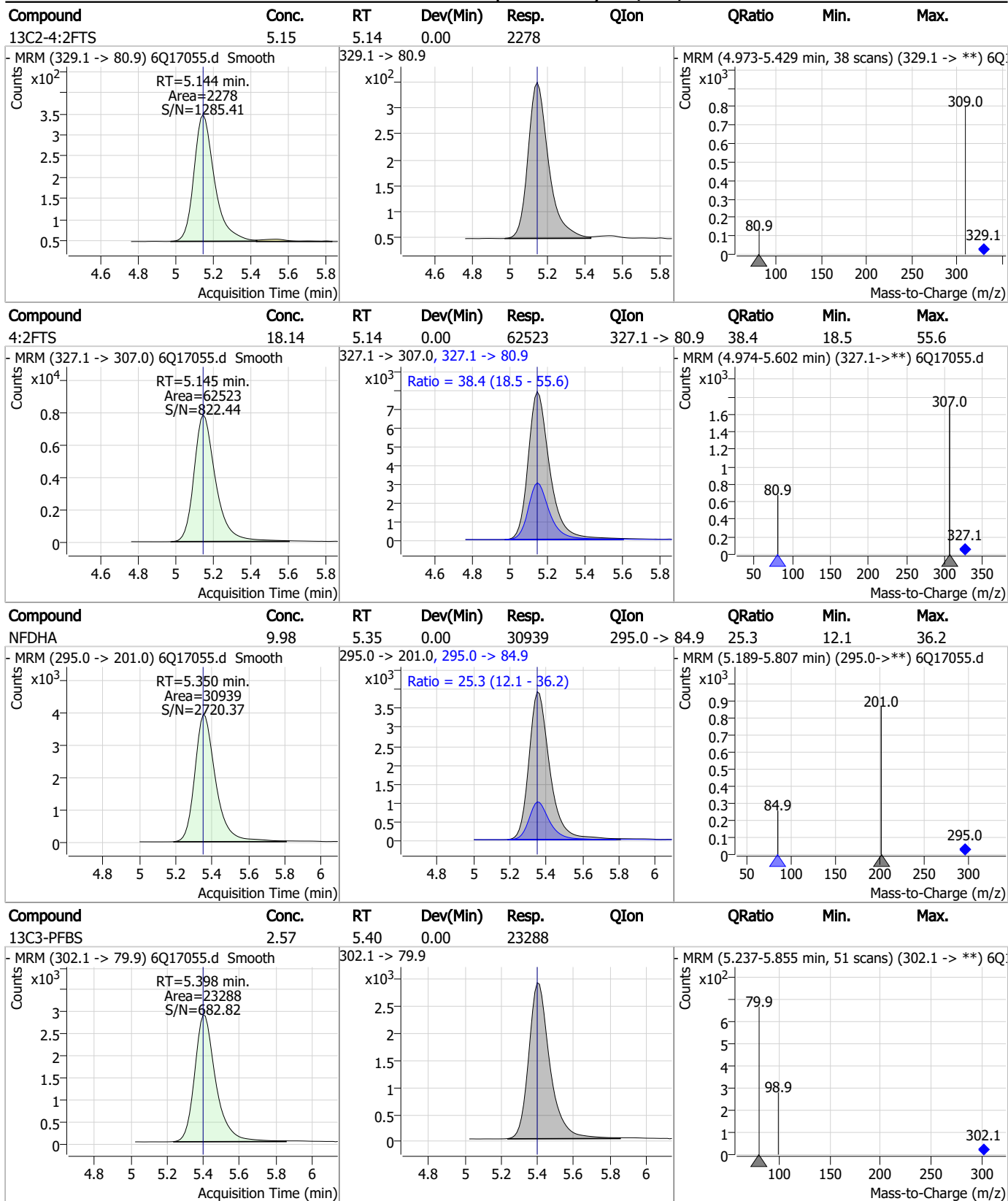


Perfluorinated Compounds by LC/MS/MS



7.7.6
7

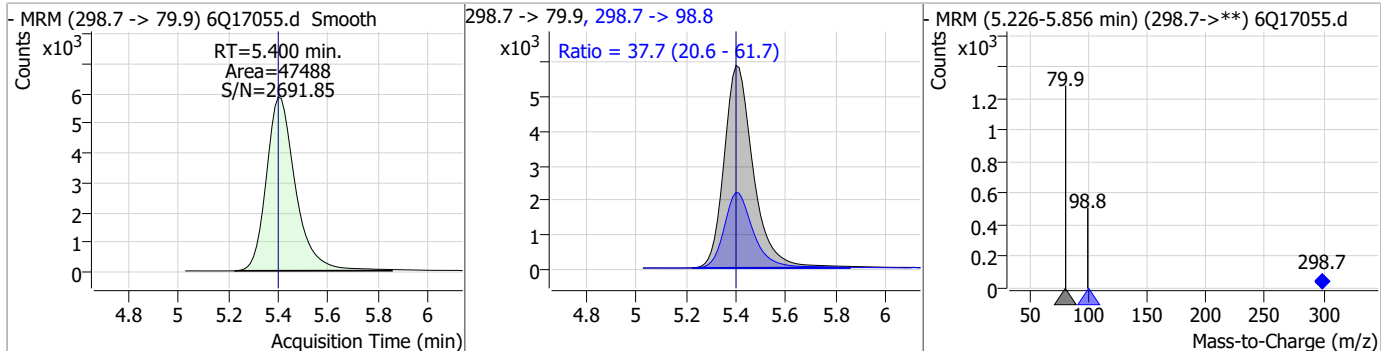
Perfluorinated Compounds by LC/MS/MS



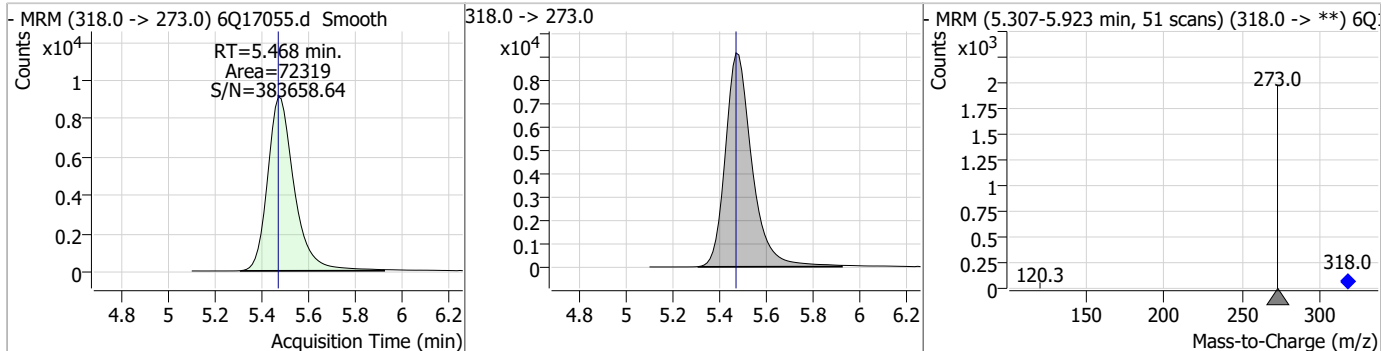
7.7.6
7

Perfluorinated Compounds by LC/MS/MS

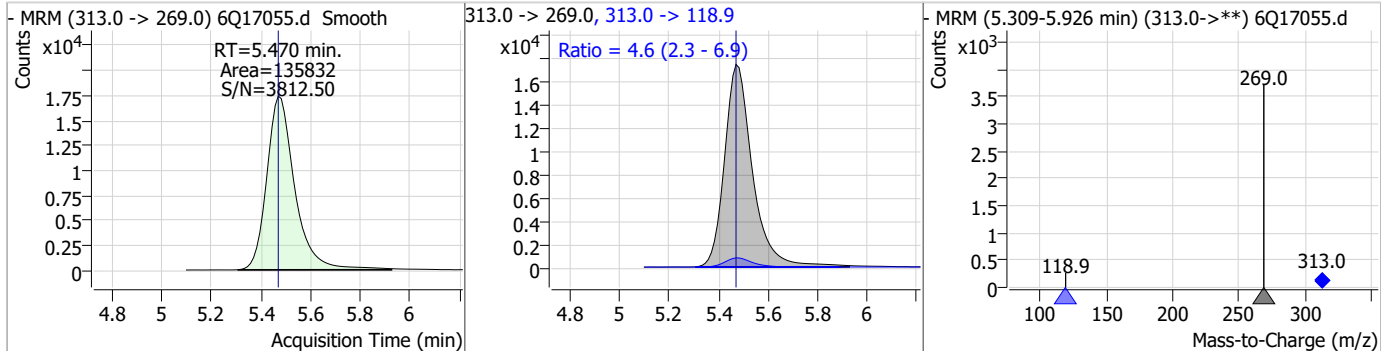
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	4.54	5.40	0.00	47488	298.7 -> 98.8	37.7	20.6	61.7



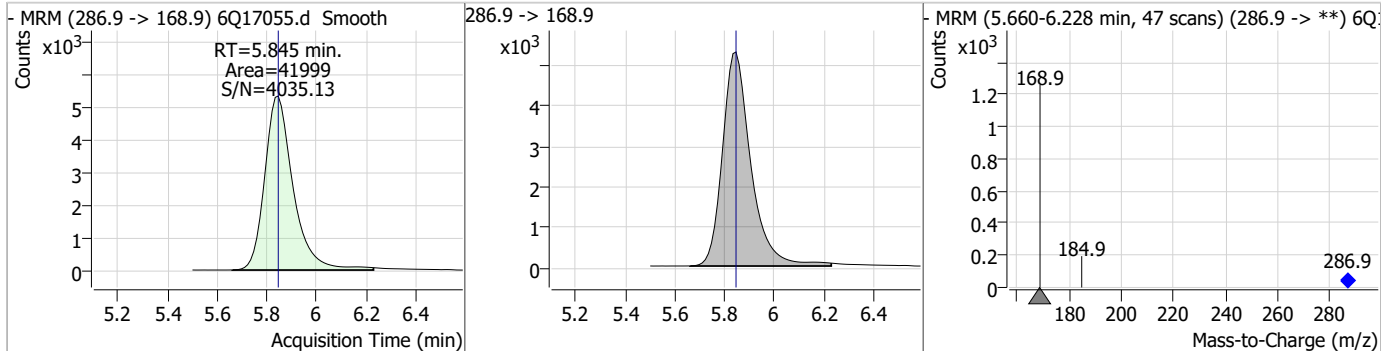
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.52	5.47	0.00	72319				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	4.75	5.47	0.00	135832	313.0 -> 118.9	4.6	2.3	6.9

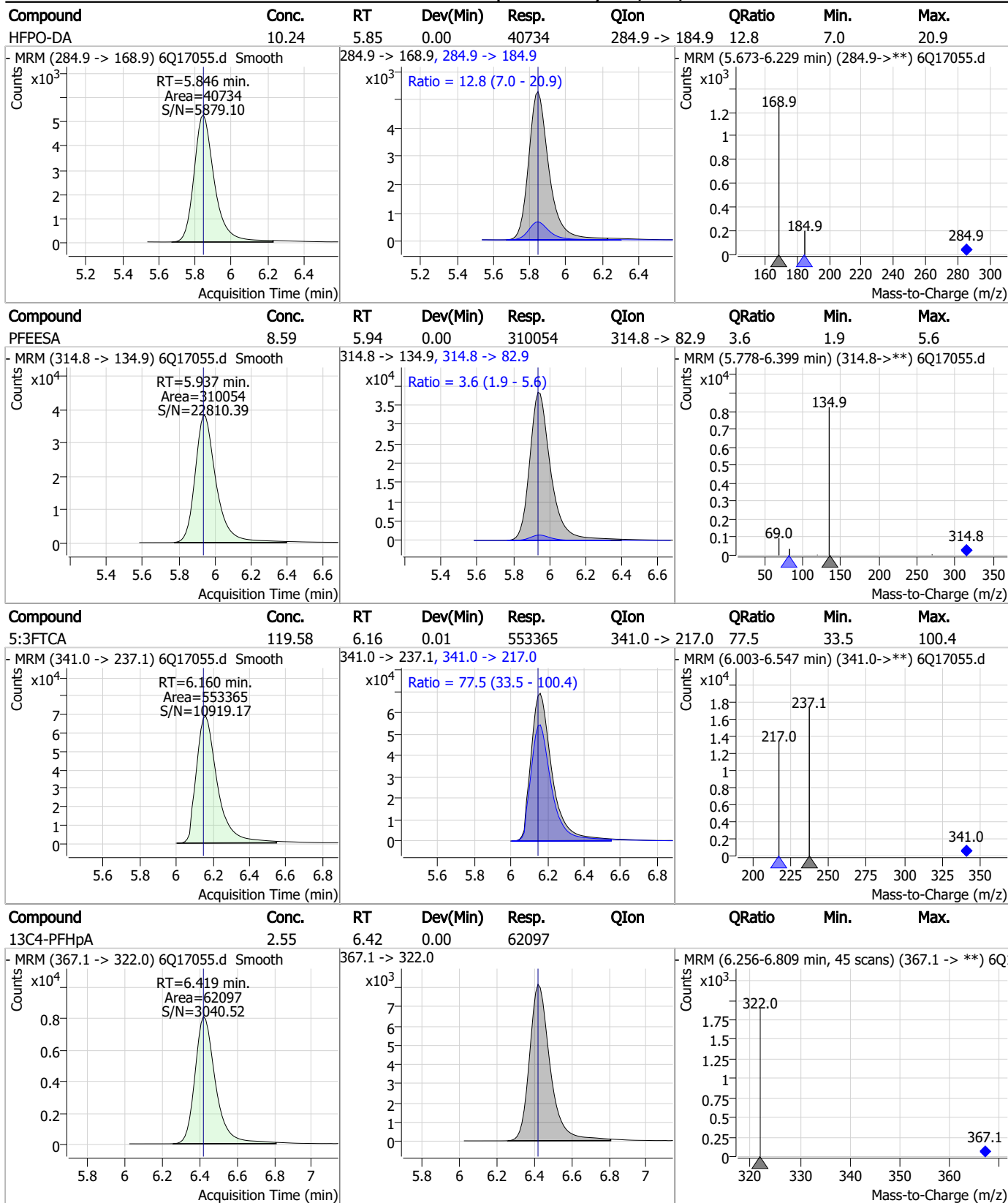


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.96	5.85	0.00	41999				



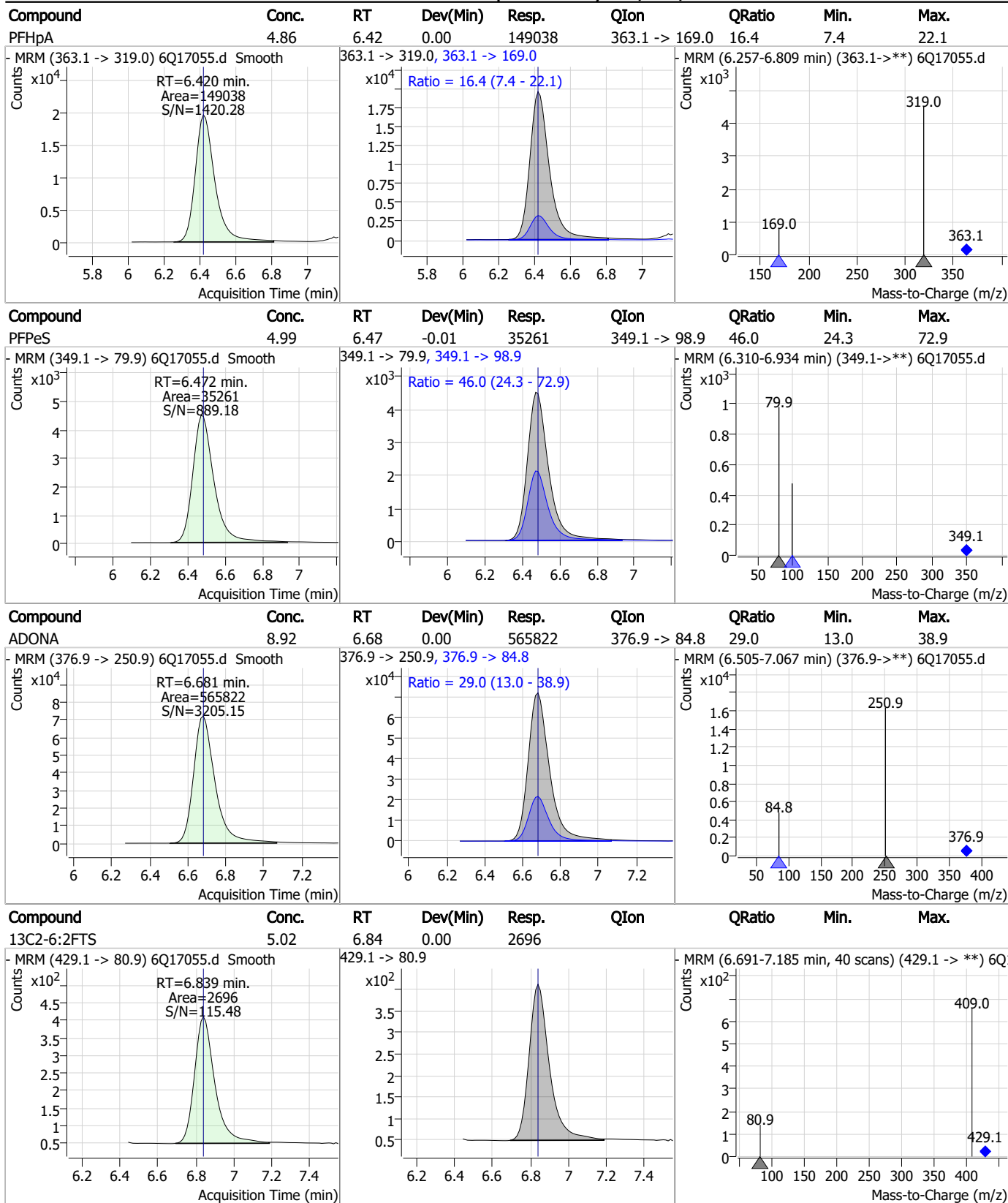
7.7.6
7

Perfluorinated Compounds by LC/MS/MS



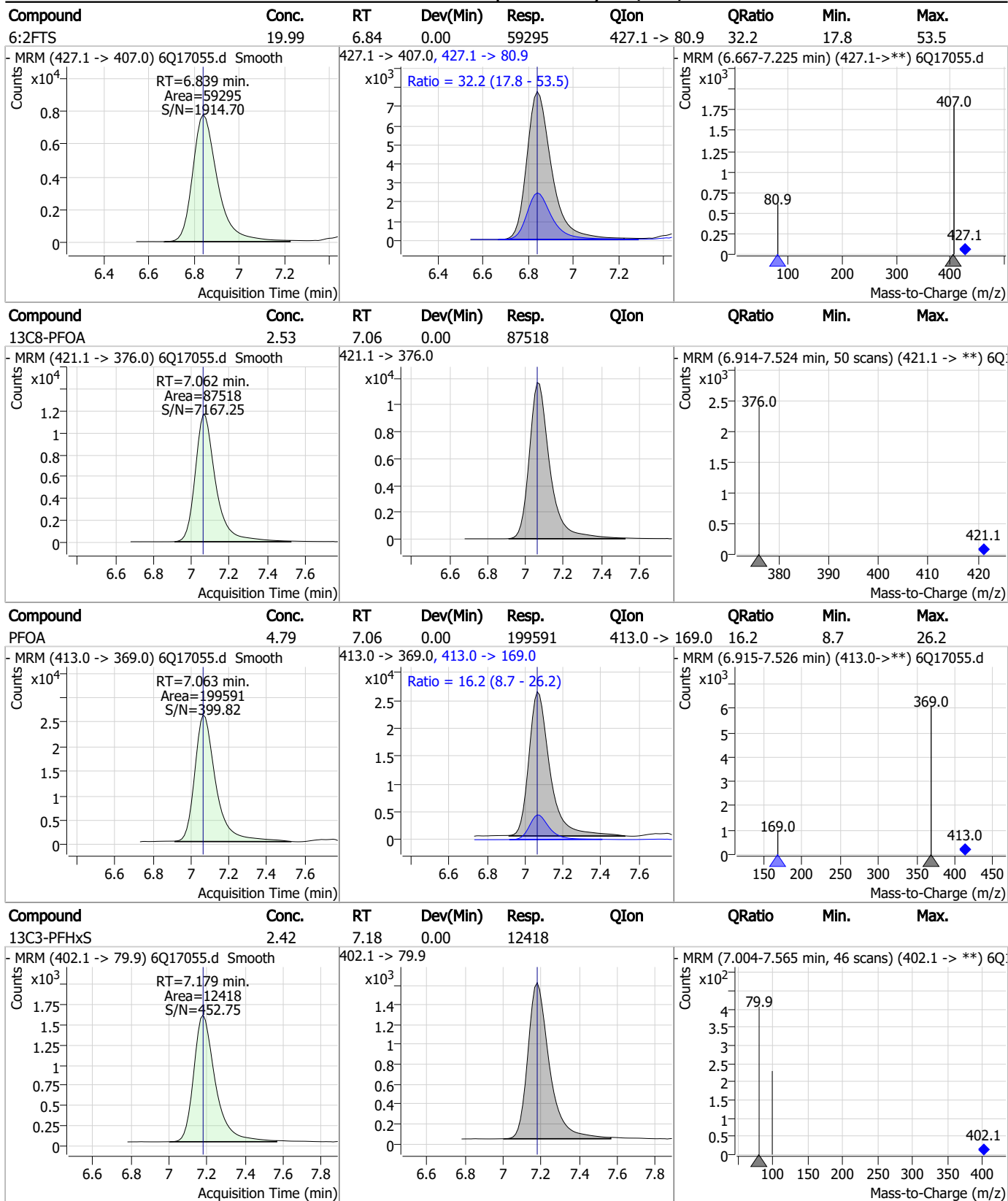
7.7.6
7

Perfluorinated Compounds by LC/MS/MS



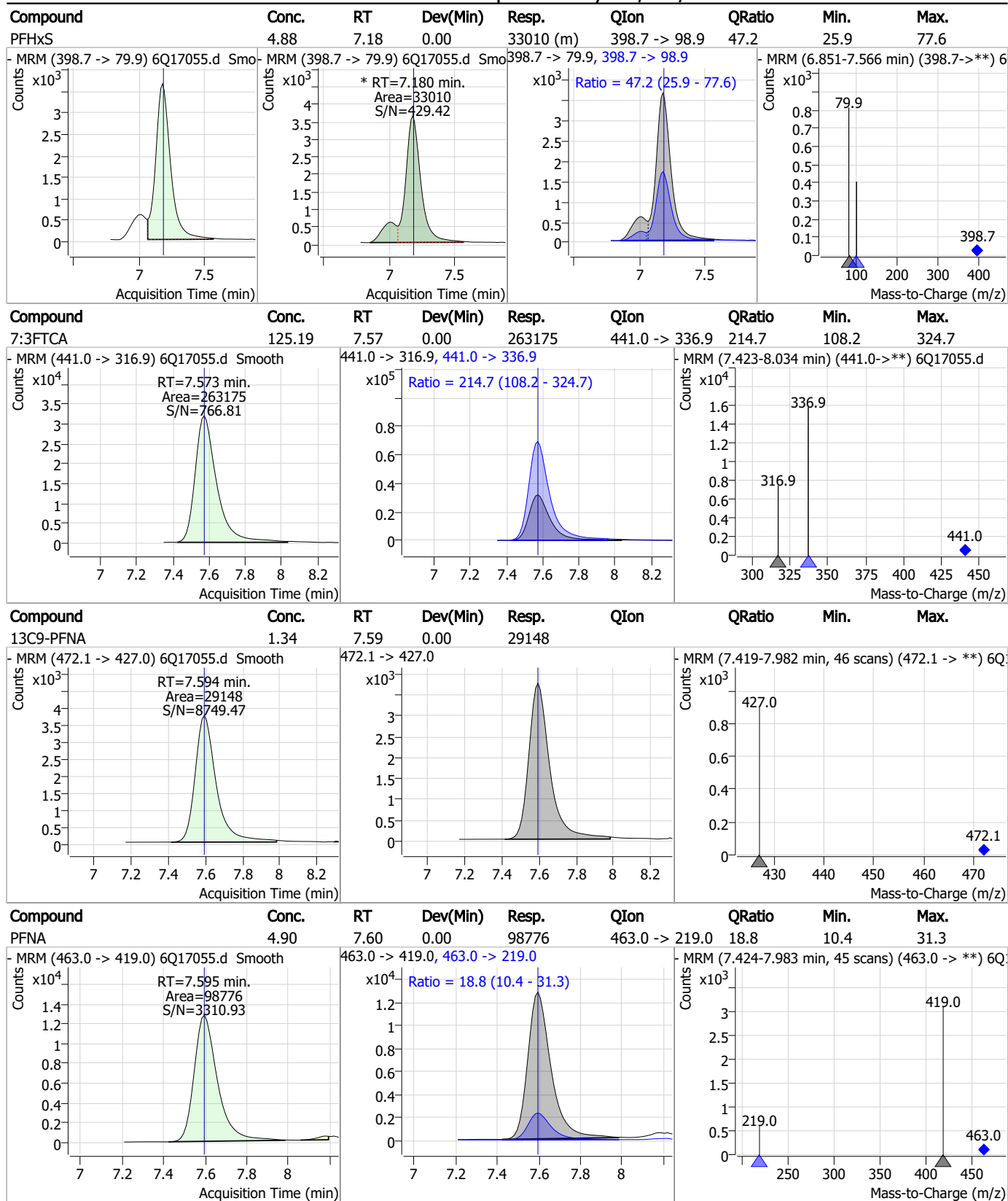
7.7.6
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Perfluorinated Compounds by LC/MS/MS



7.7.6
7

Perfluorinated Compounds by LC/MS/MS



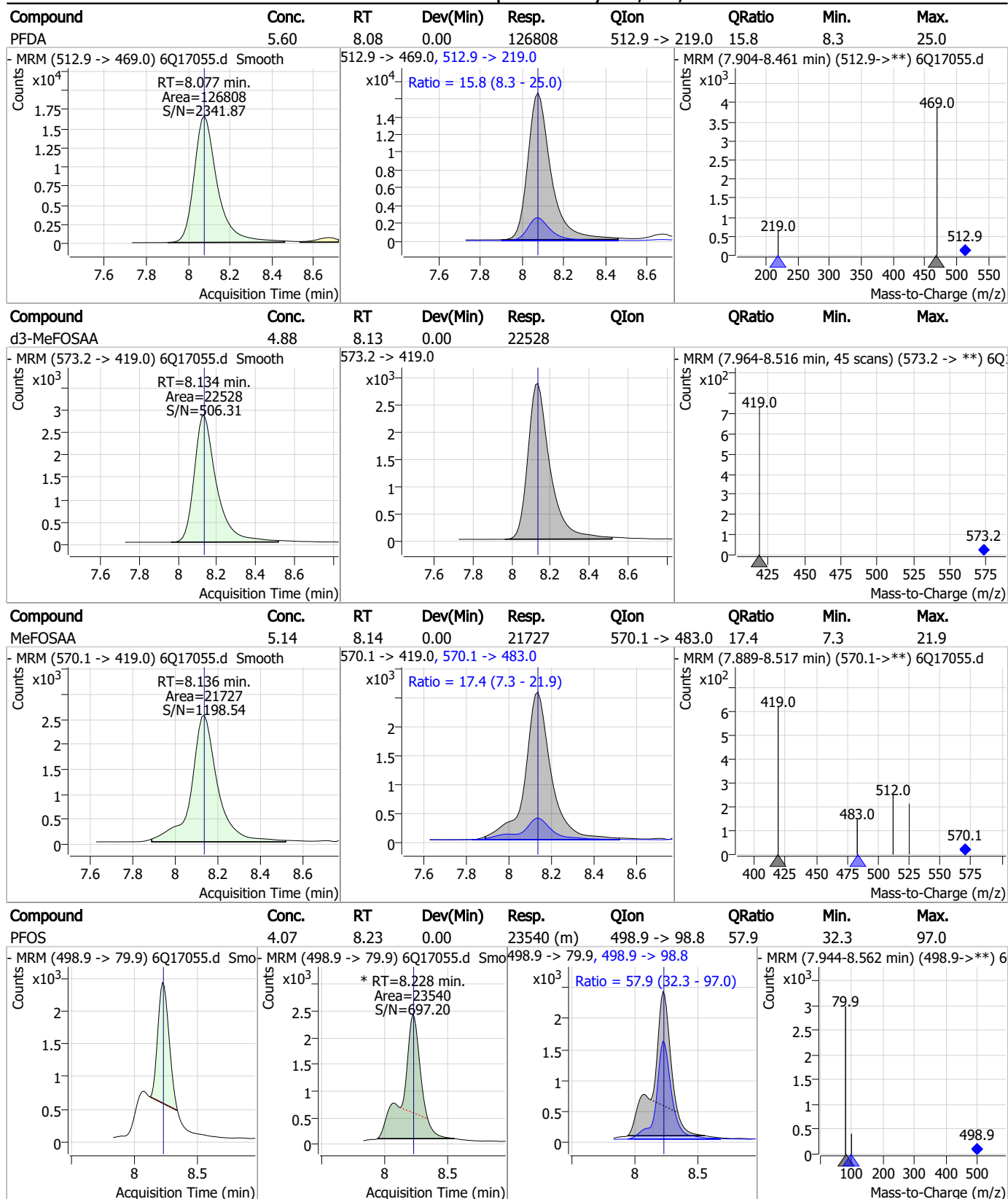
7.7.6
7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	4.46	7.73	0.00	28974	449.0 -> 98.9	46.5	25.4	76.1
13C2-8:2FTS	5.08	7.86	0.00	2934	529.1 -> 80.9			
8:2FTS	18.65	7.87	0.00	32560	527.1 -> 80.8	40.4	20.3	61.0
13C6-PFDA	1.21	8.08	0.00	20839	519.1 -> 474.1			

7.7.6
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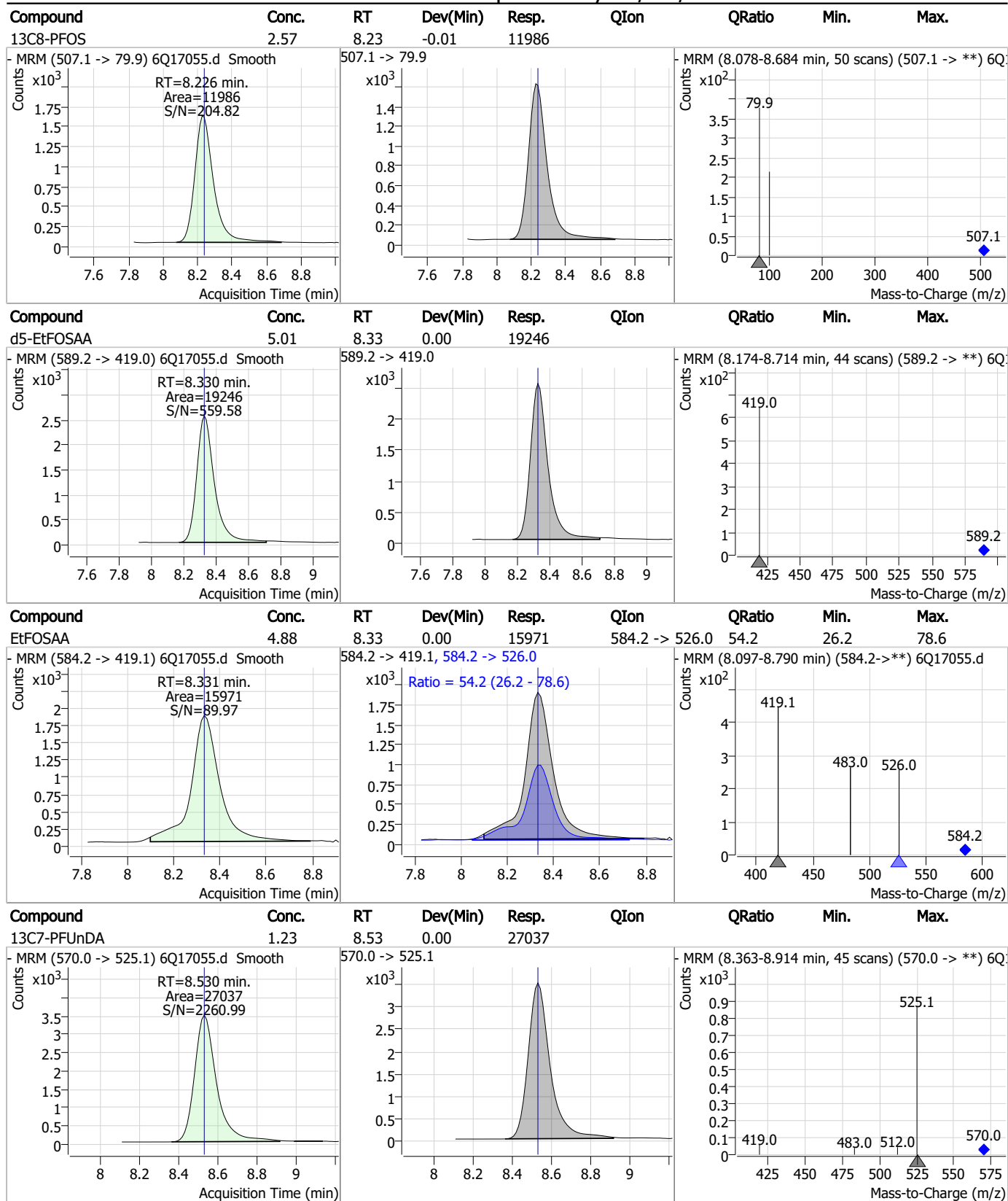
Perfluorinated Compounds by LC/MS/MS



7.7.6

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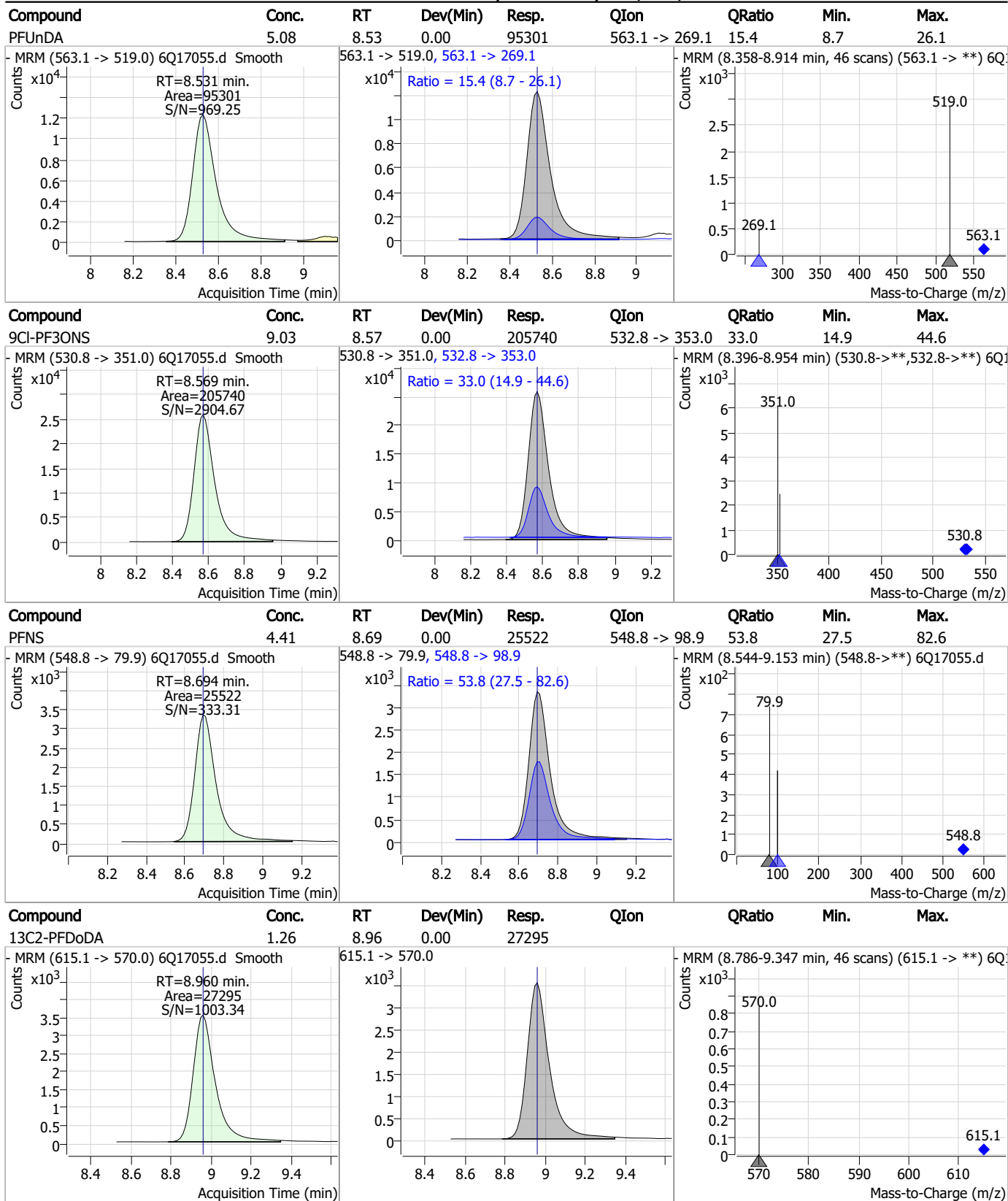
Perfluorinated Compounds by LC/MS/MS



7.7.6

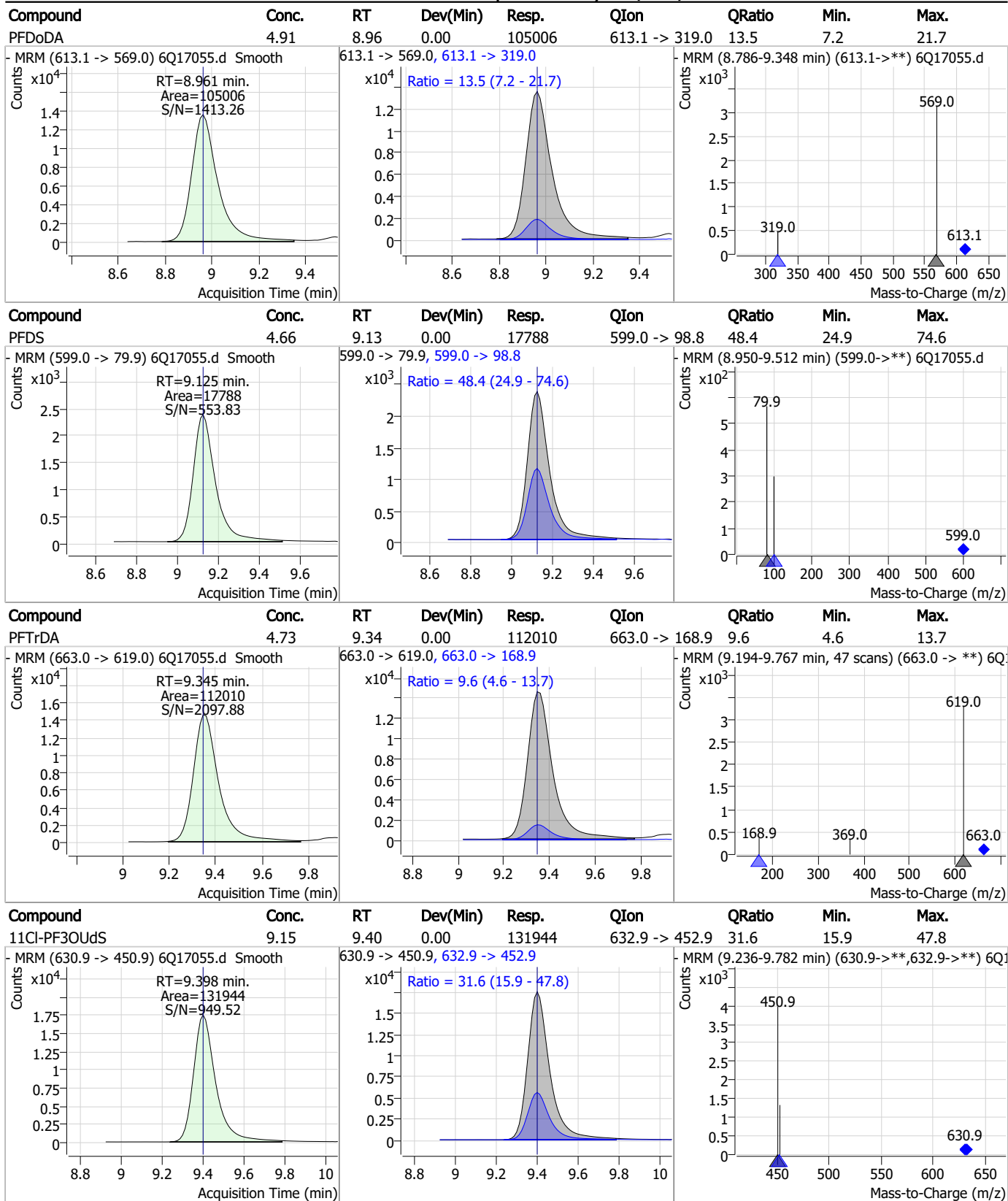
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Perfluorinated Compounds by LC/MS/MS



7.7.6
7

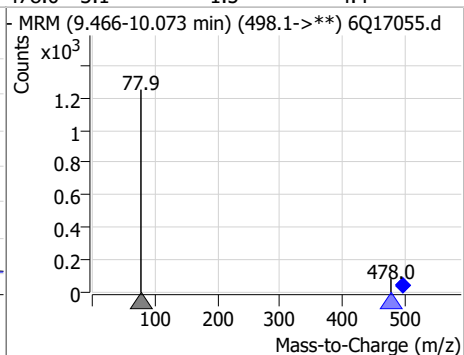
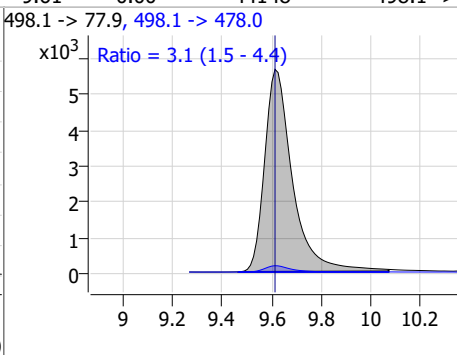
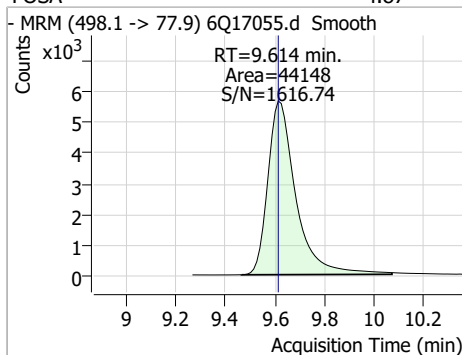
Perfluorinated Compounds by LC/MS/MS



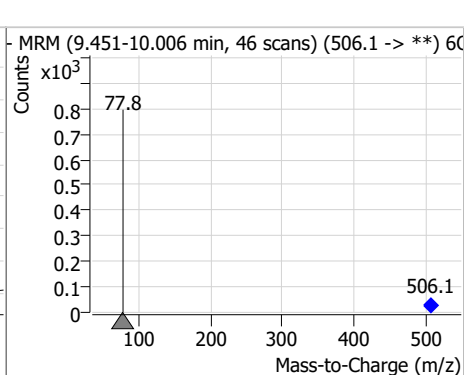
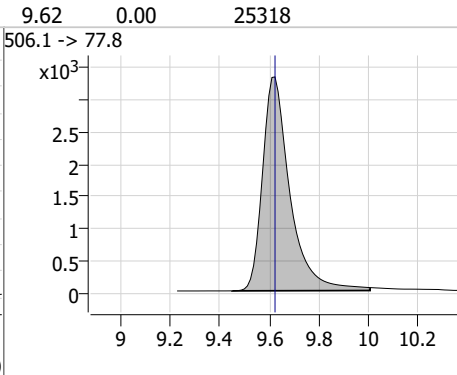
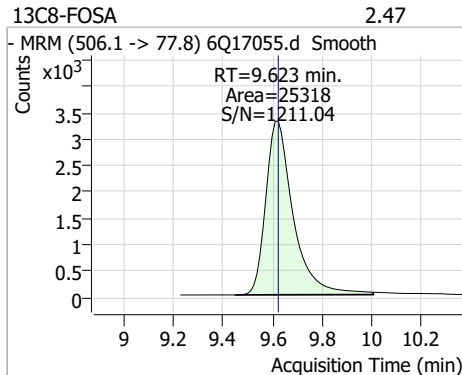
7.7.6
7

Perfluorinated Compounds by LC/MS/MS

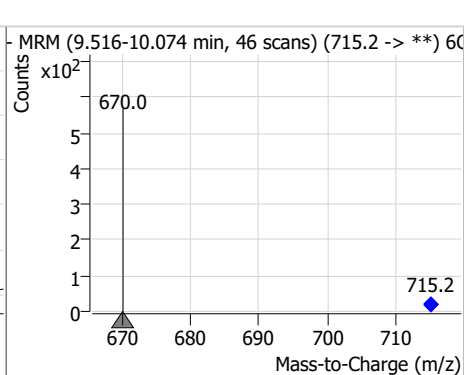
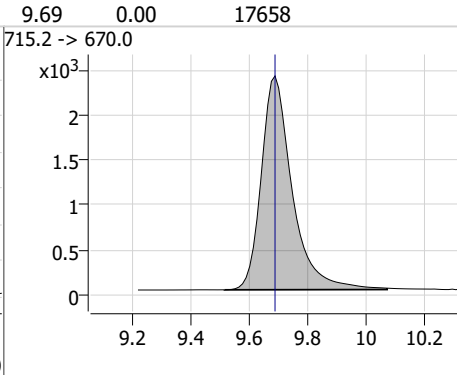
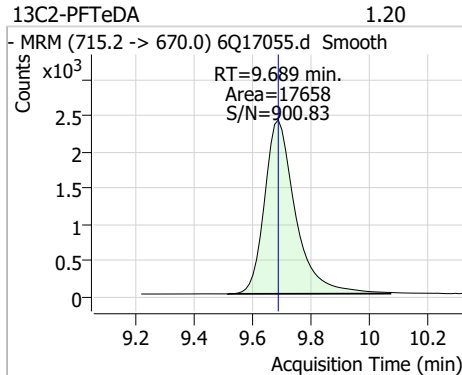
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	4.87	9.61	0.00	44148	498.1 -> 478.0	3.1	1.5	4.4



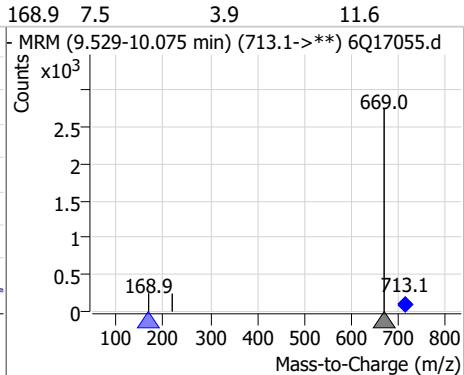
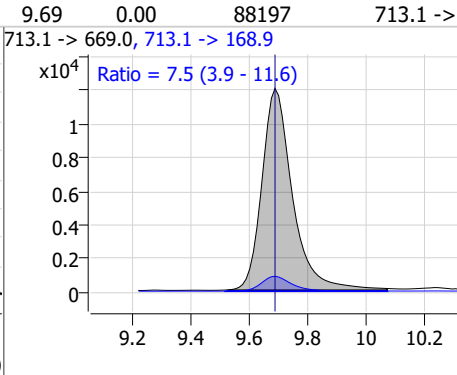
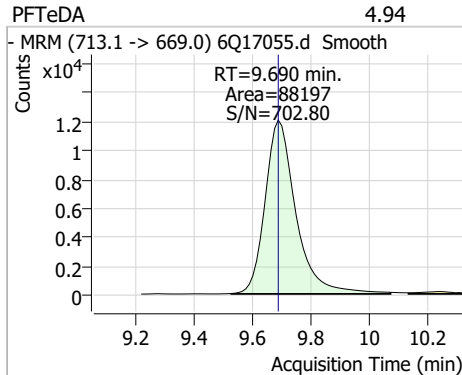
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.47	9.62	0.00	25318				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.20	9.69	0.00	17658				

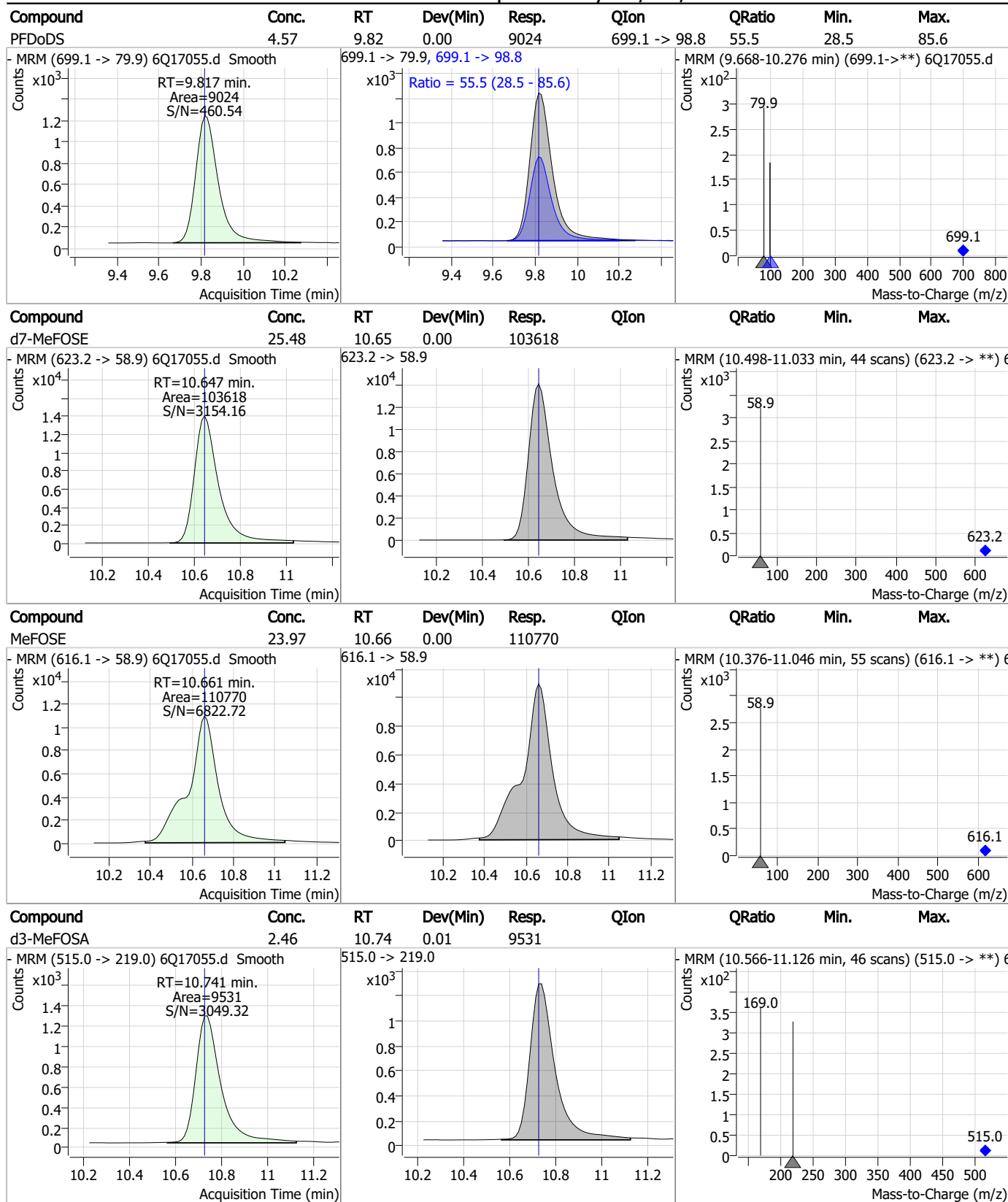


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	4.94	9.69	0.00	88197	713.1 -> 168.9	7.5	3.9	11.6



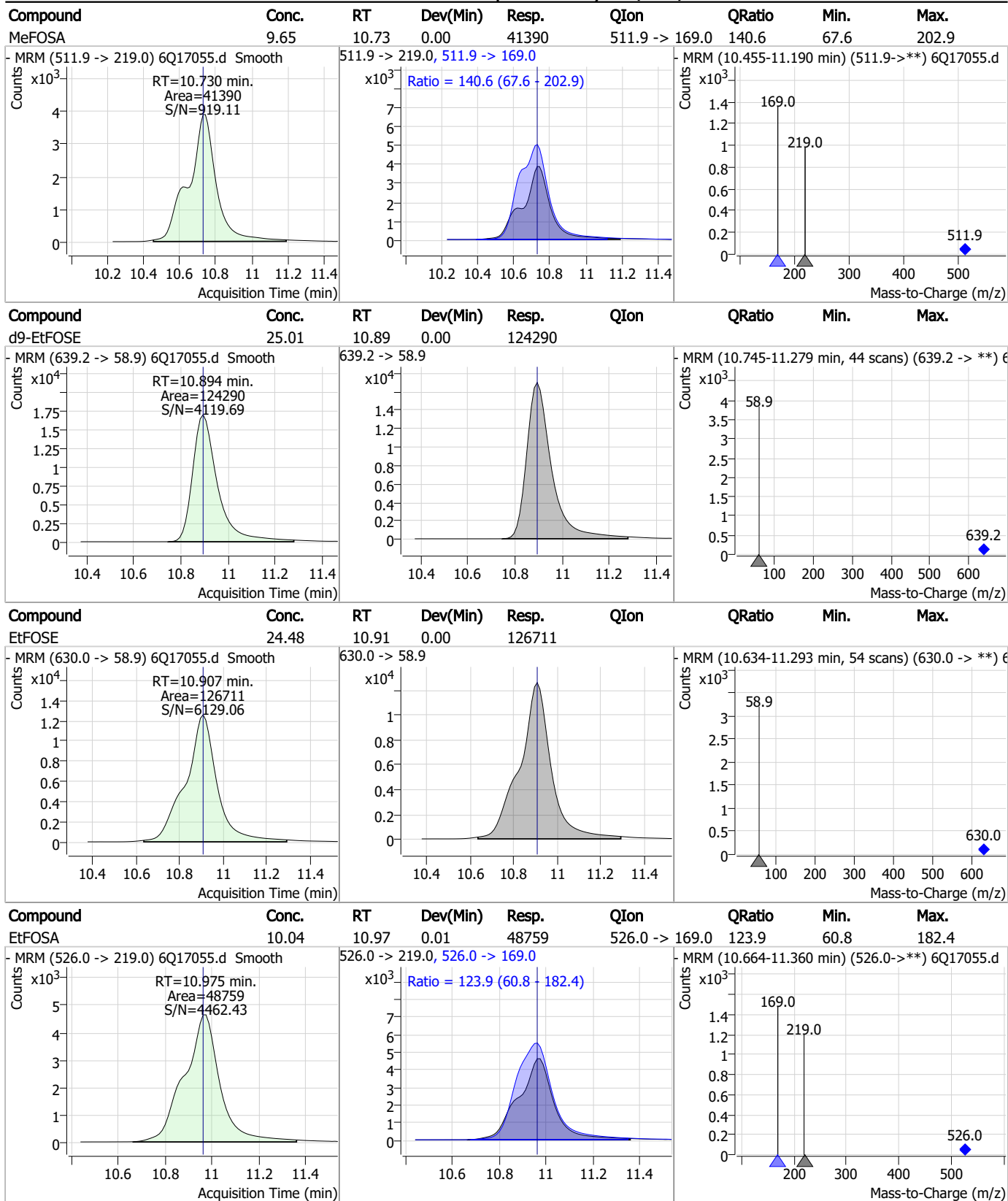
7.7.6
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Perfluorinated Compounds by LC/MS/MS



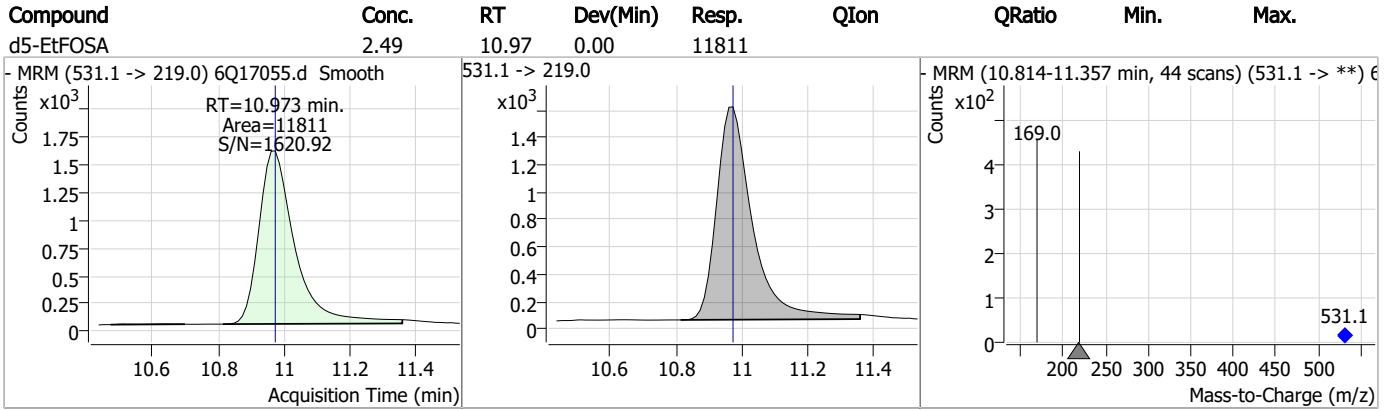
7.7.6
7

Perfluorinated Compounds by LC/MS/MS



7.7.6
7

Perfluorinated Compounds by LC/MS/MS



7.7.6

7

Manual Integration Approval Summary

Sample Number: S6Q258-IC258 Method: EPA DRAFT 1633
Lab FileID: 6Q17055.D Analyst approved: 04/30/23 23:33 Natasha Gumtie
Injection Time: 04/28/23 13:48 Supervisor approved: 04/30/23 23:52 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.23	Split peak

7.7.6.1

7

Manual Integrations
APPROVED
 (compounds with "m" flag)

Norman Farmer
04/30/23 23:52

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17056.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/28/2023 2:02:44 PM
 Sample Name : ic258-6
 Vial : P1-A7
 DA Method File : 1633_042823_S6Q258.quantmethod.xml
 Batch Name : s6q258.batch.bin
 Sample Information : OP96301,S6Q258,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.910	216.8 -> 171.9	182918	10.00 µg/L	0.012
M5-PFPeA	4.283	268.3 -> 223.0	65165	5.00 µg/L	0.012
M5-PFHxA	5.480	318.0 -> 273.0	71261	2.50 µg/L	0.012
M4-PFHpA	6.419	367.1 -> 322.0	59927	2.50 µg/L	0.000
M8-PFOA	7.074	421.1 -> 376.0	81944	2.50 µg/L	0.012
M9-PFNA	7.594	472.1 -> 427.0	26504	1.25 µg/L	0.000
M6-PFDA	8.076	519.1 -> 474.1	20674	1.25 µg/L	0.000
M7-PFUnDA	8.530	570.0 -> 525.1	26640	1.25 µg/L	0.000
M2-PFDoDA	8.960	615.1 -> 570.0	26473	1.25 µg/L	0.000
M2-PFTeDA	9.689	715.2 -> 670.0	17149	1.25 µg/L	0.000
M8-FOSA	9.623	506.1 -> 77.8	24452	2.50 µg/L	0.000
M3-PFBS	5.398	302.1 -> 79.9	23615	2.50 µg/L	0.000
M3-PFHxS	7.179	402.1 -> 79.9	13137	2.50 µg/L	0.000
M8-PFOS	8.239	507.1 -> 79.9	11944	2.50 µg/L	0.000
M2-4:2FTS	5.144	329.1 -> 80.9	2357	5.00 µg/L	0.000
M2-6:2FTS	6.839	429.1 -> 80.9	2735	5.00 µg/L	0.000
M2-8:2FTS	7.877	529.1 -> 80.9	3025	5.00 µg/L	0.012
M3-MeFOSAA	8.134	573.2 -> 419.0	21028	5.00 µg/L	0.000
M3-HFPO-DA	5.845	286.9 -> 168.9	40365	10.00 µg/L	0.000
M5-EtFOSAA	8.342	589.2 -> 419.0	19800	5.00 µg/L	0.012
M7-MeFOSE	10.647	623.2 -> 58.9	97809	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	116301	25.00 µg/L	0.000
M5-EtFOSA	10.960	531.1 -> 219.0	11391	2.50 µg/L	-0.012
M3-MeFOSA	10.728	515.0 -> 219.0	9081	2.50 µg/L	0.000
13C4-PFOS	8.239	502.8 -> 79.9	14625	2.50 µg/L	0.000
13C3-PFBA	2.902	216.0 -> 172.0	78714	5.00 µg/L	0.000
18O2-PFHxS	7.177	403.0 -> 83.9	9890	2.50 µg/L	0.000
13C4-PFOA	7.075	417.1 -> 372.0	89757	2.50 µg/L	0.012
13C2-PFDA	8.076	515.1 -> 470.1	25299	1.25 µg/L	0.000
13C5-PFNA	7.595	468.0 -> 423.0	28282	1.25 µg/L	0.000
13C2-PFHxA	5.482	315.1 -> 270.0	59565	2.50 µg/L	0.012
System Monitoring Compounds					
13C2-4:2FTS	5.144	329.1 -> 80.9	2357	5.18 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.7%		
13C2-6:2FTS	6.839	429.1 -> 80.9	2735	4.96 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.1%		
13C2-8:2FTS	7.877	529.1 -> 80.9	3025	5.10 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.9%		
13C2-PFDoDA	8.960	615.1 -> 570.0	26473	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.6%		
13C2-PFTeDA	9.689	715.2 -> 670.0	17149	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.3%		
13C3-PFBS	5.398	302.1 -> 79.9	23615	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.5%		
13C3-PFHxS	7.179	402.1 -> 79.9	13137	2.50 µg/L	0.000

7.7.7
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C4-PFBA	2.910	216.8 -> 171.9	182918	10.06 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C4-PFHpA	6.419	367.1 -> 322.0	59927	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C5-PFHxA	5.480	318.0 -> 273.0	71261	2.48 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C5-PFPeA	4.283	268.3 -> 223.0	65165	4.90 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.9%	
13C6-PFDA	8.076	519.1 -> 474.1	20674	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C7-PFUnDA	8.530	570.0 -> 525.1	26640	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C8-FOSA	9.623	506.1 -> 77.8	24452	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C8-PFOA	7.074	421.1 -> 376.0	81944	2.37 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.6%	
13C8-PFOS	8.239	507.1 -> 79.9	11944	2.71 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.4%	
13C9-PFNA	7.594	472.1 -> 427.0	26504	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.3%	
d3-MeFOSAA	8.134	573.2 -> 419.0	21028	4.82 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.5%	
13C3-HFPO-DA	5.845	286.9 -> 168.9	40365	9.57 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.7%	
d3-MeFOSA	10.728	515.0 -> 219.0	9081	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.4%	
d5-EtFOSAA	8.342	589.2 -> 419.0	19800	5.47 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 109.3%	
d7-MeFOSE	10.647	623.2 -> 58.9	97809	25.48 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.9%	
d9-EtFOSE	10.894	639.2 -> 58.9	116301	24.80 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.2%	
d5-EtFOSA	10.960	531.1 -> 219.0	11391	2.54 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.6%	
Target Compounds					QValue
4:2FTS	5.145	327.1 -> 307.0	164201	46.05 µg/L	99
		327.1 -> 80.9	61547		
6:2FTS	6.839	427.1 -> 407.0	150100	49.89 µg/L	95
		427.1 -> 80.9	48901		
8:2FTS	7.865	527.1 -> 507.0	90493	50.28 µg/L	97
		527.1 -> 80.8	35190		
EtFOSAA	8.343	584.2 -> 419.1	41294	12.27 µg/L	96
		584.2 -> 526.0	20564		
FOSA	9.614	498.1 -> 77.9	116518	13.30 µg/L	100
		498.1 -> 478.0	3568		
MeFOSAA	8.136	570.1 -> 419.0	56008	14.18 µg/L	92
		570.1 -> 483.0	10033		
PFBA	2.906	212.8 -> 168.9	325626	53.08 µg/L	100
PFBS	5.412	298.7 -> 79.9	123146	11.62 µg/L	94
		298.7 -> 98.8	45951		
PFDA	8.077	512.9 -> 469.0	310432	13.82 µg/L	99
		512.9 -> 219.0	49983		
PFDoDA	8.961	613.1 -> 569.0	262334	12.64 µg/L	99
		613.1 -> 319.0	36448		
PFDS	9.125	599.0 -> 79.9	47477	12.47 µg/L	99

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	23285			
PFHpA	6.432	363.1 -> 319.0	383701	12.97	µg/L	96
		363.1 -> 169.0	63514			
PFHpS	7.734	449.0 -> 79.9	77309	11.94	µg/L	96
		449.0 -> 98.9	37059			
PFHxA	5.483	313.0 -> 269.0	351148	12.46	µg/L	99
		313.0 -> 118.9	16863			
PFHxS	7.180	398.7 -> 79.9	83675	11.69	µg/L	m 93
		398.7 -> 98.9	39063			
PFNA	7.595	463.0 -> 419.0	245308	13.38	µg/L	97
		463.0 -> 219.0	48340			
PFNS	8.694	548.8 -> 79.9	73363	12.73	µg/L	91
		548.8 -> 98.9	35503			
PFOA	7.076	413.0 -> 369.0	521413	13.24	µg/L	99
		413.0 -> 169.0	88911			
PFOS	8.240	498.9 -> 79.9	64796	11.23	µg/L	m 89
		498.9 -> 98.8	36229			
PFPeA	4.273	263.0 -> 219.0	467679	26.35	µg/L	100
PFPeS	6.484	349.1 -> 79.9	93454	12.50	µg/L	92
		349.1 -> 98.9	40304			
PFTeDA	9.690	713.1 -> 669.0	218682	12.62	µg/L	100
		713.1 -> 168.9	16819			
PFTrDA	9.345	663.0 -> 619.0	293383	12.77	µg/L	100
		663.0 -> 168.9	27108			
PFUnDA	8.531	563.1 -> 519.0	227104	12.29	µg/L	98
		563.1 -> 269.1	37957			
11Cl-PF3OUdS	9.398	630.9 -> 450.9	362990	26.20	µg/L	97
		632.9 -> 452.9	109902			
9Cl-PF3ONS	8.569	530.8 -> 351.0	570836	26.06	µg/L	100
		532.8 -> 353.0	169030			
ADONA	6.681	376.9 -> 250.9	1545088	25.34	µg/L	99
		376.9 -> 84.8	408733			
HFPO-DA	5.846	284.9 -> 168.9	101426	26.53	µg/L	95
		284.9 -> 184.9	12065			
3:3FTCA	3.784	241.0 -> 177.0	72254	65.10	µg/L	97
		241.0 -> 117.0	8741			
5:3FTCA	6.160	341.0 -> 237.1	1457959	319.75	µg/L	93
		341.0 -> 217.0	1062147			
7:3FTCA	7.573	441.0 -> 316.9	627064	302.73	µg/L	91
		441.0 -> 336.9	1451519			
EtFOSA	10.962	526.0 -> 219.0	119231	25.47	µg/L	92
		526.0 -> 169.0	155669			
EtFOSE	10.907	630.0 -> 58.9	329424	68.02	µg/L	100
MeFOSA	10.730	511.9 -> 219.0	111843	27.37	µg/L	m 100
		511.9 -> 169.0	151496			
MeFOSE	10.661	616.1 -> 58.9	285034	65.35	µg/L	100
PFDoDS	9.817	699.1 -> 79.9	23827	12.10	µg/L	96
		699.1 -> 98.8	12919			
NFDHA	5.363	295.0 -> 201.0	78262	25.63	µg/L	100
		295.0 -> 84.9	19079			
PFMBA	4.687	279.0 -> 85.1	317585	26.67	µg/L	100
PFMPA	3.438	229.0 -> 84.9	234079	26.35	µg/L	100
PFEESA	5.949	314.8 -> 134.9	821610	23.11	µg/L	99
		314.8 -> 82.9	28517			

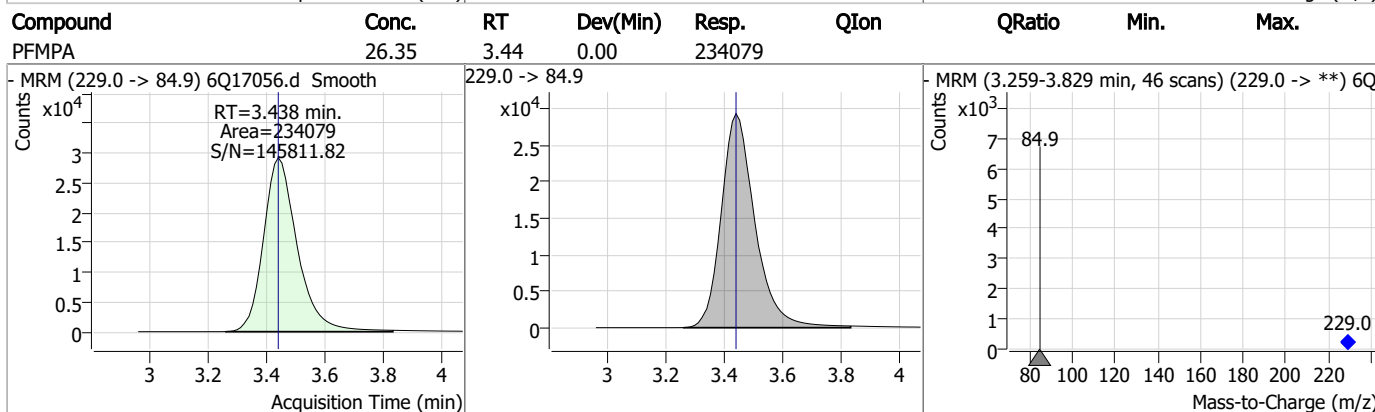
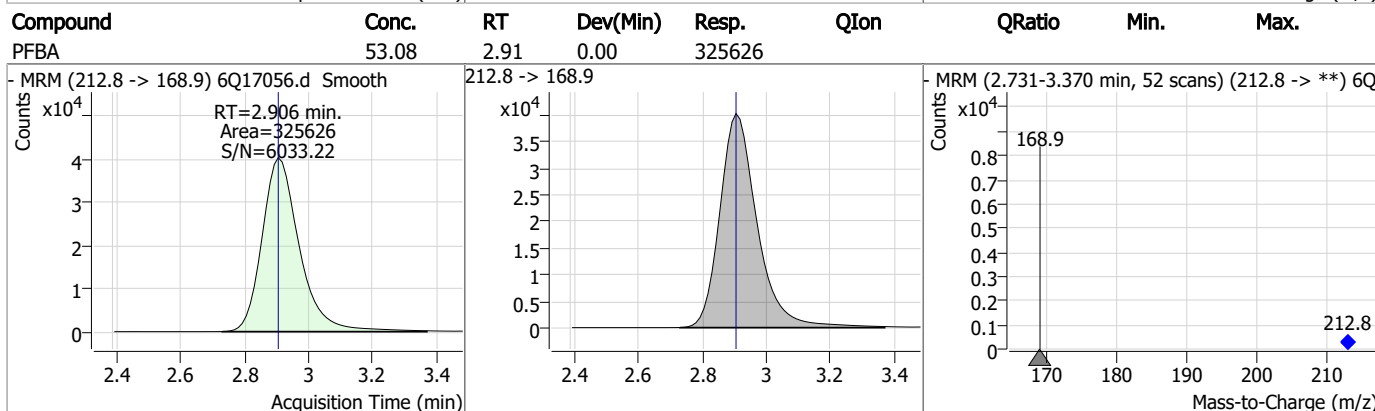
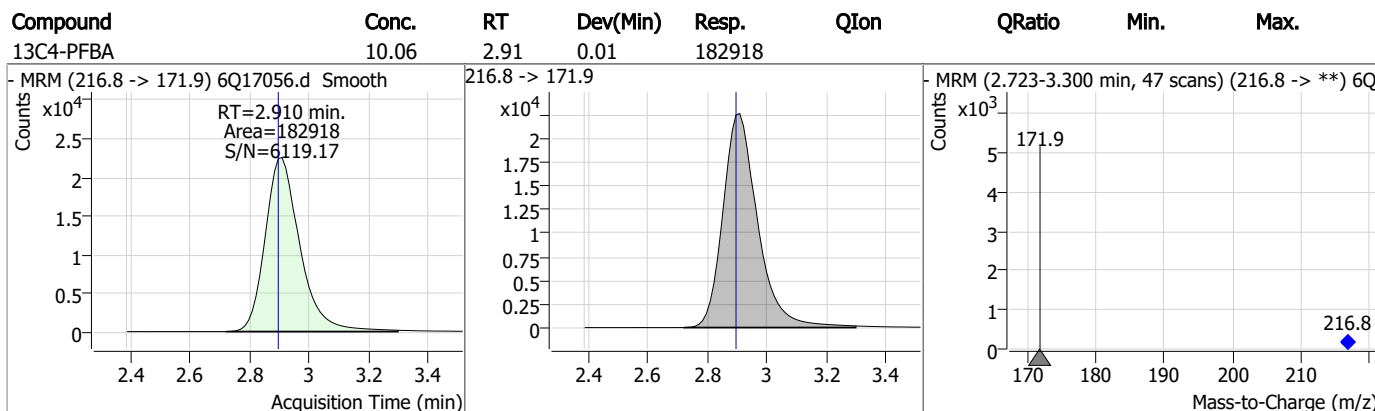
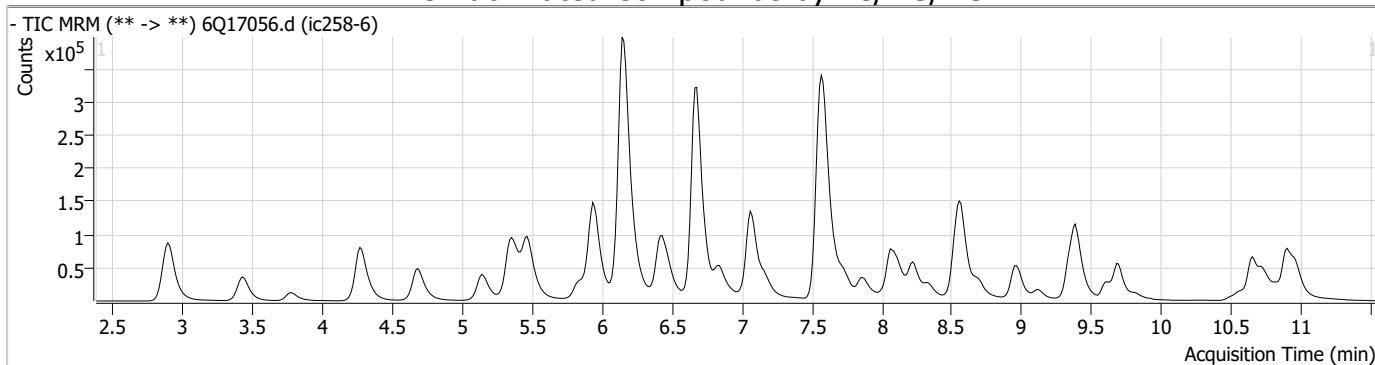
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.7
7

Perfluorinated Compounds by LC/MS/MS



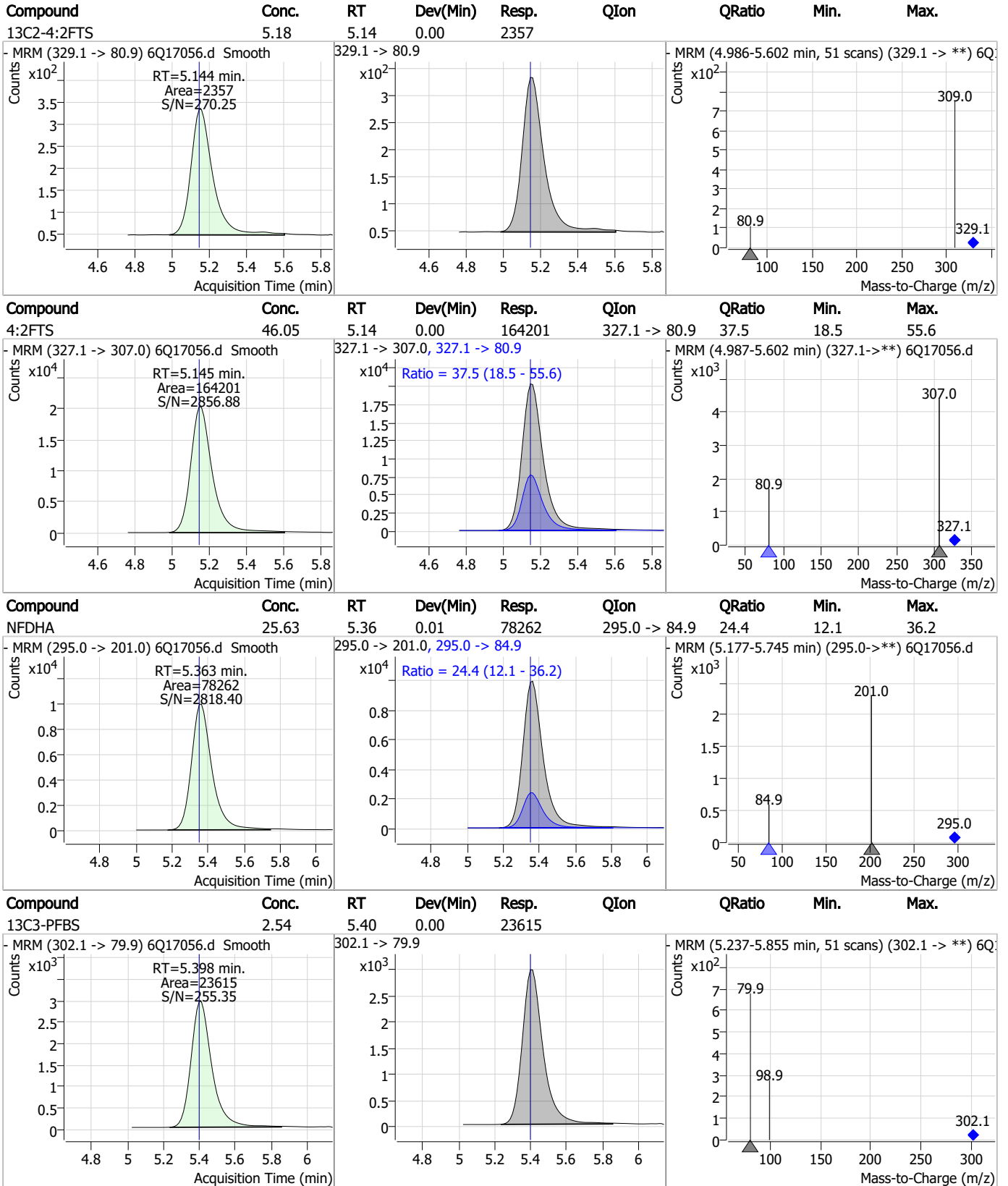
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	65.10	3.78	0.00	72254	241.0 -> 117.0	12.1	6.7	20.0
- MRM (241.0 -> 177.0) 6Q17056.d Smooth			241.0 -> 177.0, 241.0 -> 117.0			- MRM (3.609-4.178 min) (241.0->**) 6Q17056.d		
13C5-PFPeA	4.90	4.28	0.01	65165				
- MRM (268.3 -> 223.0) 6Q17056.d Smooth			268.3 -> 223.0			- MRM (4.095-4.676 min, 47 scans) (268.3 -> **) 6Q17056.d		
PFPeA	26.35	4.27	0.00	467679				
- MRM (263.0 -> 219.0) 6Q17056.d Smooth			263.0 -> 219.0			- MRM (4.110-4.740 min, 51 scans) (263.0 -> **) 6Q17056.d		
PFMBA	26.67	4.69	0.00	317585				
- MRM (279.0 -> 85.1) 6Q17056.d Smooth			279.0 -> 85.1			- MRM (4.512-5.153 min, 52 scans) (279.0 -> **) 6Q17056.d		

7.7.7

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Perfluorinated Compounds by LC/MS/MS

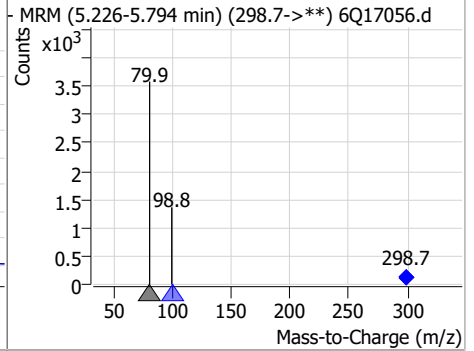
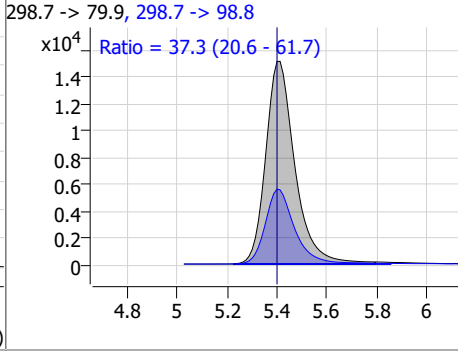
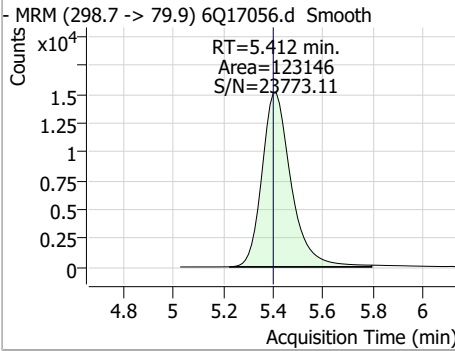


7.7.7

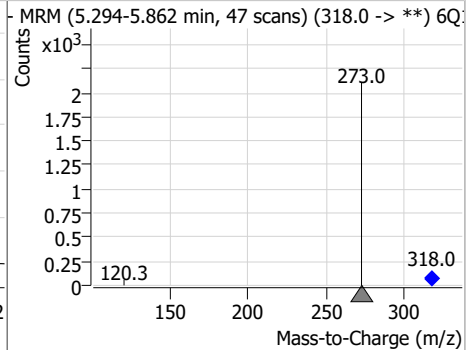
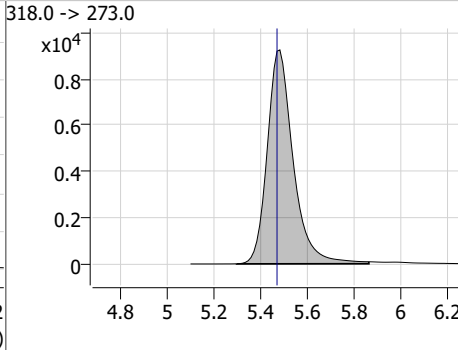
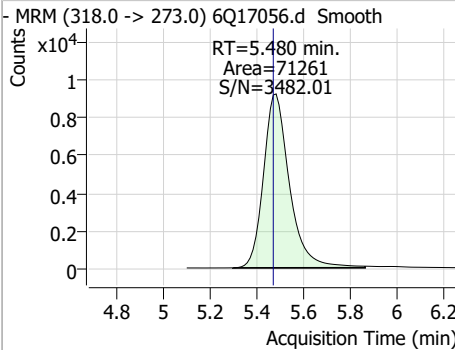
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Perfluorinated Compounds by LC/MS/MS

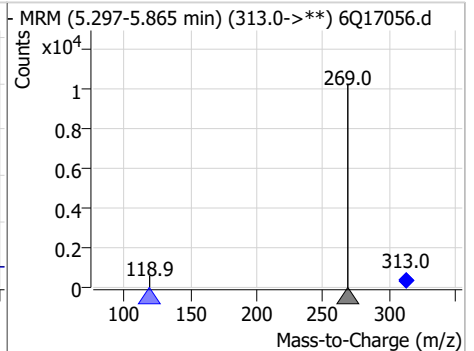
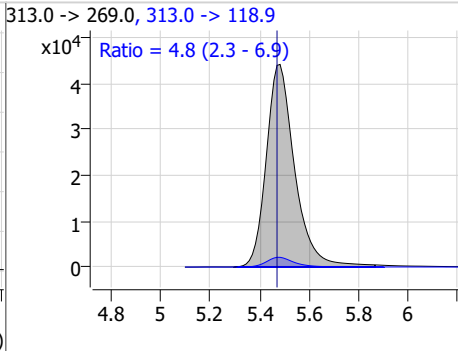
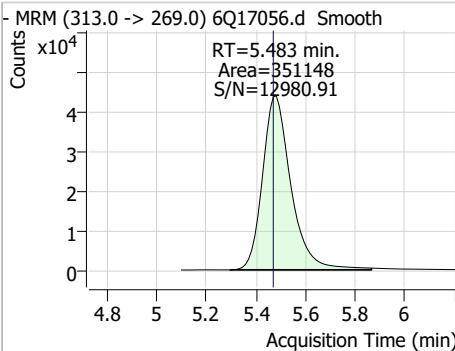
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	11.62	5.41	0.01	123146	298.7 -> 98.8	37.3	20.6	61.7



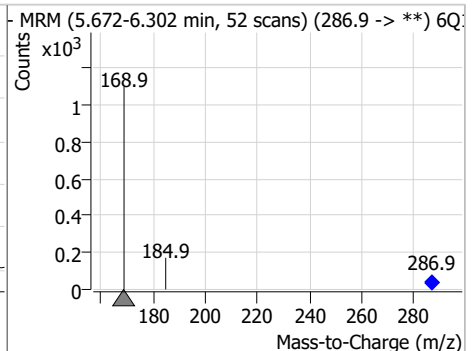
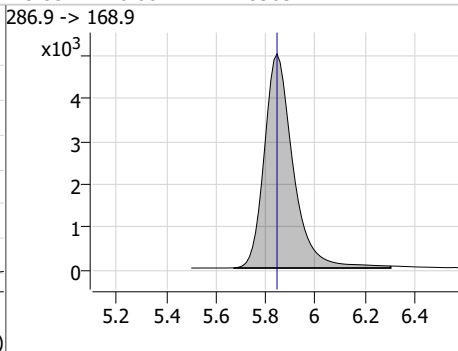
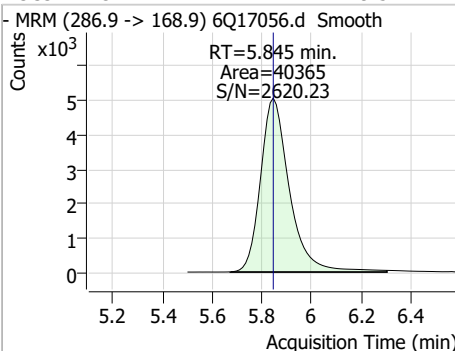
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.48	5.48	0.01	71261				



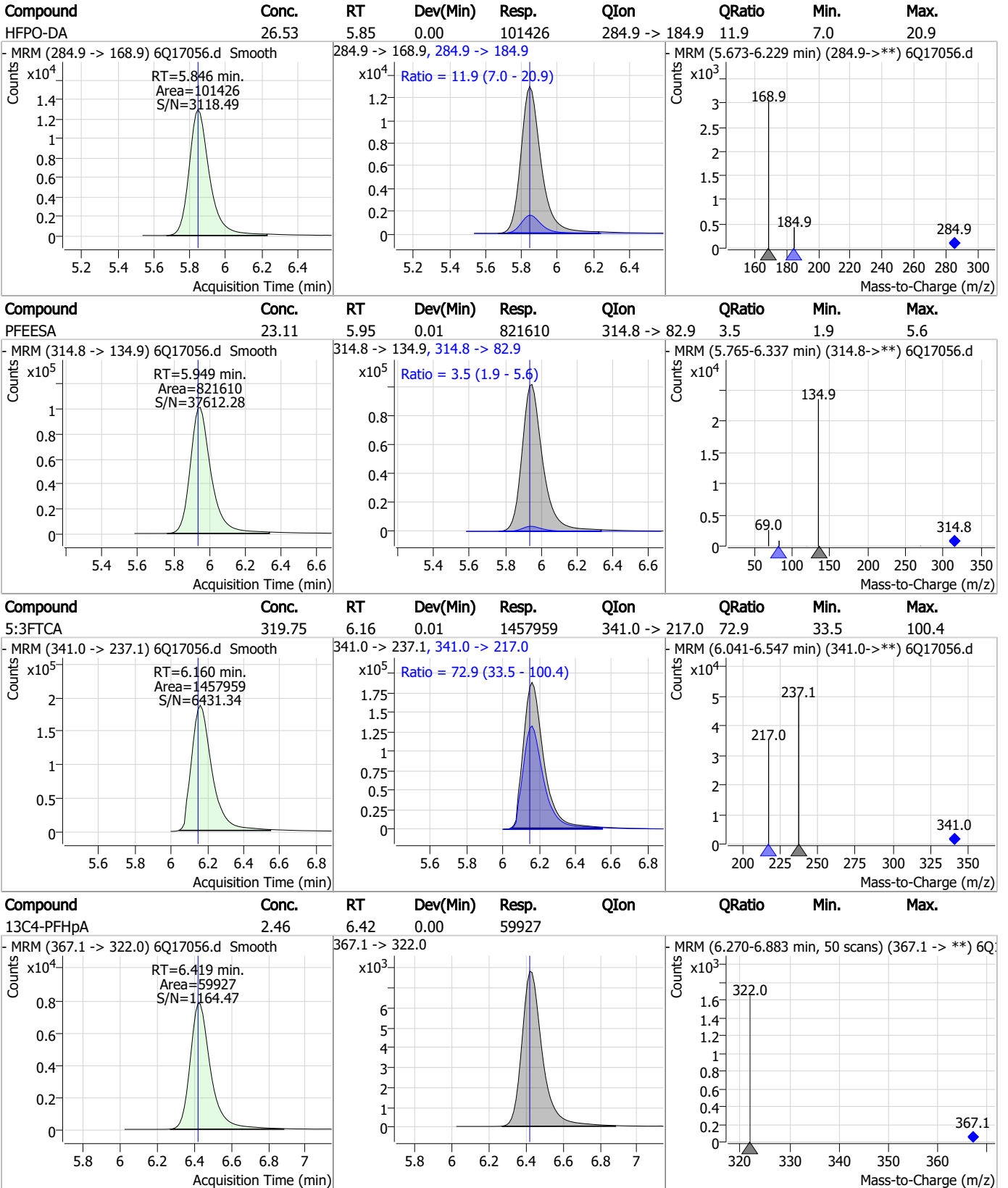
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	12.46	5.48	0.01	351148	313.0 -> 118.9	4.8	2.3	6.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.57	5.85	0.00	40365				



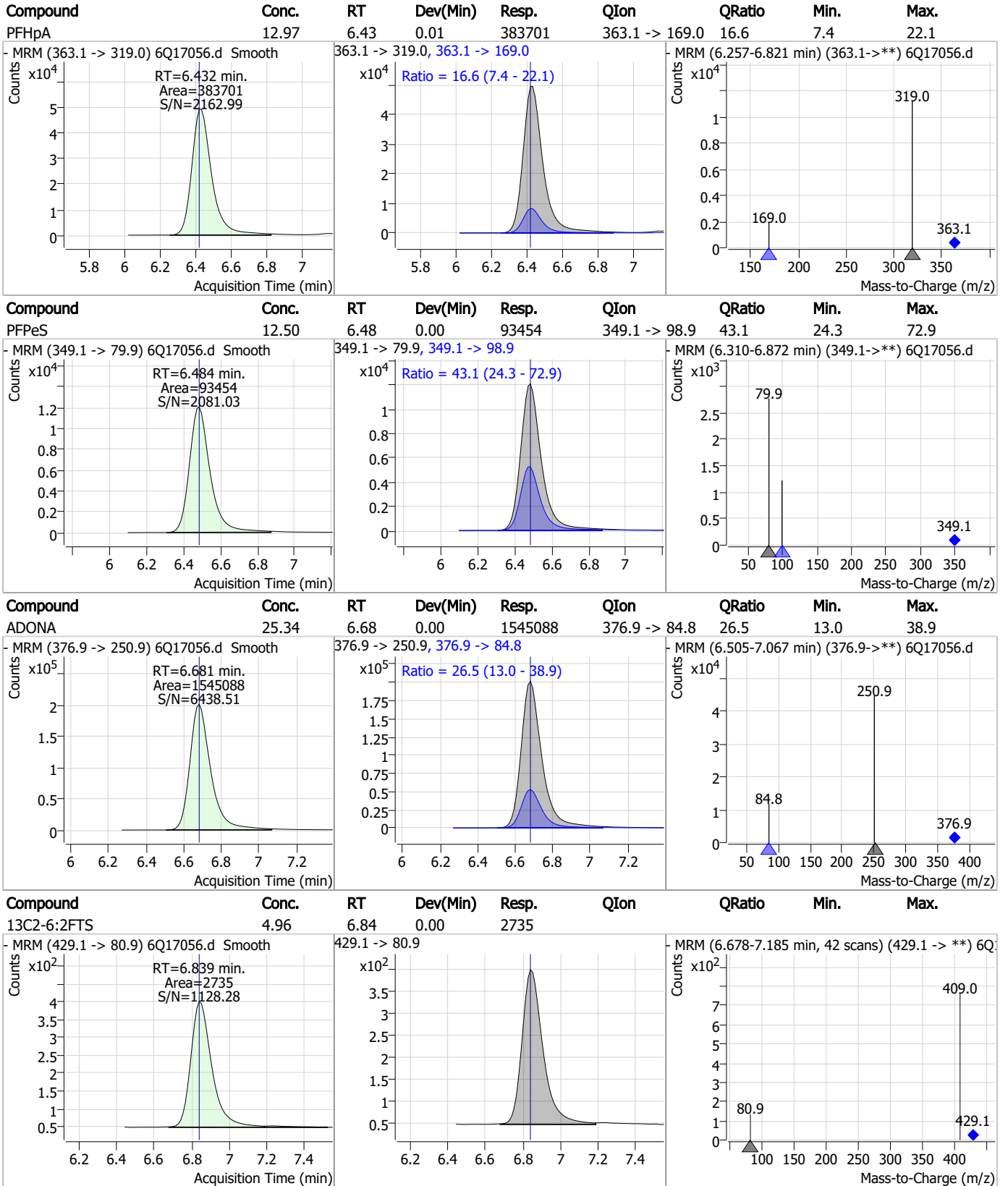
Perfluorinated Compounds by LC/MS/MS



7.7.7

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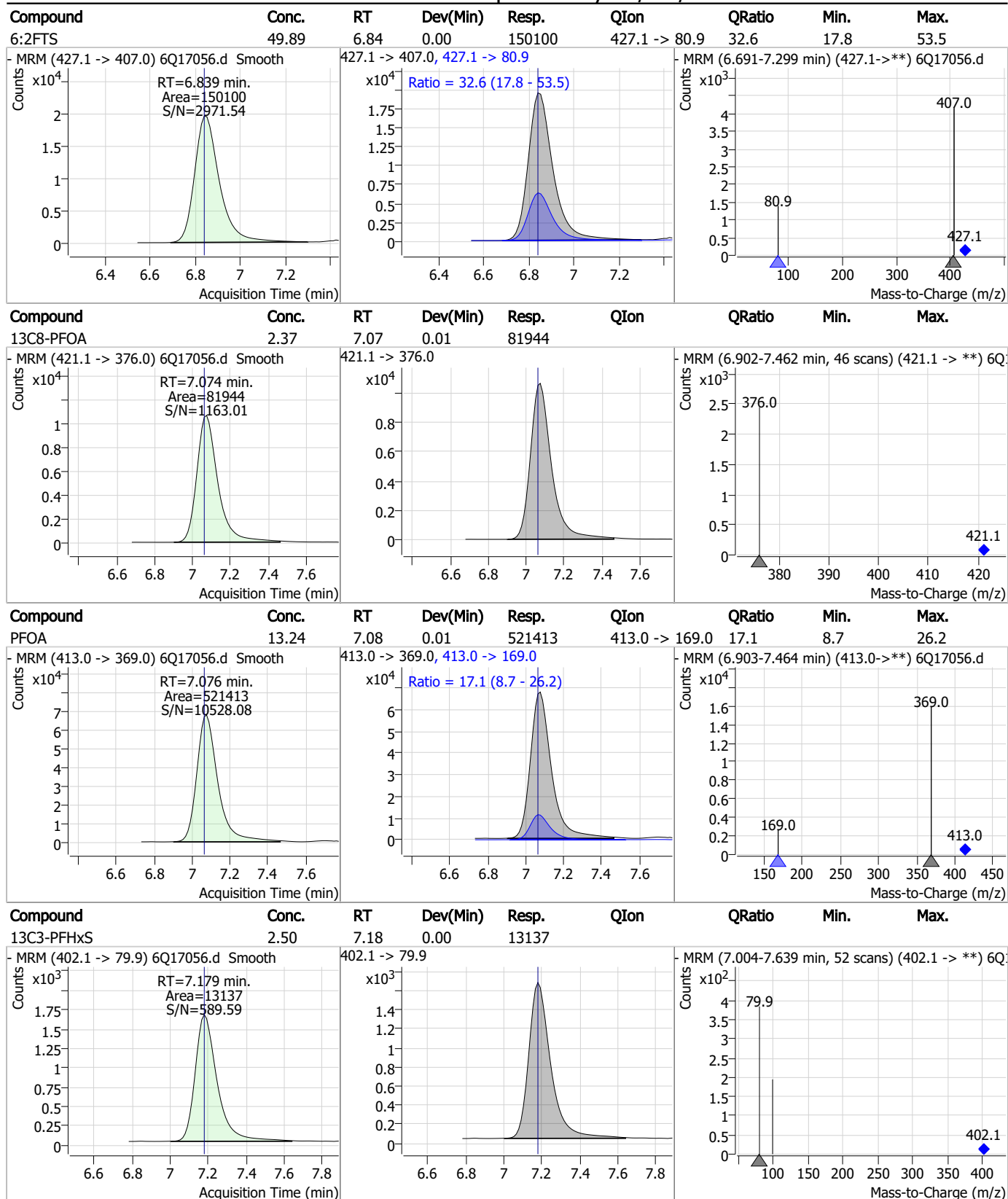
Perfluorinated Compounds by LC/MS/MS



7.7.7

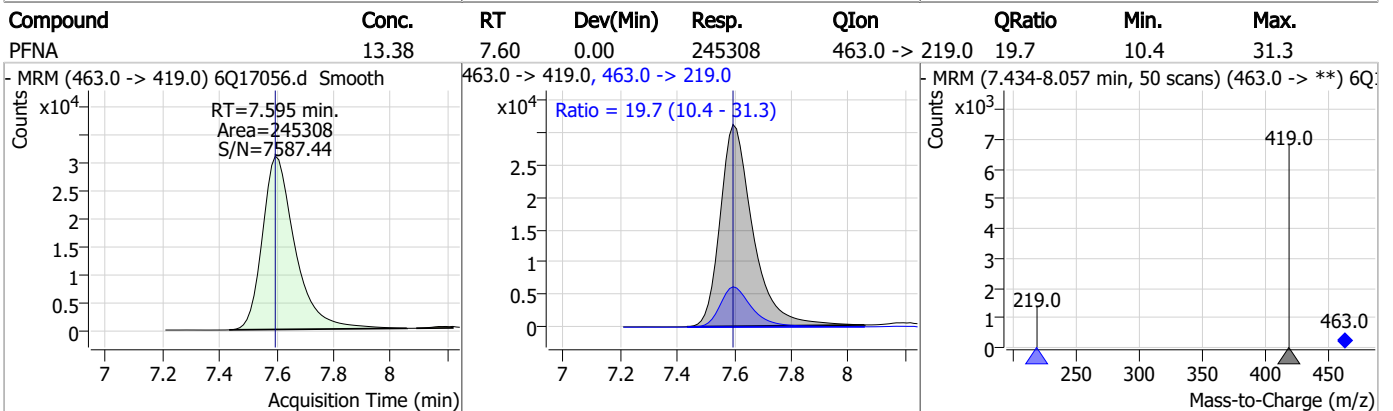
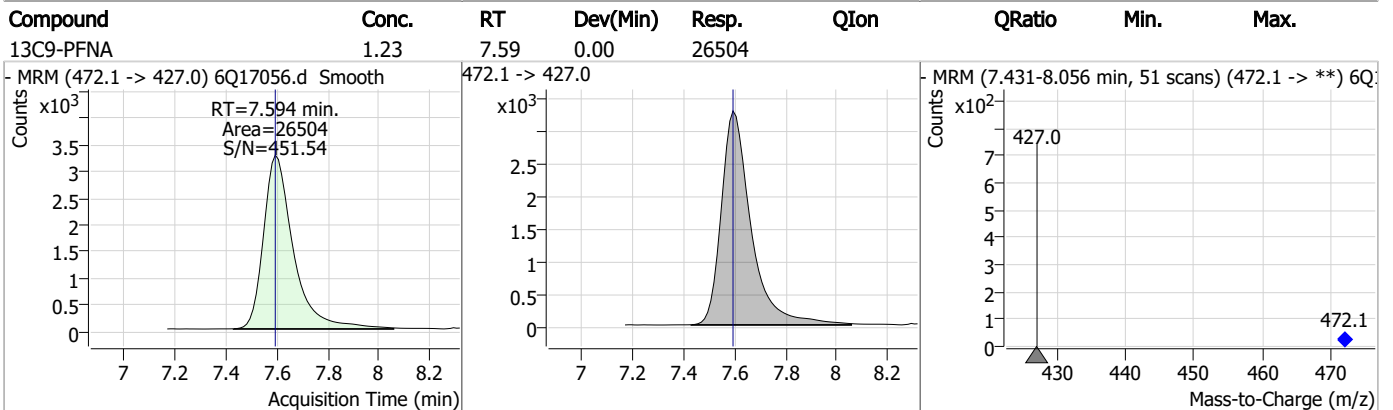
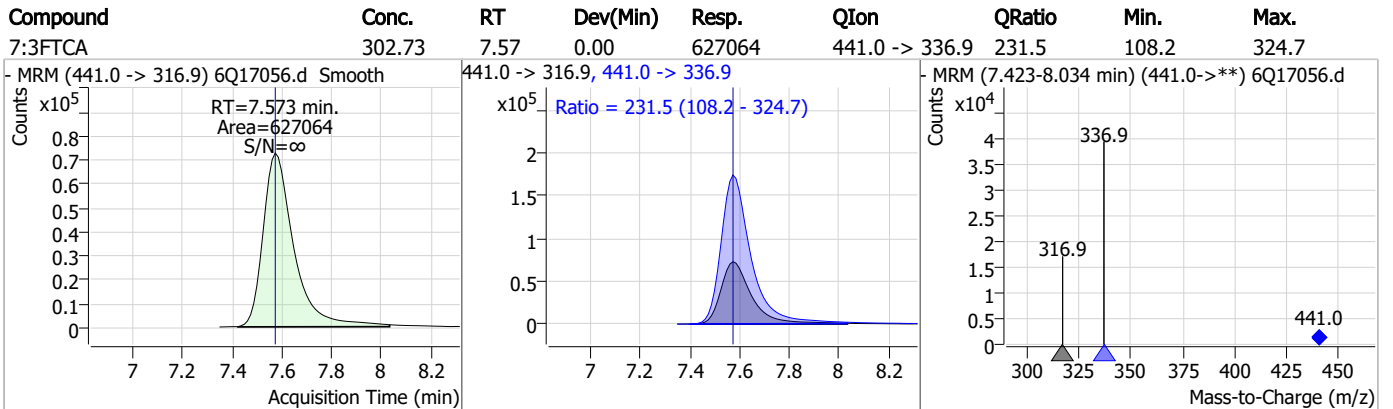
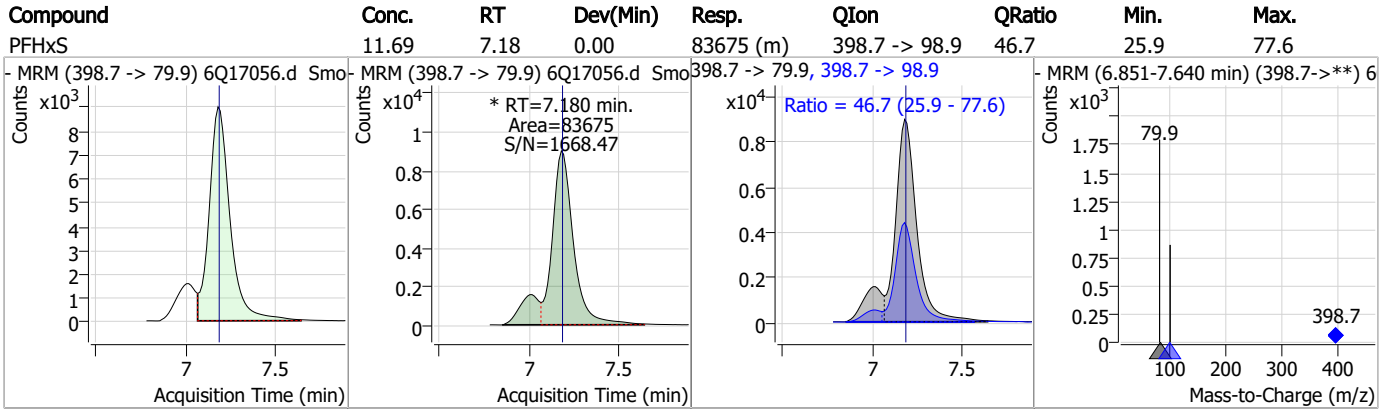
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Perfluorinated Compounds by LC/MS/MS

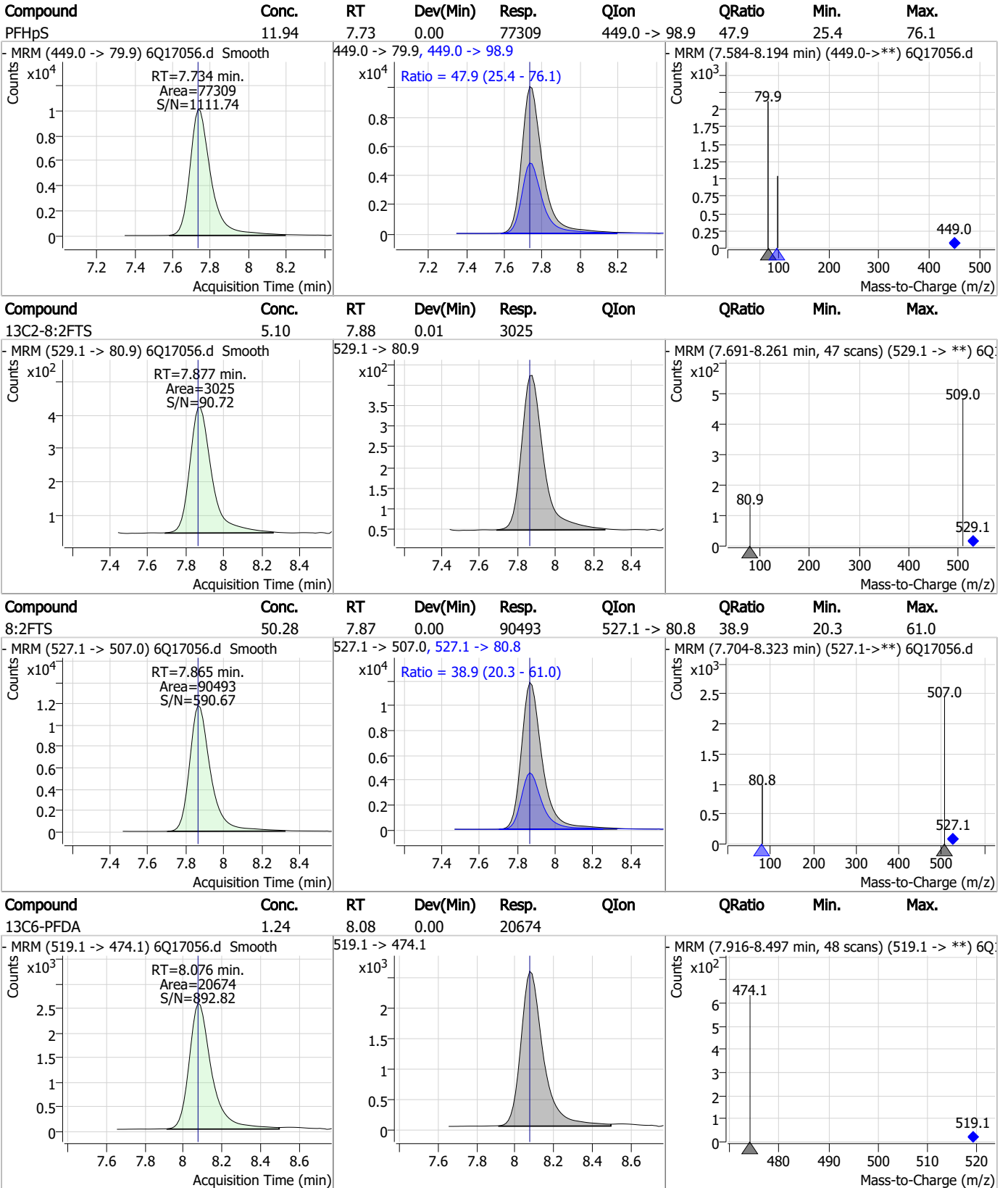


7.7.7

Perfluorinated Compounds by LC/MS/MS



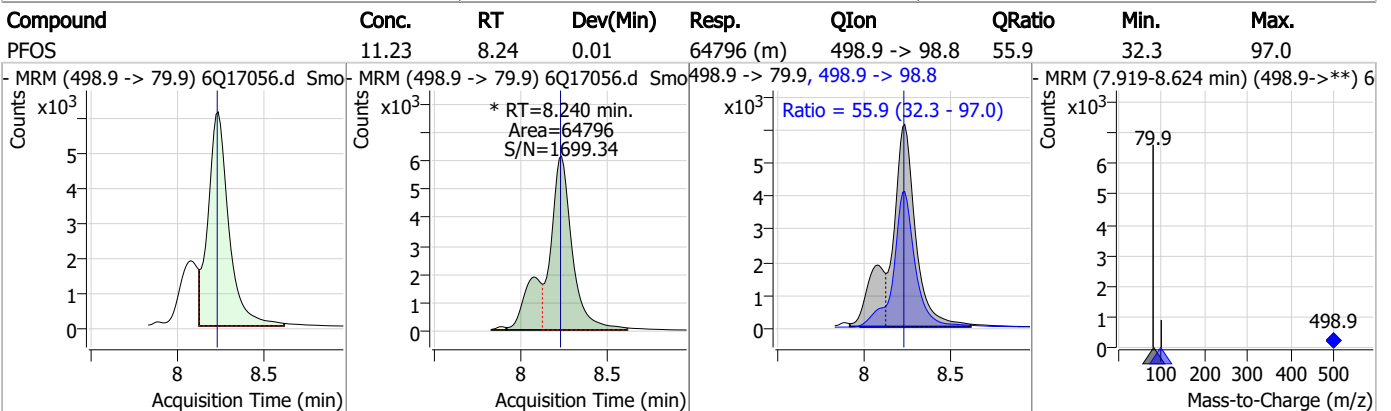
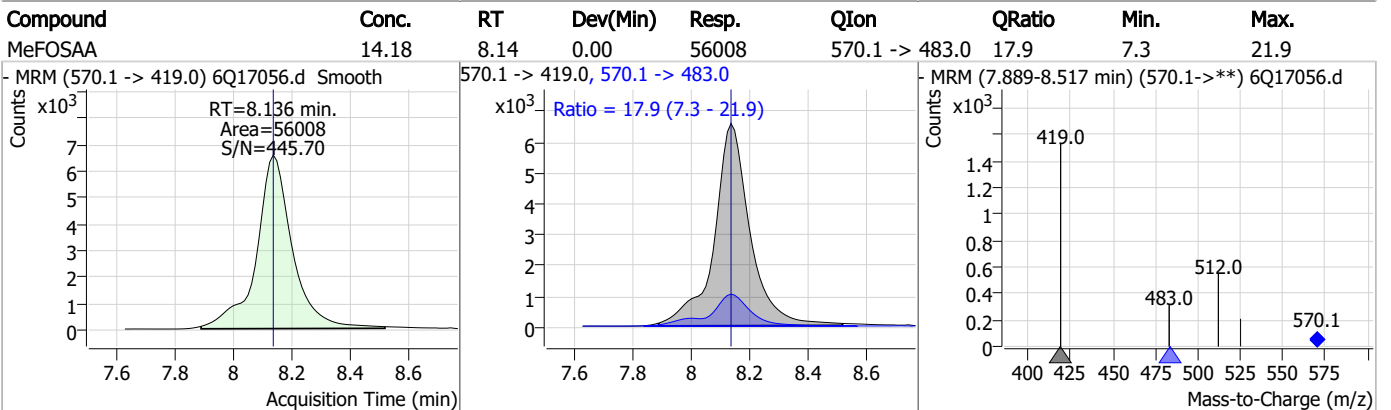
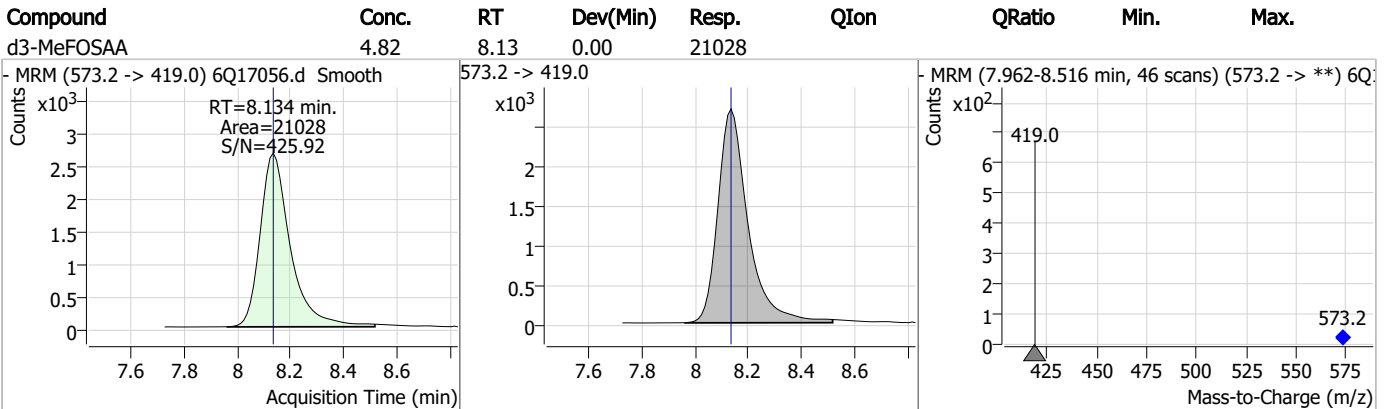
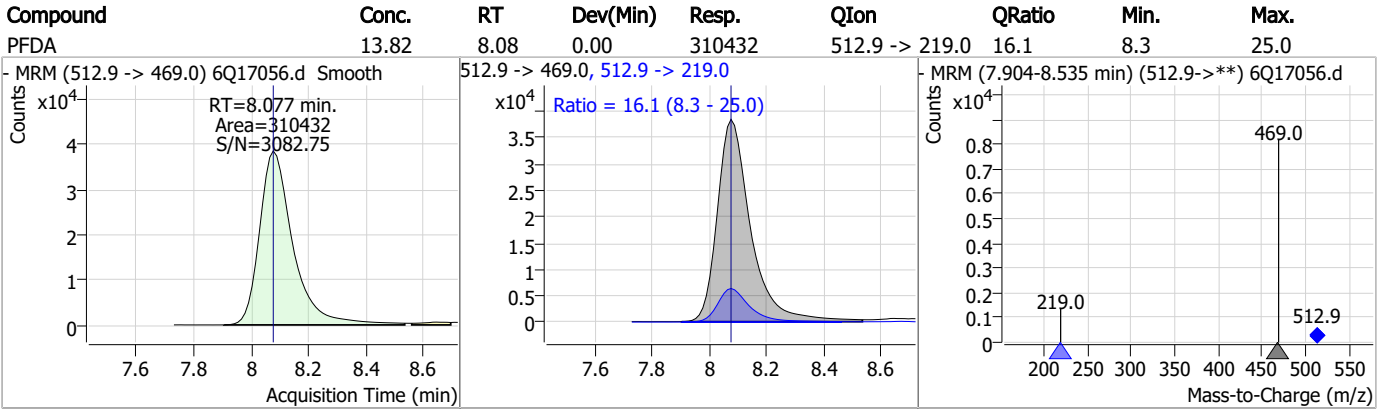
Perfluorinated Compounds by LC/MS/MS



7.7.7

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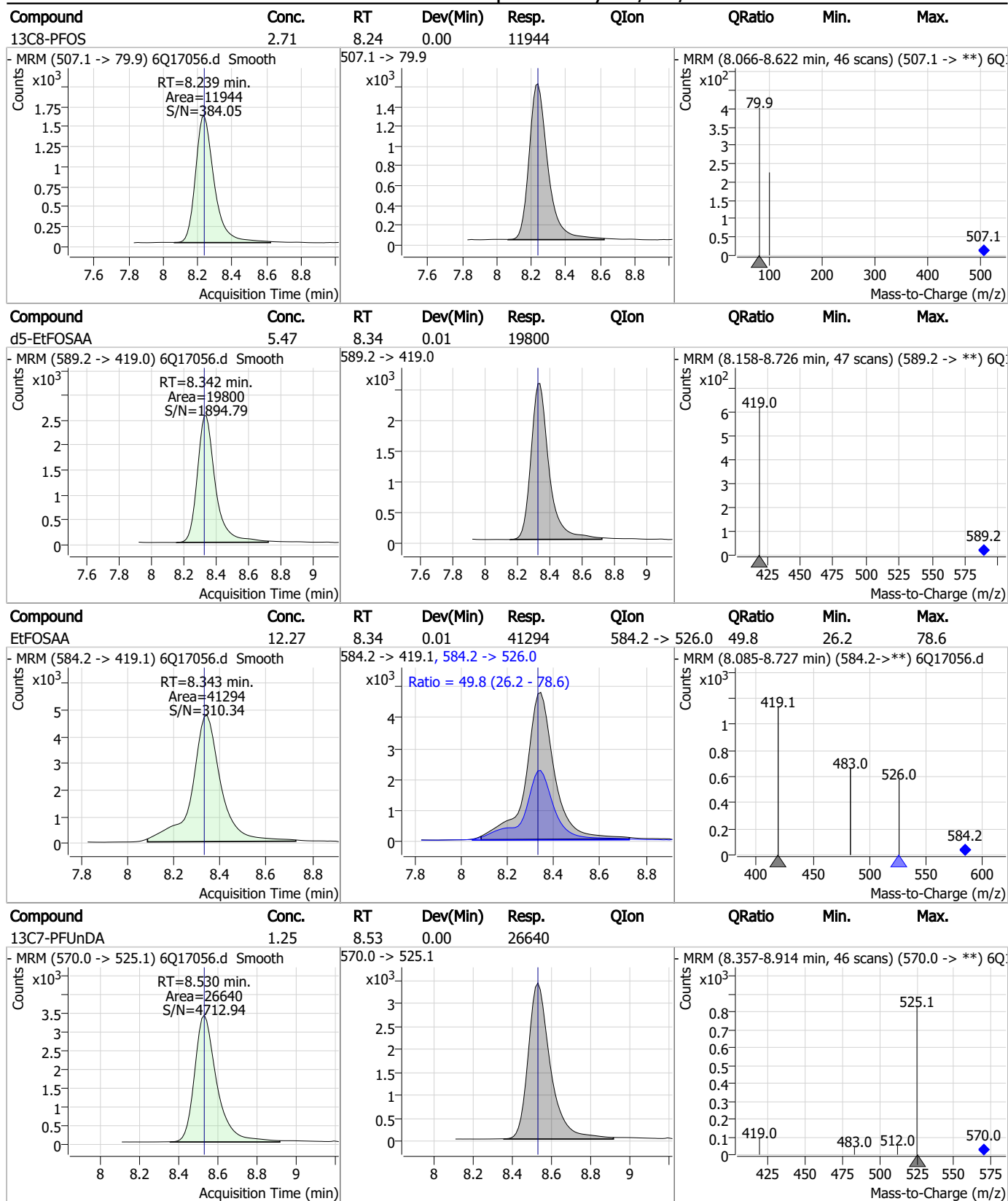
Perfluorinated Compounds by LC/MS/MS



7.7.7

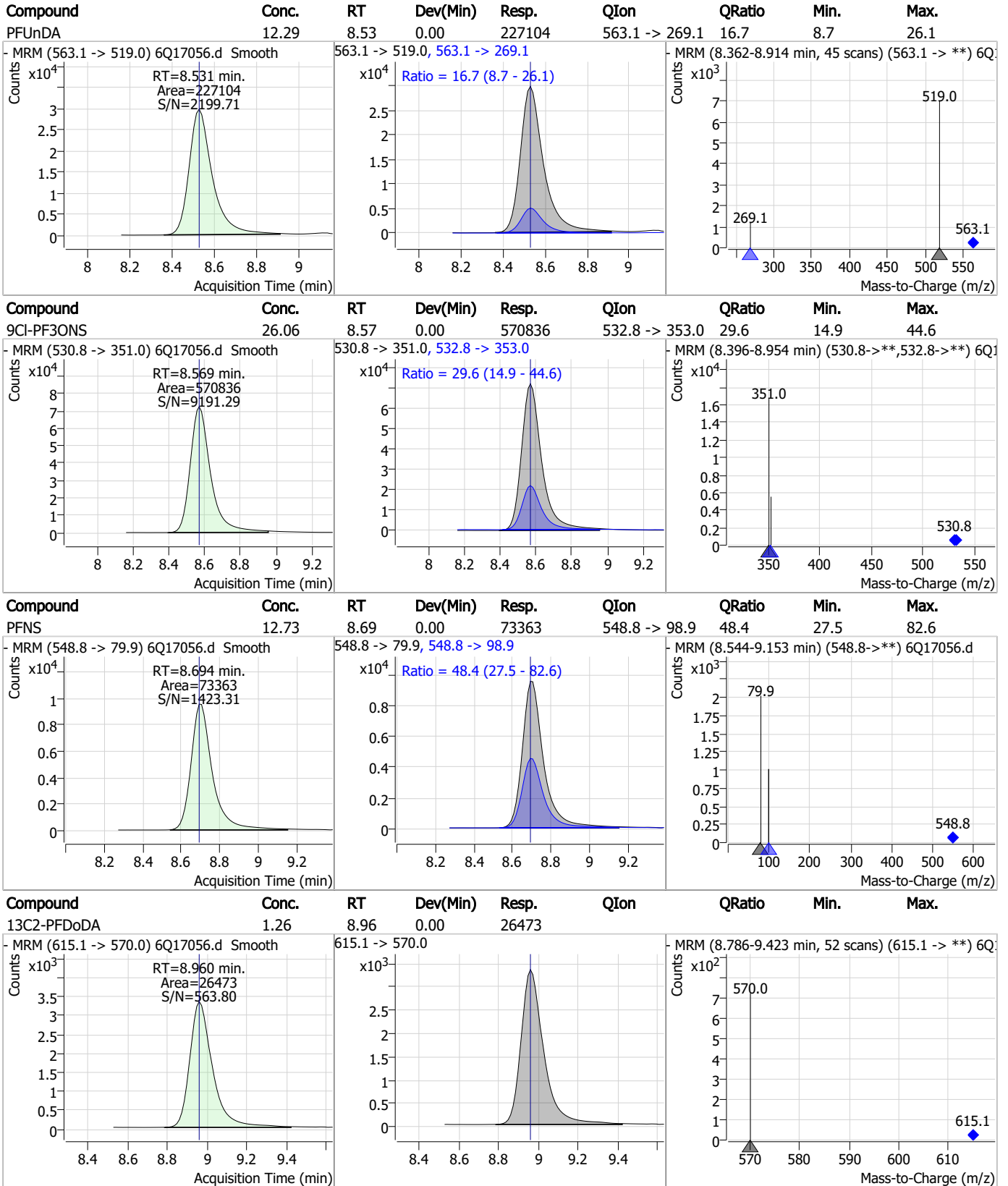
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Perfluorinated Compounds by LC/MS/MS



7.7.7
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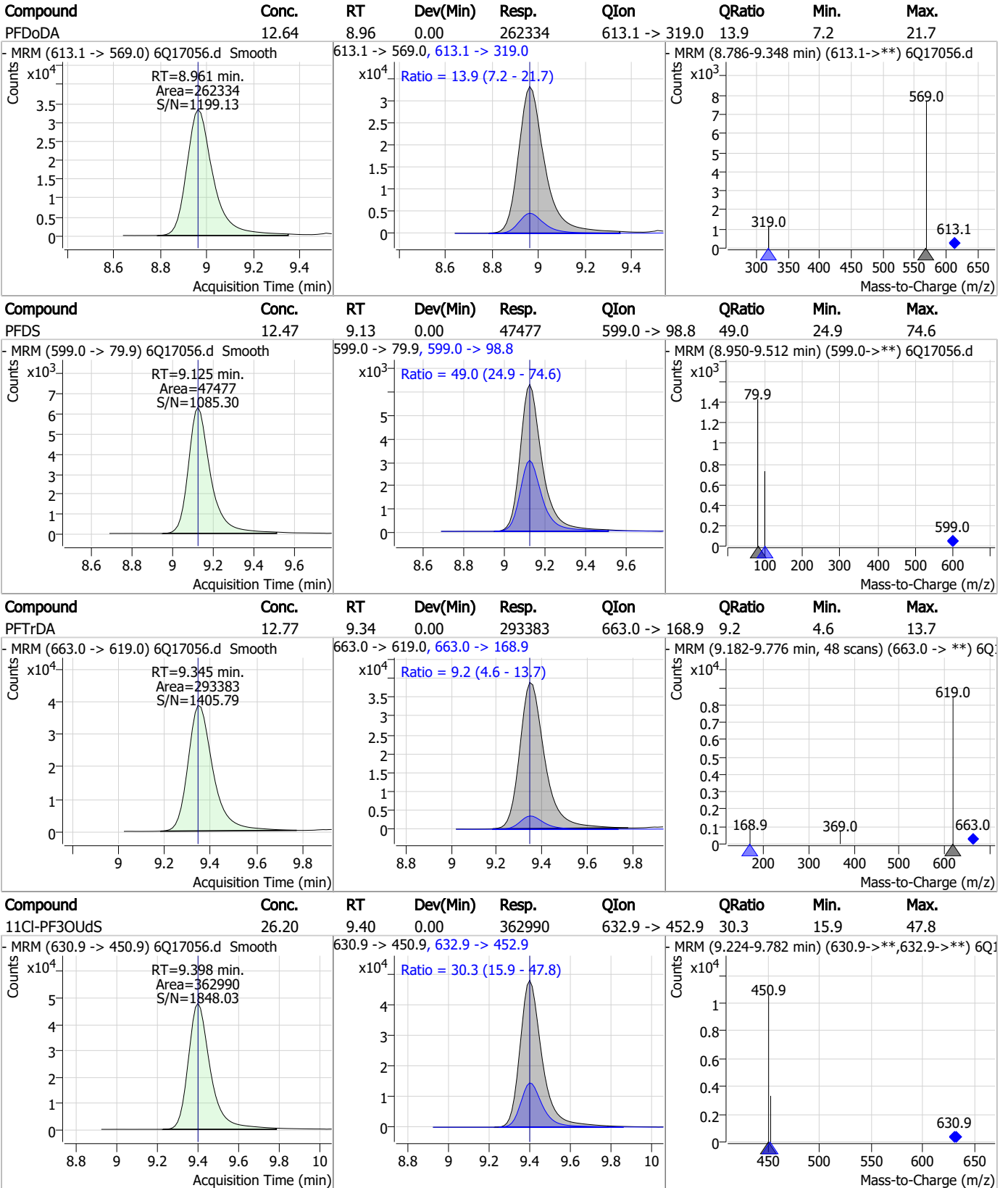
Perfluorinated Compounds by LC/MS/MS



7.7.7

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Perfluorinated Compounds by LC/MS/MS



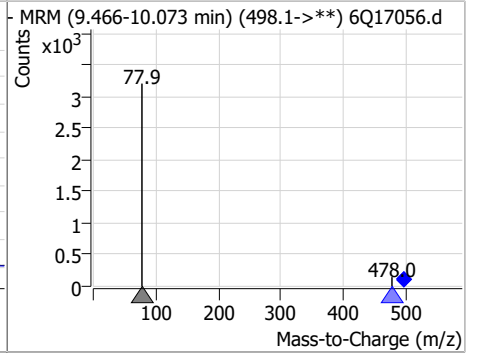
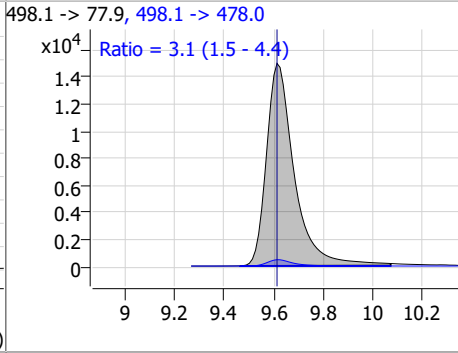
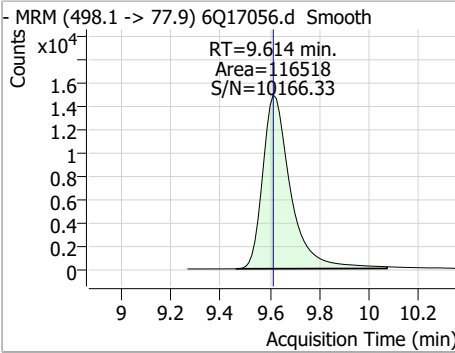
7.7.7

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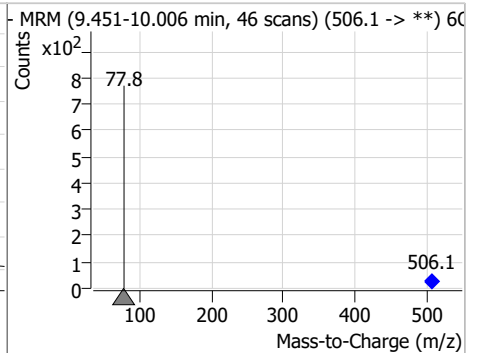
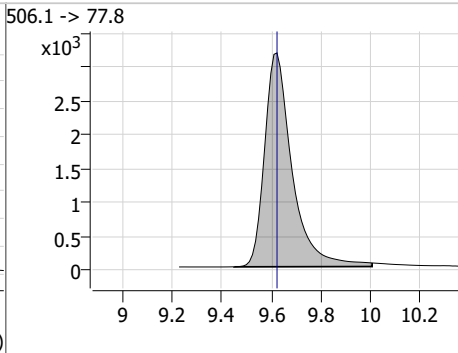
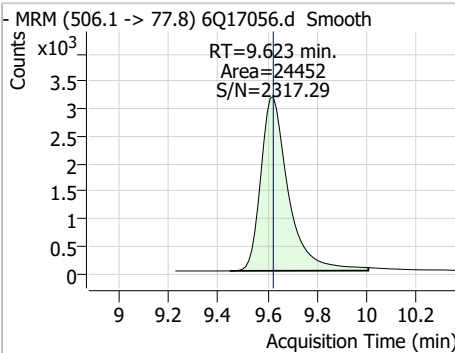


Perfluorinated Compounds by LC/MS/MS

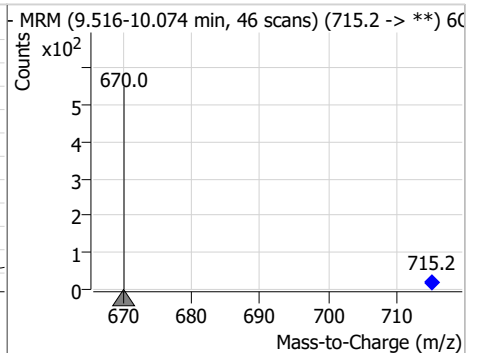
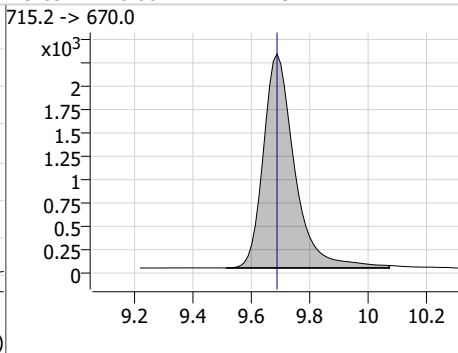
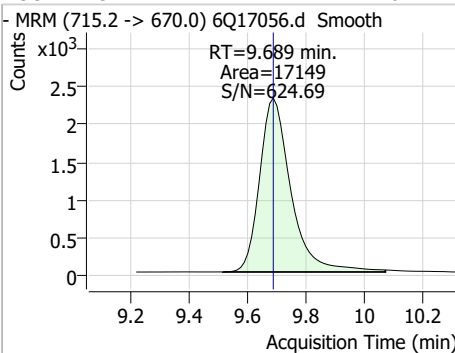
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	13.30	9.61	0.00	116518	498.1 -> 478.0	3.1	1.5	4.4



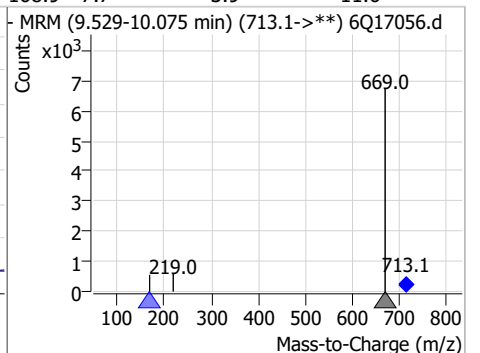
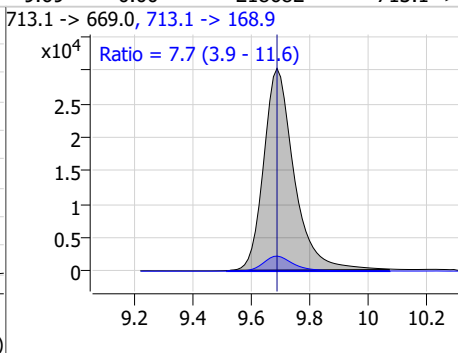
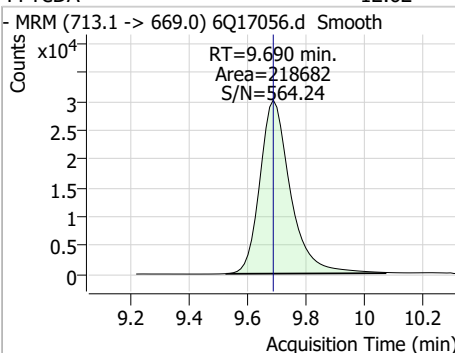
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.53	9.62	0.00	24452				



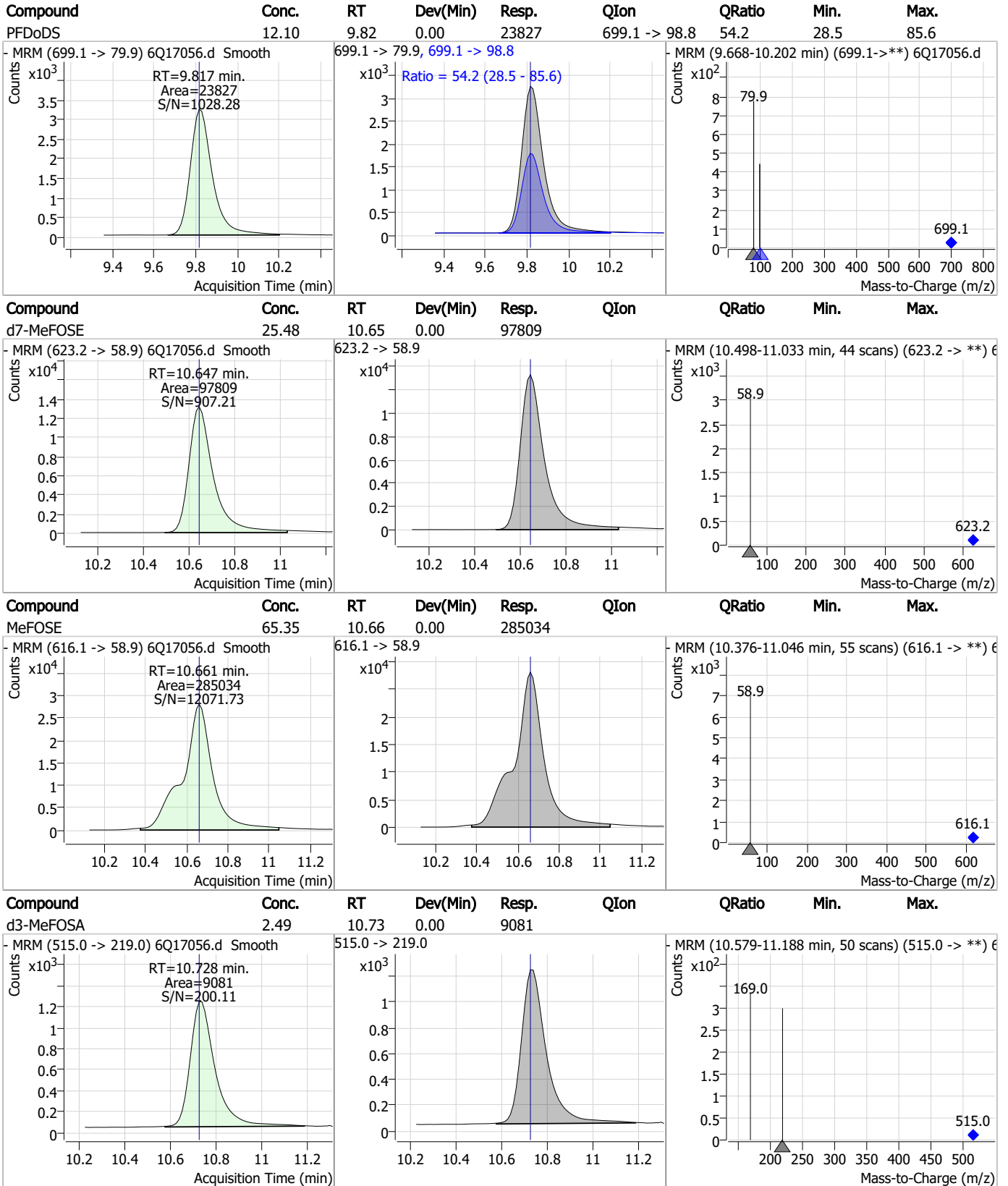
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.20	9.69	0.00	17149				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	12.62	9.69	0.00	218682	713.1 -> 168.9	7.7	3.9	11.6



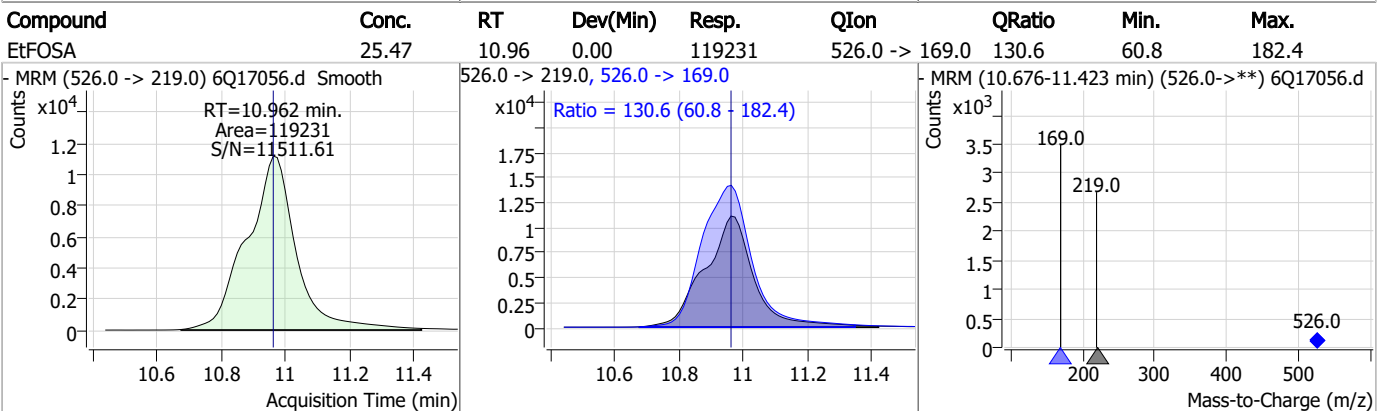
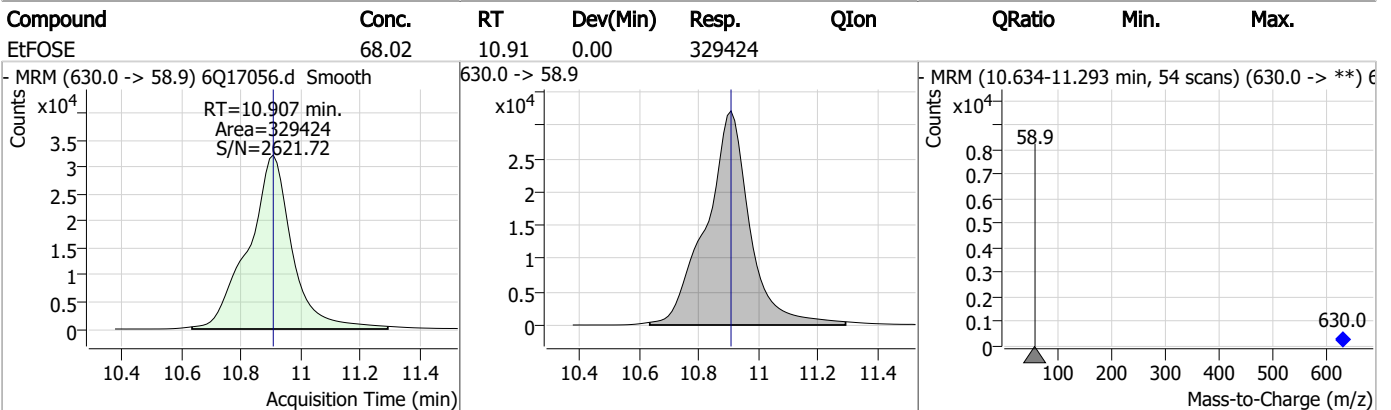
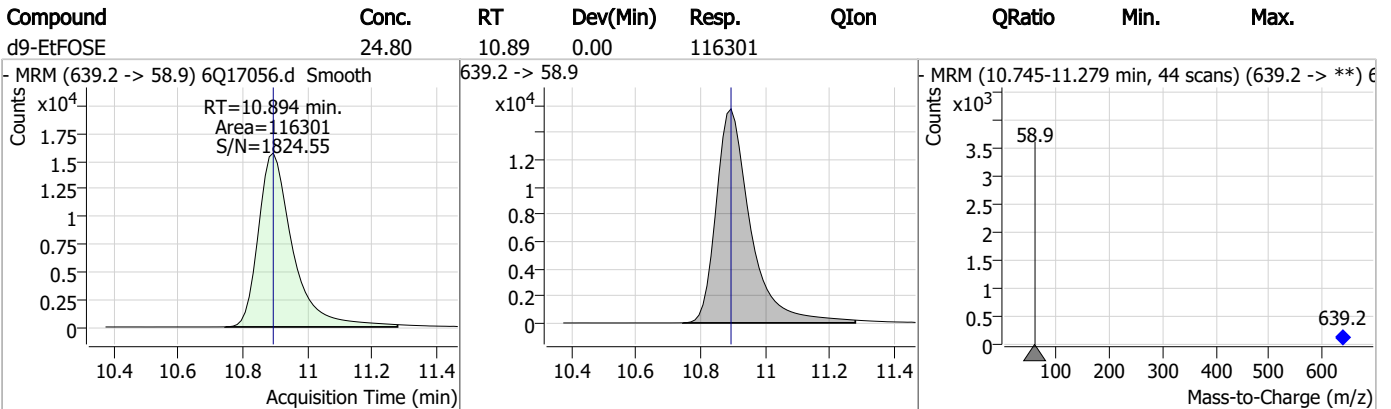
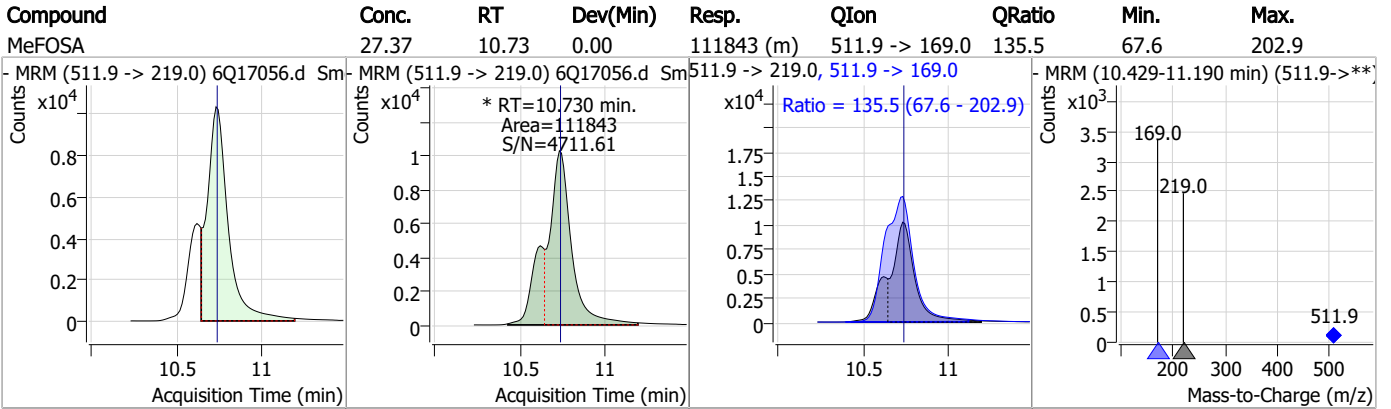
Perfluorinated Compounds by LC/MS/MS



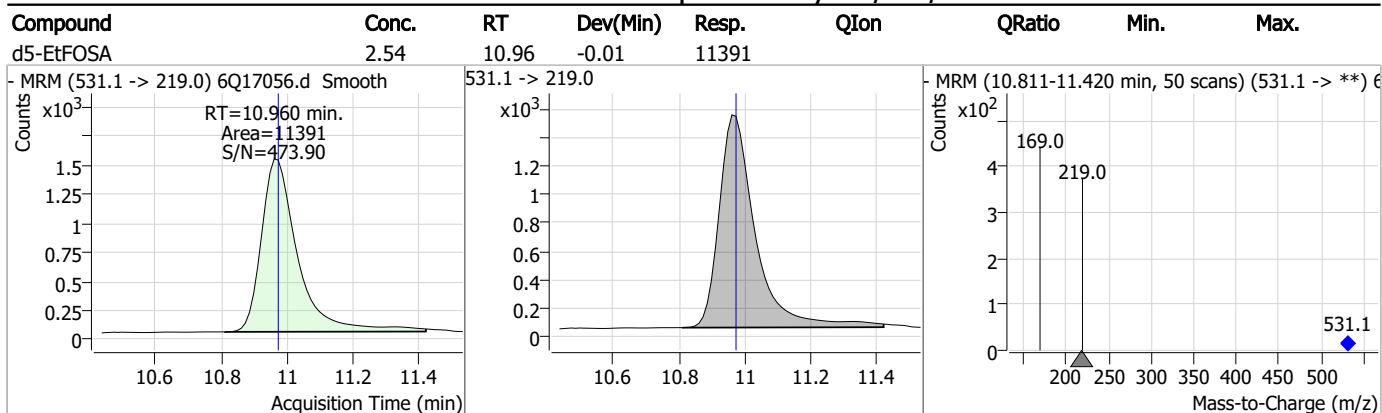
7.7.7

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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.7.7
7

Manual Integration Approval Summary

Sample Number: S6Q258-IC258 Method: EPA DRAFT 1633
Lab FileID: 6Q17056.D Analyst approved: 04/30/23 23:33 Natasha Gumtie
Injection Time: 04/28/23 14:02 Supervisor approved: 04/30/23 23:52 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.24	Split peak
MeFOSA	31506-32-8		10.73	Split peak

7.7.7.1

7

Manual Integrations
APPROVED
 (compounds with "m" flag)

Norman Farmer
 04/30/23 23:52

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17057.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/28/2023 2:17:14 PM
 Sample Name : ic258-7
 Vial : P1-A8
 DA Method File : 1633_042823_S6Q258.quantmethod.xml
 Batch Name : s6q258.batch.bin
 Sample Information : OP96301,S6Q258,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.897	216.8 -> 171.9	171617	10.00 µg/L	0.000
M5-PFPeA	4.270	268.3 -> 223.0	62728	5.00 µg/L	0.000
M5-PFHxA	5.468	318.0 -> 273.0	69796	2.50 µg/L	0.000
M4-PFHpA	6.431	367.1 -> 322.0	55432	2.50 µg/L	0.012
M8-PFOA	7.074	421.1 -> 376.0	81941	2.50 µg/L	0.012
M9-PFNA	7.594	472.1 -> 427.0	24894	1.25 µg/L	0.000
M6-PFDA	8.076	519.1 -> 474.1	19505	1.25 µg/L	0.000
M7-PFUnDA	8.530	570.0 -> 525.1	25578	1.25 µg/L	0.000
M2-PFDoDA	8.960	615.1 -> 570.0	25469	1.25 µg/L	0.000
M2-PFTeDA	9.689	715.2 -> 670.0	17051	1.25 µg/L	0.000
M8-FOSA	9.623	506.1 -> 77.8	24360	2.50 µg/L	0.000
M3-PFBS	5.398	302.1 -> 79.9	22160	2.50 µg/L	0.000
M3-PFHxS	7.179	402.1 -> 79.9	13073	2.50 µg/L	0.000
M8-PFOS	8.239	507.1 -> 79.9	10608	2.50 µg/L	0.000
M2-4:2FTS	5.144	329.1 -> 80.9	2115	5.00 µg/L	0.000
M2-6:2FTS	6.839	429.1 -> 80.9	2521	5.00 µg/L	0.000
M2-8:2FTS	7.877	529.1 -> 80.9	2882	5.00 µg/L	0.012
M3-MeFOSAA	8.134	573.2 -> 419.0	23772	5.00 µg/L	0.000
M3-HFPO-DA	5.845	286.9 -> 168.9	40565	10.00 µg/L	0.000
M5-EtFOSAA	8.330	589.2 -> 419.0	17664	5.00 µg/L	0.000
M7-MeFOSE	10.647	623.2 -> 58.9	92654	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	108844	25.00 µg/L	0.000
M5-EtFOSA	10.973	531.1 -> 219.0	11433	2.50 µg/L	0.000
M3-MeFOSA	10.728	515.0 -> 219.0	9339	2.50 µg/L	0.000
13C4-PFOS	8.239	502.8 -> 79.9	15534	2.50 µg/L	0.000
13C3-PFBA	2.902	216.0 -> 172.0	74277	5.00 µg/L	0.000
18O2-PFHxS	7.190	403.0 -> 83.9	9415	2.50 µg/L	0.012
13C4-PFOA	7.075	417.1 -> 372.0	85076	2.50 µg/L	0.012
13C2-PFDA	8.076	515.1 -> 470.1	24971	1.25 µg/L	0.000
13C5-PFNA	7.595	468.0 -> 423.0	28190	1.25 µg/L	0.000
13C2-PFHxA	5.469	315.1 -> 270.0	56669	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.144	329.1 -> 80.9	2115	4.89 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.7%		
13C2-6:2FTS	6.839	429.1 -> 80.9	2521	4.80 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.0%		
13C2-8:2FTS	7.877	529.1 -> 80.9	2882	5.10 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.0%		
13C2-PFDoDA	8.960	615.1 -> 570.0	25469	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.1%		
13C2-PFTeDA	9.689	715.2 -> 670.0	17051	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.0%		
13C3-PFBS	5.398	302.1 -> 79.9	22160	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.1%		
13C3-PFHxS	7.179	402.1 -> 79.9	13073	2.61 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.3%	
13C4-PFBA	2.897	216.8 -> 171.9	171617	10.00 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C4-PFHpA	6.431	367.1 -> 322.0	55432	2.39 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.7%	
13C5-PFHxA	5.468	318.0 -> 273.0	69796	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.1%	
13C5-PFPeA	4.270	268.3 -> 223.0	62728	4.96 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C6-PFDA	8.076	519.1 -> 474.1	19505	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.7%	
13C7-PFUnDA	8.530	570.0 -> 525.1	25578	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.0%	
13C8-FOSA	9.623	506.1 -> 77.8	24360	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.9%	
13C8-PFOA	7.074	421.1 -> 376.0	81941	2.50 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C8-PFOS	8.239	507.1 -> 79.9	10608	2.27 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 90.7%	
13C9-PFNA	7.594	472.1 -> 427.0	24894	1.16 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.7%	
d3-MeFOSAA	8.134	573.2 -> 419.0	23772	5.14 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C3-HFPO-DA	5.845	286.9 -> 168.9	40565	10.11 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.1%	
d3-MeFOSA	10.728	515.0 -> 219.0	9339	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.3%	
d5-EtFOSAA	8.330	589.2 -> 419.0	17664	4.59 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 91.8%	
d7-MeFOSE	10.647	623.2 -> 58.9	92654	22.73 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 90.9%	
d9-EtFOSE	10.894	639.2 -> 58.9	108844	21.85 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 87.4%	
d5-EtFOSA	10.973	531.1 -> 219.0	11433	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.0%	
Target Compounds					QValue
4:2FTS	5.145	327.1 -> 307.0	342753	107.12 µg/L	96
		327.1 -> 80.9	117970		
6:2FTS	6.839	427.1 -> 407.0	276504	99.72 µg/L	93
		427.1 -> 80.9	88161		
8:2FTS	7.865	527.1 -> 507.0	158285	92.31 µg/L	97
		527.1 -> 80.8	67442		
EtFOSAA	8.331	584.2 -> 419.1	78711	26.22 µg/L	m 97
		584.2 -> 526.0	42695		
FOSA	9.614	498.1 -> 77.9	227449	26.06 µg/L	100
		498.1 -> 478.0	6609		
MeFOSAA	8.136	570.1 -> 419.0	105513	23.64 µg/L	88
		570.1 -> 483.0	20730		
PFBA	2.906	212.8 -> 168.9	610169	106.01 µg/L	100
PFBS	5.400	298.7 -> 79.9	228961	23.03 µg/L	98
		298.7 -> 98.8	91659		
PFDA	8.077	512.9 -> 469.0	595413	28.09 µg/L	100
		512.9 -> 219.0	97927		
PFDoDA	8.961	613.1 -> 569.0	509639	25.52 µg/L	99
		613.1 -> 319.0	72360		
PFDS	9.125	599.0 -> 79.9	90601	26.80 µg/L	97

7.7.8
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	43202			
PFHpA	6.420	363.1 -> 319.0	772571	28.24	µg/L	97
		363.1 -> 169.0	123104			
PFHpS	7.746	449.0 -> 79.9	148414	25.82	µg/L	94
		449.0 -> 98.9	69407			
PFHxA	5.470	313.0 -> 269.0	707757	25.65	µg/L	100
		313.0 -> 118.9	31996			
PFHxS	7.180	398.7 -> 79.9	160575	22.54	µg/L	m 92
		398.7 -> 98.9	74028			
PFNA	7.595	463.0 -> 419.0	489652	28.43	µg/L	96
		463.0 -> 219.0	92096			
PFNS	8.706	548.8 -> 79.9	130947	25.58	µg/L	94
		548.8 -> 98.9	66596			
PFOA	7.063	413.0 -> 369.0	974708	24.70	µg/L	100
		413.0 -> 169.0	169979			
PFOS	8.228	498.9 -> 79.9	135647	26.48	µg/L	m 82
		498.9 -> 98.8	68222			
PFPeA	4.273	263.0 -> 219.0	902840	52.84	µg/L	100
PFPeS	6.484	349.1 -> 79.9	179655	24.15	µg/L	93
		349.1 -> 98.9	78892			
PFTeDA	9.690	713.1 -> 669.0	440013	25.53	µg/L	100
		713.1 -> 168.9	33368			
PFTrDA	9.345	663.0 -> 619.0	562349	25.45	µg/L	97
		663.0 -> 168.9	57053			
PFUnDA	8.531	563.1 -> 519.0	484125	27.29	µg/L	96
		563.1 -> 269.1	74884			
11Cl-PF3OUdS	9.398	630.9 -> 450.9	700187	50.30	µg/L	99
		632.9 -> 452.9	217767			
9Cl-PF3ONS	8.569	530.8 -> 351.0	1067589	48.50	µg/L	93
		532.8 -> 353.0	360258			
ADONA	6.681	376.9 -> 250.9	3057274	49.89	µg/L	99
		376.9 -> 84.8	771305			
HFPO-DA	5.834	284.9 -> 168.9	192769	50.17	µg/L	98
		284.9 -> 184.9	25121			
3:3FTCA	3.771	241.0 -> 177.0	143801	134.60	µg/L	97
		241.0 -> 117.0	17541			
5:3FTCA	6.160	341.0 -> 237.1	2859211	640.22	µg/L	94
		341.0 -> 217.0	2041333			
7:3FTCA	7.573	441.0 -> 316.9	1310450	645.92	µg/L	95
		441.0 -> 336.9	2731216			
EtFOSA	10.962	526.0 -> 219.0	245641	52.27	µg/L	99
		526.0 -> 169.0	302019			
EtFOSE	10.907	630.0 -> 58.9	636552	140.43	µg/L	100
MeFOSA	10.730	511.9 -> 219.0	217141	51.66	µg/L	m 98
		511.9 -> 169.0	289808			
MeFOSE	10.661	616.1 -> 58.9	569571	137.84	µg/L	100
PFDoS	9.817	699.1 -> 79.9	47201	27.00	µg/L	94
		699.1 -> 98.8	24753			
NFDHA	5.350	295.0 -> 201.0	151737	50.73	µg/L	99
		295.0 -> 84.9	37223			
PFMBA	4.687	279.0 -> 85.1	609667	53.19	µg/L	100
PFMPA	3.438	229.0 -> 84.9	459603	53.75	µg/L	100
PFEESA	5.937	314.8 -> 134.9	1587215	45.58	µg/L	99
		314.8 -> 82.9	53428			

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

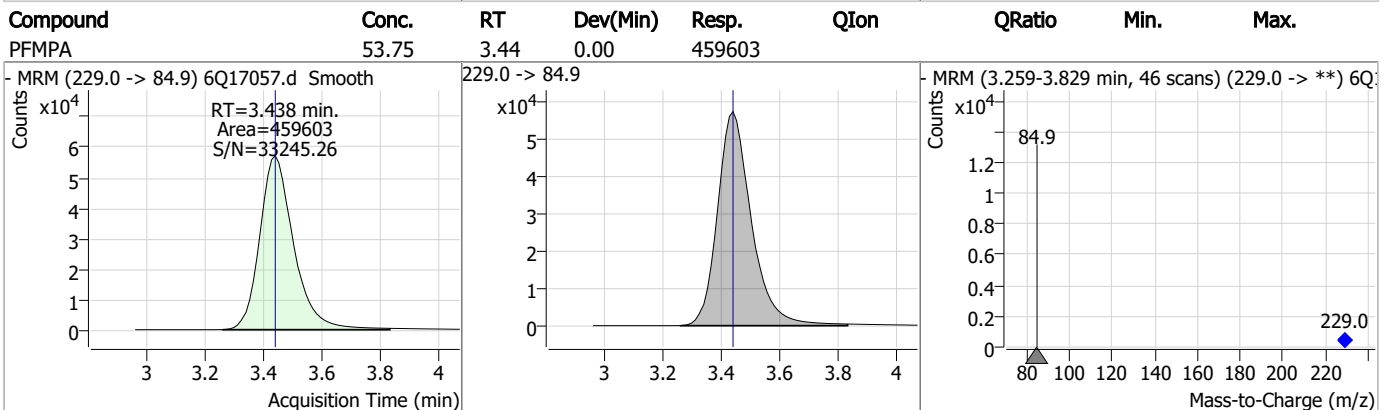
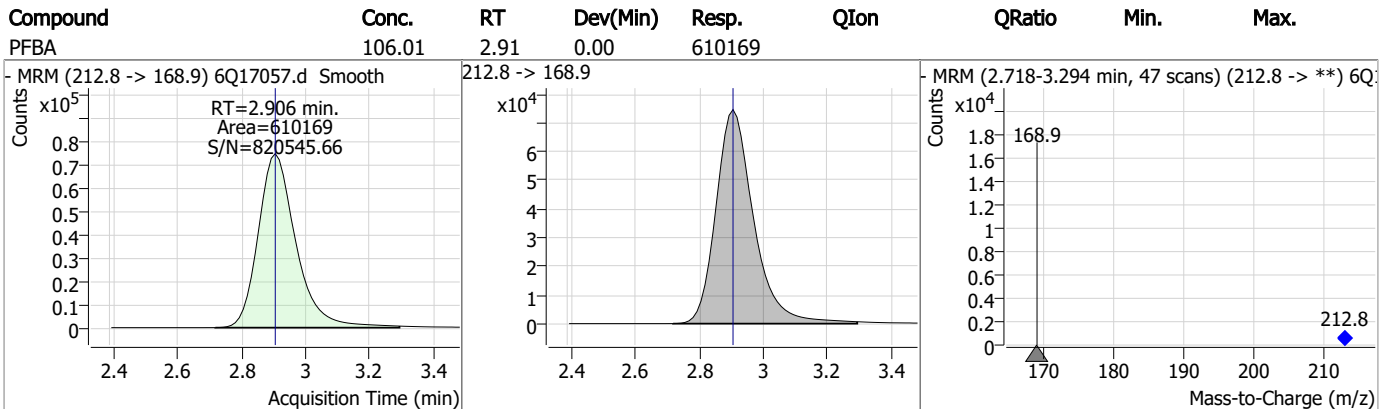
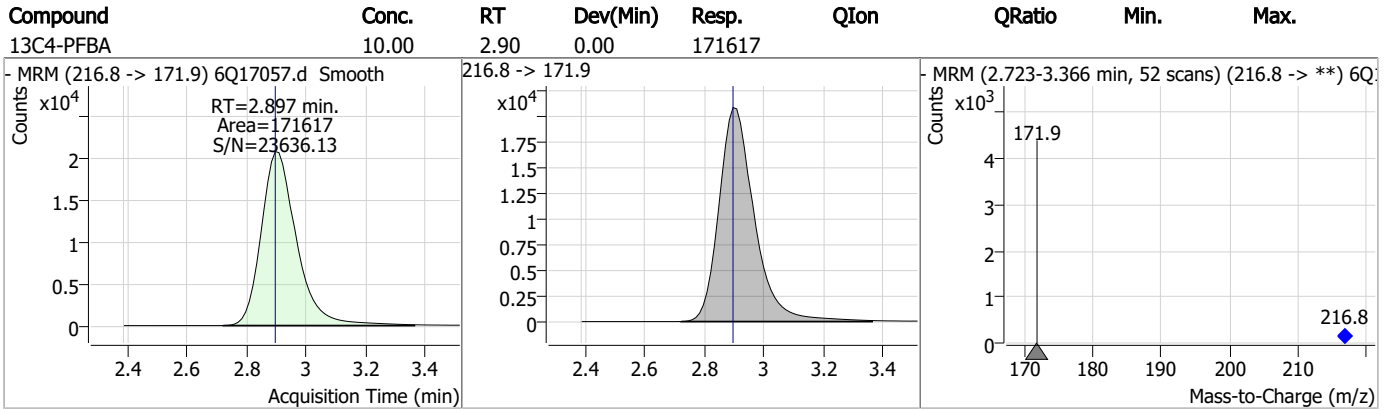
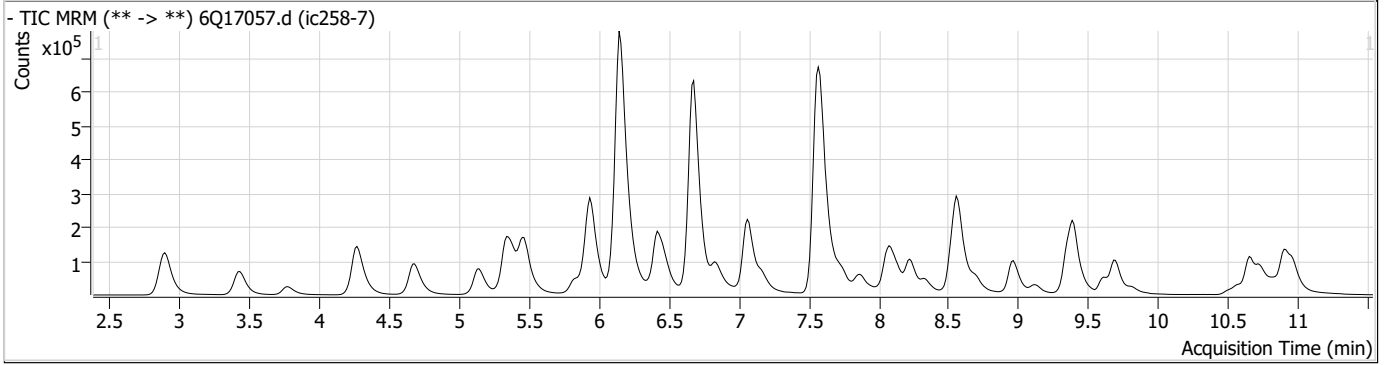
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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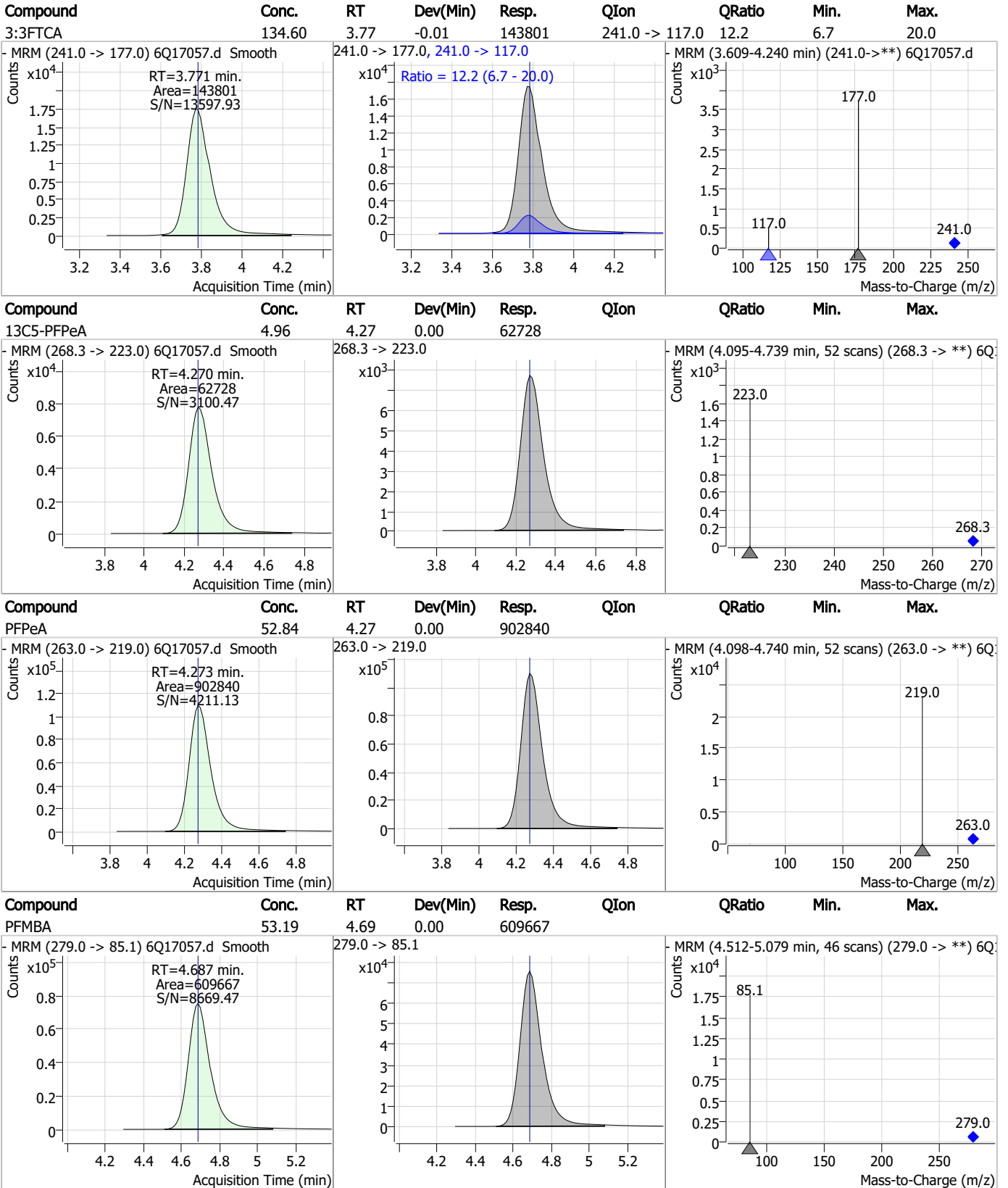
7.7.8
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Perfluorinated Compounds by LC/MS/MS



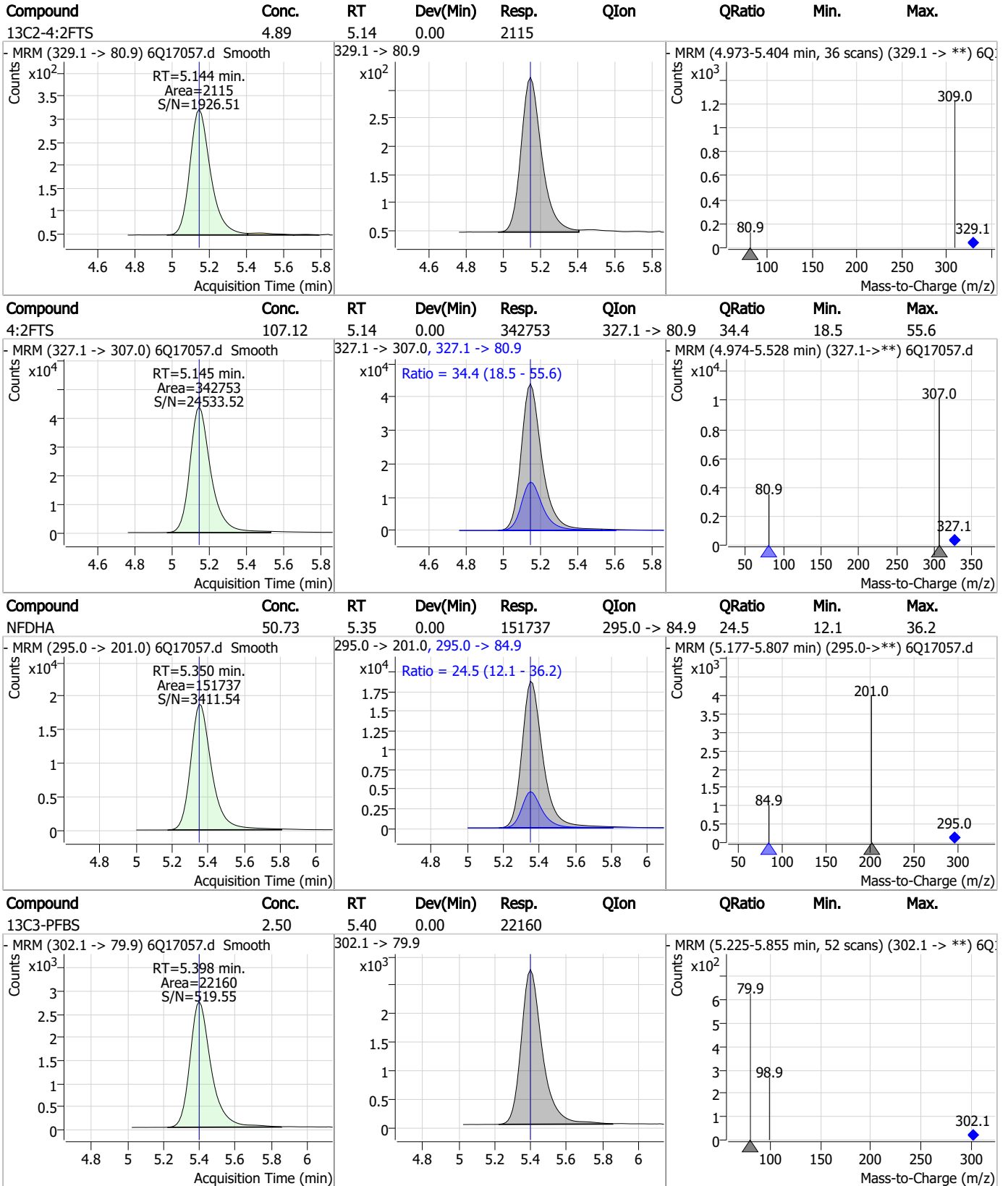
Perfluorinated Compounds by LC/MS/MS



7.7.8

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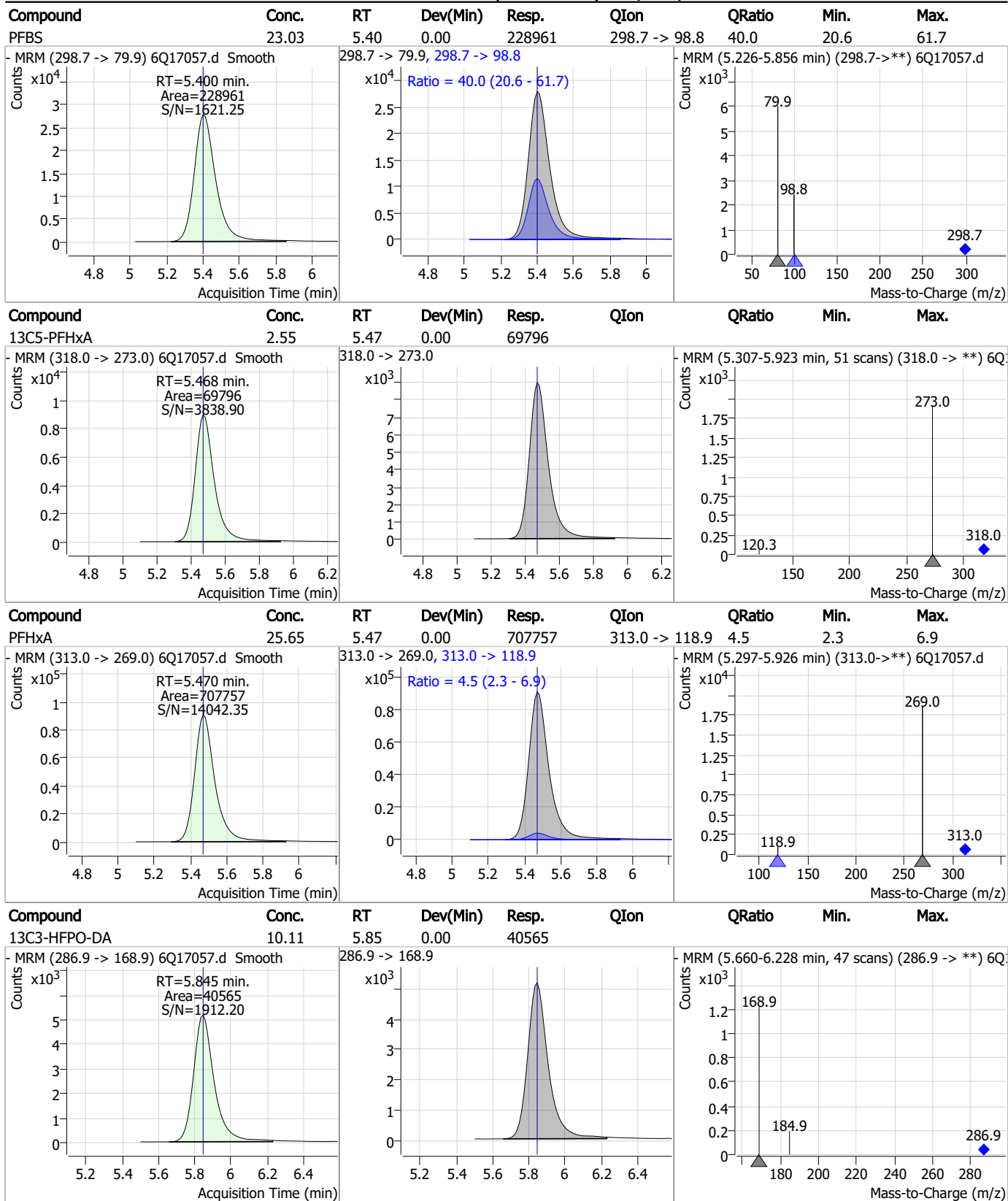
Perfluorinated Compounds by LC/MS/MS



7.7.8

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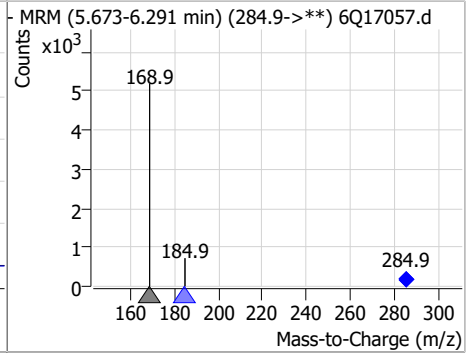
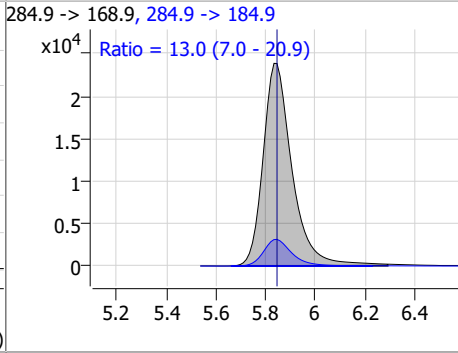
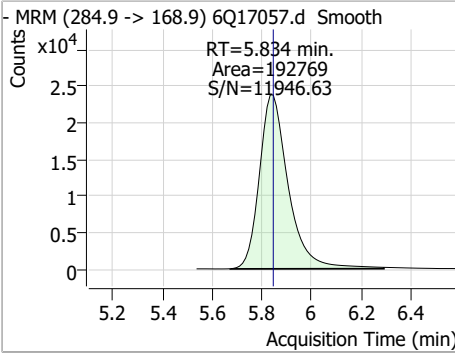
Perfluorinated Compounds by LC/MS/MS



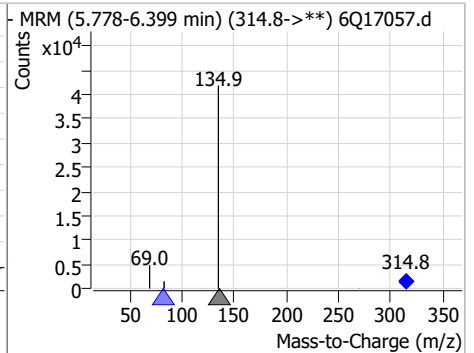
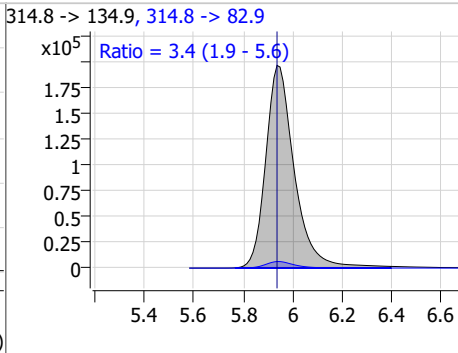
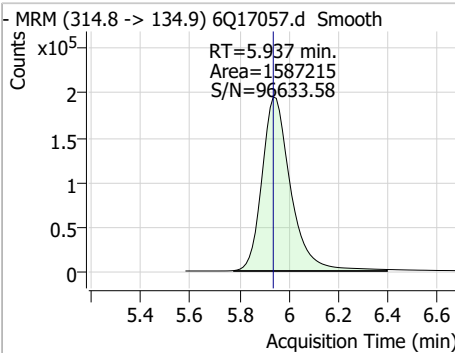
7.7.8
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Perfluorinated Compounds by LC/MS/MS

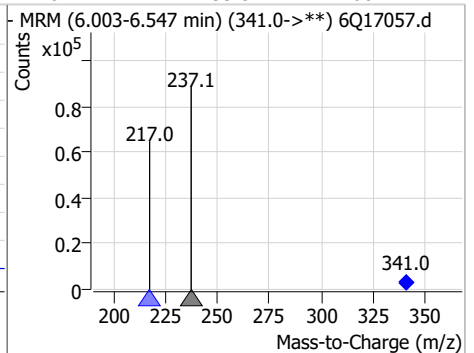
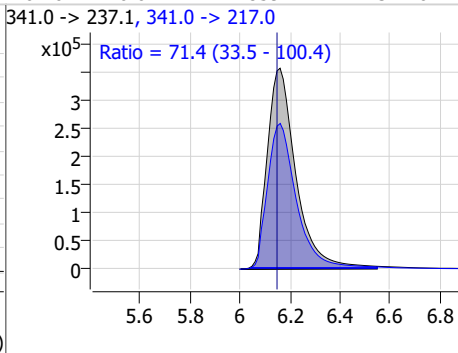
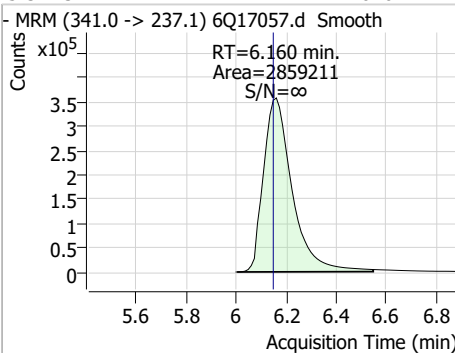
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	50.17	5.83	-0.01	192769	284.9 -> 184.9	13.0	7.0	20.9



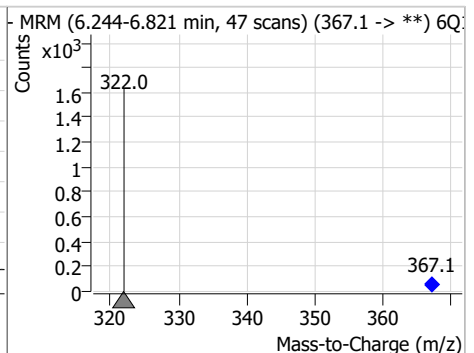
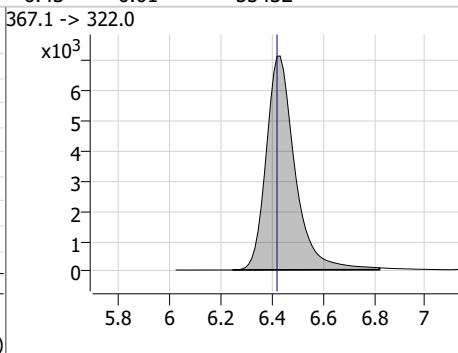
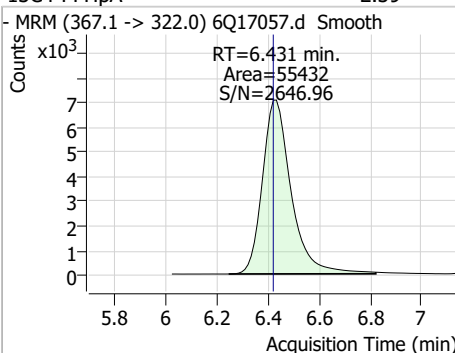
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	45.58	5.94	0.00	1587215	314.8 -> 82.9	3.4	1.9	5.6



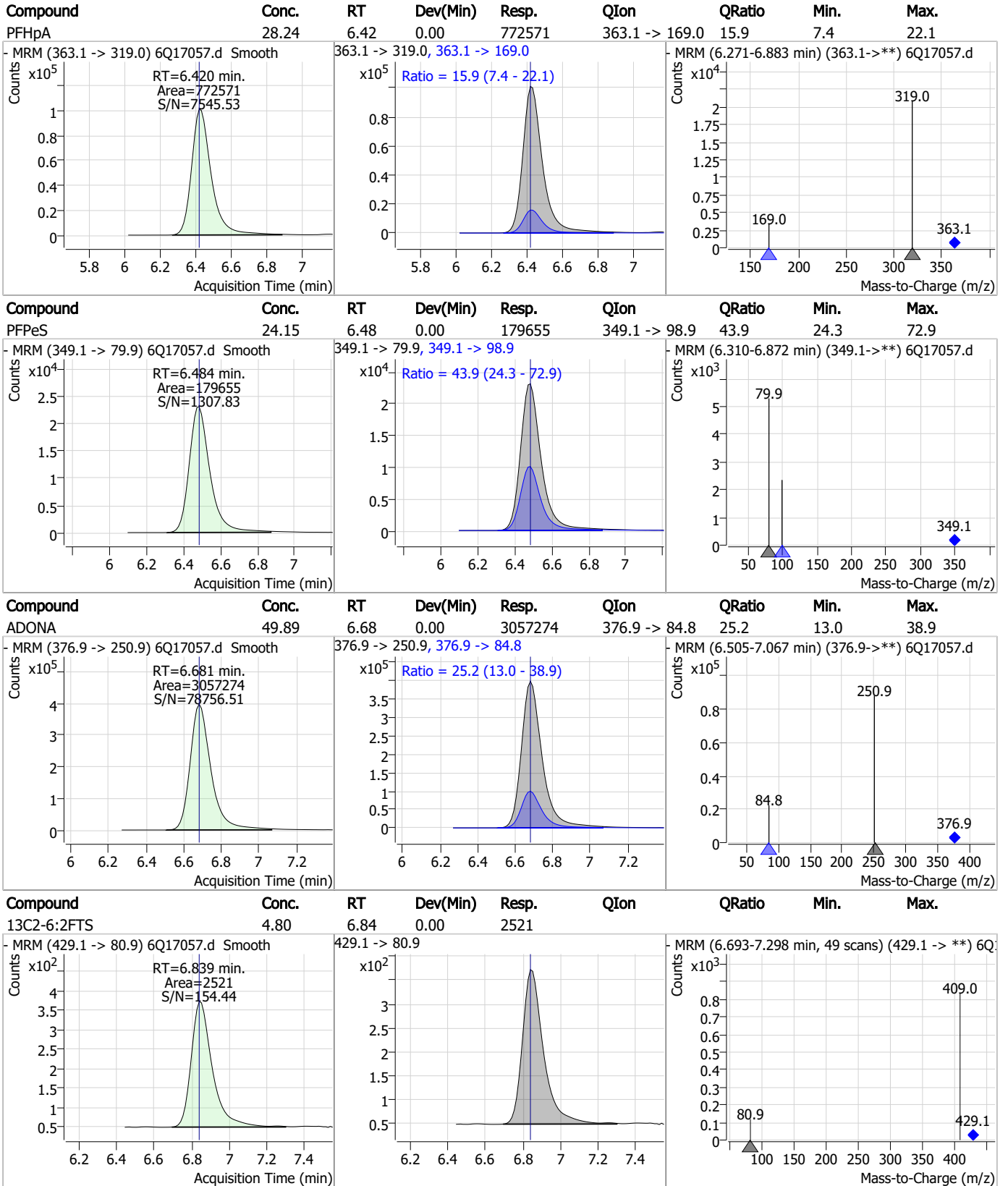
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	640.22	6.16	0.01	2859211	341.0 -> 217.0	71.4	33.5	100.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpa	2.39	6.43	0.01	55432	367.1 -> 322.0			



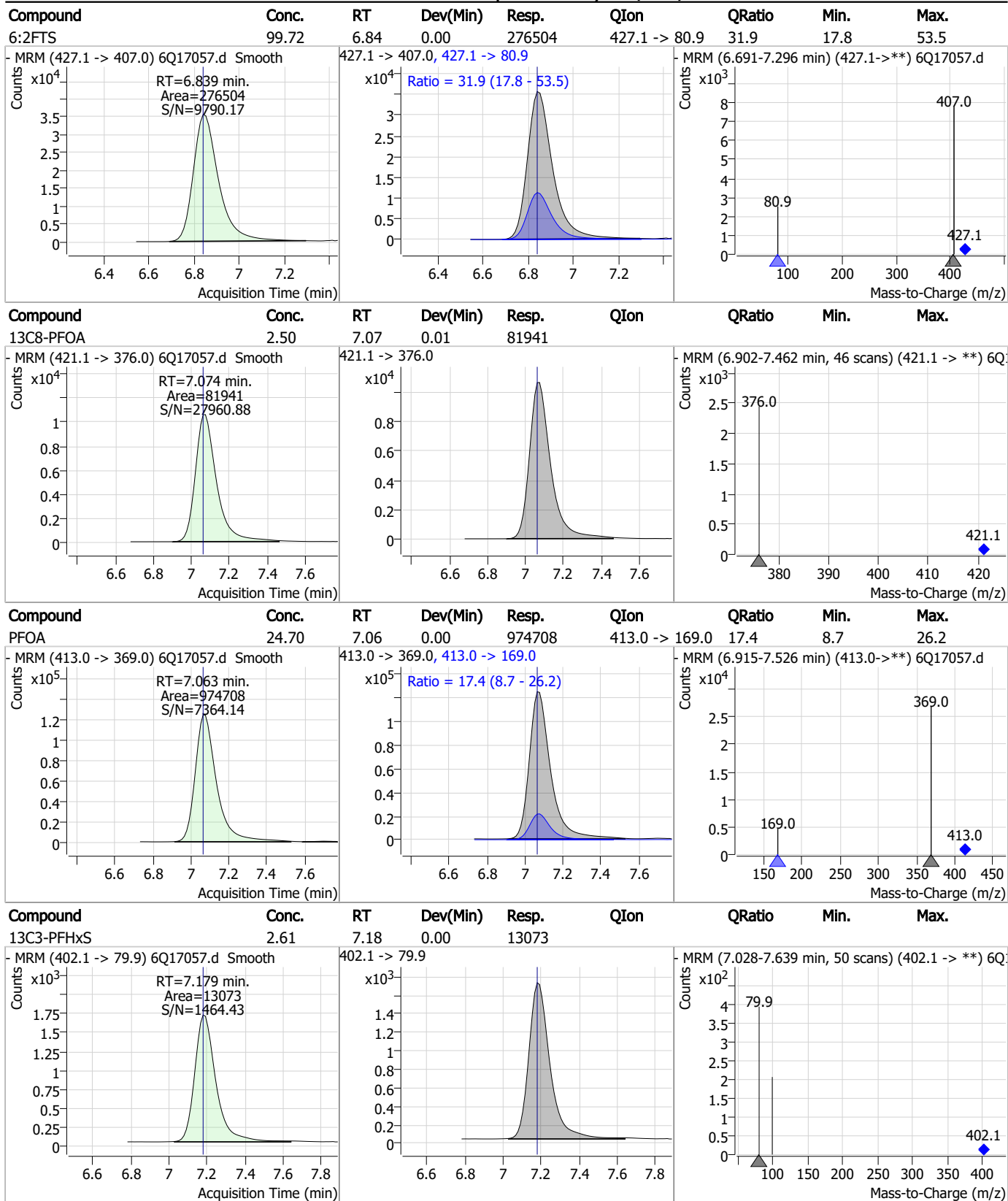
Perfluorinated Compounds by LC/MS/MS



7.7.8

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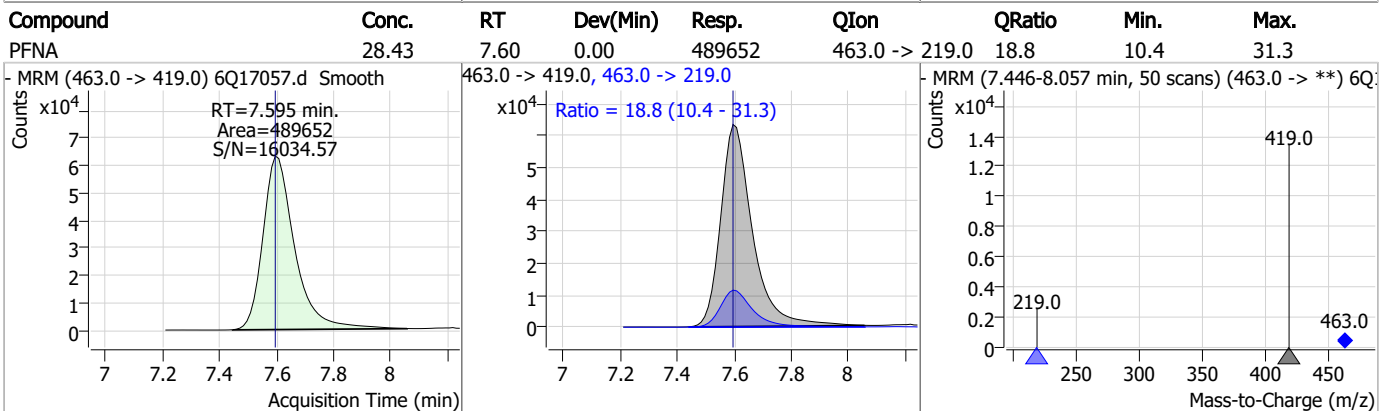
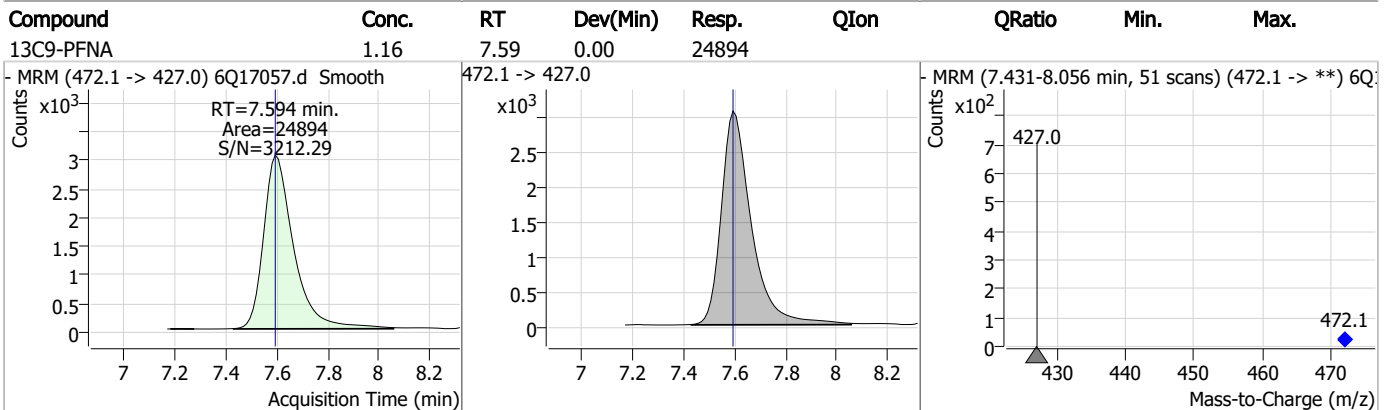
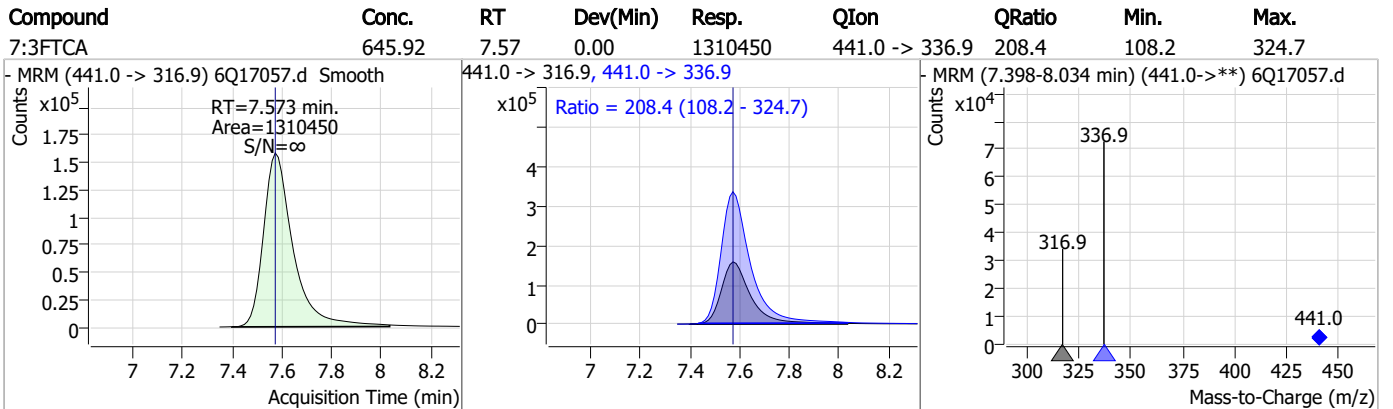
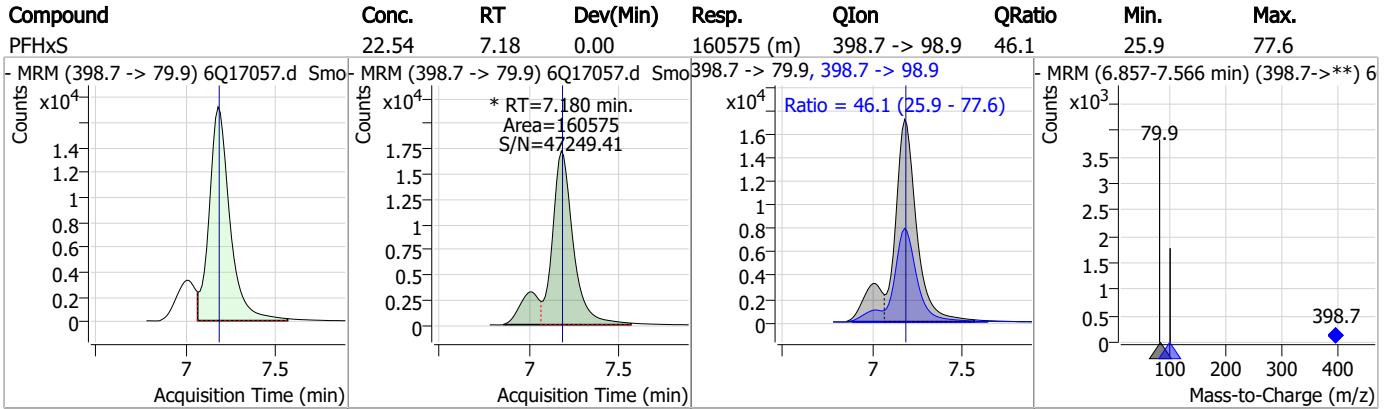
Perfluorinated Compounds by LC/MS/MS



7.7.8
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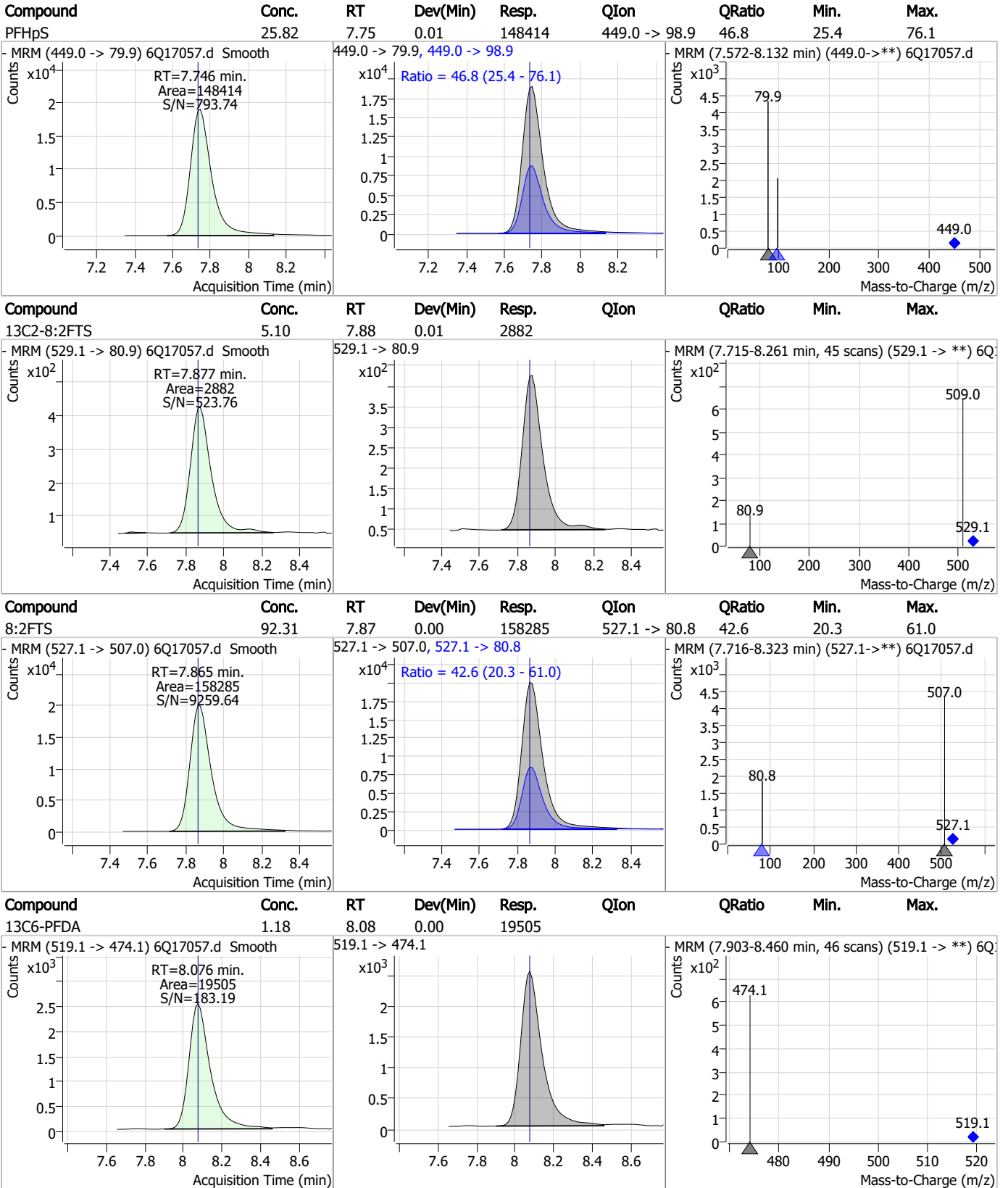
Perfluorinated Compounds by LC/MS/MS



7.7.8

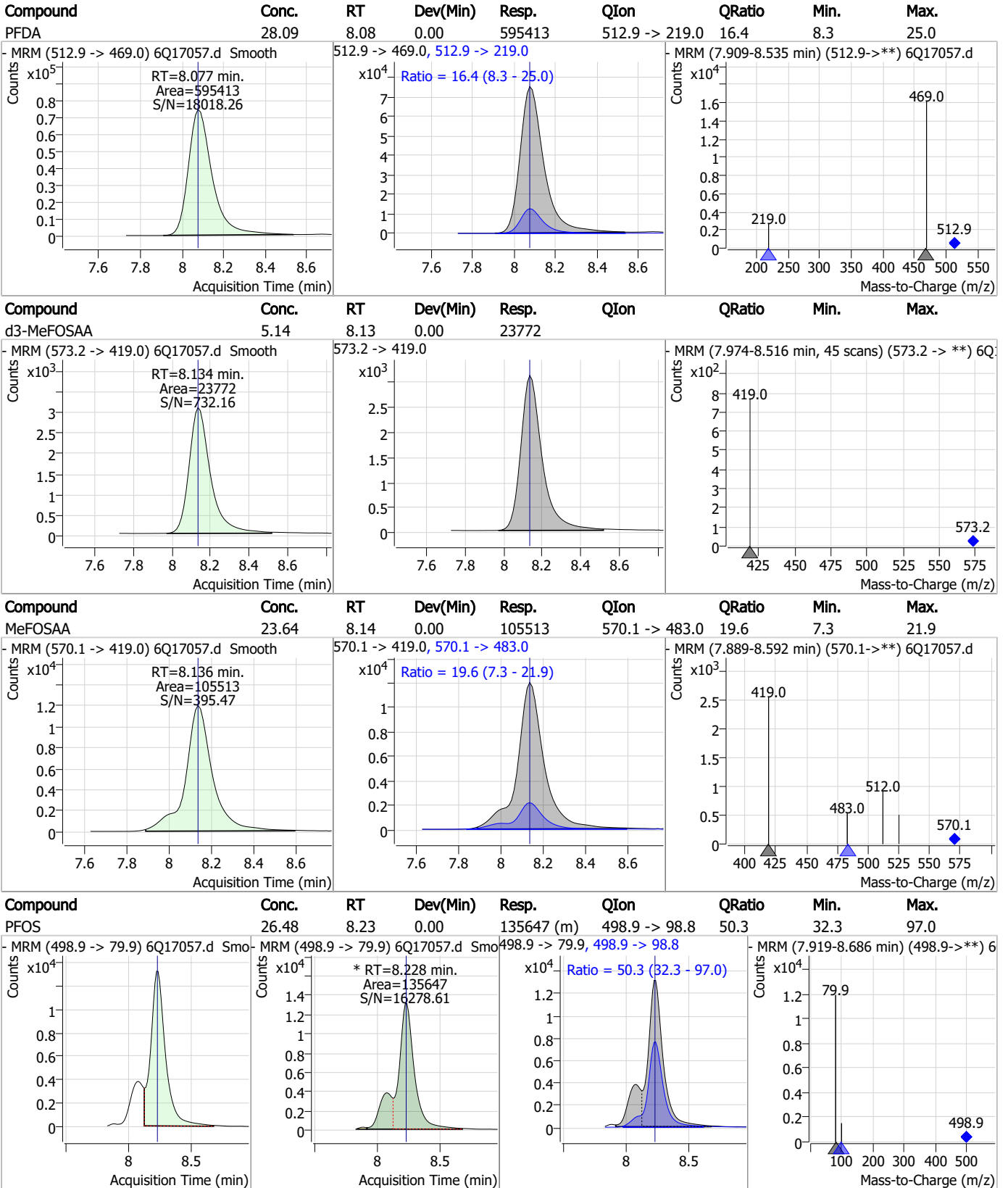
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

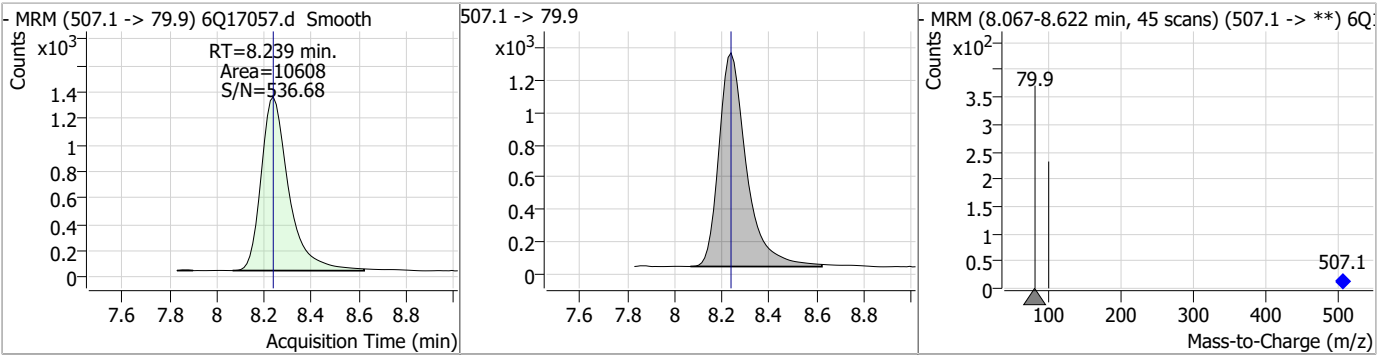


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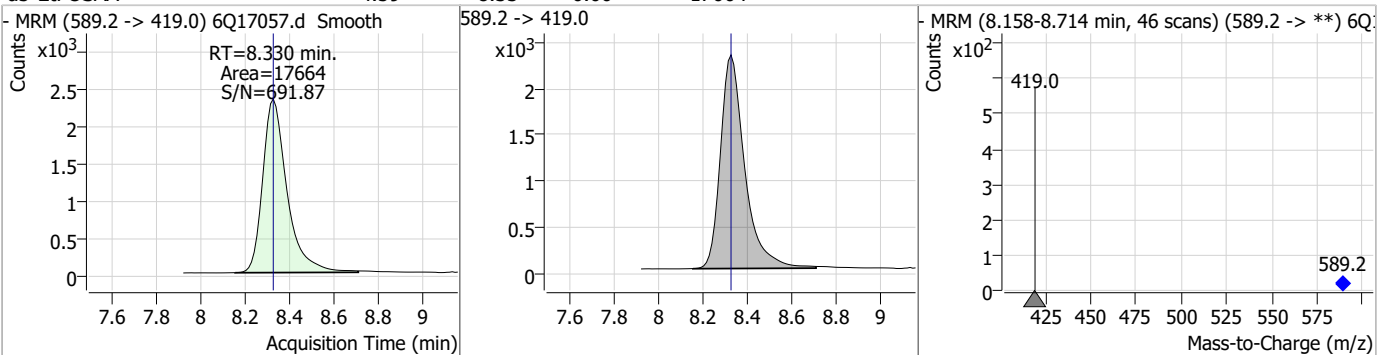
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Perfluorinated Compounds by LC/MS/MS

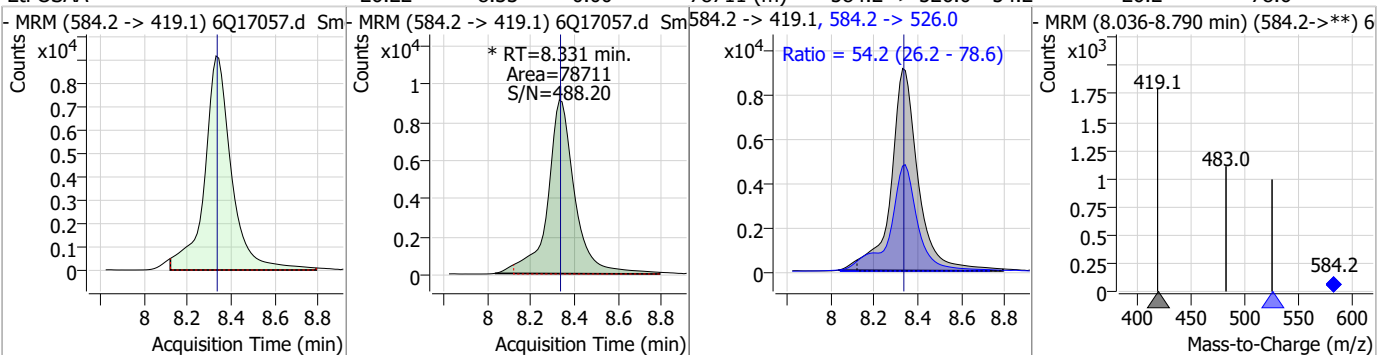
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.27	8.24	0.00	10608				



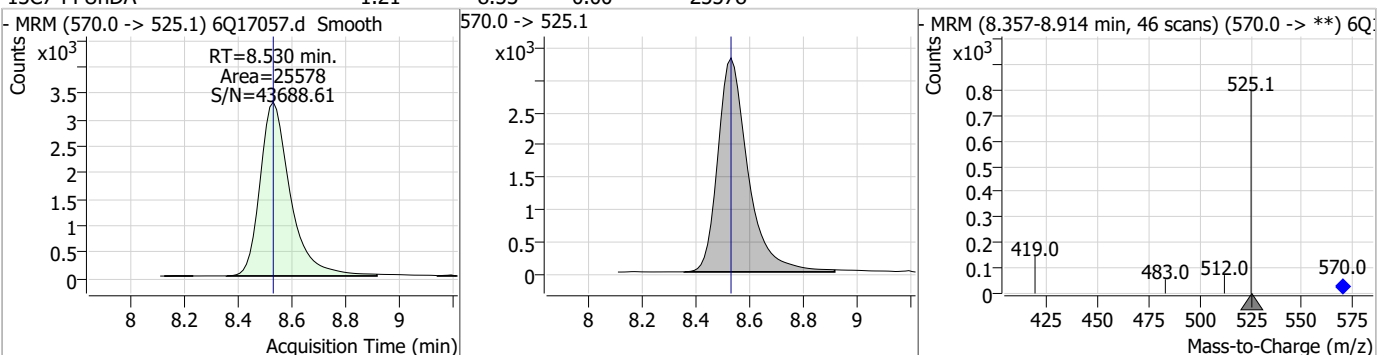
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.59	8.33	0.00	17664				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	26.22	8.33	0.00	78711 (m)	584.2 -> 526.0	54.2	26.2	78.6

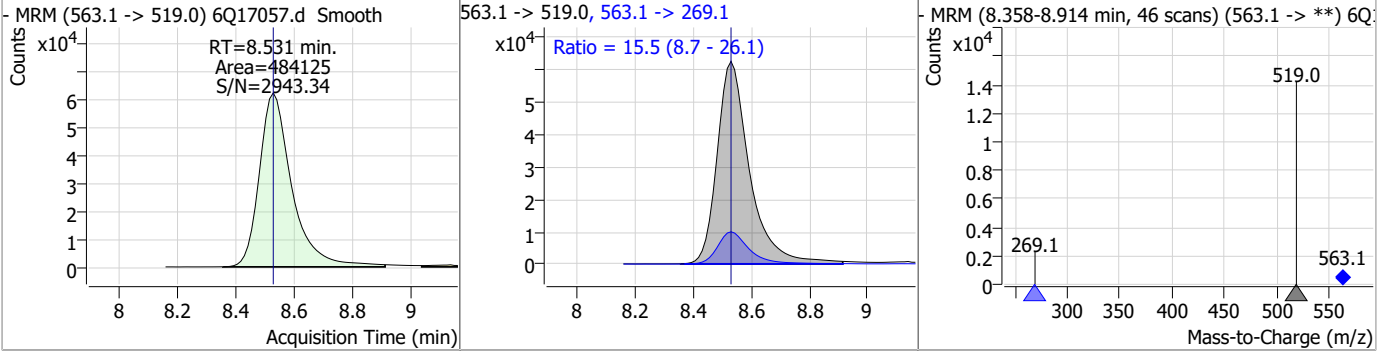


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.21	8.53	0.00	25578				

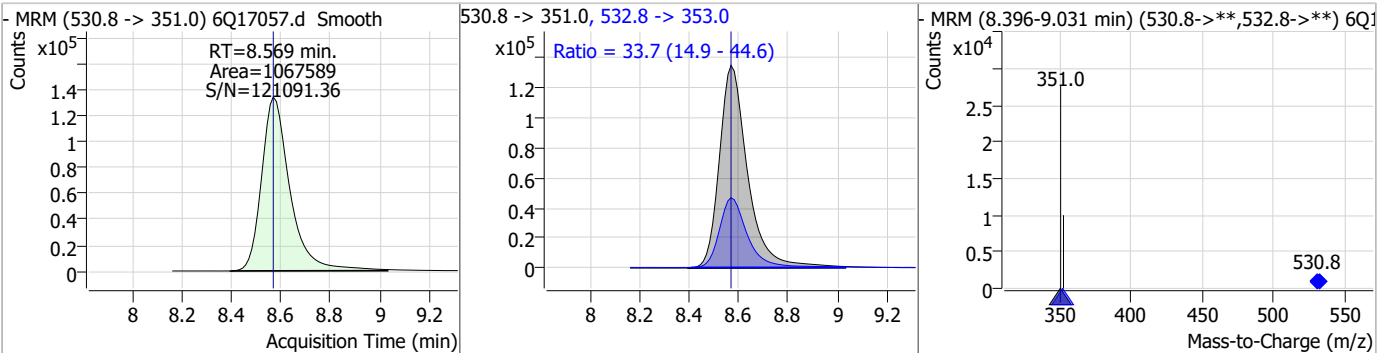


Perfluorinated Compounds by LC/MS/MS

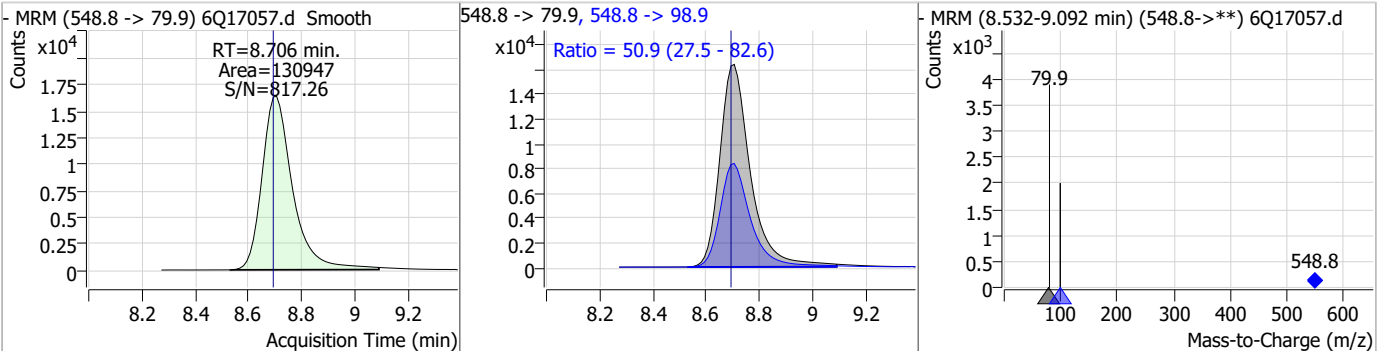
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	27.29	8.53	0.00	484125	563.1 -> 269.1	15.5	8.7	26.1



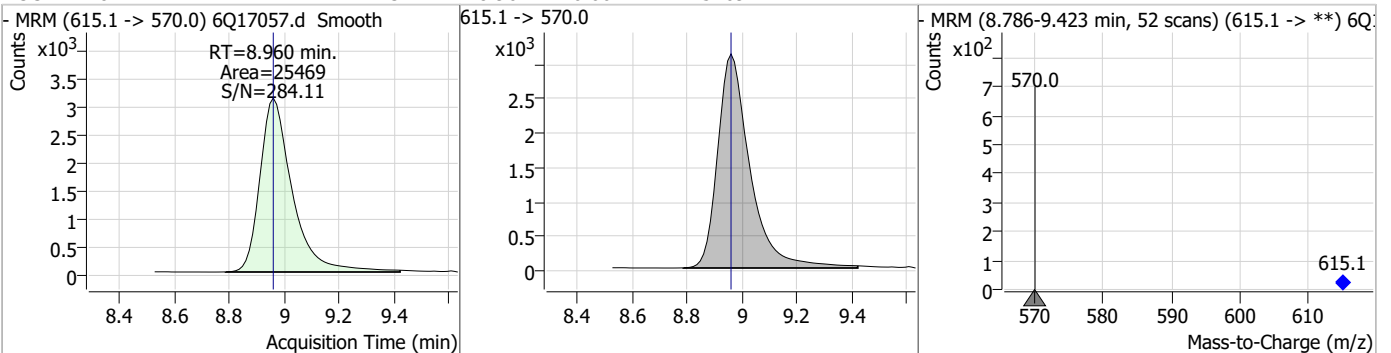
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	48.50	8.57	0.00	1067589	532.8 -> 353.0	33.7	14.9	44.6



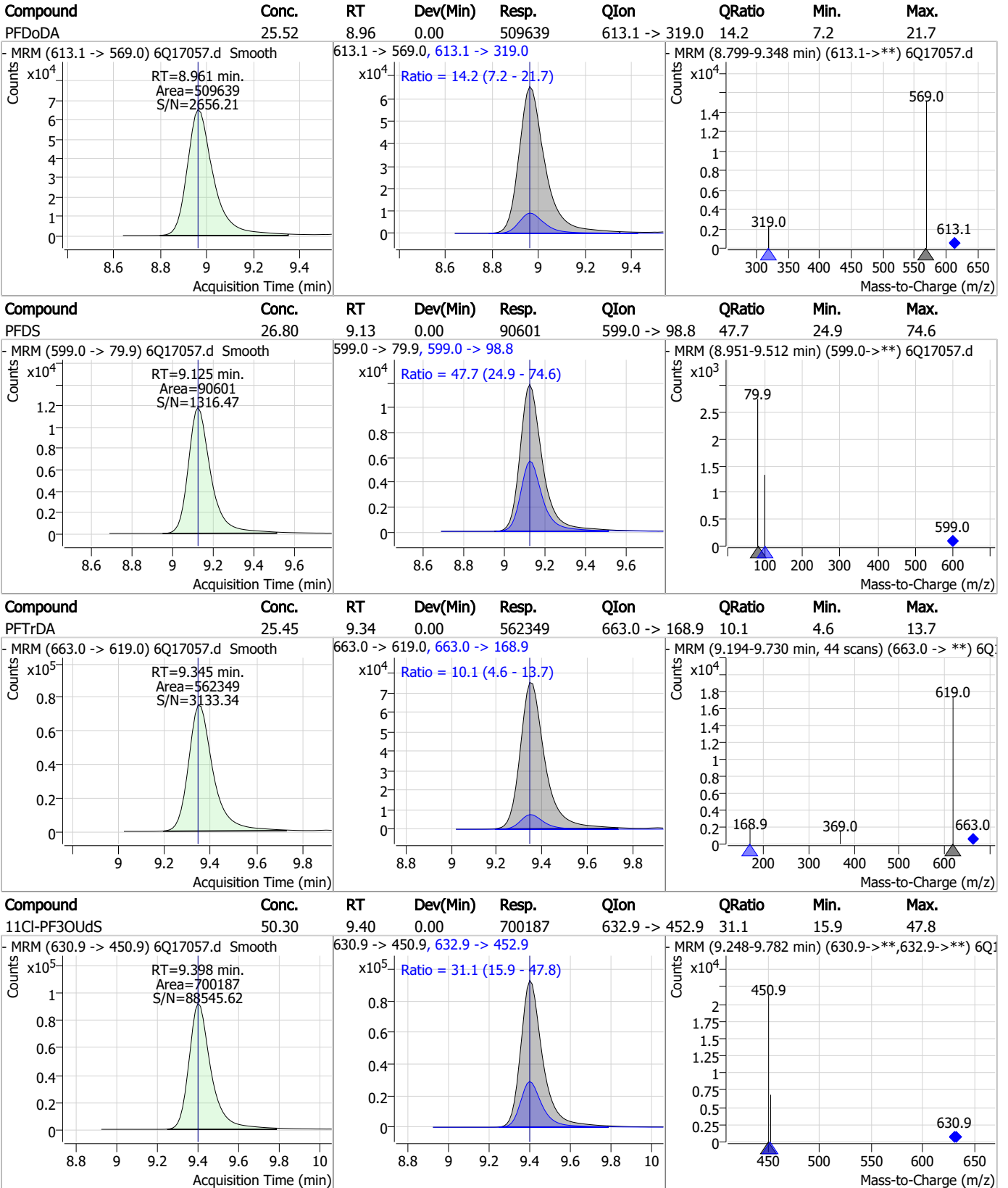
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	25.58	8.71	0.01	130947	548.8 -> 98.9	50.9	27.5	82.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.23	8.96	0.00	25469	615.1 -> 570.0			



Perfluorinated Compounds by LC/MS/MS

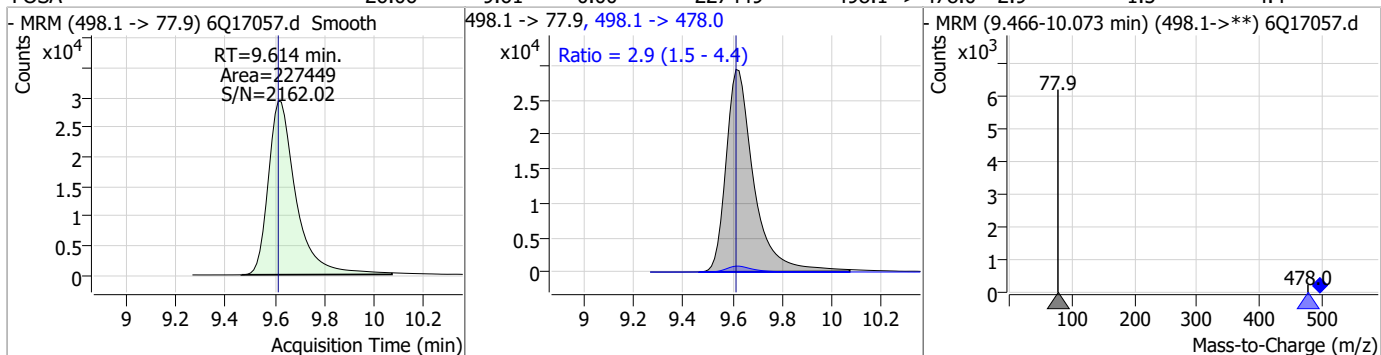


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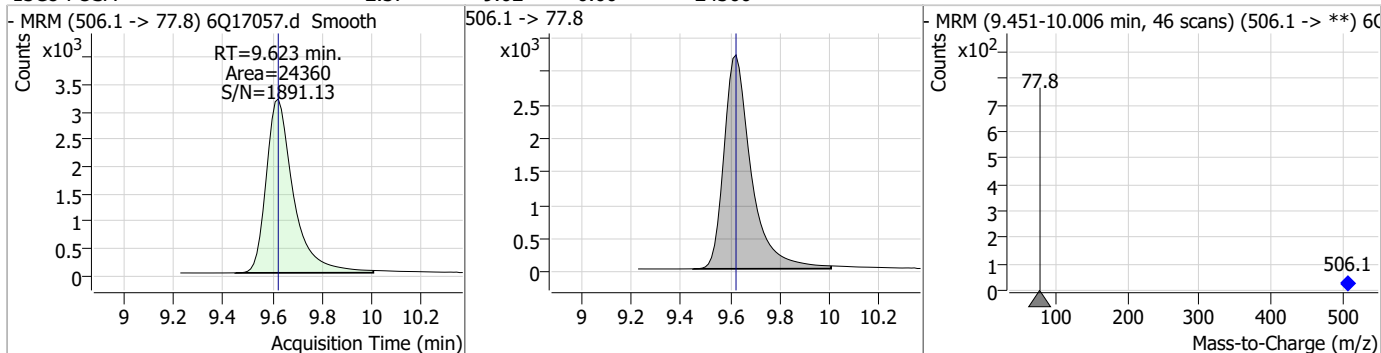
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Perfluorinated Compounds by LC/MS/MS

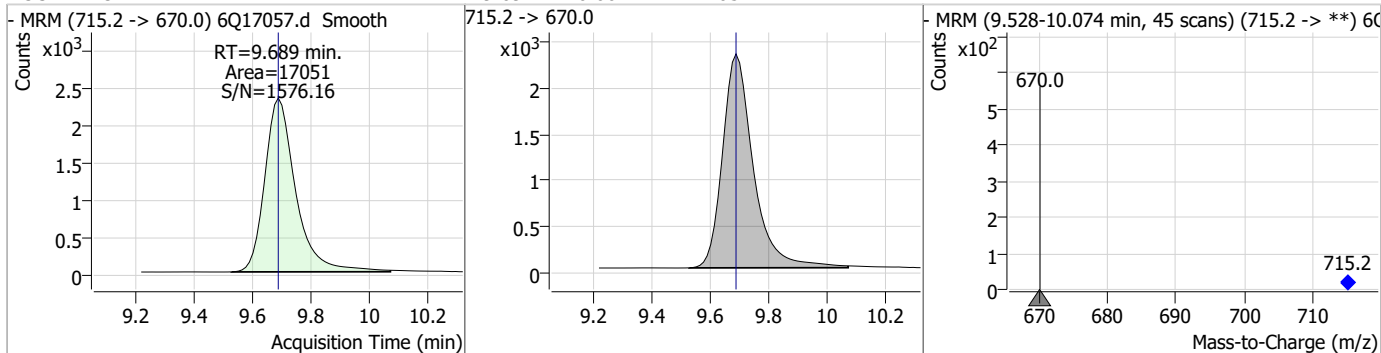
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	26.06	9.61	0.00	227449	498.1 -> 478.0	2.9	1.5	4.4



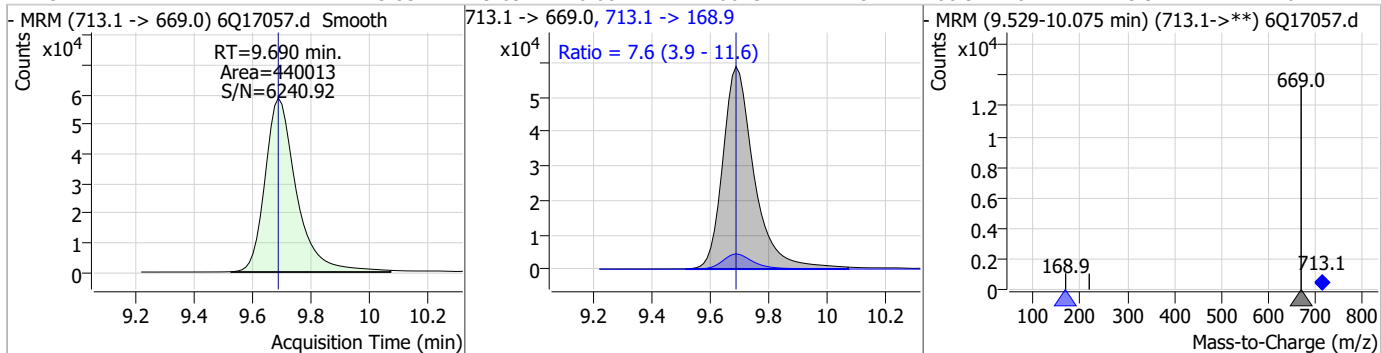
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.37	9.62	0.00	24360				



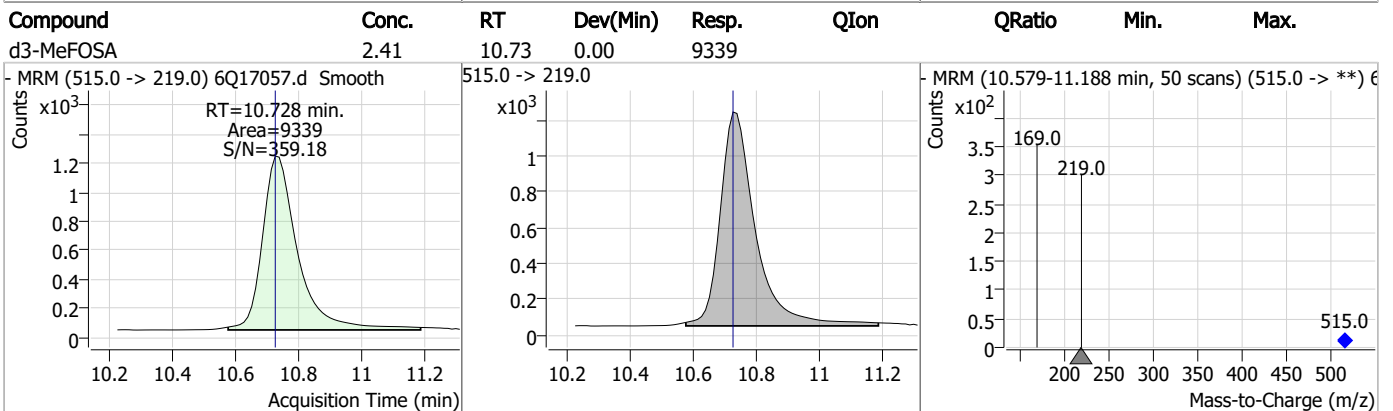
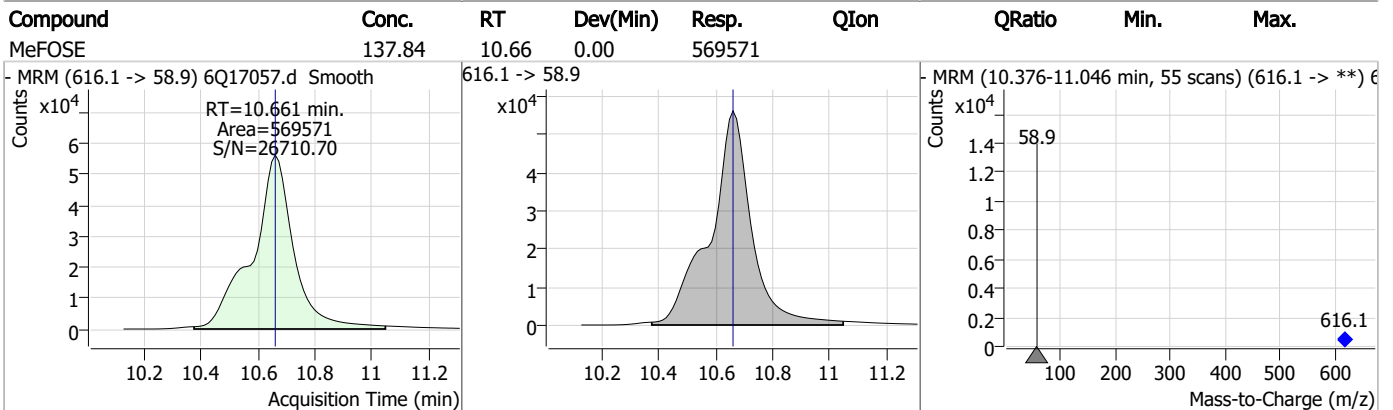
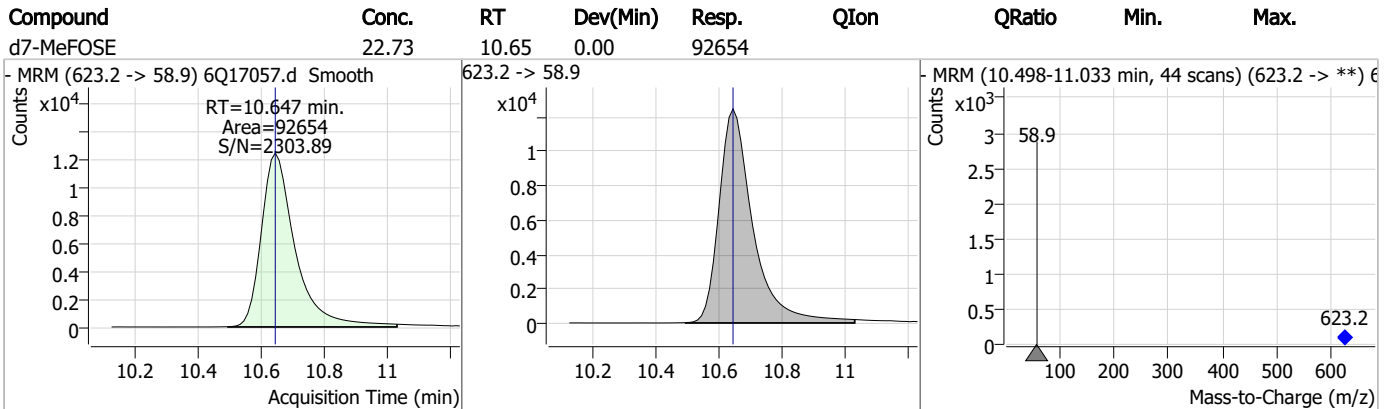
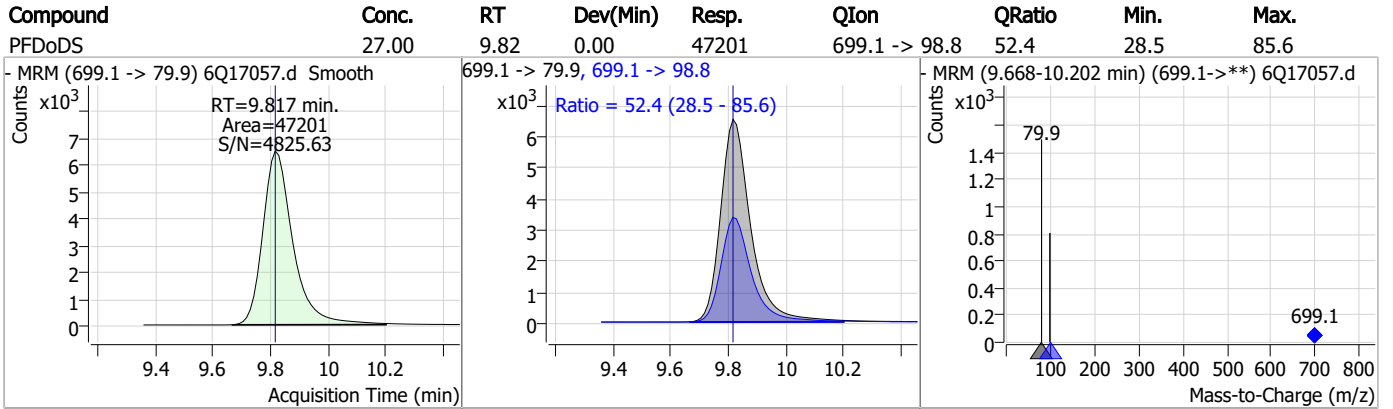
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.21	9.69	0.00	17051				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	25.53	9.69	0.00	440013	713.1 -> 168.9	7.6	3.9	11.6



Perfluorinated Compounds by LC/MS/MS



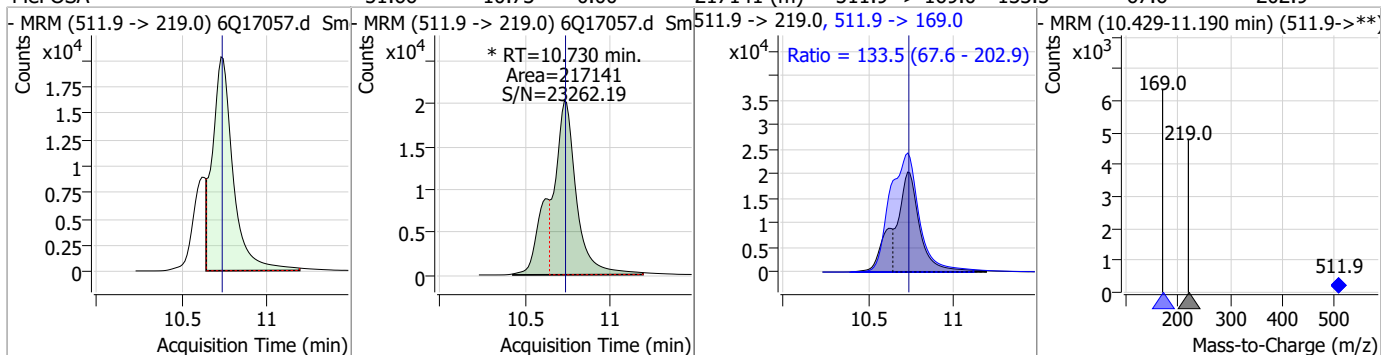
7.7.8

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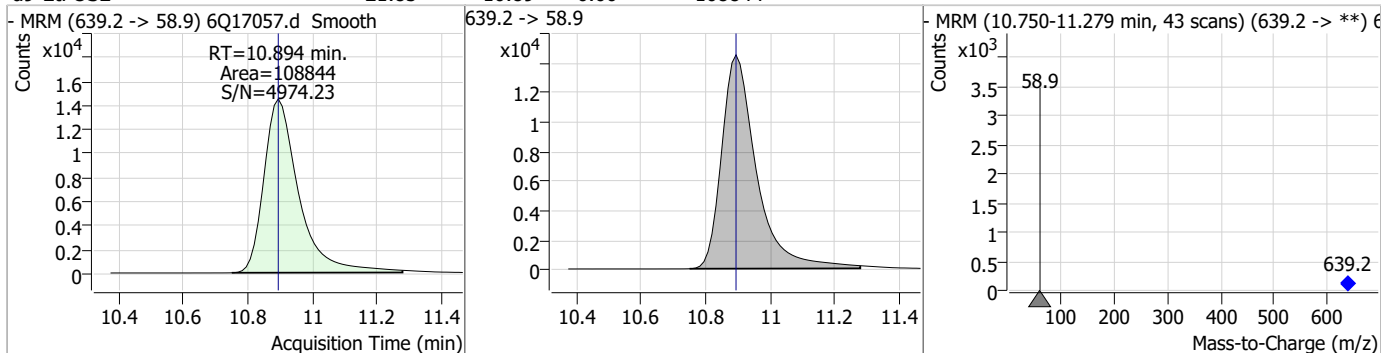


Perfluorinated Compounds by LC/MS/MS

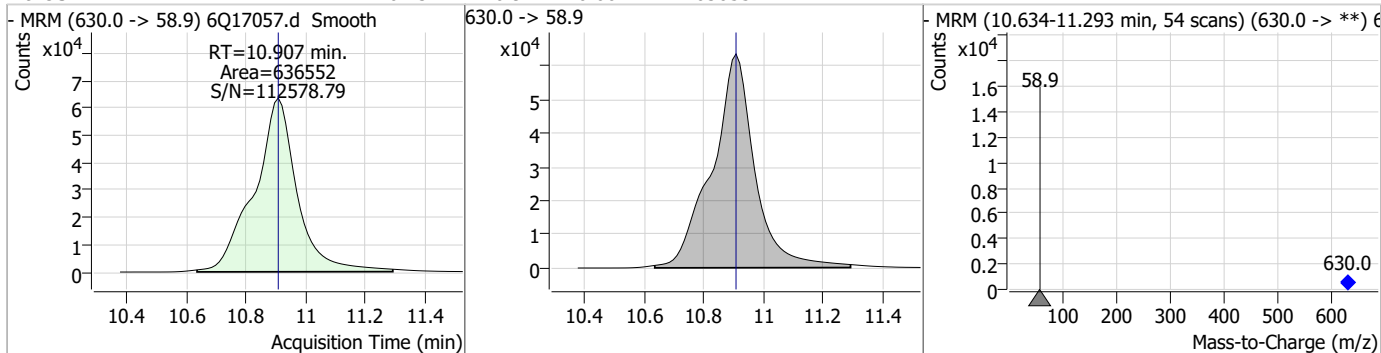
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOFA	51.66	10.73	0.00	217141 (m)	511.9 -> 169.0	133.5	67.6	202.9



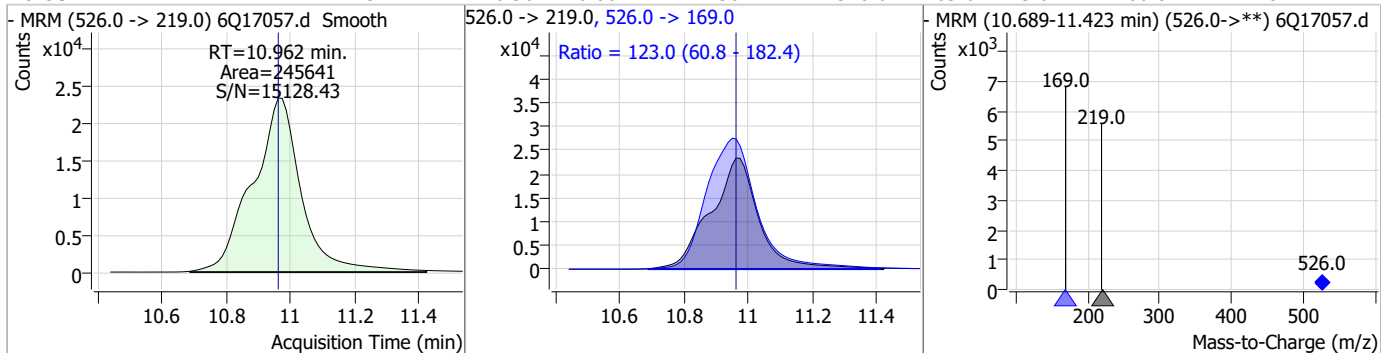
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	21.85	10.89	0.00	108844				



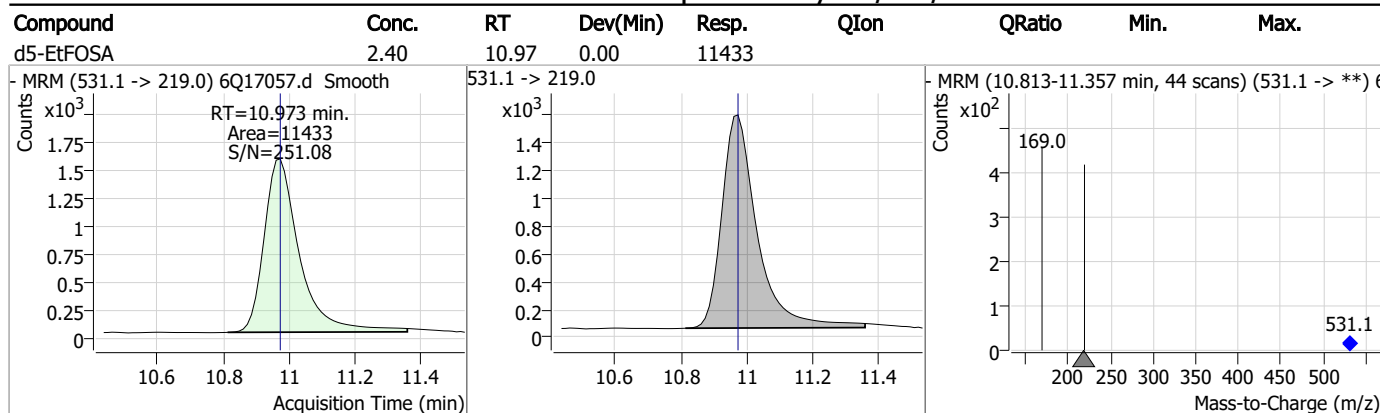
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	140.43	10.91	0.00	636552				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOFA	52.27	10.96	0.00	245641	526.0 -> 169.0	123.0	60.8	182.4



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q258-IC258 Method: EPA DRAFT 1633
Lab FileID: 6Q17057.D Analyst approved: 04/30/23 23:33 Natasha Gumtie
Injection Time: 04/28/23 14:17 Supervisor approved: 04/30/23 23:52 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.23	Split peak
EtFOSAA	2991-50-6		8.33	Split peak
MeFOSA	31506-32-8		10.73	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17058.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/28/2023 2:31:43 PM
 Sample Name : ic258-8
 Vial : P1-A9
 DA Method File : 1633_042823_S6Q258.quantmethod.xml
 Batch Name : s6q258.batch.bin
 Sample Information : OP96301,S6Q258,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.897	216.8 -> 171.9	151130	10.00 µg/L	0.000
M5-PFPeA	4.270	268.3 -> 223.0	59245	5.00 µg/L	0.000
M5-PFHxA	5.468	318.0 -> 273.0	64171	2.50 µg/L	0.000
M4-PFHpA	6.419	367.1 -> 322.0	54383	2.50 µg/L	0.000
M8-PFOA	7.062	421.1 -> 376.0	81933	2.50 µg/L	0.000
M9-PFNA	7.594	472.1 -> 427.0	24955	1.25 µg/L	0.000
M6-PFDA	8.076	519.1 -> 474.1	19248	1.25 µg/L	0.000
M7-PFUnDA	8.530	570.0 -> 525.1	23977	1.25 µg/L	0.000
M2-PFDoDA	8.960	615.1 -> 570.0	24900	1.25 µg/L	0.000
M2-PFTeDA	9.689	715.2 -> 670.0	16568	1.25 µg/L	0.000
M8-FOSA	9.623	506.1 -> 77.8	23871	2.50 µg/L	0.000
M3-PFBS	5.398	302.1 -> 79.9	21371	2.50 µg/L	0.000
M3-PFHxS	7.179	402.1 -> 79.9	12072	2.50 µg/L	0.000
M8-PFOS	8.226	507.1 -> 79.9	11247	2.50 µg/L	-0.012
M2-4:2FTS	5.144	329.1 -> 80.9	2089	5.00 µg/L	0.000
M2-6:2FTS	6.839	429.1 -> 80.9	2596	5.00 µg/L	0.000
M2-8:2FTS	7.864	529.1 -> 80.9	2849	5.00 µg/L	0.000
M3-MeFOSAA	8.134	573.2 -> 419.0	20331	5.00 µg/L	0.000
M3-HFPO-DA	5.845	286.9 -> 168.9	38629	10.00 µg/L	0.000
M5-EtFOSAA	8.330	589.2 -> 419.0	17875	5.00 µg/L	0.000
M7-MeFOSE	10.647	623.2 -> 58.9	89075	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	107649	25.00 µg/L	0.000
M5-EtFOSA	10.973	531.1 -> 219.0	10678	2.50 µg/L	0.000
M3-MeFOSA	10.728	515.0 -> 219.0	10079	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	14553	2.50 µg/L	-0.012
13C3-PFBA	2.889	216.0 -> 172.0	65582	5.00 µg/L	-0.012
18O2-PFHxS	7.177	403.0 -> 83.9	9221	2.50 µg/L	0.000
13C4-PFOA	7.063	417.1 -> 372.0	82388	2.50 µg/L	0.000
13C2-PFDA	8.076	515.1 -> 470.1	24077	1.25 µg/L	0.000
13C5-PFNA	7.595	468.0 -> 423.0	26423	1.25 µg/L	0.000
13C2-PFHxA	5.469	315.1 -> 270.0	55057	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.144	329.1 -> 80.9	2089	4.93 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.5%		
13C2-6:2FTS	6.839	429.1 -> 80.9	2596	5.04 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.9%		
13C2-8:2FTS	7.864	529.1 -> 80.9	2849	5.15 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.0%		
13C2-PFDoDA	8.960	615.1 -> 570.0	24900	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.4%		
13C2-PFTeDA	9.689	715.2 -> 670.0	16568	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.8%		
13C3-PFBS	5.398	302.1 -> 79.9	21371	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.6%		
13C3-PFHxS	7.179	402.1 -> 79.9	12072	2.46 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C4-PFBA	2.897	216.8 -> 171.9	151130	9.97 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C4-PFHpA	6.419	367.1 -> 322.0	54383	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.6%	
13C5-PFHxA	5.468	318.0 -> 273.0	64171	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.7%	
13C5-PFPeA	4.270	268.3 -> 223.0	59245	4.82 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.3%	
13C6-PFDA	8.076	519.1 -> 474.1	19248	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.0%	
13C7-PFUnDA	8.530	570.0 -> 525.1	23977	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.3%	
13C8-FOSA	9.623	506.1 -> 77.8	23871	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C8-PFOA	7.062	421.1 -> 376.0	81933	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.1%	
13C8-PFOS	8.226	507.1 -> 79.9	11247	2.57 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C9-PFNA	7.594	472.1 -> 427.0	24955	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.1%	
d3-MeFOSAA	8.134	573.2 -> 419.0	20331	4.69 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.8%	
13C3-HFPO-DA	5.845	286.9 -> 168.9	38629	9.91 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.1%	
d3-MeFOSA	10.728	515.0 -> 219.0	10079	2.77 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.9%	
d5-EtFOSAA	8.330	589.2 -> 419.0	17875	4.96 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.2%	
d7-MeFOSE	10.647	623.2 -> 58.9	89075	23.32 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 93.3%	
d9-EtFOSE	10.894	639.2 -> 58.9	107649	23.07 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 92.3%	
d5-EtFOSA	10.973	531.1 -> 219.0	10678	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.7%	
Target Compounds					QValue
4:2FTS	5.145	327.1 -> 307.0	697434	220.71 µg/L	99
		327.1 -> 80.9	262914		
6:2FTS	6.839	427.1 -> 407.0	625666	219.13 µg/L	97
		427.1 -> 80.9	214122		
8:2FTS	7.865	527.1 -> 507.0	348850	205.80 µg/L	99
		527.1 -> 80.8	143241		
EtFOSAA	8.331	584.2 -> 419.1	208550	68.65 µg/L	100
		584.2 -> 526.0	109068		
FOSA	9.614	498.1 -> 77.9	564526	66.00 µg/L	100
		498.1 -> 478.0	16955		
MeFOSAA	8.136	570.1 -> 419.0	268599	70.36 µg/L	90
		570.1 -> 483.0	50249		
PFBA	2.893	212.8 -> 168.9	1355052	267.34 µg/L	100
PFBS	5.400	298.7 -> 79.9	539834	56.29 µg/L	99
		298.7 -> 98.8	219827		
PFDA	8.077	512.9 -> 469.0	1462362	69.92 µg/L	98
		512.9 -> 219.0	230825		
PFDoDA	8.961	613.1 -> 569.0	1244394	63.75 µg/L	99
		613.1 -> 319.0	183825		
PFDS	9.125	599.0 -> 79.9	220016	61.38 µg/L	96

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.420	599.0 -> 98.8	104007	69.58	µg/L	99
		363.1 -> 319.0	1867275			
PFHpS	7.734	363.1 -> 169.0	282777	60.34	µg/L	100
		449.0 -> 79.9	367816			
PFHxA	5.470	449.0 -> 98.9	185825	67.28	µg/L	99
		313.0 -> 269.0	1707020			
PFHxS	7.180	313.0 -> 118.9	75498	62.51	µg/L	91
		398.7 -> 79.9	411201			
PFNA	7.595	398.7 -> 98.9	186310	67.51	µg/L	96
		463.0 -> 419.0	1165424			
PFNS	8.694	463.0 -> 219.0	221443	58.41	µg/L	99
		548.8 -> 79.9	317111			
PFOA	7.063	548.8 -> 98.9	176024	62.50	µg/L	97
		413.0 -> 369.0	2469950			
PFOS	8.240	413.0 -> 169.0	403014	57.36	µg/L	83
		498.9 -> 79.9	311549			
PFPeA	4.273	498.9 -> 98.8	160890	130.45	µg/L	100
		263.0 -> 219.0	2105084			
PFPeS	6.472	349.1 -> 79.9	437428	63.67	µg/L	93
		349.1 -> 98.9	193273			
PFTeDA	9.690	713.1 -> 669.0	1058689	63.23	µg/L	100
		713.1 -> 168.9	80979			
PFTrDA	9.345	663.0 -> 619.0	1376902	63.73	µg/L	99
		663.0 -> 168.9	124045			
PFUnDA	8.531	563.1 -> 519.0	1133142	68.14	µg/L	95
		563.1 -> 269.1	173575			
11Cl-PF3OUdS	9.398	630.9 -> 450.9	1661712	125.35	µg/L	98
		632.9 -> 452.9	509572			
9Cl-PF3ONS	8.569	530.8 -> 351.0	2636168	125.77	µg/L	95
		532.8 -> 353.0	857971			
ADONA	6.681	376.9 -> 250.9	7135823	122.28	µg/L	99
		376.9 -> 84.8	1798541			
HFPO-DA	5.834	284.9 -> 168.9	494197	135.07	µg/L	95
		284.9 -> 184.9	59457			
3:3FTCA	3.771	241.0 -> 177.0	341837	338.77	µg/L	97
		241.0 -> 117.0	41885			
5:3FTCA	6.147	341.0 -> 237.1	6507641	1584.88	µg/L	91
		341.0 -> 217.0	4838059			
7:3FTCA	7.573	441.0 -> 316.9	3147148	1687.19	µg/L	93
		441.0 -> 336.9	6469023			
EtFOSA	10.962	526.0 -> 219.0	583690	133.01	µg/L	92
		526.0 -> 169.0	761555			
EtFOSE	10.907	630.0 -> 58.9	1487025	331.70	µg/L	100
		511.9 -> 219.0	528578			
MeFOSA	10.743	511.9 -> 169.0	719548	116.53	µg/L	99
		616.1 -> 58.9	1309183			
MeFOSE	10.661	699.1 -> 79.9	111401	329.56	µg/L	100
		699.1 -> 98.8	65507			
PFDoDS	9.817	295.0 -> 201.0	355695	60.10	µg/L	98
		295.0 -> 84.9	85285			
NFDHA	5.350	279.0 -> 85.1	1422124	129.35	µg/L	100
		229.0 -> 84.9	1058106			
PFMBA	4.687	314.8 -> 134.9	3905822	131.01	µg/L	100
		314.8 -> 82.9	132583			
PFMPA	3.426			121.99	µg/L	99
PFEESA	5.937					

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



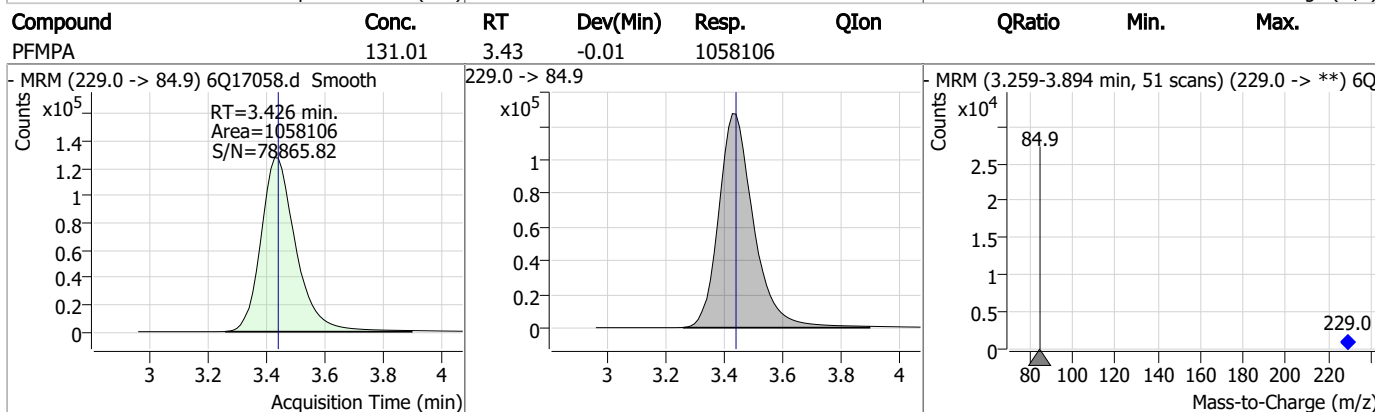
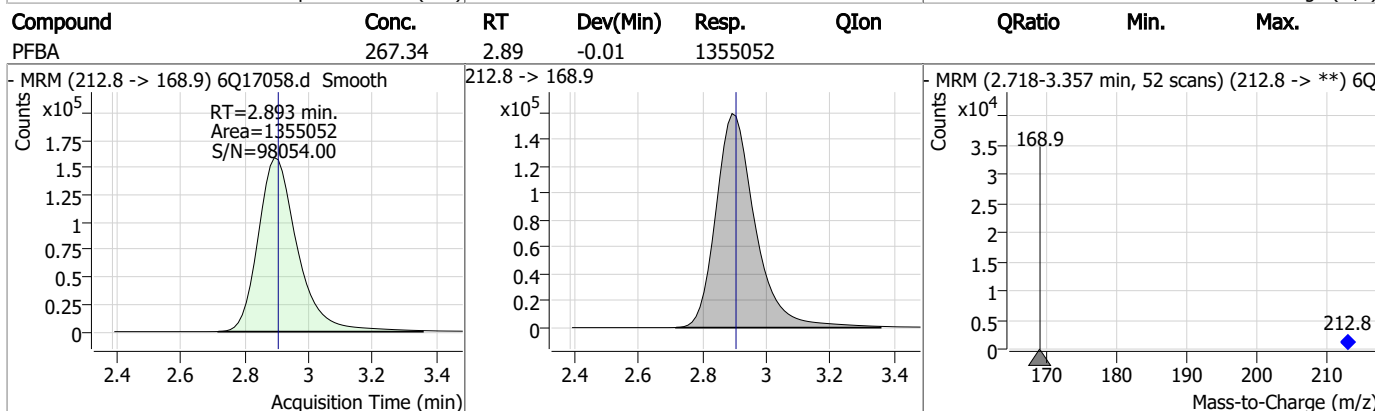
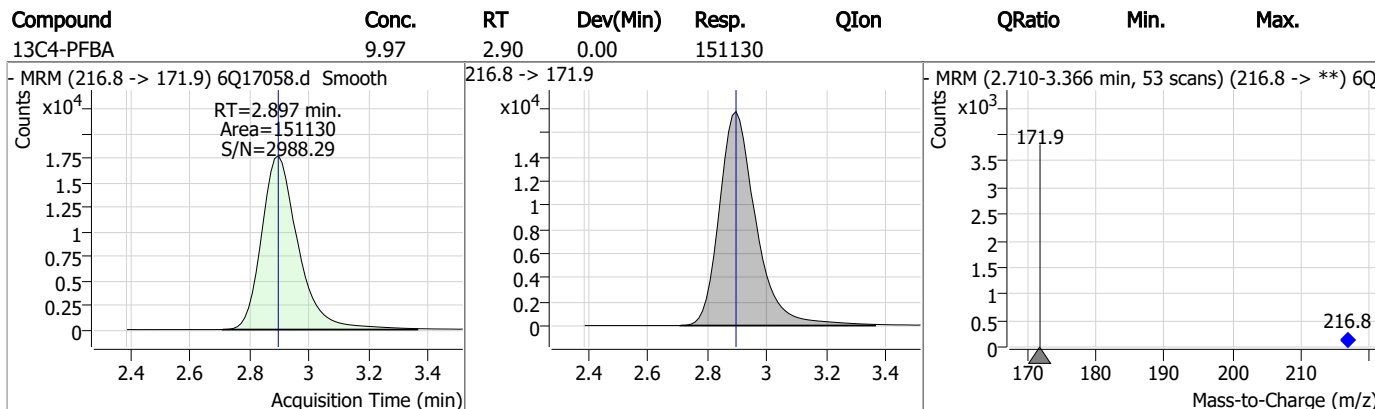
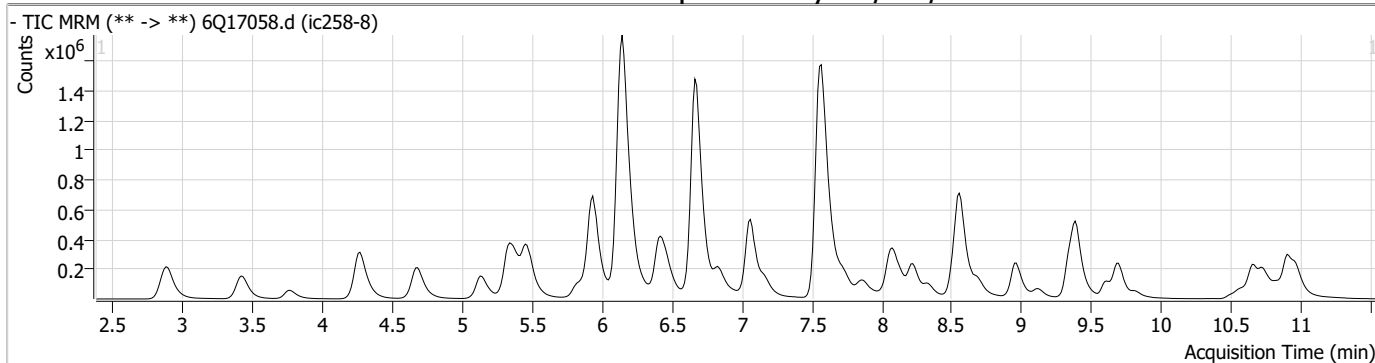
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.9

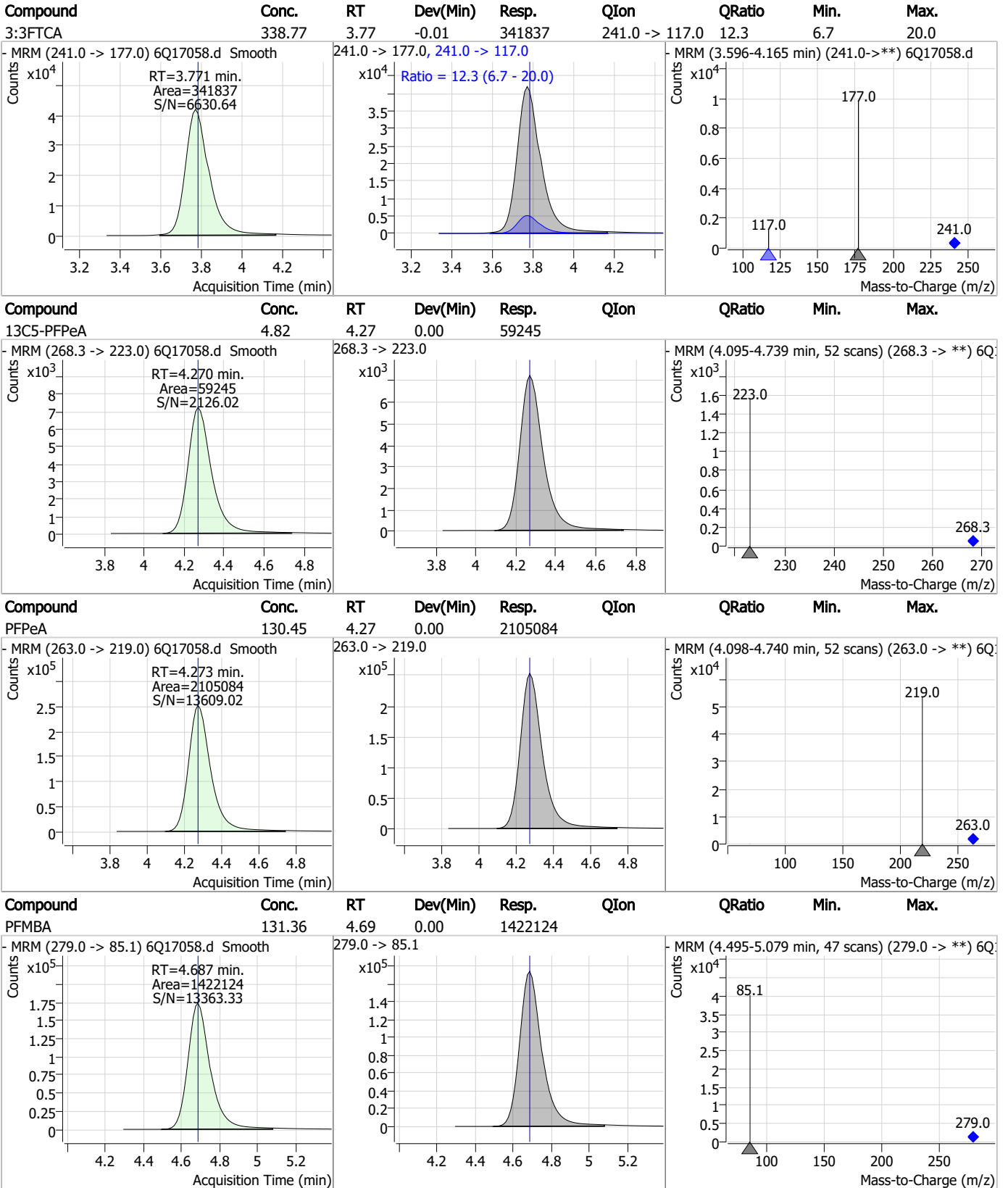
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

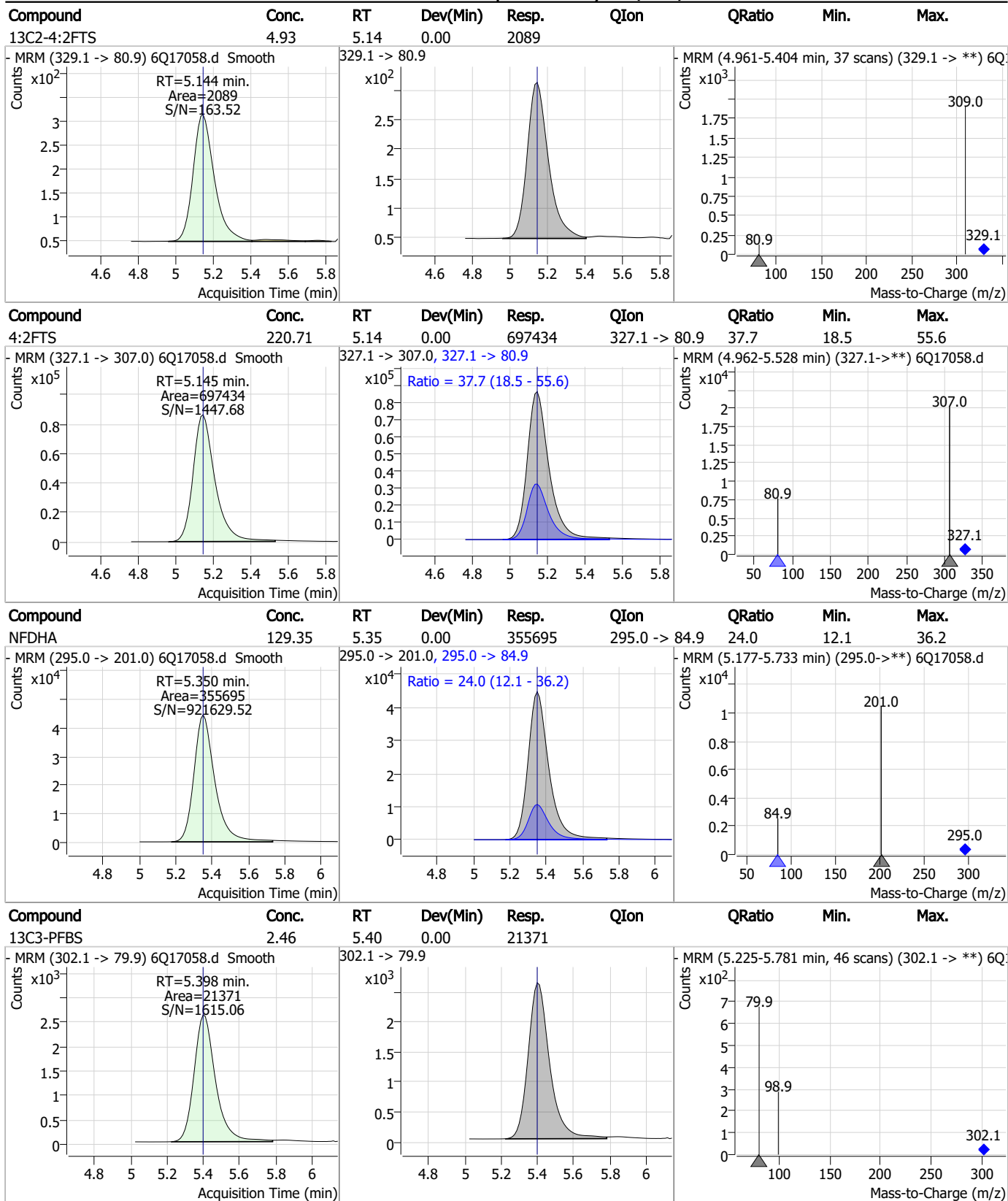


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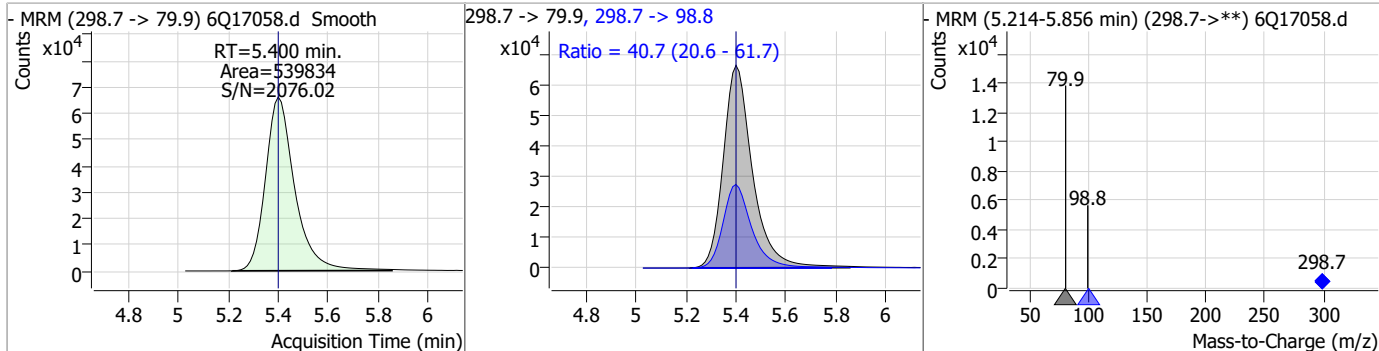
Perfluorinated Compounds by LC/MS/MS



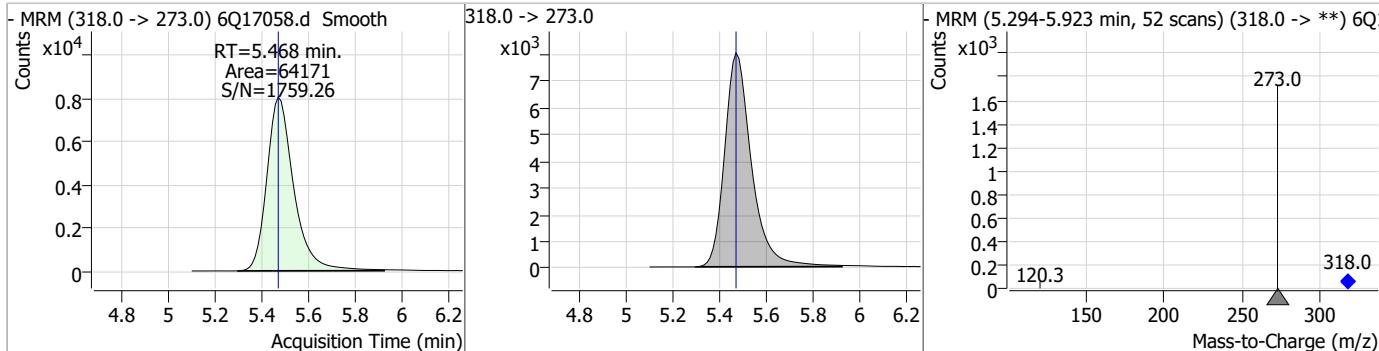
7.7.9
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Perfluorinated Compounds by LC/MS/MS

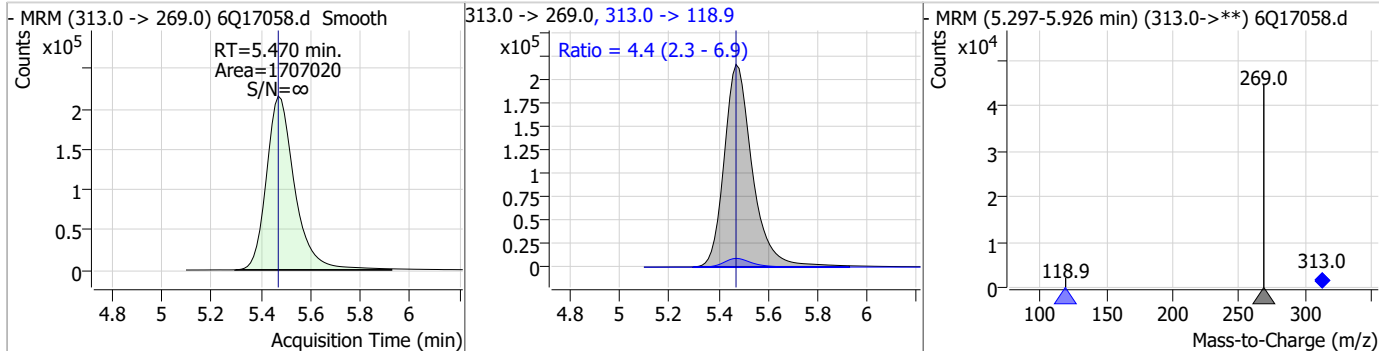
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	56.29	5.40	0.00	539834	298.7 -> 98.8	40.7	20.6	61.7



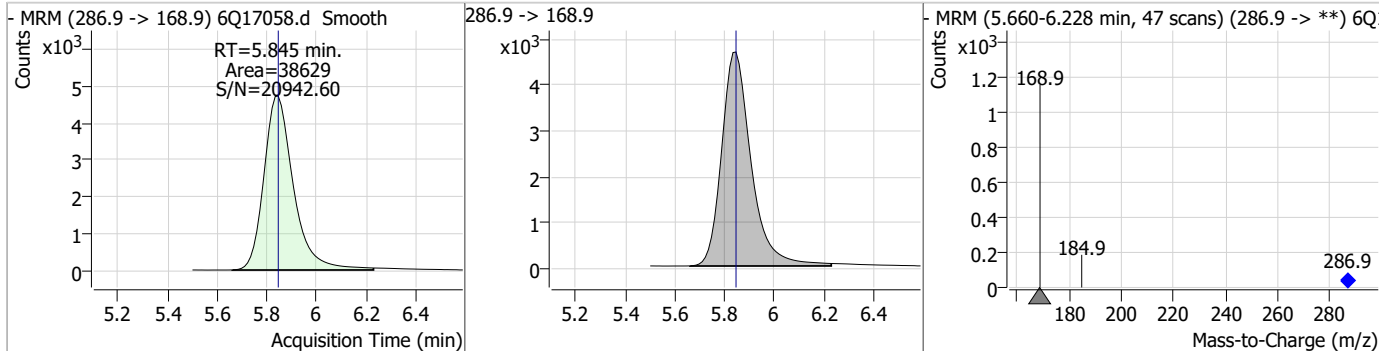
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.42	5.47	0.00	64171				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	67.28	5.47	0.00	1707020	313.0 -> 118.9	4.4	2.3	6.9

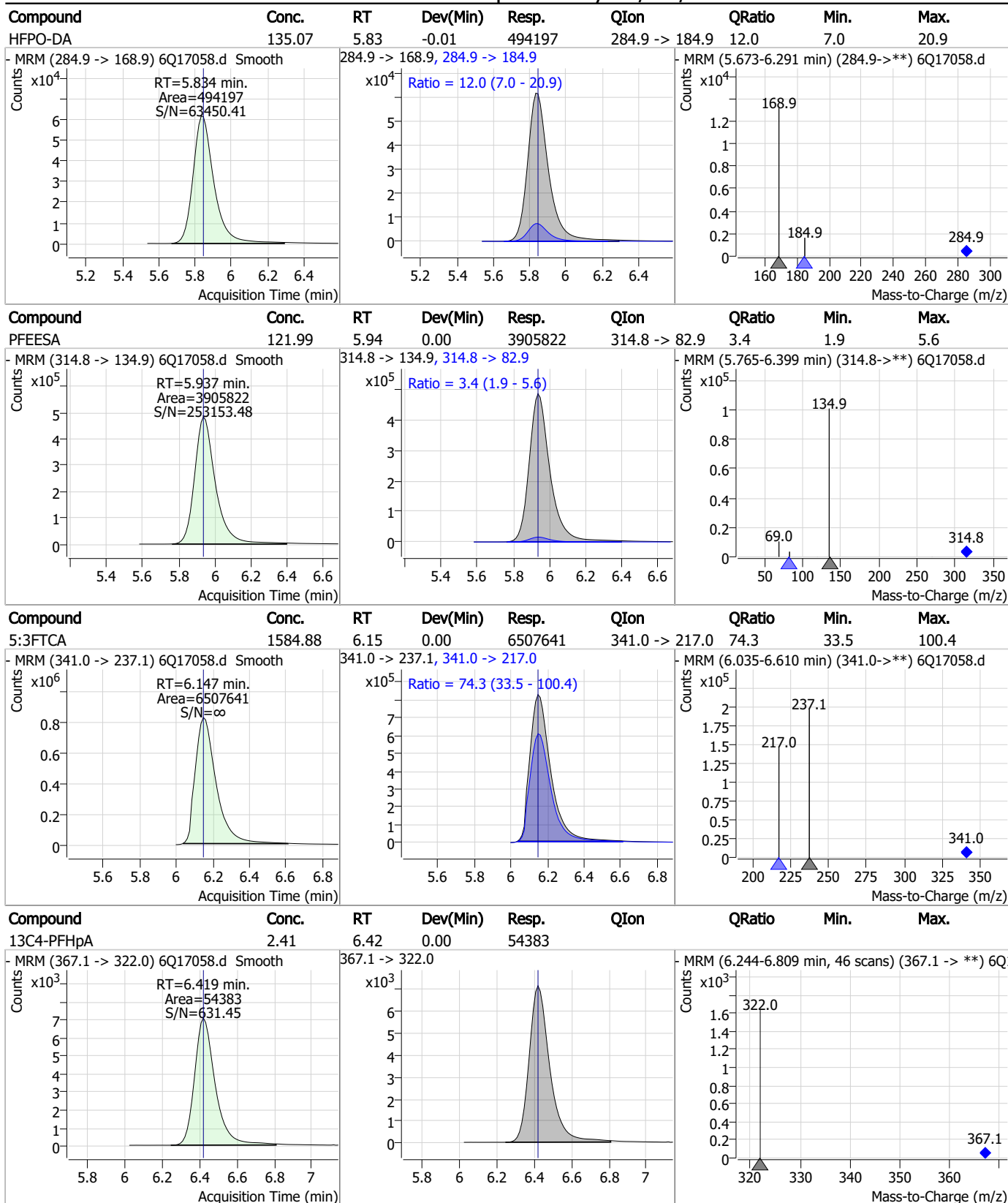


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.91	5.85	0.00	38629				



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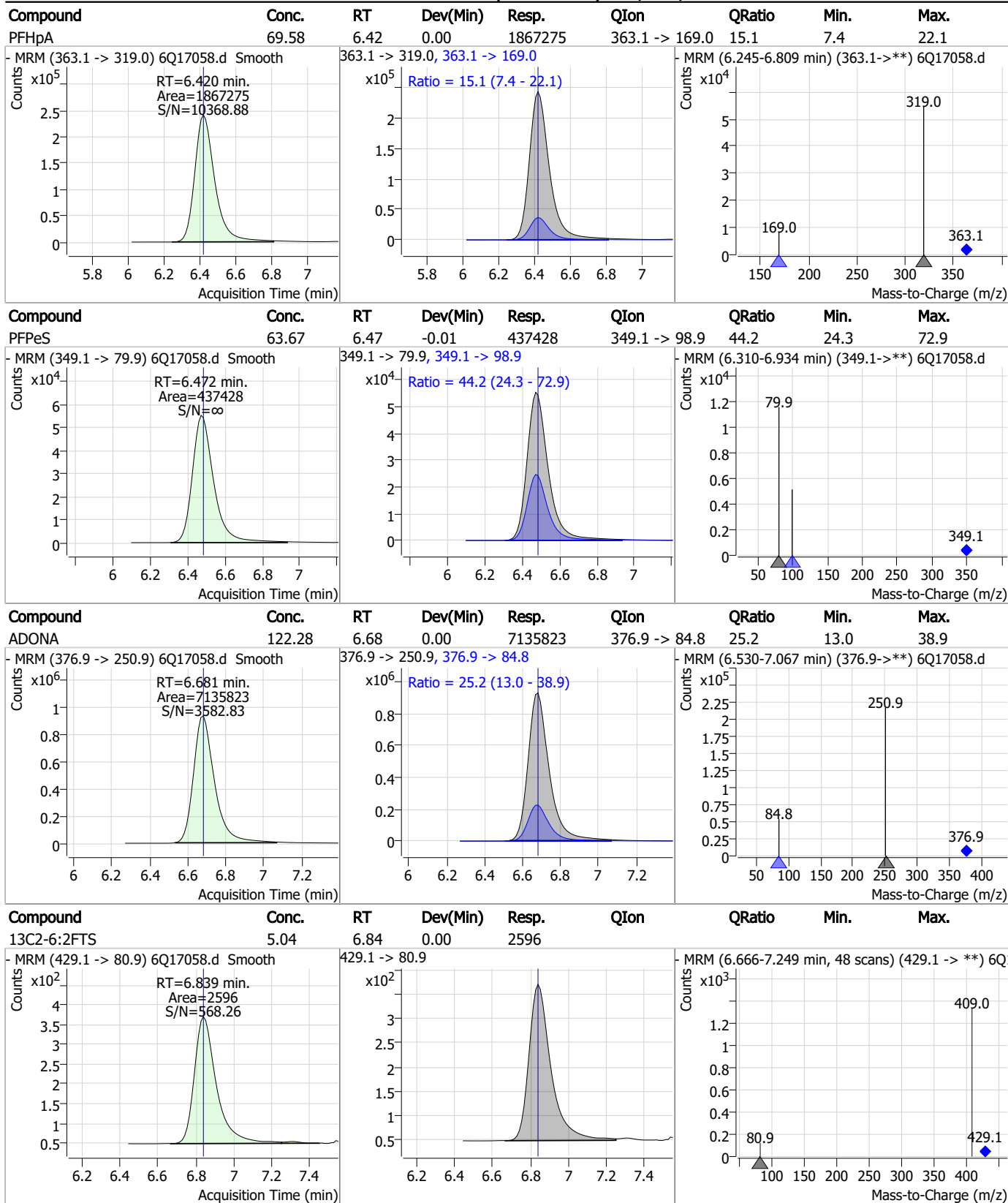
Perfluorinated Compounds by LC/MS/MS



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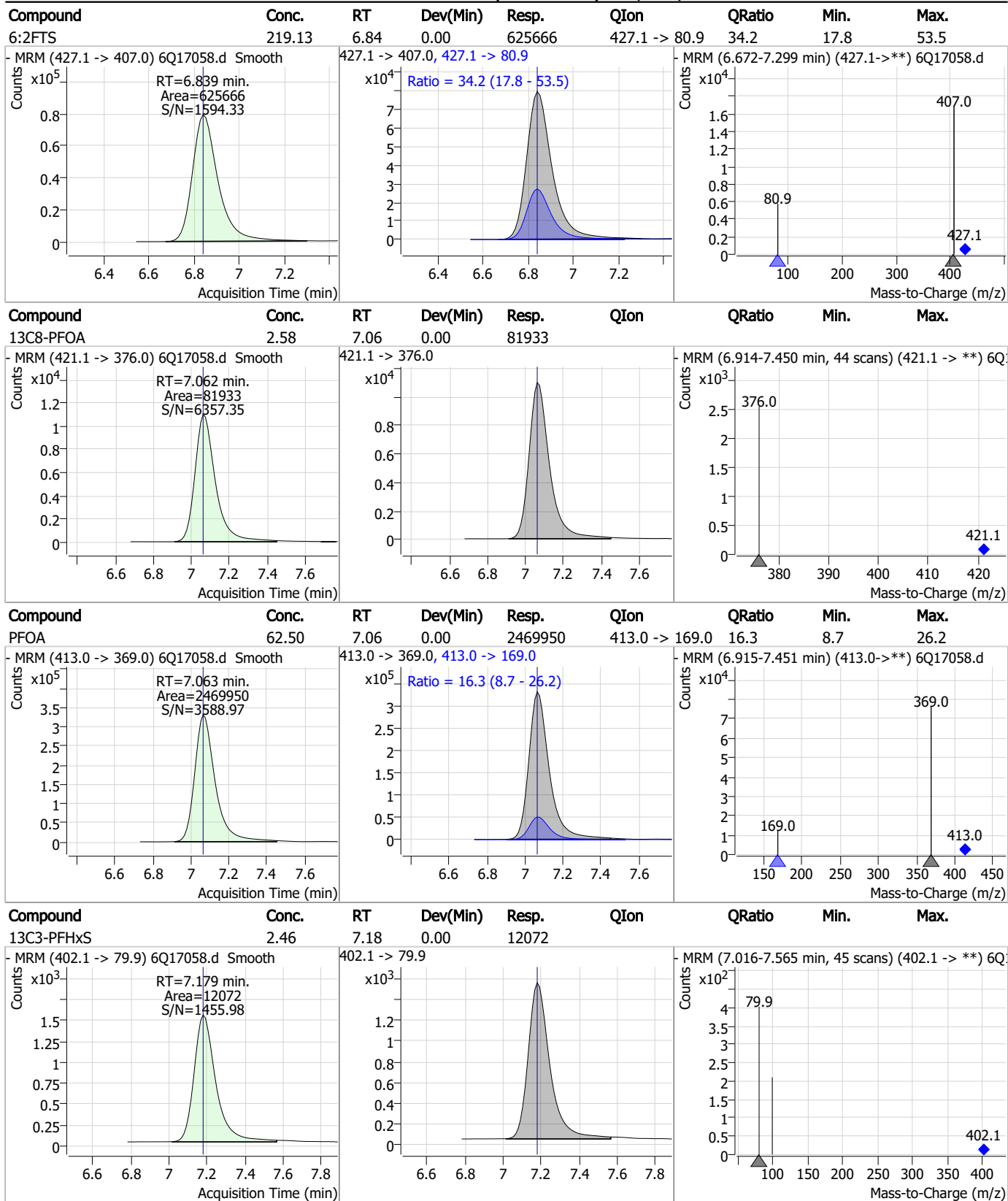
Perfluorinated Compounds by LC/MS/MS



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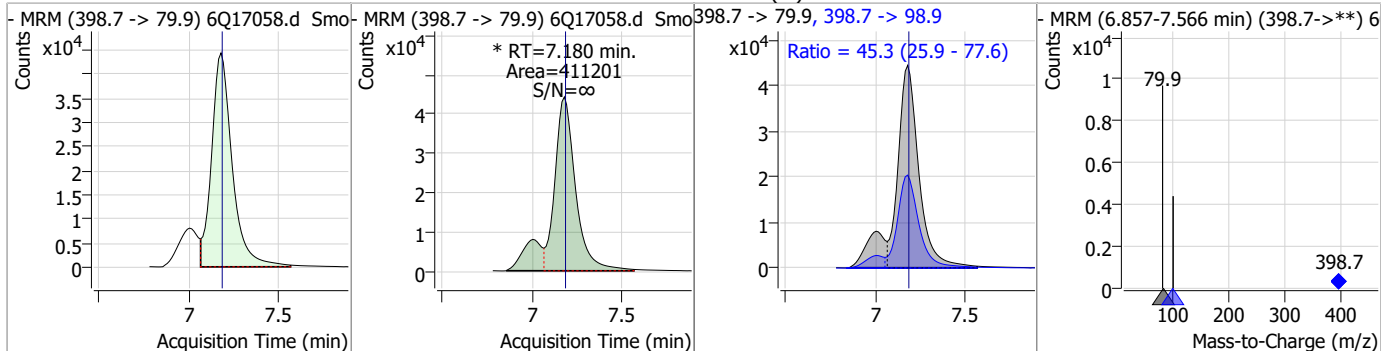
Perfluorinated Compounds by LC/MS/MS



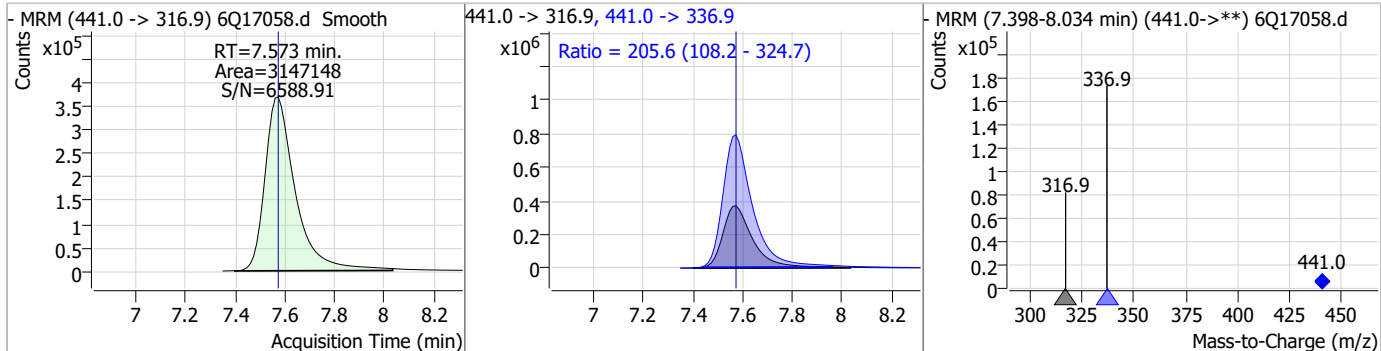
7.7.9
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Perfluorinated Compounds by LC/MS/MS

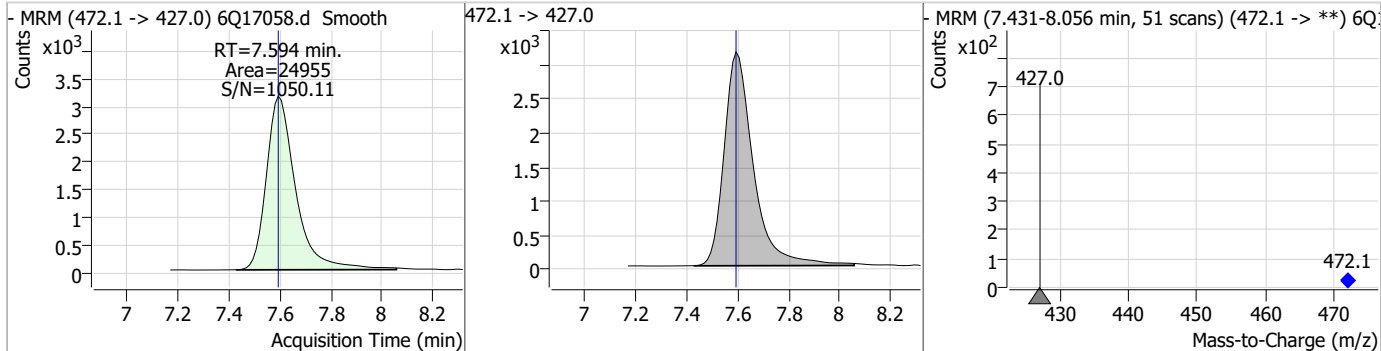
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	62.51	7.18	0.00	411201 (m)	398.7 -> 98.9	45.3	25.9	77.6



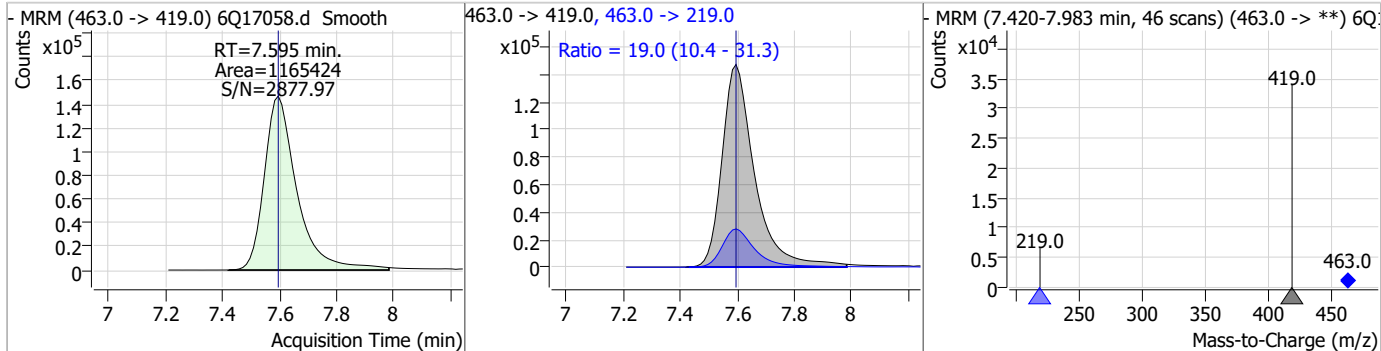
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	1687.19	7.57	0.00	3147148	441.0 -> 336.9	205.6	108.2	324.7



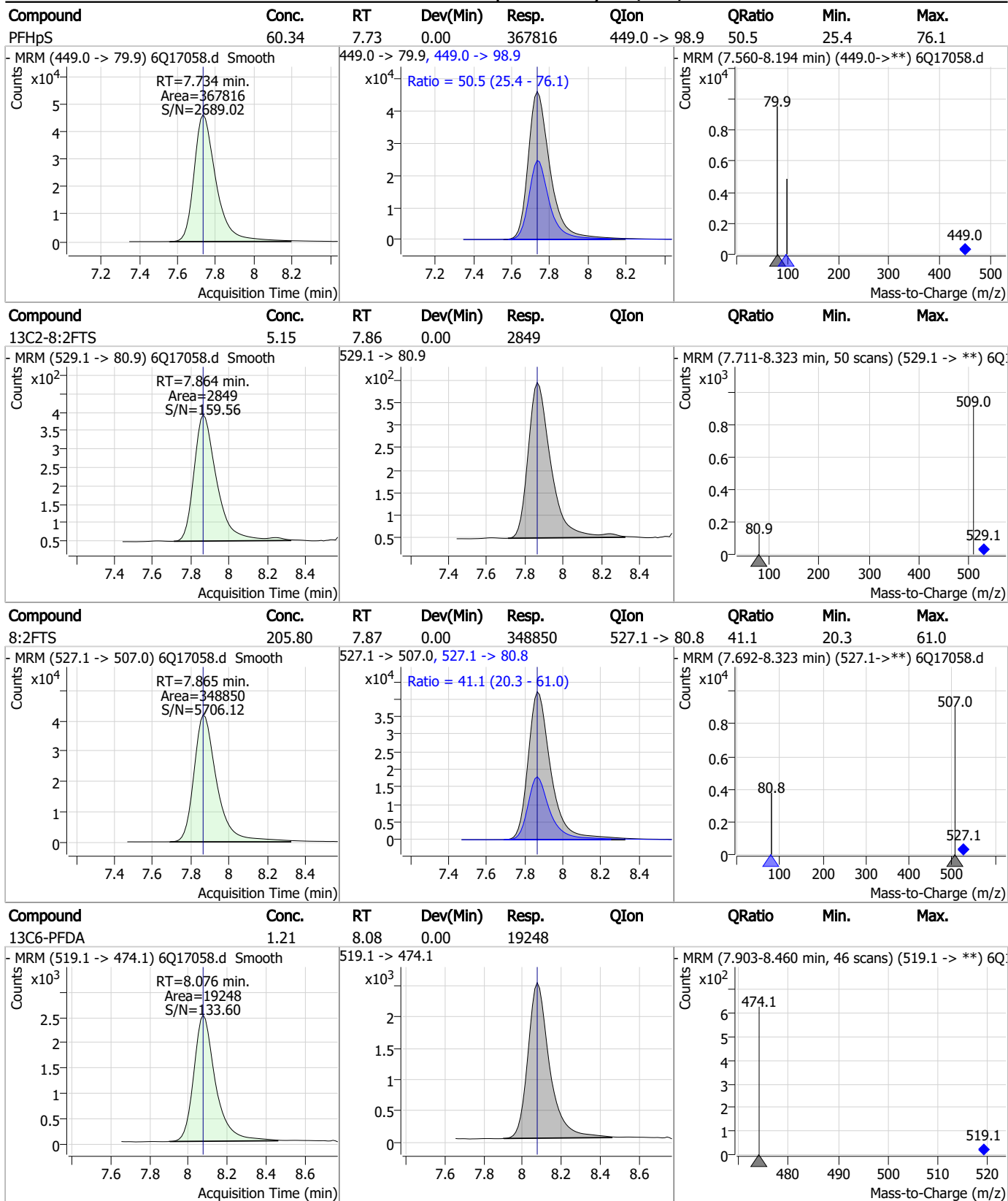
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.24	7.59	0.00	24955	472.1 -> 427.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	67.51	7.60	0.00	1165424	463.0 -> 219.0	19.0	10.4	31.3

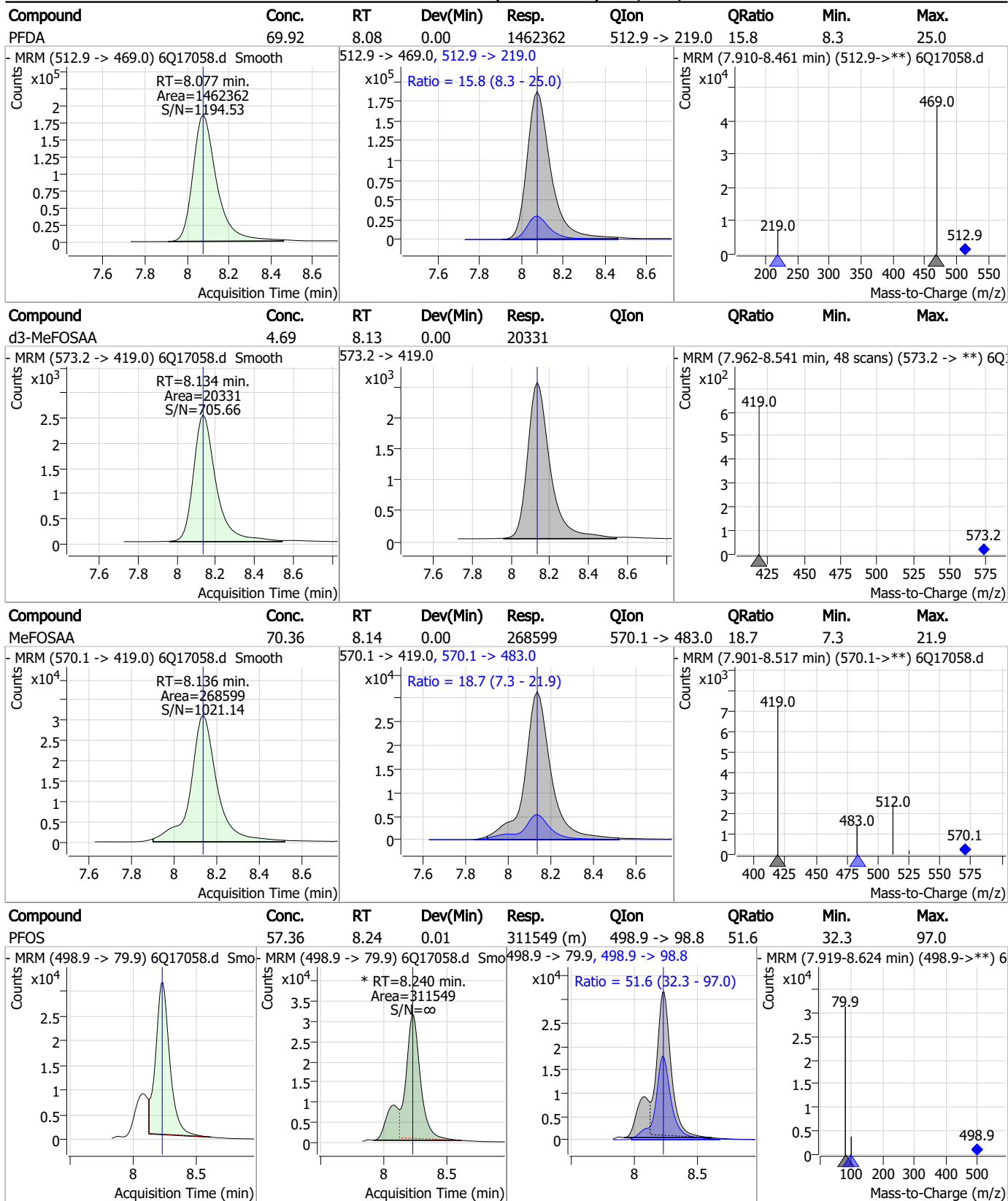


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



7.7.9
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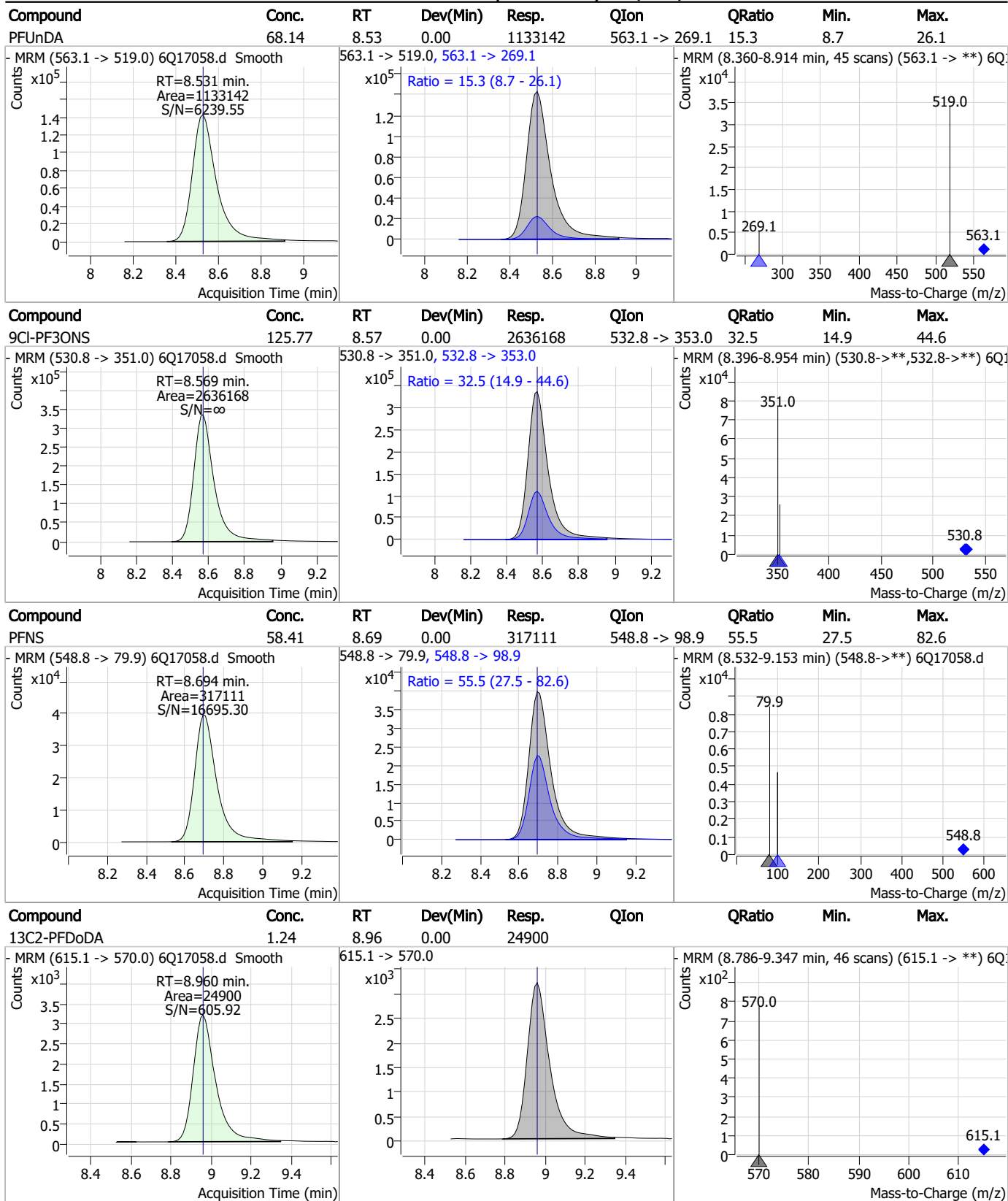
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.57	8.23	-0.01	11247				
d5-EtFOSAA	4.96	8.33	0.00	17875				
EtFOSAA	68.65	8.33	0.00	208550	584.2 -> 526.0	52.3	26.2	78.6
13C7-PFUnDA	1.18	8.53	0.00	23977				

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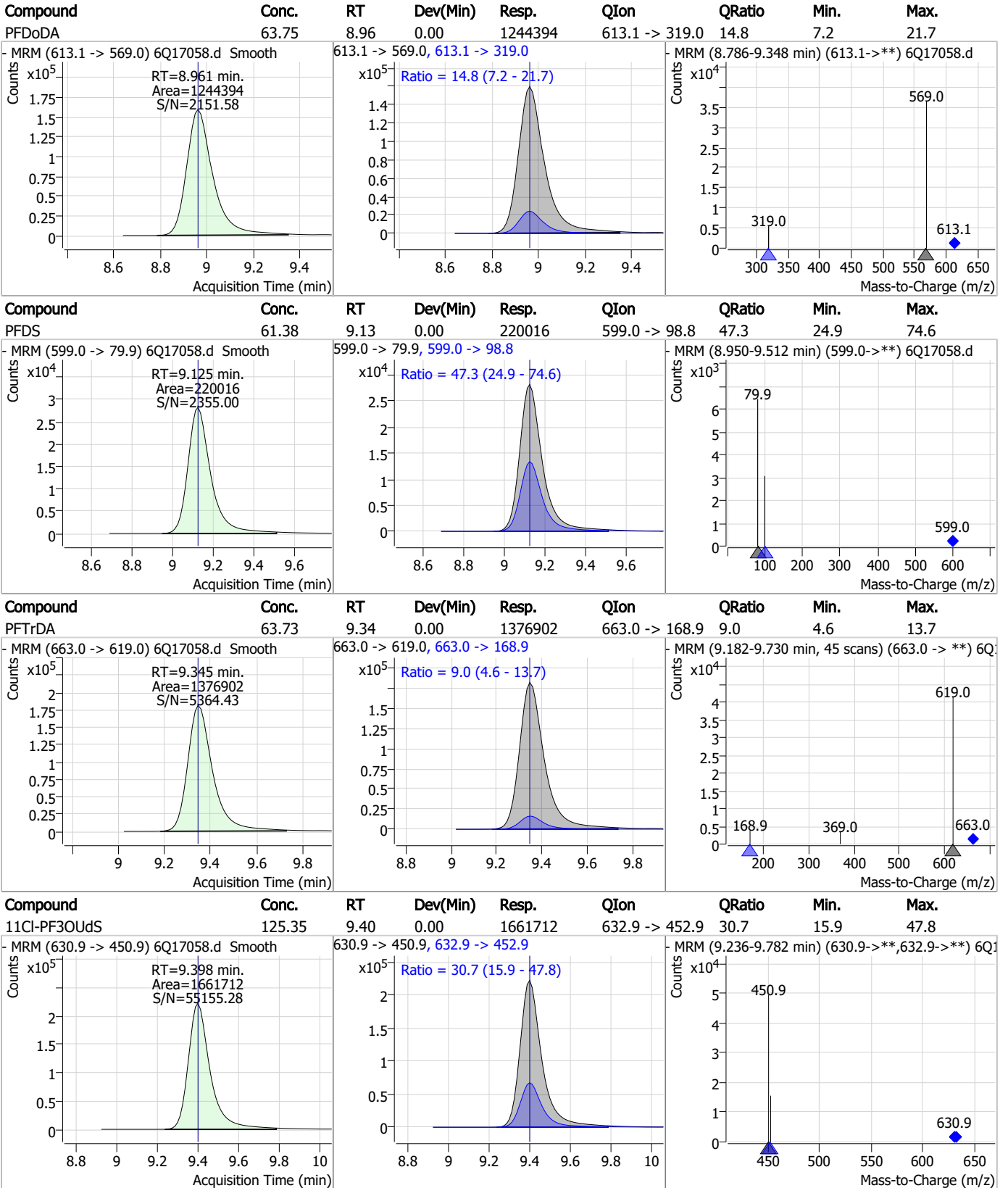


Perfluorinated Compounds by LC/MS/MS



7.7.9
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Perfluorinated Compounds by LC/MS/MS



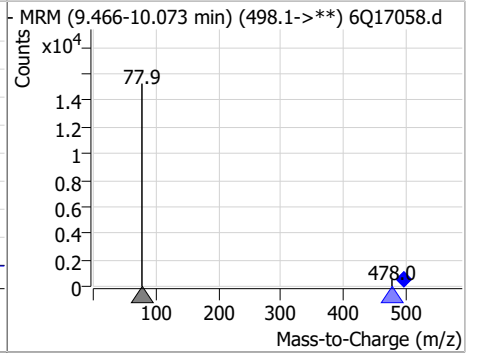
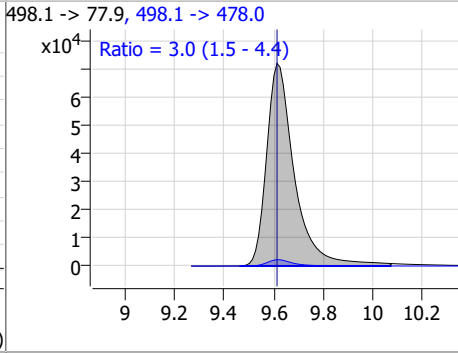
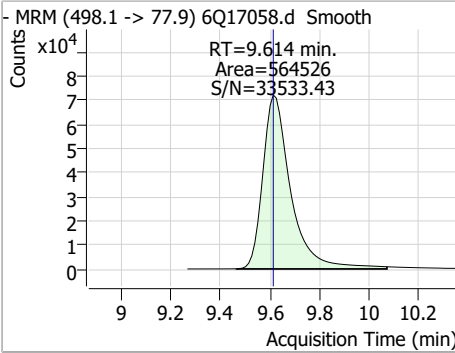
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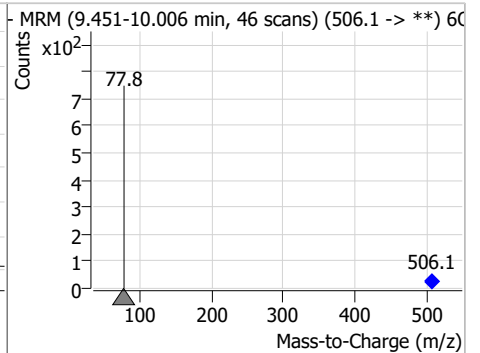
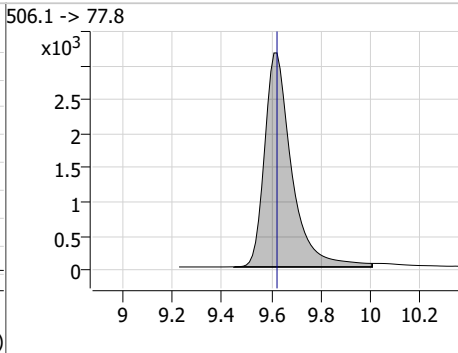
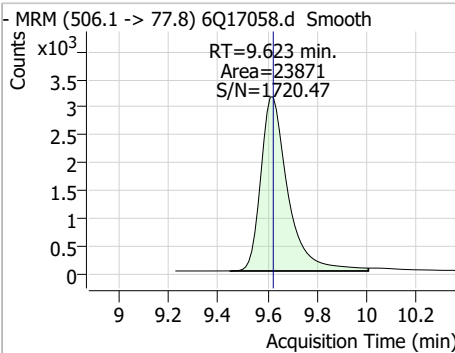


Perfluorinated Compounds by LC/MS/MS

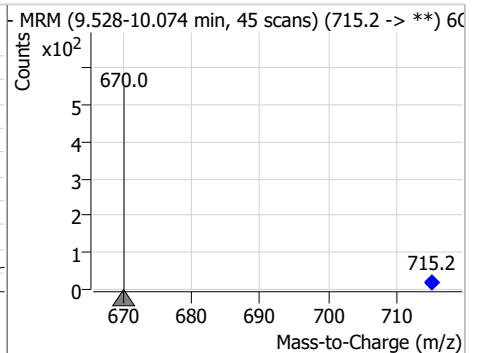
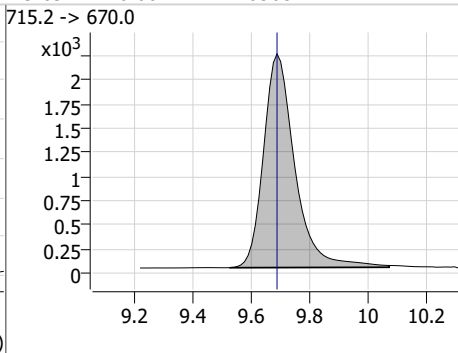
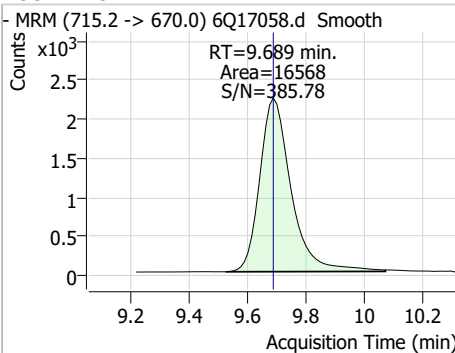
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	66.00	9.61	0.00	564526	498.1 -> 478.0	3.0	1.5	4.4



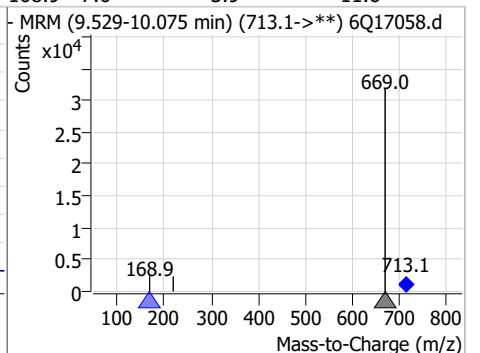
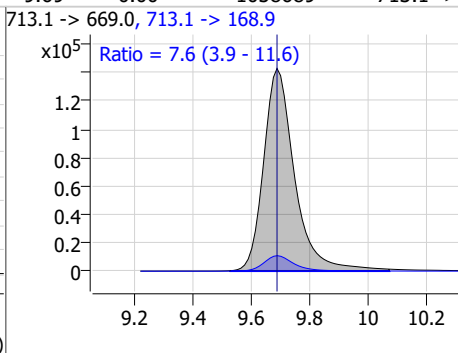
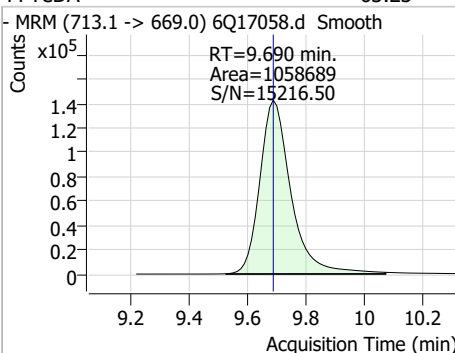
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.48	9.62	0.00	23871				



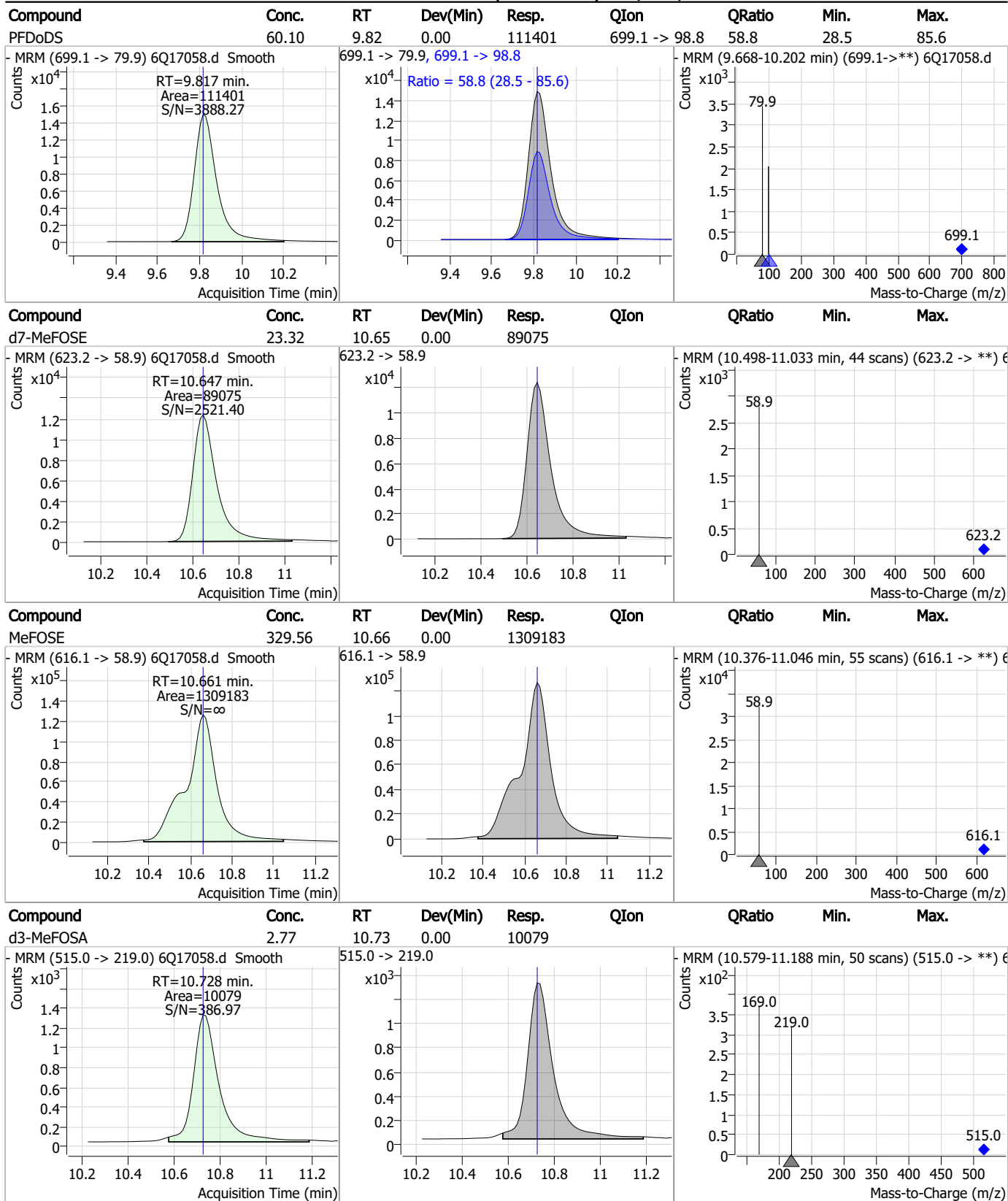
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.22	9.69	0.00	16568				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	63.23	9.69	0.00	1058689	713.1 -> 168.9	7.6	3.9	11.6



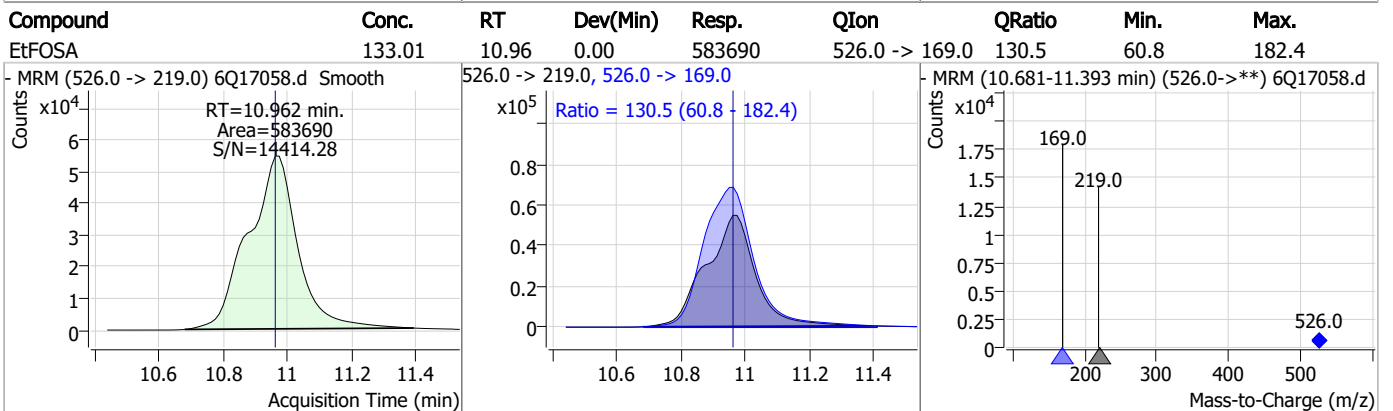
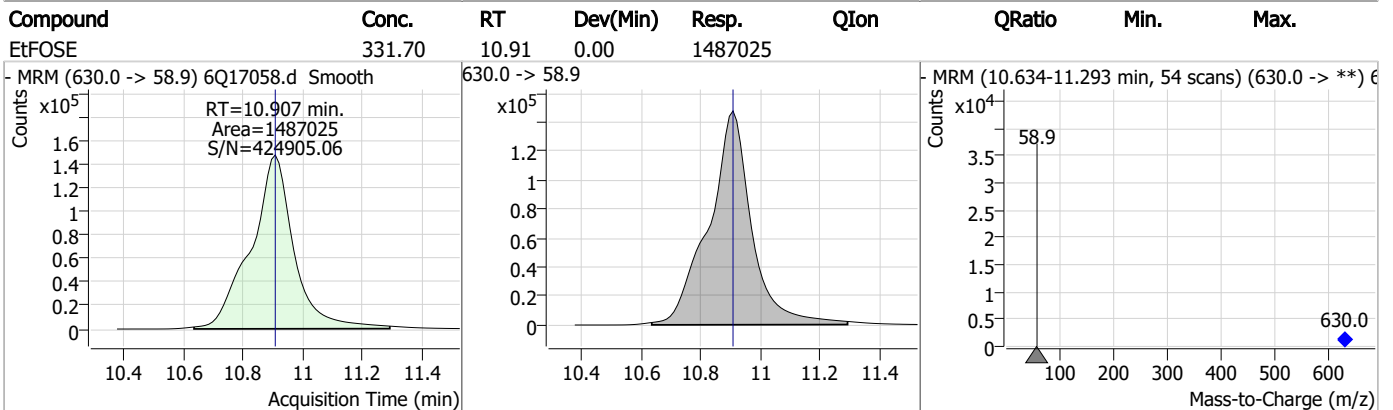
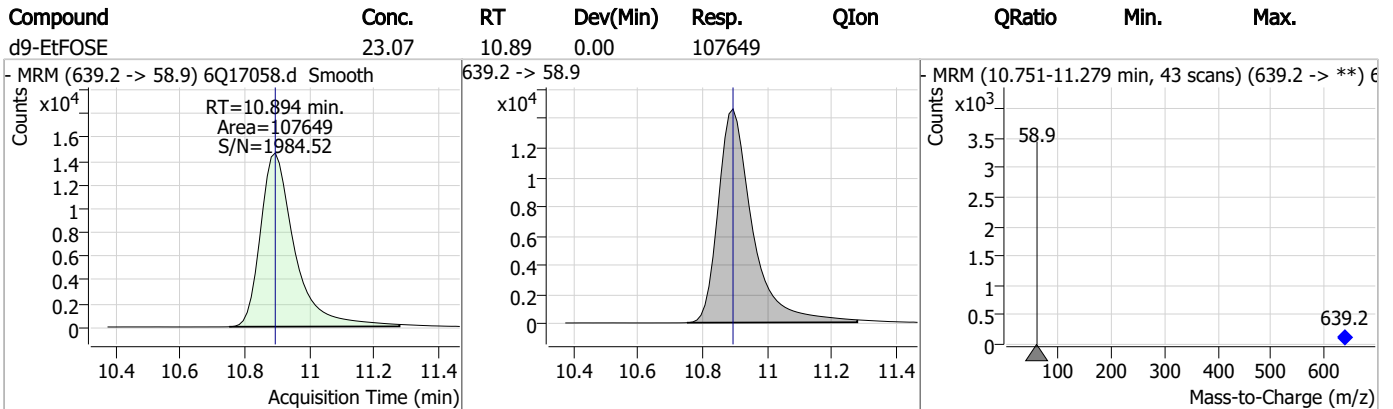
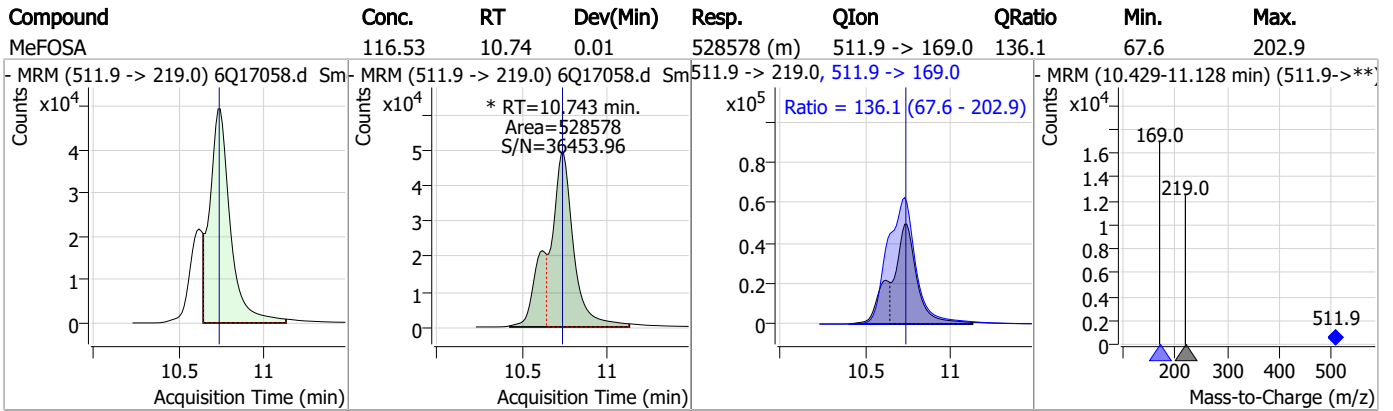
Perfluorinated Compounds by LC/MS/MS



7.7.9
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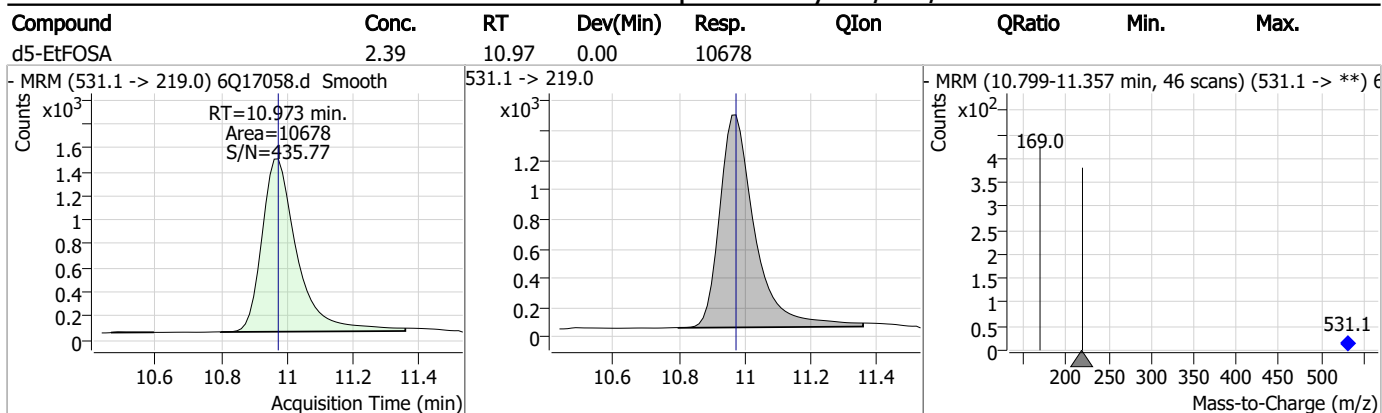
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q258-IC258 Method: EPA DRAFT 1633
Lab FileID: 6Q17058.D Analyst approved: 04/30/23 23:33 Natasha Gumtie
Injection Time: 04/28/23 14:31 Supervisor approved: 04/30/23 23:52 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.24	Split peak
MeFOSA	31506-32-8		10.74	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17060.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/28/2023 3:00:42 PM
 Sample Name : icv258-4
 Vial : P1-B1
 DA Method File : 1633_042823_S6Q258.quantmethod.xml
 Batch Name : s6q258.batch.bin
 Sample Information : OP96301,S6Q258,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.910	216.8 -> 171.9	185758	10.00 µg/L	0.012
M5-PFPeA	4.270	268.3 -> 223.0	65671	5.00 µg/L	0.000
M5-PFHxA	5.468	318.0 -> 273.0	70680	2.50 µg/L	0.000
M4-PFHpA	6.431	367.1 -> 322.0	60610	2.50 µg/L	0.012
M8-PFOA	7.074	421.1 -> 376.0	87628	2.50 µg/L	0.012
M9-PFNA	7.594	472.1 -> 427.0	27751	1.25 µg/L	0.000
M6-PFDA	8.088	519.1 -> 474.1	20874	1.25 µg/L	0.012
M7-PFUnDA	8.530	570.0 -> 525.1	25183	1.25 µg/L	0.000
M2-PFDoDA	8.960	615.1 -> 570.0	25086	1.25 µg/L	0.000
M2-PFTeDA	9.689	715.2 -> 670.0	17852	1.25 µg/L	0.000
M8-FOSA	9.623	506.1 -> 77.8	25922	2.50 µg/L	0.000
M3-PFBS	5.398	302.1 -> 79.9	22801	2.50 µg/L	0.000
M3-PFHxS	7.191	402.1 -> 79.9	12509	2.50 µg/L	0.012
M8-PFOS	8.239	507.1 -> 79.9	12071	2.50 µg/L	0.000
M2-4:2FTS	5.144	329.1 -> 80.9	2329	5.00 µg/L	0.000
M2-6:2FTS	6.851	429.1 -> 80.9	2864	5.00 µg/L	0.012
M2-8:2FTS	7.877	529.1 -> 80.9	2794	5.00 µg/L	0.012
M3-MeFOSAA	8.134	573.2 -> 419.0	22545	5.00 µg/L	0.000
M3-HFPO-DA	5.845	286.9 -> 168.9	40747	10.00 µg/L	0.000
M5-EtFOSAA	8.330	589.2 -> 419.0	19446	5.00 µg/L	0.000
M7-MeFOSE	10.647	623.2 -> 58.9	103078	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	122225	25.00 µg/L	0.000
M5-EtFOSA	10.960	531.1 -> 219.0	12086	2.50 µg/L	-0.012
M3-MeFOSA	10.741	515.0 -> 219.0	9186	2.50 µg/L	0.012
13C4-PFOS	8.239	502.8 -> 79.9	14678	2.50 µg/L	0.000
13C3-PFBA	2.902	216.0 -> 172.0	80020	5.00 µg/L	0.000
18O2-PFHxS	7.190	403.0 -> 83.9	9681	2.50 µg/L	0.012
13C4-PFOA	7.075	417.1 -> 372.0	92837	2.50 µg/L	0.012
13C2-PFDA	8.076	515.1 -> 470.1	25483	1.25 µg/L	0.000
13C5-PFNA	7.607	468.0 -> 423.0	30806	1.25 µg/L	0.012
13C2-PFHxA	5.469	315.1 -> 270.0	57923	2.50 µg/L	0.000

System Monitoring Compounds

13C2-4:2FTS	5.144	329.1 -> 80.9	2329	5.23 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.7%		
13C2-6:2FTS	6.851	429.1 -> 80.9	2864	5.30 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.0%		
13C2-8:2FTS	7.877	529.1 -> 80.9	2794	4.81 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.2%		
13C2-PFDoDA	8.960	615.1 -> 570.0	25086	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.6%		
13C2-PFTeDA	9.689	715.2 -> 670.0	17852	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.6%		
13C3-PFBS	5.398	302.1 -> 79.9	22801	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.1%		
13C3-PFHxS	7.191	402.1 -> 79.9	12509	2.43 µg/L	0.012

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.1%	
13C4-PFBA	2.910	216.8 -> 171.9	185758	10.05 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C4-PFHpA	6.431	367.1 -> 322.0	60610	2.56 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C5-PFHxA	5.468	318.0 -> 273.0	70680	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C5-PFPeA	4.270	268.3 -> 223.0	65671	5.08 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C6-PFDA	8.088	519.1 -> 474.1	20874	1.24 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C7-PFUnDA	8.530	570.0 -> 525.1	25183	1.17 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 93.6%	
13C8-FOSA	9.623	506.1 -> 77.8	25922	9.67 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.9%	
13C8-PFOA	7.074	421.1 -> 376.0	87628	2.45 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.8%	
13C8-PFOS	8.239	507.1 -> 79.9	12071	2.73 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.2%	
13C9-PFNA	7.594	472.1 -> 427.0	27751	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.5%	
d3-MeFOSAA	8.134	573.2 -> 419.0	22545	5.15 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.1%	
13C3-HFPO-DA	5.845	286.9 -> 168.9	40747	9.94 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.4%	
d3-MeFOSA	10.741	515.0 -> 219.0	9186	2.51 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.2%	
d5-EtFOSAA	8.330	589.2 -> 419.0	19446	5.35 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.0%	
d7-MeFOSE	10.647	623.2 -> 58.9	103078	26.76 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 107.0%	
d9-EtFOSE	10.894	639.2 -> 58.9	122225	25.97 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.9%	
d5-EtFOSA	10.960	531.1 -> 219.0	12086	2.68 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.4%	
Target Compounds					QValue
4:2FTS	5.145	327.1 -> 307.0	32806	9.31 µg/L	100
		327.1 -> 80.9	12117		
6:2FTS	6.851	427.1 -> 407.0	30428	9.66 µg/L	98
		427.1 -> 80.9	10418		
8:2FTS	7.877	527.1 -> 507.0	17789	10.70 µg/L	99
		527.1 -> 80.8	7105		
EtFOSAA	8.343	584.2 -> 419.1	7978	2.41 µg/L	94
		584.2 -> 526.0	4505		
FOSA	9.614	498.1 -> 77.9	23095	2.49 µg/L	100
		498.1 -> 478.0	650		
MeFOSAA	8.136	570.1 -> 419.0	10811	2.55 µg/L	87
		570.1 -> 483.0	2177		
PFBA	2.906	212.8 -> 168.9	64067	10.28 µg/L	100
PFBS	5.400	298.7 -> 79.9	23660	2.31 µg/L	96
		298.7 -> 98.8	9163		
PFDA	8.077	512.9 -> 469.0	63479	2.80 µg/L	96
		512.9 -> 219.0	9425		
PFDODA	8.961	613.1 -> 569.0	51488	2.62 µg/L	98
		613.1 -> 319.0	6984		
PFDS	9.125	599.0 -> 79.9	8759	2.28 µg/L	100

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.432	599.0 -> 98.8	4379	2.60	µg/L	99
		363.1 -> 319.0	77884			
PFHpS	7.746	363.1 -> 169.0	11811	2.33	µg/L	96
		449.0 -> 79.9	15247			
PFHxA	5.470	449.0 -> 98.9	7345	2.46	µg/L	100
		313.0 -> 269.0	68747			
PFHxS	7.180	313.0 -> 118.9	3148	2.36	µg/L	m
		398.7 -> 79.9	16112			
PFNA	7.595	398.7 -> 98.9	8157	2.37	µg/L	100
		463.0 -> 419.0	45525			
PFNS	8.706	463.0 -> 219.0	9535	2.30	µg/L	97
		548.8 -> 79.9	13429			
PFOA	7.076	548.8 -> 98.9	7078	2.42	µg/L	100
		413.0 -> 369.0	99490			
PFOS	8.228	413.0 -> 169.0	17432	2.10	µg/L	m
		498.9 -> 79.9	12245			
PFPeA	4.273	498.9 -> 98.8	6935	5.05	µg/L	100
		263.0 -> 219.0	90362			
PFPeS	6.484	349.1 -> 79.9	17853	2.51	µg/L	96
		349.1 -> 98.9	8187			
PFTeDA	9.690	713.1 -> 669.0	45331	2.51	µg/L	99
		713.1 -> 168.9	3408			
PFTrDA	9.345	663.0 -> 619.0	58210	2.67	µg/L	98
		663.0 -> 168.9	4950			
PFUnDA	8.531	563.1 -> 519.0	46797	2.68	µg/L	99
		563.1 -> 269.1	8019			
11CI-PF3OUdS	9.398	630.9 -> 450.9	68021	4.86	µg/L	100
		632.9 -> 452.9	21705			
9CI-PF3ONS	8.569	530.8 -> 351.0	101879	4.61	µg/L	91
		532.8 -> 353.0	35127			
ADONA	6.681	376.9 -> 250.9	307875	5.00	µg/L	100
		376.9 -> 84.8	79137			
HFPO-DA	5.846	284.9 -> 168.9	19230	4.98	µg/L	98
		284.9 -> 184.9	2564			
3:3FTCA	3.784	241.0 -> 177.0	13980	12.50	µg/L	96
		241.0 -> 117.0	1660			
5:3FTCA	6.160	341.0 -> 237.1	294632	65.15	µg/L	95
		341.0 -> 217.0	207989			
7:3FTCA	7.585	441.0 -> 316.9	127445	62.03	µg/L	91
		441.0 -> 336.9	294921			
EtFOSA	10.962	526.0 -> 219.0	23650	4.76	µg/L	93
		526.0 -> 169.0	30651			
EtFOSE	10.907	630.0 -> 58.9	63023	12.38	µg/L	100
		511.9 -> 219.0	21336			
MeFOSA	10.730	511.9 -> 169.0	29281	5.16	µg/L	m
		616.1 -> 58.9	56132			
MeFOSE	10.661	699.1 -> 79.9	4617	12.21	µg/L	100
		699.1 -> 98.8	2700			
PFDoDS	9.817	295.0 -> 201.0	15697	2.32	µg/L	98
		295.0 -> 84.9	3899			
NFDHA	5.350	279.0 -> 85.1	60631	5.18	µg/L	99
		229.0 -> 84.9	45433			
PFMBA	4.687	314.8 -> 134.9	159368	5.07	µg/L	100
		314.8 -> 82.9	5535			
PFMPA	3.438			4.52	µg/L	99
PFEESA	5.949					

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

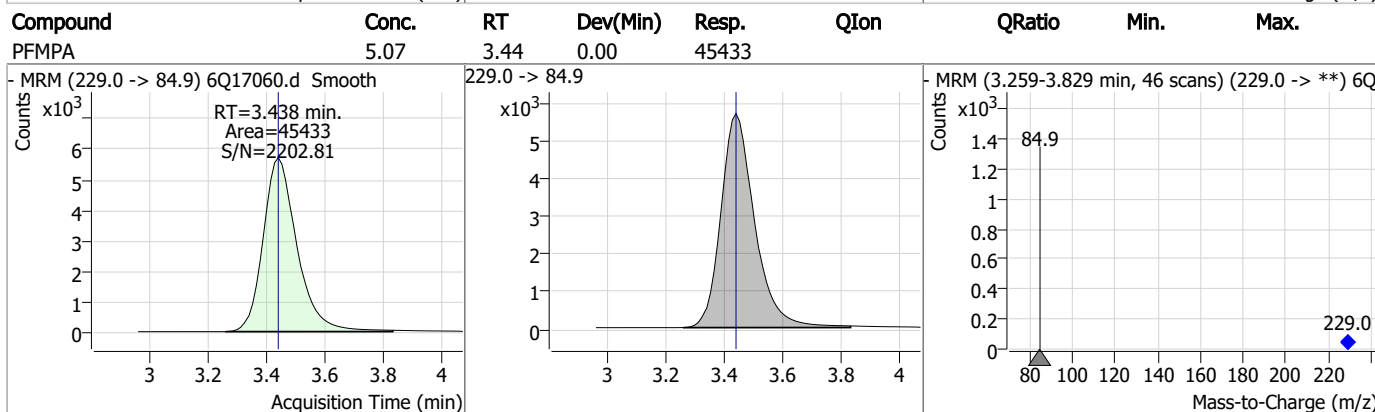
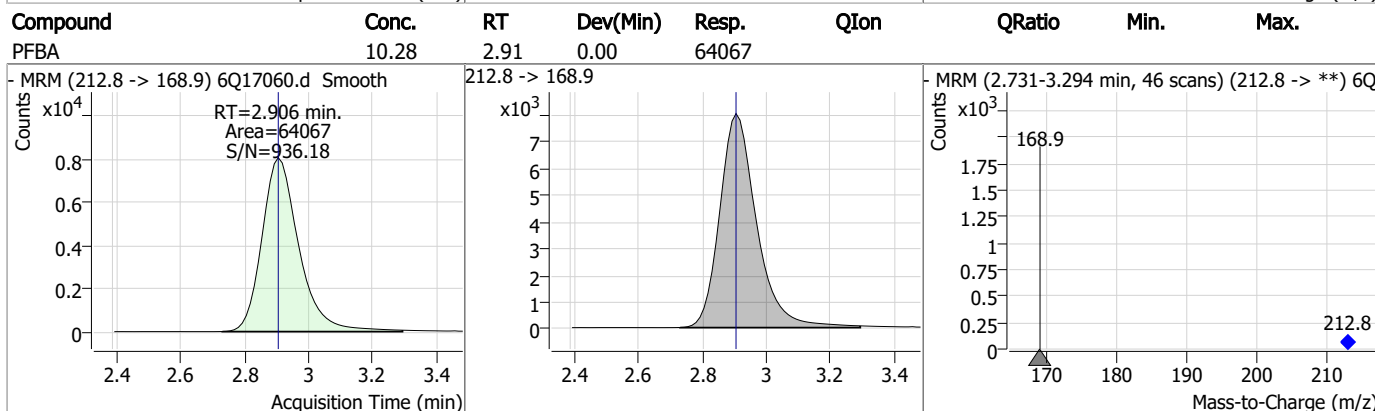
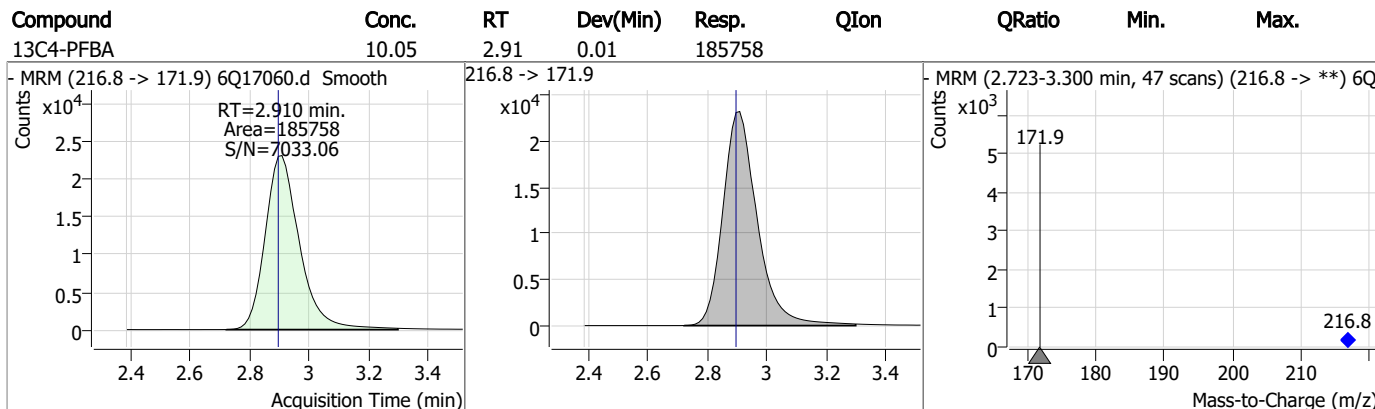
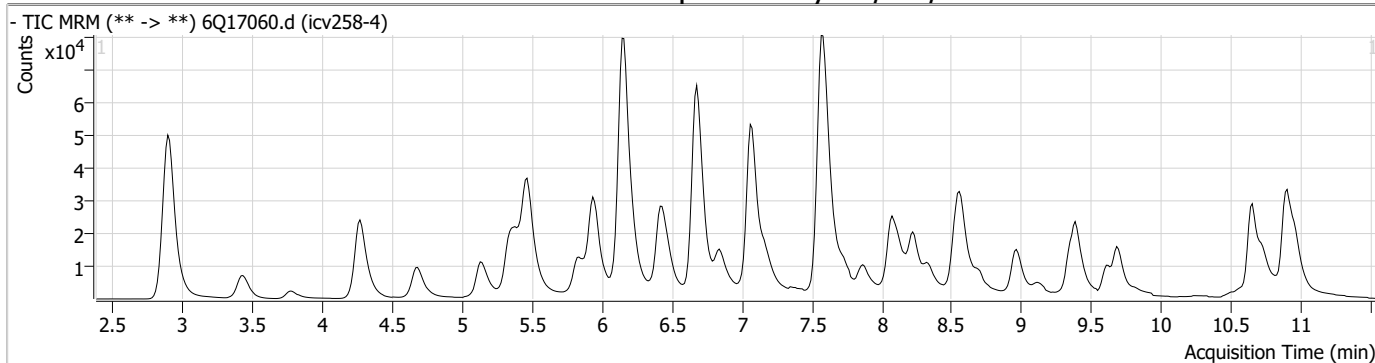


Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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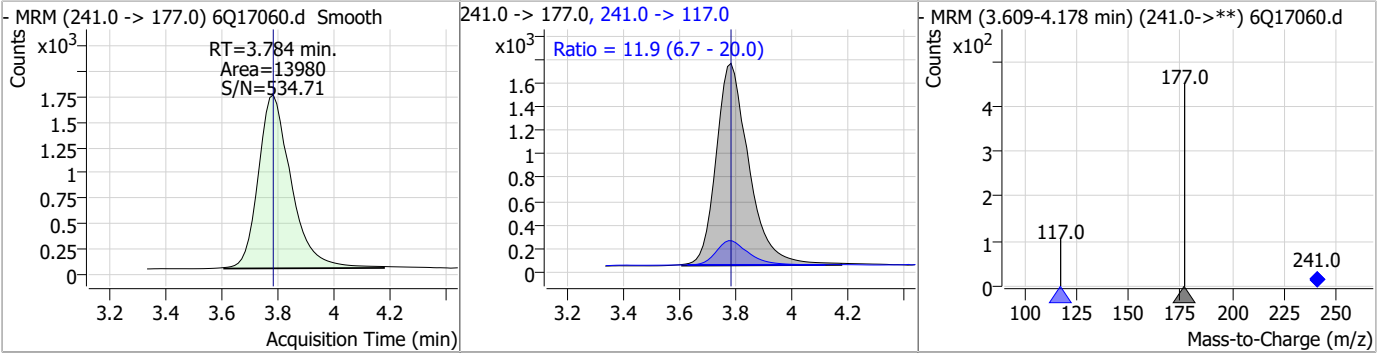
Perfluorinated Compounds by LC/MS/MS



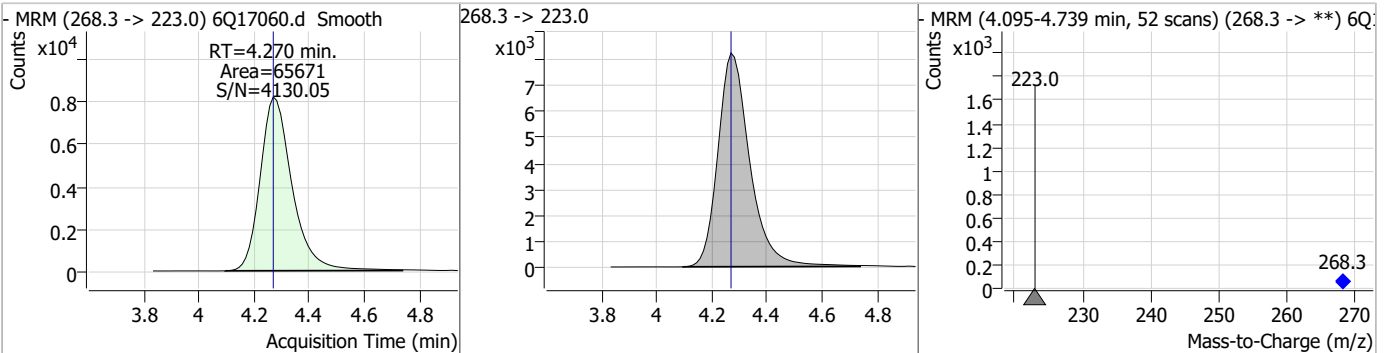
7.7.10
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Perfluorinated Compounds by LC/MS/MS

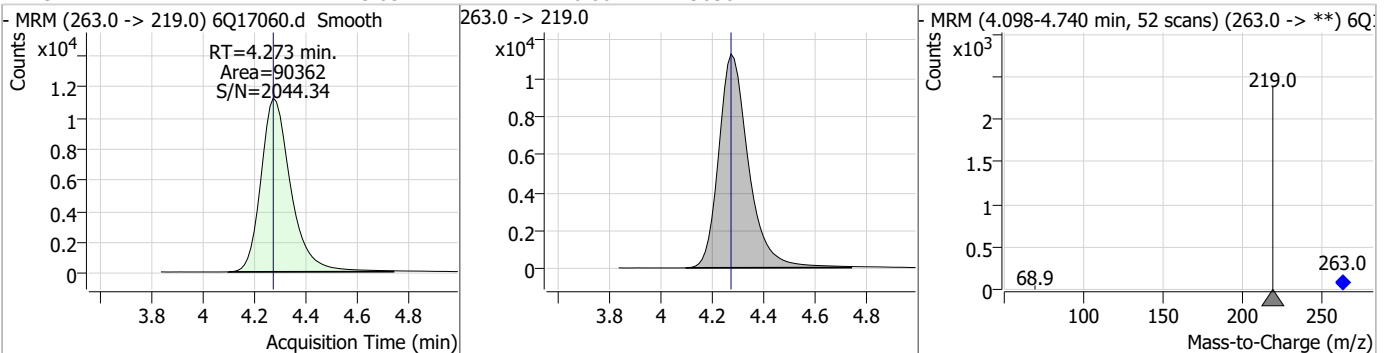
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	12.50	3.78	0.00	13980	241.0 -> 117.0	11.9	6.7	20.0



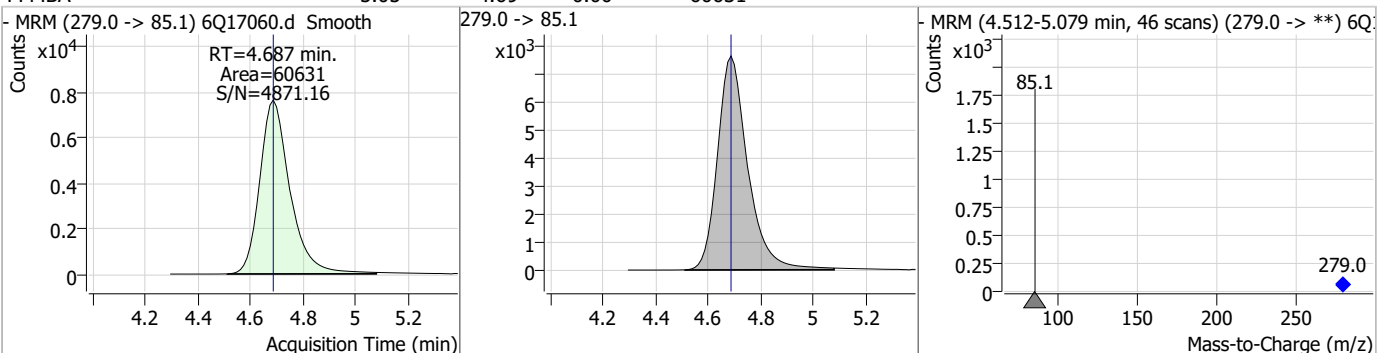
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.08	4.27	0.00	65671				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	5.05	4.27	0.00	90362				

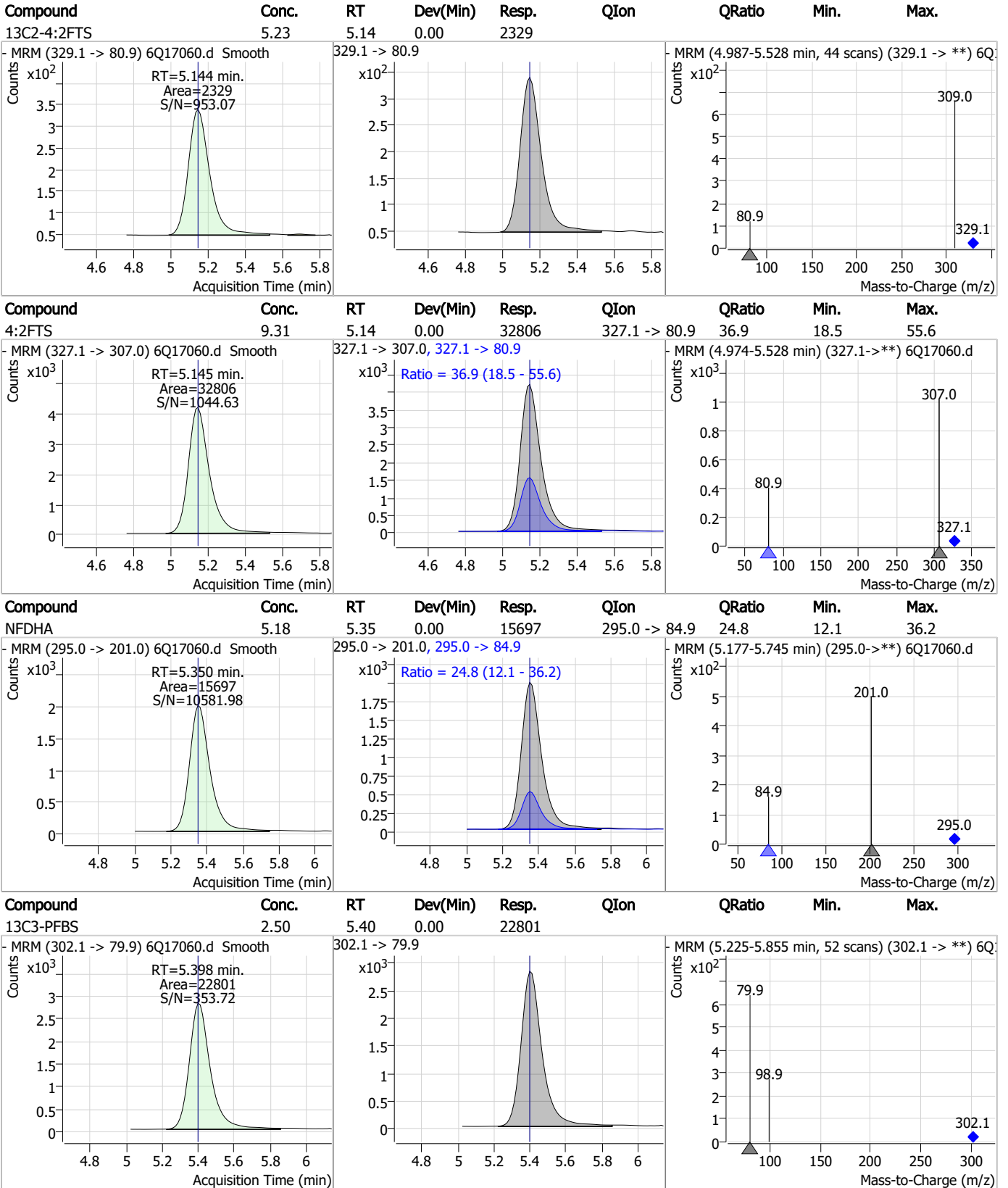


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	5.05	4.69	0.00	60631				



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Perfluorinated Compounds by LC/MS/MS

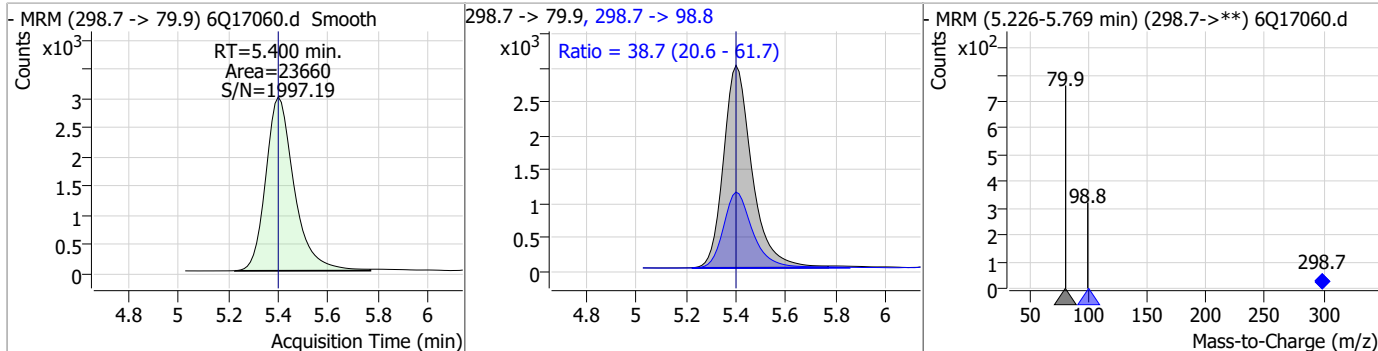


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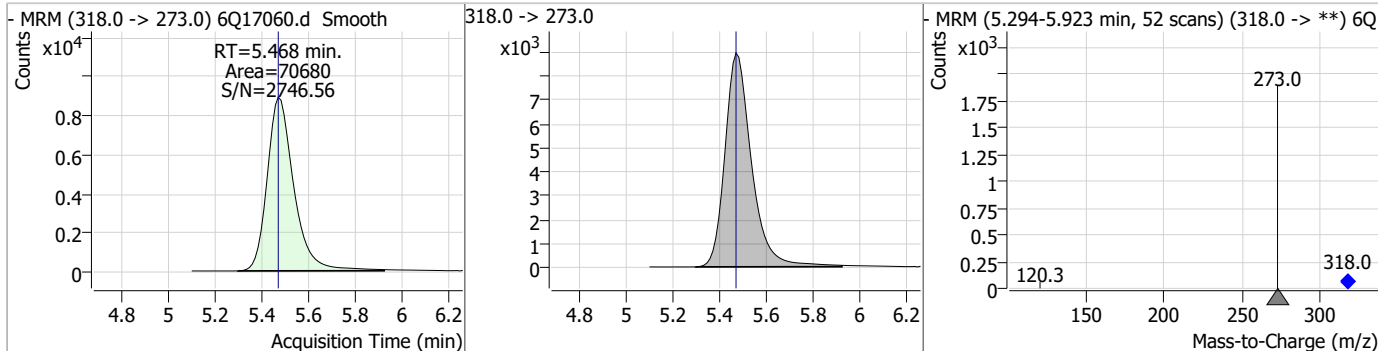


Perfluorinated Compounds by LC/MS/MS

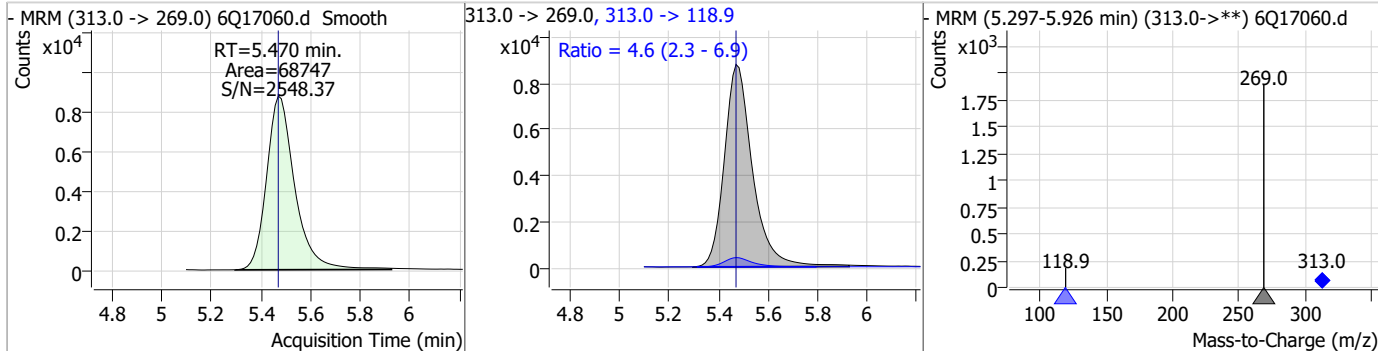
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.31	5.40	0.00	23660	298.7 -> 98.8	38.7	20.6	61.7



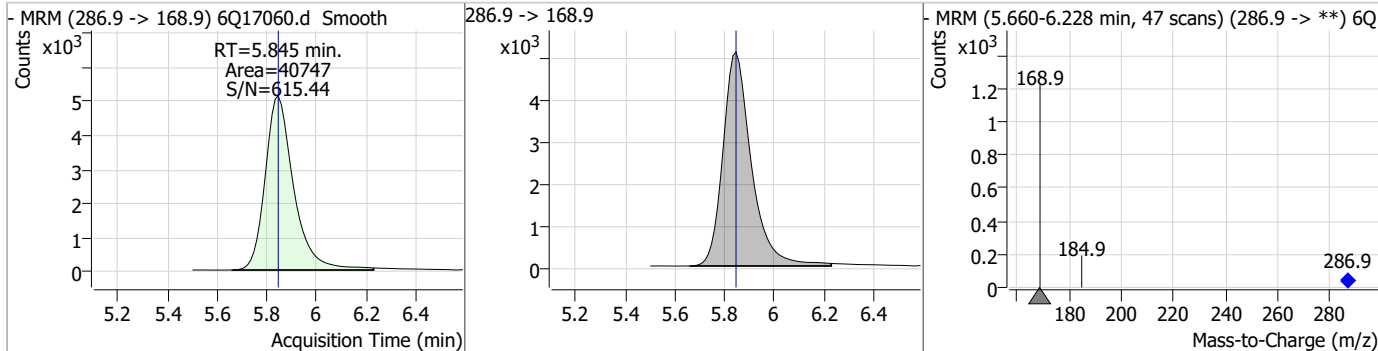
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.53	5.47	0.00	70680				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.46	5.47	0.00	68747	313.0 -> 118.9	4.6	2.3	6.9



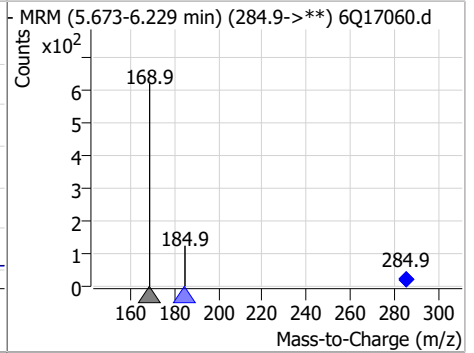
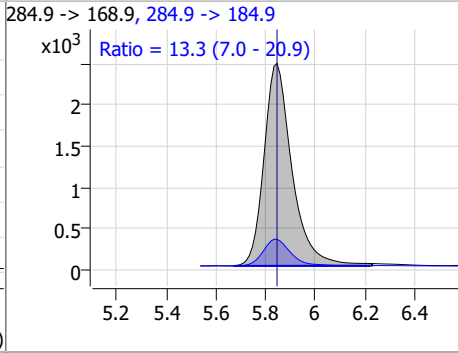
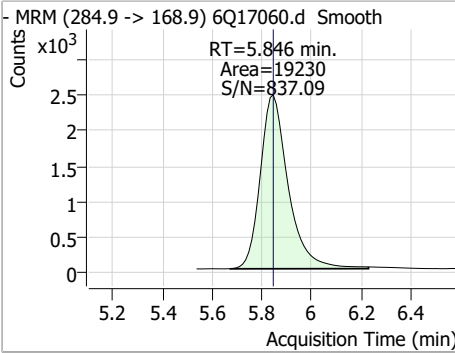
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.94	5.85	0.00	40747				



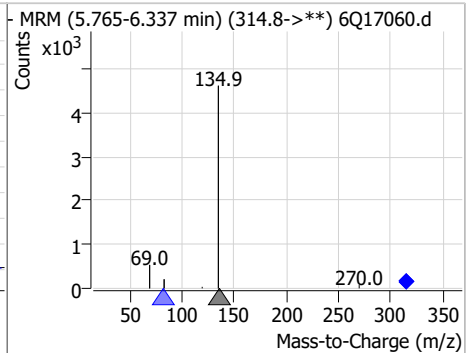
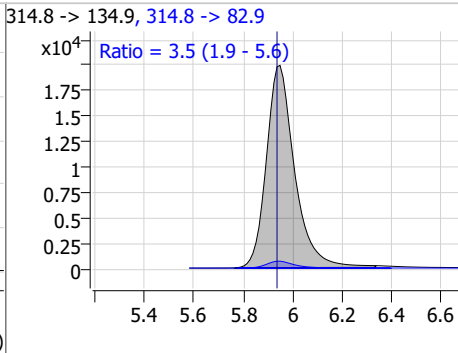
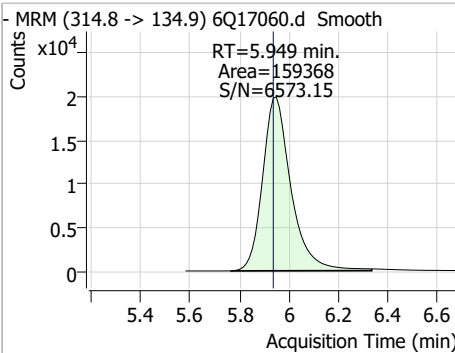
7.7.10
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Perfluorinated Compounds by LC/MS/MS

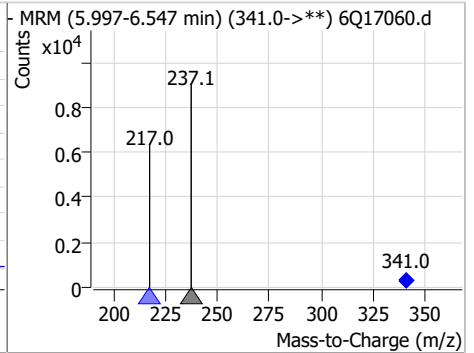
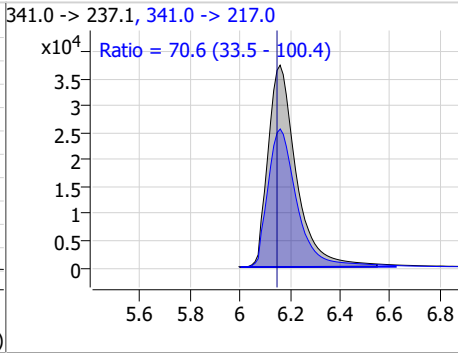
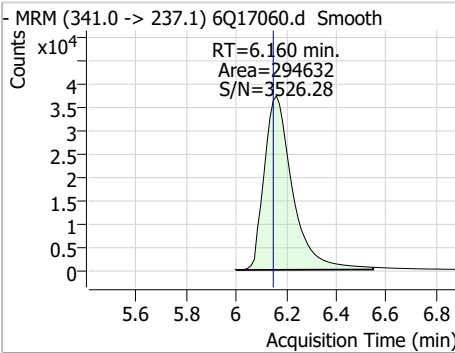
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.98	5.85	0.00	19230	284.9 -> 184.9	13.3	7.0	20.9



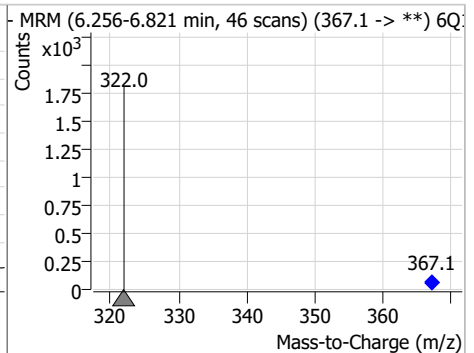
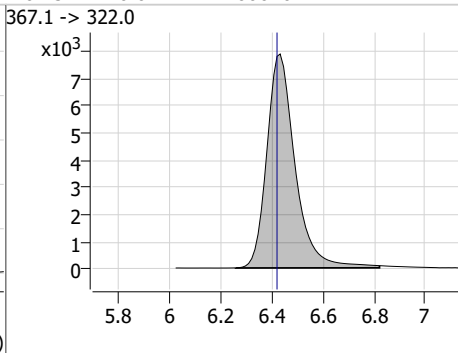
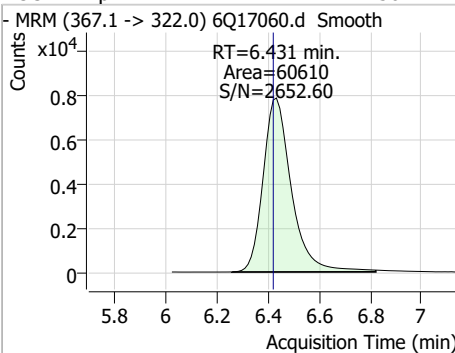
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.52	5.95	0.01	159368	314.8 -> 82.9	3.5	1.9	5.6



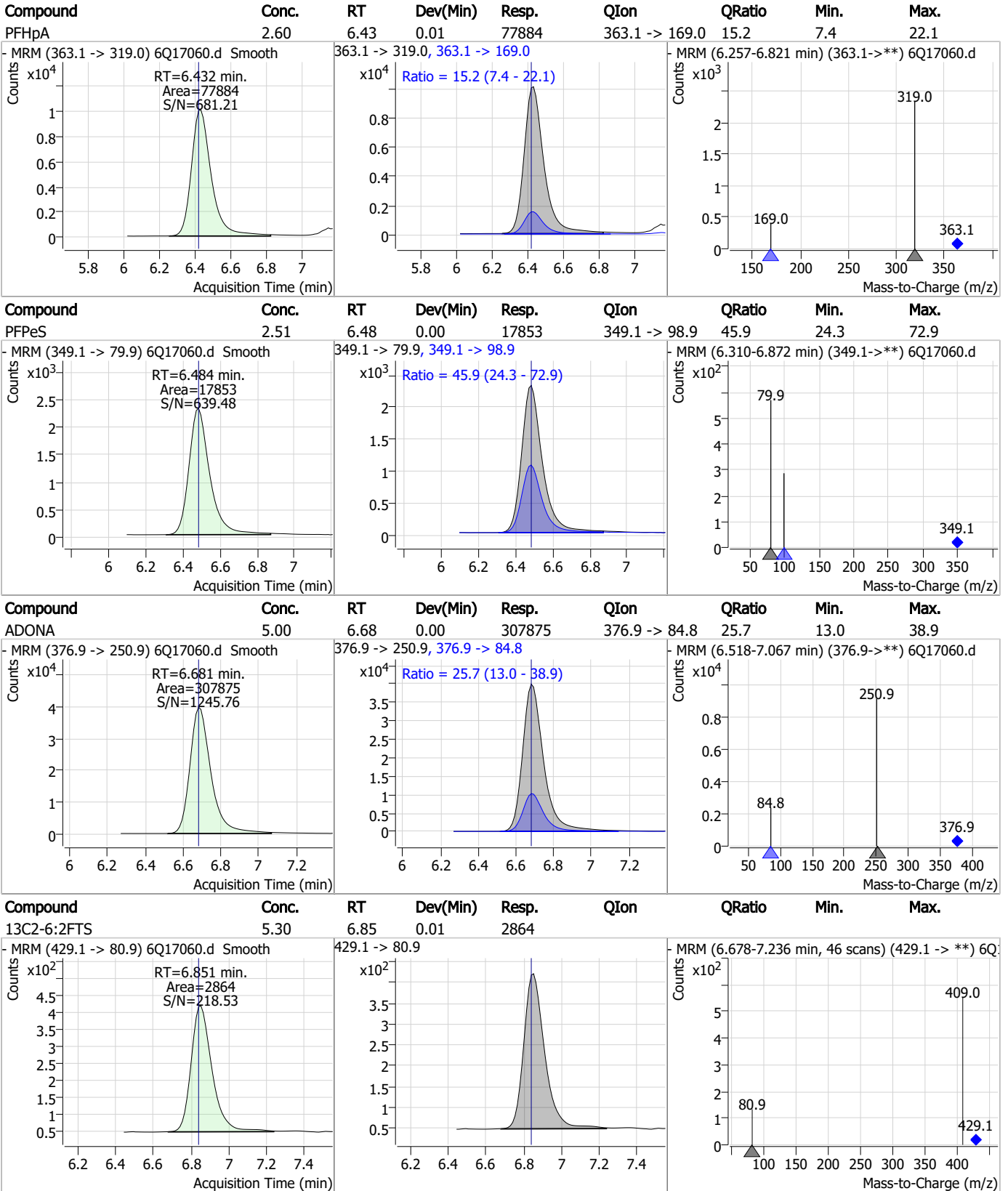
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	65.15	6.16	0.01	294632	341.0 -> 217.0	70.6	33.5	100.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.56	6.43	0.01	60610	367.1 -> 322.0			



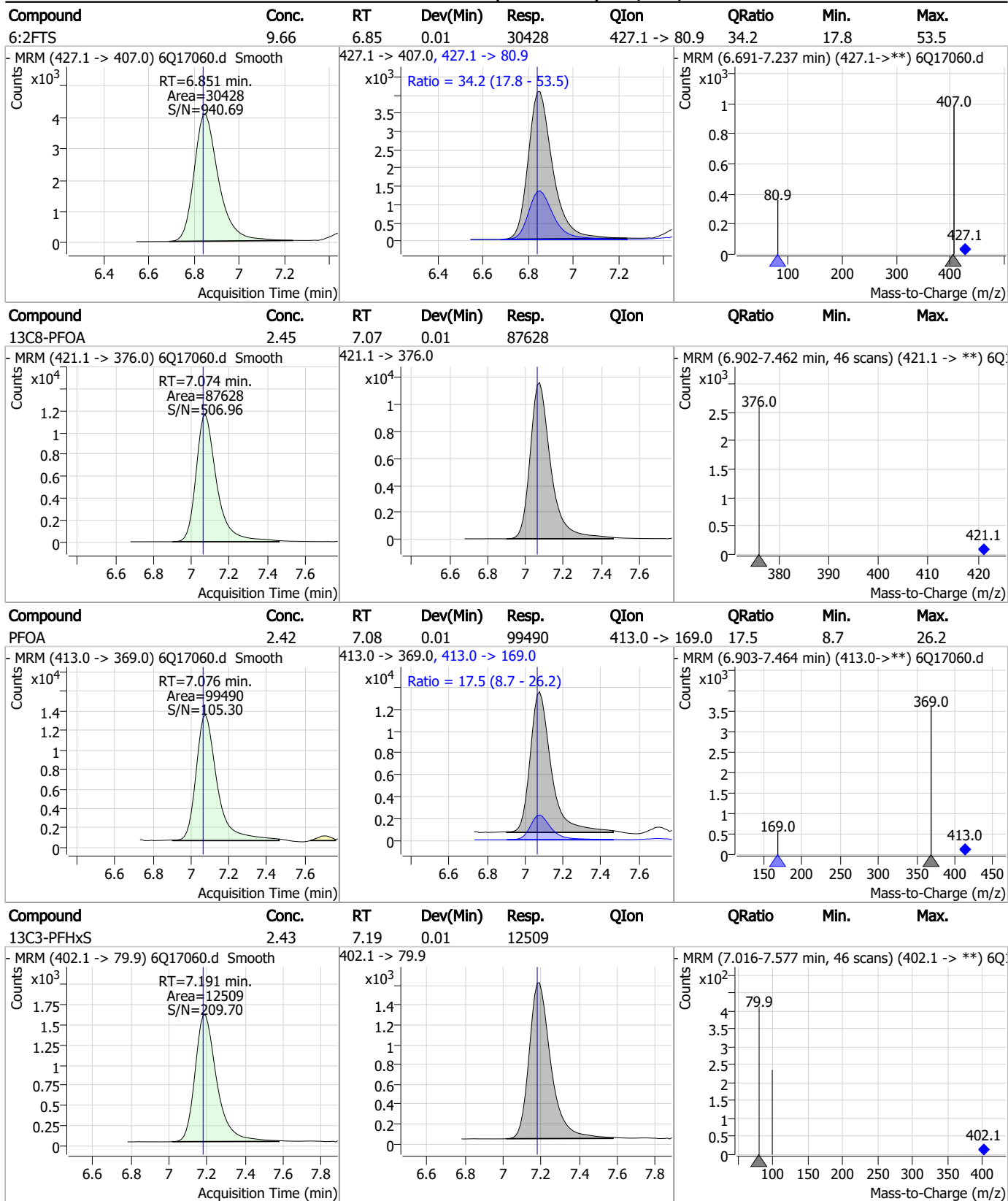
Perfluorinated Compounds by LC/MS/MS



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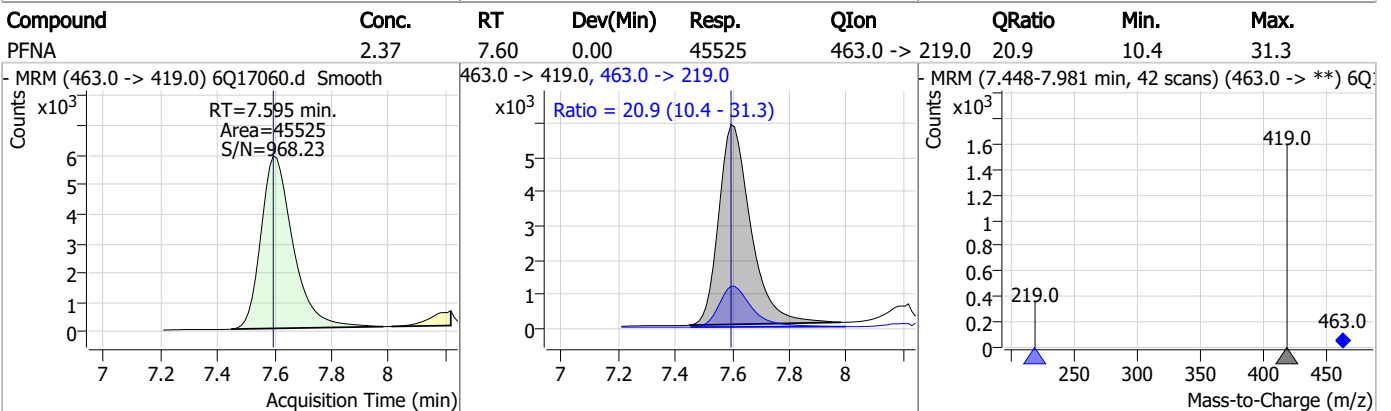
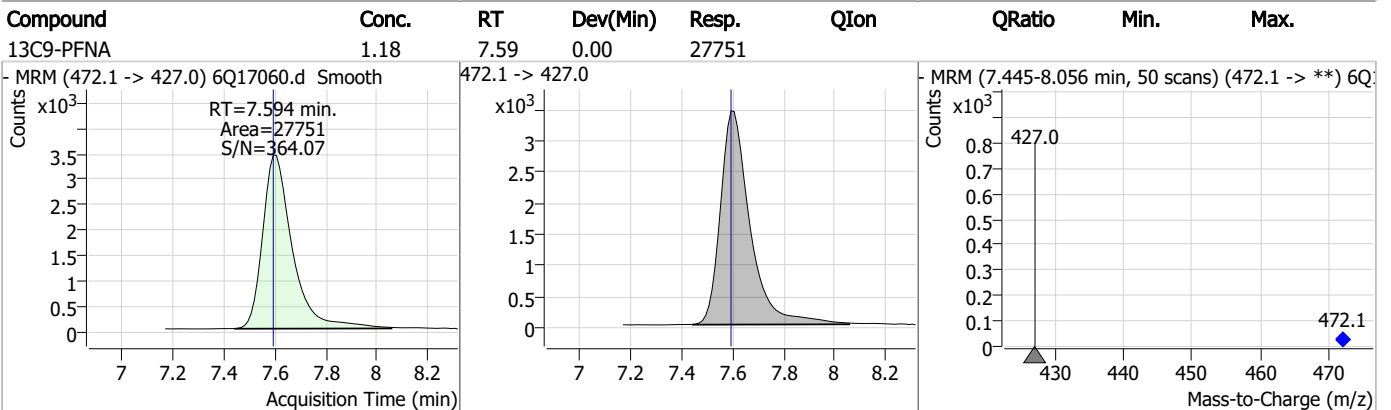
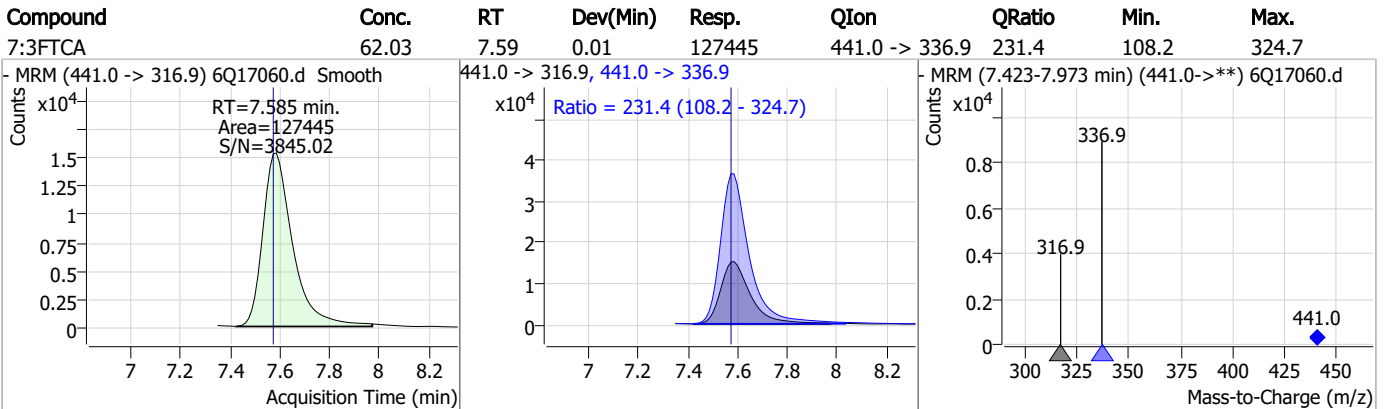
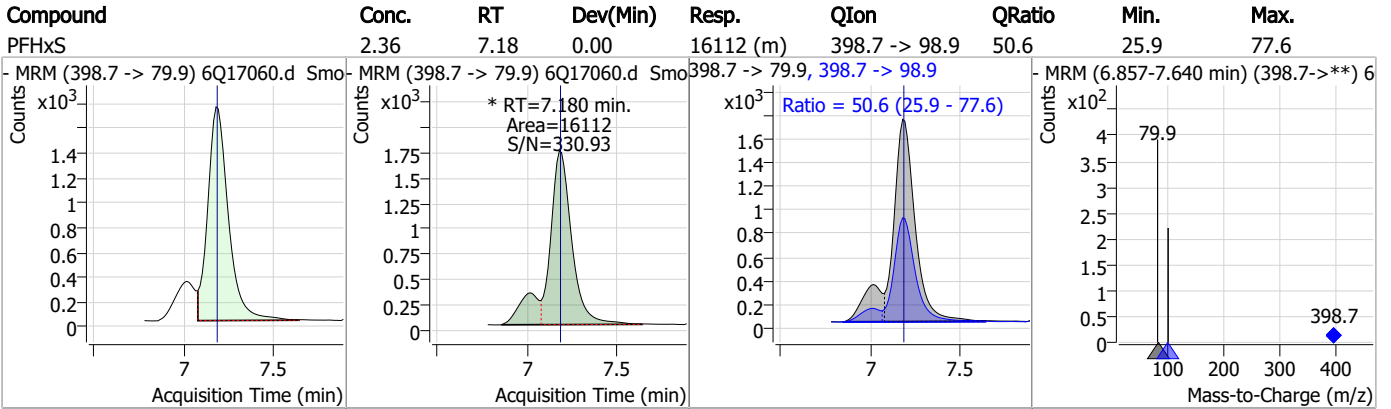


Perfluorinated Compounds by LC/MS/MS

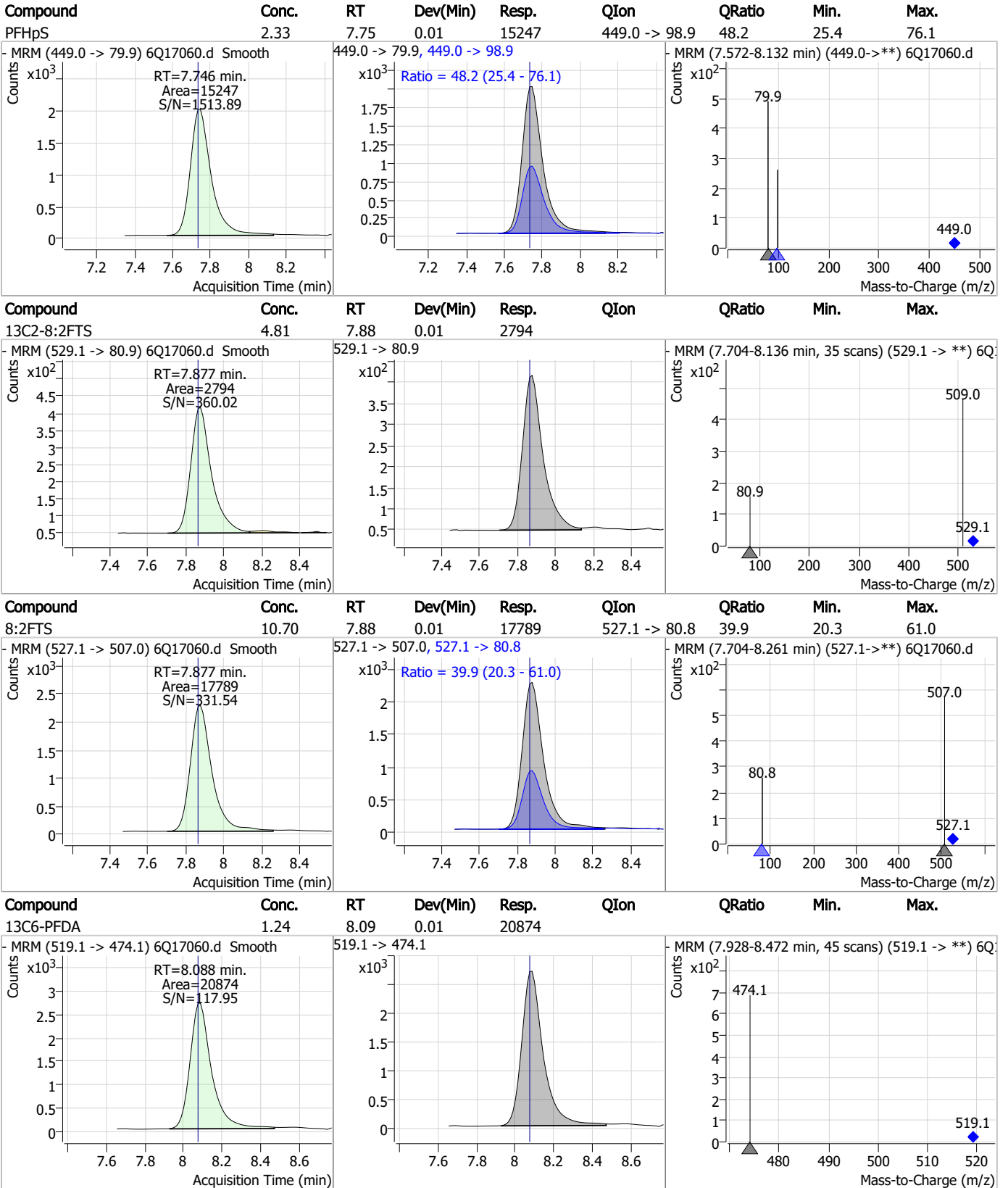


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Perfluorinated Compounds by LC/MS/MS



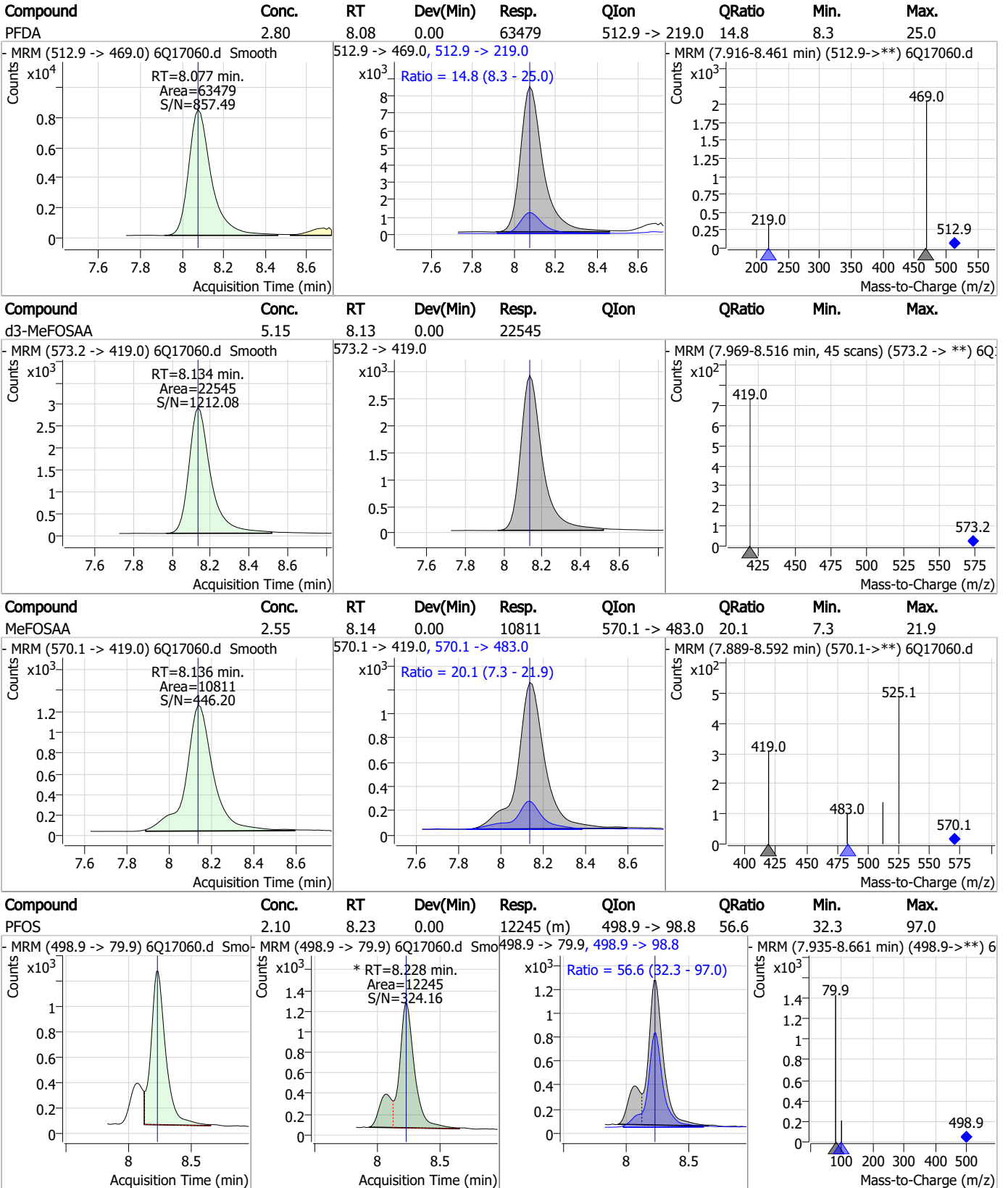
Perfluorinated Compounds by LC/MS/MS



7.7.10 7



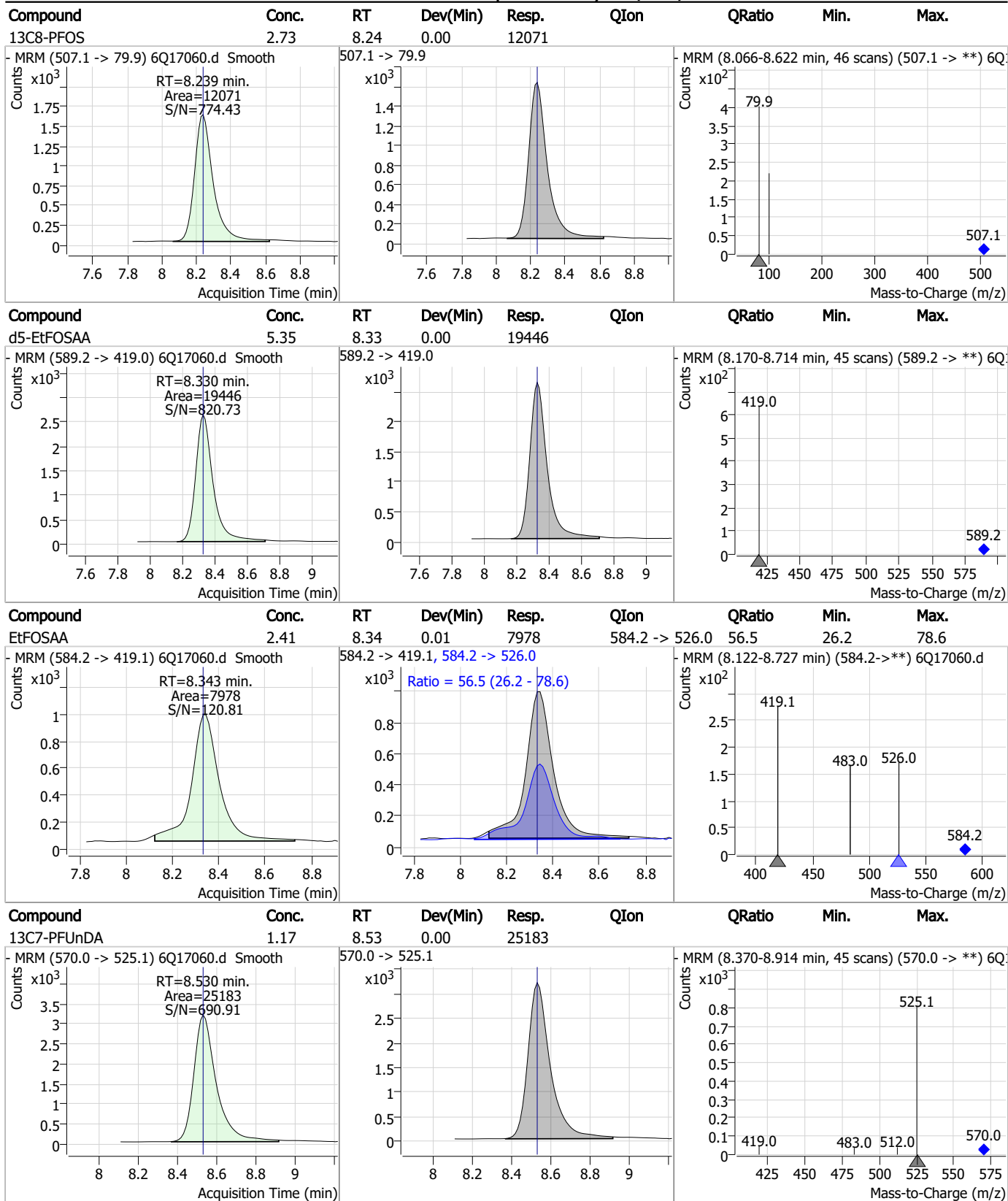
Perfluorinated Compounds by LC/MS/MS



7.7.10
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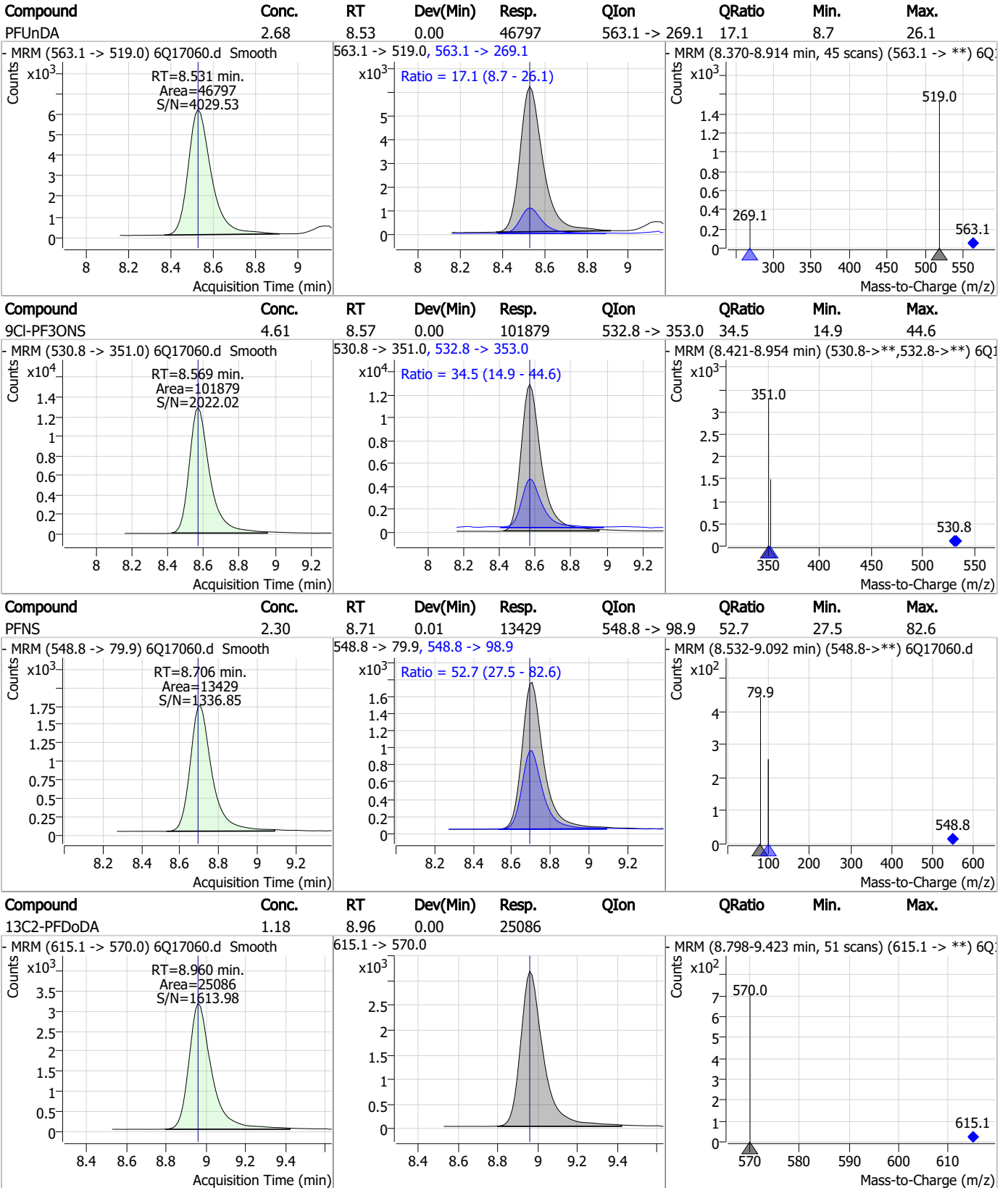


Perfluorinated Compounds by LC/MS/MS



7.7.10 7

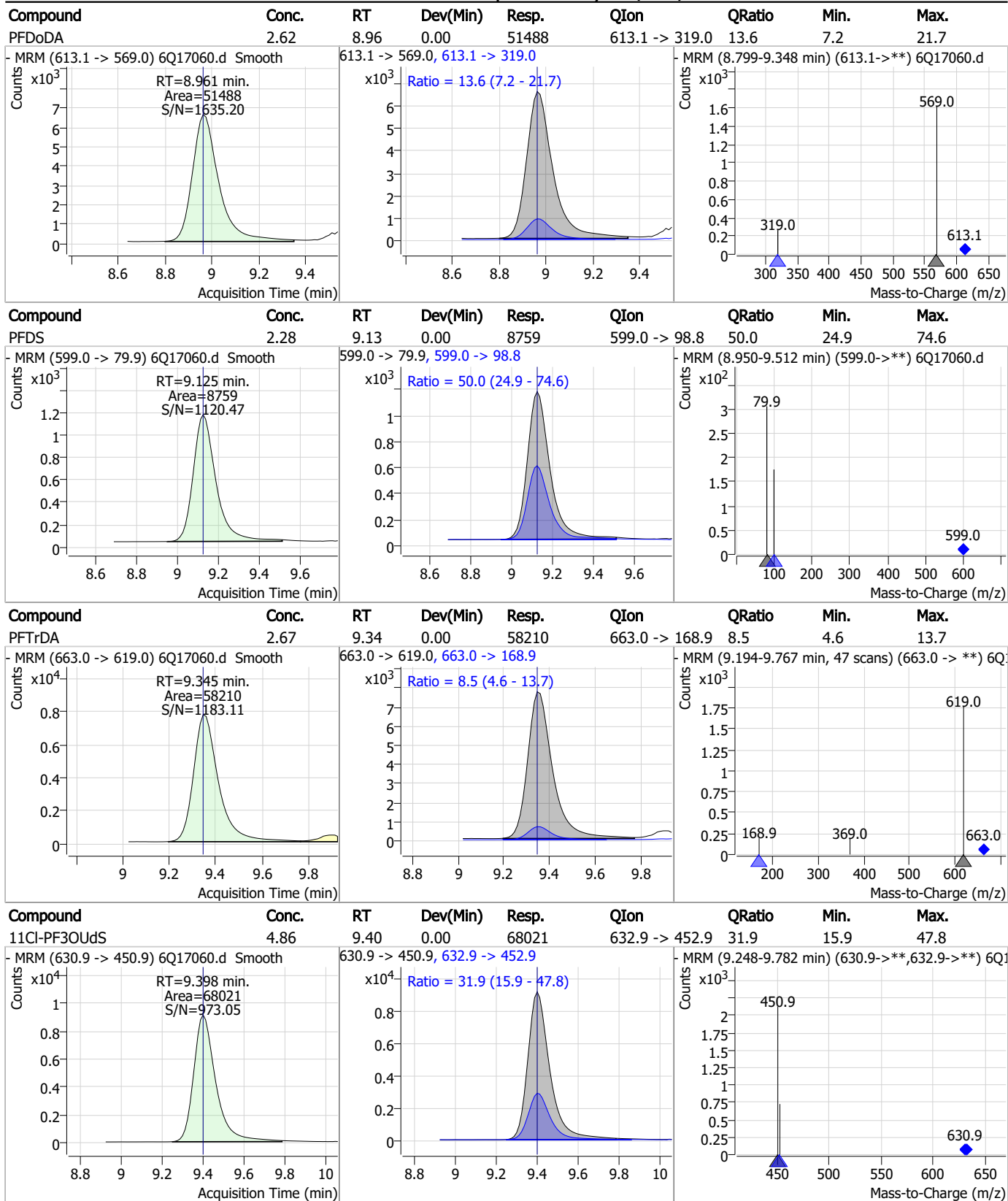
Perfluorinated Compounds by LC/MS/MS



7.7.10 7



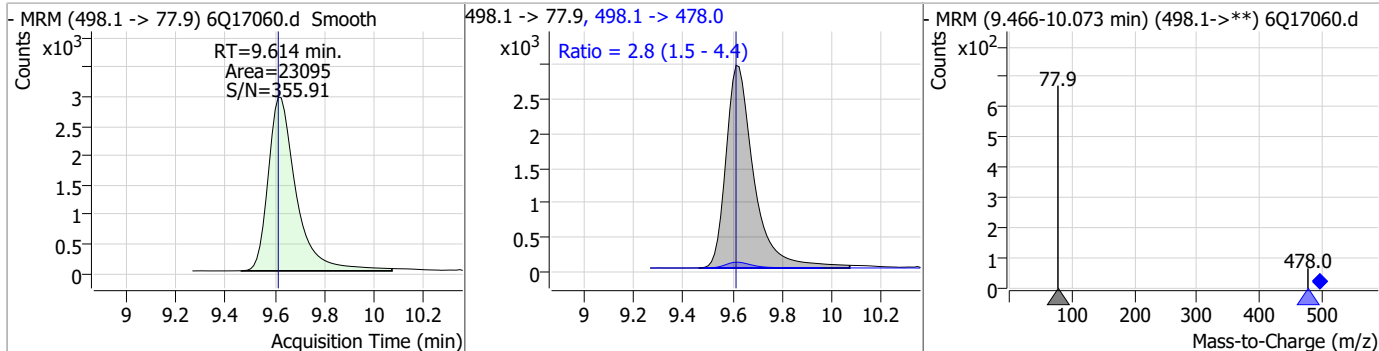
Perfluorinated Compounds by LC/MS/MS



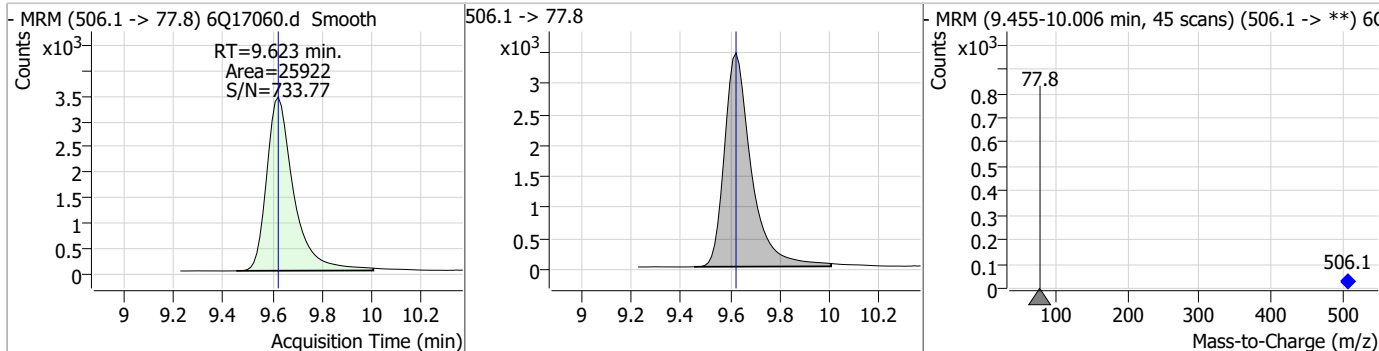
7.7.10
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Perfluorinated Compounds by LC/MS/MS

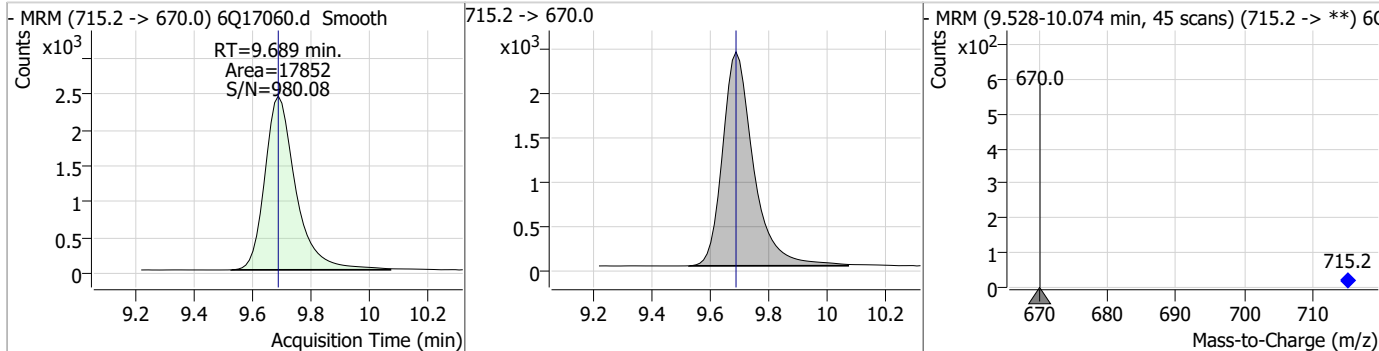
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.49	9.61	0.00	23095	498.1 -> 478.0	2.8	1.5	4.4



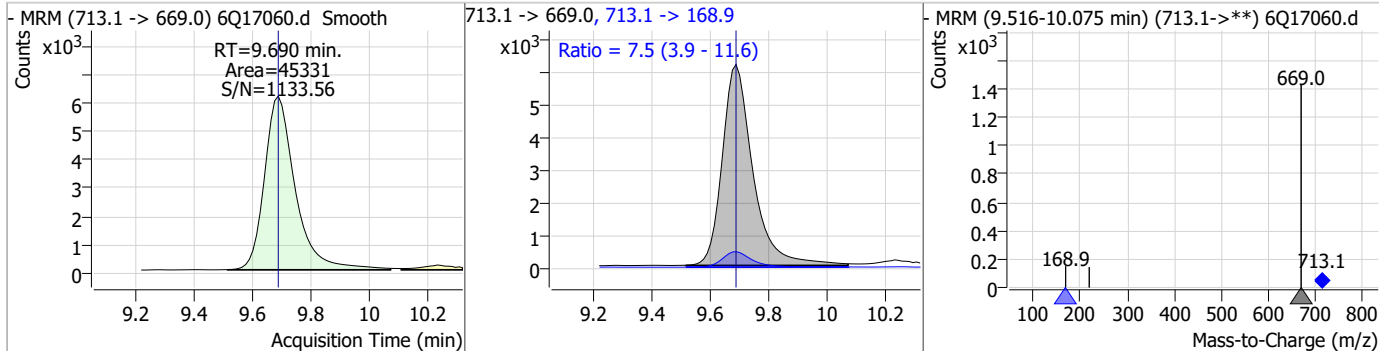
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.67	9.62	0.00	25922				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.24	9.69	0.00	17852				

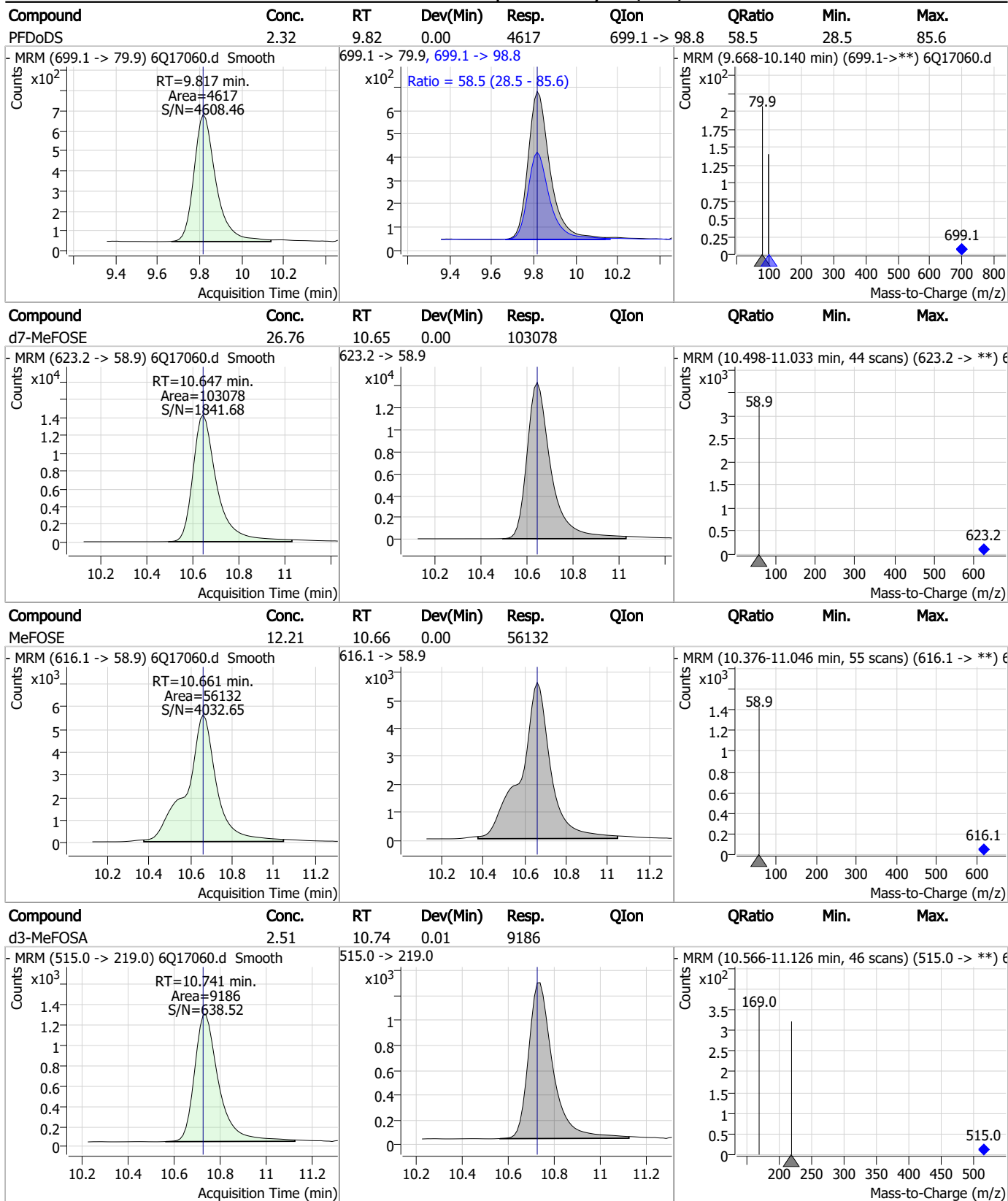


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.51	9.69	0.00	45331	713.1 -> 168.9	7.5	3.9	11.6



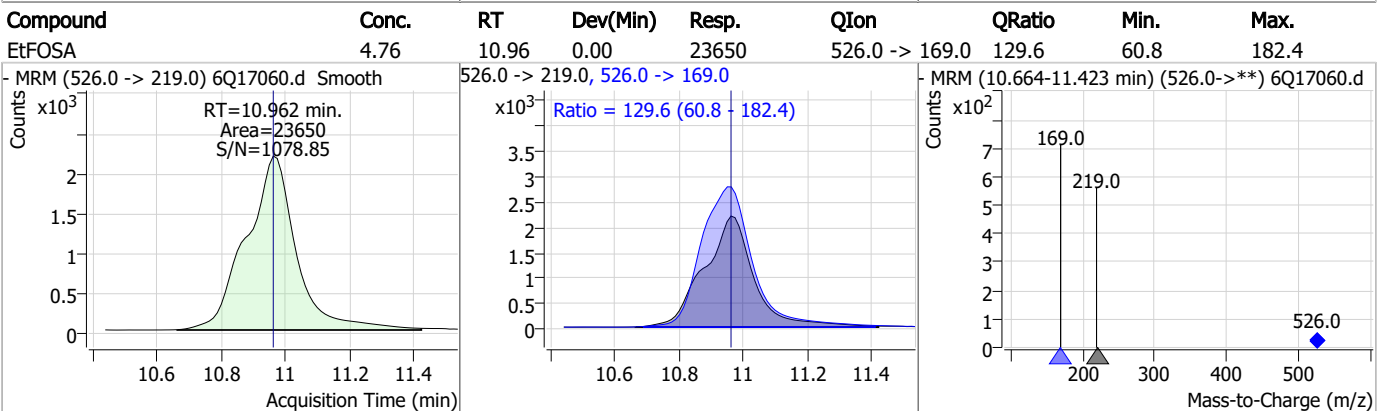
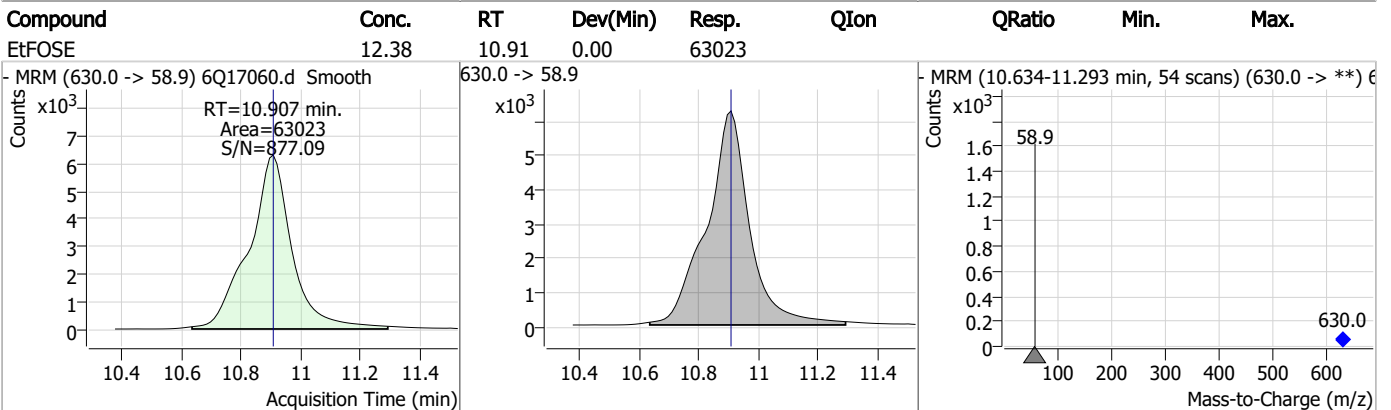
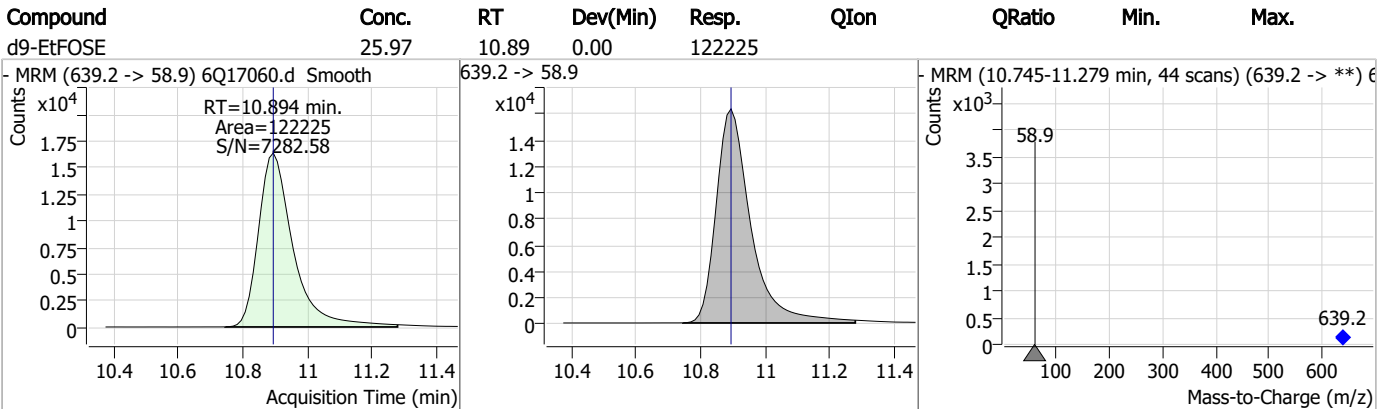
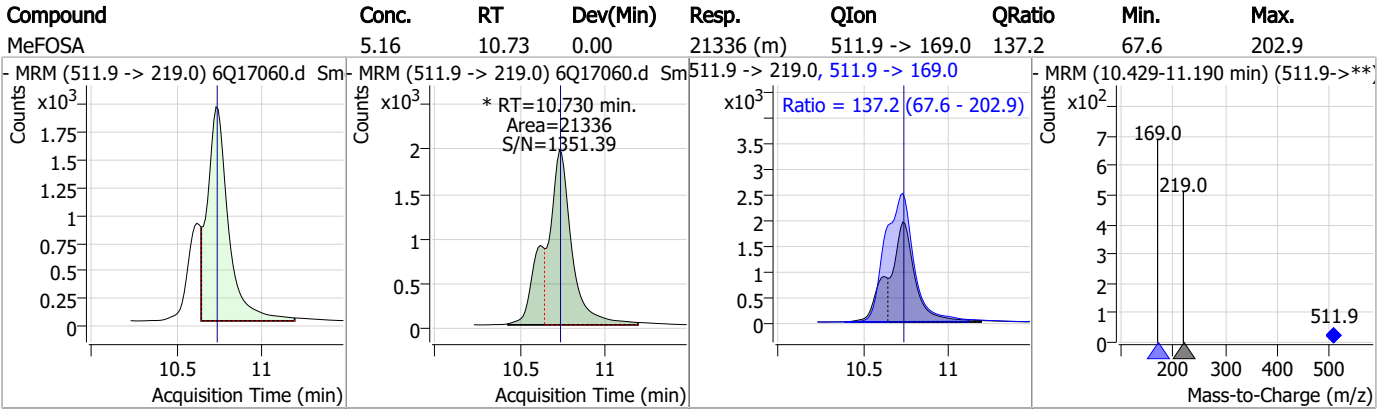
7.7.10
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Perfluorinated Compounds by LC/MS/MS



7.7.10
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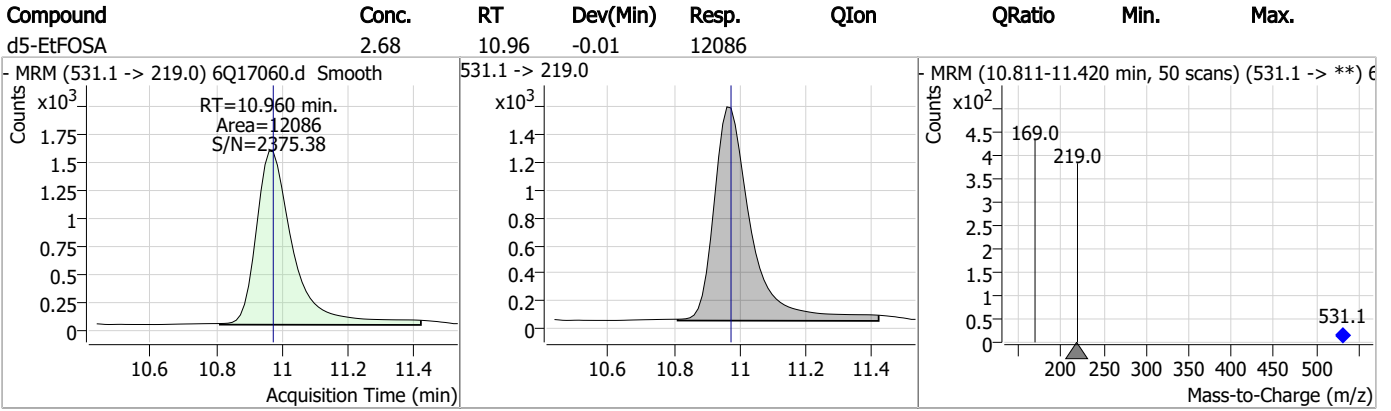
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



7.7.10
7

Manual Integration Approval Summary

Sample Number: S6Q258-ICV258 Method: EPA DRAFT 1633
Lab FileID: 6Q17060.D Analyst approved: 04/30/23 23:33 Natasha Gumtie
Injection Time: 04/28/23 15:00 Supervisor approved: 04/30/23 23:52 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.23	Split peak
MeFOSA	31506-32-8		10.73	Split peak

7.7.10.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17061.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/28/2023 3:15:11 PM
 Sample Name : icv258-20
 Vial : P1-B2
 DA Method File : 1633_042823_S6Q258.quantmethod.xml
 Batch Name : s6q258.batch.bin
 Sample Information : OP96301,S6Q258,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.897	216.8 -> 171.9	181883	10.00 µg/L	0.000
M5-PFPeA	4.270	268.3 -> 223.0	63114	5.00 µg/L	0.000
M5-PFHxA	5.468	318.0 -> 273.0	65831	2.50 µg/L	0.000
M4-PFHpA	6.419	367.1 -> 322.0	55304	2.50 µg/L	0.000
M8-PFOA	7.074	421.1 -> 376.0	78747	2.50 µg/L	0.012
M9-PFNA	7.594	472.1 -> 427.0	26122	1.25 µg/L	0.000
M6-PFDA	8.076	519.1 -> 474.1	20235	1.25 µg/L	0.000
M7-PFUnDA	8.530	570.0 -> 525.1	24976	1.25 µg/L	0.000
M2-PFDoDA	8.960	615.1 -> 570.0	26141	1.25 µg/L	0.000
M2-PFTeDA	9.689	715.2 -> 670.0	17129	1.25 µg/L	0.000
M8-FOSA	9.623	506.1 -> 77.8	23209	2.50 µg/L	0.000
M3-PFBS	5.398	302.1 -> 79.9	21977	2.50 µg/L	0.000
M3-PFHxS	7.179	402.1 -> 79.9	12387	2.50 µg/L	0.000
M8-PFOS	8.226	507.1 -> 79.9	10720	2.50 µg/L	-0.012
M2-4:2FTS	5.144	329.1 -> 80.9	2129	5.00 µg/L	0.000
M2-6:2FTS	6.851	429.1 -> 80.9	2641	5.00 µg/L	0.012
M2-8:2FTS	7.864	529.1 -> 80.9	3070	5.00 µg/L	0.000
M3-MeFOSAA	8.134	573.2 -> 419.0	21714	5.00 µg/L	0.000
M3-HFPO-DA	5.845	286.9 -> 168.9	40942	10.00 µg/L	0.000
M5-EtFOSAA	8.330	589.2 -> 419.0	18992	5.00 µg/L	0.000
M7-MeFOSE	10.647	623.2 -> 58.9	90949	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	110731	25.00 µg/L	0.000
M5-EtFOSA	10.960	531.1 -> 219.0	10862	2.50 µg/L	-0.012
M3-MeFOSA	10.728	515.0 -> 219.0	8899	2.50 µg/L	0.000
13C4-PFOS	8.239	502.8 -> 79.9	13456	2.50 µg/L	0.000
13C3-PFBA	2.902	216.0 -> 172.0	78256	5.00 µg/L	0.000
18O2-PFHxS	7.177	403.0 -> 83.9	9305	2.50 µg/L	0.000
13C4-PFOA	7.075	417.1 -> 372.0	84999	2.50 µg/L	0.012
13C2-PFDA	8.076	515.1 -> 470.1	23724	1.25 µg/L	0.000
13C5-PFNA	7.595	468.0 -> 423.0	29731	1.25 µg/L	0.000
13C2-PFHxA	5.469	315.1 -> 270.0	56306	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.144	329.1 -> 80.9	2129	4.98 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.6%		
13C2-6:2FTS	6.851	429.1 -> 80.9	2641	5.09 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.7%		
13C2-8:2FTS	7.864	529.1 -> 80.9	3070	5.50 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.0%		
13C2-PFDoDA	8.960	615.1 -> 570.0	26141	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.9%		
13C2-PFTeDA	9.689	715.2 -> 670.0	17129	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.6%		
13C3-PFBS	5.398	302.1 -> 79.9	21977	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.4%		
13C3-PFHxS	7.179	402.1 -> 79.9	12387	2.50 µg/L	0.000



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C4-PFBA	2.897	216.8 -> 171.9	181883	10.06 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C4-PFHpA	6.419	367.1 -> 322.0	55304	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.0%	
13C5-PFHxA	5.468	318.0 -> 273.0	65831	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.0%	
13C5-PFPeA	4.270	268.3 -> 223.0	63114	5.02 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C6-PFDA	8.076	519.1 -> 474.1	20235	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.5%	
13C7-PFUnDA	8.530	570.0 -> 525.1	24976	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C8-FOSA	9.623	506.1 -> 77.8	23209	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.4%	
13C8-PFOA	7.074	421.1 -> 376.0	78747	2.40 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.0%	
13C8-PFOS	8.226	507.1 -> 79.9	10720	2.64 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.8%	
13C9-PFNA	7.594	472.1 -> 427.0	26122	1.15 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.2%	
d3-MeFOSAA	8.134	573.2 -> 419.0	21714	5.42 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.3%	
13C3-HFPO-DA	5.845	286.9 -> 168.9	40942	10.27 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.7%	
d3-MeFOSA	10.728	515.0 -> 219.0	8899	2.65 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.9%	
d5-EtFOSAA	8.330	589.2 -> 419.0	18992	5.70 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 114.0%	
d7-MeFOSE	10.647	623.2 -> 58.9	90949	25.75 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.0%	
d9-EtFOSE	10.894	639.2 -> 58.9	110731	25.66 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.6%	
d5-EtFOSA	10.960	531.1 -> 219.0	10862	2.63 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.3%	
Target Compounds					QValue
4:2FTS	5.145	327.1 -> 307.0	72285	22.44 µg/L	98
		327.1 -> 80.9	26001		
6:2FTS	6.839	427.1 -> 407.0	59670	20.54 µg/L	94
		427.1 -> 80.9	19116		
8:2FTS	7.865	527.1 -> 507.0	34354	18.81 µg/L	95
		527.1 -> 80.8	15078		
EtFOSAA	8.331	584.2 -> 419.1	66660	20.65 µg/L	98
		584.2 -> 526.0	36033		
FOSA	9.614	498.1 -> 77.9	185412	22.30 µg/L	100
		498.1 -> 478.0	5114		
MeFOSAA	8.136	570.1 -> 419.0	86089	21.11 µg/L	85
		570.1 -> 483.0	17791		
PFBA	2.906	212.8 -> 168.9	124172	20.36 µg/L	100
PFBS	5.400	298.7 -> 79.9	218020	22.11 µg/L	97
		298.7 -> 98.8	85881		
PFDA	8.077	512.9 -> 469.0	496401	22.58 µg/L	99
		512.9 -> 219.0	81120		
PFDoDA	8.961	613.1 -> 569.0	347308	16.95 µg/L	98
		613.1 -> 319.0	48030		
PFDS	9.125	599.0 -> 79.9	72333	21.17 µg/L	99

7.7.11
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	36481			
PFHpA	6.420	363.1 -> 319.0	595758	21.83	µg/L	97
		363.1 -> 169.0	96770			
PFHpS	7.746	449.0 -> 79.9	118260	20.36	µg/L	93
		449.0 -> 98.9	65794			
PFHxA	5.470	313.0 -> 269.0	553947	21.28	µg/L	100
		313.0 -> 118.9	25719			
PFHxS	7.180	398.7 -> 79.9	151988	22.52	µg/L	m 90
		398.7 -> 98.9	68078			
PFNA	7.595	463.0 -> 419.0	374916	20.75	µg/L	95
		463.0 -> 219.0	86517			
PFNS	8.706	548.8 -> 79.9	115696	22.36	µg/L	95
		548.8 -> 98.9	59755			
PFOA	7.063	413.0 -> 369.0	788785	20.81	µg/L	100
		413.0 -> 169.0	136616			
PFOS	8.228	498.9 -> 79.9	99333	19.19	µg/L	m 79
		498.9 -> 98.8	47997			
PFPeA	4.273	263.0 -> 219.0	381974	22.22	µg/L	100
PFPeS	6.472	349.1 -> 79.9	158163	22.44	µg/L	92
		349.1 -> 98.9	68379			
PFTeDA	9.690	713.1 -> 669.0	372337	21.51	µg/L	100
		713.1 -> 168.9	28247			
PFTrDA	9.345	663.0 -> 619.0	417890	18.42	µg/L	98
		663.0 -> 168.9	35597			
PFUnDA	8.531	563.1 -> 519.0	365576	21.10	µg/L	95
		563.1 -> 269.1	55110			
11CI-PF3OUdS	9.398	630.9 -> 450.9	294122	20.93	µg/L	98
		632.9 -> 452.9	90566			
9CI-PF3ONS	8.569	530.8 -> 351.0	471916	21.24	µg/L	99
		532.8 -> 353.0	142935			
ADONA	6.681	376.9 -> 250.9	1282918	20.74	µg/L	97
		376.9 -> 84.8	315913			
HFPO-DA	5.846	284.9 -> 168.9	73104	18.85	µg/L	99
		284.9 -> 184.9	9797			
3:3FTCA	3.784	241.0 -> 177.0	22317	20.76	µg/L	98
		241.0 -> 117.0	2776			
5:3FTCA	6.160	341.0 -> 237.1	103543	24.58	µg/L	99
		341.0 -> 217.0	70006			
7:3FTCA	7.573	441.0 -> 316.9	42656	22.29	µg/L	92
		441.0 -> 336.9	86728			
EtFOSA	10.975	526.0 -> 219.0	92596	20.74	µg/L	86
		526.0 -> 169.0	98148			
EtFOSE	10.907	630.0 -> 58.9	511139	110.84	µg/L	100
MeFOSA	10.743	511.9 -> 219.0	82720	20.66	µg/L	80
		511.9 -> 169.0	91971			
MeFOSE	10.661	616.1 -> 58.9	455307	112.25	µg/L	100
PFDoDS	9.817	699.1 -> 79.9	35872	20.30	µg/L	98
		699.1 -> 98.8	21072			
NFDHA	5.350	295.0 -> 201.0	64405	22.83	µg/L	99
		295.0 -> 84.9	15279			
PFMBA	4.687	279.0 -> 85.1	251755	21.83	µg/L	100
PFMPA	3.438	229.0 -> 84.9	185020	21.50	µg/L	100
PFEESA	5.937	314.8 -> 134.9	652973	19.88	µg/L	99
		314.8 -> 82.9	21677			

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

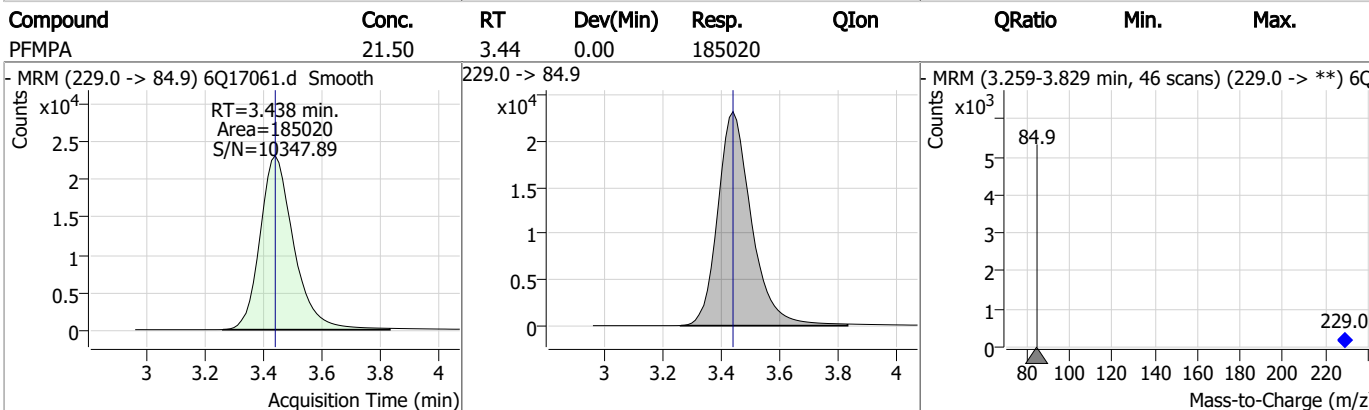
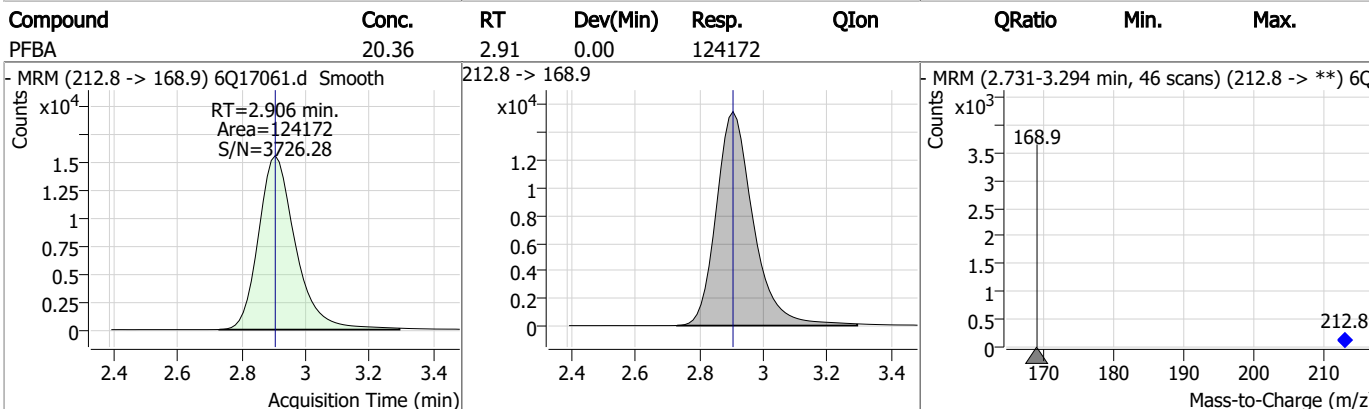
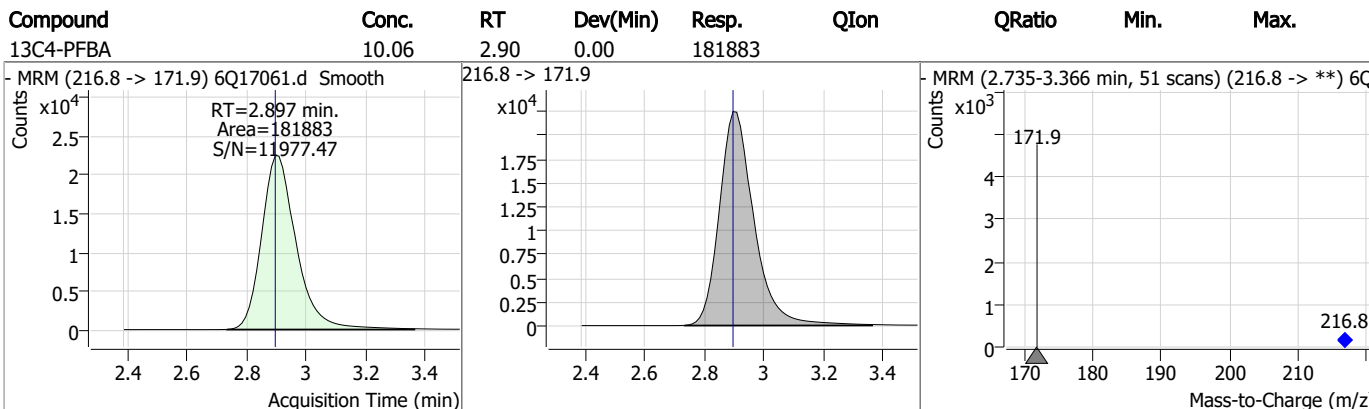
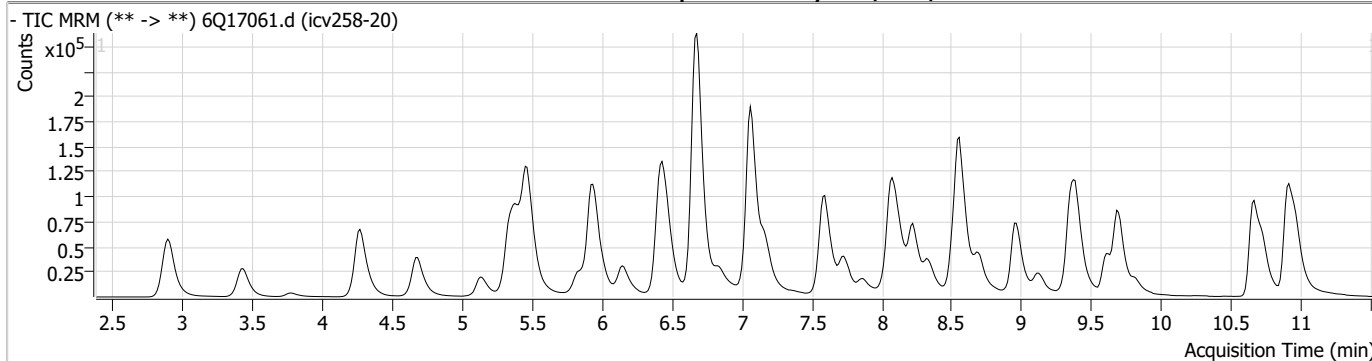
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.11

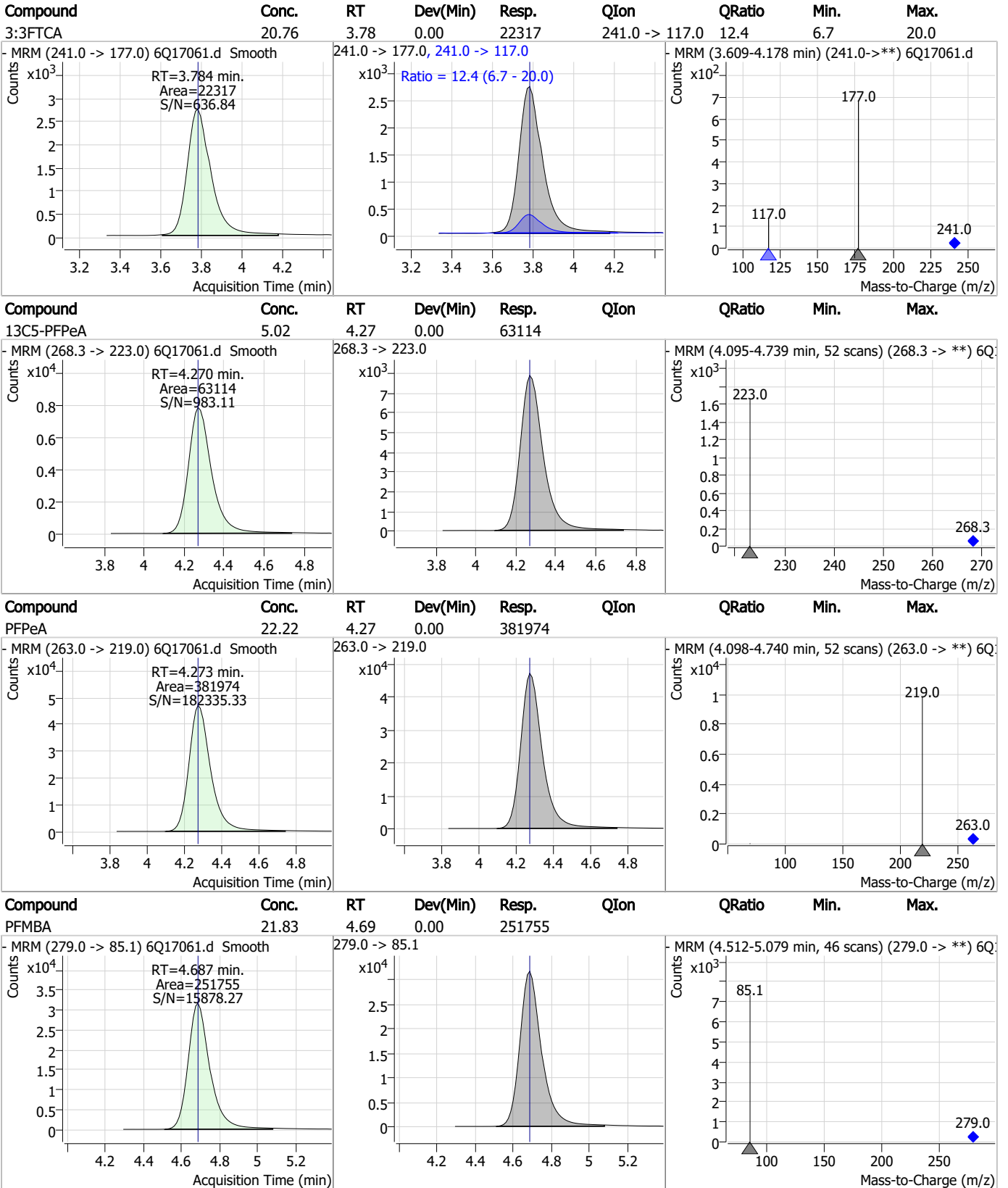
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Perfluorinated Compounds by LC/MS/MS



7.7.11
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Perfluorinated Compounds by LC/MS/MS

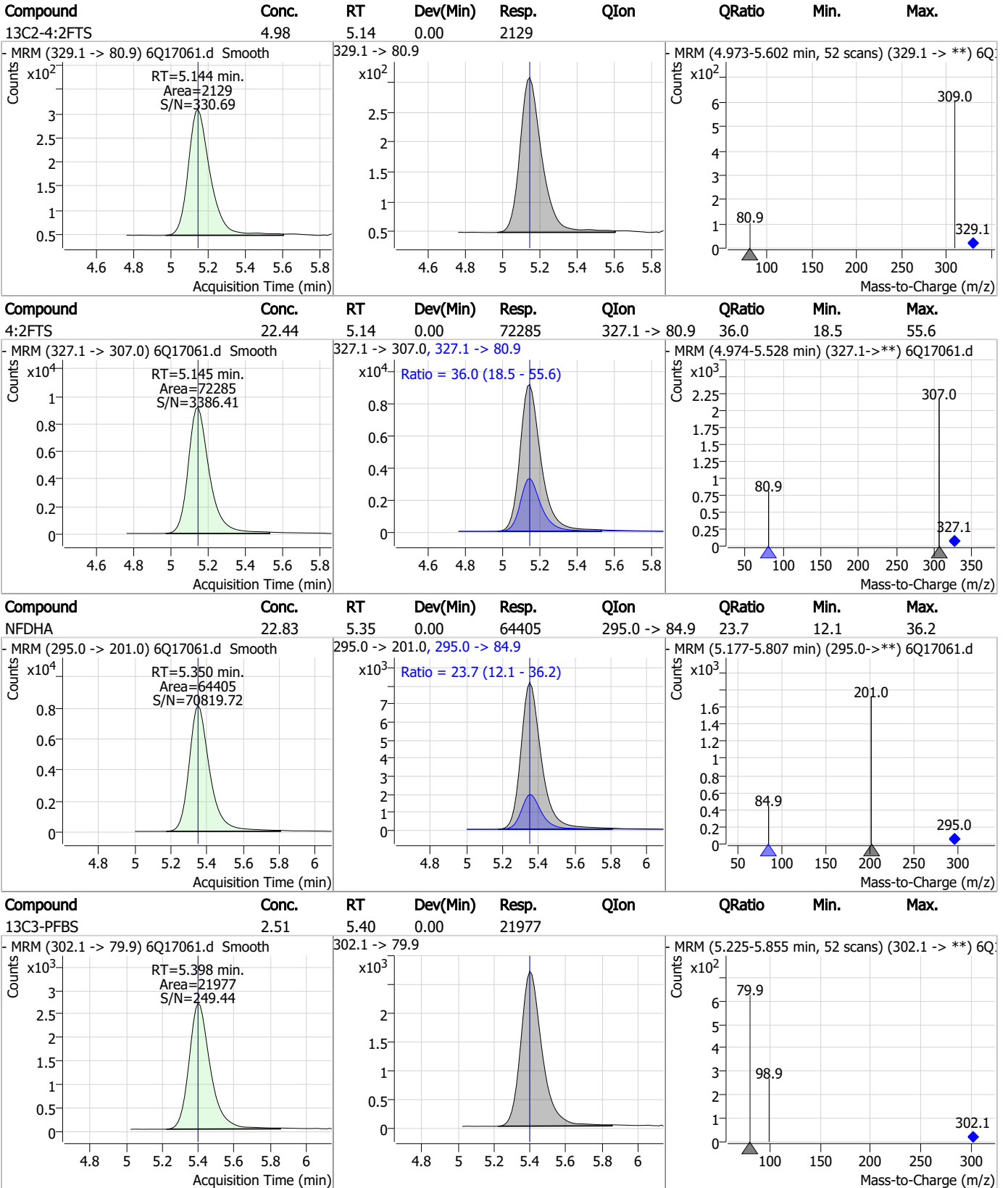


7.7.11

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Perfluorinated Compounds by LC/MS/MS



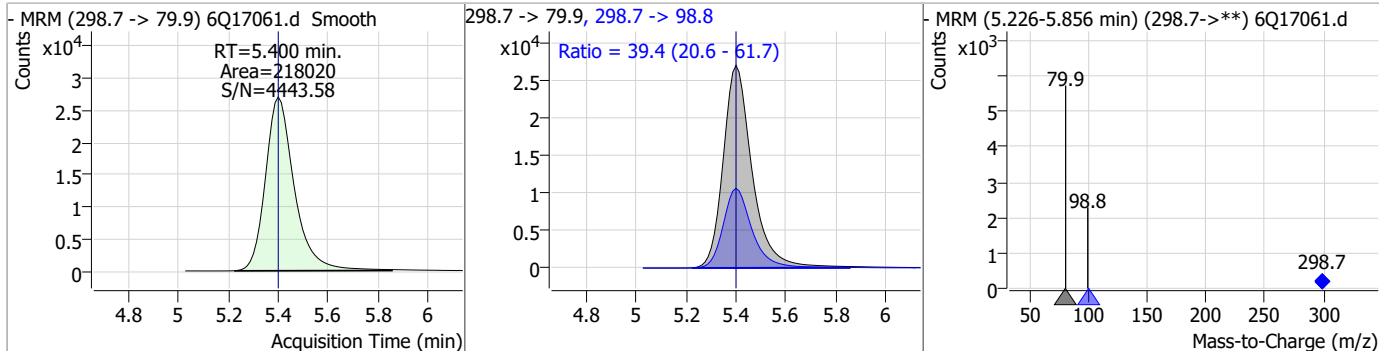
7.7.11

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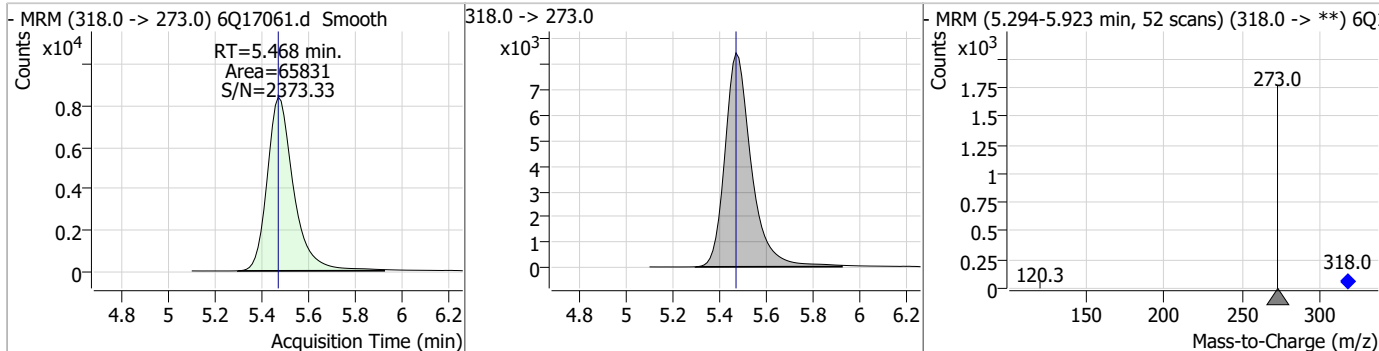


Perfluorinated Compounds by LC/MS/MS

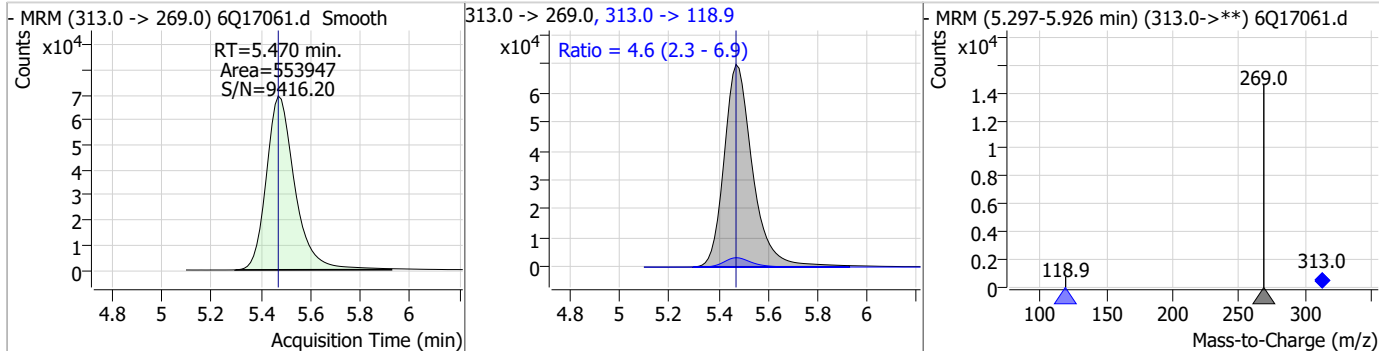
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	22.11	5.40	0.00	218020	298.7 -> 98.8	39.4	20.6	61.7



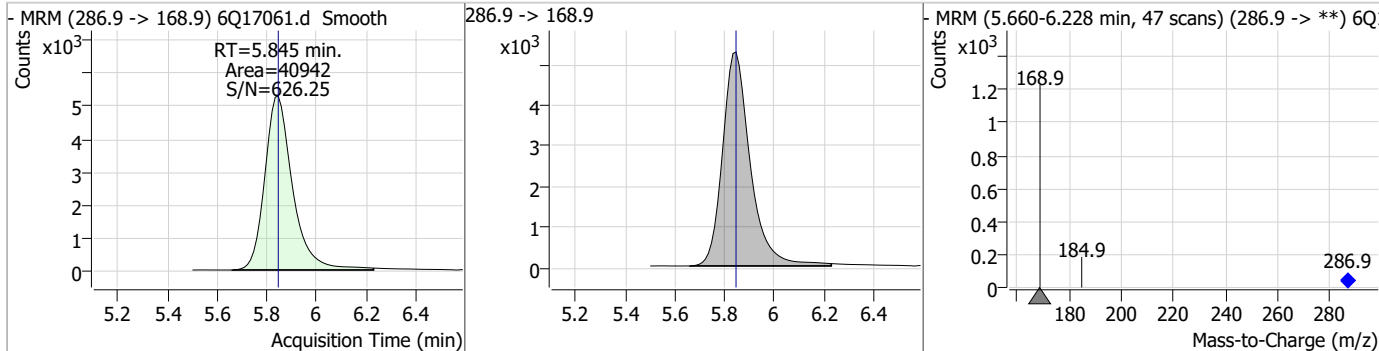
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.42	5.47	0.00	65831				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	21.28	5.47	0.00	553947	313.0 -> 118.9	4.6	2.3	6.9

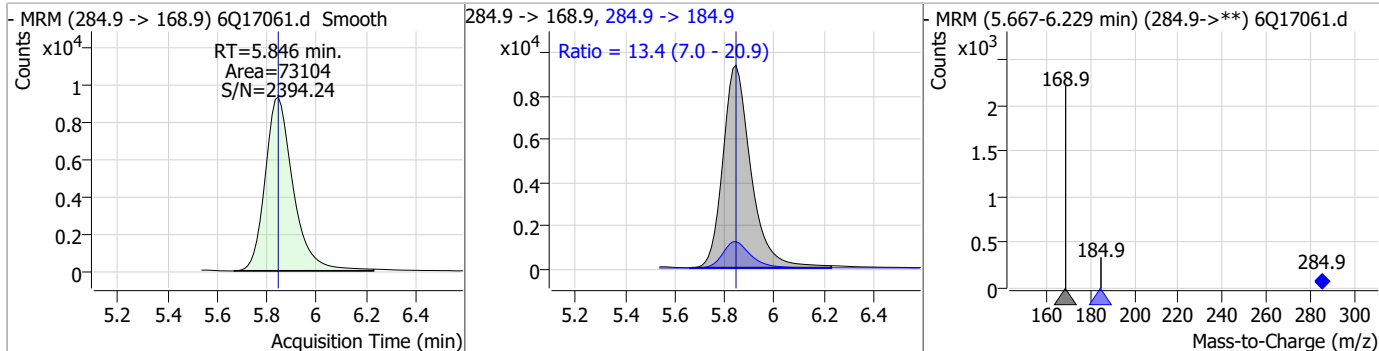


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.27	5.85	0.00	40942				

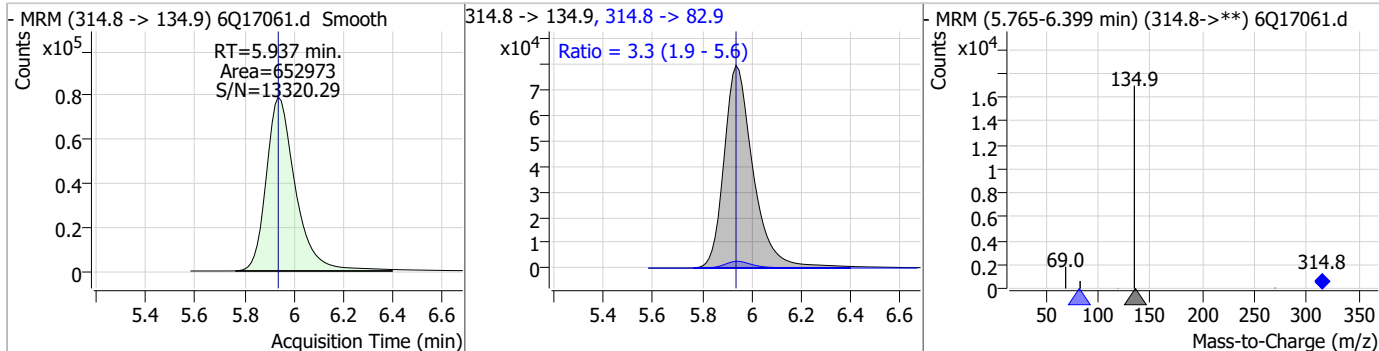


Perfluorinated Compounds by LC/MS/MS

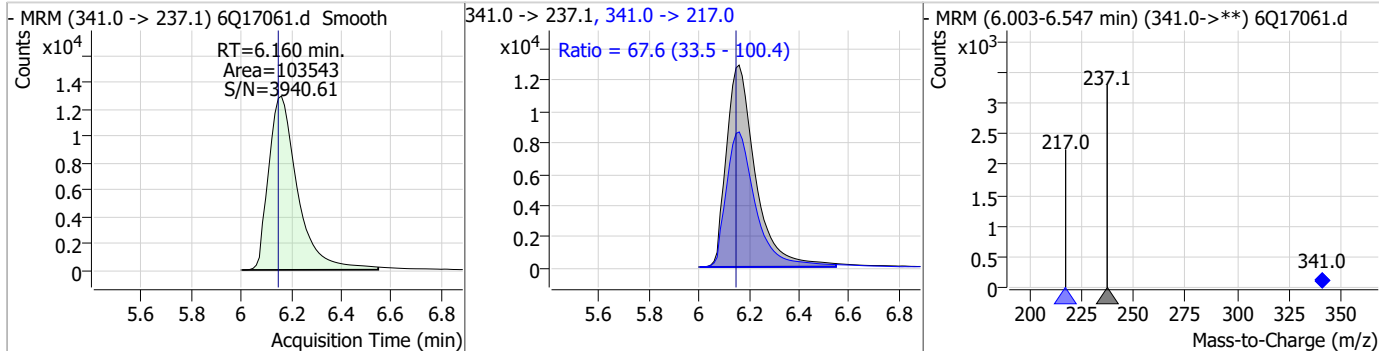
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	18.85	5.85	0.00	73104	284.9 -> 184.9	13.4	7.0	20.9



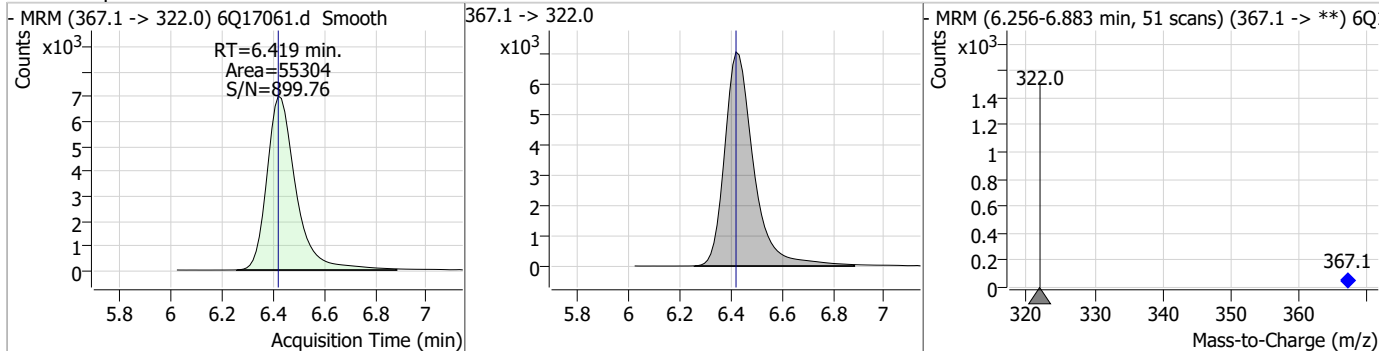
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	19.88	5.94	0.00	652973	314.8 -> 82.9	3.3	1.9	5.6



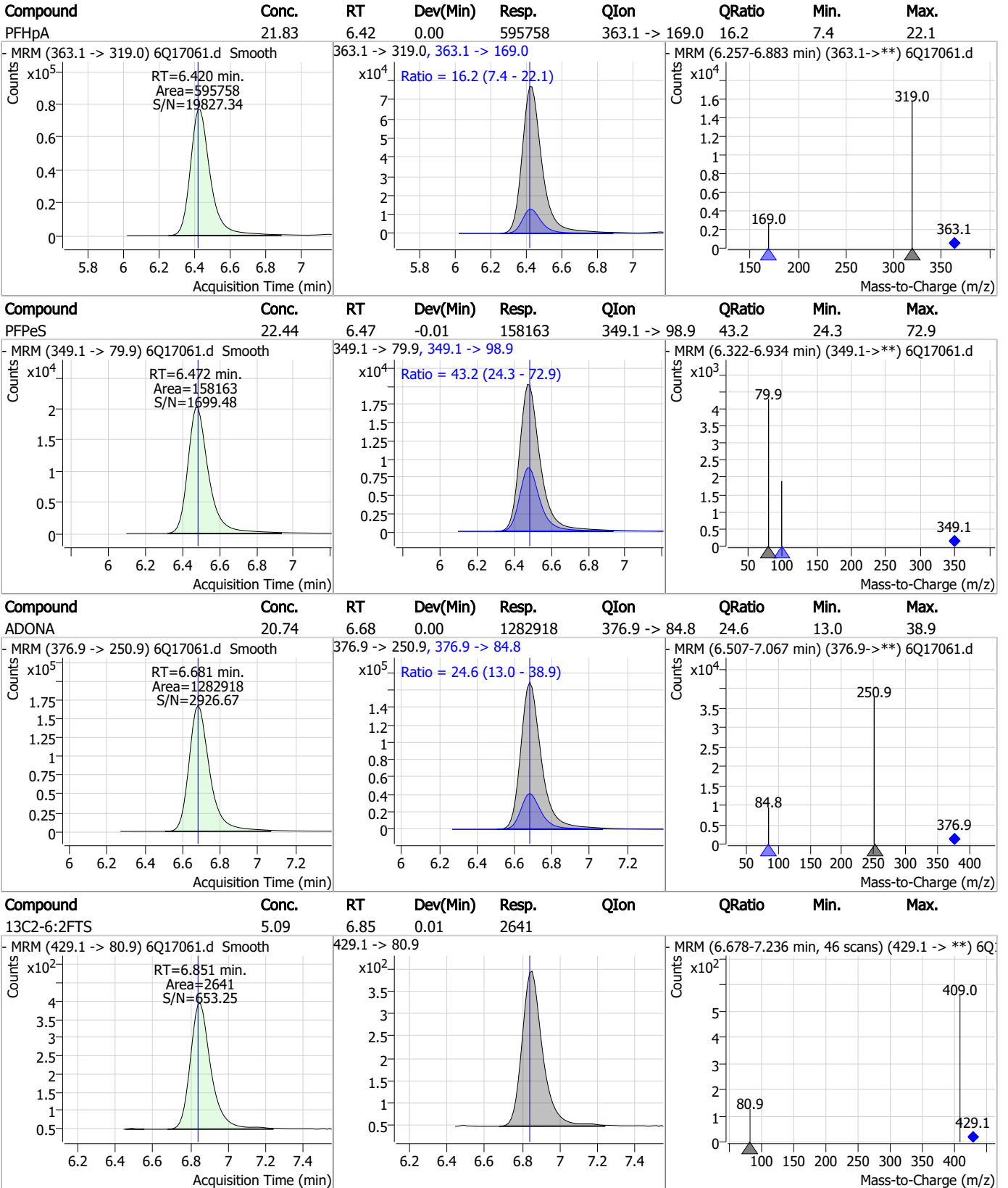
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	24.58	6.16	0.01	103543	341.0 -> 217.0	67.6	33.5	100.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.40	6.42	0.00	55304	367.1 -> 322.0			



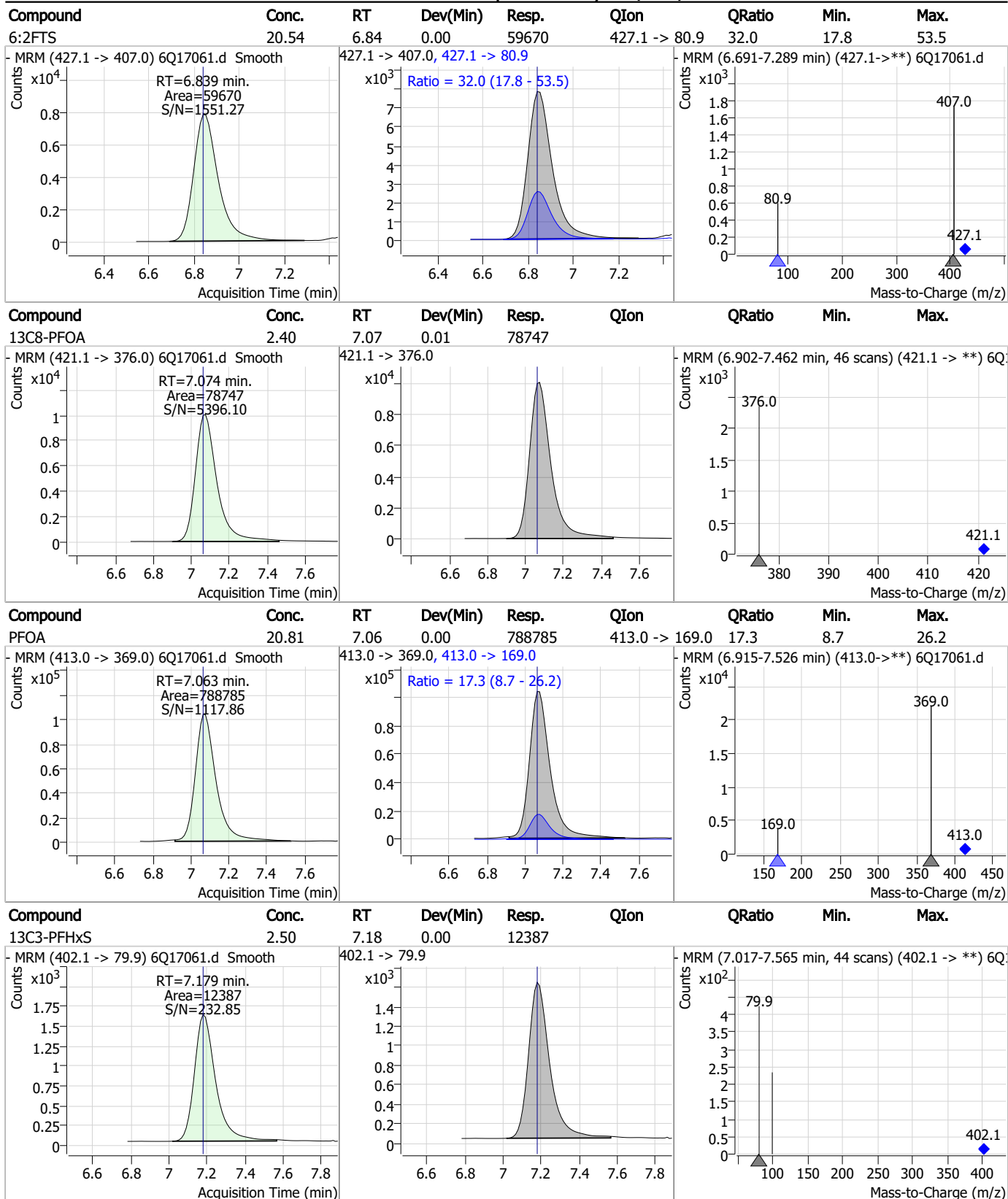
Perfluorinated Compounds by LC/MS/MS



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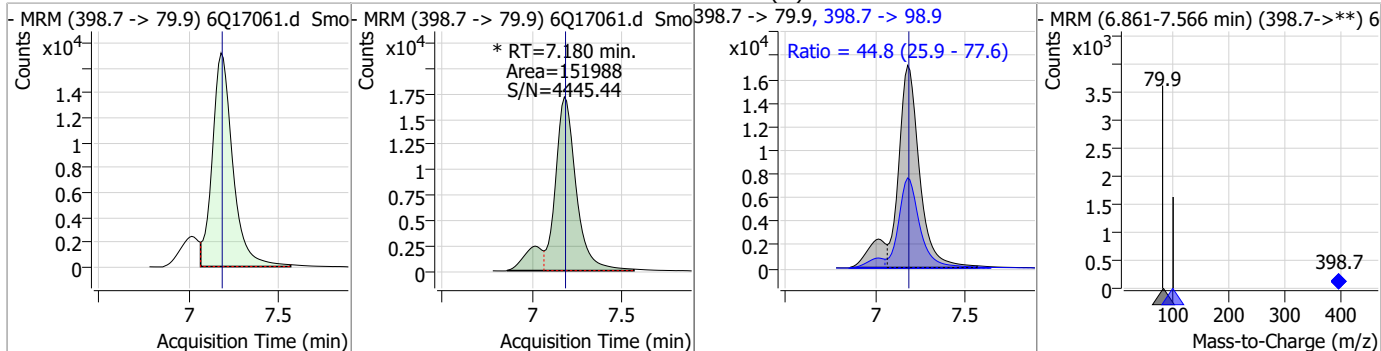
Perfluorinated Compounds by LC/MS/MS



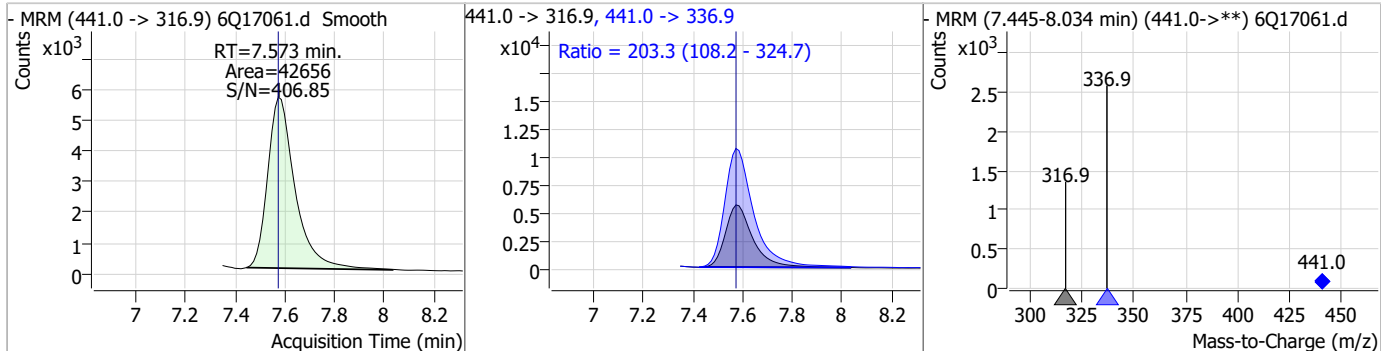
7.7.11
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Perfluorinated Compounds by LC/MS/MS

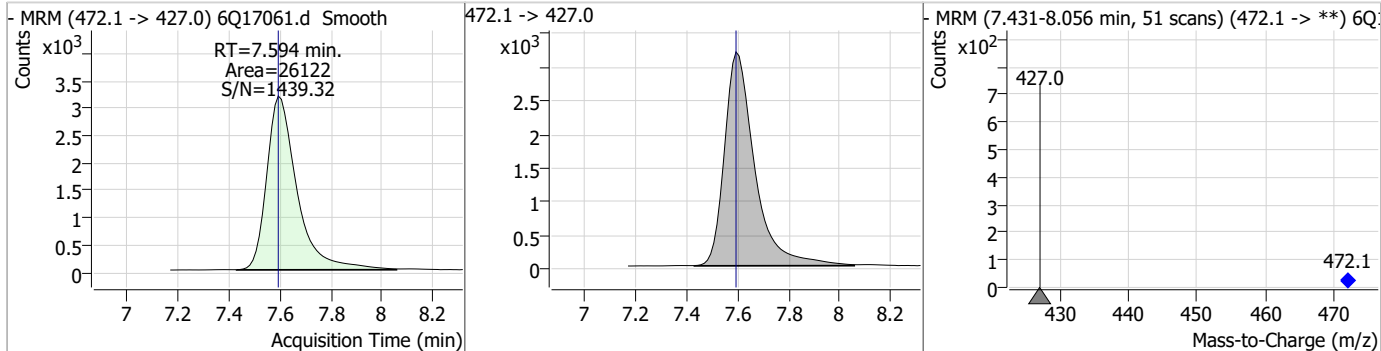
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	22.52	7.18	0.00	151988 (m)	398.7 -> 98.9	44.8	25.9	77.6



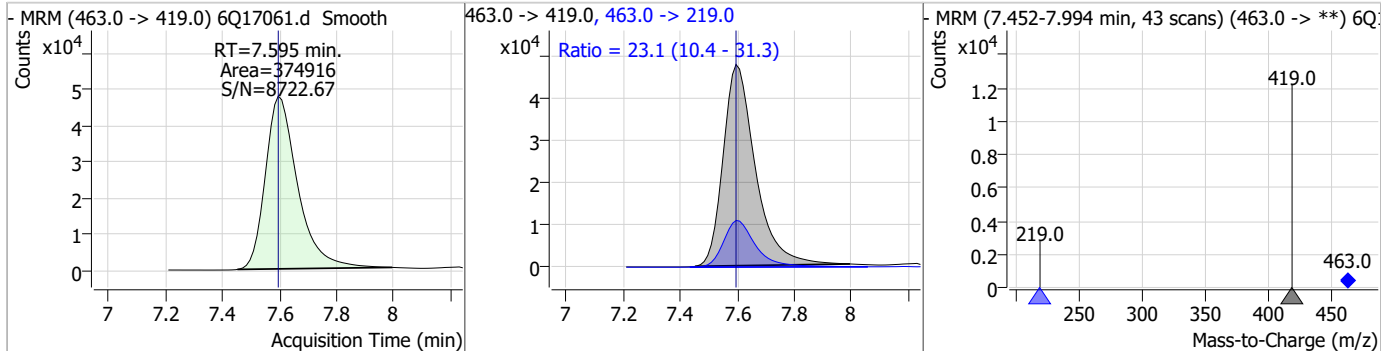
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	22.29	7.57	0.00	42656	441.0 -> 336.9	203.3	108.2	324.7



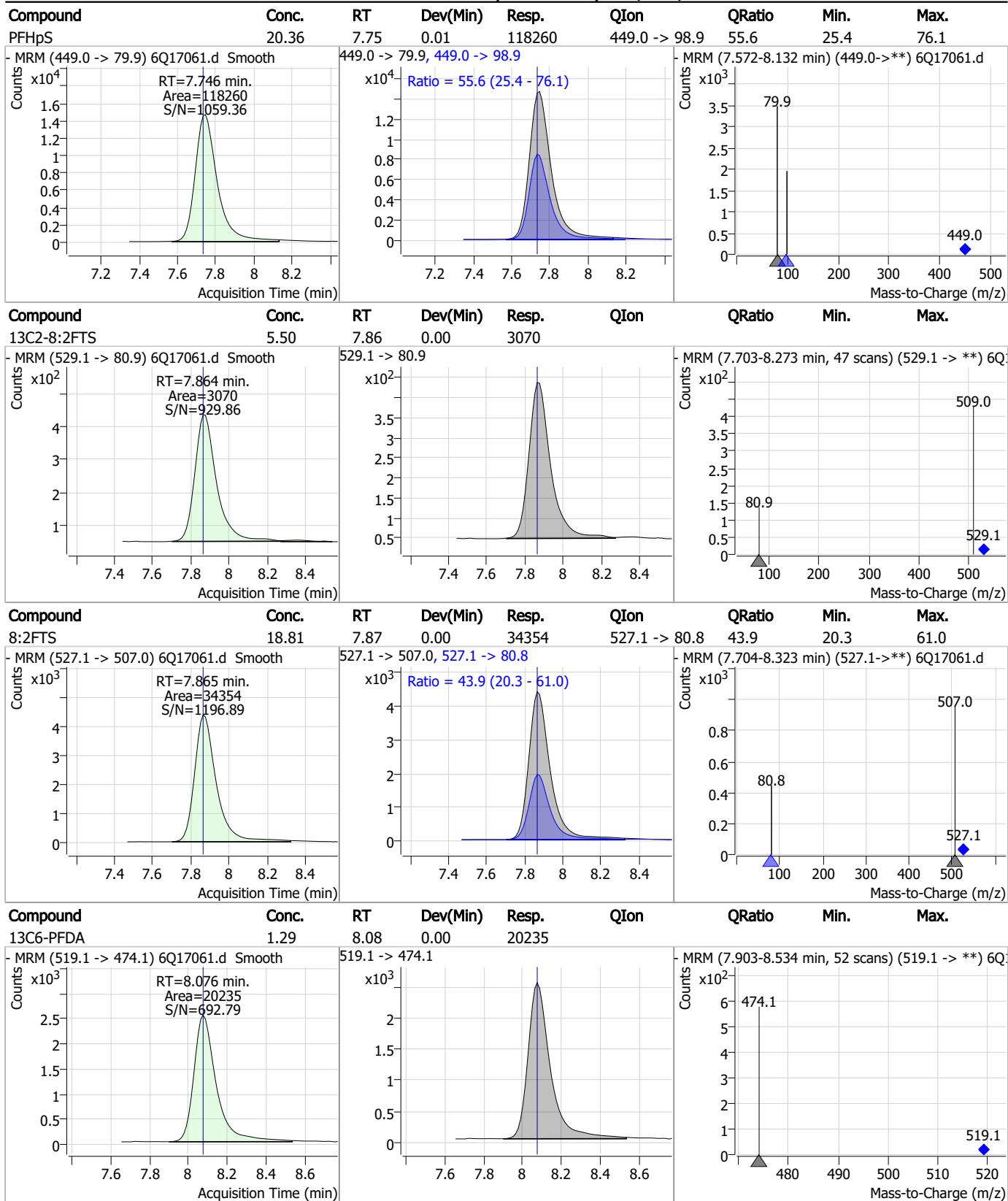
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.15	7.59	0.00	26122	472.1 -> 427.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	20.75	7.60	0.00	374916	463.0 -> 219.0	23.1	10.4	31.3

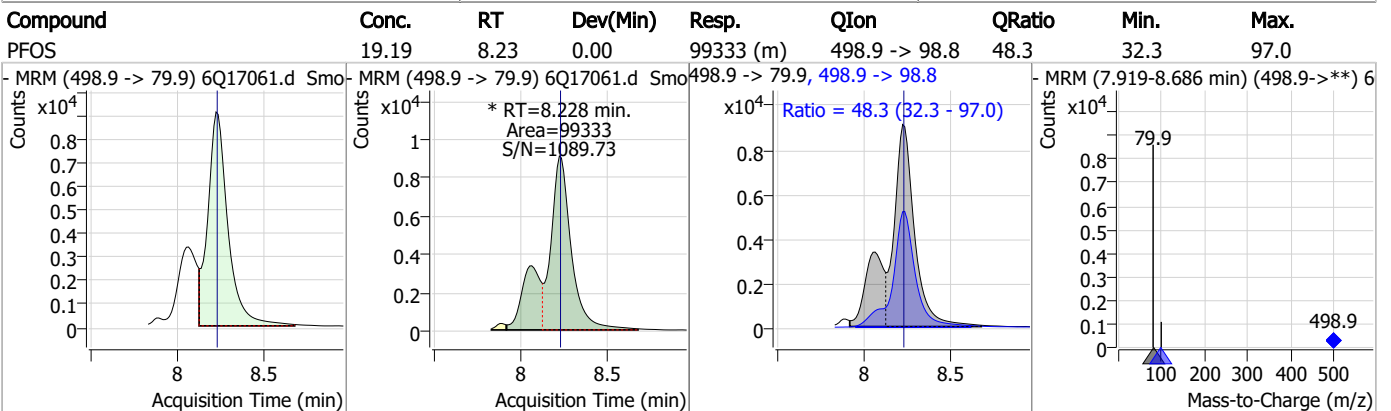
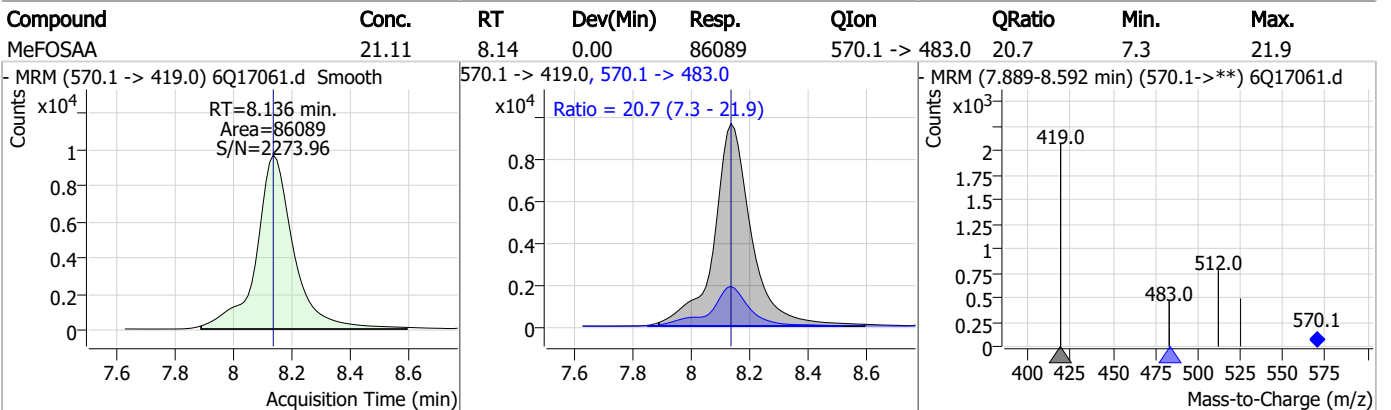
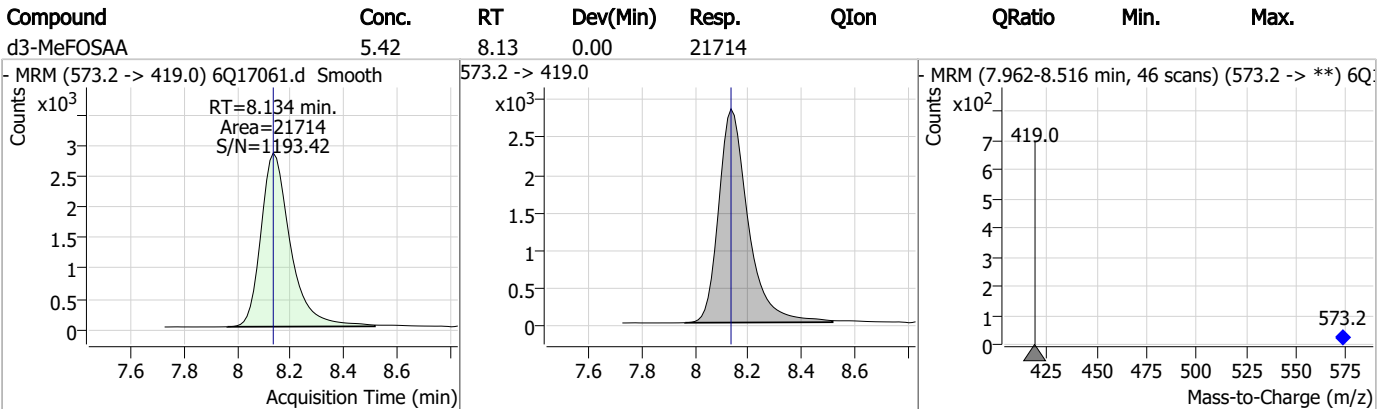
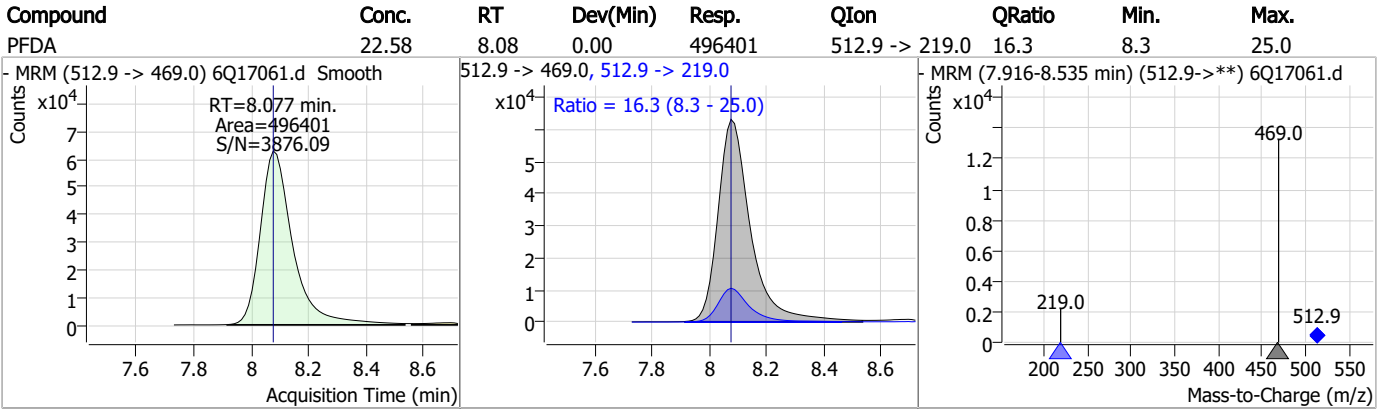


Perfluorinated Compounds by LC/MS/MS

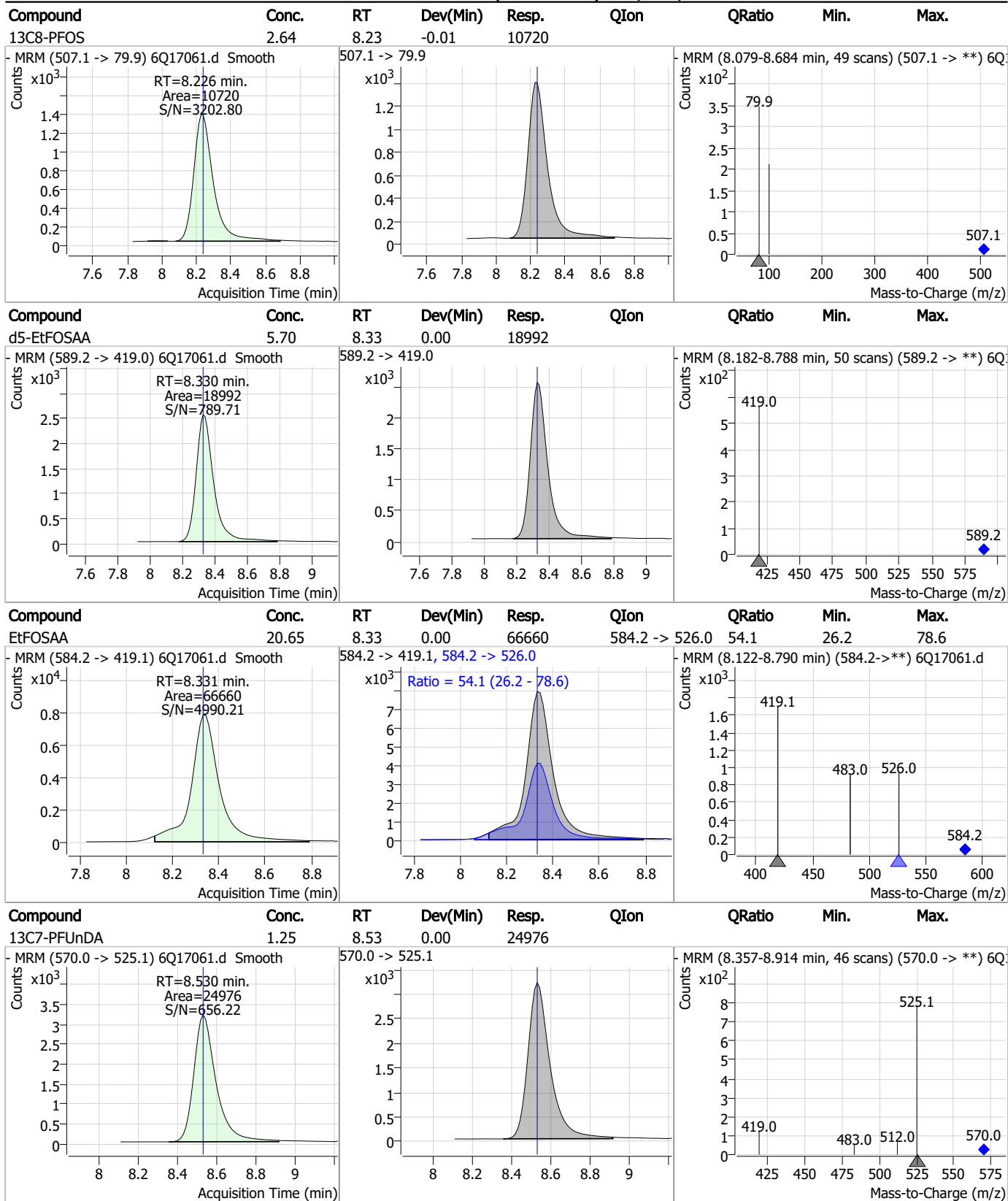


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Perfluorinated Compounds by LC/MS/MS



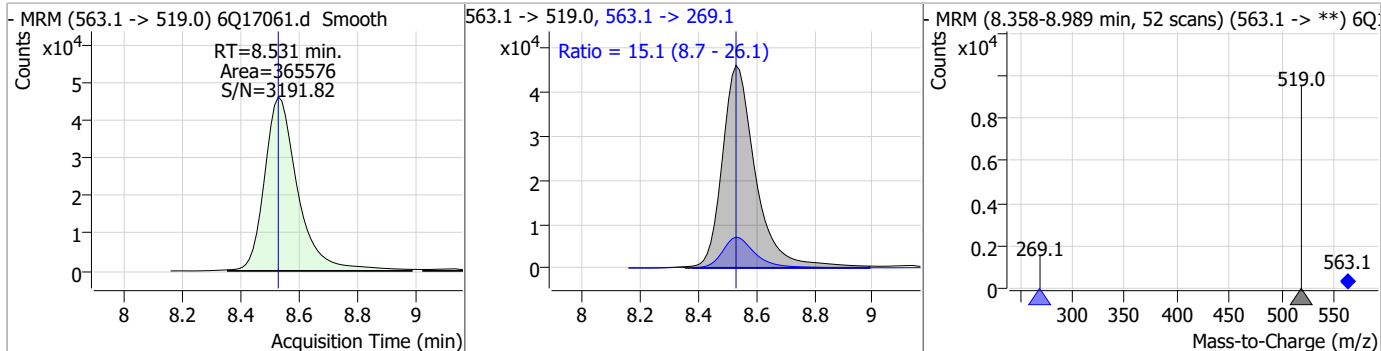
Perfluorinated Compounds by LC/MS/MS



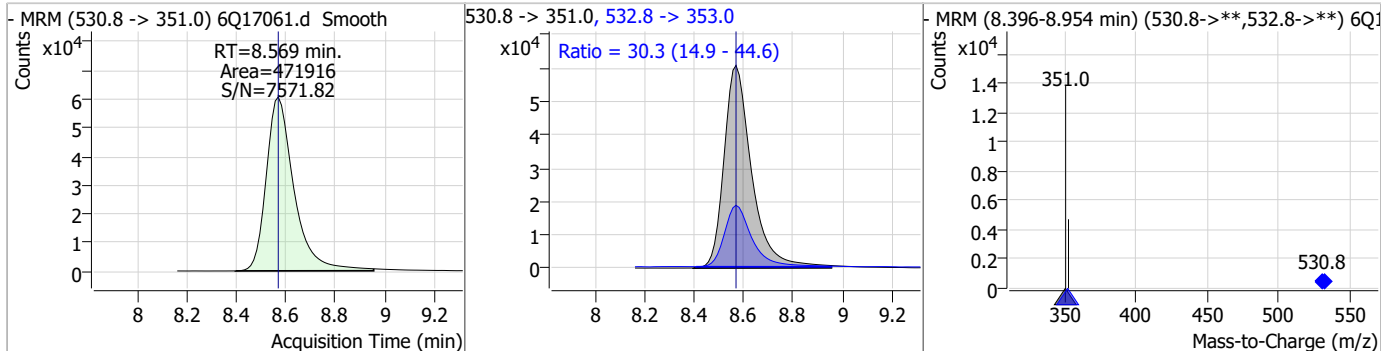
7.7.11
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Perfluorinated Compounds by LC/MS/MS

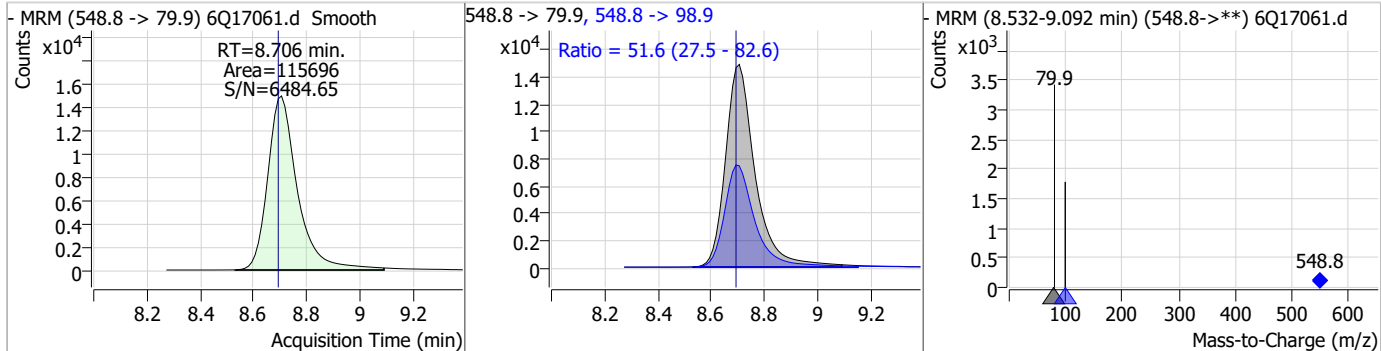
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	21.10	8.53	0.00	365576	563.1 -> 269.1	15.1	8.7	26.1



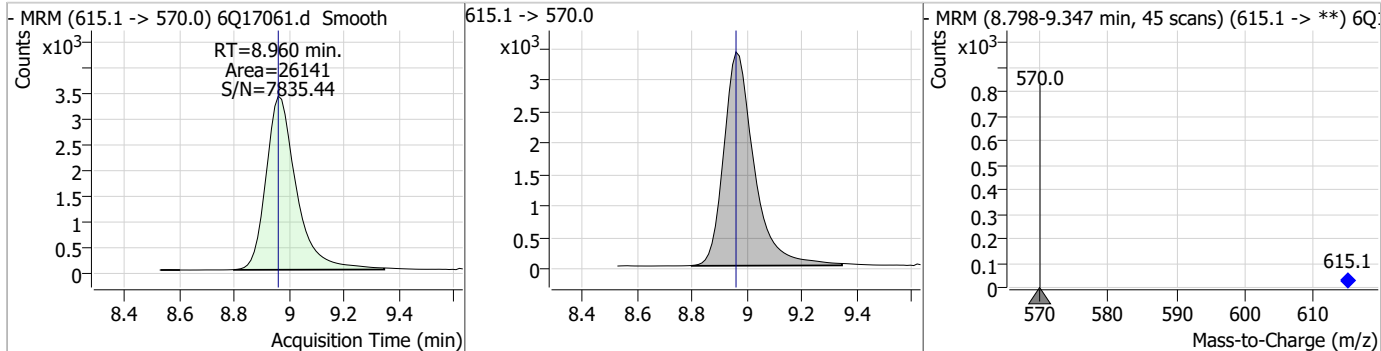
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	21.24	8.57	0.00	471916	532.8 -> 353.0	30.3	14.9	44.6



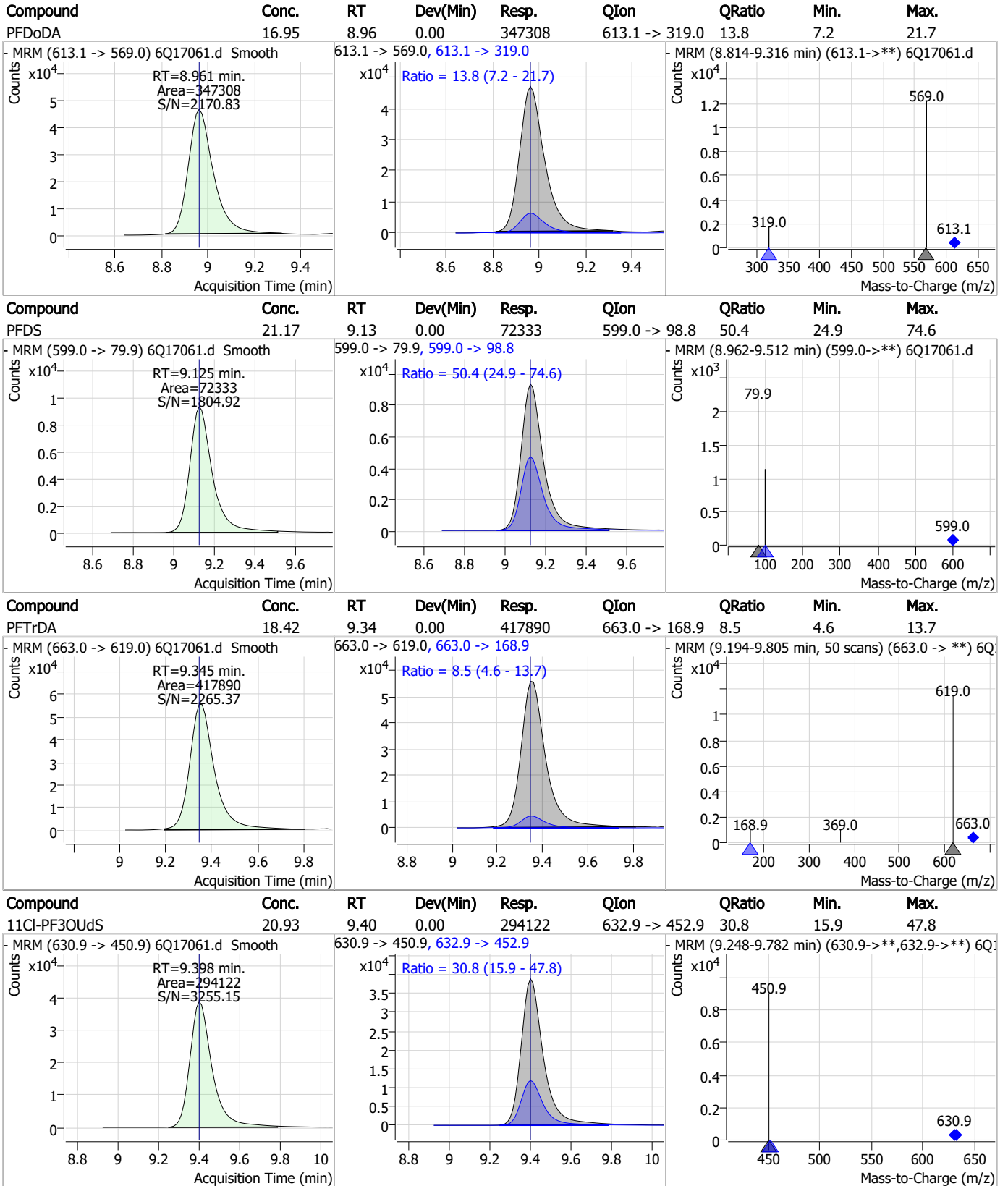
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	22.36	8.71	0.01	115696	548.8 -> 98.9	51.6	27.5	82.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.32	8.96	0.00	26141	615.1 -> 570.0			



Perfluorinated Compounds by LC/MS/MS

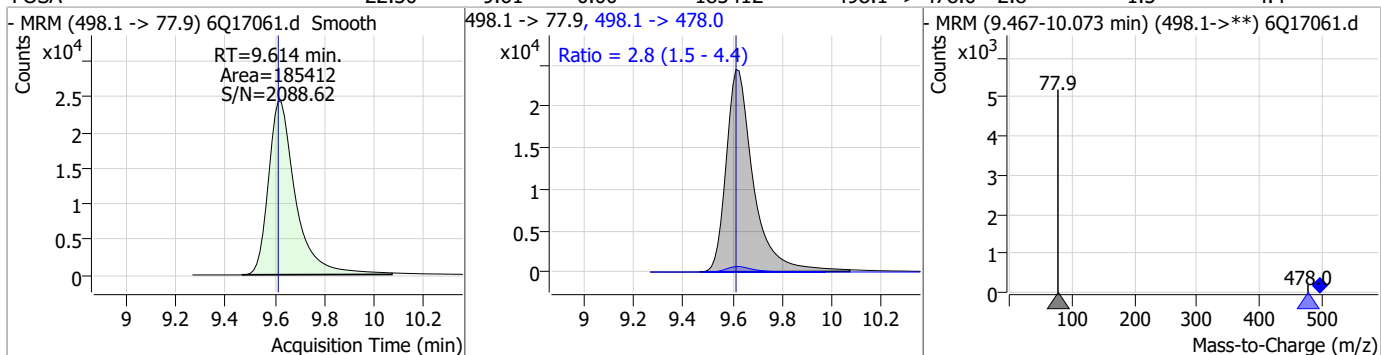


7.7.11

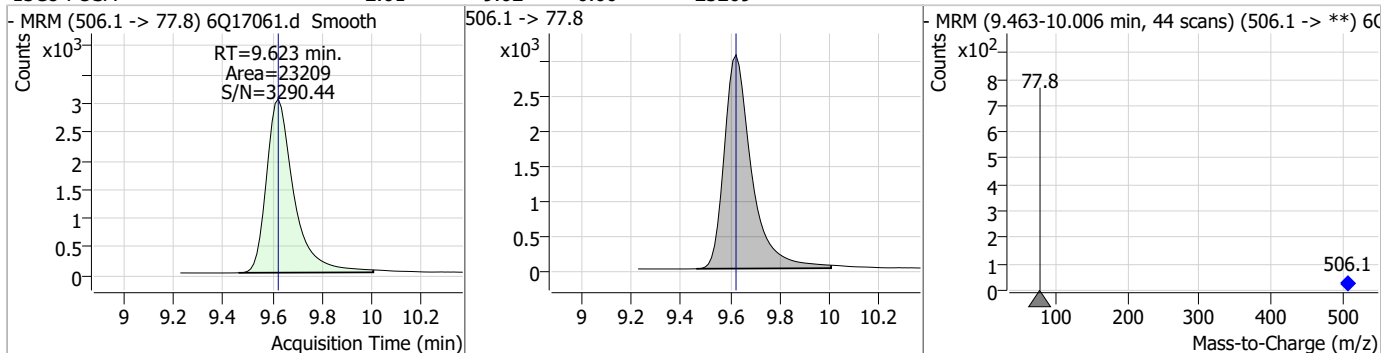
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Perfluorinated Compounds by LC/MS/MS

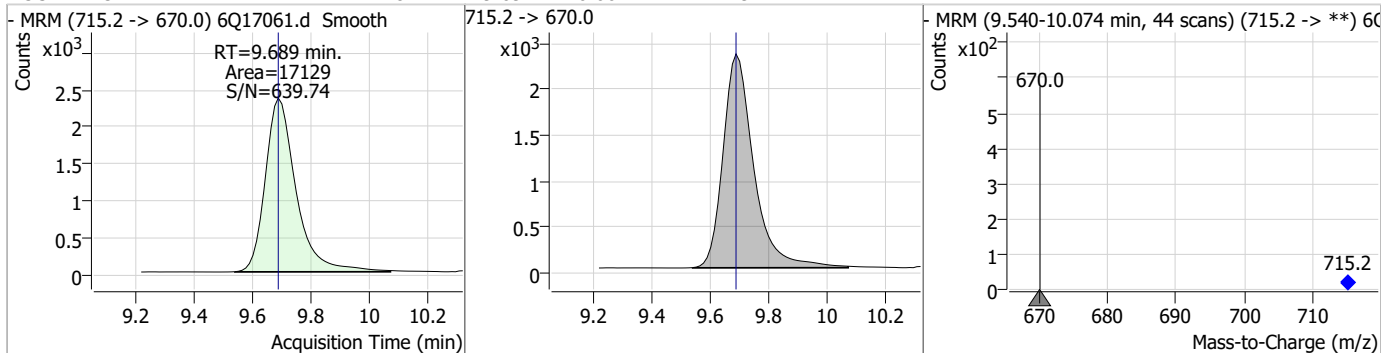
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	22.30	9.61	0.00	185412	498.1 -> 478.0	2.8	1.5	4.4



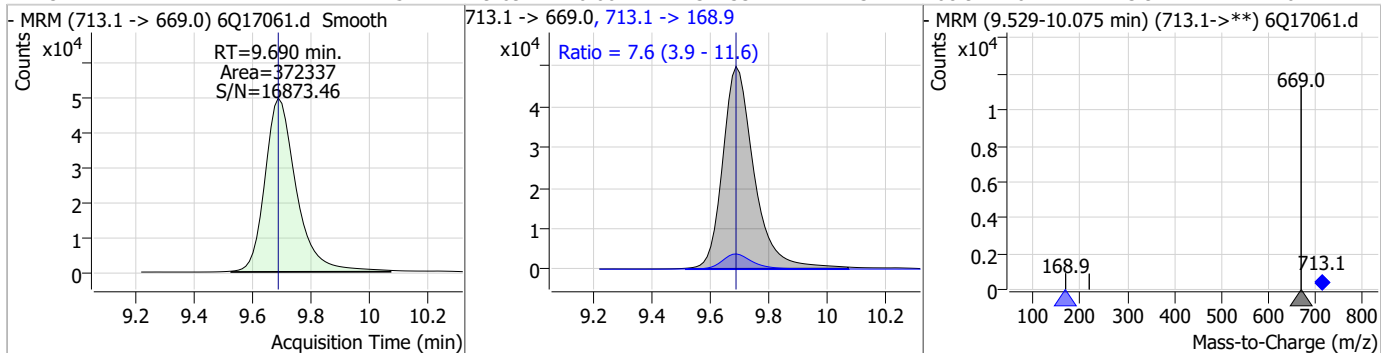
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.61	9.62	0.00	23209				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.28	9.69	0.00	17129				

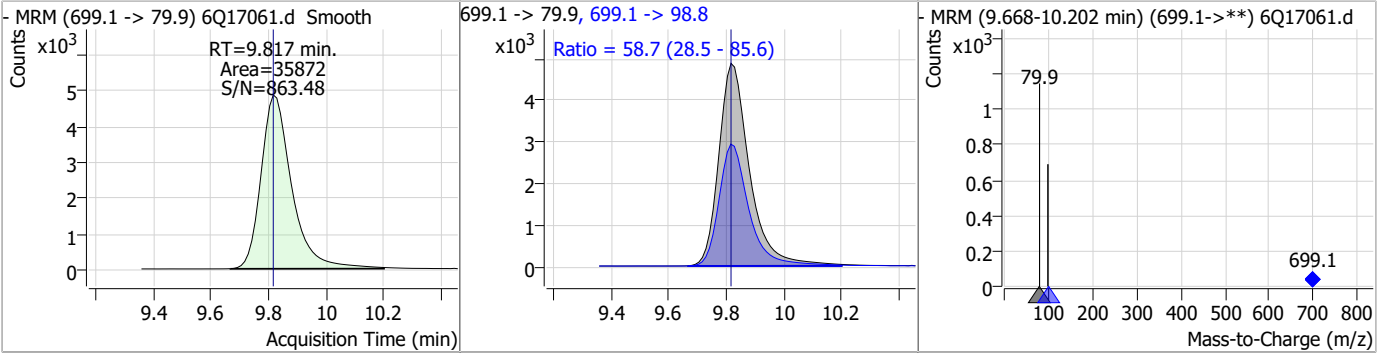


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	21.51	9.69	0.00	372337	713.1 -> 168.9	7.6	3.9	11.6

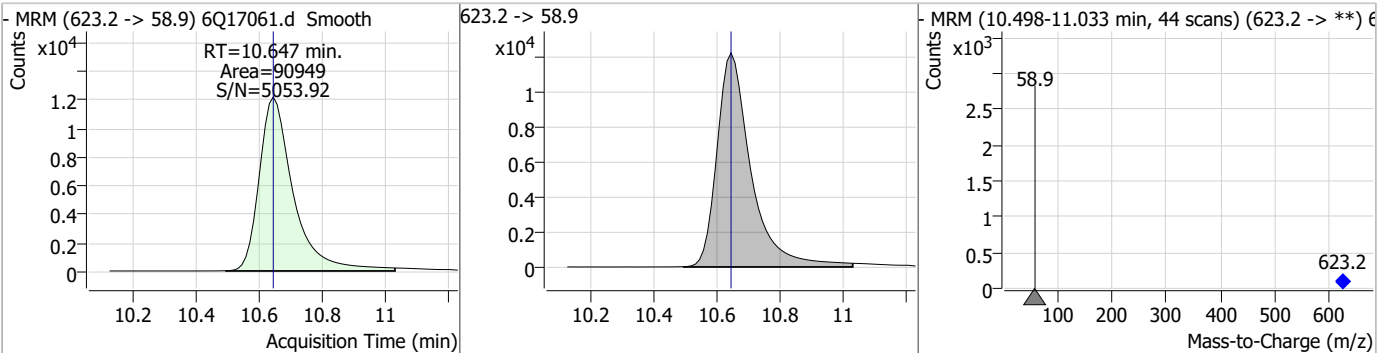


Perfluorinated Compounds by LC/MS/MS

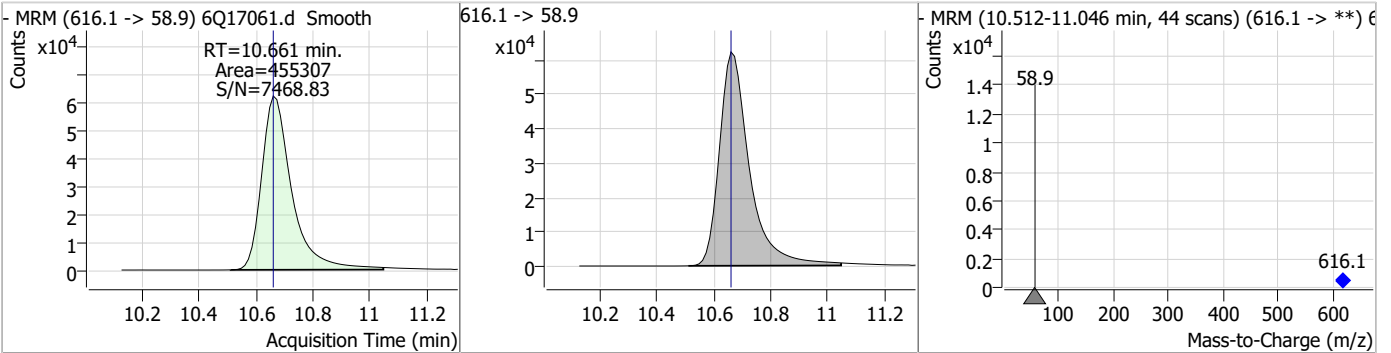
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFD _o DS	20.30	9.82	0.00	35872	699.1 -> 98.8	58.7	28.5	85.6



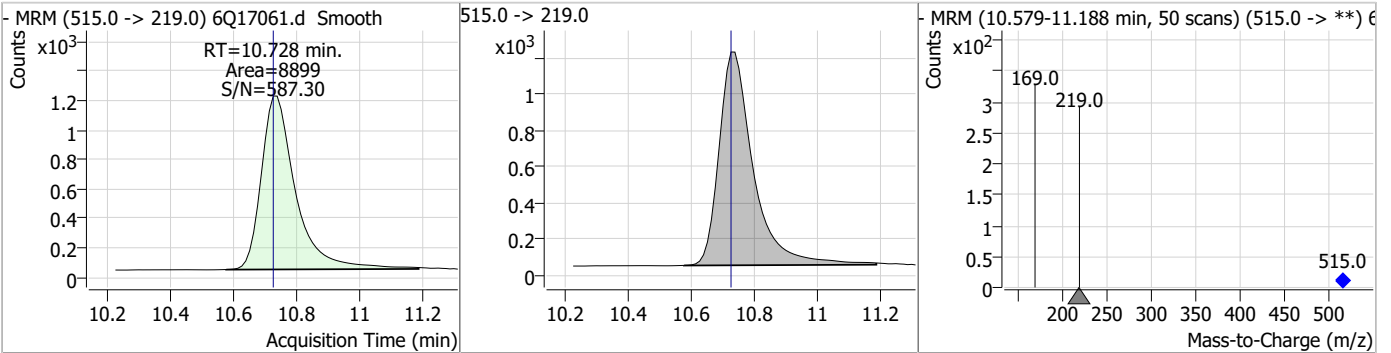
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.75	10.65	0.00	90949				



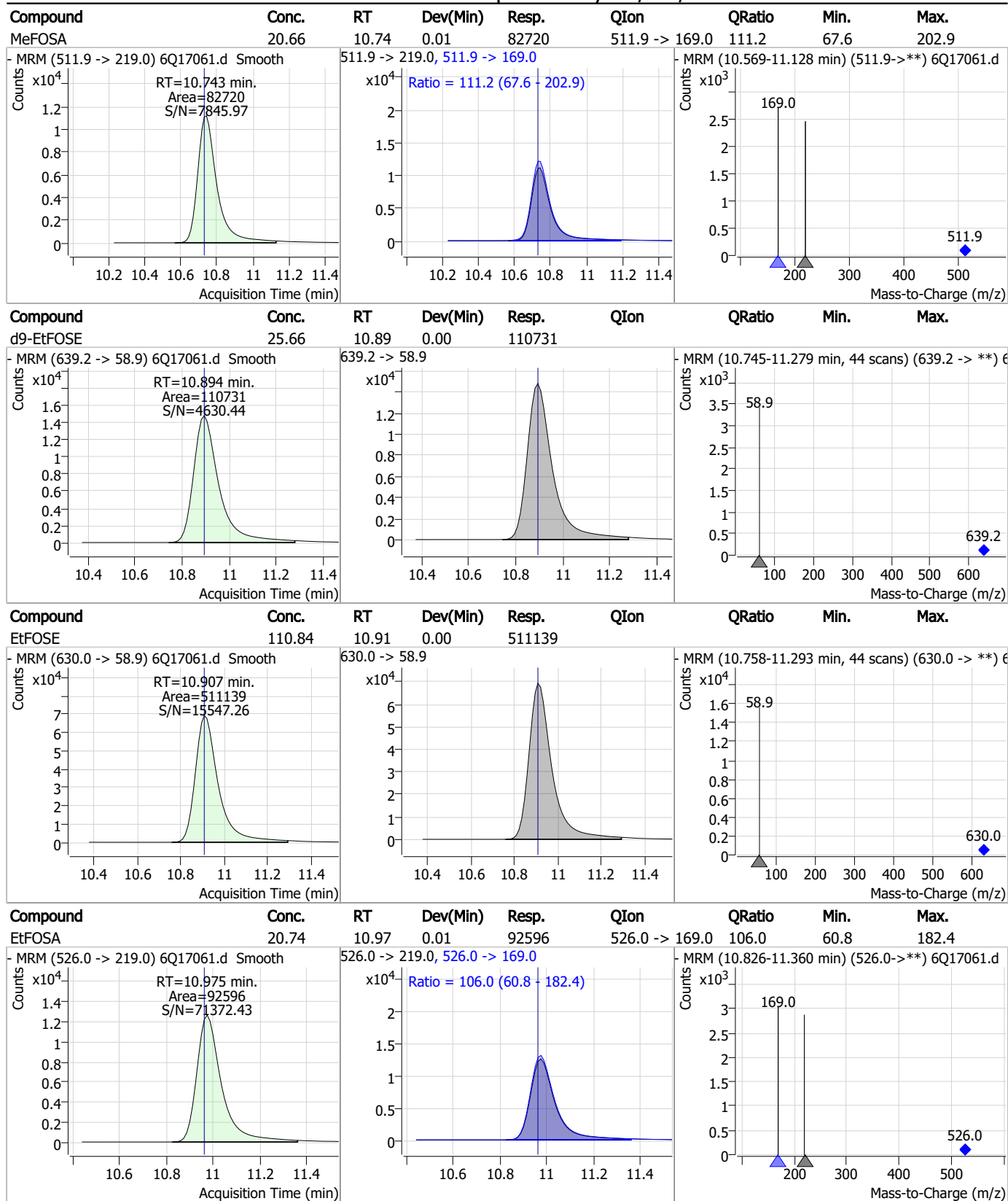
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	112.25	10.66	0.00	455307				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.65	10.73	0.00	8899				

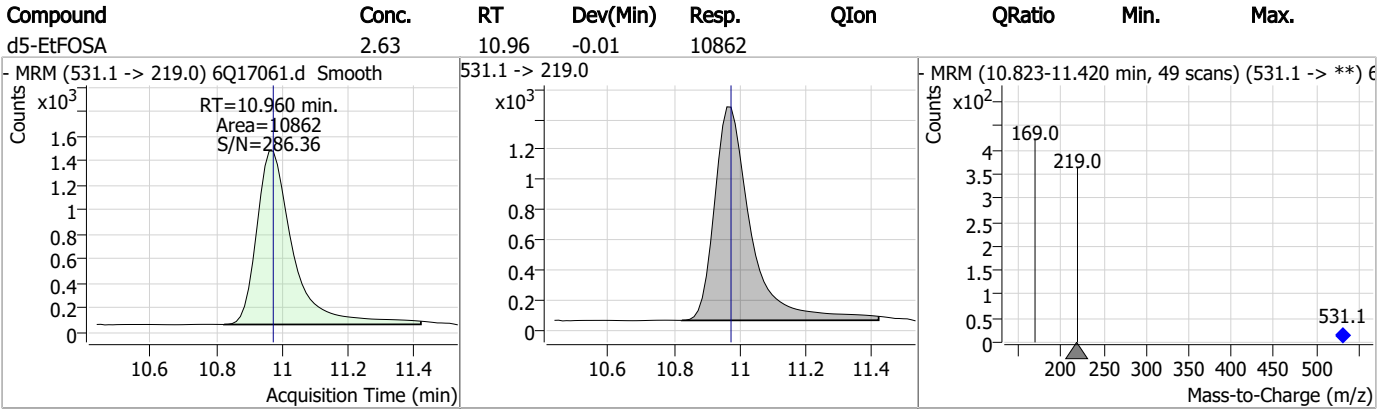


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q258-ICV258 Method: EPA DRAFT 1633
Lab FileID: 6Q17061.D Analyst approved: 04/30/23 23:33 Natasha Gumtie
Injection Time: 04/28/23 15:15 Supervisor approved: 04/30/23 23:52 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.23	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17341.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/2/2023 11:40:14 PM
 Sample Name : cc258-1.0LL
 Vial : P1-A2
 DA Method File : 1633_042823_S6Q258.quantmethod.xml
 Batch Name : s6q261.batch.bin
 Sample Information : OP96630,S6Q261,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.897	216.8 -> 171.9	180752	10.00 µg/L	-0.012
M5-PFPeA	4.270	268.3 -> 223.0	58260	5.00 µg/L	0.000
M5-PFHxA	5.468	318.0 -> 273.0	63110	2.50 µg/L	-0.012
M4-PFHpA	6.419	367.1 -> 322.0	57150	2.50 µg/L	-0.012
M8-PFOA	7.074	421.1 -> 376.0	80231	2.50 µg/L	0.000
M9-PFNA	7.594	472.1 -> 427.0	28364	1.25 µg/L	0.000
M6-PFDA	8.076	519.1 -> 474.1	21015	1.25 µg/L	0.000
M7-PFUnDA	8.530	570.0 -> 525.1	24746	1.25 µg/L	0.000
M2-PFDoDA	8.960	615.1 -> 570.0	24198	1.25 µg/L	0.000
M2-PFTeDA	9.689	715.2 -> 670.0	16576	1.25 µg/L	0.000
M8-FOSA	9.623	506.1 -> 77.8	24080	2.50 µg/L	0.000
M3-PFBS	5.398	302.1 -> 79.9	21681	2.50 µg/L	-0.012
M3-PFHxS	7.179	402.1 -> 79.9	12261	2.50 µg/L	0.000
M8-PFOS	8.226	507.1 -> 79.9	11443	2.50 µg/L	-0.012
M2-4:2FTS	5.144	329.1 -> 80.9	2028	5.00 µg/L	-0.012
M2-6:2FTS	6.839	429.1 -> 80.9	2615	5.00 µg/L	-0.012
M2-8:2FTS	7.864	529.1 -> 80.9	2582	5.00 µg/L	-0.012
M3-MeFOSAA	8.134	573.2 -> 419.0	24880	5.00 µg/L	0.000
M3-HFPO-DA	5.845	286.9 -> 168.9	37582	10.00 µg/L	0.000
M5-EtFOSAA	8.330	589.2 -> 419.0	19595	5.00 µg/L	0.000
M7-MeFOSE	10.647	623.2 -> 58.9	93730	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	110792	25.00 µg/L	0.000
M5-EtFOSA	10.973	531.1 -> 219.0	10541	2.50 µg/L	0.000
M3-MeFOSA	10.741	515.0 -> 219.0	8728	2.50 µg/L	0.000
13C4-PFOS	8.239	502.8 -> 79.9	15614	2.50 µg/L	0.000
13C3-PFBA	2.902	216.0 -> 172.0	75444	5.00 µg/L	0.000
18O2-PFHxS	7.177	403.0 -> 83.9	9237	2.50 µg/L	0.000
13C4-PFOA	7.075	417.1 -> 372.0	90482	2.50 µg/L	0.000
13C2-PFDA	8.076	515.1 -> 470.1	24910	1.25 µg/L	0.000
13C5-PFNA	7.595	468.0 -> 423.0	30546	1.25 µg/L	0.000
13C2-PFHxA	5.469	315.1 -> 270.0	54926	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.144	329.1 -> 80.9	2028	4.78 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 95.5%		
13C2-6:2FTS	6.839	429.1 -> 80.9	2615	5.07 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.5%		
13C2-8:2FTS	7.864	529.1 -> 80.9	2582	4.66 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 93.2%		
13C2-PFDoDA	8.960	615.1 -> 570.0	24198	1.17 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 93.4%		
13C2-PFTeDA	9.689	715.2 -> 670.0	16576	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.6%		
13C3-PFBS	5.398	302.1 -> 79.9	21681	2.50 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.8%		
13C3-PFHxS	7.179	402.1 -> 79.9	12261	2.49 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C4-PFBA	2.897	216.8 -> 171.9	180752	10.37 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.7%	
13C4-PFHpA	6.419	367.1 -> 322.0	57150	2.54 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C5-PFHxA	5.468	318.0 -> 273.0	63110	2.38 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.3%	
13C5-PFPeA	4.270	268.3 -> 223.0	58260	4.75 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.0%	
13C6-PFDA	8.076	519.1 -> 474.1	21015	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C7-PFUnDA	8.530	570.0 -> 525.1	24746	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.1%	
13C8-FOSA	9.623	506.1 -> 77.8	24080	2.33 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.3%	
13C8-PFOA	7.074	421.1 -> 376.0	80231	2.30 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.9%	
13C8-PFOS	8.226	507.1 -> 79.9	11443	2.43 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.3%	
13C9-PFNA	7.594	472.1 -> 427.0	28364	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.4%	
d3-MeFOSAA	8.134	573.2 -> 419.0	24880	5.35 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.9%	
13C3-HFPO-DA	5.845	286.9 -> 168.9	37582	9.67 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.7%	
d3-MeFOSA	10.741	515.0 -> 219.0	8728	2.24 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 89.5%	
d5-EtFOSAA	8.330	589.2 -> 419.0	19595	5.07 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
d7-MeFOSE	10.647	623.2 -> 58.9	93730	22.87 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 91.5%	
d9-EtFOSE	10.894	639.2 -> 58.9	110792	22.13 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 88.5%	
d5-EtFOSA	10.973	531.1 -> 219.0	10541	2.20 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 88.0%	
Target Compounds					QValue
4:2FTS	5.145	327.1 -> 307.0	2464	0.80 µg/L	97
		327.1 -> 80.9	847		
6:2FTS	6.839	427.1 -> 407.0	2376	0.83 µg/L	99
		427.1 -> 80.9	759		
8:2FTS	7.865	527.1 -> 507.0	1221	0.79 µg/L	99
		527.1 -> 80.8	487		
EtFOSAA	8.343	584.2 -> 419.1	739	0.22 µg/L	m 89
		584.2 -> 526.0	292		
FOSA	9.626	498.1 -> 77.9	1747	0.20 µg/L	100
		498.1 -> 478.0	49		
MeFOSAA	8.148	570.1 -> 419.0	938	0.20 µg/L	97
		570.1 -> 483.0	141		
PFBA	2.906	212.8 -> 168.9	5079	0.84 µg/L	100
PFBS	5.400	298.7 -> 79.9	1892	0.19 µg/L	100
		298.7 -> 98.8	711		
PFDA	8.077	512.9 -> 469.0	4202	0.18 µg/L	96
		512.9 -> 219.0	709		
PFDODA	8.961	613.1 -> 569.0	4216	0.22 µg/L	95
		613.1 -> 319.0	516		
PFDS	9.125	599.0 -> 79.9	746	0.20 µg/L	90

7.7.12
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	390			
PFHpA	6.420	363.1 -> 319.0	5476	0.19	µg/L	99
		363.1 -> 169.0	900			
PFHpS	7.734	449.0 -> 79.9	1133	0.18	µg/L	90
		449.0 -> 98.9	489			
PFHxA	5.470	313.0 -> 269.0	5355	0.21	µg/L	100
		313.0 -> 118.9	243			
PFHxS	7.180	398.7 -> 79.9	1349	0.20	µg/L	m 98
		398.7 -> 98.9	657			
PFNA	7.595	463.0 -> 419.0	3872	0.20	µg/L	96
		463.0 -> 219.0	830			
PFNS	8.694	548.8 -> 79.9	1045	0.19	µg/L	98
		548.8 -> 98.9	502			
PFOA	7.076	413.0 -> 369.0	6770	0.24	µg/L	95
		413.0 -> 169.0	1390			
PFOS	8.228	498.9 -> 79.9	1101	0.20	µg/L	m 97
		498.9 -> 98.8	588			
PFPeA	4.273	263.0 -> 219.0	6326	0.40	µg/L	100
PFPeS	6.472	349.1 -> 79.9	1443	0.21	µg/L	89
		349.1 -> 98.9	574			
PFTeDA	9.690	713.1 -> 669.0	3487	0.21	µg/L	98
		713.1 -> 168.9	236			
PFTrDA	9.345	663.0 -> 619.0	4526	0.22	µg/L	99
		663.0 -> 168.9	402			
PFUnDA	8.531	563.1 -> 519.0	2606	0.15	µg/L	92
		563.1 -> 269.1	570			
11CI-PF3OUdS	9.398	630.9 -> 450.9	5436	0.42	µg/L	98
		632.9 -> 452.9	1605			
9CI-PF3ONS	8.569	530.8 -> 351.0	8732	0.43	µg/L	98
		532.8 -> 353.0	2770			
ADONA	6.681	376.9 -> 250.9	22888	0.40	µg/L	98
		376.9 -> 84.8	6012			
HFPO-DA	5.846	284.9 -> 168.9	1489	0.42	µg/L	99
		284.9 -> 184.9	189			
3:3FTCA	3.784	241.0 -> 177.0	1028	1.04	µg/L	87
		241.0 -> 117.0	179			
5:3FTCA	6.160	341.0 -> 237.1	23456	5.81	µg/L	93
		341.0 -> 217.0	17326			
7:3FTCA	7.573	441.0 -> 316.9	10058	5.48	µg/L	88
		441.0 -> 336.9	23229			
EtFOSA	10.975	526.0 -> 219.0	1941	0.45	µg/L	95
		526.0 -> 169.0	2357			
EtFOSE	10.907	630.0 -> 58.9	5021	1.09	µg/L	100
MeFOSA	10.730	511.9 -> 219.0	1746	0.44	µg/L	89
		511.9 -> 169.0	2284			
MeFOSE	10.661	616.1 -> 58.9	4302	1.03	µg/L	100
PFDoDS	9.817	699.1 -> 79.9	331	0.18	µg/L	94
		699.1 -> 98.8	198			
NFDHA	5.350	295.0 -> 201.0	1175	0.43	µg/L	91
		295.0 -> 84.9	244			
PFMBA	4.687	279.0 -> 85.1	4511	0.42	µg/L	100
PFMPA	3.438	229.0 -> 84.9	3451	0.43	µg/L	100
PFEESA	5.937	314.8 -> 134.9	11588	0.37	µg/L	98
		314.8 -> 82.9	487			

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

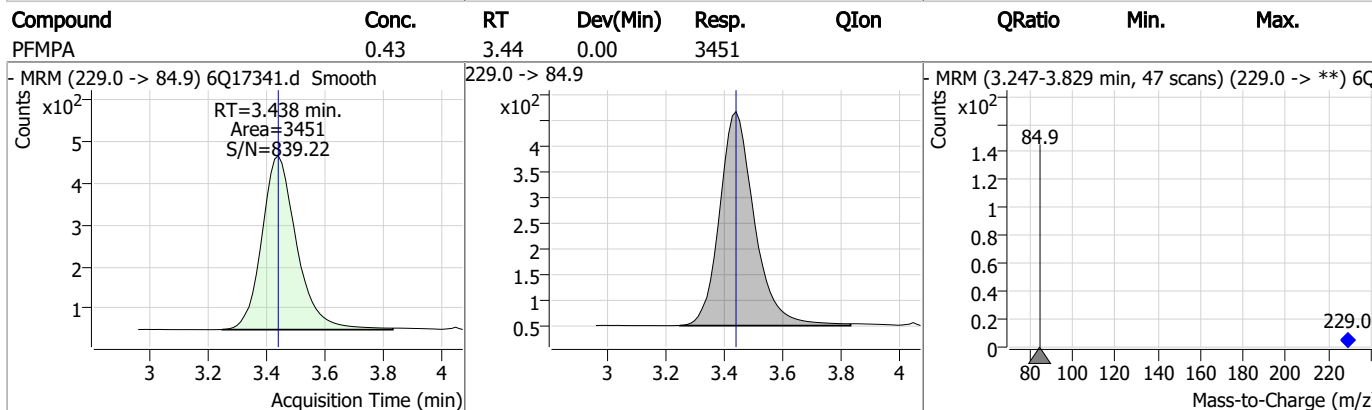
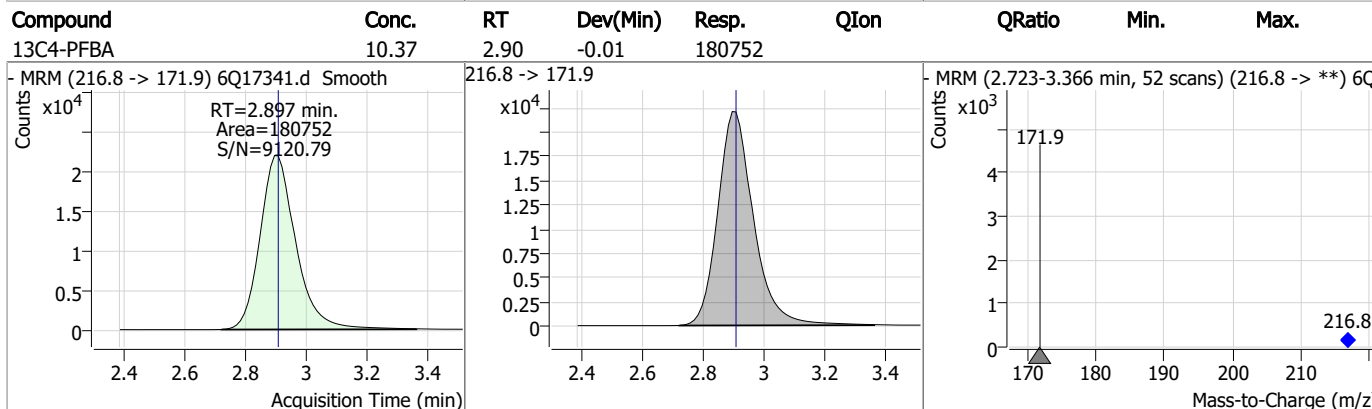
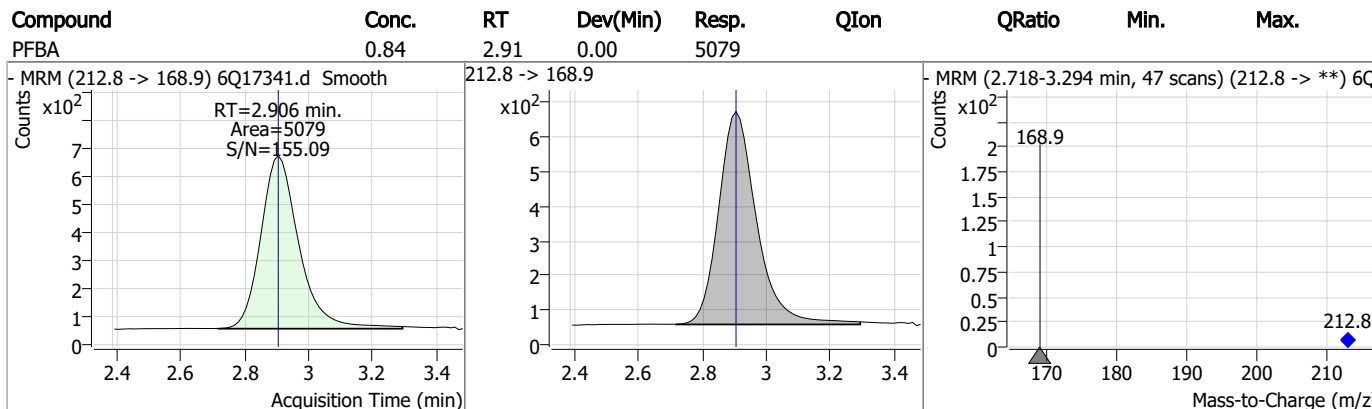
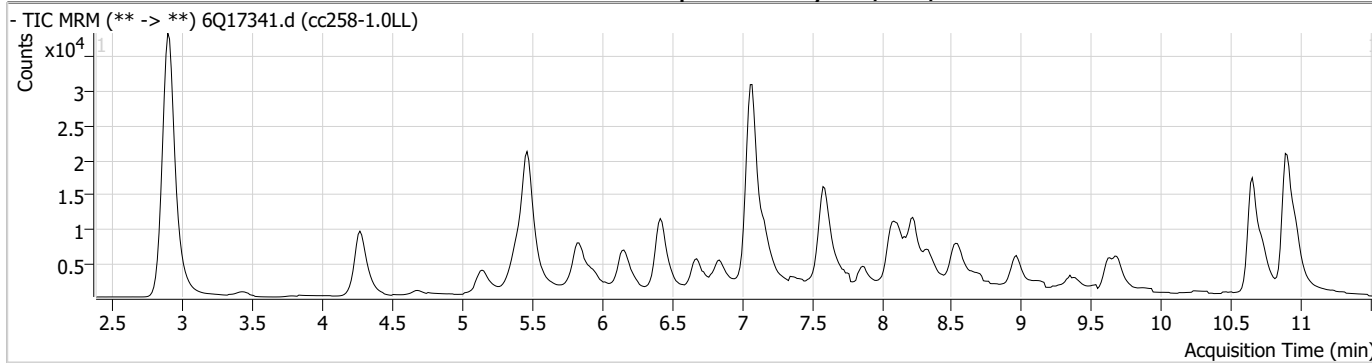
7.7.12
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
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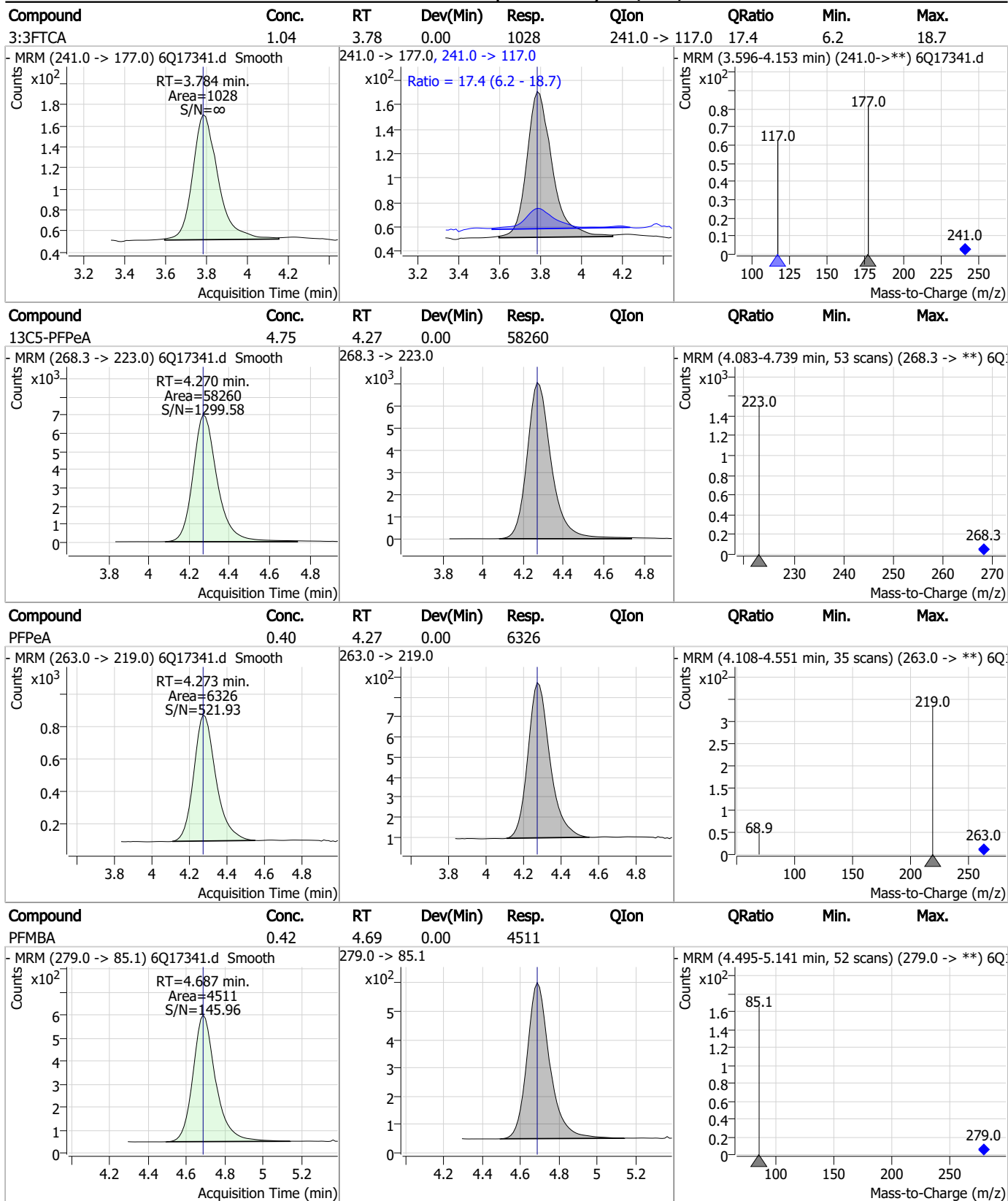
7.7.12
7

Perfluorinated Compounds by LC/MS/MS



7.7.12
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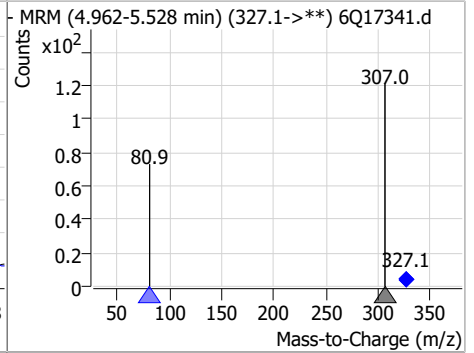
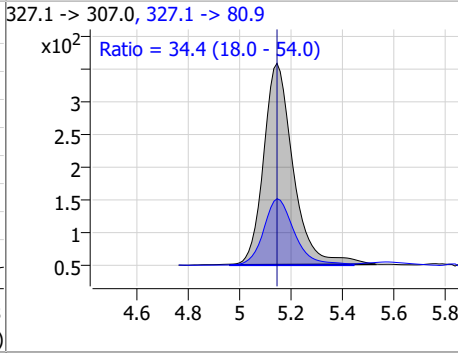
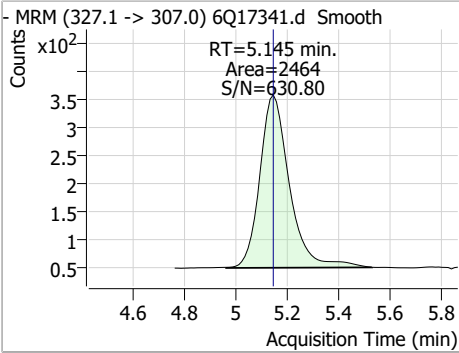
Perfluorinated Compounds by LC/MS/MS



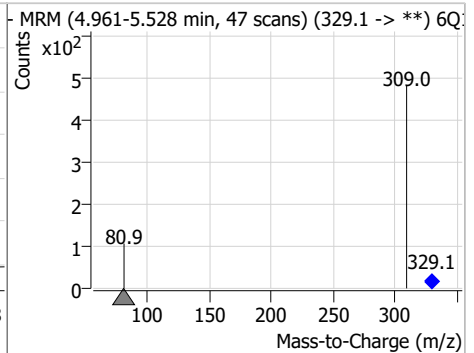
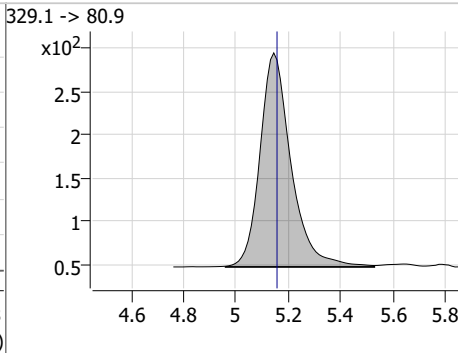
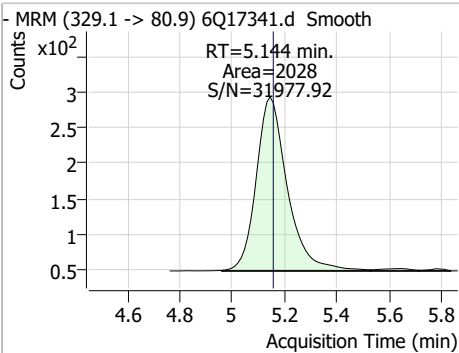
7.7.12

Perfluorinated Compounds by LC/MS/MS

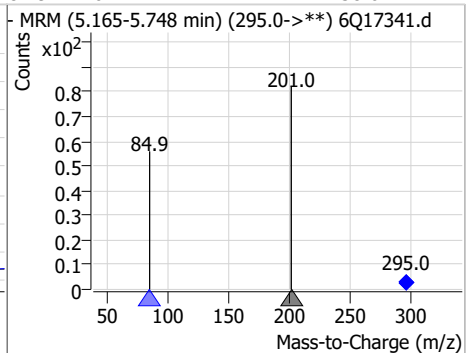
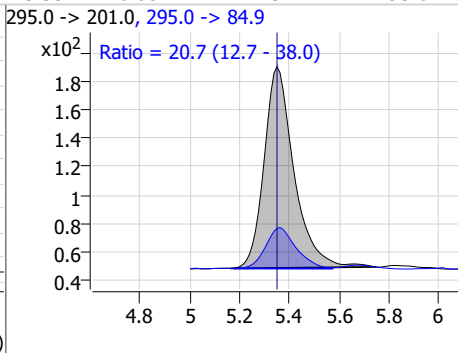
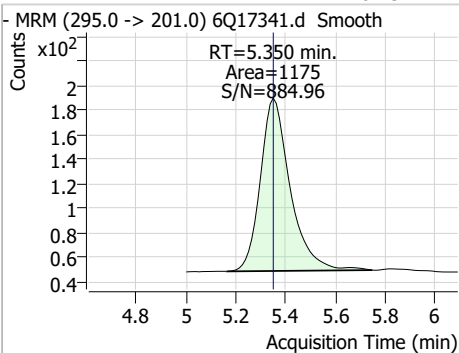
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.80	5.14	0.00	2464	327.1 -> 80.9	34.4	18.0	54.0



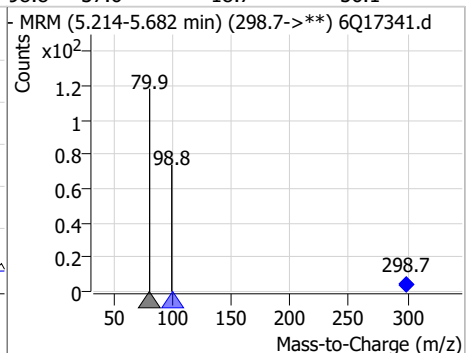
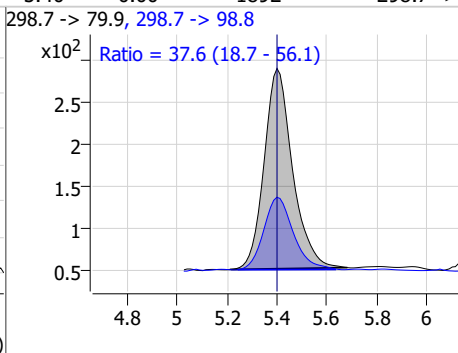
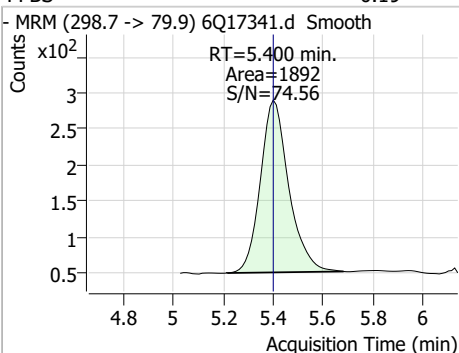
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	4.78	5.14	-0.01	2028	329.1 -> 80.9			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	0.43	5.35	0.00	1175	295.0 -> 84.9	20.7	12.7	38.0

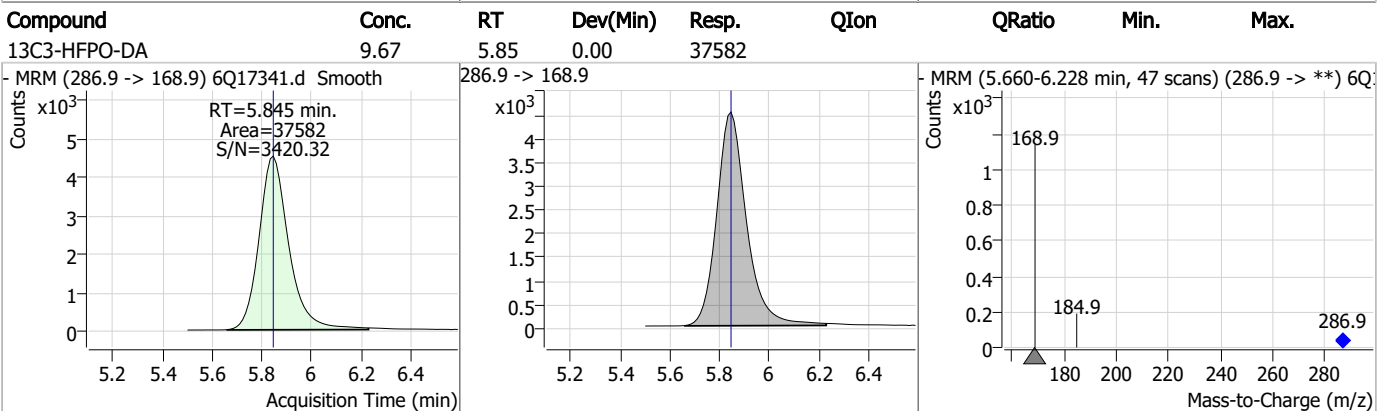
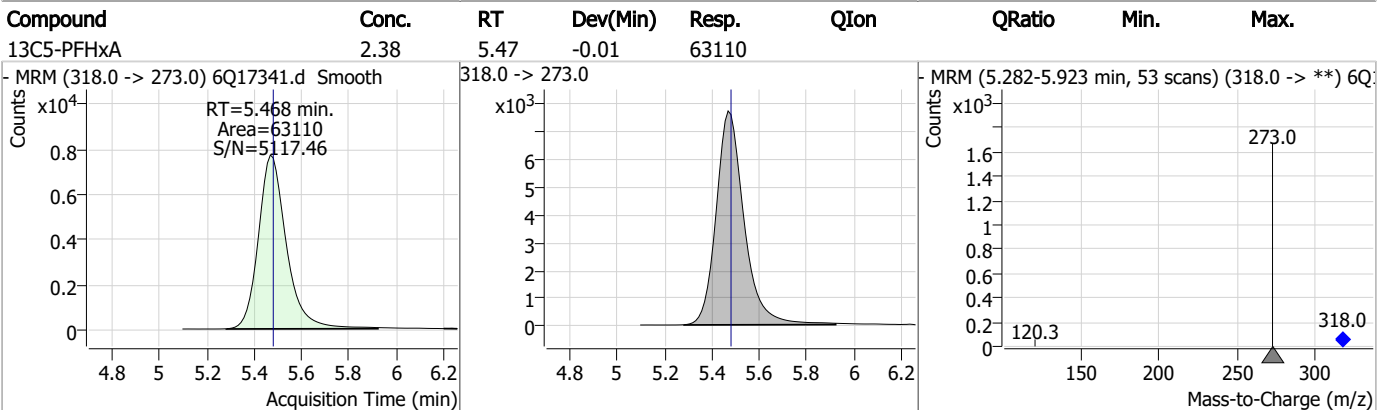
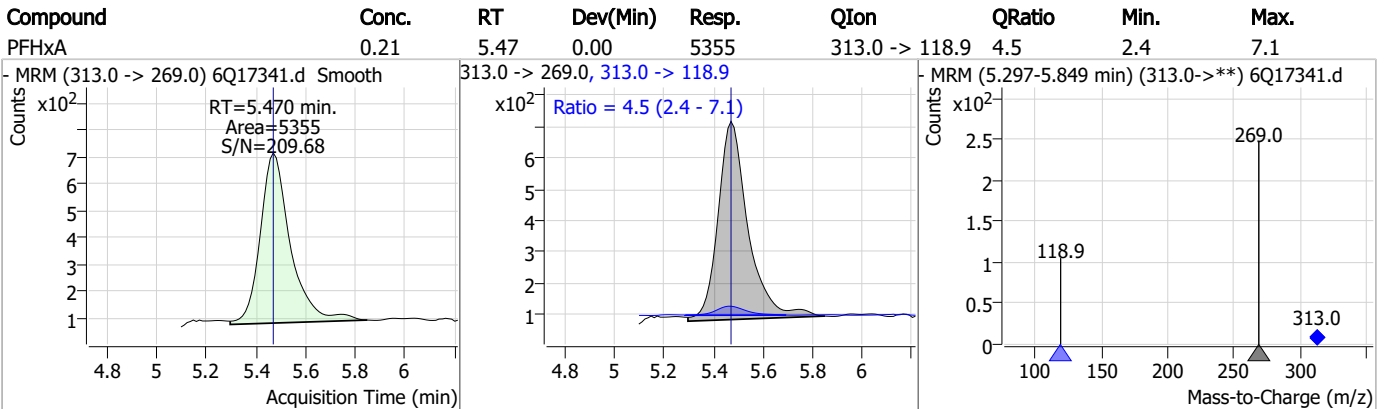
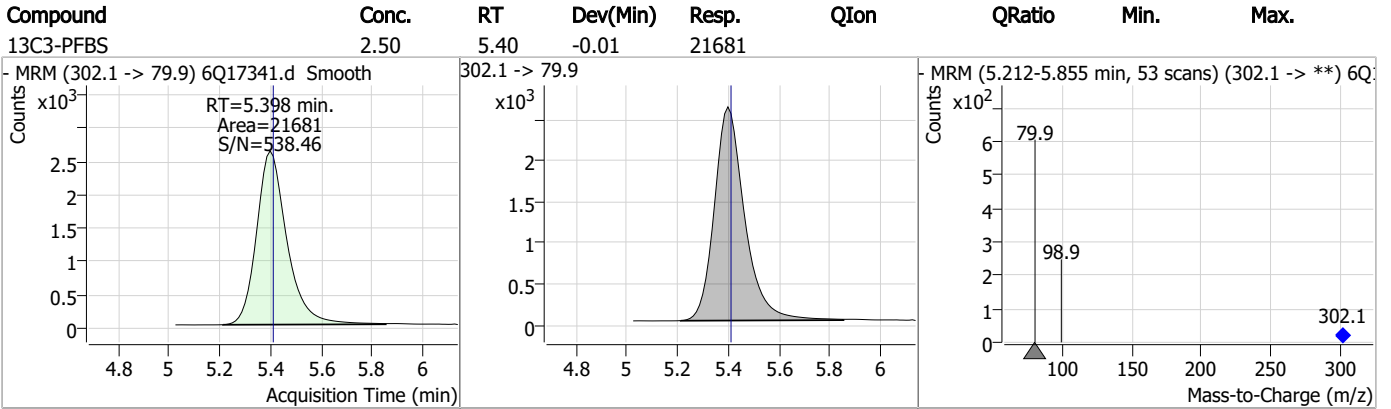


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.19	5.40	0.00	1892	298.7 -> 98.8	37.6	18.7	56.1



7.7.12
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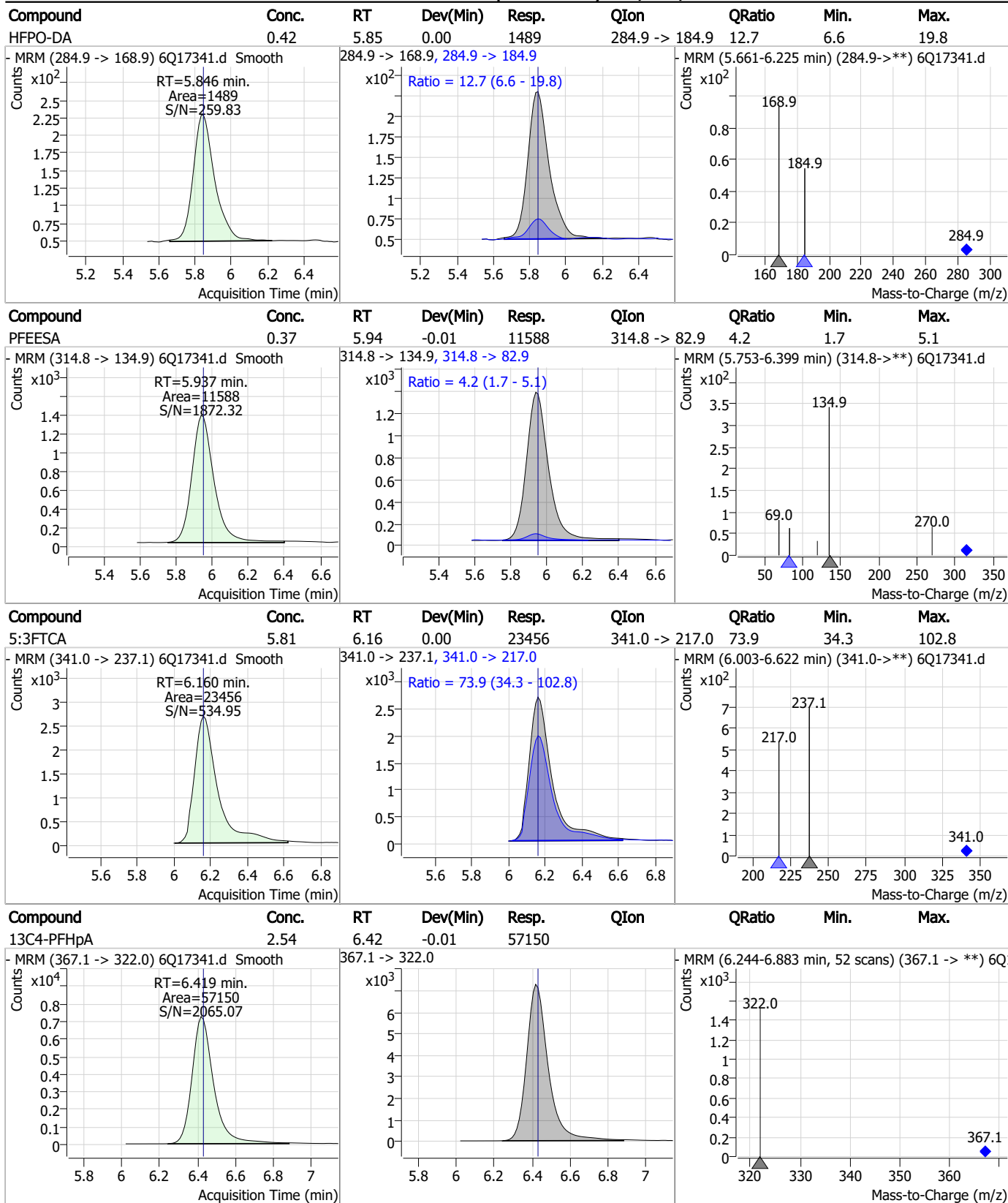
Perfluorinated Compounds by LC/MS/MS



7.7.12 7



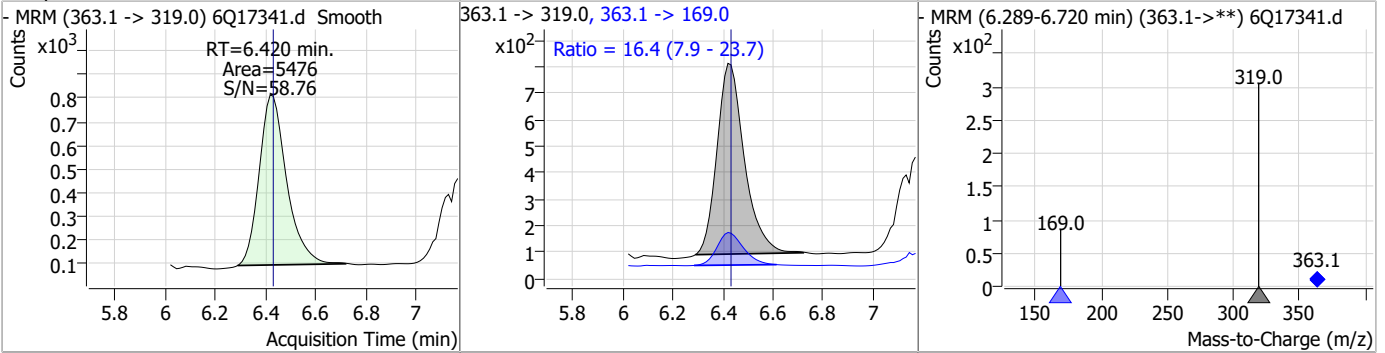
Perfluorinated Compounds by LC/MS/MS



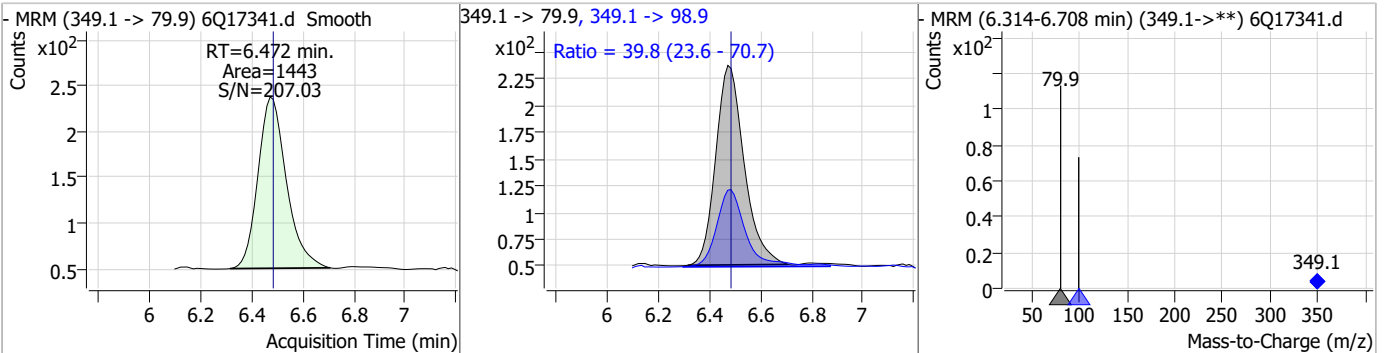
7.7.12
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Perfluorinated Compounds by LC/MS/MS

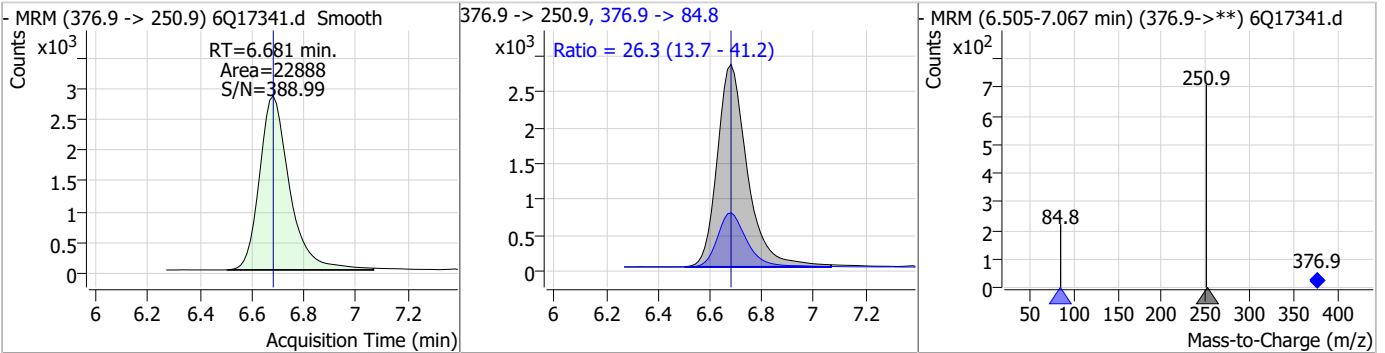
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.19	6.42	-0.01	5476	363.1 -> 169.0	16.4	7.9	23.7



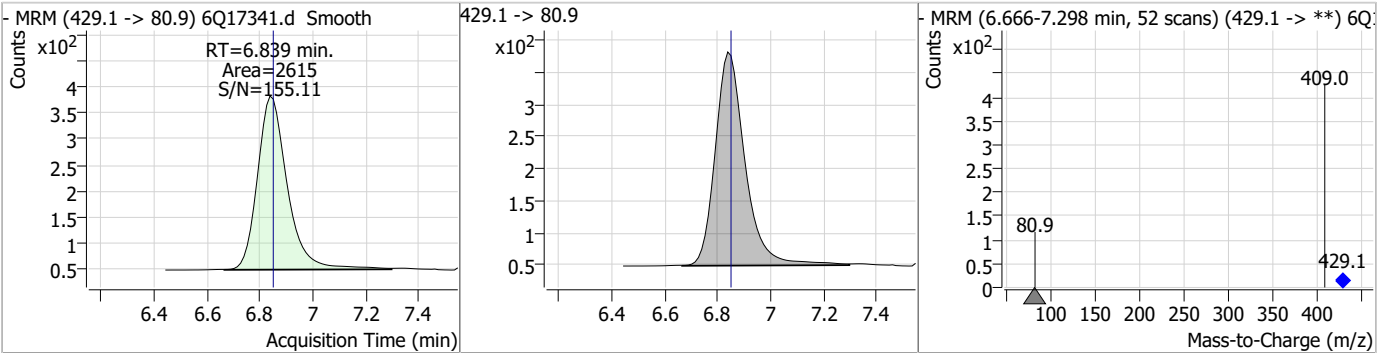
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.21	6.47	-0.01	1443	349.1 -> 98.9	39.8	23.6	70.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.40	6.68	0.00	22888	376.9 -> 84.8	26.3	13.7	41.2

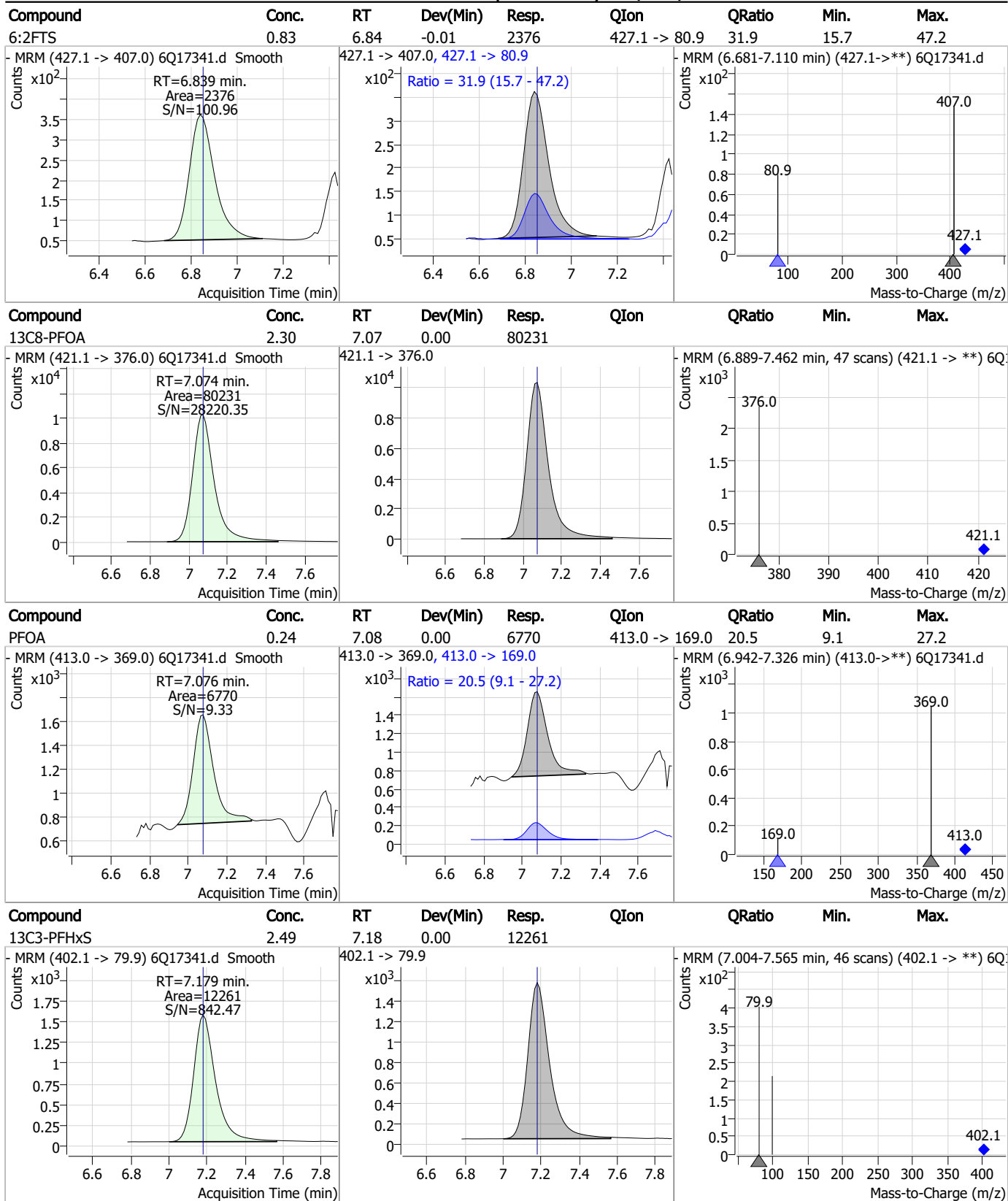


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.07	6.84	-0.01	2615	429.1 -> 80.9	529	7.9	23.7



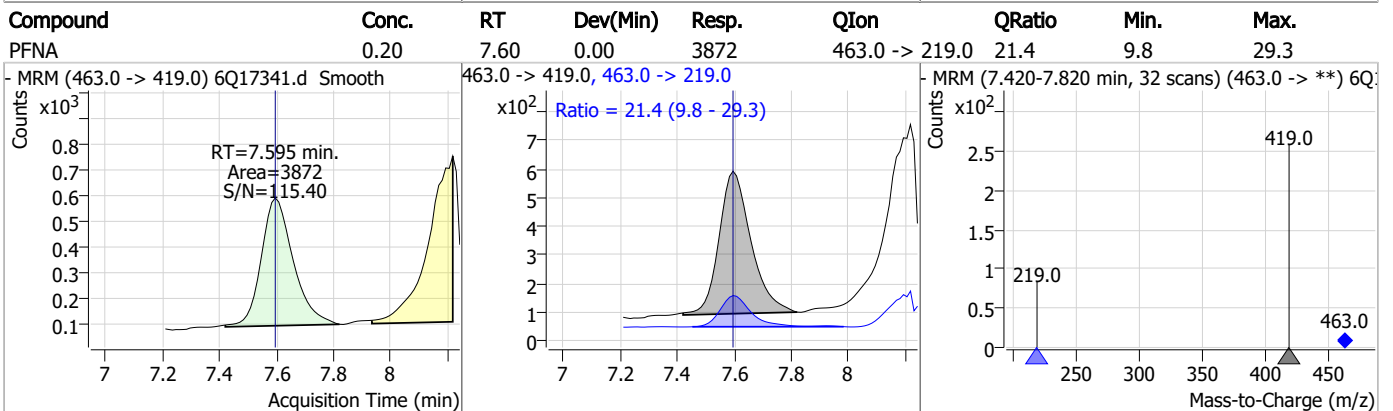
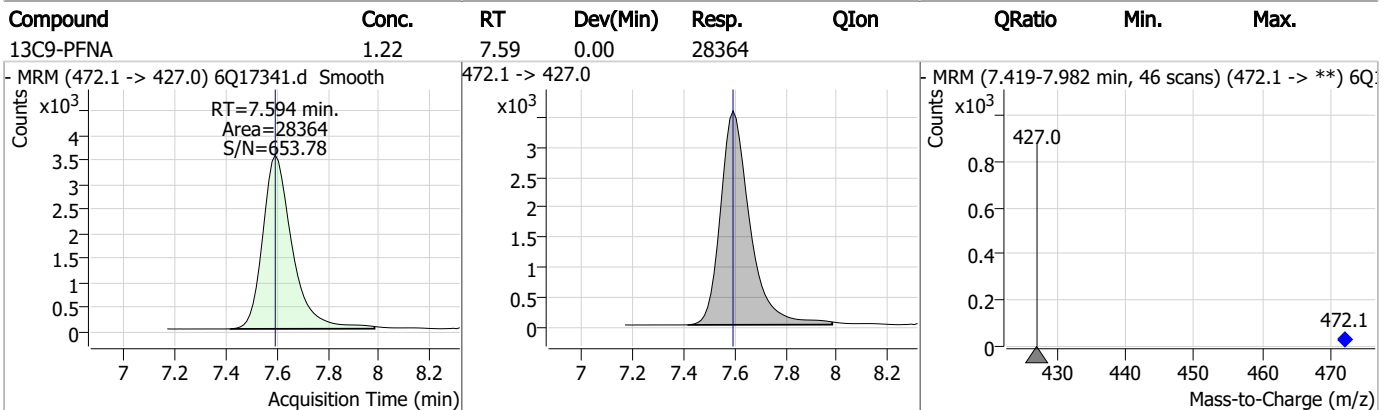
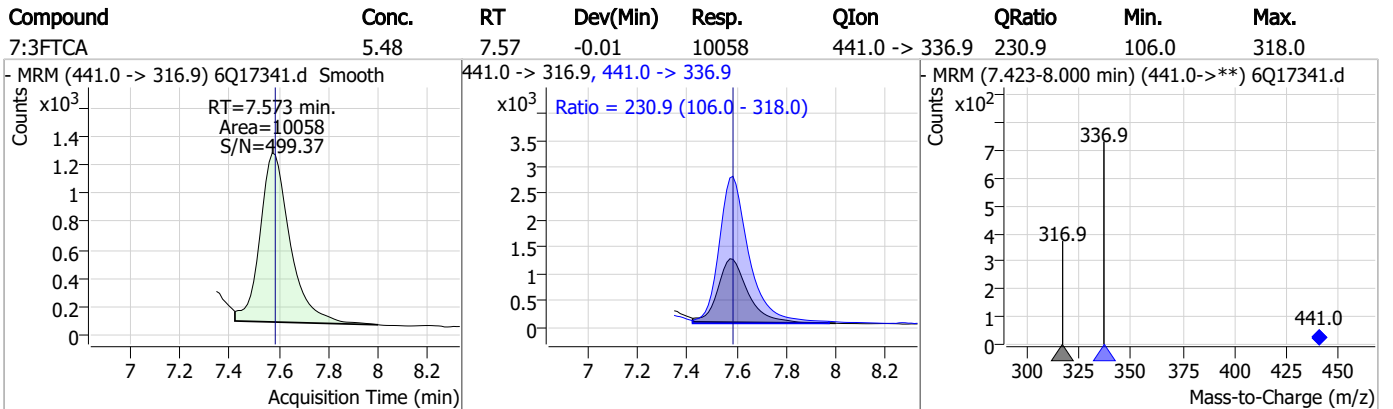
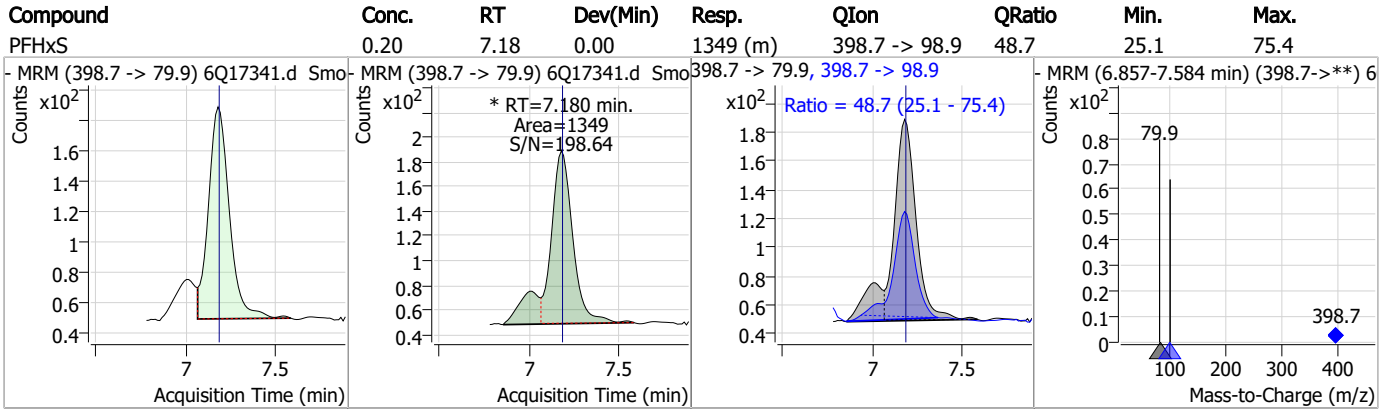
7.7.12
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Perfluorinated Compounds by LC/MS/MS



7.7.12

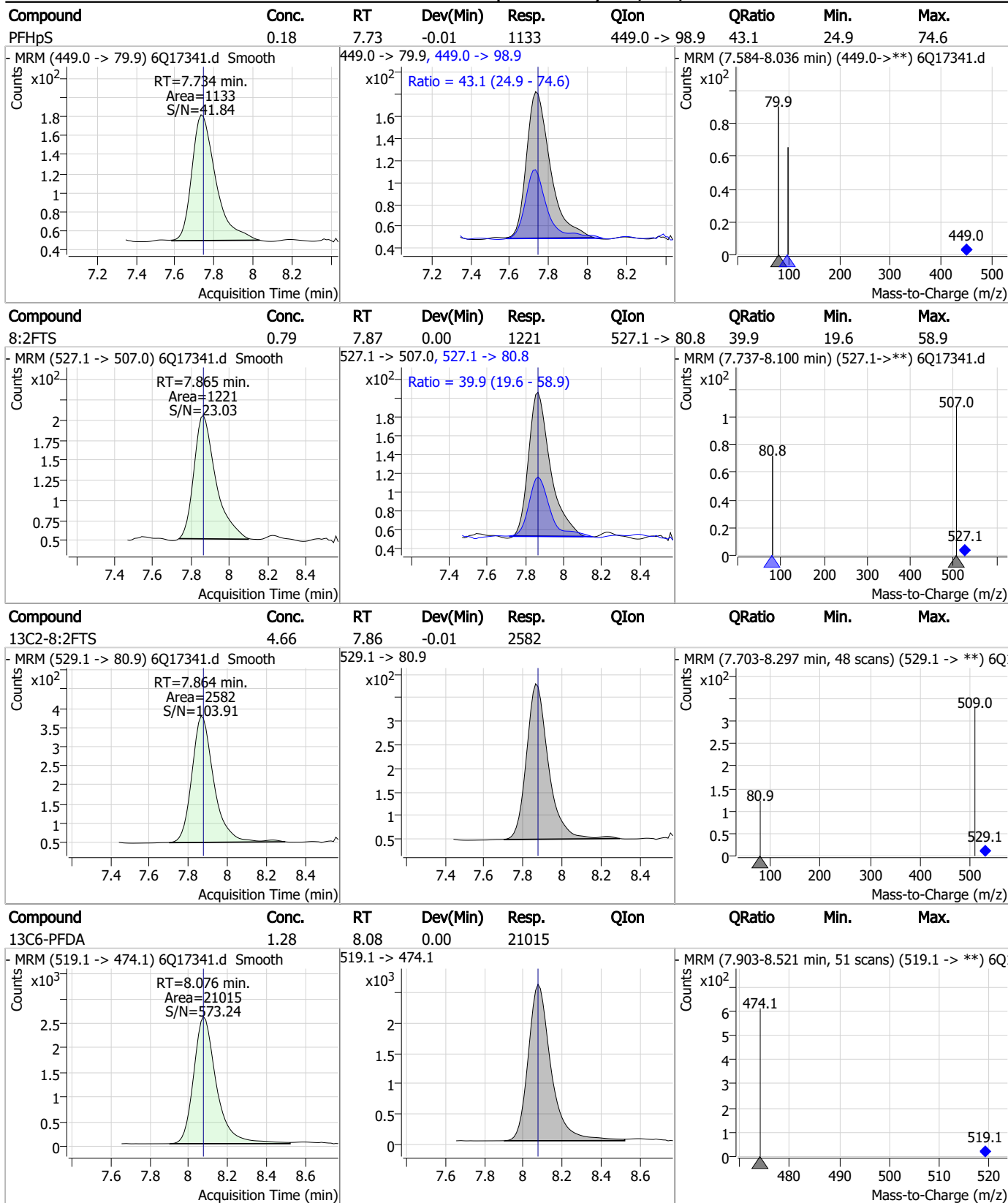
Perfluorinated Compounds by LC/MS/MS



7.7.12
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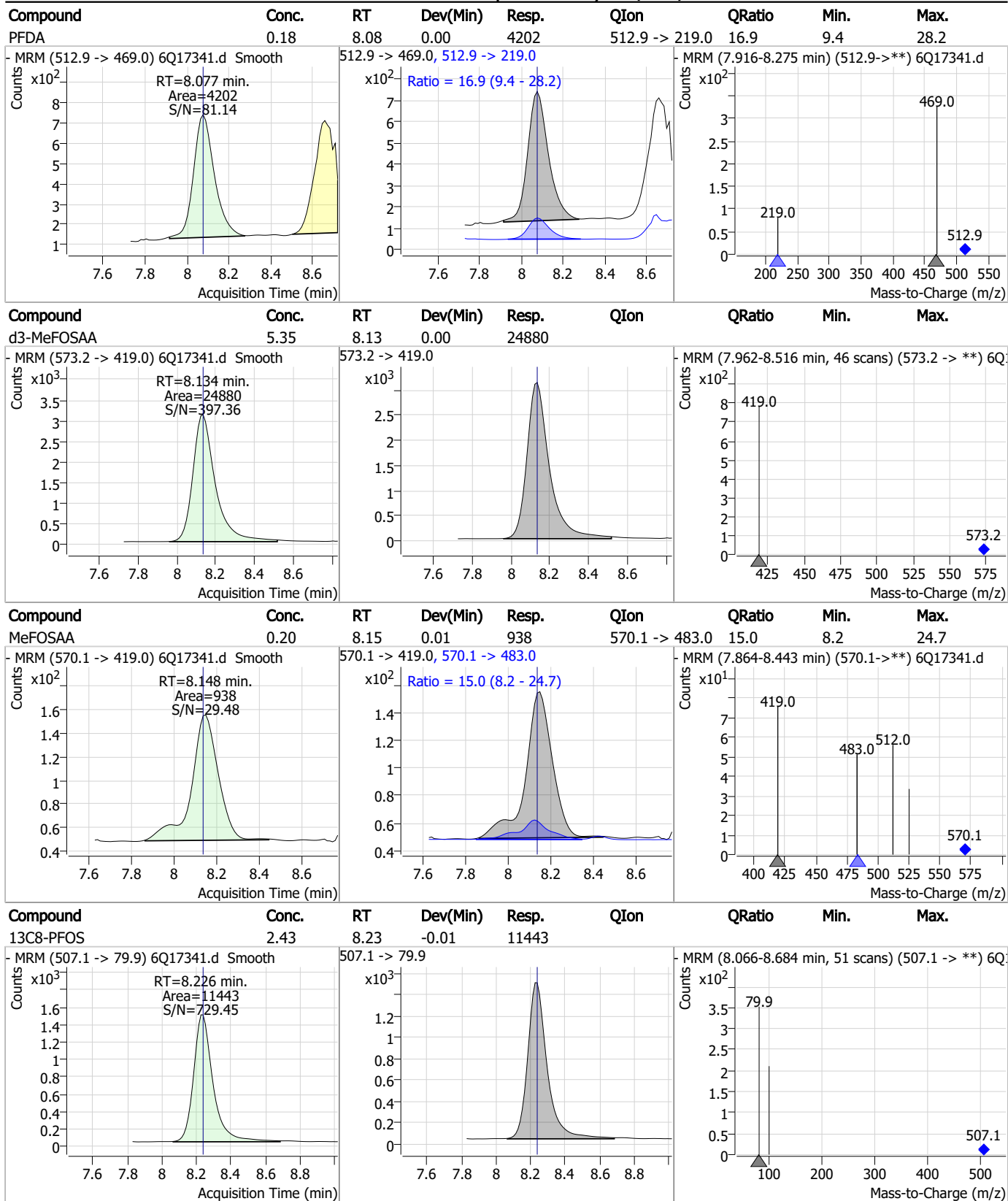
Perfluorinated Compounds by LC/MS/MS



7.7.12



Perfluorinated Compounds by LC/MS/MS

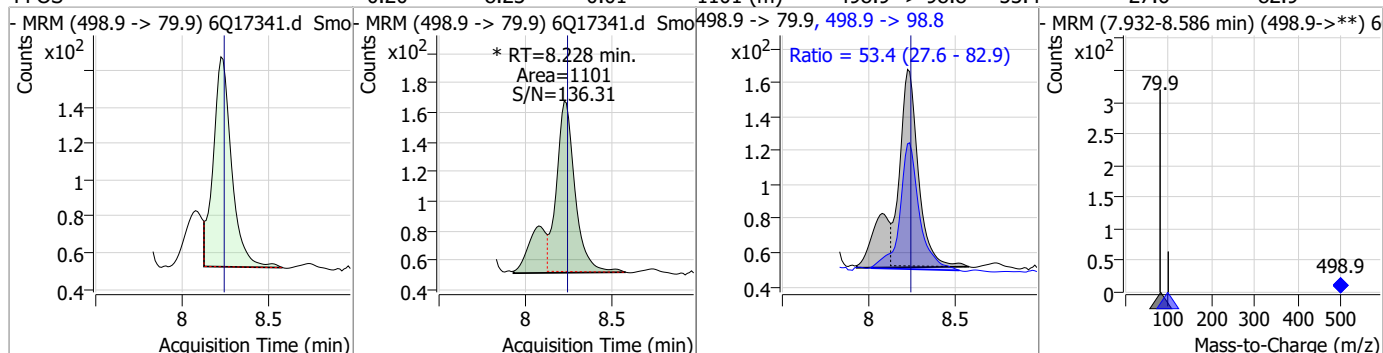


7.7.12
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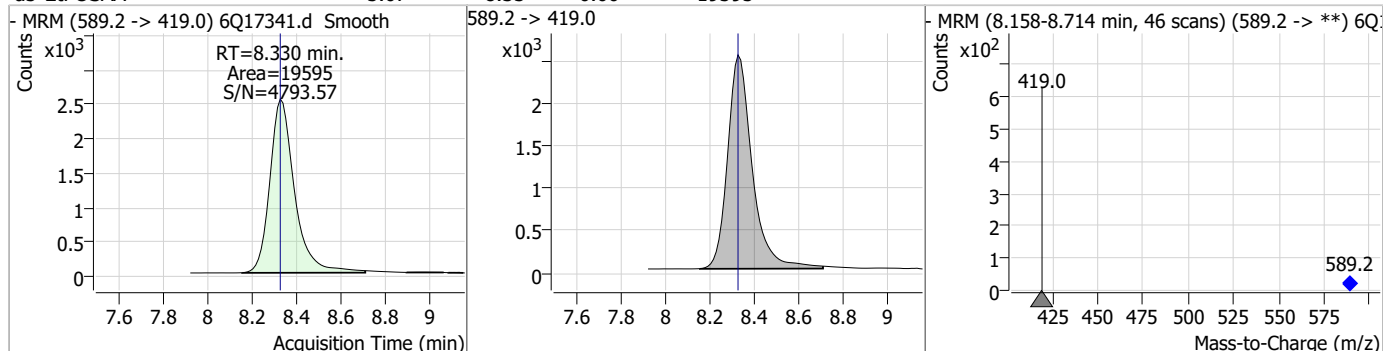


Perfluorinated Compounds by LC/MS/MS

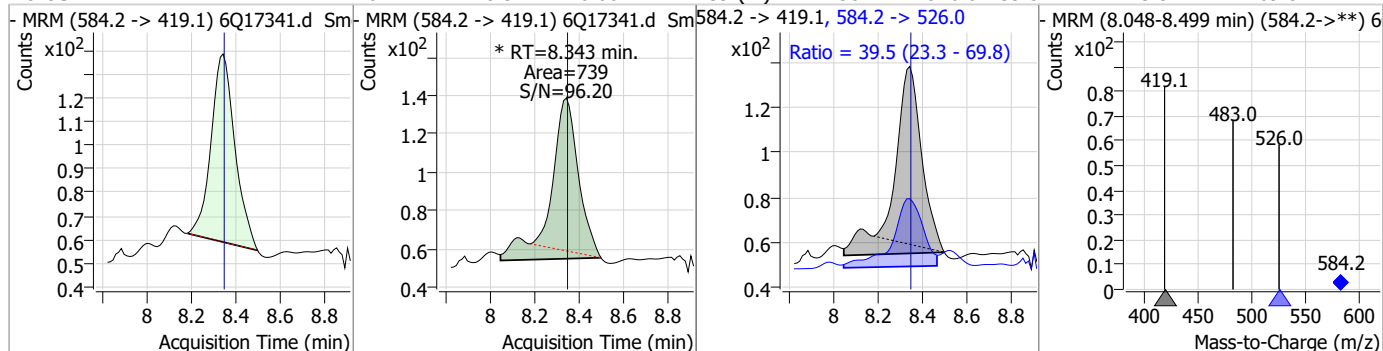
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.20	8.23	-0.01	1101 (m)	498.9 -> 98.8	53.4	27.6	82.9



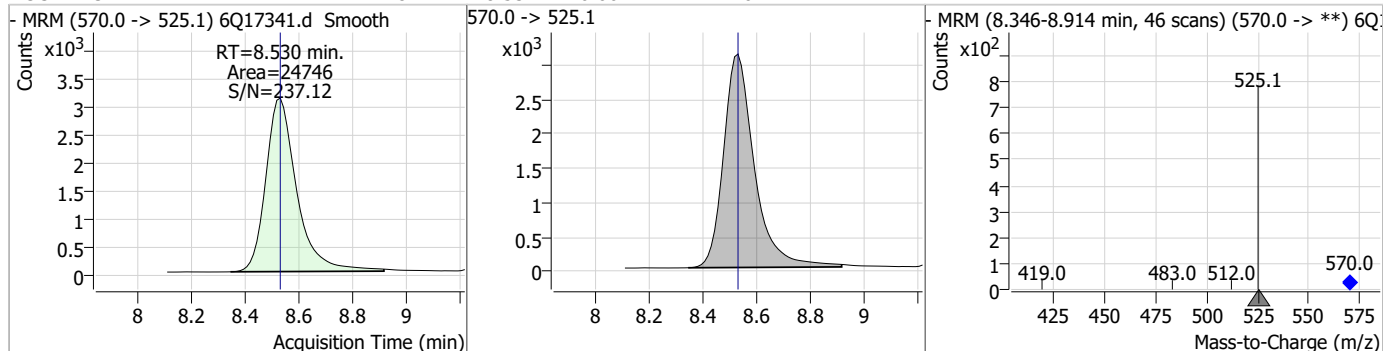
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.07	8.33	0.00	19595				



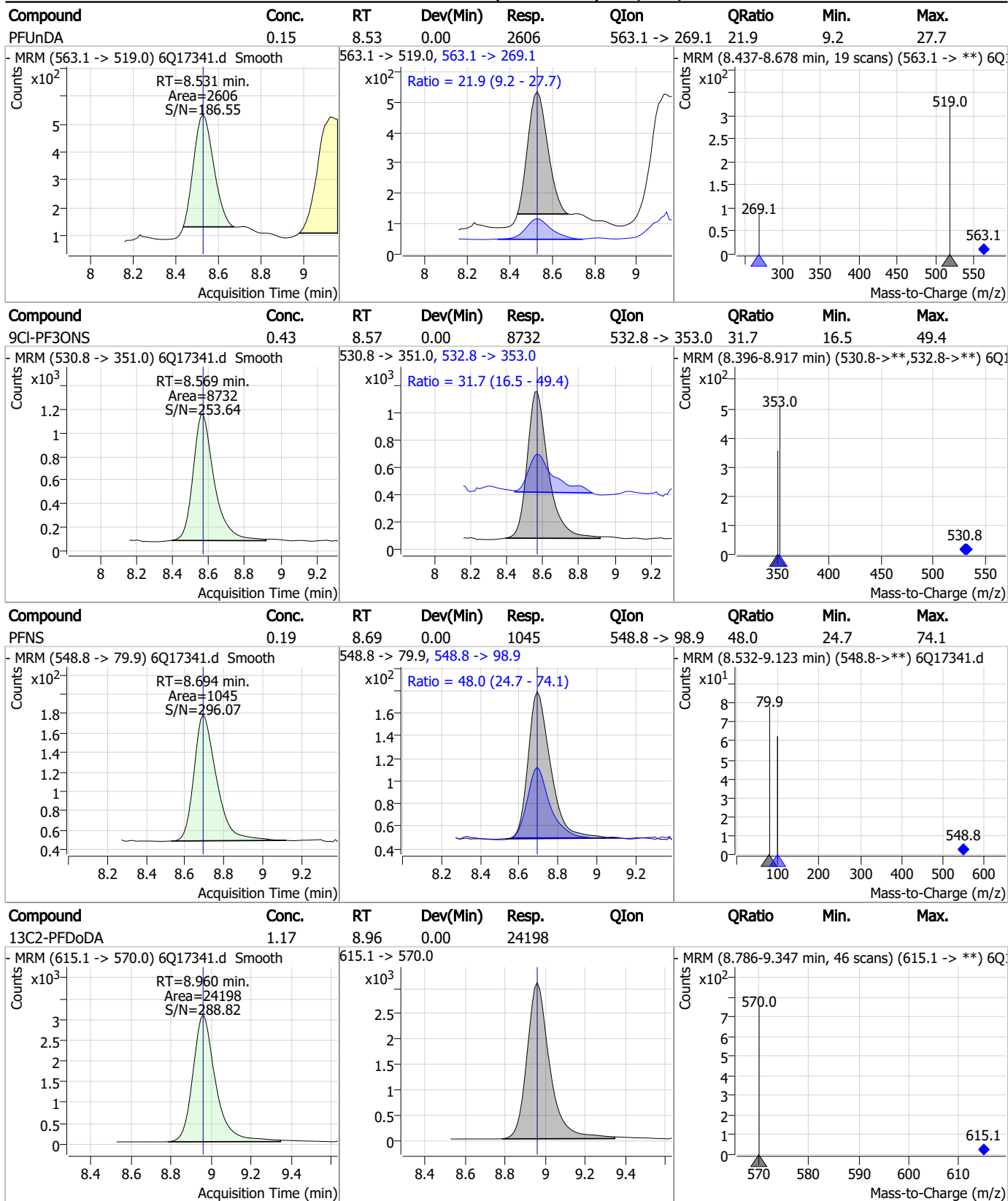
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.22	8.34	0.00	739 (m)	584.2 -> 526.0	39.5	23.3	69.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.18	8.53	0.00	24746				

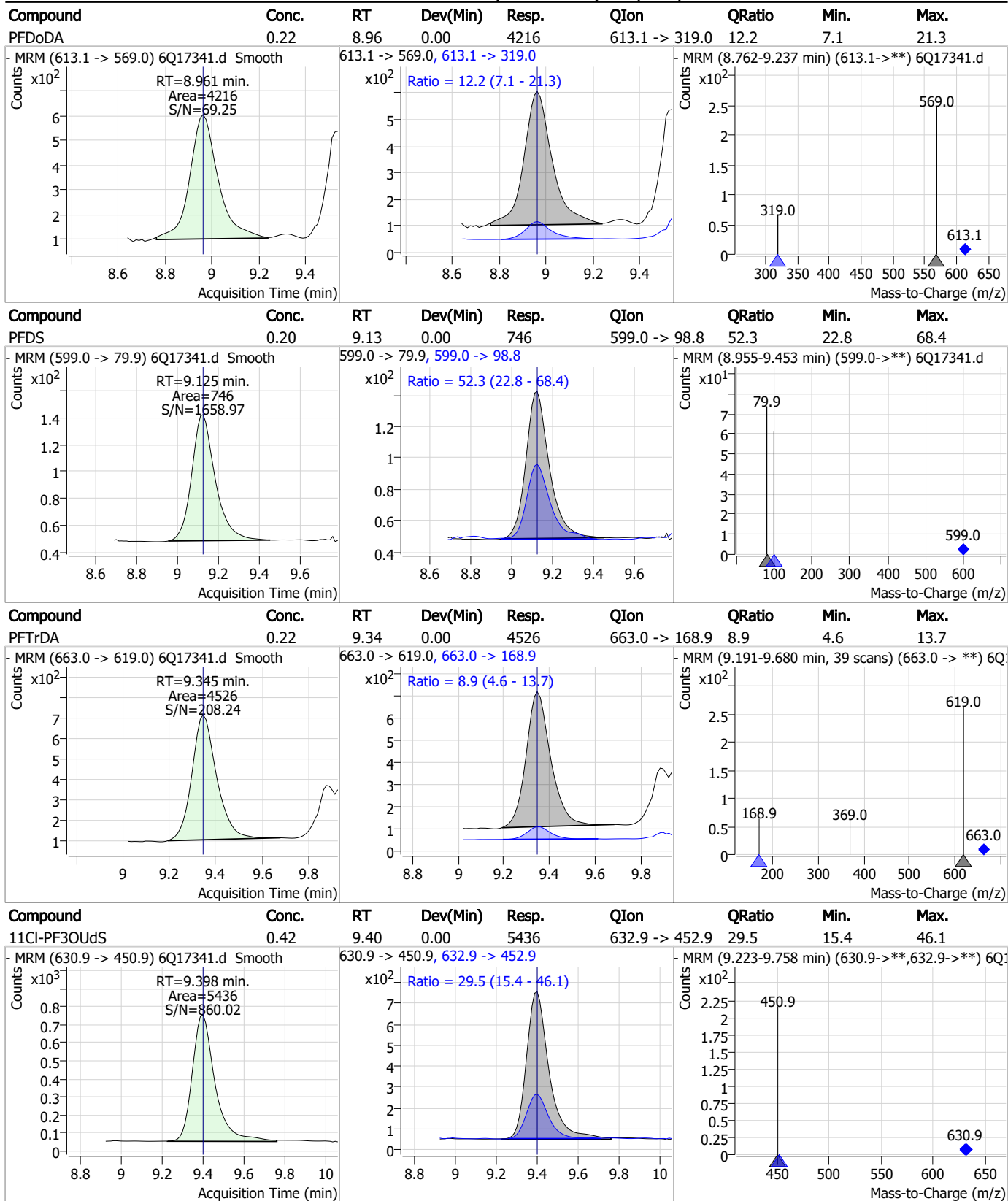


Perfluorinated Compounds by LC/MS/MS



7.7.12
7

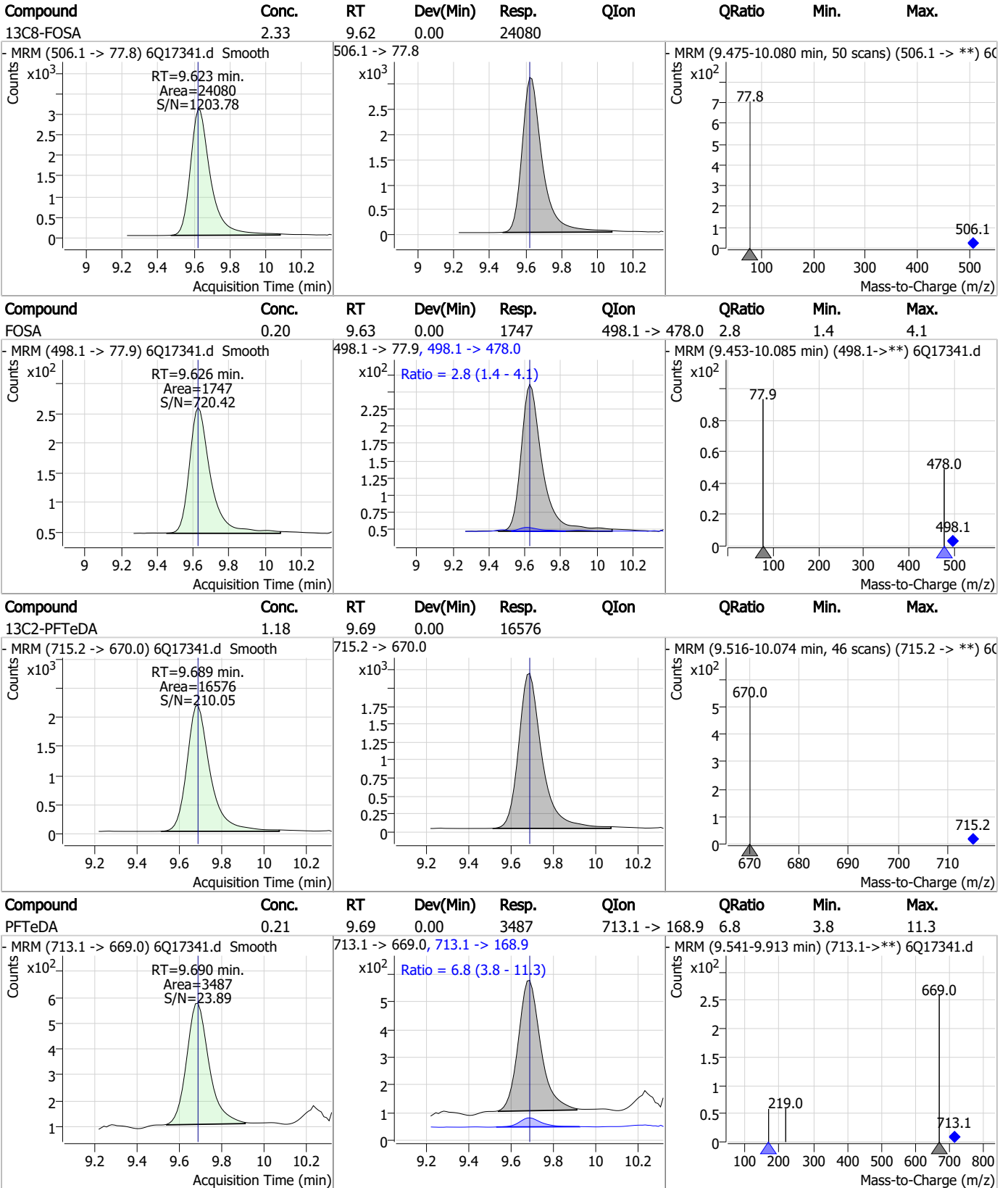
Perfluorinated Compounds by LC/MS/MS



7.7.12
7



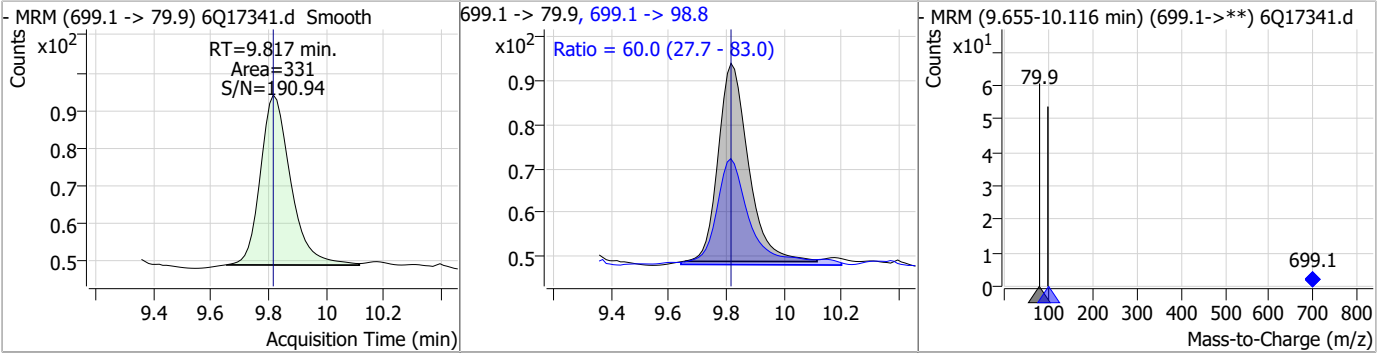
Perfluorinated Compounds by LC/MS/MS



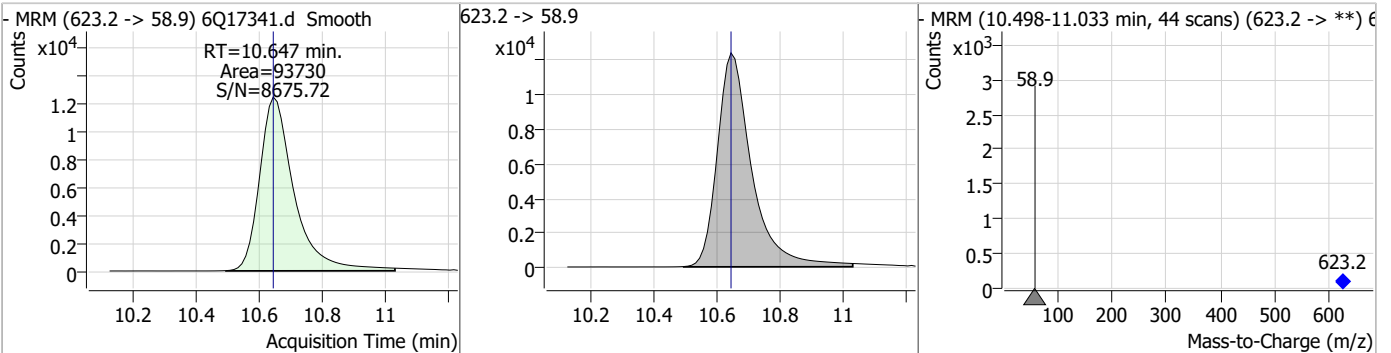
7.7.12 7

Perfluorinated Compounds by LC/MS/MS

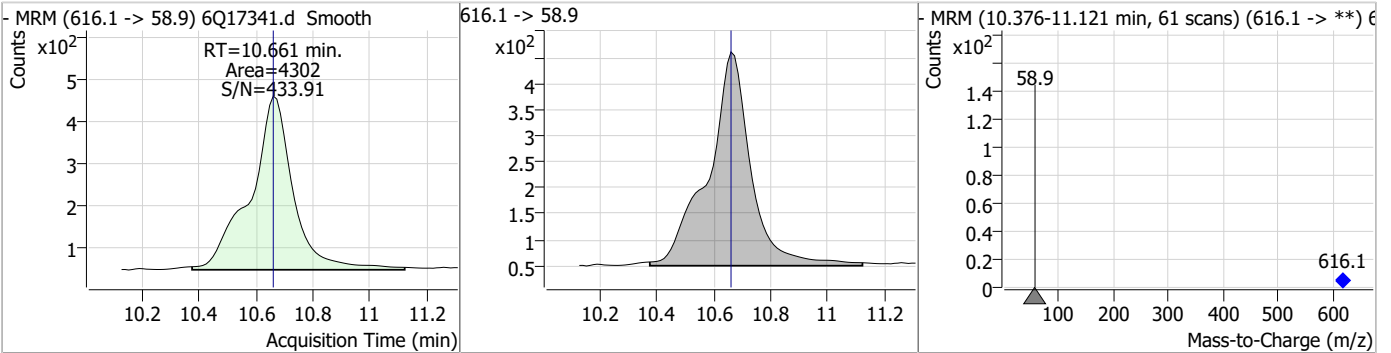
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	0.18	9.82	0.00	331	699.1 -> 98.8	60.0	27.7	83.0



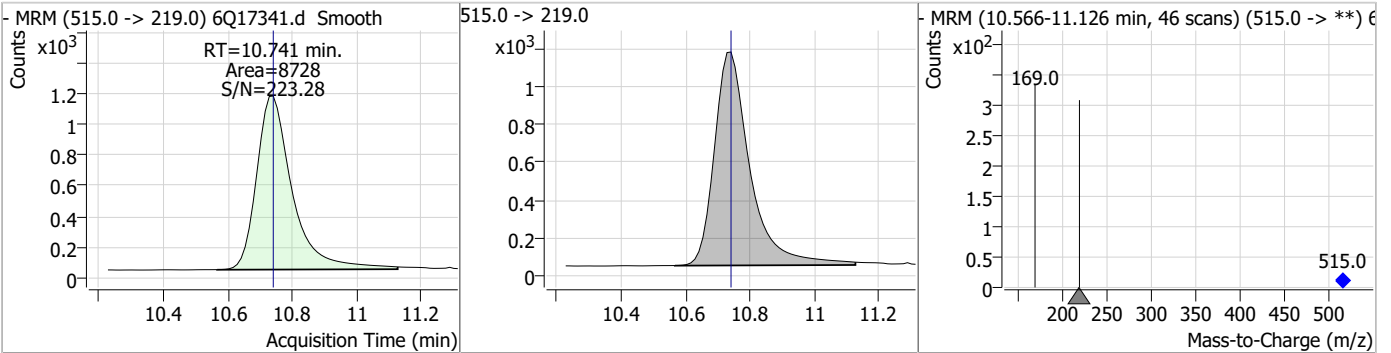
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	22.87	10.65	0.00	93730				



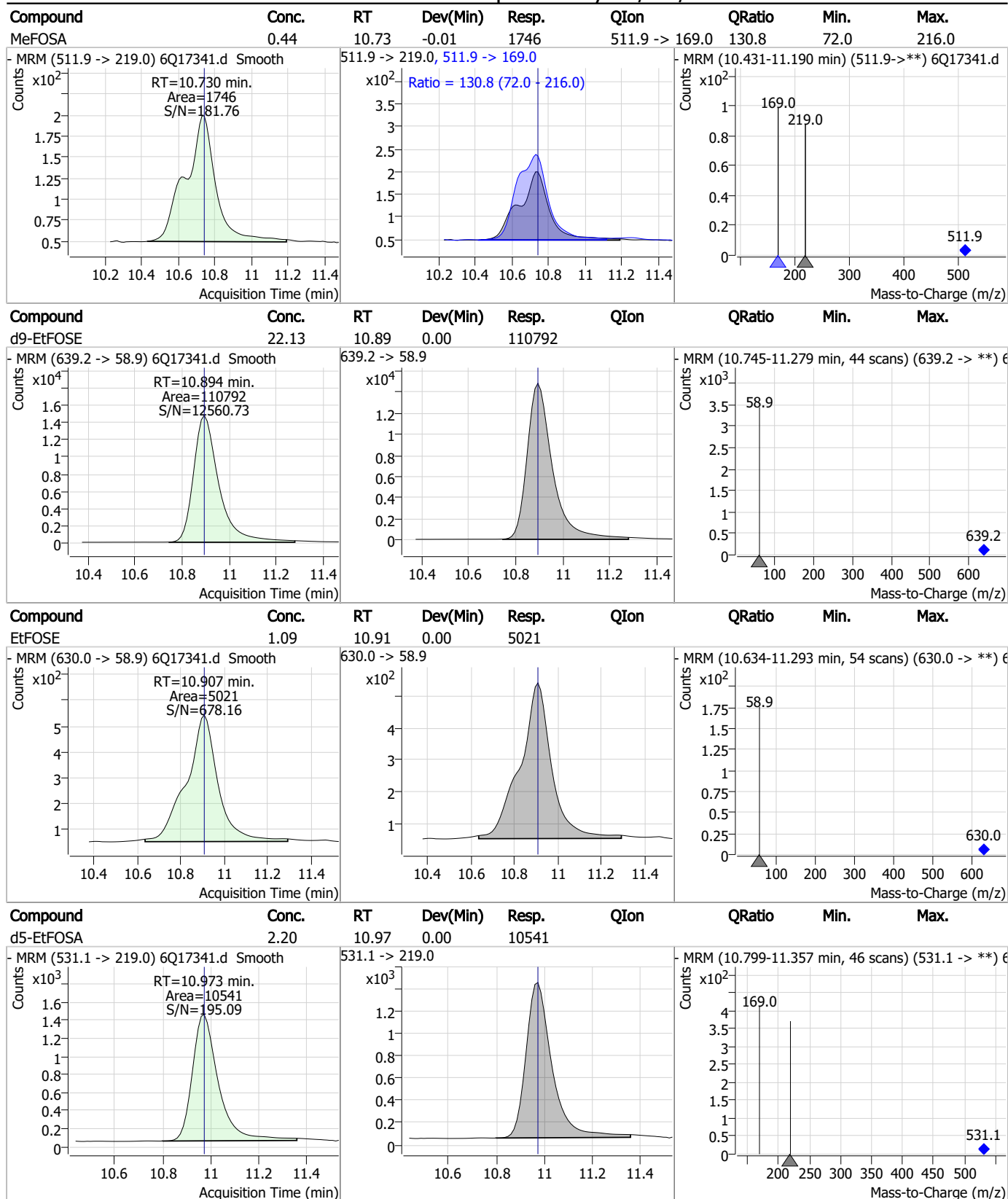
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	1.03	10.66	0.00	4302				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.24	10.74	0.00	8728				

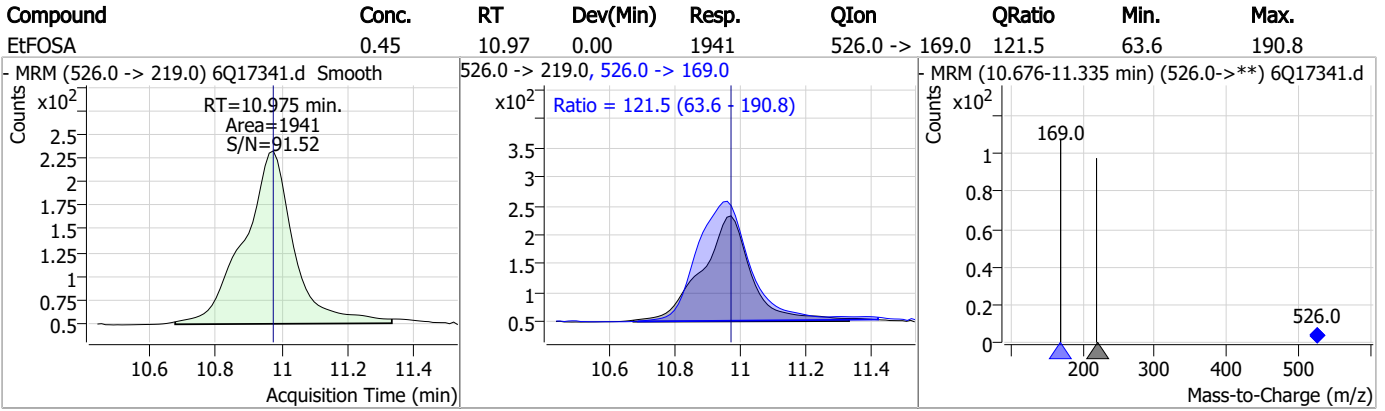


Perfluorinated Compounds by LC/MS/MS



7.7.12

Perfluorinated Compounds by LC/MS/MS



7.7.12

7

Manual Integration Approval Summary

Sample Number: S6Q261-CC258
Lab FileID: 6Q17341.D
Injection Time: 05/02/23 23:40

Method: EPA DRAFT 1633
Analyst approved: 05/03/23 13:49 Martha Valls
Supervisor approved: 05/03/23 19:39 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.23	Split peak
EtFOSAA	2991-50-6		8.34	Split peak

7.7.12.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17352.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/3/2023 2:19:32 AM
 Sample Name : cc258-4
 Vial : P1-A5
 DA Method File : 1633_042823_S6Q258.quantmethod.xml
 Batch Name : s6q261.batch.bin
 Sample Information : OP96301,S6Q261,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.897	216.8 -> 171.9	176676	10.00 µg/L	-0.012
M5-PFPeA	4.270	268.3 -> 223.0	56235	5.00 µg/L	0.000
M5-PFHxA	5.468	318.0 -> 273.0	65670	2.50 µg/L	-0.012
M4-PFHpA	6.419	367.1 -> 322.0	55624	2.50 µg/L	-0.012
M8-PFOA	7.074	421.1 -> 376.0	77571	2.50 µg/L	0.000
M9-PFNA	7.594	472.1 -> 427.0	27203	1.25 µg/L	0.000
M6-PFDA	8.076	519.1 -> 474.1	19571	1.25 µg/L	0.000
M7-PFUnDA	8.530	570.0 -> 525.1	24992	1.25 µg/L	0.000
M2-PFDoDA	8.960	615.1 -> 570.0	24060	1.25 µg/L	0.000
M2-PFTeDA	9.677	715.2 -> 670.0	16604	1.25 µg/L	-0.012
M8-FOSA	9.623	506.1 -> 77.8	23674	2.50 µg/L	0.000
M3-PFBS	5.398	302.1 -> 79.9	21069	2.50 µg/L	-0.012
M3-PFHxS	7.179	402.1 -> 79.9	12896	2.50 µg/L	0.000
M8-PFOS	8.239	507.1 -> 79.9	11175	2.50 µg/L	0.000
M2-4:2FTS	5.144	329.1 -> 80.9	2014	5.00 µg/L	-0.012
M2-6:2FTS	6.839	429.1 -> 80.9	2589	5.00 µg/L	-0.012
M2-8:2FTS	7.864	529.1 -> 80.9	2669	5.00 µg/L	-0.012
M3-MeFOSAA	8.134	573.2 -> 419.0	23225	5.00 µg/L	0.000
M3-HFPO-DA	5.845	286.9 -> 168.9	37249	10.00 µg/L	0.000
M5-EtFOSAA	8.330	589.2 -> 419.0	19842	5.00 µg/L	0.000
M7-MeFOSE	10.647	623.2 -> 58.9	89745	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	110276	25.00 µg/L	0.000
M5-EtFOSA	10.973	531.1 -> 219.0	10386	2.50 µg/L	0.000
M3-MeFOSA	10.741	515.0 -> 219.0	8305	2.50 µg/L	0.000
13C4-PFOS	8.239	502.8 -> 79.9	13327	2.50 µg/L	0.000
13C3-PFBA	2.902	216.0 -> 172.0	73697	5.00 µg/L	0.000
18O2-PFHxS	7.177	403.0 -> 83.9	9149	2.50 µg/L	0.000
13C4-PFOA	7.075	417.1 -> 372.0	86244	2.50 µg/L	0.000
13C2-PFDA	8.076	515.1 -> 470.1	23183	1.25 µg/L	0.000
13C5-PFNA	7.595	468.0 -> 423.0	29252	1.25 µg/L	0.000
13C2-PFHxA	5.469	315.1 -> 270.0	52867	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.144	329.1 -> 80.9	2014	4.79 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 95.8%		
13C2-6:2FTS	6.839	429.1 -> 80.9	2589	5.07 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.4%		
13C2-8:2FTS	7.864	529.1 -> 80.9	2669	4.86 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.2%		
13C2-PFDoDA	8.960	615.1 -> 570.0	24060	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.8%		
13C2-PFTeDA	9.677	715.2 -> 670.0	16604	1.27 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.8%		
13C3-PFBS	5.398	302.1 -> 79.9	21069	2.45 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.9%		
13C3-PFHxS	7.179	402.1 -> 79.9	12896	2.65 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.9%	
13C4-PFBA	2.897	216.8 -> 171.9	176676	10.37 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.7%	
13C4-PFHpA	6.419	367.1 -> 322.0	55624	2.57 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.9%	
13C5-PFHxA	5.468	318.0 -> 273.0	65670	2.58 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.0%	
13C5-PFPeA	4.270	268.3 -> 223.0	56235	4.76 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.2%	
13C6-PFDA	8.076	519.1 -> 474.1	19571	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C7-PFUnDA	8.530	570.0 -> 525.1	24992	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.1%	
13C8-FOSA	9.623	506.1 -> 77.8	23674	2.69 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.5%	
13C8-PFOA	7.074	421.1 -> 376.0	77571	2.33 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.2%	
13C8-PFOS	8.239	507.1 -> 79.9	11175	2.78 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 111.3%	
13C9-PFNA	7.594	472.1 -> 427.0	27203	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.6%	
d3-MeFOSAA	8.134	573.2 -> 419.0	23225	5.85 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 117.0%	
13C3-HFPO-DA	5.845	286.9 -> 168.9	37249	9.95 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
d3-MeFOSA	10.741	515.0 -> 219.0	8305	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
d5-EtFOSAA	8.330	589.2 -> 419.0	19842	6.01 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 120.2%	
d7-MeFOSE	10.647	623.2 -> 58.9	89745	25.66 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.6%	
d9-EtFOSE	10.894	639.2 -> 58.9	110276	25.80 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.2%	
d5-EtFOSA	10.973	531.1 -> 219.0	10386	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.6%	
Target Compounds					QValue
4:2FTS	5.145	327.1 -> 307.0	29820	9.79 µg/L	99
		327.1 -> 80.9	10831		
6:2FTS	6.839	427.1 -> 407.0	27092	9.51 µg/L	94
		427.1 -> 80.9	9382		
8:2FTS	7.865	527.1 -> 507.0	15588	9.81 µg/L	97
		527.1 -> 80.8	6391		
EtFOSAA	8.343	584.2 -> 419.1	7685	2.28 µg/L	92
		584.2 -> 526.0	3974		
FOSA	9.626	498.1 -> 77.9	21300	2.51 µg/L	100
		498.1 -> 478.0	590		
MeFOSAA	8.136	570.1 -> 419.0	10705	2.45 µg/L	94
		570.1 -> 483.0	2053		
PFBA	2.906	212.8 -> 168.9	61532	10.38 µg/L	100
PFBS	5.400	298.7 -> 79.9	21276	2.25 µg/L	93
		298.7 -> 98.8	8864		
PFDA	8.077	512.9 -> 469.0	55671	2.62 µg/L	95
		512.9 -> 219.0	9285		
PFDODA	8.961	613.1 -> 569.0	43620	2.31 µg/L	99
		613.1 -> 319.0	6347		
PFDS	9.125	599.0 -> 79.9	8265	2.32 µg/L	91

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.420	599.0 -> 98.8	4233	2.48	µg/L	99
		363.1 -> 319.0	67951			
PFHpS	7.734	363.1 -> 169.0	10490	2.13	µg/L	98
		449.0 -> 79.9	12889			
PFHxA	5.470	449.0 -> 98.9	6578	2.28	µg/L	99
		313.0 -> 269.0	59292			
PFHxS	7.180	313.0 -> 118.9	2892	2.14	µg/L	99
		398.7 -> 79.9	15007			
PFNA	7.595	398.7 -> 98.9	7408	2.55	µg/L	99
		463.0 -> 419.0	47993			
PFNS	8.694	463.0 -> 219.0	9714	2.35	µg/L	99
		548.8 -> 79.9	12688			
PFOA	7.076	548.8 -> 98.9	6194	2.66	µg/L	99
		413.0 -> 369.0	96961			
PFOS	8.228	413.0 -> 169.0	17077	2.07	µg/L	96
		498.9 -> 79.9	11147			
PFPeA	4.273	498.9 -> 98.8	6469	5.28	µg/L	100
		263.0 -> 219.0	80905			
PFPeS	6.472	349.1 -> 79.9	15916	2.17	µg/L	98
		349.1 -> 98.9	7272			
PFTeDA	9.690	713.1 -> 669.0	41461	2.47	µg/L	100
		713.1 -> 168.9	3110			
PFTrDA	9.345	663.0 -> 619.0	56529	2.71	µg/L	99
		663.0 -> 168.9	4913			
PFUnDA	8.531	563.1 -> 519.0	41581	2.40	µg/L	96
		563.1 -> 269.1	6941			
11CI-PF3OUdS	9.398	630.9 -> 450.9	63446	4.96	µg/L	100
		632.9 -> 452.9	19494			
9CI-PF3ONS	8.569	530.8 -> 351.0	106071	5.25	µg/L	95
		532.8 -> 353.0	31774			
ADONA	6.681	376.9 -> 250.9	298078	5.30	µg/L	96
		376.9 -> 84.8	74686			
HFPO-DA	5.846	284.9 -> 168.9	17951	5.09	µg/L	99
		284.9 -> 184.9	2326			
3:3FTCA	3.784	241.0 -> 177.0	12269	12.81	µg/L	98
		241.0 -> 117.0	1614			
5:3FTCA	6.160	341.0 -> 237.1	275882	65.65	µg/L	99
		341.0 -> 217.0	192313			
7:3FTCA	7.585	441.0 -> 316.9	126365	66.20	µg/L	100
		441.0 -> 336.9	268870			
EtFOSA	10.962	526.0 -> 219.0	21831	5.11	µg/L	100
		526.0 -> 169.0	27741			
EtFOSE	10.907	630.0 -> 58.9	58453	12.73	µg/L	100
		511.9 -> 219.0	19673			
MeFOSA	10.730	511.9 -> 169.0	26932	5.26	µg/L	94
		616.1 -> 58.9	52478			
MeFOSE	10.661	699.1 -> 79.9	4557	13.11	µg/L	100
		699.1 -> 98.8	2410			
PFDoDS	9.817	295.0 -> 201.0	13311	2.47	µg/L	97
		295.0 -> 84.9	3273			
NFDHA	5.350	279.0 -> 85.1	54453	4.73	µg/L	99
		229.0 -> 84.9	40515			
PFMBA	4.687	314.8 -> 134.9	149891	5.30	µg/L	100
		314.8 -> 82.9	5266			
PFMPA	3.438			5.28	µg/L	100
PFEESA	5.937			4.57	µg/L	100

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



7.7.13
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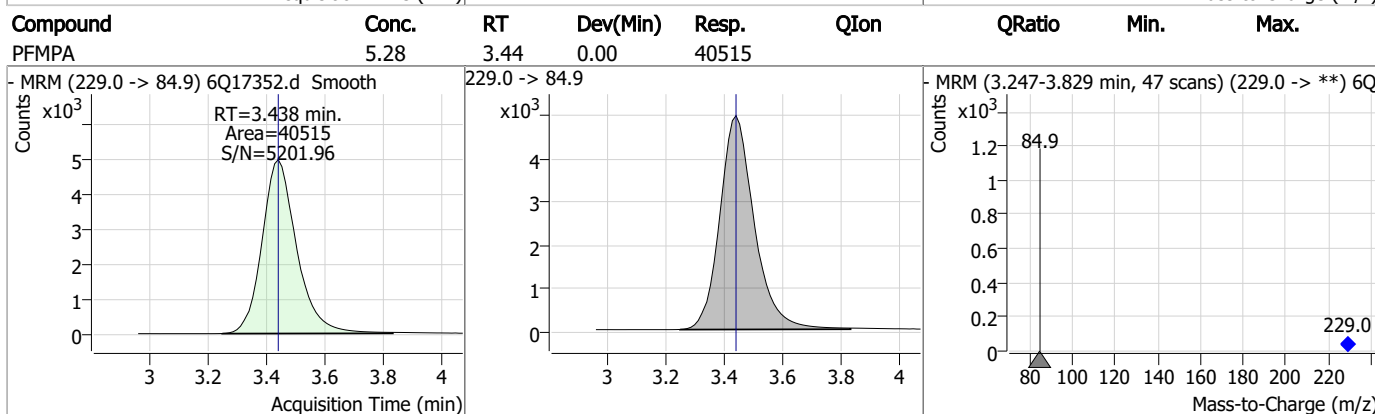
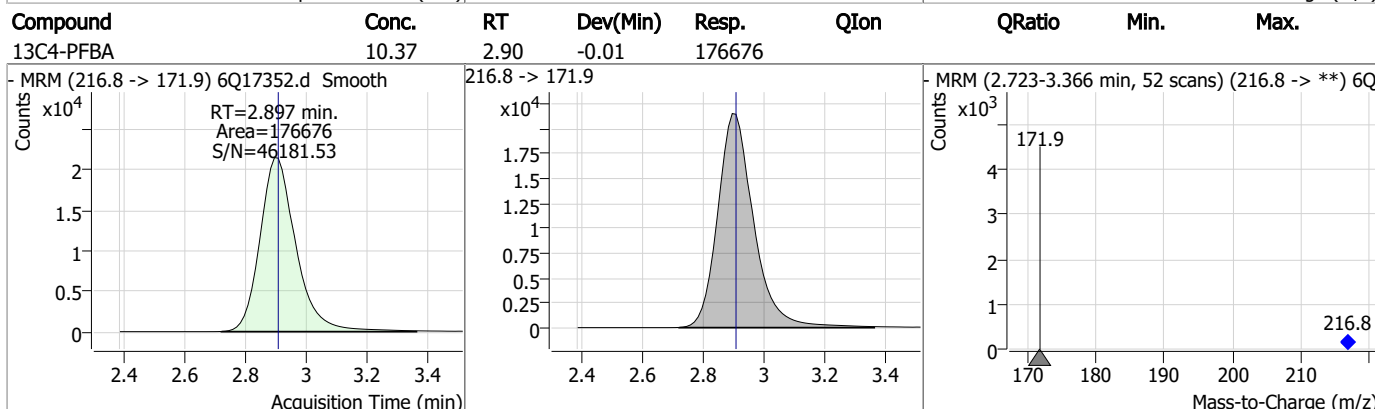
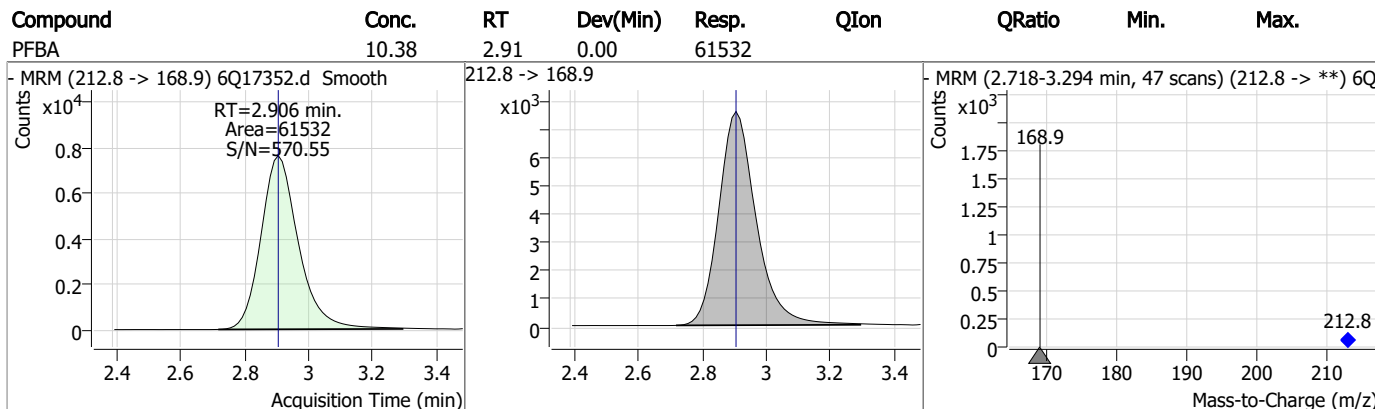
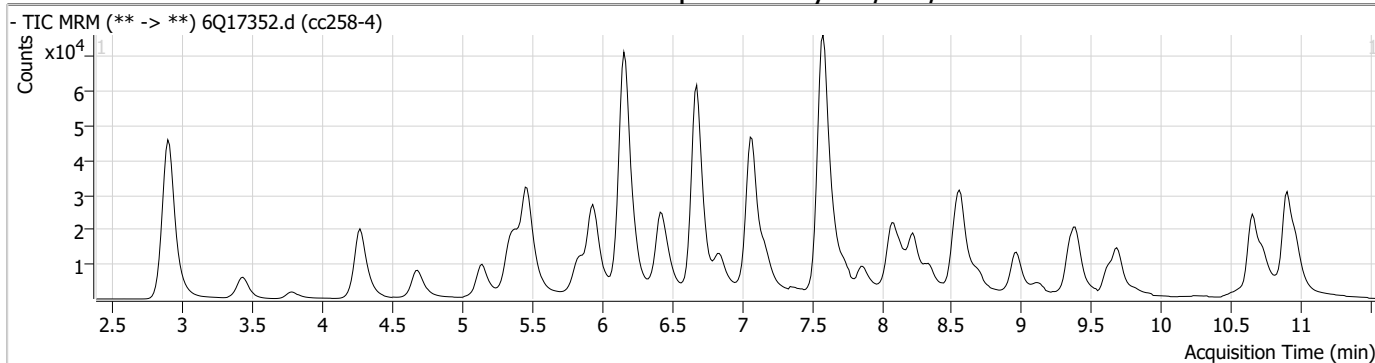
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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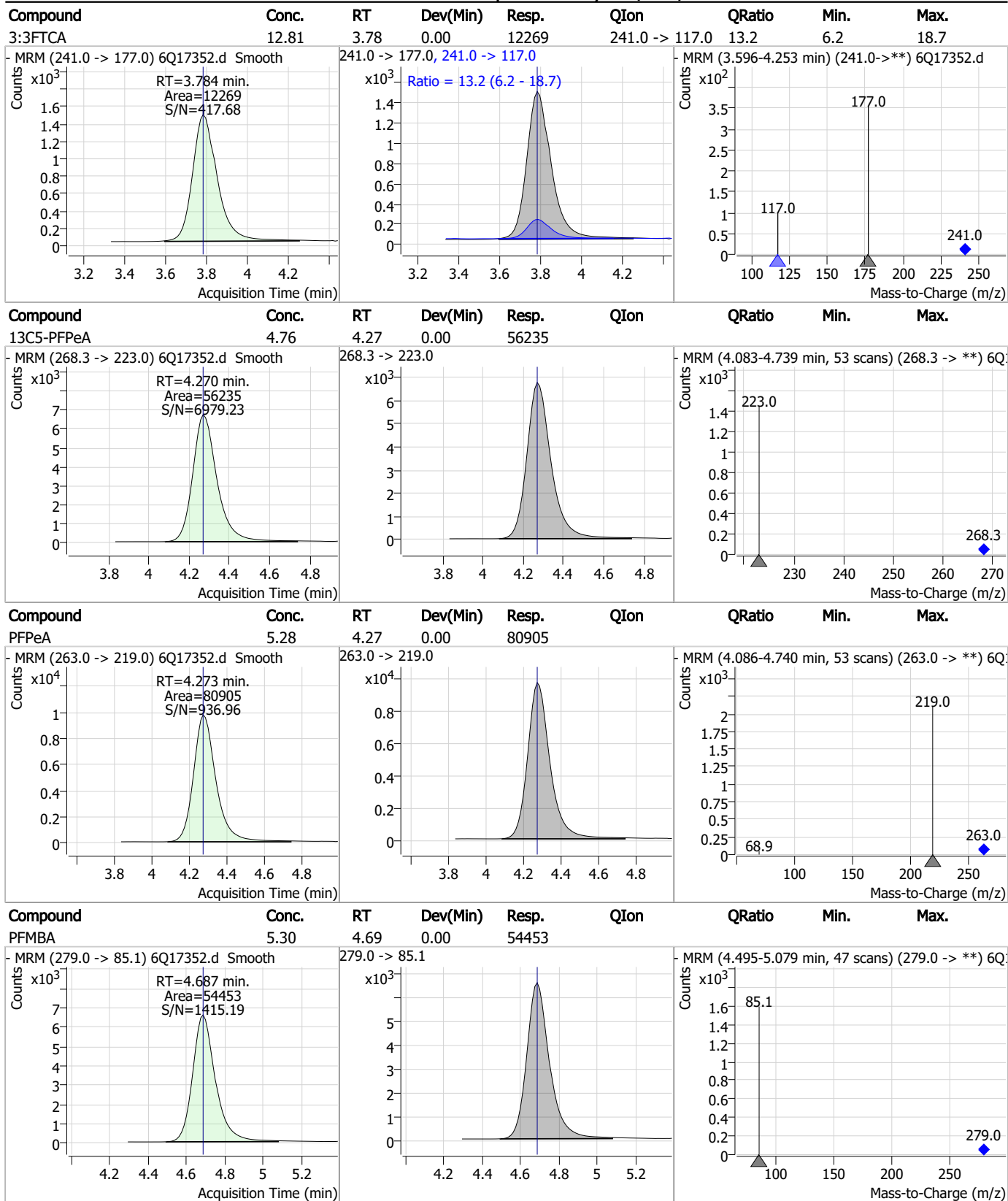
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Perfluorinated Compounds by LC/MS/MS



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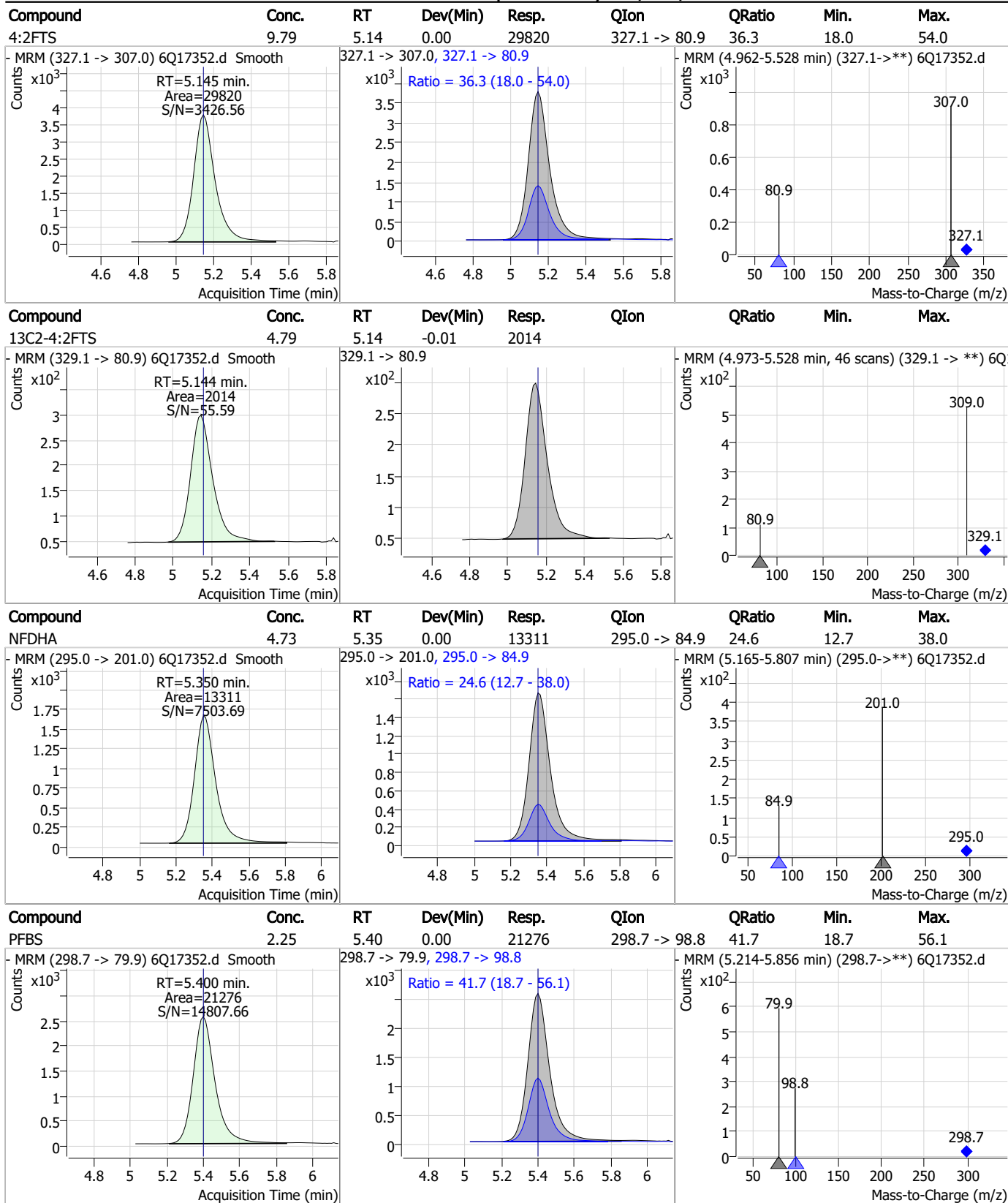
Perfluorinated Compounds by LC/MS/MS



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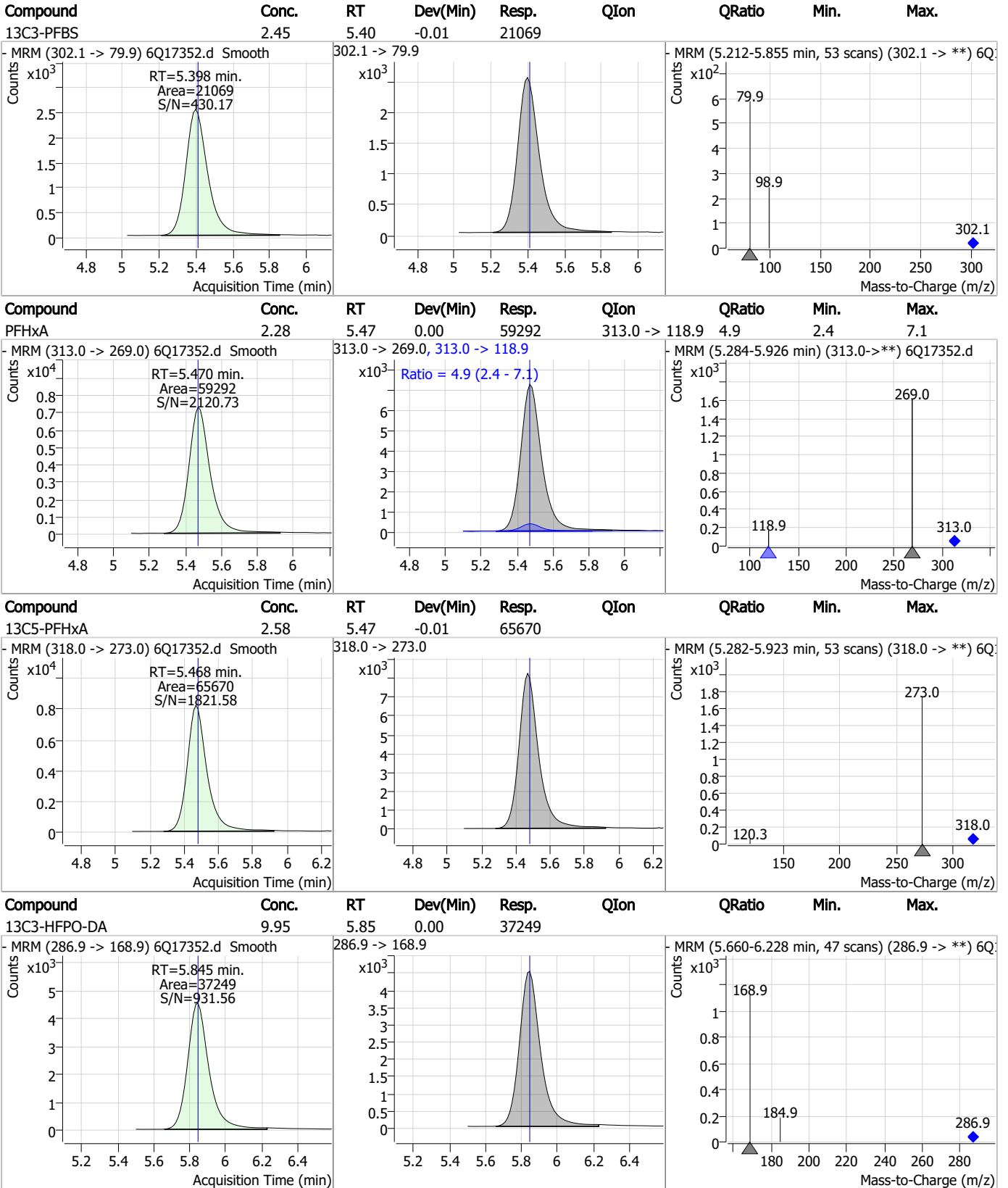
Perfluorinated Compounds by LC/MS/MS



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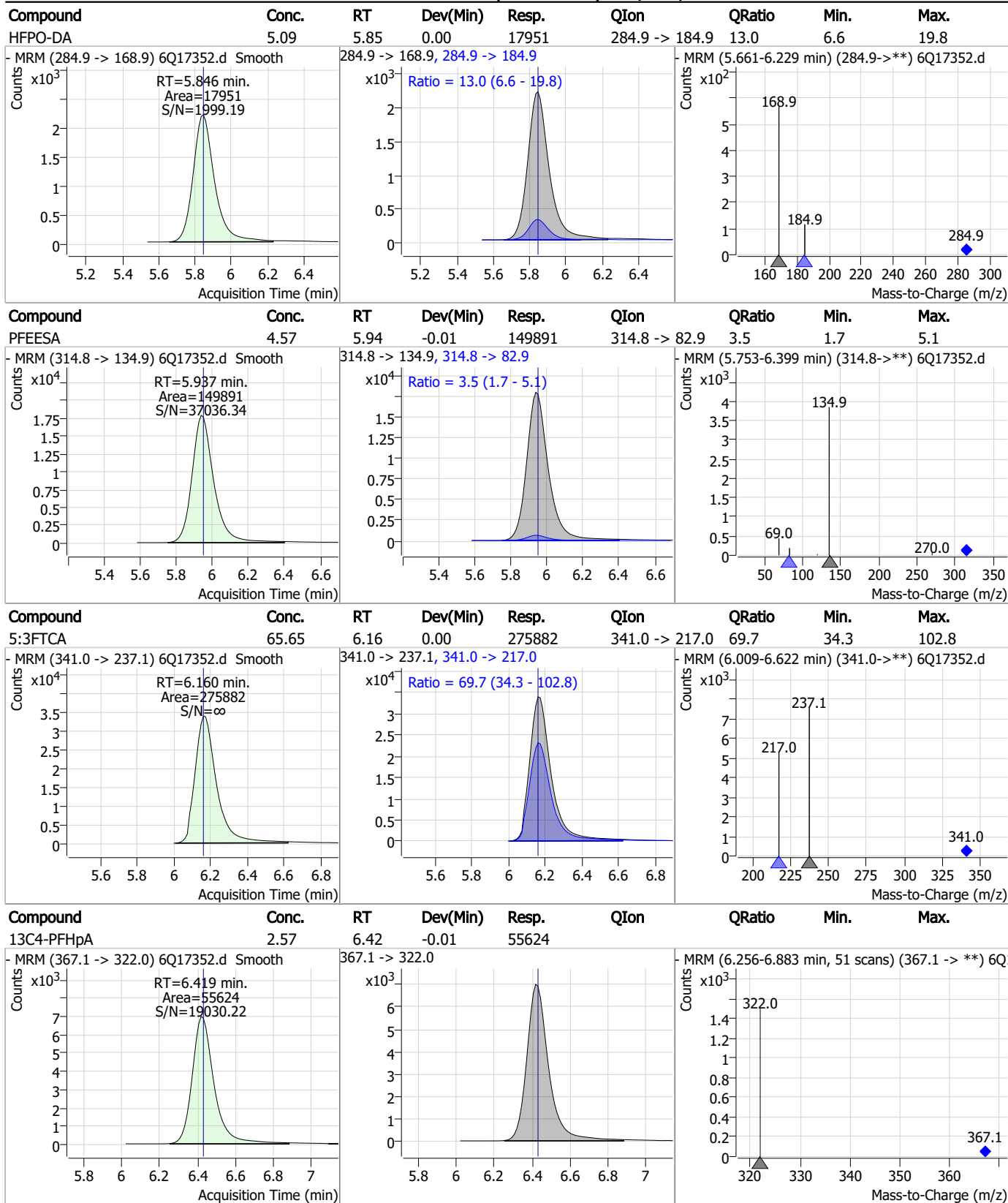
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Perfluorinated Compounds by LC/MS/MS



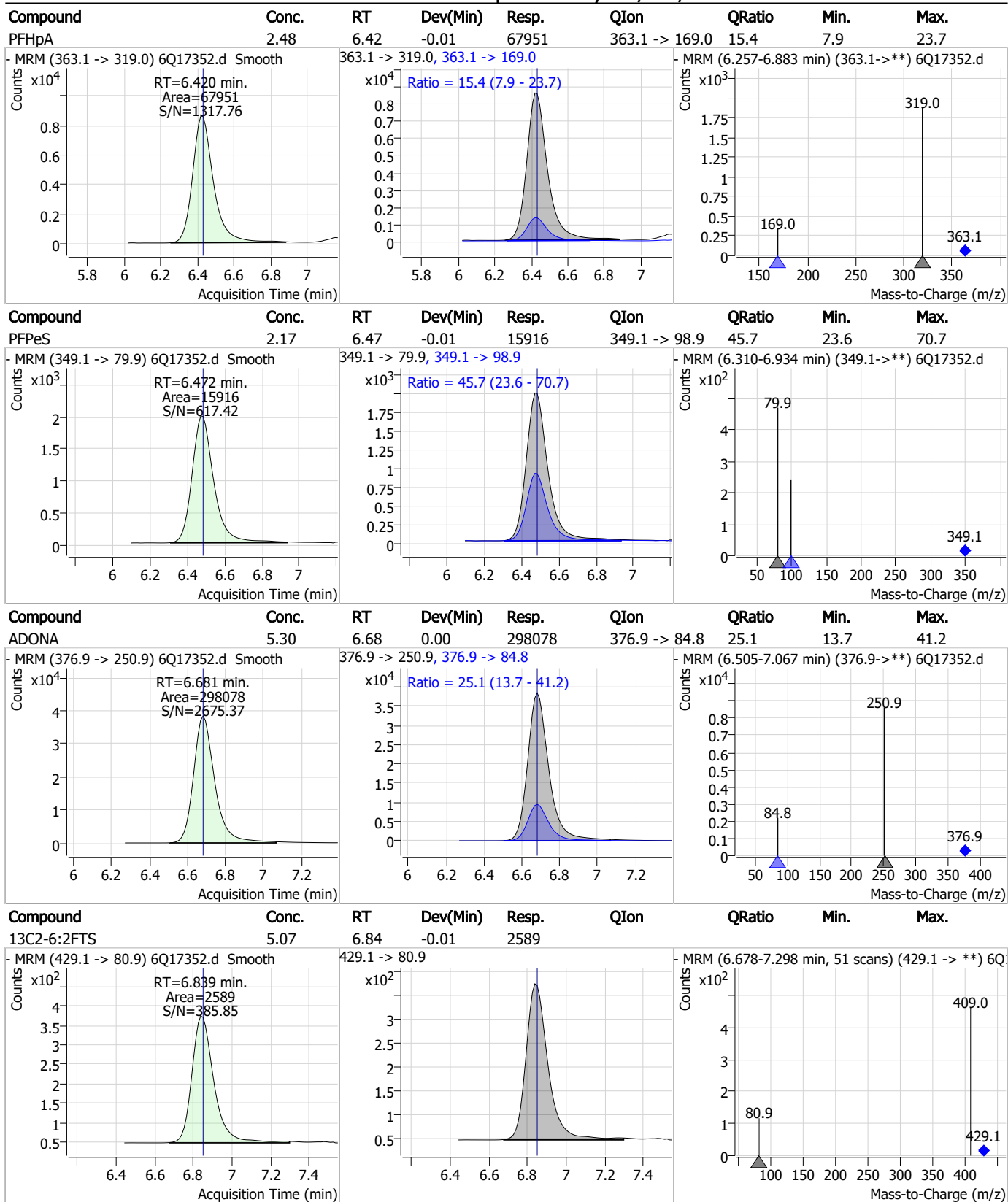
7.7.13
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Perfluorinated Compounds by LC/MS/MS



7.7.13
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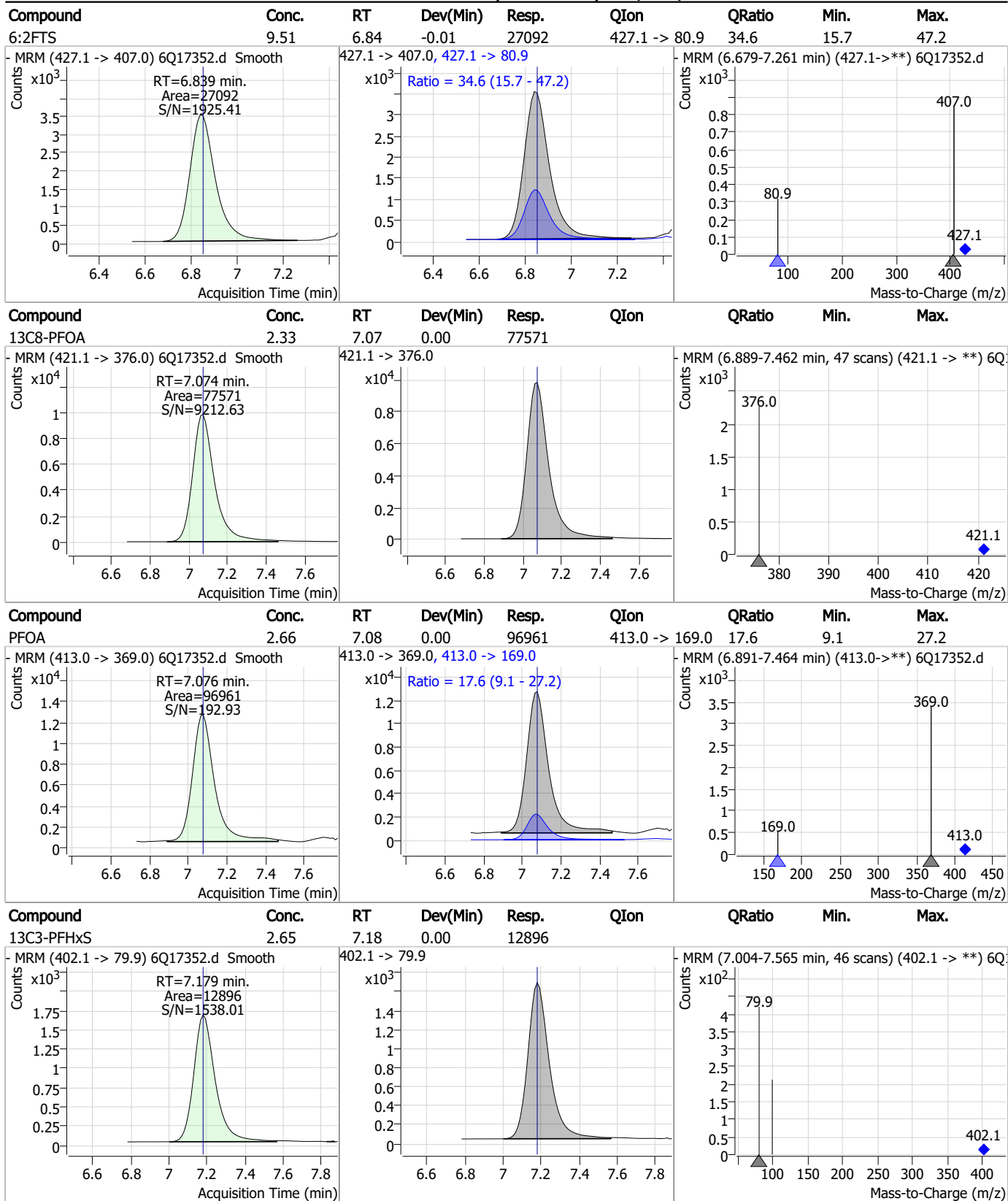
Perfluorinated Compounds by LC/MS/MS



7.7.13
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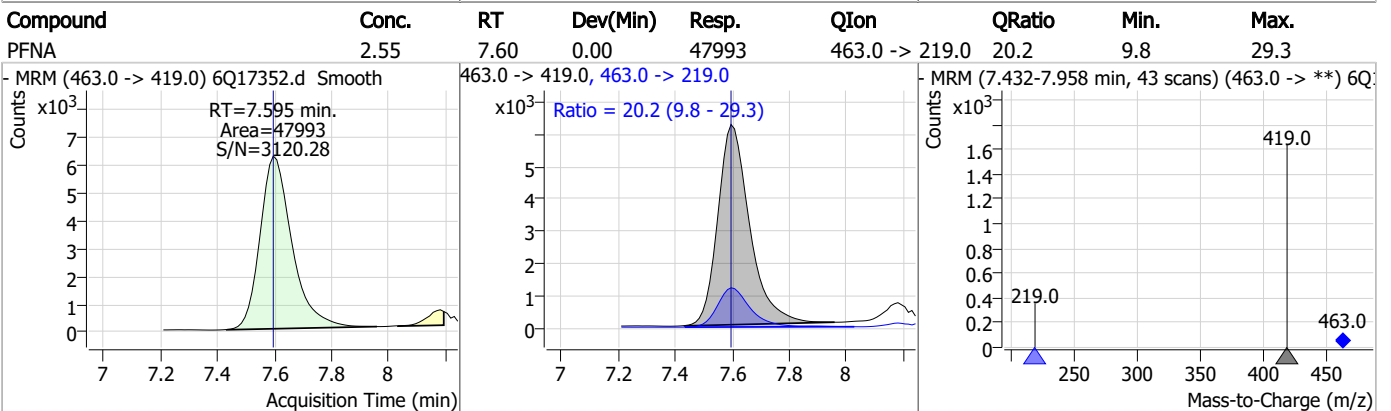
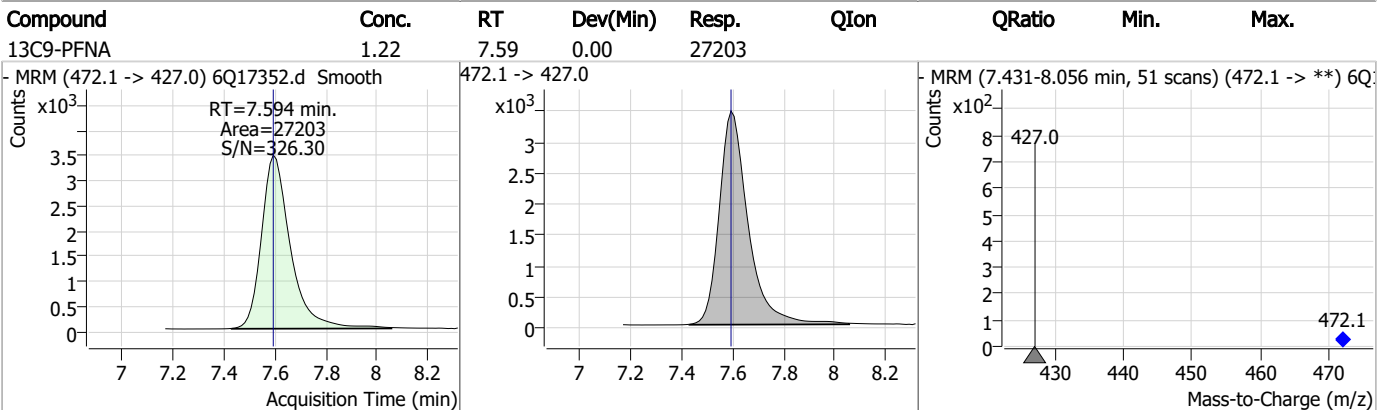
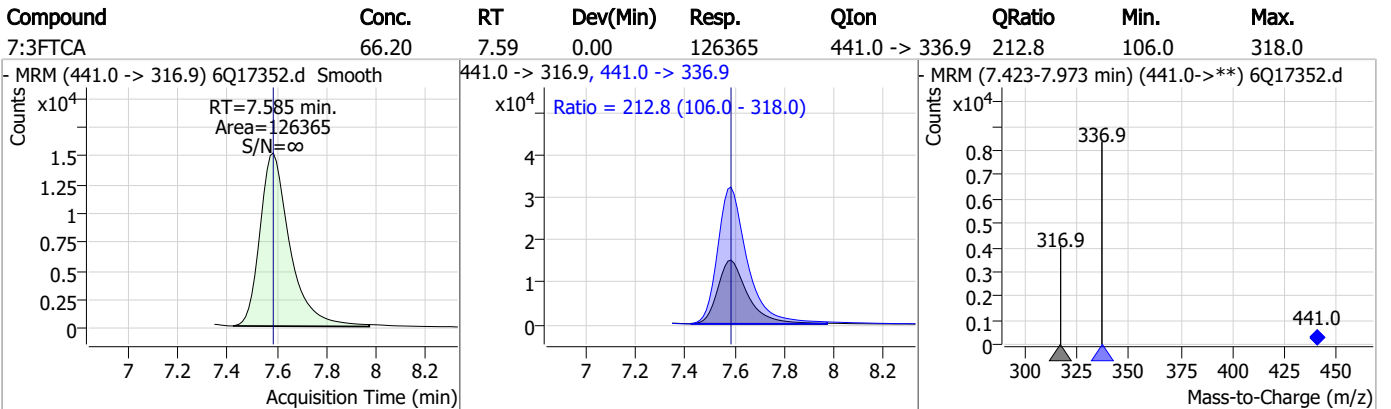
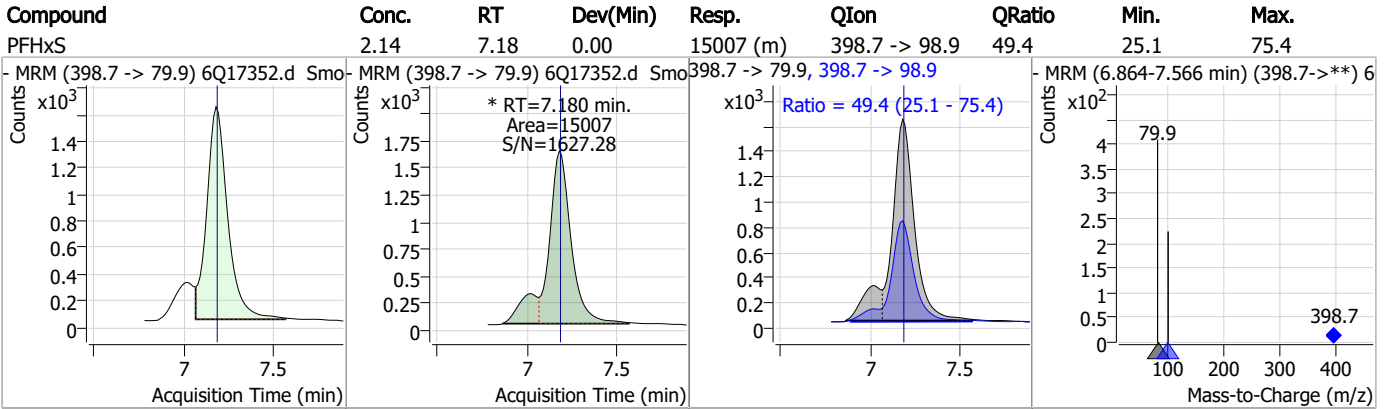


Perfluorinated Compounds by LC/MS/MS

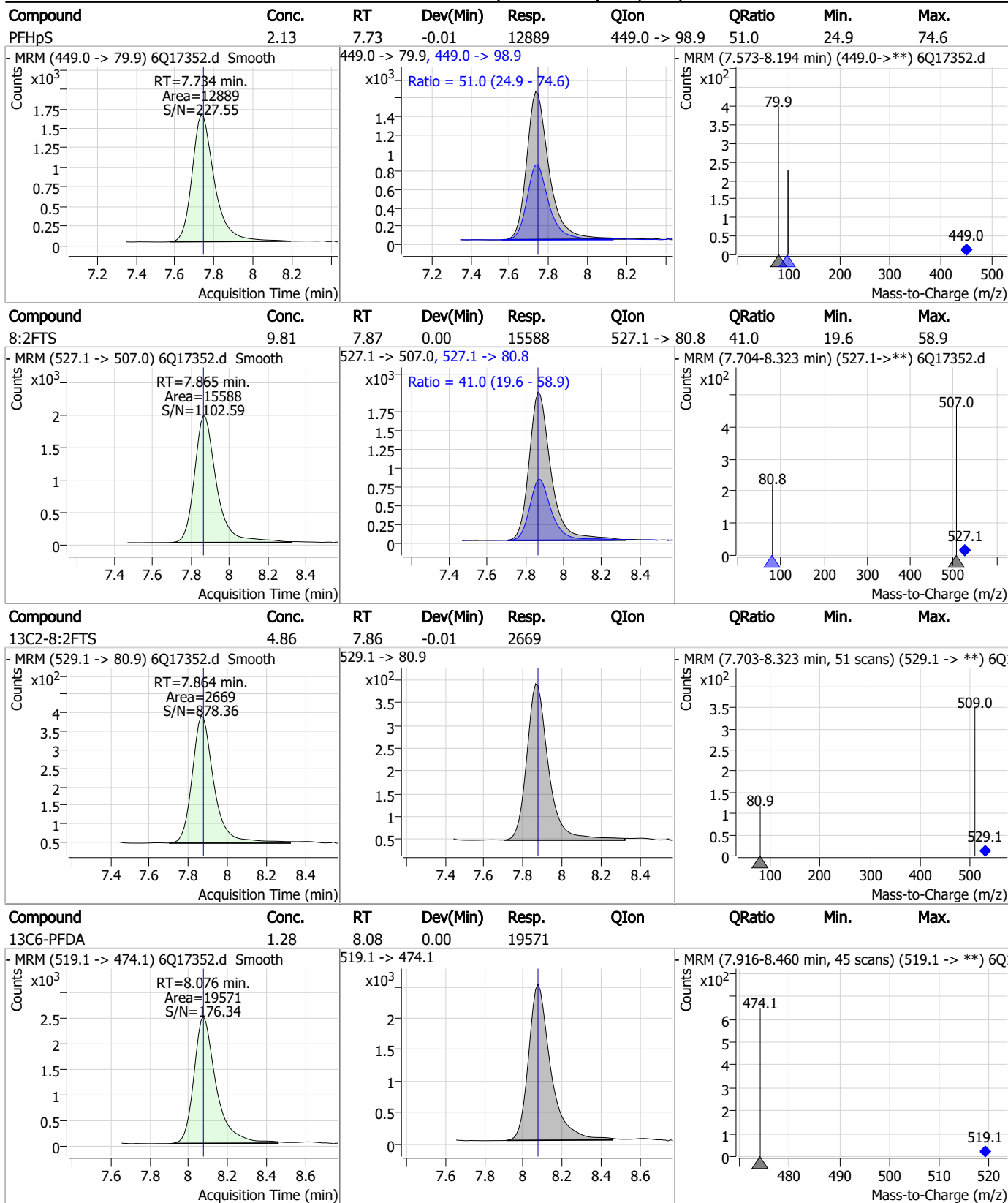


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Perfluorinated Compounds by LC/MS/MS

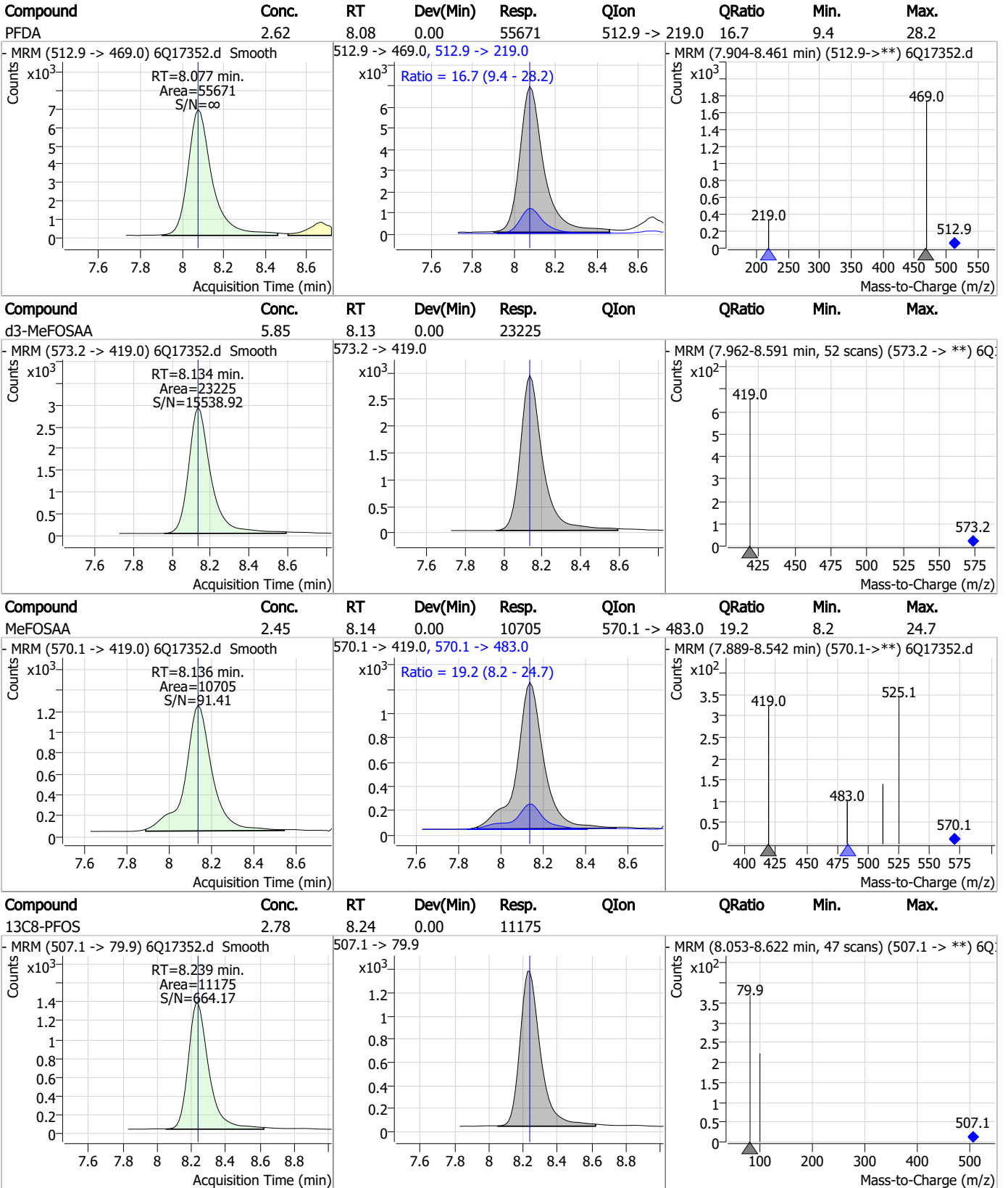


Perfluorinated Compounds by LC/MS/MS



7.7.13
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Perfluorinated Compounds by LC/MS/MS

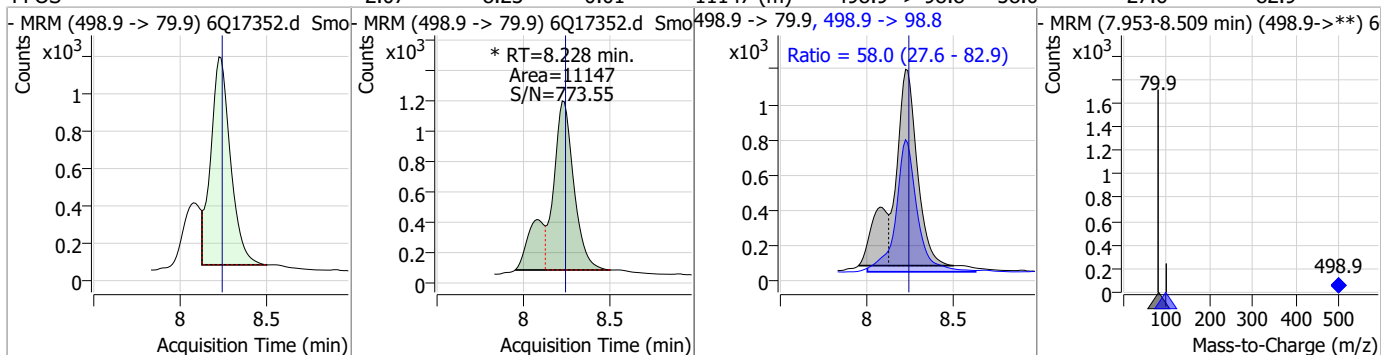


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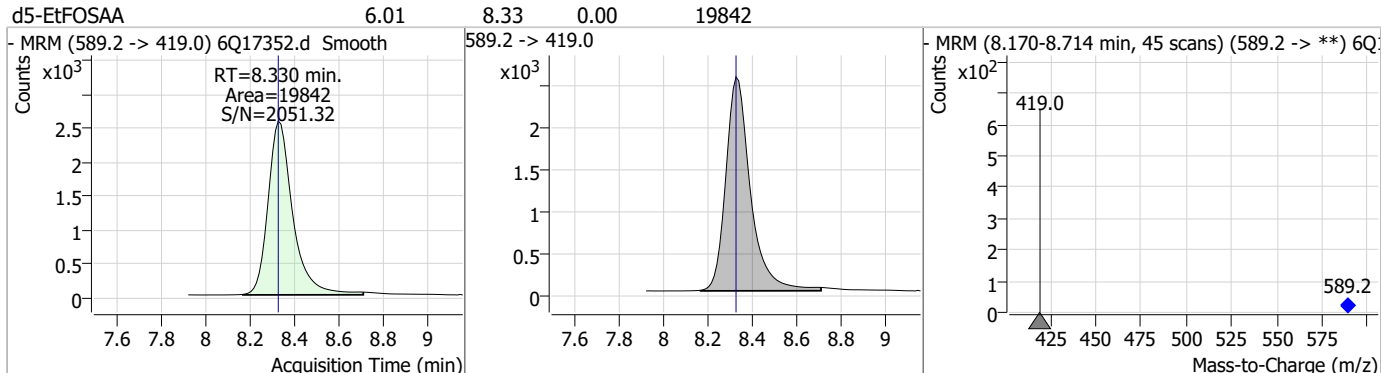


Perfluorinated Compounds by LC/MS/MS

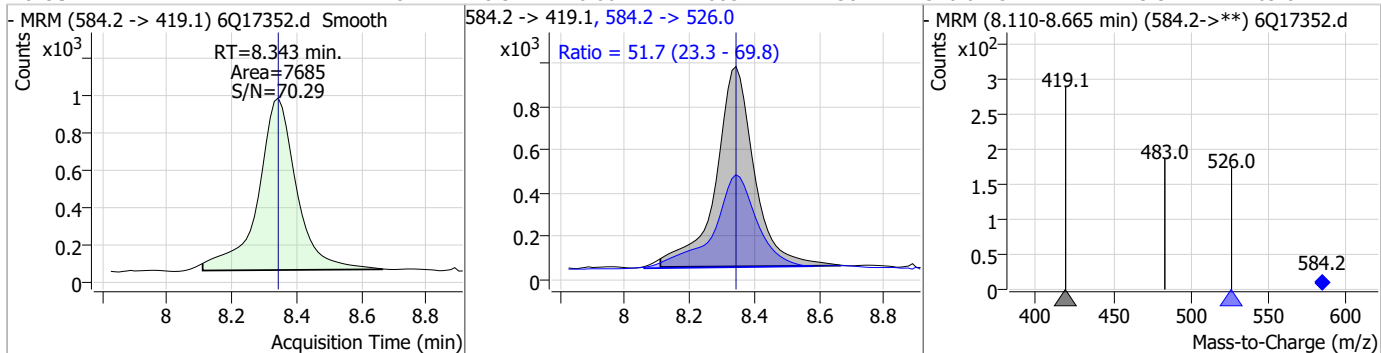
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.07	8.23	-0.01	11147 (m)	498.9 -> 98.8	58.0	27.6	82.9



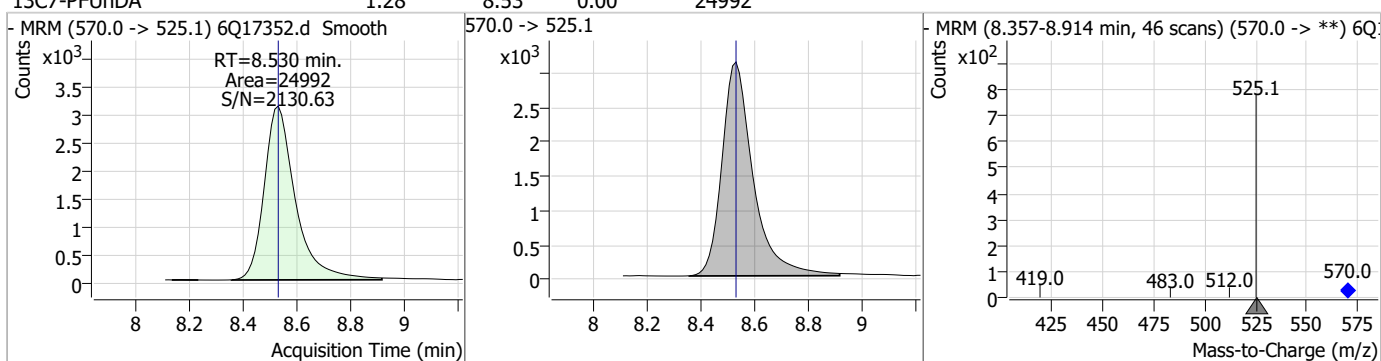
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	6.01	8.33	0.00	19842				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.28	8.34	0.00	7685	584.2 -> 526.0	51.7	23.3	69.8

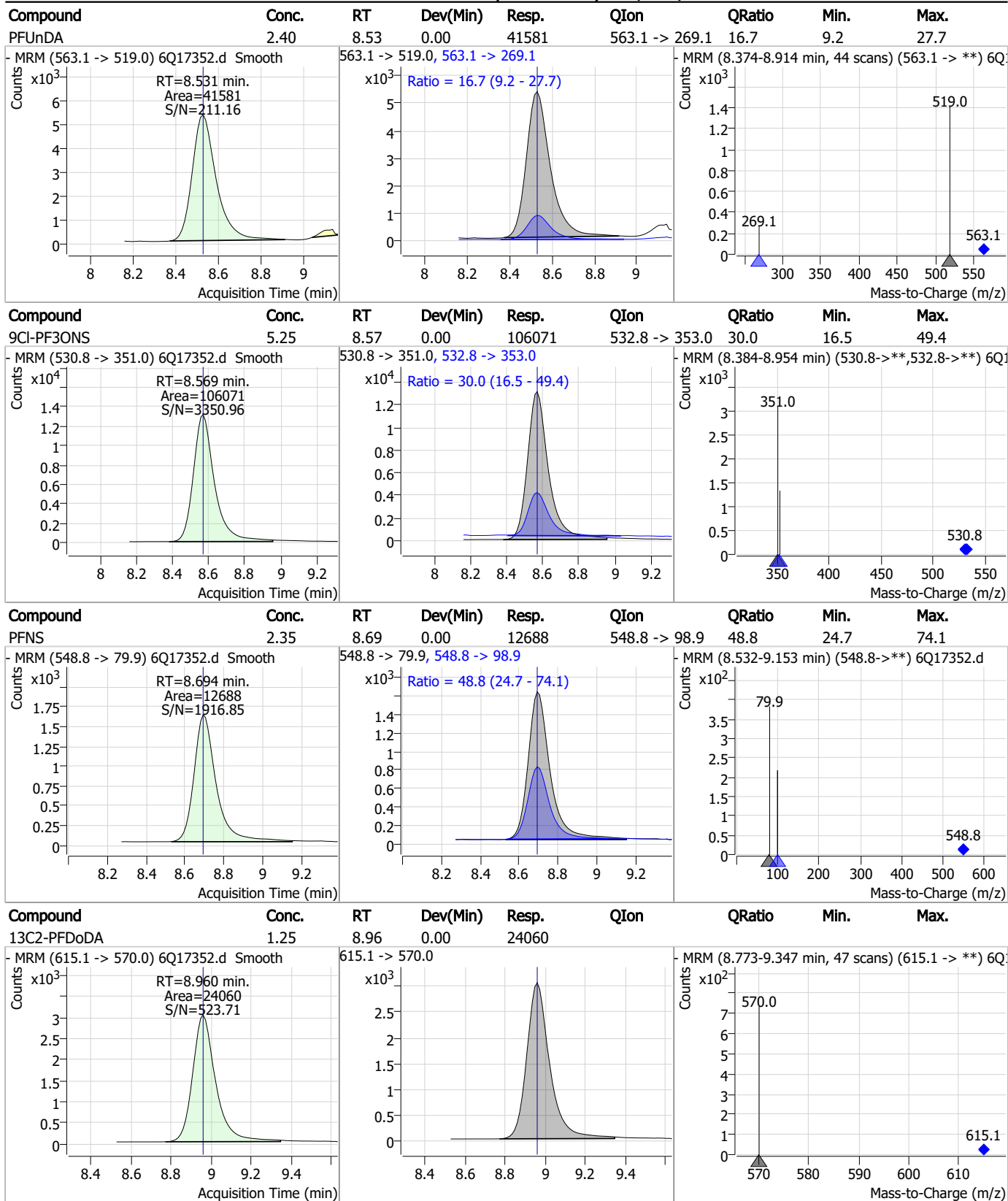


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.28	8.53	0.00	24992				



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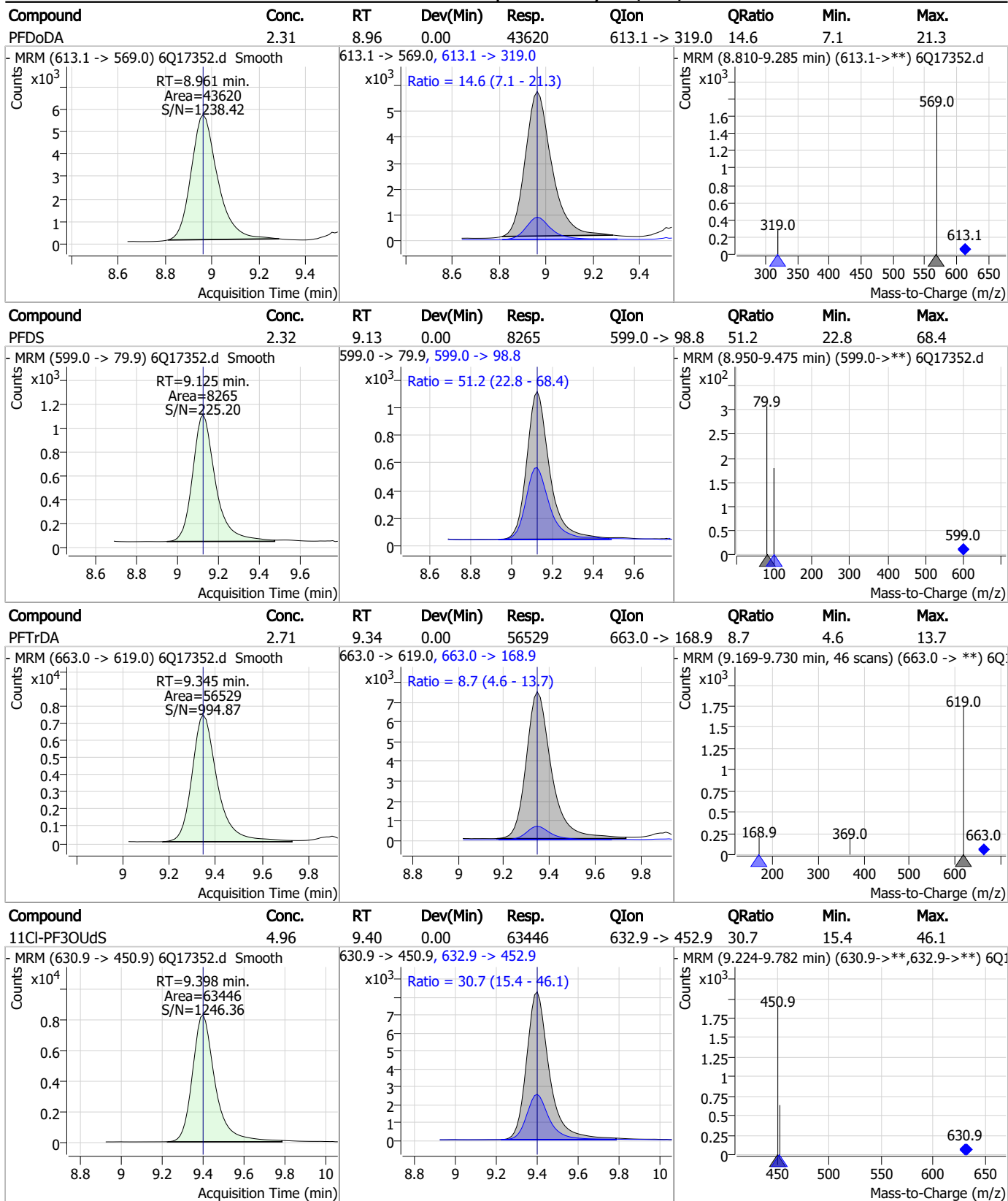
Perfluorinated Compounds by LC/MS/MS



7.7.13
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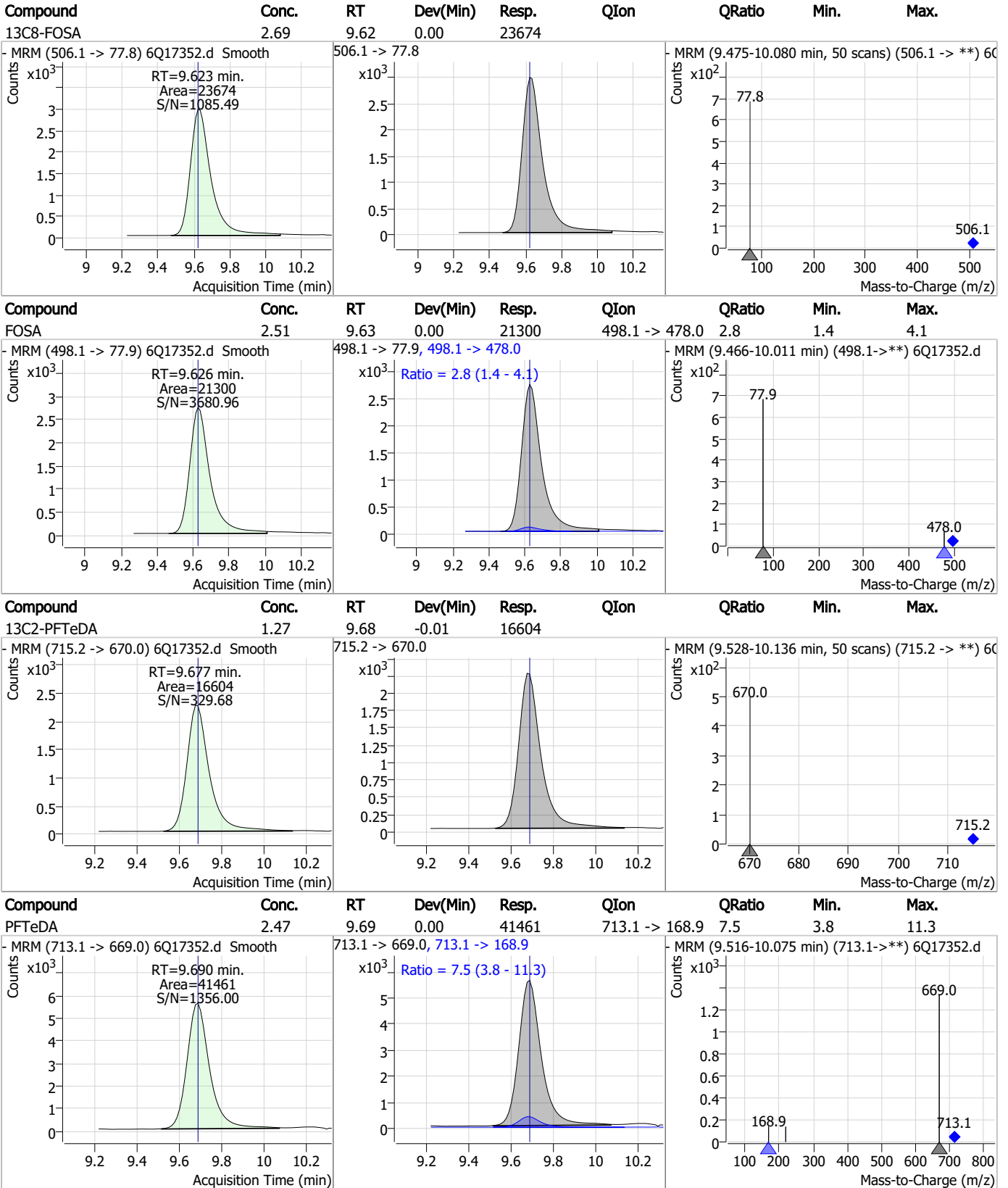
Perfluorinated Compounds by LC/MS/MS



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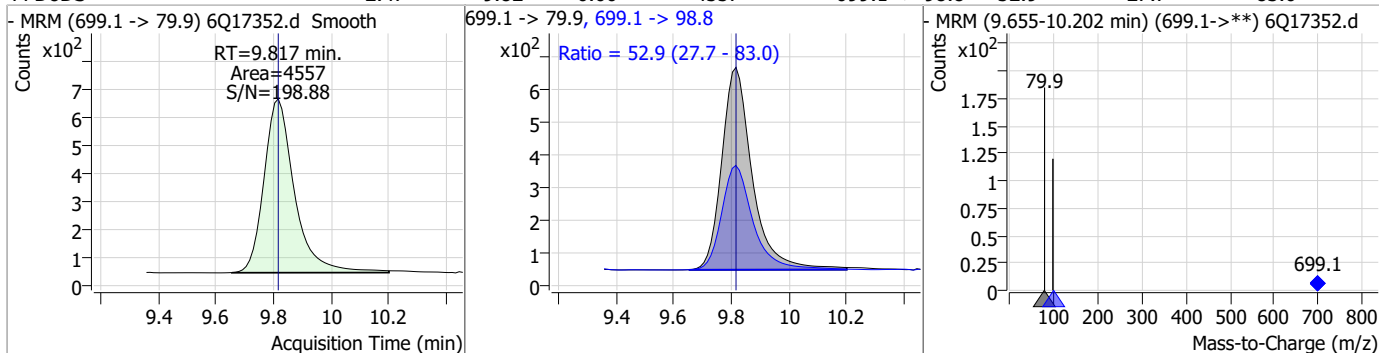
Perfluorinated Compounds by LC/MS/MS



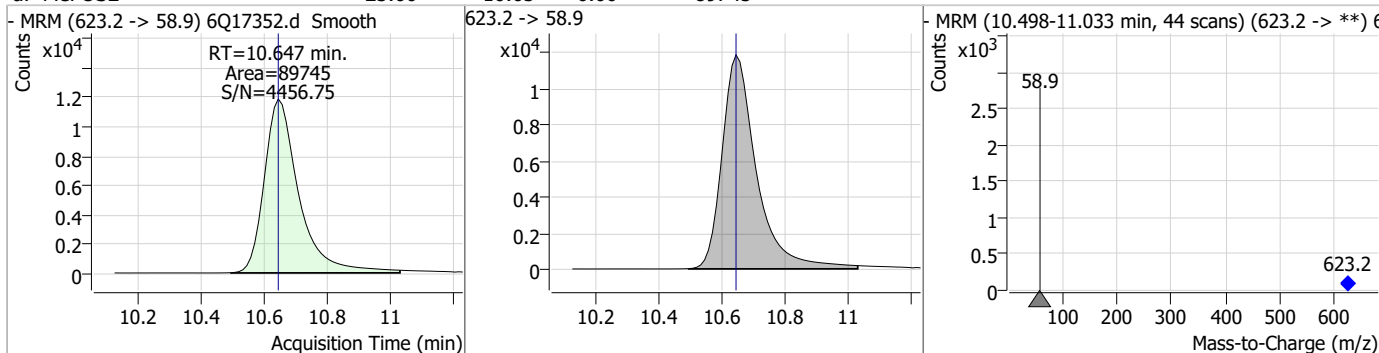
7.7.13 7

Perfluorinated Compounds by LC/MS/MS

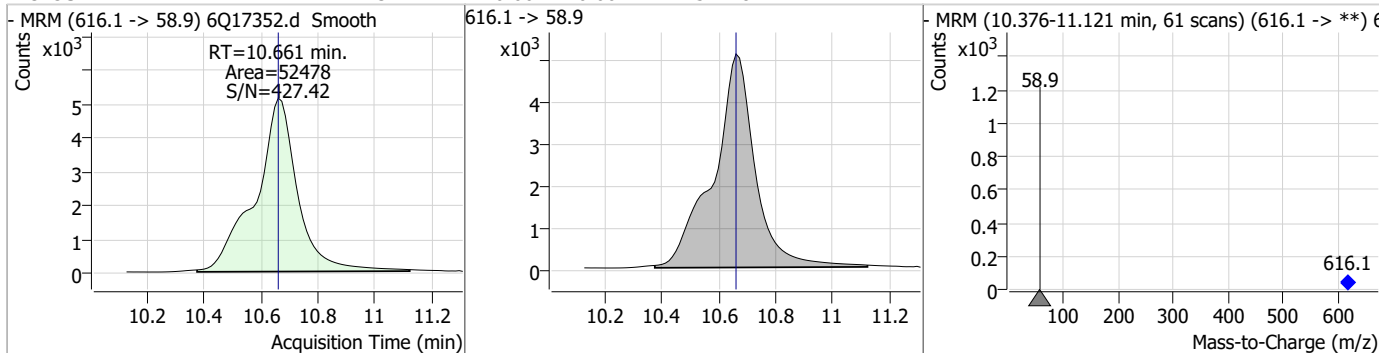
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.47	9.82	0.00	4557	699.1 -> 98.8	52.9	27.7	83.0



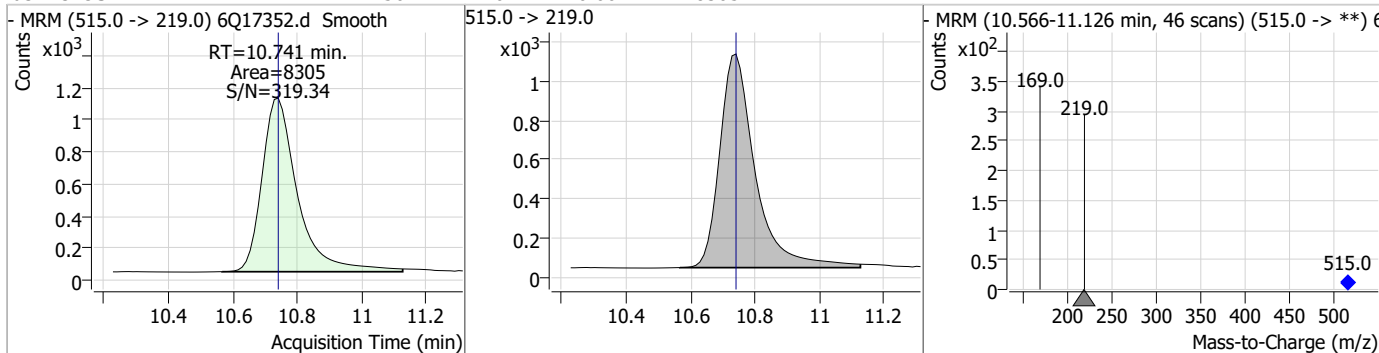
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.66	10.65	0.00	89745				



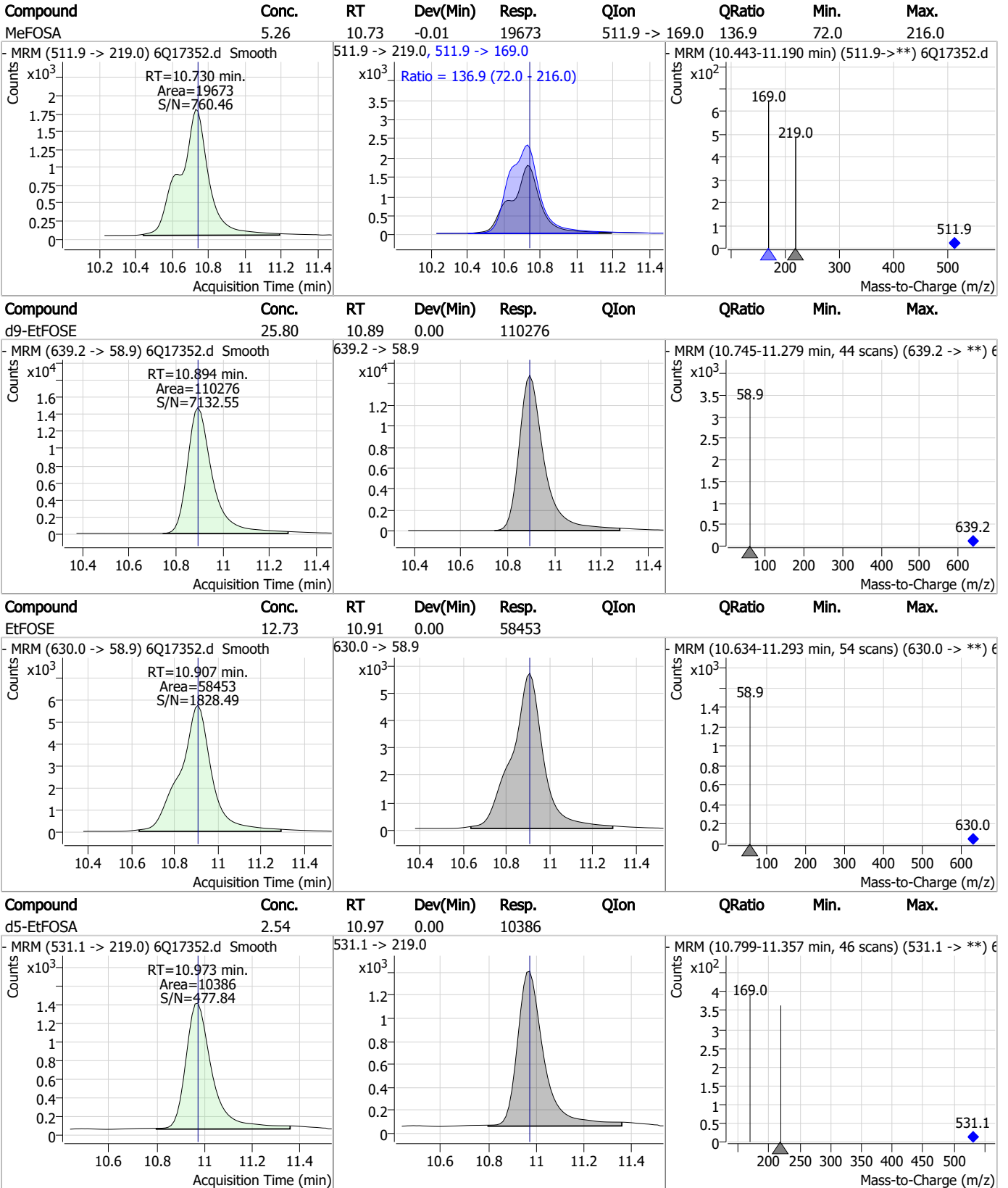
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	13.11	10.66	0.00	52478				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.50	10.74	0.00	8305				



Perfluorinated Compounds by LC/MS/MS

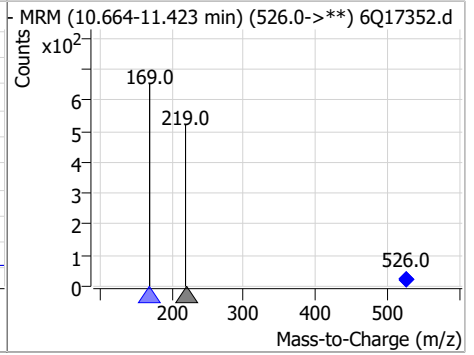
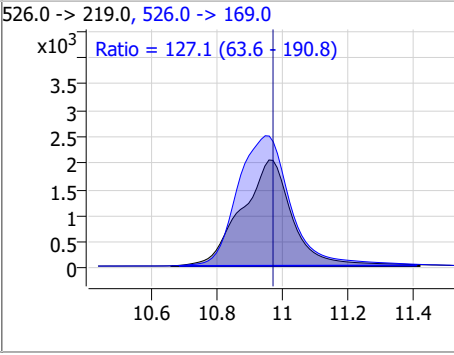
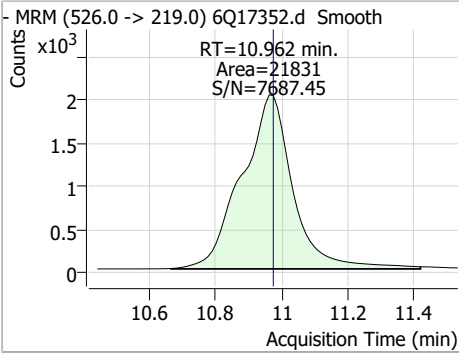


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Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	5.11	10.96	-0.01	21831	526.0 -> 169.0	127.1	63.6	190.8



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Manual Integration Approval Summary

Sample Number: S6Q261-CC258 Method: EPA DRAFT 1633
Lab FileID: 6Q17352.D Analyst approved: 05/03/23 13:49 Martha Valls
Injection Time: 05/03/23 02:19 Supervisor approved: 05/03/23 19:39 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.23	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17359.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/3/2023 4:00:53 AM
 Sample Name : cc258-4
 Vial : P1-A5
 DA Method File : 1633_042823_S6Q258.quantmethod.xml
 Batch Name : s6q261.batch.bin
 Sample Information : OP96301,S6Q261,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.897	216.8 -> 171.9	178708	10.00 µg/L	-0.012
M5-PFPeA	4.270	268.3 -> 223.0	56898	5.00 µg/L	0.000
M5-PFHxA	5.468	318.0 -> 273.0	65781	2.50 µg/L	-0.012
M4-PFHpA	6.419	367.1 -> 322.0	55290	2.50 µg/L	-0.012
M8-PFOA	7.062	421.1 -> 376.0	87609	2.50 µg/L	-0.012
M9-PFNA	7.594	472.1 -> 427.0	27637	1.25 µg/L	0.000
M6-PFDA	8.076	519.1 -> 474.1	20379	1.25 µg/L	0.000
M7-PFUnDA	8.530	570.0 -> 525.1	25014	1.25 µg/L	0.000
M2-PFDoDA	8.960	615.1 -> 570.0	23899	1.25 µg/L	0.000
M2-PFTeDA	9.689	715.2 -> 670.0	16437	1.25 µg/L	0.000
M8-FOSA	9.623	506.1 -> 77.8	24337	2.50 µg/L	0.000
M3-PFBS	5.398	302.1 -> 79.9	20180	2.50 µg/L	-0.012
M3-PFHxS	7.179	402.1 -> 79.9	12544	2.50 µg/L	0.000
M8-PFOS	8.226	507.1 -> 79.9	11287	2.50 µg/L	-0.012
M2-4:2FTS	5.144	329.1 -> 80.9	2025	5.00 µg/L	-0.012
M2-6:2FTS	6.839	429.1 -> 80.9	2467	5.00 µg/L	-0.012
M2-8:2FTS	7.864	529.1 -> 80.9	2860	5.00 µg/L	-0.012
M3-MeFOSAA	8.134	573.2 -> 419.0	21716	5.00 µg/L	0.000
M3-HFPO-DA	5.833	286.9 -> 168.9	39860	10.00 µg/L	-0.012
M5-EtFOSAA	8.330	589.2 -> 419.0	18850	5.00 µg/L	0.000
M7-MeFOSE	10.647	623.2 -> 58.9	93146	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	113597	25.00 µg/L	0.000
M5-EtFOSA	10.960	531.1 -> 219.0	10781	2.50 µg/L	-0.012
M3-MeFOSA	10.741	515.0 -> 219.0	8647	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	13955	2.50 µg/L	-0.012
13C3-PFBA	2.902	216.0 -> 172.0	75697	5.00 µg/L	0.000
18O2-PFHxS	7.177	403.0 -> 83.9	9296	2.50 µg/L	0.000
13C4-PFOA	7.063	417.1 -> 372.0	83698	2.50 µg/L	-0.012
13C2-PFDA	8.076	515.1 -> 470.1	22797	1.25 µg/L	0.000
13C5-PFNA	7.595	468.0 -> 423.0	29961	1.25 µg/L	0.000
13C2-PFHxA	5.469	315.1 -> 270.0	53148	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.144	329.1 -> 80.9	2025	4.74 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.8%		
13C2-6:2FTS	6.839	429.1 -> 80.9	2467	4.76 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 95.1%		
13C2-8:2FTS	7.864	529.1 -> 80.9	2860	5.13 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.5%		
13C2-PFDoDA	8.960	615.1 -> 570.0	23899	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.8%		
13C2-PFTeDA	9.689	715.2 -> 670.0	16437	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.5%		
13C3-PFBS	5.398	302.1 -> 79.9	20180	2.31 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 92.3%		
13C3-PFHxS	7.179	402.1 -> 79.9	12544	2.54 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.4%	
13C4-PFBA	2.897	216.8 -> 171.9	178708	10.22 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C4-PFHpA	6.419	367.1 -> 322.0	55290	2.54 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C5-PFHxA	5.468	318.0 -> 273.0	65781	2.57 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C5-PFPeA	4.270	268.3 -> 223.0	56898	4.79 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.8%	
13C6-PFDA	8.076	519.1 -> 474.1	20379	1.36 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.4%	
13C7-PFUnDA	8.530	570.0 -> 525.1	25014	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.0%	
13C8-FOSA	9.623	506.1 -> 77.8	24337	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.5%	
13C8-PFOA	7.062	421.1 -> 376.0	87609	2.71 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.5%	
13C8-PFOS	8.226	507.1 -> 79.9	11287	2.68 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.4%	
13C9-PFNA	7.594	472.1 -> 427.0	27637	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.8%	
d3-MeFOSAA	8.134	573.2 -> 419.0	21716	5.22 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.4%	
13C3-HFPO-DA	5.833	286.9 -> 168.9	39860	10.59 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.9%	
d3-MeFOSA	10.741	515.0 -> 219.0	8647	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.2%	
d5-EtFOSAA	8.330	589.2 -> 419.0	18850	5.45 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 109.1%	
d7-MeFOSE	10.647	623.2 -> 58.9	93146	25.43 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.7%	
d9-EtFOSE	10.894	639.2 -> 58.9	113597	25.38 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.5%	
d5-EtFOSA	10.960	531.1 -> 219.0	10781	2.52 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.8%	
Target Compounds					QValue
4:2FTS	5.145	327.1 -> 307.0	29212	9.54 µg/L	99
		327.1 -> 80.9	10773		
6:2FTS	6.839	427.1 -> 407.0	29382	10.83 µg/L	95
		427.1 -> 80.9	8445		
8:2FTS	7.865	527.1 -> 507.0	16576	9.74 µg/L	96
		527.1 -> 80.8	6090		
EtFOSAA	8.331	584.2 -> 419.1	8226	2.57 µg/L	m 94
		584.2 -> 526.0	4139		
FOSA	9.626	498.1 -> 77.9	22018	2.52 µg/L	100
		498.1 -> 478.0	614		
MeFOSAA	8.136	570.1 -> 419.0	11422	2.80 µg/L	94
		570.1 -> 483.0	2194		
PFBA	2.906	212.8 -> 168.9	62714	10.46 µg/L	100
PFBS	5.400	298.7 -> 79.9	21622	2.39 µg/L	93
		298.7 -> 98.8	8931		
PFDA	8.077	512.9 -> 469.0	57938	2.62 µg/L	95
		512.9 -> 219.0	9501		
PFDODA	8.961	613.1 -> 569.0	45431	2.42 µg/L	99
		613.1 -> 319.0	6669		
PFDS	9.125	599.0 -> 79.9	8542	2.37 µg/L	96

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.420	599.0 -> 98.8	4106	2.61	µg/L	98
		363.1 -> 319.0	71187			
PFHpS	7.734	363.1 -> 169.0	10775	2.11	µg/L	94
		449.0 -> 79.9	12930			
PFHxA	5.470	449.0 -> 98.9	6960	2.41	µg/L	100
		313.0 -> 269.0	62735			
PFHxS	7.180	313.0 -> 118.9	2972	2.29	µg/L	96
		398.7 -> 79.9	15655			
PFNA	7.595	398.7 -> 98.9	7419	2.35	µg/L	95
		463.0 -> 419.0	44867			
PFNS	8.694	463.0 -> 219.0	9818	2.40	µg/L	99
		548.8 -> 79.9	13071			
PFOA	7.063	548.8 -> 98.9	6375	2.41	µg/L	96
		413.0 -> 369.0	98924			
PFOS	8.228	413.0 -> 169.0	16305	2.35	µg/L	90
		498.9 -> 79.9	12796			
PFPeA	4.273	498.9 -> 98.8	6132	5.17	µg/L	100
		263.0 -> 219.0	80148			
PFPeS	6.472	349.1 -> 79.9	17005	2.38	µg/L	93
		349.1 -> 98.9	7255			
PFTeDA	9.690	713.1 -> 669.0	43937	2.64	µg/L	99
		713.1 -> 168.9	3152			
PFTrDA	9.345	663.0 -> 619.0	53986	2.60	µg/L	99
		663.0 -> 168.9	4787			
PFUnDA	8.531	563.1 -> 519.0	43246	2.49	µg/L	95
		563.1 -> 269.1	6968			
11CI-PF3OUdS	9.398	630.9 -> 450.9	64692	4.73	µg/L	100
		632.9 -> 452.9	19841			
9CI-PF3ONS	8.557	530.8 -> 351.0	105027	4.86	µg/L	94
		532.8 -> 353.0	31149			
ADONA	6.668	376.9 -> 250.9	291898	4.85	µg/L	96
		376.9 -> 84.8	73638			
HFPO-DA	5.834	284.9 -> 168.9	19023	5.04	µg/L	100
		284.9 -> 184.9	2487			
3:3FTCA	3.784	241.0 -> 177.0	12408	12.80	µg/L	98
		241.0 -> 117.0	1625			
5:3FTCA	6.160	341.0 -> 237.1	260425	61.87	µg/L	92
		341.0 -> 217.0	195273			
7:3FTCA	7.573	441.0 -> 316.9	122508	64.07	µg/L	100
		441.0 -> 336.9	260613			
EtFOSA	10.962	526.0 -> 219.0	21394	4.83	µg/L	96
		526.0 -> 169.0	28277			
EtFOSE	10.907	630.0 -> 58.9	58633	12.39	µg/L	100
		511.9 -> 219.0	20266			
MeFOSA	10.730	511.9 -> 169.0	26958	5.21	µg/L	91
		616.1 -> 58.9	49872			
MeFOSE	10.661	699.1 -> 79.9	4789	12.01	µg/L	100
		699.1 -> 98.8	2576			
PFDoDS	9.817	295.0 -> 201.0	14528	2.57	µg/L	98
		295.0 -> 84.9	3485			
NFDHA	5.350	279.0 -> 85.1	54951	5.15	µg/L	97
		229.0 -> 84.9	41459			
PFMBA	4.687	314.8 -> 134.9	147520	5.29	µg/L	100
PFMPA	3.438	314.8 -> 82.9	4889	5.34	µg/L	100
PFEESA	5.937			4.49	µg/L	100

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



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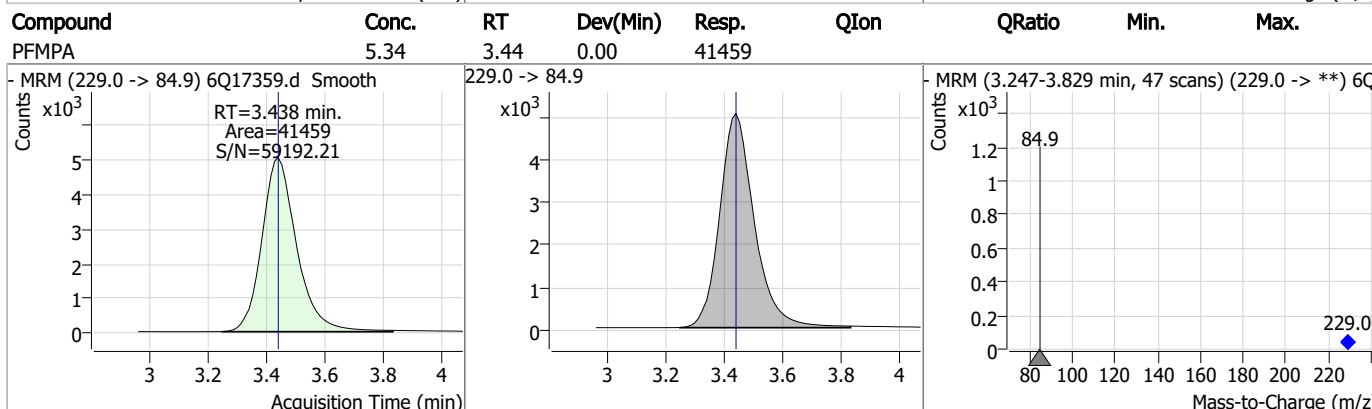
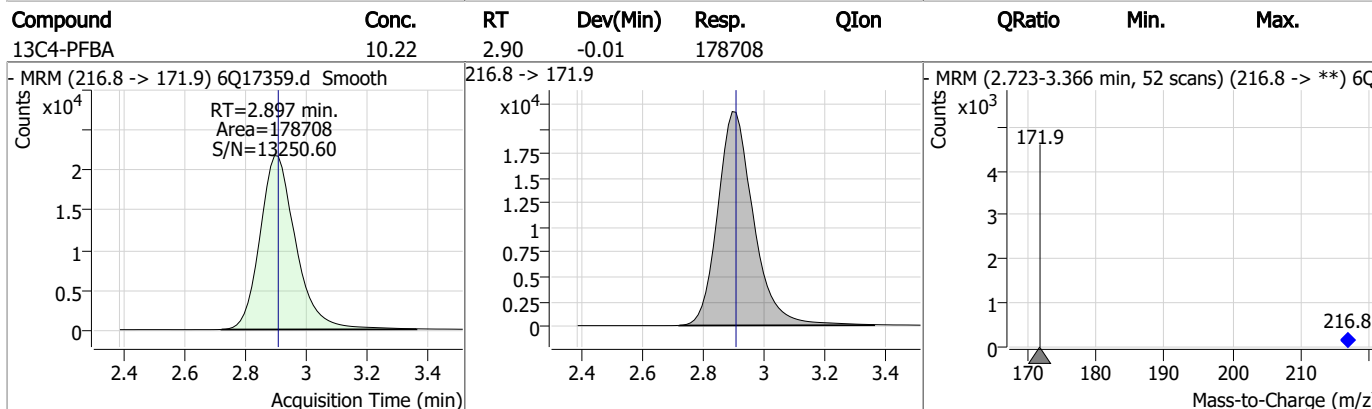
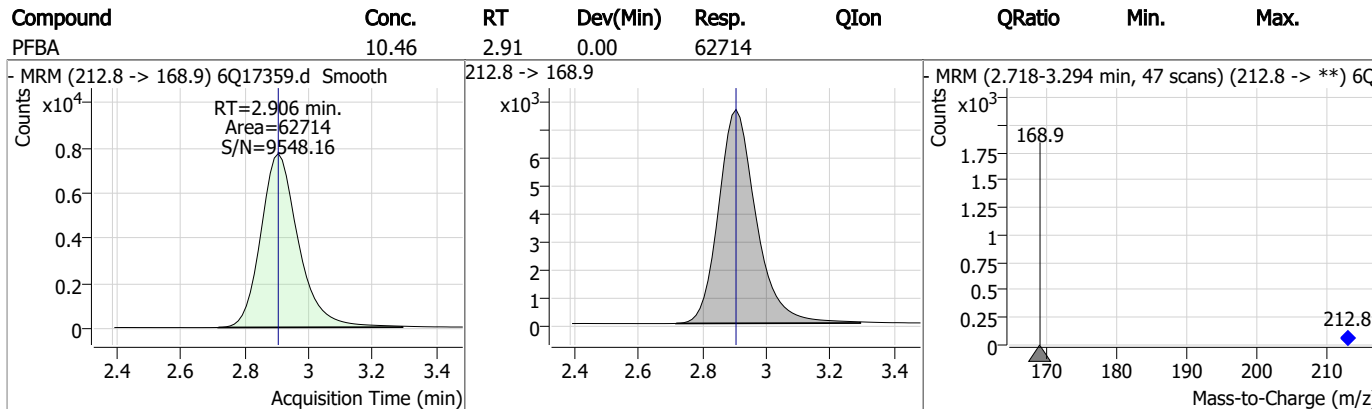
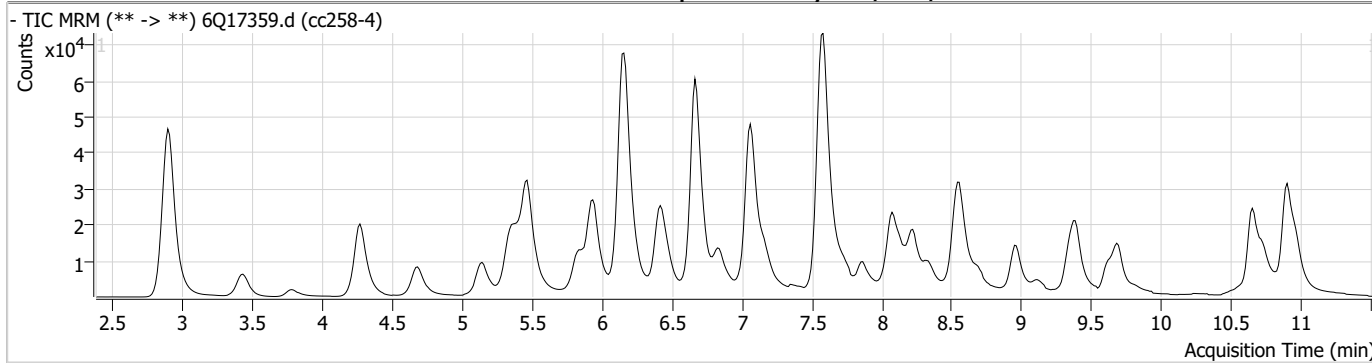
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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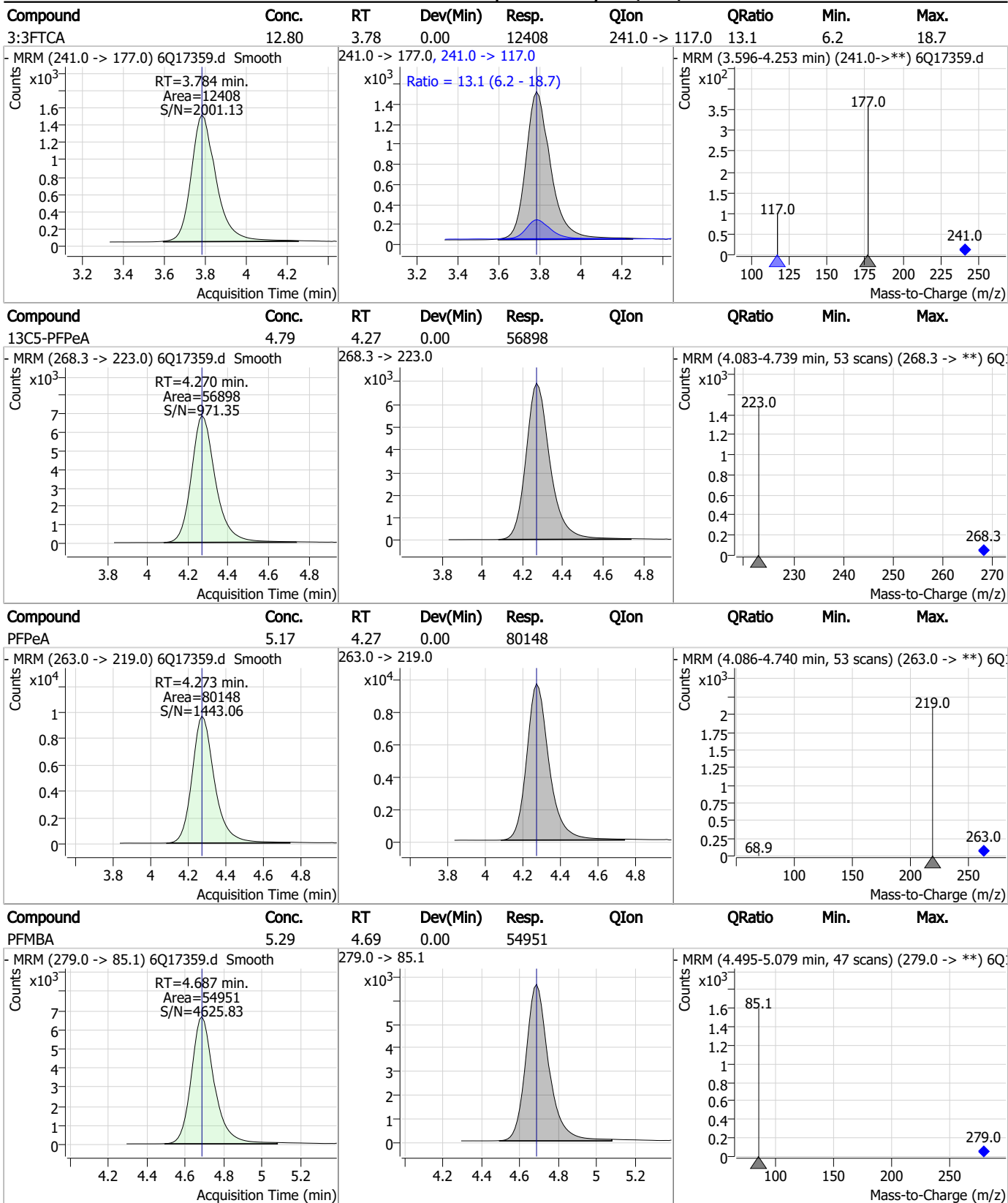
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Perfluorinated Compounds by LC/MS/MS



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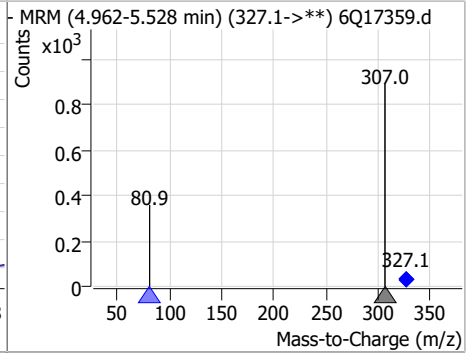
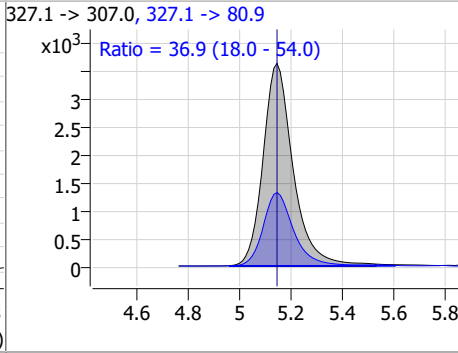
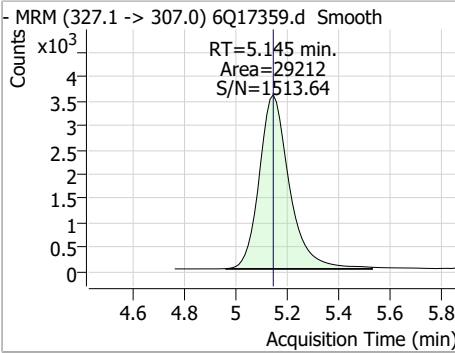
Perfluorinated Compounds by LC/MS/MS



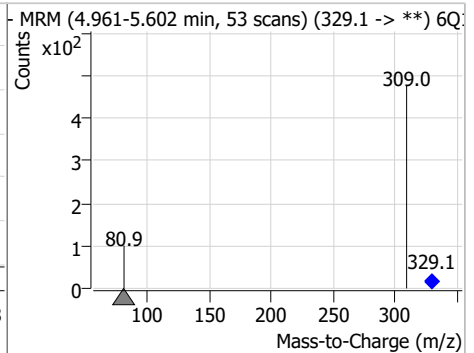
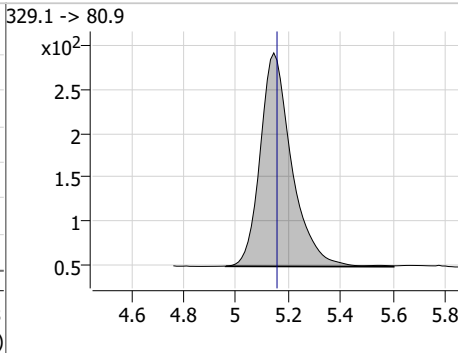
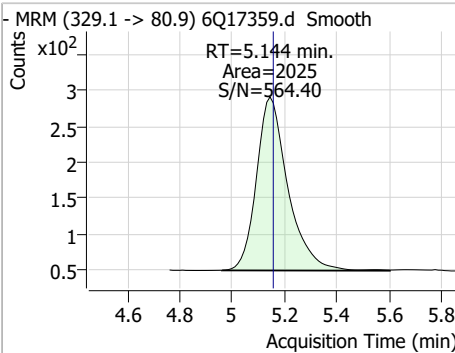
7.7.14

Perfluorinated Compounds by LC/MS/MS

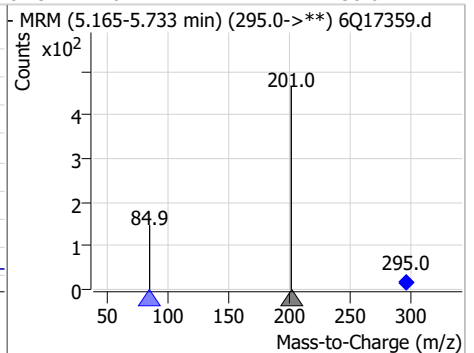
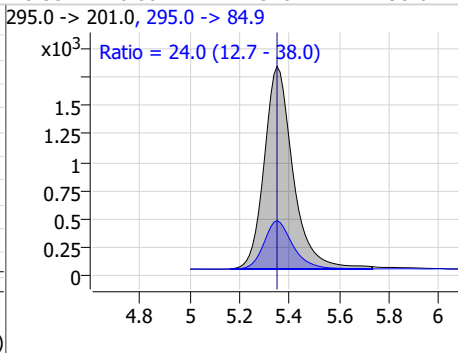
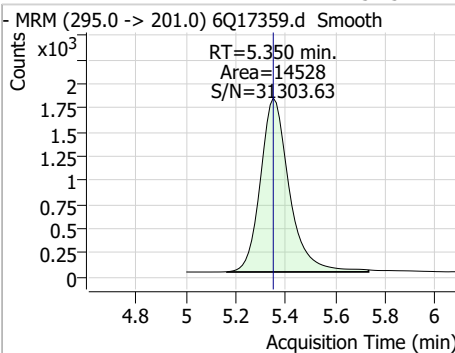
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	9.54	5.14	0.00	29212	327.1 -> 80.9	36.9	18.0	54.0



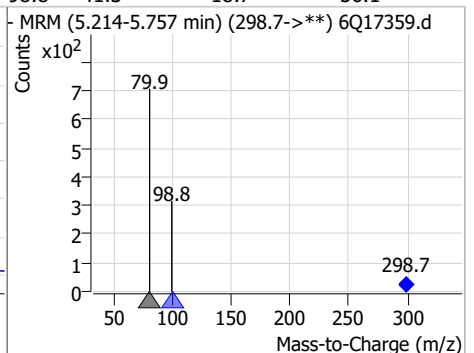
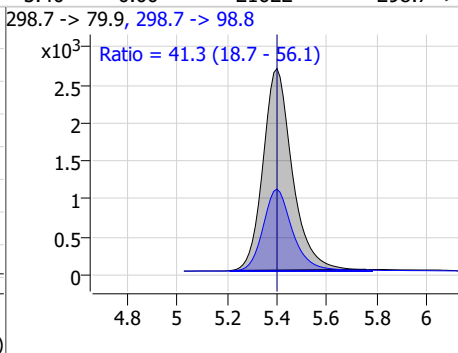
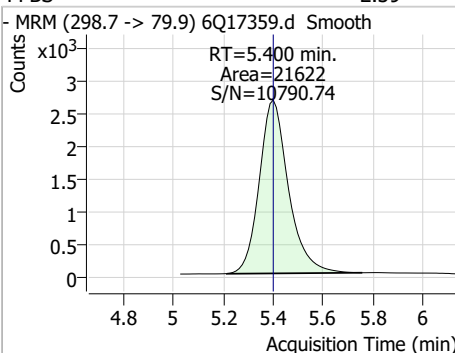
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	4.74	5.14	-0.01	2025	329.1 -> 80.9			



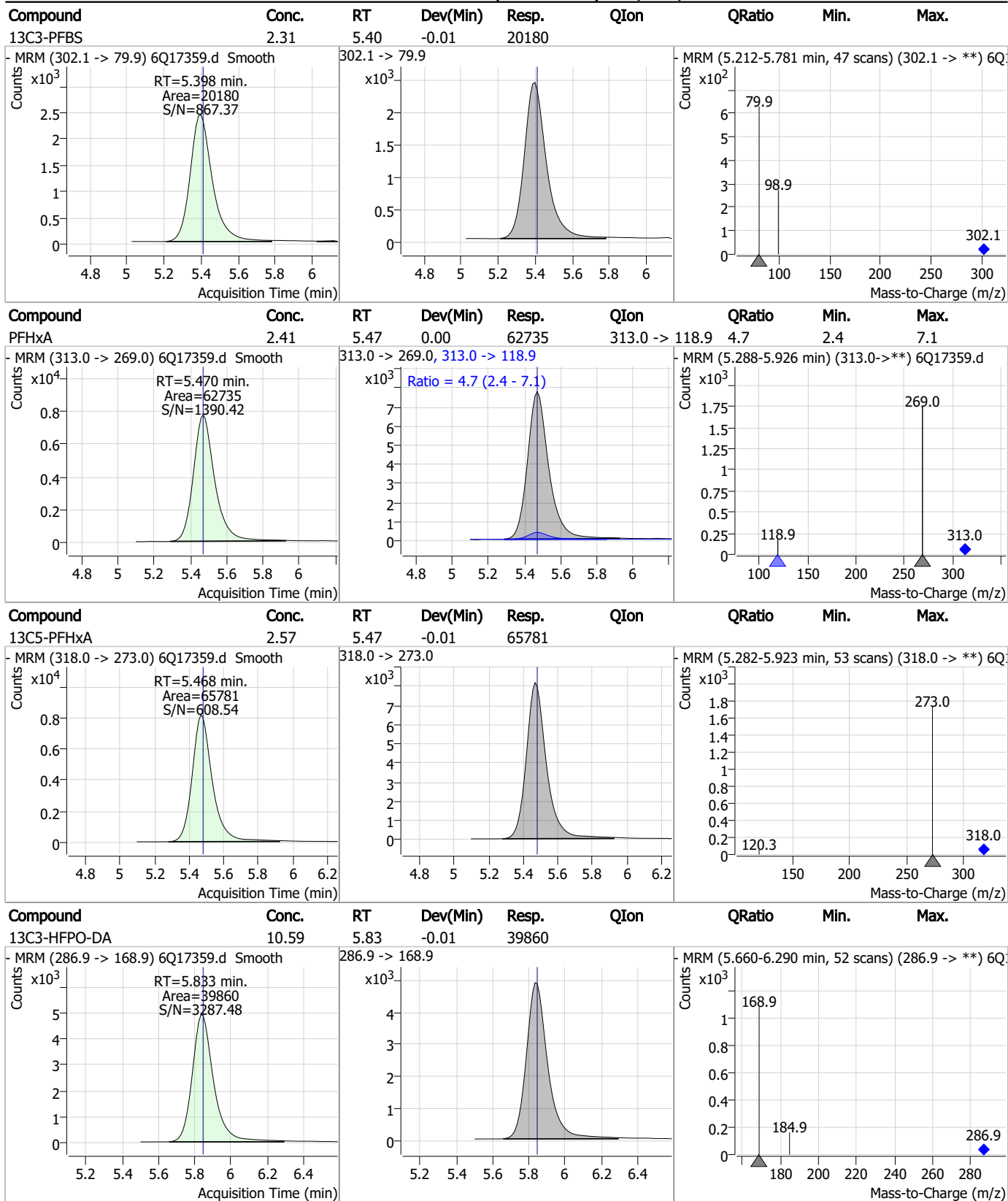
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	5.15	5.35	0.00	14528	295.0 -> 84.9	24.0	12.7	38.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.39	5.40	0.00	21622	298.7 -> 98.8	41.3	18.7	56.1



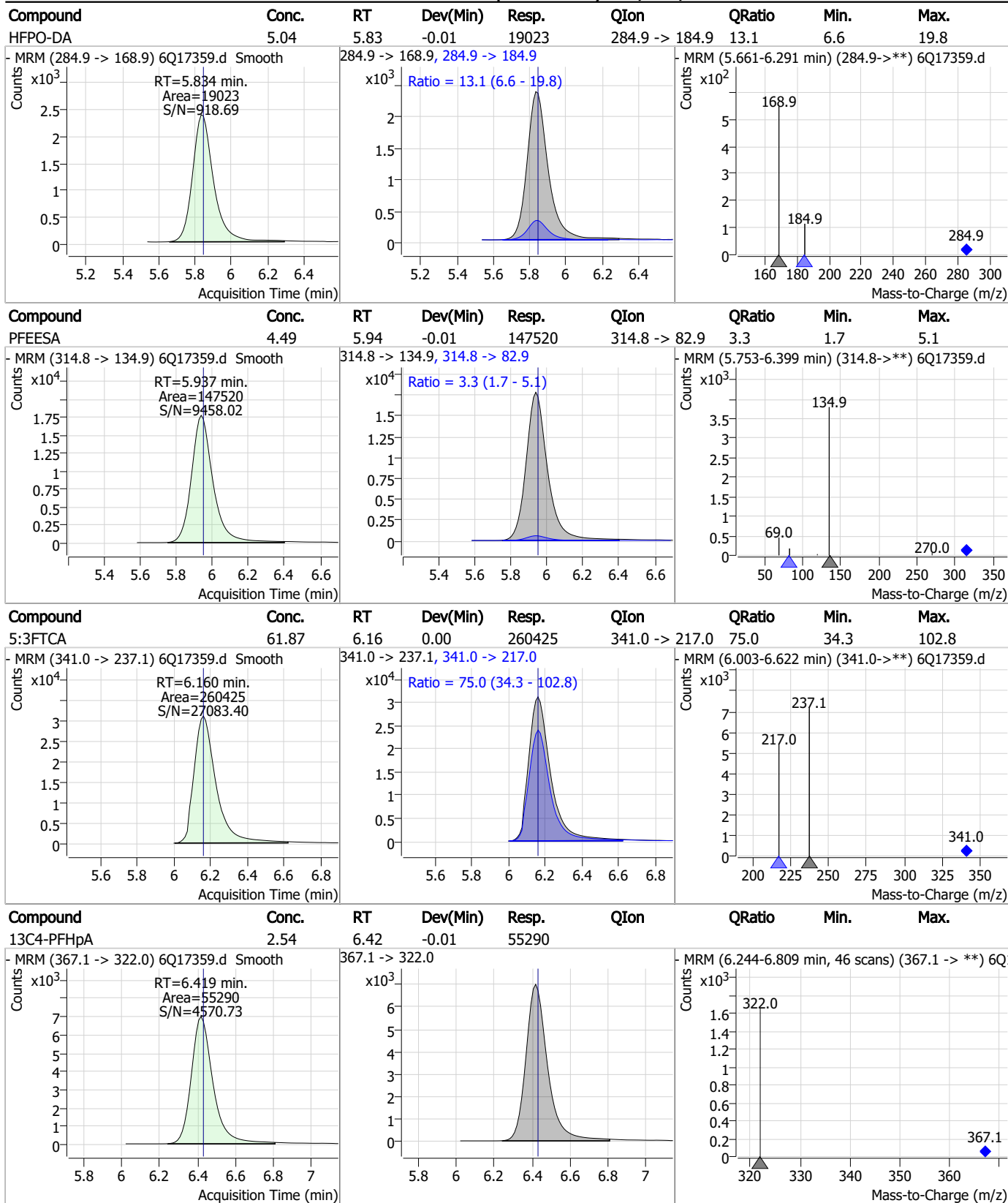
Perfluorinated Compounds by LC/MS/MS



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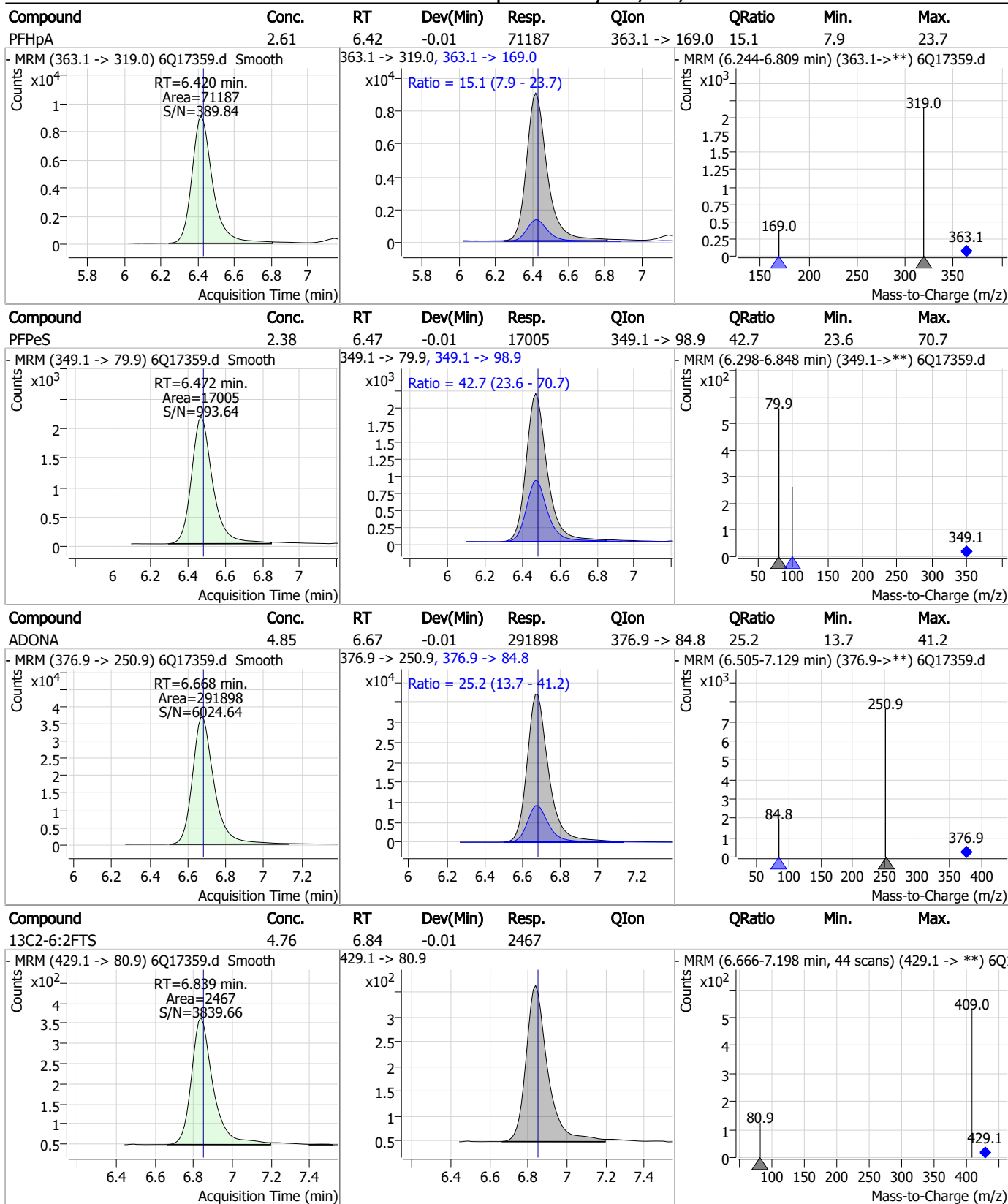


Perfluorinated Compounds by LC/MS/MS



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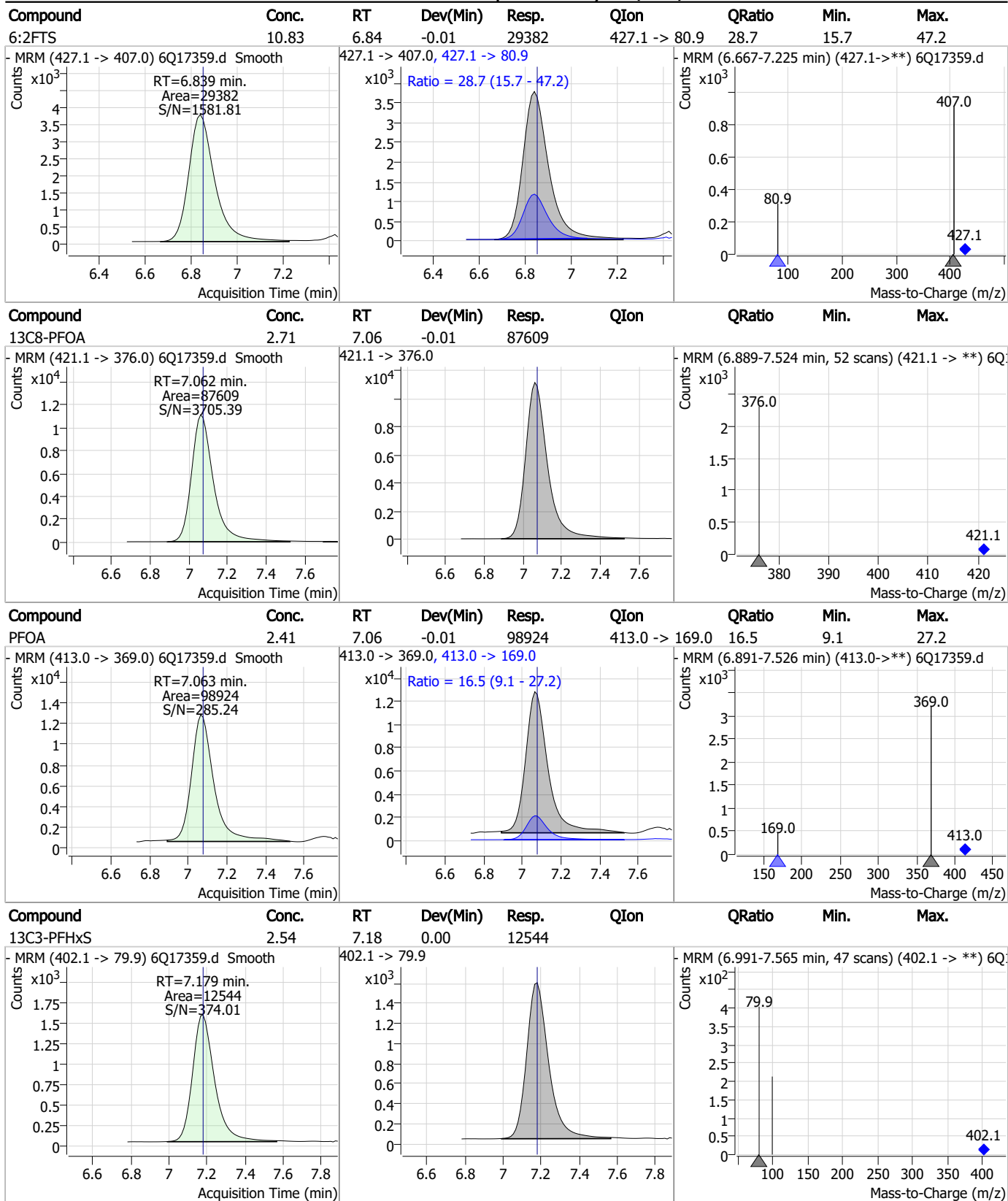
Perfluorinated Compounds by LC/MS/MS



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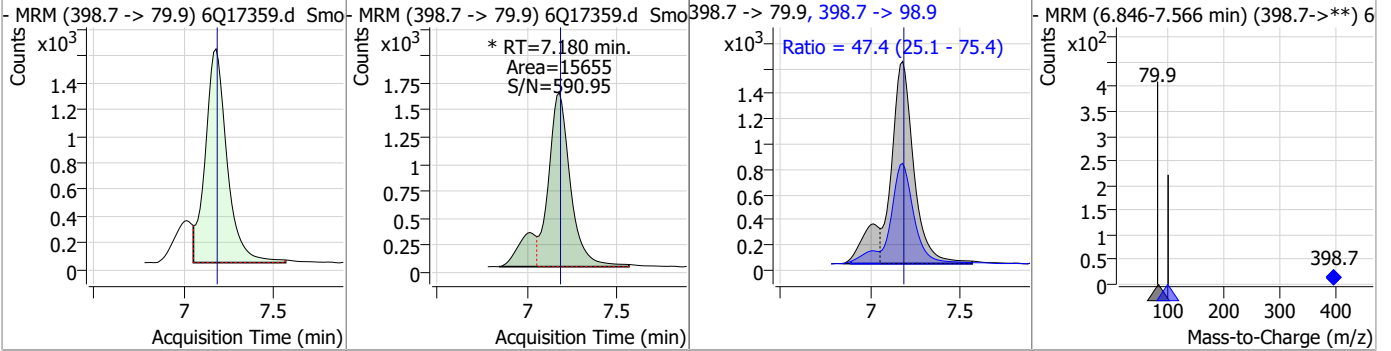
Perfluorinated Compounds by LC/MS/MS



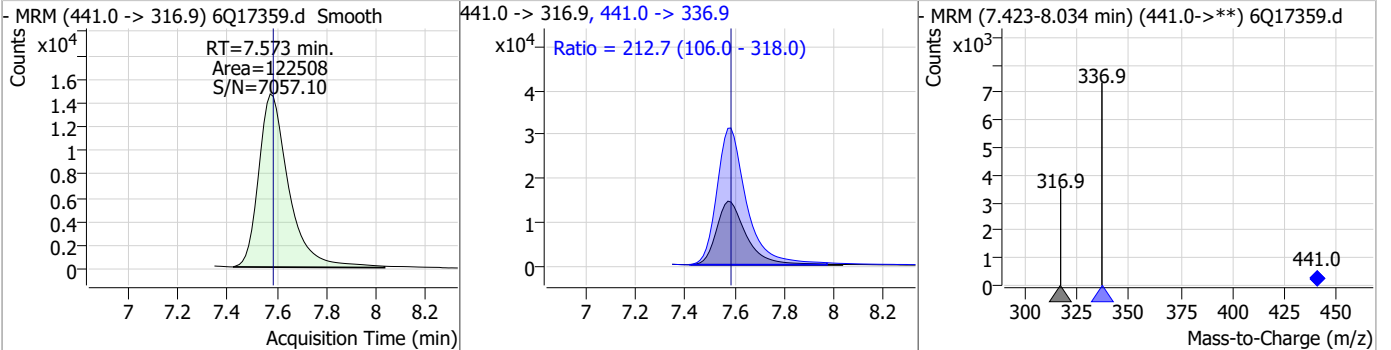
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Perfluorinated Compounds by LC/MS/MS

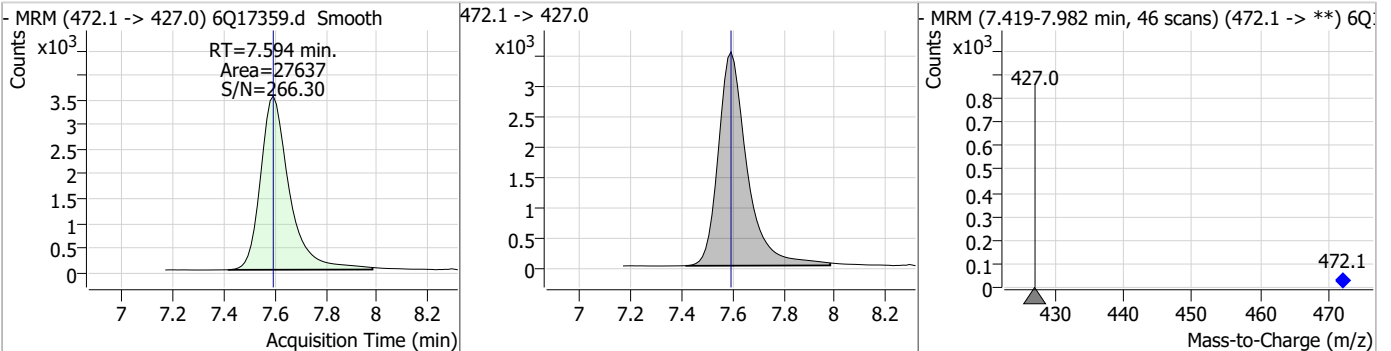
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.29	7.18	0.00	15655 (m)	398.7 -> 98.9	47.4	25.1	75.4



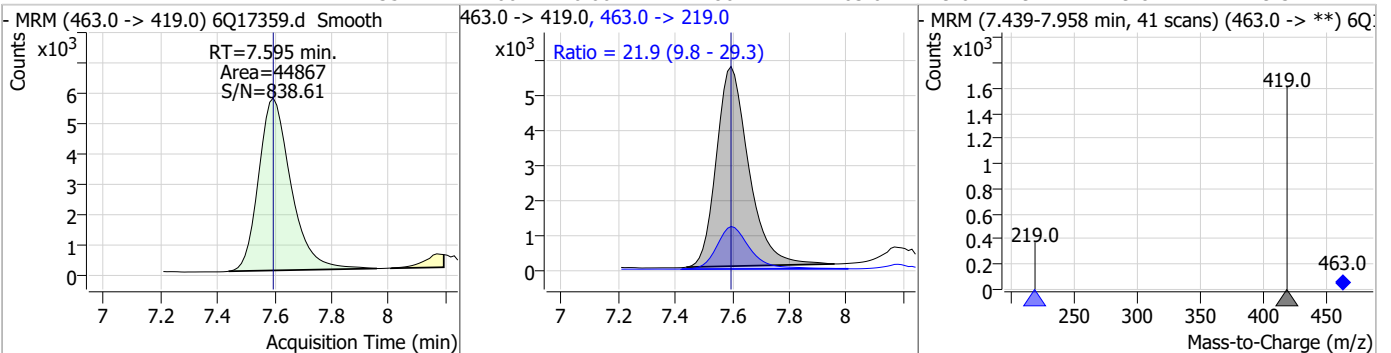
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	64.07	7.57	-0.01	122508	441.0 -> 336.9	212.7	106.0	318.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.21	7.59	0.00	27637	472.1 -> 427.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.35	7.60	0.00	44867	463.0 -> 219.0	21.9	9.8	29.3

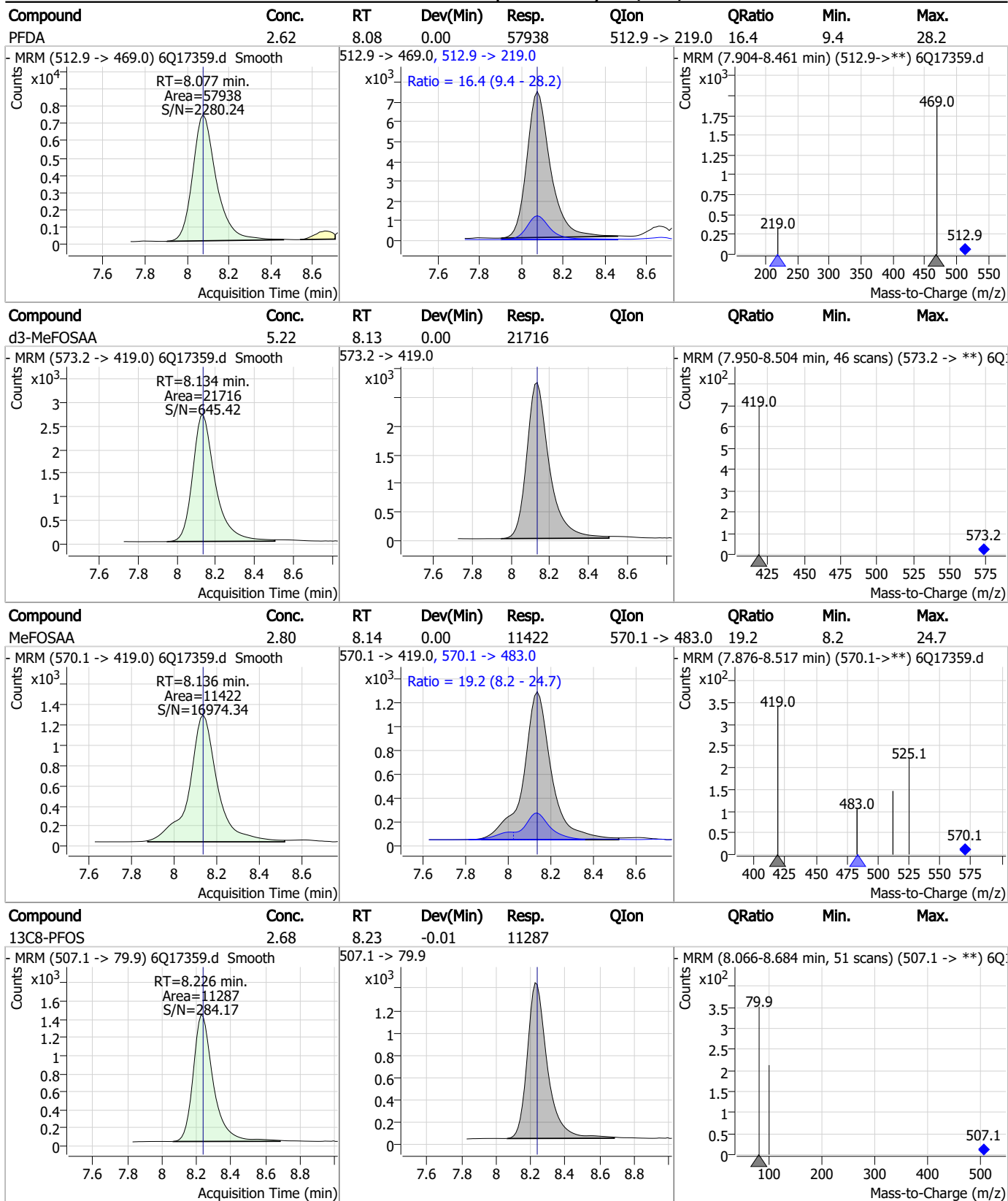


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.11	7.73	-0.01	12930	449.0 -> 98.9	53.8	24.9	74.6
8:2FTS	9.74	7.87	0.00	16576	527.1 -> 80.8	36.7	19.6	58.9
13C2-8:2FTS	5.13	7.86	-0.01	2860	529.1 -> 80.9			
13C6-PFDA	1.36	8.08	0.00	20379	519.1 -> 474.1			

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Perfluorinated Compounds by LC/MS/MS

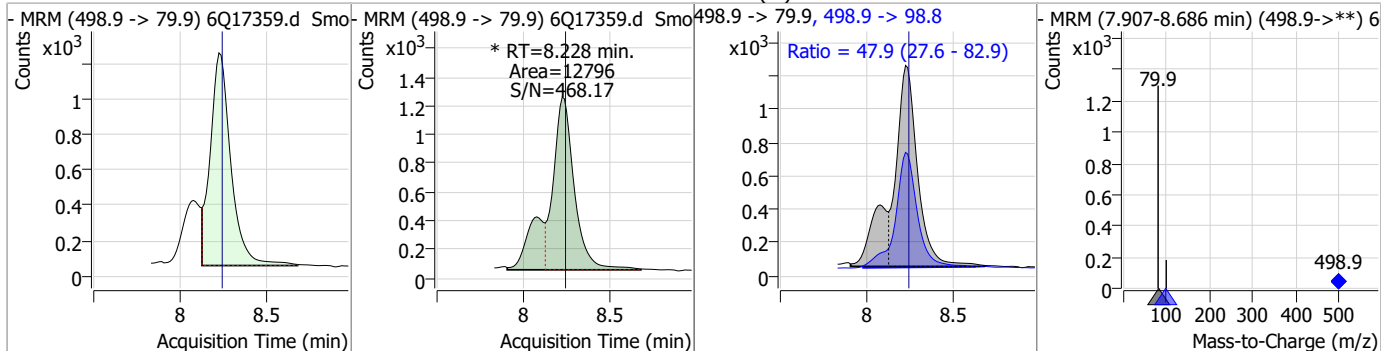


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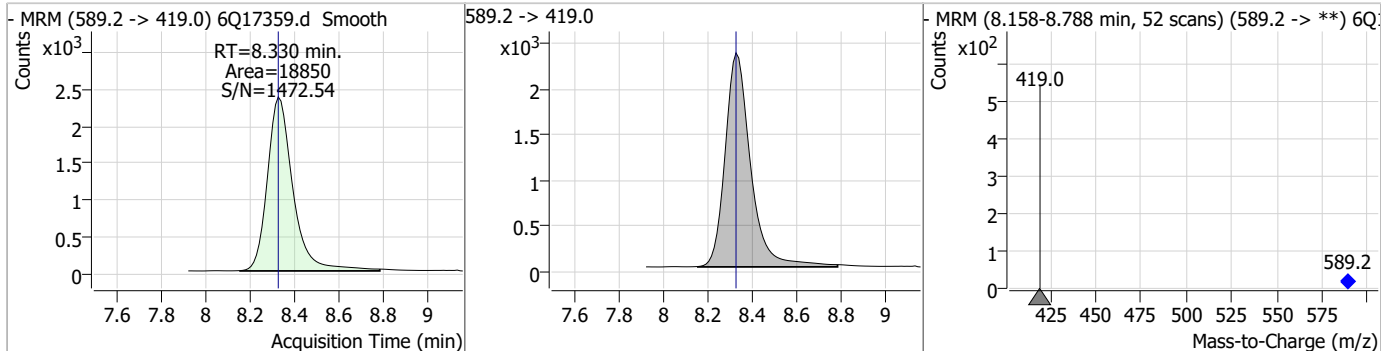
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Perfluorinated Compounds by LC/MS/MS

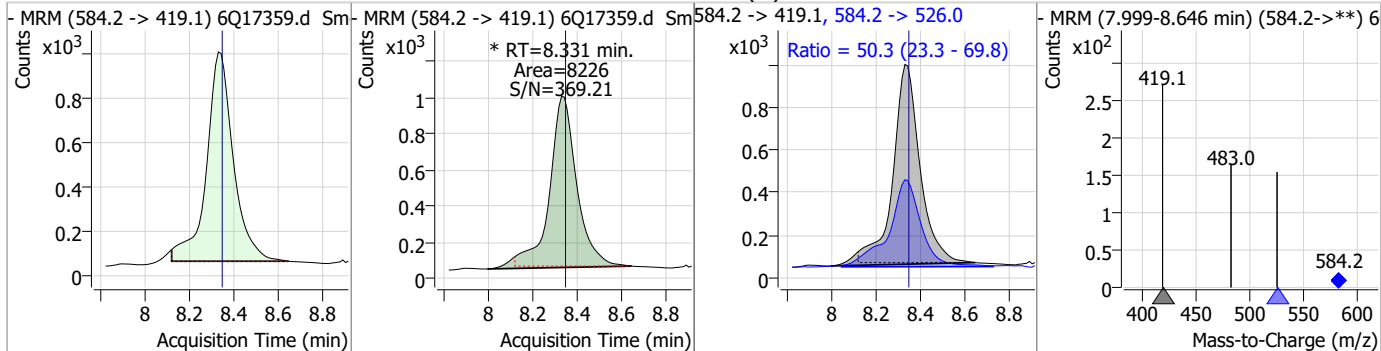
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.35	8.23	-0.01	12796 (m)	498.9 -> 98.8	47.9	27.6	82.9



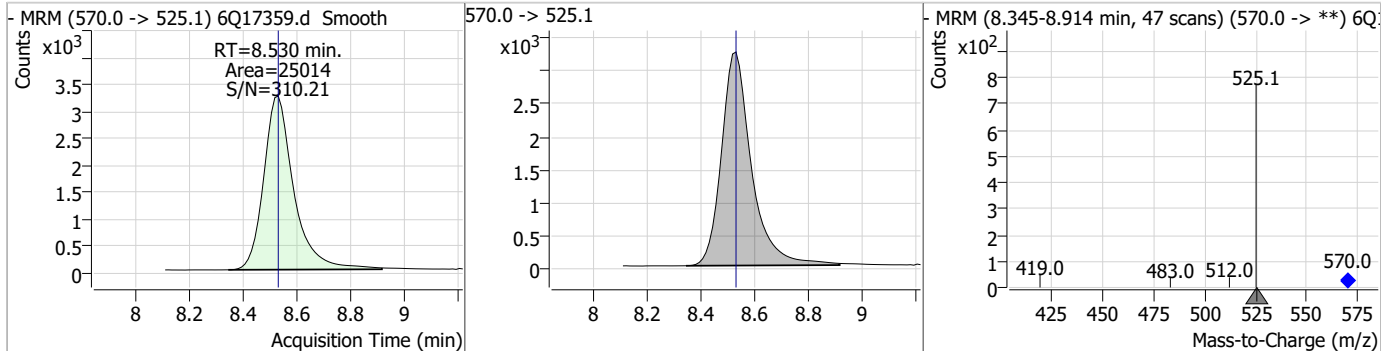
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.45	8.33	0.00	18850				



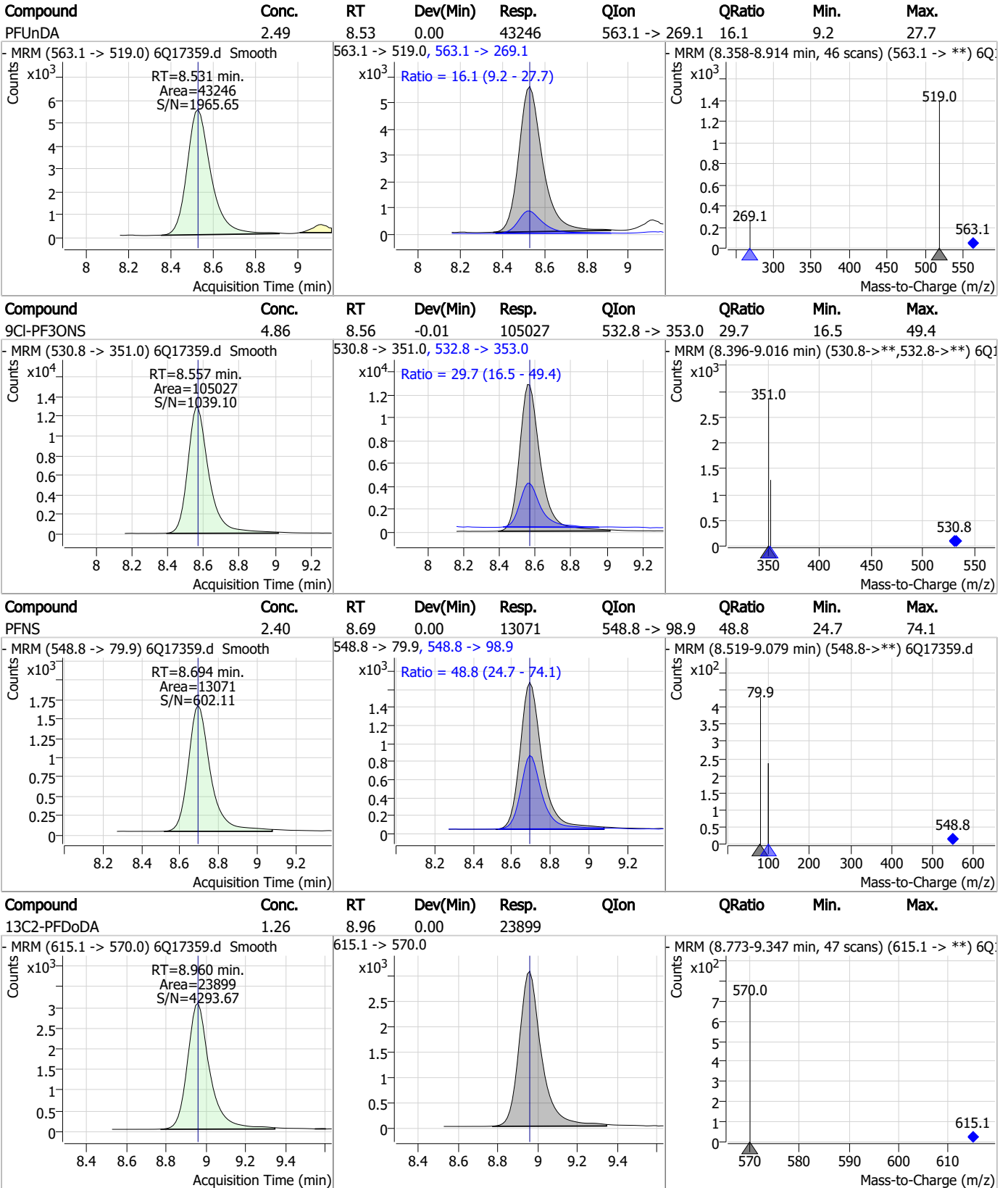
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.57	8.33	-0.01	8226 (m)	584.2 -> 526.0	50.3	23.3	69.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.30	8.53	0.00	25014				



Perfluorinated Compounds by LC/MS/MS

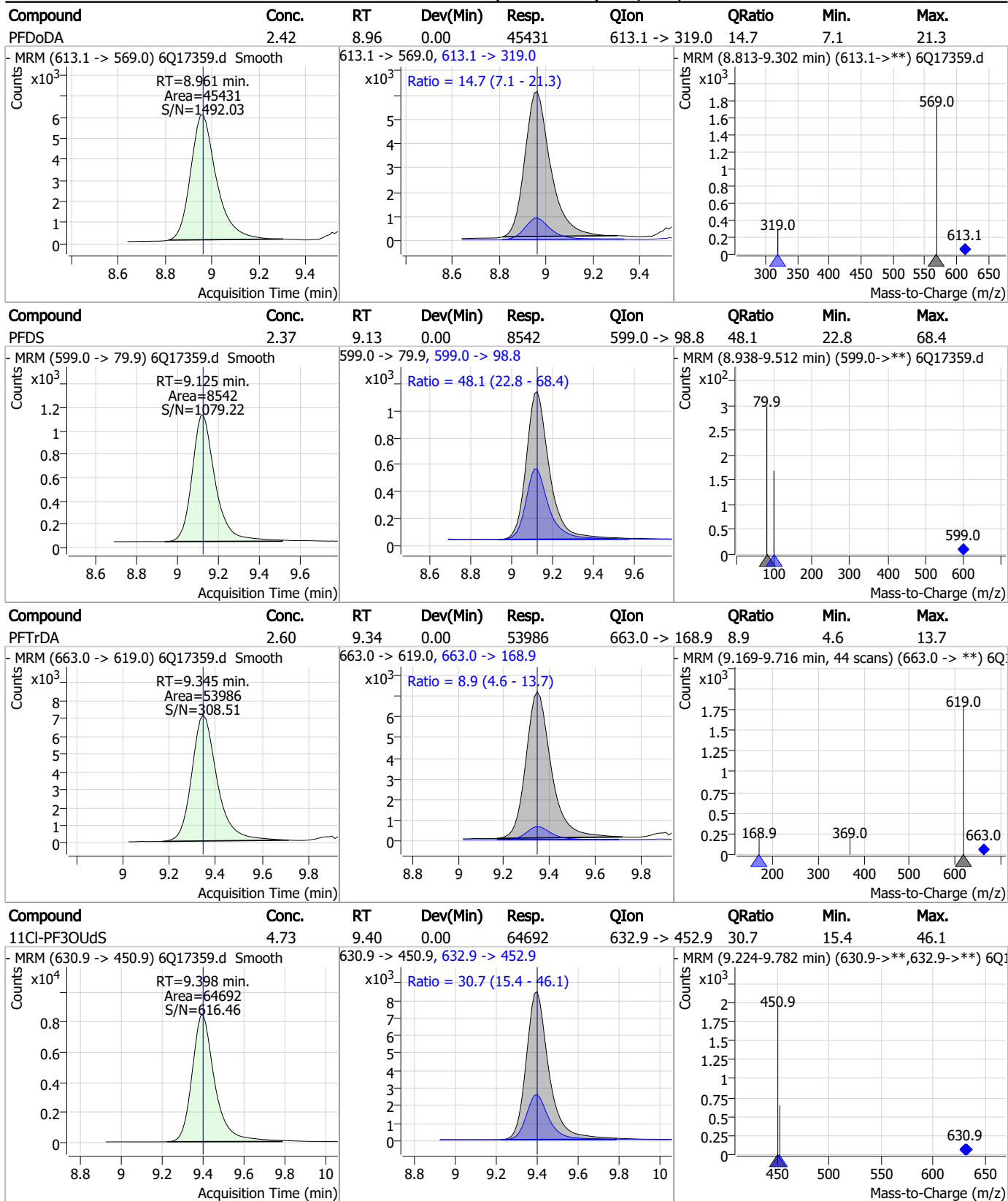


7.7.14

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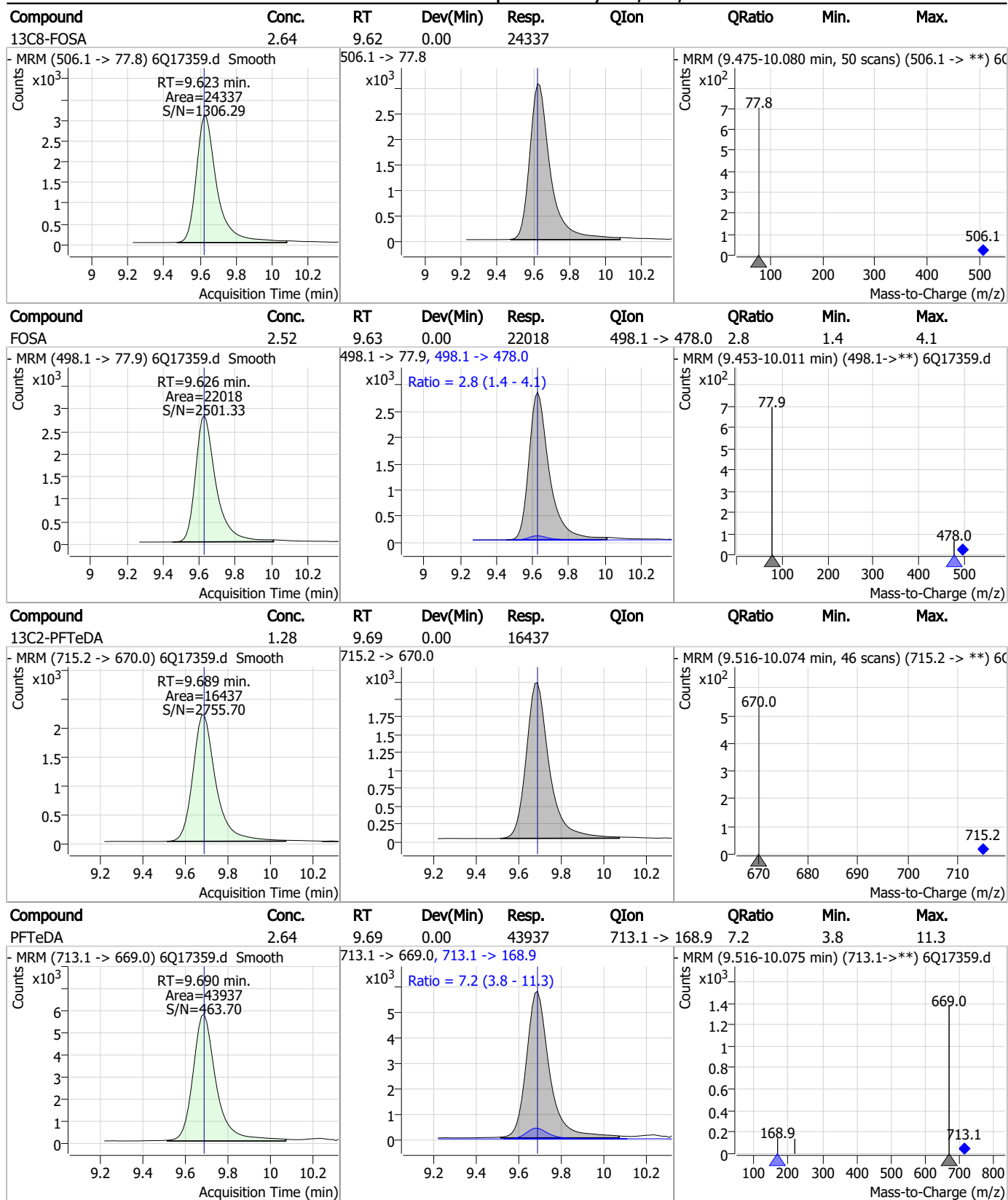


Perfluorinated Compounds by LC/MS/MS



7.7.14
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Perfluorinated Compounds by LC/MS/MS

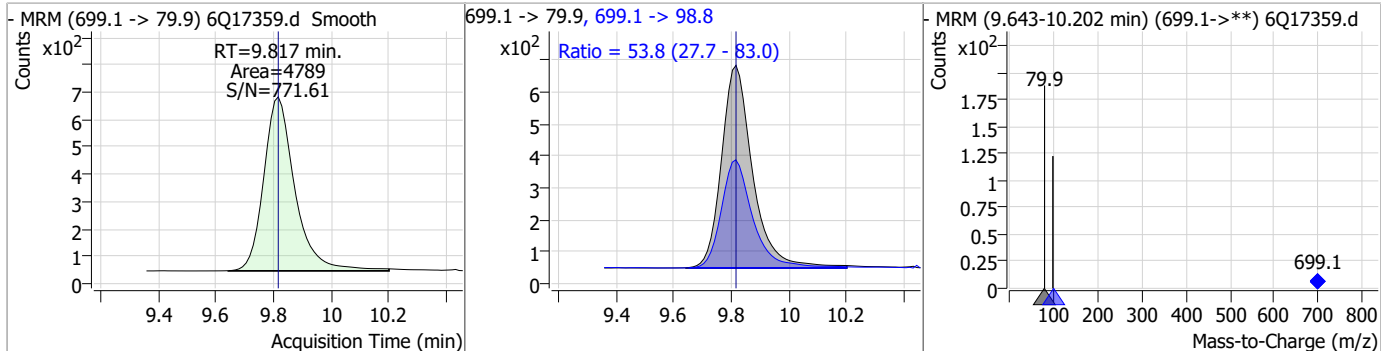


7.7.14

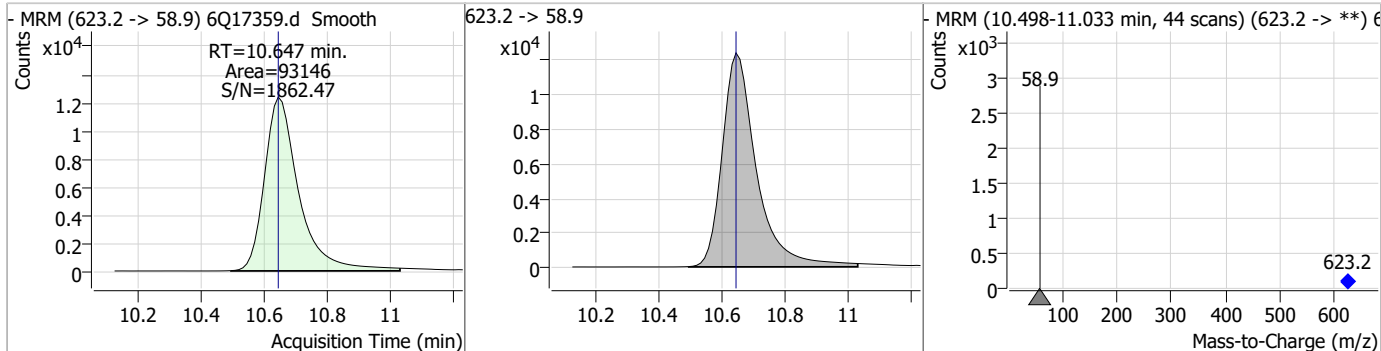


Perfluorinated Compounds by LC/MS/MS

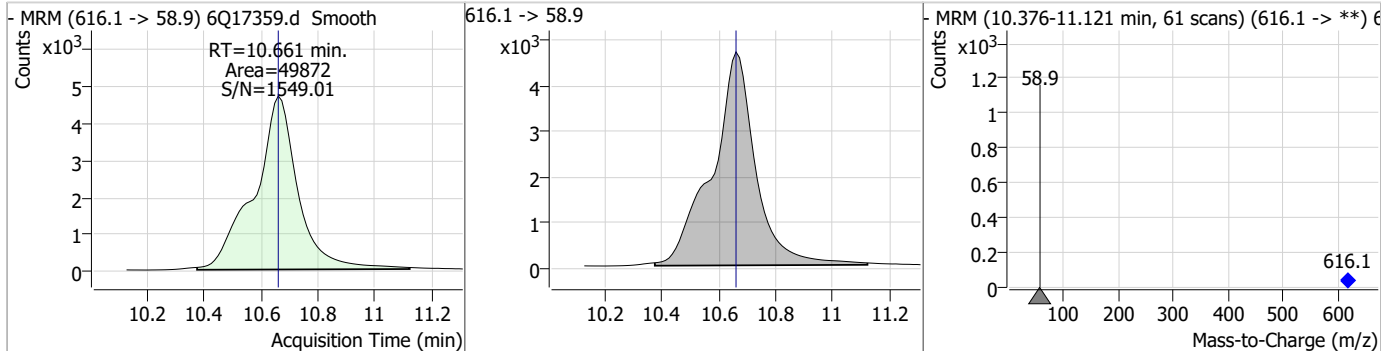
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.57	9.82	0.00	4789	699.1 -> 98.8	53.8	27.7	83.0



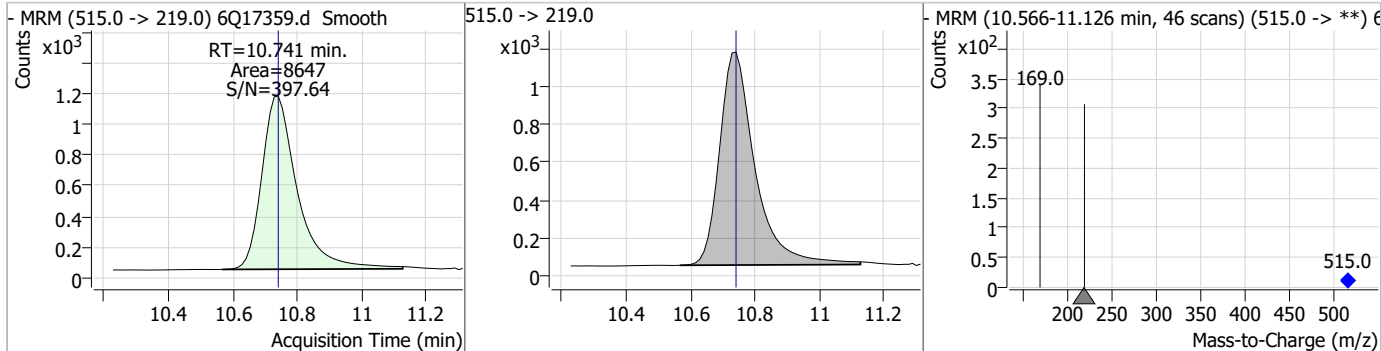
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.43	10.65	0.00	93146				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	12.01	10.66	0.00	49872				

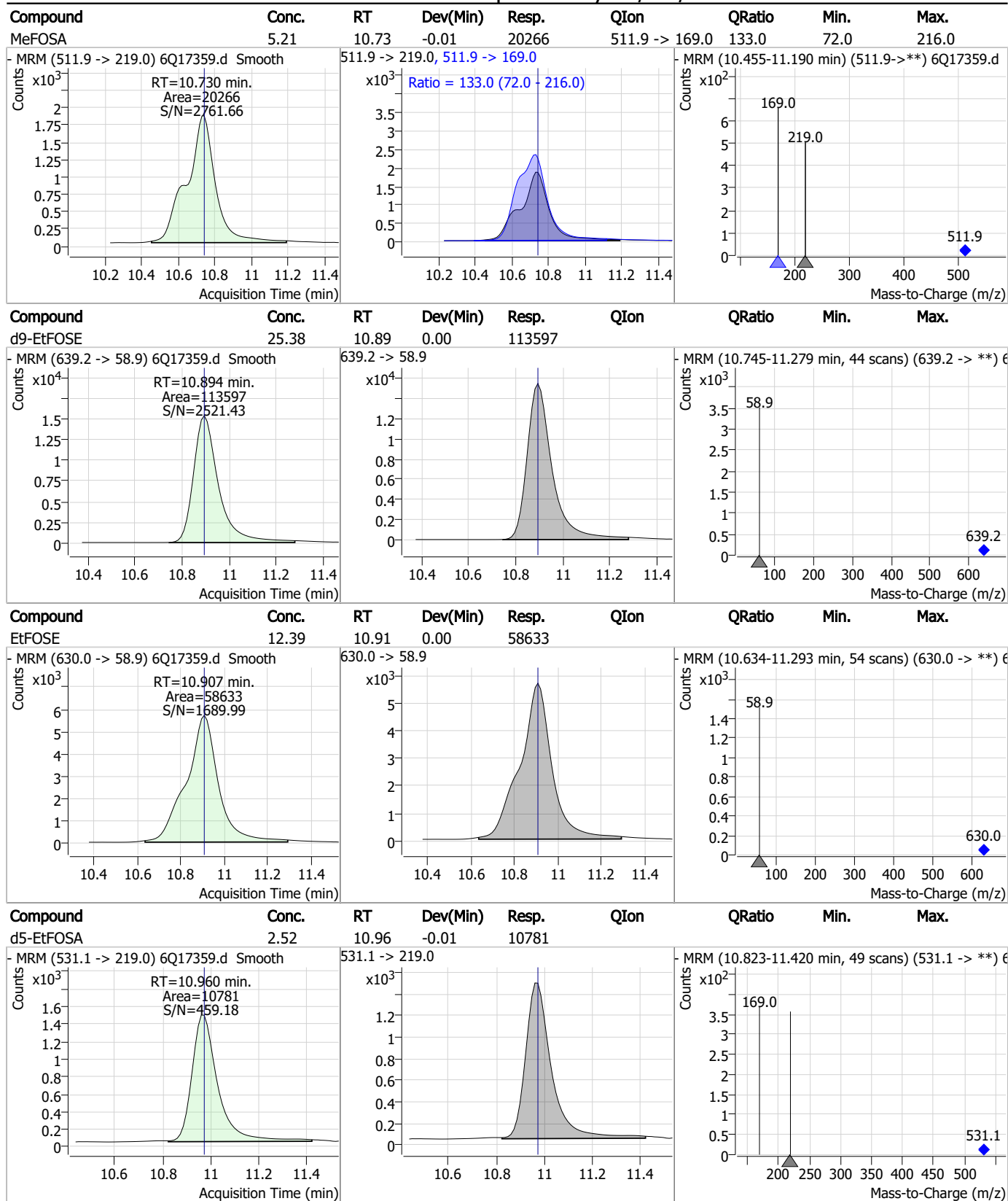


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.48	10.74	0.00	8647				



7.7.14
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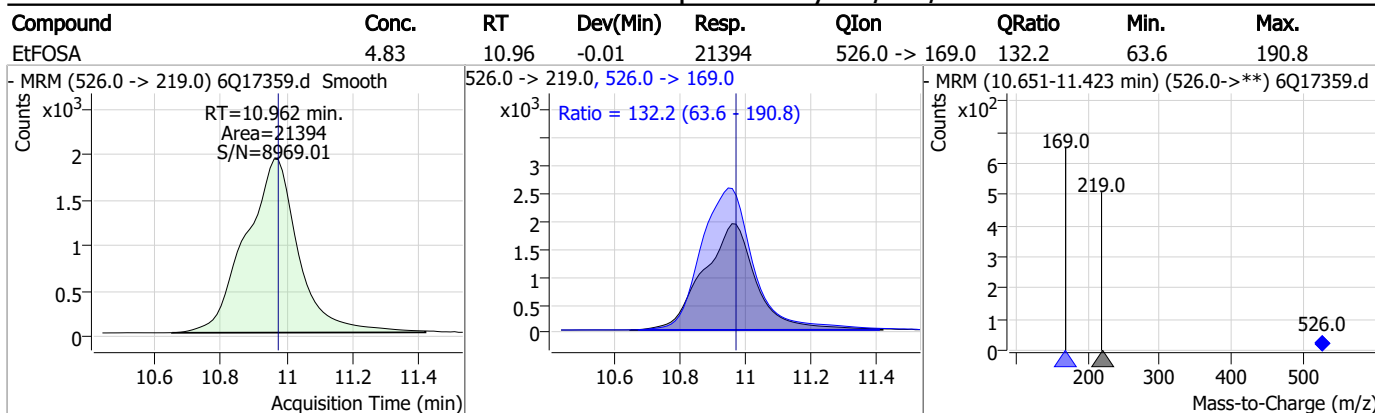
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q261-CC258 Method: EPA DRAFT 1633
Lab FileID: 6Q17359.D Analyst approved: 05/03/23 13:49 Martha Valls
Injection Time: 05/03/23 04:00 Supervisor approved: 05/03/23 19:39 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.23	Split peak
EtFOSAA	2991-50-6		8.33	Split peak

7.7.14.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17370.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/3/2023 6:40:10 AM
 Sample Name : cc258-4
 Vial : P1-A5
 DA Method File : 1633_042823_S6Q258.quantmethod.xml
 Batch Name : s6q261.batch.bin
 Sample Information : OP96301,S6Q261,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.910	216.8 -> 171.9	175689	10.00 µg/L	0.000
M5-PFPeA	4.270	268.3 -> 223.0	55515	5.00 µg/L	0.000
M5-PFHxA	5.468	318.0 -> 273.0	61190	2.50 µg/L	-0.012
M4-PFHpA	6.419	367.1 -> 322.0	55117	2.50 µg/L	-0.012
M8-PFOA	7.062	421.1 -> 376.0	80785	2.50 µg/L	-0.012
M9-PFNA	7.594	472.1 -> 427.0	27656	1.25 µg/L	0.000
M6-PFDA	8.064	519.1 -> 474.1	20736	1.25 µg/L	-0.012
M7-PFUnDA	8.517	570.0 -> 525.1	26370	1.25 µg/L	-0.013
M2-PFDoDA	8.948	615.1 -> 570.0	23786	1.25 µg/L	-0.012
M2-PFTeDA	9.677	715.2 -> 670.0	16193	1.25 µg/L	-0.012
M8-FOSA	9.623	506.1 -> 77.8	24602	2.50 µg/L	0.000
M3-PFBS	5.398	302.1 -> 79.9	20149	2.50 µg/L	-0.012
M3-PFHxS	7.179	402.1 -> 79.9	12281	2.50 µg/L	0.000
M8-PFOS	8.226	507.1 -> 79.9	11167	2.50 µg/L	-0.012
M2-4:2FTS	5.144	329.1 -> 80.9	2043	5.00 µg/L	-0.012
M2-6:2FTS	6.839	429.1 -> 80.9	2425	5.00 µg/L	-0.012
M2-8:2FTS	7.864	529.1 -> 80.9	2625	5.00 µg/L	-0.012
M3-MeFOSAA	8.122	573.2 -> 419.0	24174	5.00 µg/L	-0.012
M3-HFPO-DA	5.845	286.9 -> 168.9	39504	10.00 µg/L	0.000
M5-EtFOSAA	8.330	589.2 -> 419.0	19154	5.00 µg/L	0.000
M7-MeFOSE	10.647	623.2 -> 58.9	89718	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	109738	25.00 µg/L	0.000
M5-EtFOSA	10.973	531.1 -> 219.0	10682	2.50 µg/L	0.000
M3-MeFOSA	10.741	515.0 -> 219.0	8300	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	13497	2.50 µg/L	-0.012
13C3-PFBA	2.902	216.0 -> 172.0	73988	5.00 µg/L	0.000
18O2-PFHxS	7.177	403.0 -> 83.9	9339	2.50 µg/L	0.000
13C4-PFOA	7.063	417.1 -> 372.0	83892	2.50 µg/L	-0.012
13C2-PFDA	8.064	515.1 -> 470.1	25074	1.25 µg/L	-0.012
13C5-PFNA	7.595	468.0 -> 423.0	27727	1.25 µg/L	0.000
13C2-PFHxA	5.469	315.1 -> 270.0	53132	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.144	329.1 -> 80.9	2043	4.76 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 95.2%		
13C2-6:2FTS	6.839	429.1 -> 80.9	2425	4.65 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 93.1%		
13C2-8:2FTS	7.864	529.1 -> 80.9	2625	4.68 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 93.7%		
13C2-PFDoDA	8.948	615.1 -> 570.0	23786	1.14 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 91.2%		
13C2-PFTeDA	9.677	715.2 -> 670.0	16193	1.15 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 91.8%		
13C3-PFBS	5.398	302.1 -> 79.9	20149	2.29 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 91.7%		
13C3-PFHxS	7.179	402.1 -> 79.9	12281	2.47 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.8%	
13C4-PFBA	2.910	216.8 -> 171.9	175689	10.28 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.8%	
13C4-PFHpA	6.419	367.1 -> 322.0	55117	2.54 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.4%	
13C5-PFHxA	5.468	318.0 -> 273.0	61190	2.39 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.5%	
13C5-PFPeA	4.270	268.3 -> 223.0	55515	4.68 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.5%	
13C6-PFDA	8.064	519.1 -> 474.1	20736	1.25 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C7-PFUnDA	8.517	570.0 -> 525.1	26370	1.25 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C8-FOSA	9.623	506.1 -> 77.8	24602	2.76 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.3%	
13C8-PFOA	7.062	421.1 -> 376.0	80785	2.50 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C8-PFOS	8.226	507.1 -> 79.9	11167	2.75 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.9%	
13C9-PFNA	7.594	472.1 -> 427.0	27656	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.7%	
d3-MeFOSAA	8.122	573.2 -> 419.0	24174	6.01 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 120.2%	
13C3-HFPO-DA	5.845	286.9 -> 168.9	39504	10.50 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.0%	
d3-MeFOSA	10.741	515.0 -> 219.0	8300	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.5%	
d5-EtFOSAA	8.330	589.2 -> 419.0	19154	5.73 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 114.6%	
d7-MeFOSE	10.647	623.2 -> 58.9	89718	25.33 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
d9-EtFOSE	10.894	639.2 -> 58.9	109738	25.35 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.4%	
d5-EtFOSA	10.973	531.1 -> 219.0	10682	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.2%	
Target Compounds					QValue
4:2FTS	5.145	327.1 -> 307.0	28171	9.11 µg/L	96
		327.1 -> 80.9	10830		
6:2FTS	6.839	427.1 -> 407.0	25020	9.38 µg/L	93
		427.1 -> 80.9	8779		
8:2FTS	7.865	527.1 -> 507.0	15426	9.87 µg/L	95
		527.1 -> 80.8	6510		
EtFOSAA	8.331	584.2 -> 419.1	8278	2.54 µg/L	100
		584.2 -> 526.0	3858		
FOSA	9.627	498.1 -> 77.9	21213	2.41 µg/L	98
		498.1 -> 478.0	400		
MeFOSAA	8.123	570.1 -> 419.0	11302	2.49 µg/L	100
		570.1 -> 483.0	1870		
PFBA	2.906	212.8 -> 168.9	62375	10.59 µg/L	100
PFBS	5.400	298.7 -> 79.9	21854	2.42 µg/L	96
		298.7 -> 98.8	8673		
PFDA	8.077	512.9 -> 469.0	60364	2.68 µg/L	93
		512.9 -> 219.0	9484		
PFDoDA	8.948	613.1 -> 569.0	47436	2.54 µg/L	98
		613.1 -> 319.0	6264		
PFDS	9.113	599.0 -> 79.9	8208	2.31 µg/L	88

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.420	599.0 -> 98.8	4371	2.51	µg/L	100
		363.1 -> 319.0	68159			
PFHpS	7.734	363.1 -> 169.0	10696	2.24	µg/L	96
		449.0 -> 79.9	13533			
PFHxA	5.470	449.0 -> 98.9	7052	2.49	µg/L	100
		313.0 -> 269.0	60326			
PFHxS	7.180	313.0 -> 118.9	2818	2.34	µg/L	95
		398.7 -> 79.9	15636			
PFNA	7.595	398.7 -> 98.9	7348	2.54	µg/L	100
		463.0 -> 419.0	48606			
PFNS	8.694	463.0 -> 219.0	9593	2.32	µg/L	95
		548.8 -> 79.9	12499			
PFOA	7.063	548.8 -> 98.9	6603	2.58	µg/L	96
		413.0 -> 369.0	98046			
PFOS	8.228	413.0 -> 169.0	15888	2.21	µg/L	100
		498.9 -> 79.9	11939			
PFPeA	4.273	498.9 -> 98.8	6568	5.25	µg/L	100
		263.0 -> 219.0	79329			
PFPeS	6.472	349.1 -> 79.9	16385	2.34	µg/L	95
		349.1 -> 98.9	7150			
PFTeDA	9.677	713.1 -> 669.0	44487	2.72	µg/L	98
		713.1 -> 168.9	3067			
PFTrDA	9.332	663.0 -> 619.0	53325	2.58	µg/L	99
		663.0 -> 168.9	4746			
PFUnDA	8.518	563.1 -> 519.0	43158	2.36	µg/L	97
		563.1 -> 269.1	7415			
11CI-PF3OUdS	9.385	630.9 -> 450.9	67284	4.96	µg/L	99
		632.9 -> 452.9	20210			
9CI-PF3ONS	8.557	530.8 -> 351.0	103818	4.84	µg/L	99
		532.8 -> 353.0	33281			
ADONA	6.681	376.9 -> 250.9	280245	4.70	µg/L	99
		376.9 -> 84.8	75974			
HFPO-DA	5.846	284.9 -> 168.9	18654	4.99	µg/L	99
		284.9 -> 184.9	2353			
3:3FTCA	3.784	241.0 -> 177.0	12145	12.85	µg/L	100
		241.0 -> 117.0	1504			
5:3FTCA	6.160	341.0 -> 237.1	257346	65.73	µg/L	93
		341.0 -> 217.0	190459			
7:3FTCA	7.573	441.0 -> 316.9	120570	67.79	µg/L	95
		441.0 -> 336.9	265073			
EtFOSA	10.975	526.0 -> 219.0	21774	4.96	µg/L	100
		526.0 -> 169.0	27657			
EtFOSE	10.907	630.0 -> 58.9	61899	13.54	µg/L	100
		511.9 -> 219.0	19812			
MeFOSA	10.730	511.9 -> 169.0	26458	5.30	µg/L	92
		616.1 -> 58.9	51328			
MeFOSE	10.661	699.1 -> 79.9	4467	12.83	µg/L	100
		699.1 -> 98.8	2391			
PFDoDS	9.804	295.0 -> 201.0	13701	2.43	µg/L	98
		295.0 -> 84.9	3475			
NFDHA	5.350	279.0 -> 85.1	54236	5.23	µg/L	100
		229.0 -> 84.9	40735			
PFMBA	4.687	314.8 -> 134.9	145177	5.38	µg/L	100
		314.8 -> 82.9	5065			
PFMPA	3.438			4.76	µg/L	100
PFEESA	5.937					

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



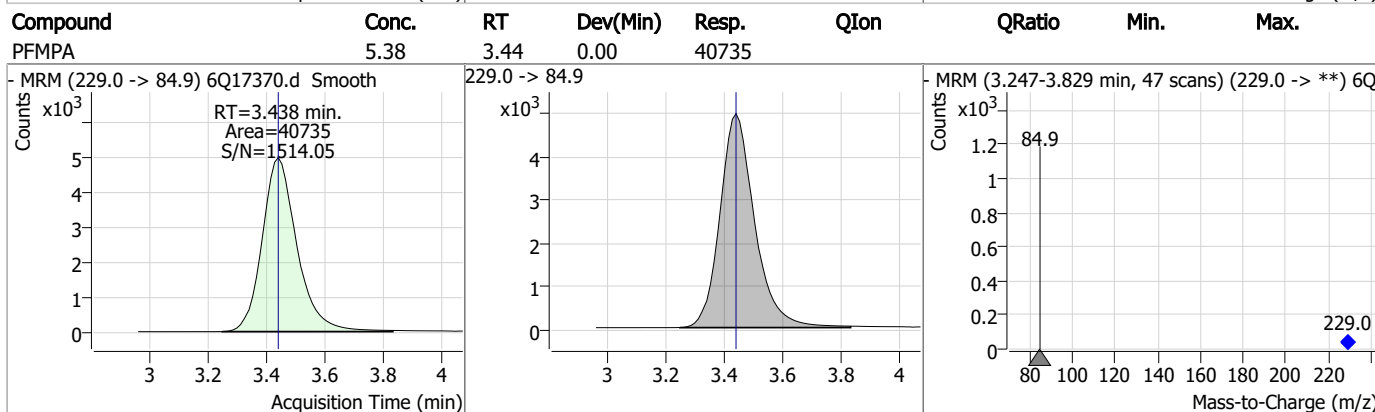
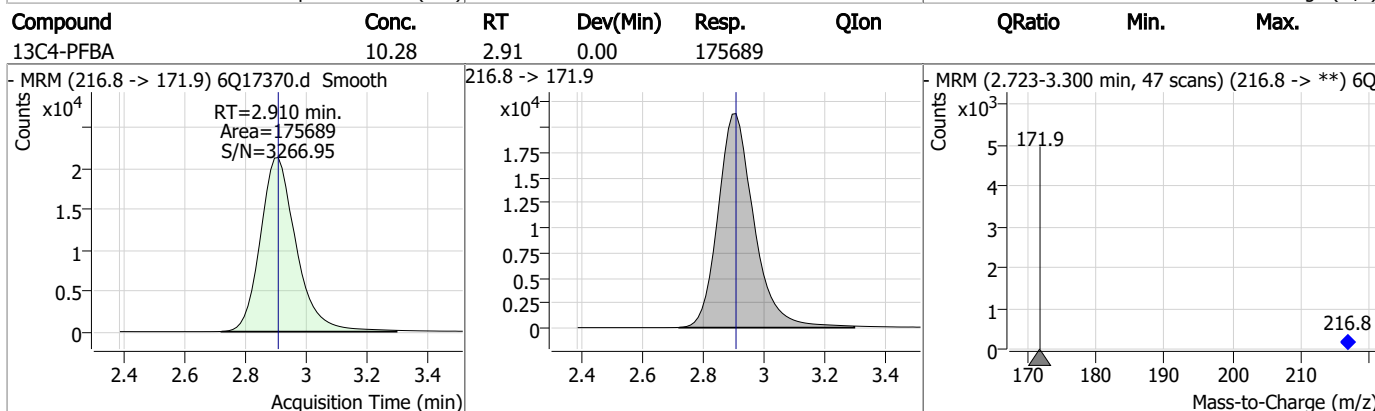
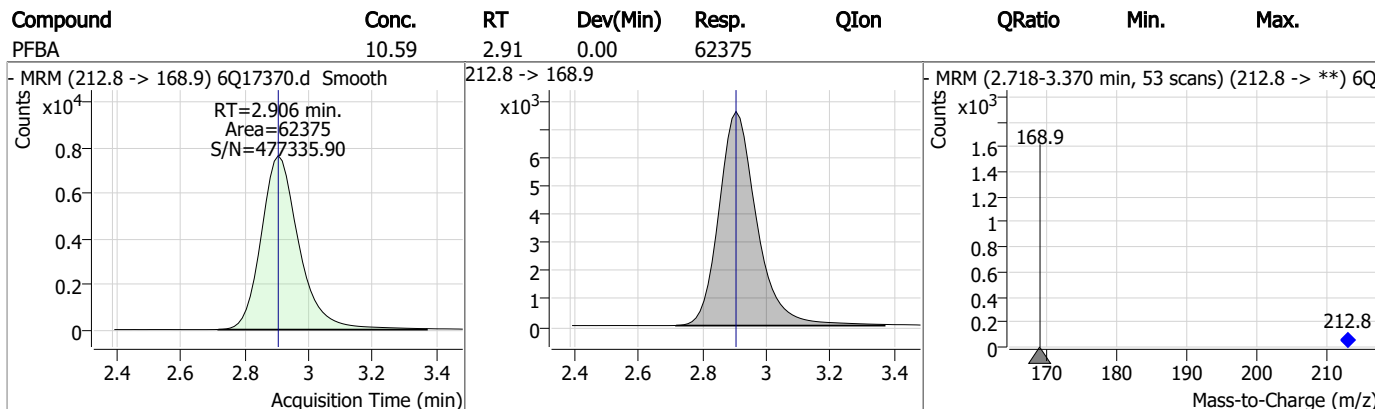
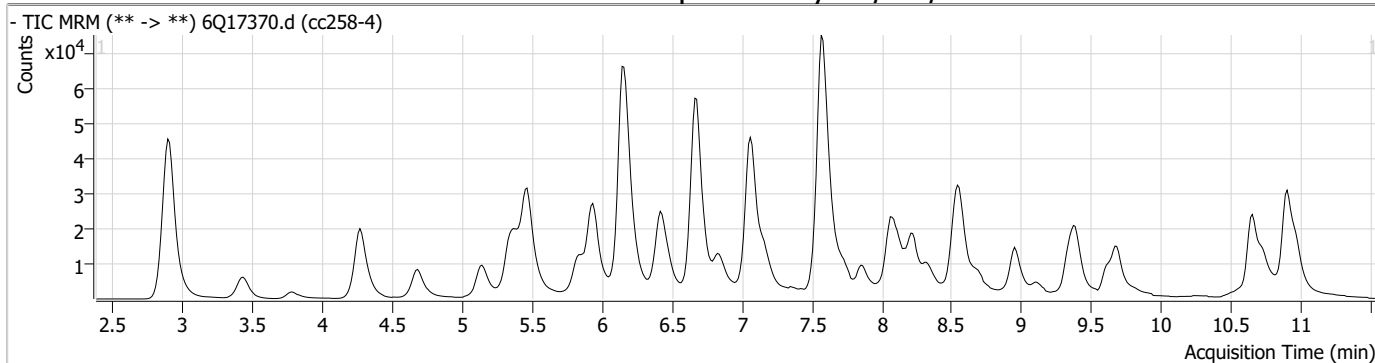
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.15

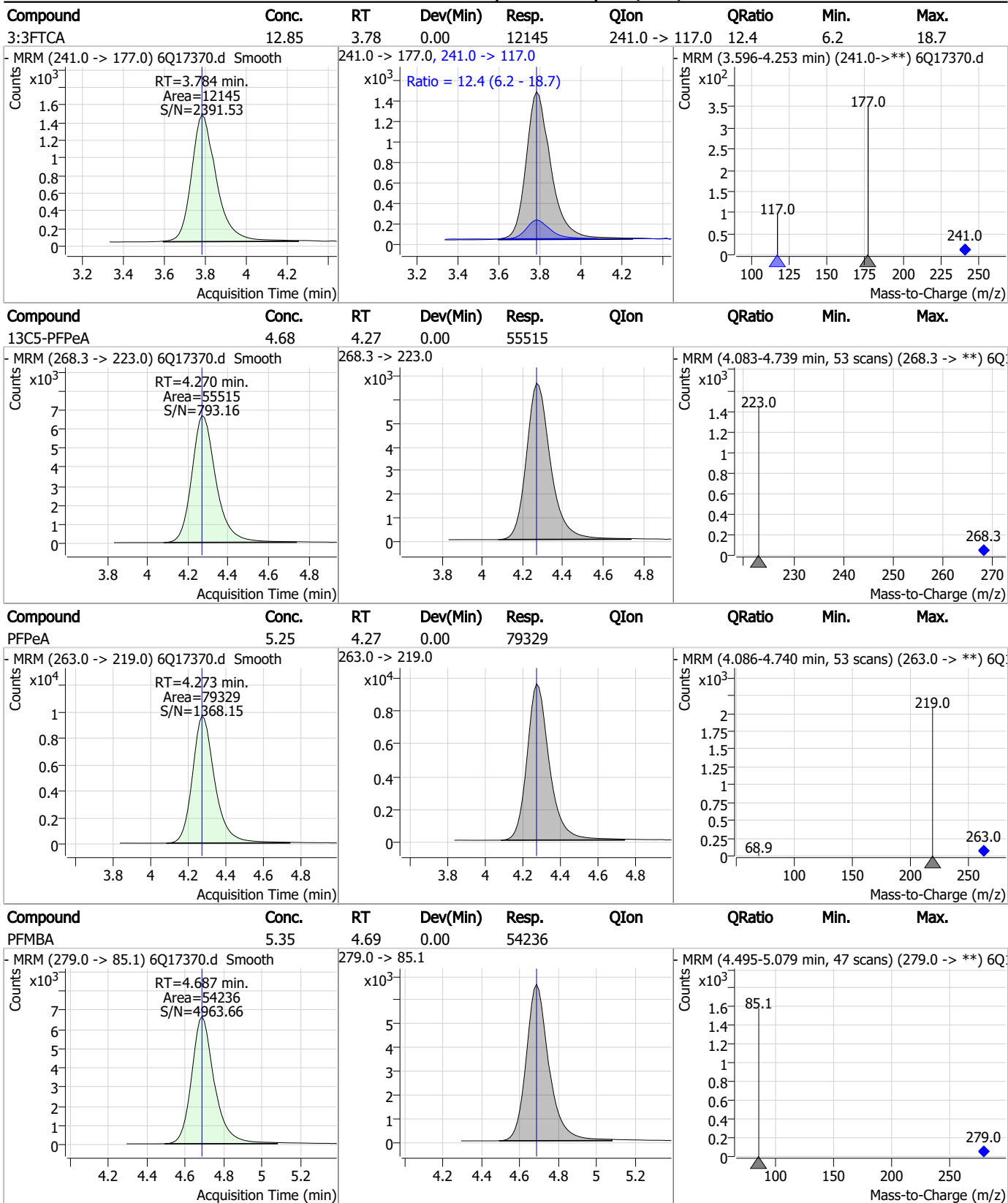
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Perfluorinated Compounds by LC/MS/MS



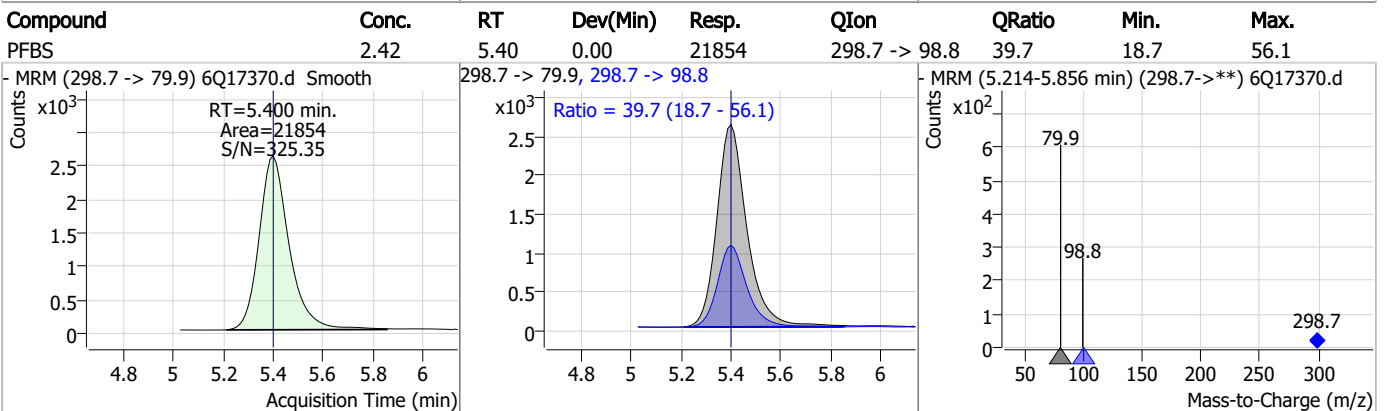
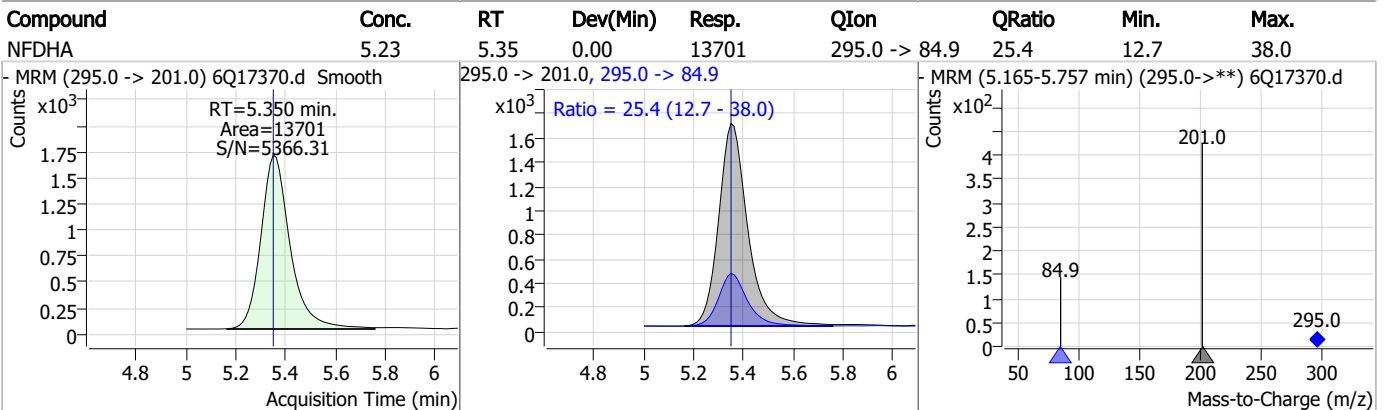
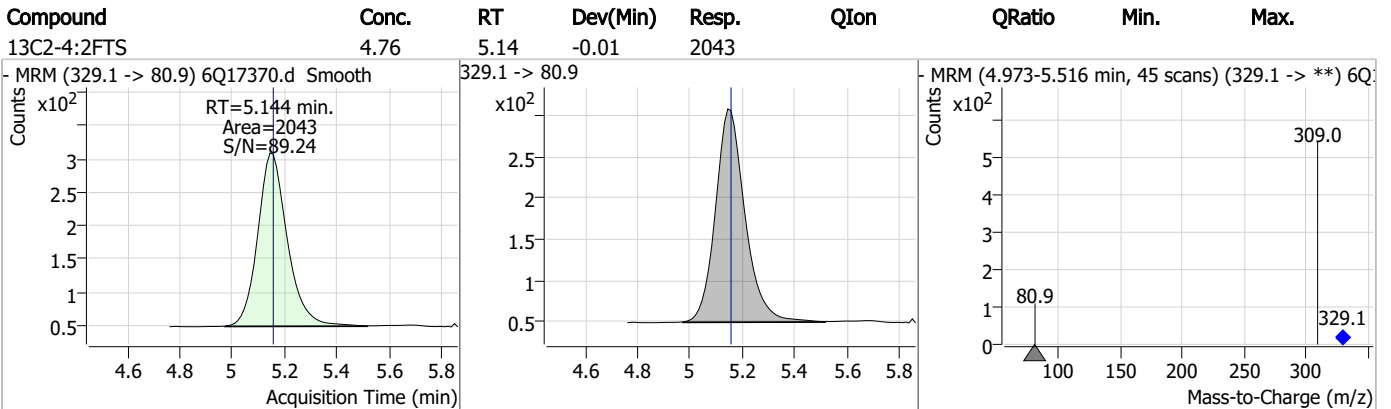
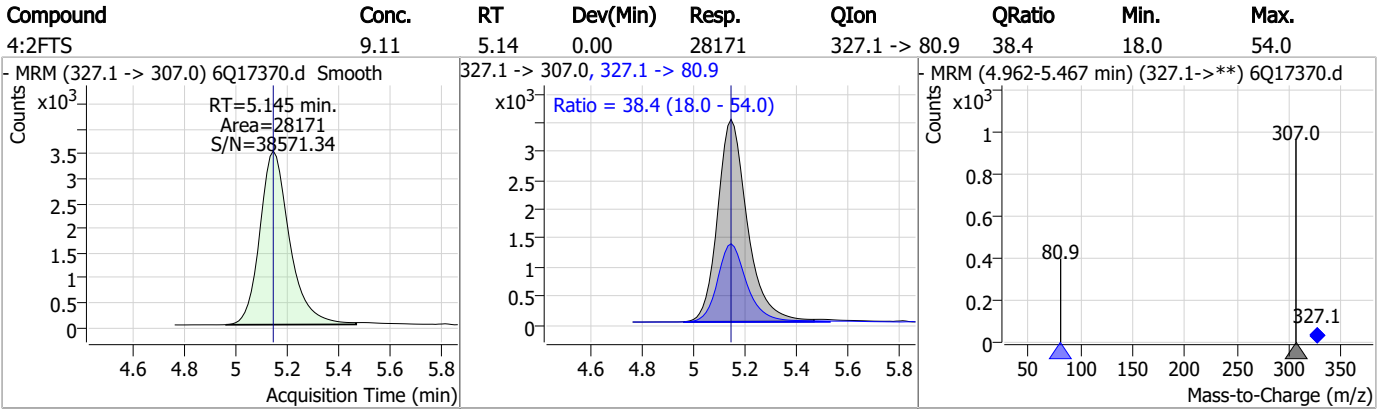
7.7.15
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Perfluorinated Compounds by LC/MS/MS

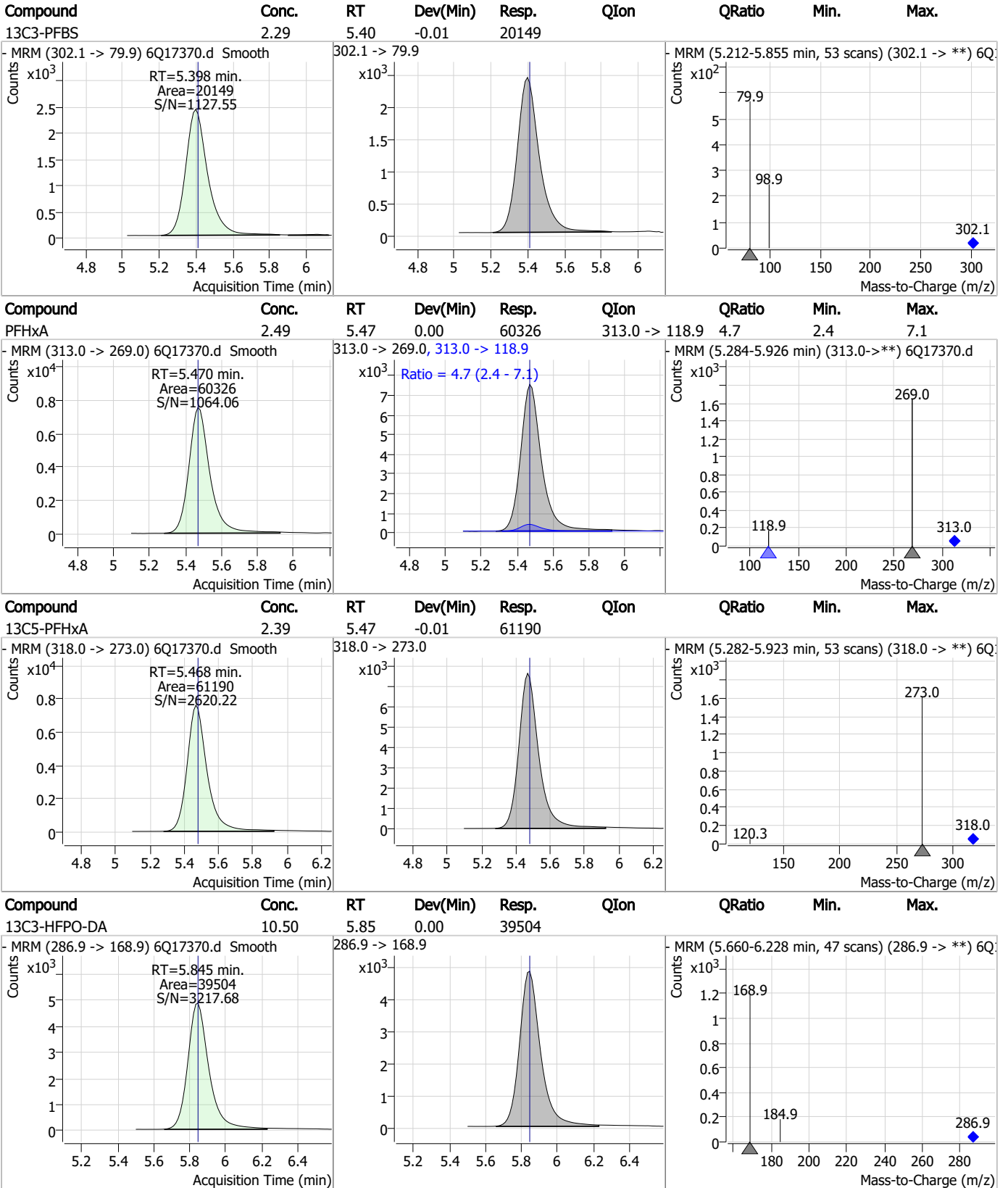


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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

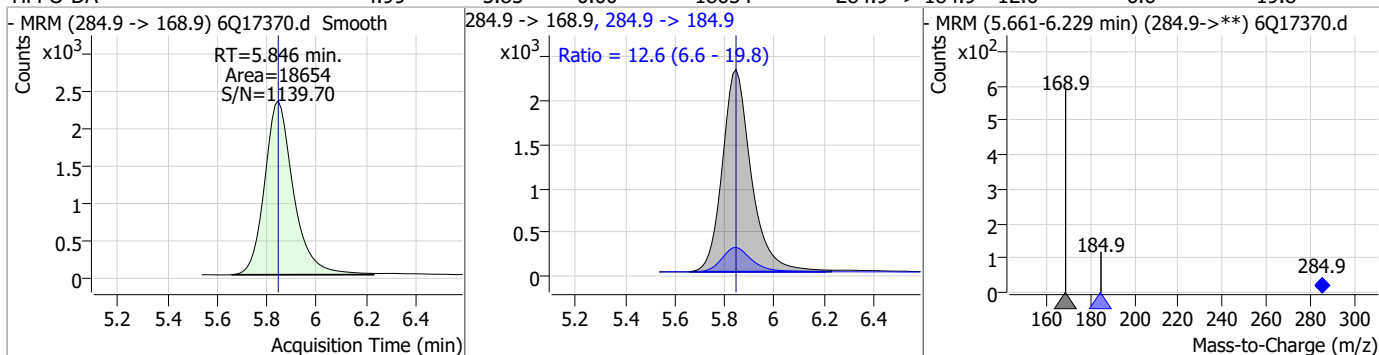


7.7.15 7

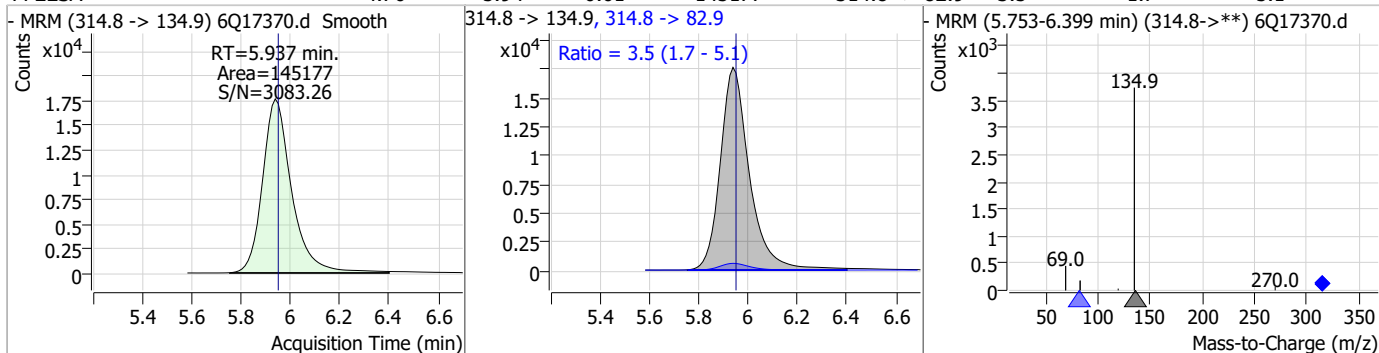


Perfluorinated Compounds by LC/MS/MS

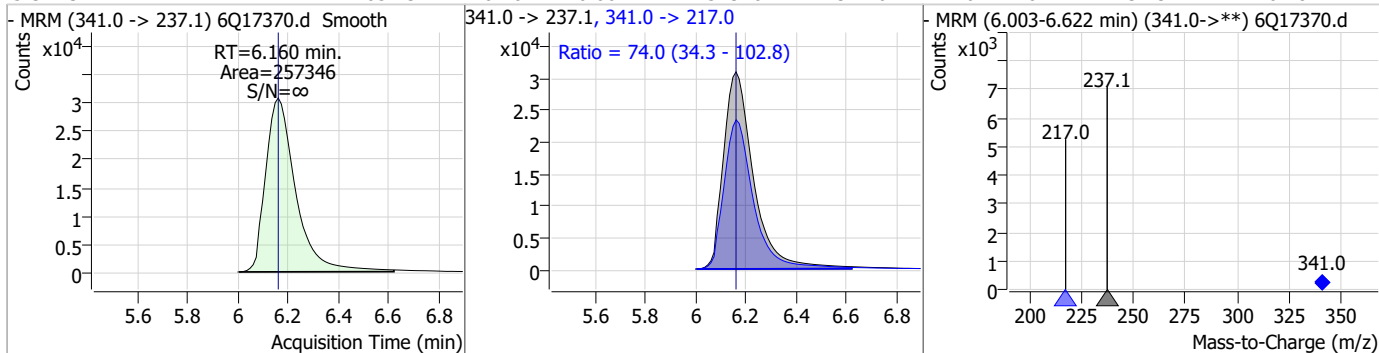
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.99	5.85	0.00	18654	284.9 -> 184.9	12.6	6.6	19.8



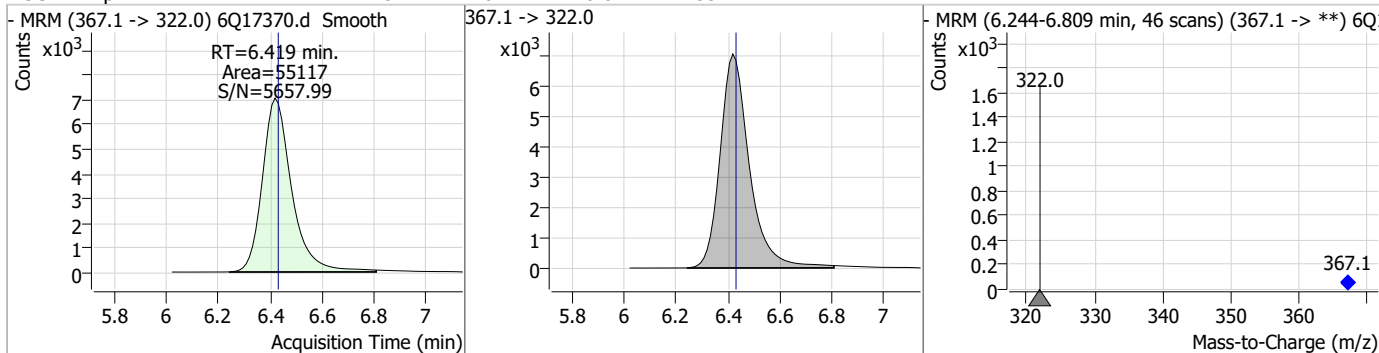
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.76	5.94	-0.01	145177	314.8 -> 82.9	3.5	1.7	5.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	65.73	6.16	0.00	257346	341.0 -> 217.0	74.0	34.3	102.8

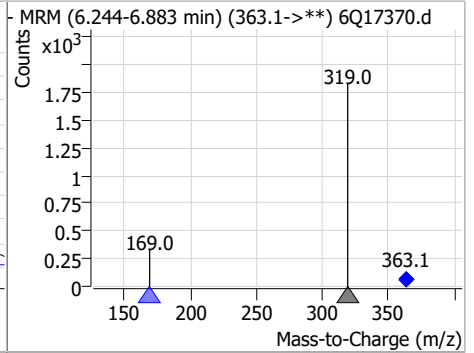
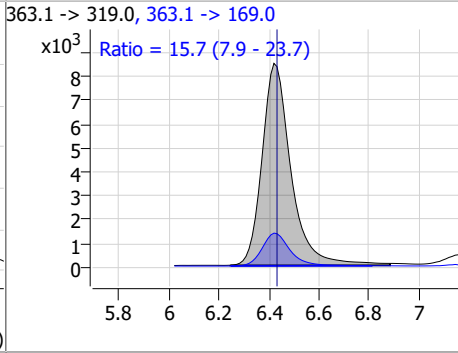
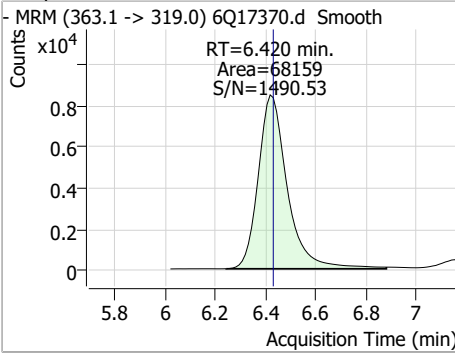


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.54	6.42	-0.01	55117	367.1 -> 322.0			

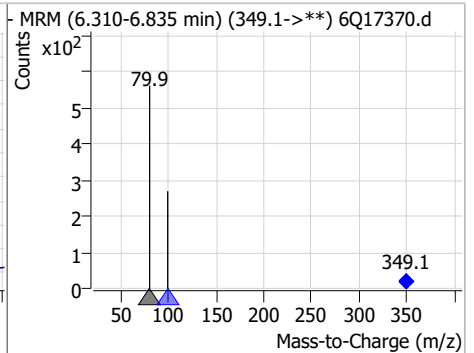
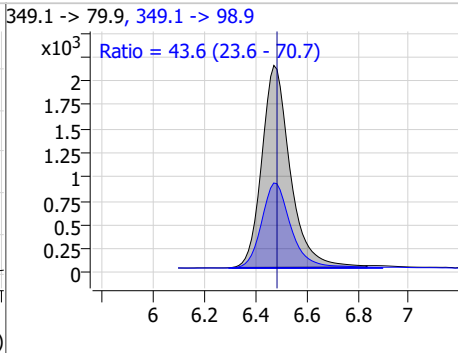
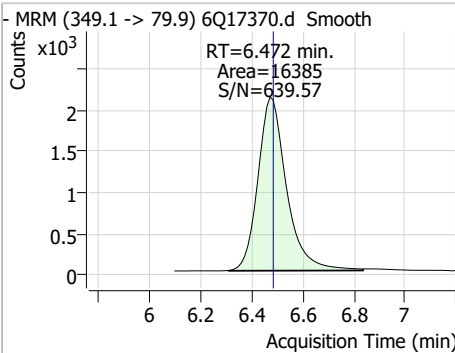


Perfluorinated Compounds by LC/MS/MS

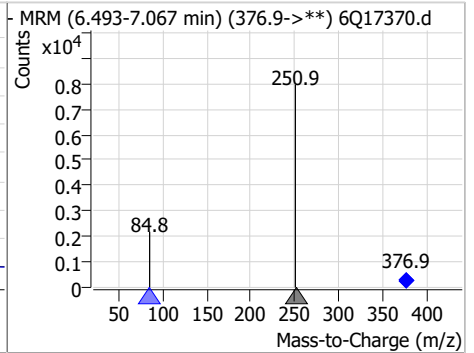
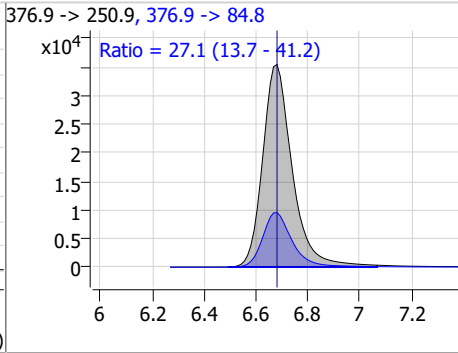
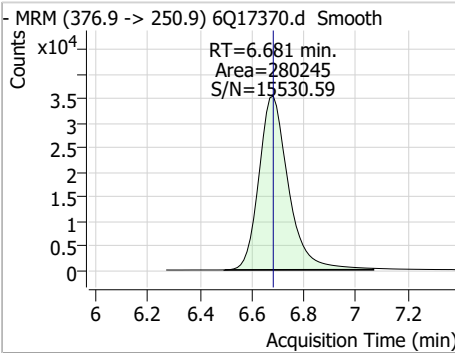
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.51	6.42	-0.01	68159	363.1 -> 169.0	15.7	7.9	23.7



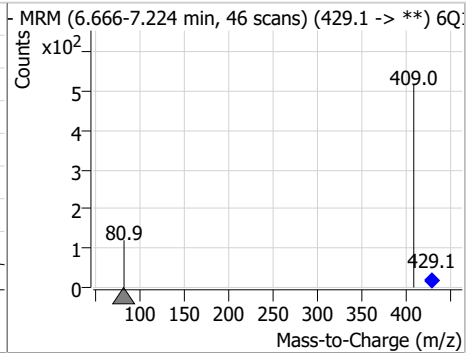
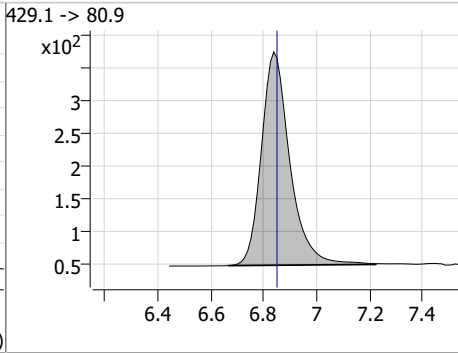
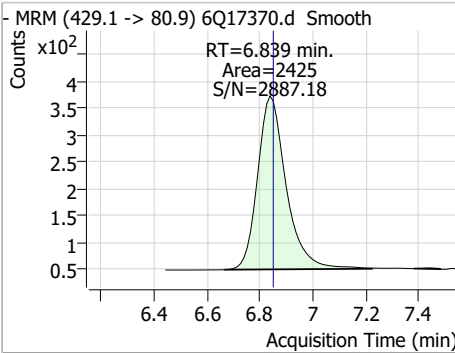
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.34	6.47	-0.01	16385	349.1 -> 98.9	43.6	23.6	70.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	4.70	6.68	0.00	280245	376.9 -> 84.8	27.1	13.7	41.2

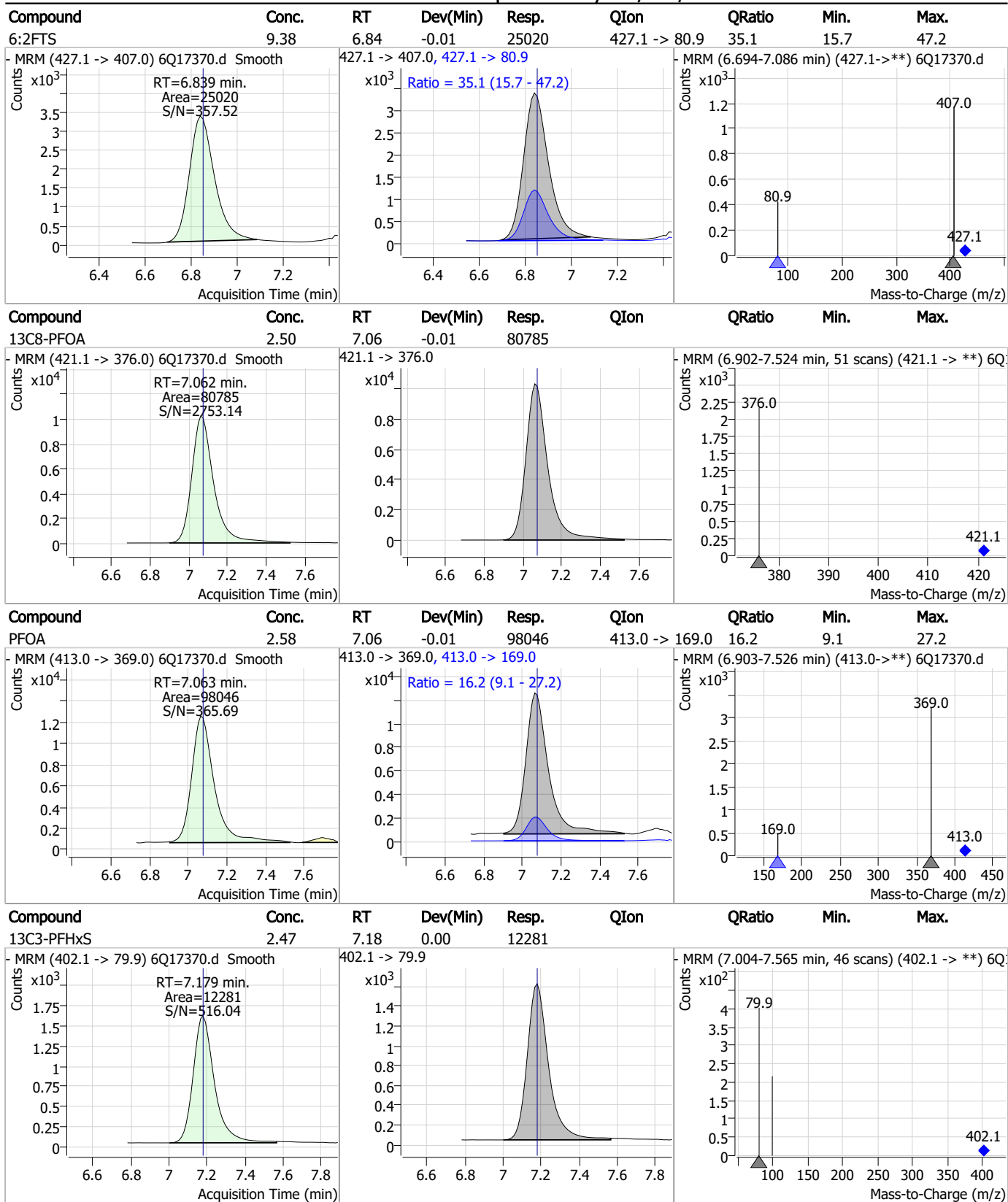


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	4.65	6.84	-0.01	2425	429.1 -> 80.9			



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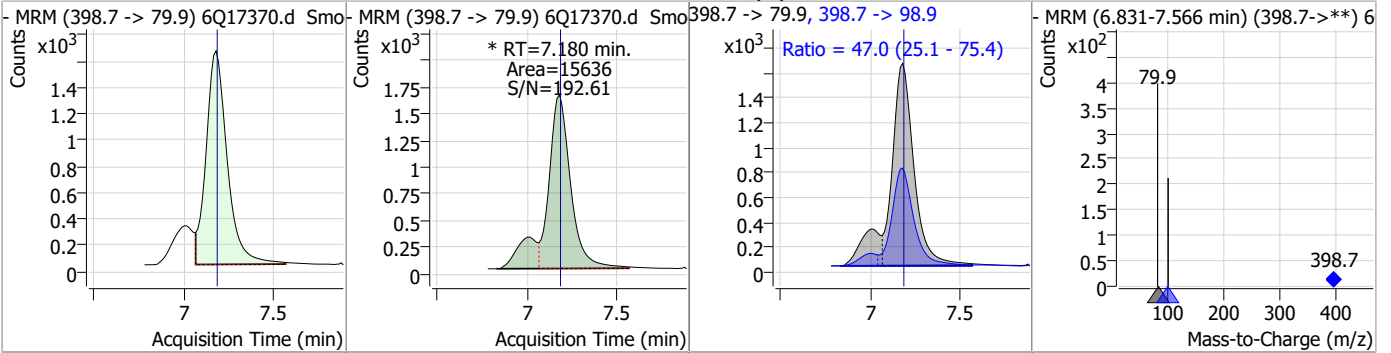
Perfluorinated Compounds by LC/MS/MS



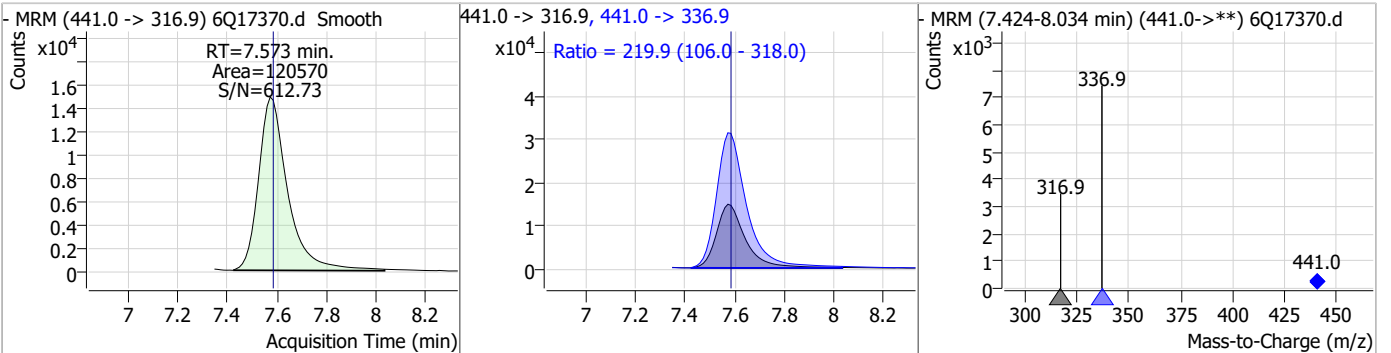
7.7.15

Perfluorinated Compounds by LC/MS/MS

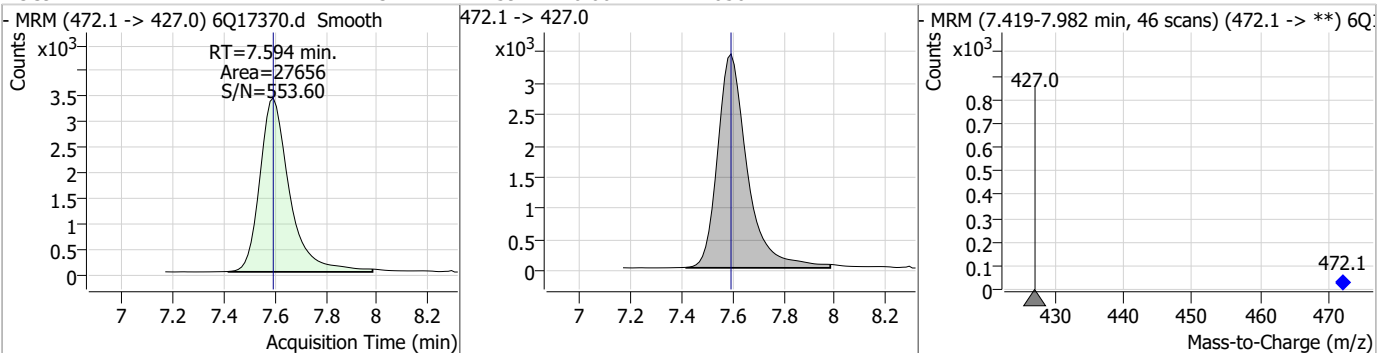
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.34	7.18	0.00	15636 (m)	398.7 -> 98.9	47.0	25.1	75.4



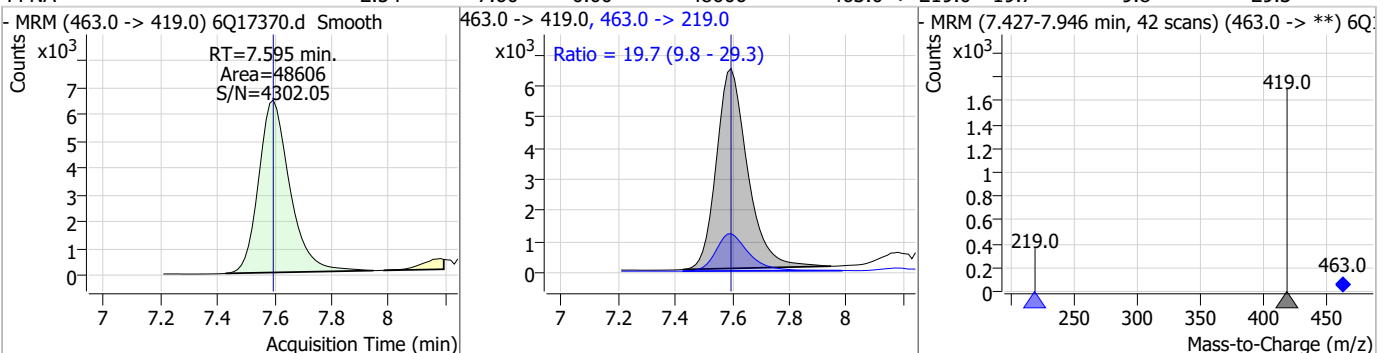
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	67.79	7.57	-0.01	120570	441.0 -> 336.9	219.9	106.0	318.0



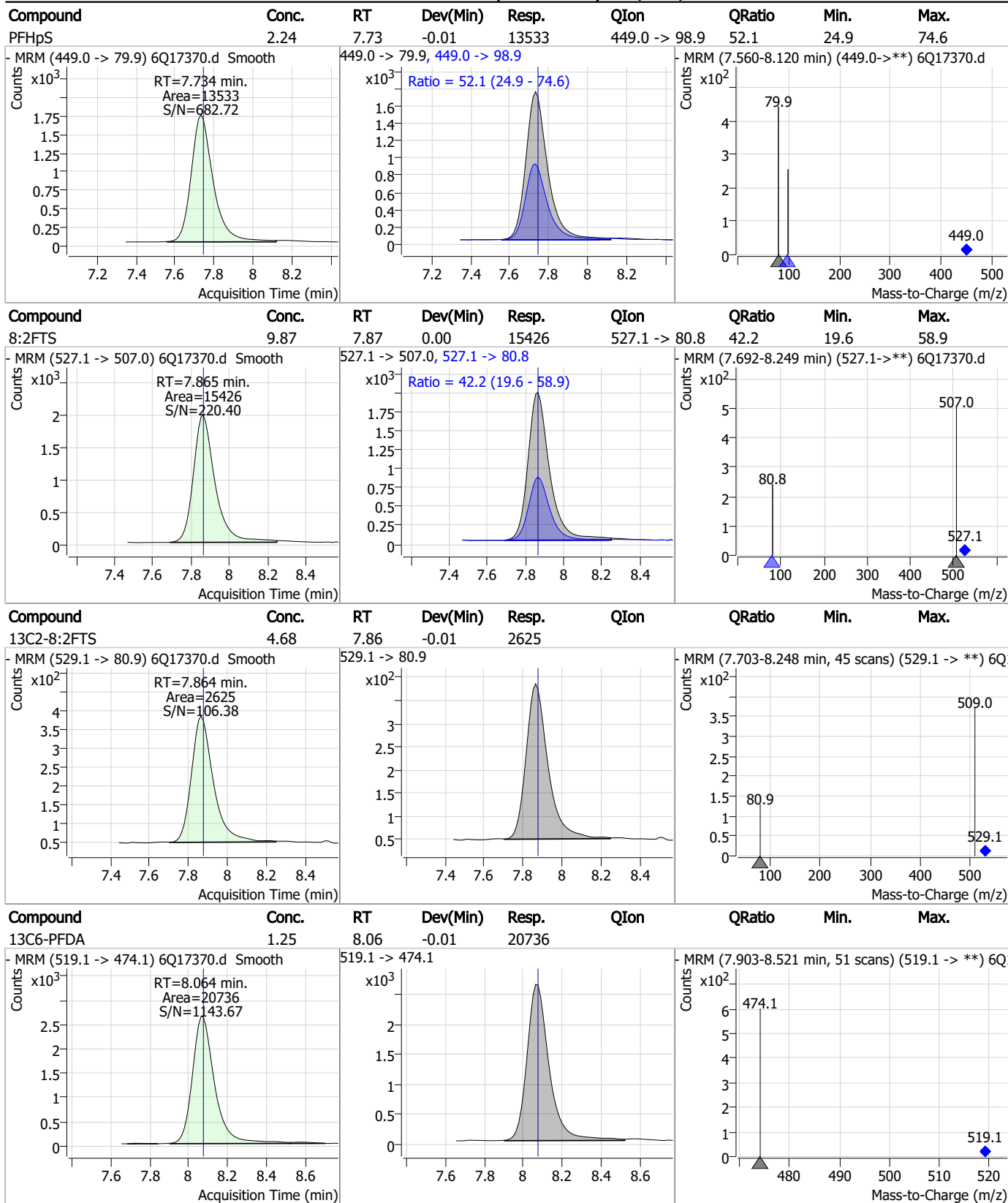
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.31	7.59	0.00	27656	472.1 -> 427.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.54	7.60	0.00	48606	463.0 -> 219.0	19.7	9.8	29.3



Perfluorinated Compounds by LC/MS/MS

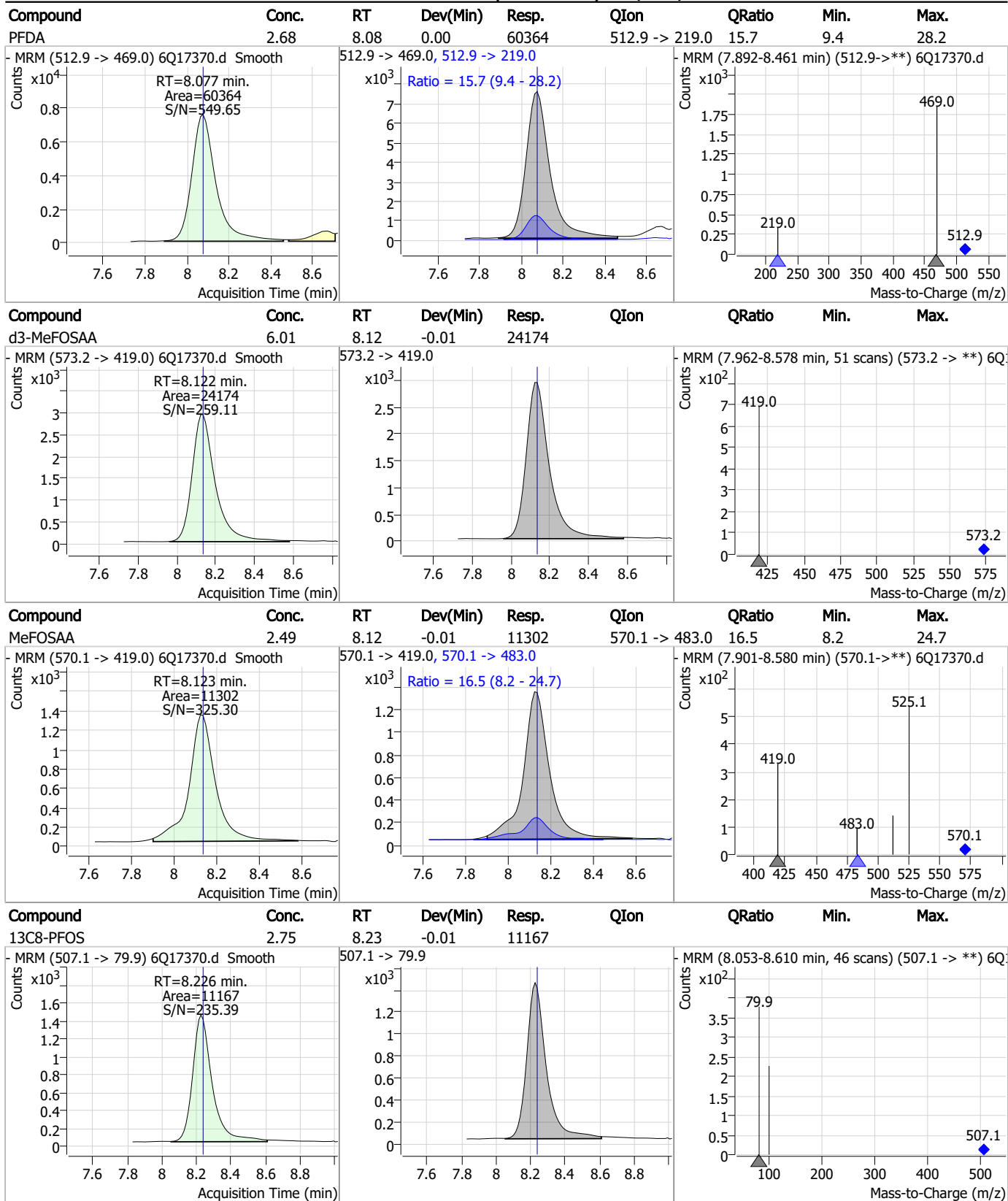


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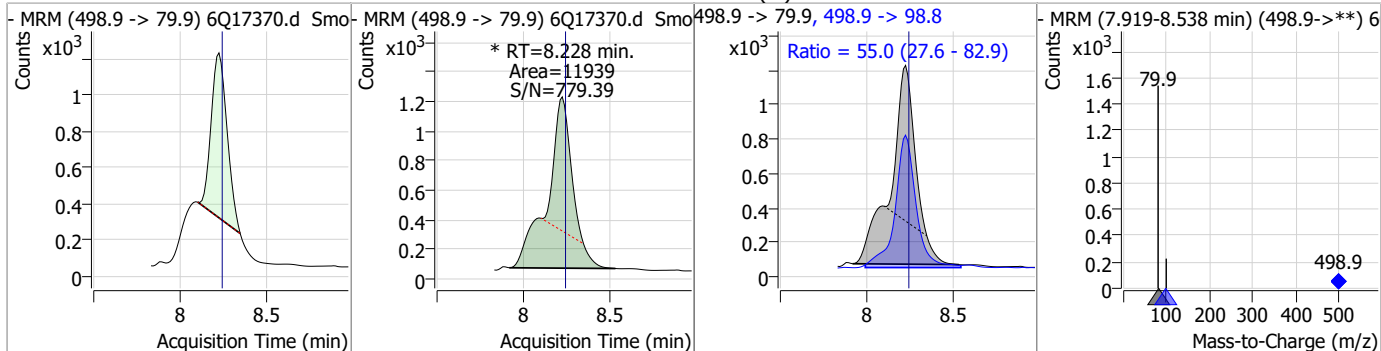
Perfluorinated Compounds by LC/MS/MS



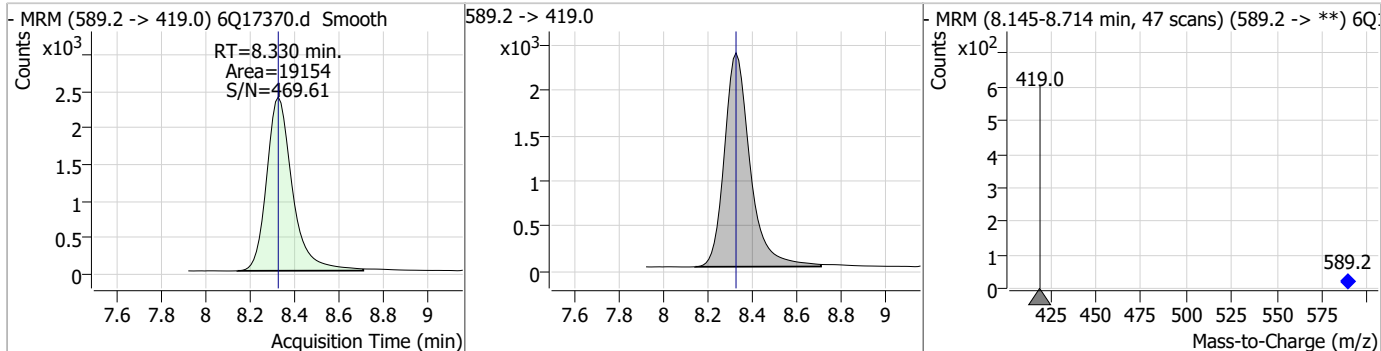
7.7.15
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Perfluorinated Compounds by LC/MS/MS

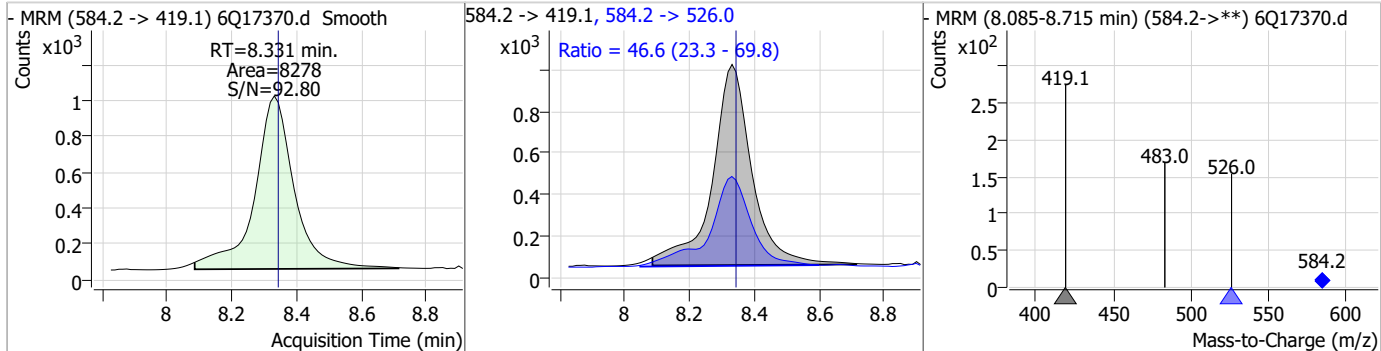
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.21	8.23	-0.01	11939 (m)	498.9 -> 98.8	55.0	27.6	82.9



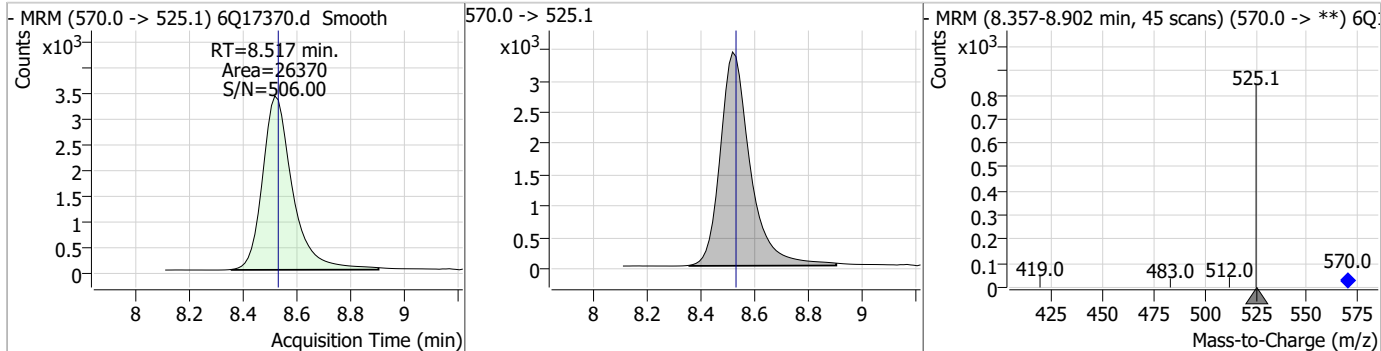
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.73	8.33	0.00	19154				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.54	8.33	-0.01	8278	584.2 -> 526.0	46.6	23.3	69.8



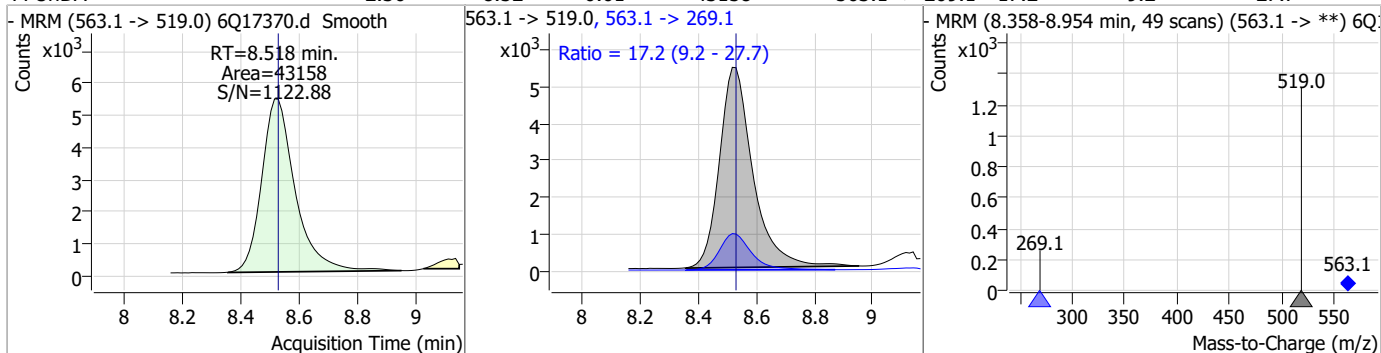
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.25	8.52	-0.01	26370				



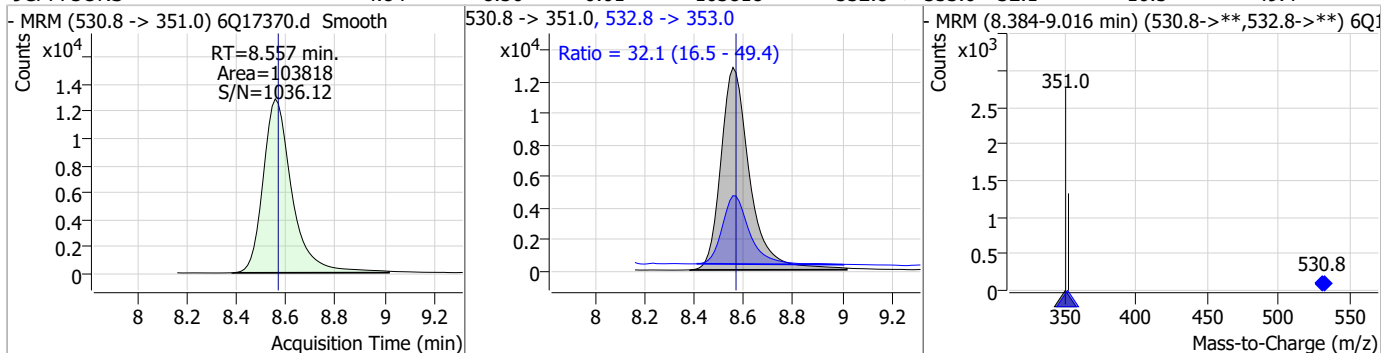
7.7.15
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Perfluorinated Compounds by LC/MS/MS

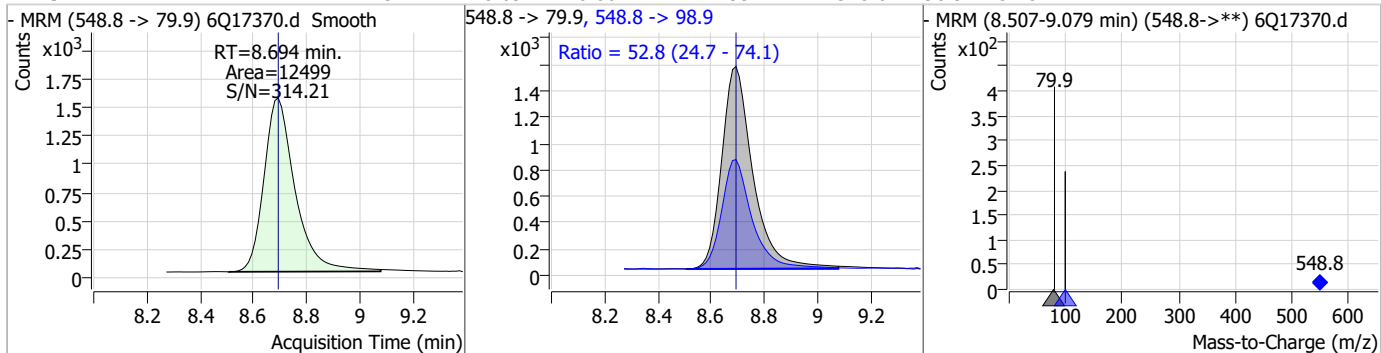
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.36	8.52	-0.01	43158	563.1 -> 269.1	17.2	9.2	27.7



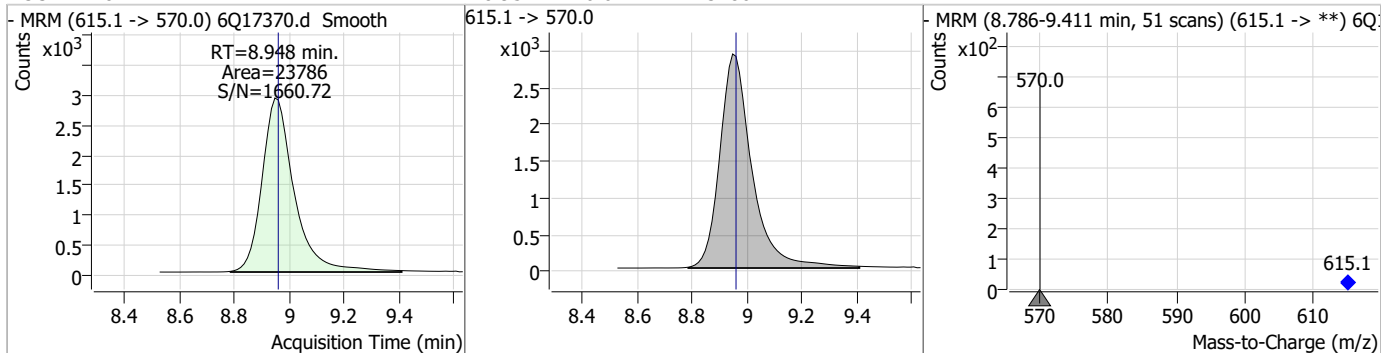
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	4.84	8.56	-0.01	103818	532.8 -> 353.0	32.1	16.5	49.4



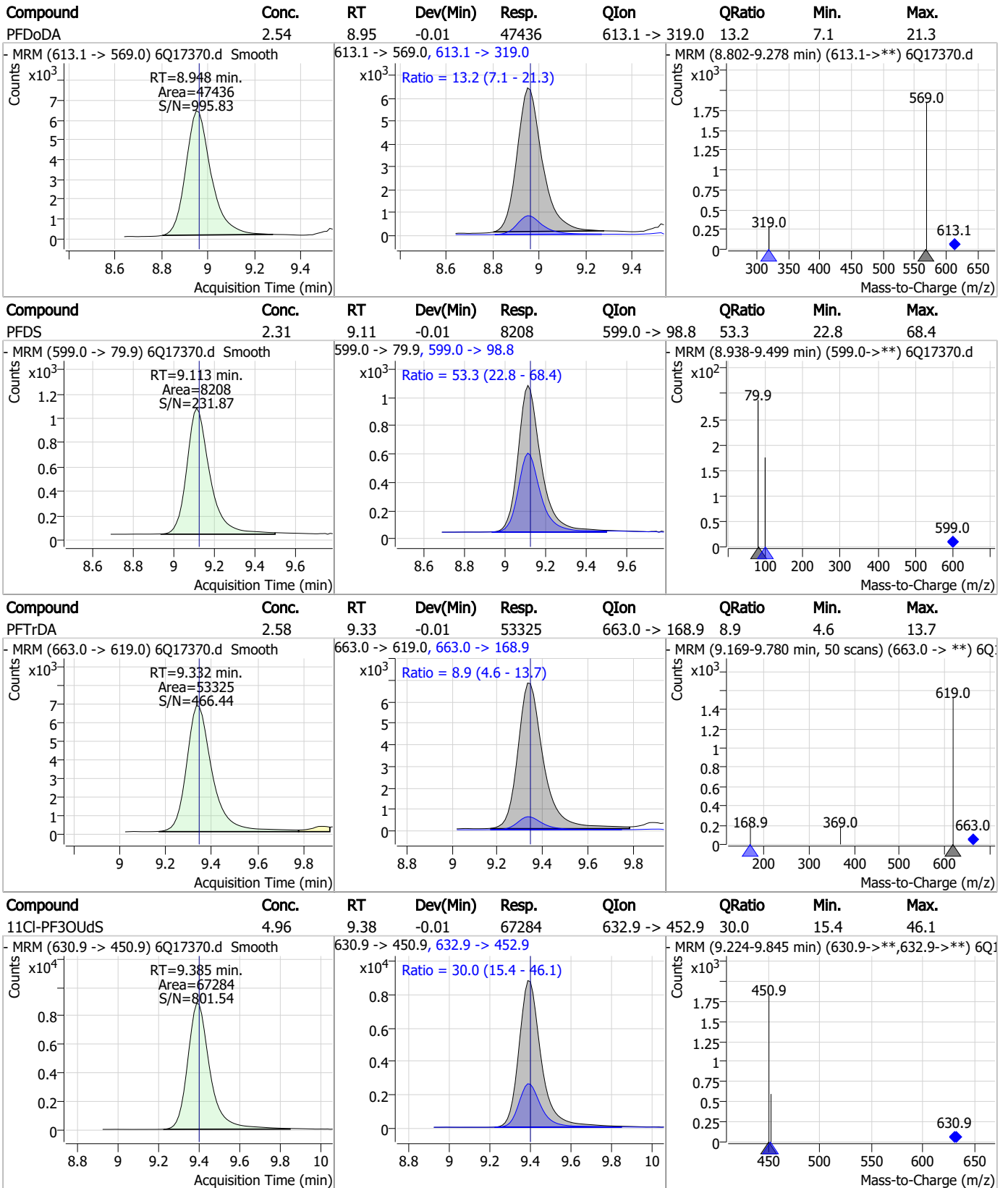
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.32	8.69	0.00	12499	548.8 -> 98.9	52.8	24.7	74.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.14	8.95	-0.01	23786	615.1 -> 570.0			



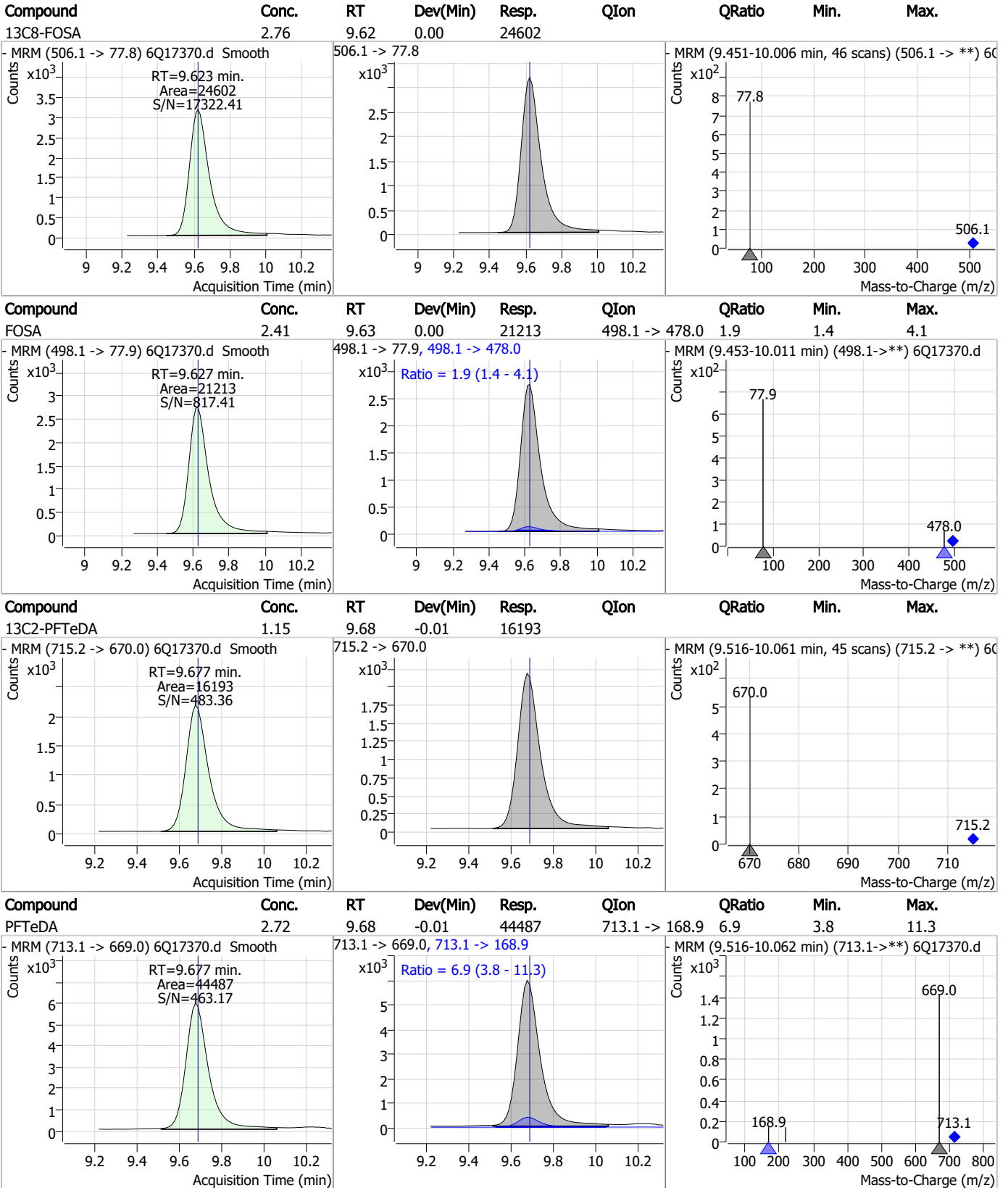
Perfluorinated Compounds by LC/MS/MS



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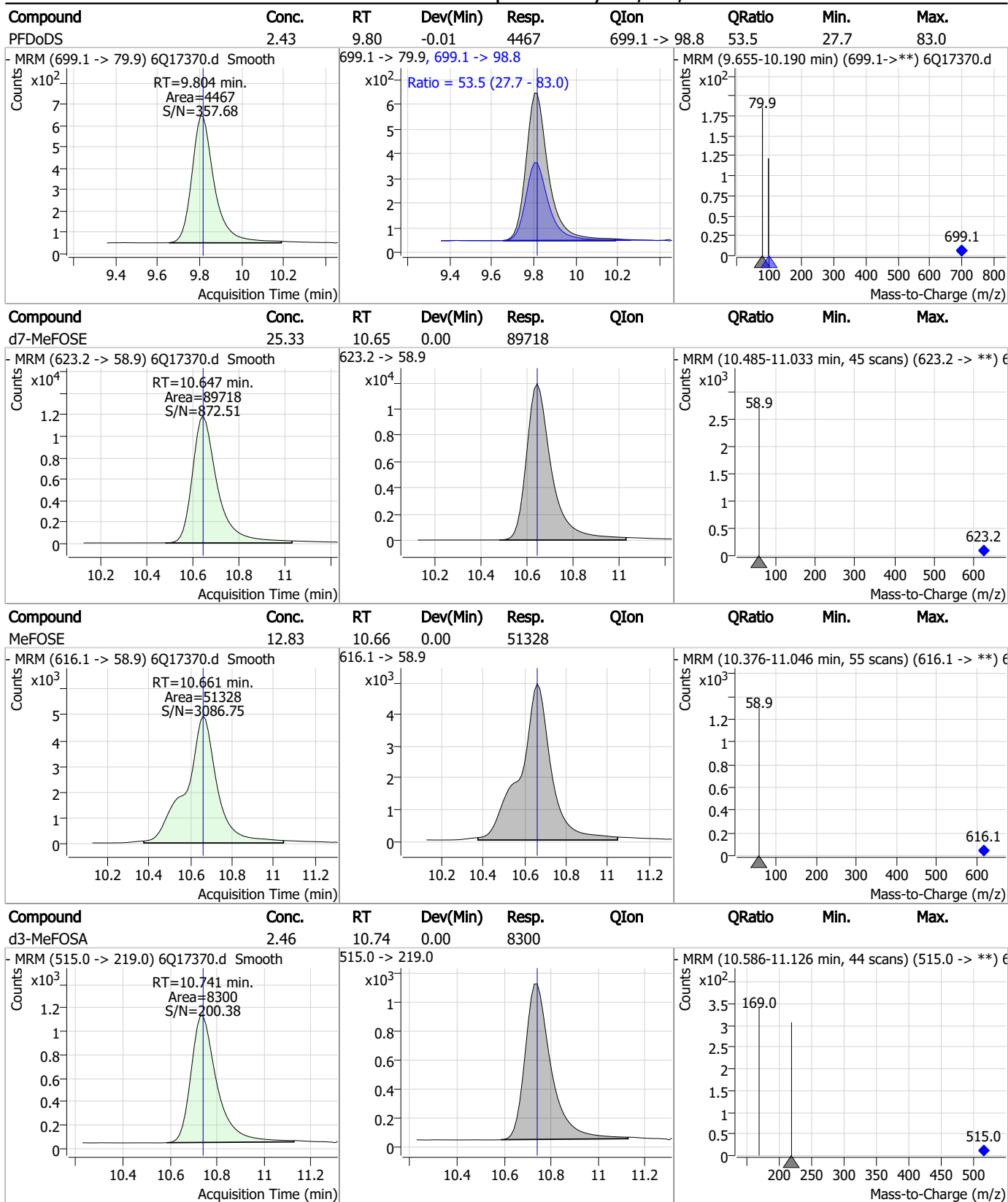
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

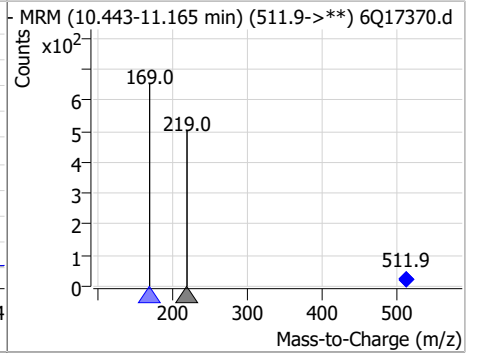
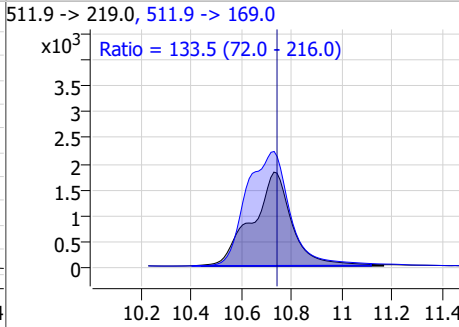
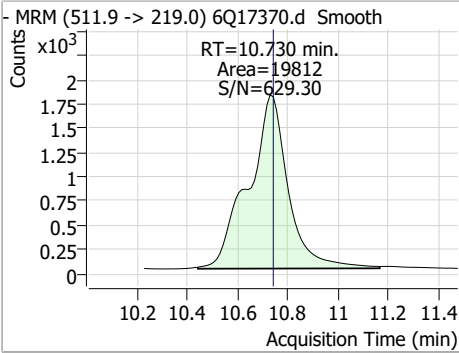


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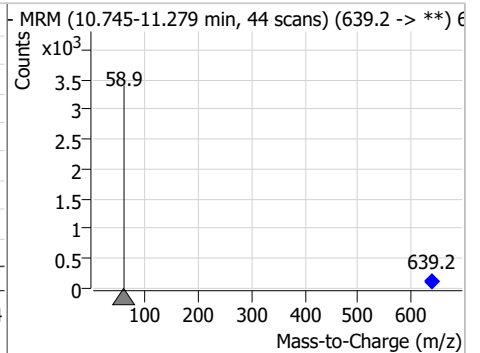
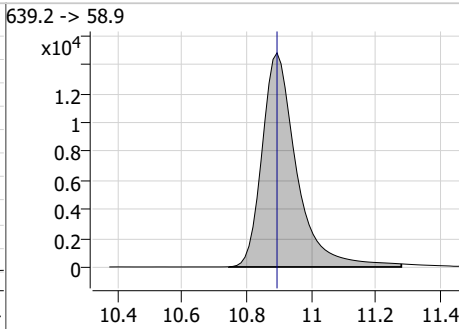
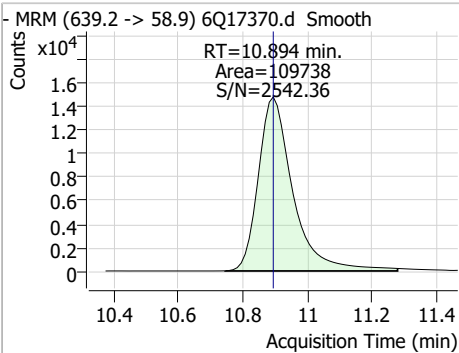
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Perfluorinated Compounds by LC/MS/MS

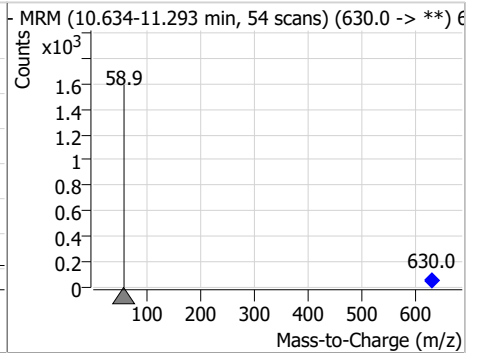
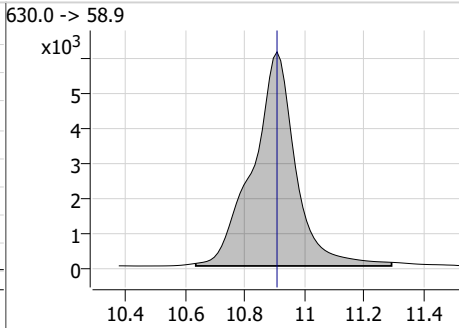
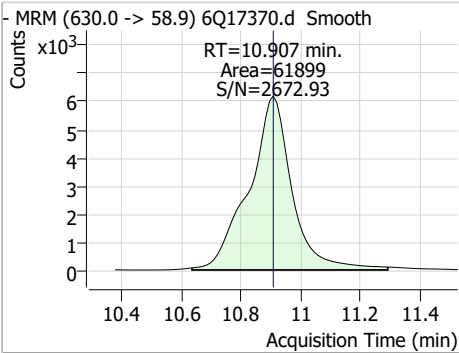
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	5.30	10.73	-0.01	19812	511.9 -> 169.0	133.5	72.0	216.0



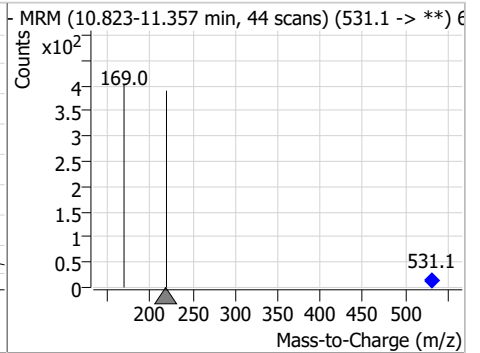
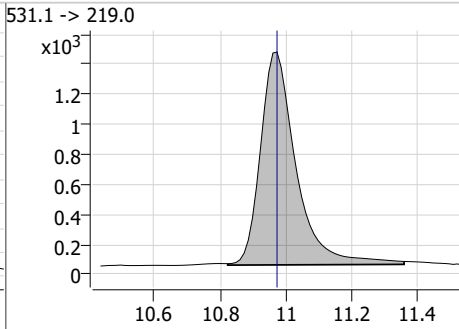
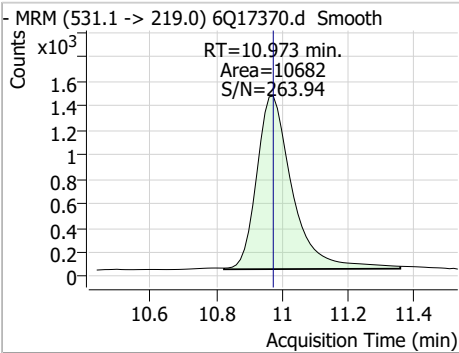
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.35	10.89	0.00	109738				



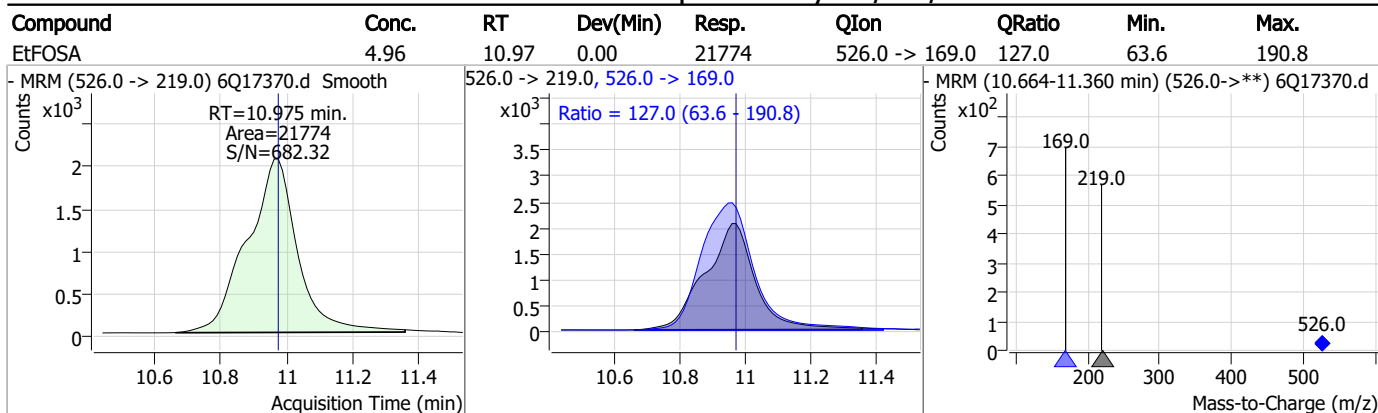
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	13.54	10.91	0.00	61899				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.58	10.97	0.00	10682				



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q261-CC258 Method: EPA DRAFT 1633
Lab FileID: 6Q17370.D Analyst approved: 05/03/23 13:49 Martha Valls
Injection Time: 05/03/23 06:40 Supervisor approved: 05/03/23 19:48 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.23	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17382.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/3/2023 9:33:58 AM
 Sample Name : cc258-4
 Vial : P1-A5
 DA Method File : 1633_042823_S6Q258.quantmethod.xml
 Batch Name : s6q261.batch.bin
 Sample Information : OP96301,S6Q261,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.910	216.8 -> 171.9	177279	10.00 µg/L	0.000
M5-PFPeA	4.270	268.3 -> 223.0	57252	5.00 µg/L	0.000
M5-PFHxA	5.468	318.0 -> 273.0	61026	2.50 µg/L	-0.012
M4-PFHpA	6.419	367.1 -> 322.0	56277	2.50 µg/L	-0.012
M8-PFOA	7.062	421.1 -> 376.0	81104	2.50 µg/L	-0.012
M9-PFNA	7.594	472.1 -> 427.0	27258	1.25 µg/L	0.000
M6-PFDA	8.064	519.1 -> 474.1	20560	1.25 µg/L	-0.012
M7-PFUnDA	8.517	570.0 -> 525.1	27748	1.25 µg/L	-0.013
M2-PFDoDA	8.960	615.1 -> 570.0	23514	1.25 µg/L	0.000
M2-PFTeDA	9.677	715.2 -> 670.0	16200	1.25 µg/L	-0.012
M8-FOSA	9.623	506.1 -> 77.8	24006	2.50 µg/L	0.000
M3-PFBS	5.398	302.1 -> 79.9	20603	2.50 µg/L	-0.012
M3-PFHxS	7.179	402.1 -> 79.9	12312	2.50 µg/L	0.000
M8-PFOS	8.226	507.1 -> 79.9	10784	2.50 µg/L	-0.012
M2-4:2FTS	5.144	329.1 -> 80.9	2027	5.00 µg/L	-0.012
M2-6:2FTS	6.839	429.1 -> 80.9	2719	5.00 µg/L	-0.012
M2-8:2FTS	7.864	529.1 -> 80.9	2421	5.00 µg/L	-0.012
M3-MeFOSAA	8.122	573.2 -> 419.0	22740	5.00 µg/L	-0.012
M3-HFPO-DA	5.845	286.9 -> 168.9	37541	10.00 µg/L	0.000
M5-EtFOSAA	8.318	589.2 -> 419.0	19137	5.00 µg/L	-0.012
M7-MeFOSE	10.647	623.2 -> 58.9	88131	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	110390	25.00 µg/L	0.000
M5-EtFOSA	10.973	531.1 -> 219.0	10245	2.50 µg/L	0.000
M3-MeFOSA	10.741	515.0 -> 219.0	8451	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	13674	2.50 µg/L	-0.012
13C3-PFBA	2.902	216.0 -> 172.0	73344	5.00 µg/L	0.000
18O2-PFHxS	7.177	403.0 -> 83.9	9111	2.50 µg/L	0.000
13C4-PFOA	7.063	417.1 -> 372.0	85162	2.50 µg/L	-0.012
13C2-PFDA	8.064	515.1 -> 470.1	23069	1.25 µg/L	-0.012
13C5-PFNA	7.595	468.0 -> 423.0	28214	1.25 µg/L	0.000
13C2-PFHxA	5.469	315.1 -> 270.0	54122	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.144	329.1 -> 80.9	2027	4.84 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.8%		
13C2-6:2FTS	6.839	429.1 -> 80.9	2719	5.35 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.0%		
13C2-8:2FTS	7.864	529.1 -> 80.9	2421	4.43 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 88.5%		
13C2-PFDoDA	8.960	615.1 -> 570.0	23514	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.0%		
13C2-PFTeDA	9.677	715.2 -> 670.0	16200	1.25 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.8%		
13C3-PFBS	5.398	302.1 -> 79.9	20603	2.40 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.2%		
13C3-PFHxS	7.179	402.1 -> 79.9	12312	2.54 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C4-PFBA	2.910	216.8 -> 171.9	177279	10.46 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.6%	
13C4-PFHpA	6.419	367.1 -> 322.0	56277	2.54 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C5-PFHxA	5.468	318.0 -> 273.0	61026	2.34 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.5%	
13C5-PFPeA	4.270	268.3 -> 223.0	57252	4.74 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.7%	
13C6-PFDA	8.064	519.1 -> 474.1	20560	1.35 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.1%	
13C7-PFUnDA	8.517	570.0 -> 525.1	27748	1.42 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 114.0%	
13C8-FOSA	9.623	506.1 -> 77.8	24006	2.66 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.2%	
13C8-PFOA	7.062	421.1 -> 376.0	81104	2.47 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.7%	
13C8-PFOS	8.226	507.1 -> 79.9	10784	2.62 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.7%	
13C9-PFNA	7.594	472.1 -> 427.0	27258	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.4%	
d3-MeFOSAA	8.122	573.2 -> 419.0	22740	5.58 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 111.6%	
13C3-HFPO-DA	5.845	286.9 -> 168.9	37541	9.80 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.0%	
d3-MeFOSA	10.741	515.0 -> 219.0	8451	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.0%	
d5-EtFOSAA	8.318	589.2 -> 419.0	19137	5.65 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 113.0%	
d7-MeFOSE	10.647	623.2 -> 58.9	88131	24.56 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.2%	
d9-EtFOSE	10.894	639.2 -> 58.9	110390	25.17 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.7%	
d5-EtFOSA	10.973	531.1 -> 219.0	10245	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.7%	
Target Compounds					QValue
4:2FTS	5.145	327.1 -> 307.0	28324	9.24 µg/L	94
		327.1 -> 80.9	11195		
6:2FTS	6.839	427.1 -> 407.0	28408	9.50 µg/L	100
		427.1 -> 80.9	8951		
8:2FTS	7.865	527.1 -> 507.0	15030	10.44 µg/L	94
		527.1 -> 80.8	6421		
EtFOSAA	8.331	584.2 -> 419.1	8028	2.47 µg/L	94
		584.2 -> 526.0	4056		
FOSA	9.627	498.1 -> 77.9	21838	2.54 µg/L	99
		498.1 -> 478.0	638		
MeFOSAA	8.136	570.1 -> 419.0	11105	2.60 µg/L	93
		570.1 -> 483.0	2160		
PFBA	2.906	212.8 -> 168.9	61291	10.31 µg/L	100
PFBS	5.400	298.7 -> 79.9	21634	2.34 µg/L	97
		298.7 -> 98.8	8463		
PFDA	8.077	512.9 -> 469.0	53258	2.38 µg/L	96
		512.9 -> 219.0	9028		
PFDoDA	8.948	613.1 -> 569.0	48523	2.63 µg/L	98
		613.1 -> 319.0	6408		
PFDS	9.113	599.0 -> 79.9	8561	2.49 µg/L	93

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.420	599.0 -> 98.8	4279	2.42	µg/L	100
		363.1 -> 319.0	67307			
PFHpS	7.734	363.1 -> 169.0	10726	2.27	µg/L	96
		449.0 -> 79.9	13286			
PFHxA	5.470	449.0 -> 98.9	6944	2.48	µg/L	100
		313.0 -> 269.0	59820			
PFHxS	7.180	313.0 -> 118.9	2723	2.36	µg/L	m
		398.7 -> 79.9	15818			
PFNA	7.595	398.7 -> 98.9	7609	2.48	µg/L	95
		463.0 -> 419.0	46818			
PFNS	8.694	463.0 -> 219.0	10277	2.43	µg/L	94
		548.8 -> 79.9	12656			
PFOA	7.063	548.8 -> 98.9	6799	2.58	µg/L	98
		413.0 -> 369.0	98550			
PFOS	8.228	413.0 -> 169.0	17084	2.22	µg/L	m
		498.9 -> 79.9	11578			
PFPeA	4.273	498.9 -> 98.8	6450	5.12	µg/L	100
		263.0 -> 219.0	79828			
PFPeS	6.472	349.1 -> 79.9	16588	2.37	µg/L	98
		349.1 -> 98.9	7559			
PFTeDA	9.677	713.1 -> 669.0	42723	2.61	µg/L	100
		713.1 -> 168.9	3155			
PFTrDA	9.345	663.0 -> 619.0	55350	2.71	µg/L	99
		663.0 -> 168.9	4905			
PFUnDA	8.518	563.1 -> 519.0	46048	2.39	µg/L	92
		563.1 -> 269.1	6838			
11CI-PF3OUdS	9.385	630.9 -> 450.9	63786	4.95	µg/L	99
		632.9 -> 452.9	19783			
9CI-PF3ONS	8.557	530.8 -> 351.0	107311	5.27	µg/L	93
		532.8 -> 353.0	31360			
ADONA	6.681	376.9 -> 250.9	292341	5.15	µg/L	97
		376.9 -> 84.8	76026			
HFPO-DA	5.846	284.9 -> 168.9	17888	5.03	µg/L	97
		284.9 -> 184.9	2557			
3:3FTCA	3.784	241.0 -> 177.0	12138	12.45	µg/L	99
		241.0 -> 117.0	1574			
5:3FTCA	6.160	341.0 -> 237.1	253460	64.91	µg/L	97
		341.0 -> 217.0	180702			
7:3FTCA	7.573	441.0 -> 316.9	122061	68.81	µg/L	98
		441.0 -> 336.9	254594			
EtFOSA	10.975	526.0 -> 219.0	22194	5.27	µg/L	97
		526.0 -> 169.0	27402			
EtFOSE	10.907	630.0 -> 58.9	57481	12.50	µg/L	100
		511.9 -> 219.0	20063			
MeFOSA	10.730	511.9 -> 169.0	27235	5.28	µg/L	93
		616.1 -> 58.9	52925			
MeFOSE	10.661	699.1 -> 79.9	4517	13.47	µg/L	100
		699.1 -> 98.8	2565			
PFDoDS	9.817	295.0 -> 201.0	14433	2.54	µg/L	98
		295.0 -> 84.9	3751			
NFDHA	5.350	279.0 -> 85.1	55523	5.52	µg/L	99
		229.0 -> 84.9	41181			
PFMBA	4.687	314.8 -> 134.9	143624	5.31	µg/L	100
		314.8 -> 82.9	5124			
PFMPA	3.438			5.28	µg/L	100
PFEESA	5.937			4.72	µg/L	99

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

7.7.16
7

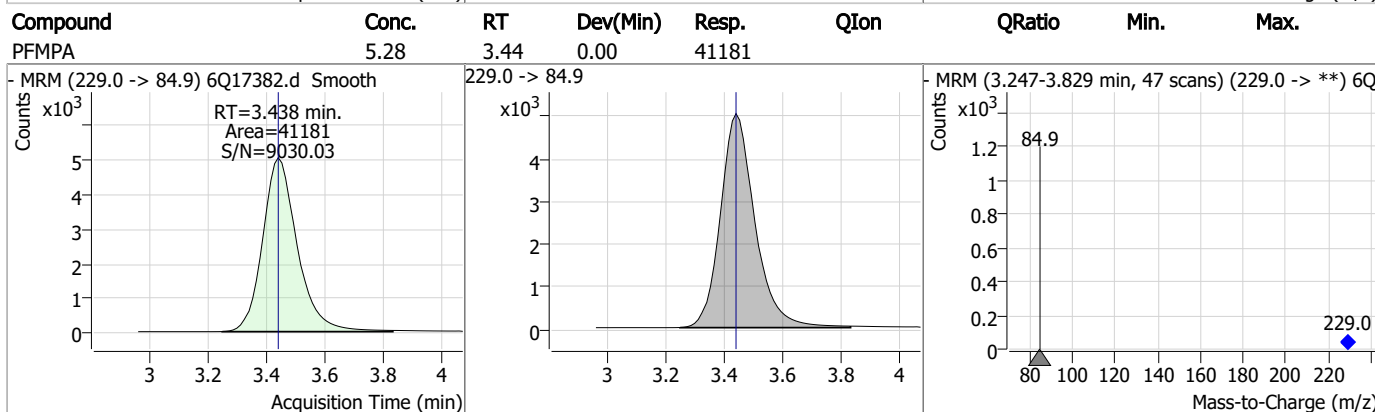
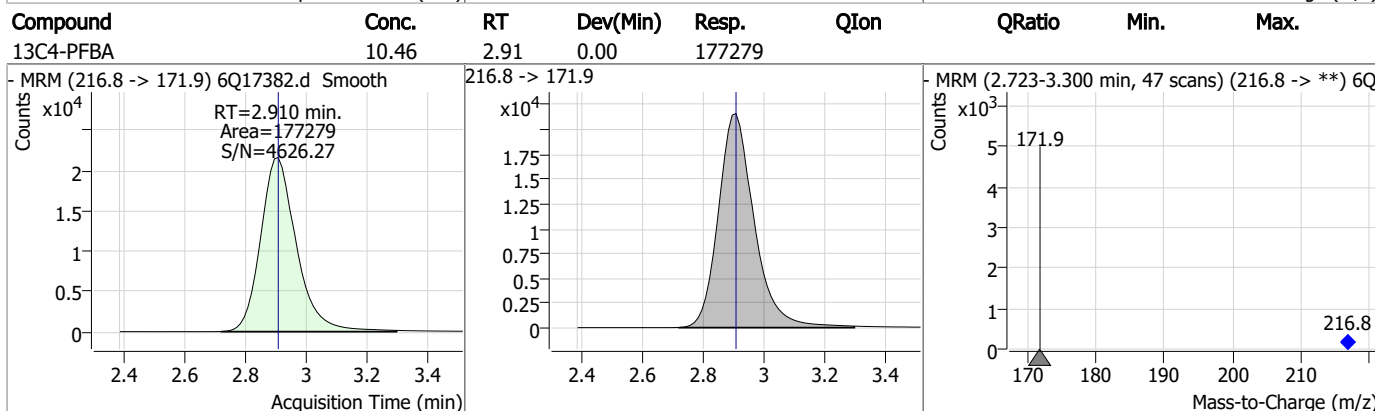
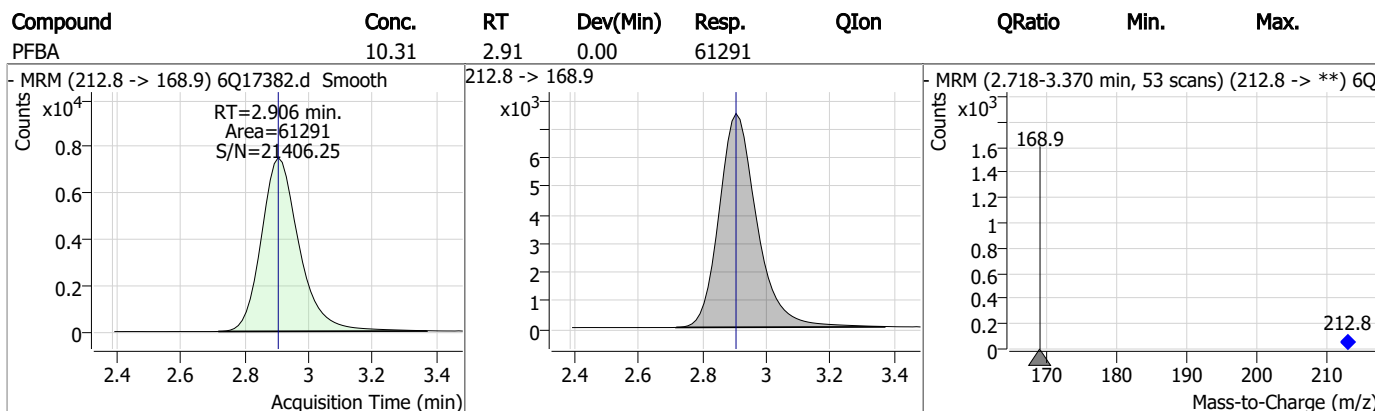
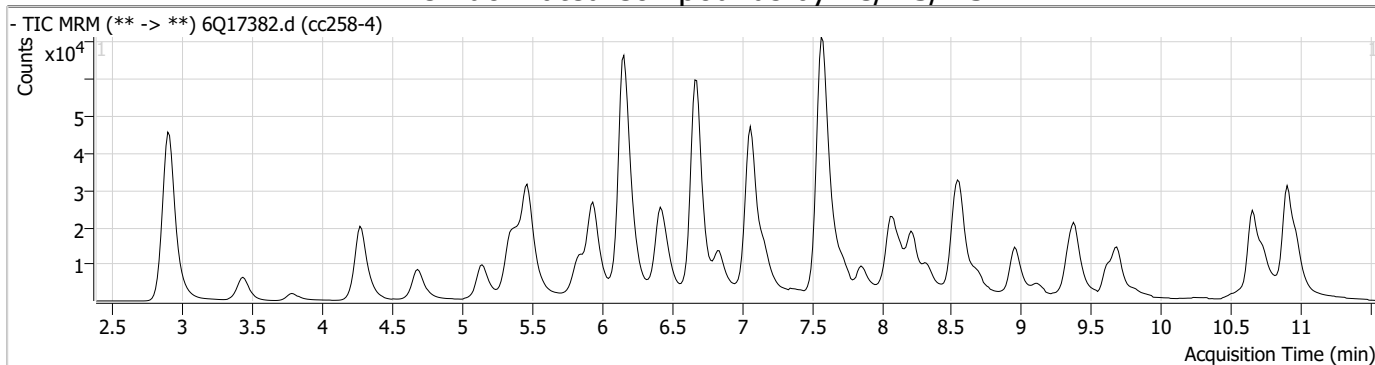
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.16

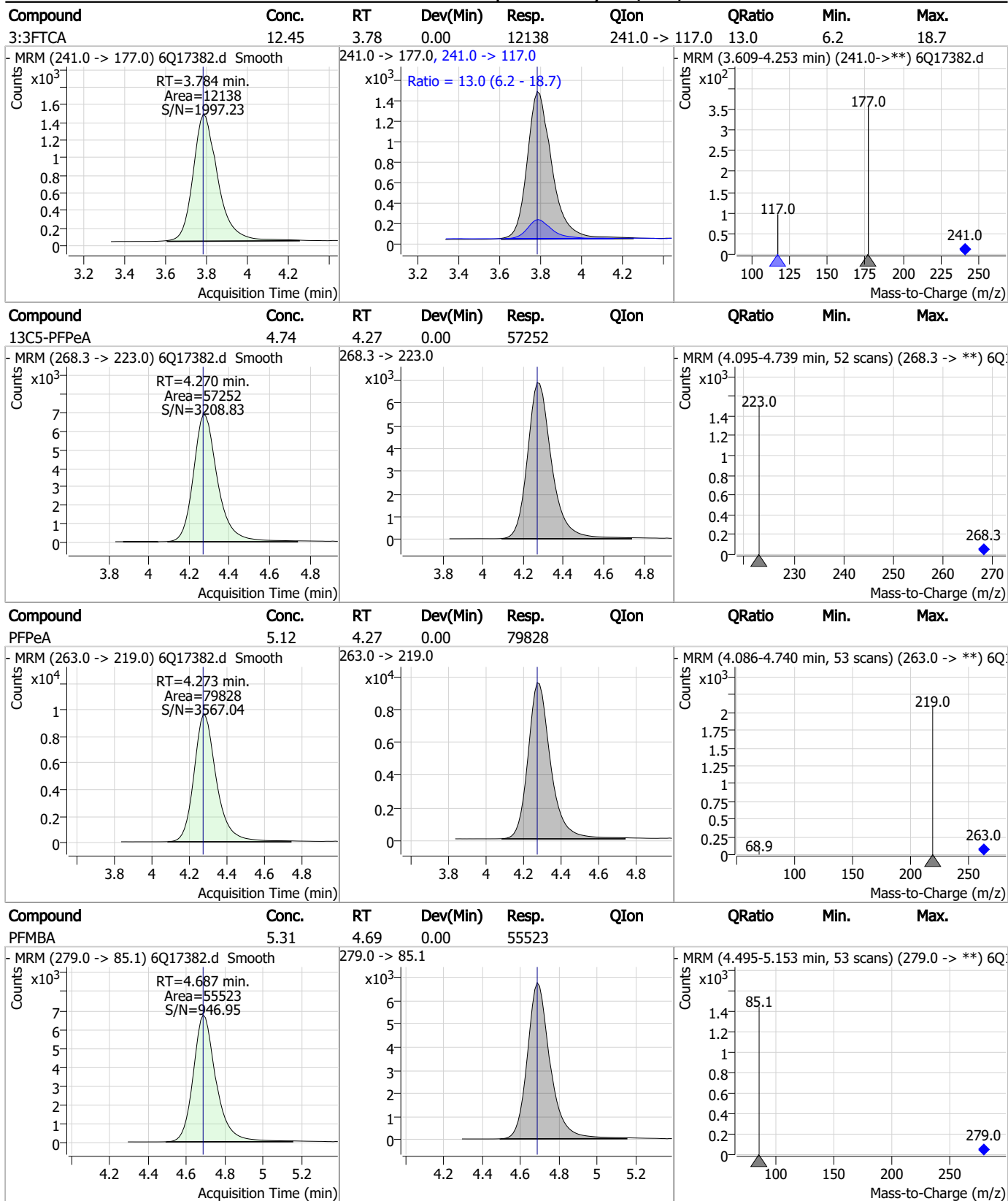
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Perfluorinated Compounds by LC/MS/MS



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7

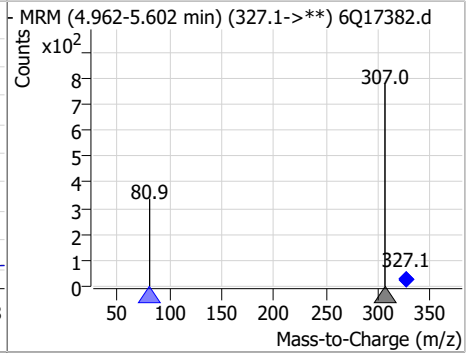
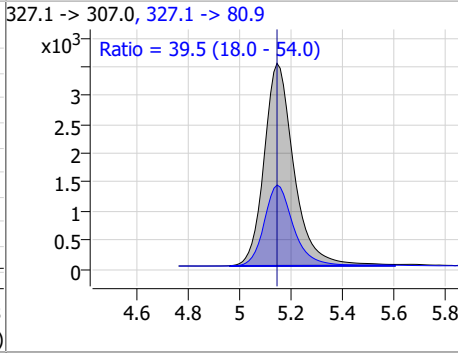
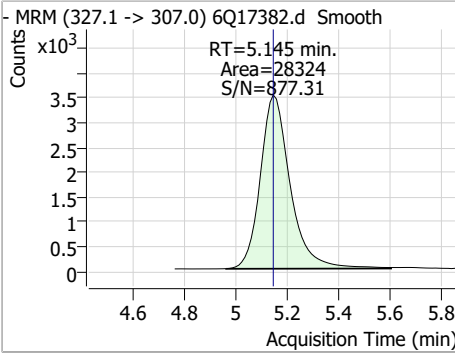
Perfluorinated Compounds by LC/MS/MS



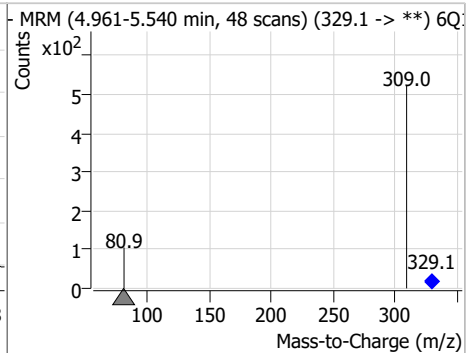
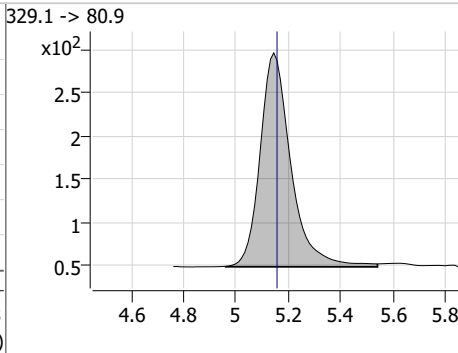
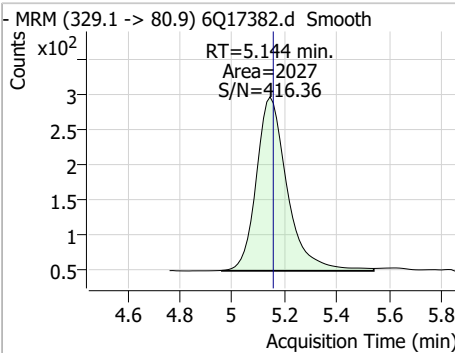
7.7.16
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Perfluorinated Compounds by LC/MS/MS

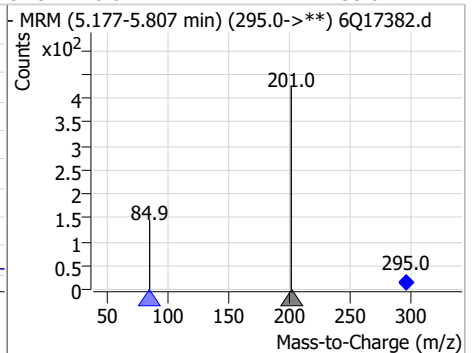
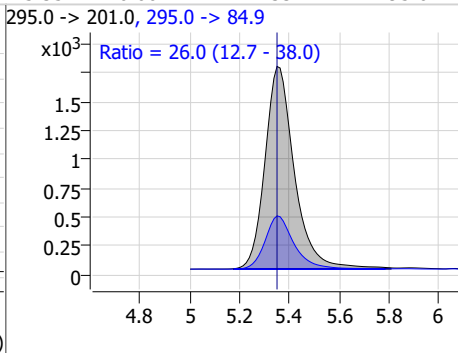
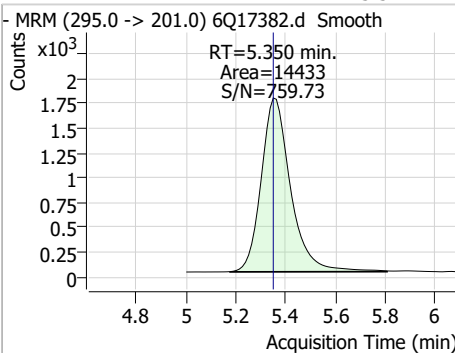
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	9.24	5.14	0.00	28324	327.1 -> 80.9	39.5	18.0	54.0



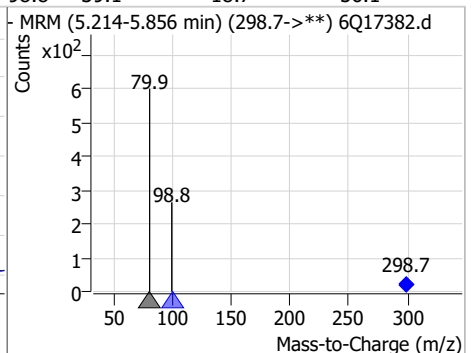
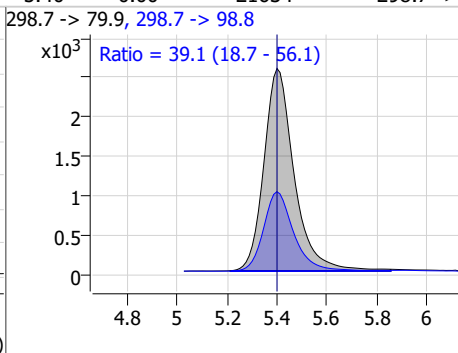
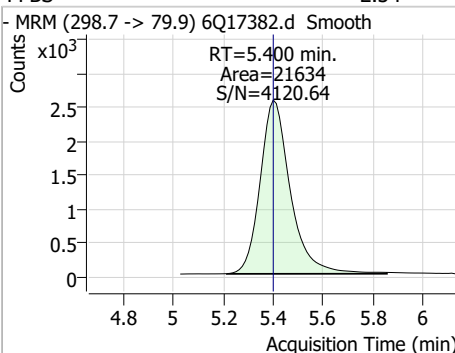
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	4.84	5.14	-0.01	2027	329.1 -> 80.9			



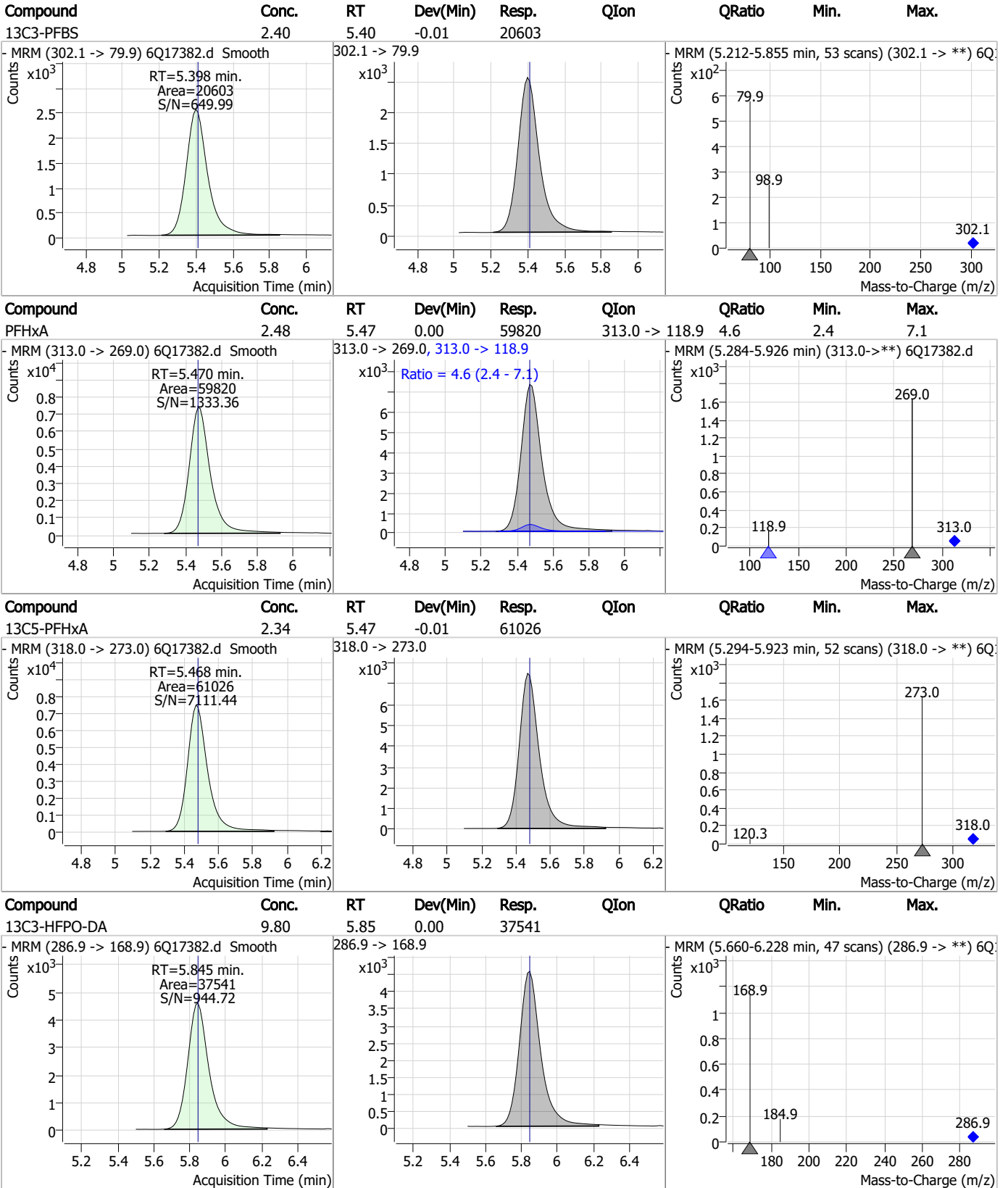
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	5.52	5.35	0.00	14433	295.0 -> 84.9	26.0	12.7	38.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.34	5.40	0.00	21634	298.7 -> 98.8	39.1	18.7	56.1



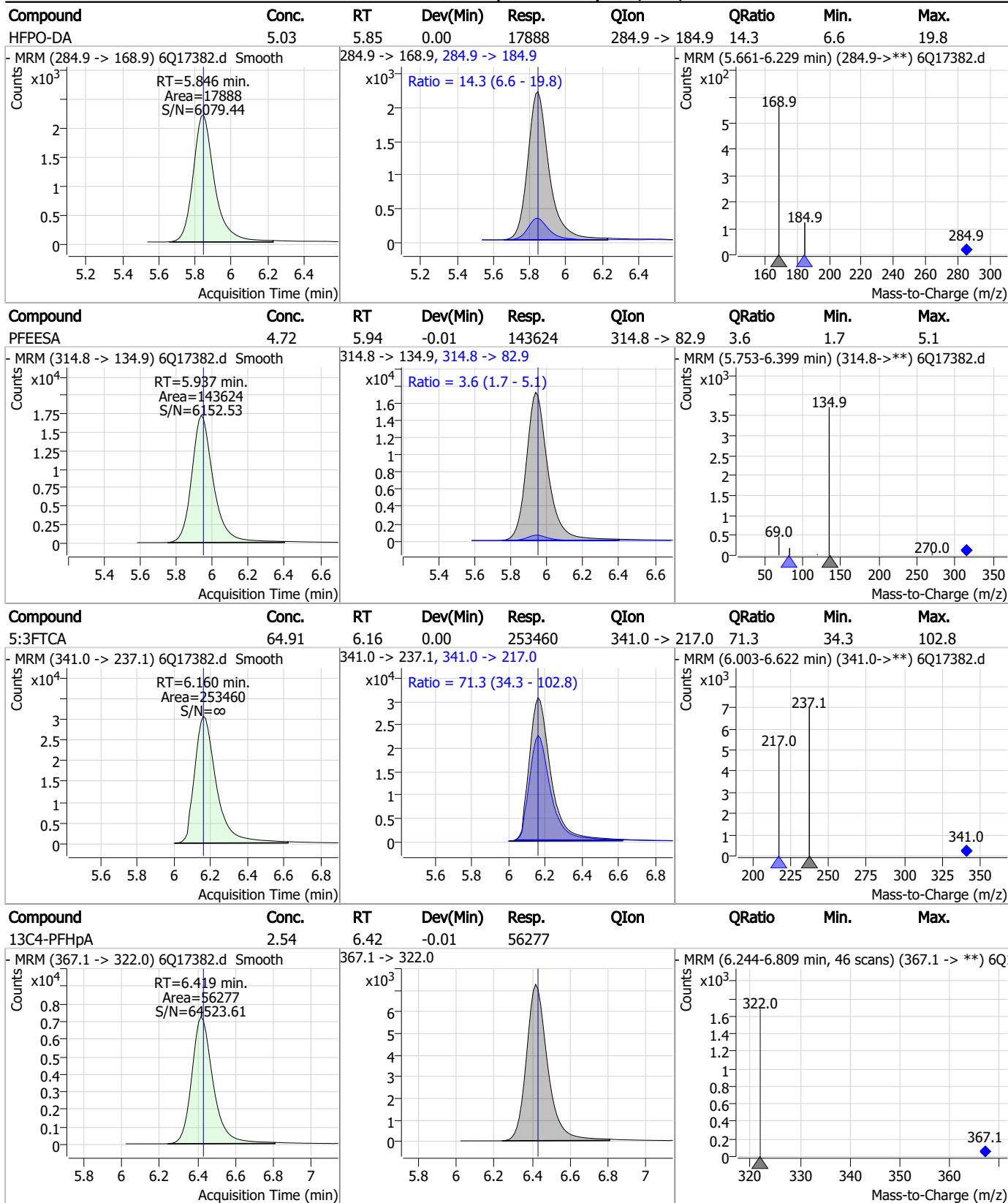
Perfluorinated Compounds by LC/MS/MS



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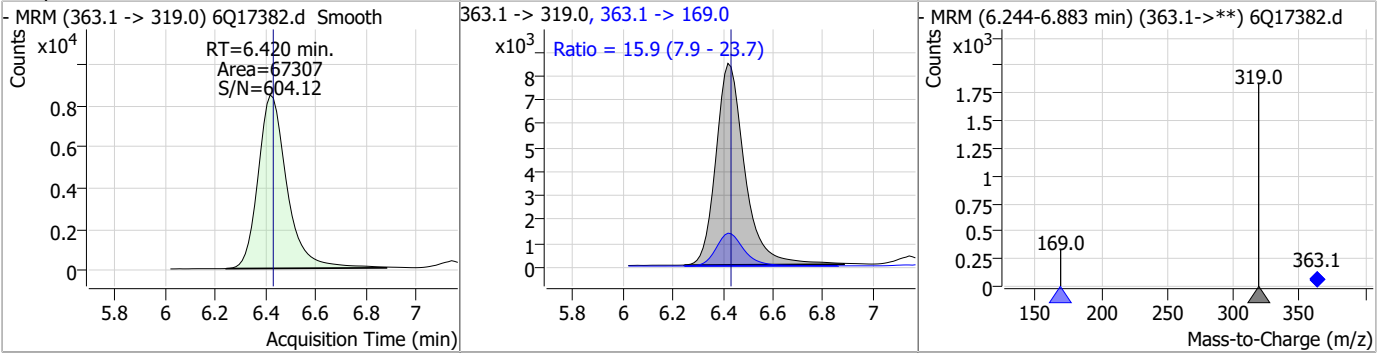
Perfluorinated Compounds by LC/MS/MS



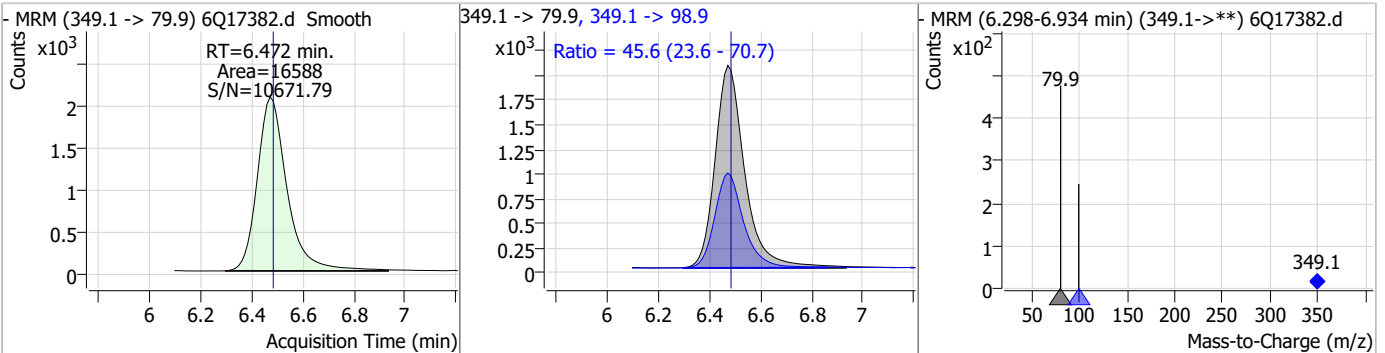
7.7.16
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Perfluorinated Compounds by LC/MS/MS

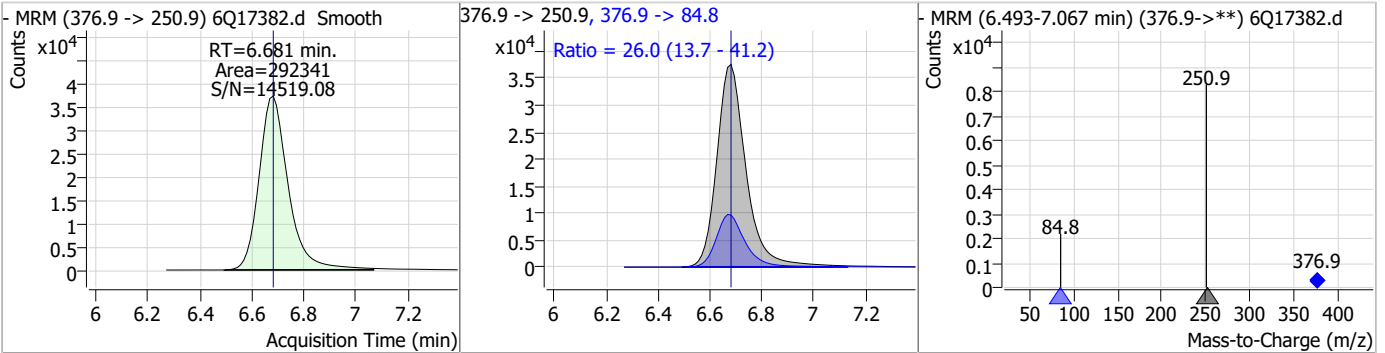
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.42	6.42	-0.01	67307	363.1 -> 169.0	15.9	7.9	23.7



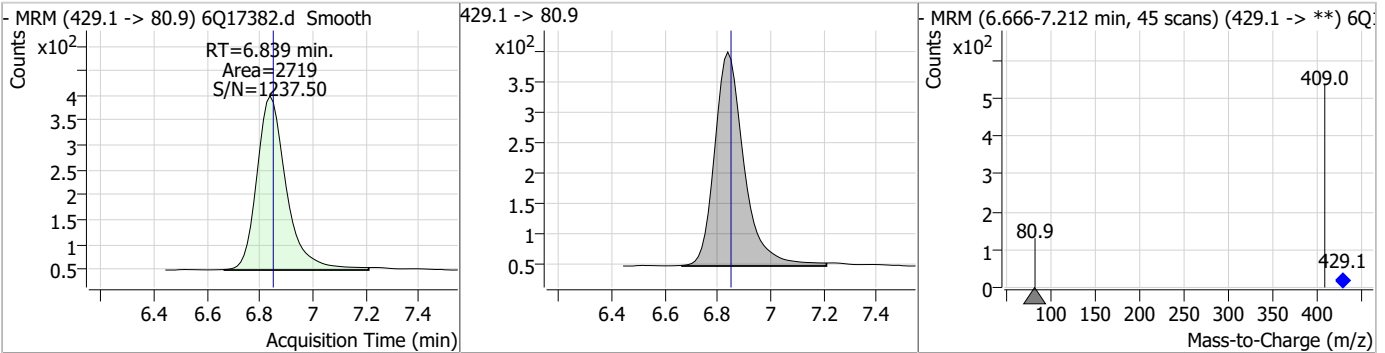
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.37	6.47	-0.01	16588	349.1 -> 98.9	45.6	23.6	70.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	5.15	6.68	0.00	292341	376.9 -> 84.8	26.0	13.7	41.2

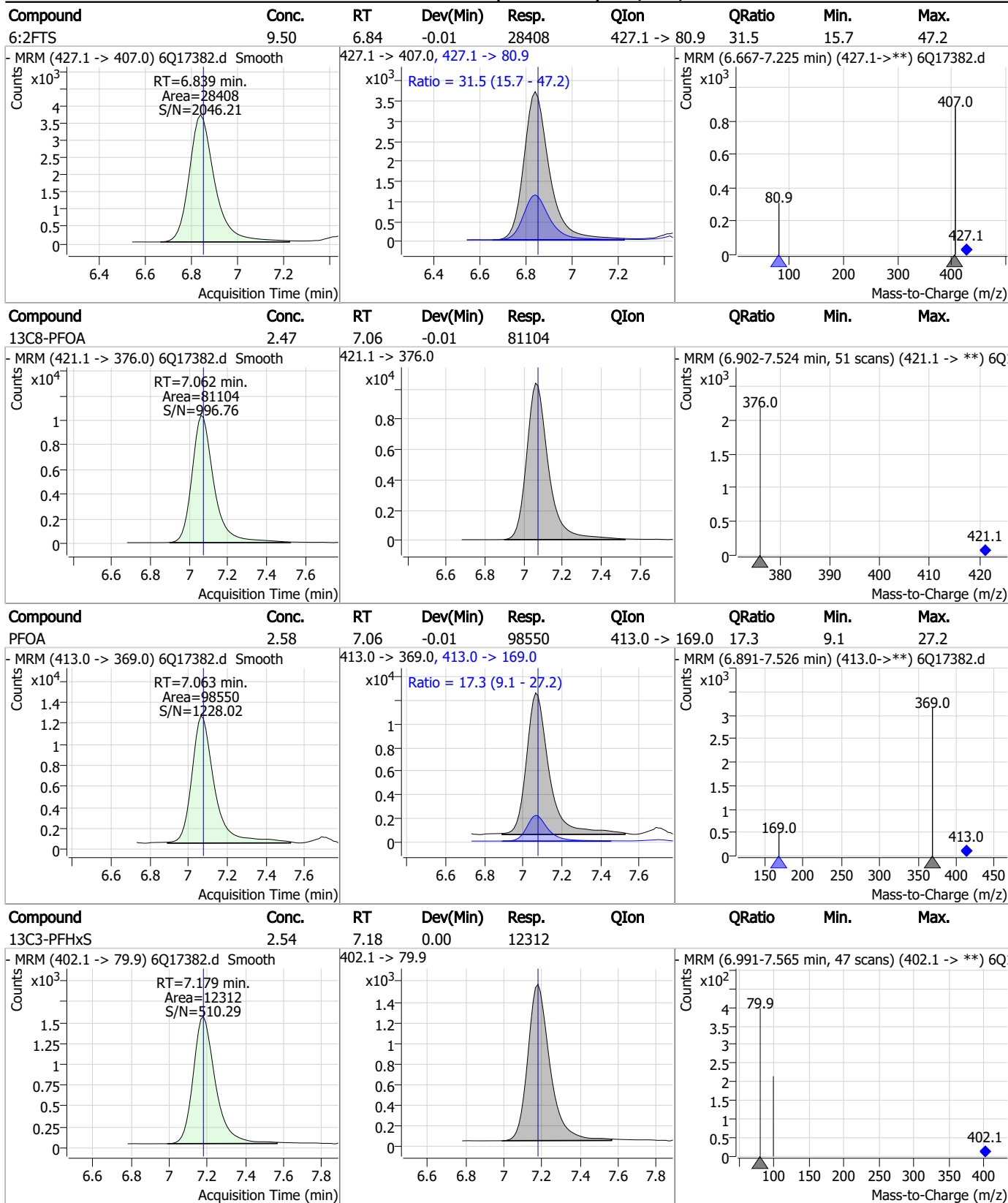


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.35	6.84	-0.01	2719	429.1 -> 80.9			



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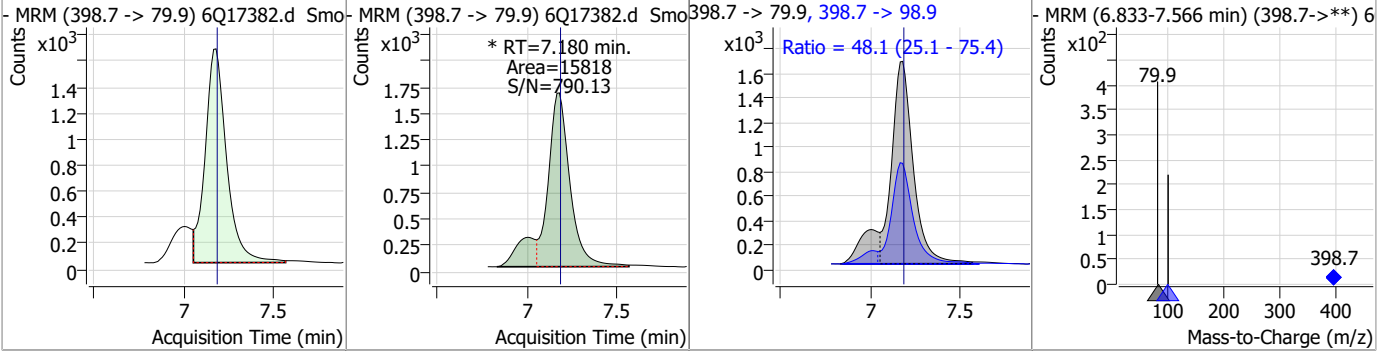
Perfluorinated Compounds by LC/MS/MS



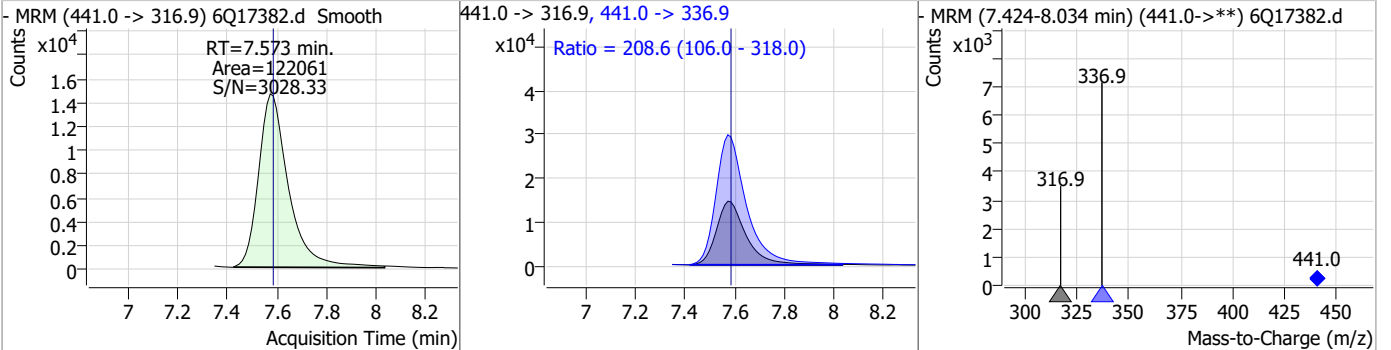
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Perfluorinated Compounds by LC/MS/MS

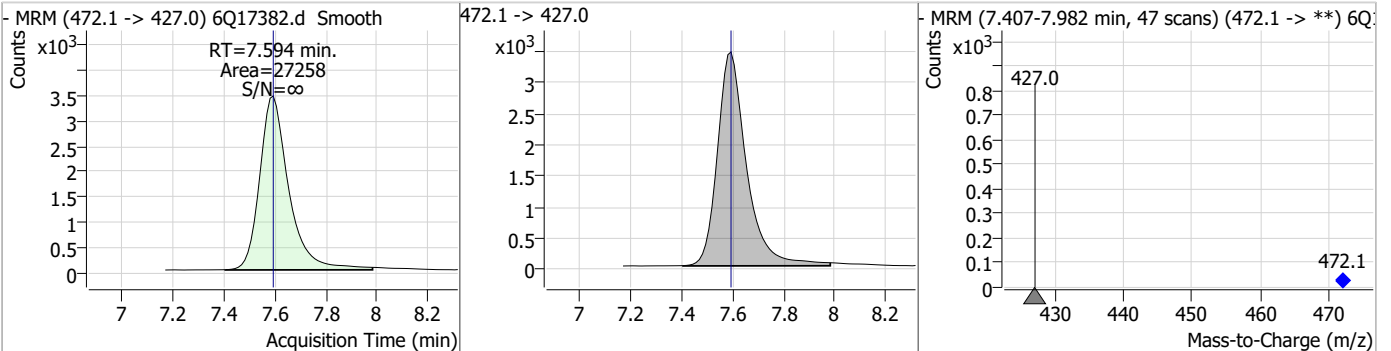
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.36	7.18	0.00	15818 (m)	398.7 -> 98.9	48.1	25.1	75.4



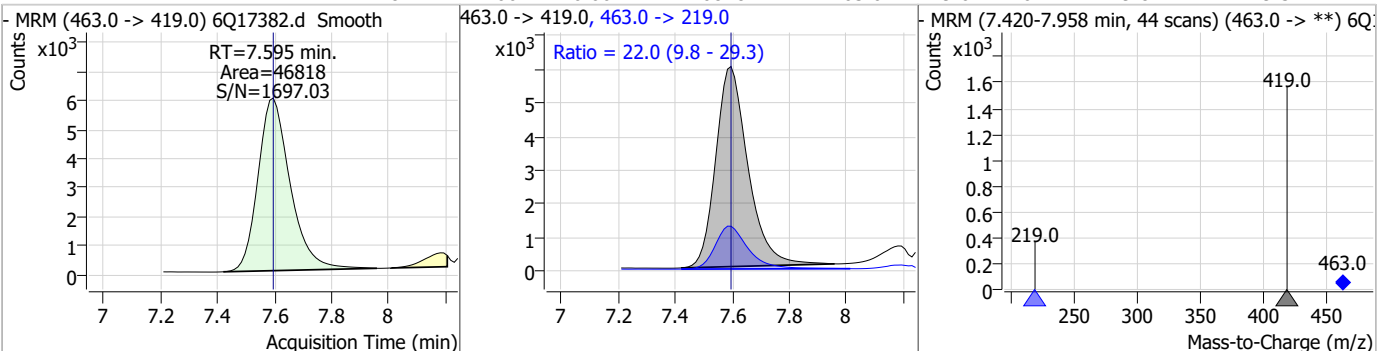
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	68.81	7.57	-0.01	122061	441.0 -> 336.9	208.6	106.0	318.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.27	7.59	0.00	27258	472.1 -> 427.0			



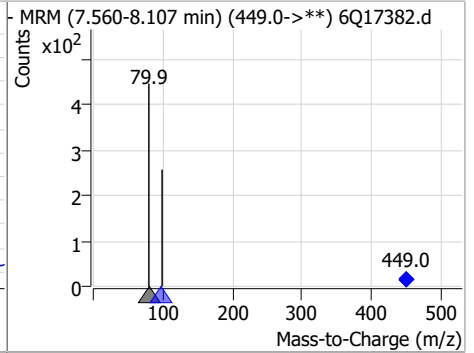
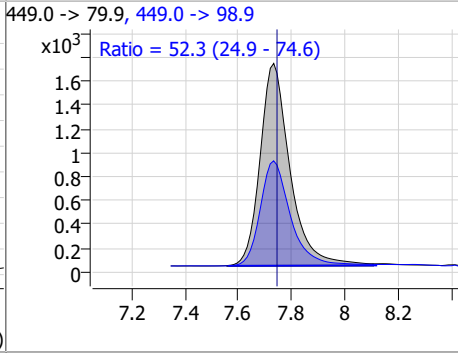
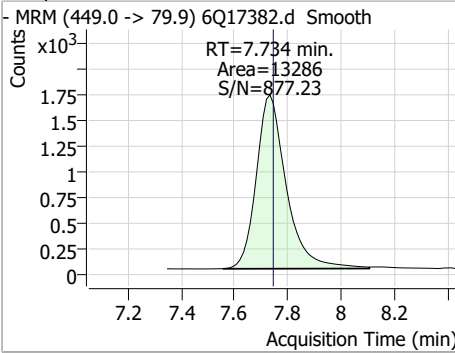
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.48	7.60	0.00	46818	463.0 -> 219.0	22.0	9.8	29.3



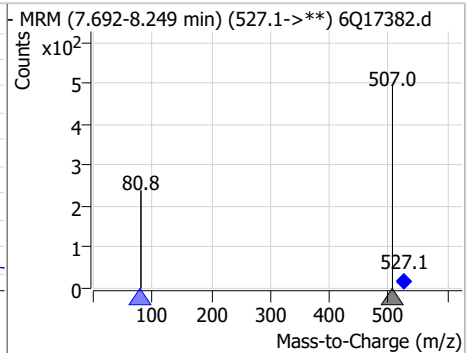
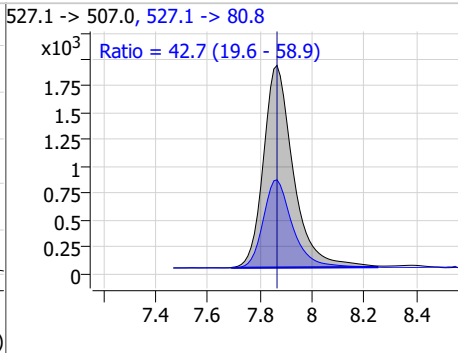
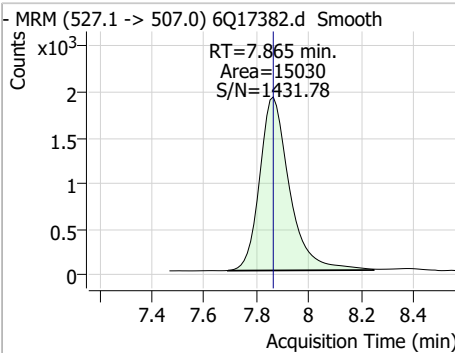
7.7.16
7

Perfluorinated Compounds by LC/MS/MS

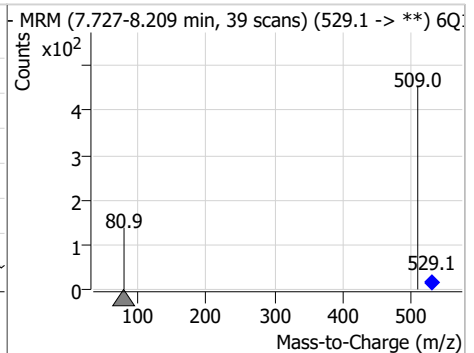
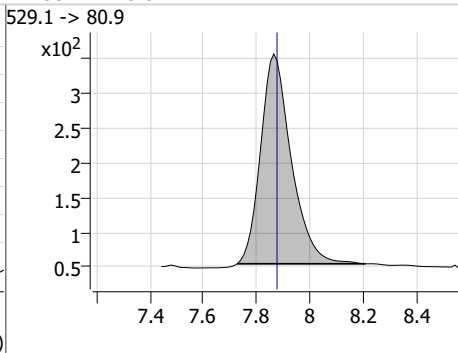
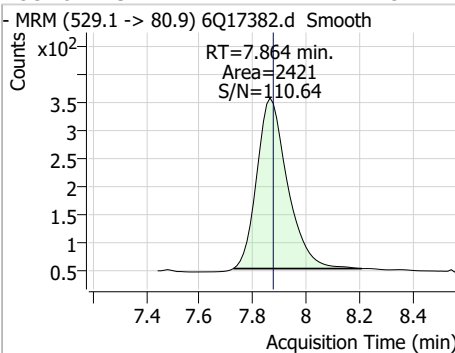
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.27	7.73	-0.01	13286	449.0 -> 98.9	52.3	24.9	74.6



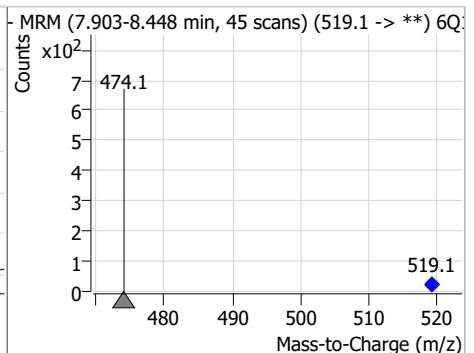
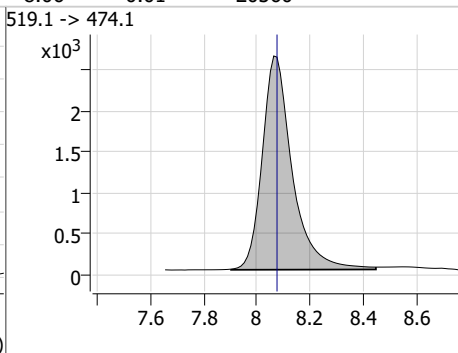
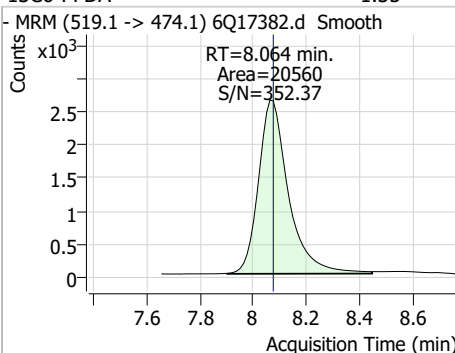
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	10.44	7.87	0.00	15030	527.1 -> 80.8	42.7	19.6	58.9



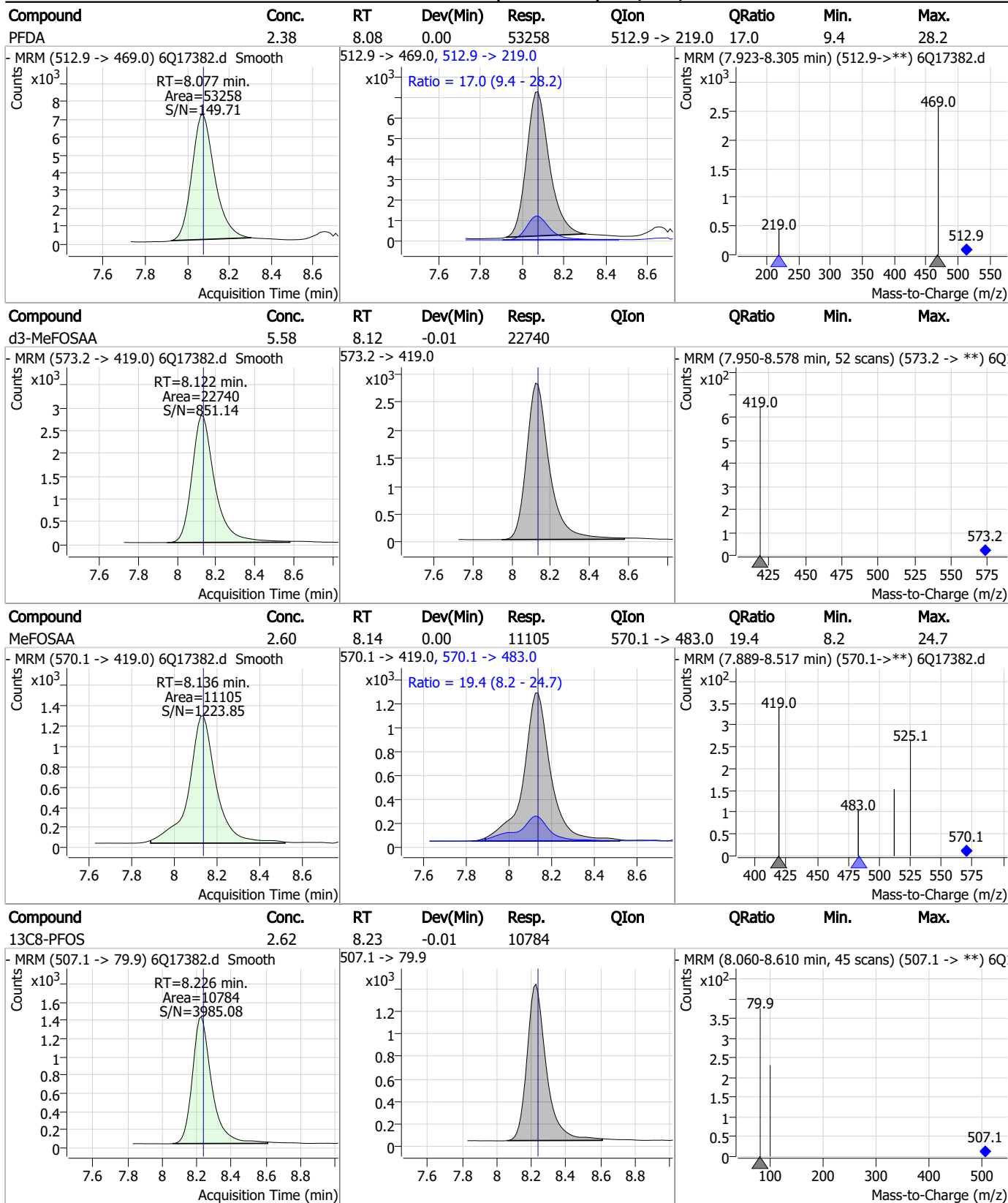
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	4.43	7.86	-0.01	2421	529.1 -> 80.9			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.35	8.06	-0.01	20560	519.1 -> 474.1			



Perfluorinated Compounds by LC/MS/MS

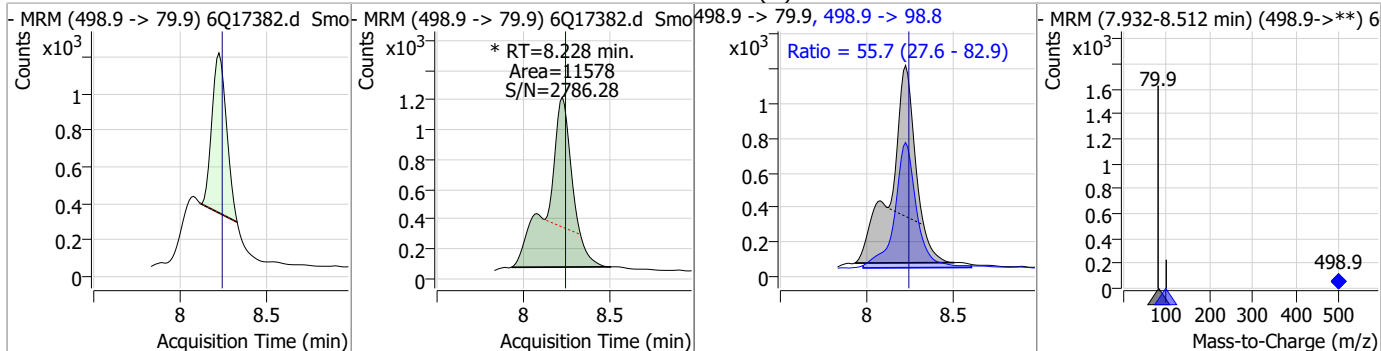


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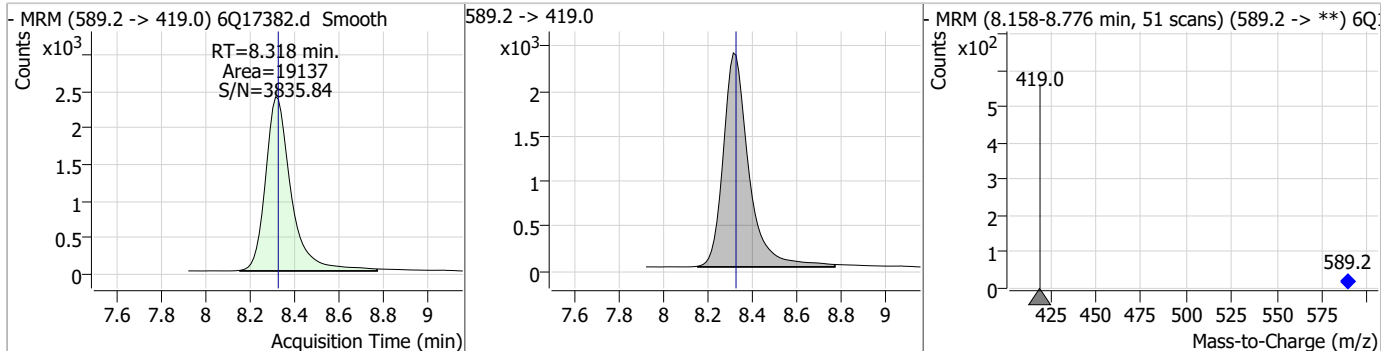
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Perfluorinated Compounds by LC/MS/MS

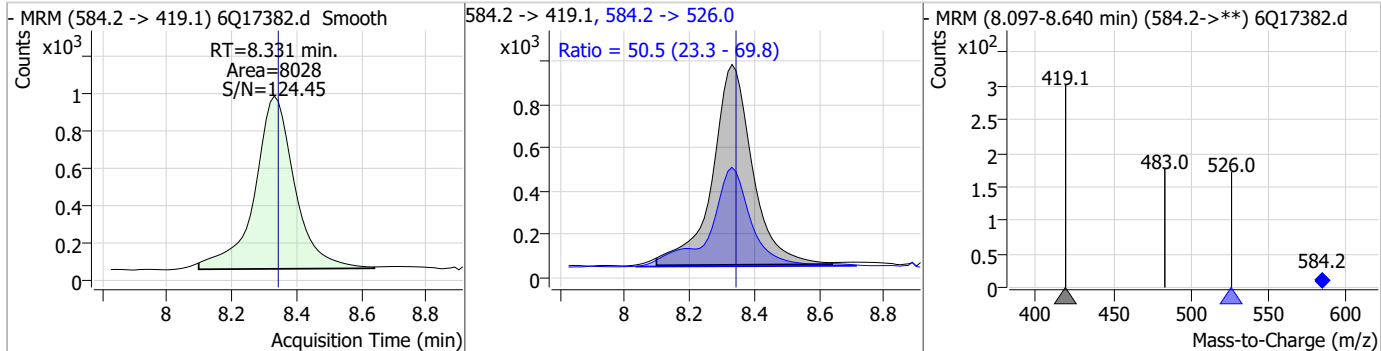
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.22	8.23	-0.01	11578 (m)	498.9 -> 98.8	55.7	27.6	82.9



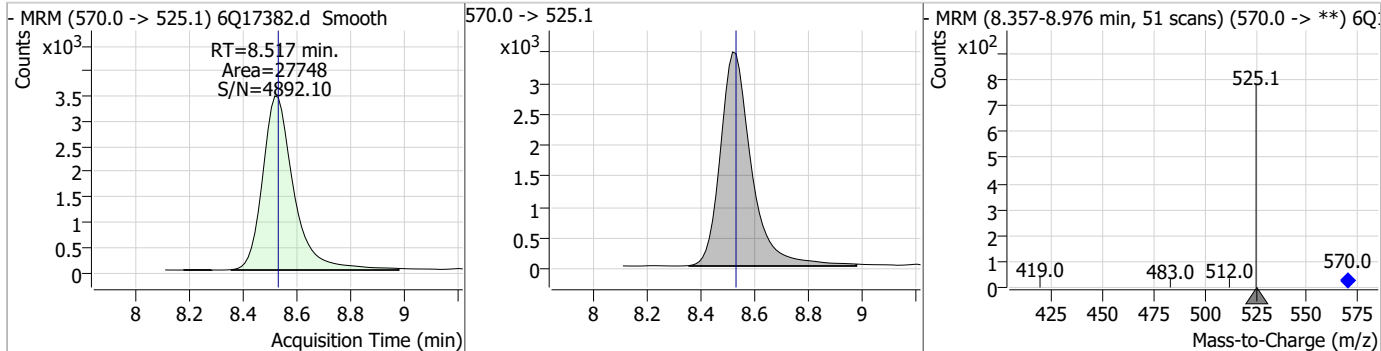
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.65	8.32	-0.01	19137				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.47	8.33	-0.01	8028	584.2 -> 526.0	50.5	23.3	69.8

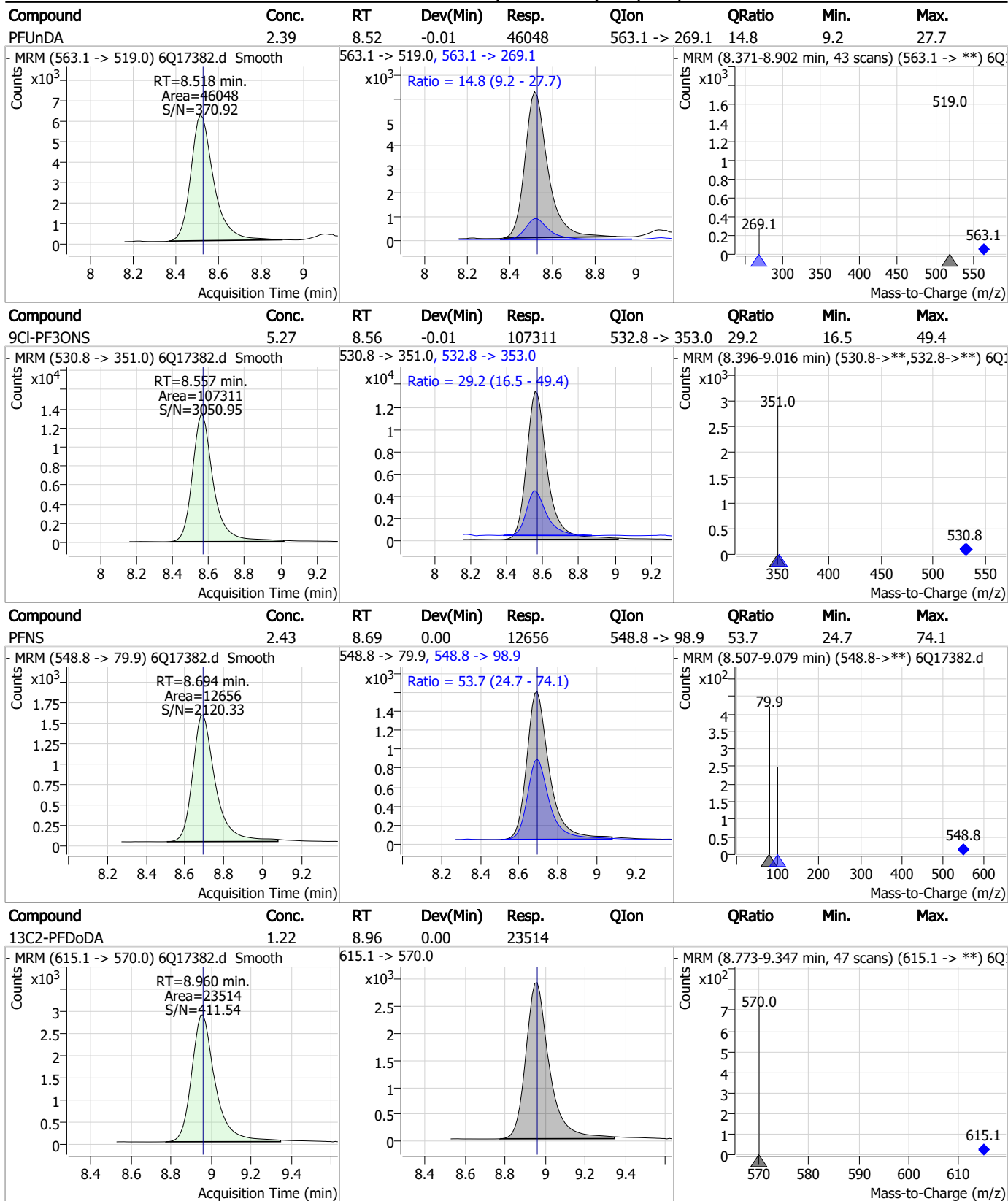


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.42	8.52	-0.01	27748				



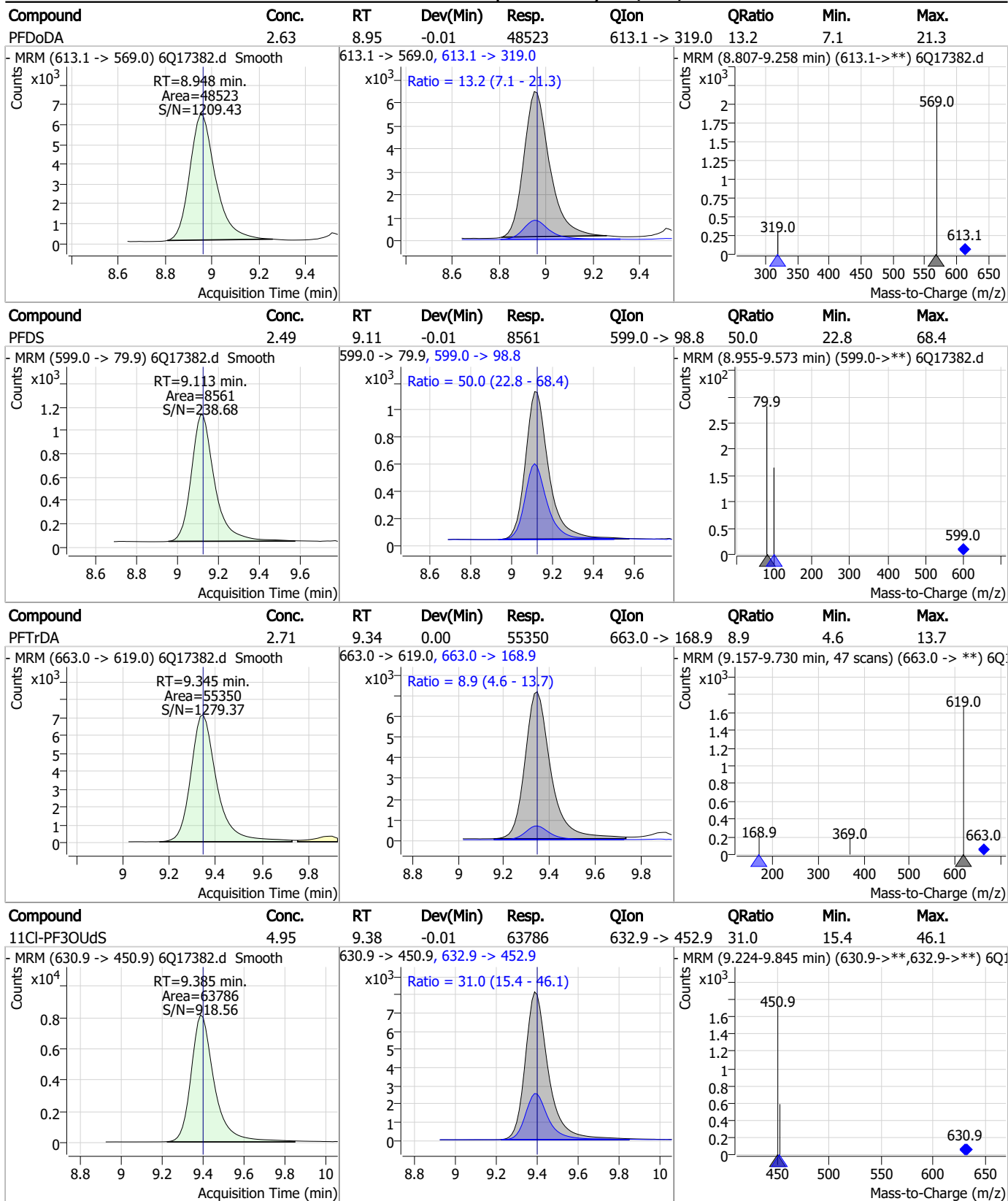
7.7.16
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Perfluorinated Compounds by LC/MS/MS



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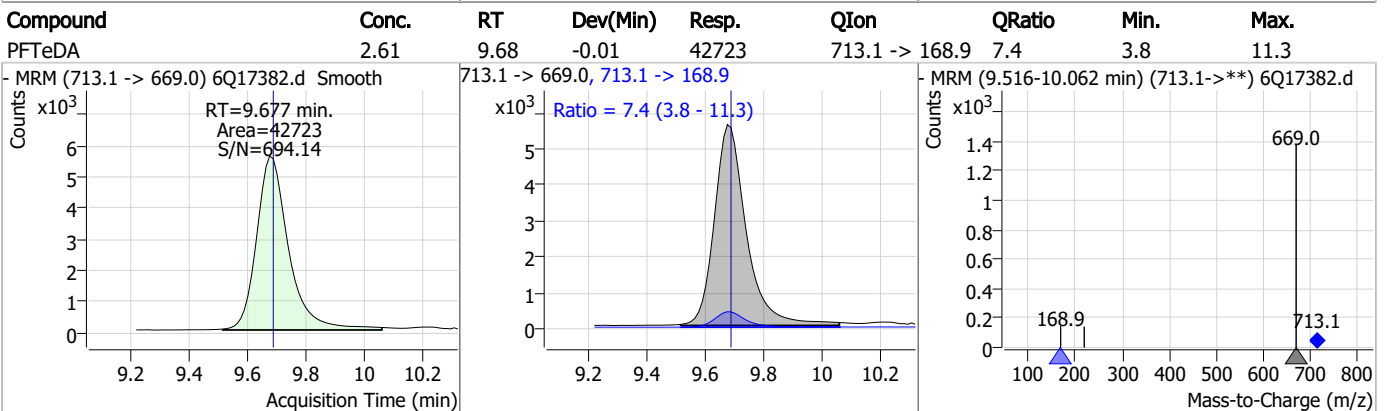
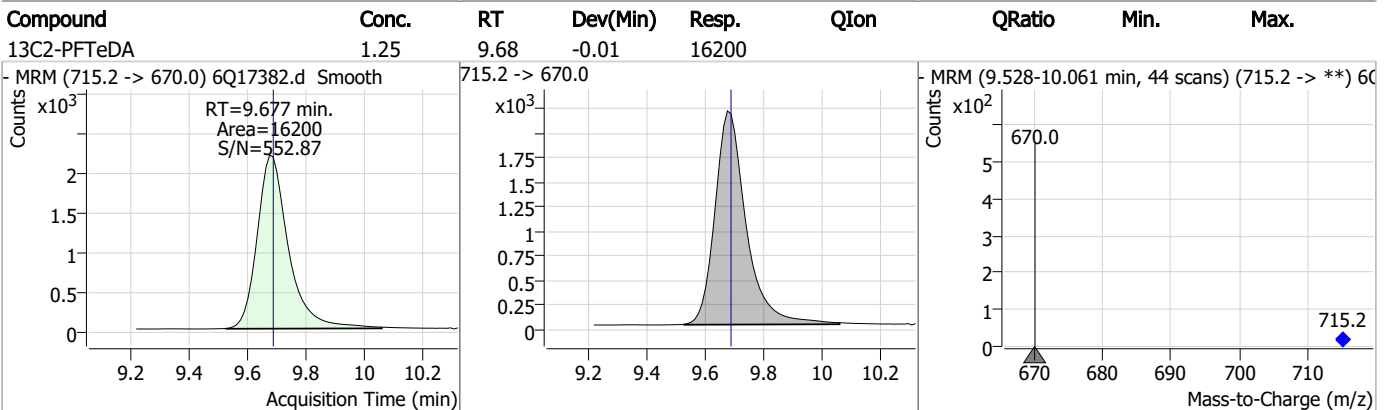
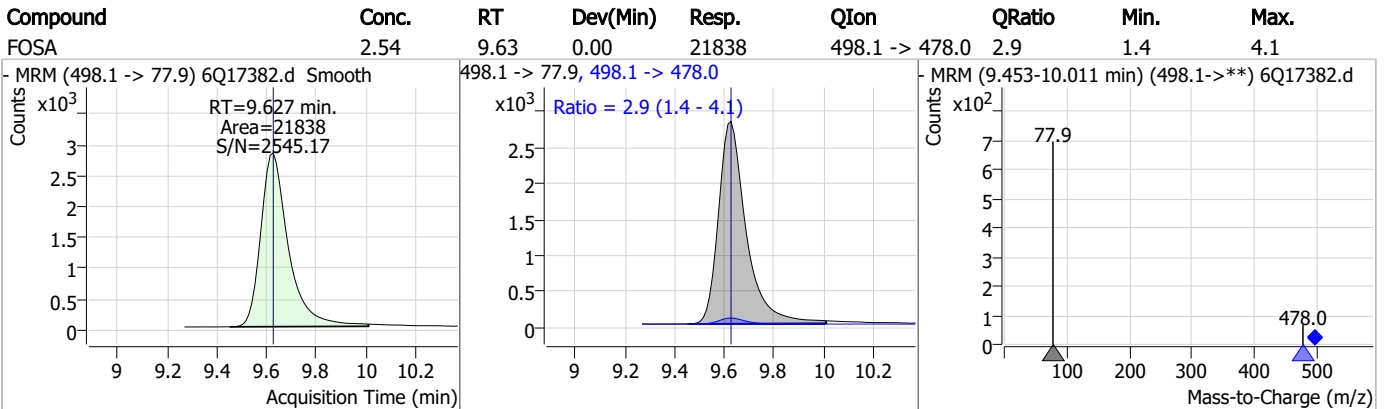
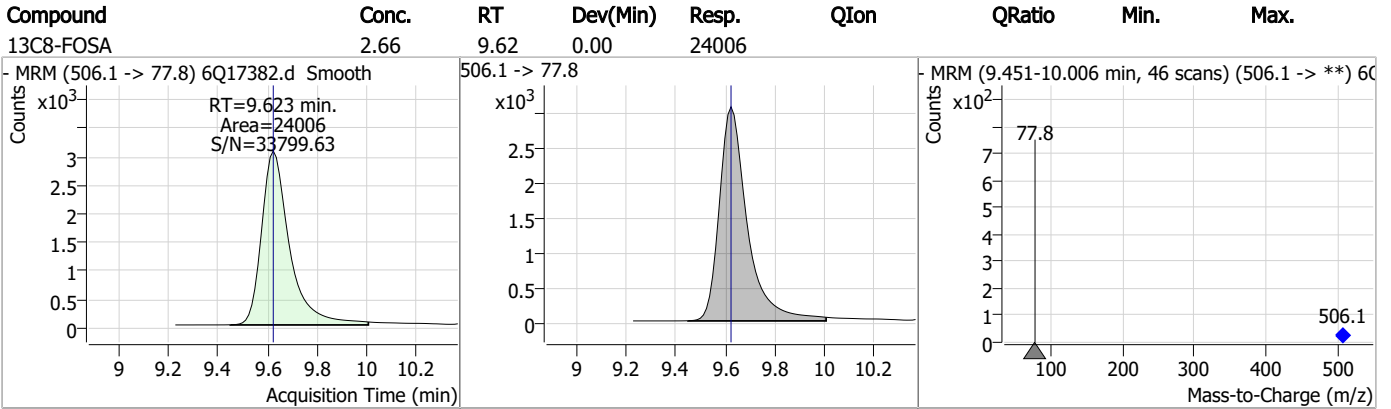
Perfluorinated Compounds by LC/MS/MS



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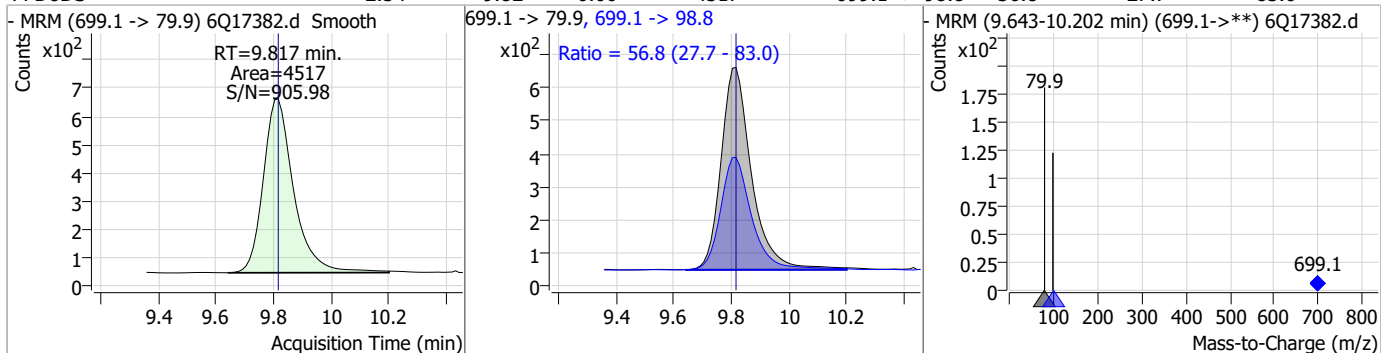
Perfluorinated Compounds by LC/MS/MS



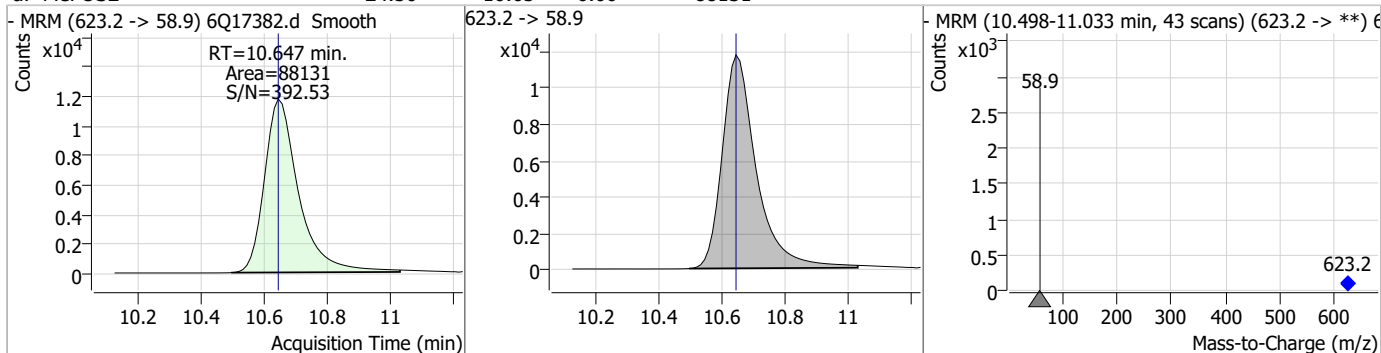
7.7.16 7

Perfluorinated Compounds by LC/MS/MS

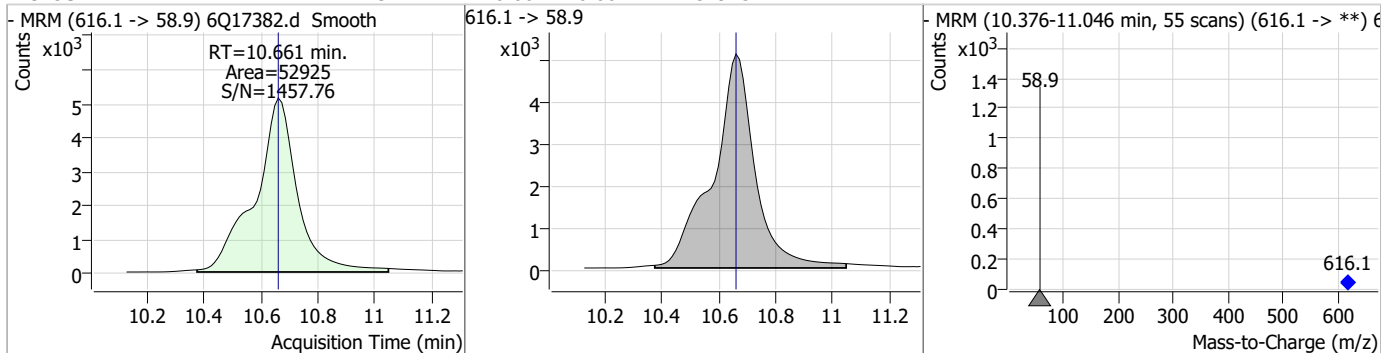
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFD _o DS	2.54	9.82	0.00	4517	699.1 -> 98.8	56.8	27.7	83.0



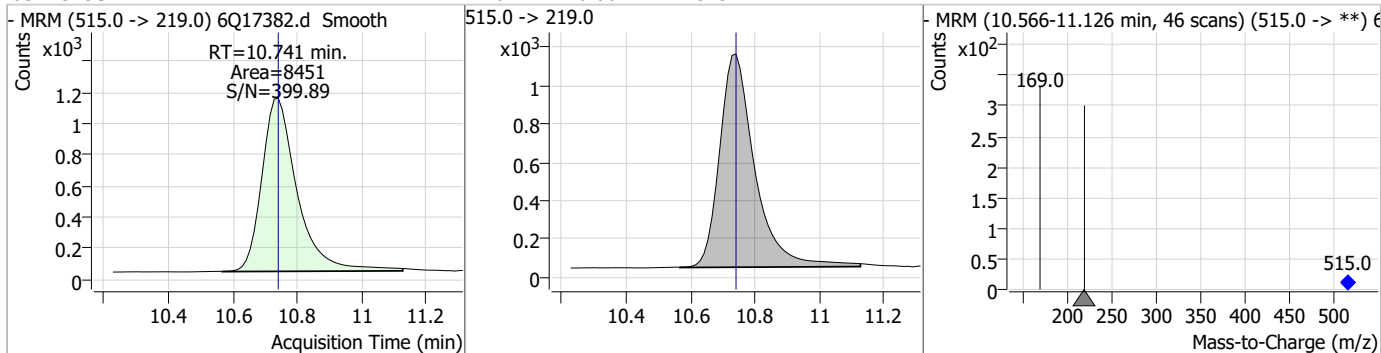
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.56	10.65	0.00	88131				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	13.47	10.66	0.00	52925				

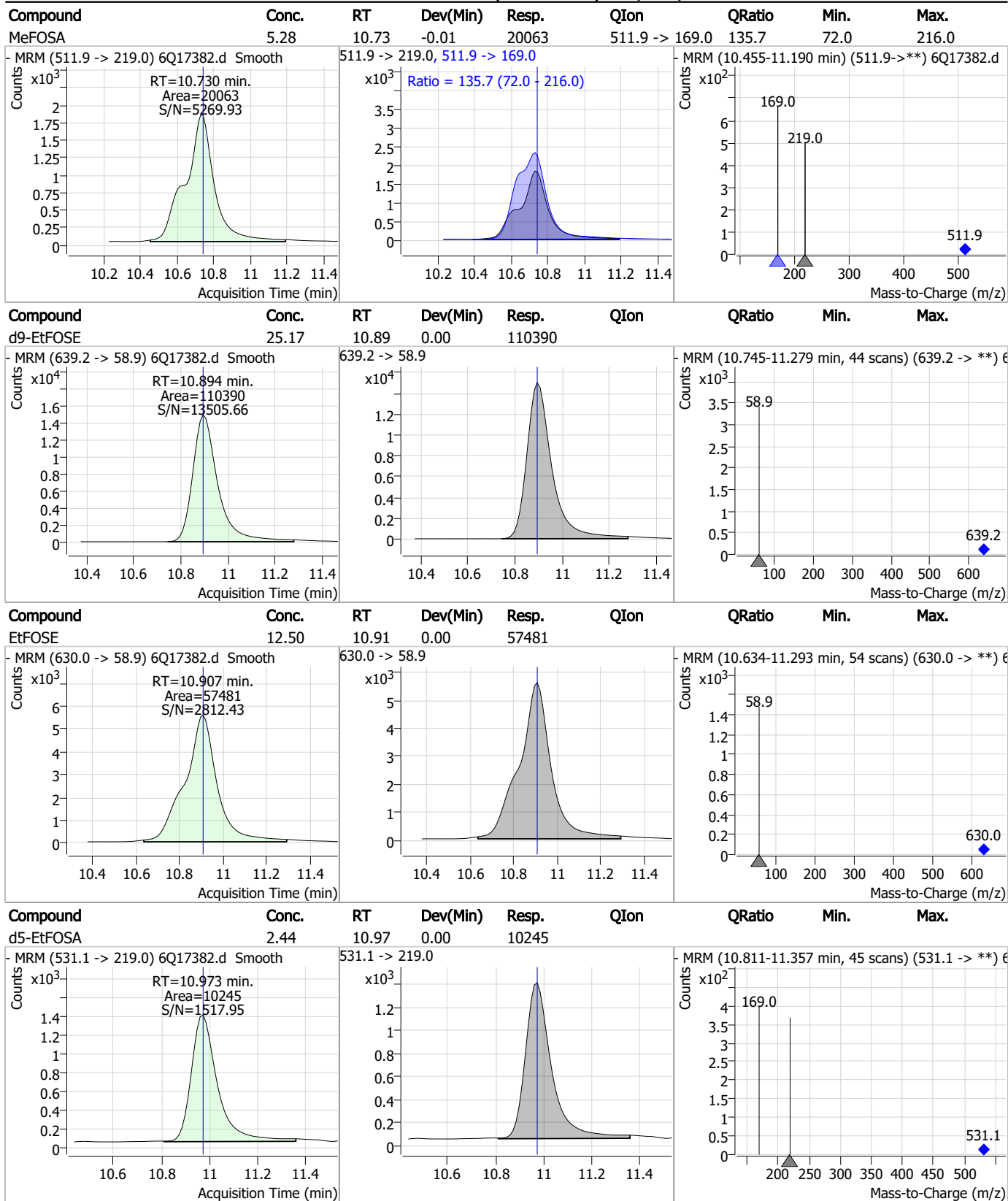


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.47	10.74	0.00	8451				



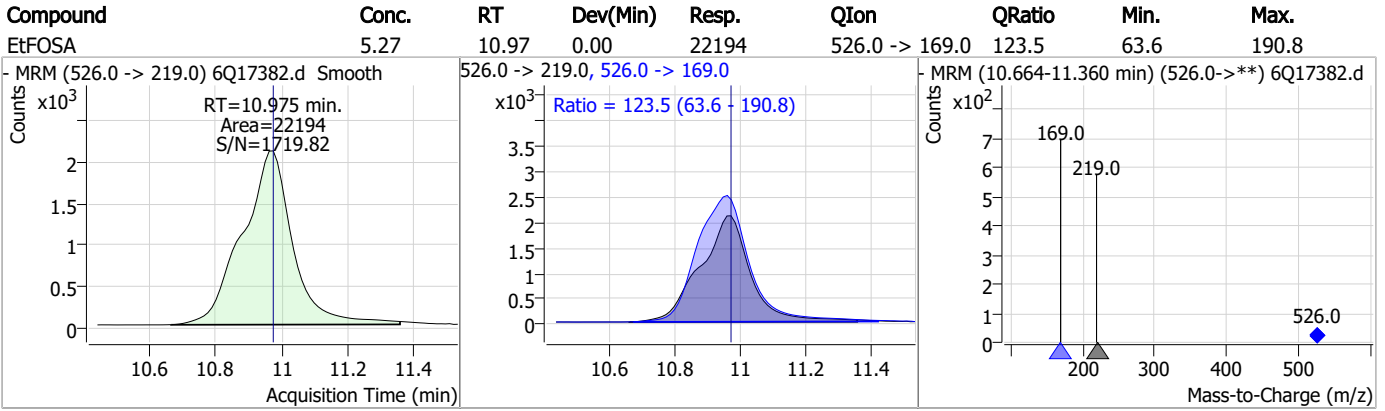
7.7.16
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Perfluorinated Compounds by LC/MS/MS



7.7.16
7

Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q261-CC258 Method: EPA DRAFT 1633
Lab FileID: 6Q17382.D Analyst approved: 05/03/23 13:49 Martha Valls
Injection Time: 05/03/23 09:33 Supervisor approved: 05/03/23 19:48 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.23	Split peak

7.7.16.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17389.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/3/2023 11:15:23 AM
 Sample Name : ecc258-4
 Vial : P1-A5
 DA Method File : 1633_042823_S6Q258.quantmethod.xml
 Batch Name : s6q261.batch.bin
 Sample Information : OP96301,S6Q261,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.910	216.8 -> 171.9	175689	10.00 µg/L	0.000
M5-PFPeA	4.270	268.3 -> 223.0	55874	5.00 µg/L	0.000
M5-PFHxA	5.468	318.0 -> 273.0	61442	2.50 µg/L	-0.012
M4-PFHpA	6.431	367.1 -> 322.0	55248	2.50 µg/L	0.000
M8-PFOA	7.074	421.1 -> 376.0	80016	2.50 µg/L	0.000
M9-PFNA	7.594	472.1 -> 427.0	27918	1.25 µg/L	0.000
M6-PFDA	8.076	519.1 -> 474.1	18821	1.25 µg/L	0.000
M7-PFUnDA	8.530	570.0 -> 525.1	24670	1.25 µg/L	0.000
M2-PFDoDA	8.960	615.1 -> 570.0	22932	1.25 µg/L	0.000
M2-PFTeDA	9.677	715.2 -> 670.0	16235	1.25 µg/L	-0.012
M8-FOSA	9.623	506.1 -> 77.8	23534	2.50 µg/L	0.000
M3-PFBS	5.398	302.1 -> 79.9	19765	2.50 µg/L	-0.012
M3-PFHxS	7.179	402.1 -> 79.9	12943	2.50 µg/L	0.000
M8-PFOS	8.226	507.1 -> 79.9	10838	2.50 µg/L	-0.012
M2-4:2FTS	5.144	329.1 -> 80.9	2086	5.00 µg/L	-0.012
M2-6:2FTS	6.851	429.1 -> 80.9	2386	5.00 µg/L	0.000
M2-8:2FTS	7.864	529.1 -> 80.9	2547	5.00 µg/L	-0.012
M3-MeFOSAA	8.134	573.2 -> 419.0	22186	5.00 µg/L	0.000
M3-HFPO-DA	5.845	286.9 -> 168.9	38668	10.00 µg/L	0.000
M5-EtFOSAA	8.330	589.2 -> 419.0	19930	5.00 µg/L	0.000
M7-MeFOSE	10.647	623.2 -> 58.9	90761	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	111953	25.00 µg/L	0.000
M5-EtFOSA	10.973	531.1 -> 219.0	10642	2.50 µg/L	0.000
M3-MeFOSA	10.741	515.0 -> 219.0	8154	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	14009	2.50 µg/L	-0.012
13C3-PFBA	2.902	216.0 -> 172.0	73102	5.00 µg/L	0.000
18O2-PFHxS	7.190	403.0 -> 83.9	9102	2.50 µg/L	0.012
13C4-PFOA	7.075	417.1 -> 372.0	84650	2.50 µg/L	0.000
13C2-PFDA	8.076	515.1 -> 470.1	23066	1.25 µg/L	0.000
13C5-PFNA	7.595	468.0 -> 423.0	27642	1.25 µg/L	0.000
13C2-PFHxA	5.469	315.1 -> 270.0	53048	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.144	329.1 -> 80.9	2086	4.98 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.7%		
13C2-6:2FTS	6.851	429.1 -> 80.9	2386	4.70 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.0%		
13C2-8:2FTS	7.864	529.1 -> 80.9	2547	4.66 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 93.2%		
13C2-PFDoDA	8.960	615.1 -> 570.0	22932	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.6%		
13C2-PFTeDA	9.677	715.2 -> 670.0	16235	1.25 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.0%		
13C3-PFBS	5.398	302.1 -> 79.9	19765	2.31 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 92.3%		
13C3-PFHxS	7.179	402.1 -> 79.9	12943	2.67 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.8%	
13C4-PFBA	2.910	216.8 -> 171.9	175689	10.40 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.0%	
13C4-PFHpA	6.431	367.1 -> 322.0	55248	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C5-PFHxA	5.468	318.0 -> 273.0	61442	2.40 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.1%	
13C5-PFPeA	4.270	268.3 -> 223.0	55874	4.71 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.3%	
13C6-PFDA	8.076	519.1 -> 474.1	18821	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C7-PFUnDA	8.530	570.0 -> 525.1	24670	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C8-FOSA	9.623	506.1 -> 77.8	23534	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C8-PFOA	7.074	421.1 -> 376.0	80016	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.0%	
13C8-PFOS	8.226	507.1 -> 79.9	10838	2.57 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C9-PFNA	7.594	472.1 -> 427.0	27918	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.0%	
d3-MeFOSAA	8.134	573.2 -> 419.0	22186	5.31 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.3%	
13C3-HFPO-DA	5.845	286.9 -> 168.9	38668	10.30 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.0%	
d3-MeFOSA	10.741	515.0 -> 219.0	8154	2.33 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.2%	
d5-EtFOSAA	8.330	589.2 -> 419.0	19930	5.74 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 114.9%	
d7-MeFOSE	10.647	623.2 -> 58.9	90761	24.68 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.7%	
d9-EtFOSE	10.894	639.2 -> 58.9	111953	24.92 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
d5-EtFOSA	10.973	531.1 -> 219.0	10642	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.1%	
Target Compounds					QValue
4:2FTS	5.145	327.1 -> 307.0	28938	9.17 µg/L	98
		327.1 -> 80.9	10730		
6:2FTS	6.839	427.1 -> 407.0	27503	10.48 µg/L	100
		427.1 -> 80.9	8573		
8:2FTS	7.865	527.1 -> 507.0	15689	10.35 µg/L	99
		527.1 -> 80.8	6056		
EtFOSAA	8.331	584.2 -> 419.1	8122	2.40 µg/L	84
		584.2 -> 526.0	4620		
FOSA	9.627	498.1 -> 77.9	20866	2.47 µg/L	99
		498.1 -> 478.0	643		
MeFOSAA	8.136	570.1 -> 419.0	11018	2.64 µg/L	90
		570.1 -> 483.0	2268		
PFBA	2.906	212.8 -> 168.9	61738	10.48 µg/L	100
PFBS	5.400	298.7 -> 79.9	21677	2.44 µg/L	96
		298.7 -> 98.8	8625		
PFDA	8.077	512.9 -> 469.0	56202	2.75 µg/L	97
		512.9 -> 219.0	9766		
PFDoDA	8.961	613.1 -> 569.0	44999	2.50 µg/L	98
		613.1 -> 319.0	6739		
PFDS	9.113	599.0 -> 79.9	8573	2.48 µg/L	98

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.432	599.0 -> 98.8	4040	2.52	µg/L	99
		363.1 -> 319.0	68696			
PFHpS	7.734	363.1 -> 169.0	10531	2.17	µg/L	92
		449.0 -> 79.9	12770			
PFHxA	5.483	449.0 -> 98.9	7025	2.47	µg/L	100
		313.0 -> 269.0	59981			
PFHxS	7.180	313.0 -> 118.9	2782	2.21	µg/L	m
		398.7 -> 79.9	15612			
PFNA	7.595	398.7 -> 98.9	7577	2.48	µg/L	100
		463.0 -> 419.0	47978			
PFNS	8.694	463.0 -> 219.0	9464	2.26	µg/L	90
		548.8 -> 79.9	11820			
PFOA	7.076	548.8 -> 98.9	6656	2.41	µg/L	99
		413.0 -> 369.0	90555			
PFOS	8.228	413.0 -> 169.0	16659	2.30	µg/L	m
		498.9 -> 79.9	12035			
PFPeA	4.273	498.9 -> 98.8	6430	5.14	µg/L	100
		263.0 -> 219.0	78210			
PFPeS	6.484	349.1 -> 79.9	15647	2.12	µg/L	100
		349.1 -> 98.9	7355			
PFTeDA	9.677	713.1 -> 669.0	40798	2.49	µg/L	98
		713.1 -> 168.9	3284			
PFTrDA	9.345	663.0 -> 619.0	53696	2.70	µg/L	99
		663.0 -> 168.9	4786			
PFUnDA	8.531	563.1 -> 519.0	45184	2.64	µg/L	93
		563.1 -> 269.1	6982			
11CI-PF3OUdS	9.398	630.9 -> 450.9	67239	5.07	µg/L	98
		632.9 -> 452.9	19988			
9CI-PF3ONS	8.569	530.8 -> 351.0	103232	4.92	µg/L	96
		532.8 -> 353.0	31505			
ADONA	6.681	376.9 -> 250.9	285263	4.88	µg/L	96
		376.9 -> 84.8	72838			
HFPO-DA	5.846	284.9 -> 168.9	18080	4.94	µg/L	99
		284.9 -> 184.9	2296			
3:3FTCA	3.784	241.0 -> 177.0	12321	12.95	µg/L	100
		241.0 -> 117.0	1528			
5:3FTCA	6.172	341.0 -> 237.1	263493	67.02	µg/L	95
		341.0 -> 217.0	190629			
7:3FTCA	7.585	441.0 -> 316.9	121055	67.78	µg/L	97
		441.0 -> 336.9	262863			
EtFOSA	10.975	526.0 -> 219.0	21964	5.02	µg/L	98
		526.0 -> 169.0	27432			
EtFOSE	10.907	630.0 -> 58.9	59148	12.69	µg/L	100
		511.9 -> 219.0	19715			
MeFOSA	10.730	511.9 -> 169.0	26510	5.37	µg/L	92
		616.1 -> 58.9	52033			
MeFOSE	10.661	699.1 -> 79.9	4686	12.86	µg/L	100
		699.1 -> 98.8	2525			
PFDoDS	9.817	295.0 -> 201.0	14098	2.62	µg/L	98
		295.0 -> 84.9	3403			
NFDHA	5.350	279.0 -> 85.1	53706	5.35	µg/L	98
		229.0 -> 84.9	40856			
PFMBA	4.687	314.8 -> 134.9	144806	4.72	µg/L	100
		314.8 -> 82.9	4883			

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



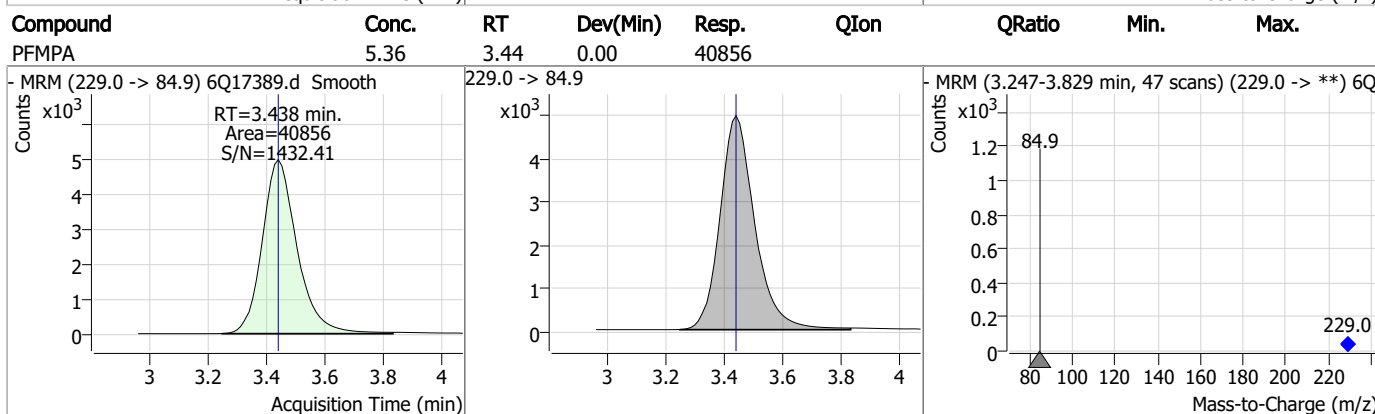
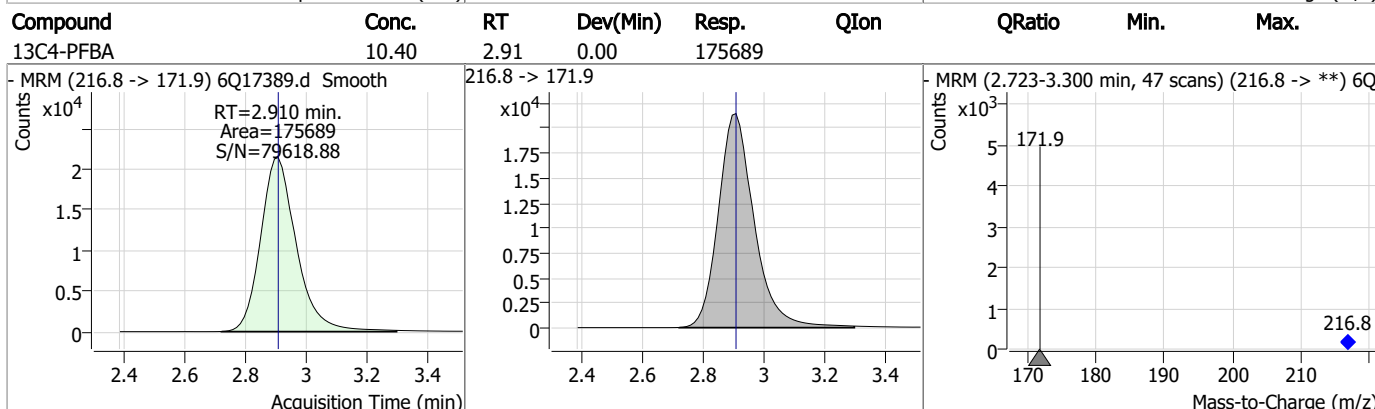
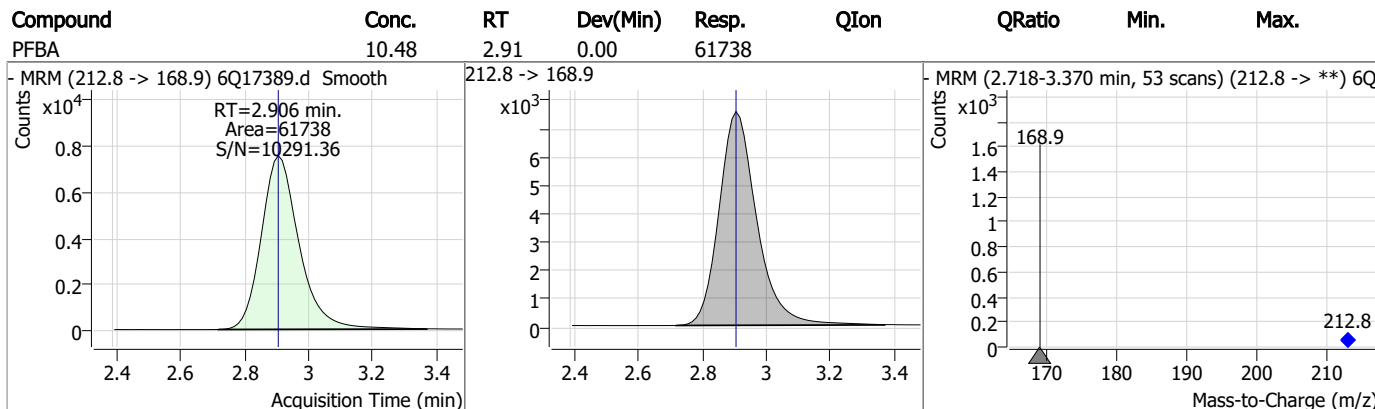
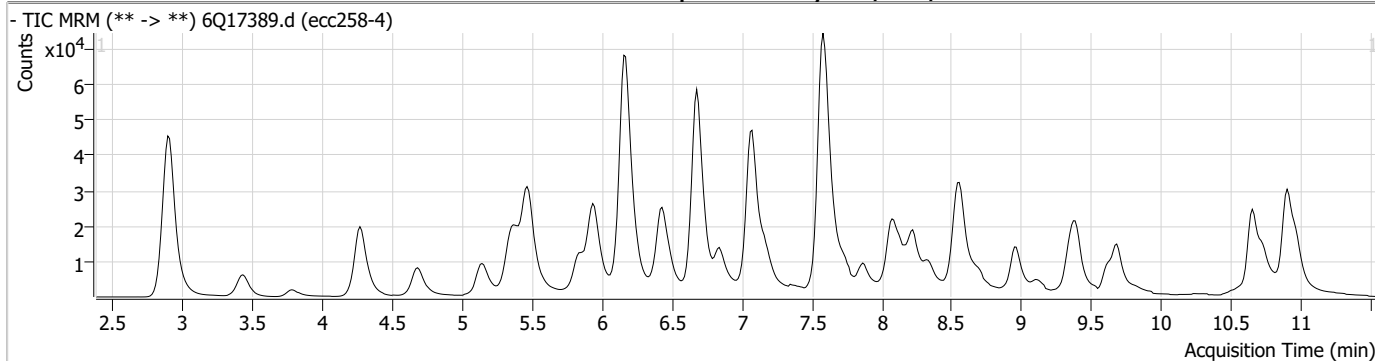
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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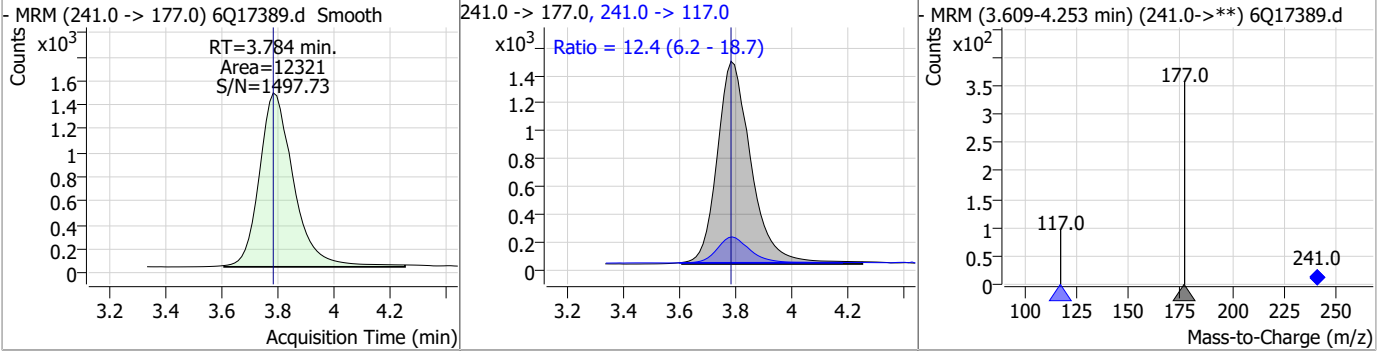
Perfluorinated Compounds by LC/MS/MS



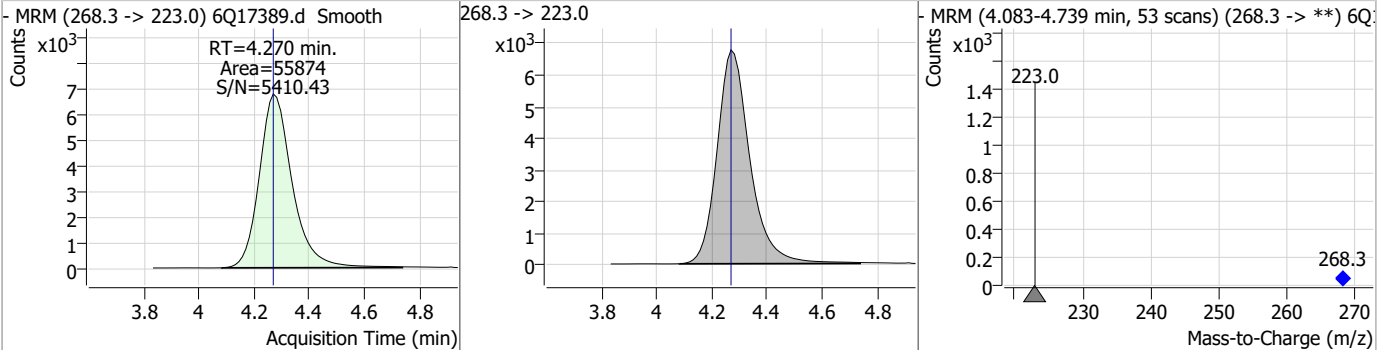
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Perfluorinated Compounds by LC/MS/MS

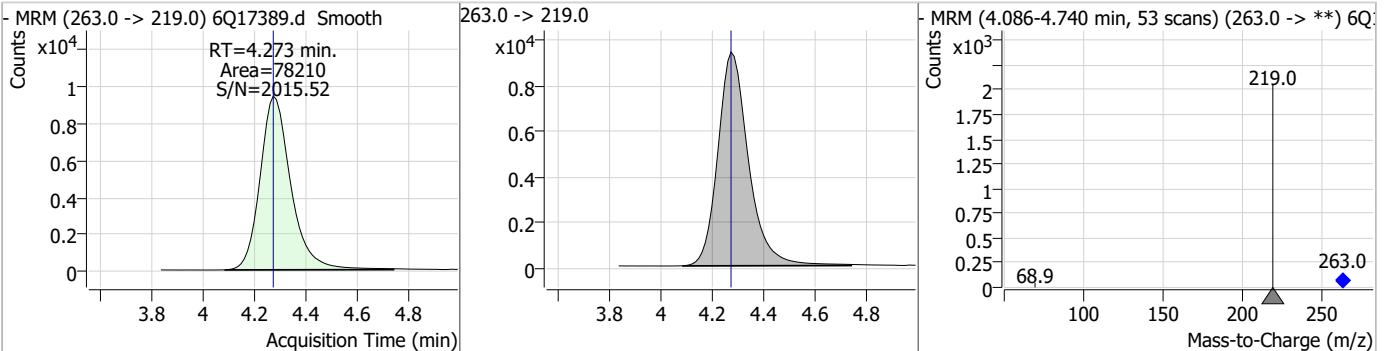
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	12.95	3.78	0.00	12321	241.0 -> 117.0	12.4	6.2	18.7



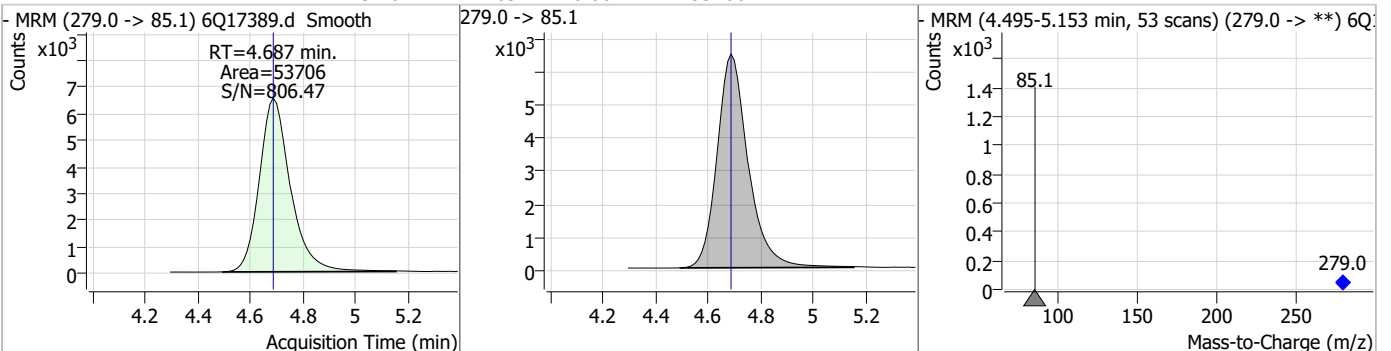
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.71	4.27	0.00	55874				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	5.14	4.27	0.00	78210				



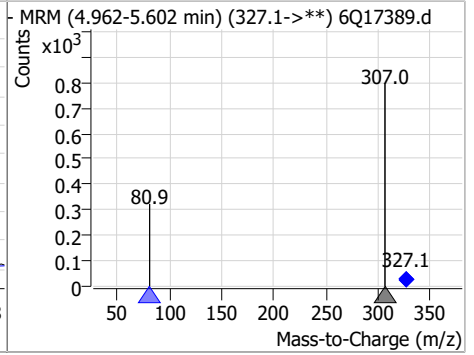
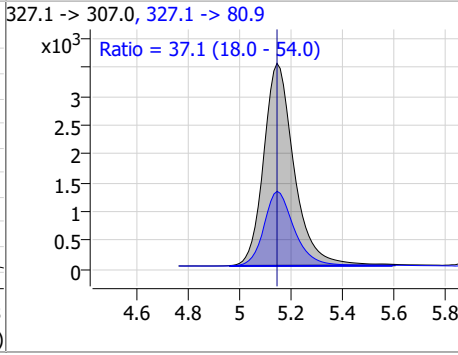
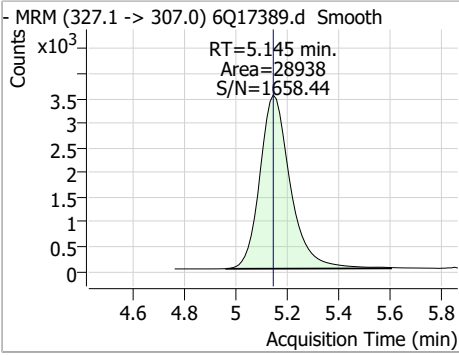
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	5.26	4.69	0.00	53706				



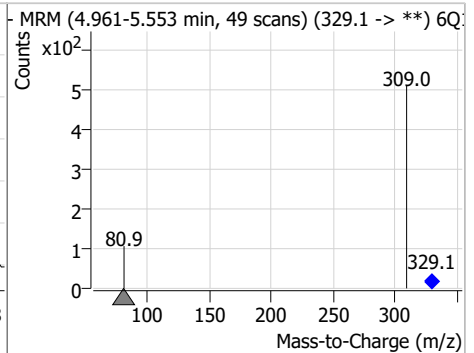
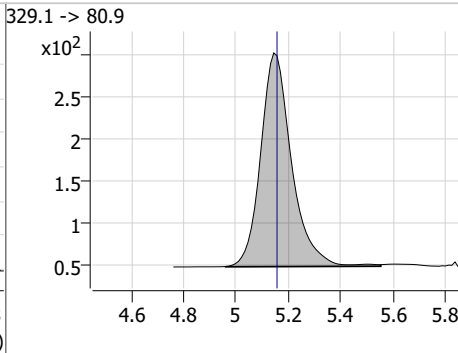
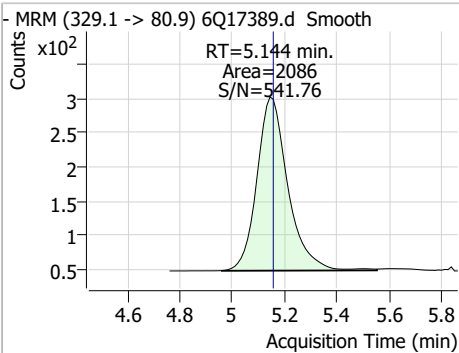
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Perfluorinated Compounds by LC/MS/MS

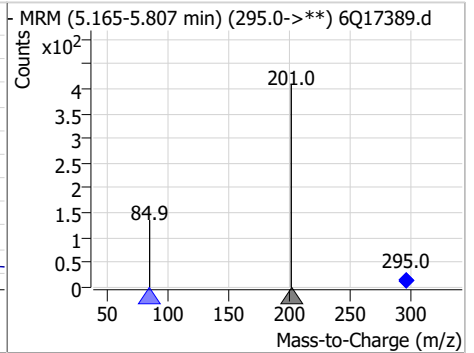
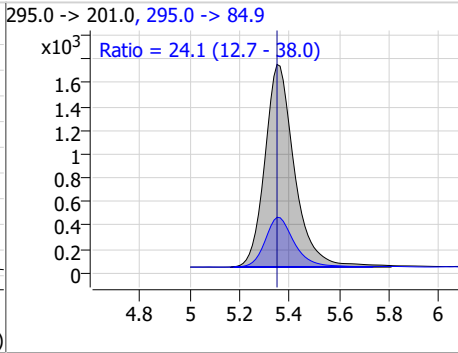
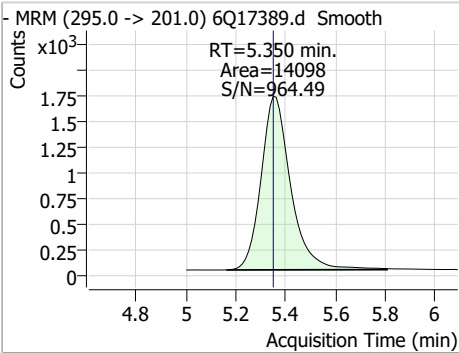
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	9.17	5.14	0.00	28938	327.1 -> 80.9	37.1	18.0	54.0



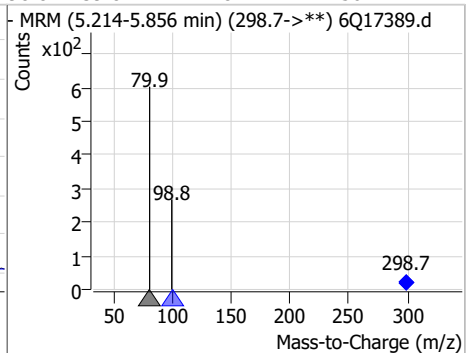
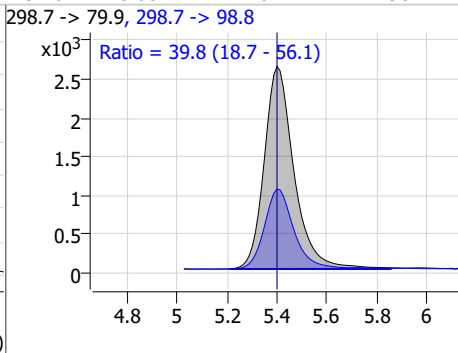
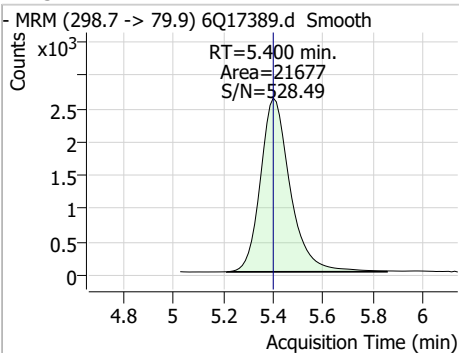
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	4.98	5.14	-0.01	2086	329.1 -> 80.9			



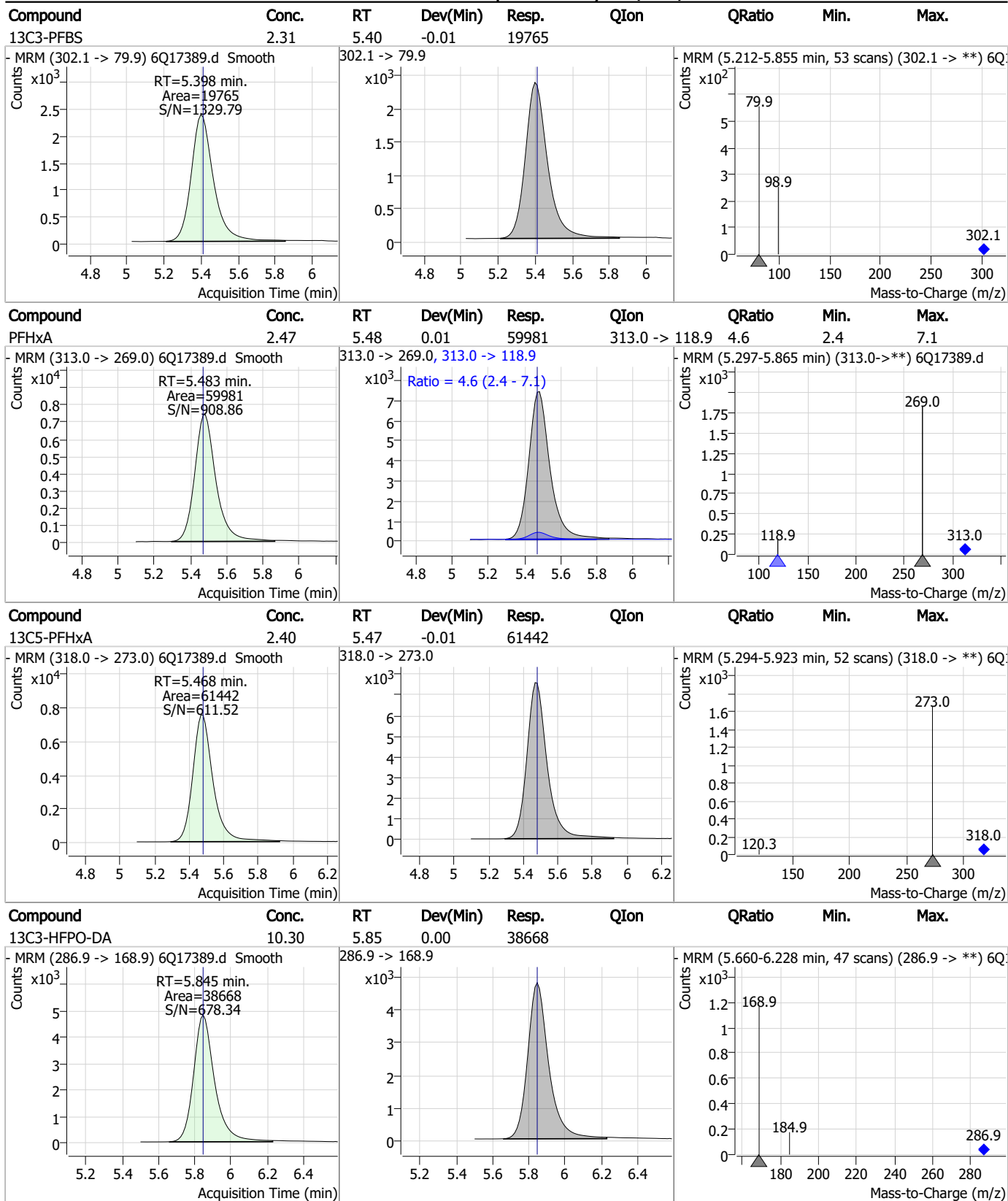
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	5.35	5.35	0.00	14098	295.0 -> 84.9	24.1	12.7	38.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.44	5.40	0.00	21677	298.7 -> 98.8	39.8	18.7	56.1



Perfluorinated Compounds by LC/MS/MS

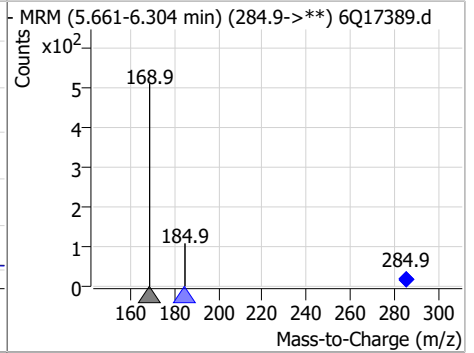
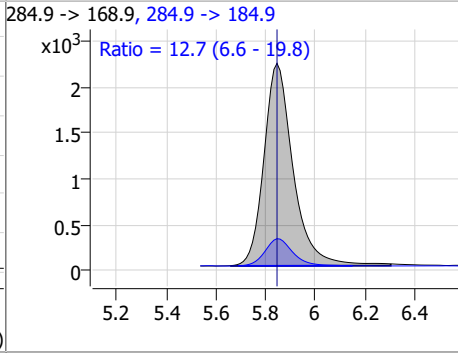
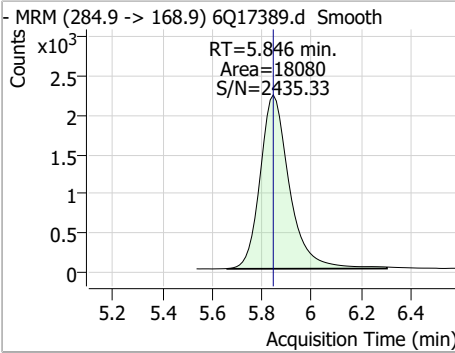


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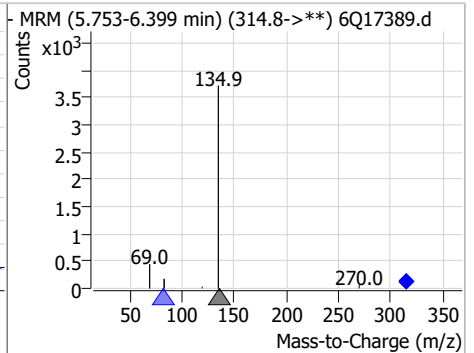
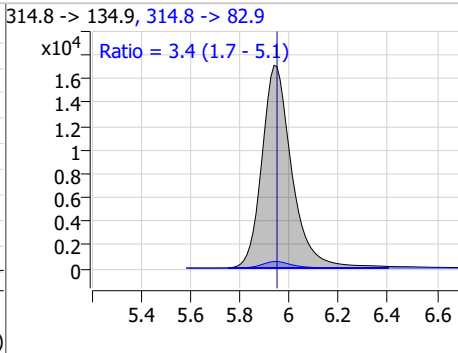
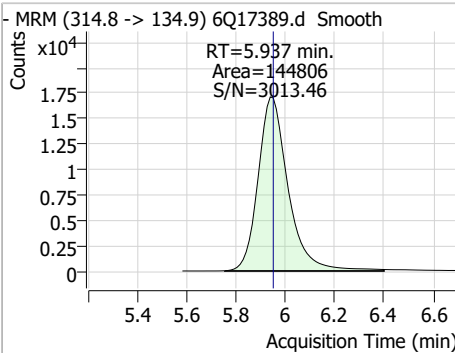


Perfluorinated Compounds by LC/MS/MS

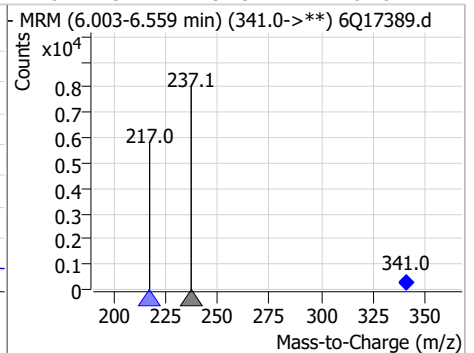
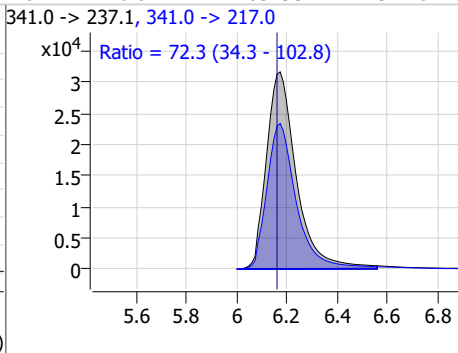
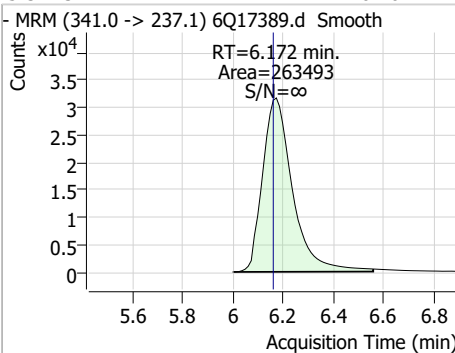
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.94	5.85	0.00	18080	284.9 -> 184.9	12.7	6.6	19.8



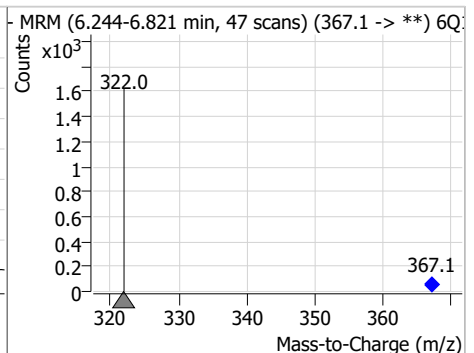
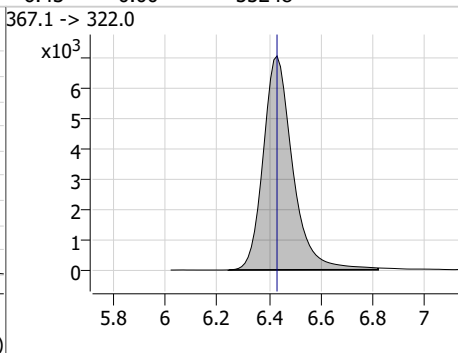
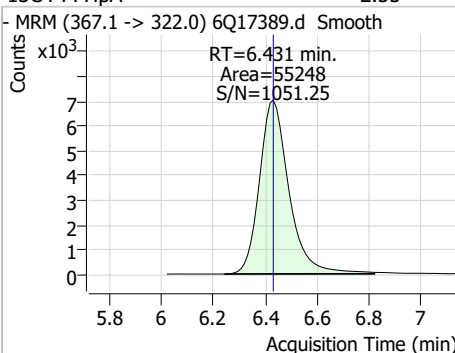
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.72	5.94	-0.01	144806	314.8 -> 82.9	3.4	1.7	5.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	67.02	6.17	0.01	263493	341.0 -> 217.0	72.3	34.3	102.8

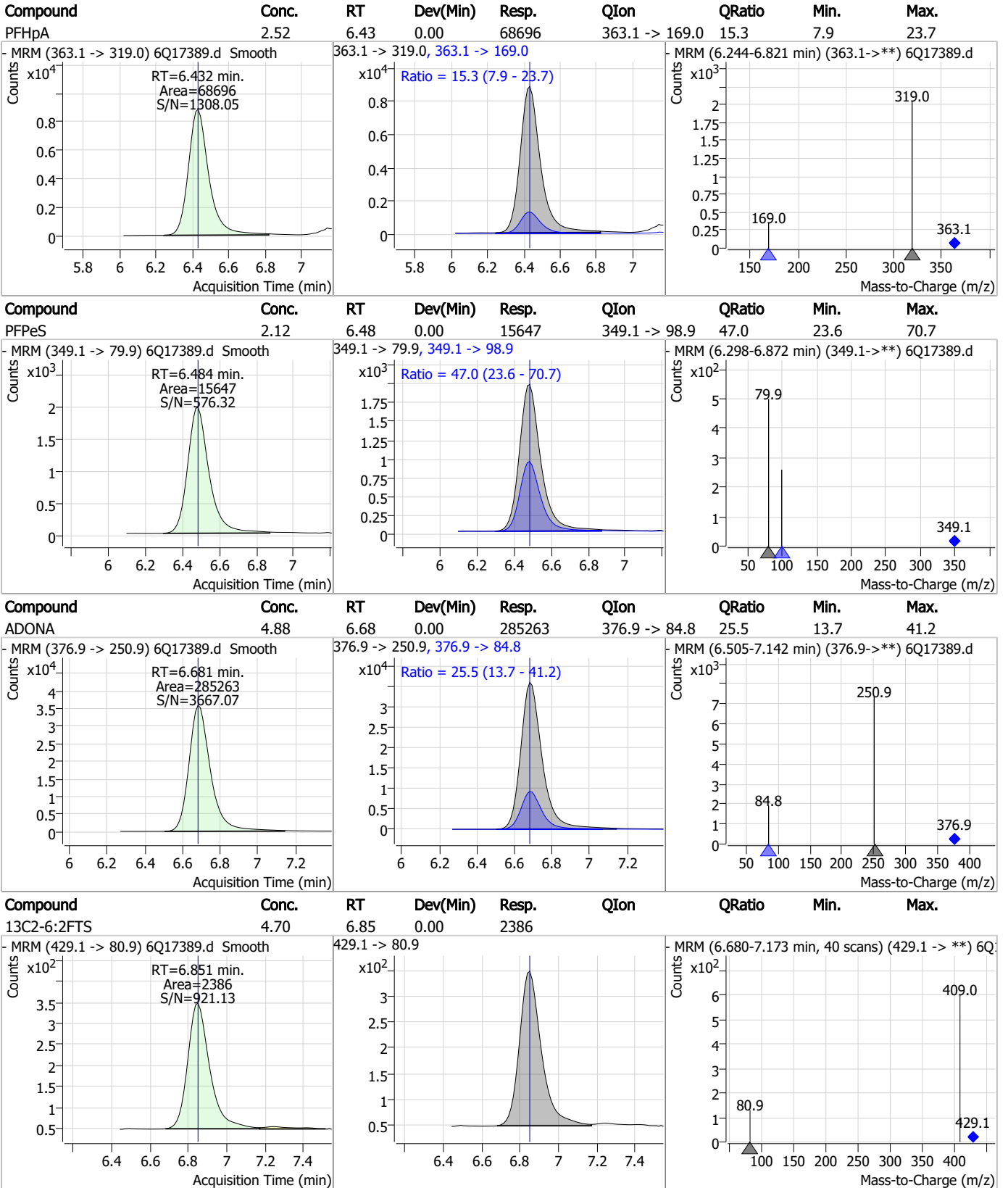


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpa	2.55	6.43	0.00	55248	367.1 -> 322.0			



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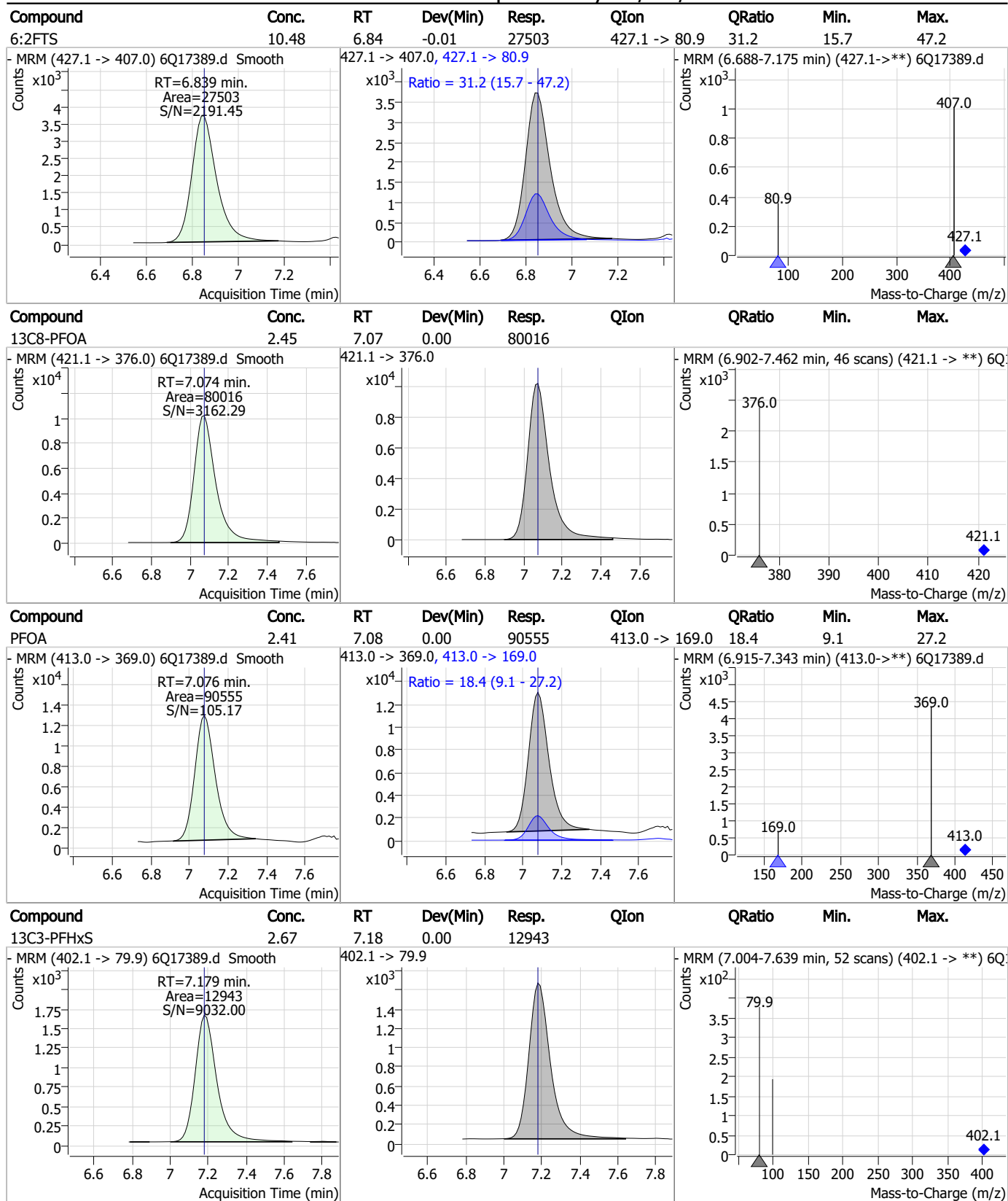
Perfluorinated Compounds by LC/MS/MS



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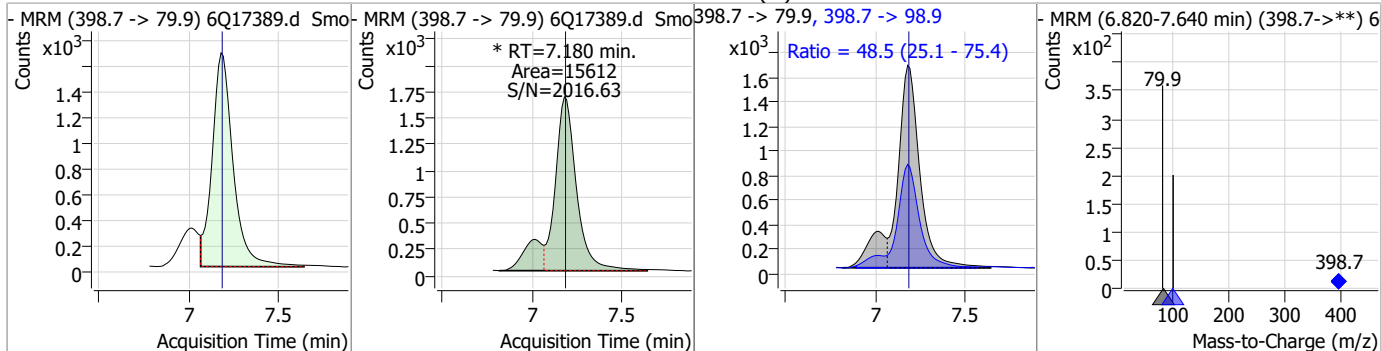
Perfluorinated Compounds by LC/MS/MS



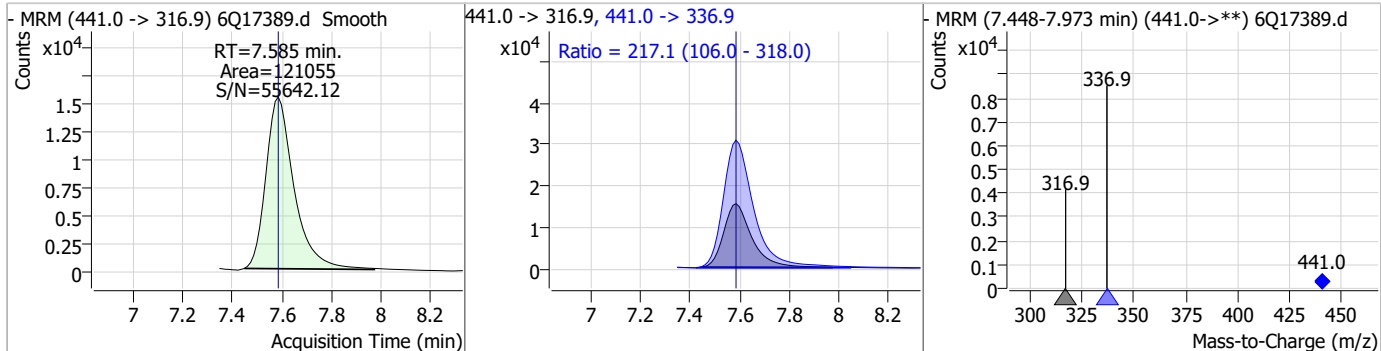
7.7.17

Perfluorinated Compounds by LC/MS/MS

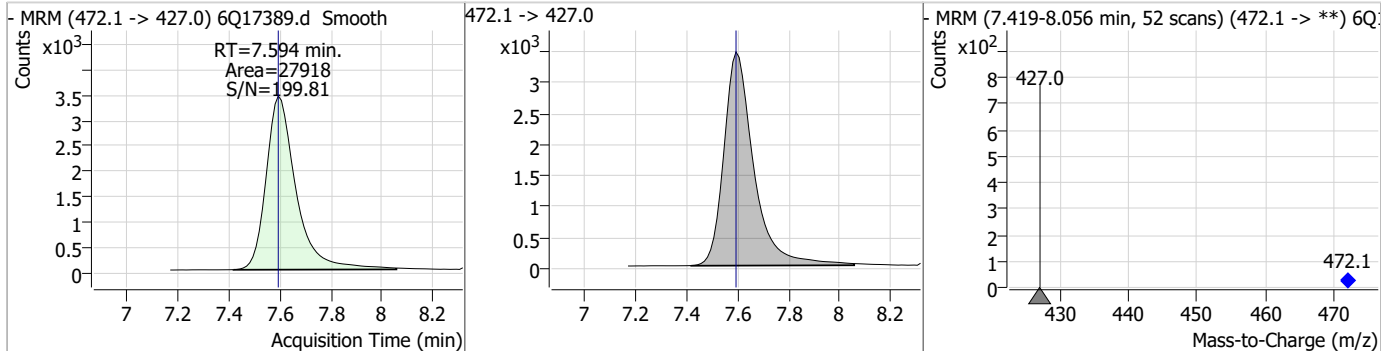
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.21	7.18	0.00	15612 (m)	398.7 -> 98.9	48.5	25.1	75.4



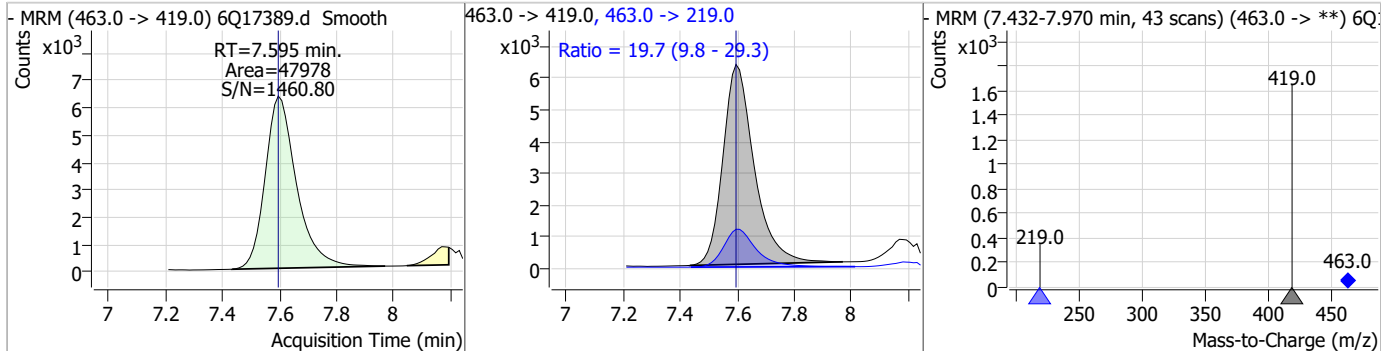
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	67.78	7.59	0.00	121055	441.0 -> 336.9	217.1	106.0	318.0



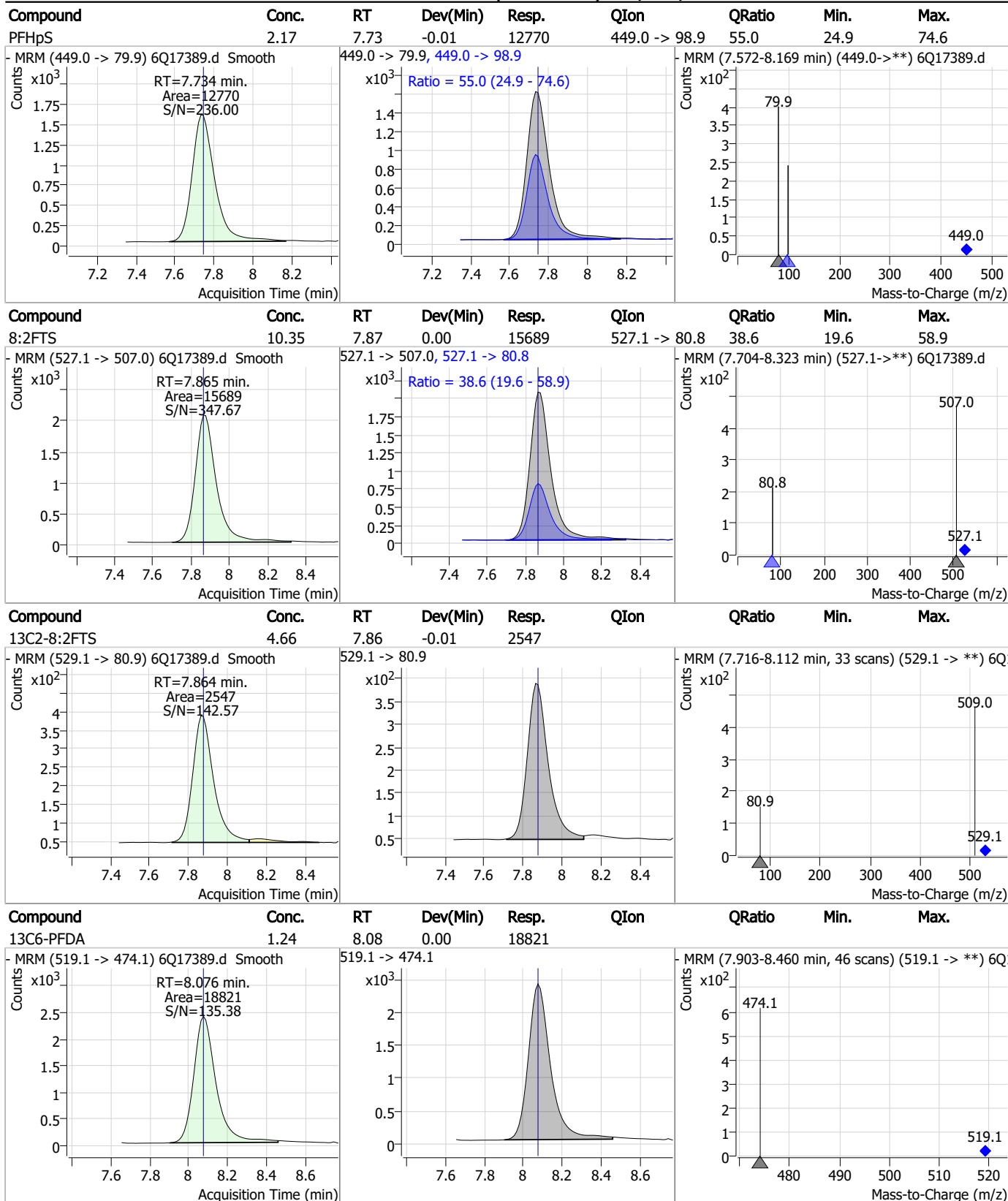
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.32	7.59	0.00	27918	472.1 -> 427.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.48	7.60	0.00	47978	463.0 -> 219.0	19.7	9.8	29.3

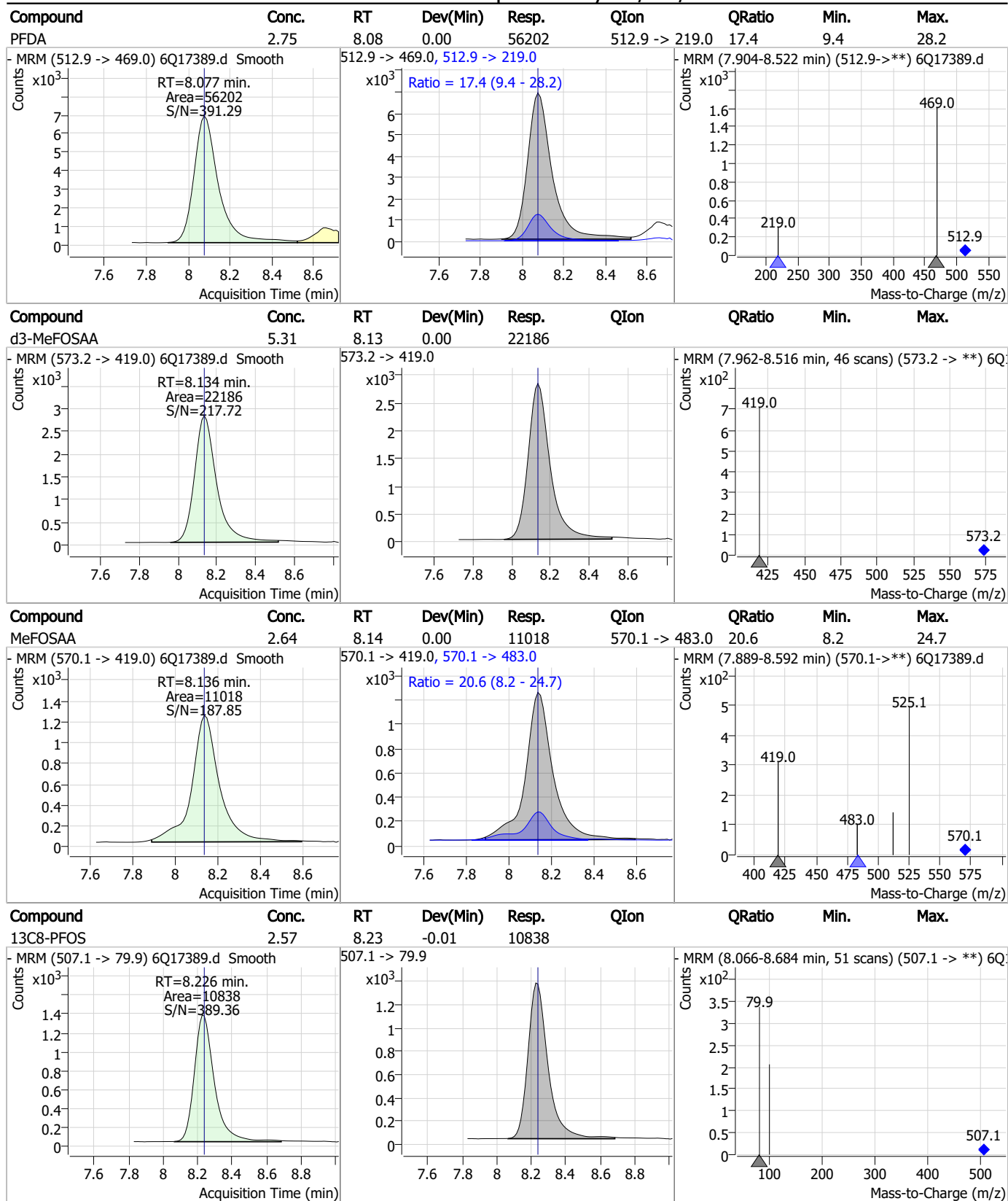


Perfluorinated Compounds by LC/MS/MS



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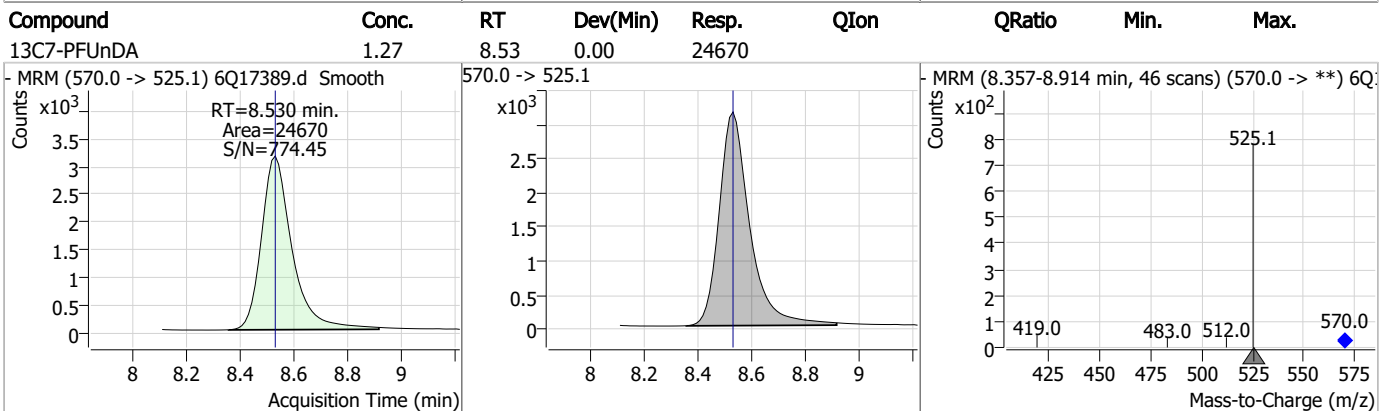
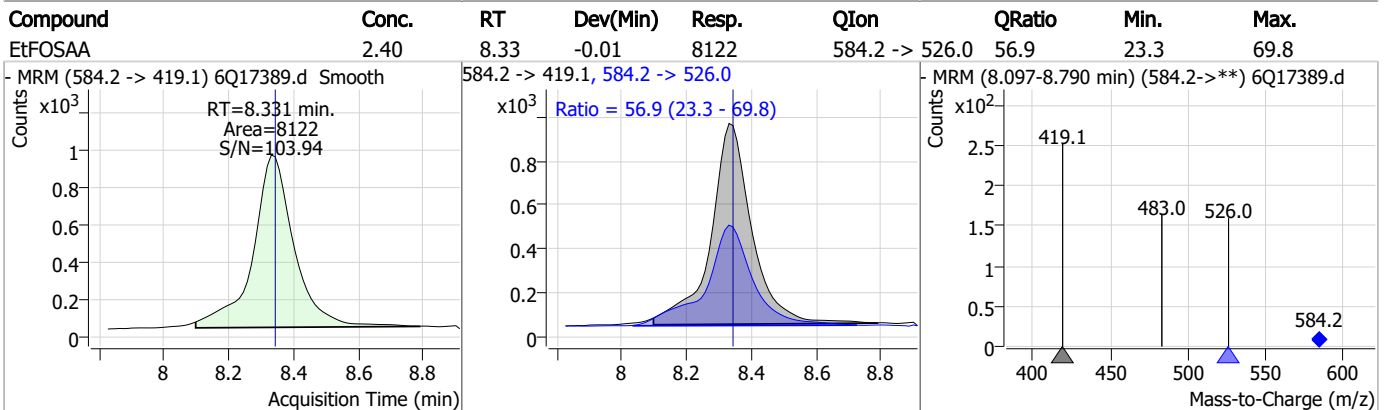
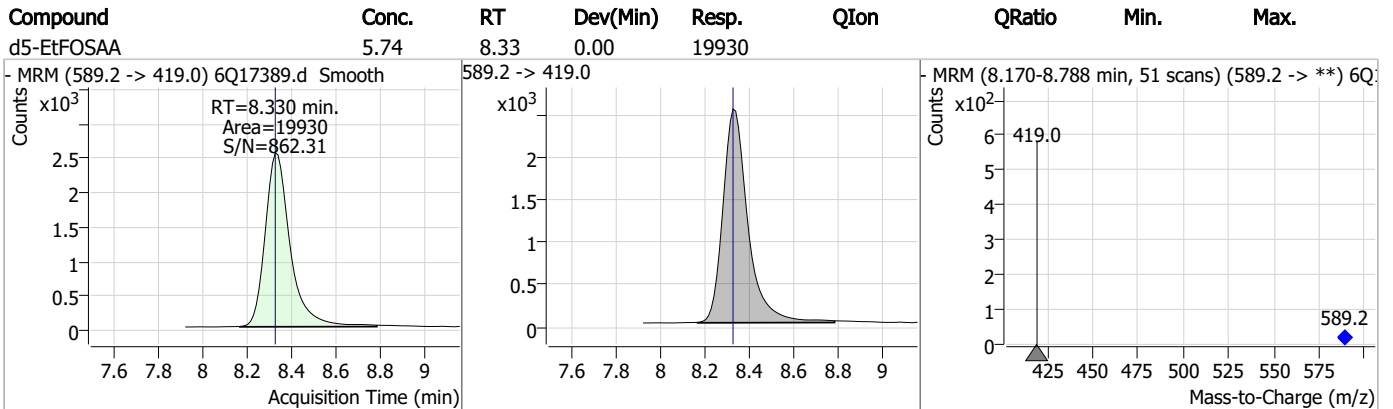
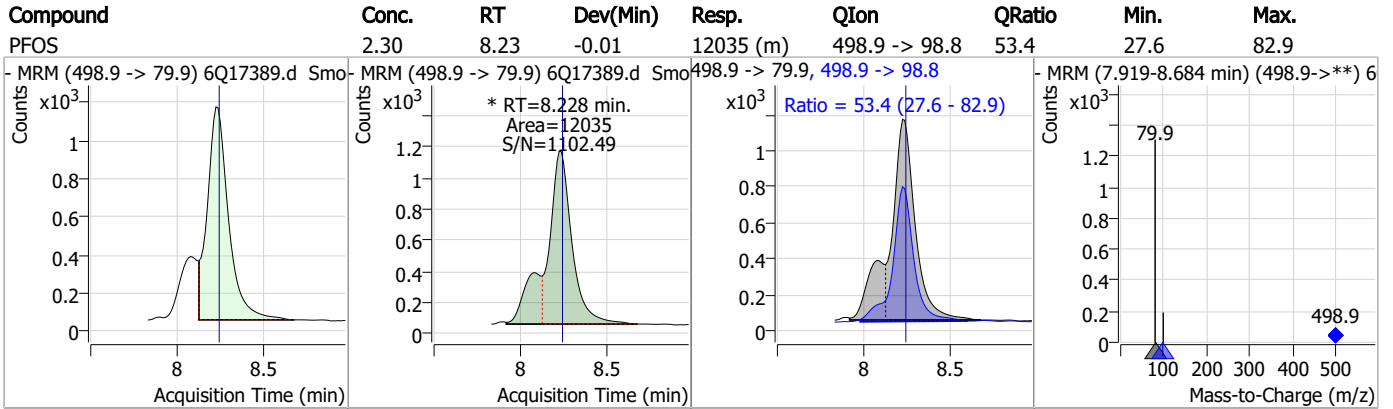
Perfluorinated Compounds by LC/MS/MS



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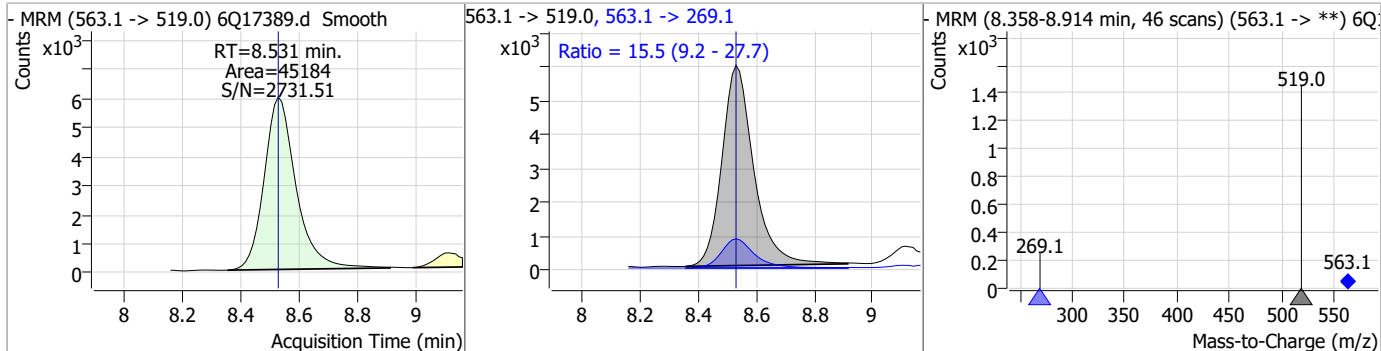


Perfluorinated Compounds by LC/MS/MS

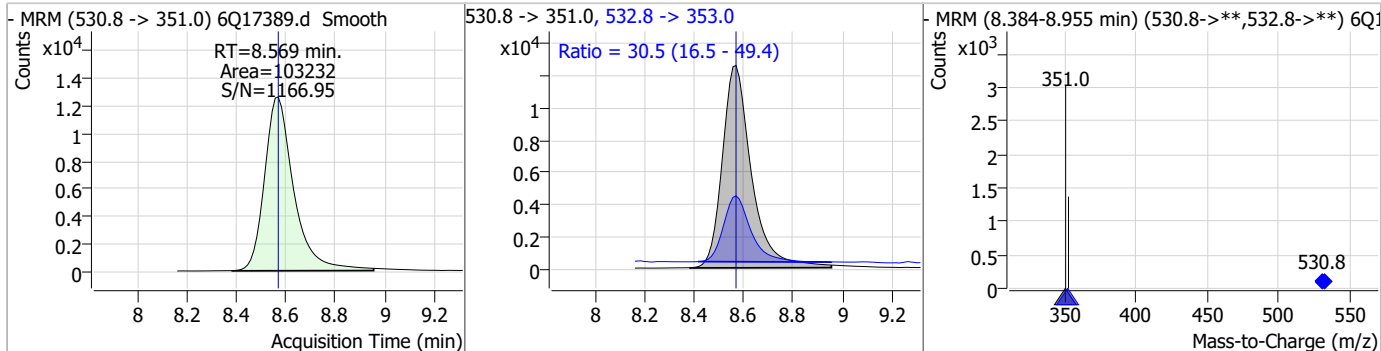


Perfluorinated Compounds by LC/MS/MS

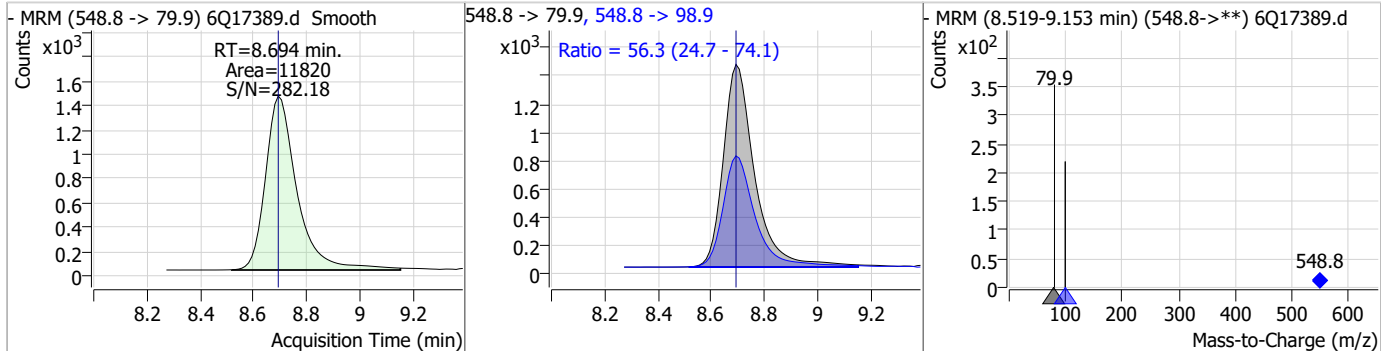
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.64	8.53	0.00	45184	563.1 -> 269.1	15.5	9.2	27.7



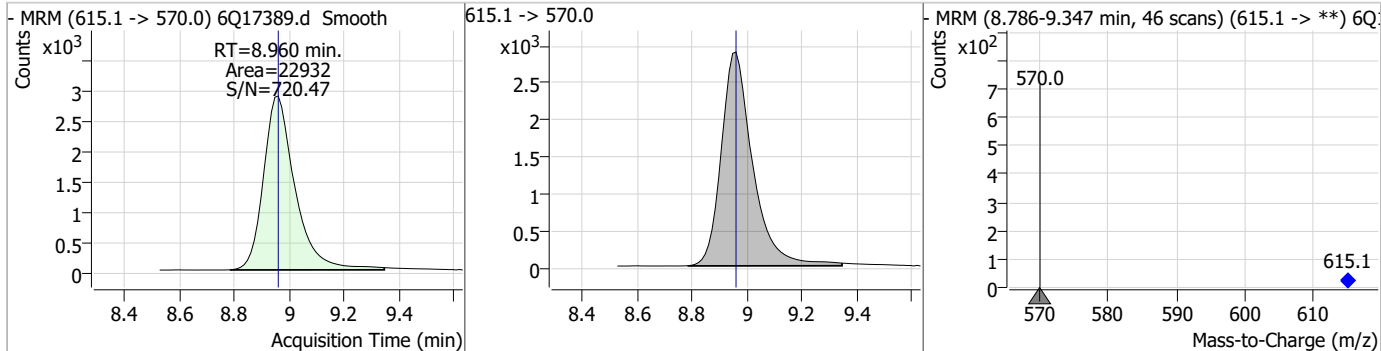
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	4.92	8.57	0.00	103232	532.8 -> 353.0	30.5	16.5	49.4



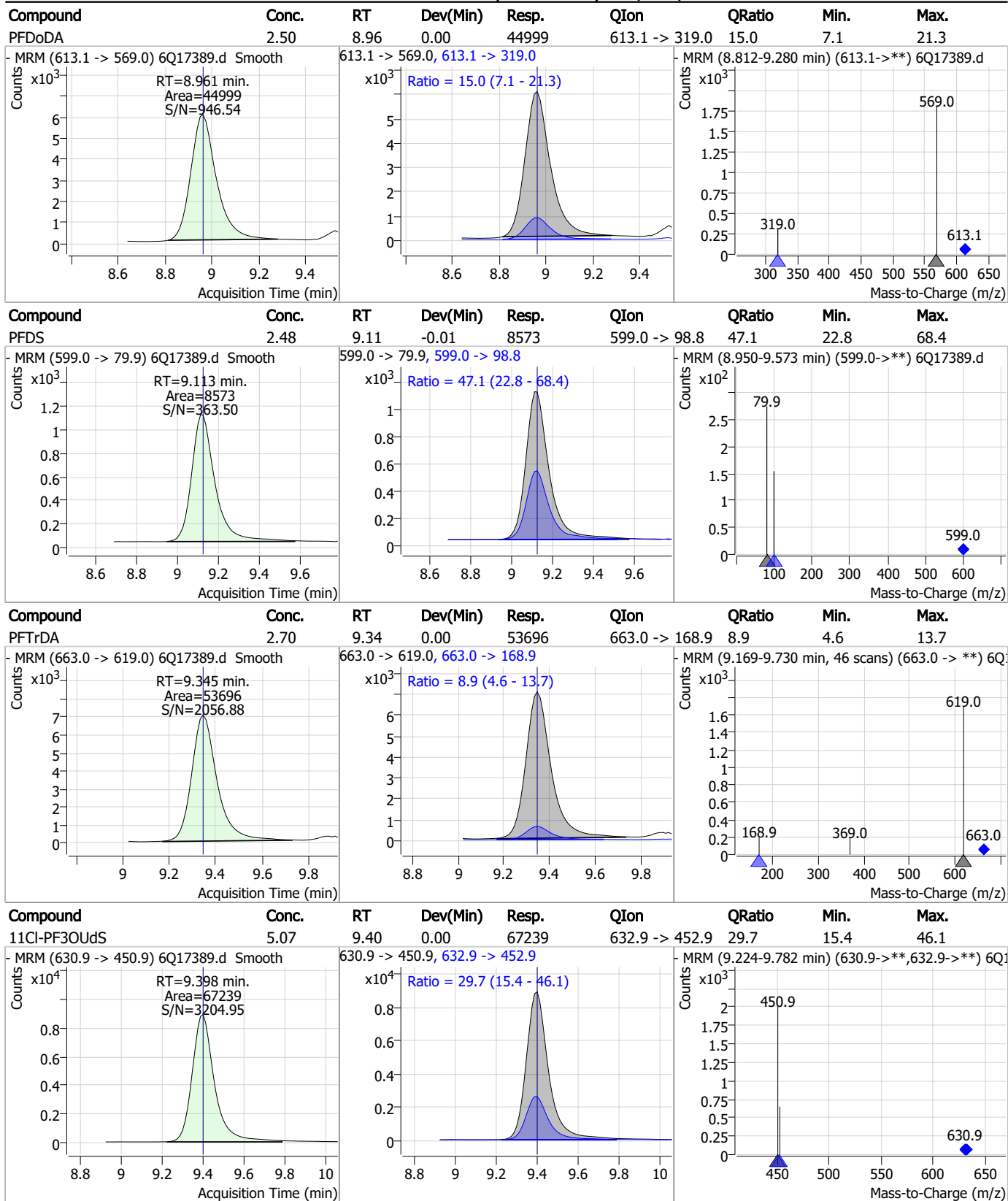
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.26	8.69	0.00	11820	548.8 -> 98.9	56.3	24.7	74.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.19	8.96	0.00	22932	615.1 -> 570.0			

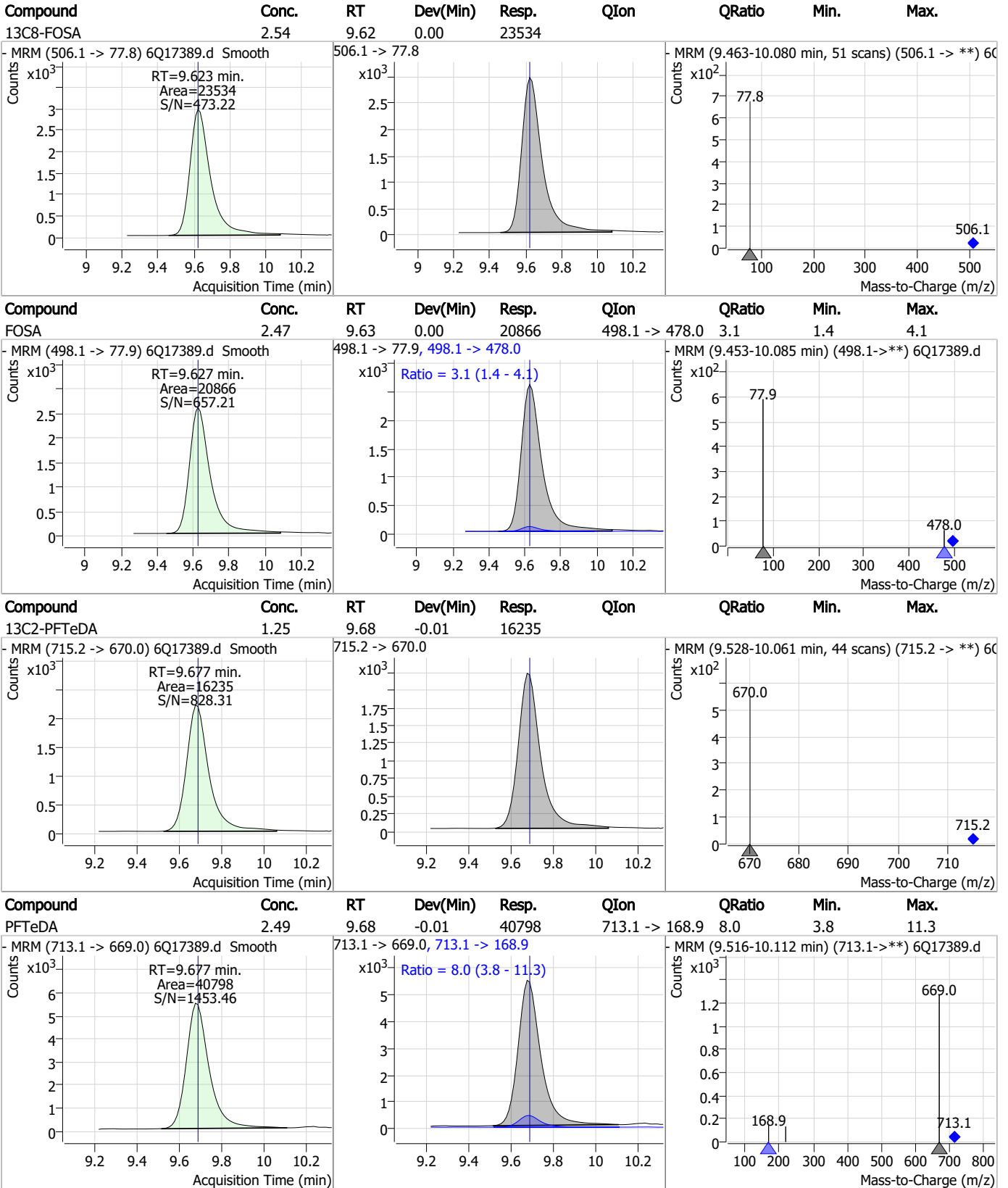


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



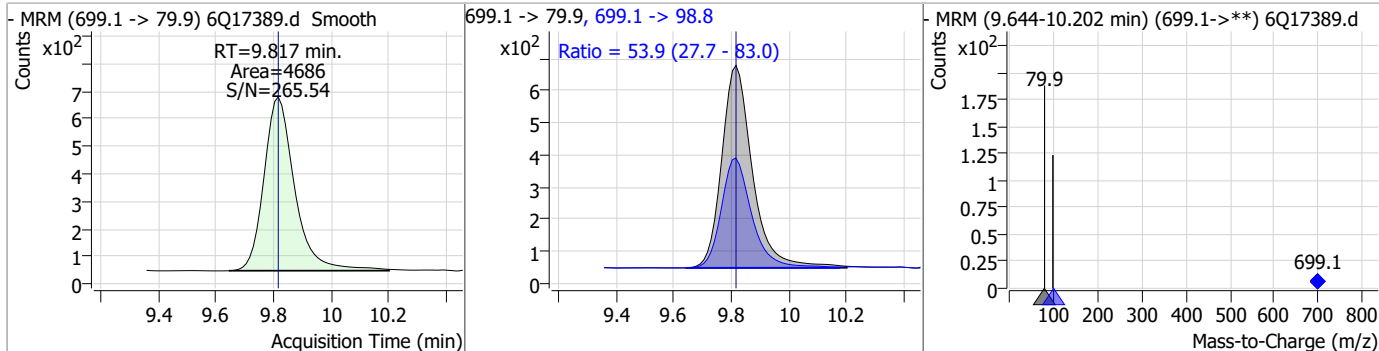
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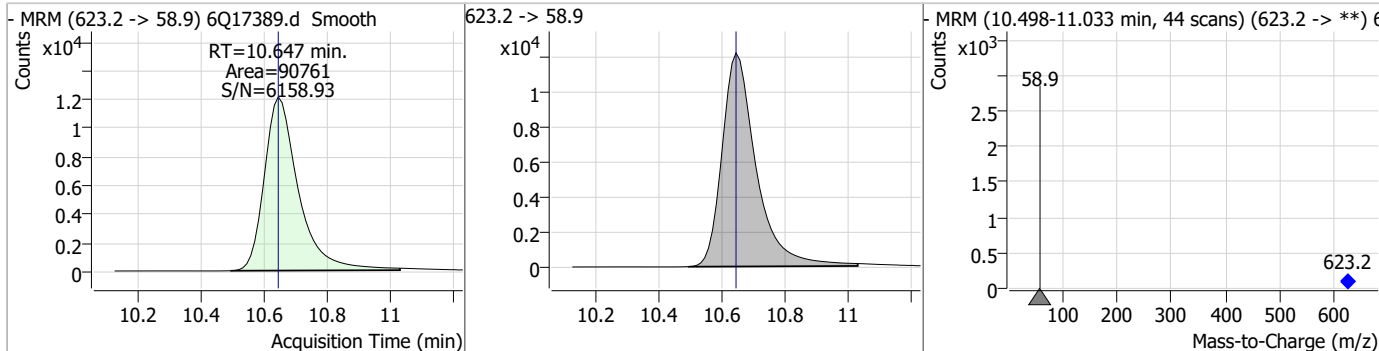


Perfluorinated Compounds by LC/MS/MS

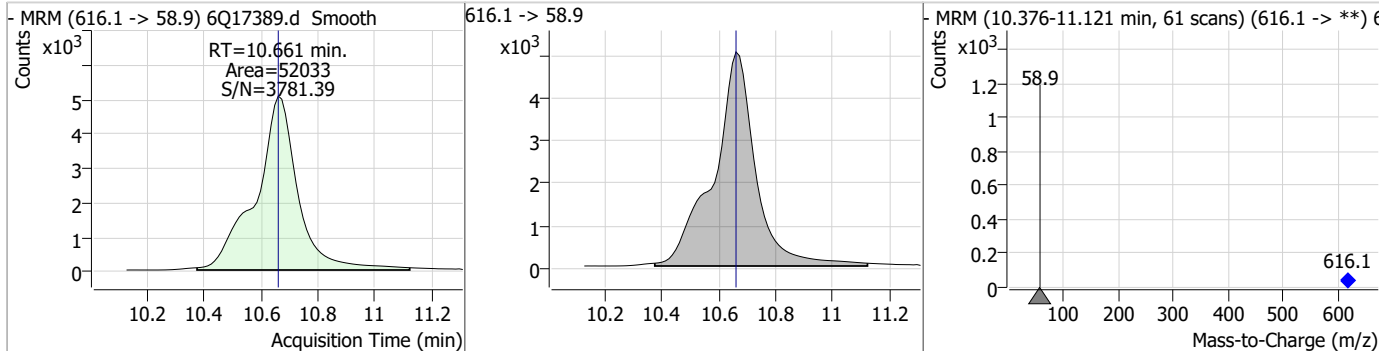
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFD _o DS	2.62	9.82	0.00	4686	699.1 -> 98.8	53.9	27.7	83.0



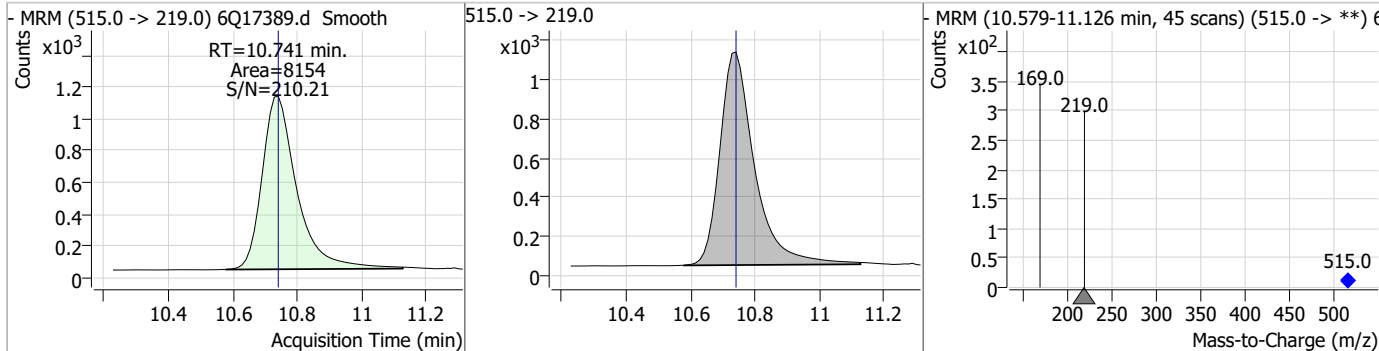
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.68	10.65	0.00	90761				



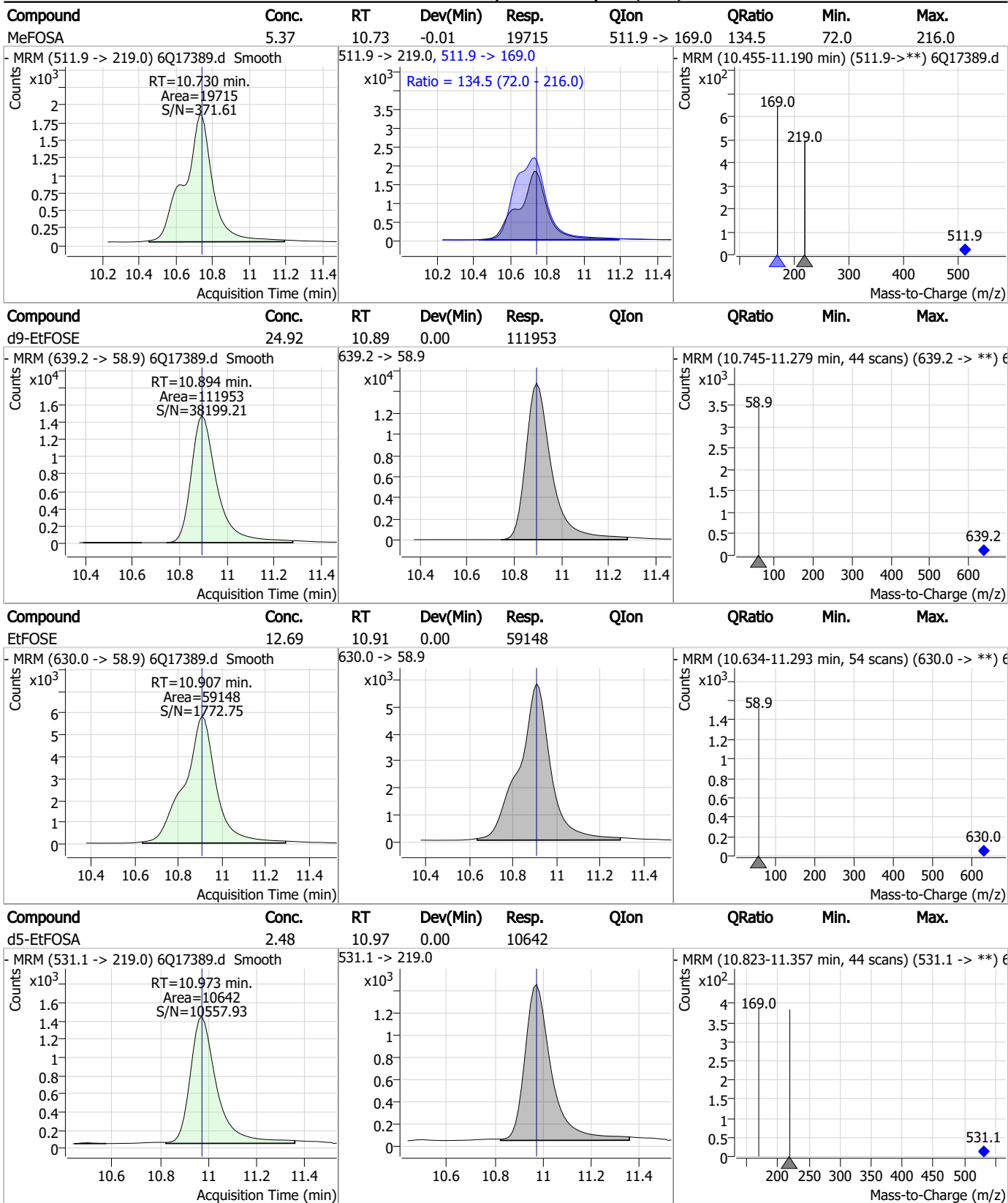
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	12.86	10.66	0.00	52033				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.33	10.74	0.00	8154				



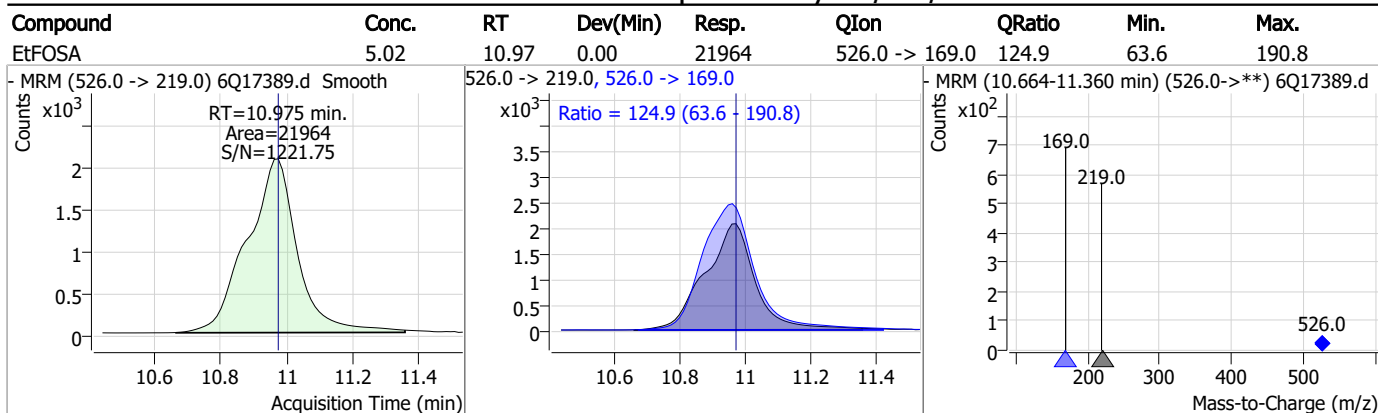
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q261-ECC258 Method: EPA DRAFT 1633
Lab FileID: 6Q17389.D Analyst approved: 05/03/23 13:49 Martha Valls
Injection Time: 05/03/23 11:15 Supervisor approved: 05/03/23 19:48 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.23	Split peak

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SGS ORLANDO

DATE:	04/28/23
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 ul
INSTRUMENT:	LCMS6-6Q

LCMS6-6Q ANALYSIS LOG

METHODS:	1633
PROC. METH:	1633_042823_S6Q258
CAL DATE:	04/28/23
ANALYST:	M. Valls
RUN BATCH:	S6Q258

ELUENT A LOT #:	ACN 220228
ELUENT B LOT #:	HPLC WATER LOT: 224870 W5% ACN 220225 2mlM AMAC: 11387
IC/CC STD LOT #:	LCMS 2107C
ICV STD LOT #:	LCMS 2107C/2100B
ISTD/D STD LOT #:	11765/11764

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	6Q17046.d	P1-A1	CCB	1633full.m	Sample		OP96301,S6Q258,500,,,5.0,1,water	✓
2	6Q17047.d	P1-A1	CCB	1633full.m	Sample		OP96301,S6Q258,500,,,5.0,1,water	✓
3	6Q17048.d	P1-B3	RT TDCA	1633full.m	Sample		OP96301,S6Q258,500,,,5.0,1,water	✓
4	6Q17049.d	P1-B4	RT BR-LN	1633full.m	Sample		OP96301,S6Q258,500,,,5.0,1,water	✓
5	6Q17050.d	P1-A1	ic258-0	1633full.m	Sample		OP96301,S6Q258,500,,,5.0,1,water	✓
6	6Q17051.d	P1-A2	ic258-1	1633full.m	Calibration	1.6/500	OP96301,S6Q258,500,,,5.0,1,water	✓
7	6Q17052.d	P1-A3	ic258-2	1633full.m	Calibration	3.2/500	OP96301,S6Q258,500,,,5.0,1,water	✓
8	6Q17053.d	P1-A4	ic258-3	1633full.m	Calibration	10/500	OP96301,S6Q258,500,,,5.0,1,water	✓
9	6Q17054.d	P1-A5	icc258-4	1633full.m	Calibration	20/500	OP96301,S6Q258,500,,,5.0,1,water	✓
10	6Q17055.d	P1-A6	ic258-5	1633full.m	Calibration	40/500	OP96301,S6Q258,500,,,5.0,1,water	✓
11	6Q17056.d	P1-A7	ic258-6	1633full.m	Calibration	100/500	OP96301,S6Q258,500,,,5.0,1,water	✓
12	6Q17057.d	P1-A8	ic258-7	1633full.m	Calibration	200/500	OP96301,S6Q258,500,,,5.0,1,water	✓
13	6Q17058.d	P1-A9	ic258-8	1633full.m	Calibration	1x	OP96301,S6Q258,500,,,5.0,1,water	✓
14	6Q17059.d	P1-A1	iblk	1633full.m	Sample		OP96301,S6Q258,500,,,5.0,1,water	✓
15	6Q17060.d	P1-B1	icv258-4	1633full.m	Sample	20/500	OP96301,S6Q258,500,,,5.0,1,water	✓
16	6Q17061.d	P1-B2	icv258-20	1633full.m	Sample	100/500	OP96301,S6Q258,500,,,5.0,1,water	✓
17	6Q17062.d	P1-A5	cc258-4	1633full.m	QC	20/500	OP96301,S6Q258,500,,,5.0,1,water	✓
18	6Q17063.d	P1-A2	cc258-1,0LL	1633full.m	QC	1.6/500	OP96301,S6Q258,500,,,5.0,1,water	✓
19	6Q17064.d	P4-F1	op96604-bs	1633full.m	Sample		OP96604,S6Q258,500,,,5.0,1,water	✓
20	6Q17065.d	P4-F2	op96604-llbs:3	1633full.m	Sample		OP96604,S6Q258,500,,,5.0,1,water	✓
21	6Q17066.d	P4-F3	op96604-mb	1633full.m	Sample		OP96604,S6Q258,500,,,5.0,1,water	✓
22	6Q17067.d	P4-F4	FC5144-9	1633full.m	Sample		OP96604,S6Q258,560,,,5.0,1,water	✓
23	6Q17068.d	P4-F5	FC5144-10	1633full.m	Sample		OP96604,S6Q258,570,,,5.0,1,water	✓
24	6Q17069.d	P4-F6	FC5144-11	1633full.m	Sample		OP96604,S6Q258,560,,,5.0,1,water	✓
25	6Q17070.d	P1-A5	cc258-4	1633full.m	QC	20/500	OP96301,S6Q258,500,,,5.0,1,water	✓
26	6Q17071.d	P1-A1	iccb	1633full.m	Sample		OP96301,S6Q258,500,,,5.0,1,water	✓
27	6Q17072.d	P3-A1	op96603-bs	1633full.m	Sample		OP96603,S6Q258,500,,,5.0,1,water	✓
28	6Q17073.d	P3-A2	op96603-llbs:3	1633full.m	Sample		OP96603,S6Q258,500,,,5.0,1,water	✓
29	6Q17074.d	P3-A3	op96603-mb	1633full.m	Sample		OP96603,S6Q258,500,,,5.0,1,water	✓
30	6Q17075.d	P3-A4	FC5514-1	1633full.m	Sample		OP96603,S6Q258,570,,,5.0,1,water	✓
31	6Q17076.d	P3-A5	FC5514-2	1633full.m	Sample		OP96603,S6Q258,570,,,5.0,1,water	✓
32	6Q17077.d	P3-A6	FC5514-3	1633full.m	Sample		OP96603,S6Q258,560,,,5.0,1,water	✓
33	6Q17078.d	P3-A7	op96603-ms	1633full.m	Sample		OP96603,S6Q258,540,,,5.0,1,water	✓
34	6Q17079.d	P3-A8	FC5514-4	1633full.m	Sample		OP96603,S6Q258,570,,,5.0,1,water	✓
35	6Q17080.d	P3-A9	op96603-dup	1633full.m	Sample		OP96603,S6Q258,530,,,5.0,1,water	✓



LCMS6-6Q ANALYSIS LOG

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36	6Q17081.d	P3-B1	FC5514-5	1633full.m	Sample	OP96603,S6Q258,520,,,5.0,1,water	✓
37	6Q17082.d	P1-A5	cc258-4	1633full.m	QC	OP96301,S6Q258,500,,,5.0,1,water	✓
38	6Q17083.d	P1-A1	iccb	1633full.m	Sample	OP96301,S6Q258,500,,,5.0,1,water	✓
39	6Q17084.d	P3-B2	FC5522-1	1633full.m	Sample	OP96603,S6Q258,540,,,5.0,1,water	✓
40	6Q17085.d	P3-B3	FC5522-2	1633full.m	Sample	OP96603,S6Q258,570,,,5.0,1,water	✓
41	6Q17086.d	P3-B4	FC5522-3	1633full.m	Sample	OP96603,S6Q258,570,,,5.0,1,water	✓
42	6Q17087.d	P3-B5	FC5522-4	1633full.m	Sample	OP96603,S6Q258,540,,,5.0,1,water	✓
43	6Q17088.d	P3-B6	FC5522-5	1633full.m	Sample	OP96603,S6Q258,560,,,5.0,1,water	✓
44	6Q17089.d	P3-B7	FC5578-1	1633full.m	Sample	OP96603,S6Q258,540,,,5.0,1,water	mefose low. Rf5x
45	6Q17090.d	P3-B8	FC5578-2	1633full.m	Sample	OP96603,S6Q258,570,,,5.0,1,water	✓
46	6Q17091.d	P1-A5	cc258-4	1633full.m	QC	OP96301,S6Q258,500,,,5.0,1,water	✓
47	6Q17092.d	P1-A1	iccb	1633full.m	Sample	OP96301,S6Q258,500,,,5.0,1,water	✓
48	6Q17093.d	P4-A1	op96579-bs	1633full.m	Sample	OP96579,S6Q258,500,,,5.0,1,water	✓
49	6Q17094.d	P4-A2	op96579-llbs:3	1633full.m	Sample	OP96579,S6Q258,500,,,5.0,1,water	✓
50	6Q17095.d	P4-A3	op96579-mb	1633full.m	Sample	OP96579,S6Q258,500,,,5.0,1,water	✓
51	6Q17096.d	P4-A4	FC5240-1	1633full.m	Sample	OP96579,S6Q258,540,,,5.0,1,water	✓
52	6Q17097.d	P4-A5	FC5240-2	1633full.m	Sample	OP96579,S6Q258,550,,,5.0,1,water	rr2x
53	6Q17098.d	P4-A6	FC5240-3	1633full.m	Sample	OP96579,S6Q258,540,,,5.0,1,water	rr1x co
54	6Q17099.d	P4-A7	FC5240-4	1633full.m	Sample	OP96579,S6Q258,560,,,5.0,1,water	✓
55	6Q17100.d	P4-A8	FC5240-5	1633full.m	Sample	OP96579,S6Q258,560,,,5.0,1,water	rr10x + redo lower volume
56	6Q17101.d	P4-A9	op96579-ms	1633full.m	Sample	OP96579,S6Q258,570,,,5.0,1,water	rr10x
57	6Q17102.d	P4-B1	op96579-msd	1633full.m	Sample	OP96579,S6Q258,530,,,5.0,1,water	rr10x
58	6Q17103.d	P1-A5	cc258-4	1633full.m	QC	OP96301,S6Q258,500,,,5.0,1,water	✓
59	6Q17104.d	P1-A1	iccb	1633full.m	Sample	OP96301,S6Q258,500,,,5.0,1,water	✓
60	6Q17105.d	P4-B2	FC5240-6	1633full.m	Sample	OP96579,S6Q258,560,,,5.0,1,water	rr10x + redo lower volume
61	6Q17106.d	P4-B3	FC5395-1	1633full.m	Sample	OP96579,S6Q258,560,,,5.0,1,water	rr1x co
62	6Q17107.d	P4-B4	FC5395-2	1633full.m	Sample	OP96579,S6Q258,570,,,5.0,1,water	✓
63	6Q17108.d	P4-B5	FC5395-3	1633full.m	Sample	OP96579,S6Q258,570,,,5.0,1,water	✓
64	6Q17109.d	P4-B6	FC5395-4	1633full.m	Sample	OP96579,S6Q258,560,,,5.0,1,water	✓
65	6Q17110.d	P4-B7	FC5395-5	1633full.m	Sample	OP96579,S6Q258,560,,,5.0,1,water	✓
66	6Q17111.d	P4-B8	FC5395-6	1633full.m	Sample	OP96579,S6Q258,520,,,5.0,1,water	✓
67	6Q17112.d	P4-B9	FC5395-7	1633full.m	Sample	OP96579,S6Q258,570,,,5.0,1,water	✓
68	6Q17113.d	P4-C1	FC5396-10	1633full.m	Sample	OP96579,S6Q258,540,,,5.0,1,water	✓
69	6Q17114.d	P4-C2	FC5487-1	1633full.m	Sample	OP96579,S6Q258,540,,,5.0,1,water	✓
70	6Q17115.d	P1-A5	cc258-4	1633full.m	QC	OP96301,S6Q258,500,,,5.0,1,water	✓
71	6Q17116.d	P1-A2	cc258-1,0LL	1633full.m	QC	OP96301,S6Q258,500,,,5.0,1,water	✓
72	6Q17117.d	P1-A1	iccb	1633full.m	Sample	OP96301,S6Q258,500,,,5.0,1,water	✓
73	6Q17118.d	P4-C3	FC5092-9	1633full.m	Sample	OP96491,S6Q258,550,,,5.0,2,water	✓
74	6Q17119.d	P4-C4	op96566-bs	1633full.m	Sample	OP96566,S6Q258,500,,,5.0,1,water	✓
75	6Q17120.d	P4-C5	op96566-llbs:3	1633full.m	Sample	OP96566,S6Q258,500,,,5.0,1,water	✓
76	6Q17121.d	P4-C6	op96566-mb	1633full.m	Sample	OP96566,S6Q258,500,,,5.0,1,water	✓
77	6Q17122.d	P4-C7	FC5200-1	1633full.m	Sample	OP96566,S6Q258,570,,,5.0,1,water	✓
78	6Q17123.d	P4-C8	FC5200-2	1633full.m	Sample	OP96566,S6Q258,550,,,5.0,1,water	✓

LCMS6-6Q ANALYSIS LOG

SGS ORLANDO

79	6Q17124.d	P4-C9	op96566-ms	1633full.m	Sample	OP96566.S6Q258.560,,,5.0,1,water	✓
80	6Q17125.d	P4-D1	op96566-msd	1633full.m	Sample	OP96566.S6Q258.570,,,5.0,1,water	✓
81	6Q17126.d	P4-D2	FC5200-3	1633full.m	Sample	OP96566.S6Q258.570,,,5.0,1,water	✓
82	6Q17127.d	P4-D3	FC5200-4	1633full.m	Sample	OP96566.S6Q258.530,,,5.0,1,water	✓
83	6Q17128.d	P1-A5	cc258-4	1633full.m	QC	20/500	✓
84	6Q17129.d	P1-A1	iccb	1633full.m	Sample	OP96301.S6Q258.500,,,5.0,1,water	✓
85	6Q17130.d	P4-D4	FC5200-5	1633full.m	Sample	OP96566.S6Q258.560,,,5.0,1,water	✓
86	6Q17131.d	P4-D5	FC5200-6	1633full.m	Sample	OP96566.S6Q258.560,,,5.0,1,water	✓
87	6Q17132.d	P4-D6	FC5200-7	1633full.m	Sample	OP96566.S6Q258.570,,,5.0,1,water	✓
88	6Q17133.d	P4-D7	FC5200-8	1633full.m	Sample	OP96566.S6Q258.570,,,5.0,1,water	✓
89	6Q17134.d	P4-D8	FC5200-9	1633full.m	Sample	OP96566.S6Q258.550,,,5.0,1,water	✓
90	6Q17135.d	P4-D9	FC5200-10	1633full.m	Sample	OP96566.S6Q258.530,,,5.0,1,water	✓
91	6Q17136.d	P4-E1	FC5200-11	1633full.m	Sample	OP96566.S6Q258.550,,,5.0,1,water	✓
92	6Q17137.d	P4-E2	FC5200-12	1633full.m	Sample	OP96566.S6Q258.550,,,5.0,1,water	✓
93	6Q17138.d	P4-E3	FC5200-13	1633full.m	Sample	OP96566.S6Q258.570,,,5.0,1,water	✓
94	6Q17139.d	P4-E4	FC5200-14	1633full.m	Sample	OP96566.S6Q258.550,,,5.0,1,water	✓
95	6Q17140.d	P1-A5	cc258-4	1633full.m	QC	20/500	✓
96	6Q17141.d	P1-A1	iccb	1633full.m	Sample	OP96301.S6Q258.500,,,5.0,1,water	✓
97	6Q17142.d	P4-E5	FC5200-15	1633full.m	Sample	OP96566.S6Q258.560,,,5.0,1,water	✓
98	6Q17143.d	P4-E6	FC5200-16	1633full.m	Sample	OP96566.S6Q258.520,,,5.0,1,water	✓
99	6Q17144.d	P4-E7	FC5200-17	1633full.m	Sample	OP96566.S6Q258.560,,,5.0,1,water	✓
100	6Q17145.d	P4-E8	FC5200-18	1633full.m	Sample	OP96566.S6Q258.530,,,5.0,1,water	✓
101	6Q17146.d	P1-A5	ecc258-4	1633full.m	QC	20/500	✓
102	6Q17147.d	P1-A1	iccb	1633full.m	Sample	OP96301.S6Q258.500,,,5.0,1,water	✓

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DATE:	05/02/23
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 ul
INSTRUMENT:	LCMS6-6Q

LCMS6-6Q ANALYSIS LOG

METHODS:	1633
PROC. METH:	1633_042823_S6Q258
CAL DATE:	04/28/23
ANALYST:	M. Valls
RUN BATCH:	S6Q261

ELUENT A LOT #:	ACN 220228
ELUENT B LOT #:	HPLC WATER LOT: 224870 W15% ACN 220225 2mM AMAC: 11387
IC/CC STD LOT #:	LCMS 2107C
ICV STD LOT #:	LCMS 2107C/2100B
ISTD/ID STD LOT #:	11765/11764

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	6Q17286.d	P1-B9	CCB	1633full.m	Sample		OP96630,S6Q261,500,,,5.0,1,,water	✓
2	6Q17287.d	P1-B9	CCB	1633full.m	Sample		OP96630,S6Q261,500,,,5.0,1,,water	✓
3	6Q17288.d	P1-B3	RT TDCA	1633full.m	Sample		OP96630,S6Q261,500,,,5.0,1,,water	✓
4	6Q17289.d	P1-B4	RT BR-LN	1633full.m	Sample		OP96630,S6Q261,500,,,5.0,1,,water	✓
5	6Q17290.d	P1-A9	High Std	1633full.m	Sample		OP96630,S6Q261,500,,,5.0,1,,water	✓
6	6Q17291.d	P1-A1	iblk	1633full.m	Sample		OP96630,S6Q261,500,,,5.0,1,,water	✓
7	6Q17292.d	P1-A5	cc258-4	1633full.m	QC	20/500	OP96630,S6Q261,500,,,5.0,1,,water	✓
8	6Q17293.d	P1-A2	cc258-1.0LL	1633full.m	QC	1.6/500	OP96630,S6Q261,500,,,5.0,1,,water	✓
9	6Q17294.d	P3-A1	op96630-bs	1633full.m	Sample		OP96630,S6Q261,500,,,5.0,1,,water	✓
10	6Q17295.d	P3-A2	op96630-llbs:2	1633full.m	Sample		OP96630,S6Q261,500,,,5.0,1,,water	✓
11	6Q17296.d	P3-A3	op96630-mb	1633full.m	Sample		OP96630,S6Q261,500,,,5.0,1,,water	✓
12	6Q17297.d	P3-A4	FC5312-1	1633full.m	Sample		OP96630,S6Q261,115,,,5.0,1,,water	✓
13	6Q17298.d	P3-A5	JD64233-1A	1633full.m	Sample		OP96630,S6Q261,490,,,5.0,1,,water	✓
14	6Q17299.d	P3-A6	JD64233-2A	1633full.m	Sample		OP96630,S6Q261,545,,,5.0,1,,water	✓
15	6Q17300.d	P3-A7	op96630-ms	1633full.m	Sample		OP96630,S6Q261,545,,,5.0,1,,water	✓
16	6Q17301.d	P3-A8	JD64233-3A	1633full.m	Sample		OP96630,S6Q261,545,,,5.0,1,,water	✓
17	6Q17302.d	P3-A9	op96630-dup	1633full.m	Sample		OP96630,S6Q261,545,,,5.0,1,,water	✓
18	6Q17303.d	P3-B1	JD64233-4A	1633full.m	Sample		OP96630,S6Q261,545,,,5.0,1,,water	✓
19	6Q17304.d	P1-A5	cc258-4	1633full.m	QC	20/500	OP96630,S6Q261,500,,,5.0,1,,water	✓
20	6Q17305.d	P1-A1	iccb	1633full.m	Sample		OP96630,S6Q261,500,,,5.0,1,,water	✓
21	6Q17306.d	P3-B2	JD64233-5A	1633full.m	Sample		OP96630,S6Q261,545,,,5.0,1,,water	✓
22	6Q17307.d	P3-B3	JD64233-6A	1633full.m	Sample		OP96630,S6Q261,545,,,5.0,1,,water	✓
23	6Q17308.d	P3-B4	JD64333-1A	1633full.m	Sample		OP96630,S6Q261,545,,,5.0,1,,water	✓
24	6Q17309.d	P3-B5	JD64333-2A	1633full.m	Sample		OP96630,S6Q261,490,,,5.0,1,,water	rr5x low surr
25	6Q17310.d	P3-B6	JD64333-3A	1633full.m	Sample		OP96630,S6Q261,545,,,5.0,1,,water	✓
26	6Q17311.d	P3-B7	JD64333-5A	1633full.m	Sample		OP96630,S6Q261,545,,,5.0,1,,water	✓
27	6Q17312.d	P3-B8	JD64333-6A	1633full.m	Sample		OP96630,S6Q261,545,,,5.0,1,,water	pba low, rr5x
28	6Q17313.d	P3-B9	JD64333-7A	1633full.m	Sample		OP96630,S6Q261,545,,,5.0,1,,water	pba low, rr5x
29	6Q17314.d	P3-C1	JD64333-8A	1633full.m	Sample		OP96630,S6Q261,505,,,5.0,1,,water	4:2 high, rr5x
30	6Q17315.d	P3-C2	JD64333-9A	1633full.m	Sample		OP96630,S6Q261,545,,,5.0,1,,water	pba low, rr5x
31	6Q17316.d	P1-A5	cc258-4	1633full.m	QC	20/500	OP96630,S6Q261,500,,,5.0,1,,water	✓
32	6Q17317.d	P1-A1	iccb	1633full.m	Sample		OP96630,S6Q261,500,,,5.0,1,,water	✓
33	6Q17318.d	P2-A8	FC5395-1	1633full.m	Sample		OP96579,S6Q261,560,,,5.0,1,,water	✓
34	6Q17319.d	P2-C3	FC5263-5	1633full.m	Sample		OP96581,S6Q261,565,,,5.0,5,,water	Wrong plate position, rr
35	6Q17320.d	P2-C4	op96629-bs	1633full.m	Sample		OP96629,S6Q261,500,,,5.0,1,,water	↓

SGS ORLANDO LCMS6-6Q ANALYSIS LOG

36	6Q17321.d	P2-C5	op96629-llbs:3	1633full.m	Sample	OP96629,S6Q261,500,,,5.0,1,water	↓
37	6Q17322.d	P2-C6	op96629-mb	1633full.m	Sample	OP96629,S6Q261,500,,,5.0,1,water	↓
38	6Q17323.d	P2-C7	FC5309-1	1633full.m	Sample	OP96629,S6Q261,565,,,5.0,1,water	↓
39	6Q17324.d	P2-C8	FC5309-2	1633full.m	Sample	OP96629,S6Q261,565,,,5.0,1,water	↓
40	6Q17325.d	P2-C9	FC5309-3	1633full.m	Sample	OP96629,S6Q261,565,,,5.0,1,water	↓
41	6Q17326.d	P2-D1	FC5309-4	1633full.m	Sample	OP96629,S6Q261,565,,,5.0,1,water	↓
42	6Q17327.d	P2-D2	FC5309-5	1633full.m	Sample	OP96629,S6Q261,565,,,5.0,1,water	↓
43	6Q17328.d	P1-A5	cc258-4	1633full.m	QC	OP96301,S6Q261,500,,,5.0,1,water	✓
44	6Q17329.d	P1-A1	iccb	1633full.m	Sample	OP96581,S6Q261,565,,,5.0,5,water	✓
45	6Q17330.d	P3-C3	FC5263-5	1633full.m	Sample	OP96629,S6Q261,500,,,5.0,1,water	✓
46	6Q17331.d	P3-C4	op96629-bs	1633full.m	Sample	OP96629,S6Q261,500,,,5.0,1,water	✓
47	6Q17332.d	P3-C5	op96629-llbs:3	1633full.m	Sample	OP96629,S6Q261,500,,,5.0,1,water	✓
48	6Q17333.d	P3-C6	op96629-mb	1633full.m	Sample	OP96629,S6Q261,500,,,5.0,1,water	✓
49	6Q17334.d	P3-C7	FC5309-1	1633full.m	Sample	OP96629,S6Q261,565,,,5.0,1,water	✓
50	6Q17335.d	P3-C8	FC5309-2	1633full.m	Sample	OP96629,S6Q261,565,,,5.0,1,water	✓
51	6Q17336.d	P3-C9	FC5309-3	1633full.m	Sample	OP96629,S6Q261,565,,,5.0,1,water	✓
52	6Q17337.d	P3-D1	FC5309-4	1633full.m	Sample	OP96629,S6Q261,565,,,5.0,1,water	✓
53	6Q17338.d	P3-D2	FC5309-5	1633full.m	Sample	OP96629,S6Q261,565,,,5.0,1,water	✓
54	6Q17339.d	P3-D3	FC5309-6	1633full.m	Sample	OP96629,S6Q261,565,,,5.0,1,water	✓
55	6Q17340.d	P1-A5	cc258-4	1633full.m	QC	OP96301,S6Q261,500,,,5.0,1,water	✓
56	6Q17341.d	P1-A2	cc258-1,0LL	1633full.m	QC	OP96630,S6Q261,500,,,5.0,1,water	✓
57	6Q17342.d	P1-A1	iccb	1633full.m	Sample	OP96301,S6Q261,500,,,5.0,1,water	✓
58	6Q17343.d	P3-D4	FC5309-7	1633full.m	Sample	OP96629,S6Q261,565,,,5.0,1,water	✓
59	6Q17344.d	P3-D5	FC5309-8	1633full.m	Sample	OP96629,S6Q261,565,,,5.0,1,water	✓
60	6Q17345.d	P3-D6	FC5309-9	1633full.m	Sample	OP96629,S6Q261,565,,,5.0,1,water	✓
61	6Q17346.d	P3-D7	FC5309-10	1633full.m	Sample	OP96629,S6Q261,565,,,5.0,1,water	✓
62	6Q17347.d	P3-D8	op96629-ms	1633full.m	Sample	OP96629,S6Q261,565,,,5.0,1,water	✓
63	6Q17348.d	P3-D9	op96629-msd	1633full.m	Sample	OP96629,S6Q261,565,,,5.0,1,water	✓
64	6Q17349.d	P3-E1	FC5309-11	1633full.m	Sample	OP96629,S6Q261,565,,,5.0,1,water	✓
65	6Q17350.d	P3-E2	FC5309-12	1633full.m	Sample	OP96629,S6Q261,565,,,5.0,1,water	✓
66	6Q17351.d	P3-E3	FC5309-13	1633full.m	Sample	OP96629,S6Q261,565,,,5.0,1,water	✓
67	6Q17352.d	P1-A5	cc258-4	1633full.m	QC	OP96301,S6Q261,500,,,5.0,1,water	✓
68	6Q17353.d	P1-A1	iccb	1633full.m	Sample	OP96301,S6Q261,500,,,5.0,1,water	✓
69	6Q17354.d	P3-E4	FC5309-14	1633full.m	Sample	OP96629,S6Q261,565,,,5.0,1,water	✓
70	6Q17355.d	P3-E5	FC5309-15	1633full.m	Sample	OP96629,S6Q261,565,,,5.0,1,water	✓
71	6Q17356.d	P3-E6	FC5309-16	1633full.m	Sample	OP96629,S6Q261,565,,,5.0,1,water	✓
72	6Q17357.d	P3-E7	FC5309-17	1633full.m	Sample	OP96629,S6Q261,565,,,5.0,1,water	✓
73	6Q17358.d	P3-E8	FC5309-18	1633full.m	Sample	OP96629,S6Q261,565,,,5.0,1,water	✓
74	6Q17359.d	P1-A5	cc258-4	1633full.m	QC	OP96301,S6Q261,500,,,5.0,1,water	✓
75	6Q17360.d	P1-A1	iccb	1633full.m	Sample	OP96301,S6Q261,500,,,5.0,1,water	✓
76	6Q17361.d	P3-E9	op96627-bs	1633full.m	Sample	OP96627,S6Q261,500,,,5.0,1,water	✓
77	6Q17362.d	P3-F1	op96627-llbs:3	1633full.m	Sample	OP96627,S6Q261,500,,,5.0,1,water	✓
78	6Q17363.d	P3-F2	op96627-mb	1633full.m	Sample	OP96627,S6Q261,500,,,5.0,1,water	✓

LCMS6-6Q ANALYSIS LOG

SGS ORLANDO

79	6Q17364.d	P3-F3	FC5295-1	1633full.m	Sample	OP96627,S6Q261,550,,,5.0,1,water	rr10x + redo lower volume
80	6Q17365.d	P3-F4	FC5295-2	1633full.m	Sample	OP96627,S6Q261,560,,,5.0,1,water	✓
81	6Q17366.d	P3-F5	FC5295-3	1633full.m	Sample	OP96627,S6Q261,540,,,5.0,1,water	Redo to confirm
82	6Q17367.d	P3-F6	FC5295-4	1633full.m	Sample	OP96627,S6Q261,560,,,5.0,1,water	✓
83	6Q17368.d	P3-F7	FC5295-5	1633full.m	Sample	OP96627,S6Q261,560,,,5.0,1,water	✓
84	6Q17369.d	P3-F8	op96627-ms	1633full.m	Sample	OP96627,S6Q261,560,,,5.0,1,water	✓
85	6Q17370.d	P1-A5	cc258-4	1633full.m	QC	20/500	✓
86	6Q17371.d	P1-A1	iccb	1633full.m	Sample	OP96301,S6Q261,500,,,5.0,1,water	✓
87	6Q17372.d	P4-A1	FC5295-6	1633full.m	Sample	OP96301,S6Q261,500,,,5.0,1,water	✓
88	6Q17373.d	P4-A2	op96627-dup	1633full.m	Sample	OP96627,S6Q261,550,,,5.0,1,water	✓
89	6Q17374.d	P4-A3	FC5295-7	1633full.m	Sample	OP96627,S6Q261,550,,,5.0,1,water	rr5x
90	6Q17375.d	P4-A4	FC5295-8	1633full.m	Sample	OP96627,S6Q261,520,,,5.0,1,water	rr1x co
91	6Q17376.d	P4-A5	FC5295-9	1633full.m	Sample	OP96627,S6Q261,540,,,5.0,1,water	rr5x mefose low
92	6Q17377.d	P4-A6	FC5295-10	1633full.m	Sample	OP96627,S6Q261,510,,,5.0,1,water	✓
93	6Q17378.d	P4-A7	FC5295-11	1633full.m	Sample	OP96627,S6Q261,510,,,5.0,1,water	✓
94	6Q17379.d	P4-A8	FC5295-12	1633full.m	Sample	OP96627,S6Q261,530,,,5.0,1,water	rr10x + redo lower volume
95	6Q17380.d	P4-A9	FC5325-1	1633full.m	Sample	OP96627,S6Q261,560,,,5.0,1,water	rr1x co
96	6Q17381.d	P4-B1	FC5325-2	1633full.m	Sample	OP96627,S6Q261,560,,,5.0,1,water	pba low, rr5x
97	6Q17382.d	P1-A5	cc258-4	1633full.m	QC	20/500	✓
98	6Q17383.d	P1-A1	iccb	1633full.m	Sample	OP96301,S6Q261,500,,,5.0,1,water	✓
99	6Q17384.d	P4-B2	FC5325-3	1633full.m	Sample	OP96627,S6Q261,570,,,5.0,1,water	pba low, rr5x
100	6Q17385.d	P4-B3	FC5325-4	1633full.m	Sample	OP96627,S6Q261,570,,,5.0,1,water	✓
101	6Q17386.d	P4-B4	FC5325-5	1633full.m	Sample	OP96627,S6Q261,570,,,5.0,1,water	✓
102	6Q17387.d	P4-B5	FC5325-6	1633full.m	Sample	OP96627,S6Q261,560,,,5.0,1,water	pba low, rr5x
103	6Q17388.d	P4-B6	FC5621-1	1633full.m	Sample	OP96627,S6Q261,570,,,5.0,1,water	✓
104	6Q17389.d	P1-A5	ecc258-4	1633full.m	QC	20/500	✓
105	6Q17390.d	P1-A1	iccb	1633full.m	Sample	OP96301,S6Q261,500,,,5.0,1,water	✓

Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 2106A-B	PFC SPIKE	11653	PF0A-100 (28 comps)	Absolute Wellington Labs	11/08/27	10/18/24	1.0ppm	2mL	5mL	400ppb	MS/MNH 5/14/20	01/16/23	10/18/23	NG
		11432	N-He-FOSAM	Wellington Labs	02/18/27	03/13/24	50ppm	40uL						NG
		11513	FBSA-1		11/10/26	04/18/24								NG
		11514	FHSX-A-1		12/19/26	04/18/24								NG
		11332	PFERHS		03/18/27	10/18/24								NG
LCMS 2107A-C	1633-OPiKE Cal Std.	11734	PFAC MXH	Wellington	8/8/27	4/14/24	1-4 ppb	250uL	4mL	62.5 125 250ppb	1633 MIX	4/19/23	10/14/23	MV
		11736	PFAC MXF	Wellington	11/11/25	4/14/24	2ppm	250uL		125ppb	2688mL			
		11737	PFAC MXG		12/11/27	4/11/24	2ppm	250uL		125ppb				
		11676	PFAC MXJ		9/11/26	4/19/24	4-20 ppm	250uL		125ppb				
LCMS 2108A-O	10PPb PFC ID SURT	11763	MPFAC-24-ES	Wellington Labs	01/18/28	04/18/24	1.0ppm	2.4mL	~50mL	312/1600 ppb	MS/MNH 5/14/20	04/24/23	10/14/23	NG
		11635A	M3HFO-DA		11/08/28	04/18/24	50ppm	48uL						NG
		11431	d-N-MADOSAM		05/06/27	03/13/24	50ppm	48uL						NG
LCMS-2109	537.1 DW STD.	11653	PF0A-DOD (28 comps)	Absolute	11/09/27	04/18/24	1.0ug/mL	4mL	100ppb	90% MeOH 4/24/23 4% H ₂ O		09/10/23	JR	
		2080	DW SURT.		07/06/23		1.0/2.0 PPM	400uL	100/200 ppb					JR

* based on date opened as specified in each SGS - Orlando SOP.

Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 20915A-E	(10ppb) PFC ID SURR	A-5 11669	PFAC-2YES	Wilmington Labs	01/16/18	03/18/24	1.0ppm	2.4mL	~50mL	0.5ppm	151mech 51.420	03/18/23	09/18/23	NS
↓	↓	11585	PFAC-DA	↓	11/08/15	01/26/24	50ppm	48uL	↓	↓	↓	↓	↓	NS
↓	↓	11431	PFAC-D-N	↓	05/10/07	03/13/24	50ppm	48uL	↓	↓	↓	↓	↓	NS
LCMS 20916A-B	1033 spike Cal wtd.	11672	PFAC-MxH	Wilmington	8/8/17	3/23/24	1-4 ppm	250uL	4mL	0.25 1.25 2.50ppb	1033 MIX	3/30/23	9/18/23	MU
↓	↓	11686	PFAC-MxI	↓	2/27/28	3/30/24	1-10 ppm	250uL	↓	0.25 0.25ppb	↓	↓	↓	↓
↓	↓	11674A	PFAC-MxJ	↓	11/1/25	3/23/24	2ppm	500uL	↓	250ppb	↓	↓	↓	↓
↓	↓	11674B	PFAC-MxK	↓	12/1/27	3/30/24	2ppm	250uL	↓	125ppb	↓	↓	↓	↓
↓	↓	11660	PFAC-MxL	↓	9/11/26	3/23/24	4-20 ppm	312uL	↓	312/100 ppb	↓	↓	↓	↓
↓	↓	11675	PFAC-MxM	↓	10/28/23	10/28/23	50ppm	200uL	5mL	2ppm	1033 MIX	4/16/23	10/28/23	MU
LCMS 2097A-B	BR-LN metal for 1033	11497	br-N metosa	Wilmington	08/23/17	10/28/23	50ppm	200uL	↓	2ppm	↓	↓	↓	↓
↓	↓	11498	br-N Eftosa	↓	10/07/17	10/28/23	50ppm	200uL	↓	5ppm	↓	↓	↓	↓
↓	↓	11495	br-N metosa	↓	10/07/17	10/28/23	50ppm	500uL	↓	5ppm	↓	↓	↓	↓
↓	↓	11494	br-N Eftosa	↓	10/07/17	10/28/23	50ppm	500uL	↓	5ppm	↓	↓	↓	↓
↓	↓					4/16/25								

* tested & used on 3/30/24

* based on date opened as specified in each SGS - Orlando SOP.



Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 2098A	1033 spike Cal std.	11672A	PFAC	Wellington	8/18/27	3/23/24	1-4 ppm	250uL	4mL	0.25 1.25 250ppb	1033 mix	4/6/23	10/6/23	MW
		LCMS 2097	Br-1n Et-Me	SGS Labo	NA	10/28/23	3ppm 5ppm	250uL		125ppb 312.5ppb				
		11674B	PFAC Mx F	Wellington	1/11/25	3/30/24	2ppm	250uL 500uL		350ppb 125ppb				
		11675	PFAC Mx G		12/1/27	3/30/24	2ppm	250uL		125ppb				
		11672B	PFAC Mx J		9/14/26	3/23/24	4-20 ppm	312uL		312/100 ppb				
LCMS 2099	537.1 Du std. (Fumeral)	11670	M3P-PEA	Wellington Labs	07/08/25	04/06/24	50ppm	80uL	4mL	1.0ppm	0.10 MESH 41. H2O	04/06/23	05/15/23	NG
		10436A	Mx 2 FTS		11/05/25	04/06/24		80uL		1.0ppm				NG
		10522B	d3-N-NEOSAA		10/22/25	05/15/23		160uL		20ppm				NG
		10498A	M1FOS		11/02/25	03/22/24		80uL		1.0ppm				NG
		11069	M2PFA		12/09/26	03/22/24		80uL		1.0ppm				NG
LCMS 2100	Full List (40)	11626	PFOR 28 Comp.	Absolute	11/19/27	4/11/24	1.0ppm	400uL	4.0mL	100ppb	75% MeOH 5% H2O	4/11/23	7/24/23	MW
91B	List 40 spike (50)	LCMS 2067	40 List ADD #1	SGS Add.		8/23/23	1.0ppm	400uL			(2,400)1			
		LCMS 2070	40 List ADD #2			5/12/23	1.0ppm	400uL						
		LCMS 2054	F055 Std.			7/24/23	5.0ppm	400uL		50ppb				
LCMS 2101	F055 std.	11336	N-et F055	Wellington	5/13/27	9/19/23	50ppm	200uL	2.0mL	5ppm	45% MeOH 5% H2O	9/11/23	9/19/23	MW
		11338	N-me F055		5/13/27	9/19/23	50ppm	200uL						

* based on date opened as specified in each SGS - Orlando SOP. (1,000)

ORLD-QAC-0017-6-03-FORM-lcms std prep log.xls 030819



Organic Standards Preparation Log

SGS - Orlando Std. #	Parent Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 2067	40 List std. ADD-ON #1	10720A	10:2 FTS	Wellington	3/3/26	3/21/23	50 ppm	80 uL	4.0 mL	1 ppm	95% meth 5% H2O	2/8/23	3/21/23 8/23/23	MV
		10840	L- PFDOS		7/9/26	10/18/23							8/23/23	
		10829	N- MCFOSA		8/3/26	8/23/23								
		10837	N- E-FOSA		8/3/26	8/23/23								
		10842	PFHxDA		9/3/26	10/18/23								
		10841	PFOA		5/7/26	10/18/23								
		11116B	3:3FTCA PFAPA		2/3/27	2/8/24								
		10685A	5:3FTCA PFAPA		11/1/25	8/23/23								
		11116A	7:3FTCA FHPA		11/12/25	2/8/24								
		11332	PFECHS		3/2/27	10/18/23								
		10762B	PFEESA		5/13/25	10/18/23								
		10763B	PFMBA		3/31/25	10/18/23								
		10764	PFMFA PF40eA		3/31/25	2/8/24								
		10765B	NFHDA 3.6-OPHFA		3/31/25	10/18/23								
					NG 02/10/23									

* based on date opened as specified in each SGS - Orlando SOP.

ORLD-QAC-0017-6-03-FORM-lcms std prep log.xls 030819



Organic Standards Preparation Log

SGS - Orlando Sid. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 2074 A-B	PFC SPIKE	11613	PROA-DOD CASCOMP	Absolute Wellington Labs	11/09/27	02/23/24	1.0ppm	2mL	5mL	400ppb	95% MeOH 5% H2O	02/23/23	05/23/23	NG
		10829	N-ME-PBSA-M	Wellington Labs	08/23/26	08/23/23	50ppm	40uL						NG
		11250	PBSA-1		11/10/26	11/08/23								NG
		11249	PHSA-1		12/29/26	11/03/23								NG
		11322	PFCHS		02/28/27	10/18/23								NG
LCMS 2075A-F	(10 PPB) PFC ID SURF	11639	MPPAC-24ES	Wellington Labs	03/24/27	02/23/24	1.0ppm	2.4mL	~50 mL	0.5ppm	95% MeOH 5% H2O	02/23/23	05/23/23	NG
		11585	N2HFO-DA	Wellington Labs	11/08/26	01/26/24	50ppm	48uL						NG
		11385	B-N-NFCSA-M	Wellington Labs	05/10/27	01/01/24	50ppm	48uL						NG
LCMS 2076	40 List std. ADDON #2	11250	FBSA-1	Wellington Labs	11/10/26	11/8/23	50ppm	80uL	4.0mL	1ppm	95% MeOH 5% H2O	2/27/23	5/2/26	MW
		11249	FHSA-1		2/29/26	11/3/23	50ppm	80uL						
		11140	L-PFRG		7/12/26	5/26/23	50ppm	80uL						
LCMS 2077A-B	1633 Solvent B	11387	Ammonium Sulfate Acetate drich			1/25/24	99.9%	0.62g	4L	2mM	95% MeOH 5% H2O	2/28/23	4/28/23	MW
		224870	HPLC water	Fisher		2/28/23		3,800ml		95%				
		220225	Acetoni trile			2/20/24		200mL		5%				
						aka new 2/28/23								
						Continue next page #1								

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Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 2052	1633 prep mix	221044 Lot:	MeOH	Fisher	—	1/4/24	99.9%	92 mL	100 mL	92%	N/A	1/19/23	2/19/23	MV
		219481 Lot:	NH4OH		—	9/19/23	100%	3.3 mL		1%				
		224863 Lot:	H2O		—	1/7/24	100%	1.7 mL		4%				
		224297 Lot:	Acetic Acid		—	6/24	99.7%	0.625 mL		.625%				
LCMS 2053	(spike) Full list std	11568	PFOA DOP 28 Calc	SGS Standards	11/9/27	11/10/24	1.0 ppm	400 nL	4.0 mL	100 ppb	95% MeOH 5% H2O	12/4/23	3/21/23	MV
		1987	LCMS 40 list Add on #1		—	3/21/23	1.0 ppm	400 nL						
		1986	LCMS 40 list Add on #2		—	4/18/23	1.0 ppm	400 nL						
		2054	LCMS Fose std.		—	7/7/23	5.0 ppm	400 nL		500 ppb				
LCMS 2054	Fose std.	11336	N-Et-FOSE	Wellington	5/13/27	9/19/23	50 ppm	200 nL	2.0 mL	5 ppm	95% MeOH 5% H2O	12/4/23	7/24/23	MV
		11338	N-Me FOSE		5/13/27	9/19/23	50 ppm	200 nL						
LCMS 2055	1633 Cal std.	10855	PFAC MXH	Wellington	9/14/26	1/17/24	1-4 ppm	2.50 nL	4 mL	62.5 125 250 ppb	1633 MIX	1/24/23	7/24/23	MV
		10853J	PFAC MXI		9/14/26	1/11/24	1-10 ppm	2.50 nL		62.5 125 250 ppb				
		11549B	PFAC MXF		11/1/25	1/11/24	2 ppm	500 nL		250 ppb				
		10854J	PFAC MXG		3/4/25	1/24/24	2 ppm	250 nL		125 ppb				
		11492	PFAC MXJ		9/14/26	1/11/24	4-20 ppm	312 nL		312/100 ppb				
		11603												

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ORLD-QAC-0017-6-03-FORM-icms std prep log.xls 030819

11494



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

br-NMeFOSE

2-(N-Methylperfluorooctanesulfonamido)ethanol Isomeric Mix

<u>PRODUCT CODE:</u>	br-NMeFOSE
<u>LOT NUMBER:</u>	brNMeFOSE0922
<u>CONCENTRATION:</u>	50.0 ± 2.5 µg/mL
<u>SOLVENT(S):</u>	Methanol
<u>DATE PREPARED:</u> (mm/dd/yyyy)	09/02/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	09/07/2022 (HRGC/LRMS) 10/07/2022 (LC/MS)
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	10/07/2027
<u>RECOMMENDED STORAGE:</u>	Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% 2-(N-methylperfluorooctanesulfonamido)ethanol linear and branched isomers. The full name, structure, and percent composition for each of the isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ¹⁹F-NMR
 Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
 Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
 Figure 3: LC/MS Data (SIR)
 Figure 4: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 24448-09-7 (for linear isomer).

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Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

brNMeFOSE0922 (1 of 7)
rev1

7.9.1

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11495



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

br-NEtFOSE

**2-(N-Ethylperfluorooctanesulfonamido)ethanol
Isomeric Mix**

<u>PRODUCT CODE:</u>	br-NEtFOSE
<u>LOT NUMBER:</u>	brNEtFOSE1022
<u>CONCENTRATION:</u>	50.0 ± 2.5 µg/mL
<u>SOLVENT(S):</u>	Methanol
<u>DATE PREPARED:</u> (mm/dd/yyyy)	09/12/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	09/12/2022 (HRGC/LRMS) 10/07/2022 (LC/MS)
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	10/07/2027
<u>RECOMMENDED STORAGE:</u>	Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% 2-(N-ethylperfluorooctanesulfonamido)ethanol linear and branched isomers. The full name, structure, and percent composition for each of the isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

- Table A: Isomeric Components and Percent Composition by ¹⁹F-NMR
- Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 3: LC/MS Data (SIR)
- Figure 4: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 1691-99-2 (for linear isomer).

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brNEtFOSE1022 (1 of 7)
rev1

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CERTIFICATE OF ANALYSIS DOCUMENTATION

br-NMeFOSA

N-Methylperfluorooctanesulfonamide Isomeric Mix

PRODUCT CODE: br-NMeFOSA
LOT NUMBER: brNMeFOSA0822
CONCENTRATION: 50.0 ± 2.5 µg/mL
SOLVENT(S): Methanol
DATE PREPARED: (mm/dd/yyyy) 08/18/2022
LAST TESTED: (mm/dd/yyyy) 08/23/2022
EXPIRY DATE: (mm/dd/yyyy) 08/23/2027
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% N-methylperfluorooctanesulfonamide (linear and branched isomers). The full name, structure, and percent composition for each of the identified isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ¹⁹F-NMR
Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS Data (SIR)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 31506-32-8 (for linear isomer).

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Revision#:9, Revised 2020-12-23

brNMeFOSA0822 (1 of 6)
rev1

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WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

br-NEtFOSA

N-Ethylperfluorooctanesulfonamide Isomeric Mix

<u>PRODUCT CODE:</u>	br-NEtFOSA
<u>LOT NUMBER:</u>	brNEtFOSA0922
<u>CONCENTRATION:</u>	50.0 ± 2.5 µg/mL
<u>SOLVENT(S):</u>	Methanol
<u>DATE PREPARED:</u> (mm/dd/yyyy)	08/23/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	10/07/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	10/07/2027
<u>RECOMMENDED STORAGE:</u>	Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% N-ethylperfluorooctanesulfonamide (linear and branched isomers). The full name, structure, and percent composition for each of the identified isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

- Table A: Isomeric Components and Percent Composition by ¹⁹F-NMR
- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS Data (SIR)
- Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 4151-50-2 (for linear isomer).

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brNEtFOSA0922 (1 of 6)
rev1

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rec'd: 02/23/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXJ

Native X:3 Fluorotelomer Carboxylic
Acid Solution/Mixture

PRODUCT CODE:	PFAC-MXJ
LOT NUMBER:	PFACMXJ0921
SOLVENT(S):	Methanol
DATE PREPARED: (mm/dd/yyyy)	09/08/2021
LAST TESTED: (mm/dd/yyyy)	09/14/2021
EXPIRY DATE: (mm/dd/yyyy)	09/14/2026
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

PFAC-MXJ is a solution/mixture of three native X:3 fluorotelomer carboxylic acids. The components and their concentrations are given in Table A.

The individual components have a chemical purity of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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7.9.1
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Table A: PFAC-MXJ; Components and Concentrations (µg/mL; ± 5% in methanol)

Compound	Acronym	Concentration (µg/mL)
3-Perfluoropropyl propanoic acid	FPrPA	4.00
3-Perfluoropentyl propanoic acid	FPePA	20.0
3-Perfluoroheptyl propanoic acid	FHpPA	20.0

Certified By: 
B.G. Chittim, General Manager

Date: 10/02/2021
(mm/dd/yyyy)

11688
rec'd 103/03/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXG

Native Perfluoroalkyl Ether Carboxylic Acids and Sulfonate Solution/Mixture

<u>PRODUCT CODE:</u>	PFAC-MXG
<u>LOT NUMBER:</u>	PFACMXG1122
<u>SOLVENT(S):</u>	Methanol/Water (<1%)
<u>DATE PREPARED:</u> (mm/dd/yyyy)	11/30/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	12/01/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	12/01/2027
<u>RECOMMENDED STORAGE:</u>	Store ampoule in a cool, dark place

DESCRIPTION:

PFAC-MXG is a solution/mixture of three native perfluoroalkyl ether carboxylic acids and a native perfluoroalkyl ether sulfonate. The components and their concentrations are given in Table A.

The individual components all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

- Table A: Components and Concentrations of the Solution/Mixture
- Figure 1: LC/MS Data (SIR)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

PFACMXG1122 (1 of 5)
rev0

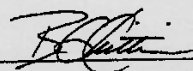
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Table A: PFAC-MXG; Components and Concentrations (ng/mL; ± 5% in methanol/water (<1%))

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-4-oxapentanoic acid	PF4OPeA	2000		A
Perfluoro-5-oxahexanoic acid	PF5OHxA	2000		B
Perfluoro-3,6-dioxaheptanoic acid	3,6-OPFHpA	2000		D
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro(2-ethoxyethane)sulfonate	PFEESA	2000	1780	C

* Concentrations have been rounded to three significant figures.

Certified By: 
 B.G. Chittim, General Manager

Date: 12/09/2022
(mm/dd/yyyy)

11689
rec'd: 03/03/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXJ

**Native X:3 Fluorotelomer Carboxylic
Acid Solution/Mixture**

<u>PRODUCT CODE:</u>	PFAC-MXJ
<u>LOT NUMBER:</u>	PFACMXJ0921
<u>SOLVENT(S):</u>	Methanol
<u>DATE PREPARED:</u> (mm/dd/yyyy)	09/08/2021
<u>LAST TESTED:</u> (mm/dd/yyyy)	09/14/2021
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	09/14/2026
<u>RECOMMENDED STORAGE:</u>	Store ampoule in a cool, dark place

DESCRIPTION:

PFAC-MXJ is a solution/mixture of three native X:3 fluorotelomer carboxylic acids. The components and their concentrations are given in Table A.

The individual components have a chemical purity of >98%.

DOCUMENTATION/ DATA ATTACHED:

- Table A: Components and Concentrations of the Solution/Mixture
- Figure 1: LC/MS Data (SIR)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

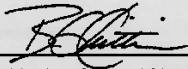
PFACMXJ0921 (1 of 5)
rev1

7.9.1

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Table A: PFAC-MXJ; Components and Concentrations ($\mu\text{g}/\text{mL}$; $\pm 5\%$ in methanol)

Compound	Acronym	Concentration ($\mu\text{g}/\text{mL}$)
3-Perfluoropropyl propanoic acid	FPrPA	4.00
3-Perfluoropentyl propanoic acid	FPePA	20.0
3-Perfluoroheptyl propanoic acid	FHpPA	20.0

Certified By: 
B.G. Chittim, General Manager

Date: 10/02/2021
(mm/dd/yyyy)

11734
rec'd: 03/29/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXH

Native PFAS
Solution/Mixture

<u>PRODUCT CODE:</u>	PFAC-MXH
<u>LOT NUMBER:</u>	PFACMXH0822
<u>SOLVENT(S):</u>	Methanol/Isopropanol (2%)/Water (<1%)
<u>DATE PREPARED:</u> (mm/dd/yyyy)	08/05/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	08/08/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	08/08/2027
<u>RECOMMENDED STORAGE:</u>	Refrigerate ampoule

DESCRIPTION:

PFAC-MXH is a solution/mixture of 11 native linear perfluoroalkylcarboxylic acids (C₄-C₁₄), eight native perfluoroalkanesulfonates (C₄, C₆, C₇, C₈, C₁₀ and C₁₂ linear; C₆ and C₈ linear and branched), three native fluorotelomer sulfonates (4:2, 6:2, and 8:2), two native linear and branched perfluorooctanesulfonamidoacetic acids, and perfluoro-1-octanesulfonamide (FOSA). The components and their concentrations are given in Table A.

The individual components of this mixture all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

- Table A: Components and Concentrations of the Solution/Mixture
- Table B: Isomeric Components and Percent Composition of N-MeFOSAA
- Table C: Isomeric Components and Percent Composition of N-EtFOSAA
- Table D: Isomeric Components and Percent Composition of PFHxSK
- Table E: Isomeric Components and Percent Composition of PFOSK
- Figure 1: LC/MS Data (SIR)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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Form# 13, Issued 2004-11-10
Revision# 9, Revised 2020-12-23

PFACMXH3822 11 of 11
rev0

7.9.1
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Table A: PFAC-MXH; Components and Concentrations
(ng/mL, ± 5% in methanol/isopropanol (2%)/water (<1%))

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-butanoic acid	PFBA	4000		1
Perfluoro-n-pentanoic acid	PFPeA	2000		2
Perfluoro-n-hexanoic acid	PFHxA	1000		5
Perfluoro-n-heptanoic acid	PFHpA	1000		7
Perfluoro-n-octanoic acid	PFOA	1000		11
Perfluoro-n-nonanoic acid	PFNA	1000		14
Perfluoro-n-decanoic acid	PFDA	1000		18
Perfluoro-n-undecanoic acid	PFUDA	1000		24
Perfluoro-n-dodecanoic acid	PFDoA	1000		26
Perfluoro-n-tridecanoic acid	PFTDA	1000		27
Perfluoro-n-tetradecanoic acid	PFTeDA	1000		29
Perfluoro-1-octanesulfonamide	FOSA	1000		23
N-methylperfluorooctanesulfonamidoacetic acid ^a	N-MeFOSAA: linear isomer	760		20
	N-MeFOSAA: ∑ branched isomers	240		17
N-ethylperfluorooctanesulfonamidoacetic acid ^b	N-EtFOSAA: linear isomer	775		22
	N-EtFOSAA: ∑ branched isomers	225		21
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro-1-butanedisulfonate	L-PFBS	1000	887	3
Sodium perfluoro-1-pentadisulfonate	L-PFPeS	1000	941	6
Potassium perfluorohexadisulfonate ^c	PFHxSK: linear isomer	811	741	9
	PFHxSK: ∑ branched isomers	189	173	8
Sodium perfluoro-1-heptadisulfonate	L-PFHpS	1000	953	12
Potassium perfluorooctadisulfonate ^d	PFOSK: linear isomer	788	732	15
	PFOSK: ∑ branched isomers	211	196	13
Sodium perfluoro-1-nonadisulfonate	L-PFNs	1000	962	19
Sodium perfluoro-1-decadisulfonate	L-PFDS	1000	965	25
Sodium perfluoro-1-dodecadisulfonate	L-PFDoS	1000	970	28
Sodium 1H,1H,2H,2H-perfluorohexanesulfonate	4:2FTS	4000	3750	4
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate	6:2FTS	4000	3800	10
Sodium 1H,1H,2H,2H-perfluorodecane sulfonate	8:2FTS	4000	3840	16

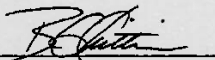
^a See Table B for percent composition of linear and branched N-MeFOSAA isomers.

^b See Table C for percent composition of linear and branched N-EtFOSAA isomers.

^c See Table D for percent composition of linear and branched PFHxSK isomers.

^d See Table E for percent composition of linear and branched PFOSK isomers.

* Concentrations have been rounded to three significant figures.

Certified By: 
B.G. Chittim, General Manager

Date: 08/09/2022
(mm/dd/yyyy)

11736
rec'd: 03/29/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXF

Native Replacement PFAS
Solution/Mixture

<u>PRODUCT CODE:</u>	PFAC-MXF
<u>LOT NUMBER:</u>	PFACMXF0122
<u>SOLVENT(S):</u>	Methanol / Water (<1%)
<u>DATE PREPARED:</u> (mm/dd/yyyy)	01/10/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	01/11/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	01/11/2025
<u>RECOMMENDED STORAGE:</u>	Refrigerate ampoule

DESCRIPTION:

PFAC-MXF is a solution/mixture of sodium dodecafluoro-3H-4,8-dioxanonoate (NaDONA), the major and minor components of F-53B (9Cl-PF3ONS and 11Cl-PF3OUdS), and GenX (HFPO-DA). The components and their concentrations are given in Table A.

The individual native components of this mixture all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

- Table A: Components and Concentrations of the Solution/Mixture
- Figure 1: LC/MS Data (SIR)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Form# 13, Issued 2004-11-10
Revision# 3, Revised 2020-12-23

PFACMXF0122 (1 of 5)
rev0

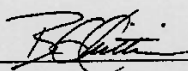
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Table A: PFAC-MXF; Components and Concentrations (ng/mL; ± 5% in Methanol/Water (<1%))

Compound	Acronym	Concentration* (ng/ml)		Peak Assignment in Figure 1
		as the salt	as the acid	
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid	HFPO-DA	2000		A
Sodium dodecafluoro-3H-4,8-dioxanonoate	NaDONA	2000	1890	B
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	9Cl-PF3ONS	2000	1870	C
Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate	11Cl-PF3OUdS	2000	1890	D

* Concentrations have been rounded to three significant figures.

Certified By:  Date: 01/12/2022
(mm/dd/yyyy)
 B.G. Chittim, General Manager

11737
rec'd: 03/29/23



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**CERTIFICATE OF ANALYSIS
DOCUMENTATION**

PFAC-MXG

**Native Perfluoroalkyl Ether Carboxylic
Acids and Sulfonate Solution/Mixture**

PRODUCT CODE: PFAC-MXG
LOT NUMBER: PFACMXG1122
SOLVENT(S): Methanol/Water (<1%)
DATE PREPARED: (mm/dd/yyyy) 11/30/2022
LAST TESTED: (mm/dd/yyyy) 12/01/2022
EXPIRY DATE: (mm/dd/yyyy) 12/01/2027
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DESCRIPTION:

PFAC-MXG is a solution/mixture of three native perfluoroalkyl ether carboxylic acids and a native perfluoroalkyl ether sulfonate. The components and their concentrations are given in Table A.

The individual components all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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Revision# 9, Revised 2020-12-23

PFACMXG1122 (1 of 5)
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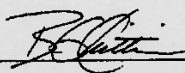
Table A:

PFAC-MXG; Components and Concentrations (ng/mL; ± 5% in methanol/water (<1%))

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-4-oxapentanoic acid	PF4OPeA	2000		A
Perfluoro-5-oxahexanoic acid	PF5OHxA	2000		B
Perfluoro-3,6-dioxaheptanoic acid	3,6-OPFHpA	2000		D
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro(2-ethoxyethane)sulfonate	PFEESA	2000	1780	C

* Concentrations have been rounded to three significant figures.

Certified By:



B.G. Chittim, General Manager

Date: 12/09/2022

(mm/dd/yyyy)

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10726 A

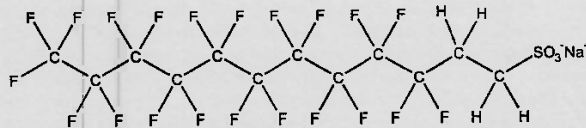


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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: 10:2FTS **LOT NUMBER:** 102FTS0221
COMPOUND: Sodium 1H,1H,2H,2H-perfluorododecanesulfonate

STRUCTURE: **CAS #:** 108026-35-3



MOLECULAR FORMULA: C₁₂H₄F₂₁SO₃Na **MOLECULAR WEIGHT:** 650.18
CONCENTRATION: 50.0 ± 2.5 µg/mL (Na salt) **SOLVENT(S):** Methanol
48.3 ± 2.4 µg/mL (10:2FTS acid)
48.2 ± 2.4 µg/mL (10:2FTS anion)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 03/03/2021
EXPIRY DATE: (mm/dd/yyyy) 03/03/2026
RECOMMENDED STORAGE: Refrigerate ampoule

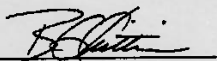
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By:  **Date:** 03/05/2021
B.G. Chittim, General Manager (mm/dd/yyyy)

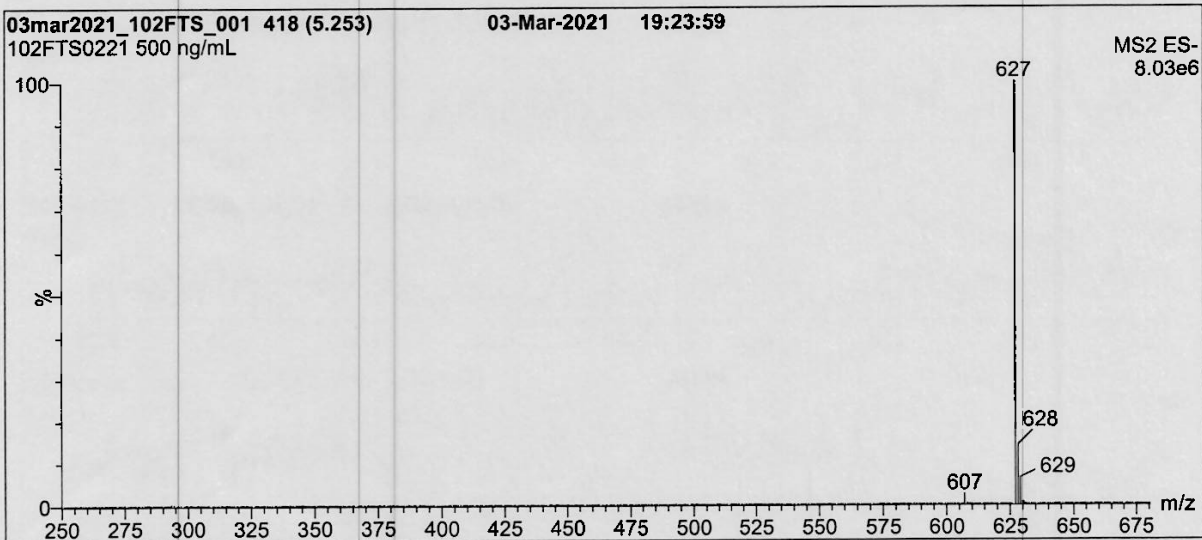
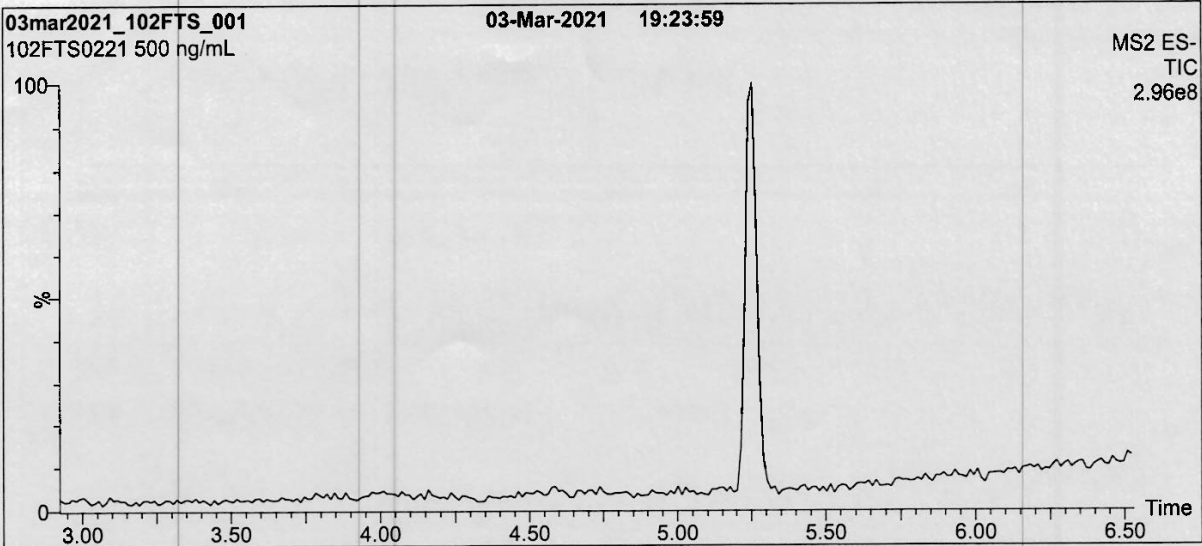
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Form#: 27, Issued 2004-11-10
Revision#: 9, Revised 2020-12-23

7.9.1

7

Figure 1: 10:2FTS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:
 Column: Acquity UPLC BEH Shield RP₁₈
 1.7 μ m, 2.1 x 100 mm
 Mobile phase: Gradient
 Start: 40% H₂O / 60% (80:20 MeOH:ACN)
 (both with 10 mM NH₄OAc buffer)
 Ramp to 90% organic over 7 min and hold for 3 min
 before returning to initial conditions in 0.75 min.
 Time: 12 min
 Flow: 300 μ L/min

MS Parameters:
 Experiment: Full Scan (250 - 850 amu)
 Source: Electrospray (negative)
 Capillary Voltage (kV) = 2.00
 Cone Voltage (V) = 25.00
 Desolvation Temperature ($^{\circ}$ C) = 500
 Desolvation Gas Flow (L/hr) = 1000

Form#: 27, Issued 2004-11-10
Revision#: 9, Revised 2020-12-23

10762 A-B



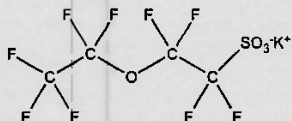
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFEESA *rec'd
8/20/21
WPH* **LOT NUMBER:** PFEESA0520

COMPOUND: Potassium perfluoro(2-ethoxyethane)sulfonate

STRUCTURE: **CAS #:** 117205-07-9



MOLECULAR FORMULA: C₄F₈SO₄K

CONCENTRATION: 50.0 ± 2.5 µg/ml (K salt)
44.6 ± 2.2 µg/ml (PFEESA acid)
44.5 ± 2.2 µg/ml (PFEESA anion)

CHEMICAL PURITY: >98%

LAST TESTED: (mm/dd/yyyy) 05/13/2020

EXPIRY DATE: (mm/dd/yyyy) 05/13/2025

RECOMMENDED STORAGE: Store ampoule in a cool, dark place

MOLECULAR WEIGHT: 354.19

SOLVENT(S): Methanol

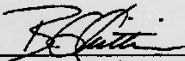
DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 0.2% of perfluoro-n-octanoic acid (PFOA).

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Certified By: 
B.G. Chittim, General Manager

Date: 05/29/2020
(mm/dd/yyyy)

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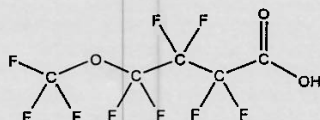
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PF5OHxA *res'd with 8/20/21* **LOT NUMBER:** PF5OHxA0320

COMPOUND: Perfluoro-5-oxahexanoic acid

SYNONYM: Perfluoro-4-methoxybutanoic acid (PFMBA)

STRUCTURE: **CAS #:** 863090-89-5



MOLECULAR FORMULA: C₅HF₉O₃ **MOLECULAR WEIGHT:** 280.05

CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
Water (<1%)

CHEMICAL PURITY: >98%

LAST TESTED: (mm/dd/yyyy) 03/31/2020

EXPIRY DATE: (mm/dd/yyyy) 03/31/2025

RECOMMENDED STORAGE: Store ampoule in a cool, dark place

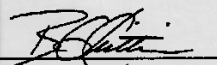
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Certified By: 
B.G. Chittim, General Manager

Date: 12/21/2020
(mm/dd/yyyy)

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Form#: 27, Issued 2004-11-10
Revision#: 8, Revised 2020-09-10

PF5OHxA0320 (1 of 4)
rev1

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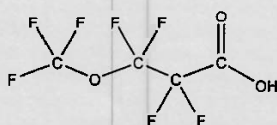
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PF4OPeA *rec'd
WPH
8/20/21* **LOT NUMBER:** PF4OPeA0320

COMPOUND: Perfluoro-4-oxapentanoic acid

SYNONYM: Perfluoro-3-methoxypropanoic acid (PFMPA)

STRUCTURE: **CAS #:** 377-73-1



MOLECULAR FORMULA: C₄HF₇O₃ **MOLECULAR WEIGHT:** 230.04

CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
Water (<1%)

CHEMICAL PURITY: >98%

LAST TESTED: (mm/dd/yyyy) 03/31/2020

EXPIRY DATE: (mm/dd/yyyy) 03/31/2025

RECOMMENDED STORAGE: Store ampoule in a cool, dark place

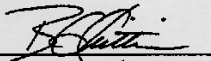
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 12/21/2020
(mm/dd/yyyy)

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10765 A-13



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

3,6-OPFHpA

rec'd
WPH
8/20/21

LOT NUMBER:

36OPFHpA0320

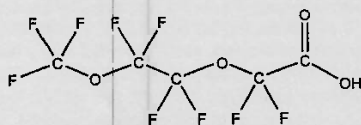
COMPOUND:

Perfluoro-3,6-dioxaheptanoic acid

STRUCTURE:

CAS #:

151772-58-6



MOLECULAR FORMULA:

C₆H₂F₉O₄

MOLECULAR WEIGHT:

296.04

CONCENTRATION:

50.0 ± 2.5 µg/ml

SOLVENT(S):

Methanol
Water (<1%)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

03/31/2020

EXPIRY DATE: (mm/dd/yyyy)

03/31/2025

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Certified By:

B.G. Chittim, General Manager

Date: 05/27/2020
(mm/dd/yyyy)

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10829



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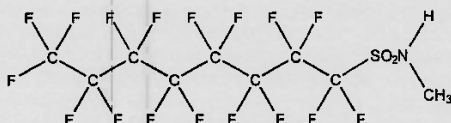
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-MeFOSA-M
COMPOUND: N-methylperfluoro-1-octanesulfonamide

LOT NUMBER: NMeFOSA0721M

STRUCTURE:

CAS #: 31506-32-8



rec'd
WPA
10/5/21

MOLECULAR FORMULA: C₉H₄F₁₇NO₂S
CONCENTRATION: 50.0 ± 2.5 µg/mL
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 08/03/2021
EXPIRY DATE: (mm/dd/yyyy) 08/03/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

MOLECULAR WEIGHT: 513.17
SOLVENT(S): Methanol

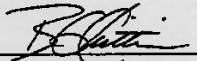
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 08/04/2021
(mm/dd/yyyy)

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Form#:27, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

NMeFOSA0721M (1 of 4)
rev0

7.9.1

7



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

N-EtFOSA-M

10837

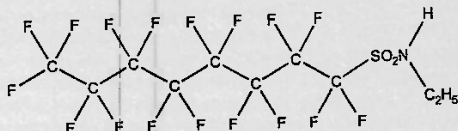
LOT NUMBER: NEtFOSA0821M

COMPOUND:

N-ethylperfluoro-1-octanesulfonamide

STRUCTURE:

CAS #: 4151-50-2



MOLECULAR FORMULA:

C₁₀H₉F₁₇NO₂S

MOLECULAR WEIGHT:

527.20

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

08/12/2021

EXPIRY DATE: (mm/dd/yyyy)

08/12/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

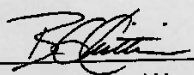
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:


B.G. Chittim, General Manager

Date: 08/16/2021

(mm/dd/yyyy)

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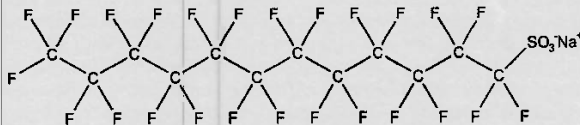
10840

PRODUCT CODE: L-PFDoS
COMPOUND: Sodium perfluoro-1-dodecanesulfonate

LOT NUMBER: LPFDoS0721

STRUCTURE:

CAS #: 1260224-54-1



MOLECULAR FORMULA: C₁₂F₂₅SO₃Na
CONCENTRATION: 50.0 ± 2.5 µg/mL (Na salt)
48.5 ± 2.4 µg/mL (PFDoS acid)
48.4 ± 2.4 µg/mL (PFDoS anion)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 07/09/2021
EXPIRY DATE: (mm/dd/yyyy) 07/09/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

MOLECULAR WEIGHT: 722.14
SOLVENT(S): Methanol


DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~0.2% of perfluoro-n-dodecanoic acid (PFDoA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 07/16/2021
(mm/dd/yyyy)

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10847 NS 01/18/23

PRODUCT CODE:

PFODA

LOT NUMBER:

PFODA0821

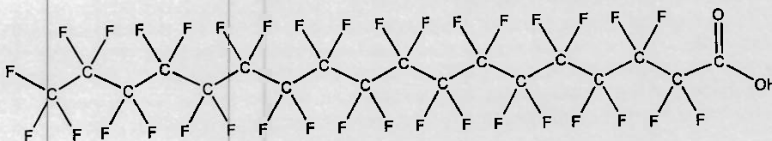
COMPOUND:

Perfluoro-n-octadecanoic acid

STRUCTURE:

CAS #:

16517-11-6



MOLECULAR FORMULA:

C₁₈H₃₅O₂

MOLECULAR WEIGHT:

914.14

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

09/03/2021

EXPIRY DATE: (mm/dd/yyyy)

09/03/2026

RECOMMENDED STORAGE:

Store ampoule at ambient temperature in a dark place

DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- The solubility of this product in methanol is very sensitive to storage conditions and solvent composition. The stated validity period applies to the sealed ampoules stored at ambient temperature.

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Certified By:

B.G. Chittim, General Manager

Date: 09/28/2021

(mm/dd/yyyy)

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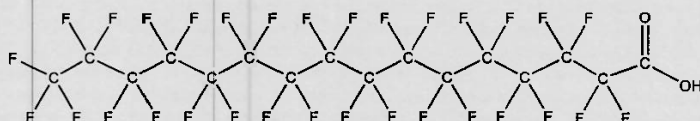


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CERTIFICATE OF ANALYSIS
DOCUMENTATION

10842 * NG 01/18/23

PRODUCT CODE: PFHxDA **LOT NUMBER:** PFHxDA0421
COMPOUND: Perfluoro-n-hexadecanoic acid
STRUCTURE: **CAS #:** 67905-19-5



MOLECULAR FORMULA: C₁₆HF₃₁O₂ **MOLECULAR WEIGHT:** 814.13
CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 05/07/2021
EXPIRY DATE: (mm/dd/yyyy) 05/07/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

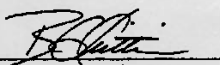
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:  **Date:** 05/25/2021
 B.G. Chittim, General Manager (mm/dd/yyyy)

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Form#:27, Issued 2004-11-10
 Revision#:9, Revised 2020-12-23

PFHxDA0421 (1 of 4)
 rev0

7.9.1
7

1116 A.B ^{mw}

1116B on the back mw



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

FHpPA

LOT NUMBER:

FHpPA1020

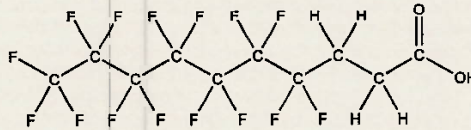
COMPOUND:

3-Perfluoroheptyl propanoic acid

STRUCTURE:

CAS #:

812-70-4



MOLECULAR FORMULA:

C₁₀H₅F₁₅O₂

MOLECULAR WEIGHT:

442.12

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

11/12/2020

EXPIRY DATE: (mm/dd/yyyy)

11/12/2025

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 11/27/2020

(mm/dd/yyyy)

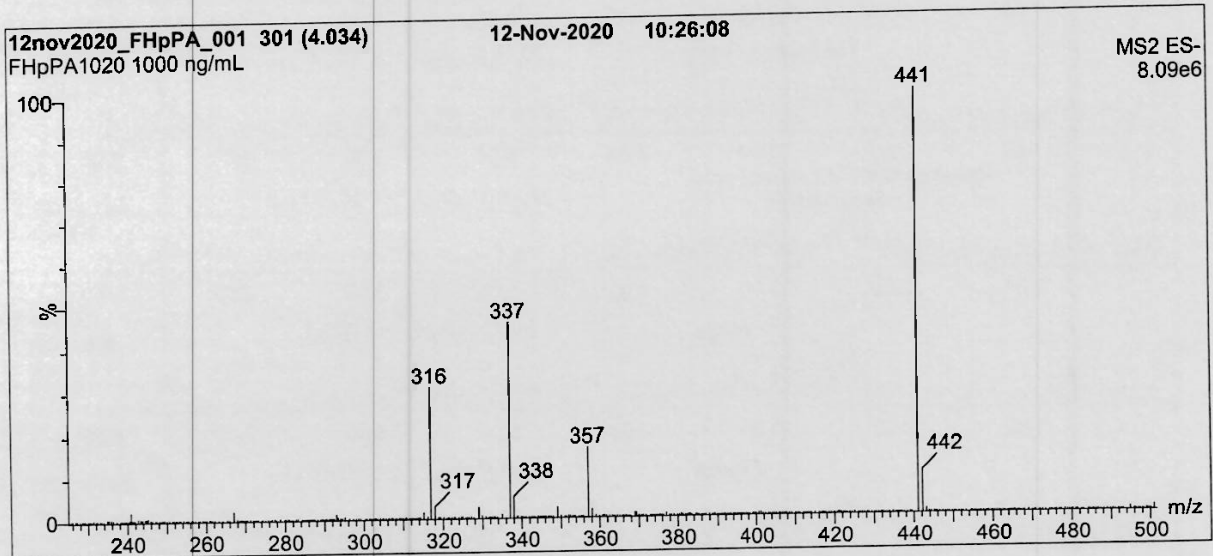
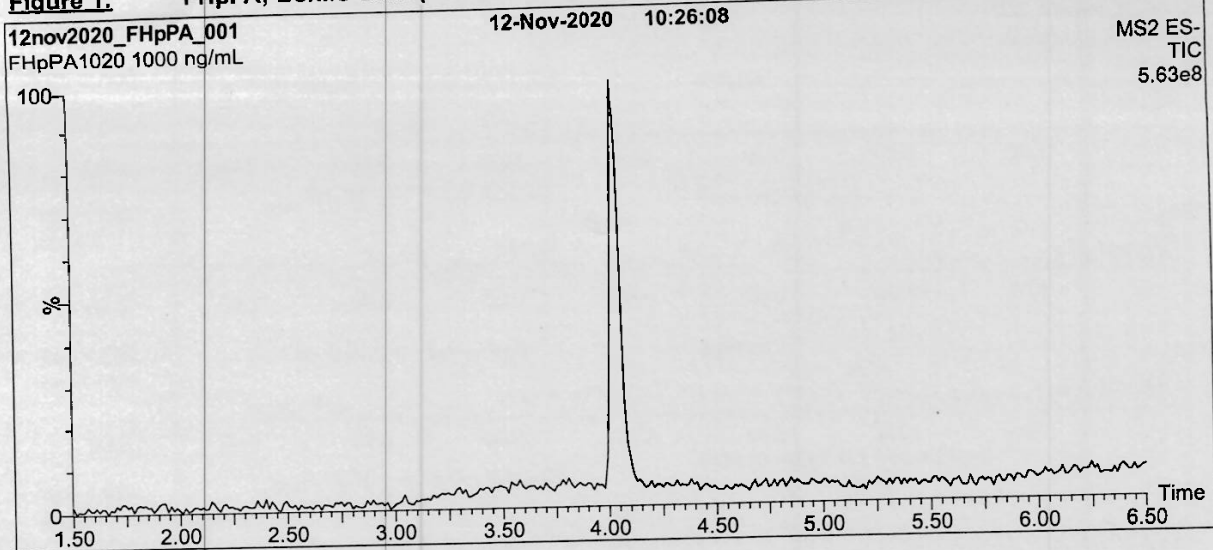
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Form#: 27, Issued 2004-11-10
Revision#: 8, Revised 2020-09-10

FHpPA1020 (1 of 4)
rev0

7.9.1

7

Figure 1: FHpPA; LC/MS Data (TIC and Mass Spectrum)**Conditions for Figure 1:**

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 28.50
Desolvation Temperature ($^{\circ}$ C) = 500
Desolvation Gas Flow (L/hr) = 1000

FPPrPA(3:3FTCA) 1116 B



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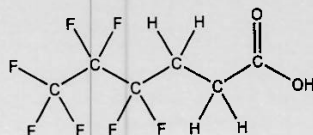
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: FPPrPA
COMPOUND: 3-Perfluoropropyl propanoic acid

LOT NUMBER: FPPrPA0122

STRUCTURE:

CAS #: 356-02-5



MOLECULAR FORMULA: C₆H₅F₇O₂
CONCENTRATION: 50.0 ± 2.5 µg/mL
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 02/03/2022
EXPIRY DATE: (mm/dd/yyyy) 02/03/2027
RECOMMENDED STORAGE: Refrigerate ampoule

MOLECULAR WEIGHT: 242.09
SOLVENT(S): Methanol

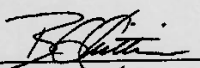
DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <1% of the unsaturated 3:3 telomer acid (C₆H₃F₇O₂) as an impurity determined by ¹⁹F NMR.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 02/04/2022
(mm/dd/yyyy)

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11332



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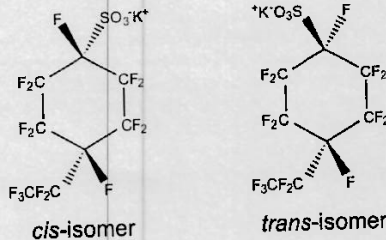
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:
COMPOUND:

PFECHS
Potassium perfluoro-4-ethylcyclohexanesulfonate (isomeric mixture)

LOT NUMBER: PFECHS0222

STRUCTURE:



CAS #: 335-24-0

MOLECULAR FORMULA:
CONCENTRATION:

$C_8F_{15}SO_3K$
50.0 ± 2.5 µg/mL (K salt)
46.2 ± 2.3 µg/mL (PFECHS acid)
46.1 ± 2.3 µg/mL (PFECHS anion)
>98%

MOLECULAR WEIGHT: 500.22
SOLVENT(S): Methanol

CHEMICAL PURITY:

LAST TESTED: (mm/dd/yyyy)

03/28/2022

EXPIRY DATE: (mm/dd/yyyy)

03/28/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains a mixture of the *cis/trans* isomers of PFECHS at a ratio of 1:1.27 (*cis:trans*).

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Certified By:

B.G. Chittim, General Manager

Date: 03/30/2022
(mm/dd/yyyy)

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11626
rec'd 01/26/23

CERTIFIED WEIGHT REPORT

Part Number: **64029A**
Lot Number: **110922**
Description: **PFOA - DOD**
28 components
Expiration Date: **110827**
Recommended Storage: **Freezer (0 °C)**
Nominal Concentration (µg/mL): **1.0**
NIST Test ID#: **6UTB**

Solvent(s):
Methanol (1 mM KOH)
2-Propanol
Lot#
102722 (98%)
32500 (2%)

Formulated By: <i>P. S. Chauhan</i>	110922
Prepared By: <i>Prashant Chauhan</i>	DATE
Reviewed By: <i>Pedro L. Rentas</i>	110922
	DATE

Volume(s) shown below were combined and diluted to (mL):
Note: All assigned values are anion concentrations.

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty (+/-) µg/mL	SDS Information (Solvent Safety Info. On Attached pg.)		
									Free Acid CAS#	OSHA PEL (TWA)	LD50
1. Perfluoro-n-butanoic acid (PFBA)	99542	110922	0.02	2.00	0.017	50.1	1.00	0.02	375-22-4	N/A	N/A
2. Perfluoro-n-pentanoic acid (PFPeA)	99543	050222	0.02	2.00	0.017	50.3	1.01	0.02	2706-90-3	N/A	N/A
3. Perfluorohexanoic acid (PFHxA)	99199	071122	0.02	2.00	0.017	50.2	1.00	0.02	307-24-4	N/A	N/A
4. Perfluoroheptanoic acid (PFHpA)	99197	110922	0.02	2.00	0.017	50.1	1.00	0.02	375-85-9	N/A	N/A
5. Perfluorooctanoic acid (br-PFOA)*	99202	080522	0.02	2.00	0.017	50.2	1.00	0.02	335-67-1 (L)	N/A	ip-rat 189mg/kg
6. Perfluorononanoic acid (PFNA)	99200	110922	0.02	2.00	0.017	50.1	1.00	0.02	375-95-1	N/A	N/A
7. Perfluorodecanoic acid (PFDA)	99195	110922	0.02	2.00	0.017	50.0	1.00	0.02	335-76-2	N/A	rat 57mg/kg
8. Perfluoroundecanoic acid (PFUnA)	99205	071522	0.02	2.00	0.017	50.2	1.00	0.02	2058-94-8	N/A	N/A
9. Perfluorododecanoic acid (PFDoA)	99196	071522	0.02	2.00	0.017	50.1	1.00	0.02	307-55-1	N/A	N/A
10. Perfluorotridecanoic acid (PTTDA)	99204	110922	0.02	2.00	0.017	50.1	1.00	0.02	72629-94-8	N/A	N/A
11. Perfluorotetradecanoic acid (PTeDA)	99203	033022	0.02	2.00	0.017	50.1	1.00	0.02	376-06-7	N/A	N/A
12. Perfluoro-1-octanesulfonamide (FOSA)	3677	FOSA03221	0.02	2.00	0.017	50.0	1.00	0.05	2355-31-9 (L)	N/A	N/A
13. N-Methylperfluoro-1-octanesulfonamidoacetic acid (br-NMeFOSAA)*	4162	brNMeFOSAA0422	0.02	2.00	0.017	50.0	1.00	0.05	2991-50-6 (L)	N/A	N/A
14. N-Ethylperfluoro-1-octanesulfonamidoacetic acid (br-NEFOSAA)*	4163	brNEFOSAA1121	0.02	2.00	0.017	50.0	1.00	0.05	2991-50-6 (L)	N/A	N/A
15. Perfluorobutanesulfonic acid (PFBS)	99194	080522	0.02	2.00	0.017	50.2	1.00	0.02	375-73-5	N/A	N/A
16. Perfluoro-1-pentanesulfonic acid (PFPeS)	99544	032422	0.02	2.00	0.017	50.1	1.00	0.02	2706-91-4	N/A	N/A
17. Perfluorohexanesulfonic acid (br-PFHxS)*	99198	071522	0.02	2.00	0.017	50.2	1.00	0.02	355-46-4 (L)	N/A	N/A
18. Perfluoro-1-heptanesulfonic acid (PFHpS)	3672	LPFHPS0822	0.021	2.10	0.017	47.6	1.00	0.05	375-92-8	N/A	N/A
19. Heptadecafluorooctanesulfonic acid (br-PFOS)*	99201	033022	0.02	2.00	0.017	50.1	1.00	0.02	1763-23-1 (L)	N/A	N/A
20. Perfluoro-1-nonanesulfonic acid (PFNS)	3957	LPFNS1021	0.021	2.10	0.017	48.0	1.01	0.05	68259-12-1	N/A	N/A
21. Perfluoro-1-decanesulfonic acid (PFDS)	3671	LPFDS0222	0.021	2.10	0.017	48.2	1.01	0.05	335-77-3	N/A	N/A
22. 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2FTS)	65271	080522	0.02	2.00	0.017	50.2	1.00	0.05	757124-72-4	N/A	N/A
23. 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2FTS)	65272	071522	0.02	2.00	0.017	50.2	1.00	0.05	29108-34-4	N/A	N/A
24. 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2FTS)	3662	82FTS0822	0.021	2.10	0.017	47.9	1.01	0.05	39108-34-4	N/A	N/A
25. 2-(Heptafluoropropoxy)-2,3,3,3-tetrafluoropropanoic acid (HFPO-DA)	99666	080522	0.02	2.00	0.017	50.1	1.00	0.02	13252-13-6	N/A	N/A
26. 11-Chlorooctadecafluoro-3-oxadecane-1-sulfonic acid (11Cl-PF3OUdS)	4165	11ClPF3OUdS0522	0.021	2.12	0.017	47.1	1.00	0.05	763051-92-9	N/A	N/A
27. 9-Chlorooctadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	4164	9ClPF3ONS0522	0.021	2.14	0.017	46.8	1.00	0.05	756426-56-1	N/A	N/A
28. Dodecafluoro-3H-4,8-dioxanonanoic acid (ADONA)	4103	NaDONA0922	0.021	2.12	0.017	47.1	1.00	0.05	919005-14-4	N/A	N/A
Perfluorooctanoic acid (linear)*	99202	080522	0.02	2.00	0.004	49.6	0.99	0.010	335-67-1 (L)	N/A	ip-rat 189mg/kg
Perfluorooctanoic acid (branched isomer)*	99202	080522	0.02	2.00	0.004	0.6	0.01	0.001	335-67-1 (L)	N/A	ip-rat 189mg/kg
Perfluorohexanesulfonic acid (linear)*	99198	071522	0.02	2.00	0.017	44.2	0.88	0.02	355-46-4 (L)	N/A	N/A
Perfluorohexanesulfonic acid (branched isomer)*	99198	071522	0.02	2.00	0.017	6.0	0.12	0.0021	355-46-4 (L)	N/A	N/A
Heptadecafluorooctanesulfonic acid (linear)*	99201	033022	0.02	2.00	0.017	38.1	0.76	0.02	1763-23-1 (L)	N/A	N/A
Heptadecafluorooctanesulfonic acid (branched isomer)*	99201	033022	0.02	2.00	0.017	7.5	0.15	0.003	1763-23-1 (L)	N/A	N/A
Heptadecafluorooctanesulfonic acid (branched isomer)*	99201	033022	0.02	2.00	0.017	4.0	0.08	0.002	1763-23-1 (L)	N/A	N/A
Heptadecafluorooctanesulfonic acid (branched isomer)*	99201	033022	0.02	2.00	0.017	0.5	0.010	0.0002	1763-23-1 (L)	N/A	N/A
N-Methylperfluoro-1-octanesulfonamidoacetic acid (linear)*	4162	brNMeFOSAA0422	0.02	2.00	0.017	36.0	0.72	0.04	2355-31-9 (L)	N/A	N/A
N-Methylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4162	brNMeFOSAA0422	0.02	2.00	0.017	6.5	0.13	0.011	2355-31-9 (L)	N/A	N/A
N-Methylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4162	brNMeFOSAA0422	0.02	2.00	0.017	5.0	0.10	0.005	2355-31-9 (L)	N/A	N/A
N-Methylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4162	brNMeFOSAA0422	0.02	2.00	0.017	2.5	0.05	0.0009	2355-31-9 (L)	N/A	N/A
N-Ethylperfluoro-1-octanesulfonamidoacetic acid (linear)*	4163	brNEFOSAA1121	0.02	2.00	0.017	36.6	0.73	0.04	2991-50-6 (L)	N/A	N/A
N-Ethylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4163	brNEFOSAA1121	0.02	2.00	0.017	7.7	0.15	0.009	2991-50-6 (L)	N/A	N/A
N-Ethylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4163	brNEFOSAA1121	0.02	2.00	0.017	6.3	0.11	0.005	2991-50-6 (L)	N/A	N/A
N-Ethylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4163	brNEFOSAA1121	0.02	2.00	0.017	0.4	0.007	0.0006	2991-50-6 (L)	N/A	N/A

*Concentrations for branched and linear isomers are based on LCMS chromatographic analysis only.

A qualitative standard (Sect. 3.19) is available for PFOA that contains the linear and branched isomers (Wellington Labs, Cat. No. T-PFOA, or equivalent). This qualitative PFOA standard must be purchased and used to identify the retention times of the branched PFOA isomers, but the linear only PFOA standard must be used for quantitation (Sect. 12.2) until a quantitative PFOA standard containing the branched and linear isomers becomes commercially available.

The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.
Uncertainty Reference: Taylor, B.N. and Kaye, C.E. "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).

7.9.1
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11140



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

L-PFPrS

LOT NUMBER:

LPFPrS0721

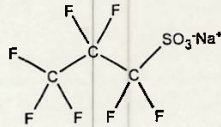
COMPOUND:

Sodium perfluoro-1-propanesulfonate

STRUCTURE:

CAS #:

Not available



MOLECULAR FORMULA:

C₃F₇SO₃Na

MOLECULAR WEIGHT:

272.07

CONCENTRATION:

50.0 ± 2.5 µg/mL (Na salt)
 46.0 ± 2.3 µg/mL (PFPrS acid)
 45.8 ± 2.3 µg/mL (PFPrS anion)

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

07/12/2021

EXPIRY DATE: (mm/dd/yyyy)

07/12/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 08/04/2021
(mm/dd/yyyy)

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11252 11249
7/1/22 KA



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

FHxSA-I

LOT NUMBER:

FHxSA12211

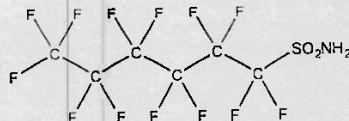
COMPOUND:

Perfluoro-1-hexanesulfonamide

STRUCTURE:

CAS #:

41997-13-1



MOLECULAR FORMULA:

C₆H₂F₁₃NO₂S

MOLECULAR WEIGHT:

399.13

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

isopropanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

12/29/2021

EXPIRY DATE: (mm/dd/yyyy)

12/29/2026

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

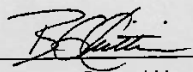
- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:


B.G. Chittim, General Manager

Date: 01/10/2022

(mm/dd/yyyy)

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11250 Lx 7/1122



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

FBSA-I

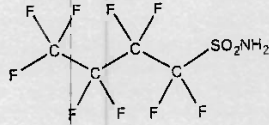
LOT NUMBER: FBSA11211

COMPOUND:

Perfluoro-1-butananesulfonamide

STRUCTURE:

CAS #: 30334-69-1



MOLECULAR FORMULA:

C₄H₂F₉NO₂S

MOLECULAR WEIGHT: 299.11

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S): Isopropanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

11/10/2021

EXPIRY DATE: (mm/dd/yyyy)

11/10/2026

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 11/10/2021

(mm/dd/yyyy)

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Form#: 27, Issued 2004-11-10
Revision#: 9, Revised 2020-12-23

FBSA11211 (1 of 4)
rev0

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WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

N-MeFOSE-M

LOT NUMBER:

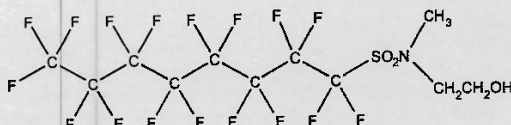
NMeFOSE0522M

COMPOUND:

2-(N-methylperfluoro-1-octanesulfonamido)ethanol

STRUCTURE:**CAS #:**

24448-09-7

**MOLECULAR FORMULA:**C₁₁H₈F₁₇NO₃S**MOLECULAR WEIGHT:**

557.22

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

05/13/2022 (HRGC/LRMS)

05/13/2022 (LC/MS)

EXPIRY DATE: (mm/dd/yyyy)

05/13/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS Data (Full Scan and Mass Spectrum)

Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager
Date: 06/14/2022
(mm/dd/yyyy)

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11764 A-5
rec'd: 04/20/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

MPFAC-HIF-IS

**Mass-Labelled PFAS Injection
Standard Solution/Mixture**

PRODUCT CODE: MPFAC-HIF-IS
LOT NUMBER: MPFACHIFIS1122
SOLVENT(S): Methanol/Water (<1%)
DATE PREPARED: (mm/dd/yyyy) 11/28/2022
LAST TESTED: (mm/dd/yyyy) 11/29/2022
EXPIRY DATE: (mm/dd/yyyy) 11/29/2027
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DESCRIPTION:

MPFAC-HIF-IS is a solution/mixture of five mass-labelled (¹³C) perfluoroalkylcarboxylic acids (C₄, C₆, C₈-C₁₀) and two mass-labelled (¹⁸O and ¹³C) perfluoroalkanesulfonates (C₆ and C₈). The components and their concentrations are given in Table A.

The individual mass-labelled perfluoroalkylcarboxylic acids and mass-labelled perfluoroalkanesulfonates all have chemical purities of >98% and isotopic purities of ≥99% per ¹³C or >94% per ¹⁸O.

DOCUMENTATION/ DATA ATTACHED:

- Table A: Components and Concentrations of the Solution/Mixture
- Figure 1: LC/MS Data (SIR)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

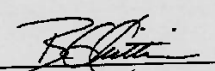
MPFACHIFIS1122 (1 of 5)
rev0

7.9.1
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Table A: MPFAC-HIF-IS; Components and Concentrations (ng/mL, ± 5% in methanol/water (<1%))

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-(2,3,4- ¹³ C ₃)butanoic acid	M3PFBA	1000		1
Perfluoro-n-(1,2- ¹³ C ₂)hexanoic acid	MPFHxA	500		2
Perfluoro-n-(1,2,3,4- ¹³ C ₄)octanoic acid	MPFOA	500		4
Perfluoro-n-(1,2,3,4,5- ¹³ C ₅)nonanoic acid	MPFNA	250		5
Perfluoro-n-(1,2- ¹³ C ₂)decanoic acid	MPFDA	250		7
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Sodium perfluoro-1-hexane(¹⁸ O ₂)sulfonate	MPFHxS	500	474	3
Sodium perfluoro-1-(1,2,3,4- ¹³ C ₄)octanesulfonate	MPFOS	500	479	6

* Concentrations have been rounded to three significant figures.

Certified By:  Date: 12/05/2022
(mm/dd/yyyy)
R.G. Chittim, General Manager

11765 A-J
Rec'd: 04/20/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

MPFAC-HIF-ES

Mass-Labelled PFAS Extraction Standard Solution/Mixture

PRODUCT CODE: MPFAC-HIF-ES
LOT NUMBER: MPFACHIFES1022
SOLVENT(S): Methanol/Isopropanol (1%)/Water (<1%)
DATE PREPARED: (mm/dd/yyyy) 10/28/2022
LAST TESTED: (mm/dd/yyyy) 11/23/2022
EXPIRY DATE: (mm/dd/yyyy) 11/23/2025
RECOMMENDED STORAGE: Refrigerate ampoule

DESCRIPTION:

MPFAC-HIF-ES is a solution/mixture of ten mass-labelled (¹³C) perfluoroalkylcarboxylic acids (C₄-C₁₂, C₁₄), three mass-labelled (¹³C) perfluoroalkanesulfonates (C₄, C₆, and C₈), three mass-labelled (one ¹³C and two ²H) perfluoro-1-octanesulfonamides, three mass-labelled (¹³C) fluorotelomer sulfonates (4:2, 6:2, and 8:2), two mass-labelled (²H) perfluorooctanesulfonamidoacetic acids, two mass-labelled (²H) perfluorooctanesulfonamidoethanols, and mass-labelled (¹³C) hexafluoropropylene oxide dimer acid (GenX, M3HFPO-DA). The components and their concentrations are given in Table A.

The individual ¹³C-labelled components all have chemical purities >98% and isotopic purities of ≥99%. The individual ²H-labelled components all have chemical purities >98% and isotopic purities of ≥98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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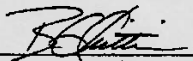
Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

MPFACHIFES1022 (1 of 7)
rev0

Table A: MPFAC-HIF-ES; Components and Concentrations (ng/mL, ± 5% in methanol/isopropanol (1%)/water (<1%))

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-(¹³ C ₂)butanoic acid	MPFBA	2000		1
Perfluoro-n-(¹³ C ₃)pentanoic acid	M5PFPeA	1000		2
Perfluoro-n-(1,2,3,4,6- ¹³ C ₅)hexanoic acid	M5PFHxA	500		5
Perfluoro-n-(1,2,3,4- ¹³ C ₄)heptanoic acid	M4PFHpA	500		7
Perfluoro-n-(¹³ C ₈)octanoic acid	M8PFOA	500		10
Perfluoro-n-(¹³ C ₉)nonanoic acid	M9PFNA	250		11
Perfluoro-n-(1,2,3,4,5,6- ¹³ C ₆)decanoic acid	M6PFDA	250		14
Perfluoro-n-(1,2,3,4,5,6,7- ¹³ C ₇)undecanoic acid	M7PFUdA	250		18
Perfluoro-n-(1,2- ¹³ C ₂)dodecanoic acid	MPFD _o A	250		19
Perfluoro-n-(1,2- ¹³ C ₂)tetradecanoic acid	M2PFTeDA	250		22
Perfluoro-1-(¹³ C ₈)octanesulfonamide	M8FOSA	500		17
N-methyl-d ₃ -perfluoro-1-octanesulfonamide	d-N-MeFOSA	500		21
N-ethyl-d ₅ -perfluoro-1-octanesulfonamide	d-N-EtFOSA	500		24
N-methyl-d ₃ -perfluoro-1-octanesulfonamidoacetic acid	d3-N-MeFOSAA	1000		15
N-ethyl-d ₅ -perfluoro-1-octanesulfonamidoacetic acid	d5-N-EtFOSAA	1000		16
2-(N-methyl-d ₃ -perfluoro-1-octanesulfonamido)ethan-d ₂ -ol	d7-N-MeFOSE	5000		20
2-(N-ethyl-d ₅ -perfluoro-1-octanesulfonamido)ethan-d ₂ -ol	d9-N-EtFOSE	5000		23
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)(¹³ C ₃)propanoic acid	M3HFPO-DA	2000		6
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Sodium perfluoro-1-(2,3,4- ¹³ C ₃)butanesulfonate	M3PFBS	500	466	3
Sodium perfluoro-1-(1,2,3- ¹³ C ₃)hexanesulfonate	M3PFHxS	500	474	8
Sodium perfluoro-1-(¹³ C ₈)octanesulfonate	M8PFOS	500	479	12
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)hexanesulfonate	M2-4:2FTS	1000	938	4
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)octanesulfonate	M2-6:2FTS	1000	951	9
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)decanesulfonate	M2-8:2FTS	1000	960	13

* Concentrations have been rounded to three significant figures.

Certified By: 
B.G. Chittim, General Manager

Date: 11/24/2022
(mm/dd/yyyy)

SGS - ORLANDO

Date/Time: 04/28/23 11:00
Started (mm/dd/yy 24:00)

Date/Time: 5/2/23 16:00
Finished (mm/dd/yy 24:00)

Batch#: OP96627

Ext. By: GH

SPE LIQUID SAMPLE PREP REPORT

Method: EPA 1633 Draft (QSM) List 40

Balance ID: _____

Conc. By: _____ Viald By: _____

Sample ID	Bottle Number	Amount Extracted (ml)	Initial pH	Adjusted pH	Surrogate Amount (ul)	Spike Amount (ul)	Final Volume (ml)	Manifold ID	Comments
OP96627MB	/	500	7	N/A	25		S	E	
OP96627BS	/	500	7	N/A		200			
OP96627LLBS	/	500	7	N/A		60			
FC5295-1	2	550	6	N/A					
	2	560	6						
	3	540	7						
	4	560	7						
	5	560	6	N/A					
	6	550	8	6					
	7	550	6	N/A					
	8	520	6						E
	9	540	6						F
	10	510	7						
	11	510	7						
	12	530	6						dirty
FC5325-1	2	560	7						
	2	560	7						
	3	570	6						
	4	570	6						cloudy, light brown
	5	570	6						
	6	560	7						
FC5621-1	2	570	7	N/A	25		S	F	
OPFC5295-5MS	3	560	6	N/A	25	200	S	E	
OP MSD									
OPFC5295-6DUP	3	550	8	N/A	25		S	E	

Comments:

EIS (SURR) ID: 11765G-I Conc: 250-5000 ng/ml Exp. Date: 04/24/24 Inj. By: GH Ver. By: AGH
 SPIKE.1 ID: LCMS2104C Conc: VARIED Exp. Date: 10/14/23 Inj. By: GH Ver. By: AG
 SPIKE.2 ID: _____ Conc: _____ Exp. Date: _____ Inj. By: _____ Ver. By: _____
 NIS (ISTD) ID: 117646-J Conc: 250-1000 ng/ml Exp. Date: 2/27/24 Inj. By: MV Ver. By: MV

TurboVap Temp (Therm ID): _____ N-Evap Temp (Therm ID): _____
 Observed Temp °C: _____ Corr. Temp °C: _____ Observed Temp °C: _____ Corr. Temp °C: _____

Methanol Lot # 224231 1% NH4OH MeOH PF378 SPE Lot # 614-0-05
 Water Lot# OP96255 0.3M Formic Acid PF375 Syringe filter Lot #
 Acetic Acid# 194003 3% NH4OH Sol pH paper Lot# 215322
 0.1M Formic PF377 5% Formic Acid PF203 Carbon Lot# 160898

Relinquished By: [Signature]
 Accepted By: MV

Date: 04/28/23
 Date: 5/2/23

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