

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

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Automated Report

Technical Report for

AECOM, INC.

N6274223F0104 RH Fire Suppression System

60697810

SGS Job Number: FC1801

Sampling Date: 01/09/23



Report to:

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ATTN: Katie Abbott

Total number of pages in report: 739



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

Client Service contact: Elvin Kumar 407-425-6700

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

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Test results relate only to samples analyzed.

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Sample Summary

AECOM, INC.

Job No: FC1801

N6274223F0104 RH Fire Suppression System
Project No: 60697810

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
FC1801-1	01/09/23	14:10 JS	01/10/23	AQ	Ground Water	AF-RHMW03-WGN01LF-2301W2

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: AECOM, INC.

Job No: FC1801

Site: N6274223F0104 RH Fire Suppression System

Report Date: 1/18/2023 3:49:42 PM

On 01/10/2023, 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 2.4 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC1801 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: OP94977

Sample(s) FC1706-2MSD, FC1706-2MS were used as the QC samples indicated.

RPD(s) for MSD for 11Cl-PF3OUdS (F-53B Minor), 3:3 Fluorotelomer carboxylate, 4:2 Fluorotelomer sulfonate, 5:3 Fluorotelomer carboxylate, 6:2 Fluorotelomer sulfonate, 7:3 Fluorotelomer carboxylate, 8:2 Fluorotelomer sulfonate, 9Cl-PF3ONS (F-53B Major), ADONA, EtFOSA, EtFOSAA, EtFOSE, HFPO-DA (GenX), MeFOSA, MeFOSAA, MeFOSE, NFDHA, Perfluorobutanesulfonic acid, Perfluorobutanoic acid, Perfluorodecanesulfonic acid, Perfluorodecanoic acid, Perfluorododecanesulfonic acid, Perfluorododecanoic acid, Perfluoroheptanesulfonic acid, Perfluoroheptanoic acid, Perfluorohexanesulfonic acid, Perfluorohexanoic acid, Perfluorononanesulfonic acid, Perfluorononanoic acid, Perfluorooctanesulfonic acid, Perfluorooctanoic acid, Perfluoropentanesulfonic acid, Perfluoropentanoic acid, Perfluorotetradecanoic acid, Perfluorotridecanoic acid, Perfluoroundecanoic acid, PFEESA, PFMBA, PFMPA, PFOSA are outside control limits for sample OP94977-MSD. High RPD due to spike amount differences.

OP94977-MS: MS recoveries corrected for double spike.

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: FC1801
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 01/09/23



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
---------------	------------------	-----------------	-----	-----	-------	--------

FC1801-1 AF-RHMW03-WGN01LF-2301W2

Perfluoropentanoic acid	2.1 J	9.1	1.8	ng/l	EPA DRAFT 1633
Perfluorohexanoic acid	1.3 J	4.5	0.91	ng/l	EPA DRAFT 1633
Perfluoroheptanoic acid	0.82 J	4.5	0.91	ng/l	EPA DRAFT 1633

Sample Results

Report of Analysis

SGS North America Inc.

Report of Analysis

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Client Sample ID:	AF-RHMW03-WGN01LF-2301W2		
Lab Sample ID:	FC1801-1	Date Sampled:	01/09/23
Matrix:	AQ - Ground Water	Date Received:	01/10/23
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	6Q11464.D	1	01/17/23 08:27	MV	01/13/23 09:00	OP94977	S6Q179
Run #2							

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

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.6 U	18	3.6	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	2.1	9.1	1.8	0.85	ng/l	J
307-24-4	Perfluorohexanoic acid	1.3	4.5	0.91	0.45	ng/l	J
375-85-9	Perfluoroheptanoic acid	0.82	4.5	0.91	0.45	ng/l	J
335-67-1	Perfluorooctanoic acid	0.91 U	4.5	0.91	0.45	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	4.5	1.8	0.55	ng/l	
335-76-2	Perfluorodecanoic acid	0.91 U	4.5	0.91	0.45	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	4.5	1.8	0.55	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	4.5	1.8	0.55	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	4.5	1.8	0.76	ng/l	
376-06-7	Perfluorotetradecanoic acid	0.91 U	4.5	0.91	0.45	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.91 U	4.5	0.91	0.45	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.6 U	4.5	3.6	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.8 U	4.5	1.8	0.64	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	0.91 U	4.5	0.91	0.45	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	4.5	1.8	0.49	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	4.5	1.8	0.52	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	4.5	1.8	0.58	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.6 U	4.5	3.6	1.0	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.3 U	18	7.3	2.9	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.3 U	18	7.3	3.2	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.3 U	18	7.3	3.7	ng/l	
PERFLUOROOCCTANE SULFONAMIDES							
754-91-6	PFOSA	1.8 U	4.5	1.8	0.61	ng/l	
31506-32-8	MeFOSA	1.8 U	4.5	1.8	0.91	ng/l	
4151-50-2	EtFOSA	1.8 U	4.5	1.8	0.91	ng/l	

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW03-WGN01LF-2301W2		
Lab Sample ID:	FC1801-1	Date Sampled:	01/09/23
Matrix:	AQ - Ground Water	Date Received:	01/10/23
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	3.6 U	4.5	3.6	0.91	ng/l	
2991-50-6	EtFOSAA	3.6 U	4.5	3.6	1.2	ng/l	

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	9.1 U	45	9.1	4.0	ng/l	
1691-99-2	EtFOSE	18 U	45	18	6.7	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	3.6 U	18	3.6	0.91	ng/l	
919005-14-4	ADONA	3.6 U	18	3.6	1.7	ng/l	
377-73-1	PFMPA	1.8 U	9.1	1.8	0.91	ng/l	
863090-89-5	PFMBA	3.6 U	9.1	3.6	1.0	ng/l	
151772-58-6	NFDHA	3.6 U	9.1	3.6	1.1	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.6 U	18	3.6	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.6 U	18	3.6	1.6	ng/l	
113507-82-7	PFEESA	1.8 U	9.1	1.8	0.71	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	9.1 U	23	9.1	4.1	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	110	18	7.9	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	18 U	110	18	7.1	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	108%		20-150%
	13C5-PFPeA	110%		20-150%
	13C5-PFHxA	113%		20-150%
	13C4-PFHpA	114%		20-150%
	13C8-PFOA	106%		20-150%
	13C9-PFNA	109%		20-150%
	13C6-PFDA	120%		20-150%
	13C7-PFUnDA	109%		20-150%
	13C2-PFDoDA	92%		20-150%
	13C2-PFTeDA	83%		20-150%
	13C3-PFBS	119%		20-150%
	13C3-PFHxS	116%		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

4.1
4

Report of Analysis

Client Sample ID:	AF-RHMW03-WGN01LF-2301W2	
Lab Sample ID:	FC1801-1	Date Sampled: 01/09/23
Matrix:	AQ - Ground Water	Date Received: 01/10/23
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	116%		20-150%
	13C8-FOSA	113%		20-150%
	d3-MeFOSA	90%		20-150%
	d5-EtFOSA	86%		20-150%
	d3-MeFOSAA	103%		20-150%
	d5-EtFOSAA	109%		20-150%
	d7-MeFOSE	98%		20-150%
	d9-EtFOSE	100%		20-150%
	13C2-4:2FTS	118%		20-150%
	13C2-6:2FTS	118%		20-150%
	13C2-8:2FTS	113%		20-150%
	13C3-HFPO-DA	117%		20-150%

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

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

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



SGS North America Inc - Orlando
Chain of Custody

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

FC1801

COC # 2301W2AFSG02

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SGS - ORLANDO Quote #

SKIFF #

Client / Reporting Information		Project Information										Analytical Information										Matrix Codes
Company Name: AECOM		Project Name: N6274223F0104 RH Fire Suppression System										<div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: small; margin-right: 10px;">PPFAS EPA Draft 1633</div> <div style="border: 1px solid black; padding: 5px; font-size: x-large; font-weight: bold; transform: rotate(-45deg);">MD 01/09/23</div> </div>										GW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid UR - Urine
Address: 1001 Bishop St. ste 1600		Street																				LAB USE ONLY
City: Honolulu State: HI Zip: 96813		City Honolulu State Hawaii																				
Project Contact: Katie Abbott Email: katie.abbott@aecom.com Project Manager: Watson Tanji Email: watson.tanji@aecom.com		Project # 60697810																				
Phone #: 303-796-4624 / 808-954-4512		Fax #																				
Sampler(s) Name(s) (Printed) Sampler 1: <i>Mia Stone</i> Sampler 2: <i>Chris Womade</i>		Client Purchase Order #																				
SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION				CONTAINER INFORMATION										PFAS EPA Draft 1633	MEDH					
		DATE	TIME	SAMPLED BY	MATRIX	TOTAL # OF BOTTLES	OTHER	NOIIE	HCl	NH3	NO3	NO2	H2SO4	NACH-ZNAC	DI WATER							
1	AF-RHMW03-WGN01LF-2301W2	1/9/23	1410	JS	GW	3		X														
Turnaround Time (Business days)		Data Deliverable Information										Comments / Remarks										
10 Day (Business) Approved By: / Date: 7 Day <input checked="" type="checkbox"/> 5 Day 3 Day RUSH 2 Day RUSH 1 Day RUSH Other		<input type="checkbox"/> COMMERCIAL "A" (RESULTS ONLY) <input type="checkbox"/> COMMERCIAL "B" (RESULTS PLUS QC) <input type="checkbox"/> REDT1 (EPA LEVEL 3) <input checked="" type="checkbox"/> FULLT1 (EPA LEVEL 4) <input checked="" type="checkbox"/> EDD'S										EDMS upload database: JBPHE EDMS Coverage: AFFF Assessment Sampling GW INITIAL ASSESSMENT LABEL VERIFICATION										
Rush T/A Data Available VIA Email or Lablink		Sample Custody must be documented below each time samples change possession, including courier delivery.																				
Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation		
1 <i>M. Stone</i> / AECOM	01/09/23 1545	2 <i>Mia Stone</i> / AECOM	3 <i>Mia Stone</i> / AECOM	01/09/23 1400	4 <i>Chris Womade</i> / AECOM	5 <i>Chris Womade</i> / AECOM	1/9/23 1632	6 <i>Chris Womade</i> / AECOM	7 <i>Chris Womade</i> / AECOM	1/10/23	8 <i>Chris Womade</i> / AECOM	9 <i>Chris Womade</i> / AECOM	1/10/23	10 <i>Chris Womade</i> / AECOM	11 <i>Chris Womade</i> / AECOM	12 <i>Chris Womade</i> / AECOM	13 <i>Chris Womade</i> / AECOM	14 <i>Chris Womade</i> / AECOM	15 <i>Chris Womade</i> / AECOM	16 <i>Chris Womade</i> / AECOM	17 <i>Chris Womade</i> / AECOM	
Lab Use Only : Cooler Temperature (s) Celsius (corrected):		2.7 F										http://www.sgs.com/en/terms-and-conditions										

SGS_ORLANDO_COC.xls Rev 031318

FC1801: Chain of Custody

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SGS Sample Receipt Summary

Job Number: FC1801

Client: AECOM

Project: N6274223F0104 RH Fire Suppression System

Date / Time Received: 1/10/2023 4:32:00 PM

Delivery Method: United Cargo/Airspace

Airbill #'s: United Cargo AWB #: 016-85611374

Therm ID: IR 1;

Therm CF: 0.2;

of Coolers: 1

Cooler Temps (Raw Measured) °C: Cooler 1: (2.2);

Cooler Temps (Corrected) °C: Cooler 1: (2.4);

Cooler Information

Y or N

- 1. Custody Seals Present
- 2. Custody Seals Intact
- 3. Temp criteria achieved
- 4. Cooler temp verification IR Gun
- 5. Cooler media Ice (Bag)

Trip Blank Information

Y or N N/A

- 1. Trip Blank present / cooler
 - 2. Trip Blank listed on COC
- W or S N/A
- 3. Type Of TB Received

Sample Information

Y or N N/A

- 1. Sample labels present on bottles
- 2. Samples preserved properly
- 3. Sufficient volume/containers recvd for analysis:
- 4. Condition of sample Intact
- 5. Sample recvd within HT
- 6. Dates/Times/IDs on COC match Sample Label
- 7. VOCs have headspace
- 8. Bottles received for unspecified tests
- 9. Compositing instructions clear
- 10. Voa Soil Kits/Jars received past 48hrs?
- 11. % Solids Jar received?
- 12. Residual Chlorine Present?

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____

Number of 5035 Field Kits: _____

Number of Lab Filtered Metals: _____

Test Strip Lot #s: pH 0-3 230315

pH 10-12 219813A

Other: (Specify) _____

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: CARLOSD

Date: 1/10/2023 4:32:00 PM

Reviewer: CD

Date: 1/16/2023

FC1801: Chain of Custody

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QC Evaluation: DOD QSM5.x Limits

Job Number: FC1801
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 01/09/23

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 FC1801

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5

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: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q179-IBLK	6Q11385.D	1	01/16/23	MV	n/a	n/a	S6Q179

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC1801-1

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.020	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.010	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0050	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0050	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0050	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0050	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0050	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0050	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0050	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0050	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0050	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0050	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0050	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0050	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0050	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0050	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0050	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	0.0050	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0050	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0050	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	0.050	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.050	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.020	0.0010	ug/l	
919005-14-4	ADONA	ND	0.020	0.0019	ug/l	
377-73-1	PFMPA	ND	0.010	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.010	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.010	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.020	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.020	0.0018	ug/l	

Instrument Blank

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q179-IBLK	6Q11385.D	1	01/16/23	MV	n/a	n/a	S6Q179

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC1801-1

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.010	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.025	0.0045	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.13	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	0.0191	0.13	0.0079	ug/l	J

CAS No.	ID Standard Recoveries	Limits	
	13C4-PFBA	100%	20-150%
	13C5-PFPeA	97%	20-150%
	13C5-PFHxA	98%	20-150%
	13C4-PFHpA	103%	20-150%
	13C8-PFOA	96%	20-150%
	13C9-PFNA	94%	20-150%
	13C6-PFDA	109%	20-150%
	13C7-PFUnDA	107%	20-150%
	13C2-PFDoDA	103%	20-150%
	13C2-PFTeDA	96%	20-150%
	13C3-PFBS	104%	20-150%
	13C3-PFHxS	104%	20-150%
	13C8-PFOS	107%	20-150%
	13C8-FOSA	103%	20-150%
	d3-MeFOSA	95%	20-150%
	d5-EtFOSA	94%	20-150%
	d3-MeFOSAA	96%	20-150%
	d5-EtFOSAA	100%	20-150%
	d7-MeFOSE	100%	20-150%
	d9-EtFOSE	101%	20-150%
	13C2-4:2FTS	118%	20-150%
	13C2-6:2FTS	103%	20-150%
	13C2-8:2FTS	99%	20-150%
	13C3-HFPO-DA	99%	20-150%

6.1.1
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Instrument Blank

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q179-IBLK	6Q11471.D	1	01/17/23	MV	n/a	n/a	S6Q179

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC1801-1

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.020	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.010	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0050	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0050	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0050	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0050	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0050	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0050	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0050	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0050	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0050	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0050	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0050	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0050	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0050	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0050	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0050	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	0.0050	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0050	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0050	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	0.050	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.050	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.020	0.0010	ug/l	
919005-14-4	ADONA	ND	0.020	0.0019	ug/l	
377-73-1	PFMPA	ND	0.010	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.010	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.010	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.020	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.020	0.0018	ug/l	

Instrument Blank

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q179-IBLK	6Q11471.D	1	01/17/23	MV	n/a	n/a	S6Q179

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC1801-1

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.010	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.025	0.0045	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.13	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.13	0.0079	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	100% 20-150%
	13C5-PFPeA	101% 20-150%
	13C5-PFHxA	100% 20-150%
	13C4-PFHpA	101% 20-150%
	13C8-PFOA	100% 20-150%
	13C9-PFNA	106% 20-150%
	13C6-PFDA	106% 20-150%
	13C7-PFUnDA	100% 20-150%
	13C2-PFDoDA	97% 20-150%
	13C2-PFTeDA	98% 20-150%
	13C3-PFBS	96% 20-150%
	13C3-PFHxS	103% 20-150%
	13C8-PFOS	98% 20-150%
	13C8-FOSA	93% 20-150%
	d3-MeFOSA	89% 20-150%
	d5-EtFOSA	87% 20-150%
	d3-MeFOSAA	95% 20-150%
	d5-EtFOSAA	94% 20-150%
	d7-MeFOSE	92% 20-150%
	d9-EtFOSE	94% 20-150%
	13C2-4:2FTS	98% 20-150%
	13C2-6:2FTS	114% 20-150%
	13C2-8:2FTS	103% 20-150%
	13C3-HFPO-DA	102% 20-150%

6.12
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Continuing Calibration Blank

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q179-ICCB	6Q11458.D	1	01/17/23	MV	n/a	n/a	S6Q179

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC1801-1

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.020	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.010	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0050	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0050	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0050	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0050	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0050	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0050	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0050	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0050	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0050	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0050	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0050	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0050	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0050	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0050	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0050	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	0.0050	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0050	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0050	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	0.050	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.050	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.020	0.0010	ug/l	
919005-14-4	ADONA	ND	0.020	0.0019	ug/l	
377-73-1	PFMPA	ND	0.010	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.010	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.010	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.020	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.020	0.0018	ug/l	

Continuing Calibration Blank

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q179-ICCB	6Q11458.D	1	01/17/23	MV	n/a	n/a	S6Q179

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC1801-1

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.010	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.025	0.0045	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.13	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.13	0.0079	ug/l	

CAS No.	ID Standard Recoveries	Limits	
	13C4-PFBA	100%	20-150%
	13C5-PFPeA	106%	20-150%
	13C5-PFHxA	98%	20-150%
	13C4-PFHpA	108%	20-150%
	13C8-PFOA	102%	20-150%
	13C9-PFNA	99%	20-150%
	13C6-PFDA	101%	20-150%
	13C7-PFUnDA	98%	20-150%
	13C2-PFDoDA	95%	20-150%
	13C2-PFTeDA	99%	20-150%
	13C3-PFBS	91%	20-150%
	13C3-PFHxS	91%	20-150%
	13C8-PFOS	100%	20-150%
	13C8-FOSA	105%	20-150%
	d3-MeFOSA	89%	20-150%
	d5-EtFOSA	88%	20-150%
	d3-MeFOSAA	99%	20-150%
	d5-EtFOSAA	99%	20-150%
	d7-MeFOSE	97%	20-150%
	d9-EtFOSE	97%	20-150%
	13C2-4:2FTS	93%	20-150%
	13C2-6:2FTS	106%	20-150%
	13C2-8:2FTS	97%	20-150%
	13C3-HFPO-DA	105%	20-150%

6.1.3

6

Method Blank Summary

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP94977-MB	6Q11443.D	1	01/17/23	MV	01/13/23	OP94977	S6Q179

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC1801-1

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.020	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.010	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0050	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0050	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0050	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0050	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0050	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0050	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0050	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0050	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0050	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0050	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0050	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0050	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0050	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0050	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0050	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	0.0050	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0050	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0050	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	0.050	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.050	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.020	0.0010	ug/l	
919005-14-4	ADONA	ND	0.020	0.0019	ug/l	
377-73-1	PFMPA	ND	0.010	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.010	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.010	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.020	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.020	0.0018	ug/l	

Method Blank Summary

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP94977-MB	6Q11443.D	1	01/17/23	MV	01/13/23	OP94977	S6Q179

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC1801-1

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.010	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.025	0.0045	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.13	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.13	0.0079	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	107% 20-150%
	13C5-PFPeA	103% 20-150%
	13C5-PFHxA	101% 20-150%
	13C4-PFHpA	104% 20-150%
	13C8-PFOA	103% 20-150%
	13C9-PFNA	118% 20-150%
	13C6-PFDA	114% 20-150%
	13C7-PFUnDA	107% 20-150%
	13C2-PFDoDA	96% 20-150%
	13C2-PFTeDA	75% 20-150%
	13C3-PFBS	105% 20-150%
	13C3-PFHxS	105% 20-150%
	13C8-PFOS	108% 20-150%
	13C8-FOSA	111% 20-150%
	d3-MeFOSA	81% 20-150%
	d5-EtFOSA	81% 20-150%
	d3-MeFOSAA	105% 20-150%
	d5-EtFOSAA	98% 20-150%
	d7-MeFOSE	89% 20-150%
	d9-EtFOSE	92% 20-150%
	13C2-4:2FTS	126% 20-150%
	13C2-6:2FTS	126% 20-150%
	13C2-8:2FTS	103% 20-150%
	13C3-HFPO-DA	107% 20-150%

Continuing Calibration Blank

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q179-ICCB	6Q11435.D	1	01/17/23	MV	n/a	n/a	S6Q179

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

OP94977-BS, OP94977-LLBS, OP94977-MB

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.020	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.010	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0050	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0050	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0050	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0050	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0050	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0050	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0050	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0050	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0050	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0050	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0050	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0050	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0050	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0050	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0050	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	0.0050	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0050	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0050	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	0.050	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.050	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.020	0.0010	ug/l	
919005-14-4	ADONA	ND	0.020	0.0019	ug/l	
377-73-1	PFMPA	ND	0.010	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.010	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.010	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.020	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.020	0.0018	ug/l	

Continuing Calibration Blank

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q179-ICCB	6Q11435.D	1	01/17/23	MV	n/a	n/a	S6Q179

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

OP94977-BS, OP94977-LLBS, OP94977-MB

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.010	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.025	0.0045	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.13	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.13	0.0079	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	101% 20-150%
	13C5-PFPeA	100% 20-150%
	13C5-PFHxA	96% 20-150%
	13C4-PFHpA	97% 20-150%
	13C8-PFOA	94% 20-150%
	13C9-PFNA	98% 20-150%
	13C6-PFDA	111% 20-150%
	13C7-PFUnDA	99% 20-150%
	13C2-PFDoDA	103% 20-150%
	13C2-PFTeDA	93% 20-150%
	13C3-PFBS	103% 20-150%
	13C3-PFHxS	111% 20-150%
	13C8-PFOS	104% 20-150%
	13C8-FOSA	101% 20-150%
	d3-MeFOSA	92% 20-150%
	d5-EtFOSA	91% 20-150%
	d3-MeFOSAA	100% 20-150%
	d5-EtFOSAA	99% 20-150%
	d7-MeFOSE	98% 20-150%
	d9-EtFOSE	99% 20-150%
	13C2-4:2FTS	130% 20-150%
	13C2-6:2FTS	123% 20-150%
	13C2-8:2FTS	119% 20-150%
	13C3-HFPO-DA	105% 20-150%

Continuing Calibration Blank

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q179-ICCB	6Q11446.D	1	01/17/23	MV	n/a	n/a	S6Q179

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

OP94977-MS, OP94977-MSD

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.020	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.010	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0050	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0050	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0050	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0050	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0050	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0050	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0050	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0050	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0050	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0050	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0050	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0050	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0050	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0050	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0050	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	0.0050	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0050	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0050	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	0.050	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.050	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.020	0.0010	ug/l	
919005-14-4	ADONA	ND	0.020	0.0019	ug/l	
377-73-1	PFMPA	ND	0.010	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.010	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.010	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.020	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.020	0.0018	ug/l	

Continuing Calibration Blank

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q179-ICCB	6Q11446.D	1	01/17/23	MV	n/a	n/a	S6Q179

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

OP94977-MS, OP94977-MSD

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.010	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.025	0.0045	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.13	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.13	0.0079	ug/l	

CAS No.	ID Standard Recoveries	Limits	
	13C4-PFBA	101%	20-150%
	13C5-PFPeA	96%	20-150%
	13C5-PFHxA	97%	20-150%
	13C4-PFHpA	94%	20-150%
	13C8-PFOA	97%	20-150%
	13C9-PFNA	103%	20-150%
	13C6-PFDA	109%	20-150%
	13C7-PFUnDA	100%	20-150%
	13C2-PFDoDA	107%	20-150%
	13C2-PFTeDA	107%	20-150%
	13C3-PFBS	100%	20-150%
	13C3-PFHxS	102%	20-150%
	13C8-PFOS	103%	20-150%
	13C8-FOSA	104%	20-150%
	d3-MeFOSA	92%	20-150%
	d5-EtFOSA	93%	20-150%
	d3-MeFOSAA	103%	20-150%
	d5-EtFOSAA	113%	20-150%
	d7-MeFOSE	100%	20-150%
	d9-EtFOSE	102%	20-150%
	13C2-4:2FTS	117%	20-150%
	13C2-6:2FTS	113%	20-150%
	13C2-8:2FTS	123%	20-150%
	13C3-HFPO-DA	102%	20-150%

Continuing Calibration Blank

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q179-ICCB	6Q11467.D	1	01/17/23	MV	n/a	n/a	S6Q179

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

S6Q179-IBLK

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.020	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.010	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0050	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0050	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0050	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0050	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0050	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0050	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0050	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0050	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0050	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0050	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0050	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0050	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0050	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0050	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0050	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	0.0050	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0050	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0050	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	0.050	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.050	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.020	0.0010	ug/l	
919005-14-4	ADONA	ND	0.020	0.0019	ug/l	
377-73-1	PFMPA	ND	0.010	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.010	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.010	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.020	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.020	0.0018	ug/l	

Continuing Calibration Blank

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q179-ICCB	6Q11467.D	1	01/17/23	MV	n/a	n/a	S6Q179

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

S6Q179-IBLK

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.010	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.025	0.0045	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.13	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.13	0.0079	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	99% 20-150%
	13C5-PFPeA	104% 20-150%
	13C5-PFHxA	100% 20-150%
	13C4-PFHpA	106% 20-150%
	13C8-PFOA	100% 20-150%
	13C9-PFNA	102% 20-150%
	13C6-PFDA	95% 20-150%
	13C7-PFUnDA	100% 20-150%
	13C2-PFDoDA	102% 20-150%
	13C2-PFTeDA	95% 20-150%
	13C3-PFBS	102% 20-150%
	13C3-PFHxS	102% 20-150%
	13C8-PFOS	109% 20-150%
	13C8-FOSA	112% 20-150%
	d3-MeFOSA	100% 20-150%
	d5-EtFOSA	99% 20-150%
	d3-MeFOSAA	111% 20-150%
	d5-EtFOSAA	106% 20-150%
	d7-MeFOSE	107% 20-150%
	d9-EtFOSE	105% 20-150%
	13C2-4:2FTS	114% 20-150%
	13C2-6:2FTS	117% 20-150%
	13C2-8:2FTS	123% 20-150%
	13C3-HFPO-DA	104% 20-150%

Blank Spike Summary

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP94977-LLBS	6Q11442.D	1	01/17/23	MV	01/13/23	OP94977	S6Q179

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC1801-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.04	0.0372	93	40-150
2706-90-3	Perfluoropentanoic acid	0.02	0.0184	92	40-150
307-24-4	Perfluorohexanoic acid	0.01	0.0093	93	40-150
375-85-9	Perfluoroheptanoic acid	0.01	0.0094	94	40-150
335-67-1	Perfluorooctanoic acid	0.01	0.0096	96	40-150
375-95-1	Perfluorononanoic acid	0.01	0.0099	99	40-150
335-76-2	Perfluorodecanoic acid	0.01	0.0089	89	40-150
2058-94-8	Perfluoroundecanoic acid	0.01	0.0102	102	40-150
307-55-1	Perfluorododecanoic acid	0.01	0.0095	95	40-150
72629-94-8	Perfluorotridecanoic acid	0.01	0.0087	87	40-150
376-06-7	Perfluorotetradecanoic acid	0.01	0.0094	94	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00887	0.0089	100	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00941	0.0086	91	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00914	0.0085	93	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00953	0.0087	91	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00928	0.0091	98	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00962	0.0084	87	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00965	0.0082	85	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0097	0.0082	85	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0375	0.0328	87	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.038	0.0348	92	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0384	0.0340	89	40-150
754-91-6	PFOSA	0.01	0.0113	113	40-150
31506-32-8	MeFOSA	0.01	0.0090	90	40-150
4151-50-2	EtFOSA	0.01	0.0085	85	40-150
2355-31-9	MeFOSAA	0.01	0.0089	89	40-150
2991-50-6	EtFOSAA	0.01	0.0091	91	40-150
24448-09-7	MeFOSE	0.1	0.0919	92	40-150
1691-99-2	EtFOSE	0.1	0.0864	86	40-150
13252-13-6	HFPO-DA (GenX)	0.04	0.0377	94	40-150
919005-14-4	ADONA	0.0378	0.0362	96	40-150
377-73-1	PFMPA	0.02	0.0183	92	40-150
863090-89-5	PFMBA	0.02	0.0188	94	40-150
151772-58-6	NFDHA	0.02	0.0177	89	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0374	0.0349	93	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0378	0.0349	92	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP94977-LLBS	6Q11442.D	1	01/17/23	MV	01/13/23	OP94977	S6Q179

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC1801-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0178	0.0165	93	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.05	0.0414	83	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.25	0.226	90	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.25	0.243	97	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	105%	20-150%
	13C5-PFPeA	108%	20-150%
	13C5-PFHxA	109%	20-150%
	13C4-PFHpA	111%	20-150%
	13C8-PFOA	102%	20-150%
	13C9-PFNA	104%	20-150%
	13C6-PFDA	116%	20-150%
	13C7-PFUnDA	103%	20-150%
	13C2-PFDoDA	102%	20-150%
	13C2-PFTeDA	90%	20-150%
	13C3-PFBS	102%	20-150%
	13C3-PFHxS	106%	20-150%
	13C8-PFOS	113%	20-150%
	13C8-FOSA	96%	20-150%
	d3-MeFOSA	95%	20-150%
	d5-EtFOSA	96%	20-150%
	d3-MeFOSAA	106%	20-150%
	d5-EtFOSAA	105%	20-150%
	d7-MeFOSE	96%	20-150%
	d9-EtFOSE	103%	20-150%
	13C2-4:2FTS	125%	20-150%
	13C2-6:2FTS	120%	20-150%
	13C2-8:2FTS	106%	20-150%
	13C3-HFPO-DA	107%	20-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP94977-BS	6Q11441.D	1	01/17/23	MV	01/13/23	OP94977	S6Q179

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC1801-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.101	101	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0512	102	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0239	96	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0279	112	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0273	109	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0284	114	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0240	96	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0257	103	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0247	99	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0245	98	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0268	107	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0220	99	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0225	96	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0227	99	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0233	98	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0233	100	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0243	101	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0244	101	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0209	86	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0938	0.0928	99	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.0844	89	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.0904	94	40-150
754-91-6	PFOSA	0.025	0.0257	103	40-150
31506-32-8	MeFOSA	0.025	0.0231	92	40-150
4151-50-2	EtFOSA	0.025	0.0235	94	40-150
2355-31-9	MeFOSAA	0.025	0.0242	97	40-150
2991-50-6	EtFOSAA	0.025	0.0252	101	40-150
24448-09-7	MeFOSE	0.25	0.249	100	40-150
1691-99-2	EtFOSE	0.25	0.229	92	40-150
13252-13-6	HFPO-DA (GenX)	0.1	0.107	107	40-150
919005-14-4	ADONA	0.0945	0.0950	101	40-150
377-73-1	PFMPA	0.05	0.0496	99	40-150
863090-89-5	PFMBA	0.05	0.0521	104	40-150
151772-58-6	NFDHA	0.05	0.0467	93	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0935	0.0919	98	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0945	0.0936	99	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP94977-BS	6Q11441.D	1	01/17/23	MV	01/13/23	OP94977	S6Q179

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC1801-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0442	99	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.116	93	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.625	0.586	94	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.671	107	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	104%	20-150%
	13C5-PFPeA	101%	20-150%
	13C5-PFHxA	104%	20-150%
	13C4-PFHpA	98%	20-150%
	13C8-PFOA	103%	20-150%
	13C9-PFNA	107%	20-150%
	13C6-PFDA	112%	20-150%
	13C7-PFUnDA	108%	20-150%
	13C2-PFDoDA	105%	20-150%
	13C2-PFTeDA	93%	20-150%
	13C3-PFBS	106%	20-150%
	13C3-PFHxS	109%	20-150%
	13C8-PFOS	102%	20-150%
	13C8-FOSA	105%	20-150%
	d3-MeFOSA	99%	20-150%
	d5-EtFOSA	91%	20-150%
	d3-MeFOSAA	100%	20-150%
	d5-EtFOSAA	99%	20-150%
	d7-MeFOSE	98%	20-150%
	d9-EtFOSE	111%	20-150%
	13C2-4:2FTS	119%	20-150%
	13C2-6:2FTS	131%	20-150%
	13C2-8:2FTS	115%	20-150%
	13C3-HFPO-DA	103%	20-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP94977-MS ^a	6Q11448.D	1	01/17/23	MV	01/13/23	OP94977	S6Q179
OP94977-MSD ^b	6Q11449.D	1	01/17/23	MV	01/13/23	OP94977	S6Q179
FC1706-2	6Q11447.D	1	01/17/23	MV	01/13/23	OP94977	S6Q179

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC1801-1

CAS No.	Compound	FC1706-2 ug/l	Spike Q	ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
375-22-4	Perfluorobutanoic acid	0.0129	J	0.179	0.179	93	0.0893	0.0965	94	60*	40-150/30
2706-90-3	Perfluoropentanoic acid	0.0015	J	0.0893	0.0876	96	0.0446	0.0437	95	67*	40-150/30
307-24-4	Perfluorohexanoic acid	0.0014	J	0.0446	0.0430	93	0.0223	0.0223	94	63*	40-150/30
375-85-9	Perfluoroheptanoic acid	0.0045	U	0.0446	0.0430	96	0.0223	0.0214	96	67*	40-150/30
335-67-1	Perfluorooctanoic acid	0.00055	J	0.0446	0.0468	104	0.0223	0.0222	97	71*	40-150/30
375-95-1	Perfluorononanoic acid	0.0045	U	0.0446	0.0420	94	0.0223	0.0199	89	71*	40-150/30
335-76-2	Perfluorodecanoic acid	0.0045	U	0.0446	0.0459	103	0.0223	0.0205	92	77*	40-150/30
2058-94-8	Perfluoroundecanoic acid	0.0045	U	0.0446	0.0450	101	0.0223	0.0214	96	71*	40-150/30
307-55-1	Perfluorododecanoic acid	0.0045	U	0.0446	0.0451	101	0.0223	0.0206	92	75*	40-150/30
72629-94-8	Perfluorotridecanoic acid	0.0045	U	0.0446	0.0473	106	0.0223	0.0214	96	75*	40-150/30
376-06-7	Perfluorotetradecanoic acid	0.0045	U	0.0446	0.0439	98	0.0223	0.0214	96	69*	40-150/30
375-73-5	Perfluorobutanesulfonic acid	0.0045	U	0.0396	0.0385	97	0.0198	0.0196	99	65*	40-150/30
2706-91-4	Perfluoropentanesulfonic acid	0.0045	U	0.042	0.0409	97	0.021	0.0190	90	73*	40-150/30
355-46-4	Perfluorohexanesulfonic acid	0.0011	J	0.0408	0.0375	89	0.0204	0.0203	94	60*	40-150/30
375-92-8	Perfluoroheptanesulfonic acid	0.0045	U	0.0425	0.0391	92	0.0213	0.0175	82	76*	40-150/30
1763-23-1	Perfluorooctanesulfonic acid	0.0045	U	0.0414	0.0374	90	0.0207	0.0181	87	70*	40-150/30
68259-12-1	Perfluorononanesulfonic acid	0.0045	U	0.0429	0.0350	81	0.0215	0.0194	90	57*	40-150/30
335-77-3	Perfluorodecanesulfonic acid	0.0045	U	0.0431	0.0349	81	0.0215	0.0185	86	61*	40-150/30
79780-39-5	Perfluorododecanesulfonic acid	0.0045	U	0.0433	0.0353	82	0.0217	0.0168	78	71*	40-150/30
757124-72-44:2	Fluorotelomer sulfonate	0.018	U	0.167	0.166	99	0.0837	0.0761	91	74*	40-150/30
27619-97-2	6:2 Fluorotelomer sulfonate	0.018	U	0.17	0.162	95	0.0848	0.0830	98	64*	40-150/30
39108-34-4	8:2 Fluorotelomer sulfonate	0.018	U	0.171	0.156	91	0.0857	0.0788	92	66*	40-150/30
754-91-6	PFOSA	0.0045	U	0.0446	0.0443	99	0.0223	0.0217	97	68*	40-150/30
31506-32-8	MeFOSA	0.0045	U	0.0446	0.0406	91	0.0223	0.0212	95	63*	40-150/30
4151-50-2	EtFOSA	0.0045	U	0.0446	0.0409	92	0.0223	0.0198	89	70*	40-150/30
2355-31-9	MeFOSAA	0.0045	U	0.0446	0.0415	93	0.0223	0.0182	82	78*	40-150/30
2991-50-6	EtFOSAA	0.0045	U	0.0446	0.0443	99	0.0223	0.0206	92	73*	40-150/30
24448-09-7	MeFOSE	0.045	U	0.446	0.419	94	0.223	0.205	92	69*	40-150/30
1691-99-2	EtFOSE	0.045	U	0.446	0.413	93	0.223	0.198	89	70*	40-150/30
13252-13-6	HFPO-DA (GenX)	0.018	U	0.179	0.167	94	0.0893	0.0844	95	66*	40-150/30
919005-14-4	ADONA	0.018	U	0.169	0.148	88	0.0844	0.0750	89	65*	40-150/30
377-73-1	PFMPA	0.0091	U	0.0893	0.0846	95	0.0446	0.0417	93	68*	40-150/30
863090-89-5	PFMBA	0.0091	U	0.0893	0.0837	94	0.0446	0.0432	97	64*	40-150/30
151772-58-6	NFDHA	0.0091	U	0.0893	0.0840	94	0.0446	0.0421	94	66*	40-150/30
756426-58-19	Cl-PF3ONS (F-53B Major)	0.018	U	0.167	0.143	86	0.0835	0.0733	88	64*	40-150/30
763051-92-911	Cl-PF3OUdS (F-53B Minor)	0.018	U	0.169	0.132	78	0.0844	0.0712	84	60*	40-150/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP94977-MS ^a	6Q11448.D	1	01/17/23	MV	01/13/23	OP94977	S6Q179
OP94977-MSD ^b	6Q11449.D	1	01/17/23	MV	01/13/23	OP94977	S6Q179
FC1706-2	6Q11447.D	1	01/17/23	MV	01/13/23	OP94977	S6Q179

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC1801-1

CAS No.	Compound	FC1706-2 ug/l	Spike Q ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
113507-82-7	PFEESA	0.0091 U	0.0795	0.0761	96	0.0397	0.0380	96	67*	40-150/30
356-02-5	3:3 Fluorotelomer carboxylate	0.023 U	0.223	0.199	89	0.112	0.0935	84	72*	40-150/30
914637-49-35:3	Fluorotelomer carboxylate	0.11 U	1.12	1.03	92	0.558	0.531	95	64*	40-150/30
812-70-4	7:3 Fluorotelomer carboxylate	0.11 U	1.12	1.03	92	0.558	0.569	102	58*	40-150/30

CAS No.	ID Standard Recoveries	MS	MSD	FC1706-2	Limits
	13C4-PFBA	108%	108%	107%	20-150%
	13C5-PFPeA	106%	114%	107%	20-150%
	13C5-PFHxA	105%	111%	101%	20-150%
	13C4-PFHpA	104%	113%	108%	20-150%
	13C8-PFOA	97%	108%	109%	20-150%
	13C9-PFNA	104%	111%	100%	20-150%
	13C6-PFDA	102%	111%	104%	20-150%
	13C7-PFUnDA	87%	97%	88%	20-150%
	13C2-PFDoDA	85%	97%	90%	20-150%
	13C2-PFTeDA	84%	95%	78%	20-150%
	13C3-PFBS	105%	100%	98%	20-150%
	13C3-PFHxS	107%	103%	100%	20-150%
	13C8-PFOS	100%	111%	104%	20-150%
	13C8-FOSA	98%	107%	112%	20-150%
	d3-MeFOSA	85%	94%		20-150%
	d5-EtFOSA	83%	93%		20-150%
	d3-MeFOSAA	96%	109%	103%	20-150%
	d5-EtFOSAA	88%	106%	97%	20-150%
	d7-MeFOSE	88%	101%		20-150%
	d9-EtFOSE	90%	101%		20-150%
	13C2-4:2FTS	110%	114%	114%	20-150%
	13C2-6:2FTS	113%	108%	115%	20-150%
	13C2-8:2FTS	121%	109%	108%	20-150%
	13C3-HFPO-DA	111%	118%		20-150%

- (a) MS recoveries corrected for double spike.
- (b) High RPD due to spike amount differences.

* = Outside of Control Limits.

Injection Standard Area Summary

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q179-CC174	Injection Date:	01/16/23
Lab File ID:	6Q11423.D	Injection Time:	22:54
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	41027	3.00	40803	5.59	84639	7.20	36296	7.74	29775	8.24
Check Std ^c	36119	2.98	36032	5.57	78917	7.17	31875	7.70	25574	8.21
Upper Limit ^d	82054	3.38	81606	5.97	169278	7.57	72592	8.10	59550	8.61
Lower Limit ^e	12308	2.58	12241	5.17	25392	6.77	10889	7.30	8933	7.81

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
OP94823-BS	35508	3.00	34512	5.57	75103	7.16	30826	7.70	23577	8.21	1
OP94823-LLBS	34885	3.00	34851	5.57	71300	7.16	30794	7.70	27045	8.20	1
OP94823-MB	35221	3.00	33716	5.57	72549	7.16	31711	7.70	25634	8.20	1
ZZZZZZ	35098	3.00	33580	5.58	74721	7.17	32378	7.71	24853	8.21	1
ZZZZZZ	38225	3.00	35680	5.58	77003	7.17	33189	7.71	26865	8.21	1
ZZZZZZ	39003	3.00	37107	5.58	83055	7.17	35074	7.71	28512	8.21	1
ZZZZZZ	35521	3.00	32628	5.57	73427	7.17	30249	7.71	25651	8.21	1
ZZZZZZ	35473	3.00	34421	5.57	73176	7.17	34354	7.71	27710	8.21	1
ZZZZZZ	35667	3.00	33018	5.57	80370	7.16	34047	7.70	25788	8.21	1
ZZZZZZ	35001	3.00	36374	5.57	74685	7.17	31086	7.70	25288	8.21	1
S6Q179-ICCB	33568	2.98	32635	5.57	71670	7.16	29557	7.70	23669	8.20	1
S6Q179-ICCB	33568	2.98	32635	5.57	71670	7.16	29557	7.70	23669	8.20	1
ZZZZZZ	34896	3.00	33438	5.58	71427	7.17	31464	7.71	25352	8.21	1
ZZZZZZ	37113	3.00	34612	5.57	75724	7.17	32393	7.71	23833	8.21	1
ZZZZZZ	32845	2.99	29455	5.57	68120	7.16	28840	7.71	22580	8.21	5
ZZZZZZ	33340	2.99	31680	5.57	65750	7.16	29360	7.70	23070	8.21	10
ZZZZZZ	28190	2.99	29714	5.57	62520	7.16	23278	7.70	20864	8.21	2
OP94977-BS	33547	3.02	33488	5.57	70007	7.16	28664	7.70	23107	8.20	1
OP94977-LLBS	34778	3.02	32530	5.58	71769	7.17	32392	7.71	24489	8.21	1
OP94977-MB	34300	3.00	33745	5.57	71795	7.17	29069	7.71	23694	8.21	1
ZZZZZZ	34365	3.00	31315	5.57	72370	7.17	31086	7.71	25076	8.21	1
S6Q179-ICCB	33862	2.98	34463	5.57	72003	7.16	29757	7.70	22950	8.20	1
FC1706-2	34243	3.02	33073	5.58	68586	7.17	31383	7.71	25390	8.20	1
OP94977-MS ^f	33866	3.02	33182	5.58	71395	7.17	29319	7.70	23788	8.21	1
OP94977-MSD ^g	34348	3.00	31193	5.57	68115	7.16	28748	7.71	23605	8.21	1
ZZZZZZ	33716	3.00	31985	5.57	69371	7.16	26681	7.70	23245	8.21	1
ZZZZZZ	34076	3.00	32677	5.57	67855	7.16	29670	7.70	22872	8.21	1
ZZZZZZ	33497	3.00	31551	5.57	72908	7.16	29697	7.70	24240	8.20	1
ZZZZZZ	35144	3.02	35266	5.57	72753	7.16	28424	7.70	25931	8.20	1
ZZZZZZ	32906	3.02	31262	5.58	69075	7.16	28656	7.70	24106	8.20	1
ZZZZZZ	35077	3.00	34472	5.57	67857	7.16	31472	7.71	23603	8.21	1
ZZZZZZ	34138	3.00	32844	5.57	71495	7.16	32895	7.71	24719	8.21	1
S6Q179-ICCB	34496	2.98	32346	5.57	72175	7.16	32117	7.70	25284	8.20	1

6.4.1
6

Injection Standard Area Summary

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q179-CC174	Injection Date:	01/16/23
Lab File ID:	6Q11423.D	Injection Time:	22:54
Instrument ID:	GCMS6Q	Method:	EPA DRAFT 1633

Lab Sample ID	IS 1 AREA	IS 1 RT	IS 2 AREA	IS 2 RT	IS 3 AREA	IS 3 RT	IS 4 AREA	IS 4 RT	IS 5 AREA	IS 5 RT	DF ^a
ZZZZZZ	34190	3.02	31825	5.58	75658	7.16	30156	7.70	25330	8.20	1
ZZZZZZ	35675	3.02	32755	5.58	70110	7.17	31597	7.70	25845	8.20	1
ZZZZZZ	35451	3.00	32540	5.57	74003	7.17	29658	7.71	25915	8.21	1
ZZZZZZ	34243	3.00	32414	5.57	73272	7.16	29886	7.70	24798	8.21	1
ZZZZZZ	34019	3.00	32519	5.57	71507	7.16	28580	7.70	23876	8.21	1
FC1801-1	34146	3.00	32740	5.57	72297	7.16	31032	7.70	24252	8.20	1
ZZZZZZ	25491	3.00	31892	5.55	72706	7.16	32168	7.70	26749	8.20	1
S6Q179-ICCB	35062	2.98	32916	5.57	74028	7.16	31602	7.70	25524	8.20	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: S6Q174-ICC174 6Q10952.D 01/11/23 12:32. 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.
- (f) MS recoveries corrected for double spike.
- (g) High RPD due to spike amount differences.

6.4.1

6

Injection Standard Area Summary

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q179-CC174	Injection Date:	01/16/23
Lab File ID:	6Q11423.D	Injection Time:	22:54
Instrument ID:	GCMS6Q	Method:	EPA DRAFT 1633

	IS 6 AREA	RT	IS 7 AREA	RT
Initial Cal ^b	7121	7.34	11560	8.42
Check Std ^c	6121	7.30	10068	8.38
Upper Limit ^d	14242	7.70	23120	8.78
Lower Limit ^e	2136	6.90	3468	7.98

Lab Sample ID	IS 6 AREA	RT	IS 7 AREA	RT	DF ^a
OP94823-BS	6441	7.30	9658	8.38	1
OP94823-LLBS	6429	7.30	10536	8.38	1
OP94823-MB	6423	7.30	9528	8.38	1
ZZZZZZ	6054	7.30	10291	8.38	1
ZZZZZZ	6676	7.30	10631	8.38	1
ZZZZZZ	6661	7.31	11099	8.38	1
ZZZZZZ	6323	7.30	10521	8.38	1
ZZZZZZ	6263	7.30	10130	8.38	1
ZZZZZZ	6215	7.30	10330	8.38	1
ZZZZZZ	6414	7.30	10392	8.38	1
S6Q179-ICCB	5563	7.30	9899	8.38	1
S6Q179-ICCB	5563	7.30	9899	8.38	1
ZZZZZZ	6176	7.31	9712	8.38	1
ZZZZZZ	6360	7.30	9262	8.38	1
ZZZZZZ	5530	7.30	9630	8.38	5
ZZZZZZ	6700	7.30	10120	8.38	10
ZZZZZZ	5048	7.30	7582	8.38	2
OP94977-BS	5838	7.30	10048	8.38	1
OP94977-LLBS	5961	7.30	9713	8.38	1
OP94977-MB	5966	7.30	9417	8.38	1
ZZZZZZ	6211	7.30	9771	8.38	1
S6Q179-ICCB	5872	7.29	9819	8.38	1
FC1706-2	6272	7.30	9505	8.38	1
OP94977-MS ^f	5828	7.30	10131	8.38	1
OP94977-MSD ^g	6195	7.30	9546	8.38	1
ZZZZZZ	5921	7.30	10291	8.38	1
ZZZZZZ	5909	7.30	9505	8.38	1
ZZZZZZ	5302	7.30	9722	8.37	1
ZZZZZZ	6544	7.30	10165	8.38	1
ZZZZZZ	5607	7.30	9059	8.37	1
ZZZZZZ	5961	7.30	9574	8.38	1
ZZZZZZ	6017	7.30	9367	8.38	1
S6Q179-ICCB	6678	7.30	10288	8.37	1

6.4.1
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Injection Standard Area Summary

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q179-CC174	Injection Date:	01/16/23
Lab File ID:	6Q11423.D	Injection Time:	22:54
Instrument ID:	GCMS6Q	Method:	EPA DRAFT 1633

Lab Sample ID	IS 6 AREA	RT	IS 7 AREA	RT	DF ^a
ZZZZZZ	6062	7.30	9279	8.38	1
ZZZZZZ	6439	7.30	10257	8.38	1
ZZZZZZ	6252	7.30	9782	8.38	1
ZZZZZZ	6065	7.30	9805	8.38	1
ZZZZZZ	6088	7.30	9994	8.38	1
FC1801-1	5837	7.30	9675	8.38	1
ZZZZZZ	6265	7.29	9612	8.37	1
S6Q179-ICCB	6042	7.30	9381	8.38	1

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

- (a) Sample areas corrected for dilution where applicable.
- (b) Initial Cal is: S6Q174-ICC174 6Q10952.D 01/11/23 12:32. 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.
- (f) MS recoveries corrected for double spike.
- (g) High RPD due to spike amount differences.

Injection Standard Area Summary

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q179-CC174	Injection Date:	01/17/23
Lab File ID:	6Q11434.D	Injection Time:	01:27
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	41027	3.00	40803	5.59	84639	7.20	36296	7.74	29775	8.24
Check Std ^c	36635	2.99	35647	5.57	76716	7.16	31106	7.70	26075	8.21
Upper Limit ^d	82054	3.39	81606	5.97	169278	7.56	72592	8.10	59550	8.61
Lower Limit ^e	12308	2.59	12241	5.17	25392	6.76	10889	7.30	8933	7.81

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
S6Q179-ICCB	33568	2.98	32635	5.57	71670	7.16	29557	7.70	23669	8.20	1
S6Q179-ICCB	33568	2.98	32635	5.57	71670	7.16	29557	7.70	23669	8.20	1
ZZZZZZ	34896	3.00	33438	5.58	71427	7.17	31464	7.71	25352	8.21	1
ZZZZZZ	37113	3.00	34612	5.57	75724	7.17	32393	7.71	23833	8.21	1
ZZZZZZ	32845	2.99	29455	5.57	68120	7.16	28840	7.71	22580	8.21	5
ZZZZZZ	33340	2.99	31680	5.57	65750	7.16	29360	7.70	23070	8.21	10
ZZZZZZ	28190	2.99	29714	5.57	62520	7.16	23278	7.70	20864	8.21	2
OP94977-BS	33547	3.02	33488	5.57	70007	7.16	28664	7.70	23107	8.20	1
OP94977-LLBS	34778	3.02	32530	5.58	71769	7.17	32392	7.71	24489	8.21	1
OP94977-MB	34300	3.00	33745	5.57	71795	7.17	29069	7.71	23694	8.21	1
ZZZZZZ	34365	3.00	31315	5.57	72370	7.17	31086	7.71	25076	8.21	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: S6Q174-ICC174 6Q10952.D 01/11/23 12:32. 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: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q179-CC174	Injection Date:	01/17/23
Lab File ID:	6Q11434.D	Injection Time:	01:27
Instrument ID:	GCMS6Q	Method:	EPA DRAFT 1633

	IS 6 AREA	RT	IS 7 AREA	RT
Initial Cal ^b	7121	7.34	11560	8.42
Check Std ^c	6701	7.30	10310	8.38
Upper Limit ^d	14242	7.70	23120	8.78
Lower Limit ^e	2136	6.90	3468	7.98

Lab Sample ID	IS 6 AREA	RT	IS 7 AREA	RT	DF ^a
S6Q179-ICCB	5563	7.30	9899	8.38	1
S6Q179-ICCB	5563	7.30	9899	8.38	1
ZZZZZZ	6176	7.31	9712	8.38	1
ZZZZZZ	6360	7.30	9262	8.38	1
ZZZZZZ	5530	7.30	9630	8.38	5
ZZZZZZ	6700	7.30	10120	8.38	10
ZZZZZZ	5048	7.30	7582	8.38	2
OP94977-BS	5838	7.30	10048	8.38	1
OP94977-LLBS	5961	7.30	9713	8.38	1
OP94977-MB	5966	7.30	9417	8.38	1
ZZZZZZ	6211	7.30	9771	8.38	1

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

- (a) Sample areas corrected for dilution where applicable.
- (b) Initial Cal is: S6Q174-ICC174 6Q10952.D 01/11/23 12:32. 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.

6.4.2
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Injection Standard Area Summary

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q179-CC174	Injection Date:	01/17/23
Lab File ID:	6Q11445.D	Injection Time:	04:01
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	41027	3.00	40803	5.59	84639	7.20	36296	7.74	29775	8.24
Check Std ^c	37418	2.99	36545	5.57	75337	7.16	31258	7.70	26751	8.21
Upper Limit ^d	82054	3.39	81606	5.97	169278	7.56	72592	8.10	59550	8.61
Lower Limit ^e	12308	2.59	12241	5.17	25392	6.76	10889	7.30	8933	7.81

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
S6Q179-ICCB	33862	2.98	34463	5.57	72003	7.16	29757	7.70	22950	8.20	1
FC1706-2	34243	3.02	33073	5.58	68586	7.17	31383	7.71	25390	8.20	1
OP94977-MS ^f	33866	3.02	33182	5.58	71395	7.17	29319	7.70	23788	8.21	1
OP94977-MSD ^g	34348	3.00	31193	5.57	68115	7.16	28748	7.71	23605	8.21	1
ZZZZZZ	33716	3.00	31985	5.57	69371	7.16	26681	7.70	23245	8.21	1
ZZZZZZ	34076	3.00	32677	5.57	67855	7.16	29670	7.70	22872	8.21	1
ZZZZZZ	33497	3.00	31551	5.57	72908	7.16	29697	7.70	24240	8.20	1
ZZZZZZ	35144	3.02	35266	5.57	72753	7.16	28424	7.70	25931	8.20	1
ZZZZZZ	32906	3.02	31262	5.58	69075	7.16	28656	7.70	24106	8.20	1
ZZZZZZ	35077	3.00	34472	5.57	67857	7.16	31472	7.71	23603	8.21	1
ZZZZZZ	34138	3.00	32844	5.57	71495	7.16	32895	7.71	24719	8.21	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: S6Q174-ICC174 6Q10952.D 01/11/23 12:32. 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.
- (f) MS recoveries corrected for double spike.
- (g) High RPD due to spike amount differences.

Injection Standard Area Summary

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q179-CC174	Injection Date:	01/17/23
Lab File ID:	6Q11445.D	Injection Time:	04:01
Instrument ID:	GCMS6Q	Method:	EPA DRAFT 1633

	IS 6 AREA	RT	IS 7 AREA	RT
Initial Cal ^b	7121	7.34	11560	8.42
Check Std ^c	6922	7.30	11170	8.38
Upper Limit ^d	14242	7.70	23120	8.78
Lower Limit ^e	2136	6.90	3468	7.98

Lab Sample ID	IS 6 AREA	RT	IS 7 AREA	RT	DF ^a
S6Q179-ICCB	5872	7.29	9819	8.38	1
FC1706-2	6272	7.30	9505	8.38	1
OP94977-MS ^f	5828	7.30	10131	8.38	1
OP94977-MSD ^g	6195	7.30	9546	8.38	1
ZZZZZZ	5921	7.30	10291	8.38	1
ZZZZZZ	5909	7.30	9505	8.38	1
ZZZZZZ	5302	7.30	9722	8.37	1
ZZZZZZ	6544	7.30	10165	8.38	1
ZZZZZZ	5607	7.30	9059	8.37	1
ZZZZZZ	5961	7.30	9574	8.38	1
ZZZZZZ	6017	7.30	9367	8.38	1

IS 6 = 1802-PFHXS
 IS 7 = 13C4-PFOS

- (a) Sample areas corrected for dilution where applicable.
- (b) Initial Cal is: S6Q174-ICC174 6Q10952.D 01/11/23 12:32. 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.
- (f) MS recoveries corrected for double spike.
- (g) High RPD due to spike amount differences.

6.4.3
6

Injection Standard Area Summary

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q179-CC174	Injection Date:	01/17/23
Lab File ID:	6Q11457.D	Injection Time:	06:49
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	41027	3.00	40803	5.59	84639	7.20	36296	7.74	29775	8.24
Check Std ^c	38460	2.98	38062	5.57	75955	7.16	33942	7.70	26791	8.20
Upper Limit ^d	82054	3.38	81606	5.97	169278	7.56	72592	8.10	59550	8.60
Lower Limit ^e	12308	2.58	12241	5.17	25392	6.76	10889	7.30	8933	7.80

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
S6Q179-ICCB	34496	2.98	32346	5.57	72175	7.16	32117	7.70	25284	8.20	1
ZZZZZZ	34190	3.02	31825	5.58	75658	7.16	30156	7.70	25330	8.20	1
ZZZZZZ	35675	3.02	32755	5.58	70110	7.17	31597	7.70	25845	8.20	1
ZZZZZZ	35451	3.00	32540	5.57	74003	7.17	29658	7.71	25915	8.21	1
ZZZZZZ	34243	3.00	32414	5.57	73272	7.16	29886	7.70	24798	8.21	1
ZZZZZZ	34019	3.00	32519	5.57	71507	7.16	28580	7.70	23876	8.21	1
FC1801-1	34146	3.00	32740	5.57	72297	7.16	31032	7.70	24252	8.20	1
ZZZZZZ	25491	3.00	31892	5.55	72706	7.16	32168	7.70	26749	8.20	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: S6Q174-ICC174 6Q10952.D 01/11/23 12:32. 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.

6.4.4
6

Injection Standard Area Summary

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q179-CC174	Injection Date:	01/17/23
Lab File ID:	6Q11457.D	Injection Time:	06:49
Instrument ID:	GCMS6Q	Method:	EPA DRAFT 1633

	IS 6 AREA	RT	IS 7 AREA	RT
Initial Cal ^b	7121	7.34	11560	8.42
Check Std ^c	6366	7.30	11153	8.37
Upper Limit ^d	14242	7.70	23120	8.77
Lower Limit ^e	2136	6.90	3468	7.97

Lab Sample ID	IS 6 AREA	RT	IS 7 AREA	RT	DF ^a
S6Q179-ICCB	6678	7.30	10288	8.37	1
ZZZZZZ	6062	7.30	9279	8.38	1
ZZZZZZ	6439	7.30	10257	8.38	1
ZZZZZZ	6252	7.30	9782	8.38	1
ZZZZZZ	6065	7.30	9805	8.38	1
ZZZZZZ	6088	7.30	9994	8.38	1
FC1801-1	5837	7.30	9675	8.38	1
ZZZZZZ	6265	7.29	9612	8.37	1

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

- (a) Sample areas corrected for dilution where applicable.
- (b) Initial Cal is: S6Q174-ICC174 6Q10952.D 01/11/23 12:32. 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.

TDCA Retention Time Check

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q174-RT	Injection Date:	01/11/23
Lab File ID:	6Q10946.D	Injection Time:	11:03
Instrument ID:	GCMS6Q		

Compound	RT (min)	RT Difference	Low Limit
PFOS	8.421	--	--
TDCA	6.846	1.575	1.000
TCDCA	6.697	1.724	1.000
TUDCA	5.820	2.601	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
S6Q174-IC174	6Q10948.D	01/11/23	11:36	00:33	Mass Calibration Verification
S6Q174-IC174	6Q10949.D	01/11/23	11:50	00:47	Initial cal 1
S6Q174-IC174	6Q10950.D	01/11/23	12:04	01:01	Initial cal 2
S6Q174-IC174	6Q10951.D	01/11/23	12:18	01:15	Initial cal 3
S6Q174-ICC174	6Q10952.D	01/11/23	12:32	01:29	Initial cal 4
S6Q174-IC174	6Q10953.D	01/11/23	12:46	01:43	Initial cal 5
S6Q174-IC174	6Q10954.D	01/11/23	13:00	01:57	Initial cal 6
S6Q174-IC174	6Q10955.D	01/11/23	13:14	02:11	Initial cal 7
S6Q174-IC174	6Q10956.D	01/11/23	13:28	02:25	Initial cal 8
S6Q174-IBLK	6Q10957.D	01/11/23	13:42	02:39	Instrument Blank
S6Q174-IBLK	6Q10957.D	01/11/23	13:42	02:39	Instrument Blank
S6Q174-ICV174	6Q10958.D	01/11/23	13:56	02:53	Initial cal verification 4
S6Q174-ICV174	6Q10959.D	01/11/23	14:10	03:07	Initial cal verification 4
S6Q174-CC174	6Q10960.D	01/11/23	14:24	03:21	Continuing cal 4
S6Q174-CC174	6Q10961.D	01/11/23	14:38	03:35	Continuing cal 1.0LL
OP94887-BS	6Q10962.D	01/11/23	14:52	03:49	Blank Spike
OP94887-LLBS	6Q10963.D	01/11/23	15:06	04:03	Blank Spike
OP94887-MB	6Q10964.D	01/11/23	15:20	04:17	Method Blank
ZZZZZZ	6Q10965.D	01/11/23	15:34	04:31	(unrelated sample)
ZZZZZZ	6Q10966.D	01/11/23	15:48	04:45	(unrelated sample)
ZZZZZZ	6Q10968.D	01/11/23	16:16	05:13	(unrelated sample)
ZZZZZZ	6Q10969.D	01/11/23	16:30	05:27	(unrelated sample)
ZZZZZZ	6Q10970.D	01/11/23	16:44	05:41	(unrelated sample)
S6Q174-CC174	6Q10971.D	01/11/23	17:06	06:03	Continuing cal 4
S6Q174-ICCB	6Q10972.D	01/11/23	17:20	06:17	Continuing Calibration Blank
ZZZZZZ	6Q10973.D	01/11/23	17:34	06:31	(unrelated sample)
JD56436-2	6Q10974.D	01/11/23	17:48	06:45	(used for QC only; not part of job FC1801)
ZZZZZZ	6Q10975.D	01/11/23	18:02	06:59	(unrelated sample)
ZZZZZZ	6Q10976.D	01/11/23	18:16	07:13	(unrelated sample)
ZZZZZZ	6Q10977.D	01/11/23	18:30	07:27	(unrelated sample)
ZZZZZZ	6Q10978.D	01/11/23	18:44	07:41	(unrelated sample)
ZZZZZZ	6Q10979.D	01/11/23	18:58	07:55	(unrelated sample)
ZZZZZZ	6Q10980.D	01/11/23	19:12	08:09	(unrelated sample)
ZZZZZZ	6Q10981.D	01/11/23	19:26	08:23	(unrelated sample)

TDCA Retention Time Check

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q174-RT	Injection Date:	01/11/23
Lab File ID:	6Q10946.D	Injection Time:	11:03
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	6Q10982.D	01/11/23	19:40	08:37	(unrelated sample)
S6Q174-CC174	6Q10983.D	01/11/23	19:54	08:51	Continuing cal 4
S6Q174-ICCB	6Q10984.D	01/11/23	20:08	09:05	Continuing Calibration Blank
ZZZZZZ	6Q10985.D	01/11/23	20:22	09:19	(unrelated sample)
ZZZZZZ	6Q10986.D	01/11/23	20:36	09:33	(unrelated sample)
ZZZZZZ	6Q10987.D	01/11/23	20:50	09:47	(unrelated sample)
ZZZZZZ	6Q10988.D	01/11/23	21:04	10:01	(unrelated sample)
ZZZZZZ	6Q10989.D	01/11/23	21:18	10:15	(unrelated sample)
JD56436-3	6Q10990.D	01/11/23	21:32	10:29	(used for QC only; not part of job FC1801)
ZZZZZZ	6Q10991.D	01/11/23	21:46	10:43	(unrelated sample)
ZZZZZZ	6Q10992.D	01/11/23	22:00	10:57	(unrelated sample)
ZZZZZZ	6Q10993.D	01/11/23	22:14	11:11	(unrelated sample)
ZZZZZZ	6Q10994.D	01/11/23	22:28	11:25	(unrelated sample)
S6Q174-CC174	6Q10995.D	01/11/23	22:42	11:39	Continuing cal 4
S6Q174-ICCB	6Q10996.D	01/11/23	22:56	11:53	Continuing Calibration Blank
ZZZZZZ	6Q10997.D	01/11/23	23:10	12:07	(unrelated sample)
ZZZZZZ	6Q10998.D	01/11/23	23:24	12:21	(unrelated sample)
ZZZZZZ	6Q10999.D	01/11/23	23:38	12:35	(unrelated sample)
ZZZZZZ	6Q11000.D	01/11/23	23:52	12:49	(unrelated sample)
ZZZZZZ	6Q11001.D	01/12/23	00:06	13:03	(unrelated sample)
ZZZZZZ	6Q11002.D	01/12/23	00:20	13:17	(unrelated sample)
S6Q174-CC174	6Q11003.D	01/12/23	00:33	13:30	Continuing cal 4
S6Q174-ICCB	6Q11004.D	01/12/23	00:48	13:45	Continuing Calibration Blank
OP94694-BS	6Q11005.D	01/12/23	01:01	13:58	Blank Spike
OP94694-LLBS	6Q11006.D	01/12/23	01:15	14:12	Blank Spike
OP94694-MB	6Q11007.D	01/12/23	01:29	14:26	Method Blank
ZZZZZZ	6Q11008.D	01/12/23	01:43	14:40	(unrelated sample)
ZZZZZZ	6Q11009.D	01/12/23	01:57	14:54	(unrelated sample)
FC1246-3	6Q11010.D	01/12/23	02:11	15:08	(used for QC only; not part of job FC1801)
OP94694-MS	6Q11011.D	01/12/23	02:25	15:22	Matrix Spike
OP94694-MSD	6Q11012.D	01/12/23	02:39	15:36	Matrix Spike Duplicate
ZZZZZZ	6Q11013.D	01/12/23	02:53	15:50	(unrelated sample)
ZZZZZZ	6Q11014.D	01/12/23	03:07	16:04	(unrelated sample)
S6Q174-CC174	6Q11015.D	01/12/23	03:21	16:18	Continuing cal 4
S6Q174-ICCB	6Q11016.D	01/12/23	03:35	16:32	Continuing Calibration Blank
ZZZZZZ	6Q11017.D	01/12/23	03:49	16:46	(unrelated sample)
ZZZZZZ	6Q11018.D	01/12/23	04:03	17:00	(unrelated sample)
ZZZZZZ	6Q11019.D	01/12/23	04:17	17:14	(unrelated sample)
ZZZZZZ	6Q11020.D	01/12/23	04:31	17:28	(unrelated sample)
ZZZZZZ	6Q11021.D	01/12/23	04:45	17:42	(unrelated sample)
ZZZZZZ	6Q11022.D	01/12/23	04:59	17:56	(unrelated sample)
ZZZZZZ	6Q11023.D	01/12/23	05:13	18:10	(unrelated sample)
ZZZZZZ	6Q11024.D	01/12/23	05:27	18:24	(unrelated sample)
ZZZZZZ	6Q11025.D	01/12/23	05:41	18:38	(unrelated sample)

6.5.1

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TDCA Retention Time Check

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q174-RT	Injection Date:	01/11/23
Lab File ID:	6Q10946.D	Injection Time:	11:03
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
S6Q174-CC174	6Q11027.D	01/12/23	06:09	19:06	Continuing cal 4
S6Q174-ICCB	6Q11028.D	01/12/23	06:23	19:20	Continuing Calibration Blank
ZZZZZZ	6Q11029.D	01/12/23	06:37	19:34	(unrelated sample)
ZZZZZZ	6Q11030.D	01/12/23	06:51	19:48	(unrelated sample)
ZZZZZZ	6Q11033.D	01/12/23	07:33	20:30	(unrelated sample)
ZZZZZZ	6Q11034.D	01/12/23	07:47	20:44	(unrelated sample)
ZZZZZZ	6Q11035.D	01/12/23	08:01	20:58	(unrelated sample)
ZZZZZZ	6Q11036.D	01/12/23	08:15	21:12	(unrelated sample)
ZZZZZZ	6Q11037.D	01/12/23	08:29	21:26	(unrelated sample)
ZZZZZZ	6Q11038.D	01/12/23	08:43	21:40	(unrelated sample)
S6Q174-ECC174	6Q11039.D	01/12/23	08:57	21:54	Ending cal 4
S6Q174-ICCB	6Q11040.D	01/12/23	09:11	22:08	Continuing Calibration Blank

6.5.1

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TDCA Retention Time Check

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q179-RT	Injection Date:	01/16/23
Lab File ID:	6Q11382.D	Injection Time:	13:12
Instrument ID:	GCMS6Q		

Compound	RT (min)	RT Difference	Low Limit
PFOS	8.385	--	--
TDCA	6.833	1.552	1.000
TCDCA	6.684	1.701	1.000
TUDCA	5.795	2.590	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
S6Q179-IBLK	6Q11385.D	01/16/23	13:54	00:42	Instrument Blank
S6Q179-IBLK	6Q11385.D	01/16/23	13:54	00:42	Instrument Blank
S6Q179-CC174	6Q11386.D	01/16/23	14:08	00:56	Continuing cal 4
S6Q179-CC174	6Q11387.D	01/16/23	14:22	01:10	Continuing cal 1.0LL
ZZZZZZ	6Q11388.D	01/16/23	14:36	01:24	(unrelated sample)
ZZZZZZ	6Q11390.D	01/16/23	15:04	01:52	(unrelated sample)
ZZZZZZ	6Q11391.D	01/16/23	15:18	02:06	(unrelated sample)
ZZZZZZ	6Q11392.D	01/16/23	15:40	02:28	(unrelated sample)
ZZZZZZ	6Q11393.D	01/16/23	15:54	02:42	(unrelated sample)
ZZZZZZ	6Q11395.D	01/16/23	16:22	03:10	(unrelated sample)
ZZZZZZ	6Q11396.D	01/16/23	16:36	03:24	(unrelated sample)
ZZZZZZ	6Q11397.D	01/16/23	16:50	03:38	(unrelated sample)
S6Q179-CC174	6Q11398.D	01/16/23	17:04	03:52	Continuing cal 4
S6Q179-ICCB	6Q11399.D	01/16/23	17:18	04:06	Continuing Calibration Blank
S6Q179-ICCB	6Q11399.D	01/16/23	17:18	04:06	Continuing Calibration Blank
ZZZZZZ	6Q11403.D	01/16/23	18:14	05:02	(unrelated sample)
ZZZZZZ	6Q11404.D	01/16/23	18:28	05:16	(unrelated sample)
ZZZZZZ	6Q11406.D	01/16/23	18:56	05:44	(unrelated sample)
ZZZZZZ	6Q11407.D	01/16/23	19:10	05:58	(unrelated sample)
ZZZZZZ	6Q11409.D	01/16/23	19:38	06:26	(unrelated sample)
S6Q179-CC174	6Q11410.D	01/16/23	19:52	06:40	Continuing cal 4
S6Q179-ICCB	6Q11411.D	01/16/23	20:06	06:54	Continuing Calibration Blank
S6Q179-ICCB	6Q11411.D	01/16/23	20:06	06:54	Continuing Calibration Blank
ZZZZZZ	6Q11413.D	01/16/23	20:34	07:22	(unrelated sample)
ZZZZZZ	6Q11415.D	01/16/23	21:02	07:50	(unrelated sample)
ZZZZZZ	6Q11417.D	01/16/23	21:30	08:18	(unrelated sample)
ZZZZZZ	6Q11418.D	01/16/23	21:44	08:32	(unrelated sample)
ZZZZZZ	6Q11419.D	01/16/23	21:58	08:46	(unrelated sample)
ZZZZZZ	6Q11420.D	01/16/23	22:12	09:00	(unrelated sample)
S6Q179-CC174	6Q11421.D	01/16/23	22:26	09:14	Continuing cal 4
S6Q179-ICCB	6Q11422.D	01/16/23	22:40	09:28	Continuing Calibration Blank
S6Q179-CC174	6Q11423.D	01/16/23	22:54	09:42	Continuing cal 1.0LL
OP94823-BS	6Q11424.D	01/16/23	23:08	09:56	Blank Spike
OP94823-LLBS	6Q11425.D	01/16/23	23:22	10:10	Blank Spike

TDCA Retention Time Check

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q179-RT	Injection Date:	01/16/23
Lab File ID:	6Q11382.D	Injection Time:	13:12
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
OP94823-MB	6Q11426.D	01/16/23	23:36	10:24	Method Blank
ZZZZZZ	6Q11427.D	01/16/23	23:50	10:38	(unrelated sample)
ZZZZZZ	6Q11428.D	01/17/23	00:04	10:52	(unrelated sample)
ZZZZZZ	6Q11429.D	01/17/23	00:18	11:06	(unrelated sample)
ZZZZZZ	6Q11430.D	01/17/23	00:32	11:20	(unrelated sample)
ZZZZZZ	6Q11431.D	01/17/23	00:46	11:34	(unrelated sample)
ZZZZZZ	6Q11432.D	01/17/23	01:00	11:48	(unrelated sample)
ZZZZZZ	6Q11433.D	01/17/23	01:13	12:01	(unrelated sample)
S6Q179-CC174	6Q11434.D	01/17/23	01:27	12:15	Continuing cal 4
S6Q179-ICCB	6Q11435.D	01/17/23	01:41	12:29	Continuing Calibration Blank
S6Q179-ICCB	6Q11435.D	01/17/23	01:41	12:29	Continuing Calibration Blank
ZZZZZZ	6Q11436.D	01/17/23	01:55	12:43	(unrelated sample)
ZZZZZZ	6Q11437.D	01/17/23	02:09	12:57	(unrelated sample)
ZZZZZZ	6Q11438.D	01/17/23	02:23	13:11	(unrelated sample)
ZZZZZZ	6Q11439.D	01/17/23	02:37	13:25	(unrelated sample)
ZZZZZZ	6Q11440.D	01/17/23	02:51	13:39	(unrelated sample)
OP94977-BS	6Q11441.D	01/17/23	03:05	13:53	Blank Spike
OP94977-LLBS	6Q11442.D	01/17/23	03:19	14:07	Blank Spike
OP94977-MB	6Q11443.D	01/17/23	03:33	14:21	Method Blank
ZZZZZZ	6Q11444.D	01/17/23	03:47	14:35	(unrelated sample)
S6Q179-CC174	6Q11445.D	01/17/23	04:01	14:49	Continuing cal 4
S6Q179-ICCB	6Q11446.D	01/17/23	04:15	15:03	Continuing Calibration Blank
FC1706-2	6Q11447.D	01/17/23	04:29	15:17	(used for QC only; not part of job FC1801)
OP94977-MS	6Q11448.D	01/17/23	04:43	15:31	Matrix Spike
OP94977-MSD	6Q11449.D	01/17/23	04:57	15:45	Matrix Spike Duplicate
ZZZZZZ	6Q11450.D	01/17/23	05:11	15:59	(unrelated sample)
ZZZZZZ	6Q11451.D	01/17/23	05:25	16:13	(unrelated sample)
ZZZZZZ	6Q11452.D	01/17/23	05:39	16:27	(unrelated sample)
ZZZZZZ	6Q11453.D	01/17/23	05:53	16:41	(unrelated sample)
ZZZZZZ	6Q11454.D	01/17/23	06:07	16:55	(unrelated sample)
ZZZZZZ	6Q11455.D	01/17/23	06:21	17:09	(unrelated sample)
ZZZZZZ	6Q11456.D	01/17/23	06:35	17:23	(unrelated sample)
S6Q179-CC174	6Q11457.D	01/17/23	06:49	17:37	Continuing cal 4
S6Q179-ICCB	6Q11458.D	01/17/23	07:03	17:51	Continuing Calibration Blank
ZZZZZZ	6Q11459.D	01/17/23	07:17	18:05	(unrelated sample)
ZZZZZZ	6Q11460.D	01/17/23	07:31	18:19	(unrelated sample)
ZZZZZZ	6Q11461.D	01/17/23	07:45	18:33	(unrelated sample)
ZZZZZZ	6Q11462.D	01/17/23	07:59	18:47	(unrelated sample)
ZZZZZZ	6Q11463.D	01/17/23	08:13	19:01	(unrelated sample)
FC1801-1	6Q11464.D	01/17/23	08:27	19:15	AF-RHMW03-WGN01LF-2301W2
ZZZZZZ	6Q11465.D	01/17/23	08:41	19:29	(unrelated sample)
S6Q179-CC174	6Q11466.D	01/17/23	08:55	19:43	Continuing cal 4
S6Q179-ICCB	6Q11467.D	01/17/23	09:09	19:57	Continuing Calibration Blank

6.5.2
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TDCA Retention Time Check

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q179-RT	Injection Date:	01/17/23
Lab File ID:	6Q11468.D	Injection Time:	09:23
Instrument ID:	GCMS6Q		

Compound	RT (min)	RT Difference	Low Limit
PFOS	8.385	--	--
TDCA	6.833	1.552	1.000
TCDCA	6.672	1.713	1.000
TUDCA	5.795	2.590	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
S6Q179-IBLK	6Q11471.D	01/17/23	10:05	00:42	Instrument Blank
S6Q179-IBLK	6Q11471.D	01/17/23	10:05	00:42	Instrument Blank
S6Q179-CC174	6Q11472.D	01/17/23	10:19	00:56	Continuing cal 1.0LL
OP94795-BS	6Q11473.D	01/17/23	10:33	01:10	Blank Spike
OP94795-LLBS	6Q11474.D	01/17/23	10:47	01:24	Blank Spike
OP94795-MB	6Q11475.D	01/17/23	11:01	01:38	Method Blank
ZZZZZZ	6Q11476.D	01/17/23	11:15	01:52	(unrelated sample)
ZZZZZZ	6Q11477.D	01/17/23	11:29	02:06	(unrelated sample)
ZZZZZZ	6Q11478.D	01/17/23	11:43	02:20	(unrelated sample)
ZZZZZZ	6Q11479.D	01/17/23	11:57	02:34	(unrelated sample)
ZZZZZZ	6Q11480.D	01/17/23	12:11	02:48	(unrelated sample)
FC1495-2	6Q11481.D	01/17/23	12:25	03:02	(used for QC only; not part of job FC1801)
OP94795-MS	6Q11482.D	01/17/23	12:39	03:16	Matrix Spike
S6Q179-CC174	6Q11483.D	01/17/23	12:53	03:30	Continuing cal 4
S6Q179-ICCB	6Q11484.D	01/17/23	13:07	03:44	Continuing Calibration Blank
ZZZZZZ	6Q11485.D	01/17/23	13:21	03:58	(unrelated sample)
OP94795-DUP	6Q11486.D	01/17/23	13:35	04:12	Duplicate
FC1495-4	6Q11487.D	01/17/23	13:49	04:26	(used for QC only; not part of job FC1801)
ZZZZZZ	6Q11488.D	01/17/23	14:10	04:47	(unrelated sample)
ZZZZZZ	6Q11489.D	01/17/23	14:24	05:01	(unrelated sample)
ZZZZZZ	6Q11490.D	01/17/23	14:38	05:15	(unrelated sample)
ZZZZZZ	6Q11491.D	01/17/23	14:52	05:29	(unrelated sample)
ZZZZZZ	6Q11492.D	01/17/23	15:06	05:43	(unrelated sample)
ZZZZZZ	6Q11493.D	01/17/23	15:20	05:57	(unrelated sample)
ZZZZZZ	6Q11494.D	01/17/23	15:34	06:11	(unrelated sample)
S6Q179-CC174	6Q11495.D	01/17/23	15:48	06:25	Continuing cal 4
S6Q179-ICCB	6Q11496.D	01/17/23	16:02	06:39	Continuing Calibration Blank
S6Q179-ICCB	6Q11496.D	01/17/23	16:02	06:39	Continuing Calibration Blank
ZZZZZZ	6Q11497.D	01/17/23	16:16	06:53	(unrelated sample)
ZZZZZZ	6Q11498.D	01/17/23	17:40	08:17	(unrelated sample)
ZZZZZZ	6Q11499.D	01/17/23	17:54	08:31	(unrelated sample)
ZZZZZZ	6Q11500.D	01/17/23	18:08	08:45	(unrelated sample)
ZZZZZZ	6Q11501.D	01/17/23	18:22	08:59	(unrelated sample)
FC1317-19	6Q11502.D	01/17/23	18:36	09:13	(used for QC only; not part of job FC1801)

TDCA Retention Time Check

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q179-RT	Injection Date:	01/17/23
Lab File ID:	6Q11468.D	Injection Time:	09:23
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	6Q11503.D	01/17/23	18:50	09:27	(unrelated sample)
ZZZZZZ	6Q11504.D	01/17/23	19:04	09:41	(unrelated sample)
ZZZZZZ	6Q11505.D	01/17/23	19:18	09:55	(unrelated sample)
S6Q179-CC174	6Q11507.D	01/17/23	19:46	10:23	Continuing cal 4
S6Q179-ICCB	6Q11508.D	01/17/23	20:00	10:37	Continuing Calibration Blank
S6Q179-ICCB	6Q11508.D	01/17/23	20:00	10:37	Continuing Calibration Blank
ZZZZZZ	6Q11509.D	01/17/23	20:14	10:51	(unrelated sample)
ZZZZZZ	6Q11510.D	01/17/23	20:28	11:05	(unrelated sample)
S6Q179-ECC174	6Q11511.D	01/17/23	20:42	11:19	Ending cal 4
S6Q179-ICCB	6Q11512.D	01/17/23	20:56	11:33	Continuing Calibration Blank

6.5.3

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Ion Ratio Summary

Job Number: FC1801
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q179	Method: EPA DRAFT 1633
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Lab Sample ID	Lab File ID	Ion Ratios		
		PFPeA	PFHxA	PFHpA
S6Q174-ICC174	6Q10952.D	0	4.1	13
FC1801-1	6Q11464.D	0	3.2	14.1

6.6.1

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Isotope Dilution Standard Recovery Summary

Job Number: FC1801
 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
FC1801-1	6Q11464.D	108	110	113	114	106	109	120	109
OP94977-BS	6Q11441.D	104	101	104	98	103	107	112	108
OP94977-LLBS	6Q11442.D	105	108	109	111	102	104	116	103
OP94977-MB	6Q11443.D	107	103	101	104	103	118	114	107
OP94977-MS	6Q11448.D	108	106	105	104	97	104	102	87
OP94977-MSD	6Q11449.D	108	114	111	113	108	111	111	97
S6Q179-IBLK	6Q11385.D	100	97	98	103	96	94	109	107
S6Q179-IBLK	6Q11471.D	100	101	100	101	100	106	106	100
S6Q179-ICCB	6Q11458.D	100	106	98	108	102	99	101	98
S6Q179-ICCB	6Q11435.D	101	100	96	97	94	98	111	99
S6Q179-ICCB	6Q11446.D	101	96	97	94	97	103	109	100
S6Q179-ICCB	6Q11467.D	99	104	100	106	100	102	95	100

Isotope Dilution Standards	Recovery Limits
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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%

6.7.1

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Isotope Dilution Standard Recovery Summary

Job Number: FC1801
 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
FC1801-1	6Q11464.D	92	83	119	116	116	113	90	86
OP94977-BS	6Q11441.D	105	93	106	109	102	105	99	91
OP94977-LLBS	6Q11442.D	102	90	102	106	113	96	95	96
OP94977-MB	6Q11443.D	96	75	105	105	108	111	81	81
OP94977-MS	6Q11448.D	85	84	105	107	100	98	85	83
OP94977-MSD	6Q11449.D	97	95	100	103	111	107	94	93
S6Q179-IBLK	6Q11385.D	103	96	104	104	107	103	95	94
S6Q179-IBLK	6Q11471.D	97	98	96	103	98	93	89	87
S6Q179-ICCB	6Q11458.D	95	99	91	91	100	105	89	88
S6Q179-ICCB	6Q11435.D	103	93	103	111	104	101	92	91
S6Q179-ICCB	6Q11446.D	107	107	100	102	103	104	92	93
S6Q179-ICCB	6Q11467.D	102	95	102	102	109	112	100	99

Isotope Dilution Standards	Recovery Limits
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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%

6.7.1

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Isotope Dilution Standard Recovery Summary

Job Number: FC1801
 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
FC1801-1	6Q11464.D	103	109	98	100	118	118	113	117
OP94977-BS	6Q11441.D	100	99	98	111	119	131	115	103
OP94977-LLBS	6Q11442.D	106	105	96	103	125	120	106	107
OP94977-MB	6Q11443.D	105	98	89	92	126	126	103	107
OP94977-MS	6Q11448.D	96	88	88	90	110	113	121	111
OP94977-MSD	6Q11449.D	109	106	101	101	114	108	109	118
S6Q179-IBLK	6Q11385.D	96	100	100	101	118	103	99	99
S6Q179-IBLK	6Q11471.D	95	94	92	94	98	114	103	102
S6Q179-ICCB	6Q11458.D	99	99	97	97	93	106	97	105
S6Q179-ICCB	6Q11435.D	100	99	98	99	130	123	119	105
S6Q179-ICCB	6Q11446.D	103	113	100	102	117	113	123	102
S6Q179-ICCB	6Q11467.D	111	106	107	105	114	117	123	104

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	20-150%
S22 = 13C2-6:2FTS	20-150%
S23 = 13C2-8:2FTS	20-150%
S24 = 13C3-HFPO-DA	20-150%

6.7.1

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Initial Calibration Summary

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q174-ICC174
 Lab FileID: 6Q10952.D

Initial Calibration Report

Method Path	Method File	Batch Name	Last Calib Update	Calibration Files	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD	Level Last Update Time
D:\MassHunter\Methods	1633_011123_S6Q174.quantmethod.xml	D:\MassHunter\Data\011123_1633_S6Q174\QuantResults\S6Q174.batch.bin	1/11/2023 2:54:49 PM	D:\MassHunter\Data\011123_1633_S6Q174\6Q10949.d	Avg RF	0.2805	0.2313	0.2404	0.2529	0.2491	0.2605	0.2753	0.2623	0.2565	6.494	1/11/2023 11:50:22 AM
D:\MassHunter\Data\011123_1633_S6Q174\6Q10950.d				D:\MassHunter\Data\011123_1633_S6Q174\6Q10951.d	Avg RF	0.3312	0.2813	0.2828	0.2990	0.2948	0.3045	0.3210	0.3167	0.3039	5.917	1/11/2023 2:54:49 PM
D:\MassHunter\Data\011123_1633_S6Q174\6Q10952.d				D:\MassHunter\Data\011123_1633_S6Q174\6Q10953.d	Avg RF	0.0656	0.0530	0.0544	0.0569	0.0562	0.0578	0.0621	0.0619	0.0585	7.386	1/11/2023 2:54:49 PM
D:\MassHunter\Data\011123_1633_S6Q174\6Q10954.d				D:\MassHunter\Data\011123_1633_S6Q174\6Q10955.d	Avg RF	1.2360	1.0027	1.0266	1.0832	1.0807	1.1082	1.1418	1.1046	1.0980	6.513	1/11/2023 2:54:49 PM
D:\MassHunter\Data\011123_1633_S6Q174\6Q10956.d				D:\MassHunter\Data\011123_1633_S6Q174\6Q10955.d	Avg RF	0.3782	0.3005	0.3273	0.3365	0.3309	0.3503	0.3603	0.3557	0.3425	6.977	1/11/2023 2:54:49 PM
D:\MassHunter\Data\011123_1633_S6Q174\6Q10956.d				D:\MassHunter\Data\011123_1633_S6Q174\6Q10955.d	Avg RF	1.6154	1.3692	1.4716	1.4869	1.4945	1.4908	1.5889	1.5443	1.5077	5.070	1/11/2023 2:54:49 PM
D:\MassHunter\Data\011123_1633_S6Q174\6Q10955.d				D:\MassHunter\Data\011123_1633_S6Q174\6Q10955.d	Avg RF	1.3500	0.9999	1.0558	1.0366	1.0819	1.1920	1.1345	1.0983	1.1186	9.893	1/11/2023 2:54:49 PM
D:\MassHunter\Data\011123_1633_S6Q174\6Q10955.d				D:\MassHunter\Data\011123_1633_S6Q174\6Q10955.d	Avg RF	0.8487	0.7684	0.7926	0.8780	0.9594	0.8749	0.9310	0.8664	0.8649	7.359	1/11/2023 2:54:49 PM
D:\MassHunter\Data\011123_1633_S6Q174\6Q10955.d				D:\MassHunter\Data\011123_1633_S6Q174\6Q10955.d	Avg RF	1.6051	1.2876	1.5050	1.5745	1.4746	1.5170	1.5722	1.4849	1.5026	6.562	1/11/2023 2:54:49 PM
D:\MassHunter\Data\011123_1633_S6Q174\6Q10955.d				D:\MassHunter\Data\011123_1633_S6Q174\6Q10955.d	Avg RF	1.0075	0.9086	0.9785	1.1247	1.0237	1.0241	1.1661	1.1305	1.0454	8.375	1/11/2023 2:54:49 PM

Generated at 2:55 PM on 1/11/2023

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Initial Calibration Summary

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q174-ICC174
 Lab FileID: 6Q10952.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
T PFDoDA	Avg RF	1.0525	0.8655	0.9990	1.0305	1.0194	1.0760	0.9569	0.8669	0.9833	8.179
T PFTfDA	Avg RF	1.0750	0.8965	0.8961	0.9385	0.9660	0.9625	0.9558	0.8194	0.9387	7.849
I M2-PFTeDA	Avg RF	1.7107	1.3184	1.4071	1.6217	1.4543	1.4622	1.4562	1.4887	1.4899	8.241
T PFTeDA	Avg RF										
I M8-FOSA	Avg RF	1.0336	0.9549	0.9483	1.0399	0.9846	1.0300	1.0558	1.0322	1.0099	4.087
T FOSA	Avg RF										
I M3-PFBS	Avg RF	1.1637	0.9269	0.9833	0.9980	0.9790	0.9673	1.0427	1.0328	1.0117	7.061
T PFBS	Avg RF										
I M3-PFHxS	Avg RF	1.6706	1.3155	1.3040	1.4217	1.2816	1.4208	1.4572	1.3999	1.4089	8.783
T PFPeS	Avg RF	1.4173	1.1972	1.1055	1.1545	1.0727	1.1426	1.1914	1.2407	1.1903	8.908
T PFHxS	Avg RF										
I M8-PFOS	Avg RF	1.2466	1.0750	1.1411	1.0688	1.1289	1.1269	1.2266	1.1362	1.1438	5.565
T PFHpS	Avg RF	1.3921	0.9704	1.2169	1.1906	1.1409	1.1959	1.3526	1.2260	1.2107	10.657
T PFOS	Avg RF	1.4265	1.0111	1.1612	1.1768	1.1325	1.2469	1.3349	1.1685	1.2073	10.597
T PRNS	Avg RF	0.8876	0.7652	0.7914	0.8654	0.8107	0.8934	1.0409	0.8482	0.8628	9.874
T PFDS	Avg RF	0.6155	0.4966	0.5083	0.5328	0.4942	0.5304	0.5936	0.5333	0.5381	8.231
T PFDoDS	Avg RF										
I M2-4:2FTS	Avg RF	13.63	10.65	10.71	13.31	11.11	12.43	12.12	11.17	11.89	9.755
T 4:2FTS	Avg RF										
I M2-6:2FTS	Avg RF	8.6152	6.5015	7.4392	8.1334	8.1074	8.7703	7.8848	6.7737	7.7782	10.518
T 6:2FTS	Avg RF										
I M2-8:2FTS	Avg RF	5.3639	3.9004	3.8257	4.3974	4.2581	3.8029	4.5256	3.2953	4.1712	14.896
T 8:2FTS	Avg RF										
I M3-MeFOSAA	Avg RF	1.2473	0.8222	0.8759	1.0901	1.0020	1.0133	1.1822	1.0128	1.0307	13.831
T MeFOSAA	Avg RF										
I M3-HFO-DA	Avg RF	1.1422	0.8906	0.9700	1.0404	1.0056	1.0629	1.0506	0.9278	1.0112	7.971
T HFO-DA	Avg RF	23.26	20.49	22.67	22.78	23.23	22.64	21.97	20.84	22.23	4.736
T ADONA	Avg RF	13.21	11.36	12.34	12.66	12.38	13.14	12.49	11.00	12.32	6.350
T 9Cl-PF3ONS	Avg RF	8.1940	7.0707	7.2191	7.9707	8.0154	7.7251	7.8384	6.6288	7.5828	7.226
T 11Cl-PF3OUds	Avg RF										
I M5-EFOSAA	Avg RF	0.8128	0.6836	0.8173	0.8569	0.7599	0.8052	0.8089	0.8409	0.7982	6.798
T EFOSAA	Avg RF										
I M7-MeFOSE	Avg RF	1.0503	0.9611	0.9839	0.9708	1.0799	1.0901	1.0787	1.0460	1.0326	5.106
T MeFOSE	Avg RF										
I M9-EFOSE	Avg RF	1.1610	0.9768	1.0039	1.0893	1.1046	1.0966	1.1657	1.2253	1.1029	7.526
T EFOSE	Avg RF										

Generated at 2:55 PM on 1/11/2023

Page 2 of 4

Initial Calibration Summary

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q174-ICC174
 Lab FileID: 6Q10952.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M5-EFOSA		1.4403	1.0964	1.1089	1.2088	1.1498	1.2454	1.2753	1.1530	1.2097	9.296
T EFOSA	Avg RF					ISTD					
I M3-MeFOSA		1.3173	0.9875	1.0477	1.0804	1.0844	1.0866	1.1735	1.0591	1.1046	9.073
T MeFOSA	Avg RF					ISTD					
I 13C4-PFOS		1.1707	1.3472	1.1997	1.0635	1.2074	1.3093	1.1109	1.2215	1.2038	7.781
S d3-MeFOSAA	Linear					ISTD					
S 13C8-PFOS	Linear	0.7474	0.8826	0.7934	0.7567	0.8256	0.8304	0.7349	0.8198	0.7989	6.298
S d5-EFOSAA	Linear	1.0546	1.0703	1.0285	0.9902	1.0875	1.1411	1.0478	1.0292	1.0562	4.280
S 13C8-FOSA	Linear	1.6058	1.8114	1.6856	1.5941	1.7582	1.7696	1.6225	1.6620	1.6886	4.870
S d7-MeFOSE	Linear	0.3151	0.3309	0.3125	0.3078	0.3073	0.3290	0.3158	0.3274	0.3182	3.000
S d3-MeFOSA	Linear	0.6906	0.8165	0.7537	0.7210	0.7661	0.8205	0.7580	0.8586	0.7731	7.186
S d9-EFOSE	Linear	0.2317	0.2599	0.2410	0.2350	0.2398	0.2635	0.2415	0.2344	0.2434	4.878
S d5-EFOSA	Linear	0.7951	0.9117	0.8333	0.8095	0.8995	0.9022	0.8490	0.9278	0.8660	5.840
I 13C3-PFBA		1.1464	1.1389	1.1347	1.1540	1.1394	1.1516	1.1265	1.1443	1.1420	0.791
S 13C4-PFBA	Linear					ISTD					
I 1802-PFHxS		0.1443	0.1399	0.1384	0.1269	0.1367	0.1306	0.1115	0.1150	0.1304	9.133
S 13C2-4:2FTS	Linear	2.1517	2.0301	2.0213	2.0396	2.0707	2.2613	2.0624	2.1368	2.0967	3.906
S 13C3-PFBS	Linear	0.2028	0.1961	0.1810	0.1840	0.1759	0.1701	0.1565	0.1620	0.1786	8.903
S 13C2-6:2FTS	Linear	1.3952	1.2698	1.4027	1.3589	1.4033	1.4336	1.2537	1.3413	1.3573	4.831
S 13C3-PFHxS	Linear	0.1967	0.1968	0.2078	0.1920	0.1907	0.2169	0.1641	0.1944	0.1949	7.831
S 13C2-8:2FTS	Linear					ISTD					
I 13C4-PFOA		0.7758	0.8417	0.8701	0.8580	0.8317	0.8251	0.8643	0.8367	0.8379	3.555
S 13C8-PFOA	Linear					ISTD					
I 13C2-PFDA		0.7491	0.7856	0.6982	0.6591	0.5981	0.7380	0.7700	0.6957	0.7117	8.736
S 13C6-PFDA	Linear	0.9630	0.8958	0.9012	0.8547	0.7802	0.9028	0.8504	0.8001	0.8685	6.870
S 13C7-PFUnDA	Linear	1.0233	0.9801	1.0113	0.9657	0.8434	0.9754	1.0706	1.0583	0.9910	7.145
S 13C2-PFDODA	Linear	0.6151	0.6071	0.5875	0.5456	0.5001	0.6001	0.6371	0.5656	0.5823	7.519
S 13C2-PFTeDA	Linear					ISTD					
I 13C5-PFNA		0.8869	0.9067	0.8780	0.9210	0.8219	0.9191	0.9077	0.8650	0.8883	3.758
S 13C9-PFNA	Linear					ISTD					
I 13C2-PFHxA		0.5728	0.5409	0.5700	0.5813	0.5908	0.5703	0.5293	0.5065	0.5577	5.204
S 13C5-PPeA	Linear	1.0407	0.9880	1.0131	1.0365	1.0485	1.0651	0.9309	0.9069	1.0037	5.739
S 13C5-PFHxA	Linear	1.061	0.0991	1.042	1.041	1.0161	1.0141	0.0995	0.1017	0.1031	2.637
S 13C3-HFOO-DA	Linear	1.0372	1.0073	1.0172	1.0744	1.0793	1.0106	0.9569	0.9260	1.0136	5.211
S 13C4-PFHxA	Linear					ISTD					

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

Initial Calibration Summary

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q174-ICC174
 Lab FileID: 6Q10952.D

Initial Calibration Report

Compounds with Curve fitting not using Avg Response Factor:

Compound	Curve Fit	Curve Fit Formula	%RSE
S 13C4-PBBA	Linear	$y = 1.141960 * x$	
S 13C5-PFPeA	Linear	$y = 0.557734 * x$	
S 13C2-4:2FTS	Linear	$y = 0.130399 * x$	
S 13C3-PFBS	Linear	$y = 2.096744 * x$	
S 13C5-PFHxA	Linear	$y = 1.003710 * x$	
S 13C3-HFPO-DA	Linear	$y = 0.103114 * x$	
S 13C4-PFHpA	Linear	$y = 1.013623 * x$	
S 13C8-PFOA	Linear	$y = 0.178567 * x$	
S 13C3-PFHxS	Linear	$y = 0.837918 * x$	
S 13C9-PFNA	Linear	$y = 1.357298 * x$	
S 13C2-8:2FTS	Linear	$y = 0.888277 * x$	
S 13C6-PEDA	Linear	$y = 0.194916 * x$	
S d3-MeFOSAA	Linear	$y = 0.711730 * x$	
S 13C8-PFOS	Linear	$y = 1.203781 * x$	
S d5-EFOSAA	Linear	$y = 0.798860 * x$	
S 13C7-PFUInDA	Linear	$y = 1.056160 * x$	
S 13C2-PFDODA	Linear	$y = 0.8668528 * x$	
S 13C8-FOSA	Linear	$y = 0.991004 * x$	
S 13C2-PFTeDA	Linear	$y = 1.688630 * x$	
S d7-MeFOSE	Linear	$y = 0.582276 * x$	
S d3-MeFOSA	Linear	$y = 0.318223 * x$	
S d9-EFOSE	Linear	$y = 0.773138 * x$	
S d5-EFOSA	Linear	$y = 0.243360 * x$	
S d5-EFOSA	Linear	$y = 0.866005 * x$	

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

Initial Calibration Verification

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q174-ICV174
 Lab FileID: 6Q10958.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\011123_1633_S6Q174\S6Q174.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\011123_1633_S6Q174\6Q10949.d
 2:D:\MassHunter\Data\011123_1633_S6Q174\6Q10950.d
 3:D:\MassHunter\Data\011123_1633_S6Q174\6Q10951.d
 4:D:\MassHunter\Data\011123_1633_S6Q174\6Q10952.d
 5:D:\MassHunter\Data\011123_1633_S6Q174\6Q10953.d
 6:D:\MassHunter\Data\011123_1633_S6Q174\6Q10954.d
 7:D:\MassHunter\Data\011123_1633_S6Q174\6Q10955.d
 8:D:\MassHunter\Data\011123_1633_S6Q174\6Q10956.d

Data File: 6Q10958
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	4.717	-5.7	94.3
13C2-6:2FTS	5.000	5.231	4.6	104.6
13C2-8:2FTS	5.000	4.795	-4.1	95.9
13C2-PFDoDA	1.250	1.144	-8.4	91.6
13C2-PFTeDA	1.250	1.144	-8.5	91.5
13C3-PFBS	2.500	2.436	-2.5	97.5
13C3-PFHxS	2.500	2.309	-7.6	92.4
13C4-PFBA	10.000	10.050	0.5	100.5
13C4-PFHpA	2.500	2.481	-0.7	99.3
13C5-PFHxA	2.500	2.535	1.4	101.4
13C5-PFPeA	5.000	5.086	1.7	101.7
13C6-PFDA	1.250	1.201	-4.0	96.0
13C7-PFUnDA	1.250	1.267	1.3	101.3
13C8-FOSA	2.500	2.634	5.4	105.4
13C8-PFOA	2.500	2.405	-3.8	96.2
13C8-PFOS	2.500	2.712	8.5	108.5
13C9-PFNA	1.250	1.259	0.7	100.7
4:2FTS	9.375	8.968	-4.3	95.7
6:2FTS	9.500	8.106	-14.7	85.3
8:2FTS	9.600	9.124	-5.0	95.0
d3-MeFOSAA	5.000	5.706	14.1	114.1
EtFOSAA	2.500	2.388	-4.5	95.5
FOSA	2.500	2.462	-1.5	98.5
MeFOSAA	2.500	2.201	-12.0	88.0
PFBA	10.000	8.925	-10.7	89.3
PFBS	2.218	1.897	-14.5	85.5
PFDA	2.500	2.379	-4.8	95.2
PFDoDA	2.500	2.318	-7.3	92.7
PFDS	2.413	2.196	-9.0	91.0
PFHpA	2.500	2.292	-8.3	91.7
PFHpS	2.383	2.112	-11.4	88.6
PFHxA	2.500	2.246	-10.1	89.9
PFHxS	2.285	2.153	-5.8	94.2
PFNA	2.500	2.371	-5.2	94.8
PFNS	2.405	2.393	-0.5	99.5
PFOA	2.500	2.197	-12.1	87.9
PFOS	2.320	2.065	-11.0	89.0

Initial Calibration Verification

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q174-ICV174
 Lab FileID: 6Q10958.D

PFPeA	5.000	4.443	-11.1	88.9
PFPeS	2.353	2.248	-4.4	95.6
PFTeDA	2.500	2.338	-6.5	93.5
PFTTrDA	2.500	2.376	-5.0	95.0
PFUnDA	2.500	2.157	-13.7	86.3
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	9.450	9.226	-2.4	97.6
13C3-HFPO-DA	10.000	9.589	-4.1	95.9
9C1-PF3ONS	9.350	9.210	-1.5	98.5
ADONA	9.450	9.136	-3.3	96.7
HFPO-DA	10.000	9.285	-7.2	92.8
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.000	-11.9	88.1
5:3FTCA	62.400	55.355	-11.3	88.7
7:3FTCA	62.400	57.713	-7.5	92.5
d3-MeFOSA	2.500	2.550	2.0	102.0
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	2.500	2.443	-2.3	97.7
EtFOSE	25.000	22.372	-10.5	89.5
MeFOSA	2.500	2.459	-1.6	98.4
MeFOSE	25.000	23.072	-7.7	92.3
PFDoDS	2.425	2.240	-7.6	92.4
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.191	3.8	103.8
d7-MeFOSE	25.000	27.157	8.6	108.6
d9-EtFOSE	25.000	27.202	8.8	108.8
d5-EtFOSA	2.500	2.556	2.2	102.2
NFDHA	5.000	4.681	-6.4	93.6
PFMBA	5.000	4.565	-8.7	91.3
PFMPA	5.000	4.493	-10.1	89.9
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.113	-7.6	92.4

CC Criteria: +/- 30%

Initial Calibration Verification

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q174-ICV174
 Lab FileID: 6Q10959.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\011123_1633_S6Q174\S6Q174.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\011123_1633_S6Q174\6Q10949.d
 2:D:\MassHunter\Data\011123_1633_S6Q174\6Q10950.d
 3:D:\MassHunter\Data\011123_1633_S6Q174\6Q10951.d
 4:D:\MassHunter\Data\011123_1633_S6Q174\6Q10952.d
 5:D:\MassHunter\Data\011123_1633_S6Q174\6Q10953.d
 6:D:\MassHunter\Data\011123_1633_S6Q174\6Q10954.d
 7:D:\MassHunter\Data\011123_1633_S6Q174\6Q10955.d
 8:D:\MassHunter\Data\011123_1633_S6Q174\6Q10956.d

Data File: 6Q10959
 Type : QC
 Level : 20

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.154	3.1	103.1
13C2-6:2FTS	5.000	4.939	-1.2	98.8
13C2-8:2FTS	5.000	5.159	3.2	103.2
13C2-PFDoDA	1.250	1.252	0.1	100.1
13C2-PFTeDA	1.250	1.233	-1.3	98.7
13C3-PFBS	2.500	2.394	-4.3	95.7
13C3-PFHxS	2.500	2.395	-4.2	95.8
13C4-PFBA	10.000	9.999	0.0	100.0
13C4-PFHpA	2.500	2.376	-5.0	95.0
13C5-PFHxA	2.500	2.478	-0.9	99.1
13C5-PFPeA	5.000	5.074	1.5	101.5
13C6-PFDA	1.250	1.253	0.3	100.3
13C7-PFUnDA	1.250	1.317	5.4	105.4
13C8-FOSA	2.500	2.652	6.1	106.1
13C8-PFOA	2.500	2.541	1.6	101.6
13C8-PFOS	2.500	2.699	8.0	108.0
13C9-PFNA	1.250	1.320	5.6	105.6
4:2FTS	20.000	19.616	-1.9	98.1
6:2FTS	20.000	21.520	7.6	107.6
8:2FTS	20.000	19.768	-1.2	98.8
d3-MeFOSAA	5.000	5.195	3.9	103.9
EtFOSAA	20.000	22.050	10.3	110.3
FOSA	20.000	21.082	5.4	105.4
MeFOSAA	20.000	20.436	2.2	102.2
PFBA	20.000	20.371	1.9	101.9
PFBS	20.000	23.182	15.9	115.9
PFDA	20.000	22.170	10.8	110.8
PFDoDA	20.000	19.443	-2.8	97.2
PFDS	20.000	20.413	2.1	102.1
PFHpA	20.000	21.569	7.8	107.8
PFHpS	20.000	20.227	1.1	101.1
PFHxA	20.000	20.742	3.7	103.7
PFHxS	20.000	22.383	11.9	111.9
PFNA	20.000	22.553	12.8	112.8
PFNS	20.000	20.071	0.4	100.4
PFOA	20.000	20.363	1.8	101.8
PFOS	20.000	17.622	-11.9	88.1

Initial Calibration Verification

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q174-ICV174
 Lab FileID: 6Q10959.D

PFPeA	20.000	20.534	2.7	102.7
PFPeS	20.000	21.166	5.8	105.8
PFTeDA	20.000	21.034	5.2	105.2
PFTTrDA	20.000	19.341	-3.3	96.7
PFUnDA	20.000	19.954	-0.2	99.8
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	20.000	22.057	10.3	110.3
13C3-HFPO-DA	10.000	10.217	2.2	102.2
9C1-PF3ONS	20.000	19.409	-3.0	97.0
ADONA	20.000	20.425	2.1	102.1
HFPO-DA	20.000	19.280	-3.6	96.4
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	20.000	19.791	-1.0	99.0
5:3FTCA	20.000	20.981	4.9	104.9
7:3FTCA	20.000	21.007	5.0	105.0
d3-MeFOSA	2.500	2.636	5.4	105.4
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	20.000	20.334	1.7	101.7
EtFOSE	100.000	98.550	-1.5	98.5
MeFOSA	20.000	20.008	0.0	100.0
MeFOSE	100.000	93.455	-6.5	93.5
PFDoDS	20.000	19.462	-2.7	97.3
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.184	3.7	103.7
d7-MeFOSE	25.000	26.353	5.4	105.4
d9-EtFOSE	25.000	25.869	3.5	103.5
d5-EtFOSA	2.500	2.592	3.7	103.7
NFDHA	20.000	19.296	-3.5	96.5
PFMBA	20.000	19.505	-2.5	97.5
PFMPA	20.000	19.798	-1.0	99.0
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	20.000	17.396	-13.0	87.0

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q179-CC174
 Lab FileID: 6Q11423.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\011123_1633_S6Q179\s6q179.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\011123_1633_S6Q174\6Q10949.d
 2:D:\MassHunter\Data\011123_1633_S6Q174\6Q10950.d
 3:D:\MassHunter\Data\011123_1633_S6Q174\6Q10951.d
 4:D:\MassHunter\Data\011123_1633_S6Q174\6Q10952.d
 5:D:\MassHunter\Data\011123_1633_S6Q174\6Q10953.d
 6:D:\MassHunter\Data\011123_1633_S6Q174\6Q10954.d
 7:D:\MassHunter\Data\011123_1633_S6Q174\6Q10955.d
 8:D:\MassHunter\Data\011123_1633_S6Q174\6Q10956.d

Data File: 6Q11423
 Type : QC
 Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.467	9.3	109.3
13C2-6:2FTS	5.000	6.005	20.1	120.1
13C2-8:2FTS	5.000	5.260	5.2	105.2
13C2-PFDoDA	1.250	1.251	0.1	100.1
13C2-PFTeDA	1.250	1.237	-1.1	98.9
13C3-PFBS	2.500	2.439	-2.4	97.6
13C3-PFHxS	2.500	2.705	8.2	108.2
13C4-PFBA	10.000	10.077	0.8	100.8
13C4-PFHpA	2.500	2.413	-3.5	96.5
13C5-PFHxA	2.500	2.399	-4.1	95.9
13C5-PFPeA	5.000	4.872	-2.6	97.4
13C6-PFDA	1.250	1.310	4.8	104.8
13C7-PFUnDA	1.250	1.291	3.3	103.3
13C8-FOSA	2.500	2.661	6.4	106.4
13C8-PFOA	2.500	2.370	-5.2	94.8
13C8-PFOS	2.500	2.764	10.6	110.6
13C9-PFNA	1.250	1.238	-1.0	99.0
4:2FTS	0.750	0.741	-1.2	98.8
6:2FTS	0.760	0.647	-14.8	85.2
8:2FTS	0.768	0.801	4.3	104.3
d3-MeFOSAA	5.000	5.215	4.3	104.3
EtFOSAA	0.200	0.162	-18.8	81.2
FOSA	0.200	0.183	-8.3	91.7
MeFOSAA	0.200	0.186	-7.2	92.8
PFBA	0.800	0.731	-8.6	91.4
PFBS	0.177	0.176	-0.6	99.4
PFDA	0.200	0.205	2.3	102.3
PFDoDA	0.200	0.181	-9.3	90.7
PFDS	0.193	0.150	-22.4	77.6
PFHpA	0.200	0.184	-8.2	91.8
PFHpS	0.191	0.136	-28.7	71.3
PFHxA	0.200	0.179	-10.5	89.5
PFHxS	0.183	0.162	-11.6	88.4
PFNA	0.200	0.200	0.0	100.0
PFNS	0.192	0.147	-23.5	76.5
PFOA	0.200	0.166	-17.1	82.9
PFOS	0.186	0.169	-9.2	90.8

Continuing Calibration Summary

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q179-CC174
 Lab FileID: 6Q11423.D

PFPeA	0.400	0.379	-5.2	94.8
PFPeS	0.188	0.173	-7.8	92.2
PFTeDA	0.200	0.179	-10.5	89.5
PFTTrDA	0.200	0.194	-3.1	96.9
PFUnDA	0.200	0.179	-10.7	89.3
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	0.756	0.714	-5.6	94.4
13C3-HFPO-DA	10.000	9.544	-4.6	95.4
9C1-PF3ONS	0.748	0.705	-5.8	94.2
ADONA	0.756	0.696	-8.0	92.0
HFPO-DA	0.800	0.724	-9.5	90.5
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	0.998	0.923	-7.6	92.4
5:3FTCA	4.992	4.468	-10.5	89.5
7:3FTCA	4.992	4.479	-10.3	89.7
d3-MeFOSA	2.500	2.540	1.6	101.6
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	0.200	0.182	-8.8	91.2
EtFOSE	2.000	1.744	-12.8	87.2
MeFOSA	0.200	0.193	-3.3	96.7
MeFOSE	2.000	1.730	-13.5	86.5
PFDoDS	0.194	0.163	-16.1	83.9
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.473	9.5	109.5
d7-MeFOSE	25.000	25.878	3.5	103.5
d9-EtFOSE	25.000	25.418	1.7	101.7
d5-EtFOSA	2.500	2.396	-4.2	95.8
NFDHA	0.400	0.347	-13.2	86.8
PFMBA	0.400	0.375	-6.4	93.6
PFMPA	0.400	0.369	-7.7	92.3
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	0.356	0.346	-2.9	97.1

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q179-CC174
 Lab FileID: 6Q11434.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\011123_1633_S6Q179\s6q179.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\011123_1633_S6Q174\6Q10949.d
 2:D:\MassHunter\Data\011123_1633_S6Q174\6Q10950.d
 3:D:\MassHunter\Data\011123_1633_S6Q174\6Q10951.d
 4:D:\MassHunter\Data\011123_1633_S6Q174\6Q10952.d
 5:D:\MassHunter\Data\011123_1633_S6Q174\6Q10953.d
 6:D:\MassHunter\Data\011123_1633_S6Q174\6Q10954.d
 7:D:\MassHunter\Data\011123_1633_S6Q174\6Q10955.d
 8:D:\MassHunter\Data\011123_1633_S6Q174\6Q10956.d

Data File: 6Q11434
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.128	2.6	102.6
13C2-6:2FTS	5.000	5.055	1.1	101.1
13C2-8:2FTS	5.000	5.273	5.5	105.5
13C2-PFDoDA	1.250	1.304	4.3	104.3
13C2-PFTeDA	1.250	1.308	4.7	104.7
13C3-PFBS	2.500	2.496	-0.2	99.8
13C3-PFHxS	2.500	2.497	-0.1	99.9
13C4-PFBA	10.000	10.105	1.1	101.1
13C4-PFHpA	2.500	2.544	1.8	101.8
13C5-PFHxA	2.500	2.436	-2.6	97.4
13C5-PFPeA	5.000	5.102	2.0	102.0
13C6-PFDA	1.250	1.274	1.9	101.9
13C7-PFUnDA	1.250	1.302	4.1	104.1
13C8-FOSA	2.500	2.546	1.8	101.8
13C8-PFOA	2.500	2.554	2.2	102.2
13C8-PFOS	2.500	2.812	12.5	112.5
13C9-PFNA	1.250	1.399	11.9	111.9
4:2FTS	9.375	8.500	-9.3	90.7
6:2FTS	9.500	9.280	-2.3	97.7
8:2FTS	9.600	9.340	-2.7	97.3
d3-MeFOSAA	5.000	5.076	1.5	101.5
EtFOSAA	2.500	2.096	-16.2	83.8
FOSA	2.500	2.512	0.5	100.5
MeFOSAA	2.500	2.288	-8.5	91.5
PFBA	10.000	9.131	-8.7	91.3
PFBS	2.218	1.955	-11.9	88.1
PFDA	2.500	2.468	-1.3	98.7
PFDoDA	2.500	2.134	-14.6	85.4
PFDS	2.413	2.121	-12.1	87.9
PFHpA	2.500	2.290	-8.4	91.6
PFHpS	2.383	2.105	-11.6	88.4
PFHxA	2.500	2.357	-5.7	94.3
PFHxS	2.285	1.989	-13.0	87.0
PFNA	2.500	2.220	-11.2	88.8
PFNS	2.405	2.083	-13.4	86.6
PFOA	2.500	2.129	-14.9	85.1
PFOS	2.320	2.004	-13.6	86.4

Continuing Calibration Summary

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q179-CC174
 Lab FileID: 6Q11434.D

PFPeA	5.000	4.530	-9.4	90.6
PFPeS	2.353	2.065	-12.2	87.8
PFTeDA	2.500	2.267	-9.3	90.7
PFTrDA	2.500	2.324	-7.0	93.0
PFUnDA	2.500	2.307	-7.7	92.3
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	9.450	8.822	-6.6	93.4
13C3-HFPO-DA	10.000	10.746	7.5	107.5
9C1-PF3ONS	9.350	8.038	-14.0	86.0
ADONA	9.450	8.333	-11.8	88.2
HFPO-DA	10.000	8.467	-15.3	84.7
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.027	-11.6	88.4
5:3FTCA	62.400	59.209	-5.1	94.9
7:3FTCA	62.400	63.733	2.1	102.1
d3-MeFOSA	2.500	2.319	-7.2	92.8
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	2.500	2.417	-3.3	96.7
EtFOSE	25.000	22.480	-10.1	89.9
MeFOSA	2.500	2.398	-4.1	95.9
MeFOSE	25.000	22.411	-10.4	89.6
PFDoDS	2.425	2.096	-13.6	86.4
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.462	9.2	109.2
d7-MeFOSE	25.000	25.941	3.8	103.8
d9-EtFOSE	25.000	25.341	1.4	101.4
d5-EtFOSA	2.500	2.368	-5.3	94.7
NFDHA	5.000	4.720	-5.6	94.4
PFMBA	5.000	4.588	-8.2	91.8
PFMPA	5.000	4.601	-8.0	92.0
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.275	-3.9	96.1

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q179-CC174
 Lab FileID: 6Q11445.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\011123_1633_S6Q179\s6q179.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\011123_1633_S6Q174\6Q10949.d
 2:D:\MassHunter\Data\011123_1633_S6Q174\6Q10950.d
 3:D:\MassHunter\Data\011123_1633_S6Q174\6Q10951.d
 4:D:\MassHunter\Data\011123_1633_S6Q174\6Q10952.d
 5:D:\MassHunter\Data\011123_1633_S6Q174\6Q10953.d
 6:D:\MassHunter\Data\011123_1633_S6Q174\6Q10954.d
 7:D:\MassHunter\Data\011123_1633_S6Q174\6Q10955.d
 8:D:\MassHunter\Data\011123_1633_S6Q174\6Q10956.d

Data File: 6Q11445
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.358	7.2	107.2
13C2-6:2FTS	5.000	5.124	2.5	102.5
13C2-8:2FTS	5.000	5.031	0.6	100.6
13C2-PFDoDA	1.250	1.292	3.4	103.4
13C2-PFTeDA	1.250	1.244	-0.5	99.5
13C3-PFBS	2.500	2.469	-1.2	98.8
13C3-PFHxS	2.500	2.406	-3.8	96.2
13C4-PFBA	10.000	10.080	0.8	100.8
13C4-PFHpA	2.500	2.499	0.0	100.0
13C5-PFHxA	2.500	2.411	-3.6	96.4
13C5-PFPeA	5.000	5.041	0.8	100.8
13C6-PFDA	1.250	1.280	2.4	102.4
13C7-PFUnDA	1.250	1.229	-1.7	98.3
13C8-FOSA	2.500	2.446	-2.2	97.8
13C8-PFOA	2.500	2.531	1.2	101.2
13C8-PFOS	2.500	2.552	2.1	102.1
13C9-PFNA	1.250	1.346	7.6	107.6
4:2FTS	9.375	7.916	-15.6	84.4
6:2FTS	9.500	8.319	-12.4	87.6
8:2FTS	9.600	9.090	-5.3	94.7
d3-MeFOSAA	5.000	4.398	-12.0	88.0
EtFOSAA	2.500	2.148	-14.1	85.9
FOSA	2.500	2.389	-4.4	95.6
MeFOSAA	2.500	2.478	-0.9	99.1
PFBA	10.000	9.126	-8.7	91.3
PFBS	2.218	1.916	-13.6	86.4
PFDA	2.500	2.408	-3.7	96.3
PFDoDA	2.500	2.235	-10.6	89.4
PFDS	2.413	2.216	-8.2	91.8
PFHpA	2.500	2.358	-5.7	94.3
PFHpS	2.383	2.072	-13.0	87.0
PFHxA	2.500	2.305	-7.8	92.2
PFHxS	2.285	2.111	-7.6	92.4
PFNA	2.500	2.248	-10.1	89.9
PFNS	2.405	2.067	-14.1	85.9
PFOA	2.500	2.270	-9.2	90.8
PFOS	2.320	2.151	-7.3	92.7

Continuing Calibration Summary

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q179-CC174
 Lab FileID: 6Q11445.D

PFPeA	5.000	4.587	-8.3	91.7
PFPeS	2.353	2.231	-5.2	94.8
PFTeDA	2.500	2.332	-6.7	93.3
PFTTrDA	2.500	2.388	-4.5	95.5
PFUnDA	2.500	2.344	-6.2	93.8
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	9.450	8.891	-5.9	94.1
13C3-HFPO-DA	10.000	10.230	2.3	102.3
9C1-PF3ONS	9.350	8.482	-9.3	90.7
ADONA	9.450	8.574	-9.3	90.7
HFPO-DA	10.000	9.208	-7.9	92.1
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.162	-10.6	89.4
5:3FTCA	62.400	59.794	-4.2	95.8
7:3FTCA	62.400	59.120	-5.3	94.7
d3-MeFOSA	2.500	2.244	-10.2	89.8
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	2.500	2.322	-7.1	92.9
EtFOSE	25.000	22.168	-11.3	88.7
MeFOSA	2.500	2.358	-5.7	94.3
MeFOSE	25.000	23.230	-7.1	92.9
PFDoDS	2.425	2.074	-14.5	85.5
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.032	0.6	100.6
d7-MeFOSE	25.000	23.668	-5.3	94.7
d9-EtFOSE	25.000	23.618	-5.5	94.5
d5-EtFOSA	2.500	2.250	-10.0	90.0
NFDHA	5.000	4.633	-7.3	92.7
PFMBA	5.000	4.735	-5.3	94.7
PFMPA	5.000	4.717	-5.7	94.3
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.163	-6.5	93.5

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q179-CC174
 Lab FileID: 6Q11457.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\011123_1633_S6Q179\s6q179.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\011123_1633_S6Q174\6Q10949.d
 2:D:\MassHunter\Data\011123_1633_S6Q174\6Q10950.d
 3:D:\MassHunter\Data\011123_1633_S6Q174\6Q10951.d
 4:D:\MassHunter\Data\011123_1633_S6Q174\6Q10952.d
 5:D:\MassHunter\Data\011123_1633_S6Q174\6Q10953.d
 6:D:\MassHunter\Data\011123_1633_S6Q174\6Q10954.d
 7:D:\MassHunter\Data\011123_1633_S6Q174\6Q10955.d
 8:D:\MassHunter\Data\011123_1633_S6Q174\6Q10956.d

Data File: 6Q11457
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.585	11.7	111.7
13C2-6:2FTS	5.000	6.287	25.7	125.7
13C2-8:2FTS	5.000	5.358	7.2	107.2
13C2-PFDoDA	1.250	1.275	2.0	102.0
13C2-PFTeDA	1.250	1.259	0.7	100.7
13C3-PFBS	2.500	2.593	3.7	103.7
13C3-PFHxS	2.500	2.736	9.5	109.5
13C4-PFBA	10.000	10.010	0.1	100.1
13C4-PFHpA	2.500	2.464	-1.5	98.5
13C5-PFHxA	2.500	2.410	-3.6	96.4
13C5-PFPeA	5.000	4.953	-0.9	99.1
13C6-PFDA	1.250	1.360	8.8	108.8
13C7-PFUnDA	1.250	1.242	-0.6	99.4
13C8-FOSA	2.500	2.438	-2.5	97.5
13C8-PFOA	2.500	2.709	8.4	108.4
13C8-PFOS	2.500	2.677	7.1	107.1
13C9-PFNA	1.250	1.286	2.9	102.9
4:2FTS	9.375	8.864	-5.4	94.6
6:2FTS	9.500	7.949	-16.3	83.7
8:2FTS	9.600	9.411	-2.0	98.0
d3-MeFOSAA	5.000	4.872	-2.6	97.4
EtFOSAA	2.500	2.362	-5.5	94.5
FOSA	2.500	2.424	-3.0	97.0
MeFOSAA	2.500	2.375	-5.0	95.0
PFBA	10.000	9.218	-7.8	92.2
PFBS	2.218	2.167	-2.3	97.7
PFDA	2.500	2.301	-8.0	92.0
PFDoDA	2.500	2.240	-10.4	89.6
PFDS	2.413	2.073	-14.1	85.9
PFHpA	2.500	2.338	-6.5	93.5
PFHpS	2.383	1.974	-17.2	82.8
PFHxA	2.500	2.338	-6.5	93.5
PFHxS	2.285	2.050	-10.3	89.7
PFNA	2.500	2.257	-9.7	90.3
PFNS	2.405	2.123	-11.7	88.3
PFOA	2.500	2.145	-14.2	85.8
PFOS	2.320	2.033	-12.4	87.6

Continuing Calibration Summary

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q179-CC174
 Lab FileID: 6Q11457.D

PFPeA	5.000	4.614	-7.7	92.3
PFPeS	2.353	2.023	-14.0	86.0
PFTeDA	2.500	2.386	-4.6	95.4
PFTTrDA	2.500	2.430	-2.8	97.2
PFUnDA	2.500	2.356	-5.8	94.2
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	9.450	9.013	-4.6	95.4
13C3-HFPO-DA	10.000	10.162	1.6	101.6
9C1-PF3ONS	9.350	8.198	-12.3	87.7
ADONA	9.450	8.441	-10.7	89.3
HFPO-DA	10.000	9.523	-4.8	95.2
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	10.958	-12.2	87.8
5:3FTCA	62.400	59.006	-5.4	94.6
7:3FTCA	62.400	58.940	-5.5	94.5
d3-MeFOSA	2.500	2.336	-6.6	93.4
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	2.500	2.454	-1.8	98.2
EtFOSE	25.000	22.167	-11.3	88.7
MeFOSA	2.500	2.363	-5.5	94.5
MeFOSE	25.000	22.550	-9.8	90.2
PFDoDS	2.425	2.043	-15.8	84.2
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.314	6.3	106.3
d7-MeFOSE	25.000	24.490	-2.0	98.0
d9-EtFOSE	25.000	24.609	-1.6	98.4
d5-EtFOSA	2.500	2.221	-11.1	88.9
NFDHA	5.000	4.683	-6.3	93.7
PFMBA	5.000	4.614	-7.7	92.3
PFMPA	5.000	4.574	-8.5	91.5
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.198	-5.7	94.3

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q179-CC174
 Lab FileID: 6Q11466.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\011123_1633_S6Q179\s6q179.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\011123_1633_S6Q174\6Q10949.d
 2:D:\MassHunter\Data\011123_1633_S6Q174\6Q10950.d
 3:D:\MassHunter\Data\011123_1633_S6Q174\6Q10951.d
 4:D:\MassHunter\Data\011123_1633_S6Q174\6Q10952.d
 5:D:\MassHunter\Data\011123_1633_S6Q174\6Q10953.d
 6:D:\MassHunter\Data\011123_1633_S6Q174\6Q10954.d
 7:D:\MassHunter\Data\011123_1633_S6Q174\6Q10955.d
 8:D:\MassHunter\Data\011123_1633_S6Q174\6Q10956.d

Data File: 6Q11466
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	4.979	-0.4	99.6
13C2-6:2FTS	5.000	5.423	8.5	108.5
13C2-8:2FTS	5.000	5.014	0.3	100.3
13C2-PFDoDA	1.250	1.358	8.6	108.6
13C2-PFTeDA	1.250	1.267	1.4	101.4
13C3-PFBS	2.500	2.329	-6.8	93.2
13C3-PFHxS	2.500	2.296	-8.2	91.8
13C4-PFBA	10.000	9.982	-0.2	99.8
13C4-PFHpA	2.500	2.532	1.3	101.3
13C5-PFHxA	2.500	2.544	1.8	101.8
13C5-PFPeA	5.000	5.040	0.8	100.8
13C6-PFDA	1.250	1.347	7.8	107.8
13C7-PFUnDA	1.250	1.365	9.2	109.2
13C8-FOSA	2.500	2.536	1.4	101.4
13C8-PFOA	2.500	2.652	6.1	106.1
13C8-PFOS	2.500	2.608	4.3	104.3
13C9-PFNA	1.250	1.249	-0.1	99.9
4:2FTS	9.375	9.285	-1.0	99.0
6:2FTS	9.500	7.994	-15.9	84.1
8:2FTS	9.600	8.938	-6.9	93.1
d3-MeFOSAA	5.000	5.476	9.5	109.5
EtFOSAA	2.500	2.117	-15.3	84.7
FOSA	2.500	2.412	-3.5	96.5
MeFOSAA	2.500	2.166	-13.4	86.6
PFBA	10.000	9.146	-8.5	91.5
PFBS	2.218	2.156	-2.8	97.2
PFDA	2.500	2.208	-11.7	88.3
PFDoDA	2.500	2.246	-10.2	89.8
PFDS	2.413	2.098	-13.1	86.9
PFHpA	2.500	2.331	-6.8	93.2
PFHpS	2.383	2.114	-11.3	88.7
PFHxA	2.500	2.228	-10.9	89.1
PFHxS	2.285	2.142	-6.3	93.7
PFNA	2.500	2.241	-10.4	89.6
PFNS	2.405	2.200	-8.5	91.5
PFOA	2.500	2.209	-11.6	88.4
PFOS	2.320	2.118	-8.7	91.3

Continuing Calibration Summary

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q179-CC174
 Lab FileID: 6Q11466.D

PFPeA	5.000	4.538	-9.2	90.8
PFPeS	2.353	2.102	-10.6	89.4
PFTeDA	2.500	2.496	-0.1	99.9
PFTTrDA	2.500	2.350	-6.0	94.0
PFUnDA	2.500	2.266	-9.4	90.6
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	9.450	8.764	-7.3	92.7
13C3-HFPO-DA	10.000	10.435	4.3	104.3
9C1-PF3ONS	9.350	8.849	-5.4	94.6
ADONA	9.450	8.497	-10.1	89.9
HFPO-DA	10.000	8.755	-12.5	87.5
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.172	-10.5	89.5
5:3FTCA	62.400	54.590	-12.5	87.5
7:3FTCA	62.400	58.465	-6.3	93.7
d3-MeFOSA	2.500	2.427	-2.9	97.1
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	2.500	2.238	-10.5	89.5
EtFOSE	25.000	21.648	-13.4	86.6
MeFOSA	2.500	2.365	-5.4	94.6
MeFOSE	25.000	21.960	-12.2	87.8
PFDoDS	2.425	2.242	-7.6	92.4
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.949	-1.0	99.0
d7-MeFOSE	25.000	25.780	3.1	103.1
d9-EtFOSE	25.000	25.828	3.3	103.3
d5-EtFOSA	2.500	2.420	-3.2	96.8
NFDHA	5.000	4.649	-7.0	93.0
PFMBA	5.000	4.522	-9.6	90.4
PFMPA	5.000	4.632	-7.4	92.6
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	3.969	-10.8	89.2

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q179-CC174
 Lab FileID: 6Q11472.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\011123_1633_S6Q179\s6q179.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\011123_1633_S6Q174\6Q10949.d
 2:D:\MassHunter\Data\011123_1633_S6Q174\6Q10950.d
 3:D:\MassHunter\Data\011123_1633_S6Q174\6Q10951.d
 4:D:\MassHunter\Data\011123_1633_S6Q174\6Q10952.d
 5:D:\MassHunter\Data\011123_1633_S6Q174\6Q10953.d
 6:D:\MassHunter\Data\011123_1633_S6Q174\6Q10954.d
 7:D:\MassHunter\Data\011123_1633_S6Q174\6Q10955.d
 8:D:\MassHunter\Data\011123_1633_S6Q174\6Q10956.d

Data File: 6Q11472
 Type : QC
 Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.312	6.2	106.2
13C2-6:2FTS	5.000	5.479	9.6	109.6
13C2-8:2FTS	5.000	5.314	6.3	106.3
13C2-PFDoDA	1.250	1.286	2.9	102.9
13C2-PFTeDA	1.250	1.213	-3.0	97.0
13C3-PFBS	2.500	2.616	4.7	104.7
13C3-PFHxS	2.500	2.454	-1.8	98.2
13C4-PFBA	10.000	9.905	-1.0	99.0
13C4-PFHpA	2.500	2.495	-0.2	99.8
13C5-PFHxA	2.500	2.322	-7.1	92.9
13C5-PFPeA	5.000	4.937	-1.3	98.7
13C6-PFDA	1.250	1.420	13.6	113.6
13C7-PFUnDA	1.250	1.259	0.7	100.7
13C8-FOSA	2.500	2.499	0.0	100.0
13C8-PFOA	2.500	2.546	1.8	101.8
13C8-PFOS	2.500	2.747	9.9	109.9
13C9-PFNA	1.250	1.262	1.0	101.0
4:2FTS	0.750	0.711	-5.2	94.8
6:2FTS	0.760	0.665	-12.5	87.5
8:2FTS	0.768	0.737	-4.1	95.9
d3-MeFOSAA	5.000	4.902	-2.0	98.0
EtFOSAA	0.200	0.219	9.7	109.7
FOSA	0.200	0.213	6.3	106.3
MeFOSAA	0.200	0.213	6.6	106.6
PFBA	0.800	0.734	-8.2	91.8
PFBS	0.177	0.166	-6.4	93.6
PFDA	0.200	0.155	-22.5	77.5
PFDoDA	0.200	0.182	-9.2	90.8
PFDS	0.193	0.161	-16.6	83.4
PFHpA	0.200	0.174	-12.9	87.1
PFHpS	0.191	0.163	-14.6	85.4
PFHxA	0.200	0.213	6.7	106.7
PFHxS	0.183	0.184	0.4	100.4
PFNA	0.200	0.197	-1.3	98.7
PFNS	0.192	0.173	-10.0	90.0
PFOA	0.200	0.229	14.6	114.6
PFOS	0.186	0.174	-6.6	93.4

Continuing Calibration Summary

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q179-CC174
 Lab FileID: 6Q11472.D

PFPeA	0.400	0.345	-13.8	86.2
PFPeS	0.188	0.169	-10.2	89.8
PFTeDA	0.200	0.204	1.8	101.8
PFTTrDA	0.200	0.196	-2.0	98.0
PFUnDA	0.200	0.180	-10.0	90.0
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	0.756	0.663	-12.3	87.7
13C3-HFPO-DA	10.000	10.245	2.5	102.5
9C1-PF3ONS	0.748	0.686	-8.3	91.7
ADONA	0.756	0.622	-17.7	82.3
HFPO-DA	0.800	0.664	-17.1	82.9
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	0.998	0.902	-9.7	90.3
5:3FTCA	4.992	4.649	-6.9	93.1
7:3FTCA	4.992	4.784	-4.2	95.8
d3-MeFOSA	2.500	2.291	-8.4	91.6
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	0.200	0.193	-3.7	96.3
EtFOSE	2.000	1.943	-2.9	97.1
MeFOSA	0.200	0.204	2.1	102.1
MeFOSE	2.000	1.810	-9.5	90.5
PFDoDS	0.194	0.206	6.0	106.0
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.973	-0.5	99.5
d7-MeFOSE	25.000	24.601	-1.6	98.4
d9-EtFOSE	25.000	24.756	-1.0	99.0
d5-EtFOSA	2.500	2.350	-6.0	94.0
NFDHA	0.400	0.385	-3.6	96.4
PFMBA	0.400	0.380	-4.9	95.1
PFMPA	0.400	0.364	-9.0	91.0
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	0.356	0.325	-8.7	91.3

CC Criteria: +/- 30%

Run Sequence Report

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q174	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
S6Q174-RT	6Q10946.D	01/11/23 11:03	n/a	Retention Time Marker
S6Q174-RT	6Q10947.D	01/11/23 11:22	n/a	Retention Time Marker
S6Q174-IC174	6Q10948.D	01/11/23 11:36	n/a	Mass Calibration Verification
S6Q174-IC174	6Q10949.D	01/11/23 11:50	n/a	Initial cal 1
S6Q174-IC174	6Q10950.D	01/11/23 12:04	n/a	Initial cal 2
S6Q174-IC174	6Q10951.D	01/11/23 12:18	n/a	Initial cal 3
S6Q174-ICC174	6Q10952.D	01/11/23 12:32	n/a	Initial cal 4
S6Q174-IC174	6Q10953.D	01/11/23 12:46	n/a	Initial cal 5
S6Q174-IC174	6Q10954.D	01/11/23 13:00	n/a	Initial cal 6
S6Q174-IC174	6Q10955.D	01/11/23 13:14	n/a	Initial cal 7
S6Q174-IC174	6Q10956.D	01/11/23 13:28	n/a	Initial cal 8
S6Q174-IBLK	6Q10957.D	01/11/23 13:42	n/a	Instrument Blank
S6Q174-IBLK	6Q10957.D	01/11/23 13:42	n/a	Instrument Blank
S6Q174-ICV174	6Q10958.D	01/11/23 13:56	n/a	Initial cal verification 4
S6Q174-ICV174	6Q10959.D	01/11/23 14:10	n/a	Initial cal verification 4
S6Q174-CC174	6Q10960.D	01/11/23 14:24	n/a	Continuing cal 4
S6Q174-CC174	6Q10961.D	01/11/23 14:38	n/a	Continuing cal 1.0LL
OP94887-BS	6Q10962.D	01/11/23 14:52	OP94887	Blank Spike
OP94887-LLBS	6Q10963.D	01/11/23 15:06	OP94887	Blank Spike
OP94887-MB	6Q10964.D	01/11/23 15:20	OP94887	Method Blank
ZZZZZZ	6Q10965.D	01/11/23 15:34	OP94887	(unrelated sample)
ZZZZZZ	6Q10966.D	01/11/23 15:48	OP94887	(unrelated sample)
ZZZZZZ	6Q10968.D	01/11/23 16:16	OP94675	(unrelated sample)
ZZZZZZ	6Q10969.D	01/11/23 16:30	OP94675	(unrelated sample)
ZZZZZZ	6Q10970.D	01/11/23 16:44	OP94667	(unrelated sample)
S6Q174-CC174	6Q10971.D	01/11/23 17:06	n/a	Continuing cal 4
S6Q174-ICCB	6Q10972.D	01/11/23 17:20	n/a	Continuing Calibration Blank
ZZZZZZ	6Q10973.D	01/11/23 17:34	OP94599	(unrelated sample)
JD56436-2	6Q10974.D	01/11/23 17:48	OP94599	(used for QC only; not part of job FC1801)
ZZZZZZ	6Q10975.D	01/11/23 18:02	OP94599	(unrelated sample)
ZZZZZZ	6Q10976.D	01/11/23 18:16	OP94599	(unrelated sample)
ZZZZZZ	6Q10977.D	01/11/23 18:30	OP94599	(unrelated sample)
ZZZZZZ	6Q10978.D	01/11/23 18:44	OP94599	(unrelated sample)
ZZZZZZ	6Q10979.D	01/11/23 18:58	OP94599	(unrelated sample)
ZZZZZZ	6Q10980.D	01/11/23 19:12	OP94599	(unrelated sample)
ZZZZZZ	6Q10981.D	01/11/23 19:26	OP94599	(unrelated sample)
ZZZZZZ	6Q10982.D	01/11/23 19:40	OP94599	(unrelated sample)
S6Q174-CC174	6Q10983.D	01/11/23 19:54	n/a	Continuing cal 4
S6Q174-ICCB	6Q10984.D	01/11/23 20:08	n/a	Continuing Calibration Blank
ZZZZZZ	6Q10985.D	01/11/23 20:22	OP94599	(unrelated sample)
ZZZZZZ	6Q10986.D	01/11/23 20:36	OP94599	(unrelated sample)
ZZZZZZ	6Q10987.D	01/11/23 20:50	OP94599	(unrelated sample)
ZZZZZZ	6Q10988.D	01/11/23 21:04	OP94599	(unrelated sample)
ZZZZZZ	6Q10989.D	01/11/23 21:18	OP94599	(unrelated sample)
JD56436-3	6Q10990.D	01/11/23 21:32	OP94600	(used for QC only; not part of job FC1801)
ZZZZZZ	6Q10991.D	01/11/23 21:46	OP94600	(unrelated sample)

Run Sequence Report

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q174	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	6Q10992.D	01/11/23 22:00	OP94600	(unrelated sample)
ZZZZZZ	6Q10993.D	01/11/23 22:14	OP94600	(unrelated sample)
ZZZZZZ	6Q10994.D	01/11/23 22:28	OP94600	(unrelated sample)
S6Q174-CC174	6Q10995.D	01/11/23 22:42	n/a	Continuing cal 4
S6Q174-ICCB	6Q10996.D	01/11/23 22:56	n/a	Continuing Calibration Blank
ZZZZZZ	6Q10997.D	01/11/23 23:10	OP94600	(unrelated sample)
ZZZZZZ	6Q10998.D	01/11/23 23:24	OP94600	(unrelated sample)
ZZZZZZ	6Q10999.D	01/11/23 23:38	OP94600	(unrelated sample)
ZZZZZZ	6Q11000.D	01/11/23 23:52	OP94600	(unrelated sample)
ZZZZZZ	6Q11001.D	01/12/23 00:06	OP94600	(unrelated sample)
ZZZZZZ	6Q11002.D	01/12/23 00:20	OP94668	(unrelated sample)
S6Q174-CC174	6Q11003.D	01/12/23 00:33	n/a	Continuing cal 4
S6Q174-ICCB	6Q11004.D	01/12/23 00:48	n/a	Continuing Calibration Blank
OP94694-BS	6Q11005.D	01/12/23 01:01	OP94694	Blank Spike
OP94694-LLBS	6Q11006.D	01/12/23 01:15	OP94694	Blank Spike
OP94694-MB	6Q11007.D	01/12/23 01:29	OP94694	Method Blank
ZZZZZZ	6Q11008.D	01/12/23 01:43	OP94694	(unrelated sample)
ZZZZZZ	6Q11009.D	01/12/23 01:57	OP94694	(unrelated sample)
FC1246-3	6Q11010.D	01/12/23 02:11	OP94694	(used for QC only; not part of job FC1801)
OP94694-MS	6Q11011.D	01/12/23 02:25	OP94694	Matrix Spike
OP94694-MSD	6Q11012.D	01/12/23 02:39	OP94694	Matrix Spike Duplicate
ZZZZZZ	6Q11013.D	01/12/23 02:53	OP94694	(unrelated sample)
ZZZZZZ	6Q11014.D	01/12/23 03:07	OP94694	(unrelated sample)
S6Q174-CC174	6Q11015.D	01/12/23 03:21	n/a	Continuing cal 4
S6Q174-ICCB	6Q11016.D	01/12/23 03:35	n/a	Continuing Calibration Blank
ZZZZZZ	6Q11017.D	01/12/23 03:49	OP94694	(unrelated sample)
ZZZZZZ	6Q11018.D	01/12/23 04:03	OP94694	(unrelated sample)
ZZZZZZ	6Q11019.D	01/12/23 04:17	OP94694	(unrelated sample)
ZZZZZZ	6Q11020.D	01/12/23 04:31	OP94694	(unrelated sample)
ZZZZZZ	6Q11021.D	01/12/23 04:45	OP94694	(unrelated sample)
ZZZZZZ	6Q11022.D	01/12/23 04:59	OP94694	(unrelated sample)
ZZZZZZ	6Q11023.D	01/12/23 05:13	OP94694	(unrelated sample)
ZZZZZZ	6Q11024.D	01/12/23 05:27	OP94694	(unrelated sample)
ZZZZZZ	6Q11025.D	01/12/23 05:41	OP94694	(unrelated sample)
S6Q174-CC174	6Q11027.D	01/12/23 06:09	n/a	Continuing cal 4
S6Q174-ICCB	6Q11028.D	01/12/23 06:23	n/a	Continuing Calibration Blank
ZZZZZZ	6Q11029.D	01/12/23 06:37	OP94694	(unrelated sample)
ZZZZZZ	6Q11030.D	01/12/23 06:51	OP94694	(unrelated sample)
ZZZZZZ	6Q11033.D	01/12/23 07:33	OP94694	(unrelated sample)
ZZZZZZ	6Q11034.D	01/12/23 07:47	OP94694	(unrelated sample)
ZZZZZZ	6Q11035.D	01/12/23 08:01	OP94694	(unrelated sample)
ZZZZZZ	6Q11036.D	01/12/23 08:15	OP94694	(unrelated sample)
ZZZZZZ	6Q11037.D	01/12/23 08:29	OP94694	(unrelated sample)
ZZZZZZ	6Q11038.D	01/12/23 08:43	OP94694	(unrelated sample)
S6Q174-ECC174	6Q11039.D	01/12/23 08:57	n/a	Ending cal 4
S6Q174-ICCB	6Q11040.D	01/12/23 09:11	n/a	Continuing Calibration Blank

6.9.1
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Run Sequence Report

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q179	Method: EPA DRAFT 1633	Instrument ID: GCMS6Q		
Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S6Q179-RT	6Q11382.D	01/16/23 13:12	n/a	Retention Time Marker
S6Q179-RT	6Q11383.D	01/16/23 13:26	n/a	Retention Time Marker
S6Q179-IBLK	6Q11385.D	01/16/23 13:54	n/a	Instrument Blank
S6Q179-IBLK	6Q11385.D	01/16/23 13:54	n/a	Instrument Blank
S6Q179-CC174	6Q11386.D	01/16/23 14:08	n/a	Continuing cal 4
S6Q179-CC174	6Q11387.D	01/16/23 14:22	n/a	Continuing cal 1.0LL
ZZZZZZ	6Q11388.D	01/16/23 14:36	OP94750	(unrelated sample)
ZZZZZZ	6Q11390.D	01/16/23 15:04	OP94921	(unrelated sample)
ZZZZZZ	6Q11391.D	01/16/23 15:18	OP94921	(unrelated sample)
ZZZZZZ	6Q11392.D	01/16/23 15:40	OP94921	(unrelated sample)
ZZZZZZ	6Q11393.D	01/16/23 15:54	OP94921	(unrelated sample)
ZZZZZZ	6Q11395.D	01/16/23 16:22	OP94921	(unrelated sample)
ZZZZZZ	6Q11396.D	01/16/23 16:36	OP94921	(unrelated sample)
ZZZZZZ	6Q11397.D	01/16/23 16:50	OP94921	(unrelated sample)
S6Q179-CC174	6Q11398.D	01/16/23 17:04	n/a	Continuing cal 4
S6Q179-ICCB	6Q11399.D	01/16/23 17:18	n/a	Continuing Calibration Blank
S6Q179-ICCB	6Q11399.D	01/16/23 17:18	n/a	Continuing Calibration Blank
ZZZZZZ	6Q11403.D	01/16/23 18:14	OP94638	(unrelated sample)
ZZZZZZ	6Q11404.D	01/16/23 18:28	OP94638	(unrelated sample)
ZZZZZZ	6Q11406.D	01/16/23 18:56	OP94638	(unrelated sample)
ZZZZZZ	6Q11407.D	01/16/23 19:10	OP94638	(unrelated sample)
ZZZZZZ	6Q11409.D	01/16/23 19:38	OP94638	(unrelated sample)
S6Q179-CC174	6Q11410.D	01/16/23 19:52	n/a	Continuing cal 4
S6Q179-ICCB	6Q11411.D	01/16/23 20:06	n/a	Continuing Calibration Blank
S6Q179-ICCB	6Q11411.D	01/16/23 20:06	n/a	Continuing Calibration Blank
ZZZZZZ	6Q11413.D	01/16/23 20:34	OP94638	(unrelated sample)
ZZZZZZ	6Q11415.D	01/16/23 21:02	OP94638	(unrelated sample)
ZZZZZZ	6Q11417.D	01/16/23 21:30	OP94638	(unrelated sample)
ZZZZZZ	6Q11418.D	01/16/23 21:44	OP94638	(unrelated sample)
ZZZZZZ	6Q11419.D	01/16/23 21:58	OP94749	(unrelated sample)
ZZZZZZ	6Q11420.D	01/16/23 22:12	OP94749	(unrelated sample)
S6Q179-CC174	6Q11421.D	01/16/23 22:26	n/a	Continuing cal 4
S6Q179-ICCB	6Q11422.D	01/16/23 22:40	n/a	Continuing Calibration Blank
S6Q179-CC174	6Q11423.D	01/16/23 22:54	n/a	Continuing cal 1.0LL
OP94823-BS	6Q11424.D	01/16/23 23:08	OP94823	Blank Spike
OP94823-LLBS	6Q11425.D	01/16/23 23:22	OP94823	Blank Spike
OP94823-MB	6Q11426.D	01/16/23 23:36	OP94823	Method Blank
ZZZZZZ	6Q11427.D	01/16/23 23:50	OP94823	(unrelated sample)
ZZZZZZ	6Q11428.D	01/17/23 00:04	OP94823	(unrelated sample)
ZZZZZZ	6Q11429.D	01/17/23 00:18	OP94823	(unrelated sample)
ZZZZZZ	6Q11430.D	01/17/23 00:32	OP94823	(unrelated sample)
ZZZZZZ	6Q11431.D	01/17/23 00:46	OP94823	(unrelated sample)
ZZZZZZ	6Q11432.D	01/17/23 01:00	OP94823	(unrelated sample)
ZZZZZZ	6Q11433.D	01/17/23 01:13	OP94823	(unrelated sample)
S6Q179-CC174	6Q11434.D	01/17/23 01:27	n/a	Continuing cal 4
S6Q179-ICCB	6Q11435.D	01/17/23 01:41	n/a	Continuing Calibration Blank

Run Sequence Report

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q179	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
S6Q179-ICCB	6Q11435.D	01/17/23 01:41	n/a	Continuing Calibration Blank
ZZZZZZ	6Q11436.D	01/17/23 01:55	OP94823	(unrelated sample)
ZZZZZZ	6Q11437.D	01/17/23 02:09	OP94823	(unrelated sample)
ZZZZZZ	6Q11438.D	01/17/23 02:23	OP94779	(unrelated sample)
ZZZZZZ	6Q11439.D	01/17/23 02:37	OP94779	(unrelated sample)
ZZZZZZ	6Q11440.D	01/17/23 02:51	OP94779	(unrelated sample)
OP94977-BS	6Q11441.D	01/17/23 03:05	OP94977	Blank Spike
OP94977-LLBS	6Q11442.D	01/17/23 03:19	OP94977	Blank Spike
OP94977-MB	6Q11443.D	01/17/23 03:33	OP94977	Method Blank
ZZZZZZ	6Q11444.D	01/17/23 03:47	OP94977	(unrelated sample)
S6Q179-CC174	6Q11445.D	01/17/23 04:01	n/a	Continuing cal 4
S6Q179-ICCB	6Q11446.D	01/17/23 04:15	n/a	Continuing Calibration Blank
FC1706-2	6Q11447.D	01/17/23 04:29	OP94977	(used for QC only; not part of job FC1801)
OP94977-MS	6Q11448.D	01/17/23 04:43	OP94977	Matrix Spike
OP94977-MSD	6Q11449.D	01/17/23 04:57	OP94977	Matrix Spike Duplicate
ZZZZZZ	6Q11450.D	01/17/23 05:11	OP94977	(unrelated sample)
ZZZZZZ	6Q11451.D	01/17/23 05:25	OP94977	(unrelated sample)
ZZZZZZ	6Q11452.D	01/17/23 05:39	OP94977	(unrelated sample)
ZZZZZZ	6Q11453.D	01/17/23 05:53	OP94977	(unrelated sample)
ZZZZZZ	6Q11454.D	01/17/23 06:07	OP94977	(unrelated sample)
ZZZZZZ	6Q11455.D	01/17/23 06:21	OP94977	(unrelated sample)
ZZZZZZ	6Q11456.D	01/17/23 06:35	OP94977	(unrelated sample)
S6Q179-CC174	6Q11457.D	01/17/23 06:49	n/a	Continuing cal 4
S6Q179-ICCB	6Q11458.D	01/17/23 07:03	n/a	Continuing Calibration Blank
ZZZZZZ	6Q11459.D	01/17/23 07:17	OP94977	(unrelated sample)
ZZZZZZ	6Q11460.D	01/17/23 07:31	OP94977	(unrelated sample)
ZZZZZZ	6Q11461.D	01/17/23 07:45	OP94977	(unrelated sample)
ZZZZZZ	6Q11462.D	01/17/23 07:59	OP94977	(unrelated sample)
ZZZZZZ	6Q11463.D	01/17/23 08:13	OP94977	(unrelated sample)
FC1801-1	6Q11464.D	01/17/23 08:27	OP94977	AF-RHMW03-WGN01LF-2301W2
ZZZZZZ	6Q11465.D	01/17/23 08:41	OP94977	(unrelated sample)
S6Q179-CC174	6Q11466.D	01/17/23 08:55	n/a	Continuing cal 4
S6Q179-ICCB	6Q11467.D	01/17/23 09:09	n/a	Continuing Calibration Blank
S6Q179-RT	6Q11468.D	01/17/23 09:23	n/a	Retention Time Marker
S6Q179-RT	6Q11469.D	01/17/23 09:37	n/a	Retention Time Marker
S6Q179-IBLK	6Q11471.D	01/17/23 10:05	n/a	Instrument Blank
S6Q179-IBLK	6Q11471.D	01/17/23 10:05	n/a	Instrument Blank
S6Q179-CC174	6Q11472.D	01/17/23 10:19	n/a	Continuing cal 1.0LL
OP94795-BS	6Q11473.D	01/17/23 10:33	OP94795	Blank Spike
OP94795-LLBS	6Q11474.D	01/17/23 10:47	OP94795	Blank Spike
OP94795-MB	6Q11475.D	01/17/23 11:01	OP94795	Method Blank
ZZZZZZ	6Q11476.D	01/17/23 11:15	OP94795	(unrelated sample)
ZZZZZZ	6Q11477.D	01/17/23 11:29	OP94795	(unrelated sample)
ZZZZZZ	6Q11478.D	01/17/23 11:43	OP94795	(unrelated sample)
ZZZZZZ	6Q11479.D	01/17/23 11:57	OP94795	(unrelated sample)
ZZZZZZ	6Q11480.D	01/17/23 12:11	OP94795	(unrelated sample)

Run Sequence Report

Job Number: FC1801
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q179	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
FC1495-2	6Q11481.D	01/17/23 12:25	OP94795	(used for QC only; not part of job FC1801)
OP94795-MS	6Q11482.D	01/17/23 12:39	OP94795	Matrix Spike
S6Q179-CC174	6Q11483.D	01/17/23 12:53	n/a	Continuing cal 4
S6Q179-ICCB	6Q11484.D	01/17/23 13:07	n/a	Continuing Calibration Blank
ZZZZZZ	6Q11485.D	01/17/23 13:21	OP94795	(unrelated sample)
OP94795-DUP	6Q11486.D	01/17/23 13:35	OP94795	Duplicate
FC1495-4	6Q11487.D	01/17/23 13:49	OP94795	(used for QC only; not part of job FC1801)
ZZZZZZ	6Q11488.D	01/17/23 14:10	OP94795	(unrelated sample)
ZZZZZZ	6Q11489.D	01/17/23 14:24	OP94795	(unrelated sample)
ZZZZZZ	6Q11490.D	01/17/23 14:38	OP94795	(unrelated sample)
ZZZZZZ	6Q11491.D	01/17/23 14:52	OP94795	(unrelated sample)
ZZZZZZ	6Q11492.D	01/17/23 15:06	OP94795	(unrelated sample)
ZZZZZZ	6Q11493.D	01/17/23 15:20	OP94795	(unrelated sample)
ZZZZZZ	6Q11494.D	01/17/23 15:34	OP94795	(unrelated sample)
S6Q179-CC174	6Q11495.D	01/17/23 15:48	n/a	Continuing cal 4
S6Q179-ICCB	6Q11496.D	01/17/23 16:02	n/a	Continuing Calibration Blank
S6Q179-ICCB	6Q11496.D	01/17/23 16:02	n/a	Continuing Calibration Blank
ZZZZZZ	6Q11497.D	01/17/23 16:16	OP94795	(unrelated sample)
ZZZZZZ	6Q11498.D	01/17/23 17:40	OP94795	(unrelated sample)
ZZZZZZ	6Q11499.D	01/17/23 17:54	OP94795	(unrelated sample)
ZZZZZZ	6Q11500.D	01/17/23 18:08	OP94795	(unrelated sample)
ZZZZZZ	6Q11501.D	01/17/23 18:22	OP94921	(unrelated sample)
FC1317-19	6Q11502.D	01/17/23 18:36	OP94637	(used for QC only; not part of job FC1801)
ZZZZZZ	6Q11503.D	01/17/23 18:50	OP94638	(unrelated sample)
ZZZZZZ	6Q11504.D	01/17/23 19:04	OP94638	(unrelated sample)
ZZZZZZ	6Q11505.D	01/17/23 19:18	OP94694	(unrelated sample)
S6Q179-CC174	6Q11507.D	01/17/23 19:46	n/a	Continuing cal 4
S6Q179-ICCB	6Q11508.D	01/17/23 20:00	n/a	Continuing Calibration Blank
S6Q179-ICCB	6Q11508.D	01/17/23 20:00	n/a	Continuing Calibration Blank
ZZZZZZ	6Q11509.D	01/17/23 20:14	OP94823	(unrelated sample)
ZZZZZZ	6Q11510.D	01/17/23 20:28	OP94823	(unrelated sample)
S6Q179-ECC174	6Q11511.D	01/17/23 20:42	n/a	Ending cal 4
S6Q179-ICCB	6Q11512.D	01/17/23 20:56	n/a	Continuing Calibration Blank
ZZZZZZ	6Q11650.D	01/19/23 05:18	OP94795	(unrelated sample)
ZZZZZZ	6Q11651.D	01/19/23 05:32	OP94795	(unrelated sample)

6.9.2
6

MS Semi-volatiles

Raw Data

Manual Integrations
APPROVED
 (compounds with "m" flag)
 Mike Eger
 01/17/23 18:24

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q11464.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/17/2023 8:27:41 AM
 Sample Name : FC1801-1
 Vial : P2-B1
 DA Method File : 1633_011123_S6Q174.quantmethod.xml
 Batch Name : s6q179.batch.bin
 Sample Information : OP94977,S6Q179,550,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.013	216.8 -> 171.9	84280	10.00 µg/L	0.012
M5-PFPeA	4.371	268.3 -> 223.0	40301	5.00 µg/L	-0.012
M5-PFHxA	5.564	318.0 -> 273.0	37066	2.50 µg/L	0.000
M4-PFHpA	6.503	367.1 -> 322.0	37727	2.50 µg/L	-0.012
M8-PFOA	7.160	421.1 -> 376.0	64369	2.50 µg/L	0.000
M9-PFNA	7.702	472.1 -> 427.0	30085	1.25 µg/L	-0.013
M6-PFDA	8.195	519.1 -> 474.1	20733	1.25 µg/L	-0.012
M7-PFUnDA	8.674	570.0 -> 525.1	23021	1.25 µg/L	0.000
M2-PFDoDA	9.117	615.1 -> 570.0	22140	1.25 µg/L	0.000
M2-PFTeDA	9.856	715.2 -> 670.0	11735	1.25 µg/L	0.000
M8-FOSA	9.568	506.1 -> 77.8	18417	2.50 µg/L	0.000
M3-PFBS	5.519	302.1 -> 79.9	14613	2.50 µg/L	-0.012
M3-PFHxS	7.288	402.1 -> 79.9	9201	2.50 µg/L	-0.012
M8-PFOS	8.371	507.1 -> 79.9	8944	2.50 µg/L	-0.012
M2-4:2FTS	5.228	329.1 -> 80.9	1799	5.00 µg/L	0.000
M2-6:2FTS	6.921	429.1 -> 80.9	2455	5.00 µg/L	-0.012
M2-8:2FTS	7.982	529.1 -> 80.9	2578	5.00 µg/L	0.000
M3-MeFOSAA	8.240	573.2 -> 419.0	23959	5.00 µg/L	0.000
M3-HFPO-DA	5.941	286.9 -> 168.9	15859	10.00 µg/L	0.000
M5-EtFOSAA	8.448	589.2 -> 419.0	22248	5.00 µg/L	0.000
M7-MeFOSE	10.591	623.2 -> 58.9	30293	25.00 µg/L	0.000
M9-EtFOSE	10.849	639.2 -> 58.9	23579	25.00 µg/L	0.000
M5-EtFOSA	10.927	531.1 -> 219.0	7186	2.50 µg/L	0.000
M3-MeFOSA	10.683	515.0 -> 219.0	6729	2.50 µg/L	0.000
13C4-PFOS	8.384	502.8 -> 79.9	9675	2.50 µg/L	0.000
13C3-PFBA	3.004	216.0 -> 172.0	34146	5.00 µg/L	0.000
18O2-PFHxS	7.299	403.0 -> 83.9	5837	2.50 µg/L	0.000
13C4-PFOA	7.160	417.1 -> 372.0	72297	2.50 µg/L	-0.012
13C2-PFDA	8.196	515.1 -> 470.1	24252	1.25 µg/L	-0.012
13C5-PFNA	7.703	468.0 -> 423.0	31032	1.25 µg/L	0.000
13C2-PFHxA	5.565	315.1 -> 270.0	32740	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.228	329.1 -> 80.9	1799	5.91 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 118.2%		
13C2-6:2FTS	6.921	429.1 -> 80.9	2455	5.89 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 117.8%		
13C2-8:2FTS	7.982	529.1 -> 80.9	2578	5.66 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.3%		
13C2-PFDoDA	9.117	615.1 -> 570.0	22140	1.15 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 92.1%		
13C2-PFTeDA	9.856	715.2 -> 670.0	11735	1.04 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 83.1%		
13C3-PFBS	5.519	302.1 -> 79.9	14613	2.99 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 119.4%		
13C3-PFHxS	7.288	402.1 -> 79.9	9201	2.90 µg/L	-0.012

7.1.1
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 = 116.1%	
13C4-PFBA	3.013	216.8 -> 171.9	84280	10.81 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.1%	
13C4-PFHpA	6.503	367.1 -> 322.0	37727	2.84 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 113.7%	
13C5-PFHxA	5.564	318.0 -> 273.0	37066	2.82 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 112.8%	
13C5-PFPeA	4.371	268.3 -> 223.0	40301	5.52 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 110.4%	
13C6-PFDA	8.195	519.1 -> 474.1	20733	1.50 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 120.1%	
13C7-PFUnDA	8.674	570.0 -> 525.1	23021	1.37 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 109.3%	
13C8-FOSA	9.568	506.1 -> 77.8	18417	2.82 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 112.7%	
13C8-PFOA	7.160	421.1 -> 376.0	64369	2.66 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.3%	
13C8-PFOS	8.371	507.1 -> 79.9	8944	2.89 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 115.7%	
13C9-PFNA	7.702	472.1 -> 427.0	30085	1.36 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 109.1%	
d3-MeFOSAA	8.240	573.2 -> 419.0	23959	5.14 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.9%	
13C3-HFPO-DA	5.941	286.9 -> 168.9	15859	11.74 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 117.4%	
d3-MeFOSA	10.683	515.0 -> 219.0	6729	2.25 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 90.0%	
d5-EtFOSAA	8.448	589.2 -> 419.0	22248	5.44 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.9%	
d7-MeFOSE	10.591	623.2 -> 58.9	30293	24.60 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.4%	
d9-EtFOSE	10.849	639.2 -> 58.9	23579	25.04 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
d5-EtFOSA	10.927	531.1 -> 219.0	7186	2.14 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 85.8%	

Target Compounds	RT	Transition	Response	Conc. Units	QValue
4:2FTS	-	327.1 -> 307.0	-	N.D.	
		327.1 -> 80.9			
6:2FTS	6.922	427.1 -> 407.0	1112	0.29 µg/L	96
		427.1 -> 80.9	255		
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.	



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.504	599.0 -> 98.8				
		363.1 -> 319.0	2065	0.09	µg/L	97
PFHpS	-	363.1 -> 169.0	291			
		449.0 -> 79.9	-	N.D.		
PFHxA	5.554	449.0 -> 98.9				
		313.0 -> 269.0	2191	0.15	µg/L	m 99
PFHxS	-	313.0 -> 118.9	69			
		398.7 -> 79.9	-	N.D.		
PFNA	-	398.7 -> 98.9				
		463.0 -> 419.0	-	N.D.		
PFNS	-	463.0 -> 219.0				
		548.8 -> 79.9	-	N.D.		
PFOA	-	548.8 -> 98.9				
		413.0 -> 369.0	-	N.D.		
PFOS	-	413.0 -> 169.0				
		498.9 -> 79.9	-	N.D.		
PFPeA	4.374	498.9 -> 98.8				
		263.0 -> 219.0	2053	0.23	µg/L	m 100
PFPeS	6.632	349.1 -> 79.9	0		µg/L	m 1
		349.1 -> 98.9	0			
PFTeDA	-	713.1 -> 669.0	-	N.D.		
		713.1 -> 168.9				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 168.9				
PFUnDA	-	563.1 -> 519.0	-	N.D.		
		563.1 -> 269.1				
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.		
		532.8 -> 353.0				
ADONA	-	376.9 -> 250.9	-	N.D.		
		376.9 -> 84.8				
HFPO-DA	-	284.9 -> 168.9	-	N.D.		
		284.9 -> 184.9				
3:3FTCA	-	241.0 -> 177.0	-	N.D.		
		241.0 -> 117.0				
5:3FTCA	-	341.0 -> 237.1	-	N.D.		
		341.0 -> 217.0				
7:3FTCA	-	441.0 -> 316.9	-	N.D.		
		441.0 -> 336.9				
EtFOSA	-	526.0 -> 219.0	-	N.D.		
		526.0 -> 169.0				
EtFOSE	-	630.0 -> 58.9	-	N.D.		
		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				
PFEESA	-					

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

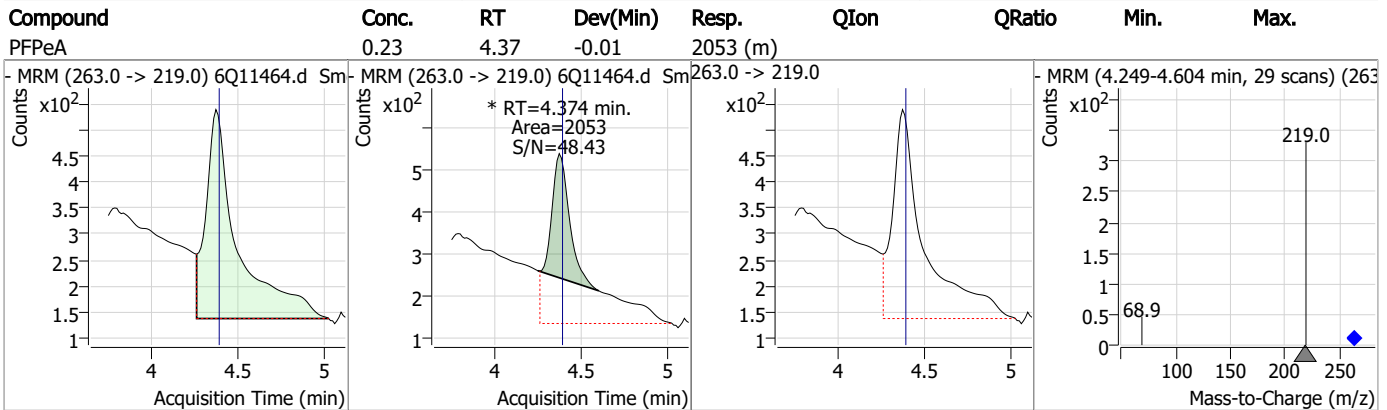
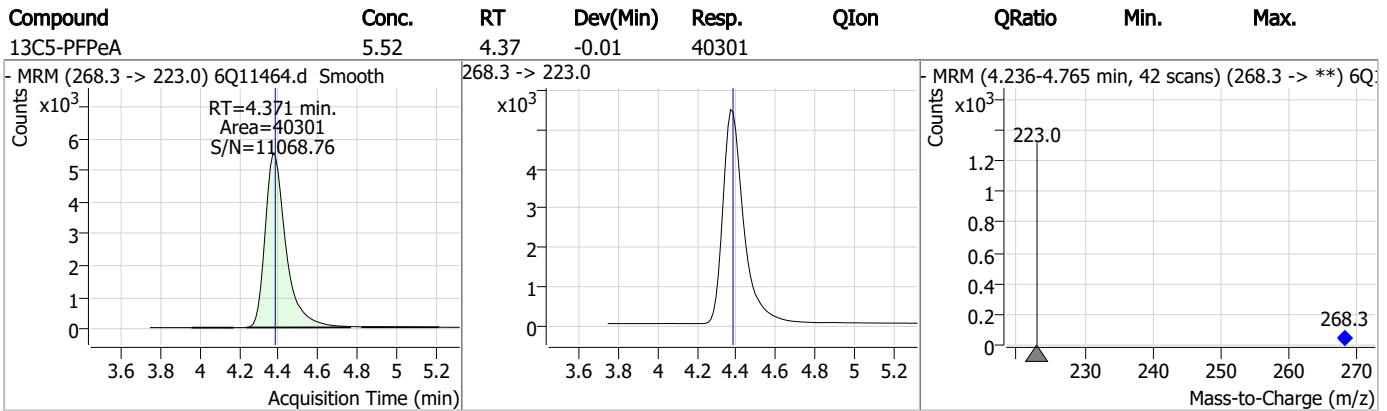
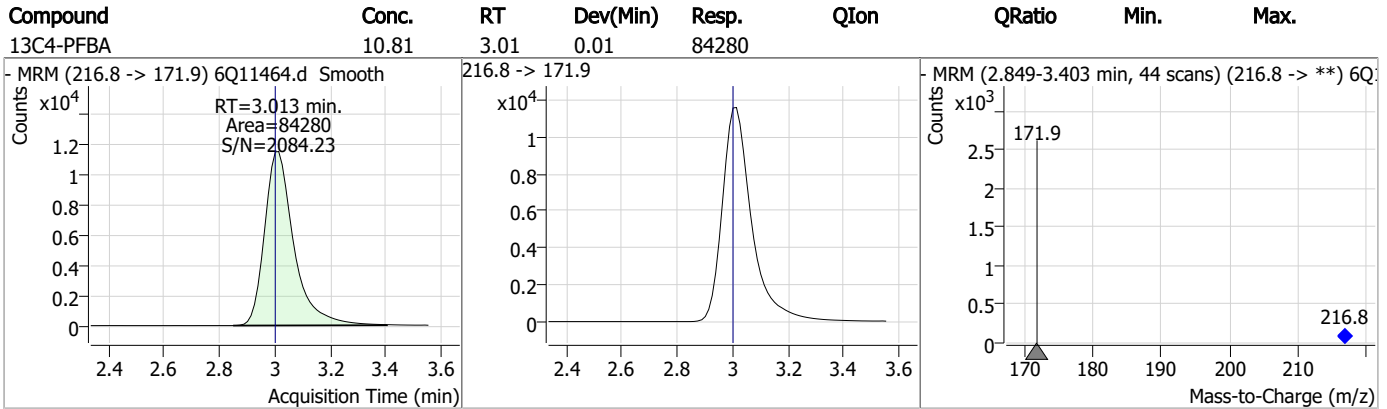
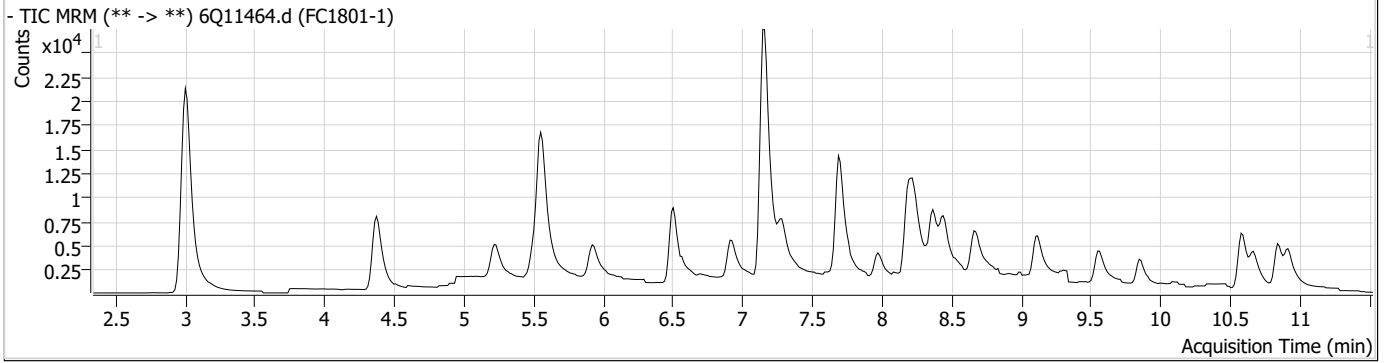
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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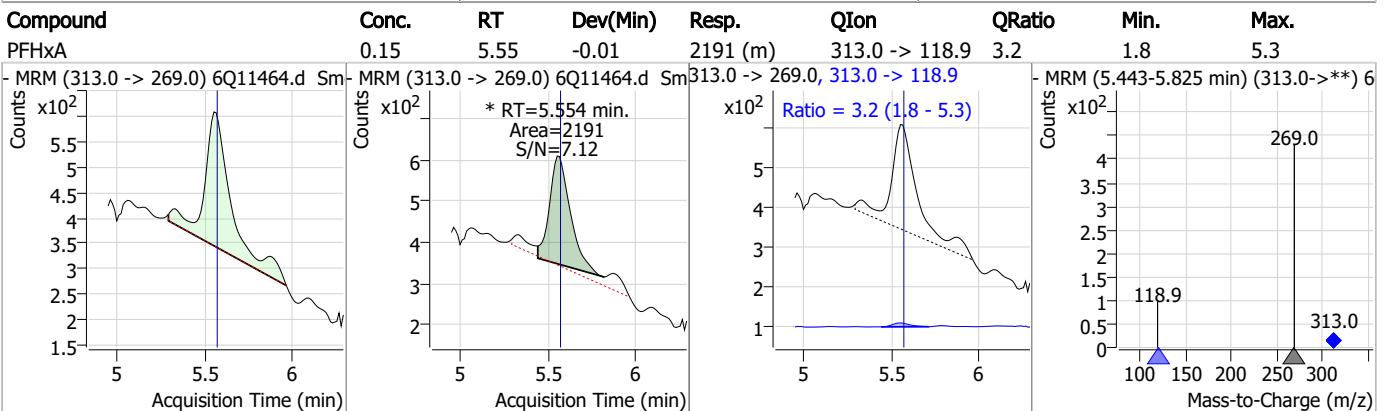
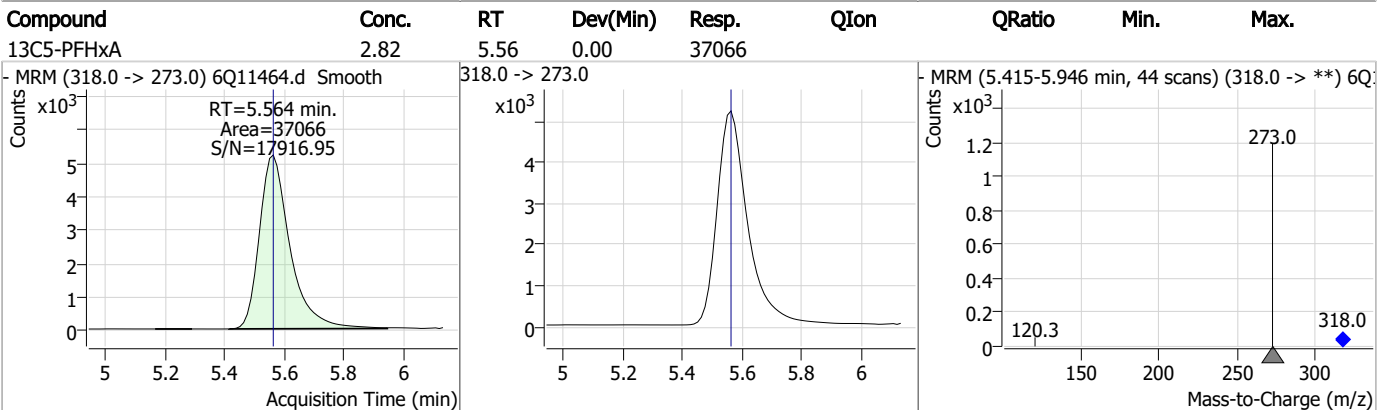
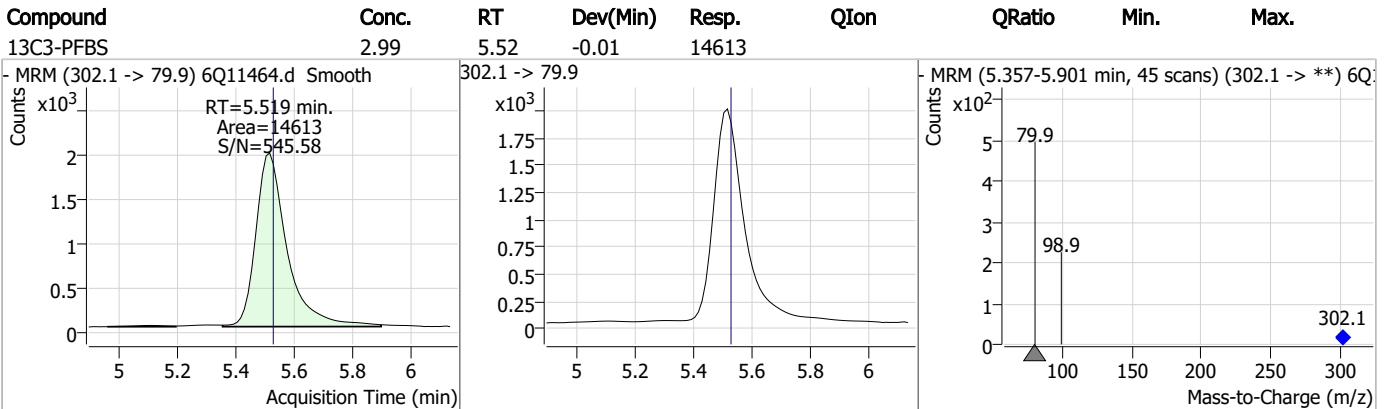
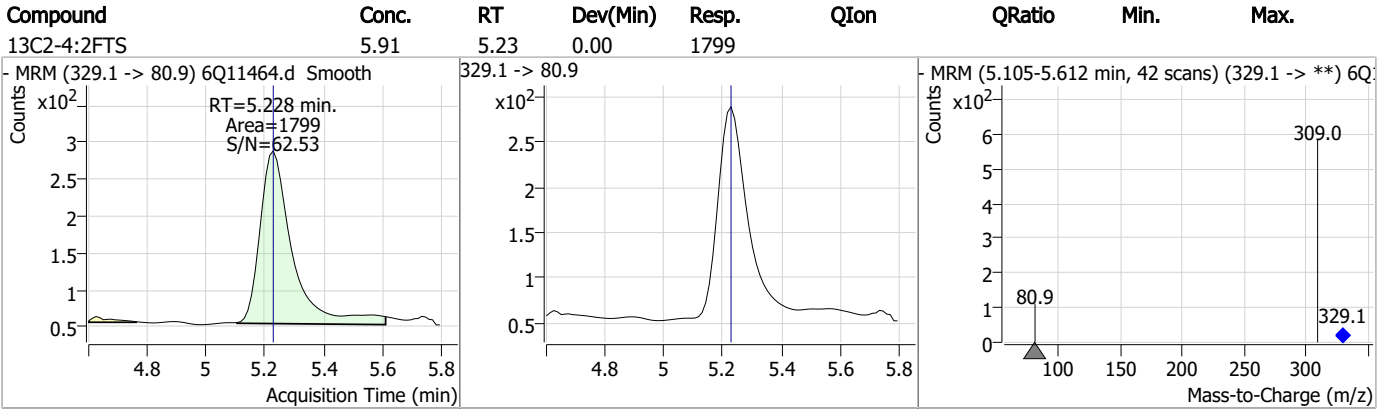
7.1.1
7



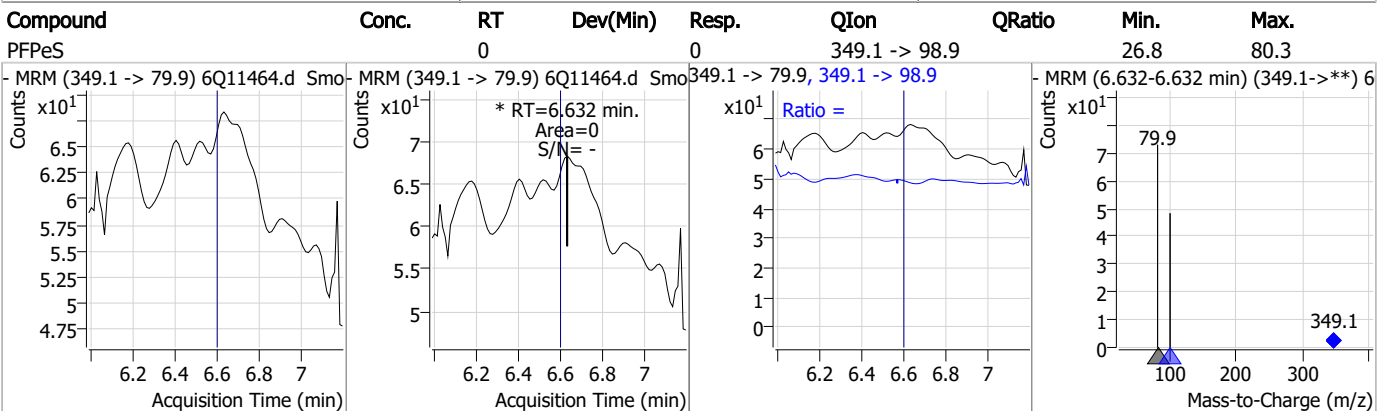
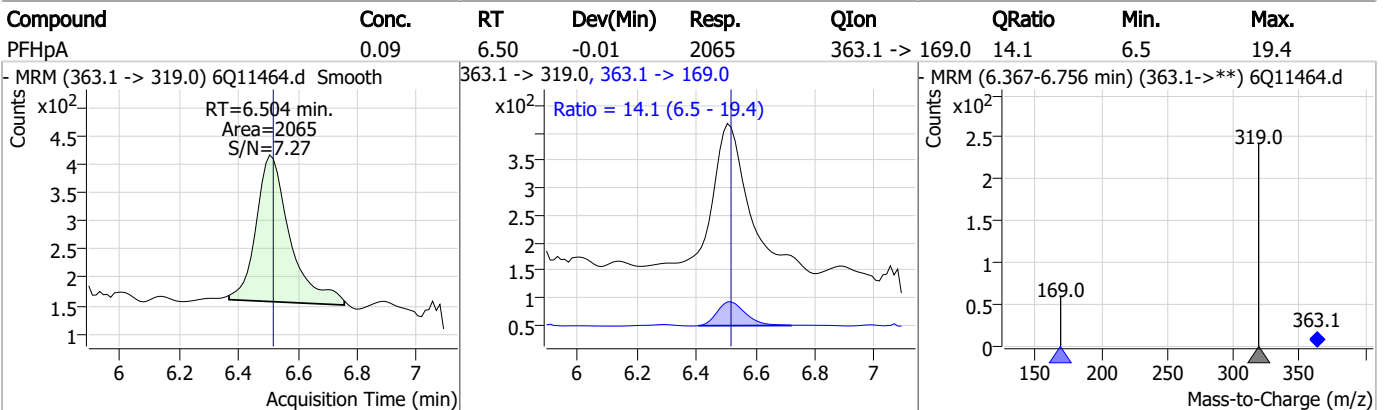
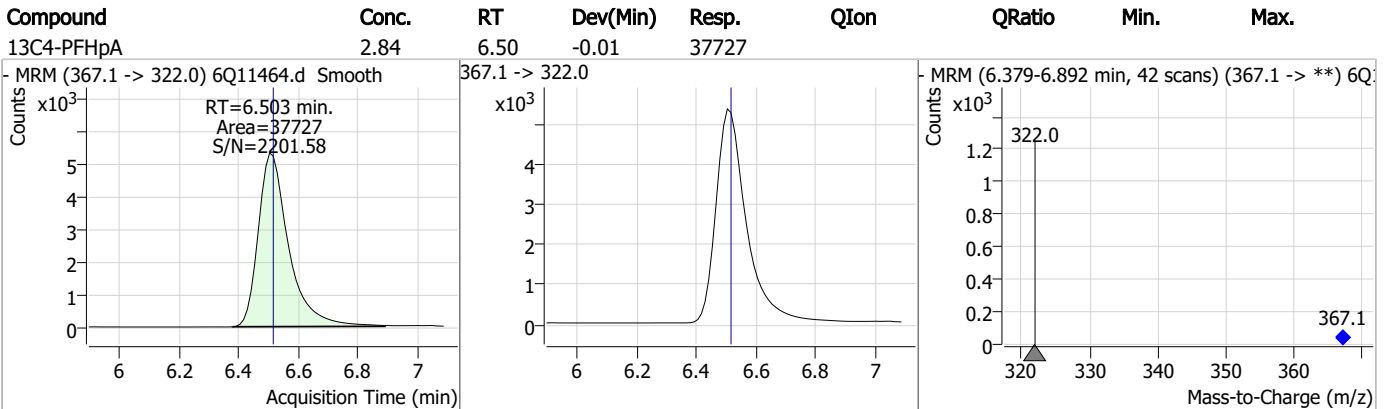
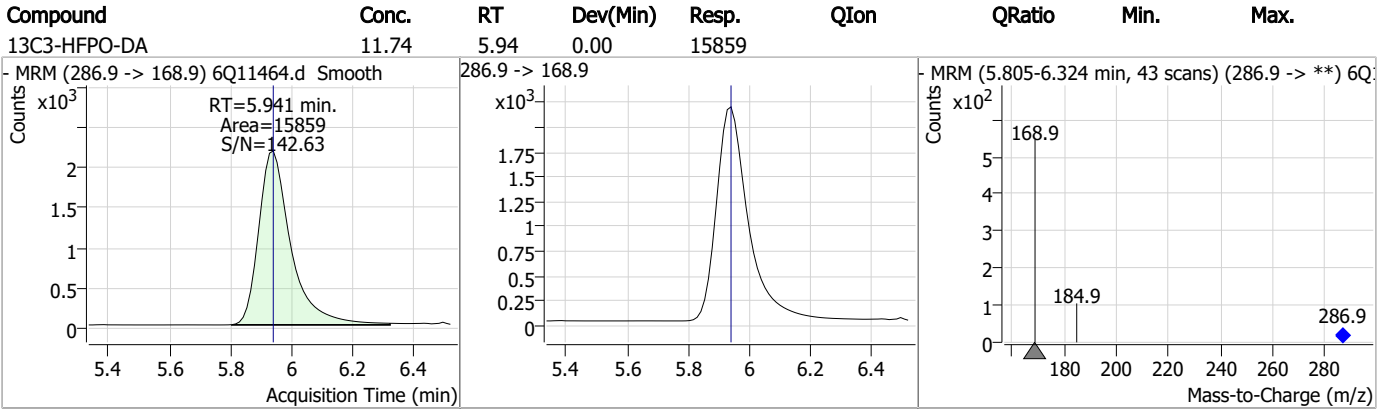
Perfluorinated Compounds by LC/MS/MS



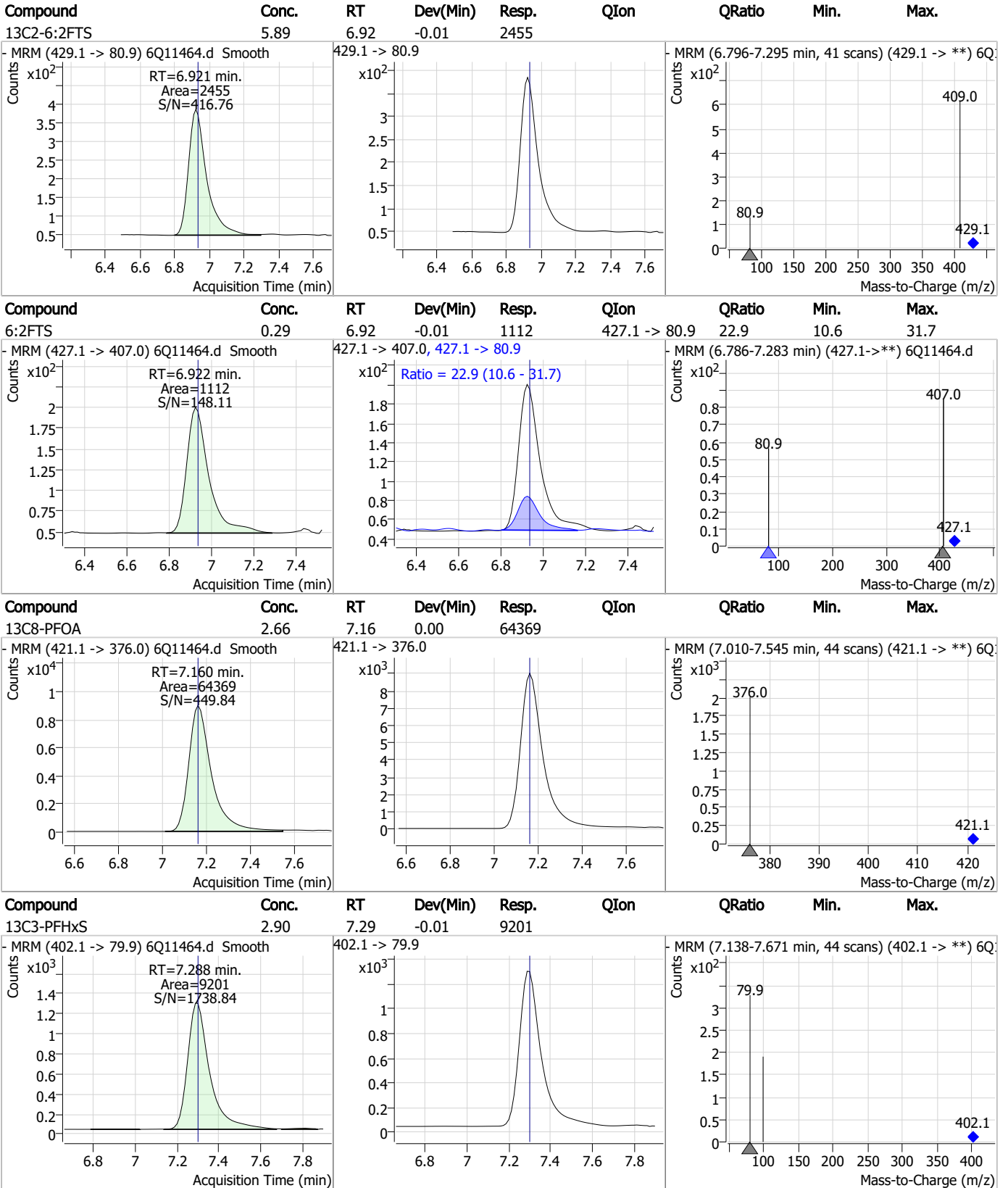
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



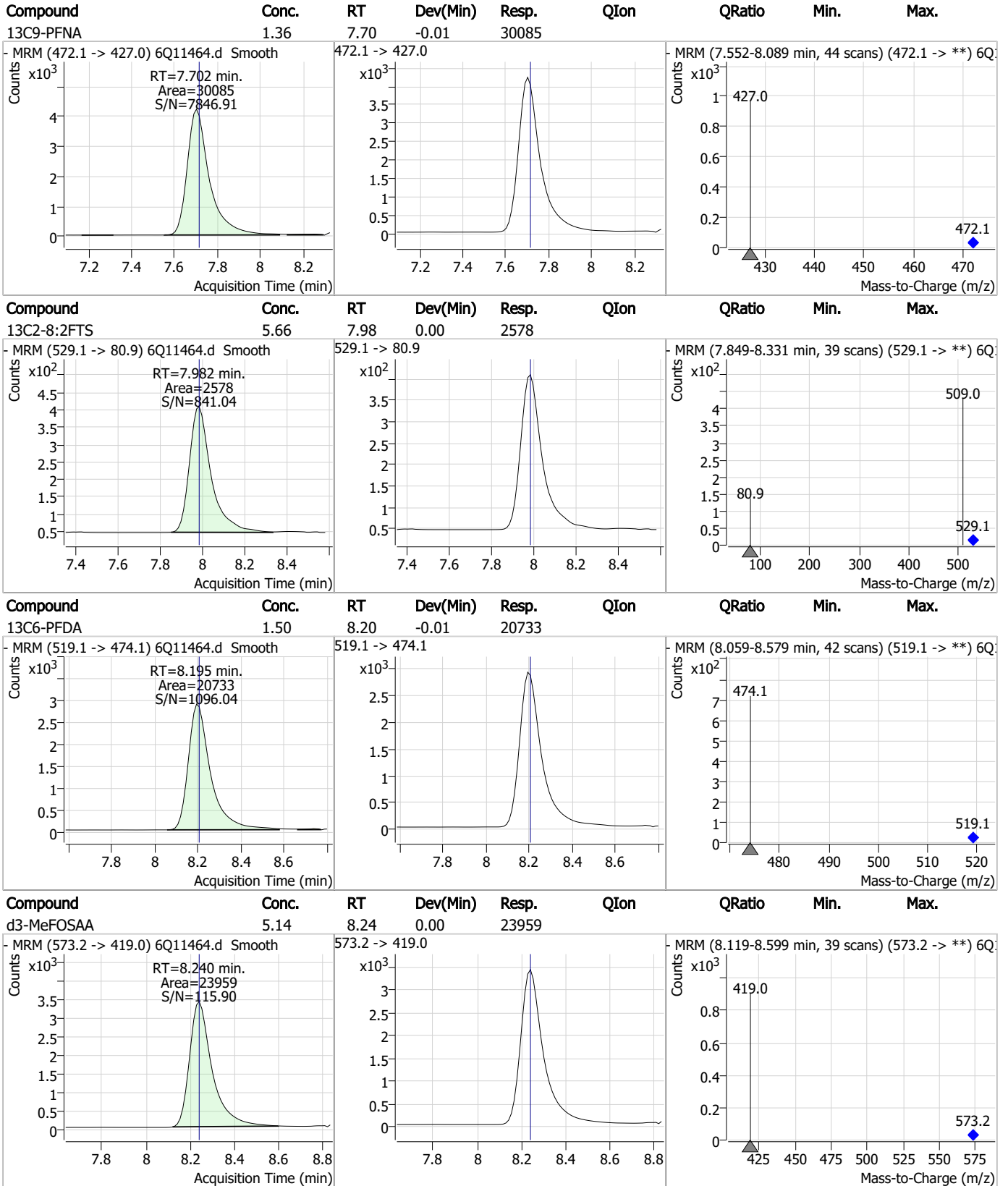
Perfluorinated Compounds by LC/MS/MS



7.1.1

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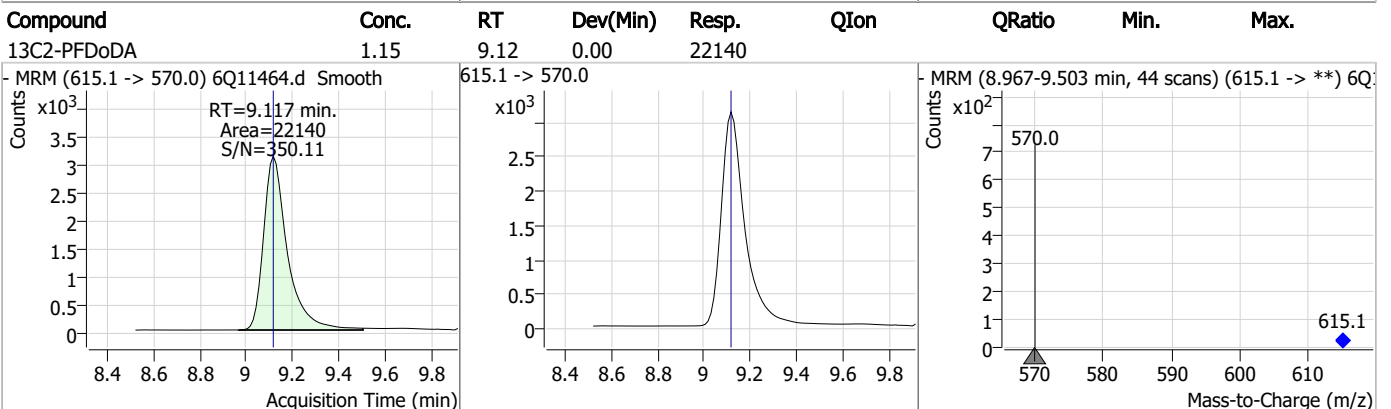
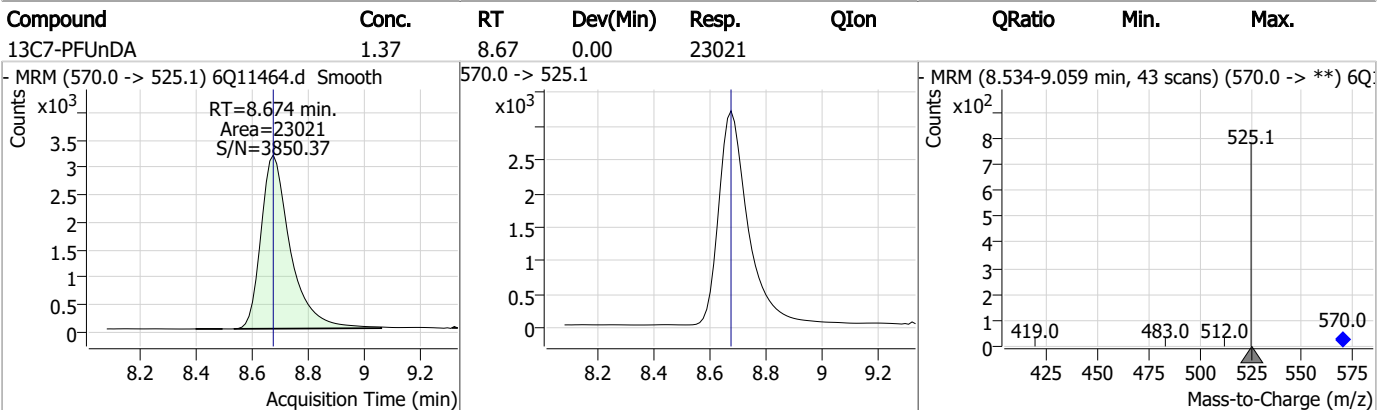
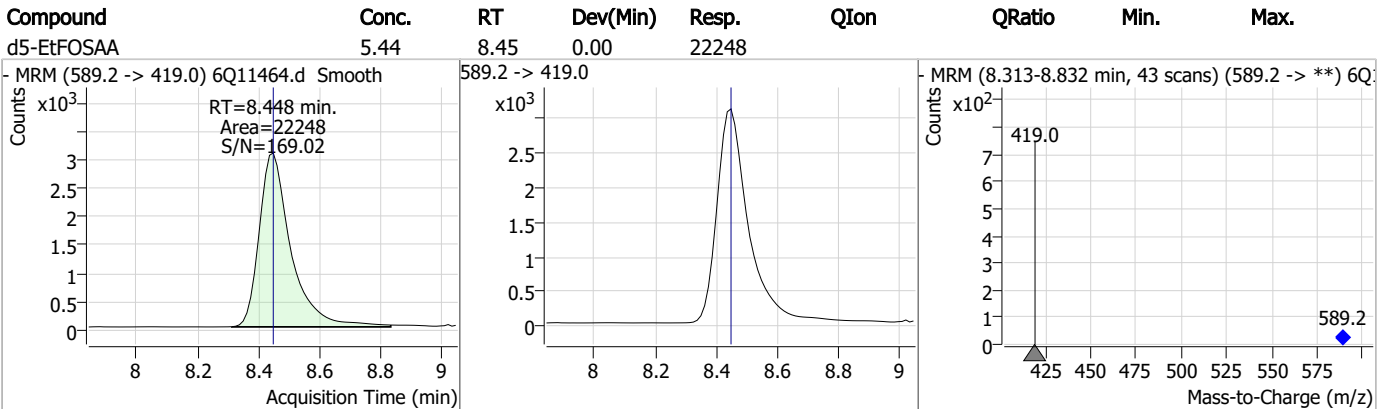
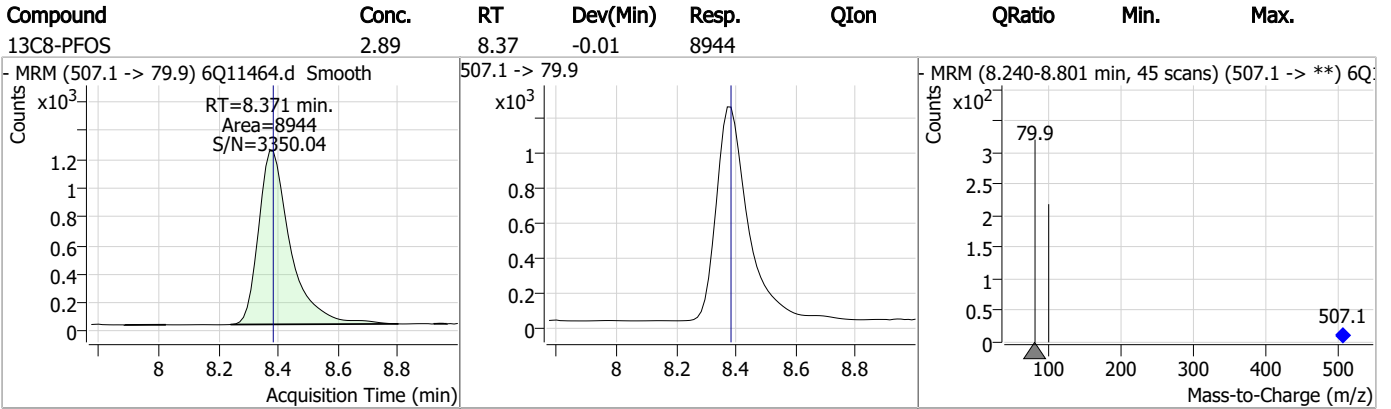
Perfluorinated Compounds by LC/MS/MS



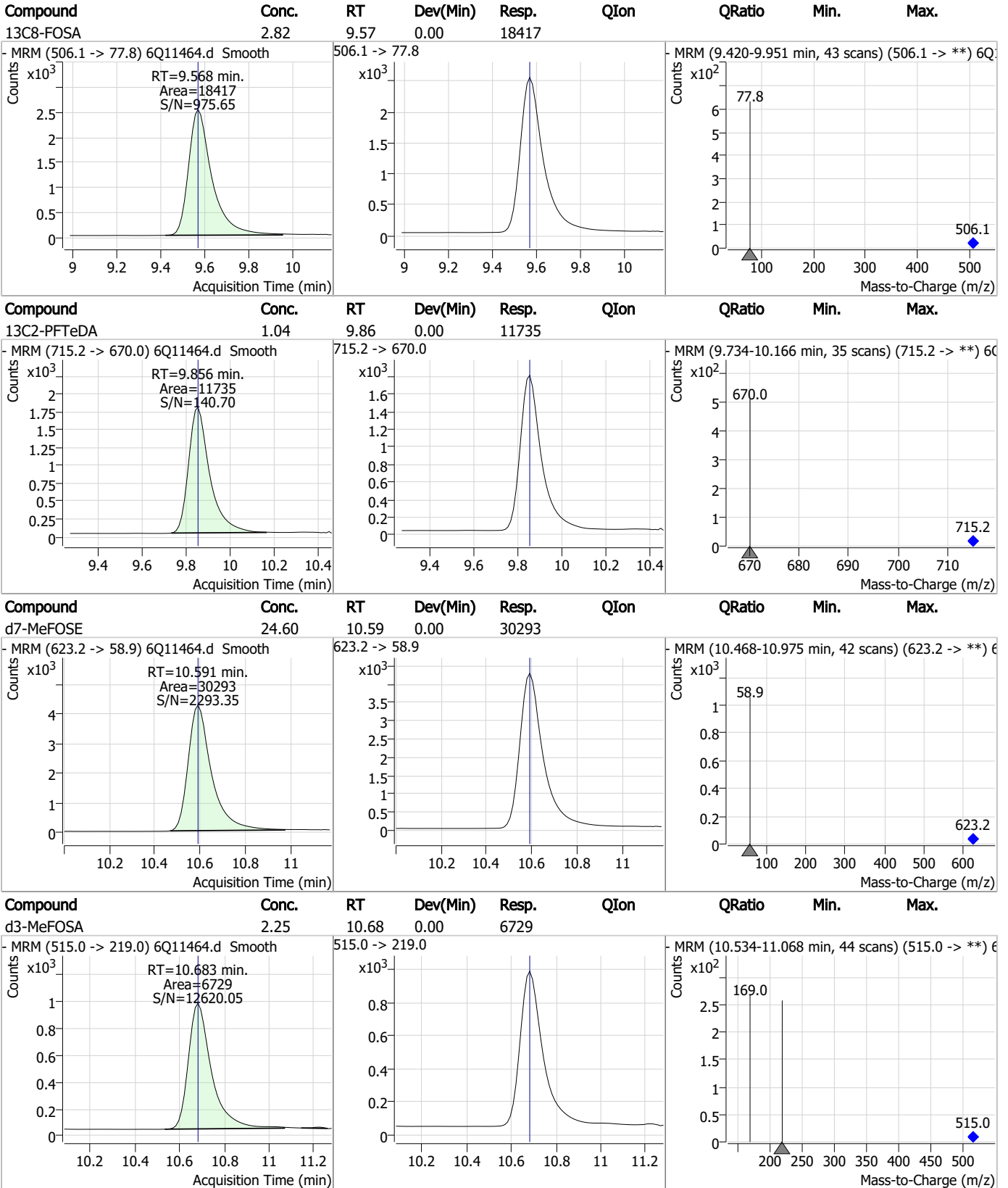
7.1.1

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Perfluorinated Compounds by LC/MS/MS

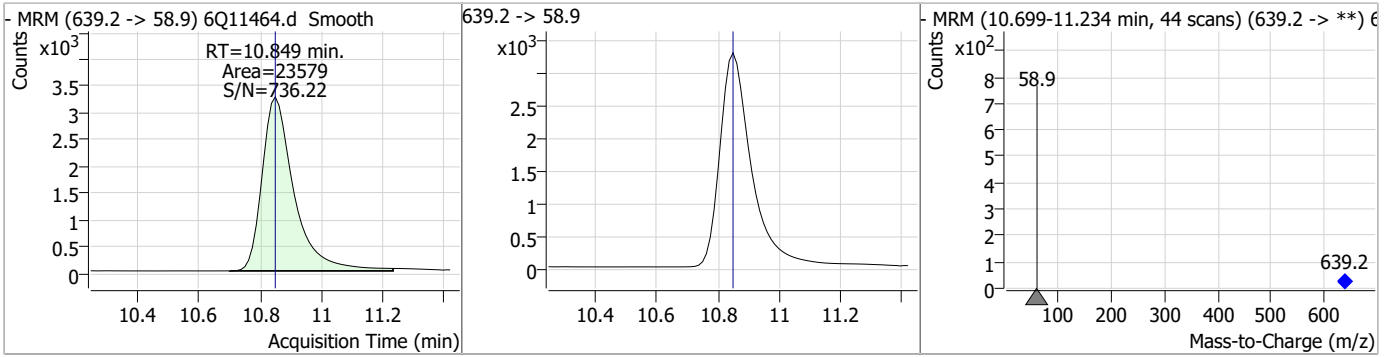


Perfluorinated Compounds by LC/MS/MS

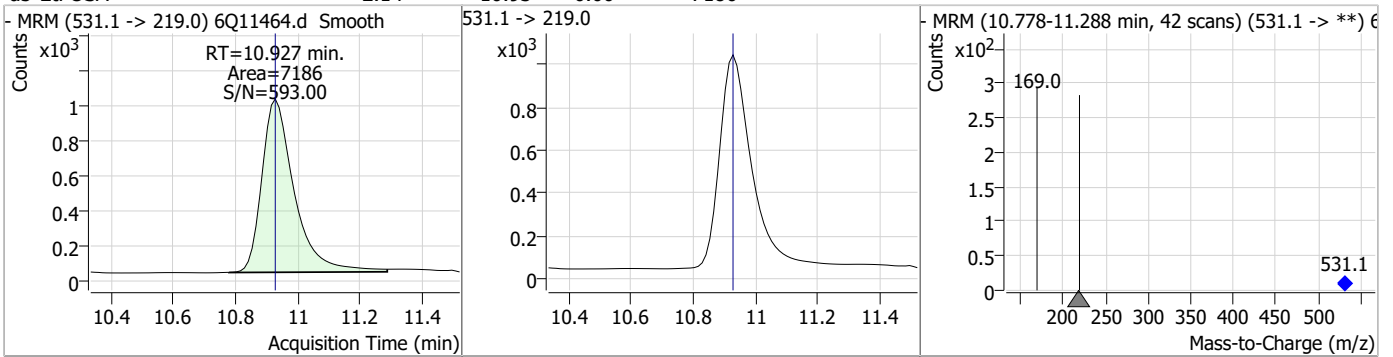


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.04	10.85	0.00	23579				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOFA	2.14	10.93	0.00	7186				



7.1.1
7

Manual Integration Approval Summary

Sample Number: FC1801-1 Method: EPA DRAFT 1633
Lab FileID: 6Q11464.D Analyst approved: 01/17/23 16:41 Martha Valls
Injection Time: 01/17/23 08:27 Supervisor approved: 01/17/23 18:24 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanoic acid	2706-90-3		4.37	Poorly defined baseline
Perfluorohexanoic acid	307-24-4		5.55	Poorly defined baseline

7.1.1.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q11443.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/17/2023 3:33:50 AM
 Sample Name : op94977-mb
 Vial : P3-F2
 DA Method File : 1633_011123_S6Q174.quantmethod.xml
 Batch Name : s6q179.batch.bin
 Sample Information : OP94977,S6Q179,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.013	216.8 -> 171.9	83645	10.00 µg/L	0.012
M5-PFPeA	4.384	268.3 -> 223.0	38750	5.00 µg/L	0.000
M5-PFHxA	5.564	318.0 -> 273.0	34226	2.50 µg/L	0.000
M4-PFHpA	6.516	367.1 -> 322.0	35449	2.50 µg/L	0.000
M8-PFOA	7.172	421.1 -> 376.0	61775	2.50 µg/L	0.012
M9-PFNA	7.715	472.1 -> 427.0	30596	1.25 µg/L	0.000
M6-PFDA	8.208	519.1 -> 474.1	19221	1.25 µg/L	0.000
M7-PFUnDA	8.674	570.0 -> 525.1	21978	1.25 µg/L	0.000
M2-PFDoDA	9.117	615.1 -> 570.0	22517	1.25 µg/L	0.000
M2-PFTeDA	9.844	715.2 -> 670.0	10393	1.25 µg/L	-0.012
M8-FOSA	9.556	506.1 -> 77.8	17596	2.50 µg/L	-0.012
M3-PFBS	5.531	302.1 -> 79.9	13184	2.50 µg/L	0.000
M3-PFHxS	7.300	402.1 -> 79.9	8496	2.50 µg/L	0.000
M8-PFOS	8.383	507.1 -> 79.9	8132	2.50 µg/L	0.000
M2-4:2FTS	5.228	329.1 -> 80.9	1963	5.00 µg/L	0.000
M2-6:2FTS	6.934	429.1 -> 80.9	2685	5.00 µg/L	0.000
M2-8:2FTS	7.982	529.1 -> 80.9	2400	5.00 µg/L	0.000
M3-MeFOSAA	8.253	573.2 -> 419.0	23716	5.00 µg/L	0.012
M3-HFPO-DA	5.941	286.9 -> 168.9	14871	10.00 µg/L	0.000
M5-EtFOSAA	8.448	589.2 -> 419.0	19577	5.00 µg/L	0.000
M7-MeFOSE	10.579	623.2 -> 58.9	26597	25.00 µg/L	-0.012
M9-EtFOSE	10.849	639.2 -> 58.9	21060	25.00 µg/L	0.000
M5-EtFOSA	10.927	531.1 -> 219.0	6600	2.50 µg/L	0.000
M3-MeFOSA	10.683	515.0 -> 219.0	5873	2.50 µg/L	0.000
13C4-PFOS	8.384	502.8 -> 79.9	9417	2.50 µg/L	0.000
13C3-PFBA	3.004	216.0 -> 172.0	34300	5.00 µg/L	0.000
18O2-PFHxS	7.299	403.0 -> 83.9	5966	2.50 µg/L	0.000
13C4-PFOA	7.173	417.1 -> 372.0	71795	2.50 µg/L	0.000
13C2-PFDA	8.208	515.1 -> 470.1	23694	1.25 µg/L	0.000
13C5-PFNA	7.715	468.0 -> 423.0	29069	1.25 µg/L	0.013
13C2-PFHxA	5.565	315.1 -> 270.0	33745	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.228	329.1 -> 80.9	1963	6.31 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 126.2%		
13C2-6:2FTS	6.934	429.1 -> 80.9	2685	6.30 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 126.0%		
13C2-8:2FTS	7.982	529.1 -> 80.9	2400	5.16 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.2%		
13C2-PFDoDA	9.117	615.1 -> 570.0	22517	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.9%		
13C2-PFTeDA	9.844	715.2 -> 670.0	10393	0.94 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 75.3%		
13C3-PFBS	5.531	302.1 -> 79.9	13184	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.4%		
13C3-PFHxS	7.300	402.1 -> 79.9	8496	2.62 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 = 104.9%	
13C4-PFBA	3.013	216.8 -> 171.9	83645	10.68 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.8%	
13C4-PFHpA	6.516	367.1 -> 322.0	35449	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.6%	
13C5-PFHxA	5.564	318.0 -> 273.0	34226	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C5-PFPeA	4.384	268.3 -> 223.0	38750	5.15 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.9%	
13C6-PFDA	8.208	519.1 -> 474.1	19221	1.42 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 114.0%	
13C7-PFUnDA	8.674	570.0 -> 525.1	21978	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.8%	
13C8-FOSA	9.556	506.1 -> 77.8	17596	2.77 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.6%	
13C8-PFOA	7.172	421.1 -> 376.0	61775	2.57 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C8-PFOS	8.383	507.1 -> 79.9	8132	2.70 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.1%	
13C9-PFNA	7.715	472.1 -> 427.0	30596	1.48 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 118.5%	
d3-MeFOSAA	8.253	573.2 -> 419.0	23716	5.23 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.6%	
13C3-HFPO-DA	5.941	286.9 -> 168.9	14871	10.68 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.8%	
d3-MeFOSA	10.683	515.0 -> 219.0	5873	2.02 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 80.7%	
d5-EtFOSAA	8.448	589.2 -> 419.0	19577	4.92 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.4%	
d7-MeFOSE	10.579	623.2 -> 58.9	26597	22.19 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 88.7%	
d9-EtFOSE	10.849	639.2 -> 58.9	21060	22.97 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 91.9%	
d5-EtFOSA	10.927	531.1 -> 219.0	6600	2.02 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 80.9%	

7.2.1
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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.	



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	-	398.7 -> 98.9	-	N.D.	
		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	-	563.1 -> 519.0	-	N.D.	
		563.1 -> 269.1			
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.	
		632.9 -> 452.9			
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.	
		532.8 -> 353.0			
ADONA	-	376.9 -> 250.9	-	N.D.	
		376.9 -> 84.8			
HFPO-DA	-	284.9 -> 168.9	-	N.D.	
		284.9 -> 184.9			
3:3FTCA	-	241.0 -> 177.0	-	N.D.	
		241.0 -> 117.0			
5:3FTCA	-	341.0 -> 237.1	-	N.D.	
		341.0 -> 217.0			
7:3FTCA	-	441.0 -> 316.9	-	N.D.	
		441.0 -> 336.9			
EtFOSA	-	526.0 -> 219.0	-	N.D.	
		526.0 -> 169.0			
EtFOSE	-	630.0 -> 58.9	-	N.D.	
		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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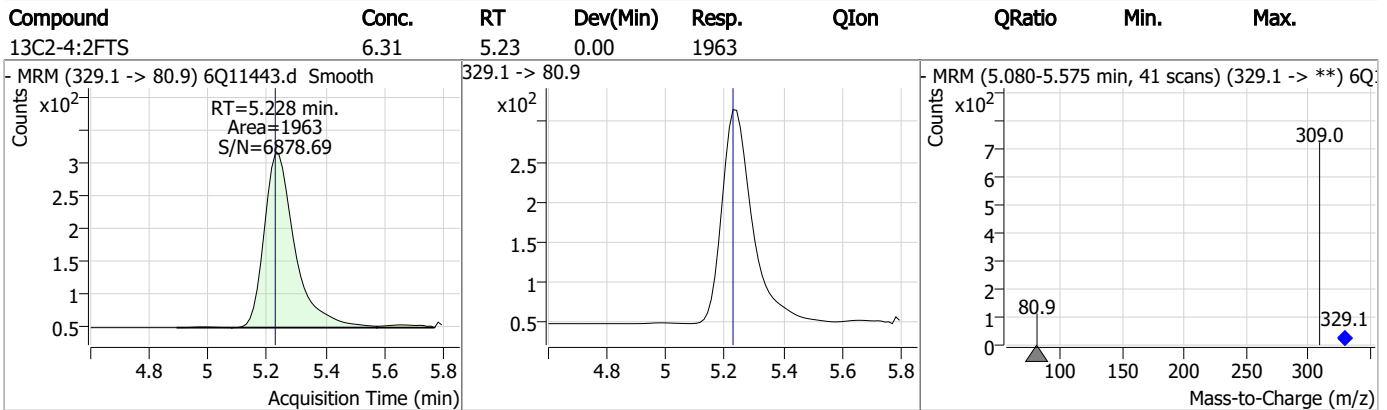
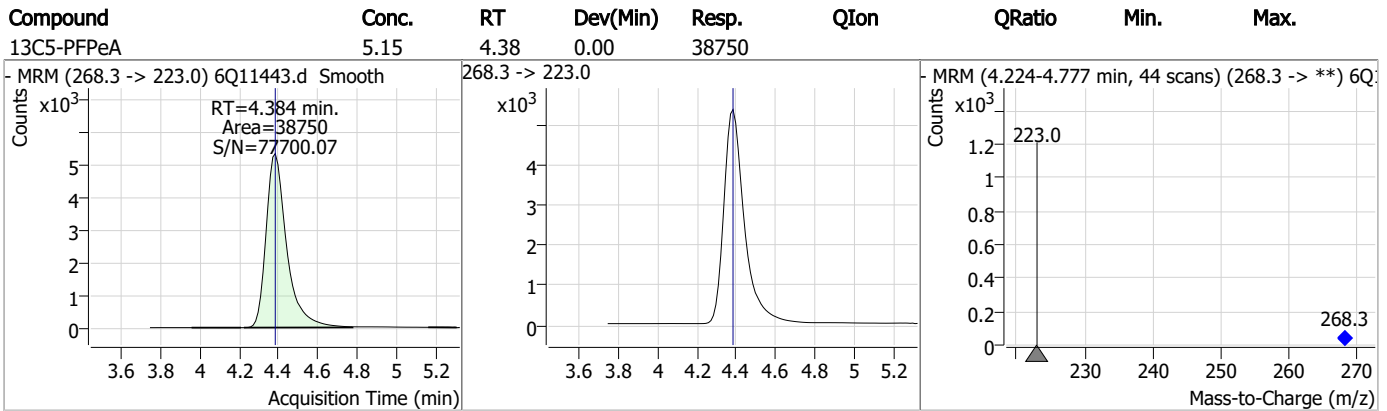
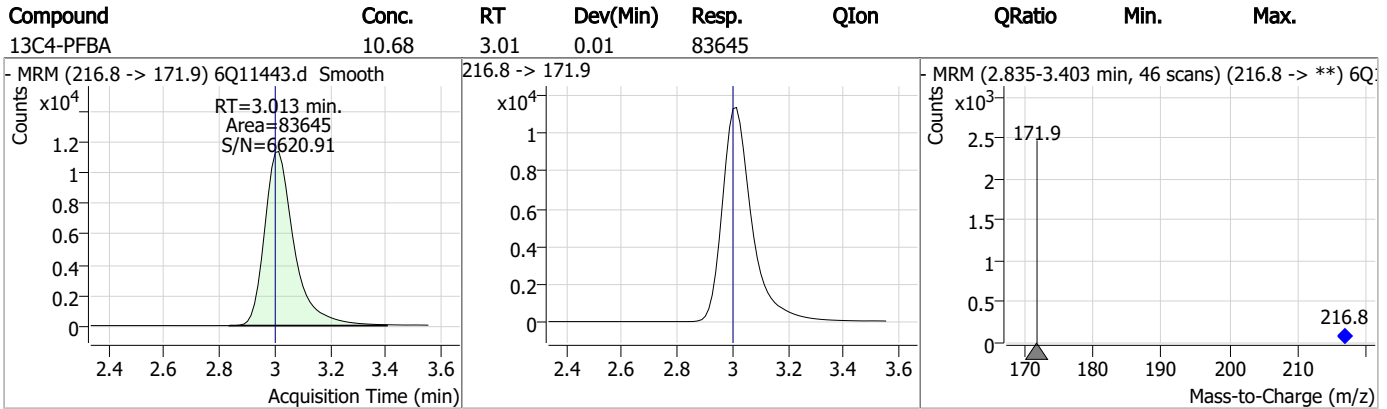
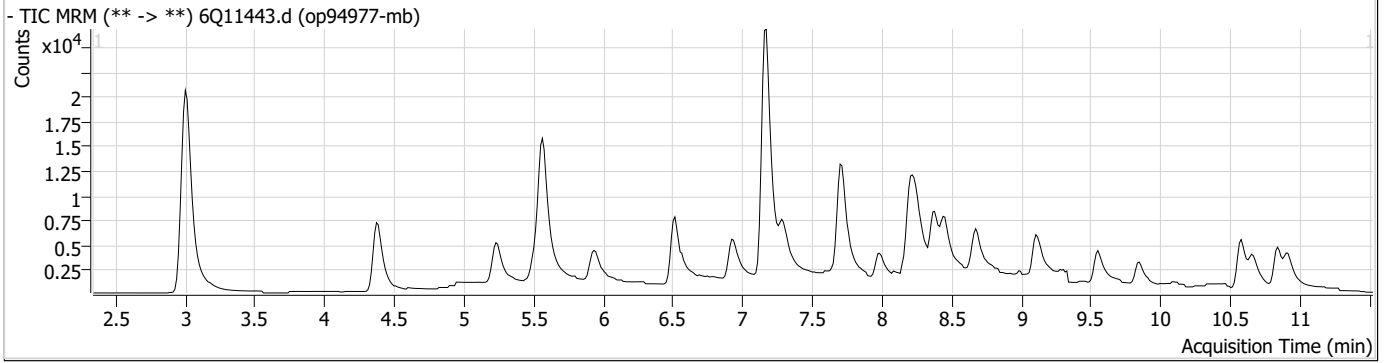
Perfluorinated Compounds by LC/MS/MS

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

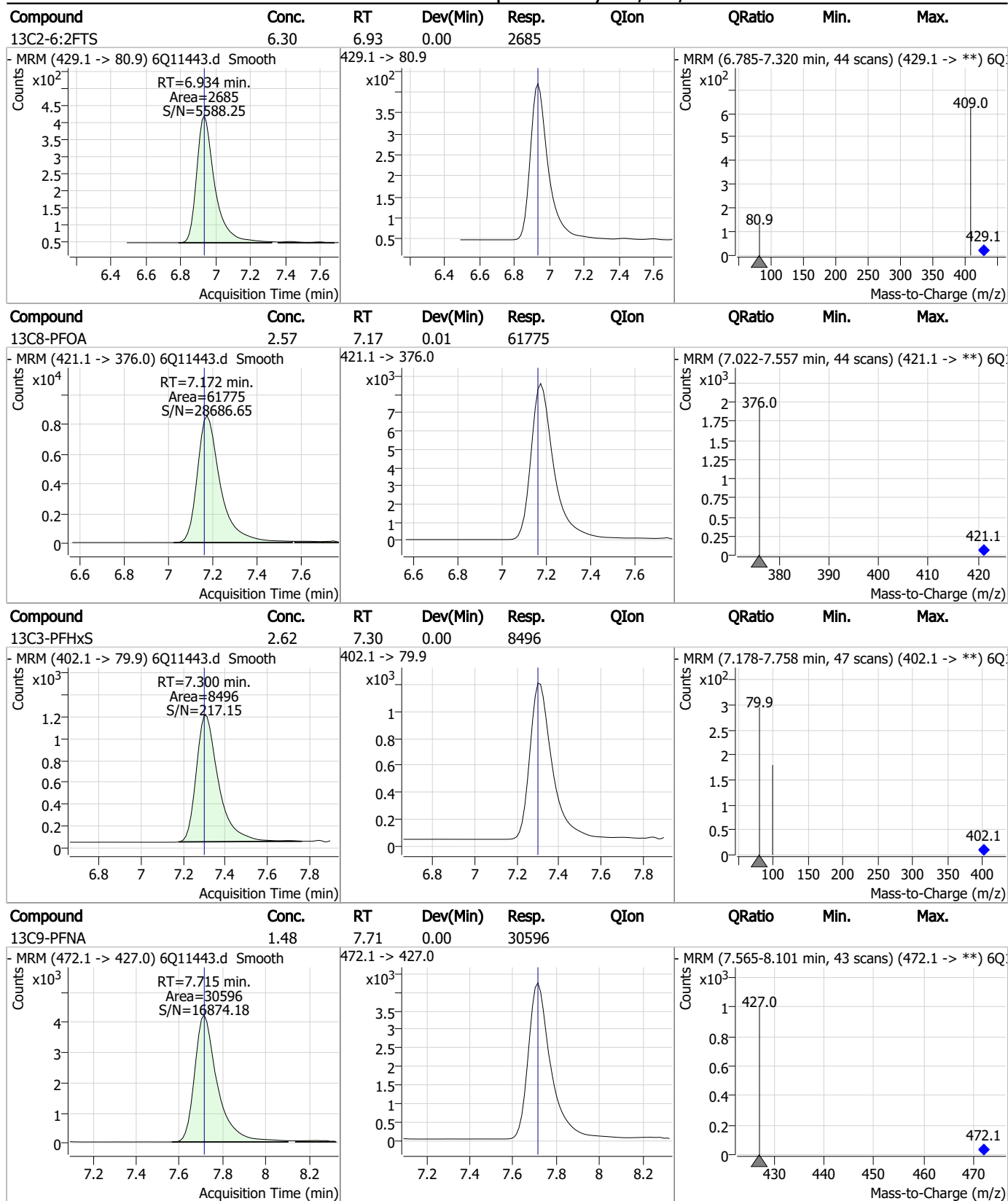
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.63	5.53	0.00	13184				
13C5-PFHxA	2.53	5.56	0.00	34226				
13C3-HFPO-DA	10.68	5.94	0.00	14871				
13C4-PFHpA	2.59	6.52	0.00	35449				

7.2.1

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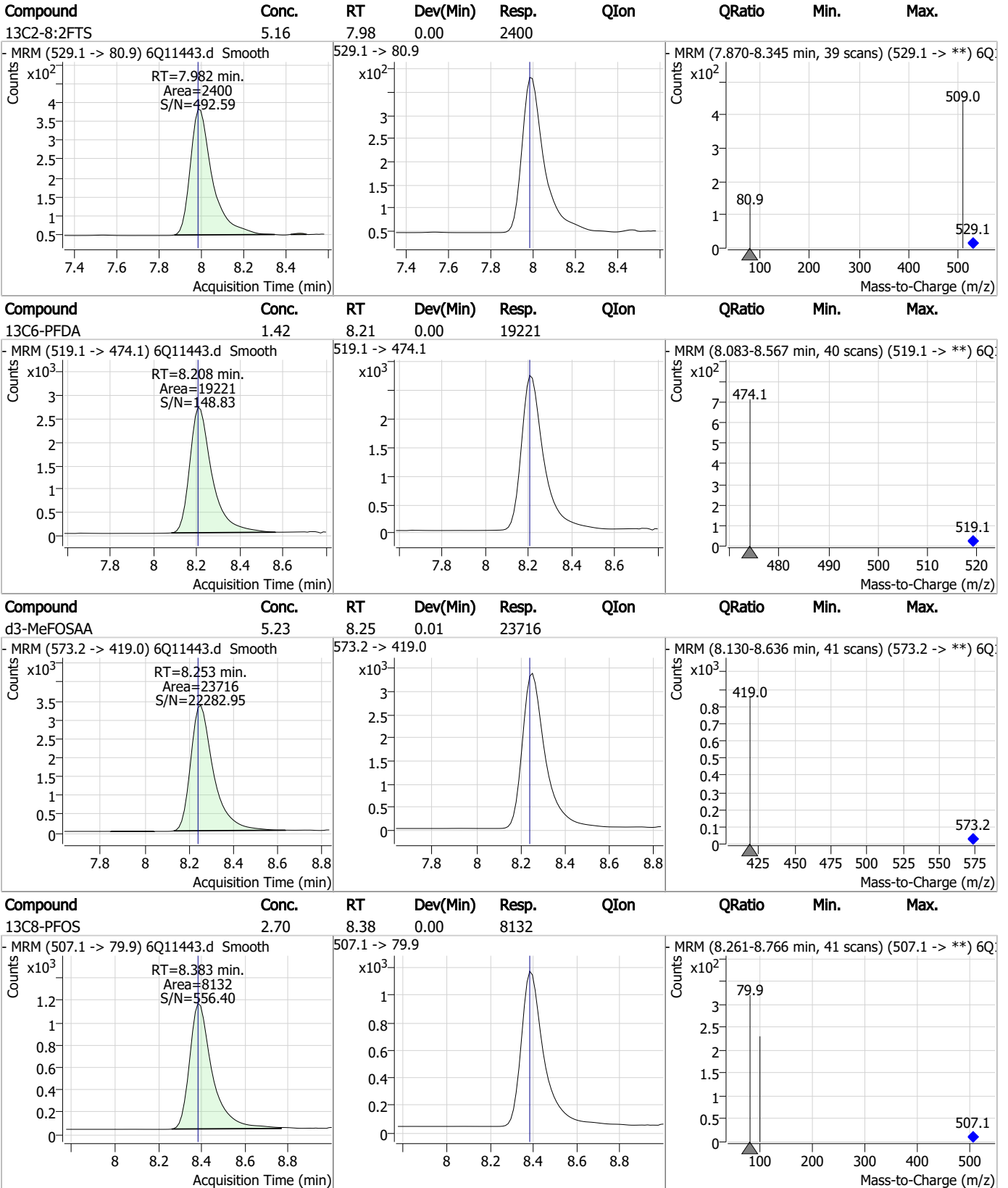
Perfluorinated Compounds by LC/MS/MS



7.2.1
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Perfluorinated Compounds by LC/MS/MS



7.2.1

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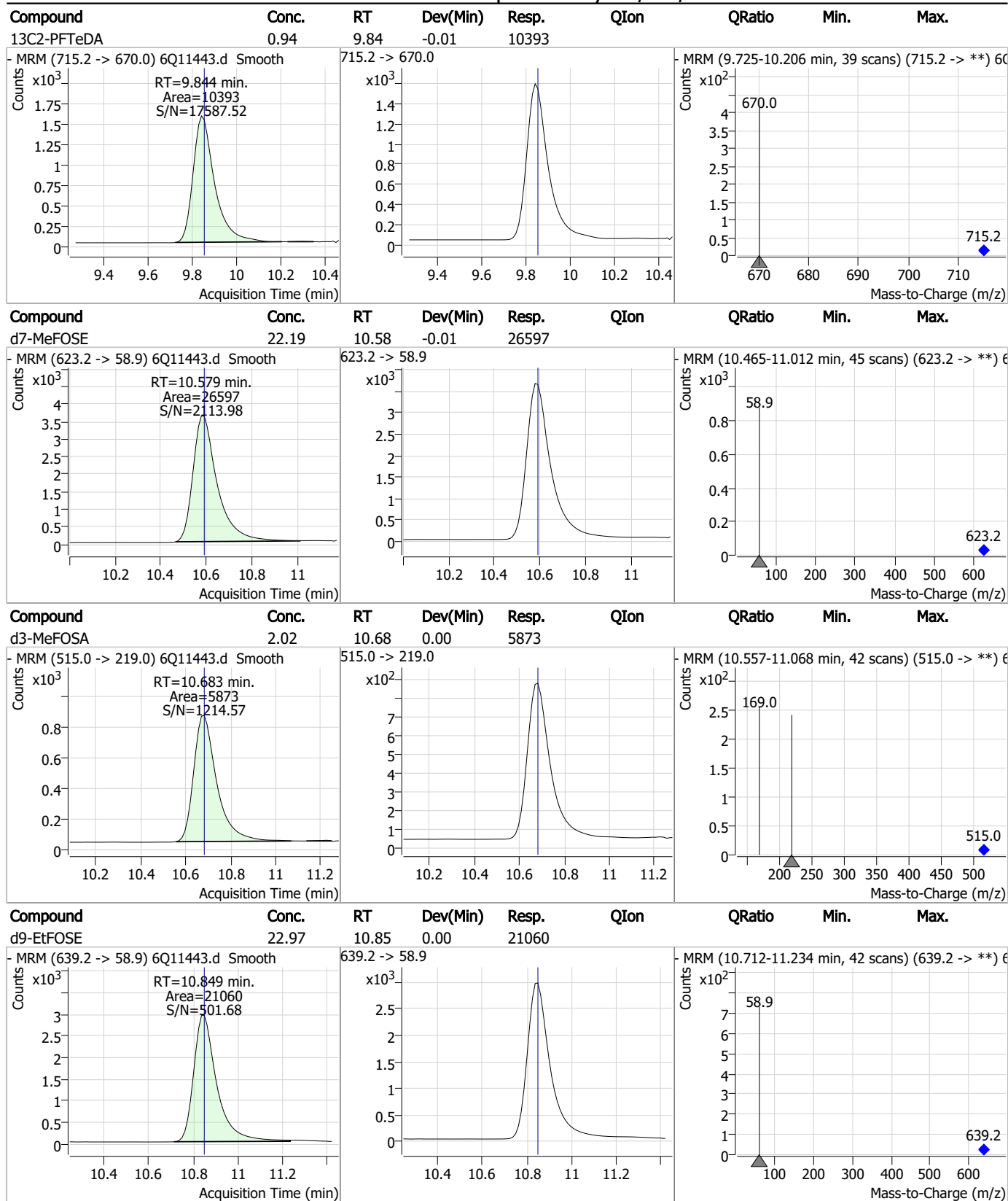
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.92	8.45	0.00	19577				
13C7-PFUnDA	1.33	8.67	0.00	21978				
13C2-PFDoDA	1.20	9.12	0.00	22517				
13C8-FOSA	2.77	9.56	-0.01	17596				

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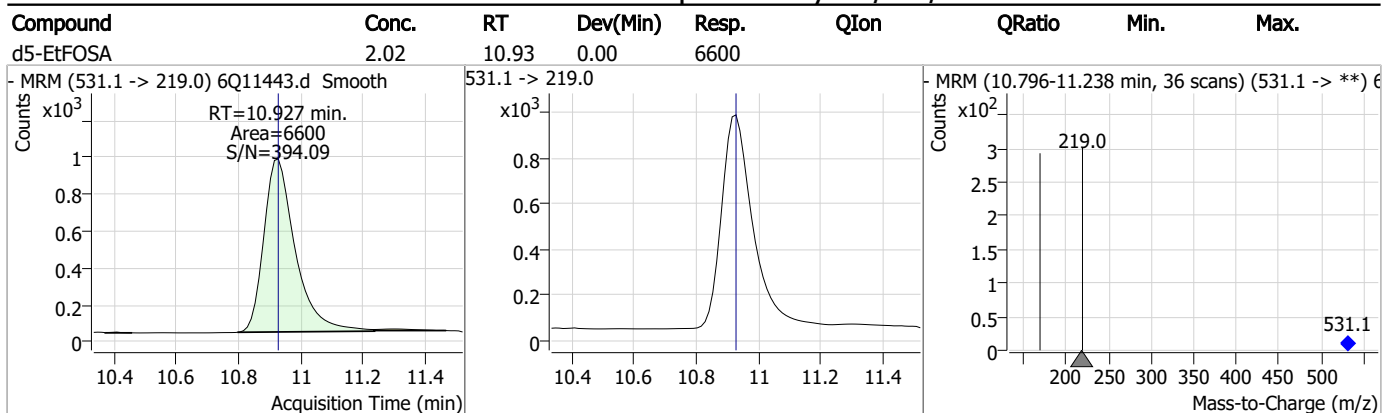


Perfluorinated Compounds by LC/MS/MS



7.2.1
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q11385.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/16/2023 1:54:14 PM
 Sample Name : IBLK
 Vial : P1-B9
 DA Method File : 1633_011123_S6Q174.quantmethod.xml
 Batch Name : s6q179.batch.bin
 Sample Information : OP94795,S6Q179,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.988	216.8 -> 171.9	88338	10.00 µg/L	-0.012
M5-PFPeA	4.371	268.3 -> 223.0	41322	5.00 µg/L	-0.012
M5-PFHxA	5.564	318.0 -> 273.0	37473	2.50 µg/L	0.000
M4-PFHpA	6.503	367.1 -> 322.0	39745	2.50 µg/L	-0.012
M8-PFOA	7.160	421.1 -> 376.0	64349	2.50 µg/L	0.000
M9-PFNA	7.702	472.1 -> 427.0	27984	1.25 µg/L	-0.013
M6-PFDA	8.195	519.1 -> 474.1	20886	1.25 µg/L	-0.012
M7-PFUnDA	8.674	570.0 -> 525.1	25127	1.25 µg/L	0.000
M2-PFDoDA	9.117	615.1 -> 570.0	27416	1.25 µg/L	0.000
M2-PFTeDA	9.856	715.2 -> 670.0	15011	1.25 µg/L	0.000
M8-FOSA	9.568	506.1 -> 77.8	18704	2.50 µg/L	0.000
M3-PFBS	5.519	302.1 -> 79.9	14178	2.50 µg/L	-0.012
M3-PFHxS	7.288	402.1 -> 79.9	9225	2.50 µg/L	-0.012
M8-PFOS	8.371	507.1 -> 79.9	9258	2.50 µg/L	-0.012
M2-4:2FTS	5.228	329.1 -> 80.9	1997	5.00 µg/L	0.000
M2-6:2FTS	6.921	429.1 -> 80.9	2399	5.00 µg/L	-0.012
M2-8:2FTS	7.970	529.1 -> 80.9	2525	5.00 µg/L	-0.012
M3-MeFOSAA	8.228	573.2 -> 419.0	25044	5.00 µg/L	-0.012
M3-HFPO-DA	5.928	286.9 -> 168.9	15581	10.00 µg/L	-0.012
M5-EtFOSAA	8.436	589.2 -> 419.0	22894	5.00 µg/L	-0.012
M7-MeFOSE	10.591	623.2 -> 58.9	34327	25.00 µg/L	0.000
M9-EtFOSE	10.849	639.2 -> 58.9	26560	25.00 µg/L	0.000
M5-EtFOSA	10.927	531.1 -> 219.0	8767	2.50 µg/L	0.000
M3-MeFOSA	10.683	515.0 -> 219.0	7903	2.50 µg/L	0.000
13C4-PFOS	8.384	502.8 -> 79.9	10794	2.50 µg/L	0.000
13C3-PFBA	2.979	216.0 -> 172.0	38604	5.00 µg/L	-0.025
18O2-PFHxS	7.287	403.0 -> 83.9	6516	2.50 µg/L	-0.012
13C4-PFOA	7.160	417.1 -> 372.0	79796	2.50 µg/L	-0.012
13C2-PFDA	8.196	515.1 -> 470.1	26967	1.25 µg/L	-0.012
13C5-PFNA	7.703	468.0 -> 423.0	33645	1.25 µg/L	0.000
13C2-PFHxA	5.565	315.1 -> 270.0	38062	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.228	329.1 -> 80.9	1997	5.88 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 117.5%		
13C2-6:2FTS	6.921	429.1 -> 80.9	2399	5.15 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.1%		
13C2-8:2FTS	7.970	529.1 -> 80.9	2525	4.97 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.4%		
13C2-PFDoDA	9.117	615.1 -> 570.0	27416	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.6%		
13C2-PFTeDA	9.856	715.2 -> 670.0	15011	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.6%		
13C3-PFBS	5.519	302.1 -> 79.9	14178	2.59 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.8%		
13C3-PFHxS	7.288	402.1 -> 79.9	9225	2.61 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 = 104.3%	
13C4-PFBA	2.988	216.8 -> 171.9	88338	10.02 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C4-PFHpA	6.503	367.1 -> 322.0	39745	2.58 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.0%	
13C5-PFHxA	5.564	318.0 -> 273.0	37473	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.1%	
13C5-PFPeA	4.371	268.3 -> 223.0	41322	4.87 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.3%	
13C6-PFDA	8.195	519.1 -> 474.1	20886	1.36 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.8%	
13C7-PFUnDA	8.674	570.0 -> 525.1	25127	1.34 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.3%	
13C8-FOSA	9.568	506.1 -> 77.8	18704	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C8-PFOA	7.160	421.1 -> 376.0	64349	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.2%	
13C8-PFOS	8.371	507.1 -> 79.9	9258	2.68 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.4%	
13C9-PFNA	7.702	472.1 -> 427.0	27984	1.17 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 93.6%	
d3-MeFOSAA	8.228	573.2 -> 419.0	25044	4.82 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.4%	
13C3-HFPO-DA	5.928	286.9 -> 168.9	15581	9.92 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.2%	
d3-MeFOSA	10.683	515.0 -> 219.0	7903	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.7%	
d5-EtFOSAA	8.436	589.2 -> 419.0	22894	5.02 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
d7-MeFOSE	10.591	623.2 -> 58.9	34327	24.98 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
d9-EtFOSE	10.849	639.2 -> 58.9	26560	25.28 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.1%	
d5-EtFOSA	10.927	531.1 -> 219.0	8767	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.8%	

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	-	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)
		599.0 -> 98.8				
PFHpA	-	363.1 -> 319.0	-	N.D.		
		363.1 -> 169.0				
PFHpS	-	449.0 -> 79.9	-	N.D.		
		449.0 -> 98.9				
PFHxA	-	313.0 -> 269.0	-	N.D.		
		313.0 -> 118.9				
PFHxS	-	398.7 -> 79.9	-	N.D.		
		398.7 -> 98.9				
PFNA	-	463.0 -> 419.0	-	N.D.		
		463.0 -> 219.0				
PFNS	-	548.8 -> 79.9	-	N.D.		
		548.8 -> 98.9				
PFOA	7.335	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	-	563.1 -> 519.0	-	N.D.		
		563.1 -> 269.1				
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.		
		532.8 -> 353.0				
ADONA	-	376.9 -> 250.9	-	N.D.		
		376.9 -> 84.8				
HFPO-DA	-	284.9 -> 168.9	-	N.D.		
		284.9 -> 184.9				
3:3FTCA	-	241.0 -> 177.0	-	N.D.		
		241.0 -> 117.0				
5:3FTCA	-	341.0 -> 237.1	-	N.D.		
		341.0 -> 217.0				
7:3FTCA	7.606	441.0 -> 316.9	4050	1.91	µg/L	88
		441.0 -> 336.9	8663			
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

7.2.2
7

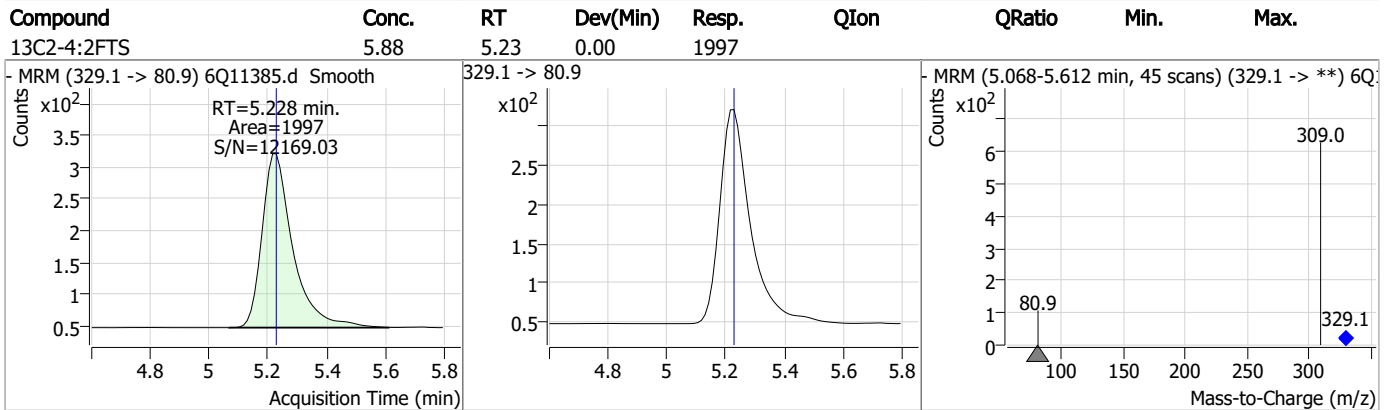
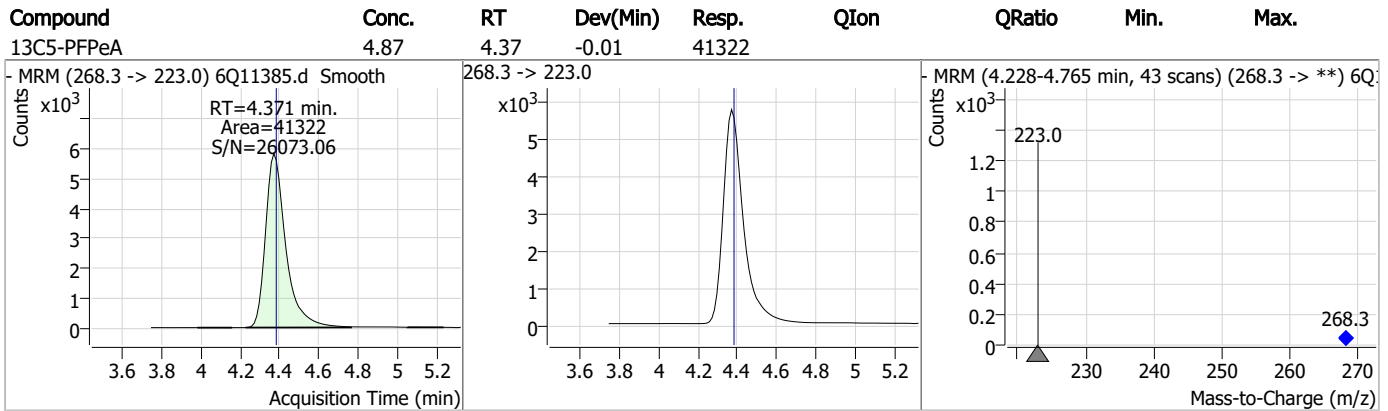
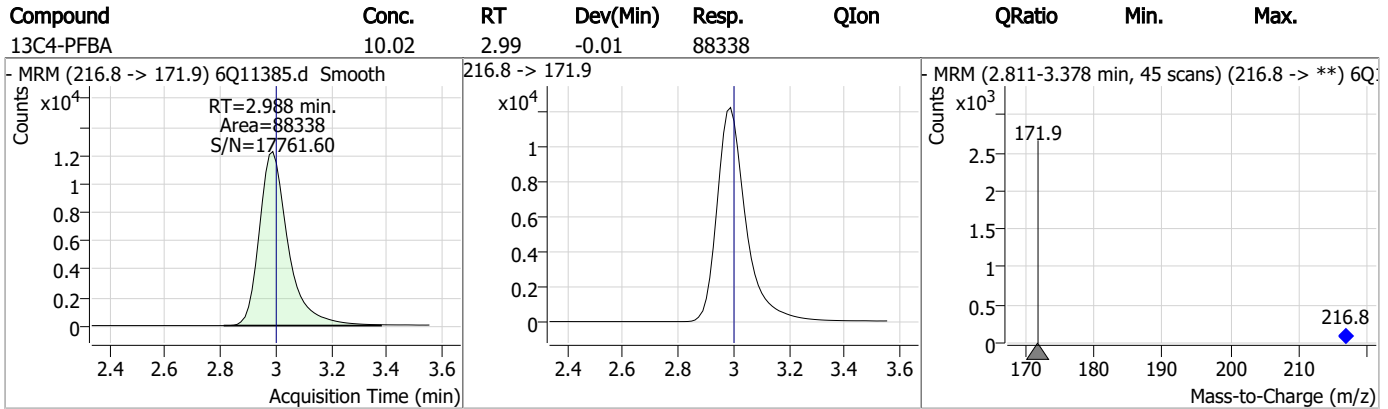
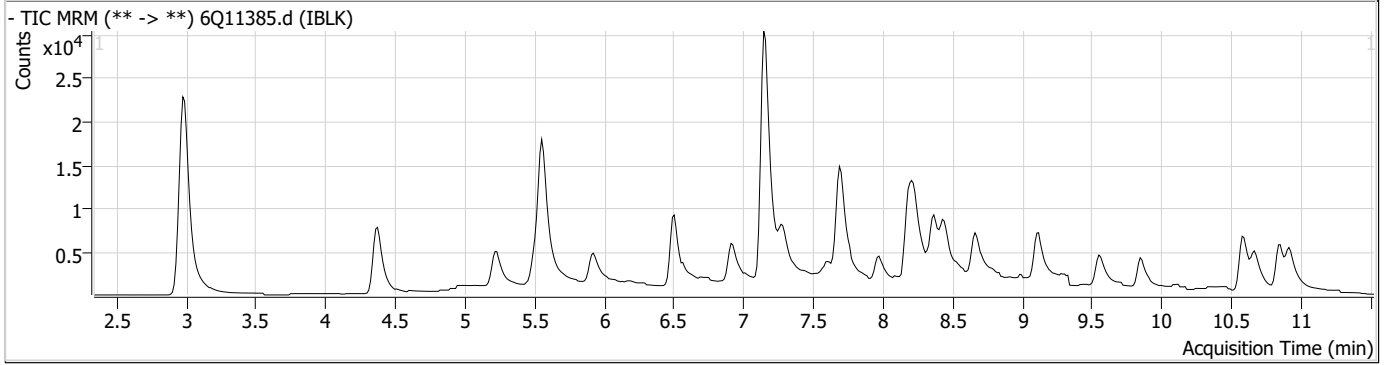
Perfluorinated Compounds by LC/MS/MS

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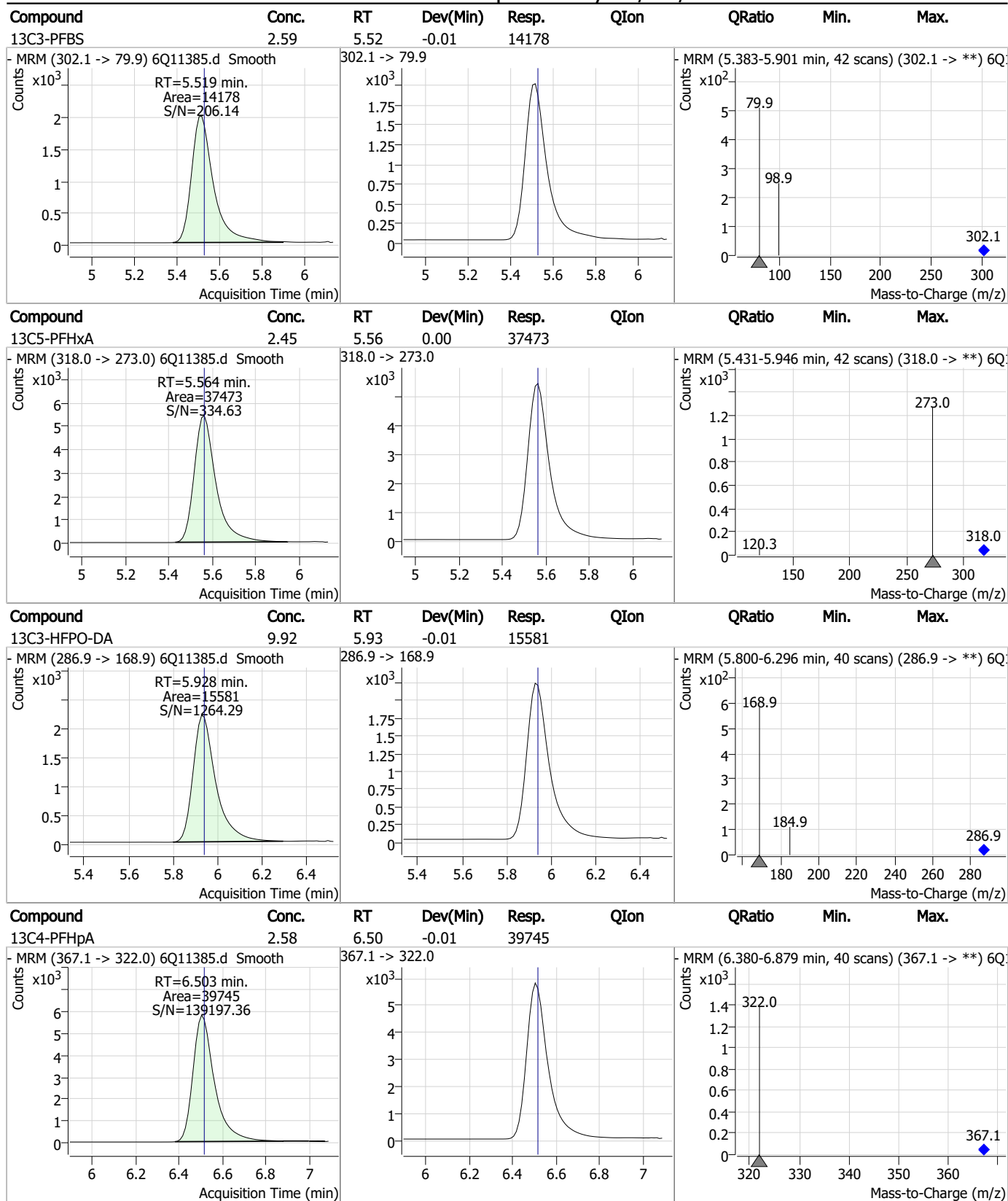
7.2.2

7

Perfluorinated Compounds by LC/MS/MS



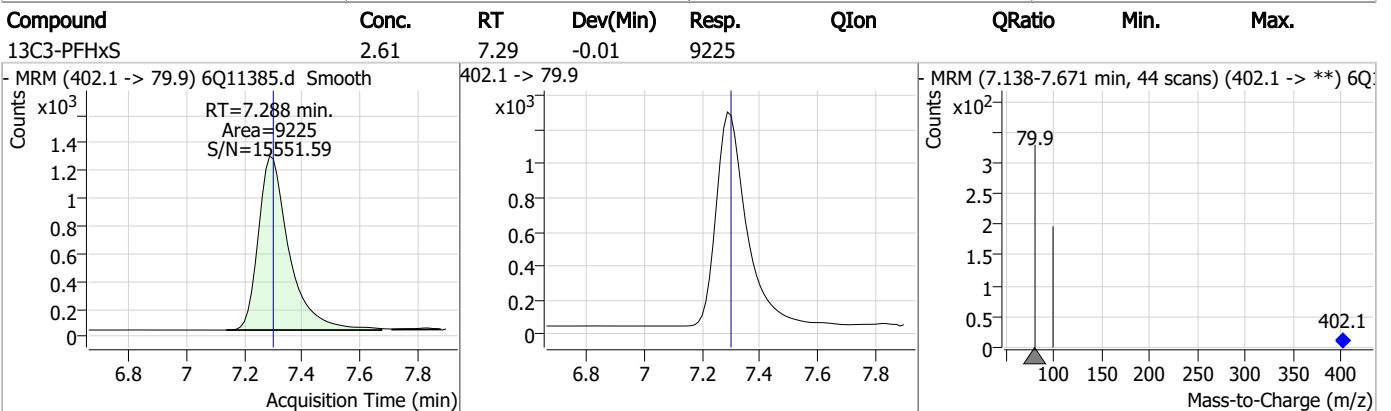
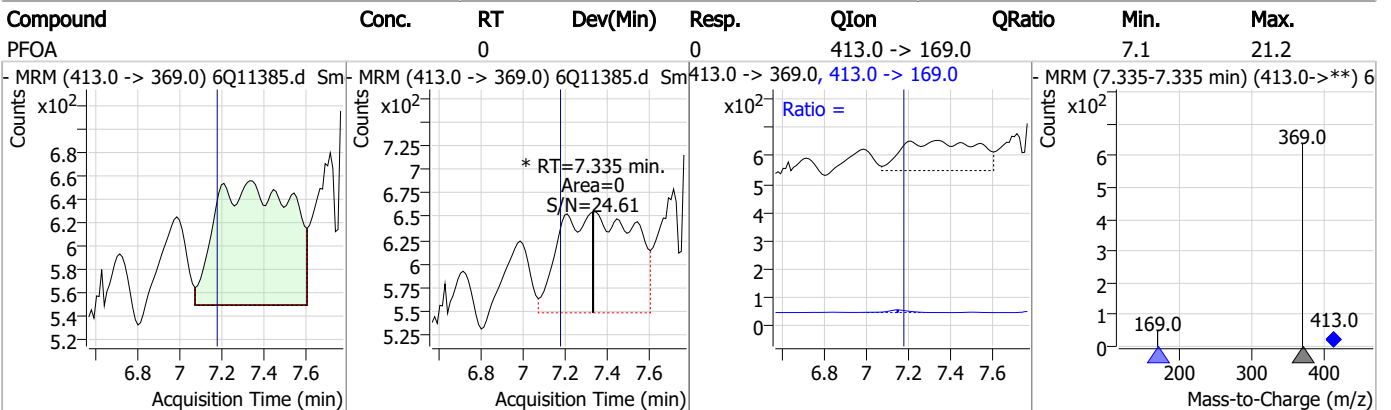
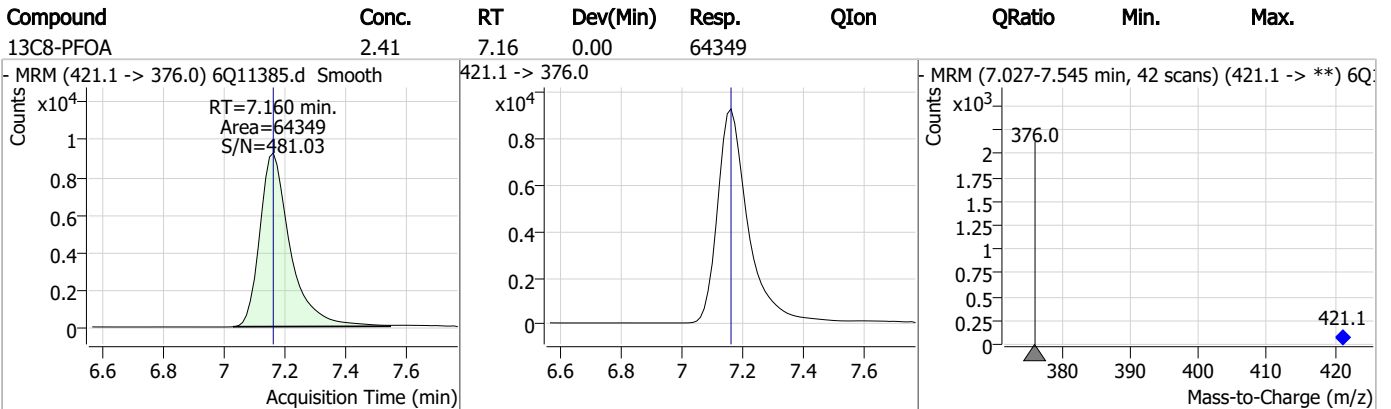
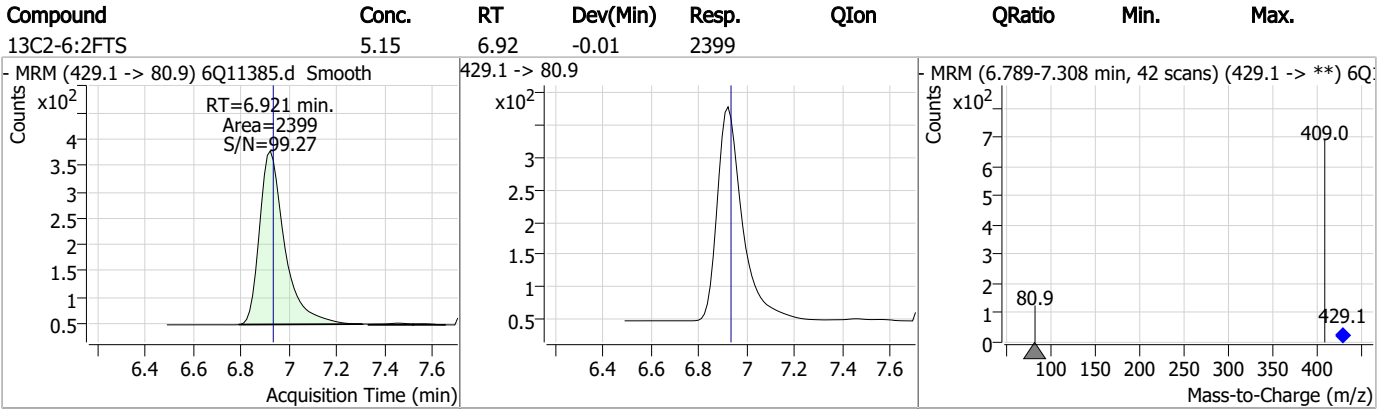
Perfluorinated Compounds by LC/MS/MS



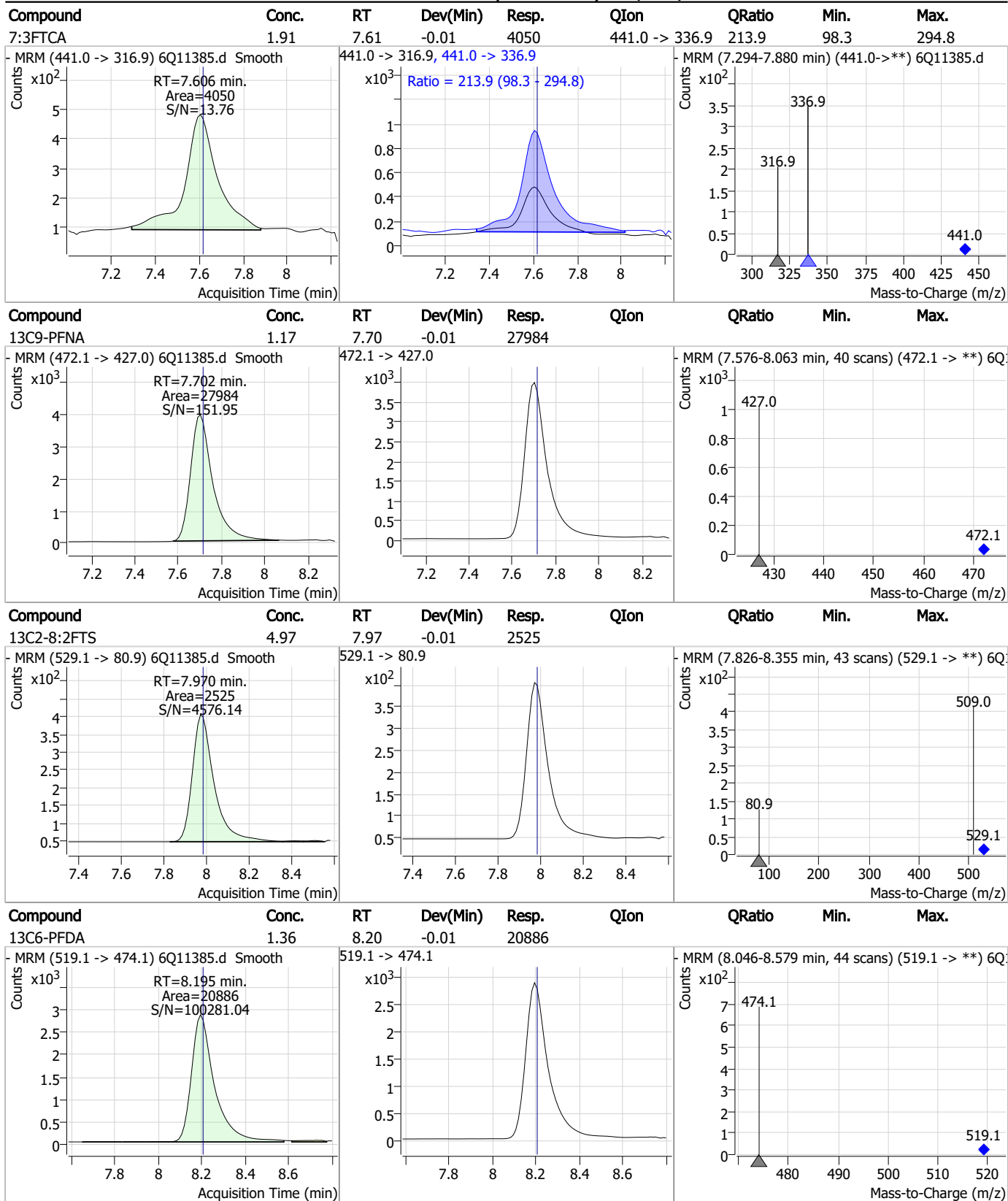
7.2.2
7



Perfluorinated Compounds by LC/MS/MS

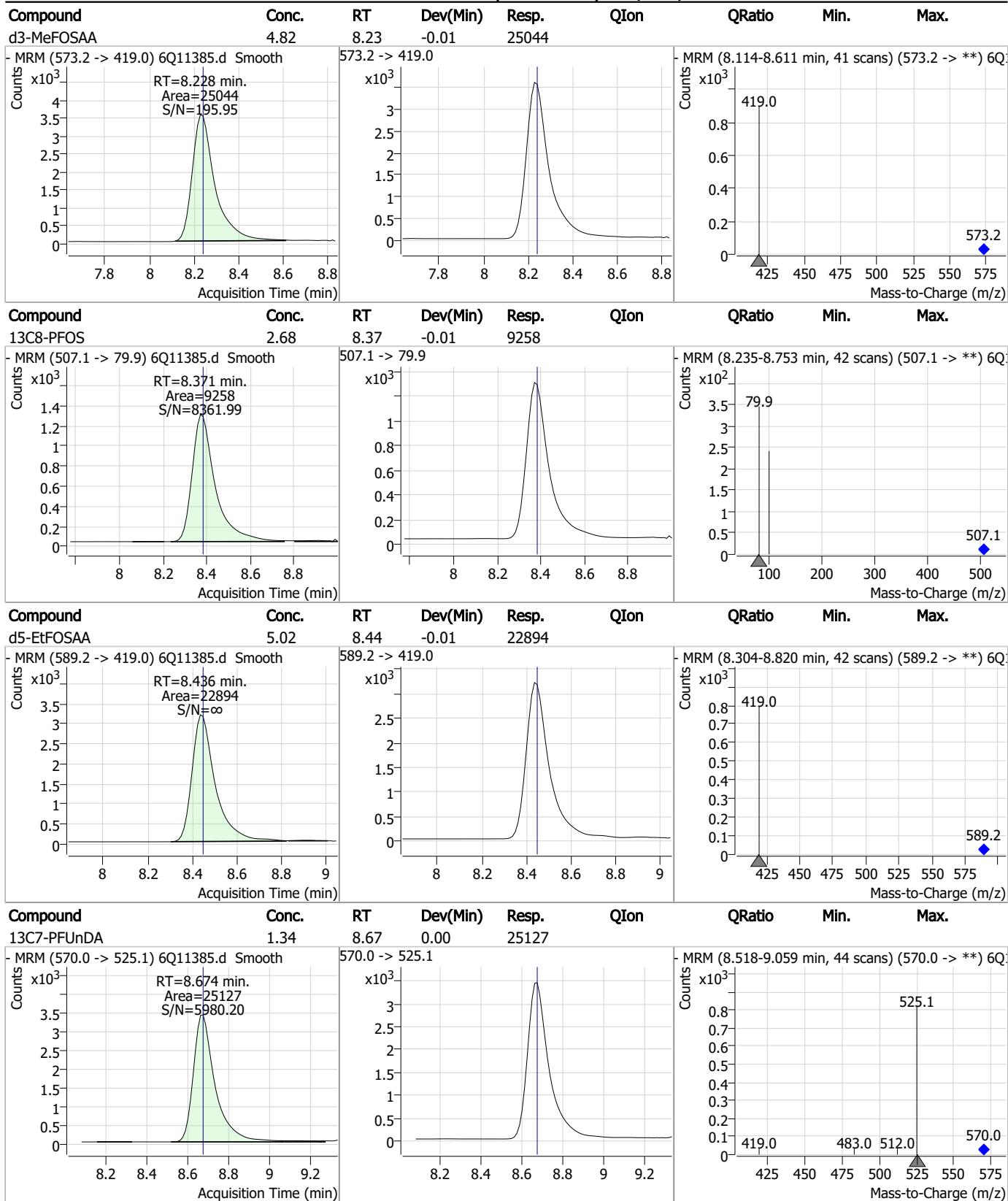


Perfluorinated Compounds by LC/MS/MS



7.2.2
7

Perfluorinated Compounds by LC/MS/MS



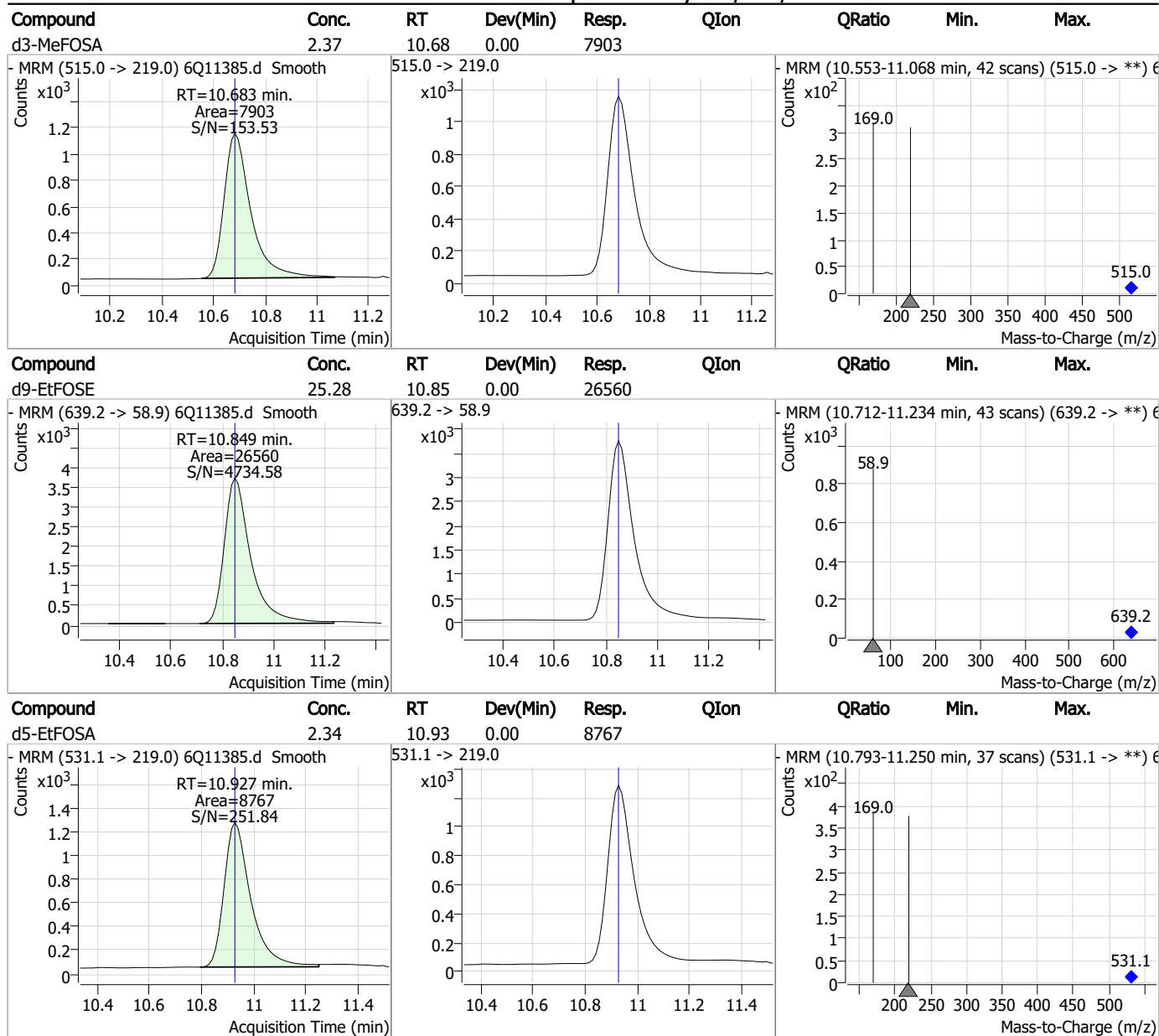
7.2.2
7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.28	9.12	0.00	27416				
13C8-FOSA	2.57	9.57	0.00	18704				
13C2-PFTeDA	1.20	9.86	0.00	15011				
d7-MeFOSE	24.98	10.59	0.00	34327				

7.2.2
7

Perfluorinated Compounds by LC/MS/MS



7.2.2
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q11458.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/17/2023 7:03:41 AM
 Sample Name : iccb
 Vial : P1-C1
 DA Method File : 1633_011123_S6Q174.quantmethod.xml
 Batch Name : s6q179.batch.bin
 Sample Information : OP94795,S6Q179,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.988	216.8 -> 171.9	78875	10.00 µg/L	-0.012
M5-PFPeA	4.371	268.3 -> 223.0	38227	5.00 µg/L	-0.012
M5-PFHxA	5.564	318.0 -> 273.0	31888	2.50 µg/L	0.000
M4-PFHpA	6.503	367.1 -> 322.0	35285	2.50 µg/L	-0.012
M8-PFOA	7.160	421.1 -> 376.0	61928	2.50 µg/L	0.000
M9-PFNA	7.702	472.1 -> 427.0	28246	1.25 µg/L	-0.013
M6-PFDA	8.195	519.1 -> 474.1	18136	1.25 µg/L	-0.012
M7-PFUnDA	8.674	570.0 -> 525.1	21615	1.25 µg/L	0.000
M2-PFDoDA	9.117	615.1 -> 570.0	23693	1.25 µg/L	0.000
M2-PFTeDA	9.844	715.2 -> 670.0	14571	1.25 µg/L	-0.012
M8-FOSA	9.568	506.1 -> 77.8	18188	2.50 µg/L	0.000
M3-PFBS	5.506	302.1 -> 79.9	12710	2.50 µg/L	-0.025
M3-PFHxS	7.288	402.1 -> 79.9	8260	2.50 µg/L	-0.012
M8-PFOS	8.383	507.1 -> 79.9	8206	2.50 µg/L	0.000
M2-4:2FTS	5.216	329.1 -> 80.9	1628	5.00 µg/L	-0.012
M2-6:2FTS	6.921	429.1 -> 80.9	2524	5.00 µg/L	-0.012
M2-8:2FTS	7.982	529.1 -> 80.9	2536	5.00 µg/L	0.000
M3-MeFOSAA	8.240	573.2 -> 419.0	24434	5.00 µg/L	0.000
M3-HFPO-DA	5.941	286.9 -> 168.9	14009	10.00 µg/L	0.000
M5-EtFOSAA	8.448	589.2 -> 419.0	21444	5.00 µg/L	0.000
M7-MeFOSE	10.591	623.2 -> 58.9	31851	25.00 µg/L	0.000
M9-EtFOSE	10.849	639.2 -> 58.9	24359	25.00 µg/L	0.000
M5-EtFOSA	10.927	531.1 -> 219.0	7837	2.50 µg/L	0.000
M3-MeFOSA	10.683	515.0 -> 219.0	7064	2.50 µg/L	0.000
13C4-PFOS	8.372	502.8 -> 79.9	10288	2.50 µg/L	-0.012
13C3-PFBA	2.979	216.0 -> 172.0	34496	5.00 µg/L	-0.025
18O2-PFHxS	7.299	403.0 -> 83.9	6678	2.50 µg/L	0.000
13C4-PFOA	7.160	417.1 -> 372.0	72175	2.50 µg/L	-0.012
13C2-PFDA	8.196	515.1 -> 470.1	25284	1.25 µg/L	-0.012
13C5-PFNA	7.703	468.0 -> 423.0	32117	1.25 µg/L	0.000
13C2-PFHxA	5.565	315.1 -> 270.0	32346	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.216	329.1 -> 80.9	1628	4.67 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 93.5%		
13C2-6:2FTS	6.921	429.1 -> 80.9	2524	5.29 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.8%		
13C2-8:2FTS	7.982	529.1 -> 80.9	2536	4.87 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.4%		
13C2-PFDoDA	9.117	615.1 -> 570.0	23693	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.6%		
13C2-PFTeDA	9.844	715.2 -> 670.0	14571	1.24 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.0%		
13C3-PFBS	5.506	302.1 -> 79.9	12710	2.27 µg/L	-0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 90.8%		
13C3-PFHxS	7.288	402.1 -> 79.9	8260	2.28 µg/L	-0.012

7.2.3
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 = 91.1%	
13C4-PFBA	2.988	216.8 -> 171.9	78875	10.01 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C4-PFHpA	6.503	367.1 -> 322.0	35285	2.69 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.6%	
13C5-PFHxA	5.564	318.0 -> 273.0	31888	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.2%	
13C5-PFPeA	4.371	268.3 -> 223.0	38227	5.30 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.9%	
13C6-PFDA	8.195	519.1 -> 474.1	18136	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C7-PFUnDA	8.674	570.0 -> 525.1	21615	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C8-FOSA	9.568	506.1 -> 77.8	18188	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.7%	
13C8-PFOA	7.160	421.1 -> 376.0	61928	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C8-PFOS	8.383	507.1 -> 79.9	8206	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C9-PFNA	7.702	472.1 -> 427.0	28246	1.24 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.0%	
d3-MeFOSAA	8.240	573.2 -> 419.0	24434	4.93 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C3-HFPO-DA	5.941	286.9 -> 168.9	14009	10.50 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.0%	
d3-MeFOSA	10.683	515.0 -> 219.0	7064	2.22 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 88.8%	
d5-EtFOSAA	8.448	589.2 -> 419.0	21444	4.93 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.7%	
d7-MeFOSE	10.591	623.2 -> 58.9	31851	24.32 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.3%	
d9-EtFOSE	10.849	639.2 -> 58.9	24359	24.32 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.3%	
d5-EtFOSA	10.927	531.1 -> 219.0	7837	2.20 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 88.0%	

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	-	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.	

7.2.3
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	-	463.0 -> 419.0	-	N.D.	
		463.0 -> 219.0			
PFNS	-	548.8 -> 79.9	-	N.D.	
		548.8 -> 98.9			
PFOA	-	413.0 -> 369.0	-	N.D.	
		413.0 -> 169.0			
PFOS	-	498.9 -> 79.9	-	N.D.	
		498.9 -> 98.8			
PFPeA	-	263.0 -> 219.0	-	N.D.	
PFPeS	-	349.1 -> 79.9	-	N.D.	
		349.1 -> 98.9			
PFTeDA	-	713.1 -> 669.0	-	N.D.	
		713.1 -> 168.9			
PFTTrDA	-	663.0 -> 619.0	-	N.D.	
		663.0 -> 168.9			
PFUnDA	-	563.1 -> 519.0	-	N.D.	
		563.1 -> 269.1			
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.	
		632.9 -> 452.9			
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.	
		532.8 -> 353.0			
ADONA	-	376.9 -> 250.9	-	N.D.	
		376.9 -> 84.8			
HFPO-DA	-	284.9 -> 168.9	-	N.D.	
		284.9 -> 184.9			
3:3FTCA	-	241.0 -> 177.0	-	N.D.	
		241.0 -> 117.0			
5:3FTCA	-	341.0 -> 237.1	-	N.D.	
		341.0 -> 217.0			
7:3FTCA	-	441.0 -> 316.9	-	N.D.	
		441.0 -> 336.9			
EtFOSA	-	526.0 -> 219.0	-	N.D.	
		526.0 -> 169.0			
EtFOSE	-	630.0 -> 58.9	-	N.D.	
MeFOSA	-	511.9 -> 219.0	-	N.D.	
		511.9 -> 169.0			
MeFOSE	-	616.1 -> 58.9	-	N.D.	
PFDoDS	-	699.1 -> 79.9	-	N.D.	
		699.1 -> 98.8			
NFDHA	-	295.0 -> 201.0	-	N.D.	
		295.0 -> 84.9			
PFMBA	-	279.0 -> 85.1	-	N.D.	
PFMPA	-	229.0 -> 84.9	-	N.D.	
PFEESA	-	314.8 -> 134.9	-	N.D.	
		314.8 -> 82.9			

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

7.2.3
7

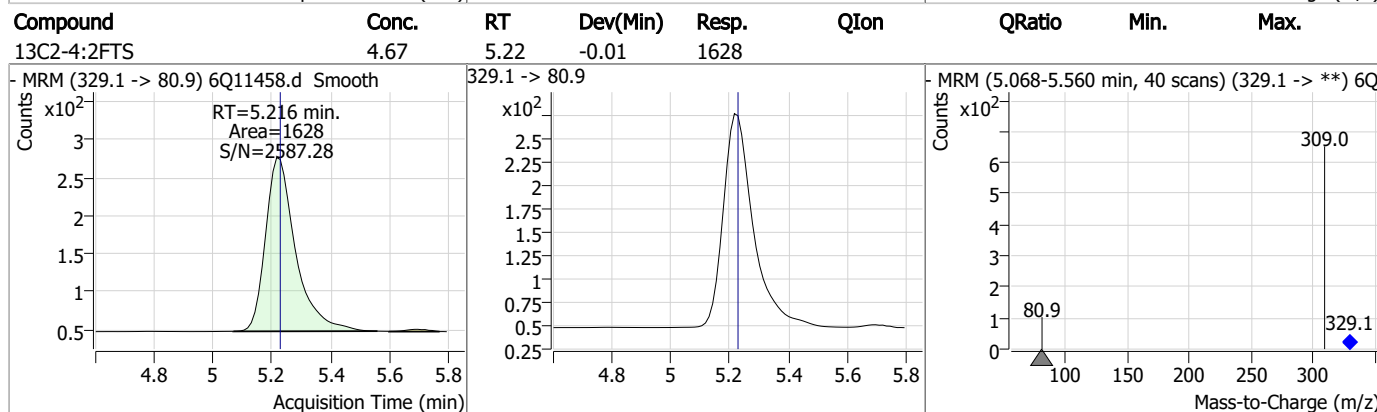
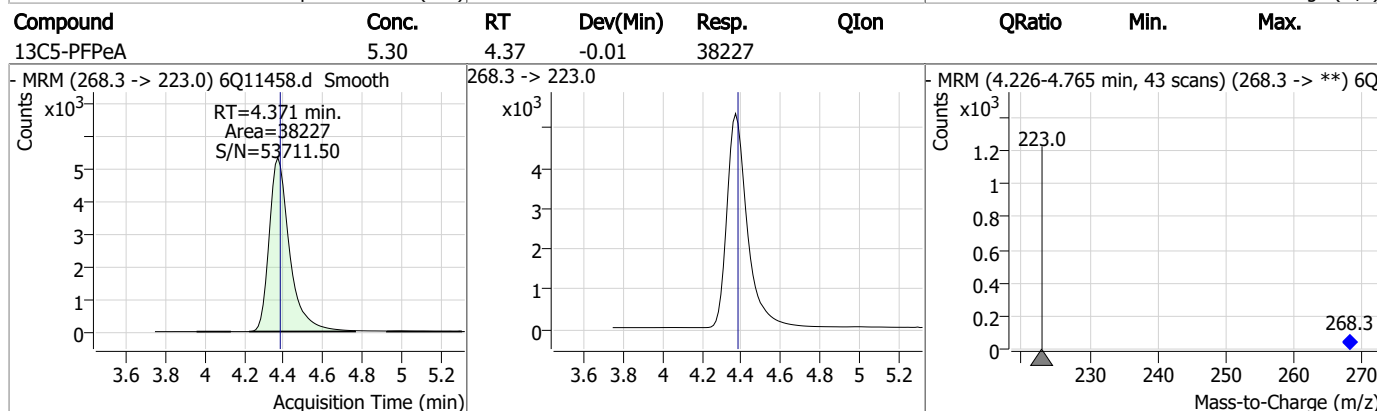
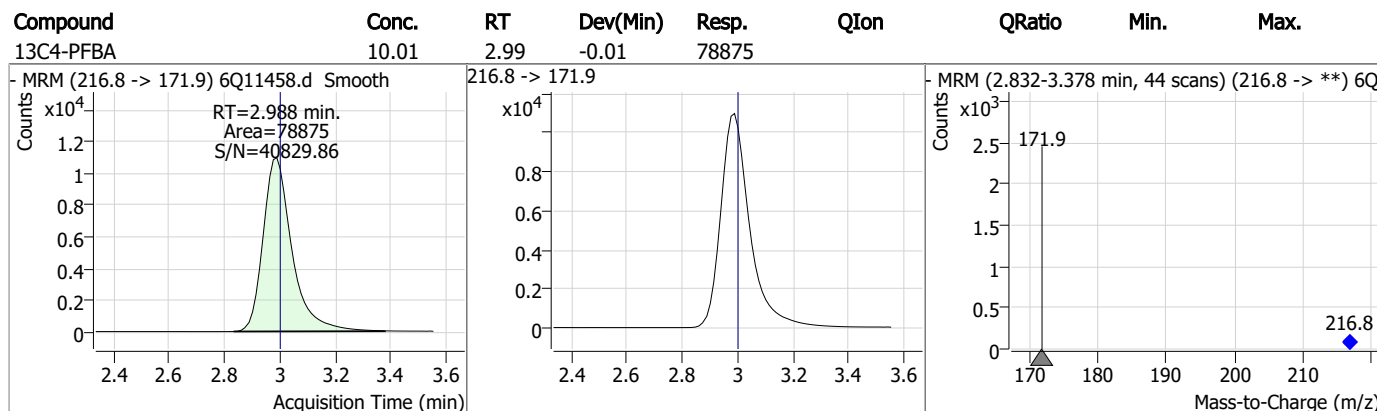
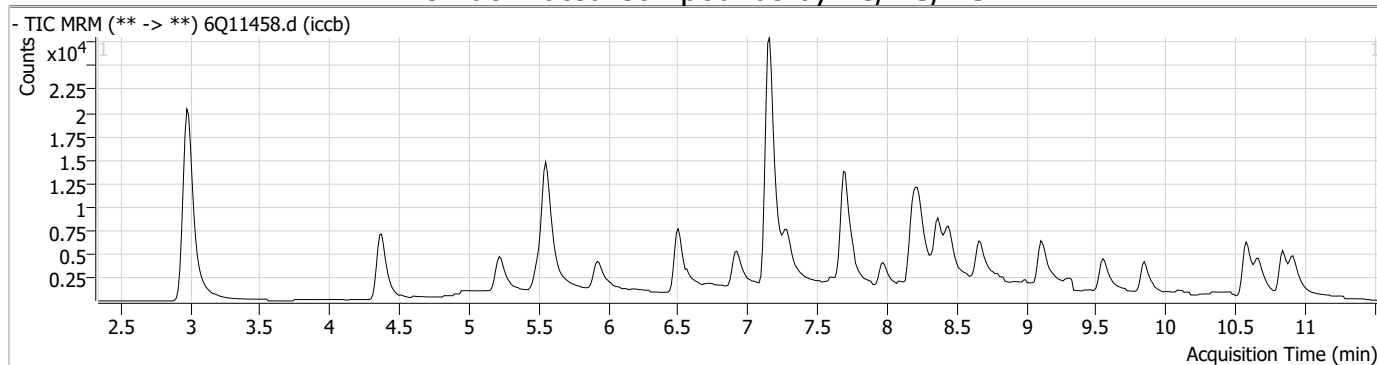
Perfluorinated Compounds by LC/MS/MS

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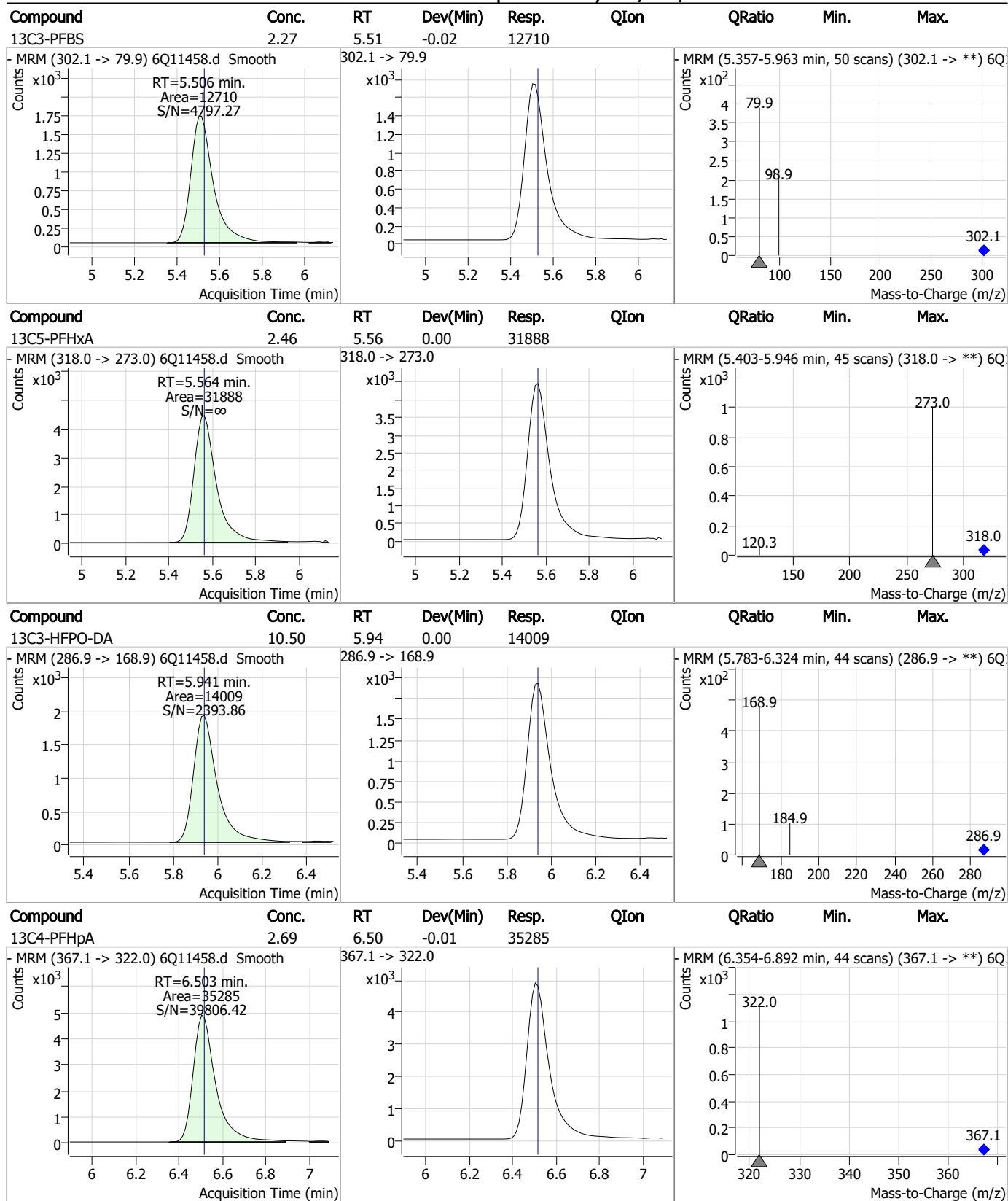
7.2.3

7

Perfluorinated Compounds by LC/MS/MS

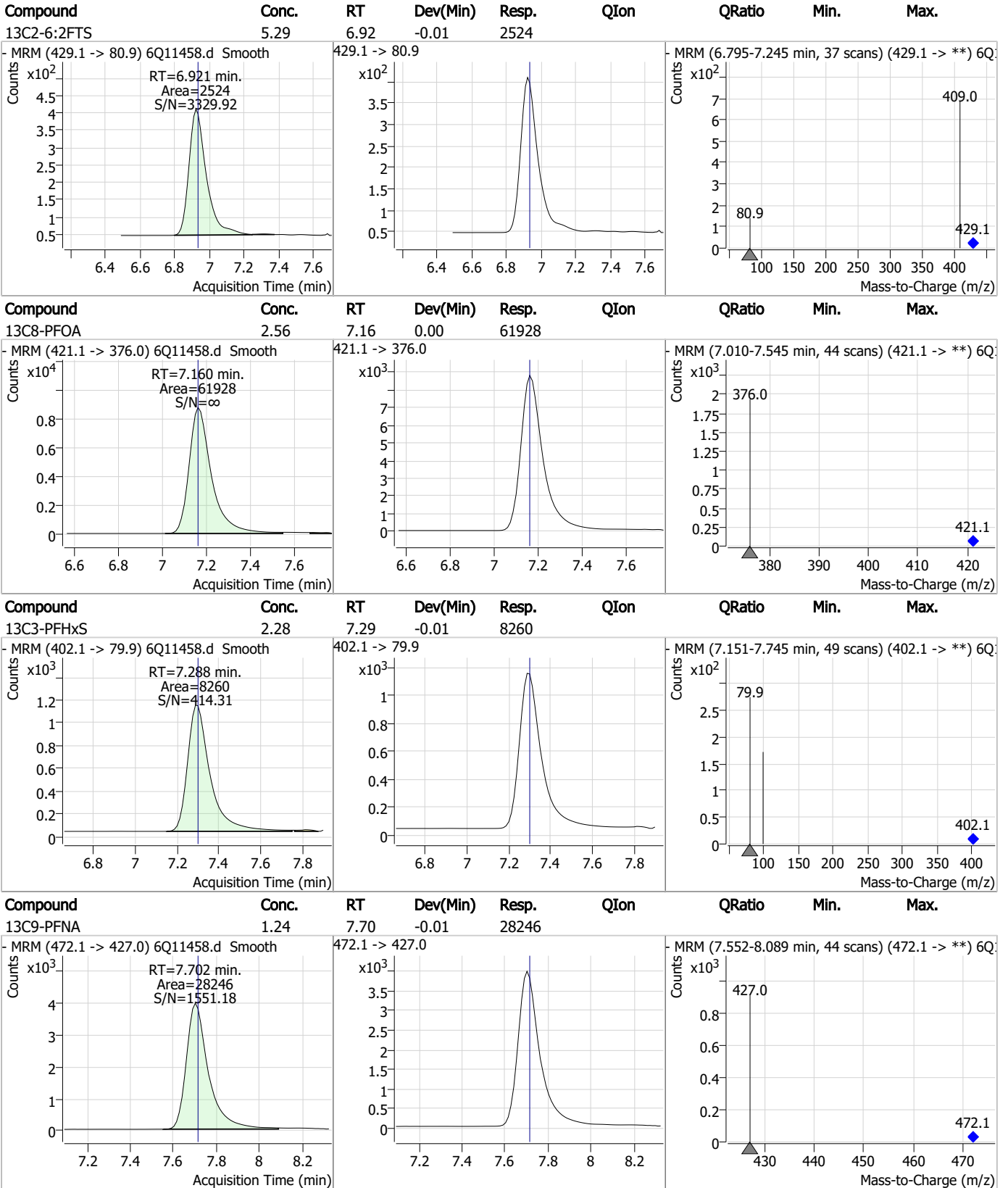


Perfluorinated Compounds by LC/MS/MS



7.2.3
7

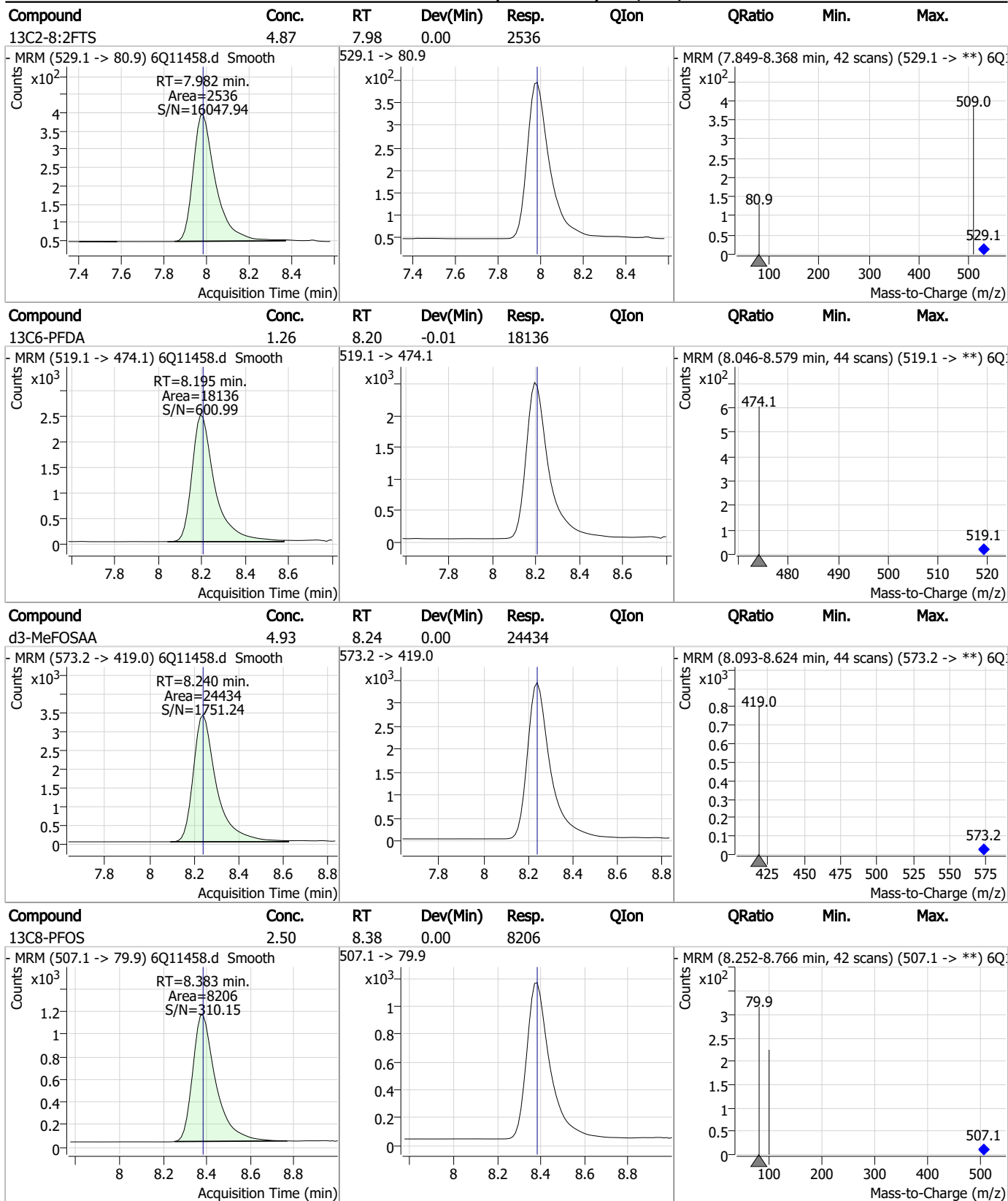
Perfluorinated Compounds by LC/MS/MS



7.2.3

7

Perfluorinated Compounds by LC/MS/MS



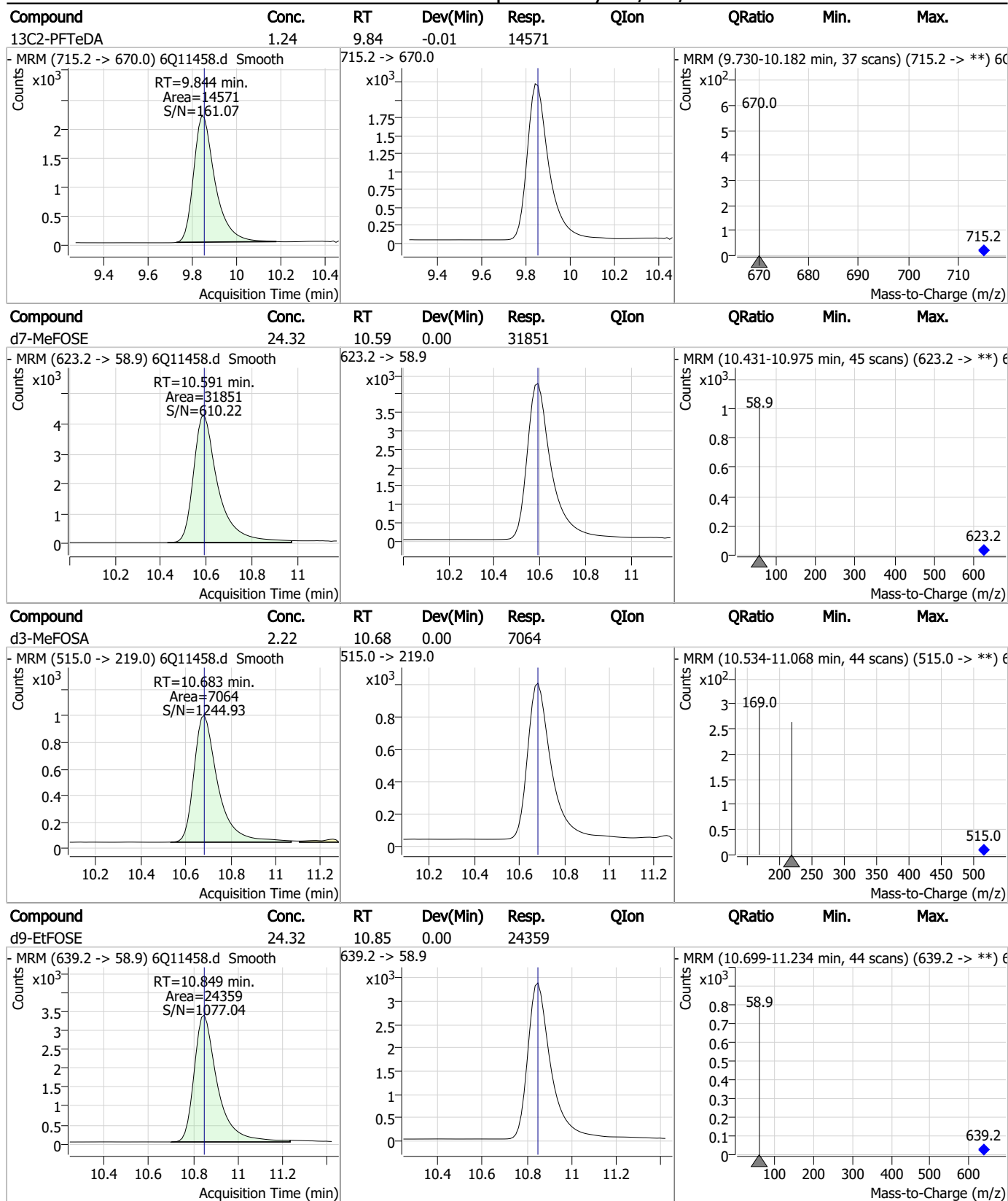
7.2.3
7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.93	8.45	0.00	21444				
13C7-PFUnDA	1.23	8.67	0.00	21615				
13C2-PFDoDA	1.18	9.12	0.00	23693				
13C8-FOSA	2.62	9.57	0.00	18188				

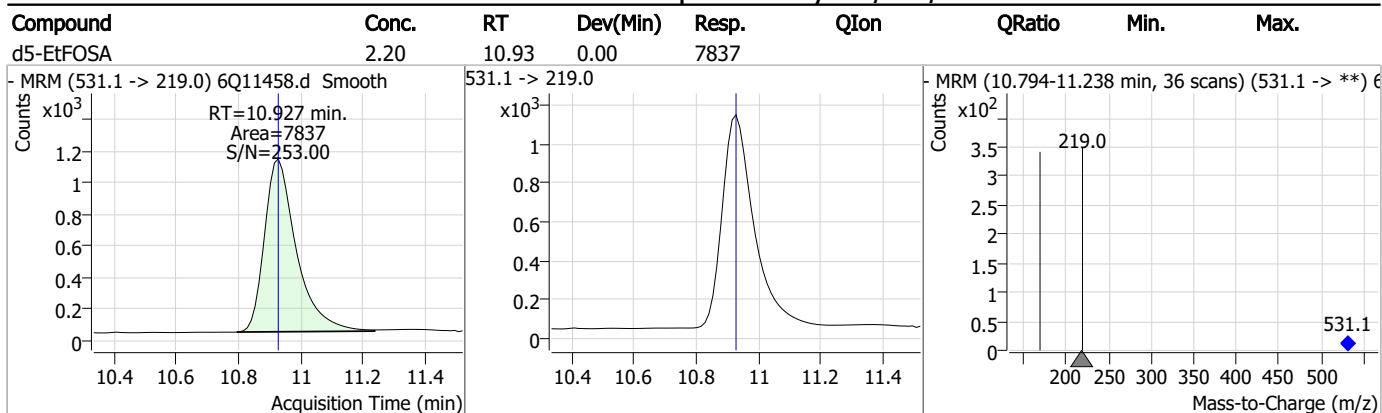
7.2.3
7

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

Data File : 6Q11471.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/17/2023 10:05:36 AM
 Sample Name : IBLK
 Vial : P1-C1
 DA Method File : 1633_011123_S6Q174.quantmethod.xml
 Batch Name : s6q179.batch.bin
 Sample Information : OP94795,S6Q179,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.975	216.8 -> 171.9	79970	10.00 µg/L	-0.025
M5-PFPeA	4.371	268.3 -> 223.0	37201	5.00 µg/L	-0.012
M5-PFHxA	5.564	318.0 -> 273.0	33121	2.50 µg/L	0.000
M4-PFHpA	6.503	367.1 -> 322.0	33974	2.50 µg/L	-0.012
M8-PFOA	7.160	421.1 -> 376.0	60163	2.50 µg/L	0.000
M9-PFNA	7.702	472.1 -> 427.0	28540	1.25 µg/L	-0.013
M6-PFDA	8.195	519.1 -> 474.1	18972	1.25 µg/L	-0.012
M7-PFUnDA	8.674	570.0 -> 525.1	21993	1.25 µg/L	0.000
M2-PFDoDA	9.117	615.1 -> 570.0	24184	1.25 µg/L	0.000
M2-PFTeDA	9.856	715.2 -> 670.0	14339	1.25 µg/L	0.000
M8-FOSA	9.568	506.1 -> 77.8	16374	2.50 µg/L	0.000
M3-PFBS	5.506	302.1 -> 79.9	12487	2.50 µg/L	-0.025
M3-PFHxS	7.288	402.1 -> 79.9	8696	2.50 µg/L	-0.012
M8-PFOS	8.383	507.1 -> 79.9	8207	2.50 µg/L	0.000
M2-4:2FTS	5.228	329.1 -> 80.9	1592	5.00 µg/L	0.000
M2-6:2FTS	6.921	429.1 -> 80.9	2543	5.00 µg/L	-0.012
M2-8:2FTS	7.982	529.1 -> 80.9	2497	5.00 µg/L	0.000
M3-MeFOSAA	8.240	573.2 -> 419.0	23830	5.00 µg/L	0.000
M3-HFPO-DA	5.928	286.9 -> 168.9	13960	10.00 µg/L	-0.012
M5-EtFOSAA	8.448	589.2 -> 419.0	20705	5.00 µg/L	0.000
M7-MeFOSE	10.591	623.2 -> 58.9	30687	25.00 µg/L	0.000
M9-EtFOSE	10.849	639.2 -> 58.9	23878	25.00 µg/L	0.000
M5-EtFOSA	10.927	531.1 -> 219.0	7854	2.50 µg/L	0.000
M3-MeFOSA	10.683	515.0 -> 219.0	7225	2.50 µg/L	0.000
13C4-PFOS	8.384	502.8 -> 79.9	10452	2.50 µg/L	0.000
13C3-PFBA	2.979	216.0 -> 172.0	34921	5.00 µg/L	-0.025
18O2-PFHxS	7.299	403.0 -> 83.9	6223	2.50 µg/L	0.000
13C4-PFOA	7.160	417.1 -> 372.0	71901	2.50 µg/L	-0.012
13C2-PFDA	8.196	515.1 -> 470.1	25199	1.25 µg/L	-0.012
13C5-PFNA	7.703	468.0 -> 423.0	30275	1.25 µg/L	0.000
13C2-PFHxA	5.565	315.1 -> 270.0	33137	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.228	329.1 -> 80.9	1592	4.91 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.1%		
13C2-6:2FTS	6.921	429.1 -> 80.9	2543	5.72 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 114.4%		
13C2-8:2FTS	7.982	529.1 -> 80.9	2497	5.15 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.9%		
13C2-PFDoDA	9.117	615.1 -> 570.0	24184	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.8%		
13C2-PFTeDA	9.856	715.2 -> 670.0	14339	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.7%		
13C3-PFBS	5.506	302.1 -> 79.9	12487	2.39 µg/L	-0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.7%		
13C3-PFHxS	7.288	402.1 -> 79.9	8696	2.57 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 = 103.0%	
13C4-PFBA	2.975	216.8 -> 171.9	79970	10.03 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C4-PFHpA	6.503	367.1 -> 322.0	33974	2.53 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C5-PFHxA	5.564	318.0 -> 273.0	33121	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C5-PFPeA	4.371	268.3 -> 223.0	37201	5.03 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C6-PFDA	8.195	519.1 -> 474.1	18972	1.32 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.8%	
13C7-PFUnDA	8.674	570.0 -> 525.1	21993	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C8-FOSA	9.568	506.1 -> 77.8	16374	2.32 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.8%	
13C8-PFOA	7.160	421.1 -> 376.0	60163	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C8-PFOS	8.383	507.1 -> 79.9	8207	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.3%	
13C9-PFNA	7.702	472.1 -> 427.0	28540	1.33 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.1%	
d3-MeFOSAA	8.240	573.2 -> 419.0	23830	4.74 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.7%	
13C3-HFPO-DA	5.928	286.9 -> 168.9	13960	10.21 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.1%	
d3-MeFOSA	10.683	515.0 -> 219.0	7225	2.24 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 89.4%	
d5-EtFOSAA	8.448	589.2 -> 419.0	20705	4.69 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.8%	
d7-MeFOSE	10.591	623.2 -> 58.9	30687	23.07 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 92.3%	
d9-EtFOSE	10.849	639.2 -> 58.9	23878	23.47 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 93.9%	
d5-EtFOSA	10.927	531.1 -> 219.0	7854	2.17 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 86.8%	

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.	



7.2.4
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Perfluorinated Compounds by LC/MS/MS

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

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

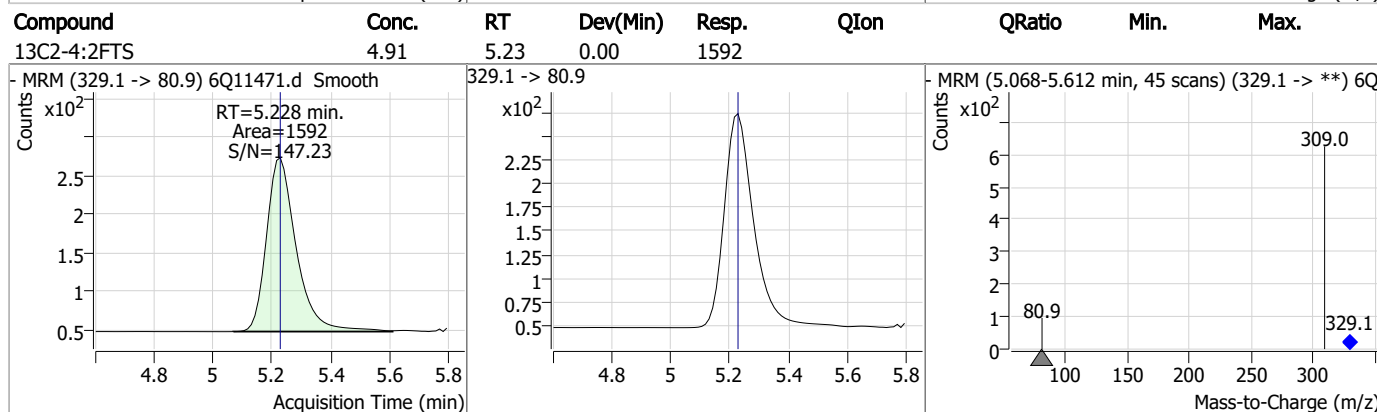
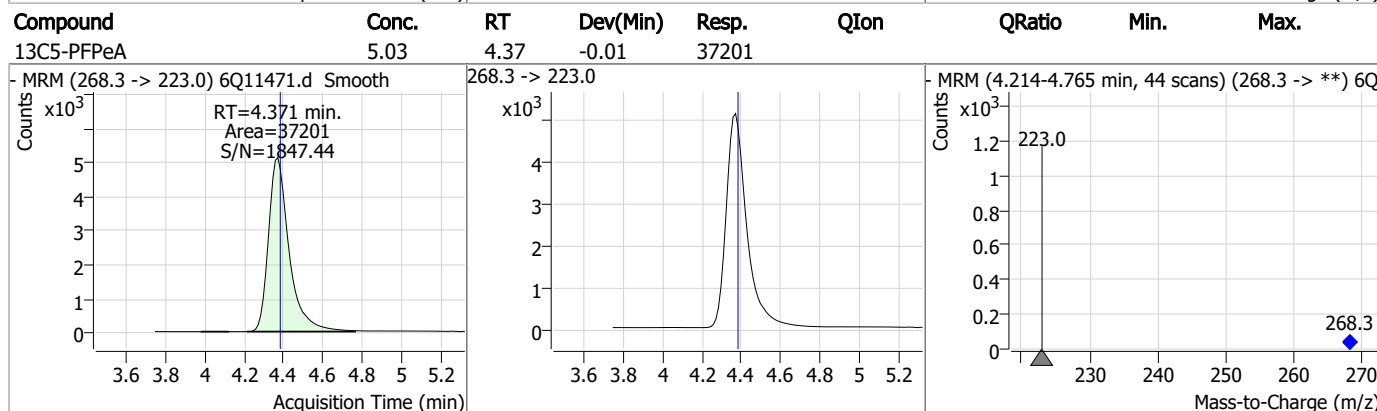
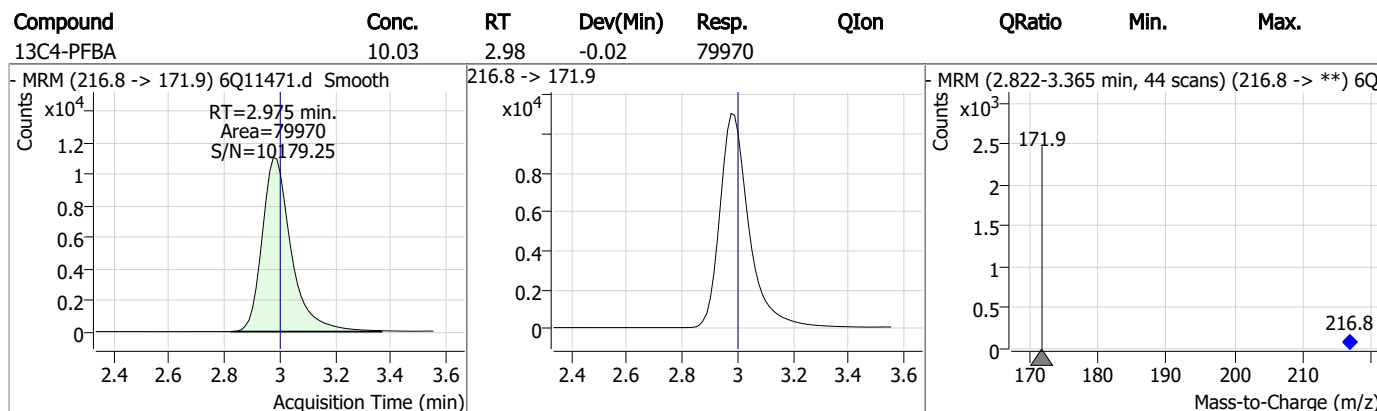
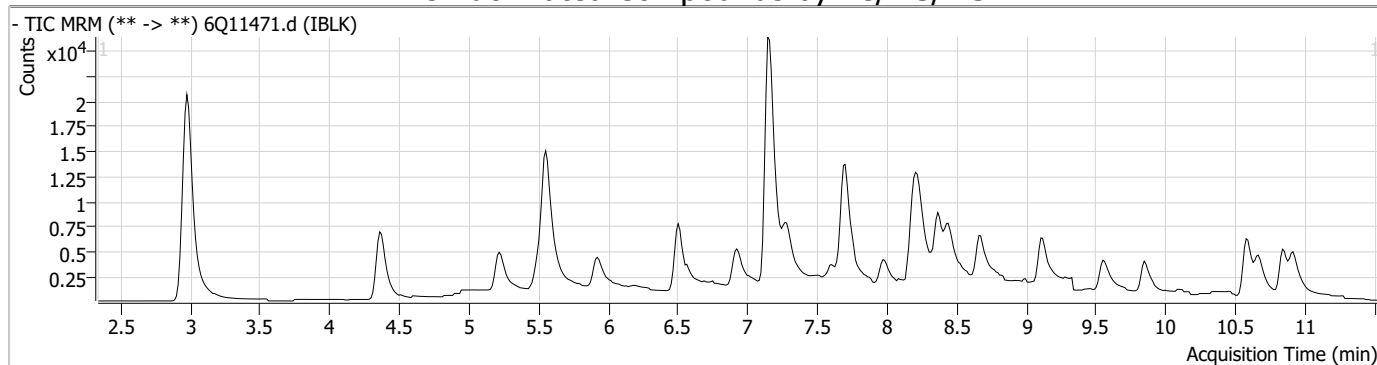
Perfluorinated Compounds by LC/MS/MS

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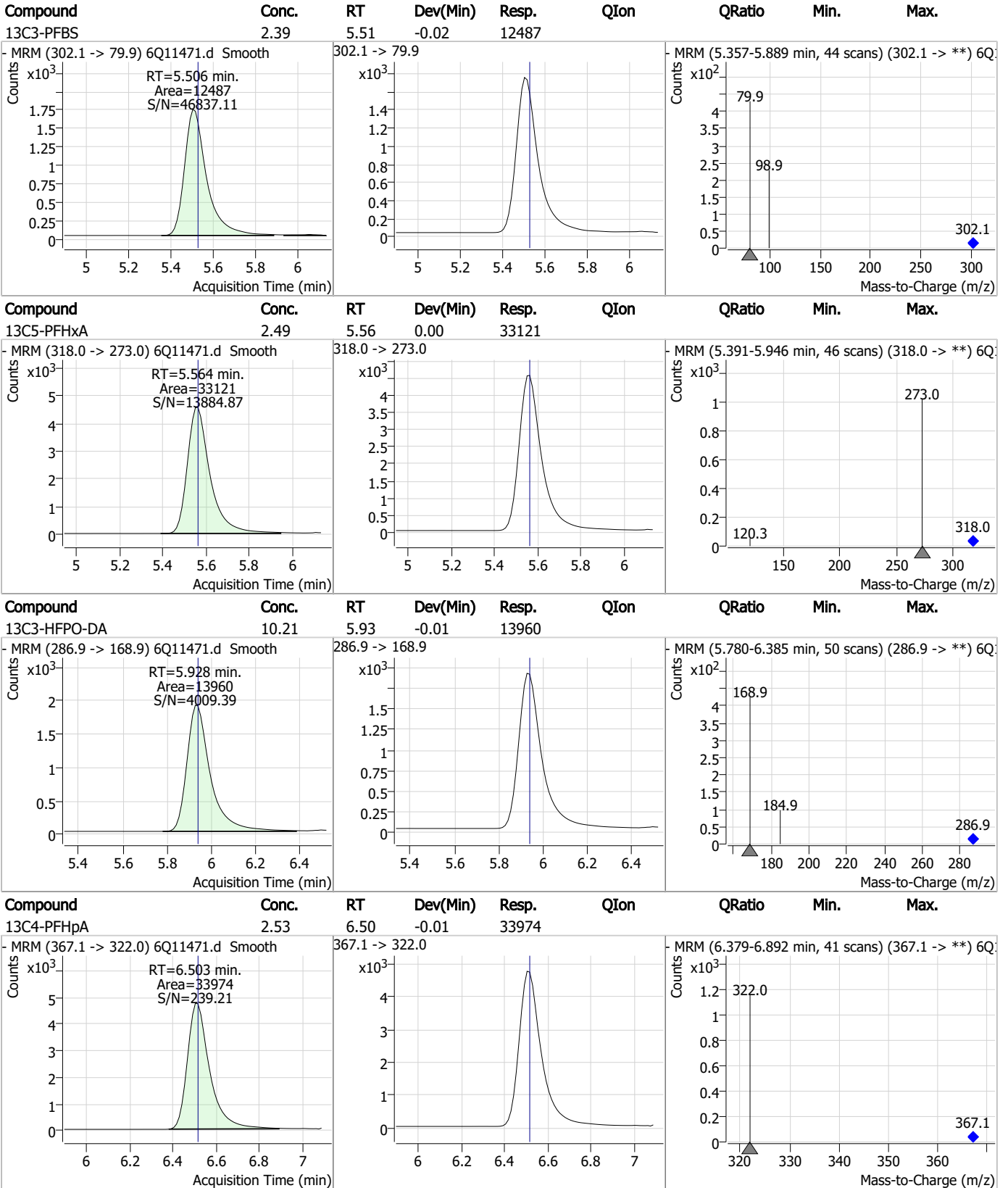
7.2.4

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Perfluorinated Compounds by LC/MS/MS



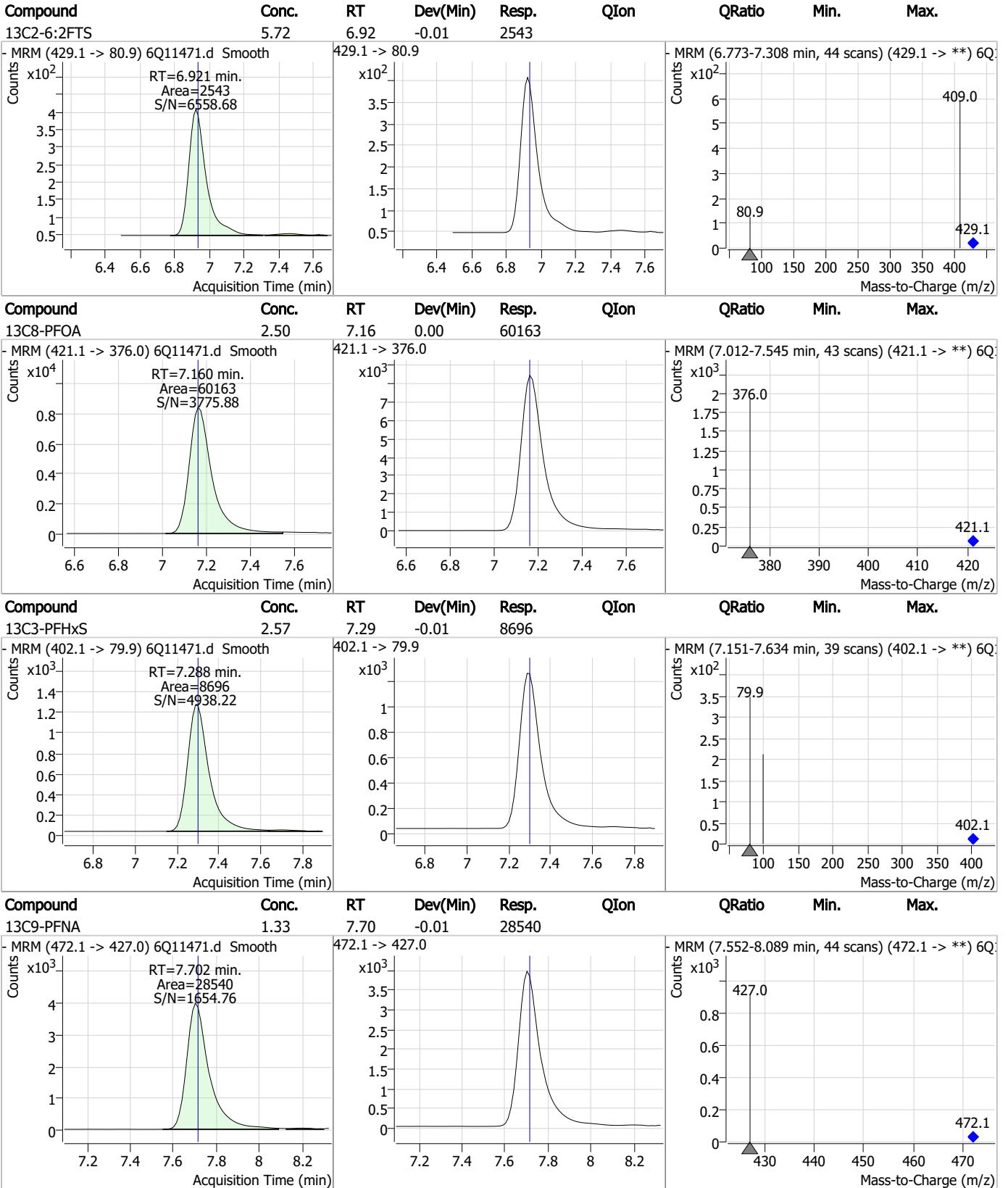
Perfluorinated Compounds by LC/MS/MS



7.2.4

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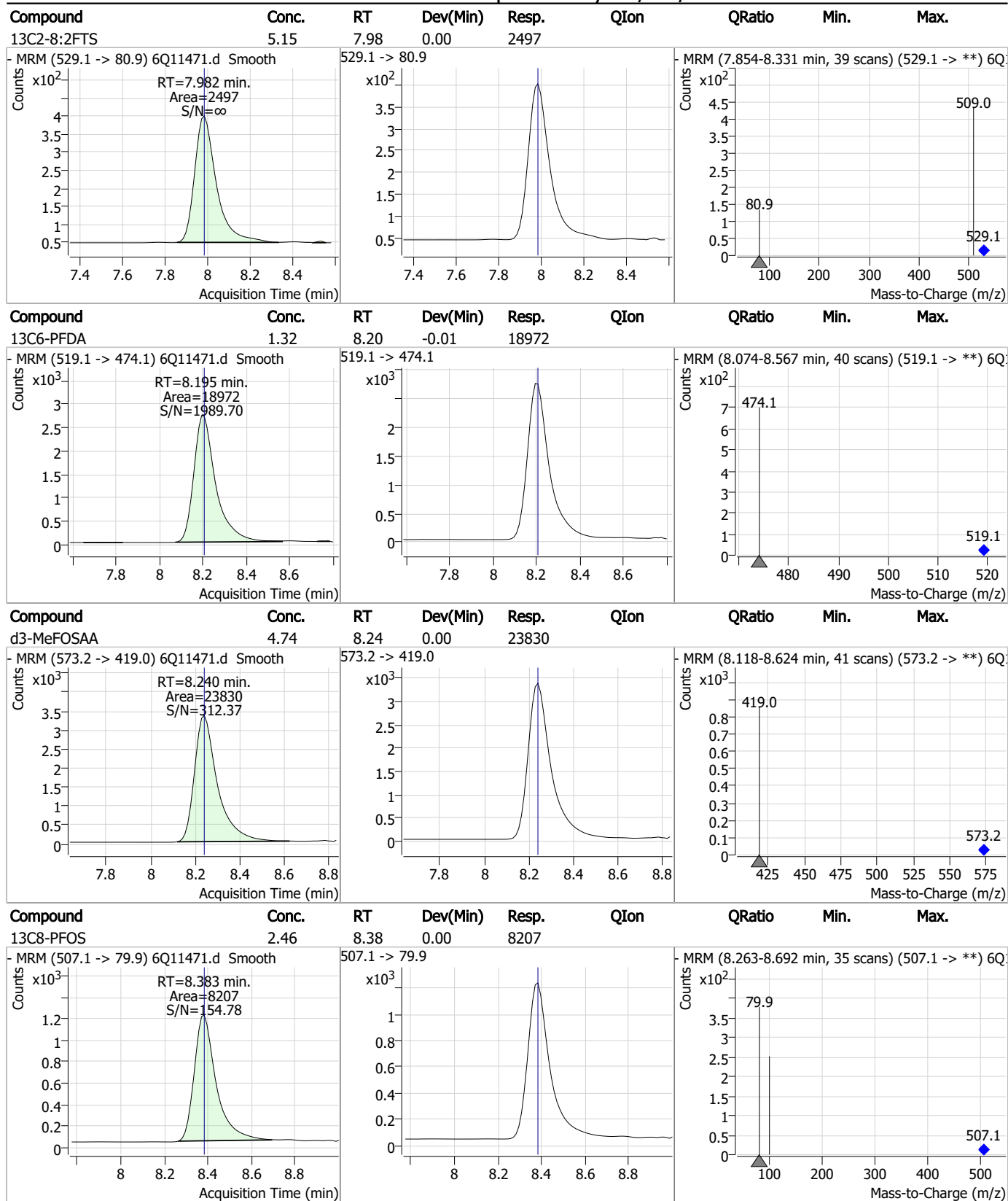
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



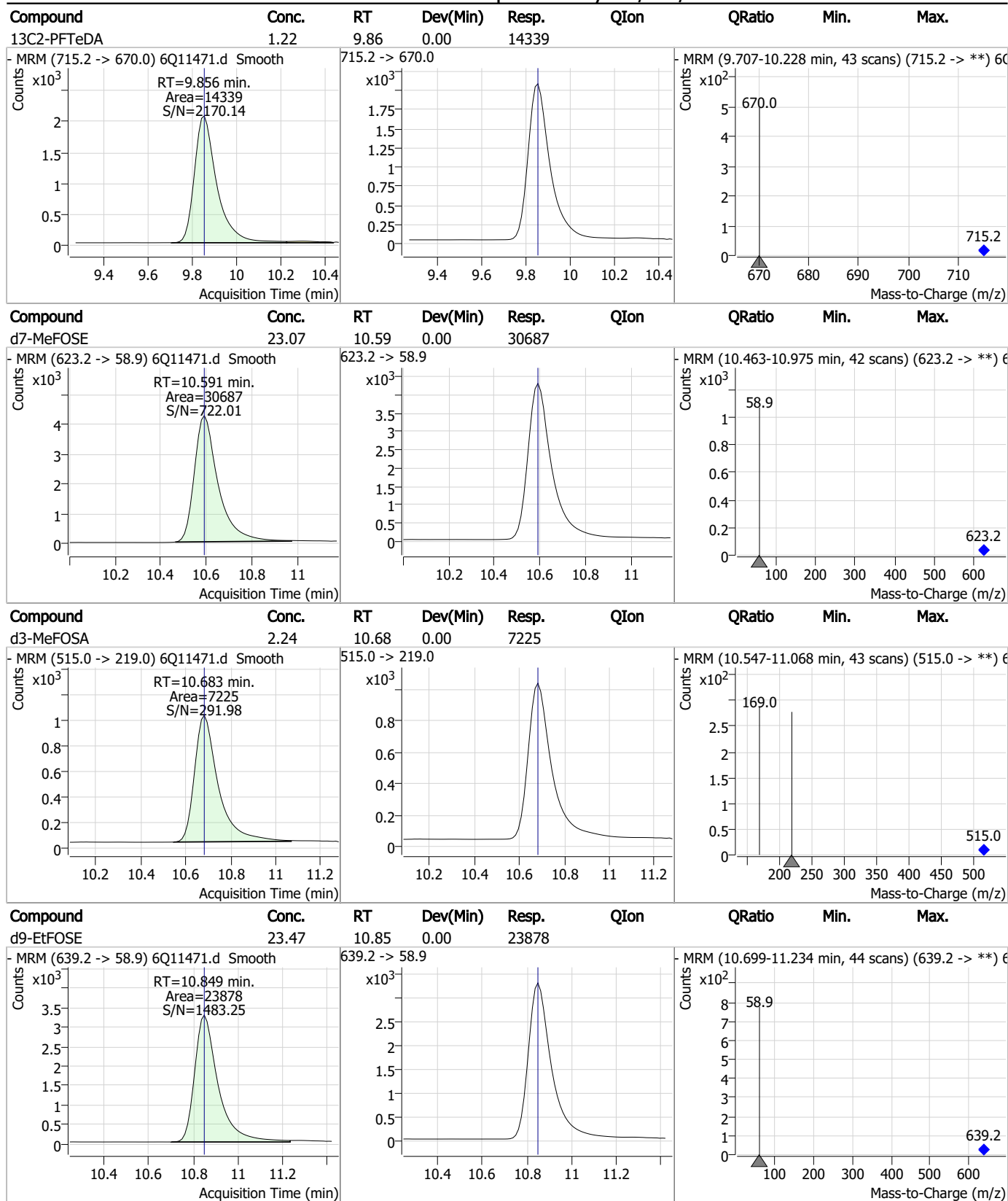
7.2.4
7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.69	8.45	0.00	20705				
13C7-PFUnDA	1.26	8.67	0.00	21993				
13C2-PFDoDA	1.21	9.12	0.00	24184				
13C8-FOSA	2.32	9.57	0.00	16374				

7.2.4
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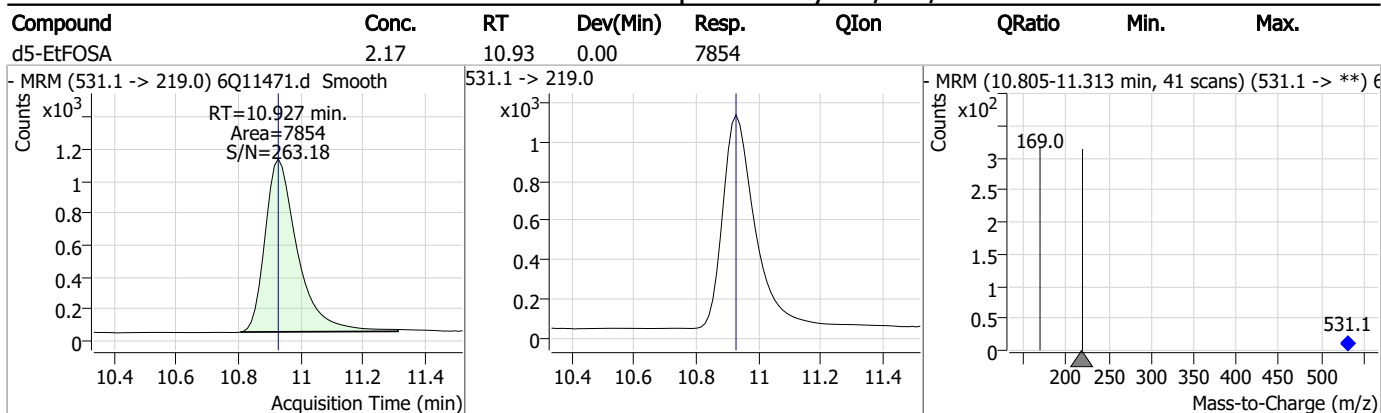
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q11435.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/17/2023 1:41:57 AM
 Sample Name : iccb
 Vial : P1-C1
 DA Method File : 1633_011123_S6Q174.quantmethod.xml
 Batch Name : s6q179.batch.bin
 Sample Information : OP94795,S6Q179,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.988	216.8 -> 171.9	77204	10.00 µg/L	-0.012
M5-PFPeA	4.371	268.3 -> 223.0	36471	5.00 µg/L	-0.012
M5-PFHxA	5.564	318.0 -> 273.0	31384	2.50 µg/L	0.000
M4-PFHpA	6.516	367.1 -> 322.0	32173	2.50 µg/L	0.000
M8-PFOA	7.160	421.1 -> 376.0	56279	2.50 µg/L	0.000
M9-PFNA	7.702	472.1 -> 427.0	25625	1.25 µg/L	-0.013
M6-PFDA	8.195	519.1 -> 474.1	18763	1.25 µg/L	-0.012
M7-PFUnDA	8.674	570.0 -> 525.1	20424	1.25 µg/L	0.000
M2-PFDoDA	9.104	615.1 -> 570.0	24252	1.25 µg/L	-0.012
M2-PFTeDA	9.844	715.2 -> 670.0	12813	1.25 µg/L	-0.012
M8-FOSA	9.556	506.1 -> 77.8	16867	2.50 µg/L	-0.012
M3-PFBS	5.519	302.1 -> 79.9	11994	2.50 µg/L	-0.012
M3-PFHxS	7.300	402.1 -> 79.9	8384	2.50 µg/L	0.000
M8-PFOS	8.383	507.1 -> 79.9	8251	2.50 µg/L	0.000
M2-4:2FTS	5.228	329.1 -> 80.9	1882	5.00 µg/L	0.000
M2-6:2FTS	6.921	429.1 -> 80.9	2436	5.00 µg/L	-0.012
M2-8:2FTS	7.982	529.1 -> 80.9	2576	5.00 µg/L	0.000
M3-MeFOSAA	8.240	573.2 -> 419.0	23847	5.00 µg/L	0.000
M3-HFPO-DA	5.941	286.9 -> 168.9	14158	10.00 µg/L	0.000
M5-EtFOSAA	8.448	589.2 -> 419.0	20725	5.00 µg/L	0.000
M7-MeFOSE	10.579	623.2 -> 58.9	30816	25.00 µg/L	-0.012
M9-EtFOSE	10.836	639.2 -> 58.9	23917	25.00 µg/L	-0.012
M5-EtFOSA	10.915	531.1 -> 219.0	7795	2.50 µg/L	-0.012
M3-MeFOSA	10.683	515.0 -> 219.0	7061	2.50 µg/L	0.000
13C4-PFOS	8.384	502.8 -> 79.9	9899	2.50 µg/L	0.000
13C3-PFBA	2.979	216.0 -> 172.0	33568	5.00 µg/L	-0.025
18O2-PFHxS	7.299	403.0 -> 83.9	5563	2.50 µg/L	0.000
13C4-PFOA	7.160	417.1 -> 372.0	71670	2.50 µg/L	-0.012
13C2-PFDA	8.196	515.1 -> 470.1	23669	1.25 µg/L	-0.012
13C5-PFNA	7.703	468.0 -> 423.0	29557	1.25 µg/L	0.000
13C2-PFHxA	5.565	315.1 -> 270.0	32635	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.228	329.1 -> 80.9	1882	6.49 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 129.7%		
13C2-6:2FTS	6.921	429.1 -> 80.9	2436	6.13 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 122.6%		
13C2-8:2FTS	7.982	529.1 -> 80.9	2576	5.94 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 118.8%		
13C2-PFDoDA	9.104	615.1 -> 570.0	24252	1.29 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.4%		
13C2-PFTeDA	9.844	715.2 -> 670.0	12813	1.16 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 93.0%		
13C3-PFBS	5.519	302.1 -> 79.9	11994	2.57 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.8%		
13C3-PFHxS	7.300	402.1 -> 79.9	8384	2.78 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 = 111.0%	
13C4-PFBA	2.988	216.8 -> 171.9	77204	10.07 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C4-PFHpA	6.516	367.1 -> 322.0	32173	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.3%	
13C5-PFHxA	5.564	318.0 -> 273.0	31384	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.8%	
13C5-PFPeA	4.371	268.3 -> 223.0	36471	5.01 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C6-PFDA	8.195	519.1 -> 474.1	18763	1.39 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 111.4%	
13C7-PFUnDA	8.674	570.0 -> 525.1	20424	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C8-FOSA	9.556	506.1 -> 77.8	16867	2.52 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C8-PFOA	7.160	421.1 -> 376.0	56279	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.7%	
13C8-PFOS	8.383	507.1 -> 79.9	8251	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.3%	
13C9-PFNA	7.702	472.1 -> 427.0	25625	1.22 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.6%	
d3-MeFOSAA	8.240	573.2 -> 419.0	23847	5.00 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C3-HFPO-DA	5.941	286.9 -> 168.9	14158	10.52 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.2%	
d3-MeFOSA	10.683	515.0 -> 219.0	7061	2.31 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.3%	
d5-EtFOSAA	8.448	589.2 -> 419.0	20725	4.96 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.1%	
d7-MeFOSE	10.579	623.2 -> 58.9	30816	24.46 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.8%	
d9-EtFOSE	10.836	639.2 -> 58.9	23917	24.82 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.3%	
d5-EtFOSA	10.915	531.1 -> 219.0	7795	2.27 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 90.9%	

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	-	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.	



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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	-	398.7 -> 98.9	-	N.D.	
		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	-	563.1 -> 519.0	-	N.D.	
		563.1 -> 269.1			
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.	
		632.9 -> 452.9			
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.	
		532.8 -> 353.0			
ADONA	-	376.9 -> 250.9	-	N.D.	
		376.9 -> 84.8			
HFPO-DA	-	284.9 -> 168.9	-	N.D.	
		284.9 -> 184.9			
3:3FTCA	-	241.0 -> 177.0	-	N.D.	
		241.0 -> 117.0			
5:3FTCA	-	341.0 -> 237.1	-	N.D.	
		341.0 -> 217.0			
7:3FTCA	-	441.0 -> 316.9	-	N.D.	
		441.0 -> 336.9			
EtFOSA	-	526.0 -> 219.0	-	N.D.	
		526.0 -> 169.0			
EtFOSE	-	630.0 -> 58.9	-	N.D.	
		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
7

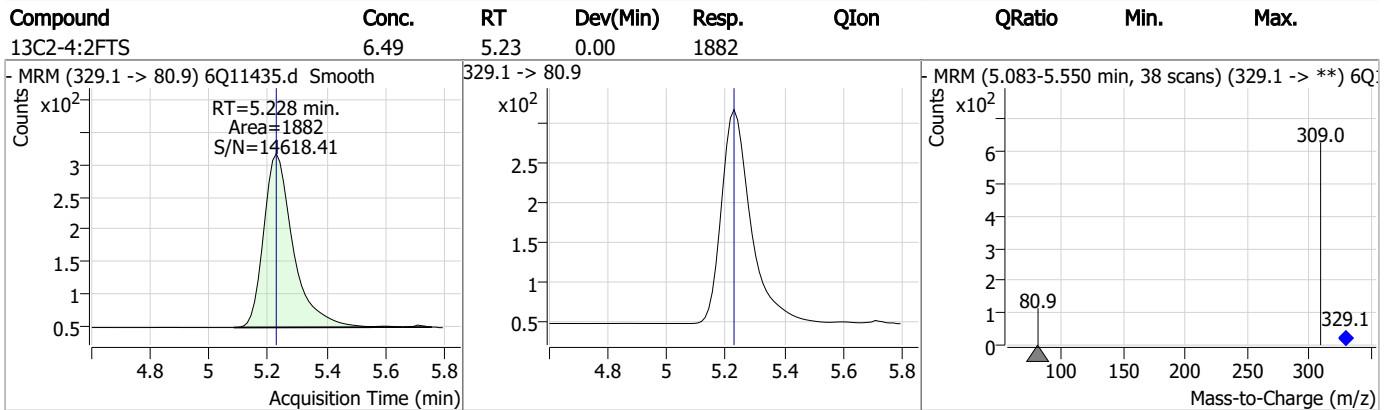
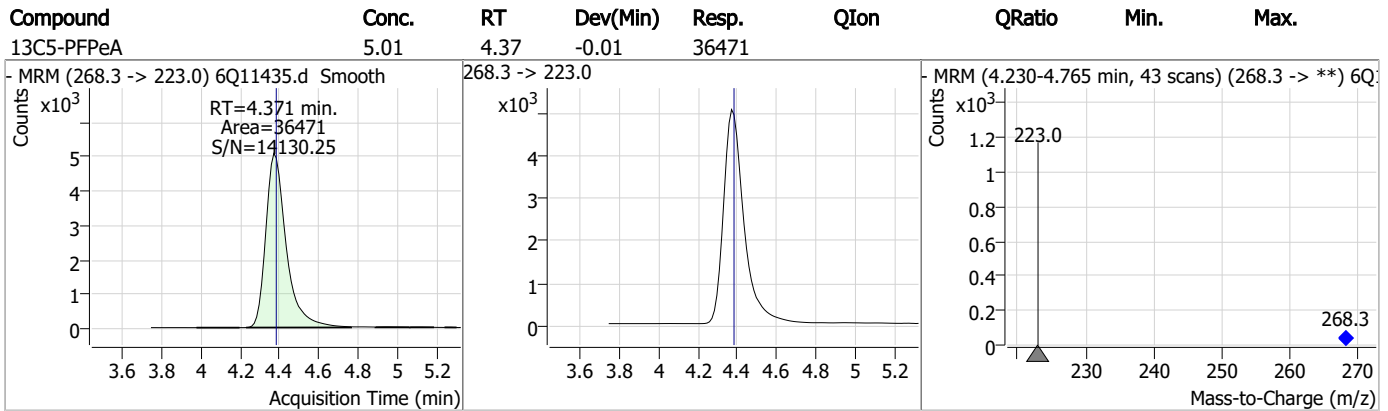
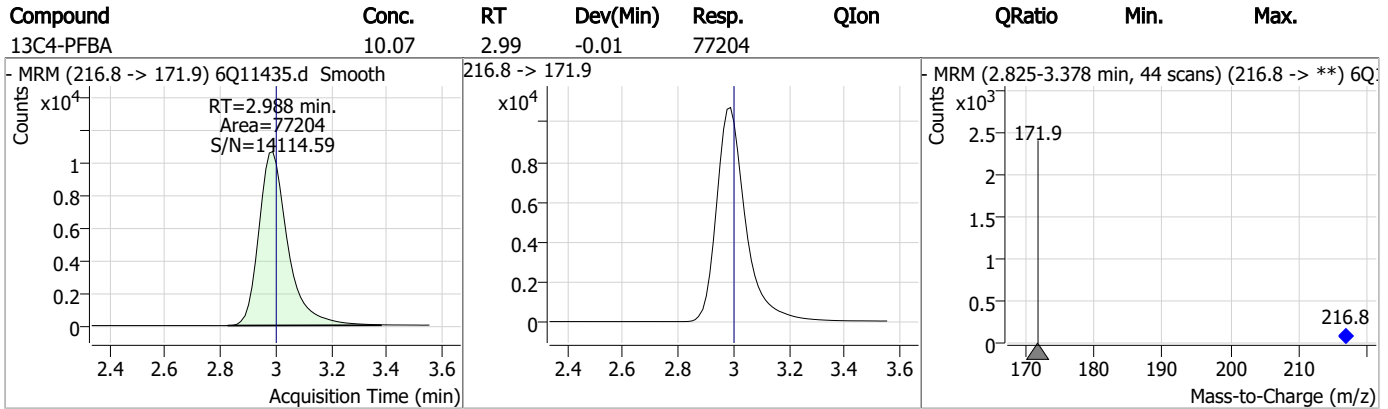
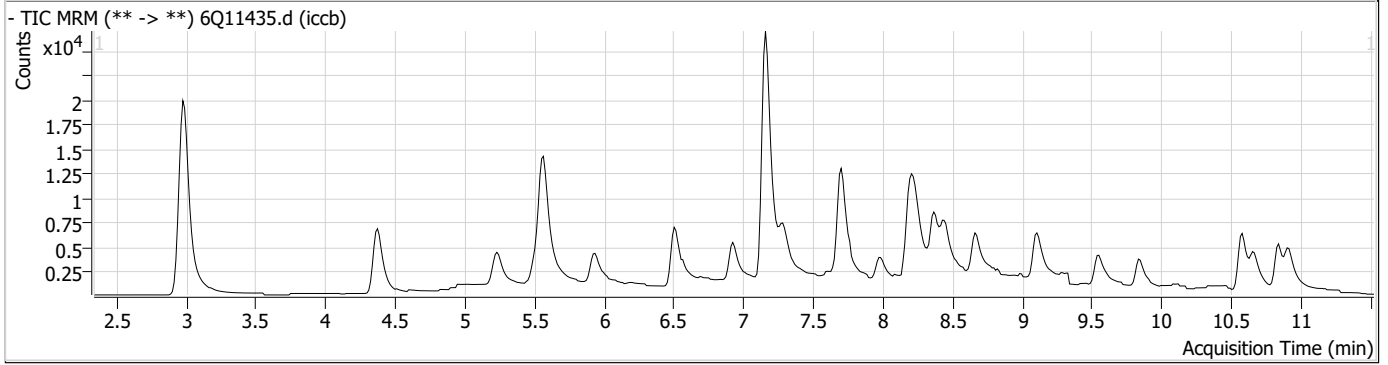
Perfluorinated Compounds by LC/MS/MS

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



7.2.5

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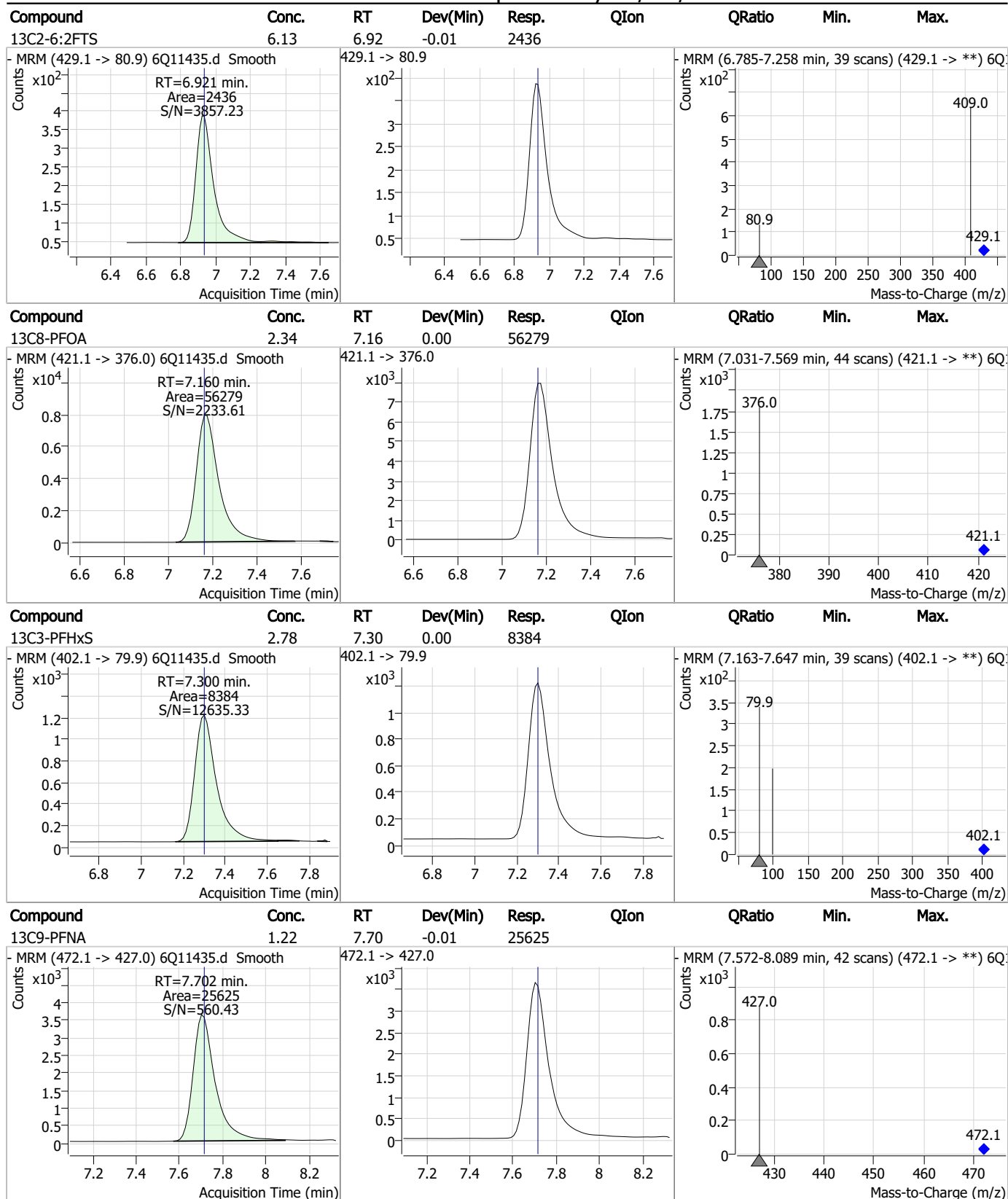
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.57	5.52	-0.01	11994				
13C5-PFHxA	2.40	5.56	0.00	31384				
13C3-HFPO-DA	10.52	5.94	0.00	14158				
13C4-PFHpA	2.43	6.52	0.00	32173				

7.2.5
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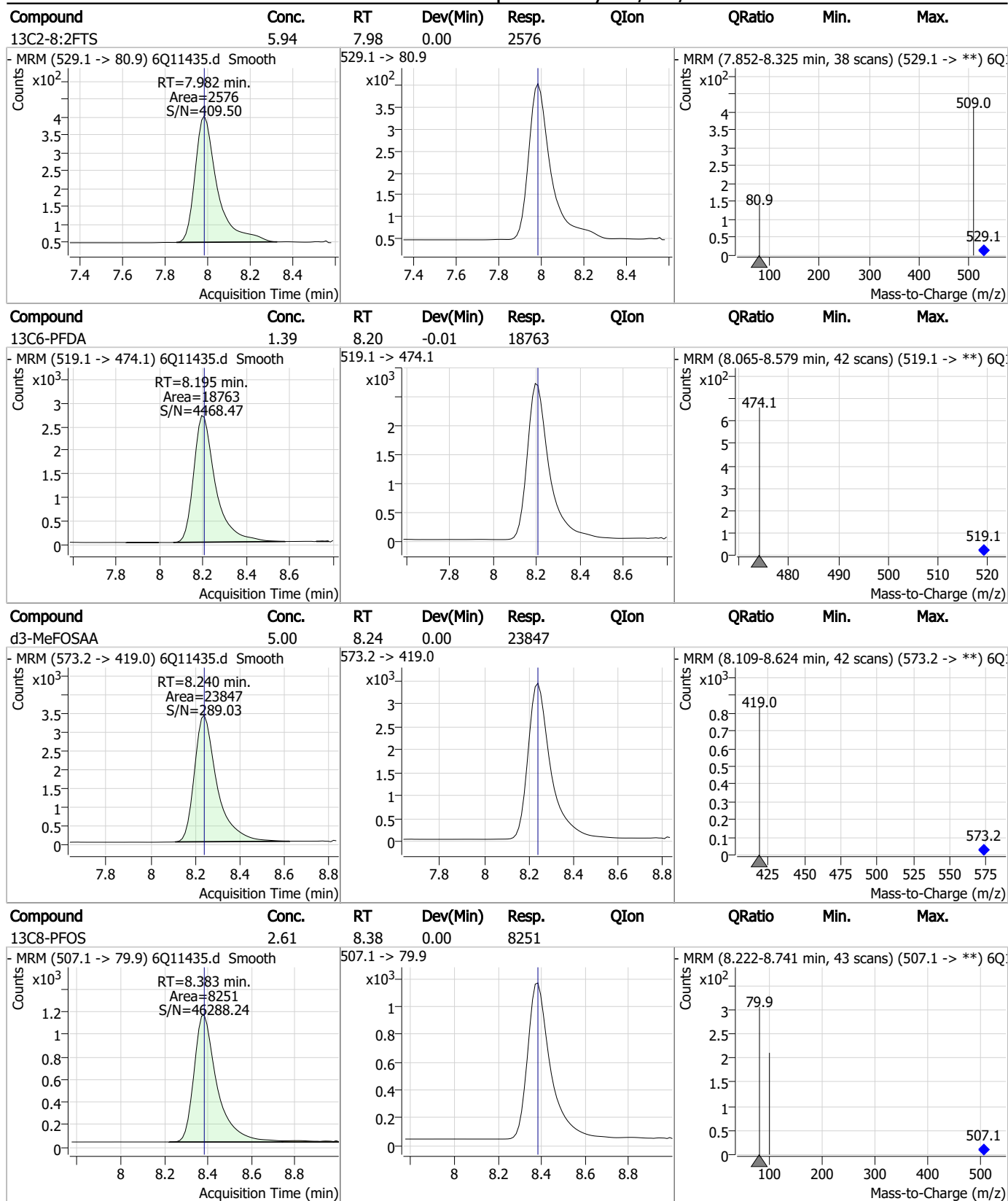


Perfluorinated Compounds by LC/MS/MS



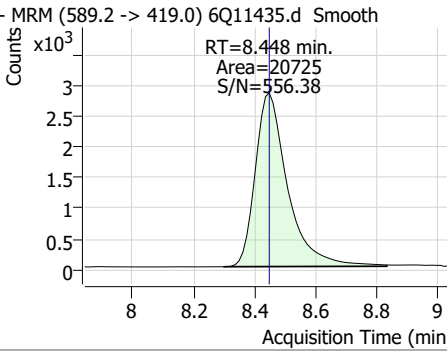
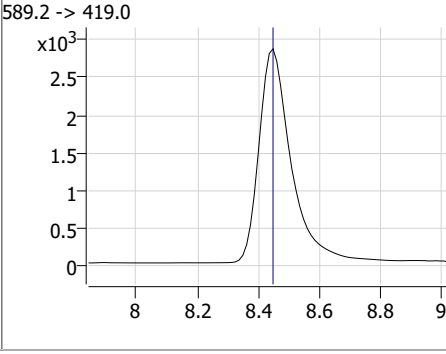
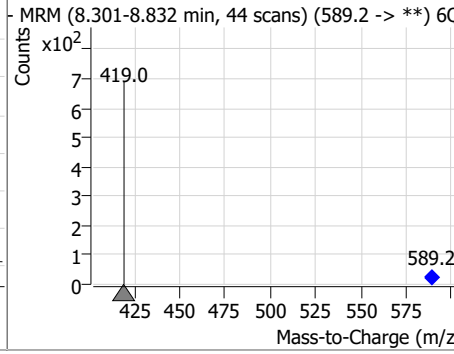
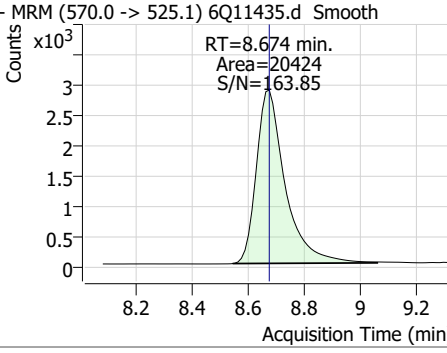
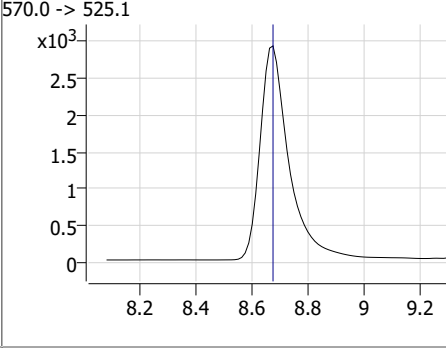
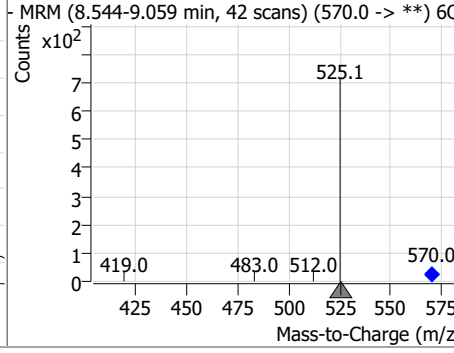
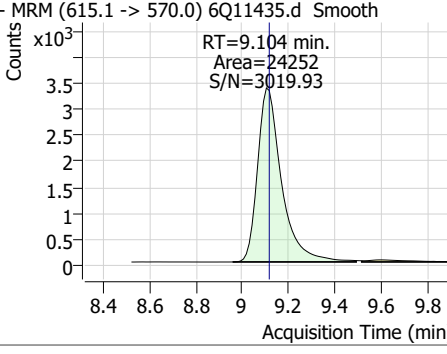
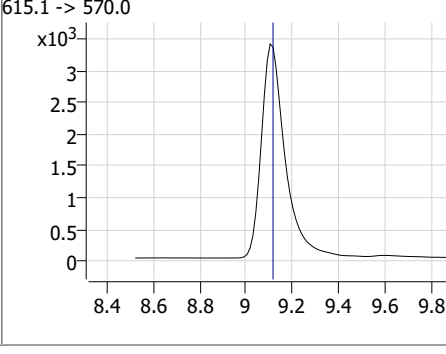
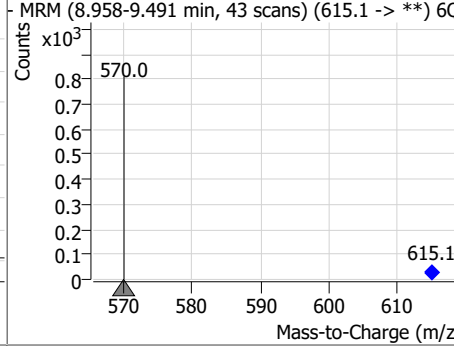
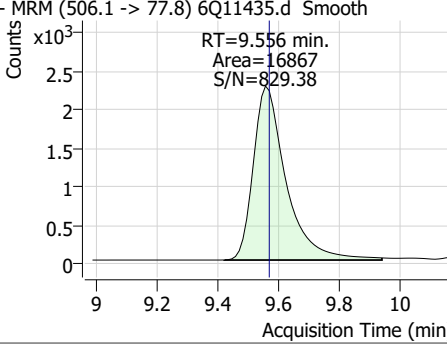
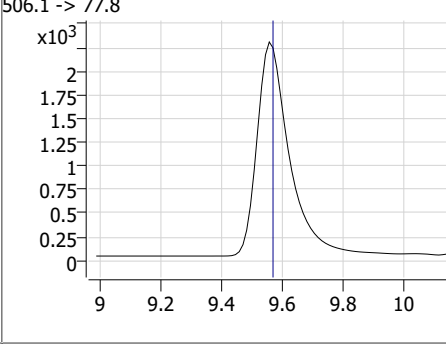
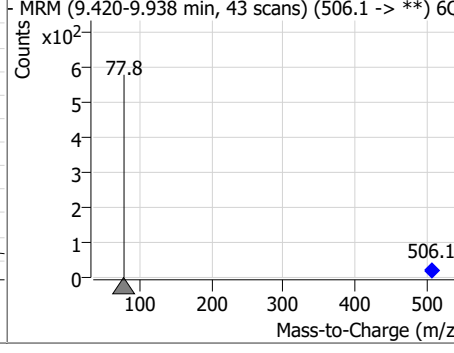
7.25
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Perfluorinated Compounds by LC/MS/MS



7.25
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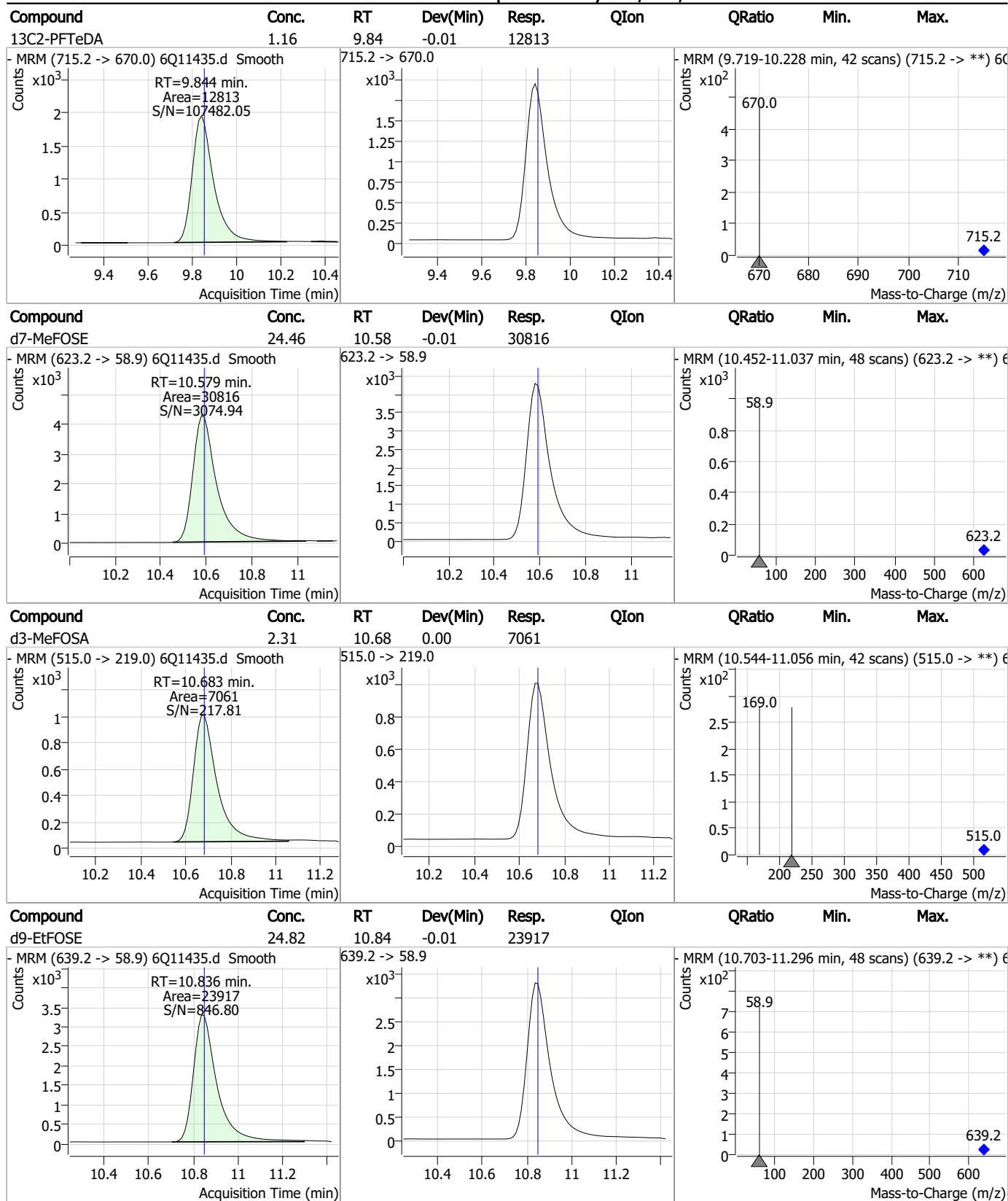
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.96	8.45	0.00	20725				
- MRM (589.2 -> 419.0) 6Q11435.d Smooth Counts x10 ³ RT=8.448 min. Area=20725 S/N=556.38 			589.2 -> 419.0 x10 ³ 			- MRM (8.301-8.832 min, 44 scans) (589.2 -> **) 6Q Counts x10 ² 419.0 589.2 		
13C7-PFUnDA	1.24	8.67	0.00	20424				
- MRM (570.0 -> 525.1) 6Q11435.d Smooth Counts x10 ³ RT=8.674 min. Area=20424 S/N=163.85 			570.0 -> 525.1 x10 ³ 			- MRM (8.544-9.059 min, 42 scans) (570.0 -> **) 6Q Counts x10 ² 419.0 483.0 512.0 525.1 570.0 		
13C2-PFDoDA	1.29	9.10	-0.01	24252				
- MRM (615.1 -> 570.0) 6Q11435.d Smooth Counts x10 ³ RT=9.104 min. Area=24252 S/N=3019.93 			615.1 -> 570.0 x10 ³ 			- MRM (8.958-9.491 min, 43 scans) (615.1 -> **) 6Q Counts x10 ³ 570.0 615.1 		
13C8-FOSA	2.52	9.56	-0.01	16867				
- MRM (506.1 -> 77.8) 6Q11435.d Smooth Counts x10 ³ RT=9.556 min. Area=16867 S/N=829.38 			506.1 -> 77.8 x10 ³ 			- MRM (9.420-9.938 min, 43 scans) (506.1 -> **) 6Q Counts x10 ² 77.8 506.1 		

7.25
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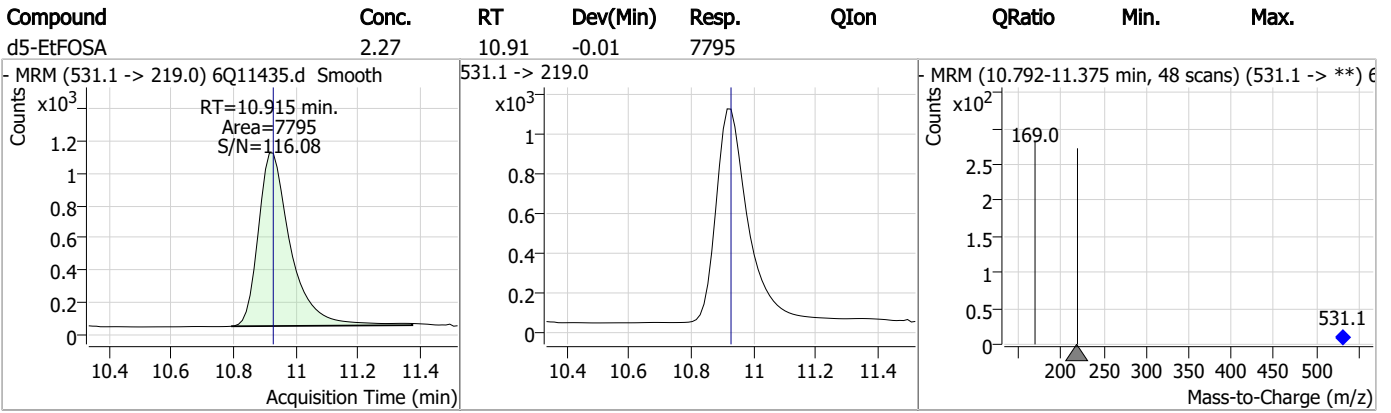
Perfluorinated Compounds by LC/MS/MS



7.2.5
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Perfluorinated Compounds by LC/MS/MS



7.2.5

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q11446.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/17/2023 4:15:48 AM
 Sample Name : iccb
 Vial : P1-C1
 DA Method File : 1633_011123_S6Q174.quantmethod.xml
 Batch Name : s6q179.batch.bin
 Sample Information : OP94795,S6Q179,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.988	216.8 -> 171.9	78154	10.00 µg/L	-0.012
M5-PFPeA	4.371	268.3 -> 223.0	36955	5.00 µg/L	-0.012
M5-PFHxA	5.564	318.0 -> 273.0	33439	2.50 µg/L	0.000
M4-PFHpA	6.503	367.1 -> 322.0	32902	2.50 µg/L	-0.012
M8-PFOA	7.160	421.1 -> 376.0	58438	2.50 µg/L	0.000
M9-PFNA	7.702	472.1 -> 427.0	27236	1.25 µg/L	-0.013
M6-PFDA	8.195	519.1 -> 474.1	17797	1.25 µg/L	-0.012
M7-PFUnDA	8.674	570.0 -> 525.1	19915	1.25 µg/L	0.000
M2-PFDoDA	9.104	615.1 -> 570.0	24350	1.25 µg/L	-0.012
M2-PFTeDA	9.844	715.2 -> 670.0	14329	1.25 µg/L	-0.012
M8-FOSA	9.556	506.1 -> 77.8	17209	2.50 µg/L	-0.012
M3-PFBS	5.519	302.1 -> 79.9	12357	2.50 µg/L	-0.012
M3-PFHxS	7.288	402.1 -> 79.9	8154	2.50 µg/L	-0.012
M8-PFOS	8.371	507.1 -> 79.9	8063	2.50 µg/L	-0.012
M2-4:2FTS	5.228	329.1 -> 80.9	1788	5.00 µg/L	0.000
M2-6:2FTS	6.921	429.1 -> 80.9	2379	5.00 µg/L	-0.012
M2-8:2FTS	7.982	529.1 -> 80.9	2804	5.00 µg/L	0.000
M3-MeFOSAA	8.240	573.2 -> 419.0	24465	5.00 µg/L	0.000
M3-HFPO-DA	5.941	286.9 -> 168.9	14508	10.00 µg/L	0.000
M5-EtFOSAA	8.448	589.2 -> 419.0	23452	5.00 µg/L	0.000
M7-MeFOSE	10.579	623.2 -> 58.9	31148	25.00 µg/L	-0.012
M9-EtFOSE	10.849	639.2 -> 58.9	24339	25.00 µg/L	0.000
M5-EtFOSA	10.927	531.1 -> 219.0	7870	2.50 µg/L	0.000
M3-MeFOSA	10.683	515.0 -> 219.0	6950	2.50 µg/L	0.000
13C4-PFOS	8.384	502.8 -> 79.9	9819	2.50 µg/L	0.000
13C3-PFBA	2.979	216.0 -> 172.0	33862	5.00 µg/L	-0.025
18O2-PFHxS	7.287	403.0 -> 83.9	5872	2.50 µg/L	-0.012
13C4-PFOA	7.160	417.1 -> 372.0	72003	2.50 µg/L	-0.012
13C2-PFDA	8.196	515.1 -> 470.1	22950	1.25 µg/L	-0.012
13C5-PFNA	7.703	468.0 -> 423.0	29757	1.25 µg/L	0.000
13C2-PFHxA	5.565	315.1 -> 270.0	34463	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.228	329.1 -> 80.9	1788	5.84 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 116.8%		
13C2-6:2FTS	6.921	429.1 -> 80.9	2379	5.67 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.4%		
13C2-8:2FTS	7.982	529.1 -> 80.9	2804	6.13 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 122.5%		
13C2-PFDoDA	9.104	615.1 -> 570.0	24350	1.34 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 107.1%		
13C2-PFTeDA	9.844	715.2 -> 670.0	14329	1.34 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 107.2%		
13C3-PFBS	5.519	302.1 -> 79.9	12357	2.51 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.4%		
13C3-PFHxS	7.288	402.1 -> 79.9	8154	2.56 µg/L	-0.012

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 = 102.3%	
13C4-PFBA	2.988	216.8 -> 171.9	78154	10.11 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C4-PFHpA	6.503	367.1 -> 322.0	32902	2.35 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.2%	
13C5-PFHxA	5.564	318.0 -> 273.0	33439	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.7%	
13C5-PFPeA	4.371	268.3 -> 223.0	36955	4.81 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.1%	
13C6-PFDA	8.195	519.1 -> 474.1	17797	1.36 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 109.0%	
13C7-PFUnDA	8.674	570.0 -> 525.1	19915	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C8-FOSA	9.556	506.1 -> 77.8	17209	2.59 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.8%	
13C8-PFOA	7.160	421.1 -> 376.0	58438	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.9%	
13C8-PFOS	8.371	507.1 -> 79.9	8063	2.57 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.8%	
13C9-PFNA	7.702	472.1 -> 427.0	27236	1.29 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.0%	
d3-MeFOSAA	8.240	573.2 -> 419.0	24465	5.17 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.5%	
13C3-HFPO-DA	5.941	286.9 -> 168.9	14508	10.21 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.1%	
d3-MeFOSA	10.683	515.0 -> 219.0	6950	2.29 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.5%	
d5-EtFOSAA	8.448	589.2 -> 419.0	23452	5.65 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 113.1%	
d7-MeFOSE	10.579	623.2 -> 58.9	31148	24.92 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
d9-EtFOSE	10.849	639.2 -> 58.9	24339	25.46 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.9%	
d5-EtFOSA	10.927	531.1 -> 219.0	7870	2.31 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.6%	

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	-	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.	



7.2.6
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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	-	398.7 -> 98.9	-	N.D.	
		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	-	563.1 -> 519.0	-	N.D.	
		563.1 -> 269.1			
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.	
		632.9 -> 452.9			
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.	
		532.8 -> 353.0			
ADONA	-	376.9 -> 250.9	-	N.D.	
		376.9 -> 84.8			
HFPO-DA	-	284.9 -> 168.9	-	N.D.	
		284.9 -> 184.9			
3:3FTCA	-	241.0 -> 177.0	-	N.D.	
		241.0 -> 117.0			
5:3FTCA	-	341.0 -> 237.1	-	N.D.	
		341.0 -> 217.0			
7:3FTCA	-	441.0 -> 316.9	-	N.D.	
		441.0 -> 336.9			
EtFOSA	-	526.0 -> 219.0	-	N.D.	
		526.0 -> 169.0			
EtFOSE	-	630.0 -> 58.9	-	N.D.	
		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

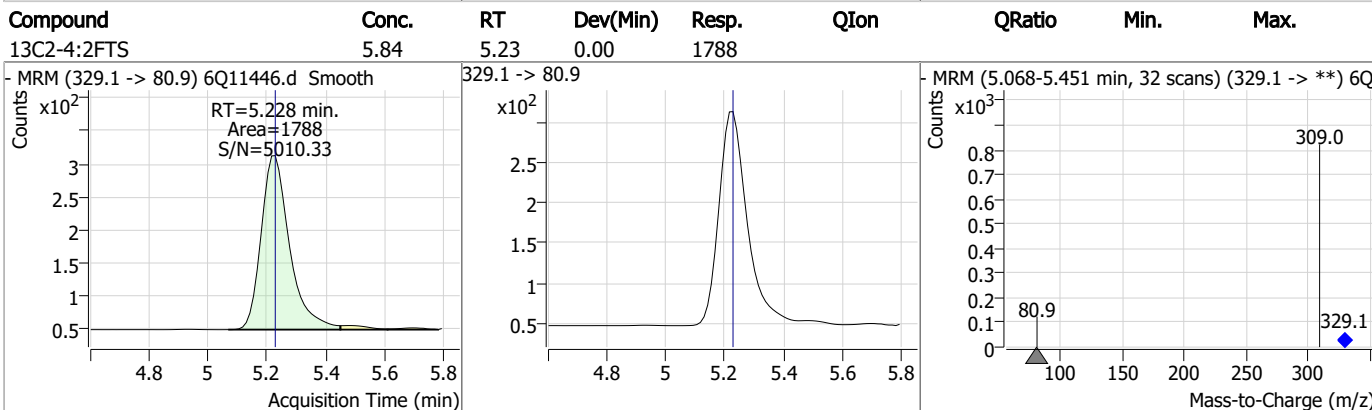
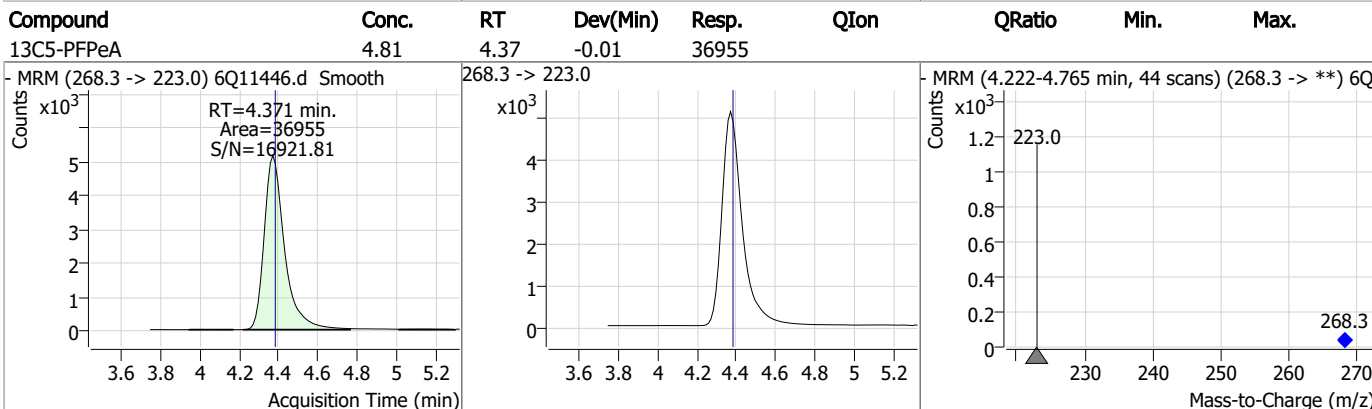
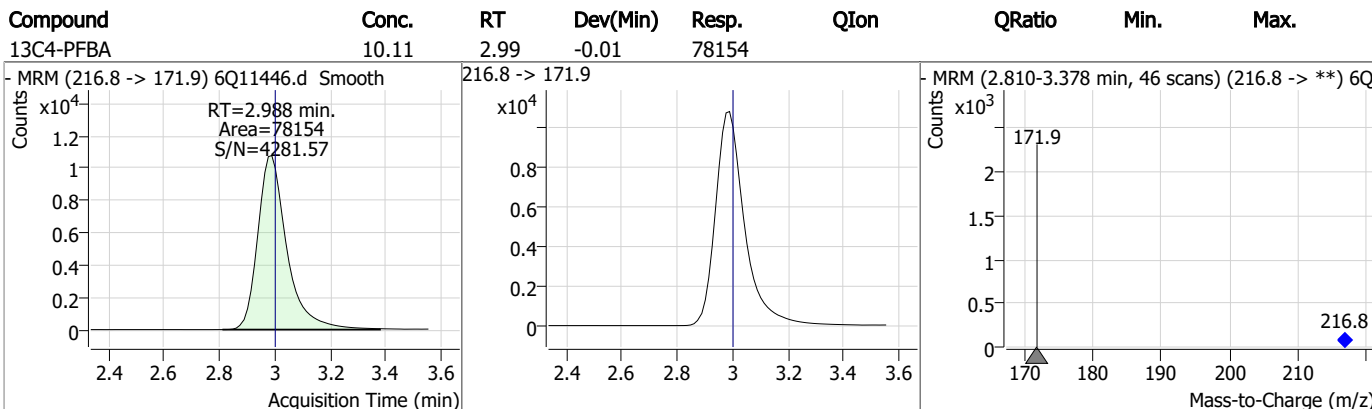
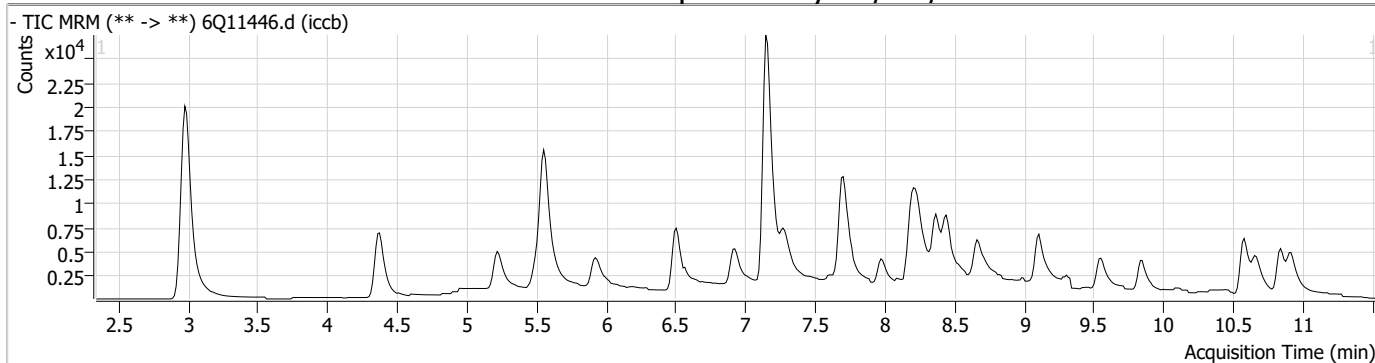
Perfluorinated Compounds by LC/MS/MS

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

7

Perfluorinated Compounds by LC/MS/MS



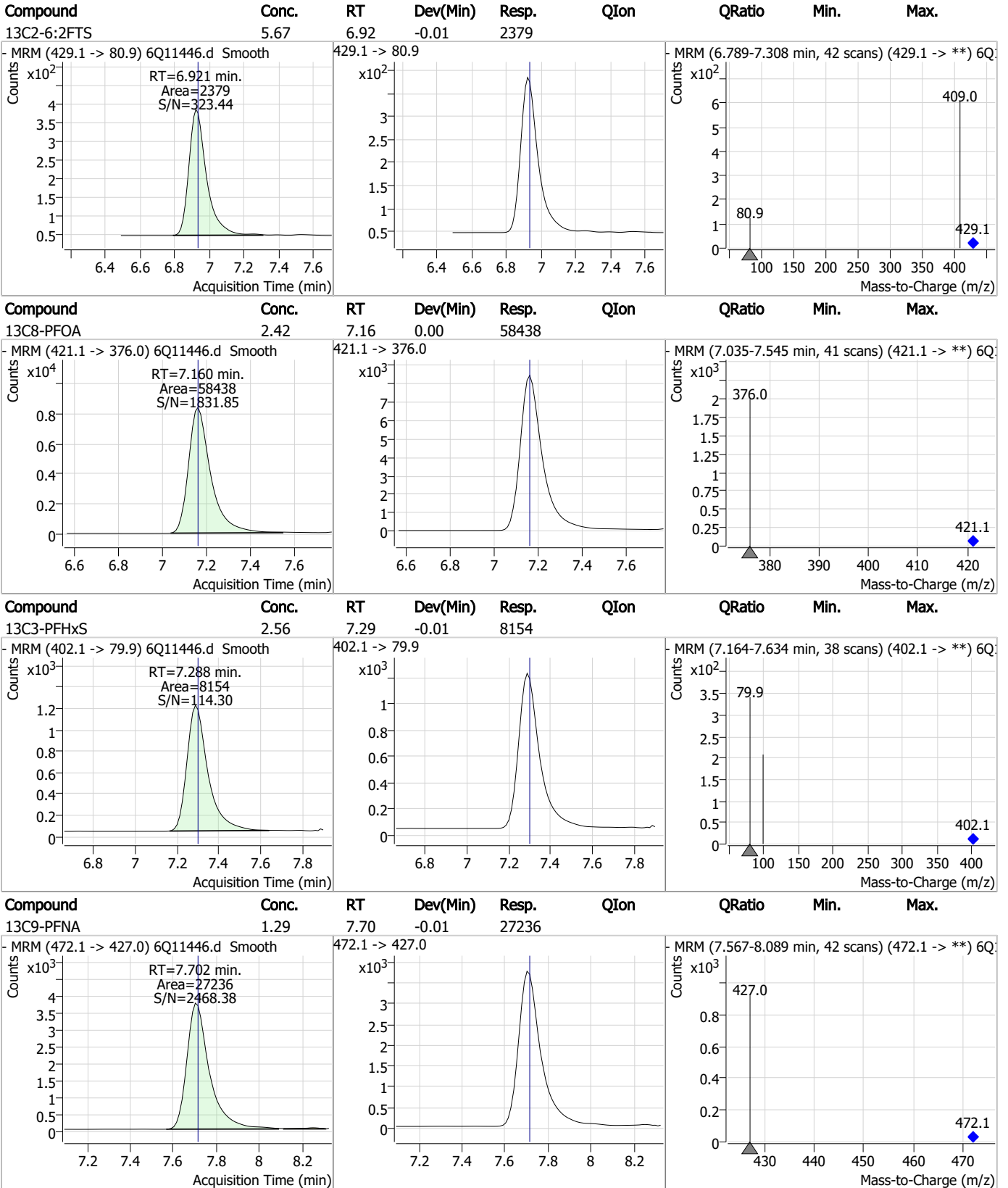
7.2.6
7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.51	5.52	-0.01	12357				
13C5-PFHxA	2.42	5.56	0.00	33439				
13C3-HFPO-DA	10.21	5.94	0.00	14508				
13C4-PFHpA	2.35	6.50	-0.01	32902				

7.2.6
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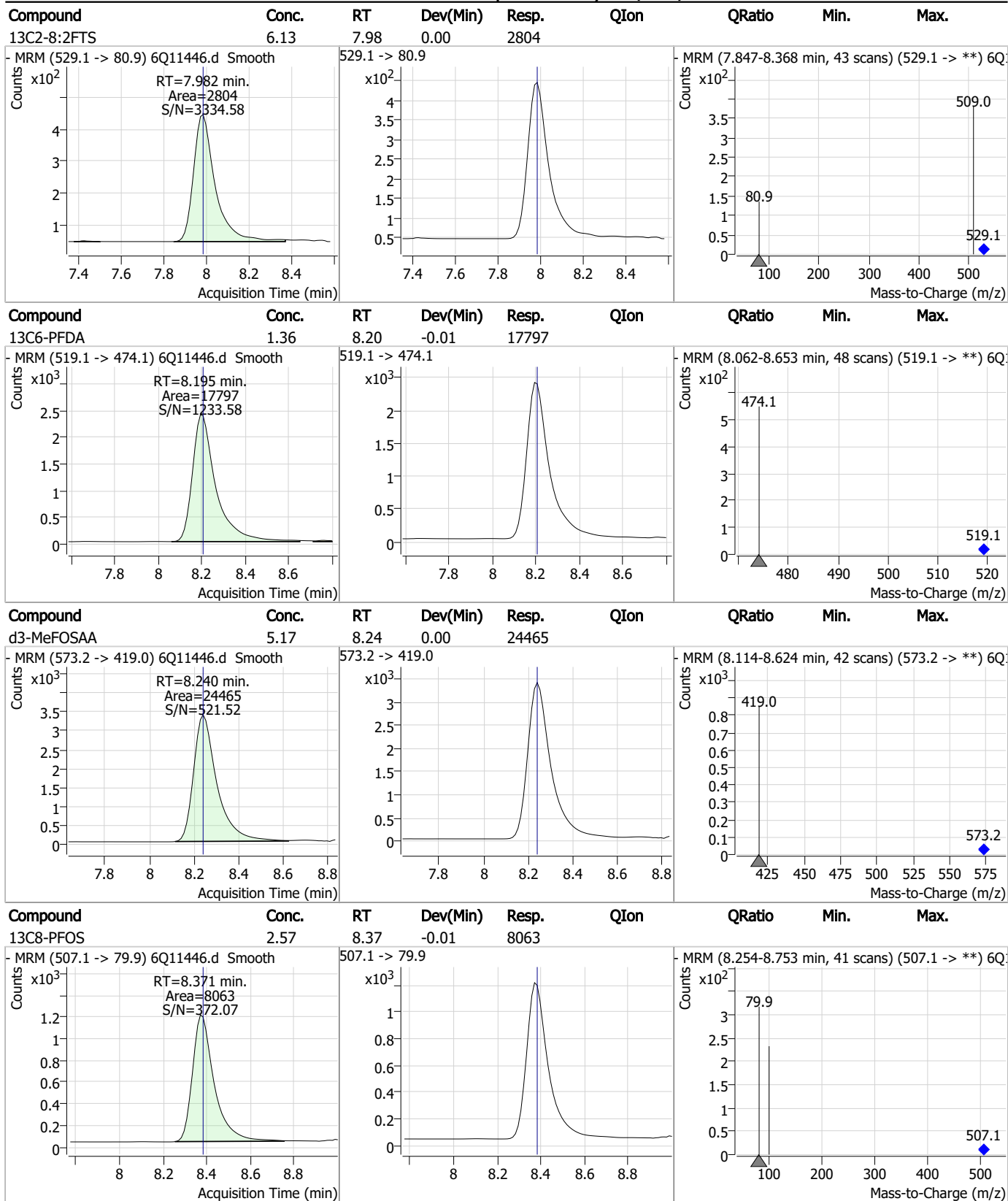
Perfluorinated Compounds by LC/MS/MS



7.2.6

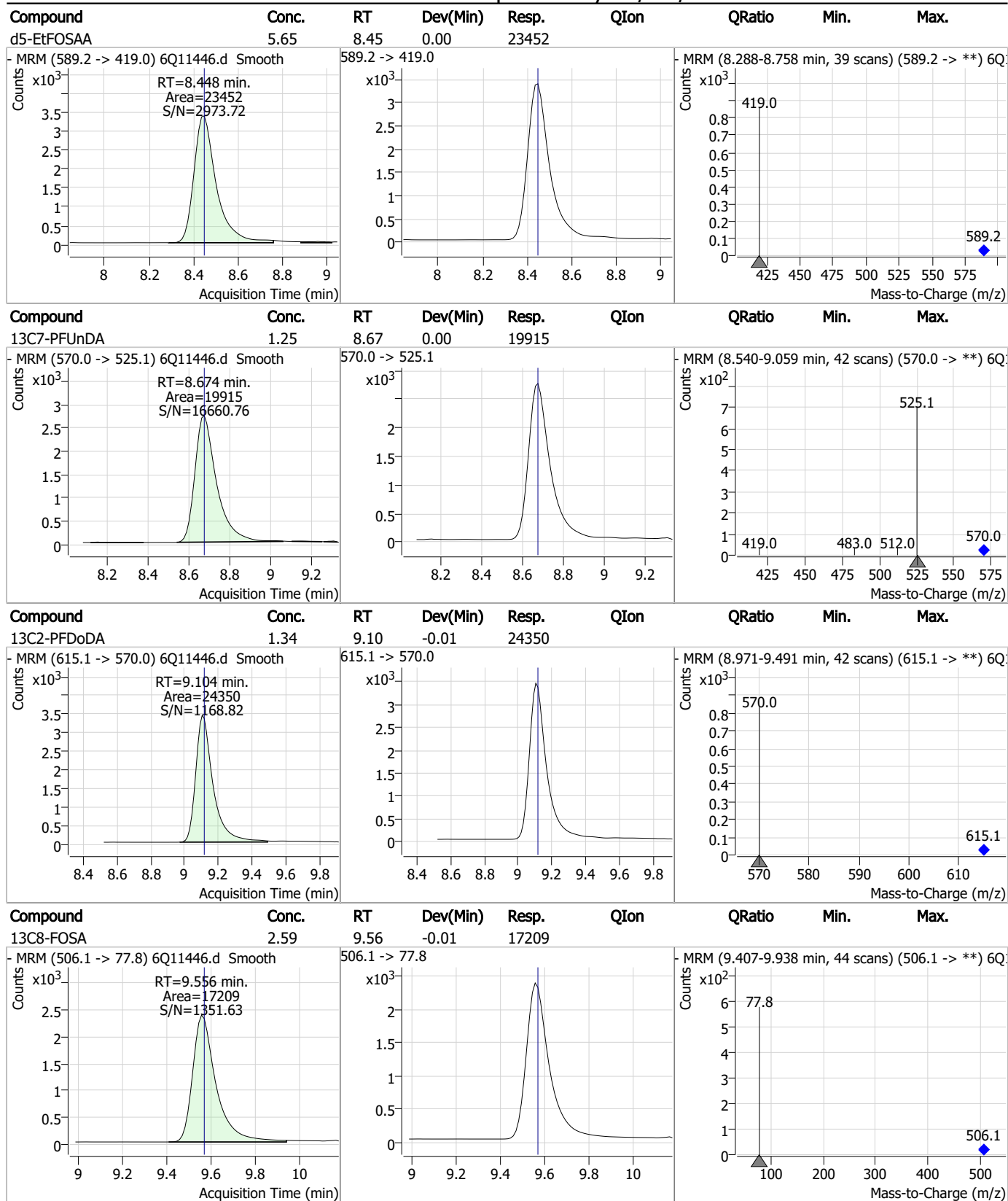
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Perfluorinated Compounds by LC/MS/MS



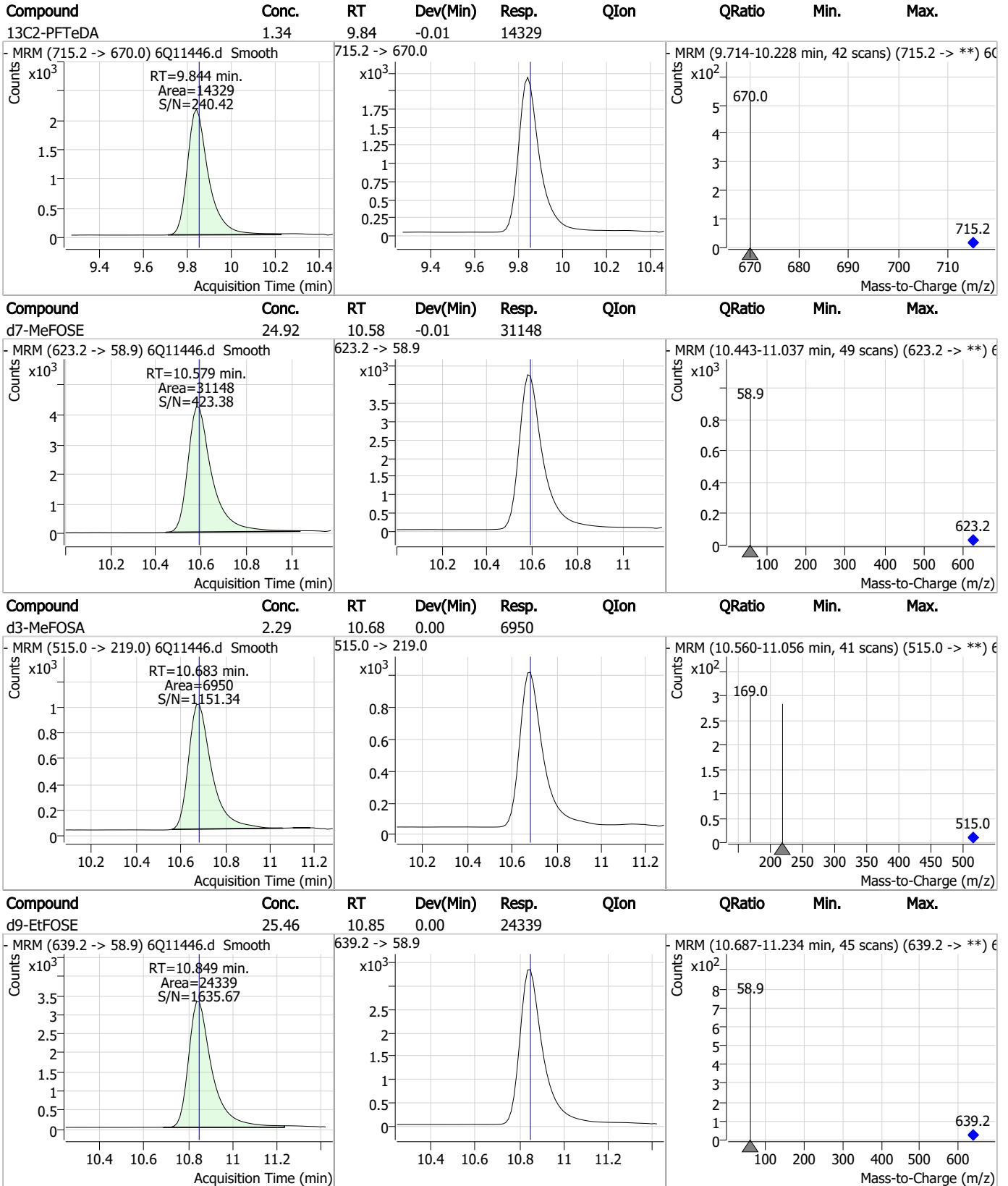
7.2.6
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Perfluorinated Compounds by LC/MS/MS



7.2.6
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Perfluorinated Compounds by LC/MS/MS

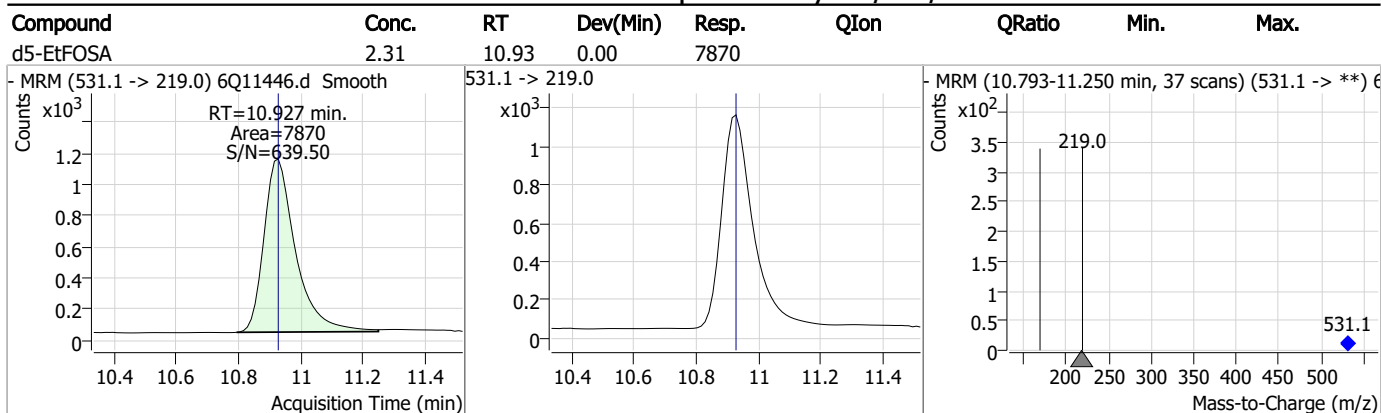


7.2.6

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Perfluorinated Compounds by LC/MS/MS



7.2.6

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q11467.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/17/2023 9:09:37 AM
 Sample Name : iccb
 Vial : P1-C1
 DA Method File : 1633_011123_S6Q174.quantmethod.xml
 Batch Name : s6q179.batch.bin
 Sample Information : OP94795,S6Q179,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.988	216.8 -> 171.9	78972	10.00 µg/L	-0.012
M5-PFPeA	4.371	268.3 -> 223.0	38131	5.00 µg/L	-0.012
M5-PFHxA	5.564	318.0 -> 273.0	32939	2.50 µg/L	0.000
M4-PFHpA	6.516	367.1 -> 322.0	35253	2.50 µg/L	0.000
M8-PFOA	7.160	421.1 -> 376.0	61926	2.50 µg/L	0.000
M9-PFNA	7.702	472.1 -> 427.0	28548	1.25 µg/L	-0.013
M6-PFDA	8.195	519.1 -> 474.1	17242	1.25 µg/L	-0.012
M7-PFUnDA	8.674	570.0 -> 525.1	22203	1.25 µg/L	0.000
M2-PFDoDA	9.117	615.1 -> 570.0	25807	1.25 µg/L	0.000
M2-PFTeDA	9.844	715.2 -> 670.0	14162	1.25 µg/L	-0.012
M8-FOSA	9.556	506.1 -> 77.8	17726	2.50 µg/L	-0.012
M3-PFBS	5.519	302.1 -> 79.9	12966	2.50 µg/L	-0.012
M3-PFHxS	7.300	402.1 -> 79.9	8405	2.50 µg/L	0.000
M8-PFOS	8.371	507.1 -> 79.9	8203	2.50 µg/L	-0.012
M2-4:2FTS	5.228	329.1 -> 80.9	1791	5.00 µg/L	0.000
M2-6:2FTS	6.921	429.1 -> 80.9	2526	5.00 µg/L	-0.012
M2-8:2FTS	7.982	529.1 -> 80.9	2895	5.00 µg/L	0.000
M3-MeFOSAA	8.240	573.2 -> 419.0	25152	5.00 µg/L	0.000
M3-HFPO-DA	5.941	286.9 -> 168.9	14175	10.00 µg/L	0.000
M5-EtFOSAA	8.448	589.2 -> 419.0	21051	5.00 µg/L	0.000
M7-MeFOSE	10.591	623.2 -> 58.9	31798	25.00 µg/L	0.000
M9-EtFOSE	10.849	639.2 -> 58.9	23904	25.00 µg/L	0.000
M5-EtFOSA	10.927	531.1 -> 219.0	8013	2.50 µg/L	0.000
M3-MeFOSA	10.683	515.0 -> 219.0	7264	2.50 µg/L	0.000
13C4-PFOS	8.384	502.8 -> 79.9	9381	2.50 µg/L	0.000
13C3-PFBA	2.979	216.0 -> 172.0	35062	5.00 µg/L	-0.025
18O2-PFHxS	7.299	403.0 -> 83.9	6042	2.50 µg/L	0.000
13C4-PFOA	7.160	417.1 -> 372.0	74028	2.50 µg/L	-0.012
13C2-PFDA	8.196	515.1 -> 470.1	25524	1.25 µg/L	-0.012
13C5-PFNA	7.703	468.0 -> 423.0	31602	1.25 µg/L	0.000
13C2-PFHxA	5.565	315.1 -> 270.0	32916	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.228	329.1 -> 80.9	1791	5.68 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.7%		
13C2-6:2FTS	6.921	429.1 -> 80.9	2526	5.85 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 117.1%		
13C2-8:2FTS	7.982	529.1 -> 80.9	2895	6.15 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 122.9%		
13C2-PFDoDA	9.117	615.1 -> 570.0	25807	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.0%		
13C2-PFTeDA	9.844	715.2 -> 670.0	14162	1.19 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.3%		
13C3-PFBS	5.519	302.1 -> 79.9	12966	2.56 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.4%		
13C3-PFHxS	7.300	402.1 -> 79.9	8405	2.56 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 = 102.5%	
13C4-PFBA	2.988	216.8 -> 171.9	78972	9.86 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C4-PFHpA	6.516	367.1 -> 322.0	35253	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.7%	
13C5-PFHxA	5.564	318.0 -> 273.0	32939	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C5-PFPeA	4.371	268.3 -> 223.0	38131	5.19 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.9%	
13C6-PFDA	8.195	519.1 -> 474.1	17242	1.19 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.9%	
13C7-PFUnDA	8.674	570.0 -> 525.1	22203	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C8-FOSA	9.556	506.1 -> 77.8	17726	2.80 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 111.9%	
13C8-PFOA	7.160	421.1 -> 376.0	61926	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C8-PFOS	8.371	507.1 -> 79.9	8203	2.74 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.5%	
13C9-PFNA	7.702	472.1 -> 427.0	28548	1.27 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.7%	
d3-MeFOSAA	8.240	573.2 -> 419.0	25152	5.57 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 111.4%	
13C3-HFPO-DA	5.941	286.9 -> 168.9	14175	10.44 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.4%	
d3-MeFOSA	10.683	515.0 -> 219.0	7264	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.2%	
d5-EtFOSAA	8.448	589.2 -> 419.0	21051	5.31 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.2%	
d7-MeFOSE	10.591	623.2 -> 58.9	31798	26.63 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 106.5%	
d9-EtFOSE	10.849	639.2 -> 58.9	23904	26.18 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 104.7%	
d5-EtFOSA	10.927	531.1 -> 219.0	8013	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.6%	

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	-	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.	



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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	-	398.7 -> 98.9	-	N.D.	
		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	-	563.1 -> 519.0	-	N.D.	
		563.1 -> 269.1			
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.	
		632.9 -> 452.9			
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.	
		532.8 -> 353.0			
ADONA	-	376.9 -> 250.9	-	N.D.	
		376.9 -> 84.8			
HFPO-DA	-	284.9 -> 168.9	-	N.D.	
		284.9 -> 184.9			
3:3FTCA	-	241.0 -> 177.0	-	N.D.	
		241.0 -> 117.0			
5:3FTCA	-	341.0 -> 237.1	-	N.D.	
		341.0 -> 217.0			
7:3FTCA	-	441.0 -> 316.9	-	N.D.	
		441.0 -> 336.9			
EtFOSA	-	526.0 -> 219.0	-	N.D.	
		526.0 -> 169.0			
EtFOSE	-	630.0 -> 58.9	-	N.D.	
		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

7.27
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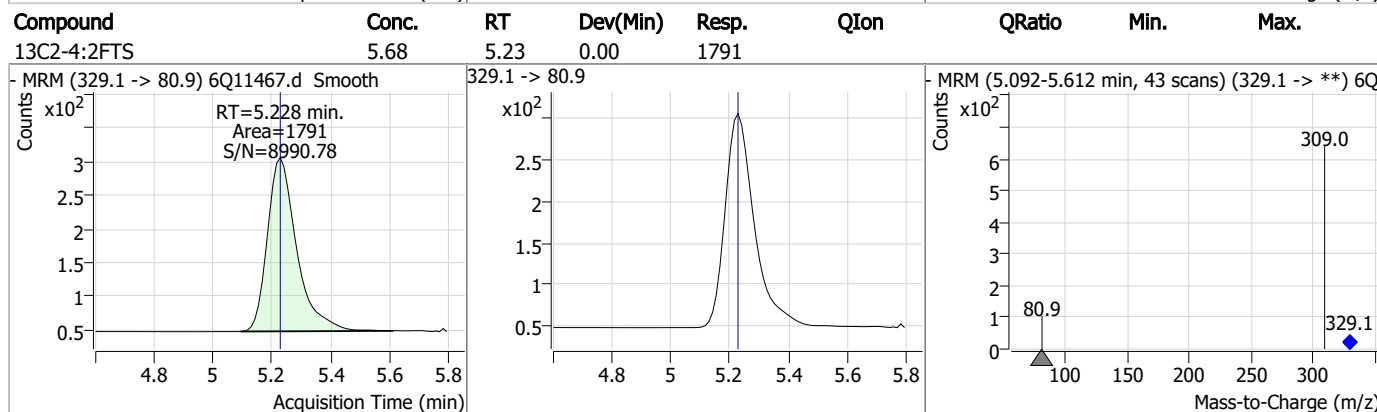
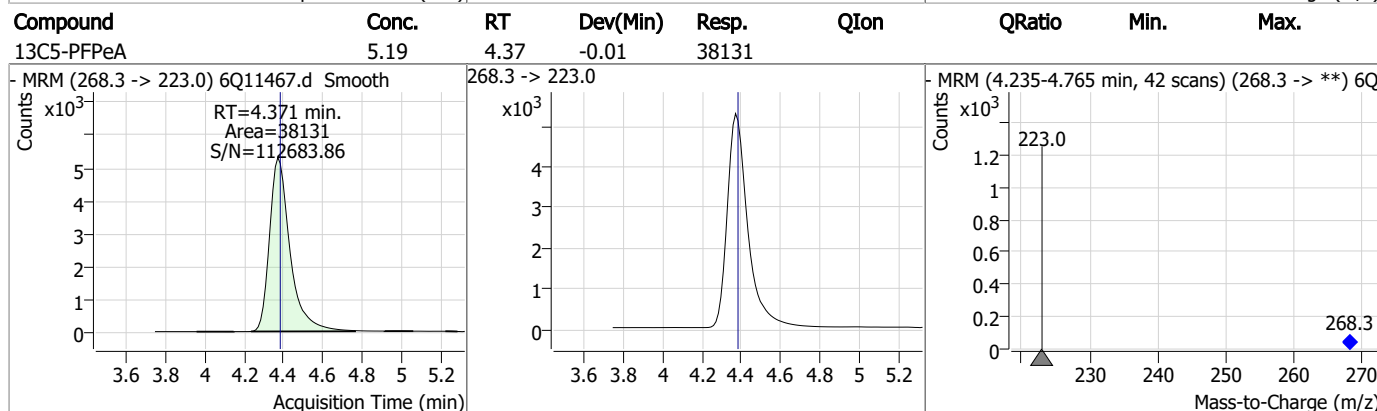
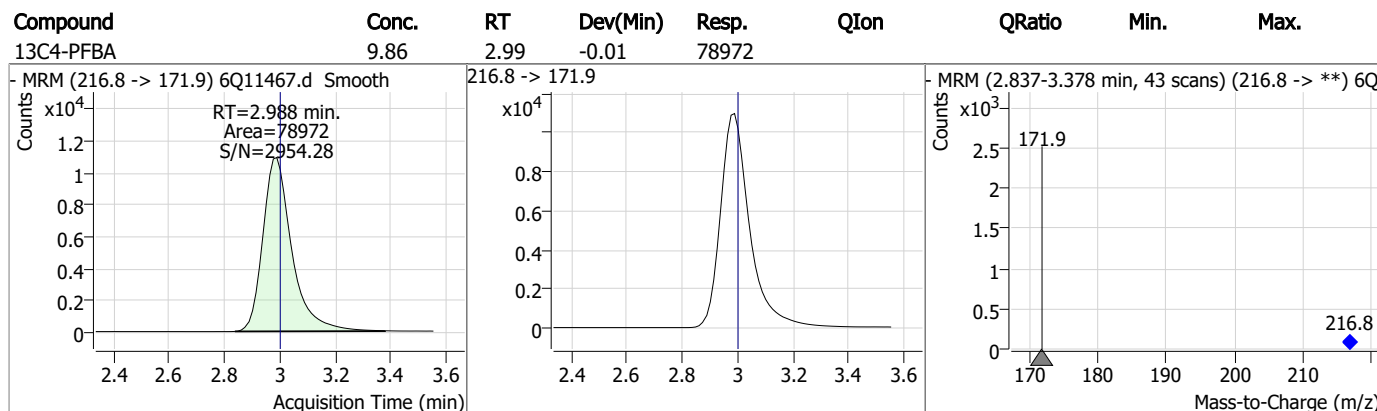
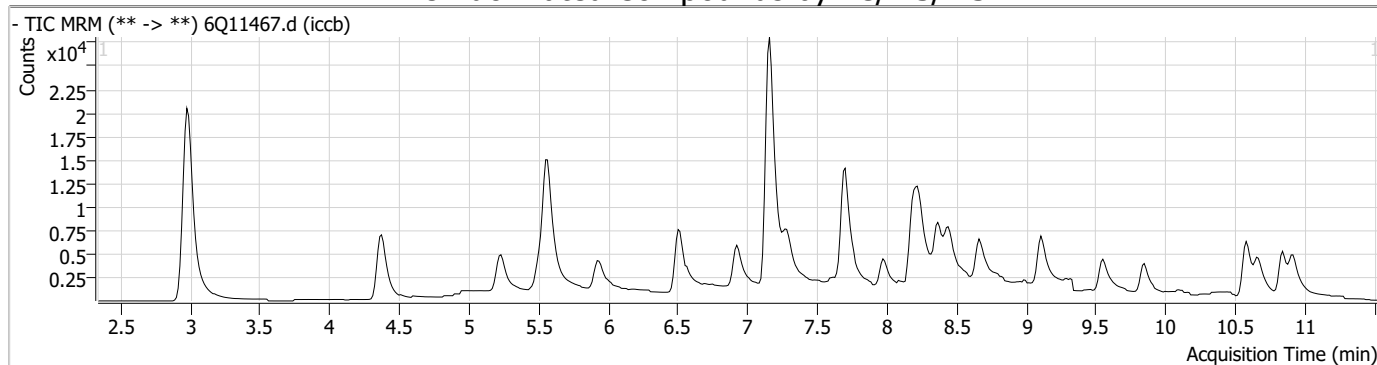
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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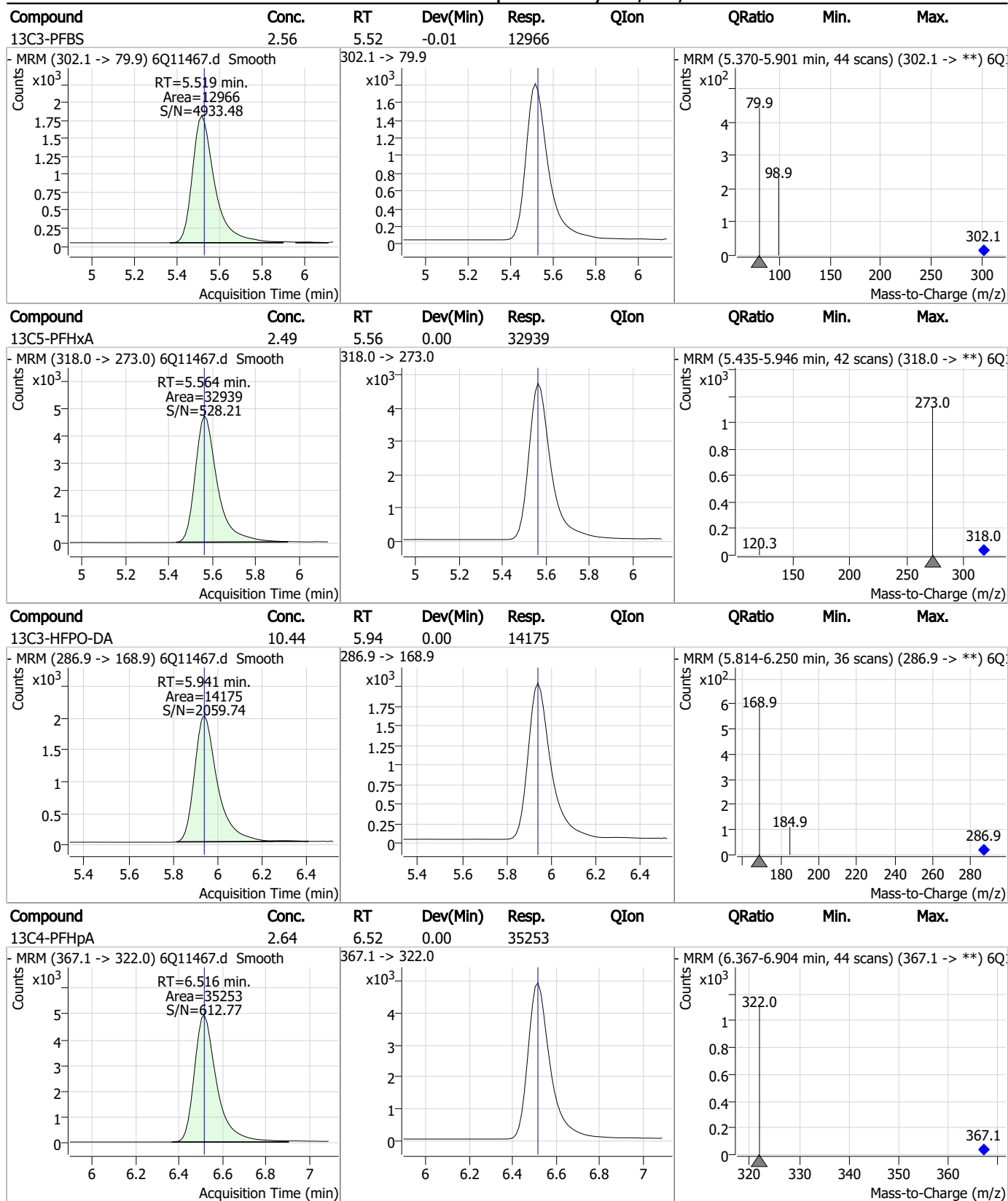
7.2.7

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Perfluorinated Compounds by LC/MS/MS



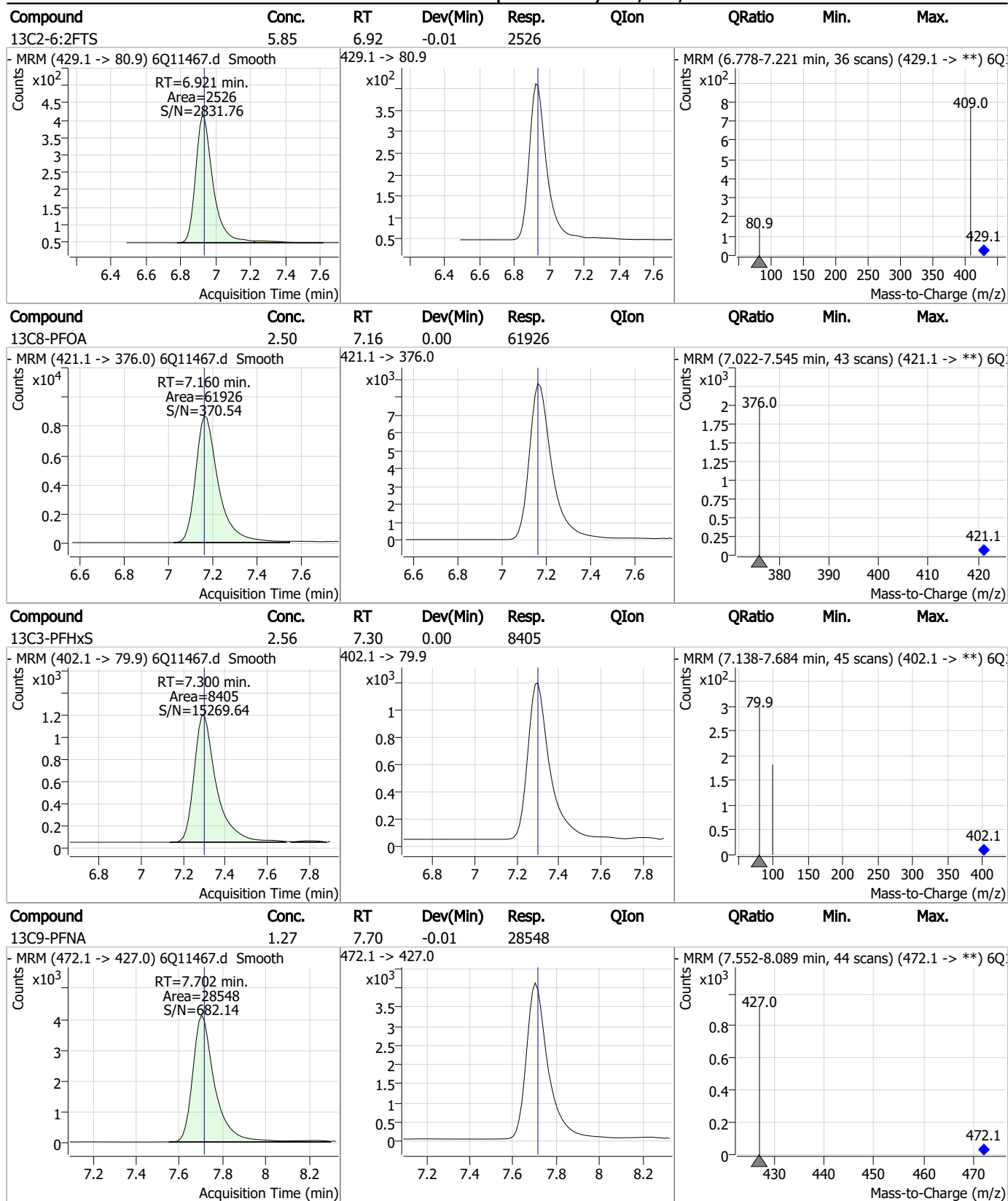
Perfluorinated Compounds by LC/MS/MS



7.2.7
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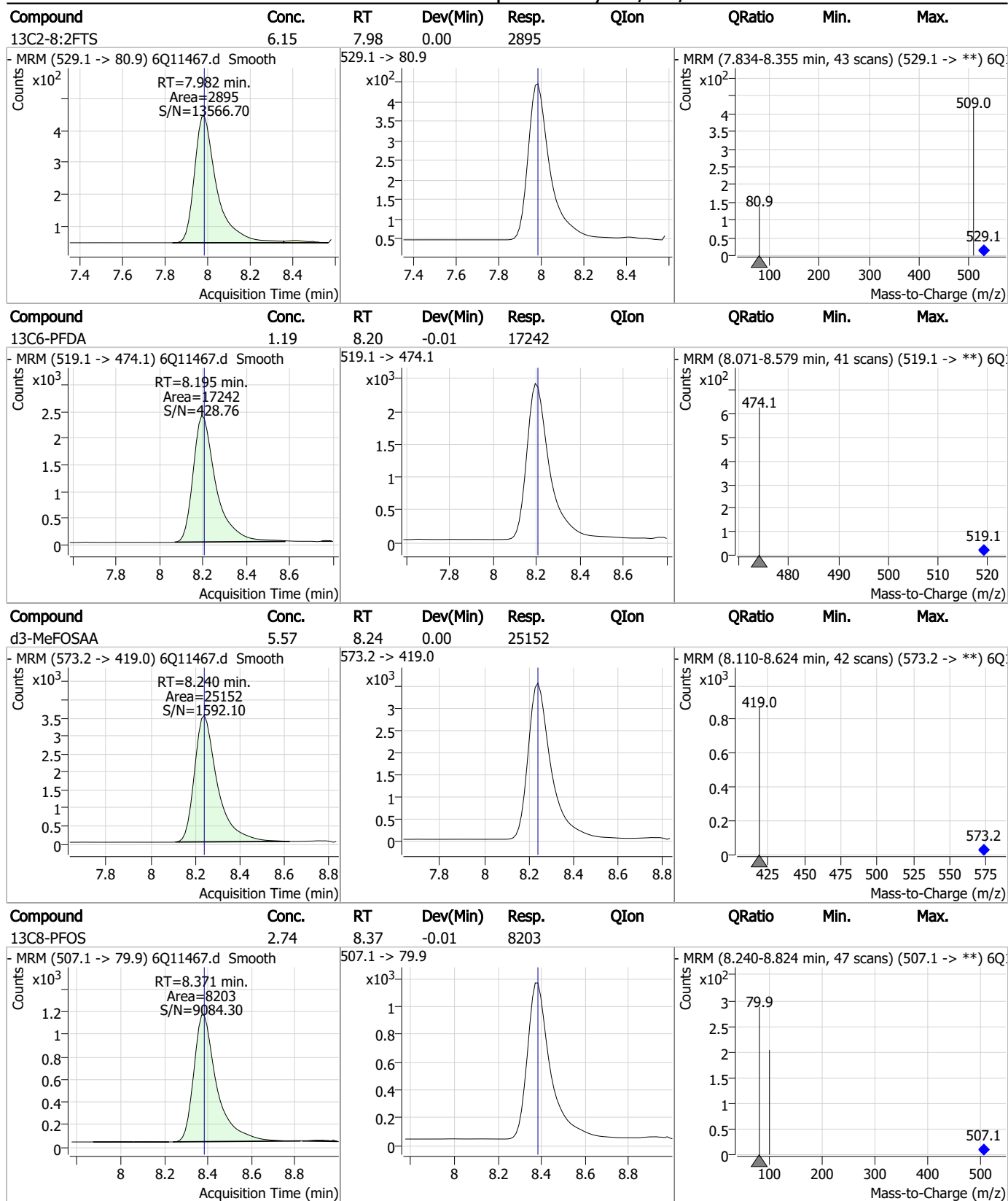
Perfluorinated Compounds by LC/MS/MS



7.27
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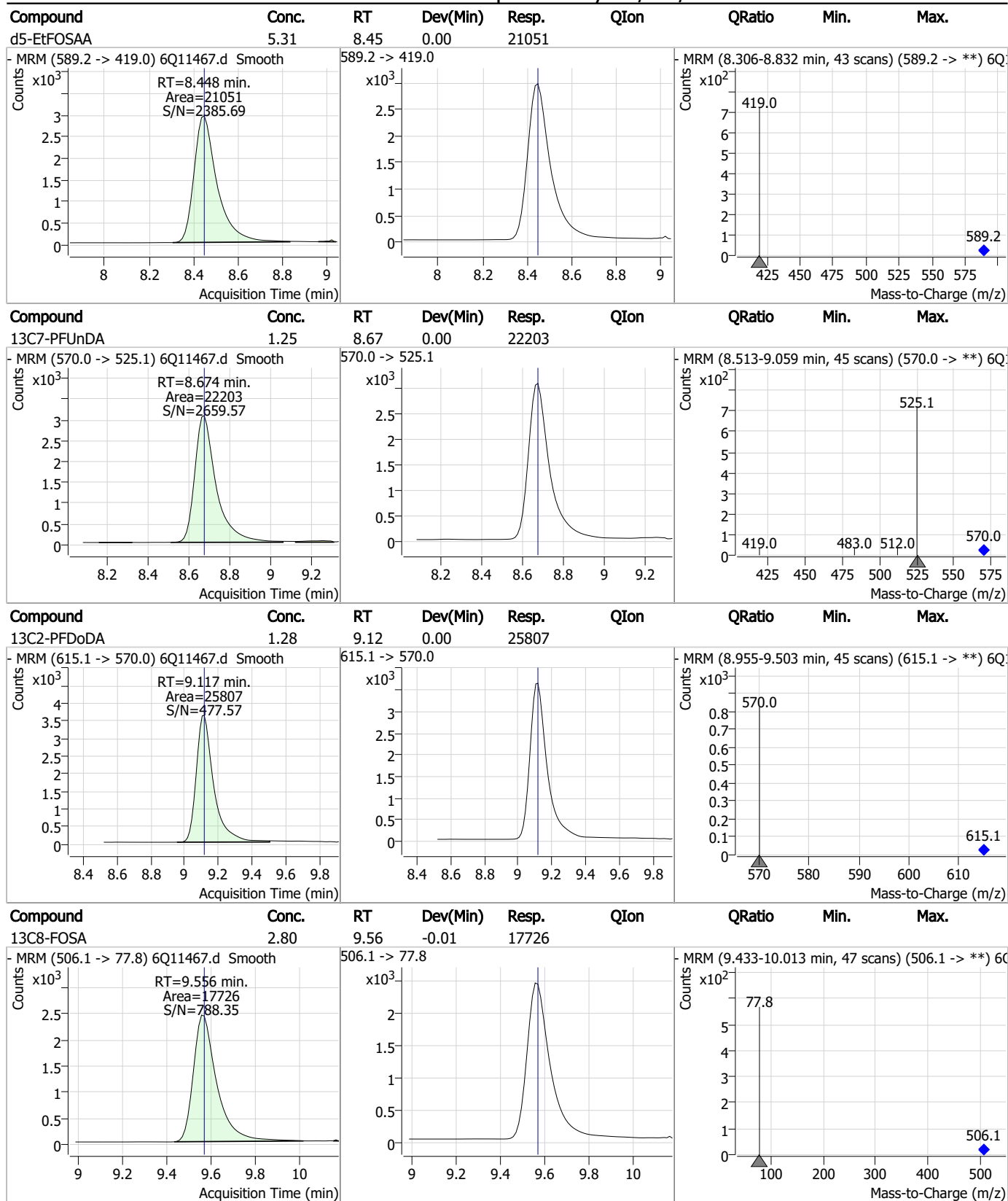
Perfluorinated Compounds by LC/MS/MS



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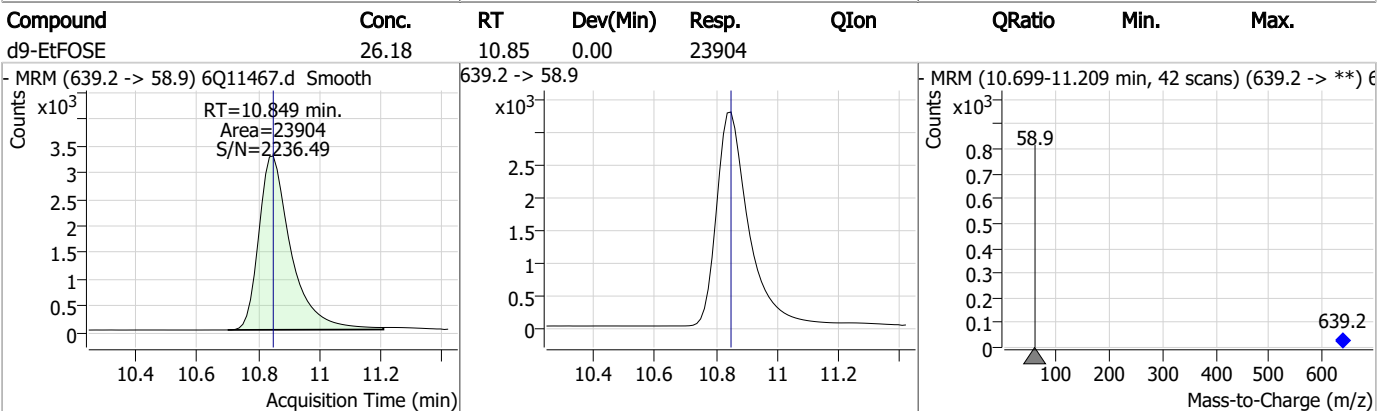
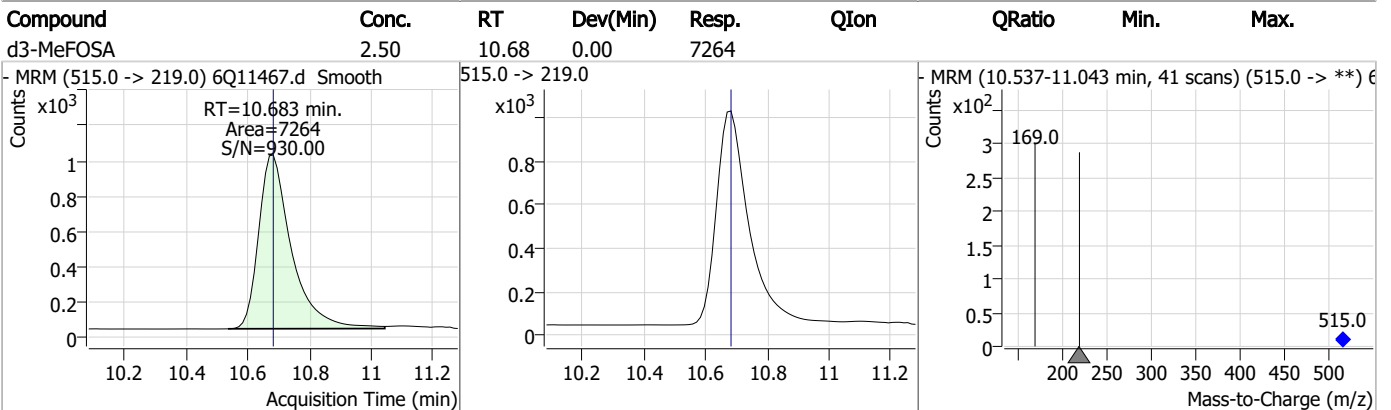
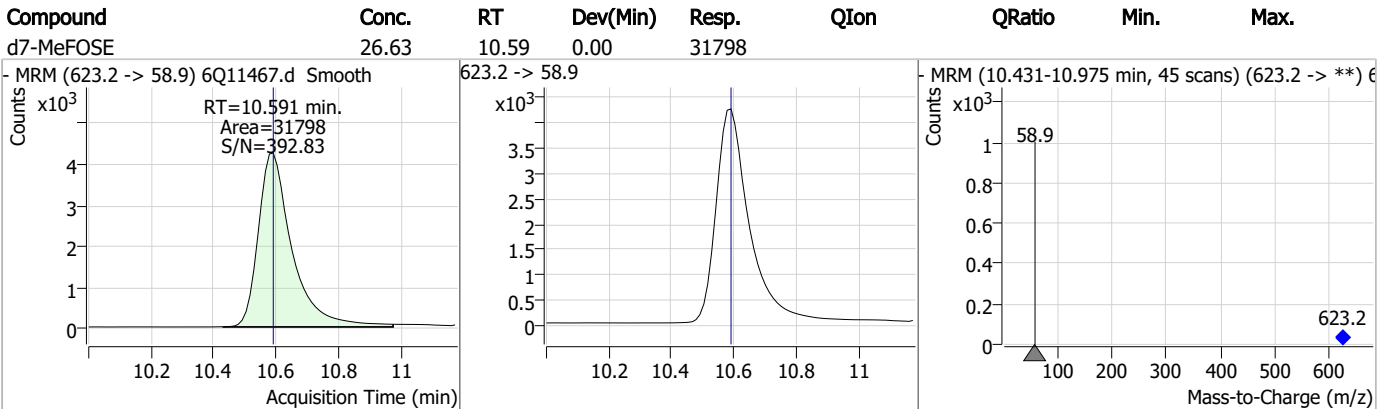
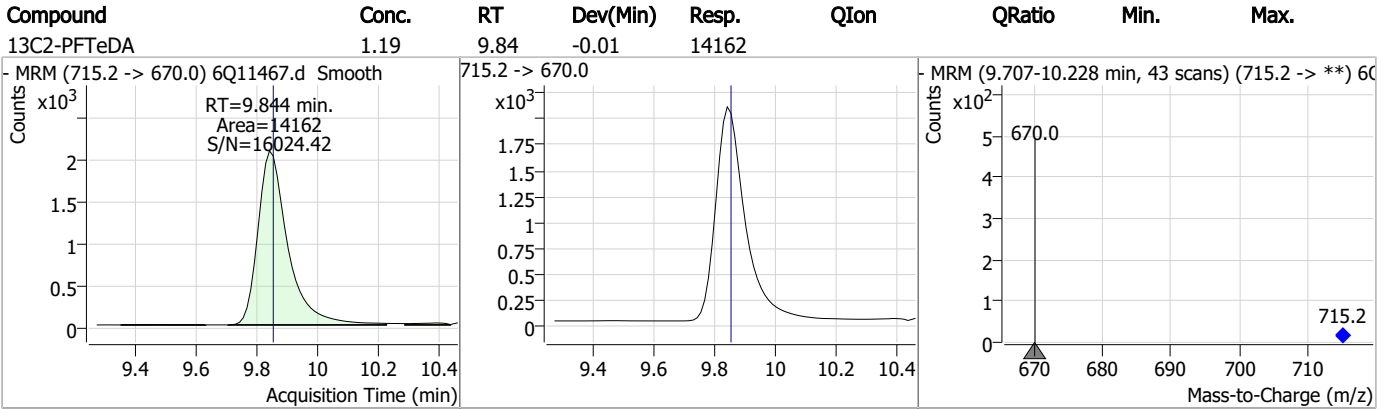


Perfluorinated Compounds by LC/MS/MS



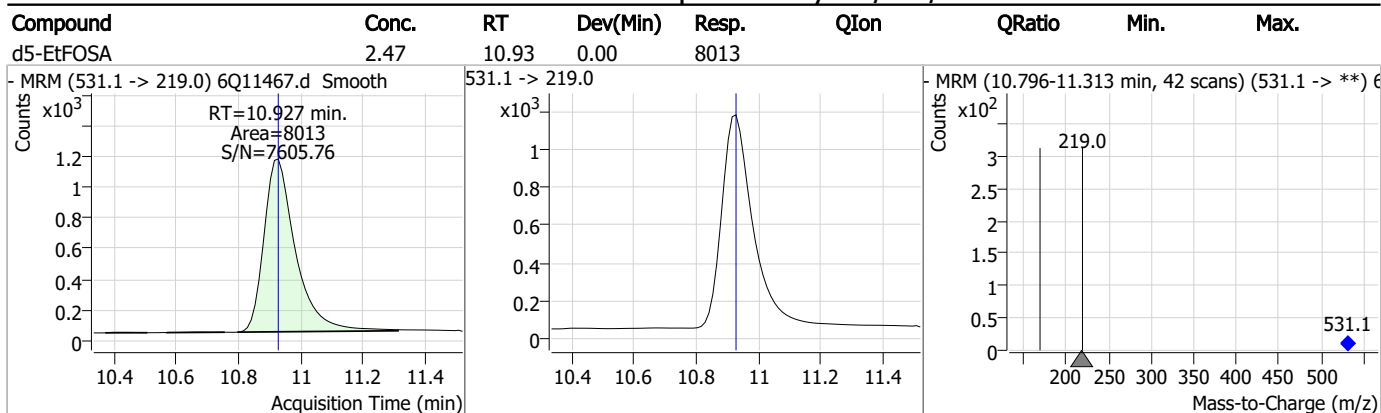
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Perfluorinated Compounds by LC/MS/MS



7.2.7

Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q11441.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/17/2023 3:05:52 AM
 Sample Name : op94977-bs
 Vial : P3-E9
 DA Method File : 1633_011123_S6Q174.quantmethod.xml
 Batch Name : s6q179.batch.bin
 Sample Information : OP94977,S6Q179,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.013	216.8 -> 171.9	79914	10.00 µg/L	0.012
M5-PFPeA	4.384	268.3 -> 223.0	37542	5.00 µg/L	0.000
M5-PFHxA	5.564	318.0 -> 273.0	35093	2.50 µg/L	0.000
M4-PFHpA	6.516	367.1 -> 322.0	33288	2.50 µg/L	0.000
M8-PFOA	7.160	421.1 -> 376.0	60620	2.50 µg/L	0.000
M9-PFNA	7.702	472.1 -> 427.0	27225	1.25 µg/L	-0.013
M6-PFDA	8.195	519.1 -> 474.1	18431	1.25 µg/L	-0.012
M7-PFUnDA	8.674	570.0 -> 525.1	21663	1.25 µg/L	0.000
M2-PFDoDA	9.104	615.1 -> 570.0	24013	1.25 µg/L	-0.012
M2-PFTeDA	9.844	715.2 -> 670.0	12482	1.25 µg/L	-0.012
M8-FOSA	9.556	506.1 -> 77.8	17790	2.50 µg/L	-0.012
M3-PFBS	5.531	302.1 -> 79.9	13017	2.50 µg/L	0.000
M3-PFHxS	7.300	402.1 -> 79.9	8647	2.50 µg/L	0.000
M8-PFOS	8.383	507.1 -> 79.9	8178	2.50 µg/L	0.000
M2-4:2FTS	5.241	329.1 -> 80.9	1816	5.00 µg/L	0.012
M2-6:2FTS	6.934	429.1 -> 80.9	2736	5.00 µg/L	0.000
M2-8:2FTS	7.982	529.1 -> 80.9	2612	5.00 µg/L	0.000
M3-MeFOSAA	8.240	573.2 -> 419.0	24108	5.00 µg/L	0.000
M3-HFPO-DA	5.941	286.9 -> 168.9	14226	10.00 µg/L	0.000
M5-EtFOSAA	8.448	589.2 -> 419.0	20924	5.00 µg/L	0.000
M7-MeFOSE	10.579	623.2 -> 58.9	31437	25.00 µg/L	-0.012
M9-EtFOSE	10.836	639.2 -> 58.9	27229	25.00 µg/L	-0.012
M5-EtFOSA	10.927	531.1 -> 219.0	7925	2.50 µg/L	0.000
M3-MeFOSA	10.670	515.0 -> 219.0	7662	2.50 µg/L	-0.012
13C4-PFOS	8.384	502.8 -> 79.9	10048	2.50 µg/L	0.000
13C3-PFBA	3.016	216.0 -> 172.0	33547	5.00 µg/L	0.012
18O2-PFHxS	7.299	403.0 -> 83.9	5838	2.50 µg/L	0.000
13C4-PFOA	7.160	417.1 -> 372.0	70007	2.50 µg/L	-0.012
13C2-PFDA	8.196	515.1 -> 470.1	23107	1.25 µg/L	-0.012
13C5-PFNA	7.703	468.0 -> 423.0	28664	1.25 µg/L	0.000
13C2-PFHxA	5.565	315.1 -> 270.0	33488	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.241	329.1 -> 80.9	1816	5.96 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 119.3%		
13C2-6:2FTS	6.934	429.1 -> 80.9	2736	6.56 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 131.2%		
13C2-8:2FTS	7.982	529.1 -> 80.9	2612	5.74 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 114.8%		
13C2-PFDoDA	9.104	615.1 -> 570.0	24013	1.31 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.9%		
13C2-PFTeDA	9.844	715.2 -> 670.0	12482	1.16 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 92.8%		
13C3-PFBS	5.531	302.1 -> 79.9	13017	2.66 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 106.3%		
13C3-PFHxS	7.300	402.1 -> 79.9	8647	2.73 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 = 109.1%	
13C4-PFBA	3.013	216.8 -> 171.9	79914	10.43 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.3%	
13C4-PFHpA	6.516	367.1 -> 322.0	33288	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.1%	
13C5-PFHxA	5.564	318.0 -> 273.0	35093	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.4%	
13C5-PFPeA	4.384	268.3 -> 223.0	37542	5.03 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C6-PFDA	8.195	519.1 -> 474.1	18431	1.40 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 112.1%	
13C7-PFUnDA	8.674	570.0 -> 525.1	21663	1.35 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.9%	
13C8-FOSA	9.556	506.1 -> 77.8	17790	2.62 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.8%	
13C8-PFOA	7.160	421.1 -> 376.0	60620	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.3%	
13C8-PFOS	8.383	507.1 -> 79.9	8178	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.9%	
13C9-PFNA	7.702	472.1 -> 427.0	27225	1.34 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.9%	
d3-MeFOSAA	8.240	573.2 -> 419.0	24108	4.98 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C3-HFPO-DA	5.941	286.9 -> 168.9	14226	10.30 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.0%	
d3-MeFOSA	10.670	515.0 -> 219.0	7662	2.47 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.6%	
d5-EtFOSAA	8.448	589.2 -> 419.0	20924	4.93 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.6%	
d7-MeFOSE	10.579	623.2 -> 58.9	31437	24.58 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.3%	
d9-EtFOSE	10.836	639.2 -> 58.9	27229	27.84 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 111.4%	
d5-EtFOSA	10.927	531.1 -> 219.0	7925	2.28 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.1%	
Target Compounds					QValue
4:2FTS	5.241	327.1 -> 307.0	40082	9.28 µg/L	100
		327.1 -> 80.9	9353		
6:2FTS	6.922	427.1 -> 407.0	35928	8.44 µg/L	99
		427.1 -> 80.9	7677		
8:2FTS	7.983	527.1 -> 507.0	19705	9.04 µg/L	97
		527.1 -> 80.8	5179		
EtFOSAA	8.449	584.2 -> 419.1	8424	2.52 µg/L	m 98
		584.2 -> 526.0	4821		
FOSA	9.558	498.1 -> 77.9	18456	2.57 µg/L	100
		498.1 -> 478.0	722		
MeFOSAA	8.241	570.1 -> 419.0	12017	2.42 µg/L	m 93
		570.1 -> 483.0	2049		
PFBA	3.007	212.8 -> 168.9	20709	10.10 µg/L	100
PFBS	5.532	298.7 -> 79.9	11566	2.20 µg/L	98
		298.7 -> 98.8	5403		
PFDA	8.196	512.9 -> 469.0	53238	2.40 µg/L	97
		512.9 -> 219.0	7814		
PFDODA	9.117	613.1 -> 569.0	46658	2.47 µg/L	99
		613.1 -> 319.0	6054		
PFDS	9.280	599.0 -> 79.9	6882	2.44 µg/L	98

7.3.1
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	3557			
PFHpA	6.516	363.1 -> 319.0	56076	2.79	µg/L	99
		363.1 -> 169.0	7447			
PFHpS	7.867	449.0 -> 79.9	8723	2.33	µg/L	99
		449.0 -> 98.9	5058			
PFHxA	5.567	313.0 -> 269.0	33822	2.39	µg/L	99
		313.0 -> 118.9	1313			
PFHxS	7.301	398.7 -> 79.9	9328	2.27	µg/L	m 96
		398.7 -> 98.9	5251			
PFNA	7.703	463.0 -> 419.0	53440	2.84	µg/L	97
		463.0 -> 219.0	9952			
PFNS	8.862	548.8 -> 79.9	9599	2.43	µg/L	90
		548.8 -> 98.9	5323			
PFOA	7.161	413.0 -> 369.0	73956	2.73	µg/L	95
		413.0 -> 169.0	8932			
PFOS	8.385	498.9 -> 79.9	9224	2.33	µg/L	m 96
		498.9 -> 98.8	5752			
PFPeA	4.386	263.0 -> 219.0	42238	5.12	µg/L	100
PFPeS	6.595	349.1 -> 79.9	10945	2.25	µg/L	97
		349.1 -> 98.9	6052			
PFTeDA	9.844	713.1 -> 669.0	39899	2.68	µg/L	99
		713.1 -> 168.9	2641			
PFTrDA	9.501	663.0 -> 619.0	44105	2.45	µg/L	99
		663.0 -> 168.9	3507			
PFUnDA	8.675	563.1 -> 519.0	46554	2.57	µg/L	99
		563.1 -> 269.1	6455			
11CI-PF3OUdS	9.552	630.9 -> 450.9	100985	9.36	µg/L	98
		632.9 -> 452.9	31735			
9CI-PF3ONS	8.727	530.8 -> 351.0	161013	9.19	µg/L	100
		532.8 -> 353.0	54532			
ADONA	6.767	376.9 -> 250.9	300387	9.50	µg/L	96
		376.9 -> 84.8	67521			
HFPO-DA	5.942	284.9 -> 168.9	15329	10.66	µg/L	100
		284.9 -> 184.9	1892			
3:3FTCA	3.864	241.0 -> 177.0	5102	11.62	µg/L	95
		241.0 -> 117.0	711			
5:3FTCA	6.207	341.0 -> 237.1	172841	58.61	µg/L	100
		341.0 -> 217.0	146654			
7:3FTCA	7.618	441.0 -> 316.9	133340	67.08	µg/L	96
		441.0 -> 336.9	254206			
EtFOSA	10.929	526.0 -> 219.0	9017	2.35	µg/L	86
		526.0 -> 169.0	8685			
EtFOSE	10.862	630.0 -> 58.9	27551	22.94	µg/L	100
MeFOSA	10.685	511.9 -> 219.0	7810	2.31	µg/L	85
		511.9 -> 169.0	8250			
MeFOSE	10.604	616.1 -> 58.9	32328	24.90	µg/L	100
PFDoDS	9.984	699.1 -> 79.9	3682	2.09	µg/L	97
		699.1 -> 98.8	2223			
NFDHA	5.458	295.0 -> 201.0	4291	4.67	µg/L	88
		295.0 -> 84.9	2078			
PFMBA	4.789	279.0 -> 85.1	13394	5.21	µg/L	100
PFMPA	3.550	229.0 -> 84.9	11308	4.96	µg/L	100
PFEESA	6.072	314.8 -> 134.9	87328	4.42	µg/L	100
		314.8 -> 82.9	2149			

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



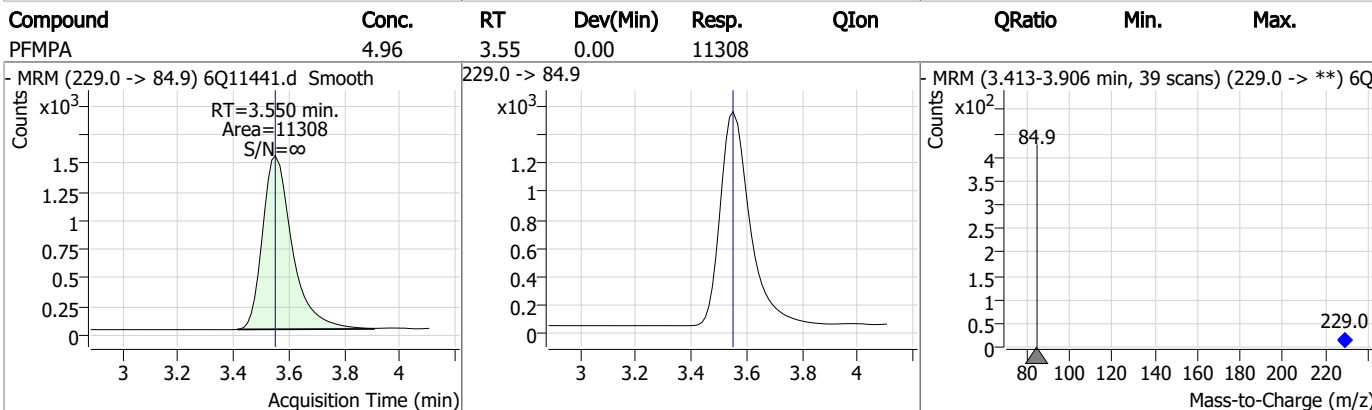
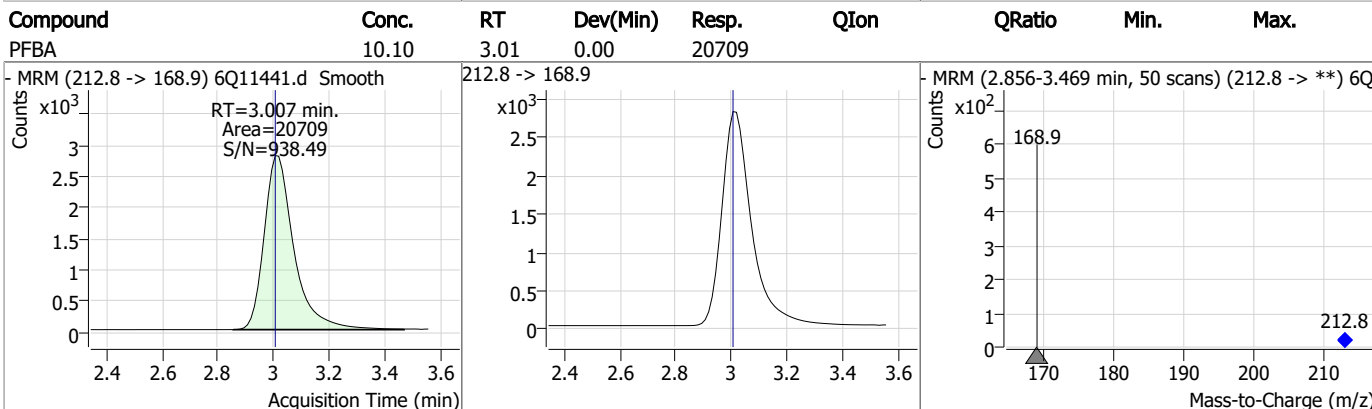
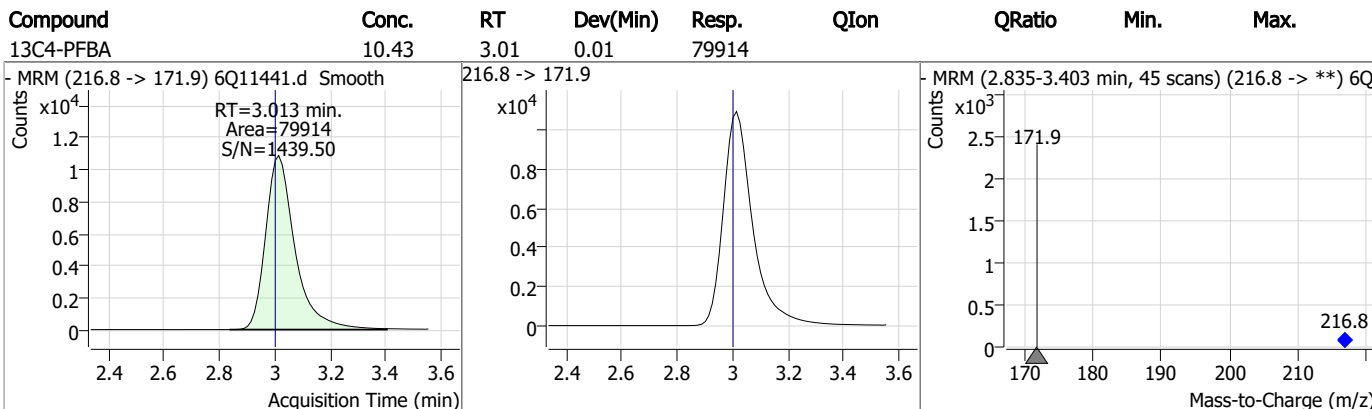
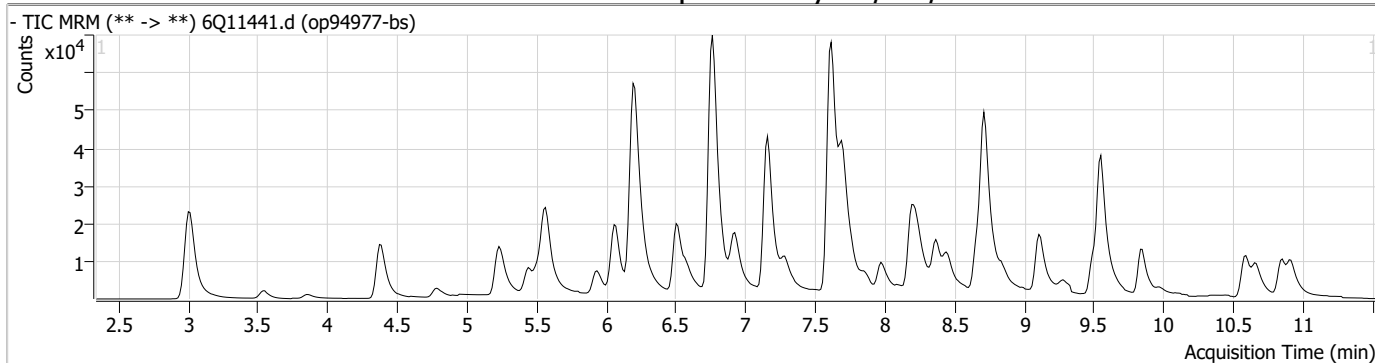
Perfluorinated Compounds by LC/MS/MS

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

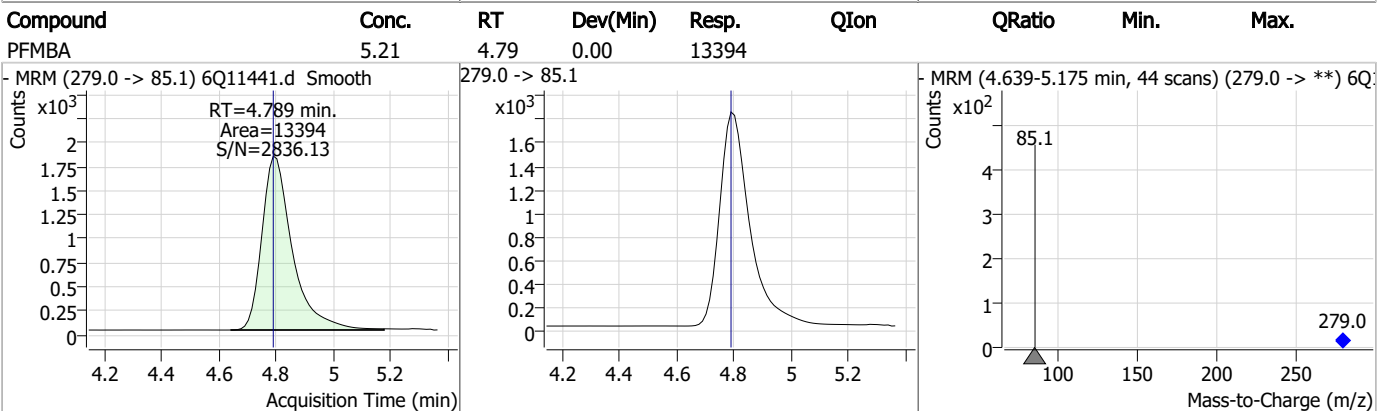
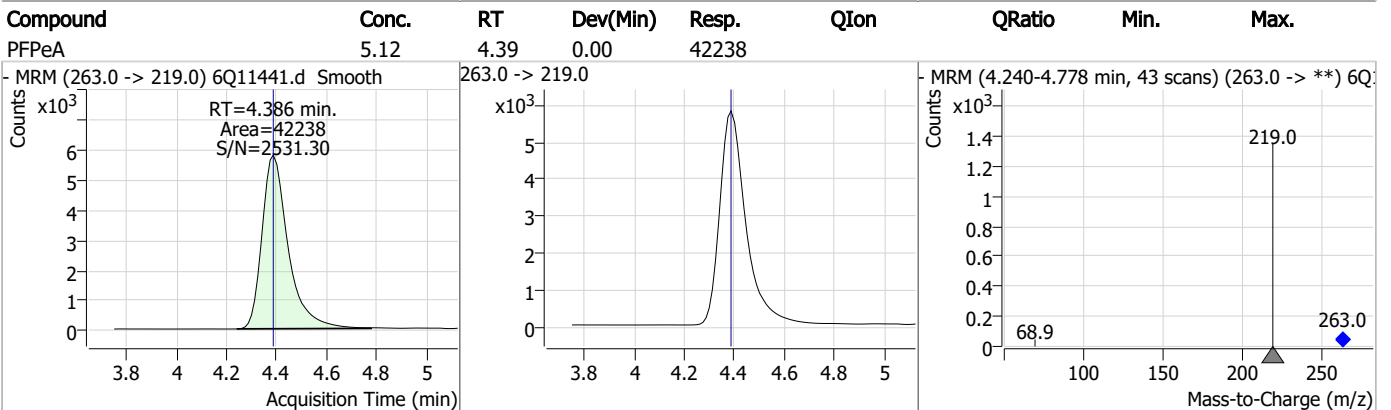
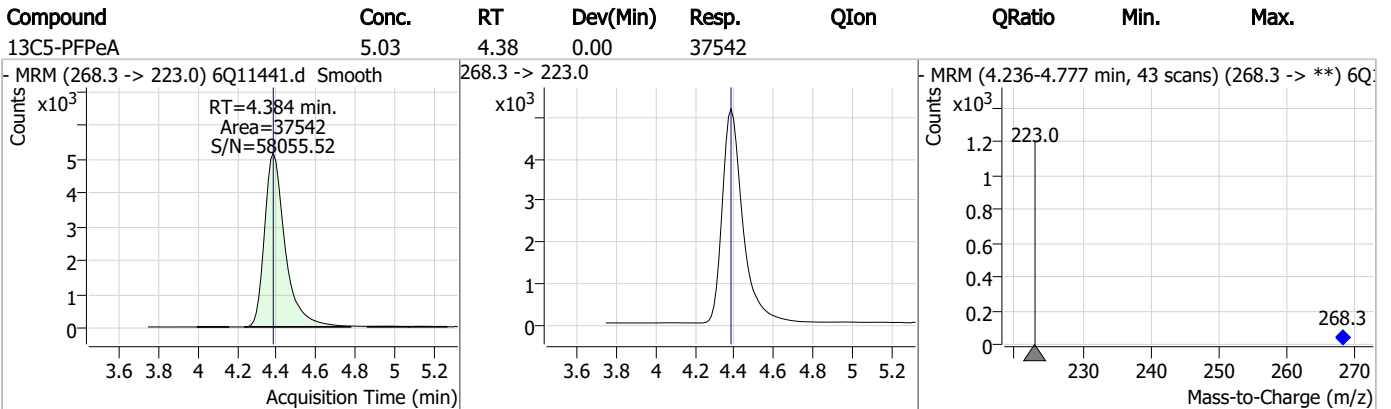
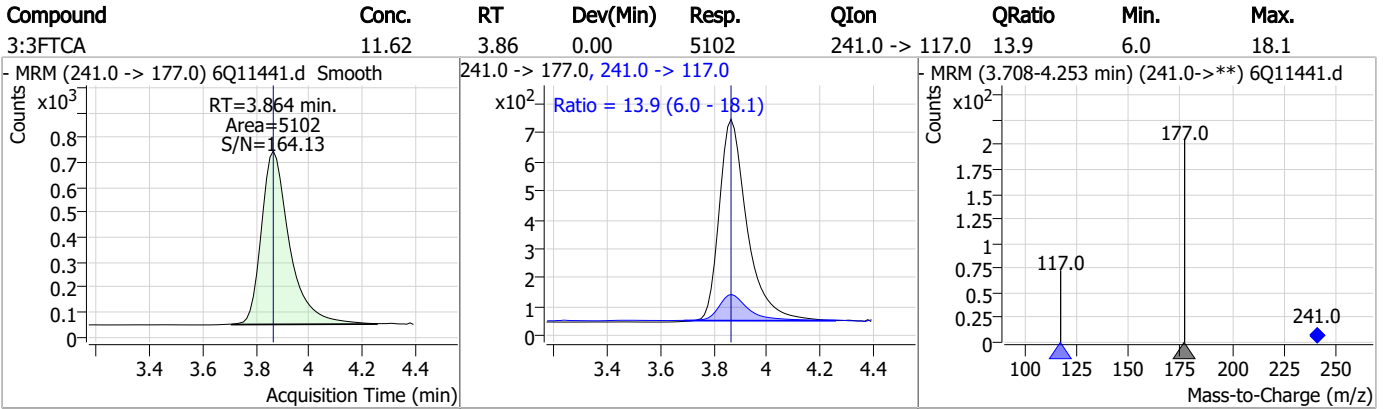
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Perfluorinated Compounds by LC/MS/MS

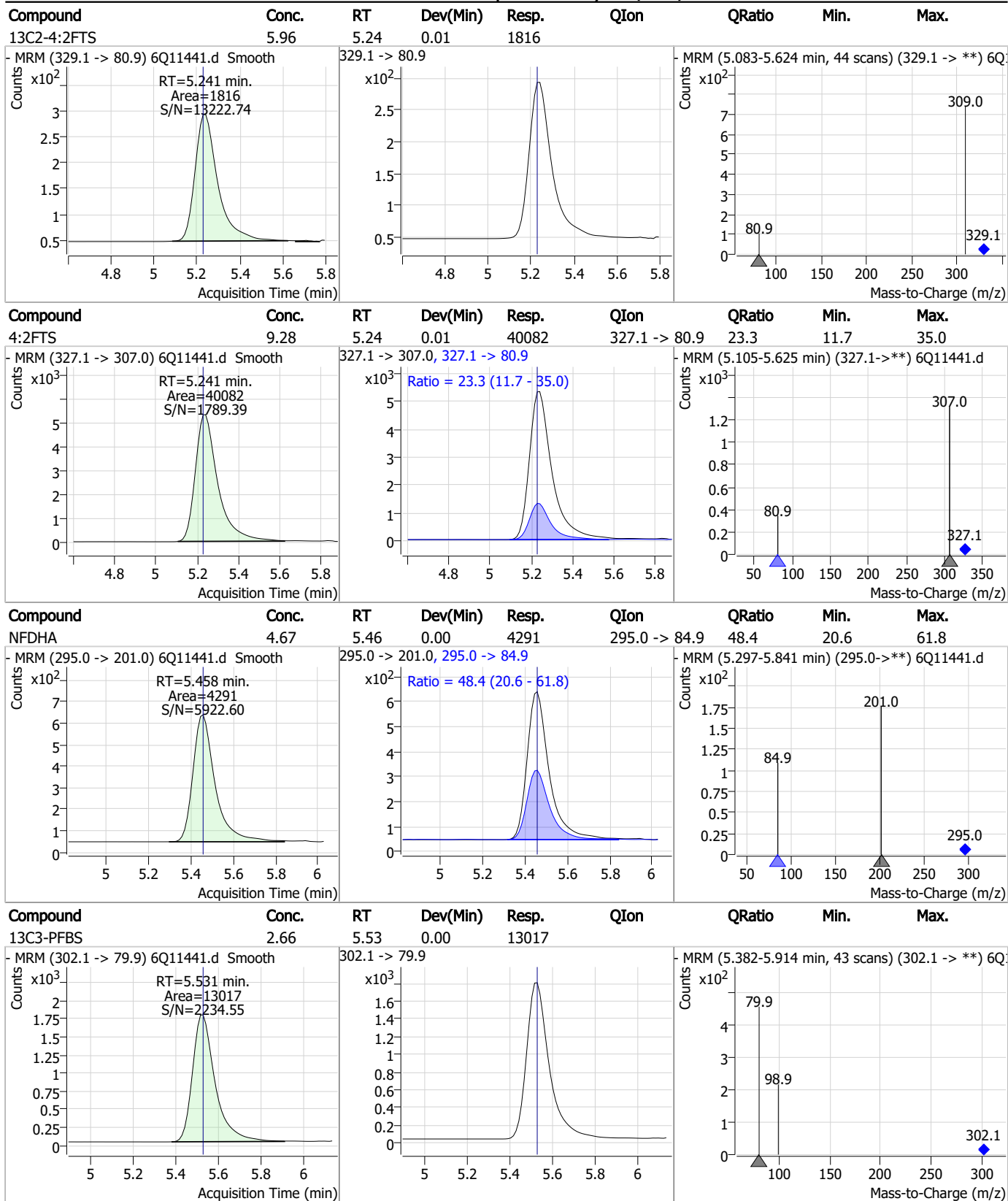


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Perfluorinated Compounds by LC/MS/MS

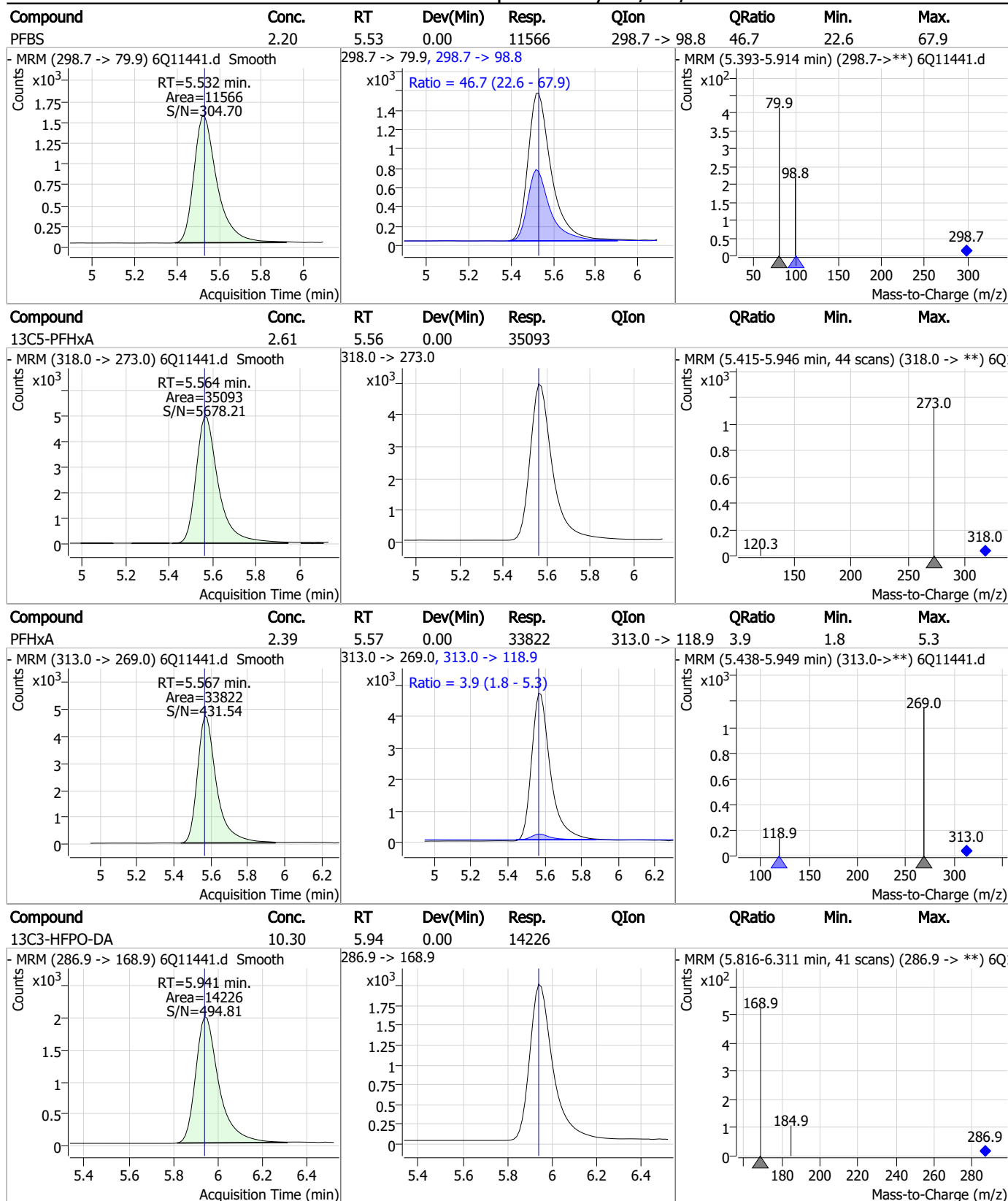


Perfluorinated Compounds by LC/MS/MS



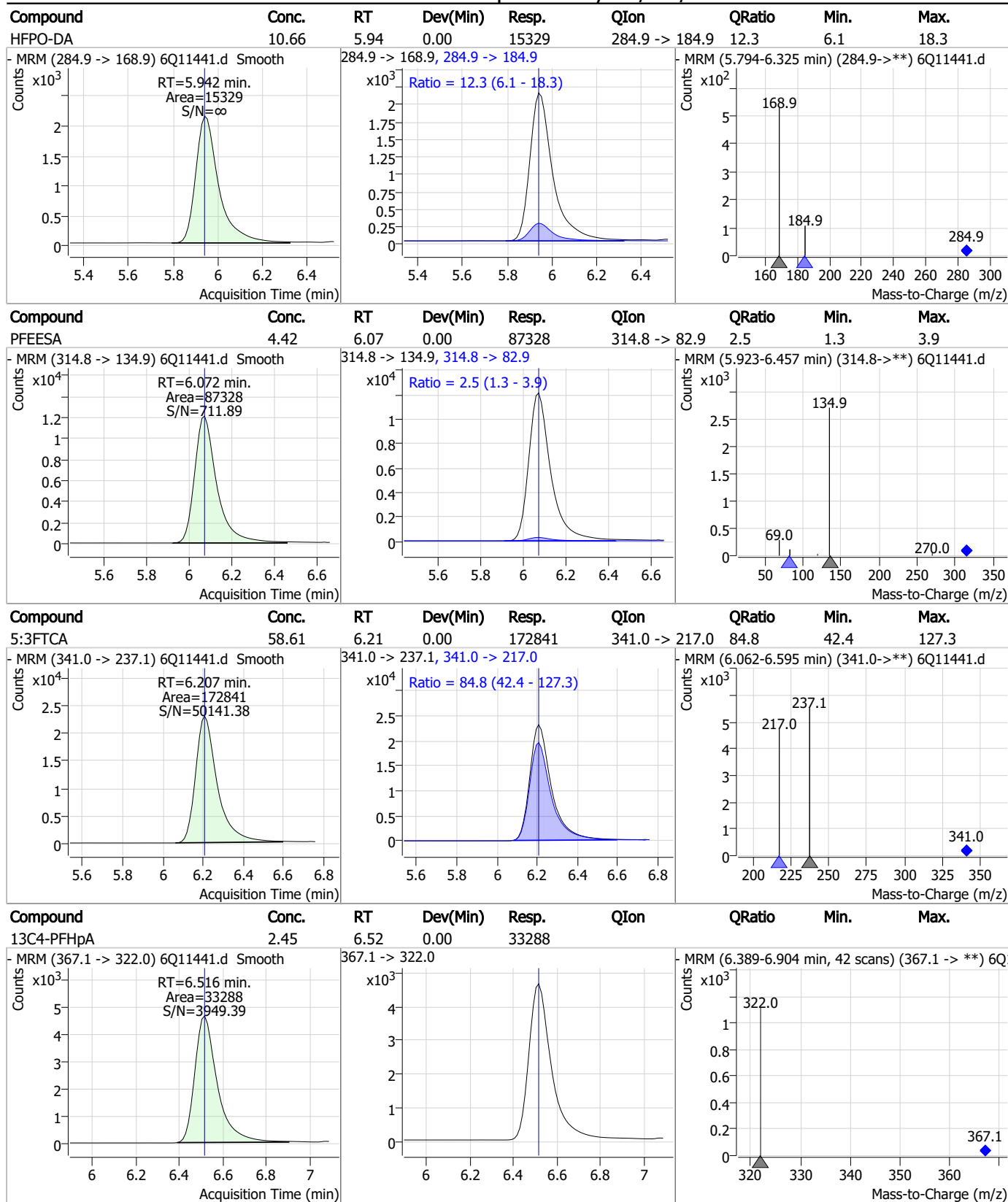
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Perfluorinated Compounds by LC/MS/MS



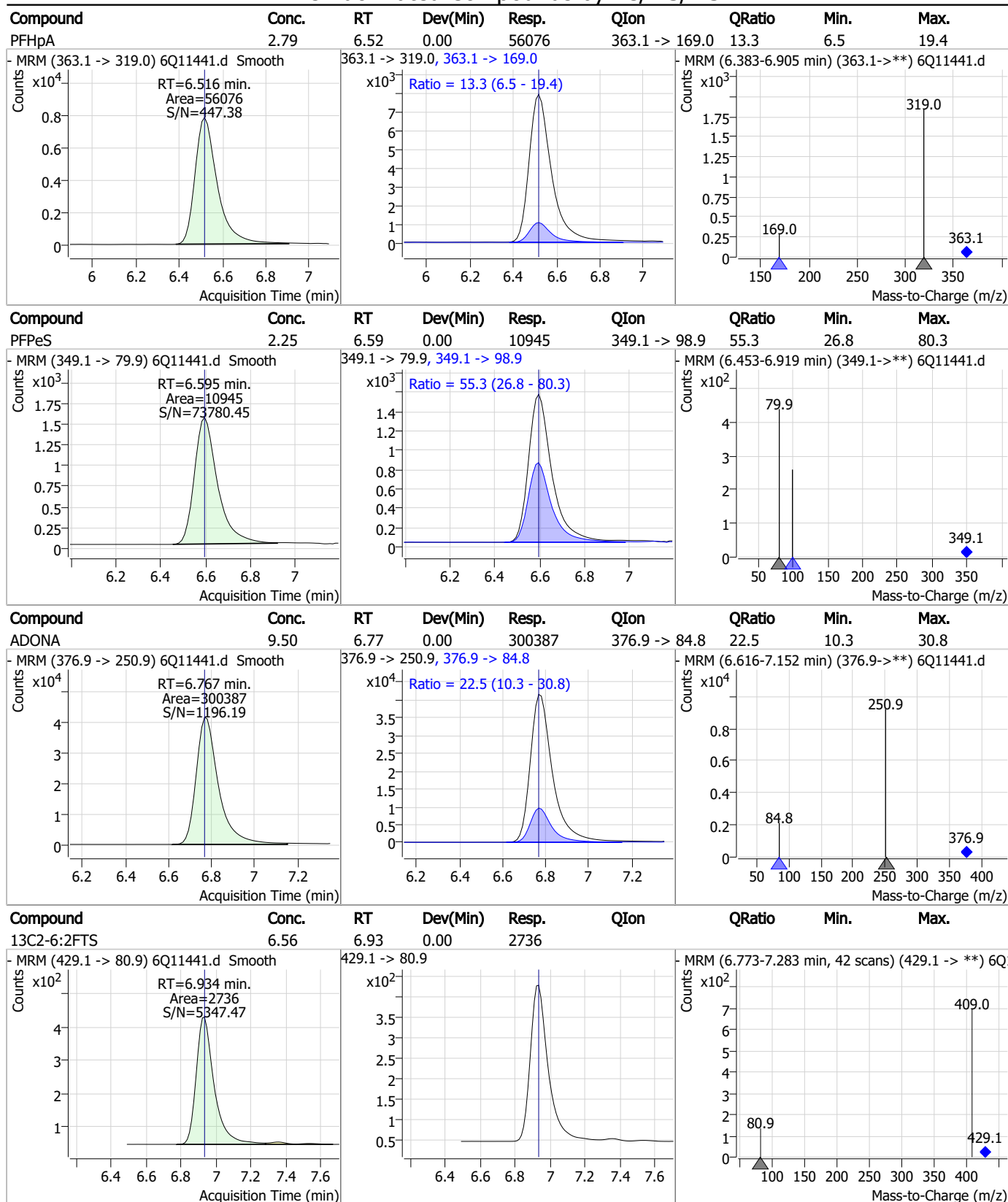
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Perfluorinated Compounds by LC/MS/MS



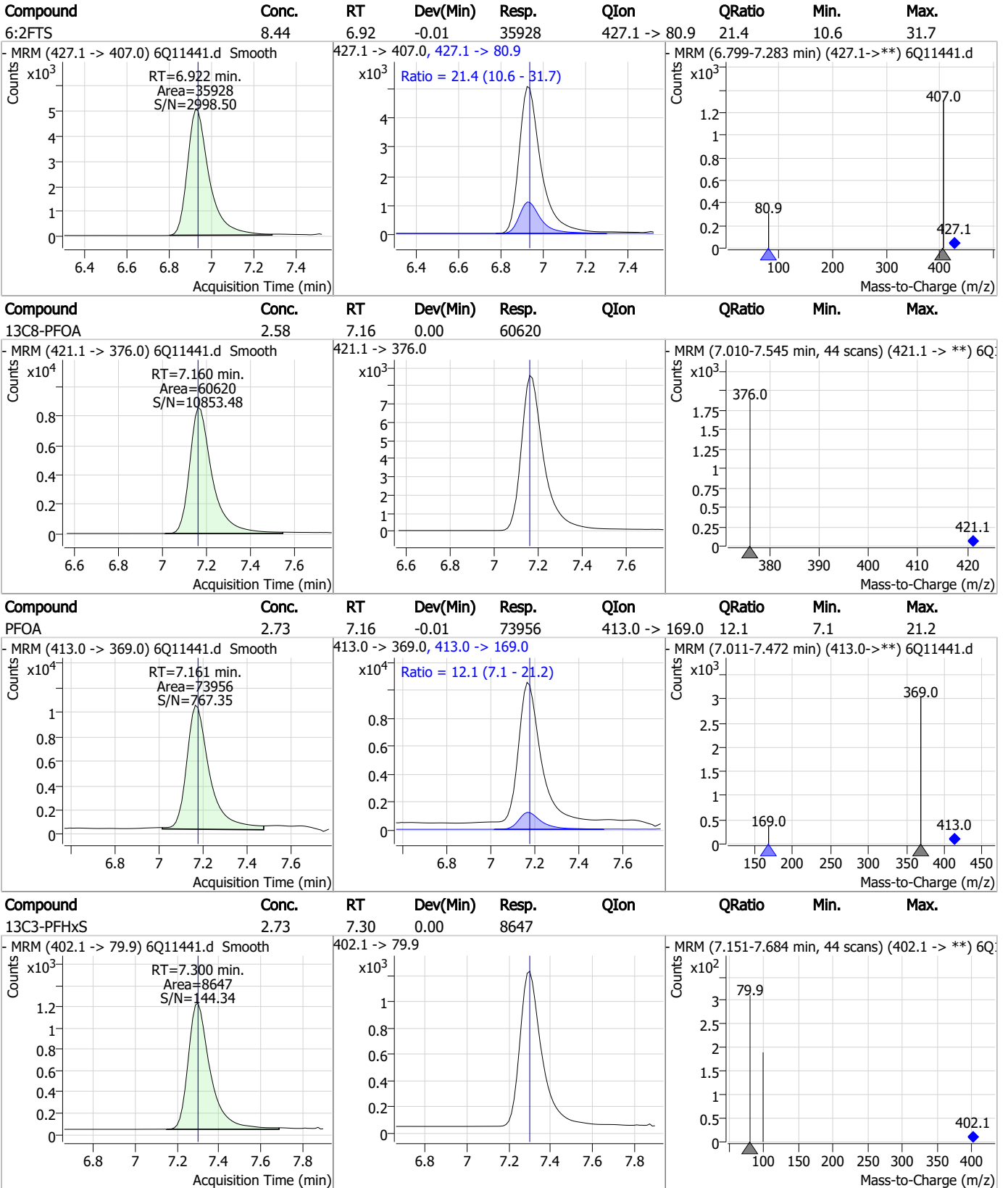
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Perfluorinated Compounds by LC/MS/MS



7.3.1
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Perfluorinated Compounds by LC/MS/MS

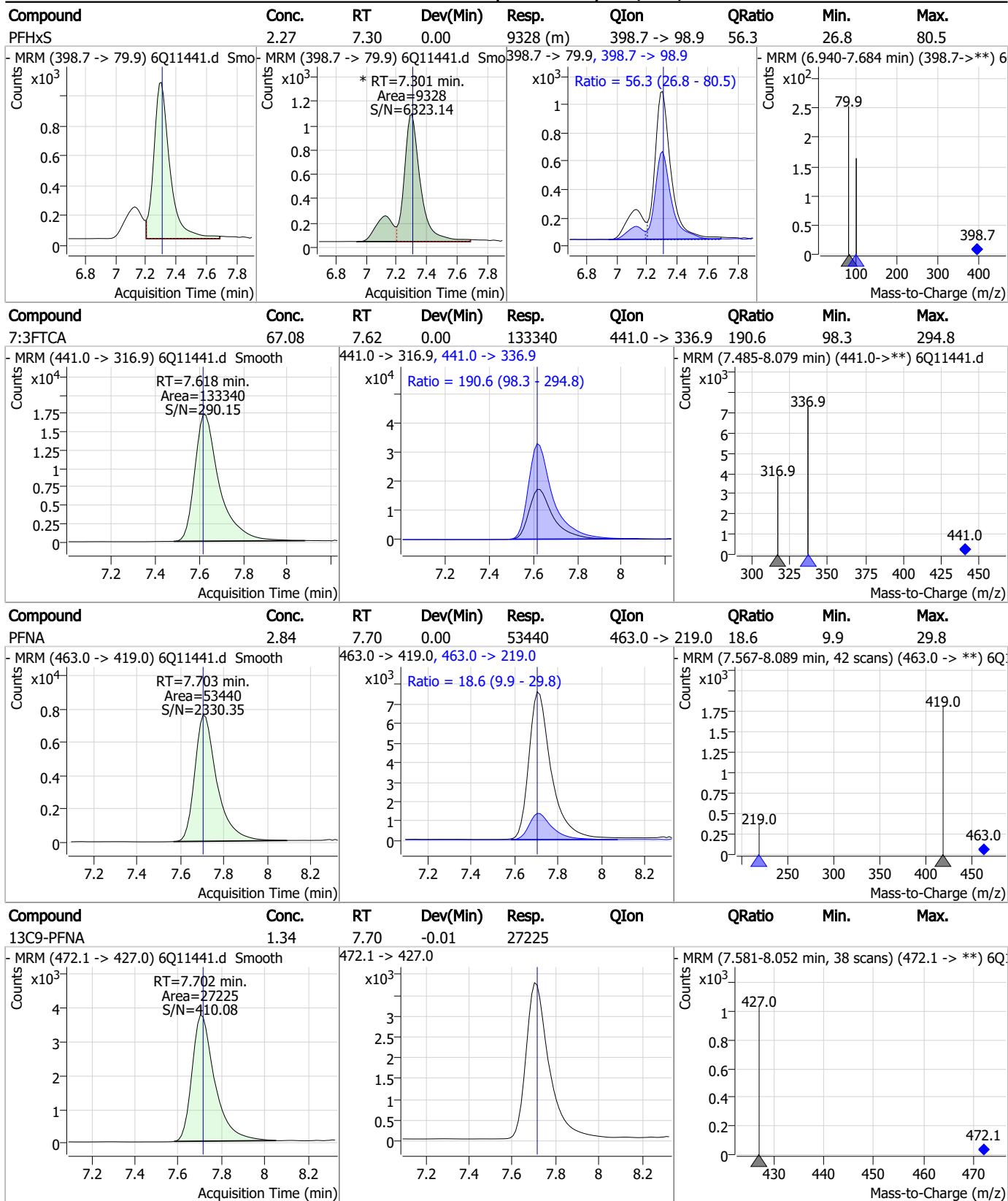


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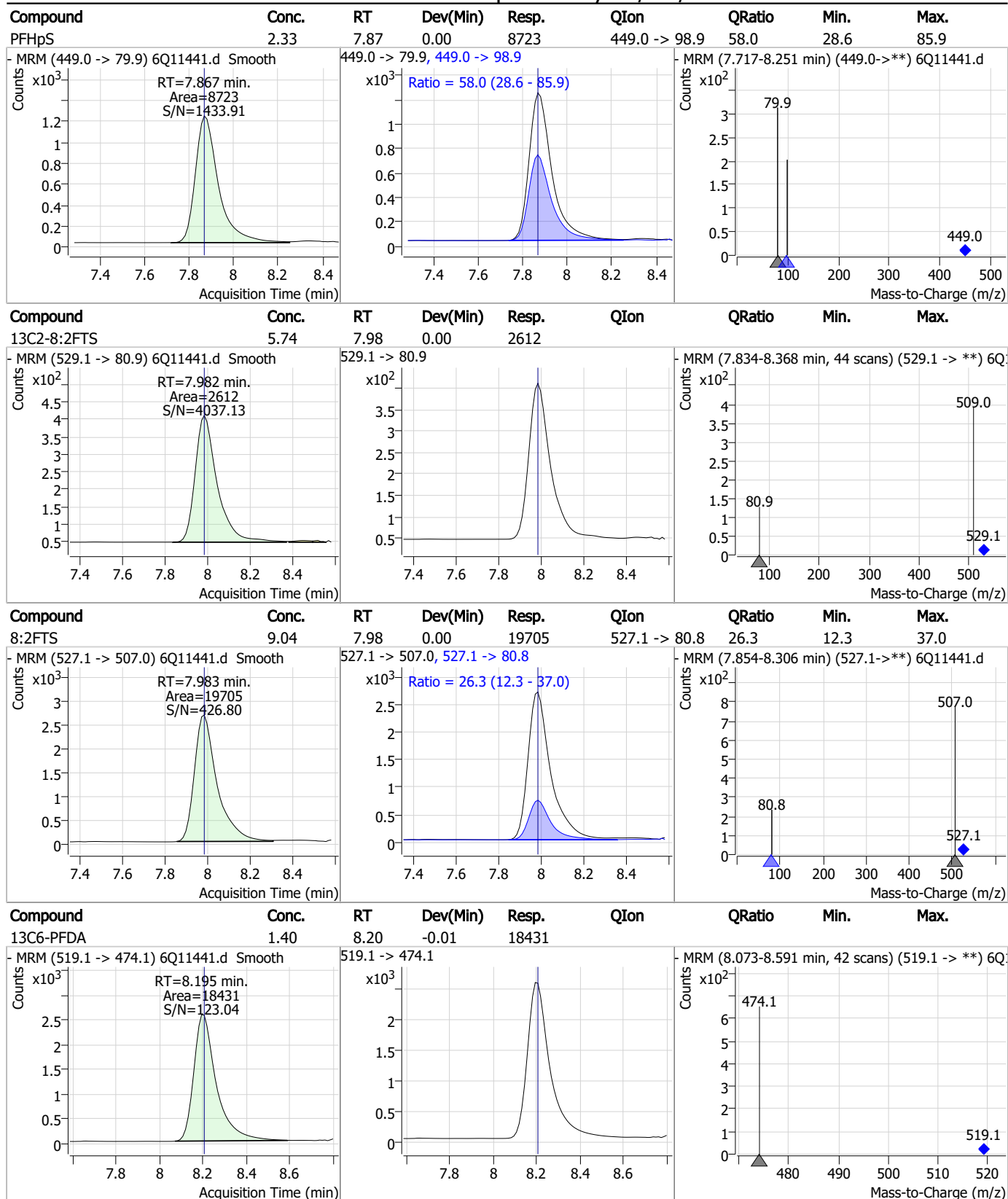


Perfluorinated Compounds by LC/MS/MS



7.3.1

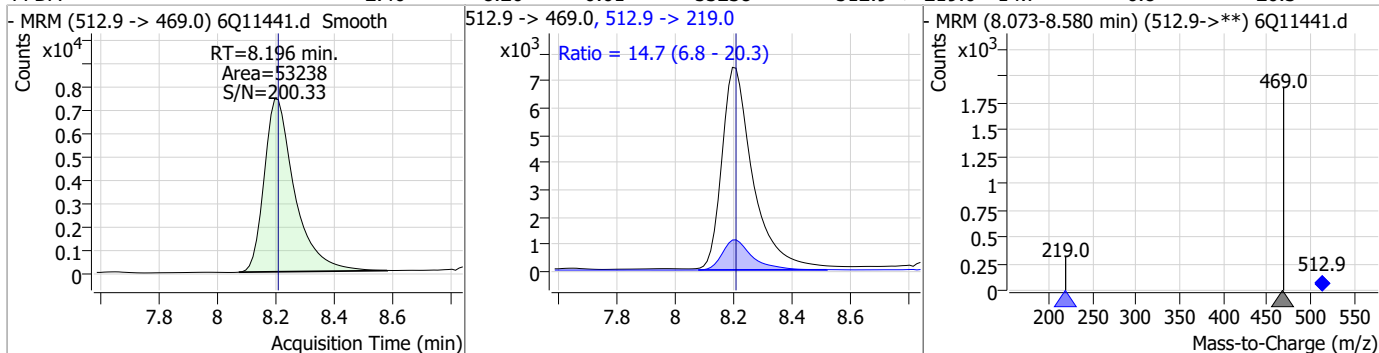
Perfluorinated Compounds by LC/MS/MS



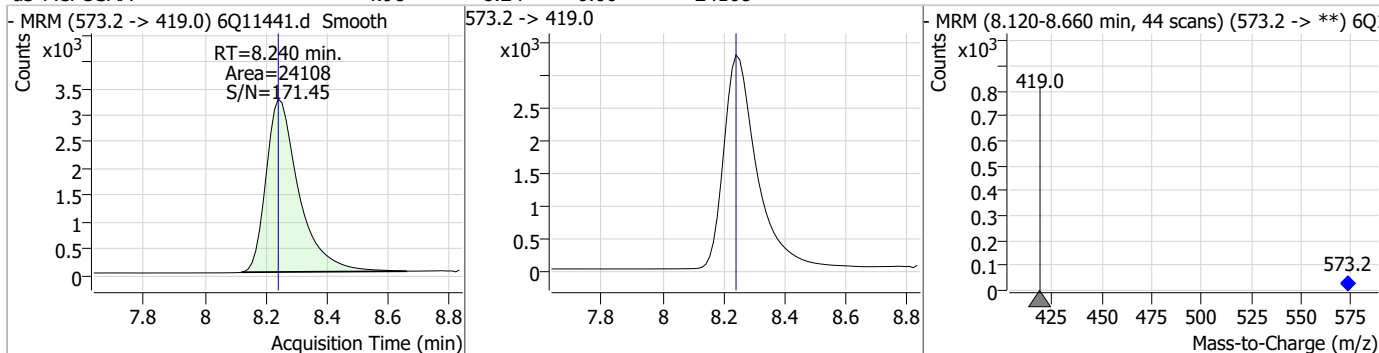
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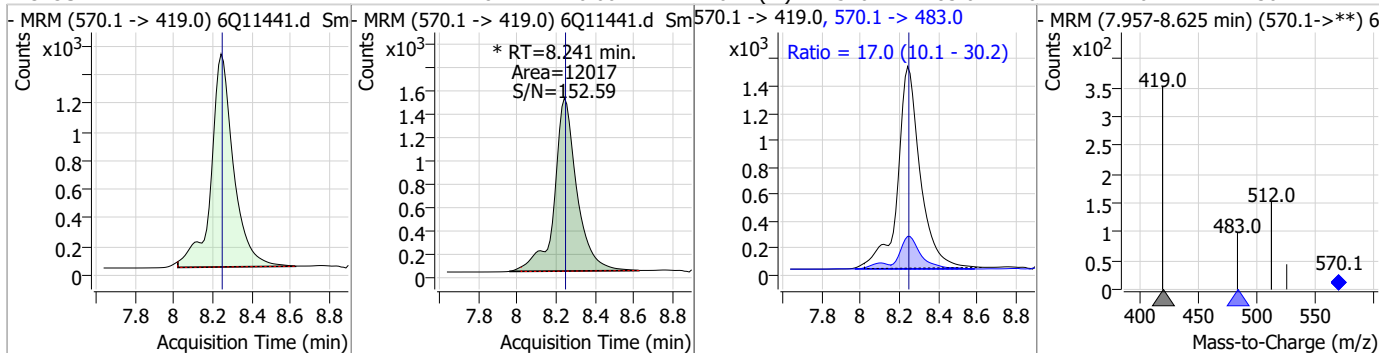
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.40	8.20	-0.01	53238	512.9 -> 219.0	14.7	6.8	20.3



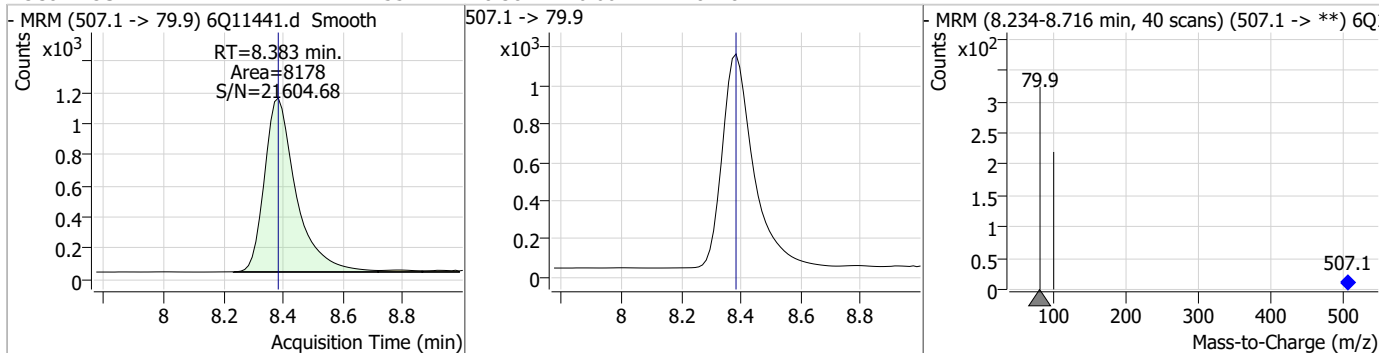
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.98	8.24	0.00	24108				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.42	8.24	0.00	12017 (m)	570.1 -> 483.0	17.0	10.1	30.2

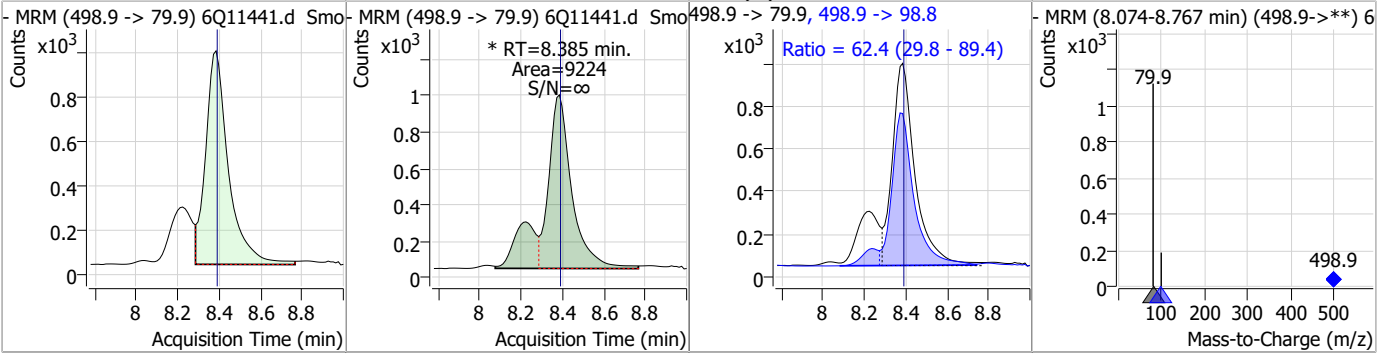


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.55	8.38	0.00	8178				

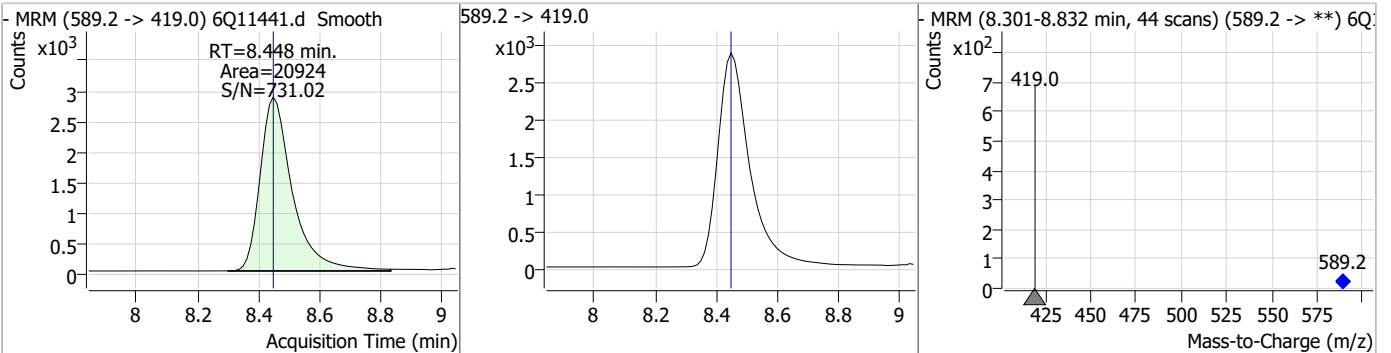


Perfluorinated Compounds by LC/MS/MS

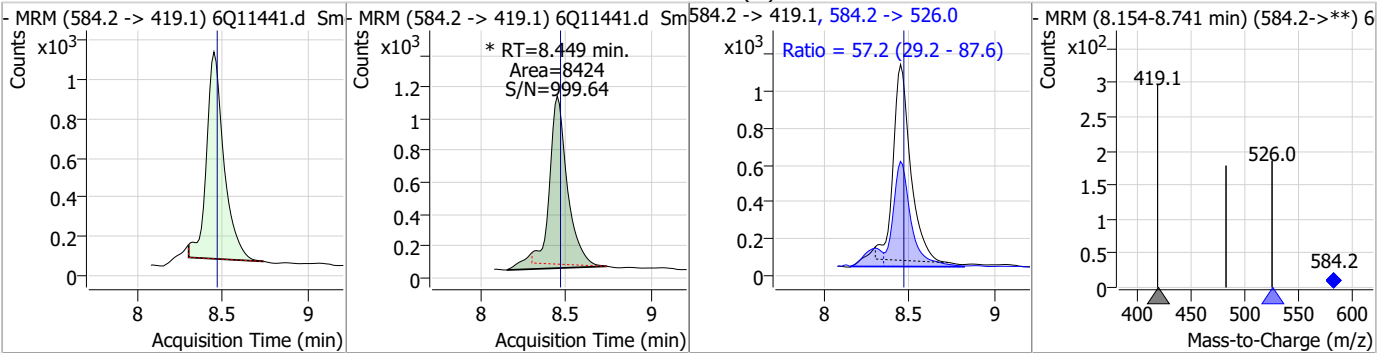
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.33	8.38	0.00	9224 (m)	498.9 -> 98.8	62.4	29.8	89.4



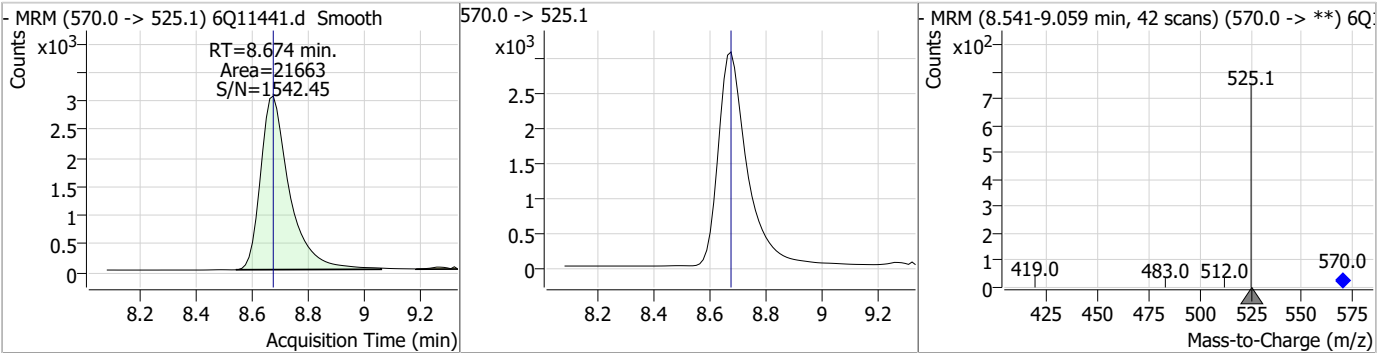
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.93	8.45	0.00	20924				



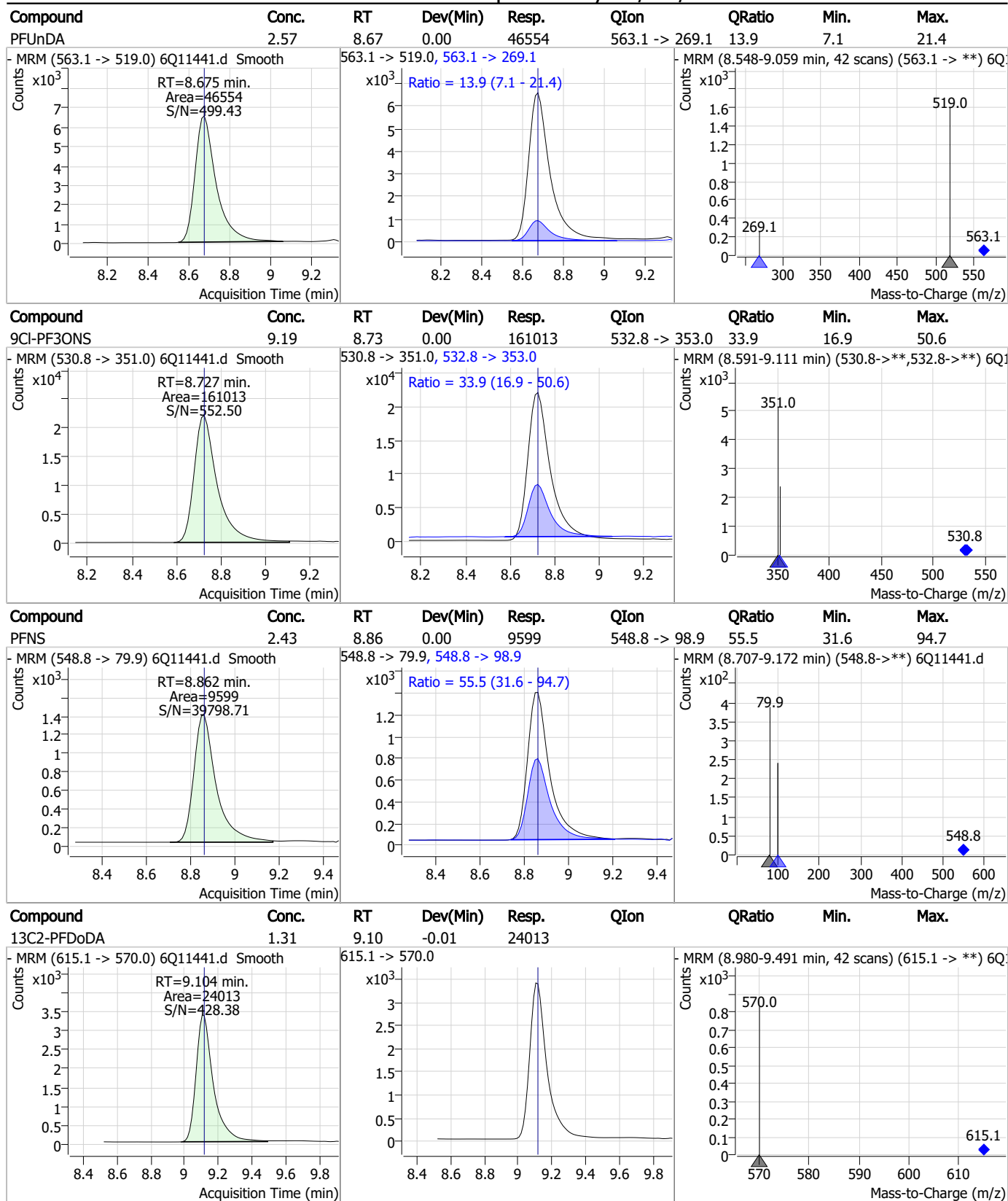
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.52	8.45	-0.01	8424 (m)	584.2 -> 526.0	57.2	29.2	87.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.35	8.67	0.00	21663				



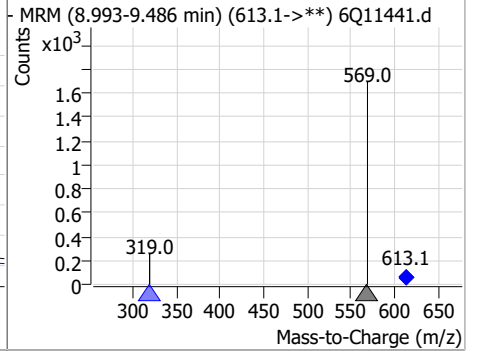
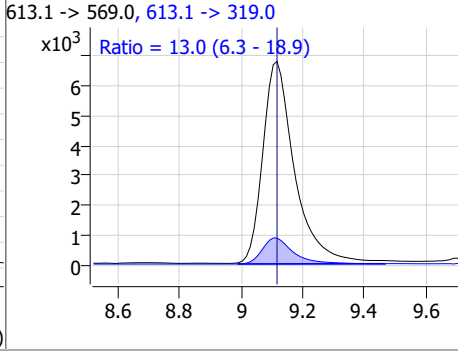
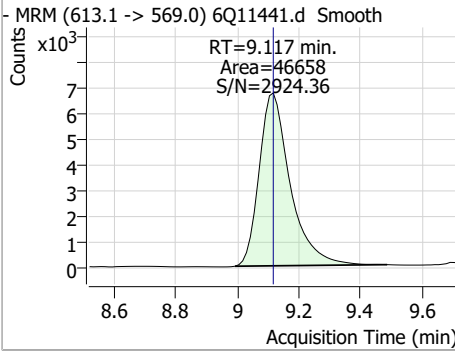
Perfluorinated Compounds by LC/MS/MS



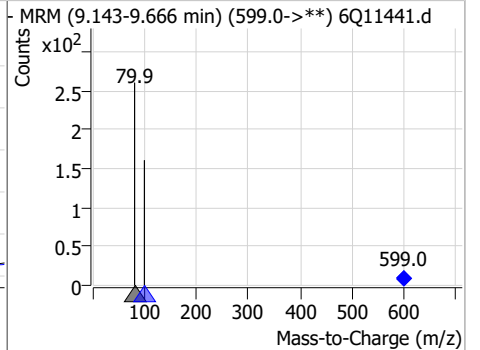
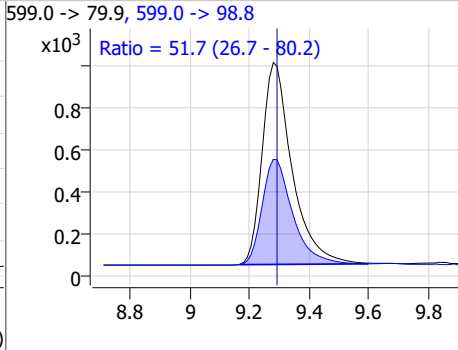
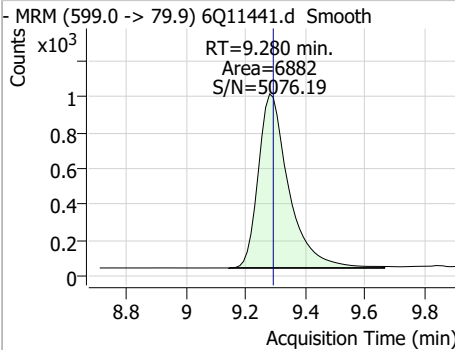
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Perfluorinated Compounds by LC/MS/MS

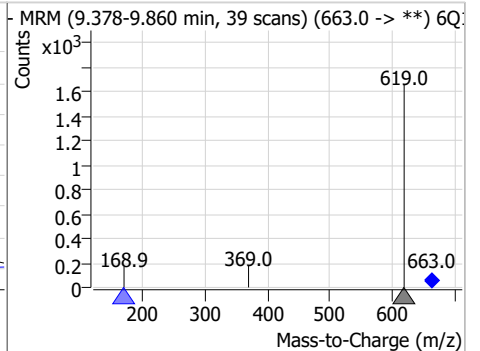
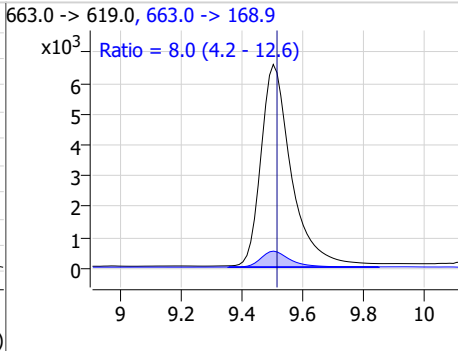
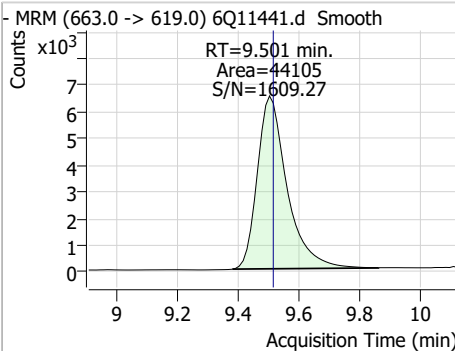
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFD _o DA	2.47	9.12	0.00	46658	613.1 -> 319.0	13.0	6.3	18.9



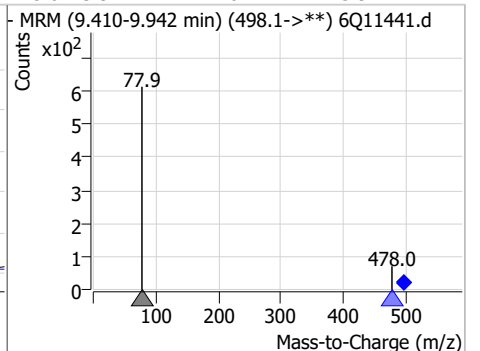
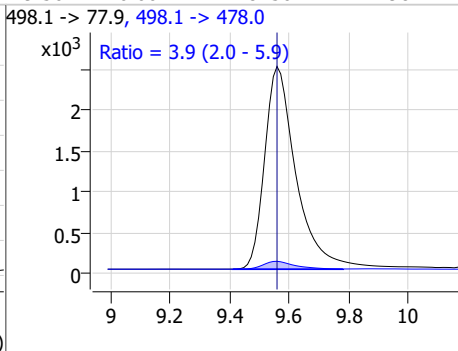
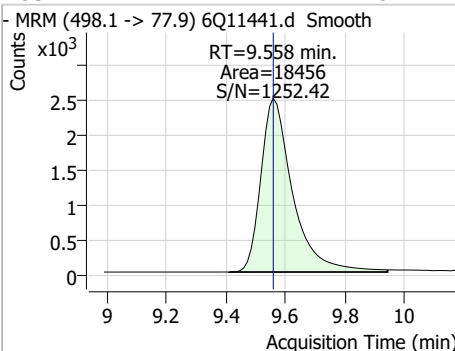
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.44	9.28	-0.01	6882	599.0 -> 98.8	51.7	26.7	80.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFT _r DA	2.45	9.50	-0.01	44105	663.0 -> 168.9	8.0	4.2	12.6

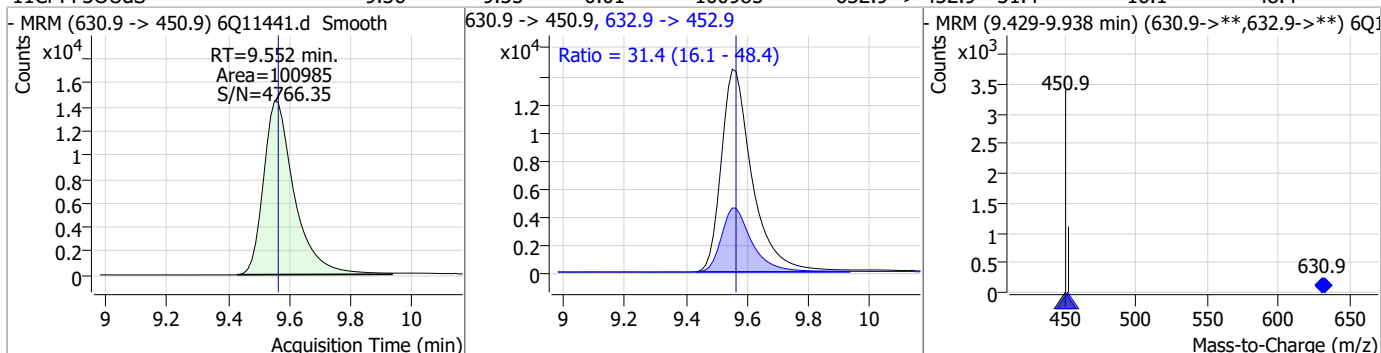


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.57	9.56	0.00	18456	498.1 -> 478.0	3.9	2.0	5.9

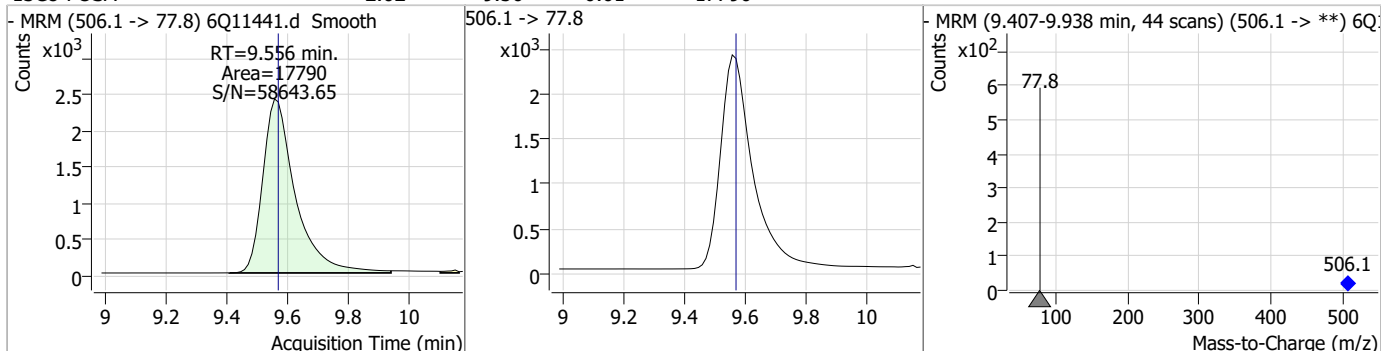


Perfluorinated Compounds by LC/MS/MS

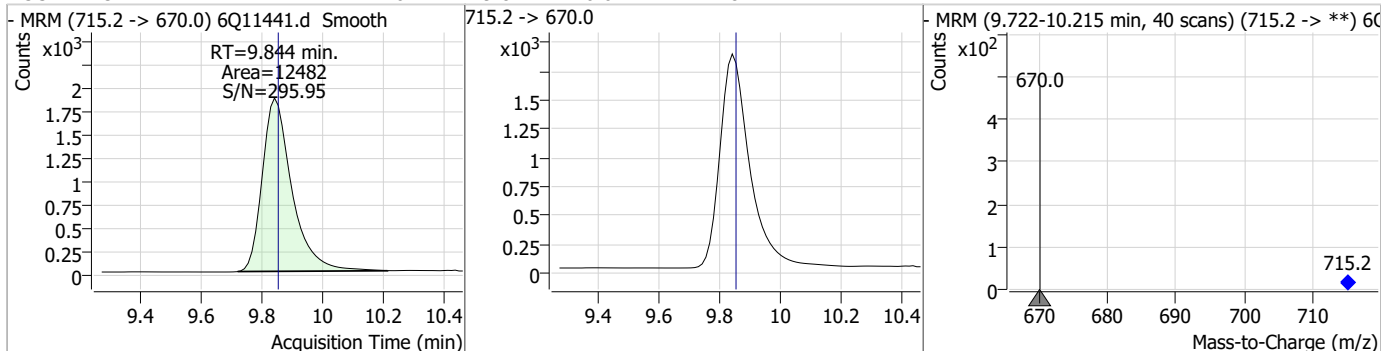
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11CI-PF3OUds	9.36	9.55	-0.01	100985	632.9 -> 452.9	31.4	16.1	48.4



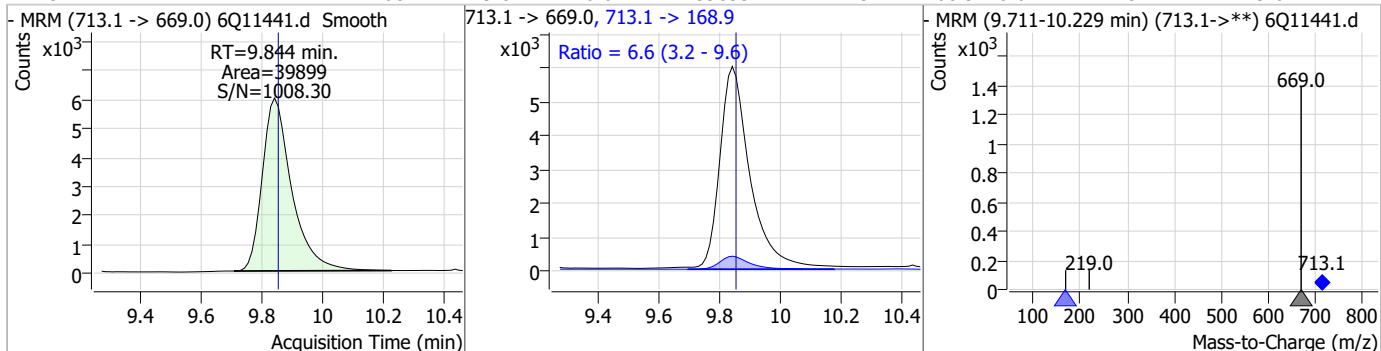
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.62	9.56	-0.01	17790				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.16	9.84	-0.01	12482				

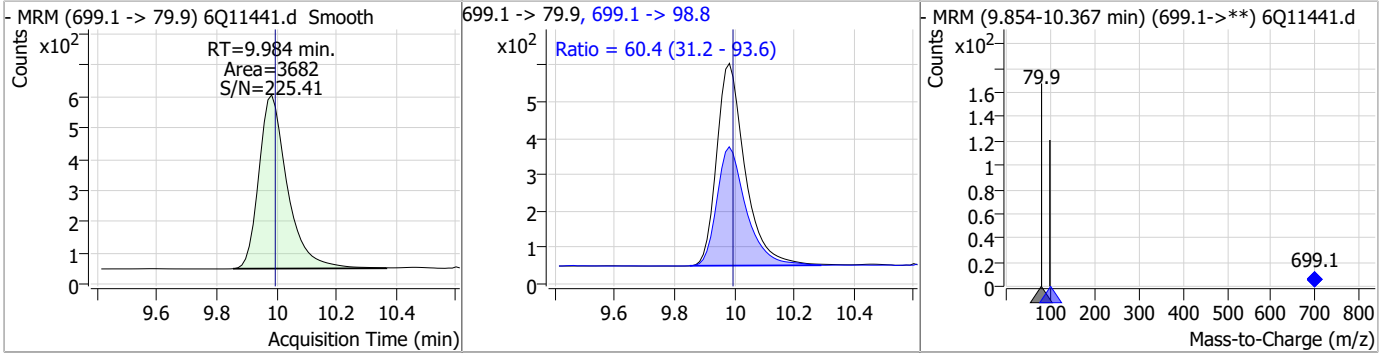


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.68	9.84	-0.01	39899	713.1 -> 168.9	6.6	3.2	9.6

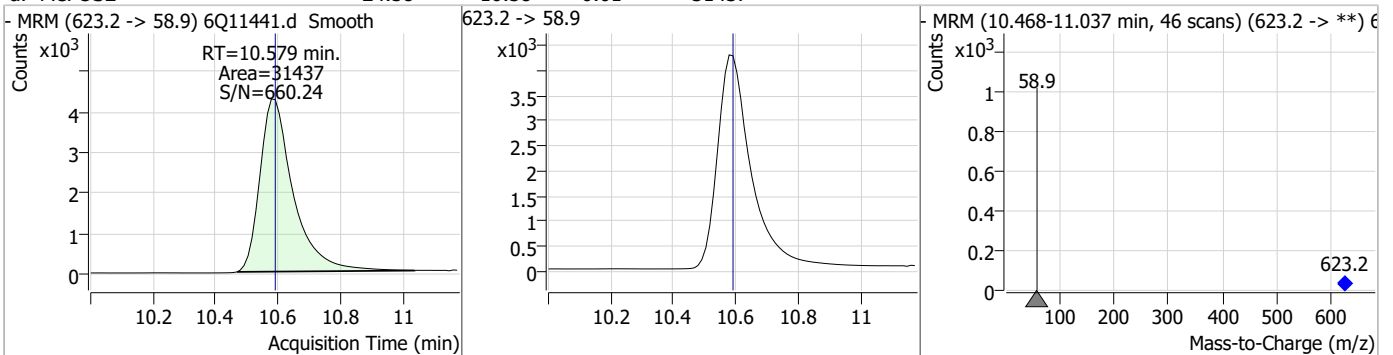


Perfluorinated Compounds by LC/MS/MS

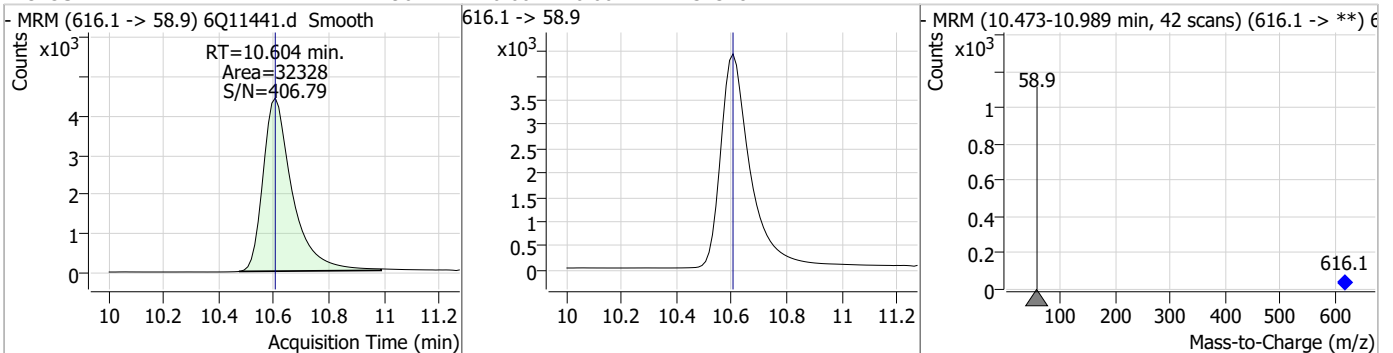
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.09	9.98	-0.01	3682	699.1 -> 98.8	60.4	31.2	93.6



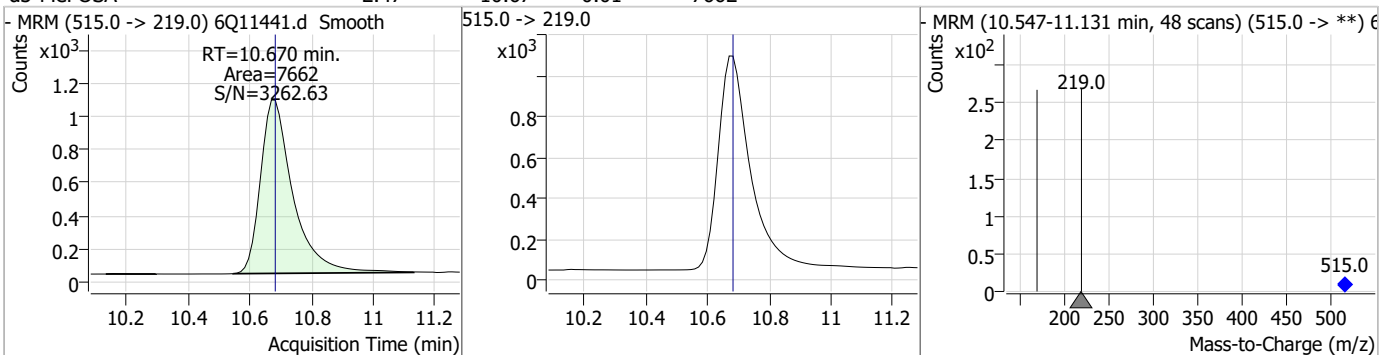
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.58	10.58	-0.01	31437				



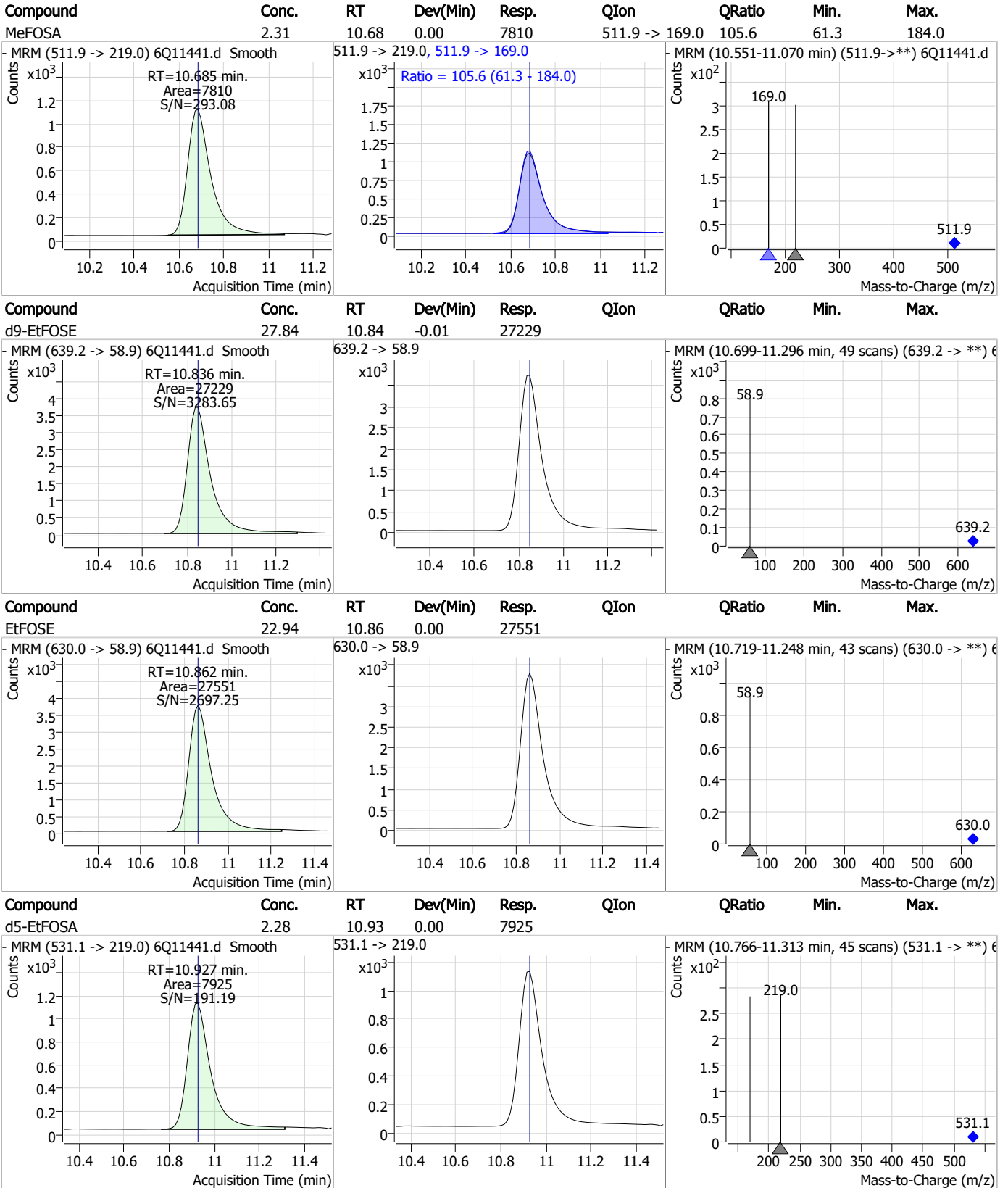
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	24.90	10.60	0.00	32328				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.47	10.67	-0.01	7662				



Perfluorinated Compounds by LC/MS/MS

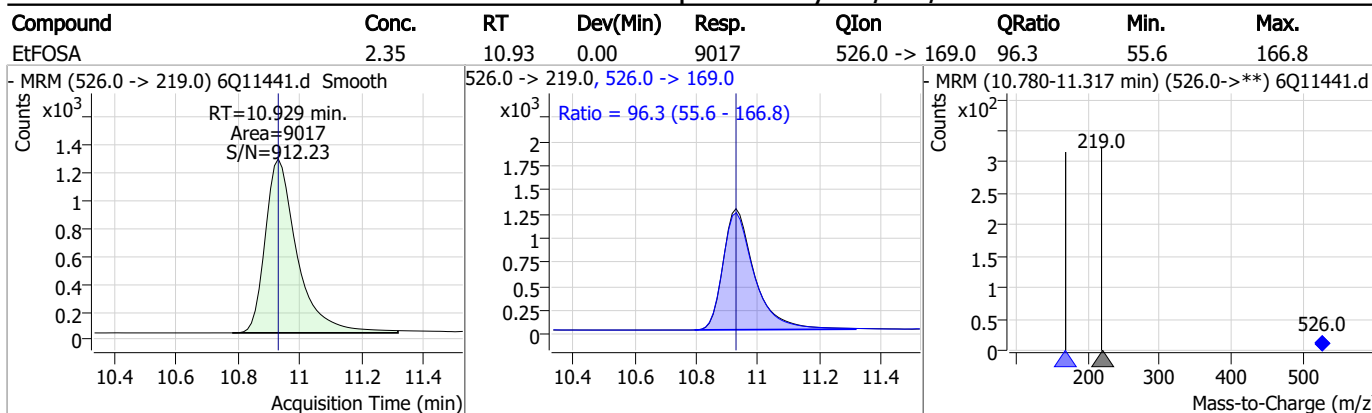


7.3.1

7



Perfluorinated Compounds by LC/MS/MS



7.3.1

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Manual Integration Approval Summary

Sample Number: OP94977-BS Method: EPA DRAFT 1633
Lab FileID: 6Q11441.D Analyst approved: 01/17/23 15:03 Martha Valls
Injection Time: 01/17/23 03:05 Supervisor approved: 01/17/23 18:24 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.30	Split peak
MeFOSAA	2355-31-9		8.24	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.38	Split peak
EtFOSAA	2991-50-6		8.45	Split peak

7.3.1.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q11442.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/17/2023 3:19:51 AM
 Sample Name : op94977-llbs:3
 Vial : P3-F1
 DA Method File : 1633_011123_S6Q174.quantmethod.xml
 Batch Name : s6q179.batch.bin
 Sample Information : OP94977,S6Q179,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.013	216.8 -> 171.9	83071	10.00 µg/L	0.012
M5-PFPeA	4.384	268.3 -> 223.0	39309	5.00 µg/L	0.000
M5-PFHxA	5.576	318.0 -> 273.0	35744	2.50 µg/L	0.012
M4-PFHpA	6.516	367.1 -> 322.0	36471	2.50 µg/L	0.000
M8-PFOA	7.172	421.1 -> 376.0	61131	2.50 µg/L	0.012
M9-PFNA	7.715	472.1 -> 427.0	29822	1.25 µg/L	0.000
M6-PFDA	8.208	519.1 -> 474.1	20178	1.25 µg/L	0.000
M7-PFUnDA	8.674	570.0 -> 525.1	22008	1.25 µg/L	0.000
M2-PFDoDA	9.117	615.1 -> 570.0	24815	1.25 µg/L	0.000
M2-PFTeDA	9.844	715.2 -> 670.0	12877	1.25 µg/L	-0.012
M8-FOSA	9.556	506.1 -> 77.8	15767	2.50 µg/L	-0.012
M3-PFBS	5.531	302.1 -> 79.9	12789	2.50 µg/L	0.000
M3-PFHxS	7.300	402.1 -> 79.9	8546	2.50 µg/L	0.000
M8-PFOS	8.383	507.1 -> 79.9	8778	2.50 µg/L	0.000
M2-4:2FTS	5.241	329.1 -> 80.9	1942	5.00 µg/L	0.012
M2-6:2FTS	6.934	429.1 -> 80.9	2550	5.00 µg/L	0.000
M2-8:2FTS	7.982	529.1 -> 80.9	2456	5.00 µg/L	0.000
M3-MeFOSAA	8.240	573.2 -> 419.0	24857	5.00 µg/L	0.000
M3-HFPO-DA	5.953	286.9 -> 168.9	14341	10.00 µg/L	0.012
M5-EtFOSAA	8.448	589.2 -> 419.0	21454	5.00 µg/L	0.000
M7-MeFOSE	10.579	623.2 -> 58.9	29681	25.00 µg/L	-0.012
M9-EtFOSE	10.849	639.2 -> 58.9	24259	25.00 µg/L	0.000
M5-EtFOSA	10.927	531.1 -> 219.0	8036	2.50 µg/L	0.000
M3-MeFOSA	10.670	515.0 -> 219.0	7102	2.50 µg/L	-0.012
13C4-PFOS	8.384	502.8 -> 79.9	9713	2.50 µg/L	0.000
13C3-PFBA	3.016	216.0 -> 172.0	34778	5.00 µg/L	0.012
18O2-PFHxS	7.299	403.0 -> 83.9	5961	2.50 µg/L	0.000
13C4-PFOA	7.173	417.1 -> 372.0	71769	2.50 µg/L	0.000
13C2-PFDA	8.208	515.1 -> 470.1	24489	1.25 µg/L	0.000
13C5-PFNA	7.715	468.0 -> 423.0	32392	1.25 µg/L	0.013
13C2-PFHxA	5.577	315.1 -> 270.0	32530	2.50 µg/L	0.012
System Monitoring Compounds					
13C2-4:2FTS	5.241	329.1 -> 80.9	1942	6.25 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 124.9%		
13C2-6:2FTS	6.934	429.1 -> 80.9	2550	5.99 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 119.8%		
13C2-8:2FTS	7.982	529.1 -> 80.9	2456	5.28 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.7%		
13C2-PFDoDA	9.117	615.1 -> 570.0	24815	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.2%		
13C2-PFTeDA	9.844	715.2 -> 670.0	12877	1.13 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 90.3%		
13C3-PFBS	5.531	302.1 -> 79.9	12789	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.3%		
13C3-PFHxS	7.300	402.1 -> 79.9	8546	2.64 µg/L	0.000

7.32
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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 = 105.6%	
13C4-PFBA	3.013	216.8 -> 171.9	83071	10.46 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.6%	
13C4-PFHpA	6.516	367.1 -> 322.0	36471	2.77 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.6%	
13C5-PFHxA	5.576	318.0 -> 273.0	35744	2.74 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.5%	
13C5-PFPeA	4.384	268.3 -> 223.0	39309	5.42 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.3%	
13C6-PFDA	8.208	519.1 -> 474.1	20178	1.45 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 115.8%	
13C7-PFUnDA	8.674	570.0 -> 525.1	22008	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.5%	
13C8-FOSA	9.556	506.1 -> 77.8	15767	2.40 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.1%	
13C8-PFOA	7.172	421.1 -> 376.0	61131	2.54 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C8-PFOS	8.383	507.1 -> 79.9	8778	2.83 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 113.1%	
13C9-PFNA	7.715	472.1 -> 427.0	29822	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.6%	
d3-MeFOSAA	8.240	573.2 -> 419.0	24857	5.31 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.3%	
13C3-HFPO-DA	5.953	286.9 -> 168.9	14341	10.69 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.9%	
d3-MeFOSA	10.670	515.0 -> 219.0	7102	2.36 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.6%	
d5-EtFOSAA	8.448	589.2 -> 419.0	21454	5.23 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.6%	
d7-MeFOSE	10.579	623.2 -> 58.9	29681	24.01 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.0%	
d9-EtFOSE	10.849	639.2 -> 58.9	24259	25.66 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.6%	
d5-EtFOSA	10.927	531.1 -> 219.0	8036	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.5%	
Target Compounds					QValue
4:2FTS	5.241	327.1 -> 307.0	15130	3.28 µg/L	97
		327.1 -> 80.9	3763		
6:2FTS	6.934	427.1 -> 407.0	13822	3.48 µg/L	100
		427.1 -> 80.9	2941		
8:2FTS	7.983	527.1 -> 507.0	6975	3.40 µg/L	94
		527.1 -> 80.8	1939		
EtFOSAA	8.449	584.2 -> 419.1	3113	0.91 µg/L	m 94
		584.2 -> 526.0	1957		
FOSA	9.558	498.1 -> 77.9	7192	1.13 µg/L	98
		498.1 -> 478.0	237		
MeFOSAA	8.241	570.1 -> 419.0	4553	0.89 µg/L	m 95
		570.1 -> 483.0	804		
PFBA	3.007	212.8 -> 168.9	7936	3.72 µg/L	100
PFBS	5.532	298.7 -> 79.9	4600	0.89 µg/L	91
		298.7 -> 98.8	1817		
PFDA	8.208	512.9 -> 469.0	21649	0.89 µg/L	98
		512.9 -> 219.0	2754		
PFDODA	9.105	613.1 -> 569.0	18502	0.95 µg/L	100
		613.1 -> 319.0	2296		
PFDS	9.280	599.0 -> 79.9	2492	0.82 µg/L	99

7.3.2
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.516	599.0 -> 98.8	1350	0.94	µg/L	96
		363.1 -> 319.0	20762			
PFHpS	7.867	363.1 -> 169.0	3045	0.87	µg/L	98
		449.0 -> 79.9	3510			
PFHxA	5.579	449.0 -> 98.9	2055	0.93	µg/L	99
		313.0 -> 269.0	13370			
PFHxS	7.301	313.0 -> 118.9	498	0.85	µg/L	96
		398.7 -> 79.9	3439			
PFNA	7.716	398.7 -> 98.9	1949	0.99	µg/L	93
		463.0 -> 419.0	20500			
PFNS	8.862	463.0 -> 219.0	3397	0.84	µg/L	99
		548.8 -> 79.9	3556			
PFOA	7.174	548.8 -> 98.9	2279	0.96	µg/L	100
		413.0 -> 369.0	26237			
PFOS	8.385	413.0 -> 169.0	3683	0.91	µg/L	97
		498.9 -> 79.9	3862			
PFPeA	4.386	498.9 -> 98.8	2205	1.84	µg/L	100
		263.0 -> 219.0	15889			
PFPeS	6.595	349.1 -> 79.9	4154	0.86	µg/L	100
		349.1 -> 98.9	2209			
PFTeDA	9.844	713.1 -> 669.0	14404	0.94	µg/L	98
		713.1 -> 168.9	1016			
PFTrDA	9.501	663.0 -> 619.0	16181	0.87	µg/L	100
		663.0 -> 168.9	1331			
PFUnDA	8.675	563.1 -> 519.0	18693	1.02	µg/L	99
		563.1 -> 269.1	2595			
11CI-PF3OUdS	9.552	630.9 -> 450.9	37953	3.49	µg/L	98
		632.9 -> 452.9	11914			
9CI-PF3ONS	8.727	530.8 -> 351.0	61641	3.49	µg/L	99
		532.8 -> 353.0	20343			
ADONA	6.780	376.9 -> 250.9	115317	3.62	µg/L	98
		376.9 -> 84.8	24766			
HFPO-DA	5.954	284.9 -> 168.9	5470	3.77	µg/L	96
		284.9 -> 184.9	750			
3:3FTCA	3.864	241.0 -> 177.0	1904	4.14	µg/L	98
		241.0 -> 117.0	243			
5:3FTCA	6.207	341.0 -> 237.1	67865	22.59	µg/L	99
		341.0 -> 217.0	56977			
7:3FTCA	7.630	441.0 -> 316.9	49230	24.32	µg/L	97
		441.0 -> 336.9	99247			
EtFOSA	10.929	526.0 -> 219.0	3296	0.85	µg/L	86
		526.0 -> 169.0	3177			
EtFOSE	10.862	630.0 -> 58.9	9249	8.64	µg/L	100
		511.9 -> 219.0	2809			
MeFOSA	10.685	511.9 -> 169.0	2941	0.90	µg/L	84
		616.1 -> 58.9	11265			
MeFOSE	10.604	699.1 -> 79.9	1541	9.19	µg/L	100
		699.1 -> 98.8	889			
PFDoDS	9.984	295.0 -> 201.0	1659	0.82	µg/L	94
		295.0 -> 84.9	710			
NFDHA	5.458	279.0 -> 85.1	5068	1.77	µg/L	97
		229.0 -> 84.9	4363			
PFMBA	4.801	314.8 -> 134.9	33253	1.88	µg/L	100
		314.8 -> 82.9	875			
PFMPA	3.550			1.83	µg/L	100
PFEESA	6.072			1.65	µg/L	100

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

7.3.2
7

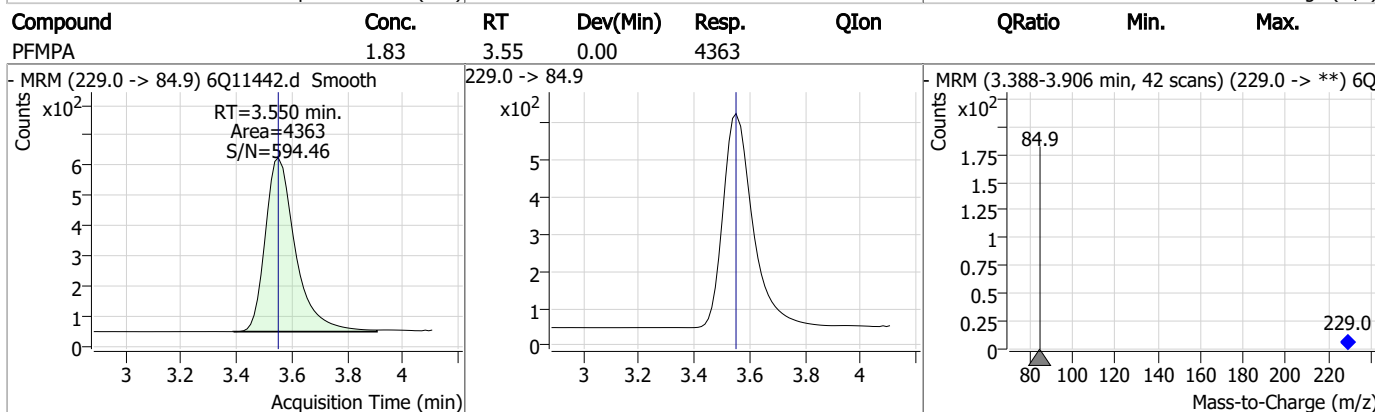
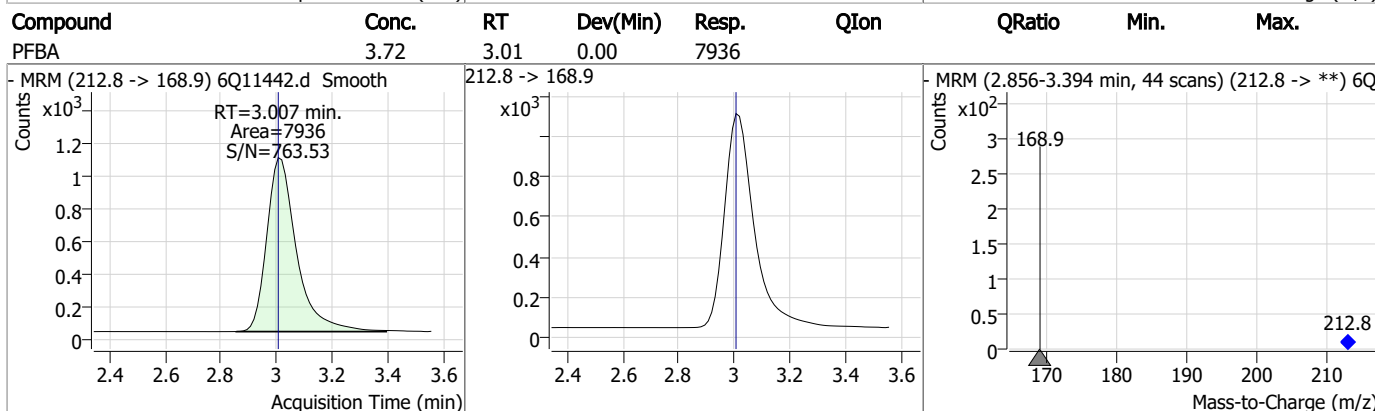
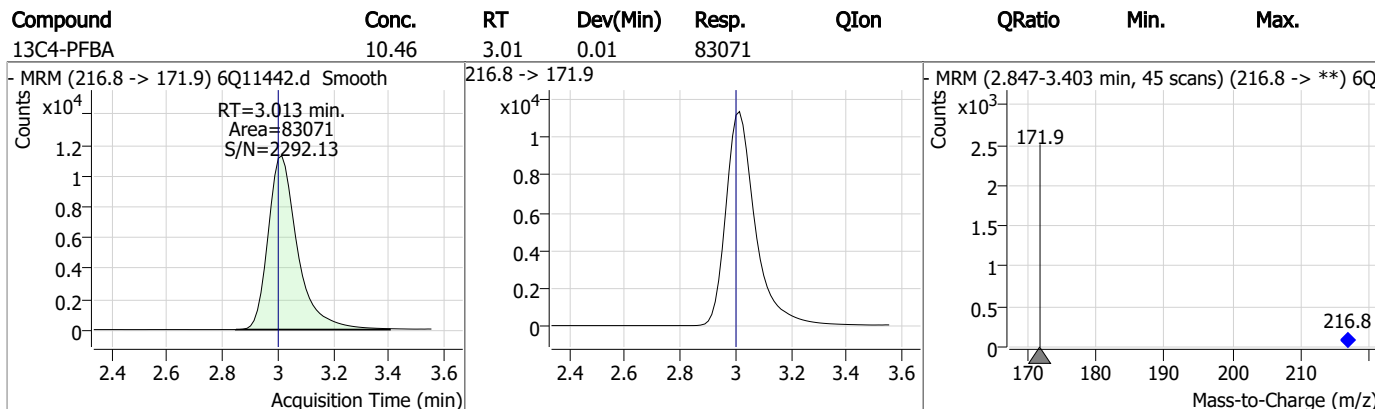
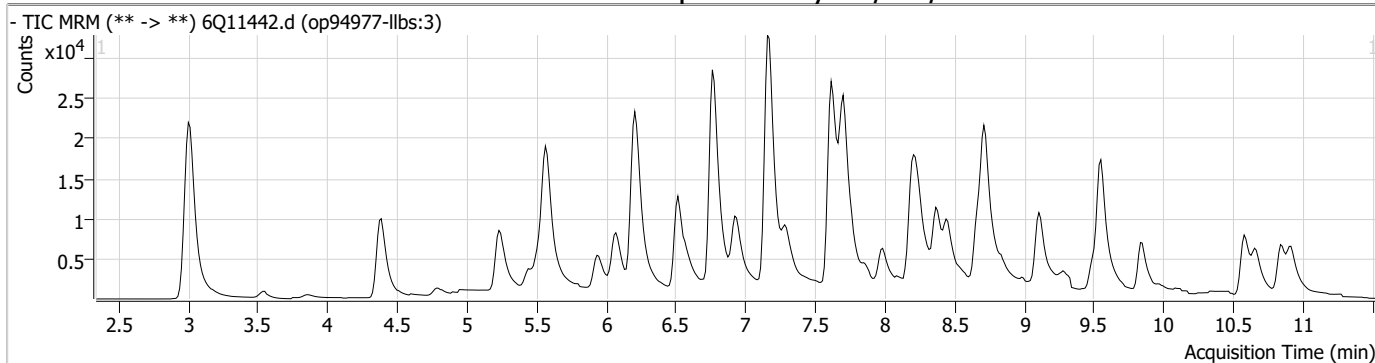
Perfluorinated Compounds by LC/MS/MS

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

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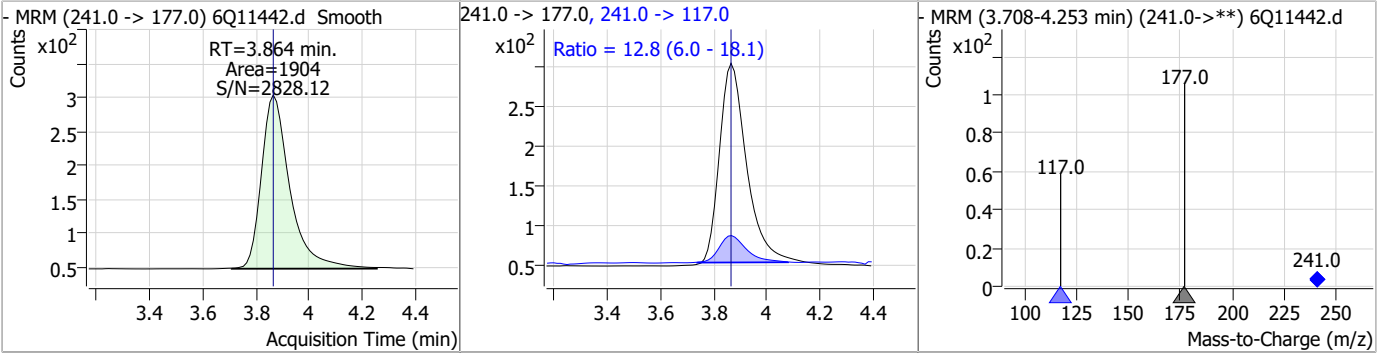
Perfluorinated Compounds by LC/MS/MS



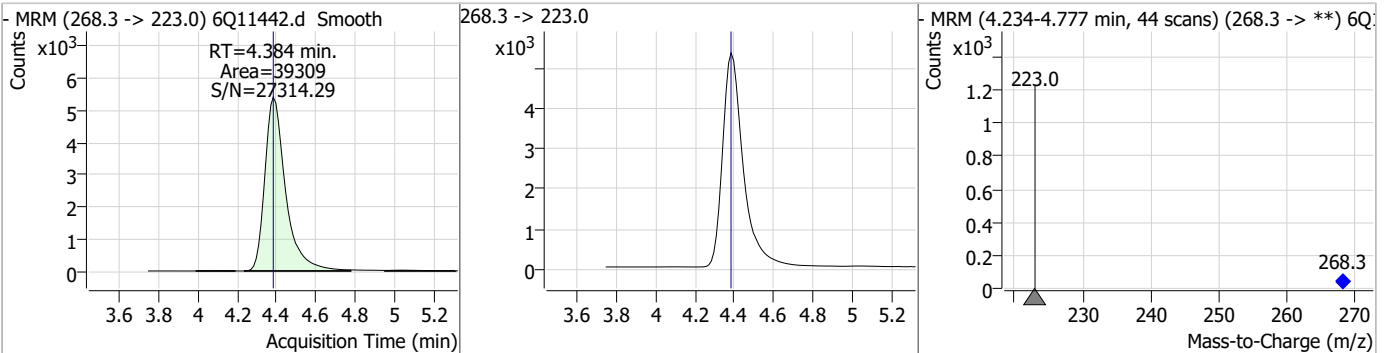
7.3.2
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Perfluorinated Compounds by LC/MS/MS

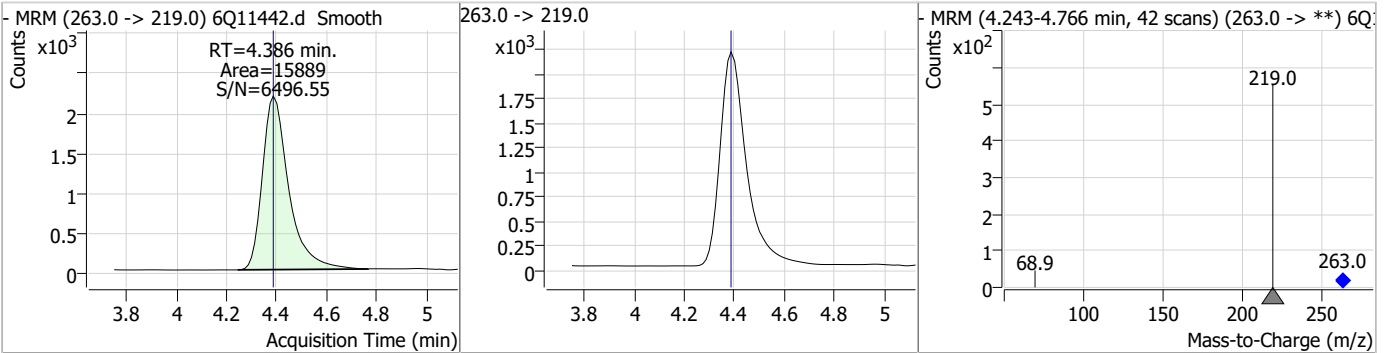
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	4.14	3.86	0.00	1904	241.0 -> 117.0	12.8	6.0	18.1



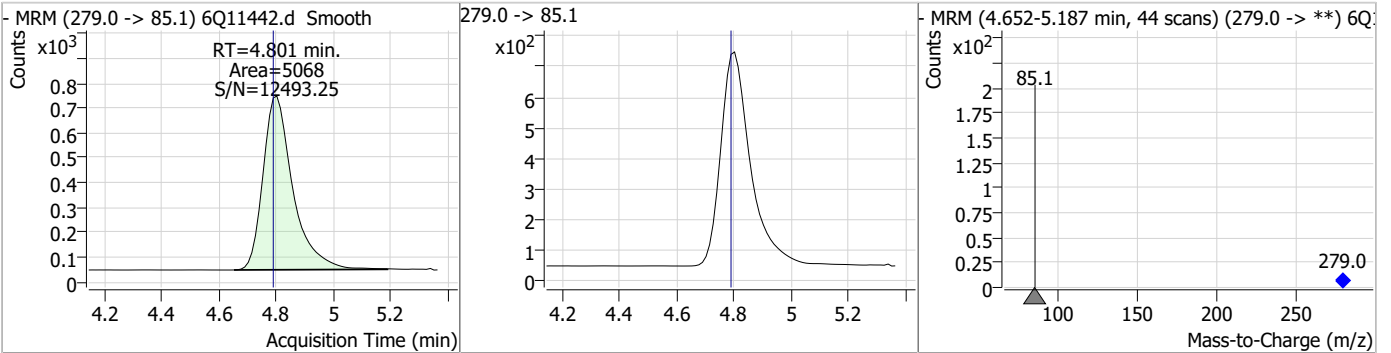
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.42	4.38	0.00	39309				



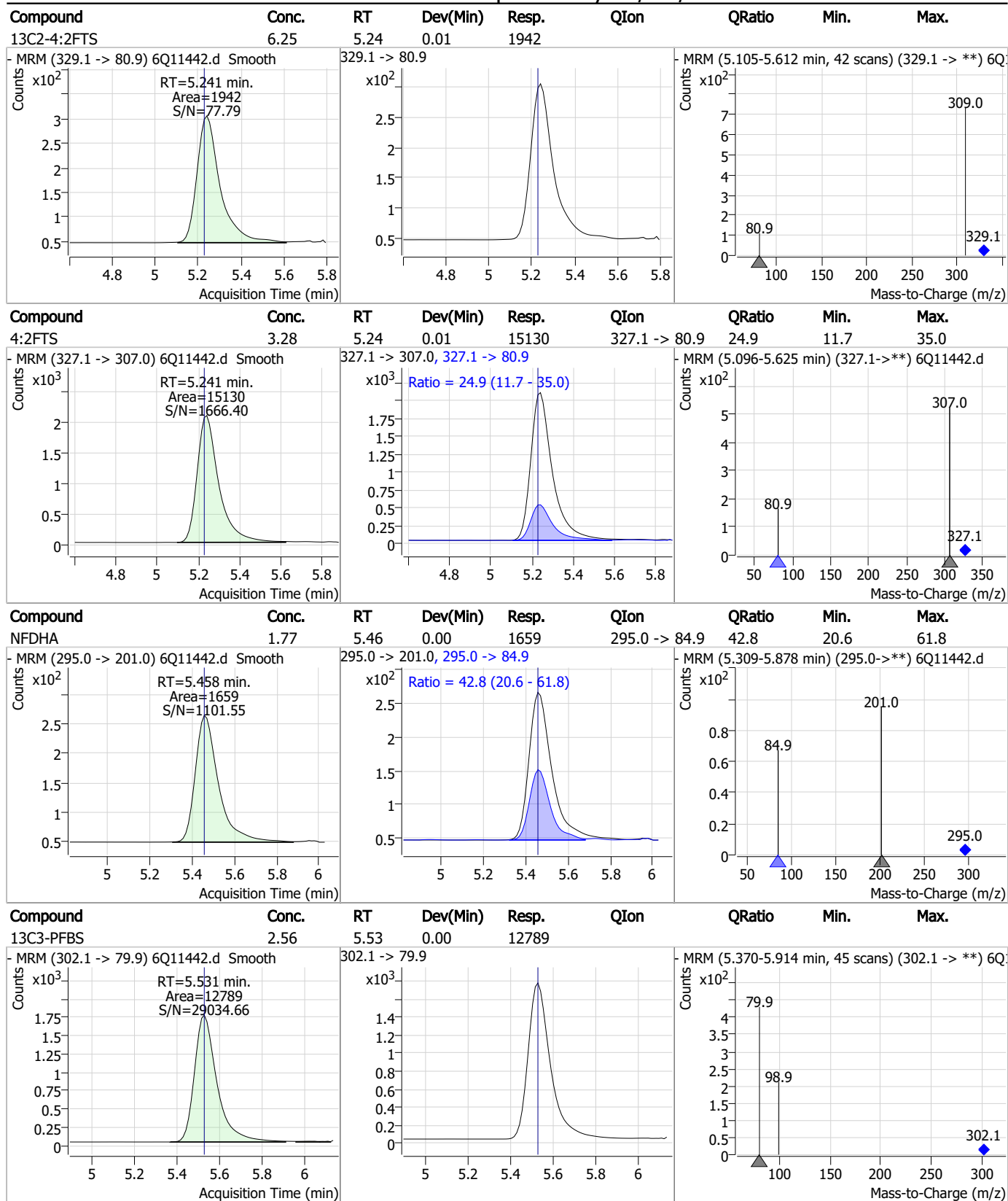
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.84	4.39	0.00	15889				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	1.88	4.80	0.01	5068				



Perfluorinated Compounds by LC/MS/MS

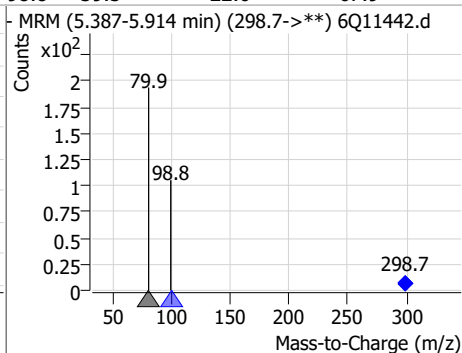
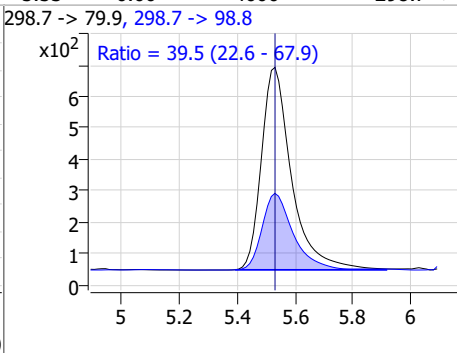
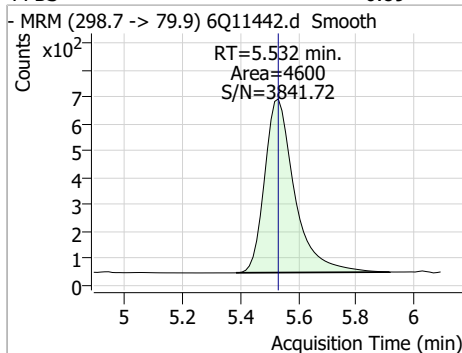


7.3.2
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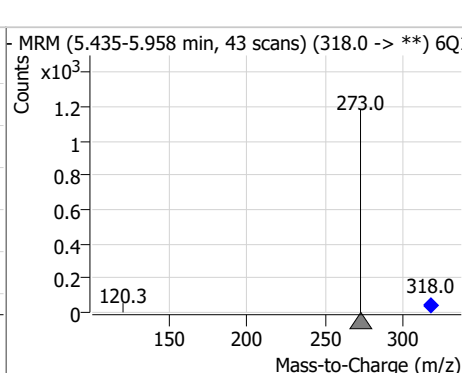
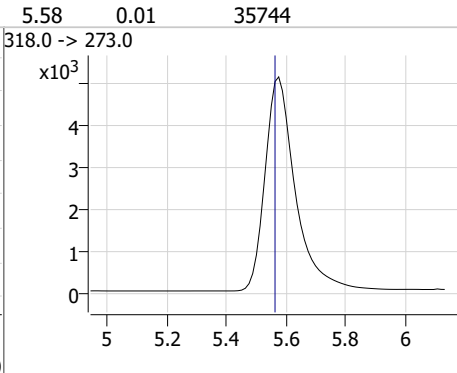
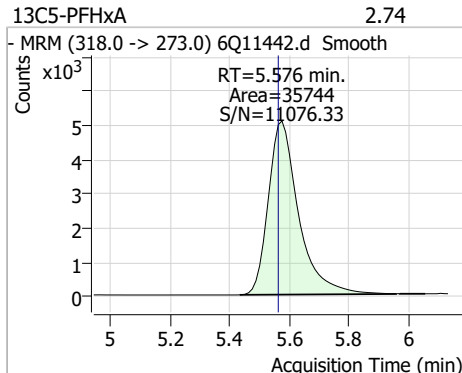


Perfluorinated Compounds by LC/MS/MS

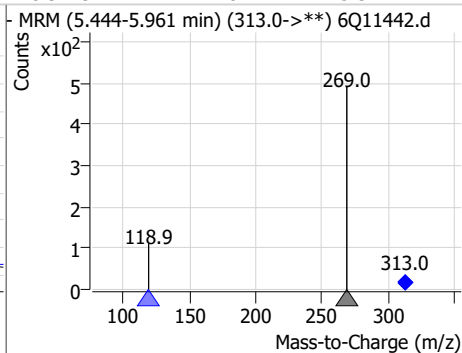
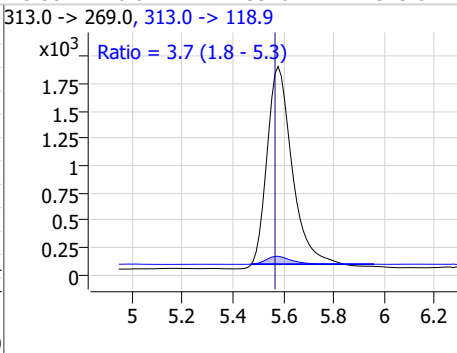
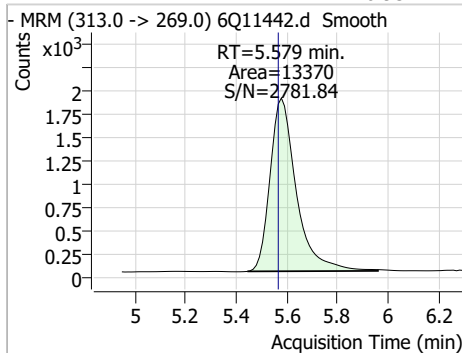
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.89	5.53	0.00	4600	298.7 -> 98.8	39.5	22.6	67.9



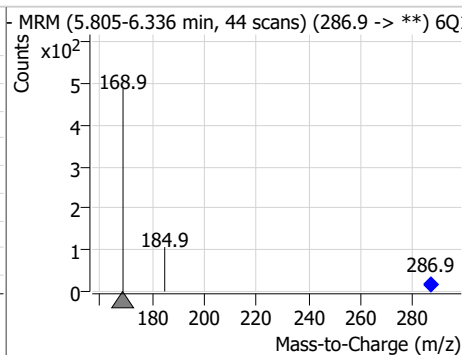
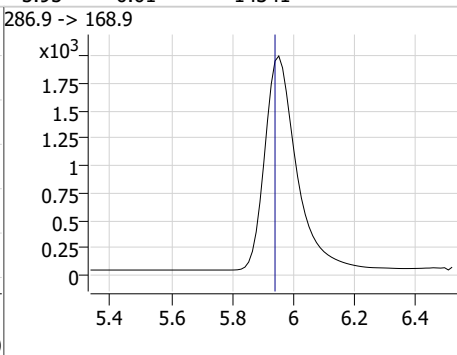
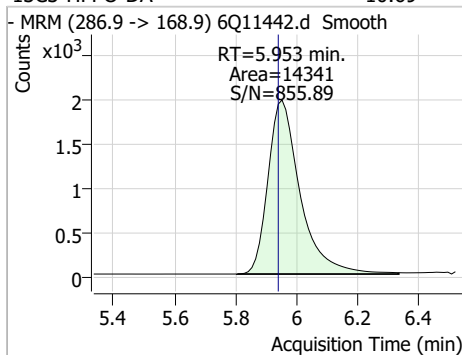
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.74	5.58	0.01	35744	318.0 -> 273.0	3.7	1.8	5.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.93	5.58	0.01	13370	313.0 -> 118.9	3.7	1.8	5.3

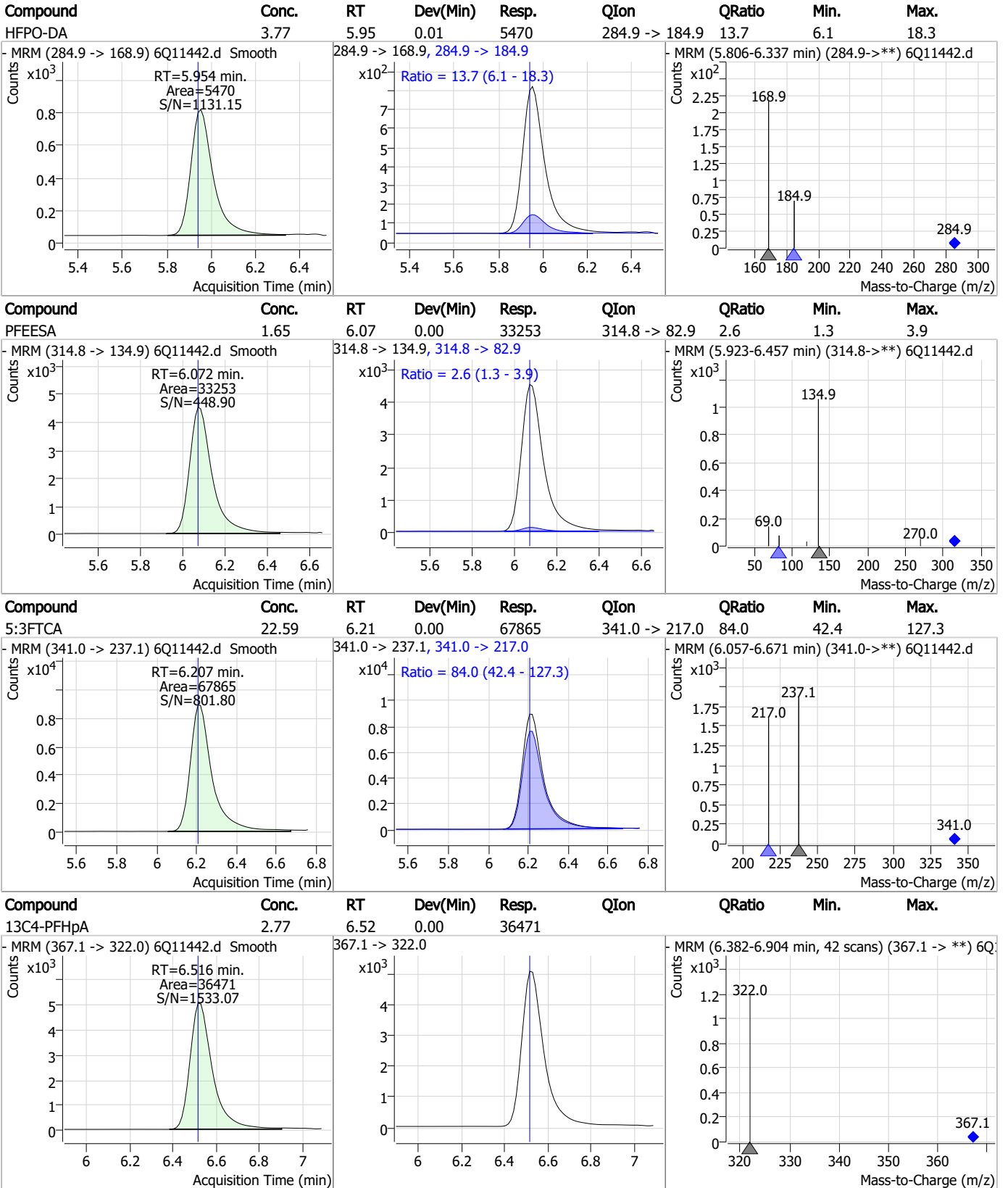


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.69	5.95	0.01	14341	286.9 -> 168.9	3.7	1.8	5.3



7.3.2
7

Perfluorinated Compounds by LC/MS/MS



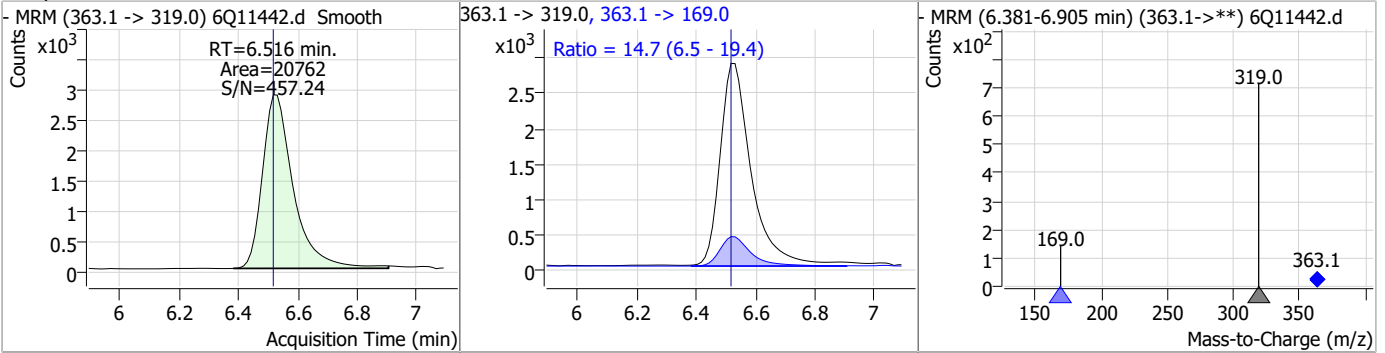
7.3.2

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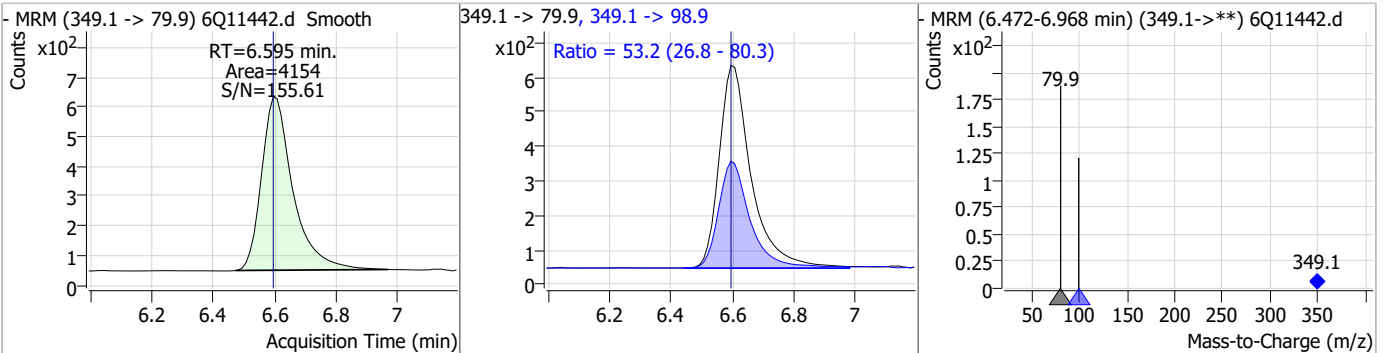


Perfluorinated Compounds by LC/MS/MS

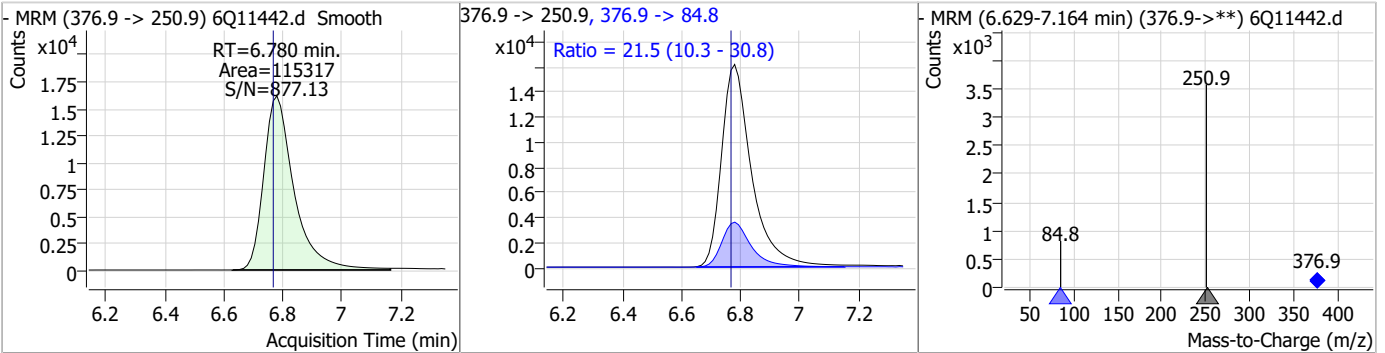
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.94	6.52	0.00	20762	363.1 -> 169.0	14.7	6.5	19.4



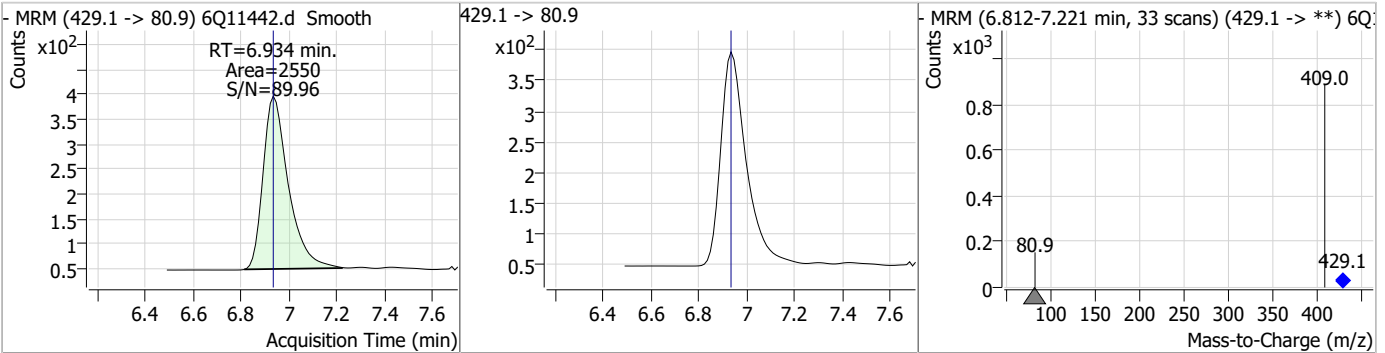
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.86	6.59	0.00	4154	349.1 -> 98.9	53.2	26.8	80.3



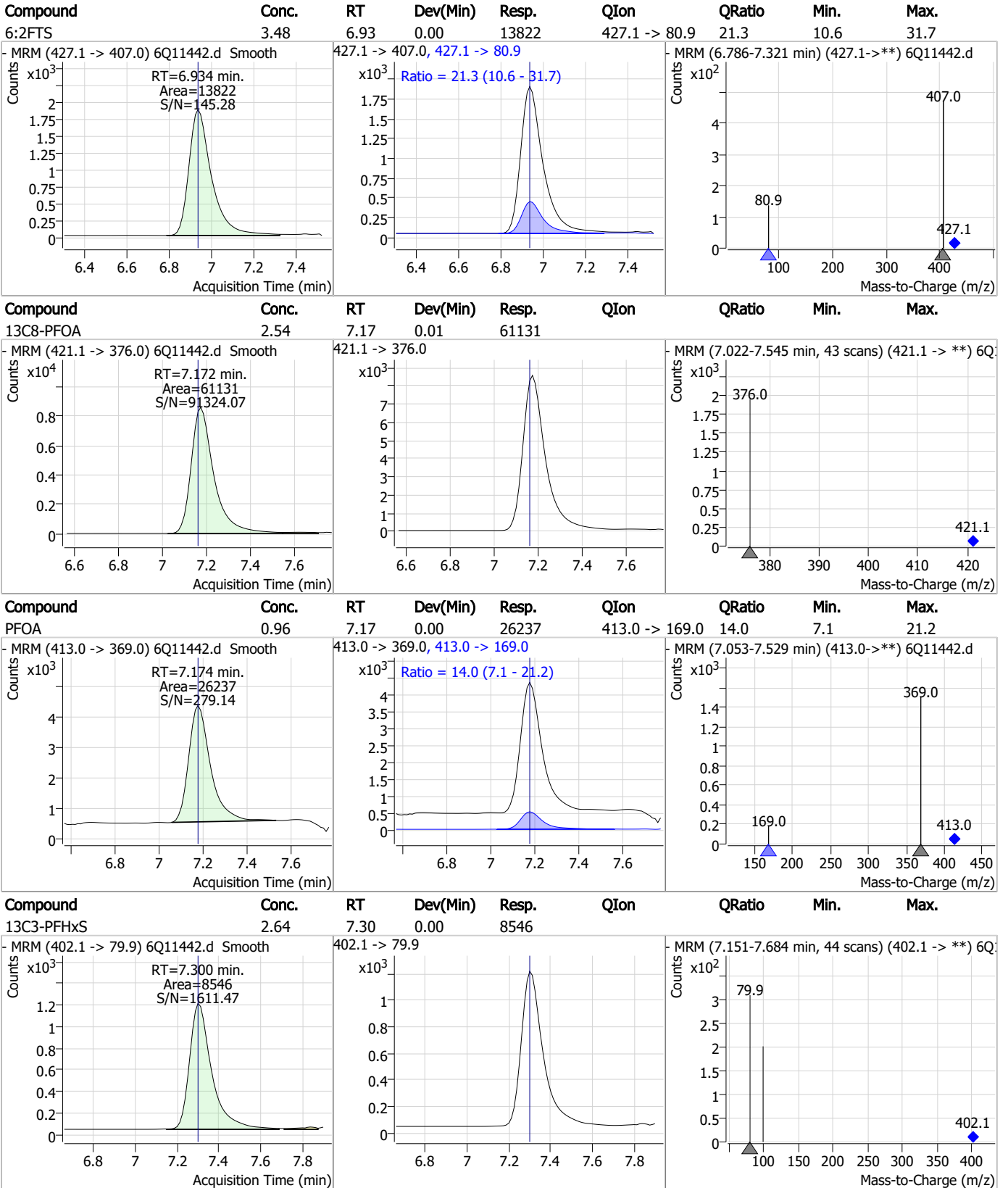
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	3.62	6.78	0.01	115317	376.9 -> 84.8	21.5	10.3	30.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.99	6.93	0.00	2550	429.1 -> 80.9			



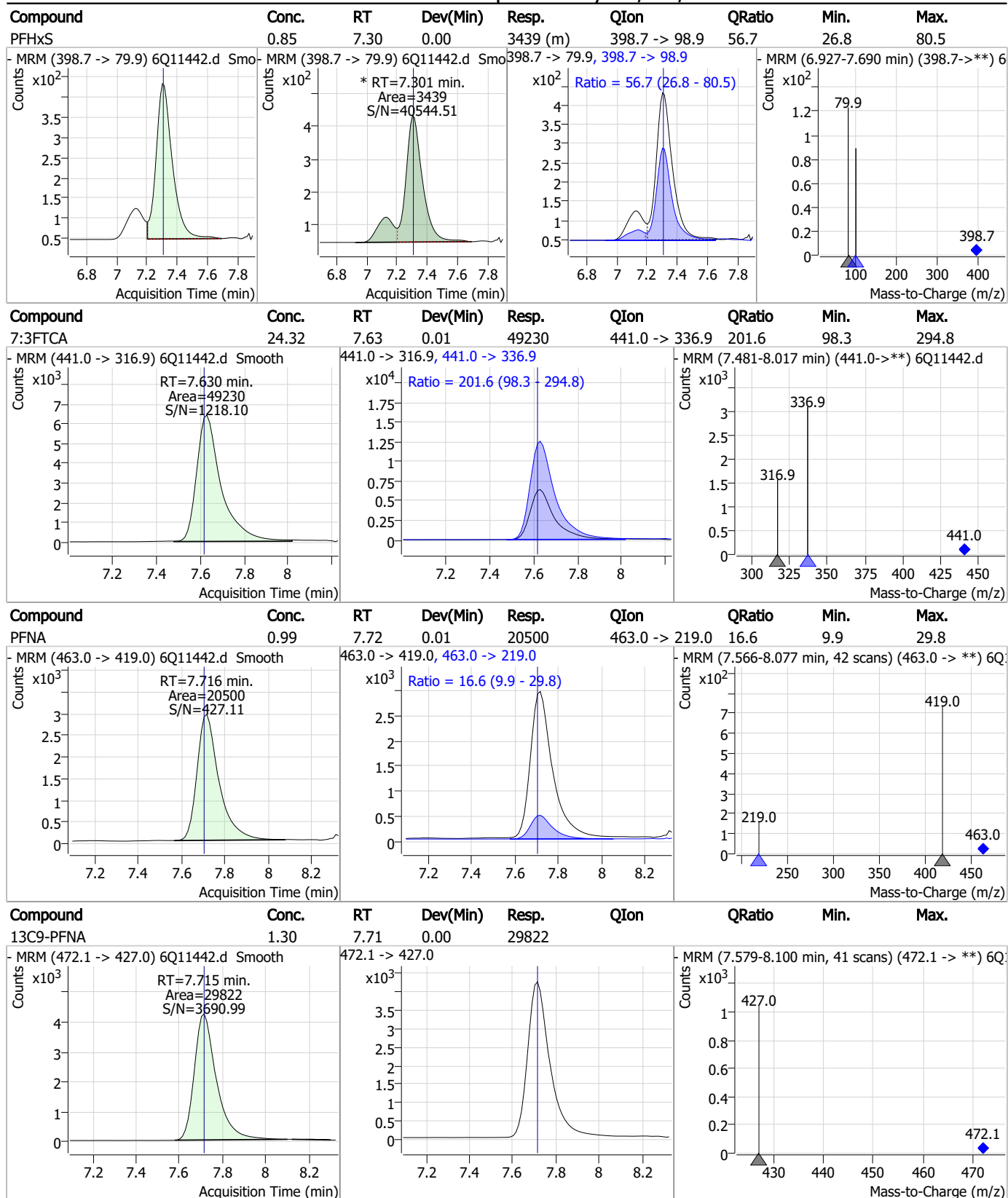
Perfluorinated Compounds by LC/MS/MS



7.3.2
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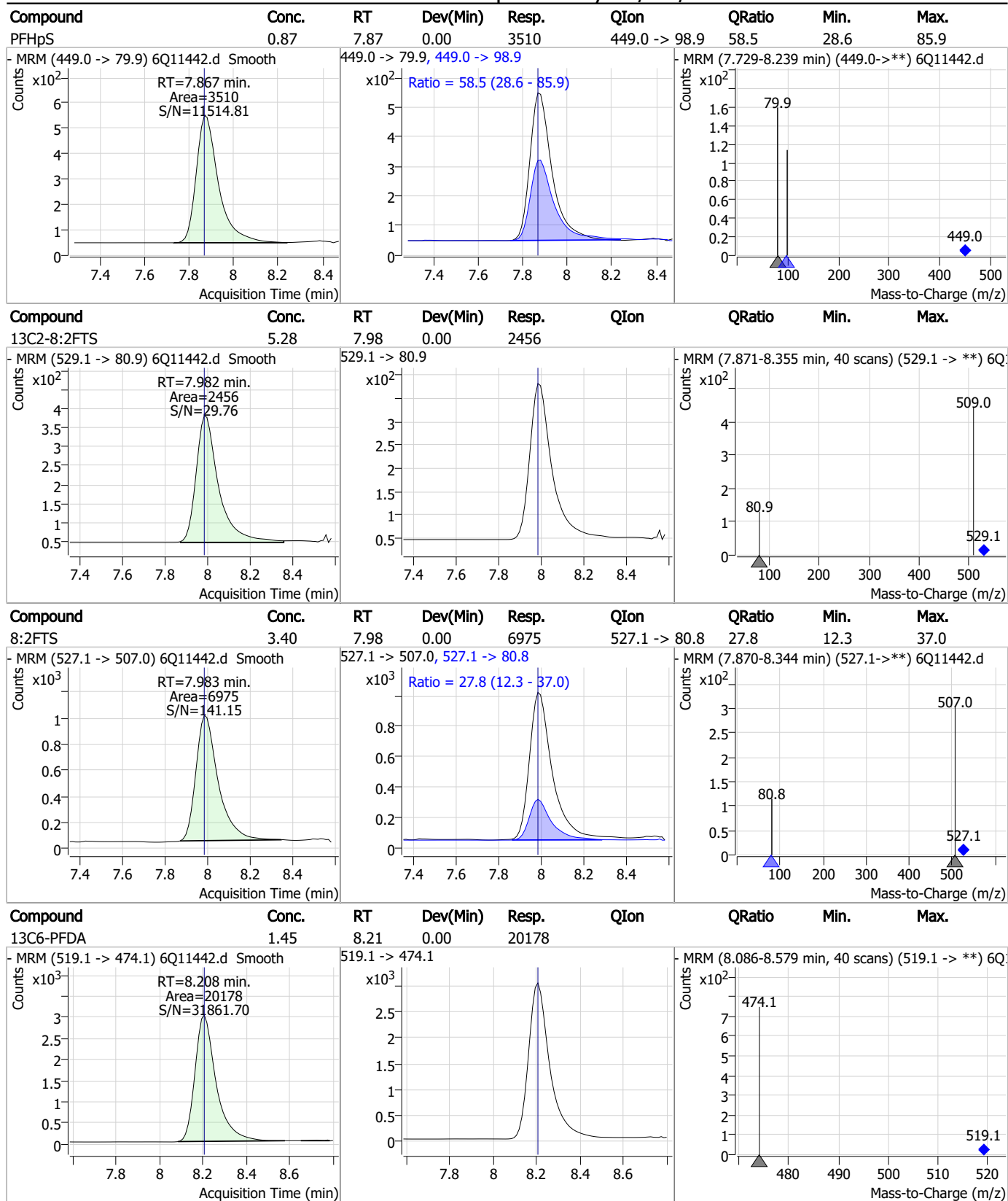


Perfluorinated Compounds by LC/MS/MS



7.3.2
7

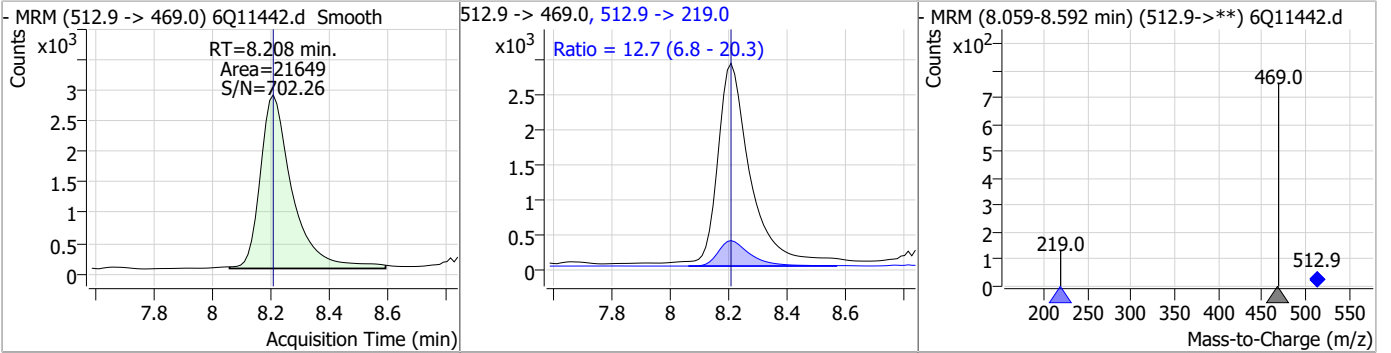
Perfluorinated Compounds by LC/MS/MS



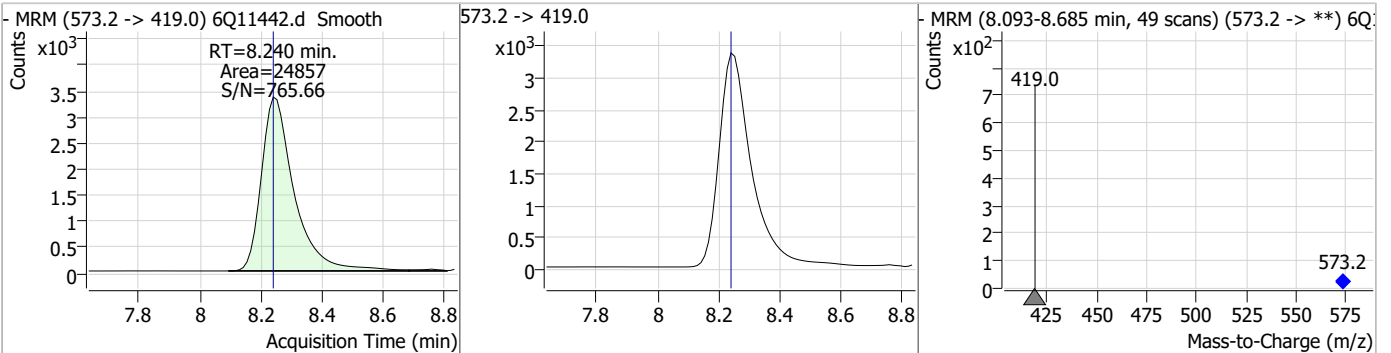
7.3.2
7

Perfluorinated Compounds by LC/MS/MS

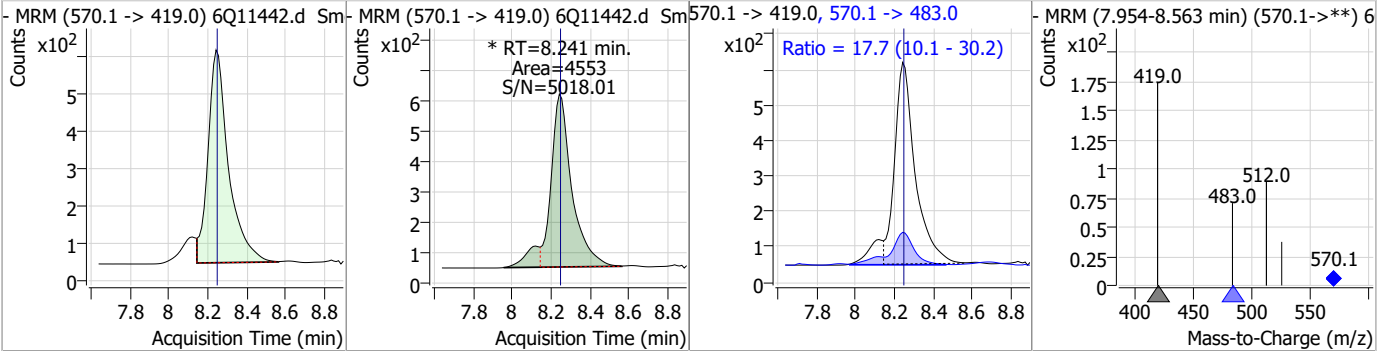
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.89	8.21	0.00	21649	512.9 -> 219.0	12.7	6.8	20.3



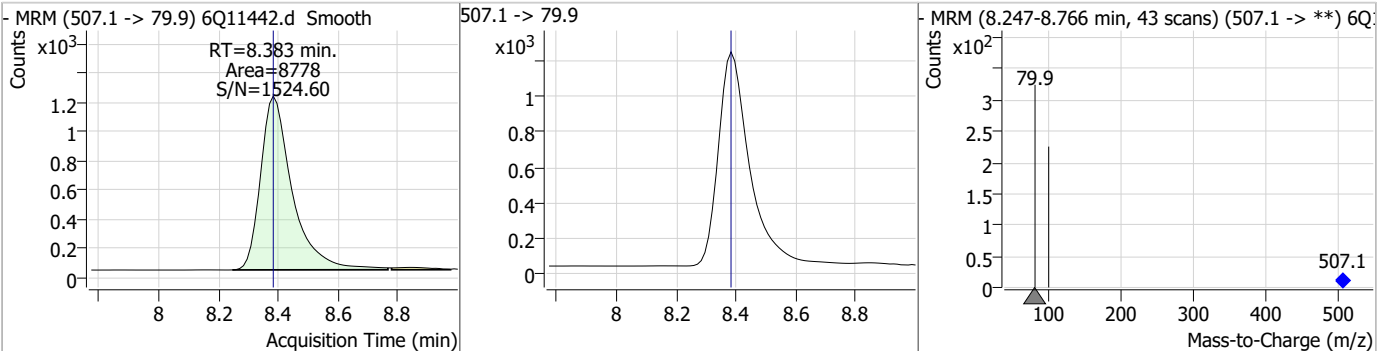
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.31	8.24	0.00	24857				



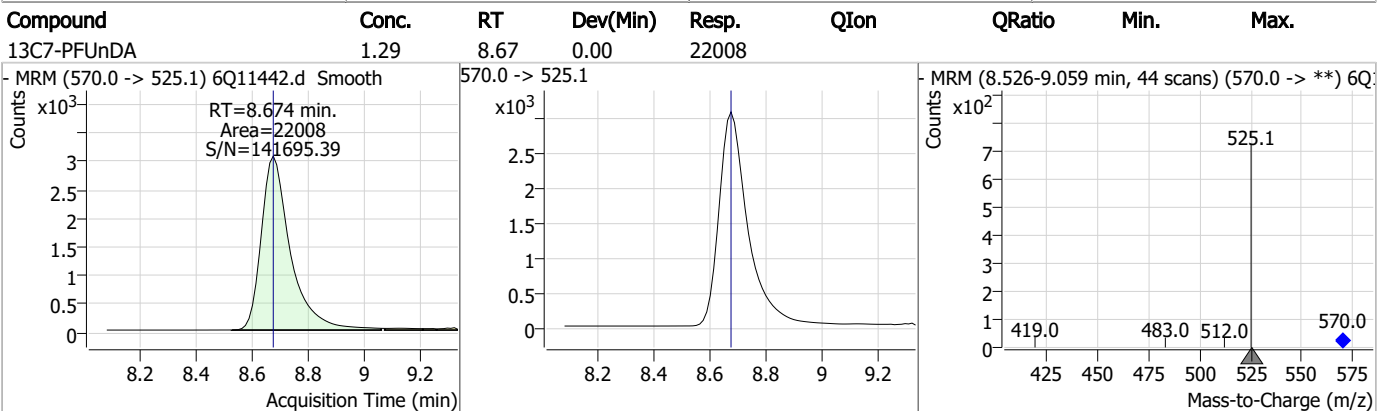
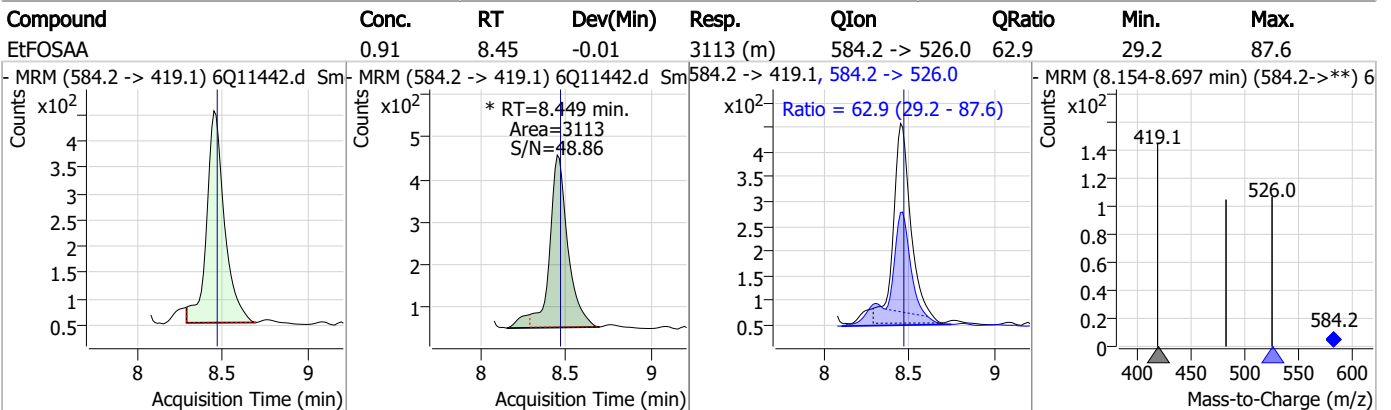
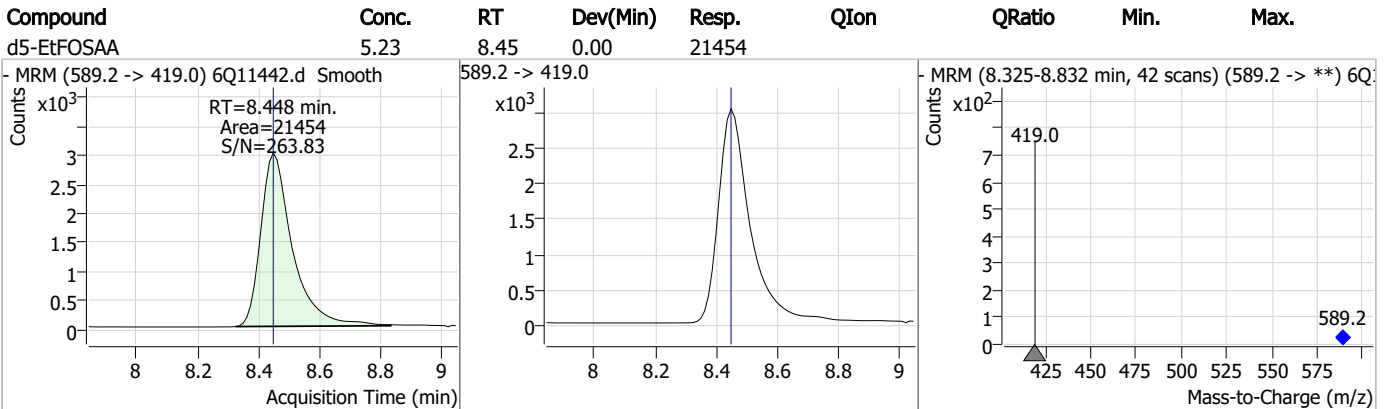
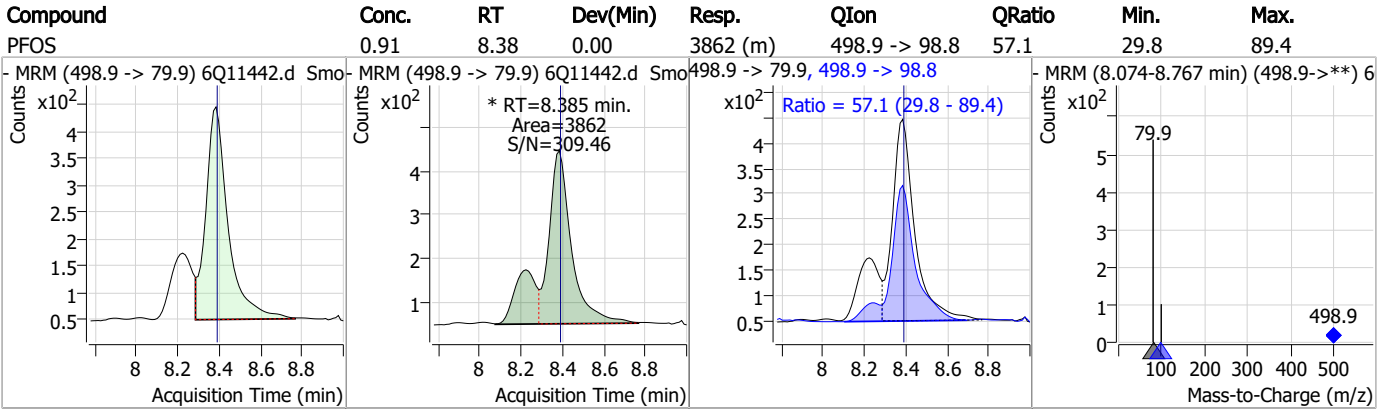
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.89	8.24	0.00	4553 (m)	570.1 -> 483.0	17.7	10.1	30.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.83	8.38	0.00	8778				



Perfluorinated Compounds by LC/MS/MS

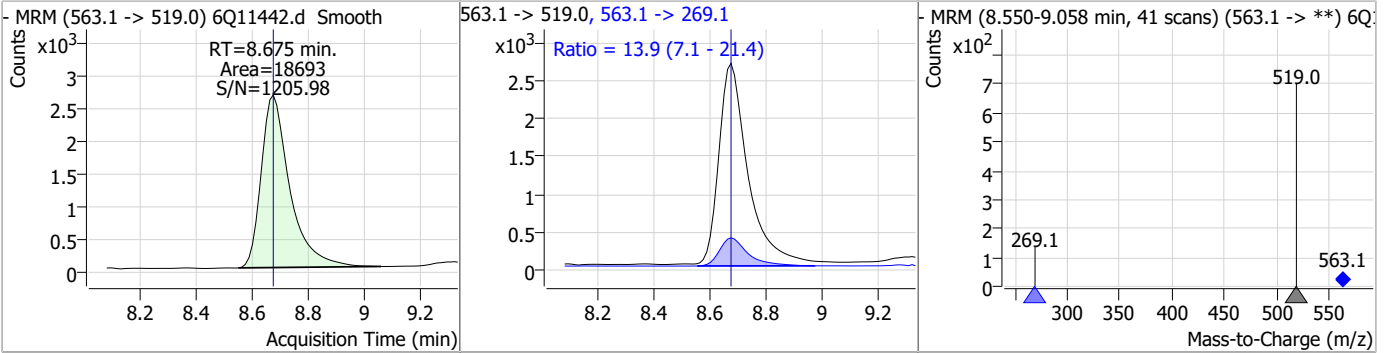


7.3.2

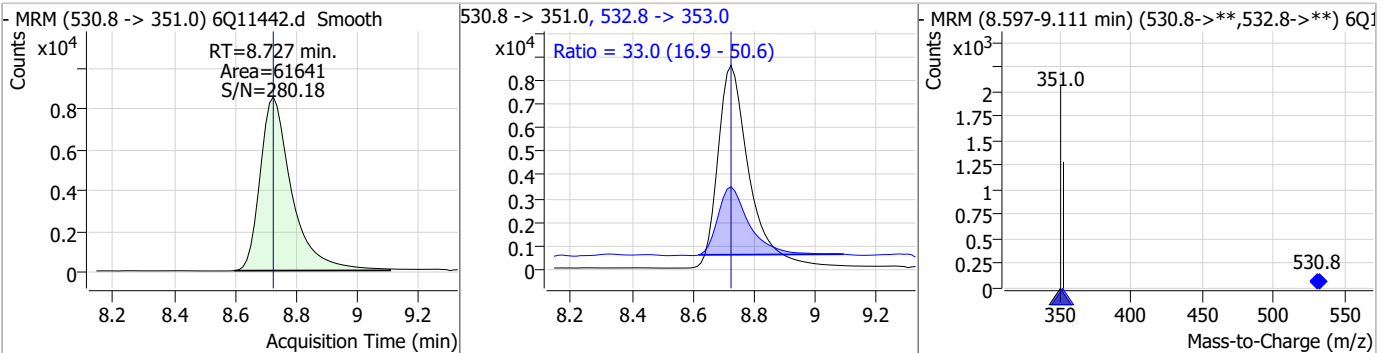
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Perfluorinated Compounds by LC/MS/MS

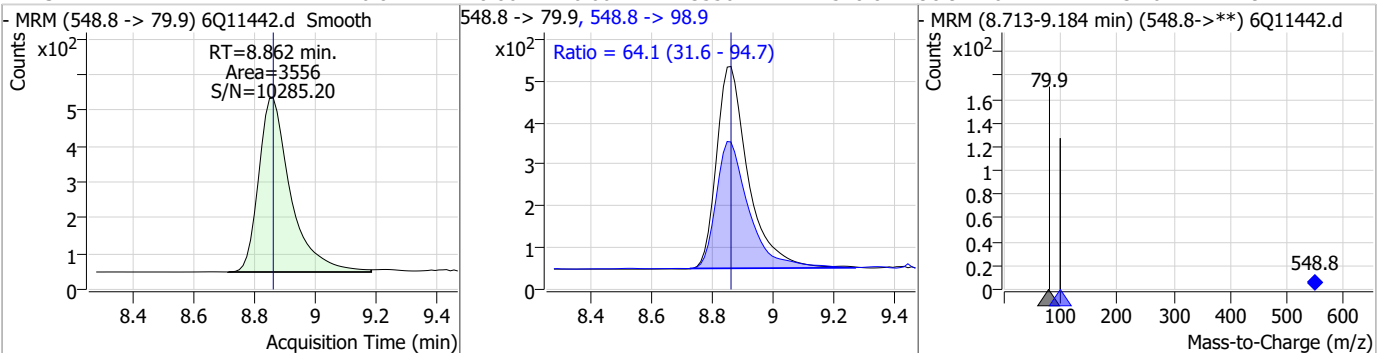
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	1.02	8.67	0.00	18693	563.1 -> 269.1	13.9	7.1	21.4



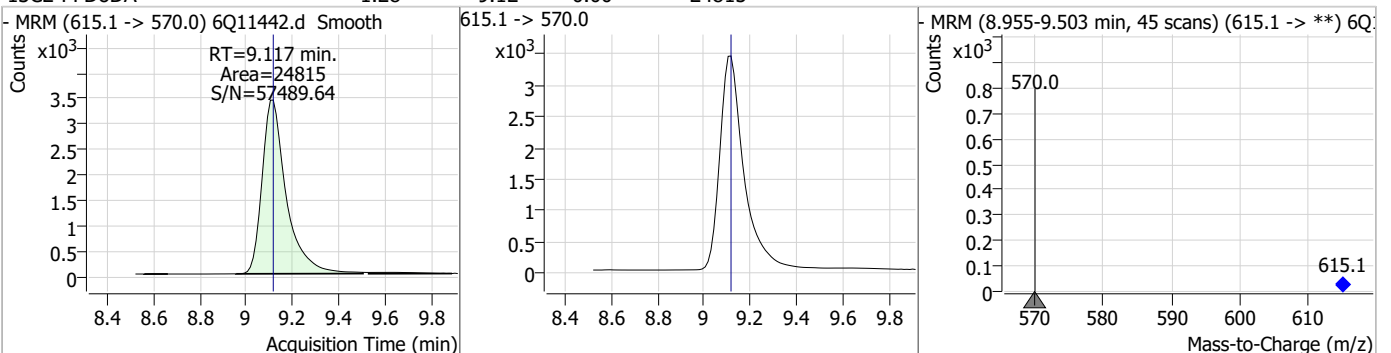
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	3.49	8.73	0.00	61641	532.8 -> 353.0	33.0	16.9	50.6



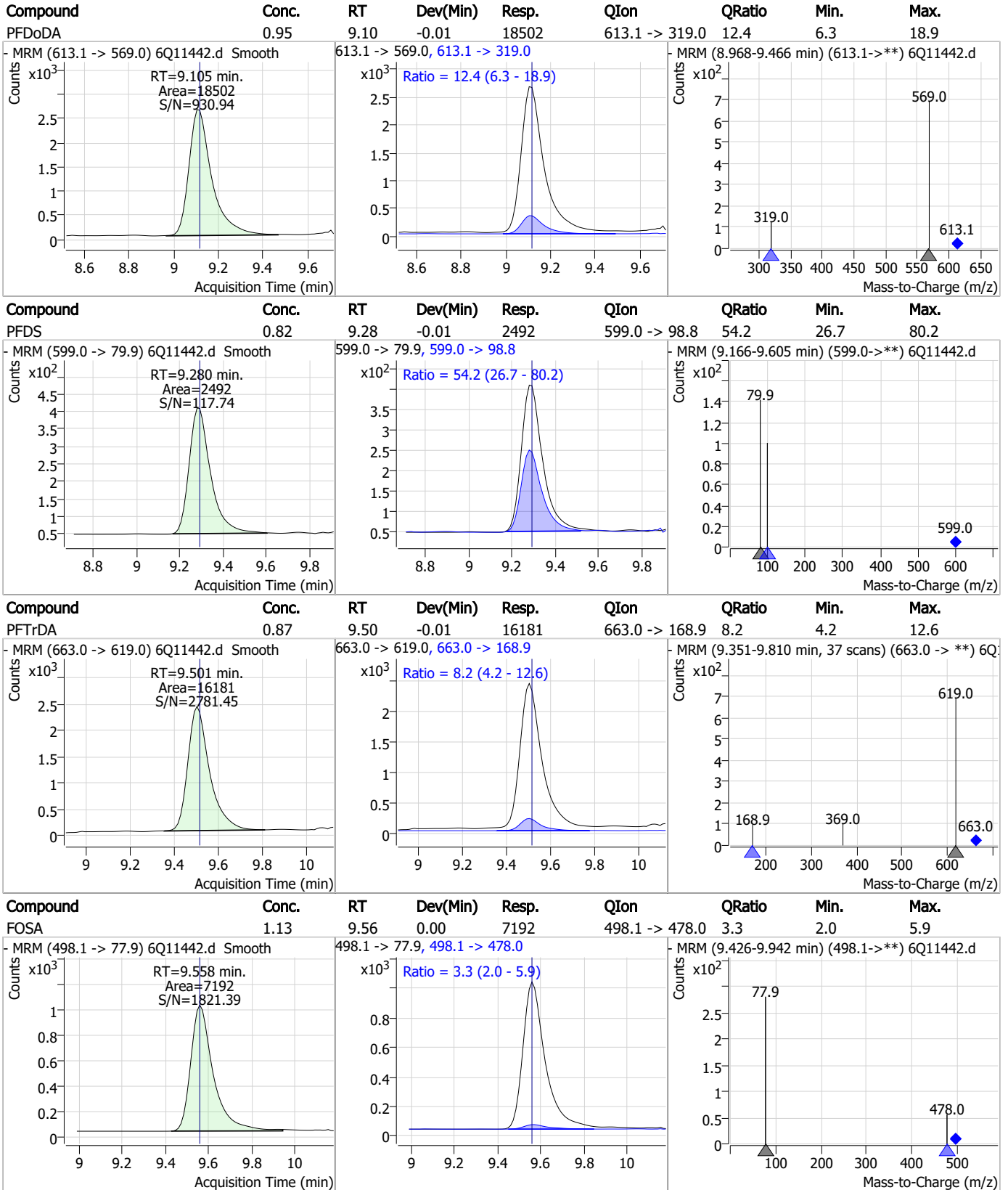
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.84	8.86	0.00	3556	548.8 -> 98.9	64.1	31.6	94.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.28	9.12	0.00	24815	615.1 -> 570.0			



Perfluorinated Compounds by LC/MS/MS



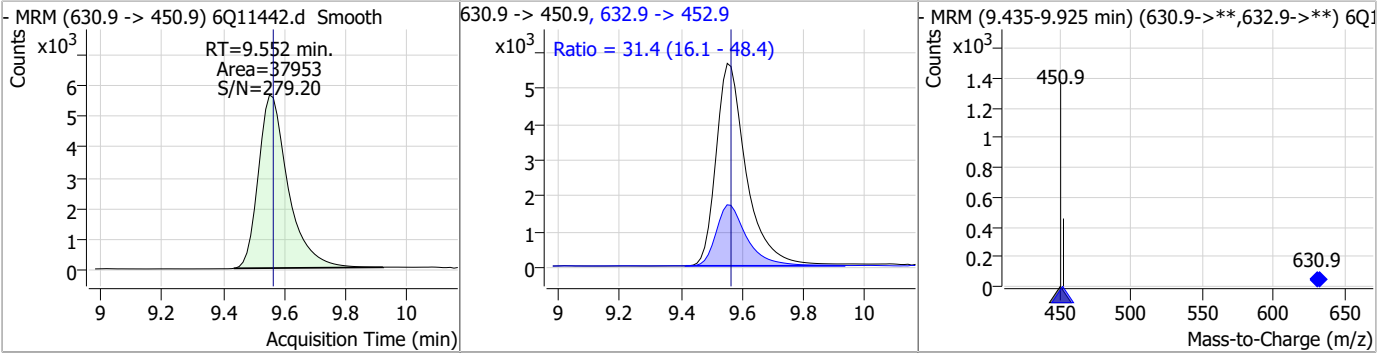
7.3.2

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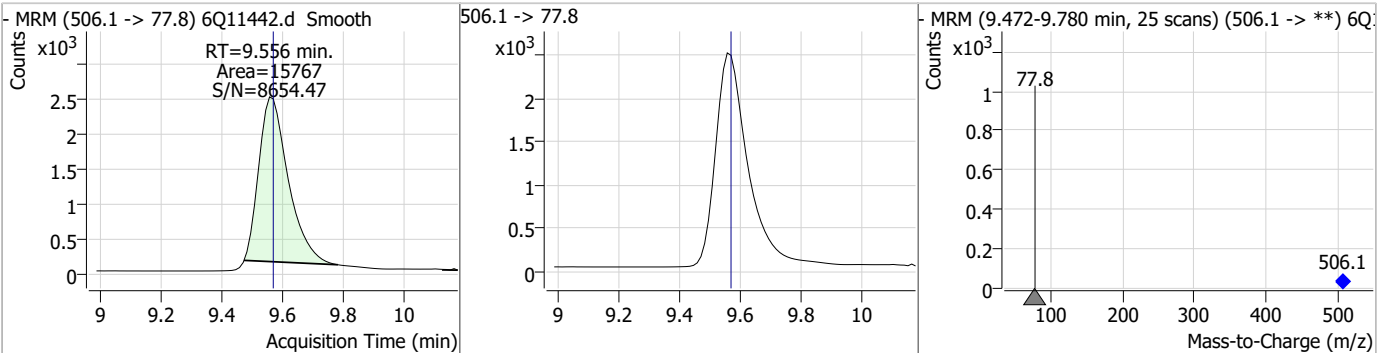


Perfluorinated Compounds by LC/MS/MS

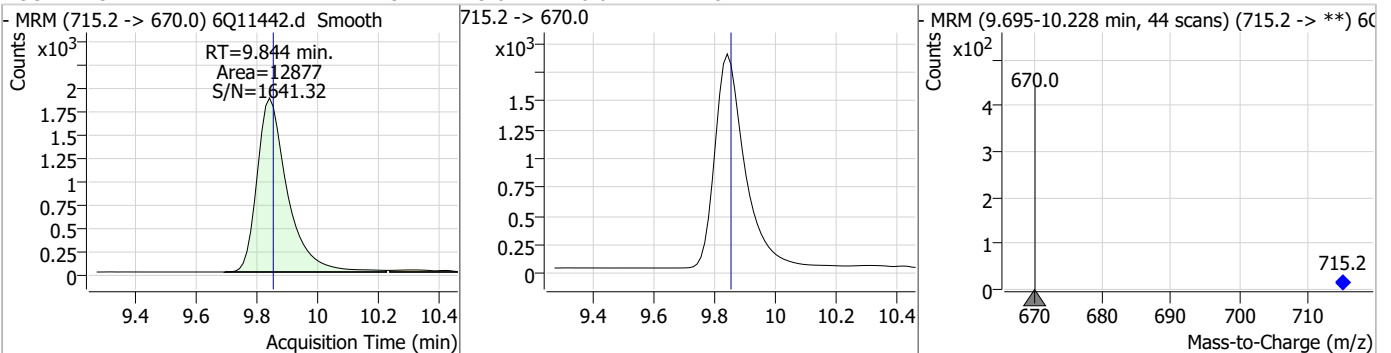
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11CI-PF3OUdS	3.49	9.55	-0.01	37953	632.9 -> 452.9	31.4	16.1	48.4



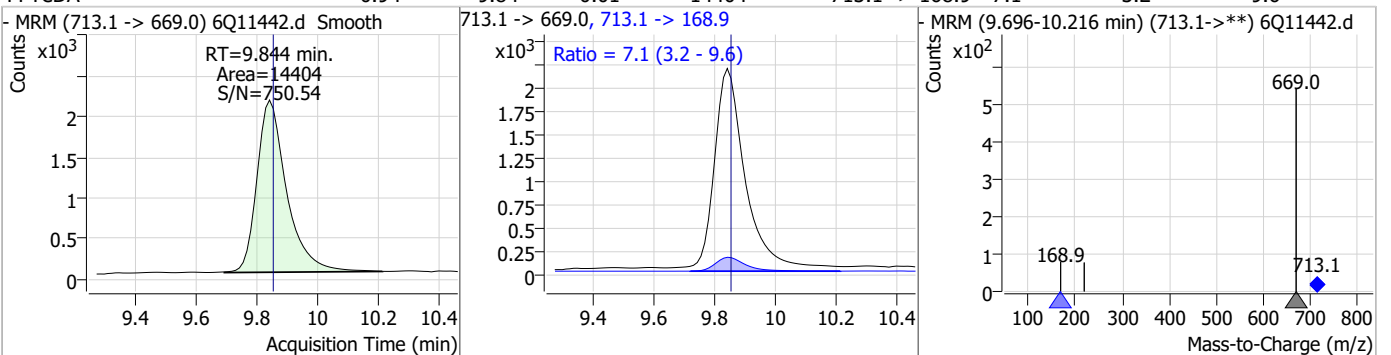
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.40	9.56	-0.01	15767				



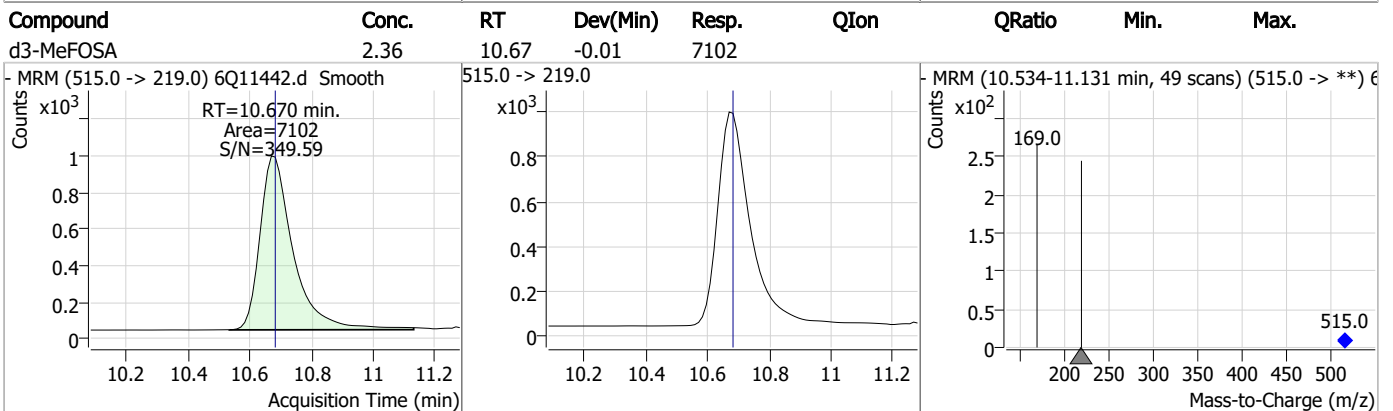
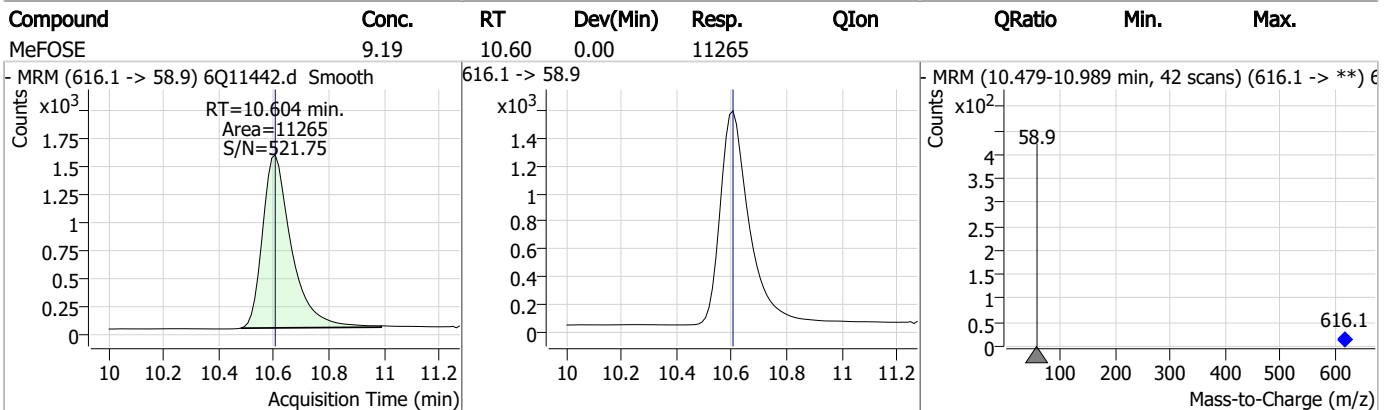
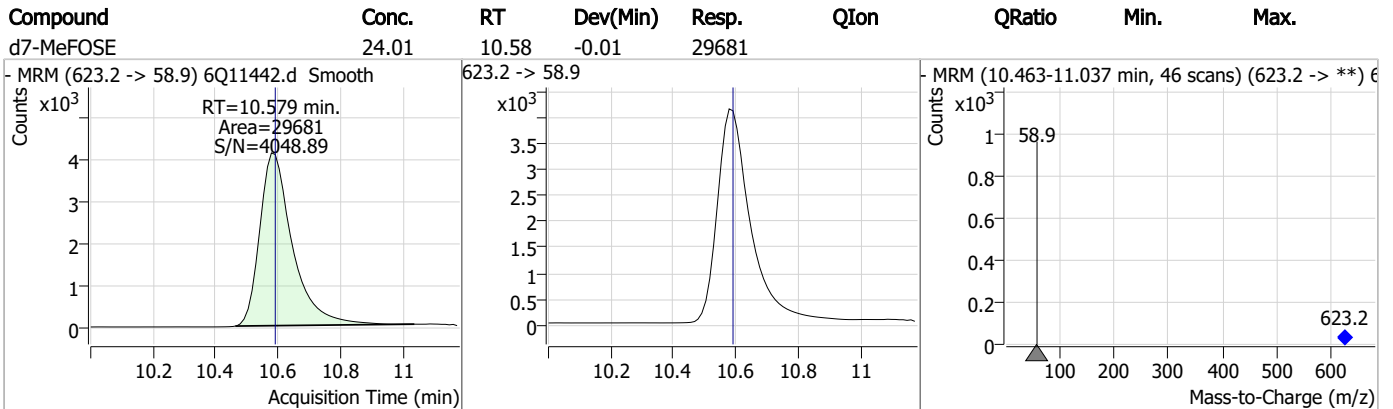
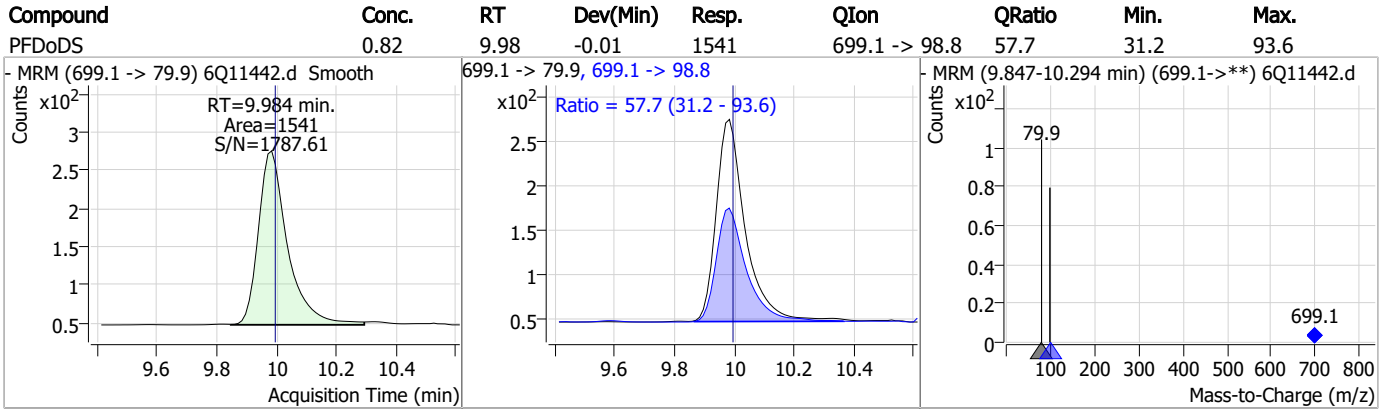
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.13	9.84	-0.01	12877				



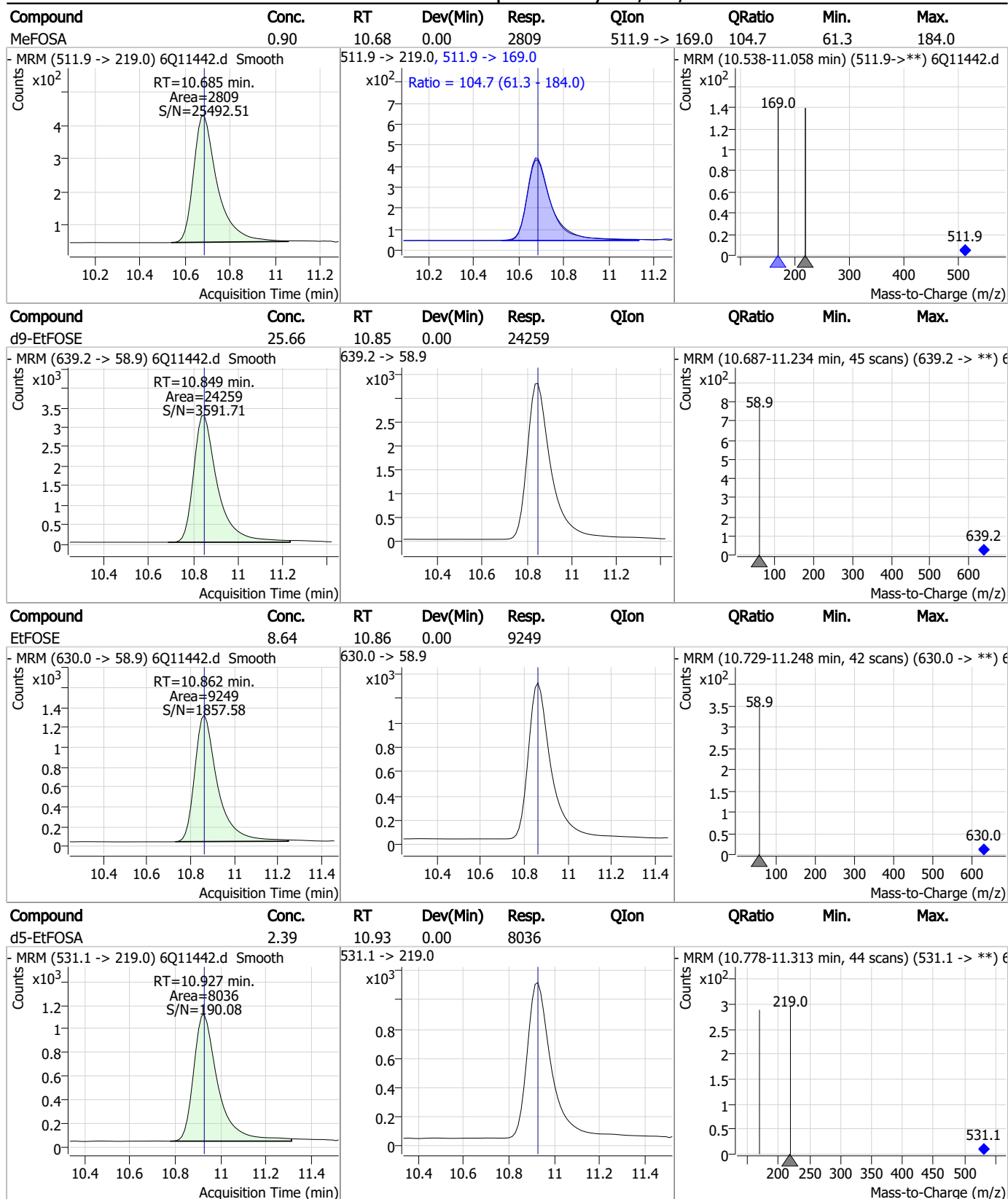
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.94	9.84	-0.01	14404	713.1 -> 168.9	7.1	3.2	9.6



Perfluorinated Compounds by LC/MS/MS



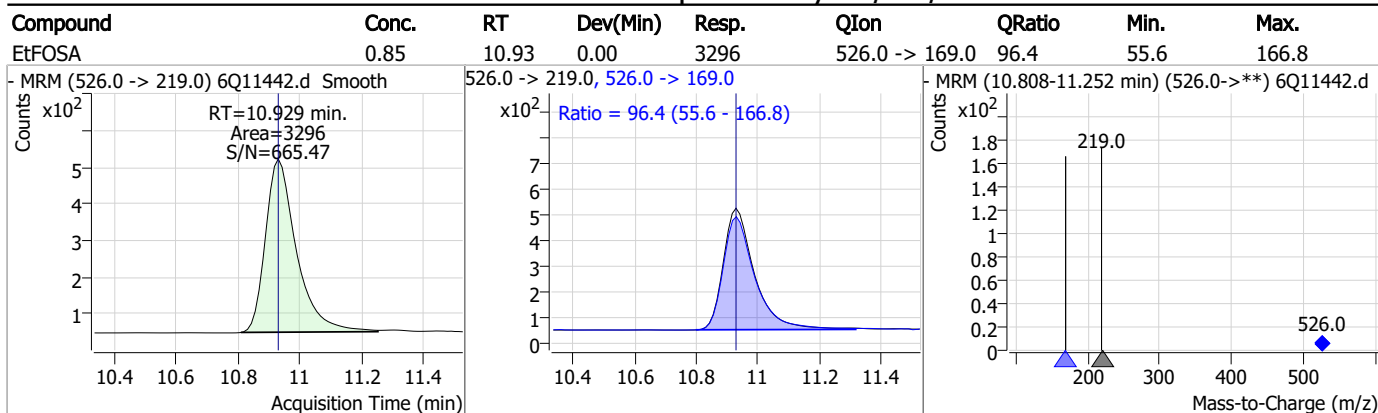
Perfluorinated Compounds by LC/MS/MS



7.3.2
7



Perfluorinated Compounds by LC/MS/MS



7.3.2
7

Manual Integration Approval Summary

Sample Number: OP94977-LLBS Method: EPA DRAFT 1633
Lab FileID: 6Q11442.D Analyst approved: 01/17/23 16:41 Martha Valls
Injection Time: 01/17/23 03:19 Supervisor approved: 01/17/23 18:24 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.30	Split peak
MeFOSAA	2355-31-9		8.24	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.38	Split peak
EtFOSAA	2991-50-6		8.45	Split peak

7.3.2.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q11448.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/17/2023 4:43:47 AM
 Sample Name : op94977-ms
 Vial : P3-F5
 DA Method File : 1633_011123_S6Q174.quantmethod.xml
 Batch Name : s6q179.batch.bin
 Sample Information : OP94977,S6Q179,560,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.013	216.8 -> 171.9	83746	10.00 µg/L	0.012
M5-PFPeA	4.384	268.3 -> 223.0	39076	5.00 µg/L	0.000
M5-PFHxA	5.576	318.0 -> 273.0	34828	2.50 µg/L	0.012
M4-PFHpA	6.516	367.1 -> 322.0	34848	2.50 µg/L	0.000
M8-PFOA	7.172	421.1 -> 376.0	57950	2.50 µg/L	0.012
M9-PFNA	7.702	472.1 -> 427.0	26982	1.25 µg/L	-0.013
M6-PFDA	8.195	519.1 -> 474.1	17291	1.25 µg/L	-0.012
M7-PFUnDA	8.674	570.0 -> 525.1	18004	1.25 µg/L	0.000
M2-PFDoDA	9.117	615.1 -> 570.0	20117	1.25 µg/L	0.000
M2-PFTeDA	9.844	715.2 -> 670.0	11703	1.25 µg/L	-0.012
M8-FOSA	9.568	506.1 -> 77.8	16844	2.50 µg/L	0.000
M3-PFBS	5.531	302.1 -> 79.9	12794	2.50 µg/L	0.000
M3-PFHxS	7.300	402.1 -> 79.9	8450	2.50 µg/L	0.000
M8-PFOS	8.383	507.1 -> 79.9	8068	2.50 µg/L	0.000
M2-4:2FTS	5.241	329.1 -> 80.9	1675	5.00 µg/L	0.012
M2-6:2FTS	6.934	429.1 -> 80.9	2352	5.00 µg/L	0.000
M2-8:2FTS	7.982	529.1 -> 80.9	2739	5.00 µg/L	0.000
M3-MeFOSAA	8.240	573.2 -> 419.0	23298	5.00 µg/L	0.000
M3-HFPO-DA	5.941	286.9 -> 168.9	15237	10.00 µg/L	0.000
M5-EtFOSAA	8.448	589.2 -> 419.0	18914	5.00 µg/L	0.000
M7-MeFOSE	10.591	623.2 -> 58.9	28529	25.00 µg/L	0.000
M9-EtFOSE	10.849	639.2 -> 58.9	22077	25.00 µg/L	0.000
M5-EtFOSA	10.927	531.1 -> 219.0	7246	2.50 µg/L	0.000
M3-MeFOSA	10.683	515.0 -> 219.0	6634	2.50 µg/L	0.000
13C4-PFOS	8.384	502.8 -> 79.9	10131	2.50 µg/L	0.000
13C3-PFBA	3.016	216.0 -> 172.0	33866	5.00 µg/L	0.012
18O2-PFHxS	7.299	403.0 -> 83.9	5828	2.50 µg/L	0.000
13C4-PFOA	7.173	417.1 -> 372.0	71395	2.50 µg/L	0.000
13C2-PFDA	8.208	515.1 -> 470.1	23788	1.25 µg/L	0.000
13C5-PFNA	7.703	468.0 -> 423.0	29319	1.25 µg/L	0.000
13C2-PFHxA	5.577	315.1 -> 270.0	33182	2.50 µg/L	0.012
System Monitoring Compounds					
13C2-4:2FTS	5.241	329.1 -> 80.9	1675	5.51 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.2%		
13C2-6:2FTS	6.934	429.1 -> 80.9	2352	5.65 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.0%		
13C2-8:2FTS	7.982	529.1 -> 80.9	2739	6.03 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 120.6%		
13C2-PFDoDA	9.117	615.1 -> 570.0	20117	1.07 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 85.3%		
13C2-PFTeDA	9.844	715.2 -> 670.0	11703	1.06 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 84.5%		
13C3-PFBS	5.531	302.1 -> 79.9	12794	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.7%		
13C3-PFHxS	7.300	402.1 -> 79.9	8450	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	3.013	216.8 -> 171.9	83746	10.83 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.3%	
13C4-PFHpA	6.516	367.1 -> 322.0	34848	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.6%	
13C5-PFHxA	5.576	318.0 -> 273.0	34828	2.61 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.6%	
13C5-PFPeA	4.384	268.3 -> 223.0	39076	5.28 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.6%	
13C6-PFDA	8.195	519.1 -> 474.1	17291	1.28 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.1%	
13C7-PFUnDA	8.674	570.0 -> 525.1	18004	1.09 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 87.1%	
13C8-FOSA	9.568	506.1 -> 77.8	16844	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.5%	
13C8-PFOA	7.172	421.1 -> 376.0	57950	2.42 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.9%	
13C8-PFOS	8.383	507.1 -> 79.9	8068	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C9-PFNA	7.702	472.1 -> 427.0	26982	1.30 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.6%	
d3-MeFOSAA	8.240	573.2 -> 419.0	23298	4.78 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.5%	
13C3-HFPO-DA	5.941	286.9 -> 168.9	15237	11.13 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 111.3%	
d3-MeFOSA	10.683	515.0 -> 219.0	6634	2.12 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 84.7%	
d5-EtFOSAA	8.448	589.2 -> 419.0	18914	4.42 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 88.4%	
d7-MeFOSE	10.591	623.2 -> 58.9	28529	22.12 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 88.5%	
d9-EtFOSE	10.849	639.2 -> 58.9	22077	22.39 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 89.5%	
d5-EtFOSA	10.927	531.1 -> 219.0	7246	2.06 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 82.6%	
Target Compounds					QValue
4:2FTS	5.229	327.1 -> 307.0	74152	18.61 µg/L	98
		327.1 -> 80.9	16602		
6:2FTS	6.934	427.1 -> 407.0	66319	18.13 µg/L	100
		427.1 -> 80.9	14098		
8:2FTS	7.983	527.1 -> 507.0	39897	17.46 µg/L	98
		527.1 -> 80.8	9466		
EtFOSAA	8.449	584.2 -> 419.1	14980	4.96 µg/L	m 95
		584.2 -> 526.0	8238		
FOSA	9.558	498.1 -> 77.9	33741	4.96 µg/L	100
		498.1 -> 478.0	1295		
MeFOSAA	8.254	570.1 -> 419.0	22337	4.65 µg/L	96
		570.1 -> 483.0	4100		
PFBA	3.007	212.8 -> 168.9	43055	20.04 µg/L	100
PFBS	5.520	298.7 -> 79.9	22326	4.31 µg/L	96
		298.7 -> 98.8	10637		
PFDA	8.208	512.9 -> 469.0	106870	5.14 µg/L	99
		512.9 -> 219.0	14037		
PFDODA	9.117	613.1 -> 569.0	80004	5.06 µg/L	98
		613.1 -> 319.0	9485		
PFDS	9.293	599.0 -> 79.9	10887	3.91 µg/L	99

7.4.1
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.516	599.0 -> 98.8	5890	4.81	µg/L	97
		363.1 -> 319.0	101189			
PFHpS	7.867	363.1 -> 169.0	14529	4.38	µg/L	98
		449.0 -> 79.9	16152			
PFHxA	5.567	449.0 -> 98.9	9435	4.82	µg/L	99
		313.0 -> 269.0	67763			
PFHxS	7.301	313.0 -> 118.9	2503	4.21	µg/L	m
		398.7 -> 79.9	16919			
PFNA	7.703	398.7 -> 98.9	9418	4.71	µg/L	97
		463.0 -> 419.0	87895			
PFNS	8.862	463.0 -> 219.0	16468	3.92	µg/L	97
		548.8 -> 79.9	15278			
PFOA	7.161	548.8 -> 98.9	9249	5.24	µg/L	m
		413.0 -> 369.0	135928			
PFOS	8.385	413.0 -> 169.0	16909	4.18	µg/L	m
		498.9 -> 79.9	16351			
PFPeA	4.386	498.9 -> 98.8	10102	9.82	µg/L	100
		263.0 -> 219.0	84234			
PFPeS	6.595	349.1 -> 79.9	21803	4.58	µg/L	97
		349.1 -> 98.9	11173			
PFTeDA	9.844	713.1 -> 669.0	68614	4.92	µg/L	99
		713.1 -> 168.9	4626			
PFTrDA	9.501	663.0 -> 619.0	80041	5.30	µg/L	96
		663.0 -> 168.9	5578			
PFUnDA	8.675	563.1 -> 519.0	75951	5.04	µg/L	96
		563.1 -> 269.1	12049			
11CI-PF3OUdS	9.565	630.9 -> 450.9	171056	14.81	µg/L	96
		632.9 -> 452.9	50943			
9CI-PF3ONS	8.727	530.8 -> 351.0	300223	15.99	µg/L	98
		532.8 -> 353.0	97014			
ADONA	6.767	376.9 -> 250.9	562507	16.60	µg/L	98
		376.9 -> 84.8	119521			
HFPO-DA	5.954	284.9 -> 168.9	28803	18.69	µg/L	97
		284.9 -> 184.9	3198			
3:3FTCA	3.864	241.0 -> 177.0	10173	22.25	µg/L	98
		241.0 -> 117.0	1307			
5:3FTCA	6.207	341.0 -> 237.1	338730	115.74	µg/L	99
		341.0 -> 217.0	289652			
7:3FTCA	7.618	441.0 -> 316.9	227389	115.27	µg/L	81
		441.0 -> 336.9	513467			
EtFOSA	10.929	526.0 -> 219.0	16053	4.58	µg/L	87
		526.0 -> 169.0	15684			
EtFOSE	10.862	630.0 -> 58.9	45104	46.31	µg/L	100
		511.9 -> 219.0	13327			
MeFOSA	10.685	511.9 -> 169.0	13697	4.55	µg/L	82
		616.1 -> 58.9	55353			
MeFOSE	10.604	699.1 -> 79.9	6866	46.98	µg/L	100
		699.1 -> 98.8	3901			
PFDoDS	9.984	295.0 -> 201.0	8589	3.95	µg/L	93
		295.0 -> 84.9	3943			
NFDHA	5.458	279.0 -> 85.1	25095	9.41	µg/L	92
		229.0 -> 84.9	22513			
PFMBA	4.789	314.8 -> 134.9	166936	8.52	µg/L	100
		314.8 -> 82.9	4265			

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

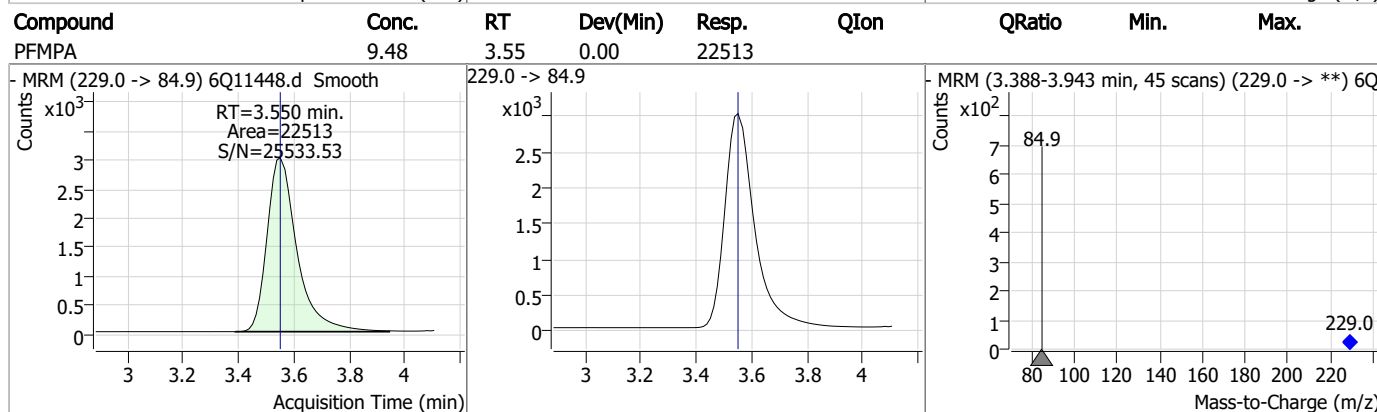
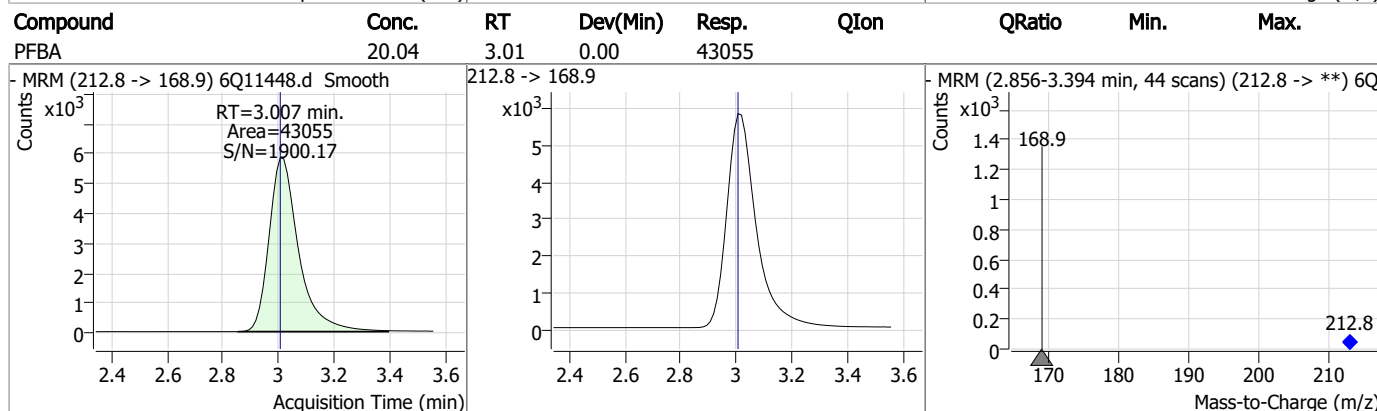
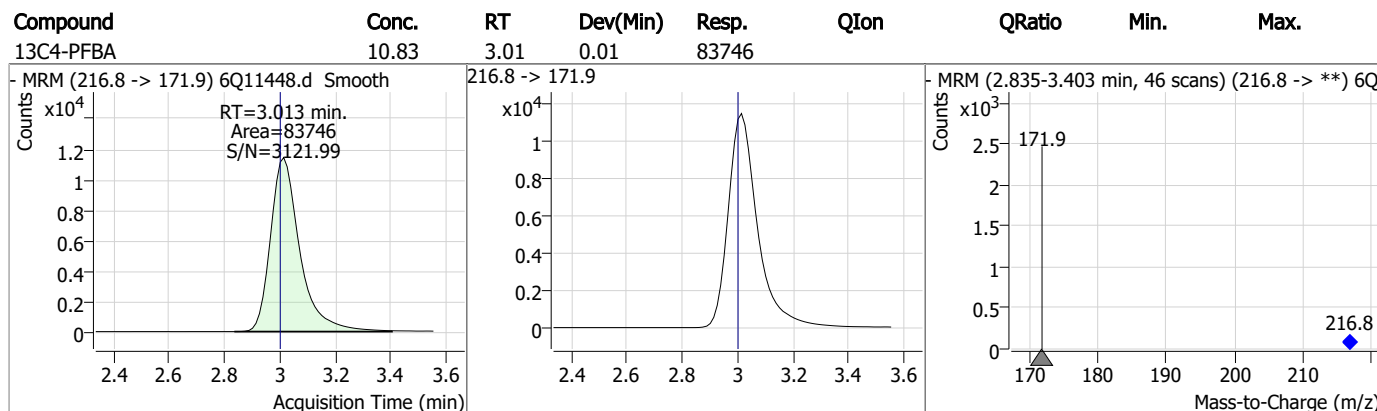
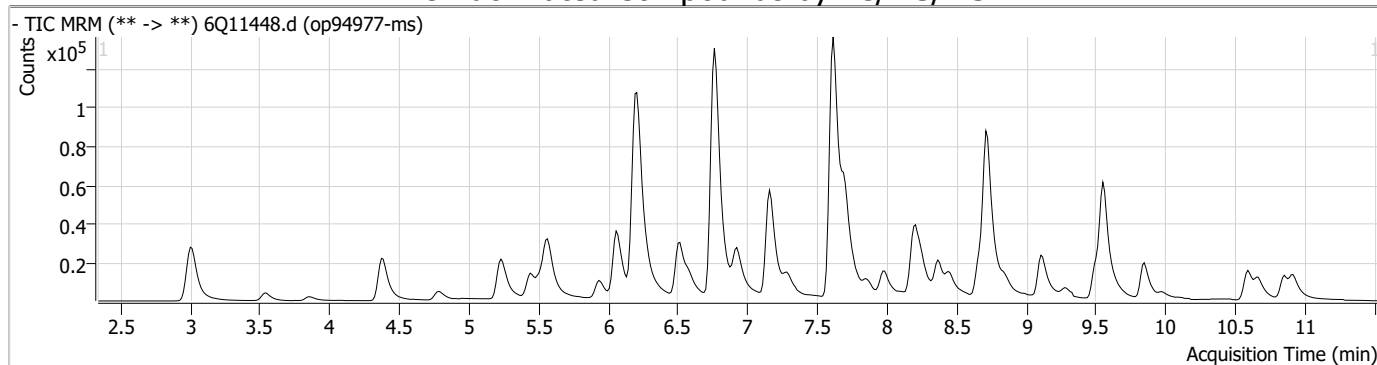
Perfluorinated Compounds by LC/MS/MS

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

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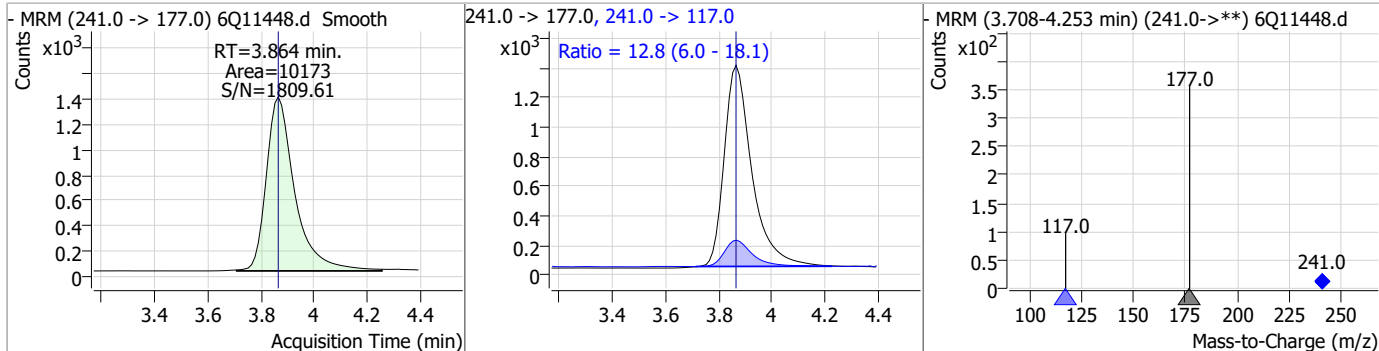
Perfluorinated Compounds by LC/MS/MS



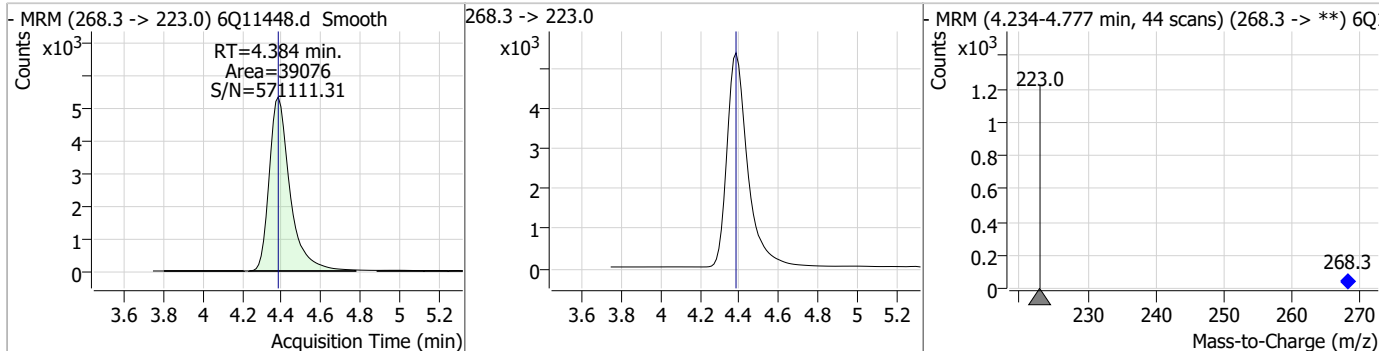
7.4.1
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Perfluorinated Compounds by LC/MS/MS

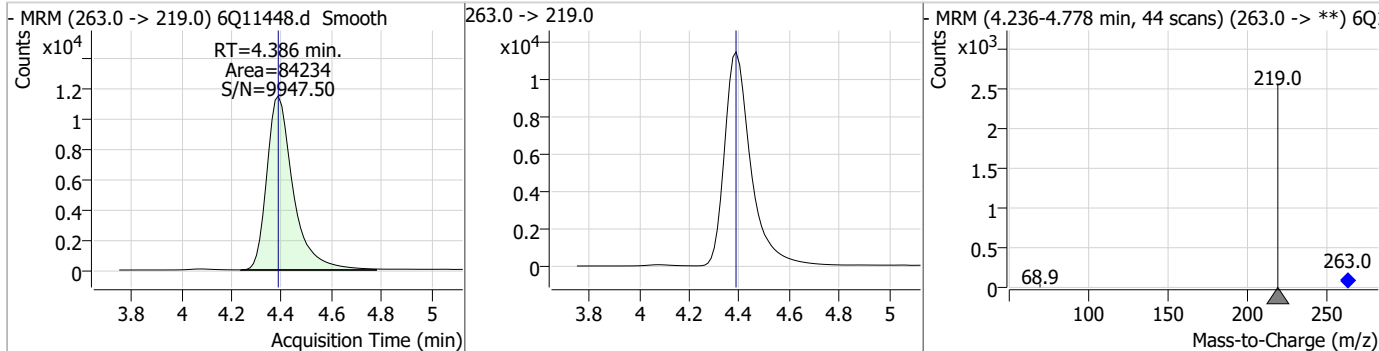
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	22.25	3.86	0.00	10173	241.0 -> 117.0	12.8	6.0	18.1



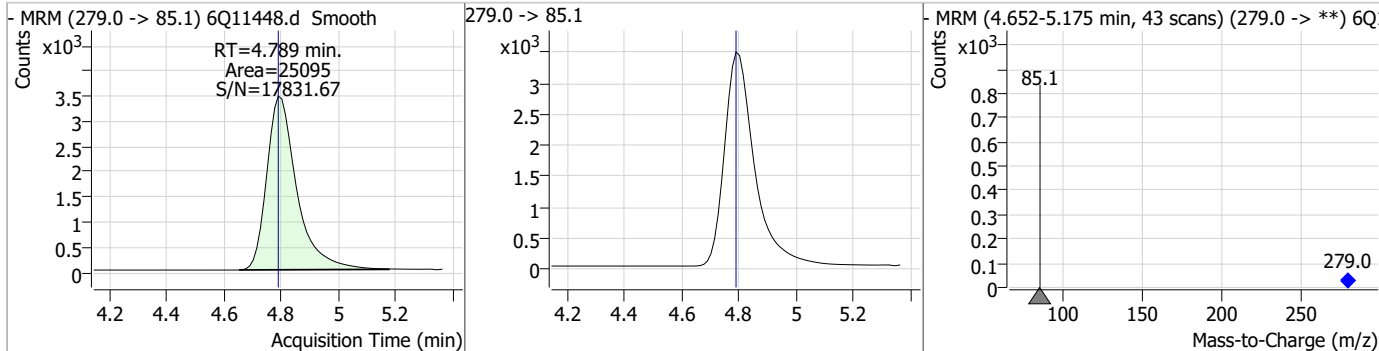
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.28	4.38	0.00	39076				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	9.82	4.39	0.00	84234				

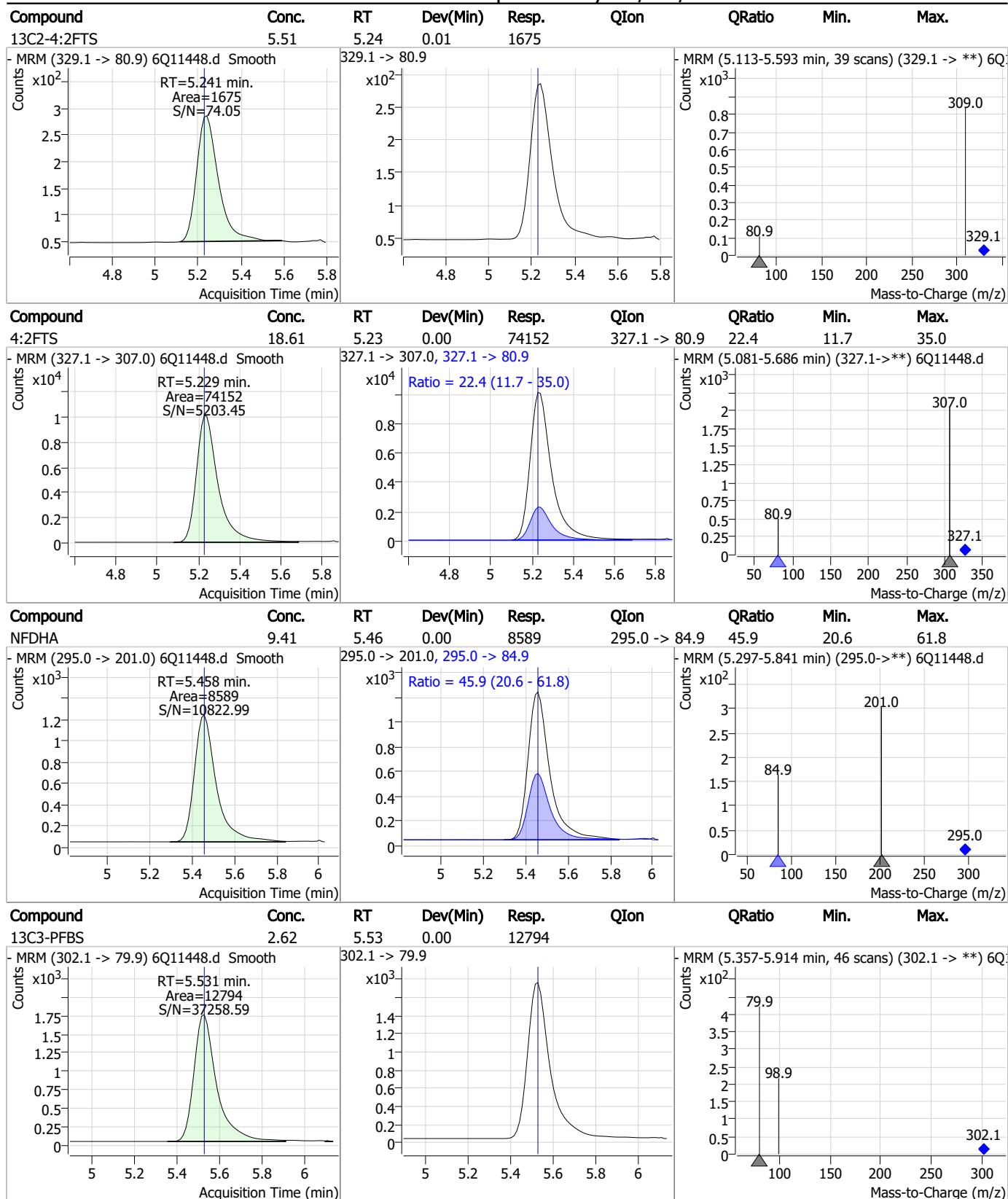


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	9.38	4.79	0.00	25095				



7.4.1
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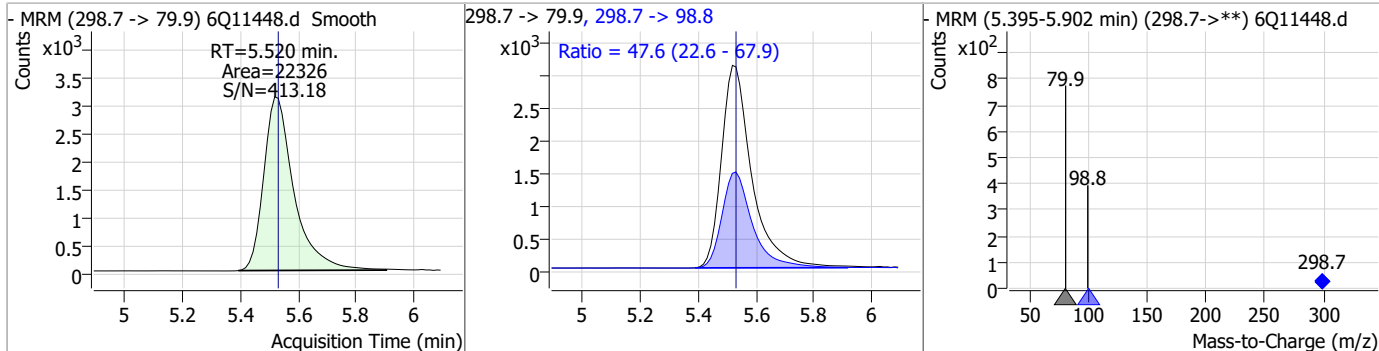
Perfluorinated Compounds by LC/MS/MS



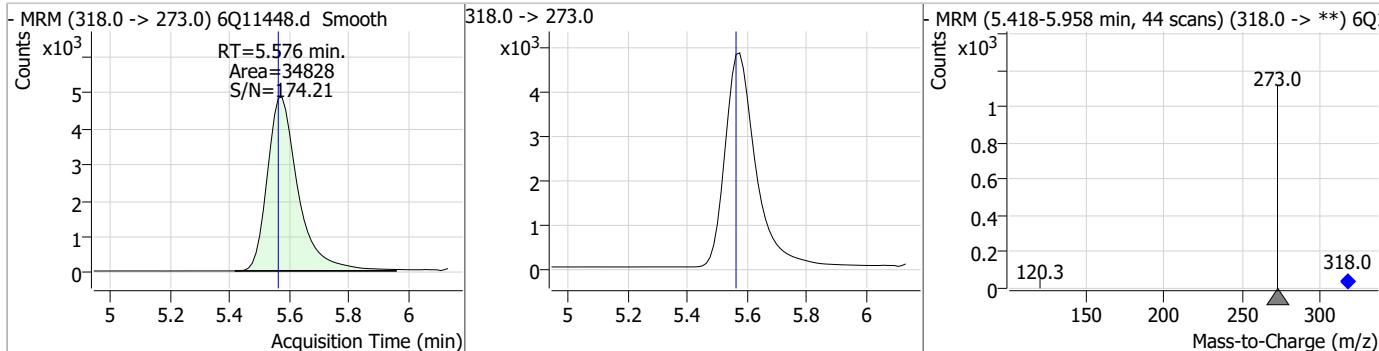
7.4.1
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Perfluorinated Compounds by LC/MS/MS

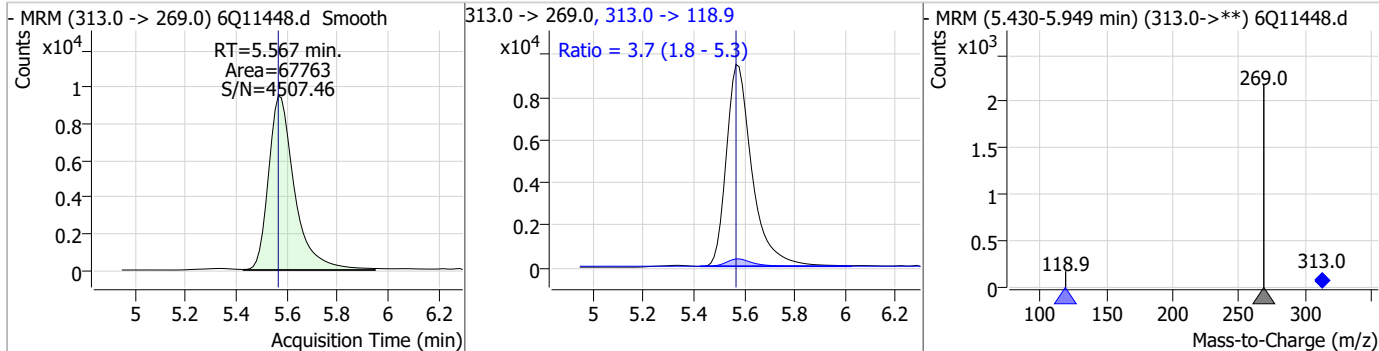
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	4.31	5.52	-0.01	22326	298.7 -> 98.8	47.6	22.6	67.9



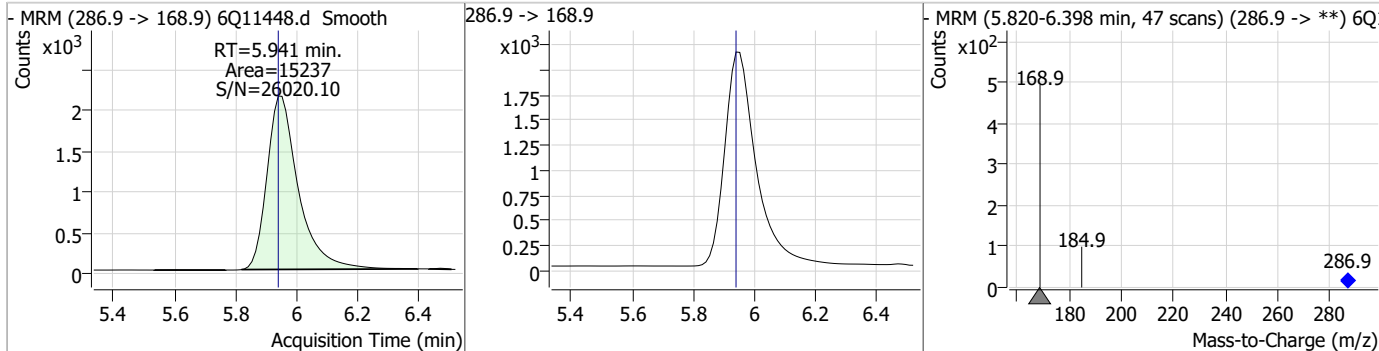
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.61	5.58	0.01	34828				



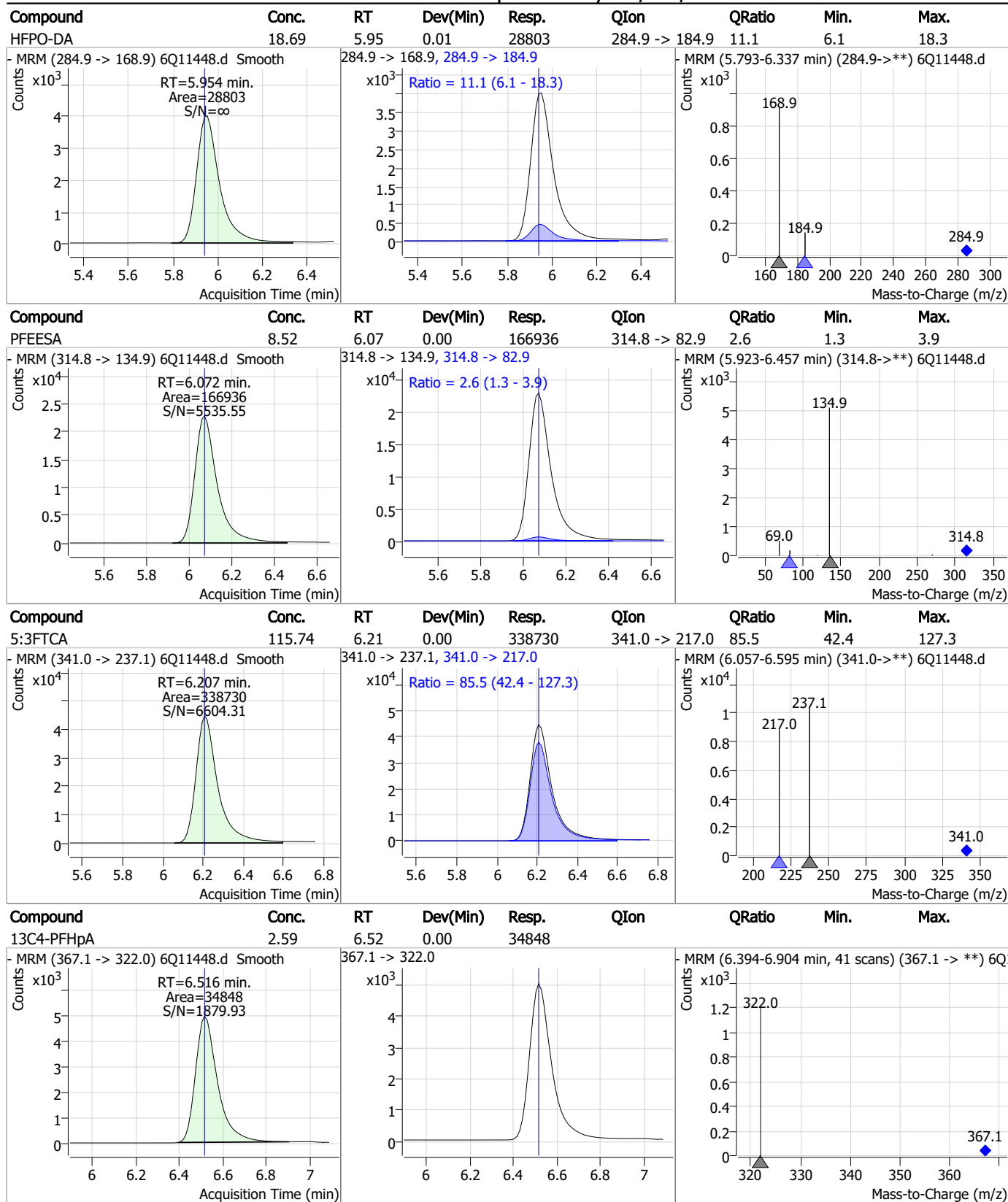
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	4.82	5.57	0.00	67763	313.0 -> 118.9	3.7	1.8	5.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	11.13	5.94	0.00	15237				

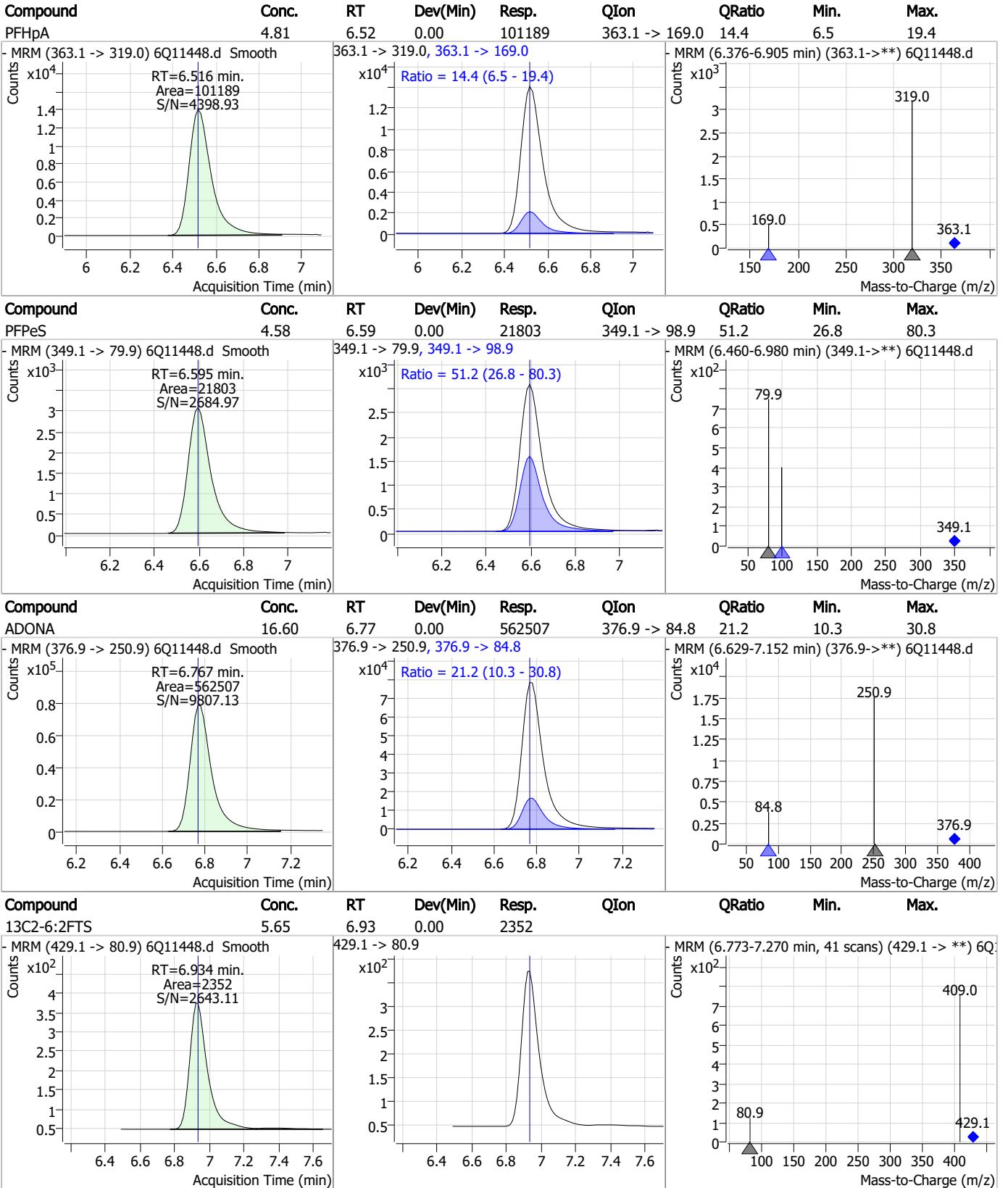


Perfluorinated Compounds by LC/MS/MS



7.4.1
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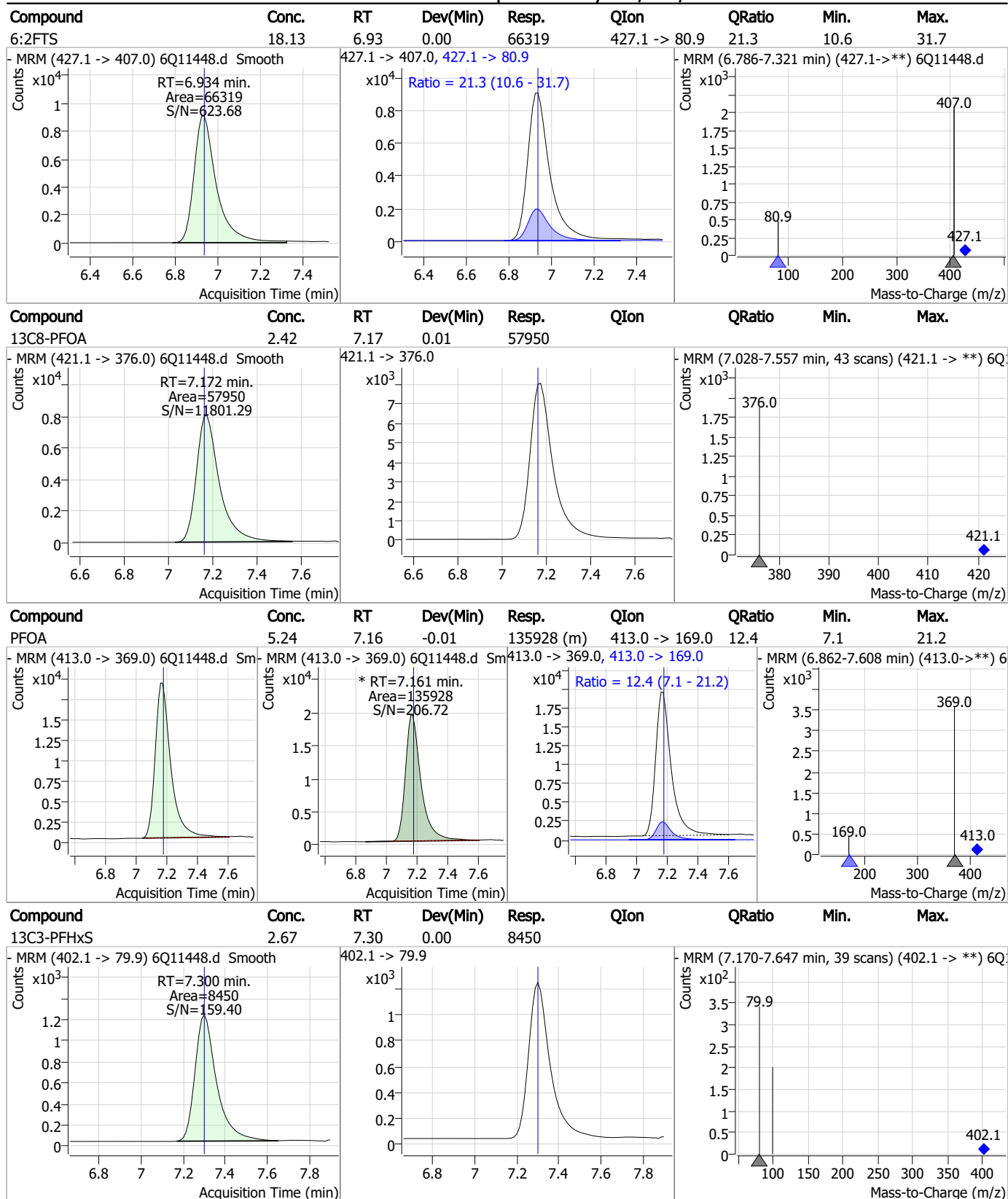
Perfluorinated Compounds by LC/MS/MS



7.4.1

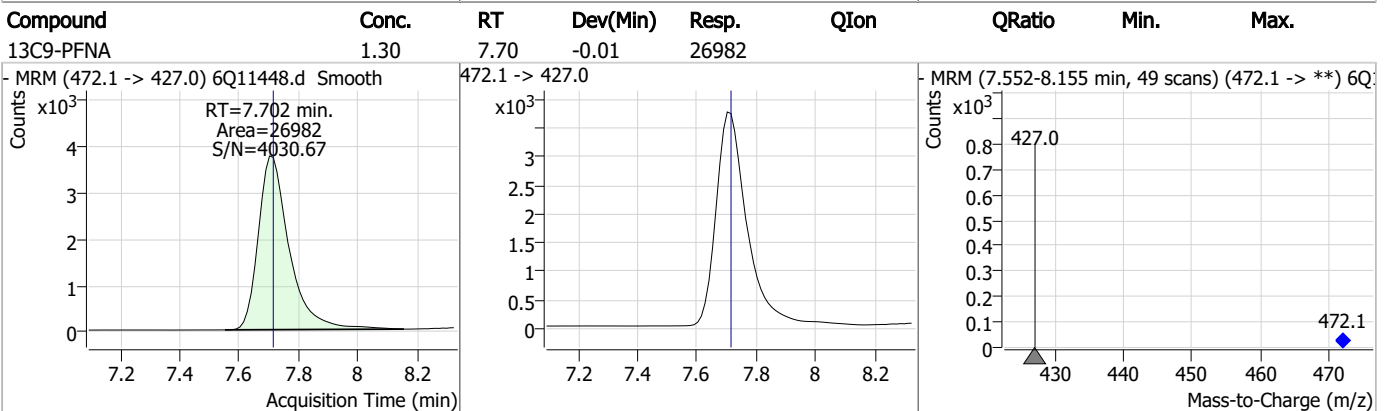
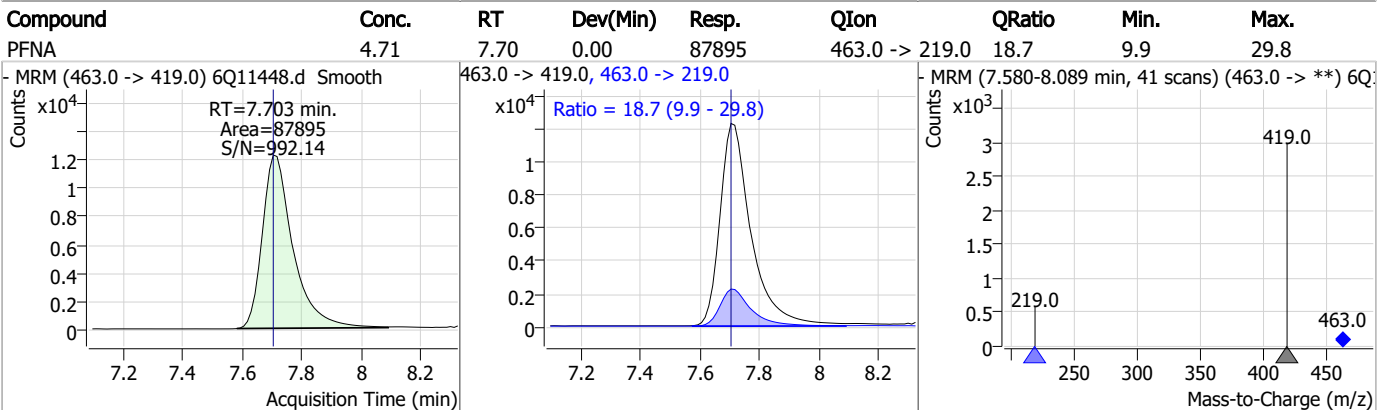
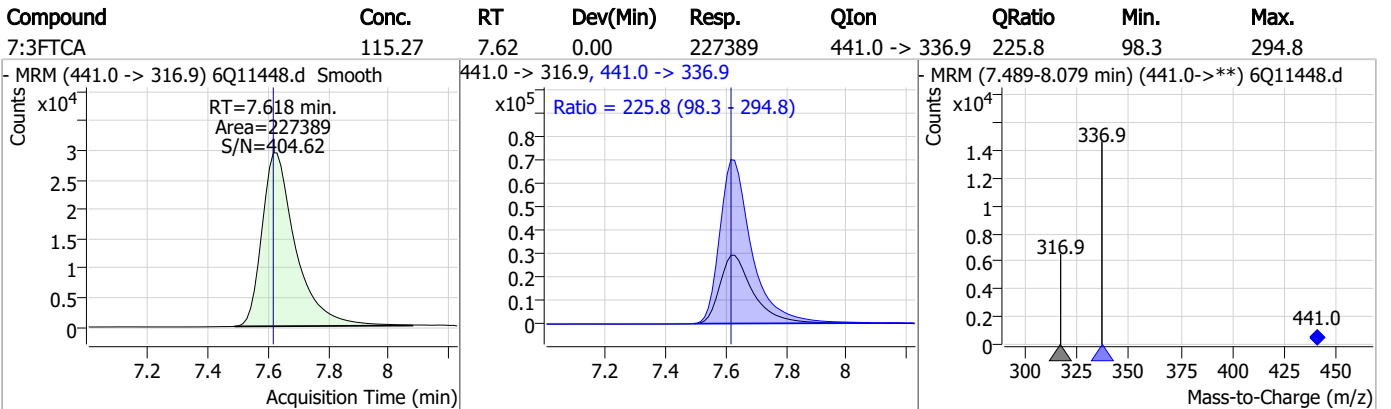
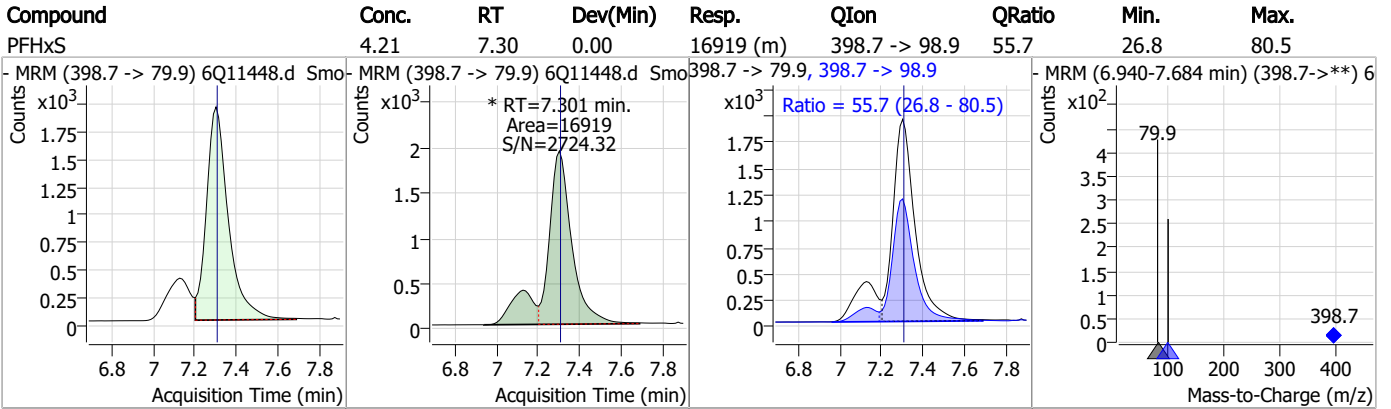
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Perfluorinated Compounds by LC/MS/MS



7.4.1
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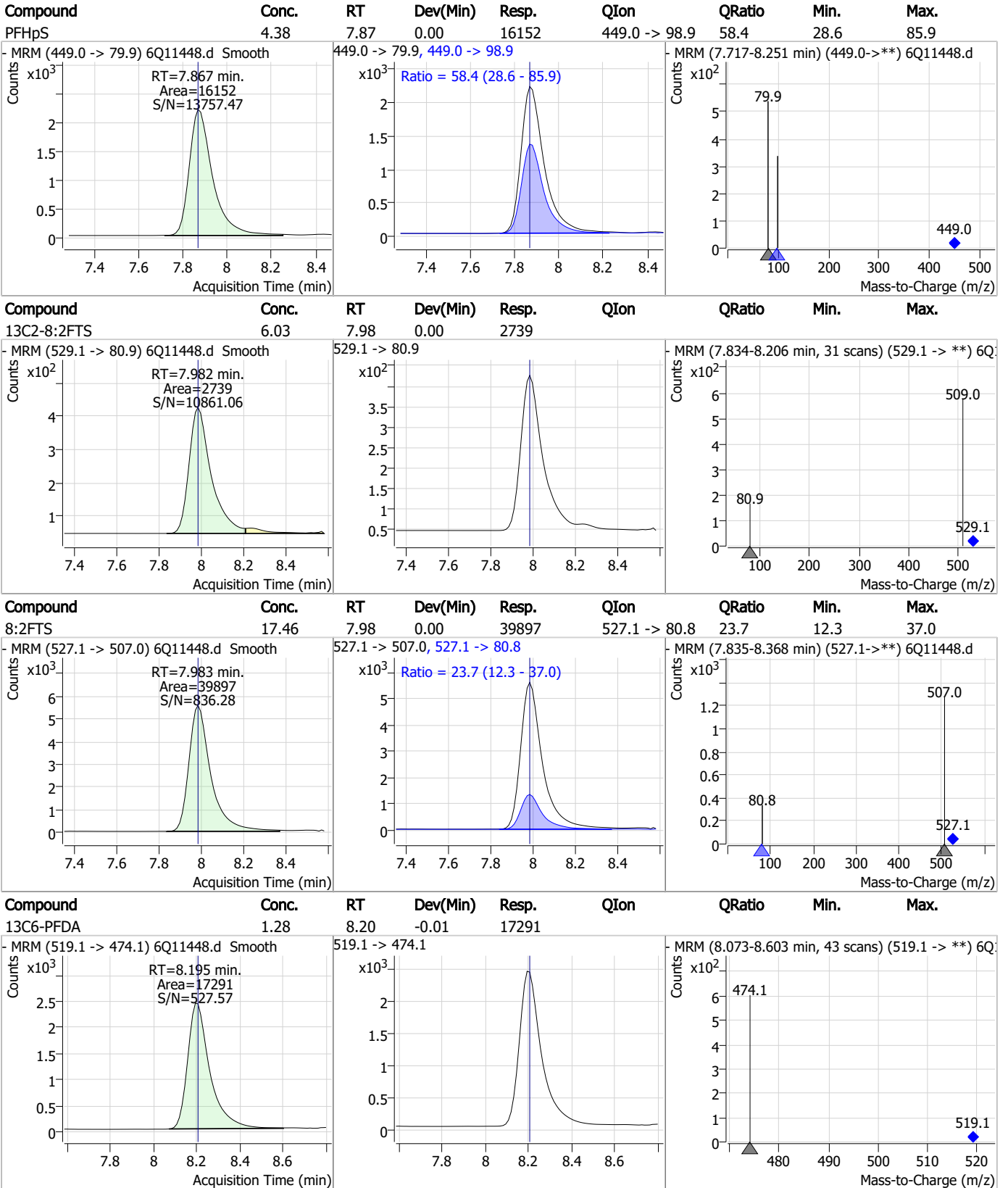
Perfluorinated Compounds by LC/MS/MS



7.4.1

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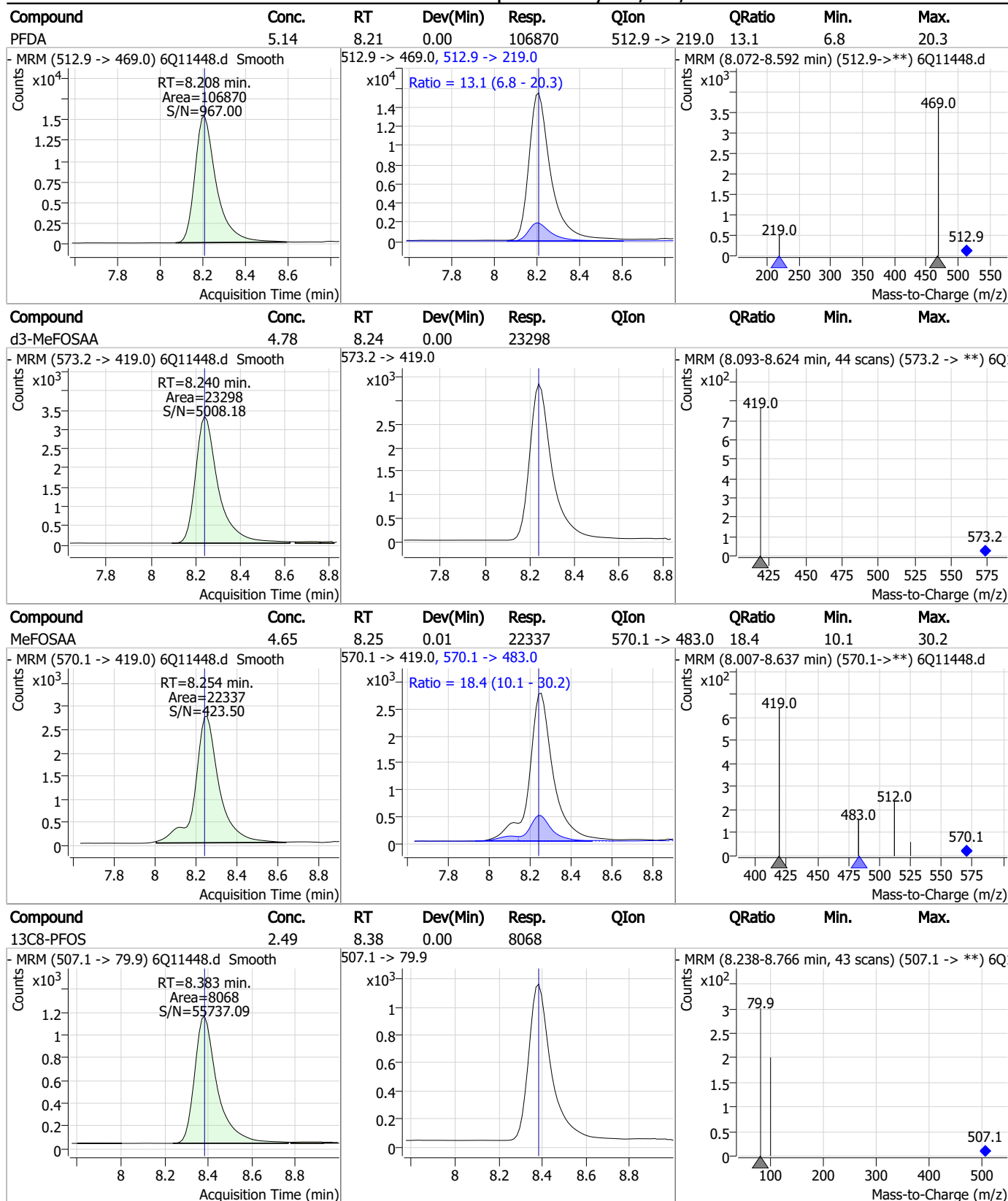
Perfluorinated Compounds by LC/MS/MS



7.4.1

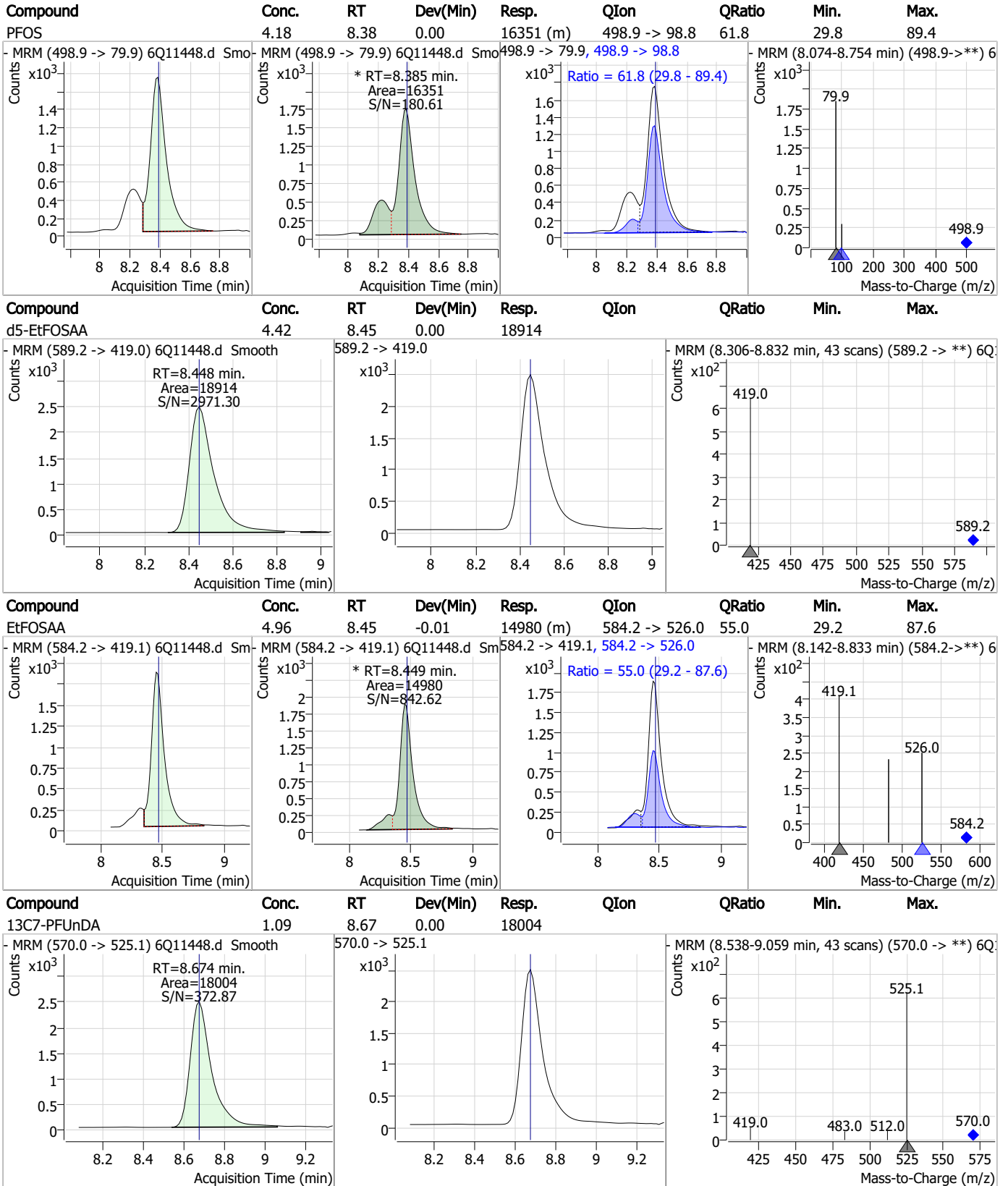
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Perfluorinated Compounds by LC/MS/MS



7.4.1
7

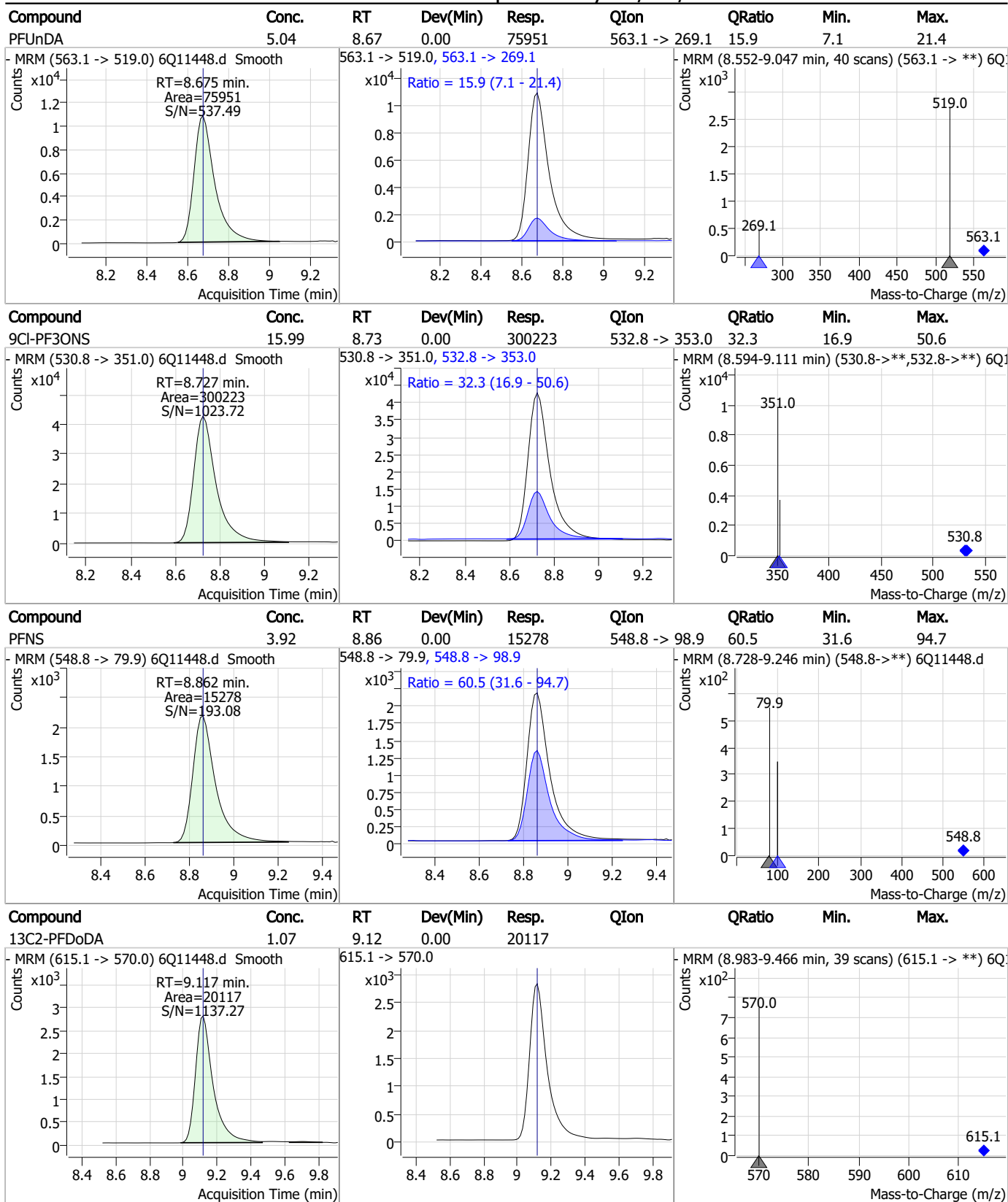
Perfluorinated Compounds by LC/MS/MS



7.4.1

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Perfluorinated Compounds by LC/MS/MS

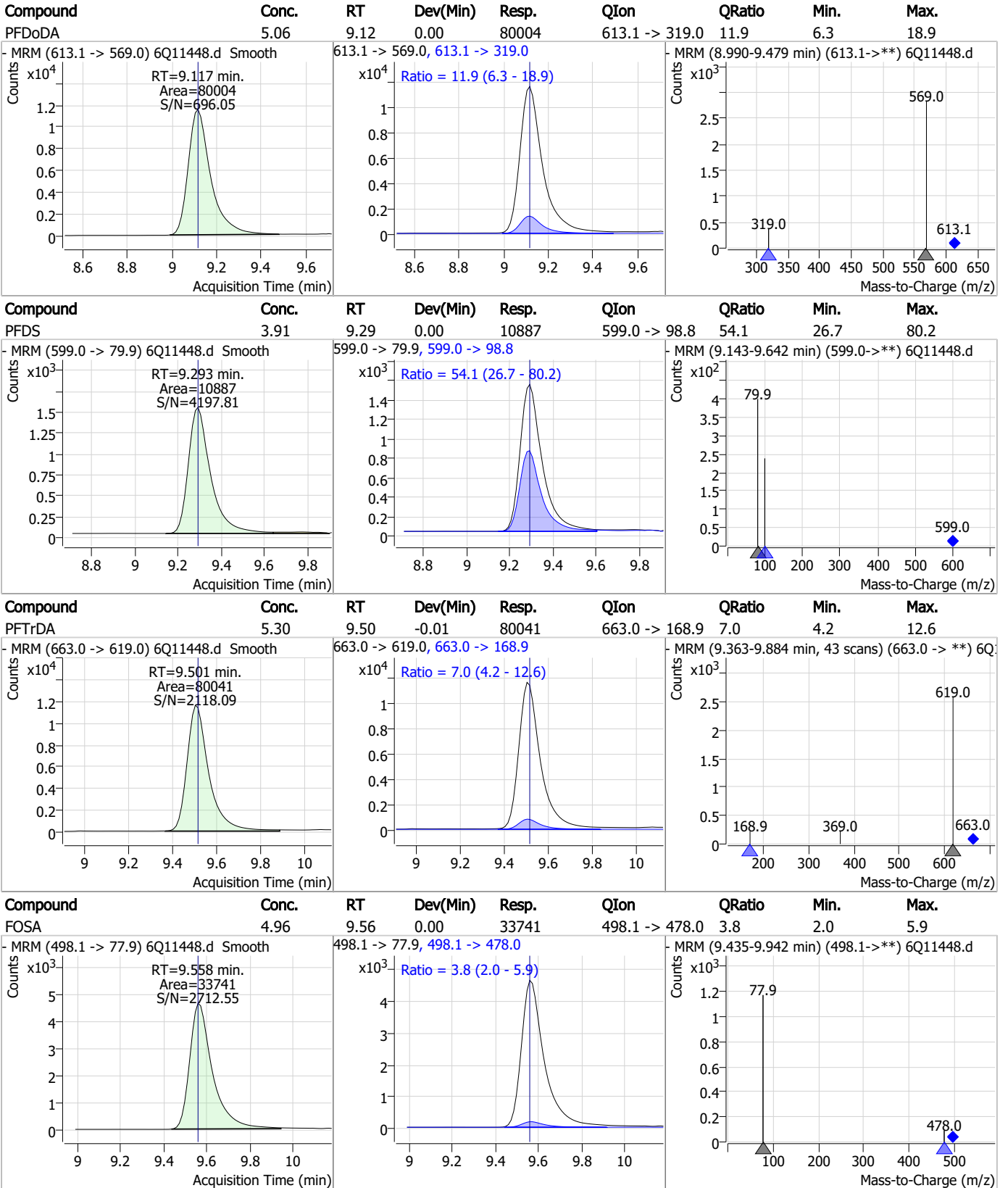


7.4.1

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Perfluorinated Compounds by LC/MS/MS



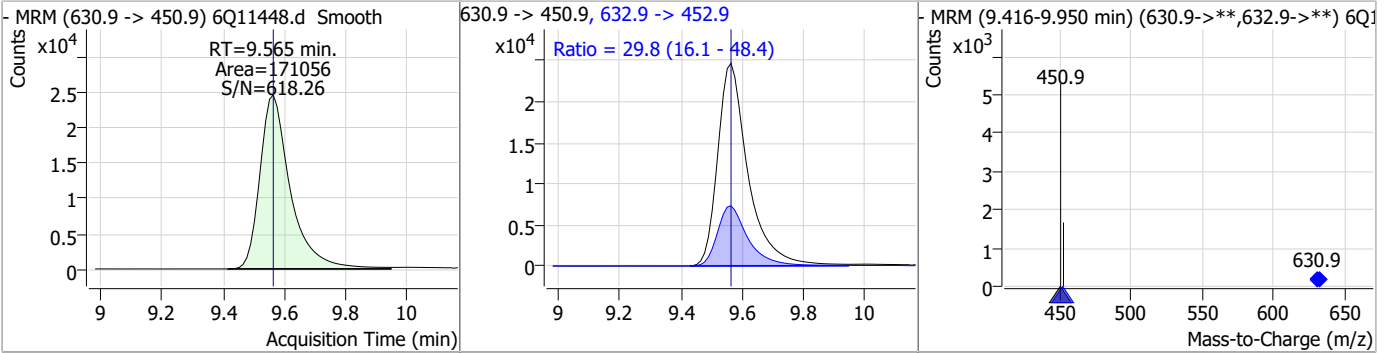
7.4.1

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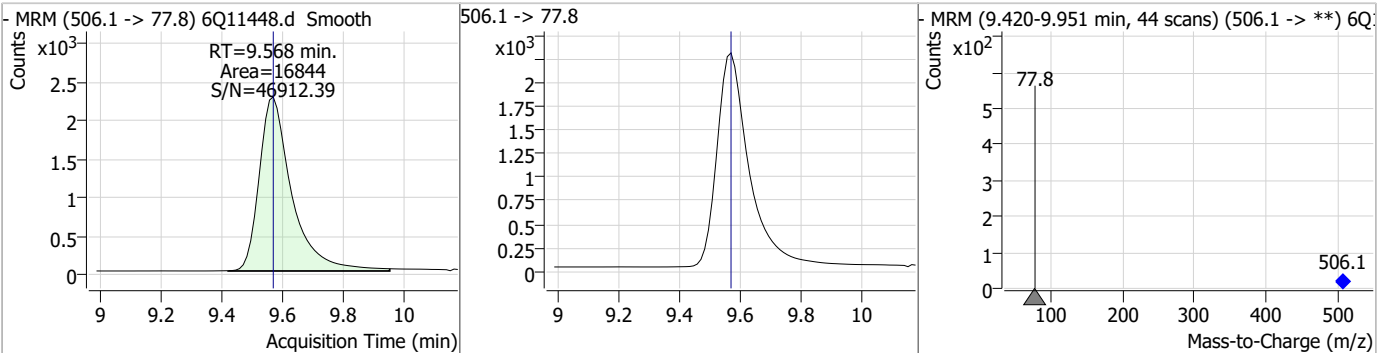


Perfluorinated Compounds by LC/MS/MS

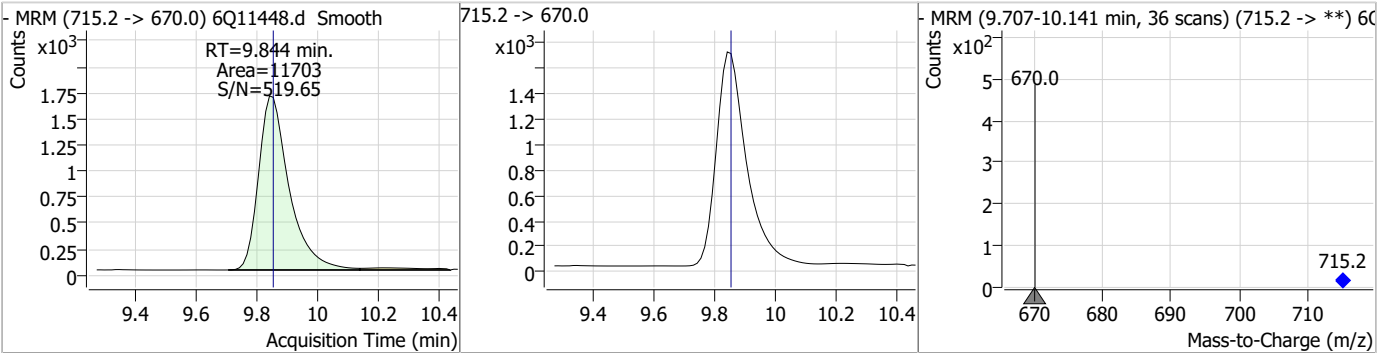
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11CI-PF3OUdS	14.81	9.56	0.00	171056	632.9 -> 452.9	29.8	16.1	48.4



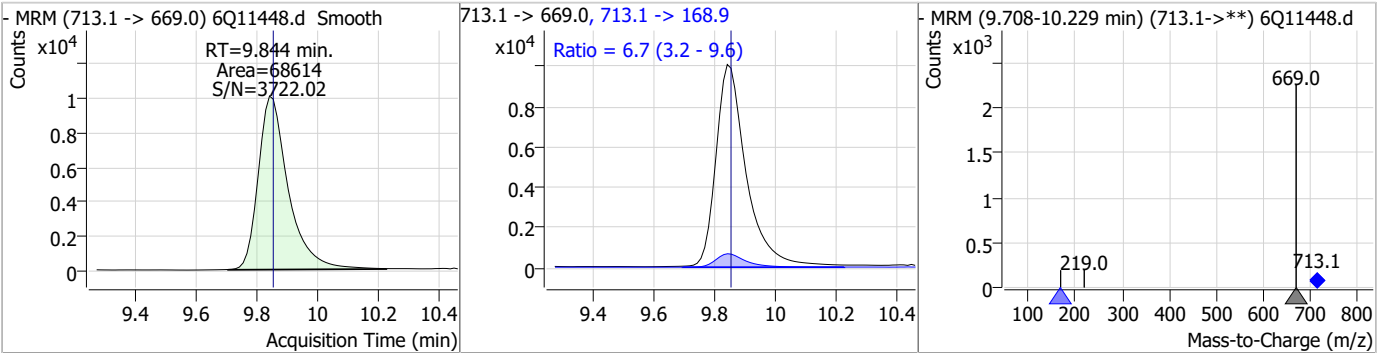
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.46	9.57	0.00	16844				



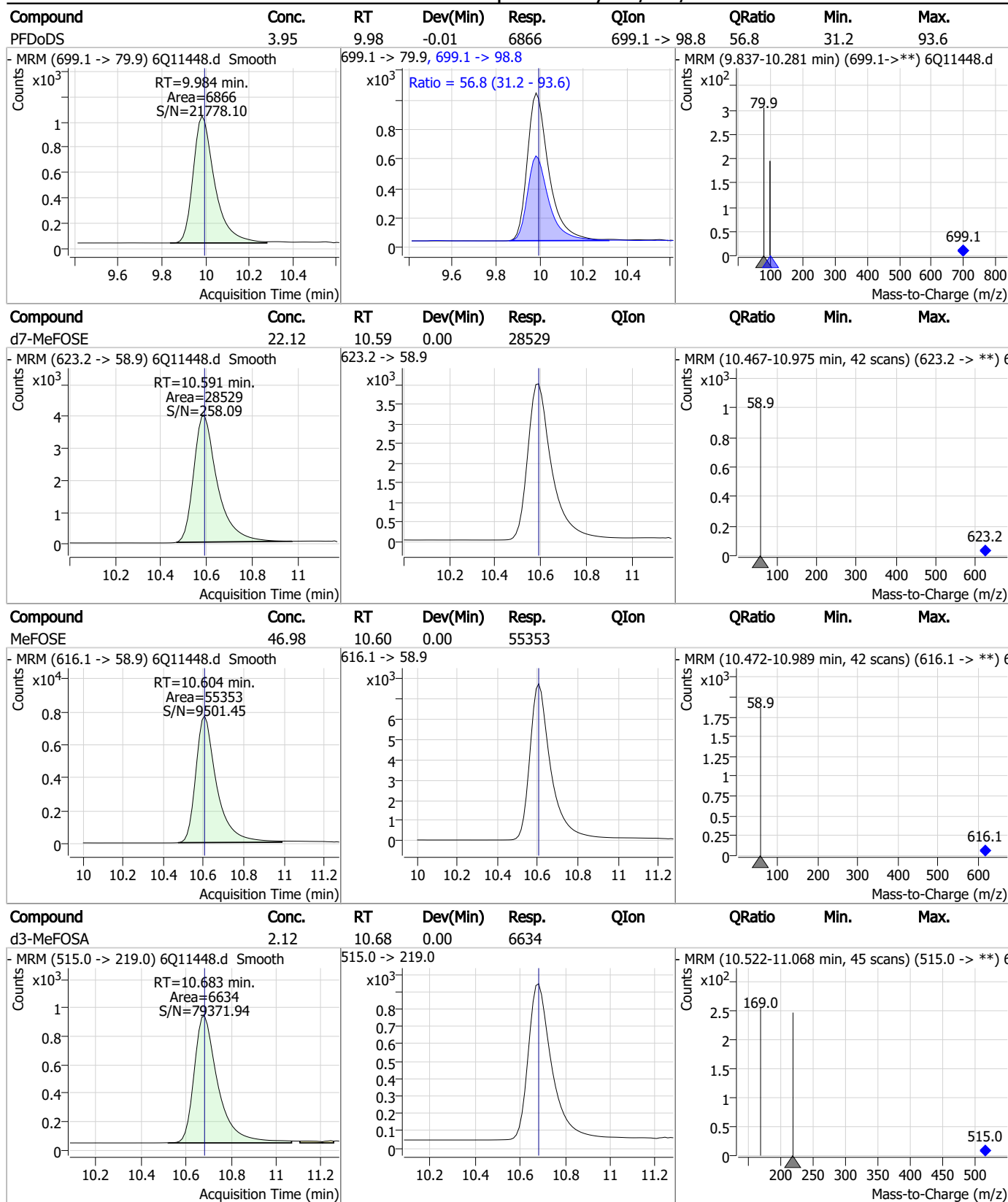
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.06	9.84	-0.01	11703				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	4.92	9.84	-0.01	68614	713.1 -> 168.9	6.7	3.2	9.6



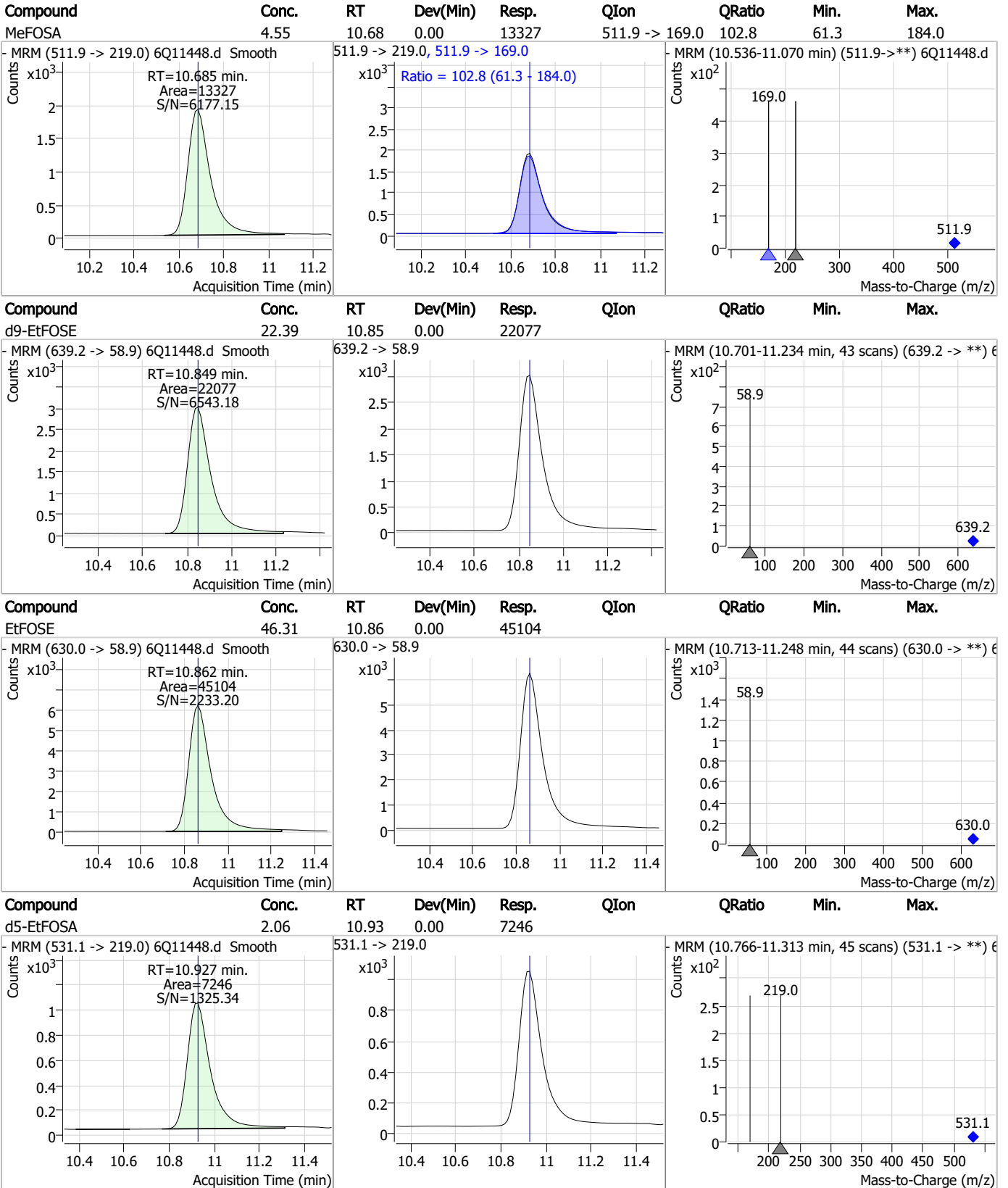
Perfluorinated Compounds by LC/MS/MS



7.4.1
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Perfluorinated Compounds by LC/MS/MS

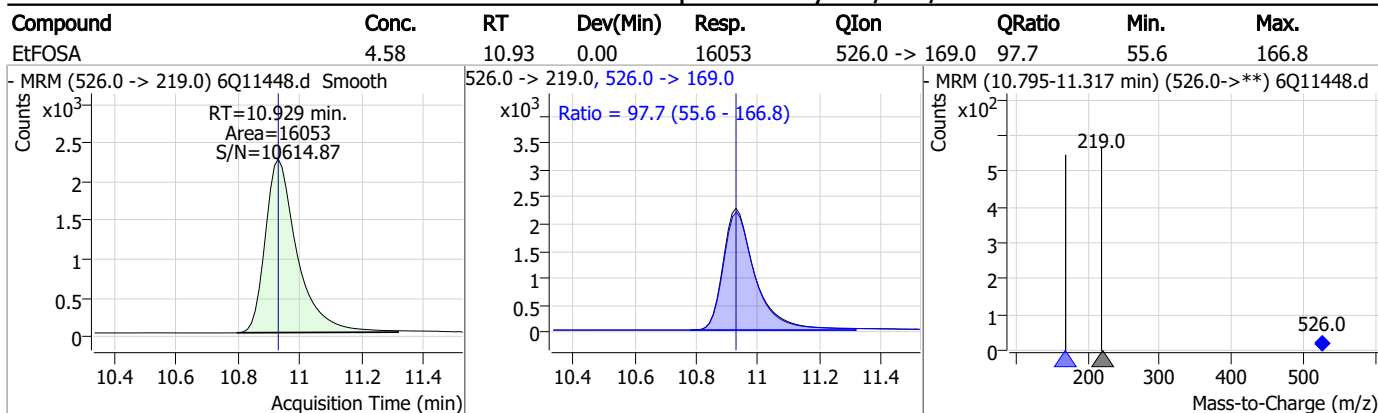


7.4.1

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Perfluorinated Compounds by LC/MS/MS



7.4.1

7

Manual Integration Approval Summary

Sample Number: OP94977-MS Method: EPA DRAFT 1633
Lab FileID: 6Q11448.D Analyst approved: 01/18/23 10:23 Norman Farmer
Injection Time: 01/17/23 04:43 Supervisor approved: 01/18/23 10:26 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.16	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.30	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.38	Split peak
EtFOSAA	2991-50-6		8.45	Split peak

7.4.1.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q11449.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/17/2023 4:57:47 AM
 Sample Name : op94977-msd
 Vial : P3-F6
 DA Method File : 1633_011123_S6Q174.quantmethod.xml
 Batch Name : s6q179.batch.bin
 Sample Information : OP94977,S6Q179,560,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.013	216.8 -> 171.9	84390	10.00 µg/L	0.012
M5-PFPeA	4.371	268.3 -> 223.0	39833	5.00 µg/L	-0.012
M5-PFHxA	5.564	318.0 -> 273.0	34844	2.50 µg/L	0.000
M4-PFHpA	6.516	367.1 -> 322.0	35749	2.50 µg/L	0.000
M8-PFOA	7.160	421.1 -> 376.0	61694	2.50 µg/L	0.000
M9-PFNA	7.702	472.1 -> 427.0	28256	1.25 µg/L	-0.013
M6-PFDA	8.208	519.1 -> 474.1	18649	1.25 µg/L	0.000
M7-PFUnDA	8.674	570.0 -> 525.1	19965	1.25 µg/L	0.000
M2-PFDoDA	9.117	615.1 -> 570.0	22699	1.25 µg/L	0.000
M2-PFTeDA	9.856	715.2 -> 670.0	13114	1.25 µg/L	0.000
M8-FOSA	9.568	506.1 -> 77.8	17318	2.50 µg/L	0.000
M3-PFBS	5.519	302.1 -> 79.9	12948	2.50 µg/L	-0.012
M3-PFHxS	7.300	402.1 -> 79.9	8688	2.50 µg/L	0.000
M8-PFOS	8.383	507.1 -> 79.9	8490	2.50 µg/L	0.000
M2-4:2FTS	5.228	329.1 -> 80.9	1839	5.00 µg/L	0.000
M2-6:2FTS	6.934	429.1 -> 80.9	2382	5.00 µg/L	0.000
M2-8:2FTS	7.982	529.1 -> 80.9	2631	5.00 µg/L	0.000
M3-MeFOSAA	8.240	573.2 -> 419.0	25128	5.00 µg/L	0.000
M3-HFPO-DA	5.941	286.9 -> 168.9	15205	10.00 µg/L	0.000
M5-EtFOSAA	8.448	589.2 -> 419.0	21343	5.00 µg/L	0.000
M7-MeFOSE	10.591	623.2 -> 58.9	30801	25.00 µg/L	0.000
M9-EtFOSE	10.849	639.2 -> 58.9	23565	25.00 µg/L	0.000
M5-EtFOSA	10.927	531.1 -> 219.0	7657	2.50 µg/L	0.000
M3-MeFOSA	10.683	515.0 -> 219.0	6917	2.50 µg/L	0.000
13C4-PFOS	8.384	502.8 -> 79.9	9546	2.50 µg/L	0.000
13C3-PFBA	3.004	216.0 -> 172.0	34348	5.00 µg/L	0.000
18O2-PFHxS	7.299	403.0 -> 83.9	6195	2.50 µg/L	0.000
13C4-PFOA	7.160	417.1 -> 372.0	68115	2.50 µg/L	-0.012
13C2-PFDA	8.208	515.1 -> 470.1	23605	1.25 µg/L	0.000
13C5-PFNA	7.715	468.0 -> 423.0	28748	1.25 µg/L	0.013
13C2-PFHxA	5.565	315.1 -> 270.0	31193	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.228	329.1 -> 80.9	1839	5.69 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.9%		
13C2-6:2FTS	6.934	429.1 -> 80.9	2382	5.38 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.7%		
13C2-8:2FTS	7.982	529.1 -> 80.9	2631	5.45 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.9%		
13C2-PFDoDA	9.117	615.1 -> 570.0	22699	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.0%		
13C2-PFTeDA	9.856	715.2 -> 670.0	13114	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.4%		
13C3-PFBS	5.519	302.1 -> 79.9	12948	2.49 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.7%		
13C3-PFHxS	7.300	402.1 -> 79.9	8688	2.58 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.3%		
13C4-PFBA	3.013	216.8 -> 171.9	84390	10.76 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 107.6%		
13C4-PFHpA	6.516	367.1 -> 322.0	35749	2.83 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 113.1%		
13C5-PFHxA	5.564	318.0 -> 273.0	34844	2.78 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 111.3%		
13C5-PFPeA	4.371	268.3 -> 223.0	39833	5.72 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 114.5%		
13C6-PFDA	8.208	519.1 -> 474.1	18649	1.39 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 111.0%		
13C7-PFUnDA	8.674	570.0 -> 525.1	19965	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.4%		
13C8-FOSA	9.568	506.1 -> 77.8	17318	2.69 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 107.4%		
13C8-PFOA	7.160	421.1 -> 376.0	61694	2.70 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 108.1%		
13C8-PFOS	8.383	507.1 -> 79.9	8490	2.78 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 111.3%		
13C9-PFNA	7.702	472.1 -> 427.0	28256	1.38 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 110.7%		
d3-MeFOSAA	8.240	573.2 -> 419.0	25128	5.47 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.3%		
13C3-HFPO-DA	5.941	286.9 -> 168.9	15205	11.82 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 118.2%		
d3-MeFOSA	10.683	515.0 -> 219.0	6917	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 93.7%		
d5-EtFOSAA	8.448	589.2 -> 419.0	21343	5.29 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.8%		
d7-MeFOSE	10.591	623.2 -> 58.9	30801	25.35 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 101.4%		
d9-EtFOSE	10.849	639.2 -> 58.9	23565	25.36 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 101.4%		
d5-EtFOSA	10.927	531.1 -> 219.0	7657	2.32 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 92.6%		
Target Compounds					QValue
4:2FTS	5.229	327.1 -> 307.0	37262	8.52 µg/L	99
		327.1 -> 80.9	8866		
6:2FTS	6.922	427.1 -> 407.0	34464	9.30 µg/L	98
		427.1 -> 80.9	6962		
8:2FTS	7.983	527.1 -> 507.0	19383	8.83 µg/L	97
		527.1 -> 80.8	5105		
EtFOSAA	8.462	584.2 -> 419.1	7878	2.31 µg/L	m 91
		584.2 -> 526.0	4072		
FOSA	9.571	498.1 -> 77.9	17024	2.43 µg/L	99
		498.1 -> 478.0	716		
MeFOSAA	8.254	570.1 -> 419.0	10558	2.04 µg/L	m 96
		570.1 -> 483.0	2314		
PFBA	3.007	212.8 -> 168.9	23404	10.81 µg/L	100
PFBS	5.520	298.7 -> 79.9	11514	2.20 µg/L	98
		298.7 -> 98.8	5353		
PFDA	8.208	512.9 -> 469.0	51409	2.29 µg/L	100
		512.9 -> 219.0	7021		
PFDoDA	9.117	613.1 -> 569.0	41188	2.31 µg/L	99
		613.1 -> 319.0	5084		
PFDS	9.293	599.0 -> 79.9	6076	2.07 µg/L	95

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.516	599.0 -> 98.8	3011	2.40	µg/L	96
		363.1 -> 319.0	51777			
PFHpS	7.879	363.1 -> 169.0	7532	1.95	µg/L	89
		449.0 -> 79.9	7593			
PFHxA	5.567	449.0 -> 98.9	4981	2.49	µg/L	100
		313.0 -> 269.0	35112			
PFHxS	7.301	313.0 -> 118.9	1264	2.27	µg/L	99
		398.7 -> 79.9	9389			
PFNA	7.716	398.7 -> 98.9	4984	2.23	µg/L	99
		463.0 -> 419.0	43603			
PFNS	8.862	463.0 -> 219.0	8964	2.17	µg/L	89
		548.8 -> 79.9	8911			
PFOA	7.161	548.8 -> 98.9	4854	2.48	µg/L	99
		413.0 -> 369.0	68596			
PFOS	8.385	413.0 -> 169.0	9367	2.02	µg/L	91
		498.9 -> 79.9	8319			
PFPeA	4.374	498.9 -> 98.8	5528	4.90	µg/L	100
		263.0 -> 219.0	42832			
PFPeS	6.595	349.1 -> 79.9	10394	2.12	µg/L	96
		349.1 -> 98.9	5854			
PFTeDA	9.844	713.1 -> 669.0	37404	2.39	µg/L	99
		713.1 -> 168.9	2467			
PFTrDA	9.501	663.0 -> 619.0	40881	2.40	µg/L	98
		663.0 -> 168.9	3110			
PFUnDA	8.675	563.1 -> 519.0	39998	2.40	µg/L	100
		563.1 -> 269.1	5756			
11CI-PF3OUdS	9.565	630.9 -> 450.9	91992	7.98	µg/L	95
		632.9 -> 452.9	26896			
9CI-PF3ONS	8.727	530.8 -> 351.0	153784	8.21	µg/L	95
		532.8 -> 353.0	47712			
ADONA	6.767	376.9 -> 250.9	283979	8.40	µg/L	95
		376.9 -> 84.8	64508			
HFPO-DA	5.942	284.9 -> 168.9	14534	9.45	µg/L	100
		284.9 -> 184.9	1747			
3:3FTCA	3.864	241.0 -> 177.0	4878	10.47	µg/L	91
		241.0 -> 117.0	763			
5:3FTCA	6.207	341.0 -> 237.1	174166	59.48	µg/L	98
		341.0 -> 217.0	144872			
7:3FTCA	7.630	441.0 -> 316.9	125865	63.77	µg/L	100
		441.0 -> 336.9	247607			
EtFOSA	10.929	526.0 -> 219.0	8204	2.21	µg/L	88
		526.0 -> 169.0	8112			
EtFOSE	10.862	630.0 -> 58.9	23100	22.22	µg/L	100
		511.9 -> 219.0	7267			
MeFOSA	10.685	511.9 -> 169.0	7116	2.38	µg/L	78
		616.1 -> 58.9	29249			
MeFOSE	10.604	699.1 -> 79.9	3433	22.99	µg/L	100
		699.1 -> 98.8	2333			
PFDoDS	9.984	295.0 -> 201.0	4302	1.88	µg/L	93
		295.0 -> 84.9	1841			
NFDHA	5.446	279.0 -> 85.1	13207	4.71	µg/L	97
		229.0 -> 84.9	11310			
PFMBA	4.789	314.8 -> 134.9	83454	4.84	µg/L	100
PFMPA	3.538	314.8 -> 82.9	2097	4.67	µg/L	100
PFEESA	6.072			4.26	µg/L	100

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

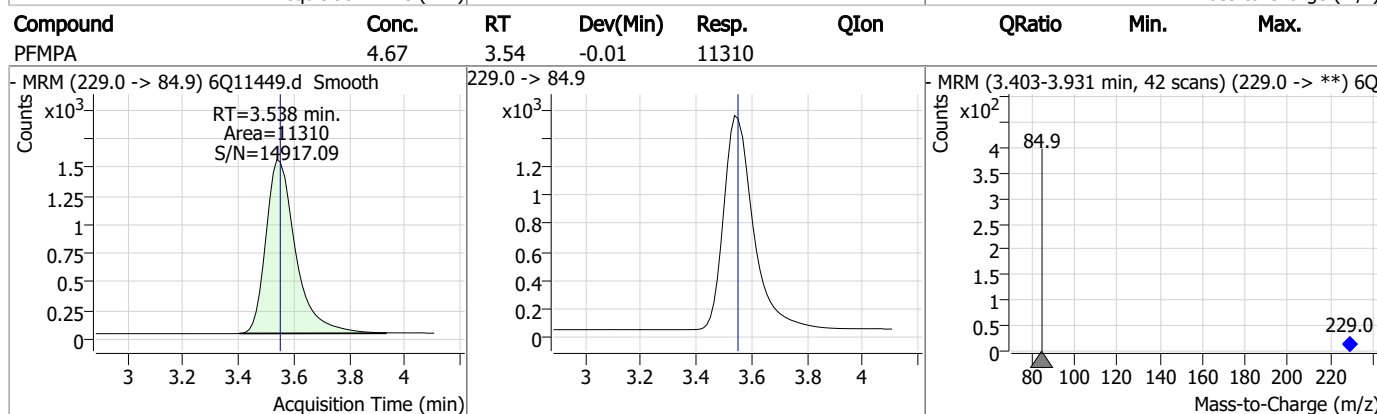
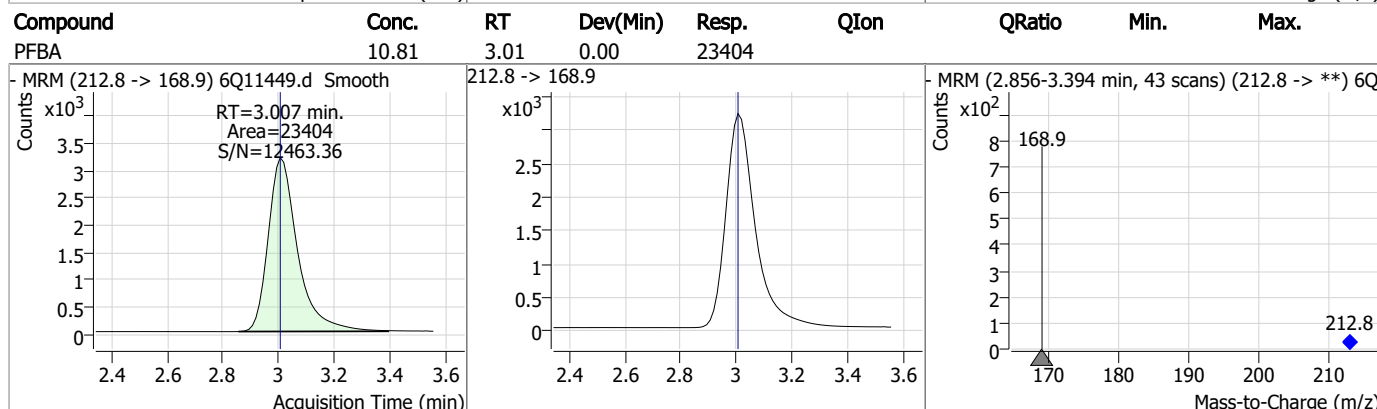
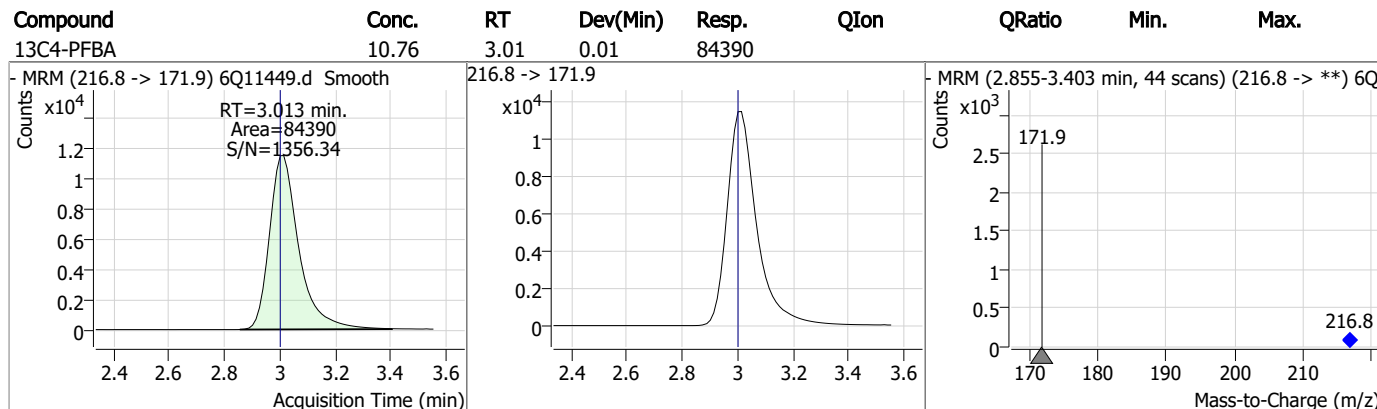
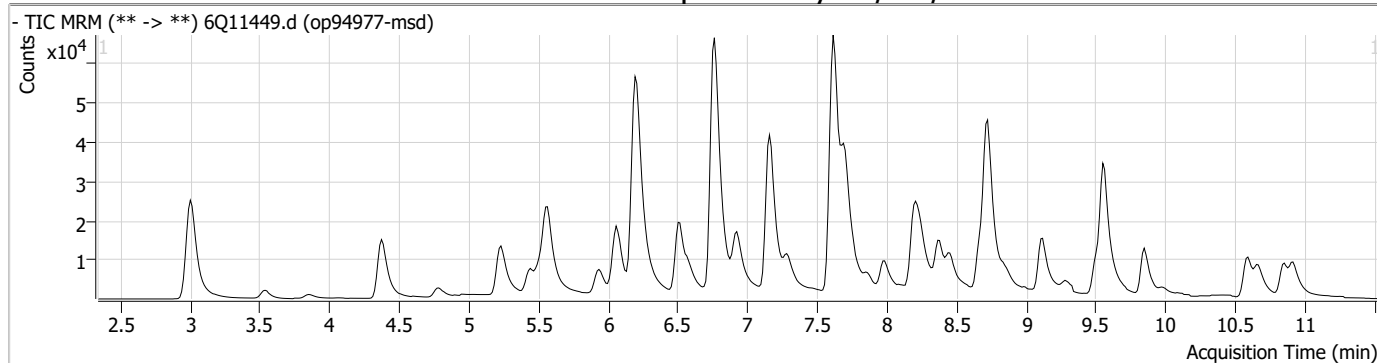
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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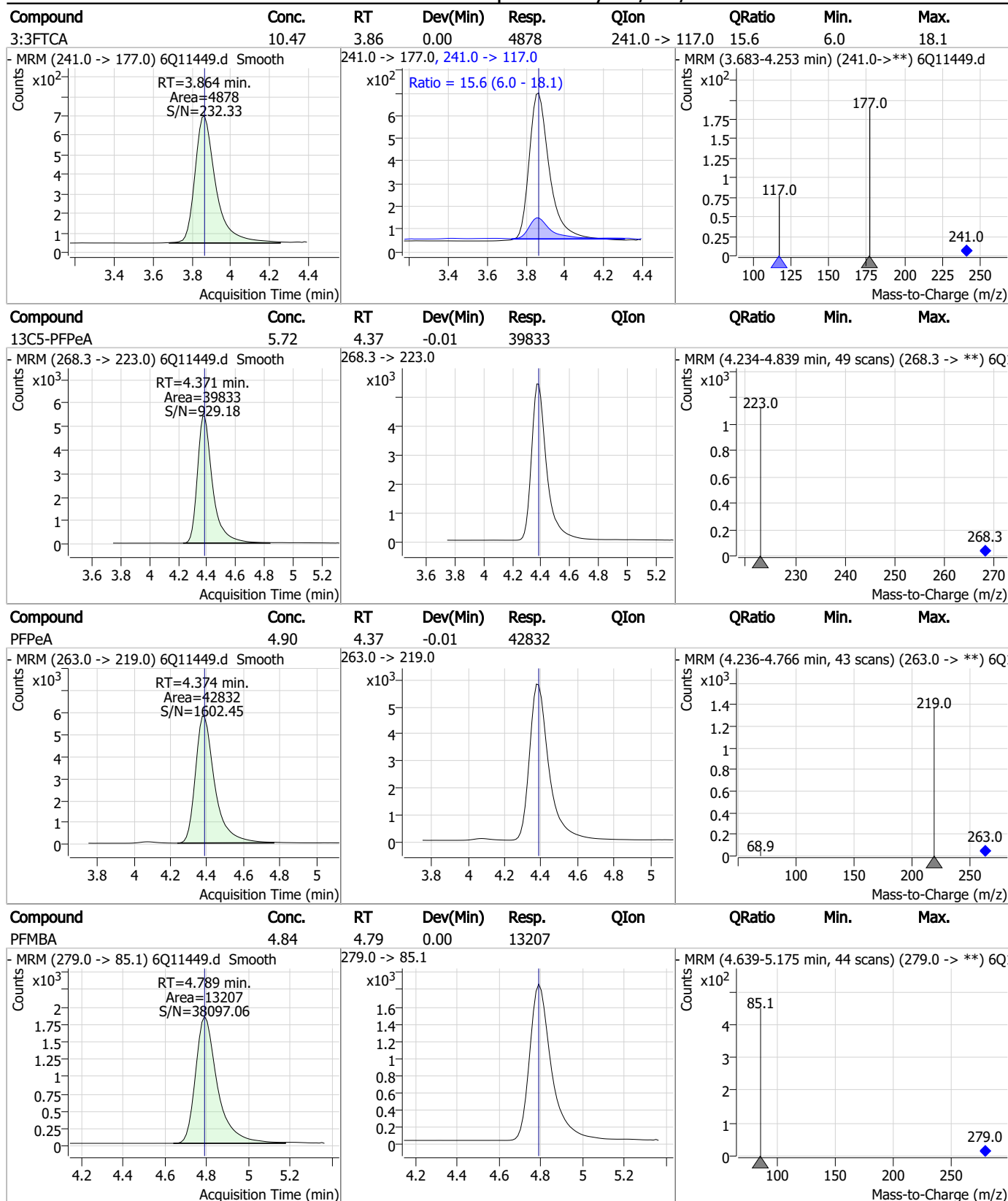
7.4.2
7



Perfluorinated Compounds by LC/MS/MS

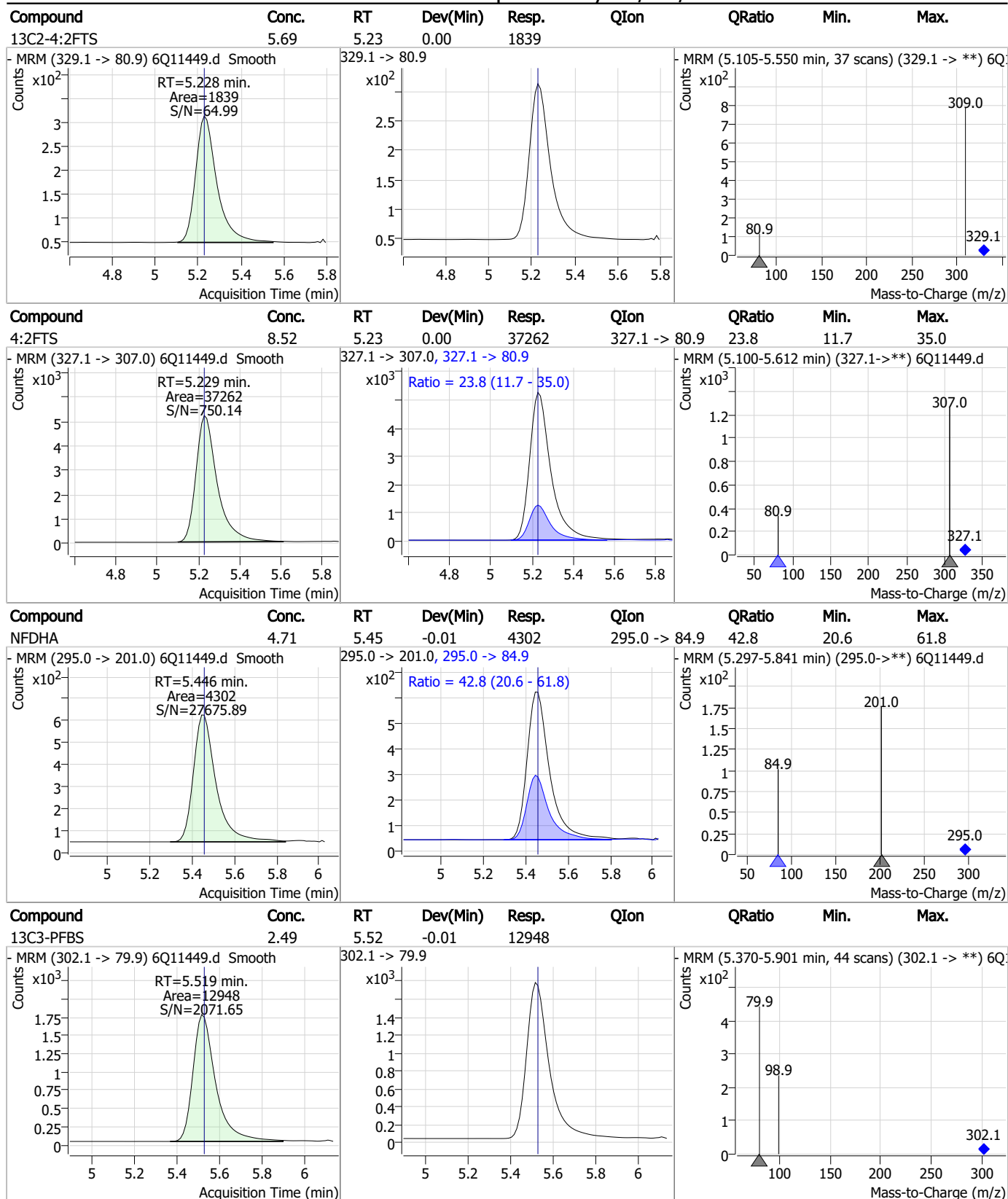


Perfluorinated Compounds by LC/MS/MS



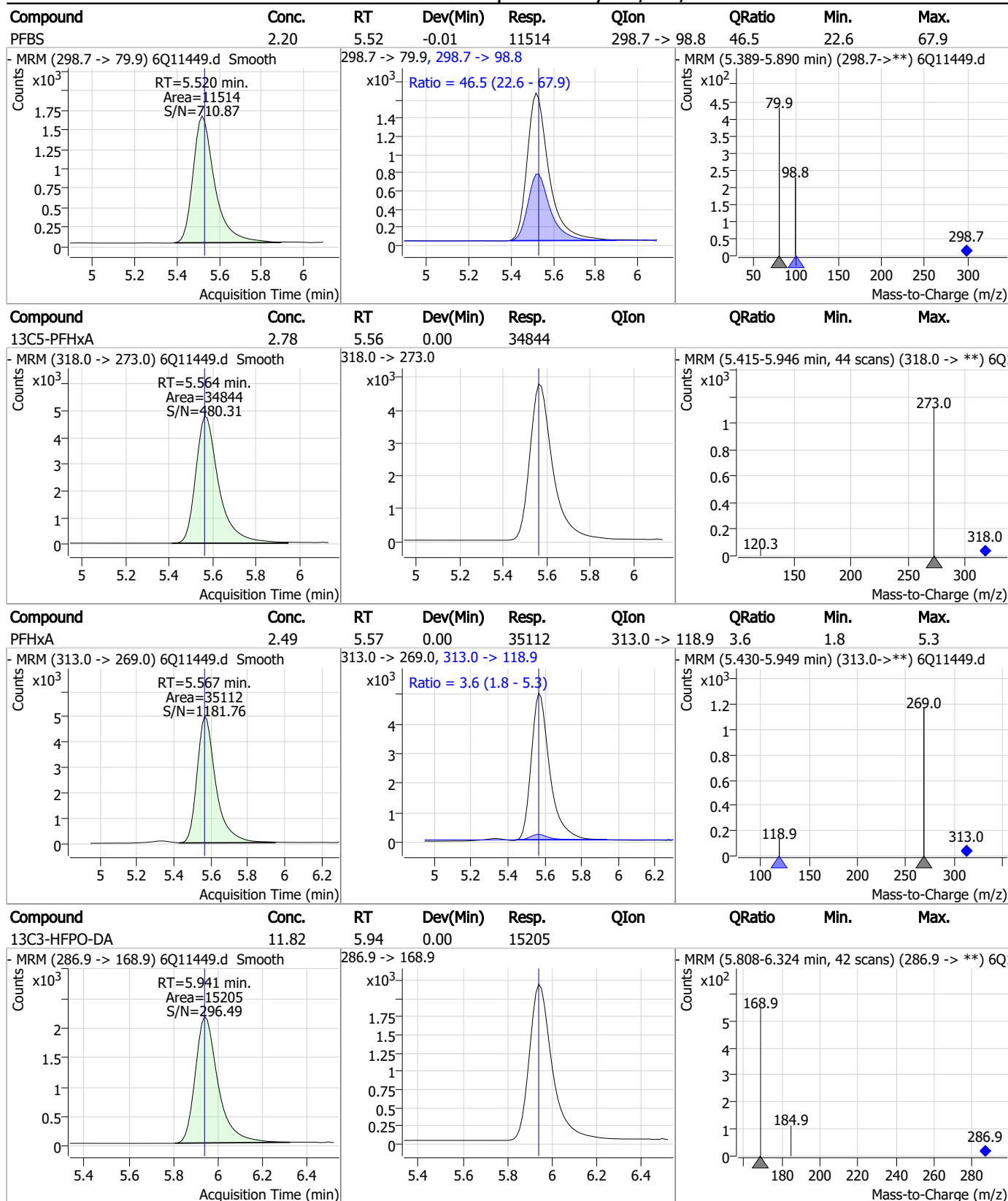
7.4.2
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Perfluorinated Compounds by LC/MS/MS



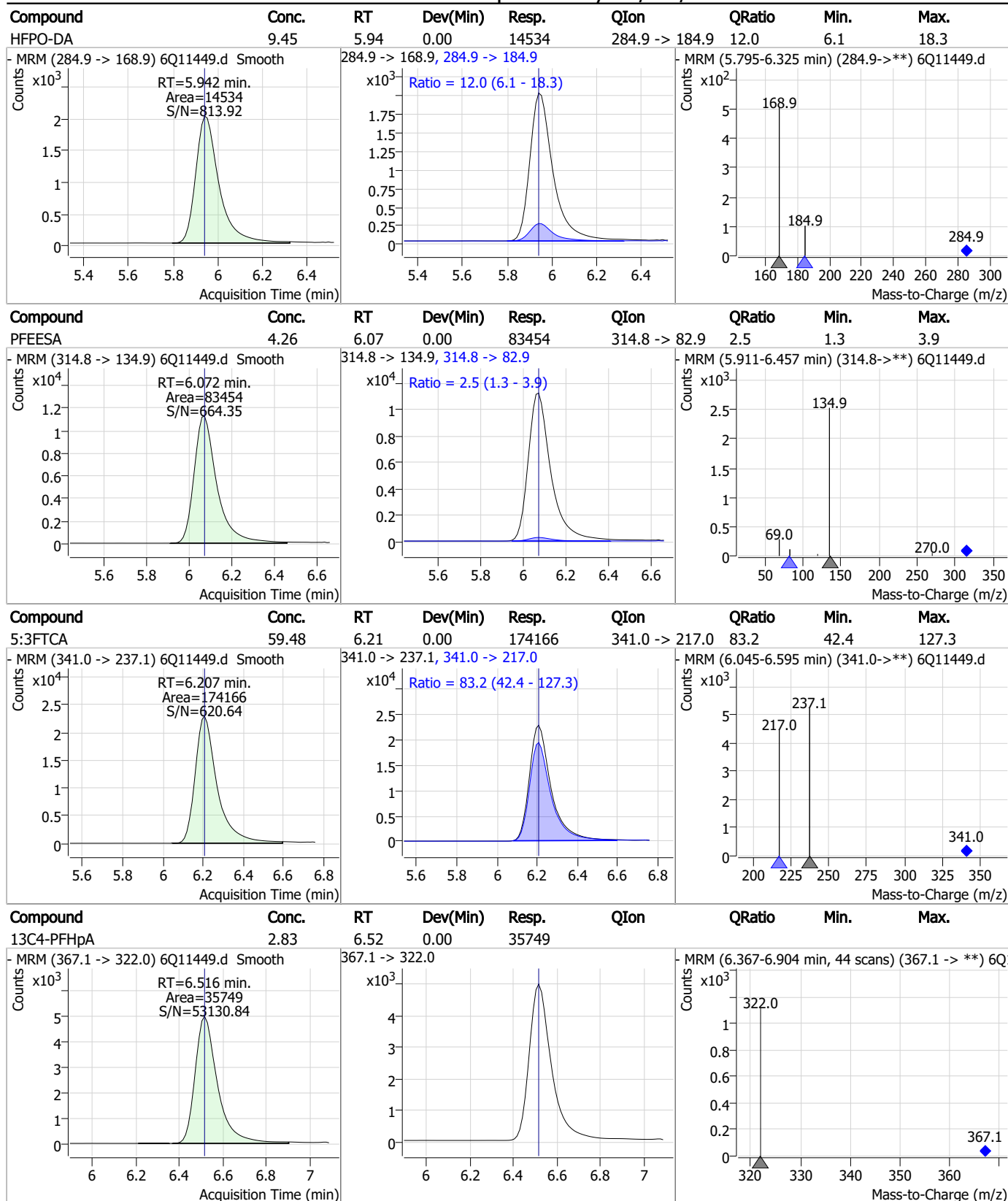
7.4.2
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Perfluorinated Compounds by LC/MS/MS



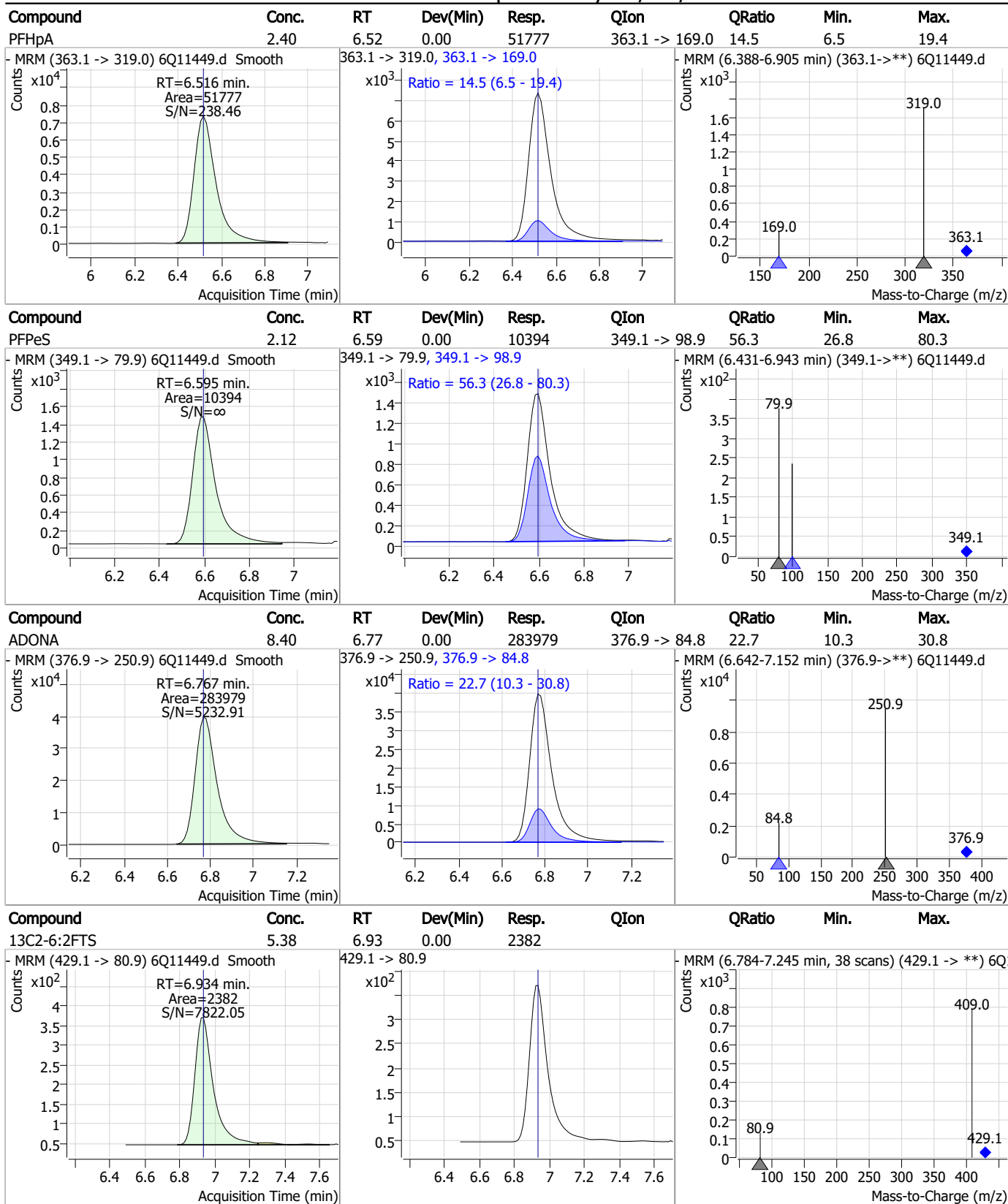
7.4.2
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Perfluorinated Compounds by LC/MS/MS



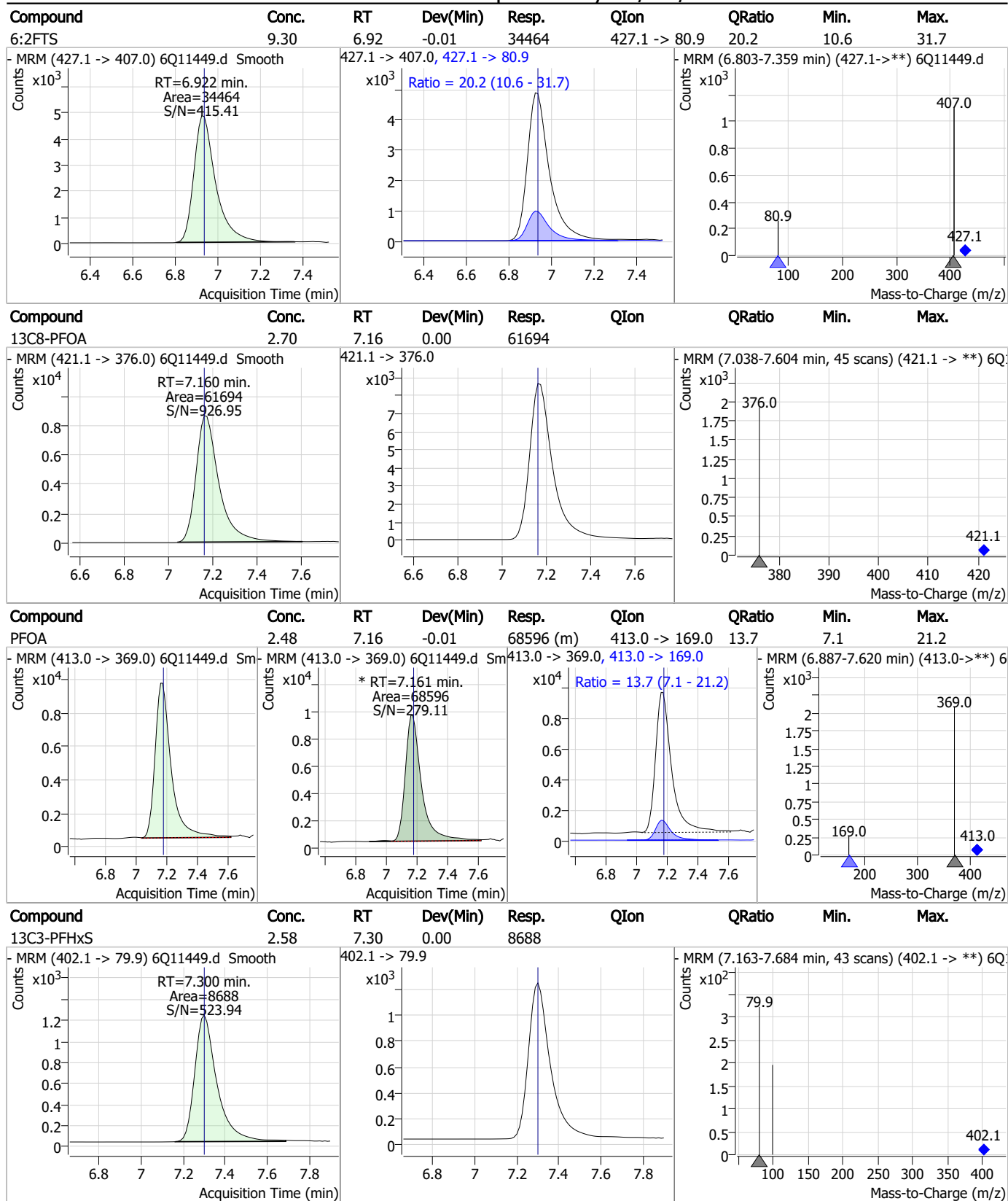
7.4.2
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Perfluorinated Compounds by LC/MS/MS



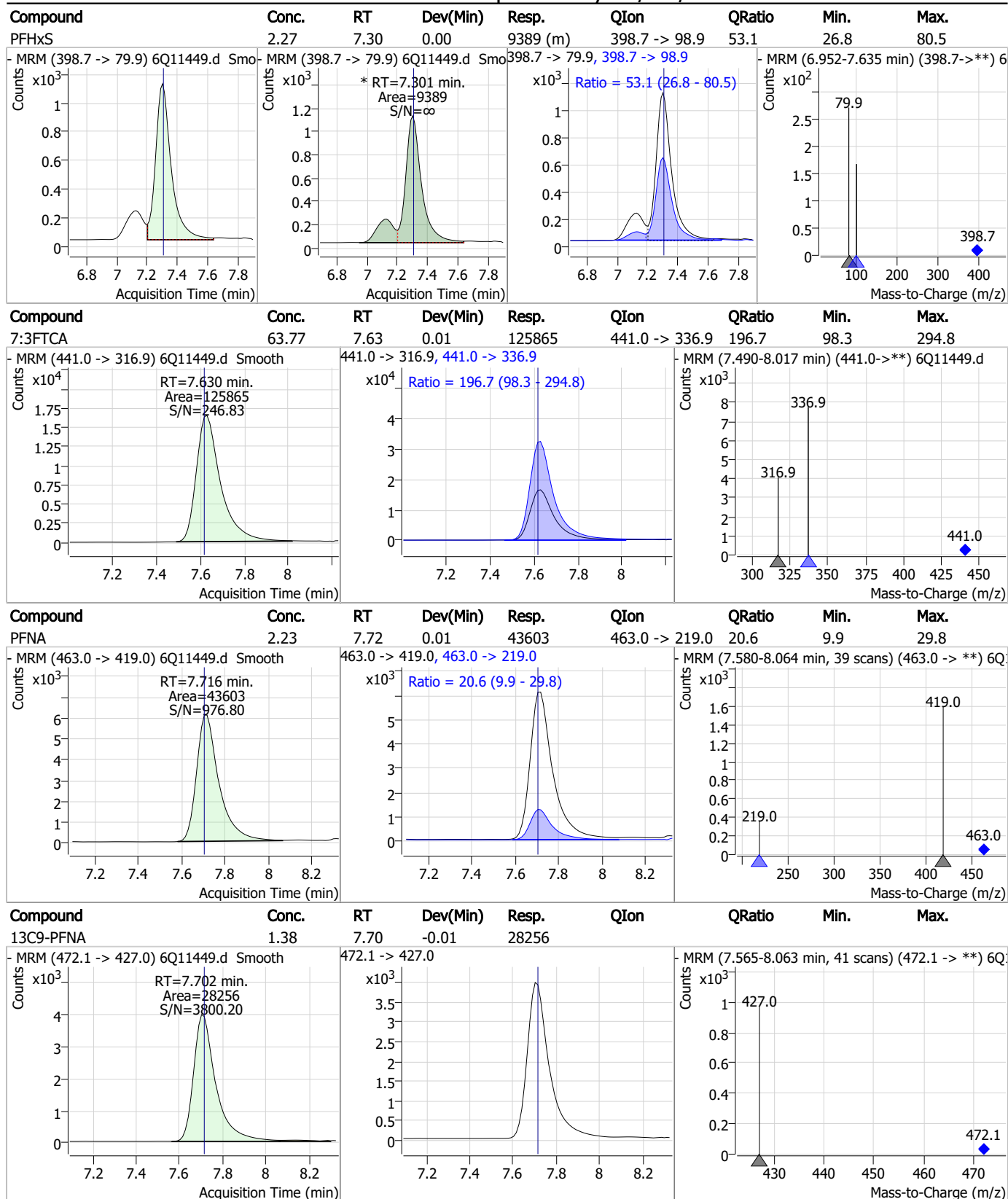
7.4.2
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Perfluorinated Compounds by LC/MS/MS



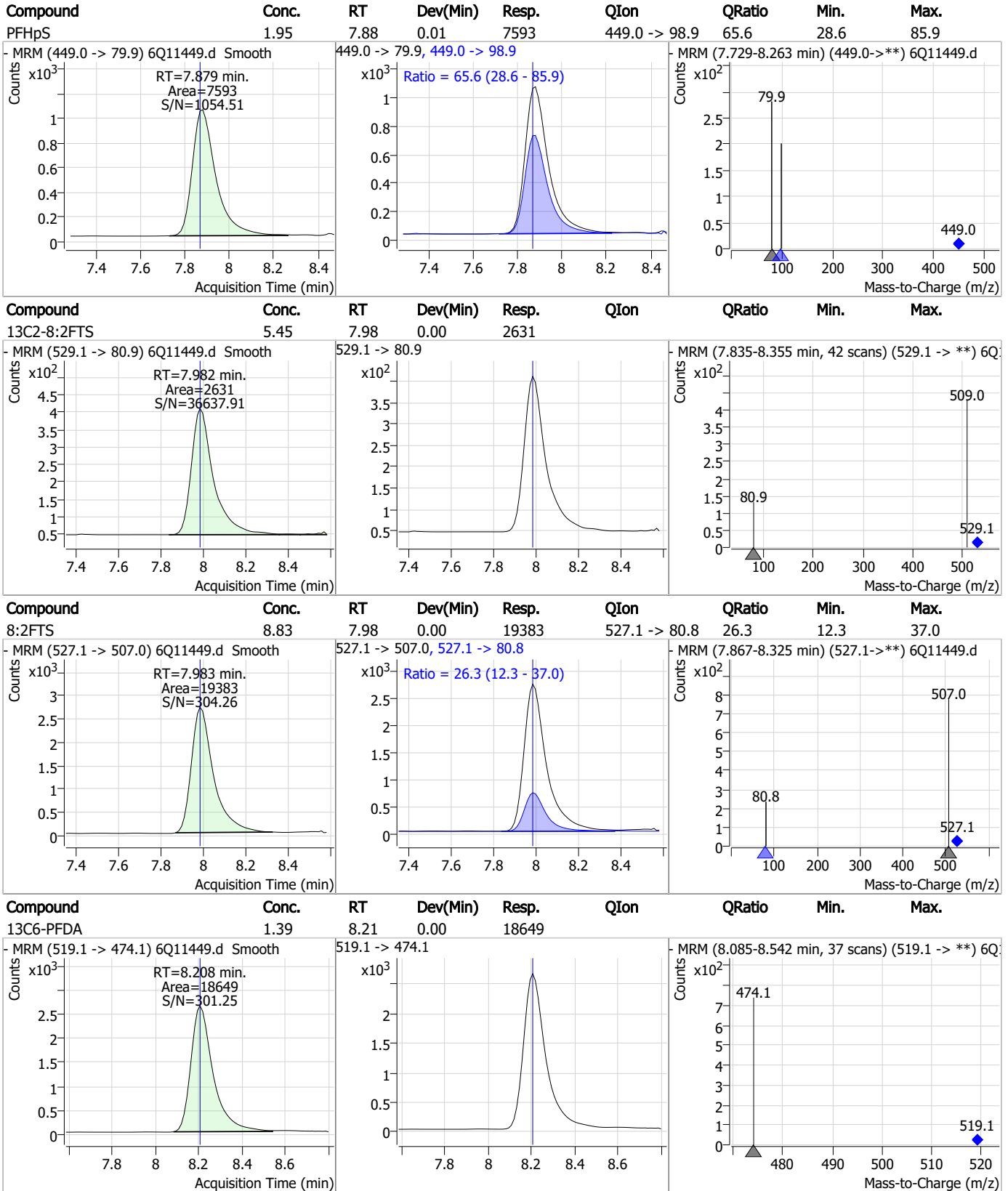
7.4.2
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Perfluorinated Compounds by LC/MS/MS



7.4.2
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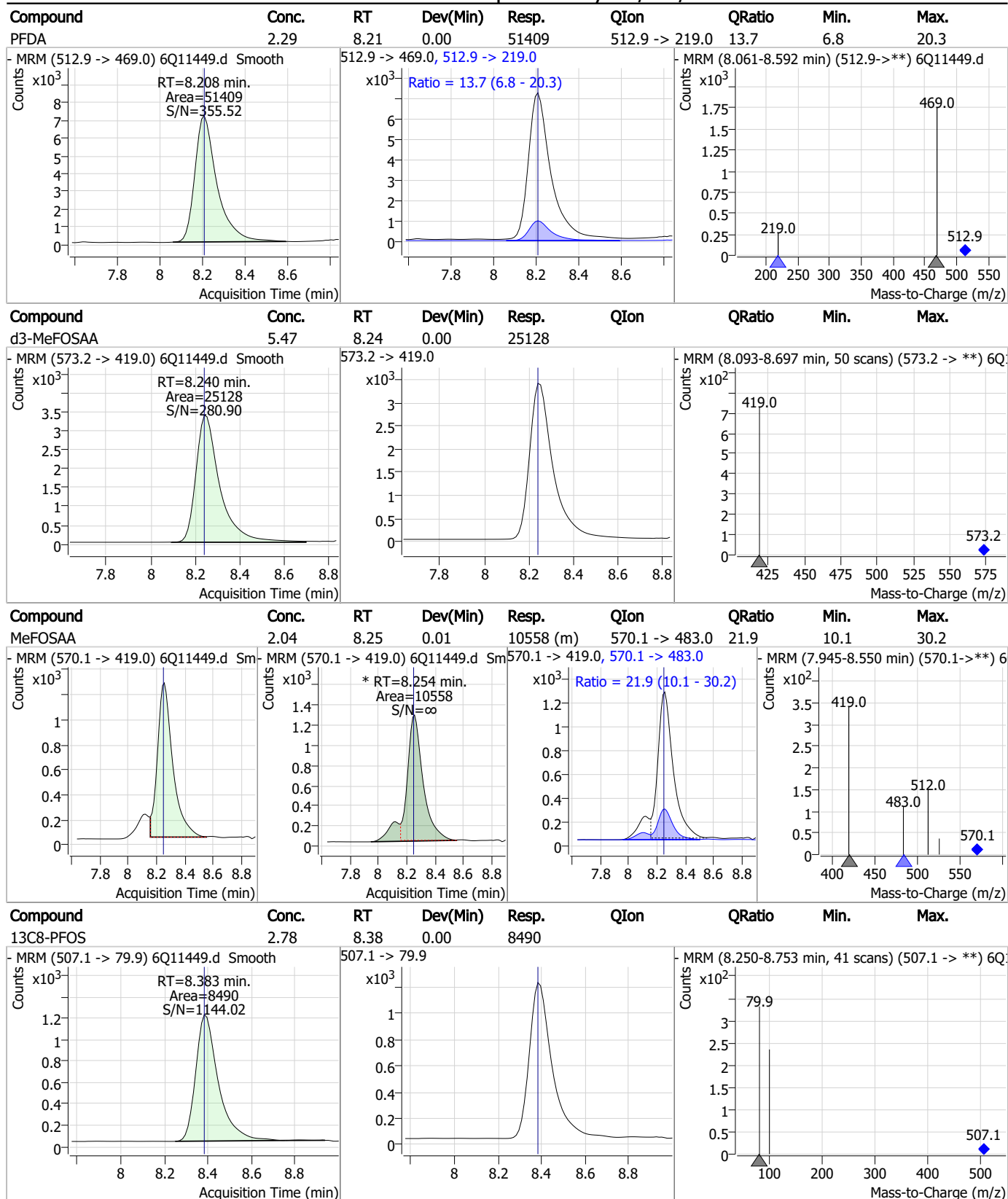
Perfluorinated Compounds by LC/MS/MS



7.4.2

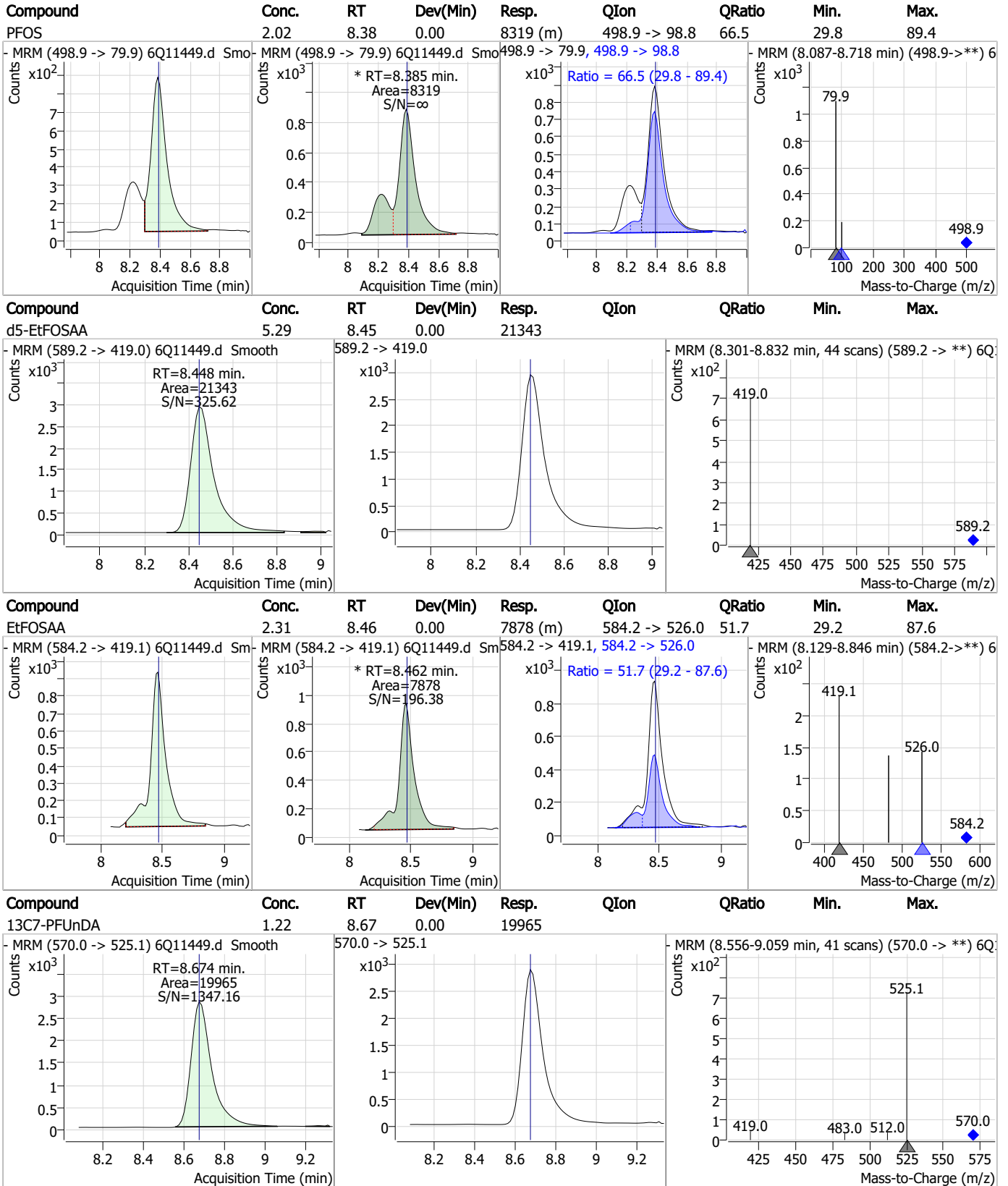
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Perfluorinated Compounds by LC/MS/MS

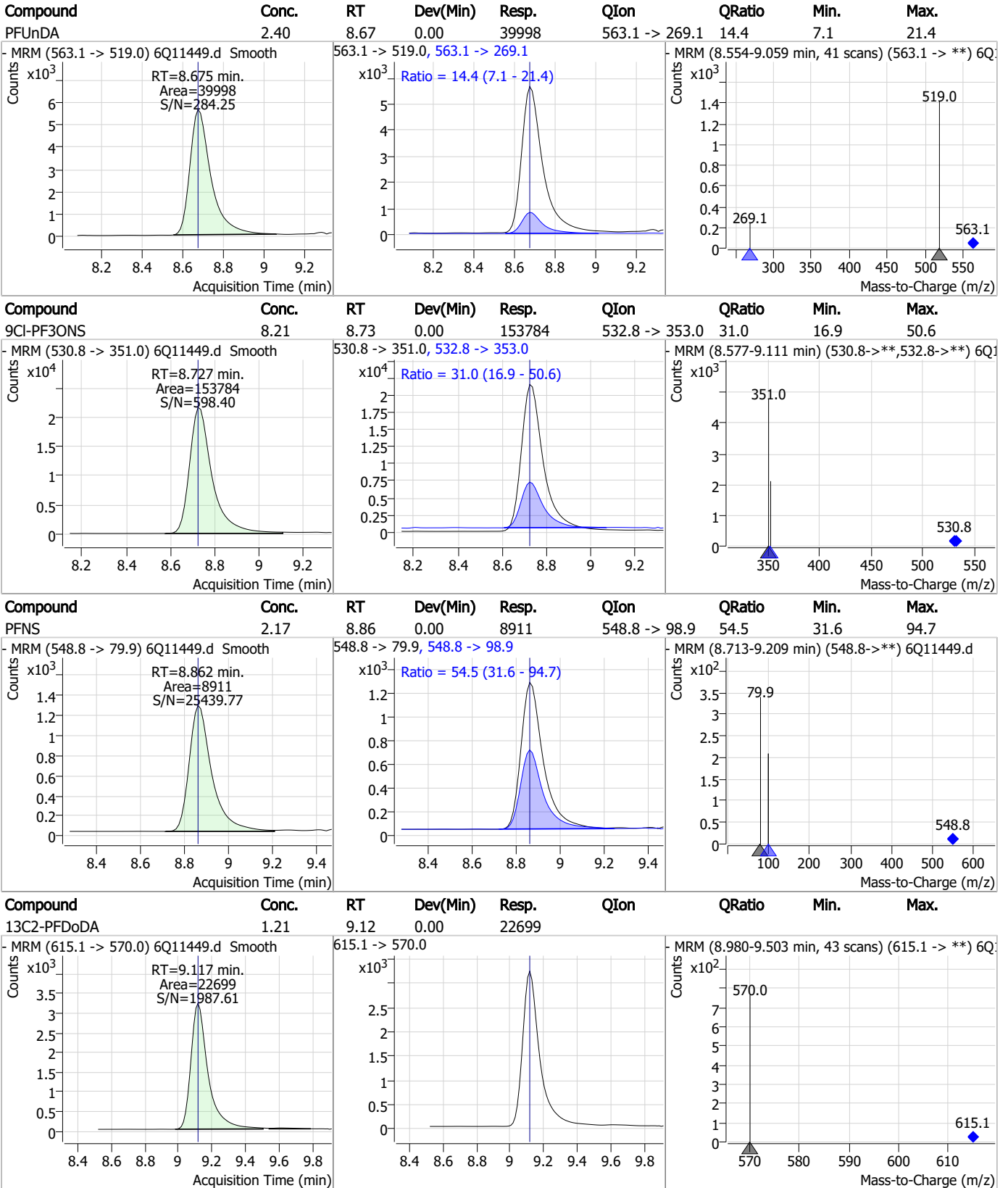


7.4.2
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Perfluorinated Compounds by LC/MS/MS



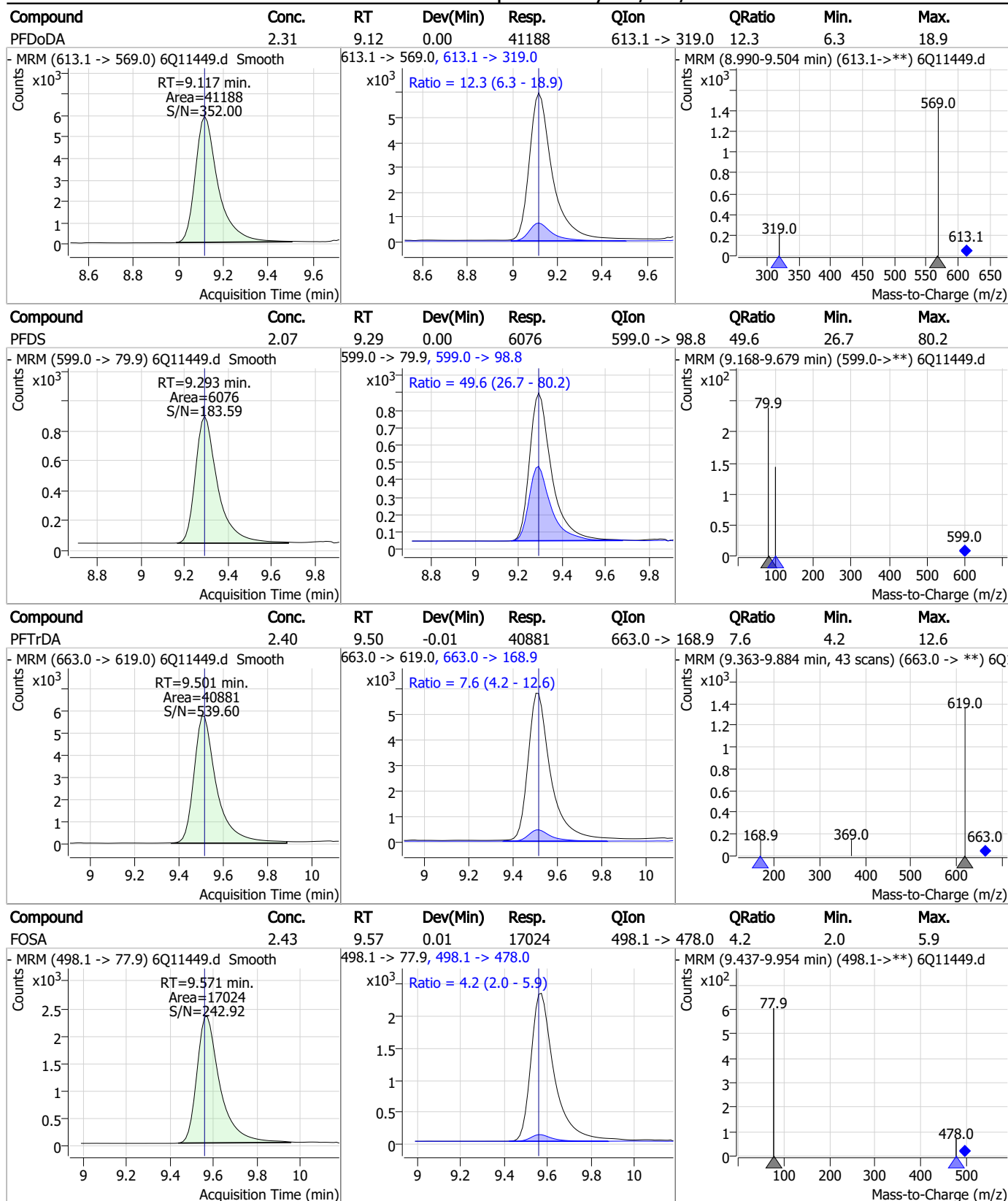
Perfluorinated Compounds by LC/MS/MS



7.4.2

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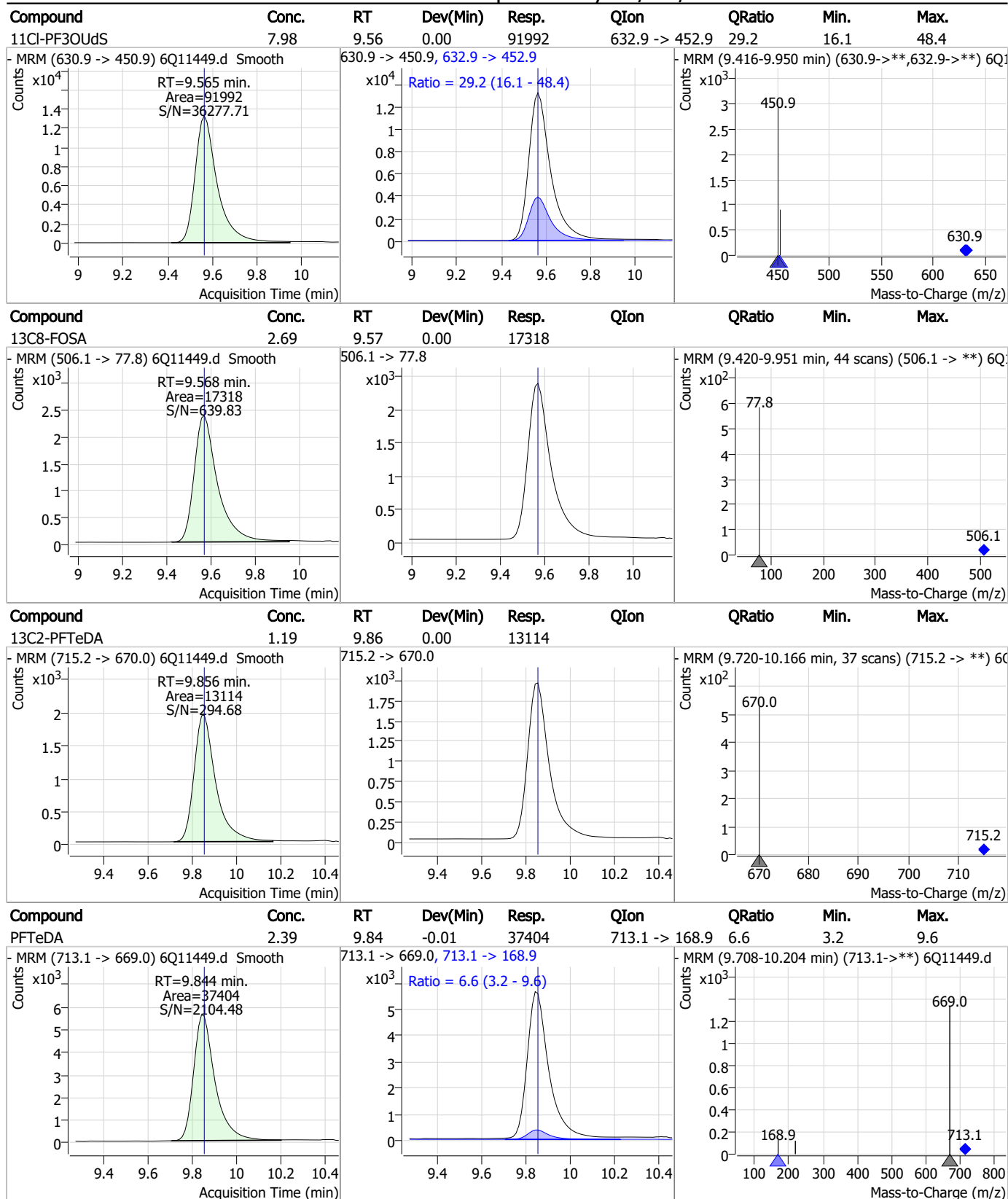
Perfluorinated Compounds by LC/MS/MS



7.4.2

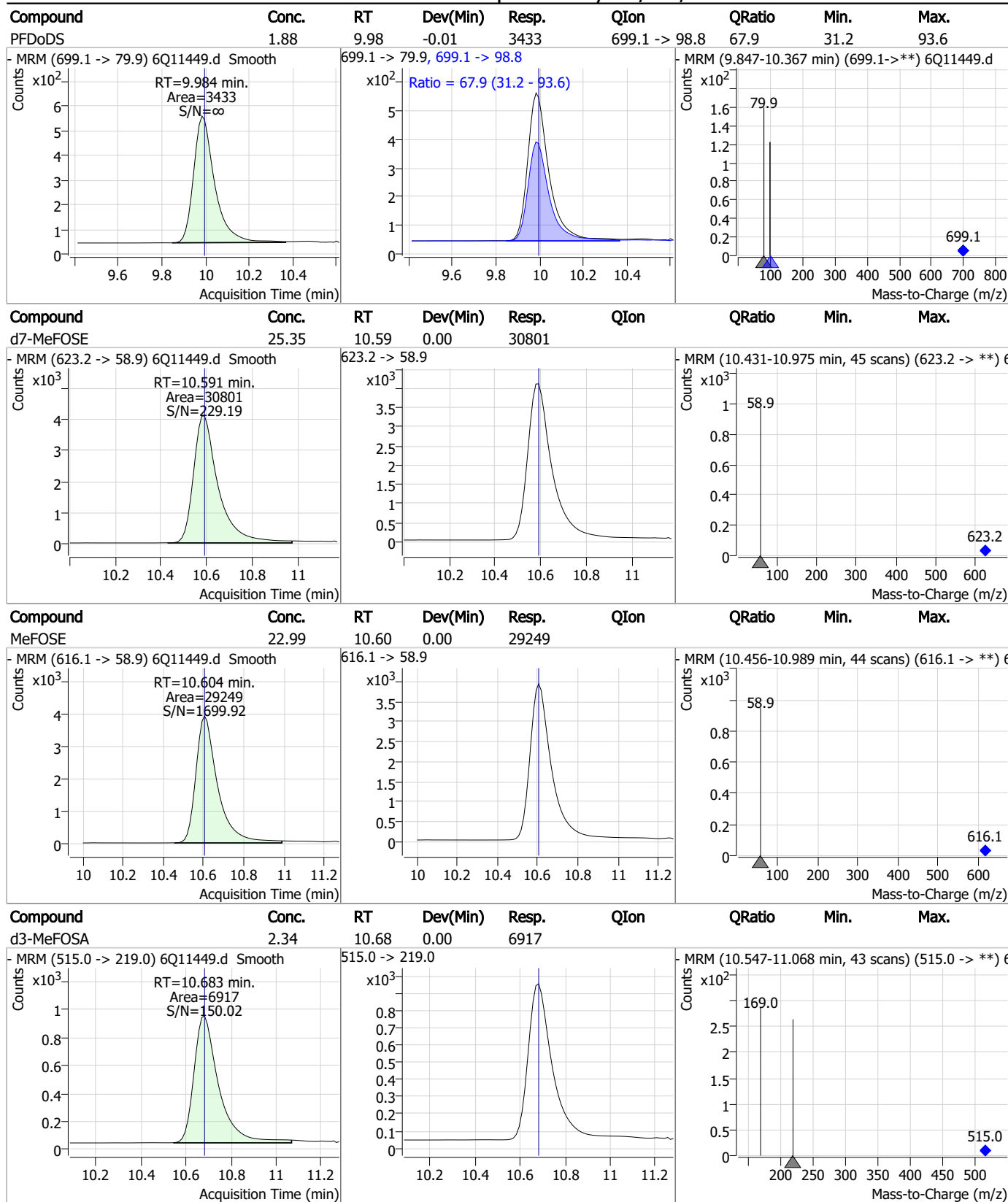
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Perfluorinated Compounds by LC/MS/MS



7.4.2
7

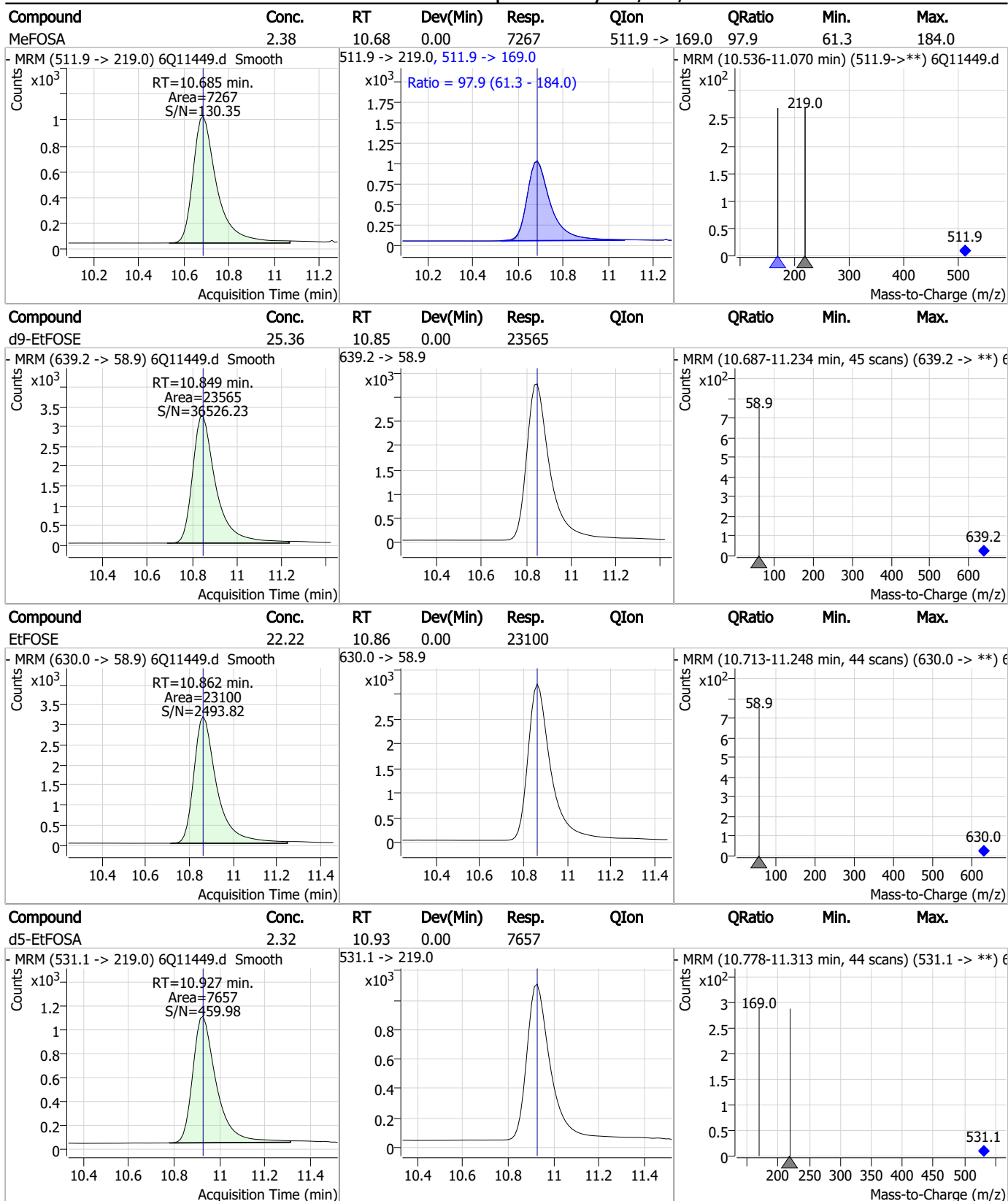
Perfluorinated Compounds by LC/MS/MS



7.4.2

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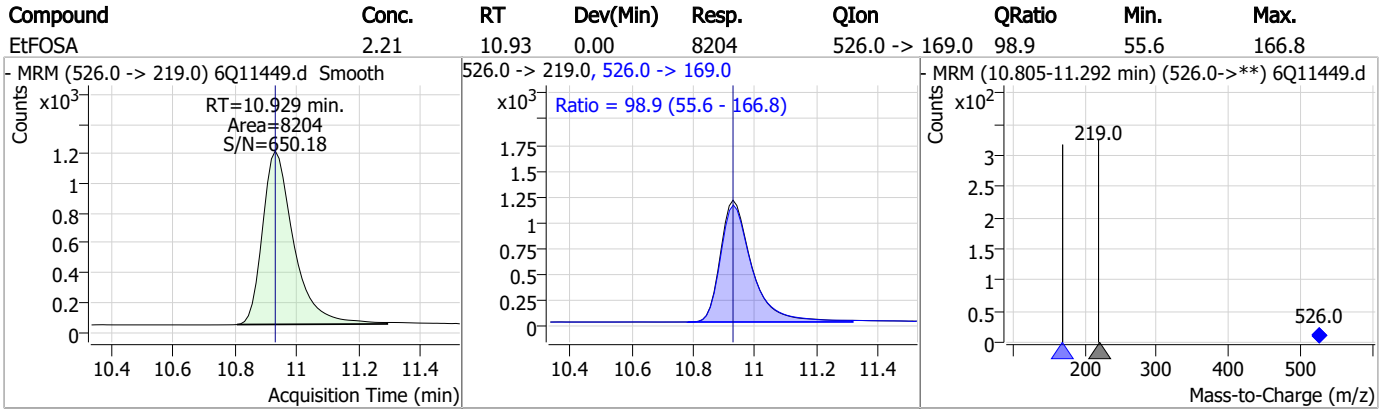
Perfluorinated Compounds by LC/MS/MS



7.4.2

7

Perfluorinated Compounds by LC/MS/MS



7.4.2

7

Manual Integration Approval Summary

Sample Number: OP94977-MSD Method: EPA DRAFT 1633
Lab FileID: 6Q11449.D Analyst approved: 01/18/23 10:23 Norman Farmer
Injection Time: 01/17/23 04:57 Supervisor approved: 01/18/23 10:26 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.16	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.30	Split peak
MeFOSAA	2355-31-9		8.25	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.38	Split peak
EtFOSAA	2991-50-6		8.46	Split peak

7.4.2.1

7

Manual Integrations
APPROVED
 (compounds with "m" flag)
 Natasha Gumtie
 01/12/23 15:42

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q10946.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/11/2023 11:03:43 AM
 Sample Name : RT TDCA
 Vial : P1-B3
 DA Method File : TDCA.quantmethod.xml
 Batch Name : S6Q174 TDCA.batch.bin
 Sample Information : OP94795,S6Q174,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M8-PFOS	8.432	507.1 -> 79.9	13323	2.50 µg/L	0.000
13C4-PFOS	8.421	502.8 -> 79.9	17365	2.50 µg/L	0.000
System Monitoring Compounds					
13C8-PFOS	8.432	507.1 -> 79.9	13323	1.95 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 77.8%		
Target Compounds					
PFOS	8.421	498.9 -> 79.9 498.9 -> 98.8	17636 11189	3.87 µg/L m	78
TCDCa	6.697	498.9 -> 79.9	2626	4.27 ng/ml	100
TDCA	6.846	498.9 -> 79.9	3909	7.02 ng/ml	100
TUDCA	5.820	498.9 -> 79.9	5204	4.41 ng/ml	100

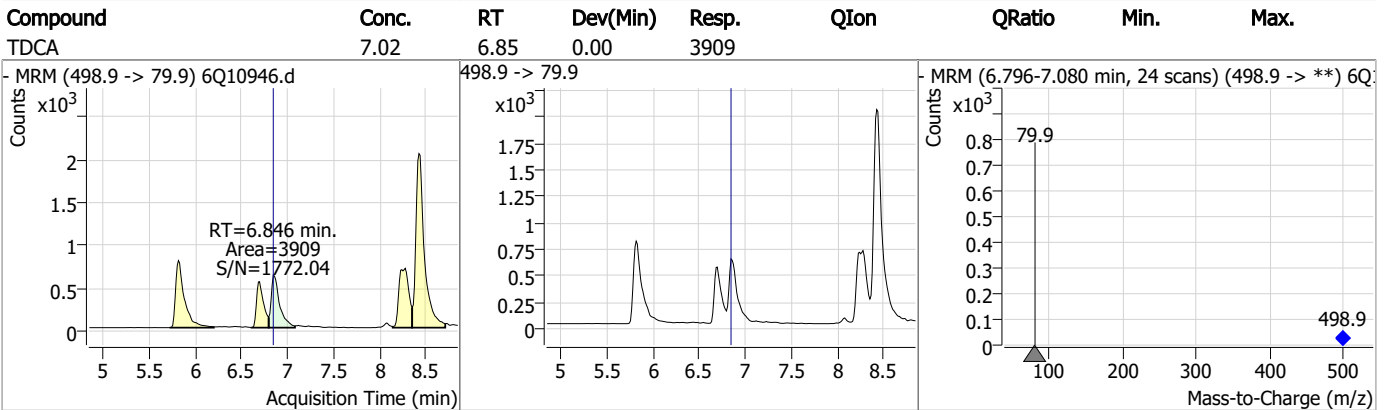
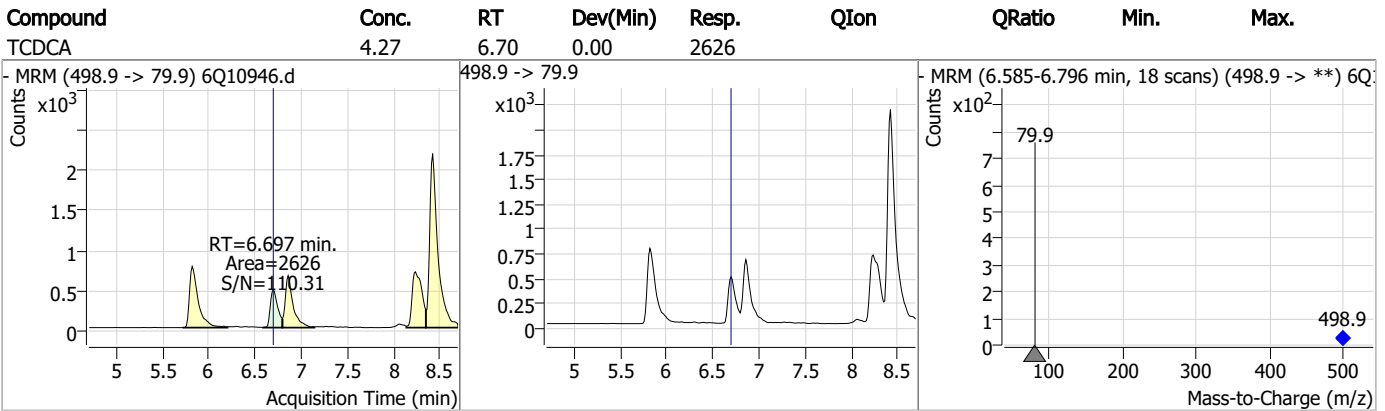
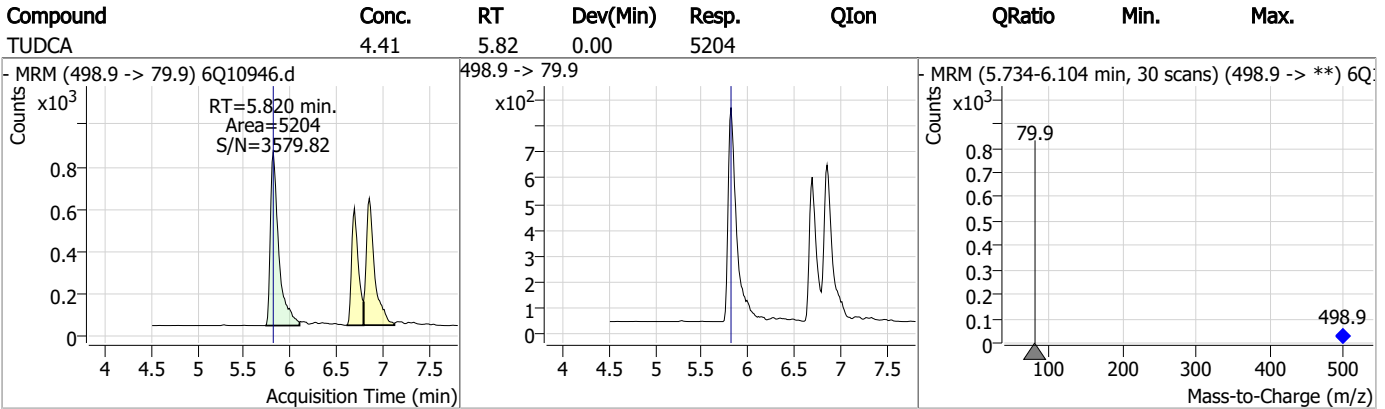
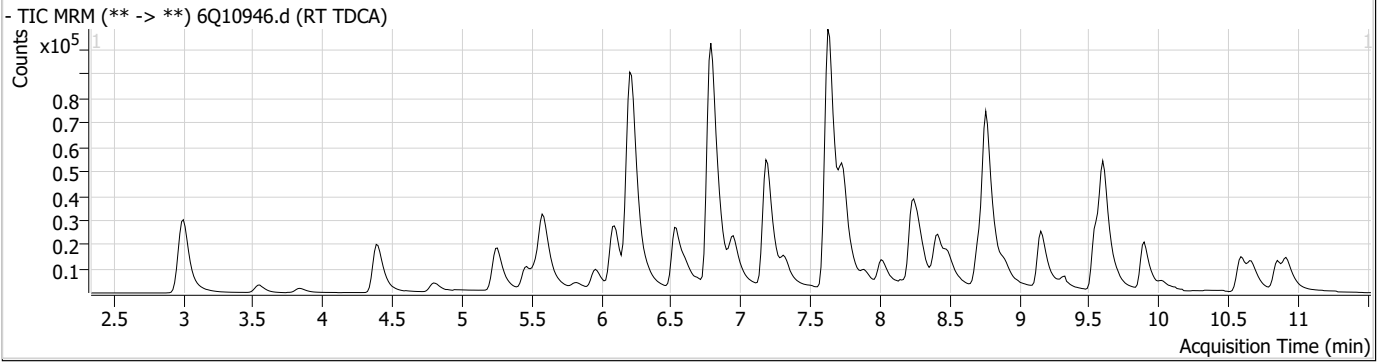
= Qualifier out of range, m = manually integrated, + = Area summed

7.5.1

7



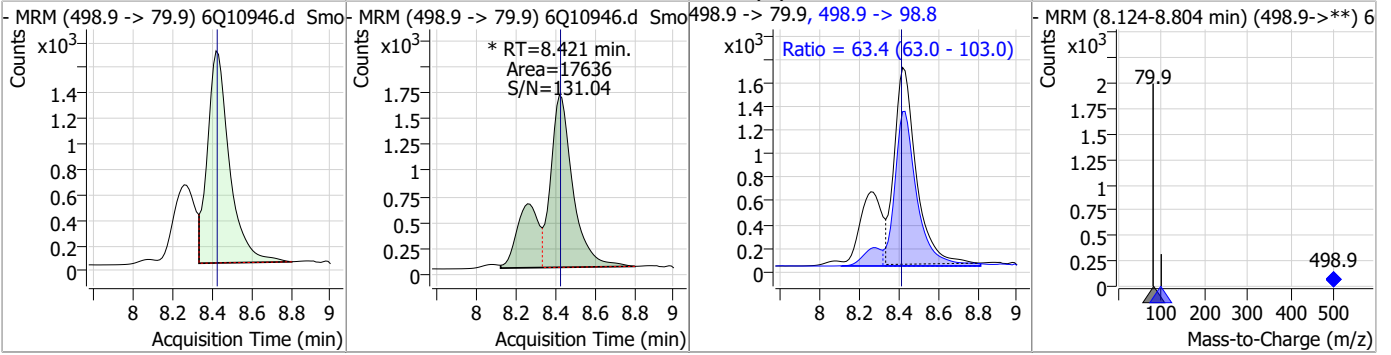
Perfluorinated Compounds by LC/MS/MS



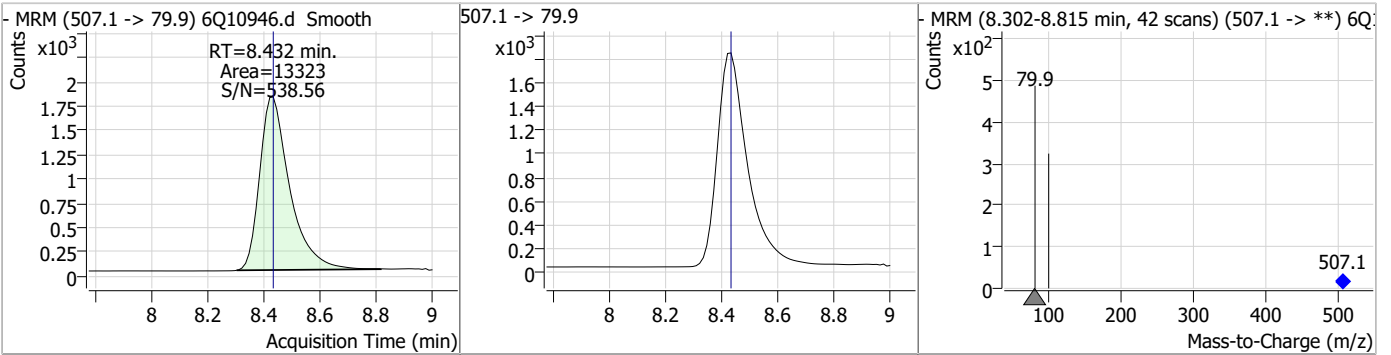
7.5.1
7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	3.87	8.42	0.00	17636 (m)	498.9 -> 98.8	63.4	63.0	103.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	1.95	8.43	0.00	13323				



7.5.1

7

Manual Integration Approval Summary

Sample Number: S6Q174-RT Method: EPA DRAFT 1633
Lab FileID: 6Q10946.D Analyst approved: 01/12/23 11:46 Martha Valls
Injection Time: 01/11/23 11:03 Supervisor approved: 01/12/23 15:42 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.42	Split peak

7.5.1.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q10947.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/11/2023 11:22:20 AM
 Sample Name : RT br-ln
 Vial : P1-B4
 DA Method File : 1633_011123_S6Q174.quantmethod.xml
 Batch Name : S6Q174.batch.bin
 Sample Information : OP94795,S6Q174,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.038	216.8 -> 171.9	90756	10.00 µg/L	0.037
M5-PFPeA	4.422	268.3 -> 223.0	44380	5.00 µg/L	0.025
M5-PFHxA	5.601	318.0 -> 273.0	39100	2.50 µg/L	0.012
M4-PFHpA	6.542	367.1 -> 322.0	41603	2.50 µg/L	0.000
M8-PFOA	7.197	421.1 -> 376.0	65523	2.50 µg/L	0.000
M9-PFNA	7.740	472.1 -> 427.0	29368	1.25 µg/L	0.000
M6-PFDA	8.245	519.1 -> 474.1	19681	1.25 µg/L	0.000
M7-PFUnDA	8.724	570.0 -> 525.1	24196	1.25 µg/L	0.012
M2-PFDoDA	9.166	615.1 -> 570.0	28199	1.25 µg/L	0.012
M2-PFTeDA	9.893	715.2 -> 670.0	17131	1.25 µg/L	0.000
M8-FOSA	9.568	506.1 -> 77.8	18910	2.50 µg/L	0.000
M3-PFBS	5.556	302.1 -> 79.9	14748	2.50 µg/L	0.000
M3-PFHxS	7.337	402.1 -> 79.9	8799	2.50 µg/L	0.000
M8-PFOS	8.432	507.1 -> 79.9	9303	2.50 µg/L	0.012
M2-4:2FTS	5.265	329.1 -> 80.9	1666	5.00 µg/L	0.012
M2-6:2FTS	6.958	429.1 -> 80.9	2370	5.00 µg/L	0.000
M2-8:2FTS	8.019	529.1 -> 80.9	2768	5.00 µg/L	0.000
M3-MeFOSAA	8.290	573.2 -> 419.0	25266	5.00 µg/L	0.012
M3-HFPO-DA	5.978	286.9 -> 168.9	15846	10.00 µg/L	0.000
M5-EtFOSAA	8.498	589.2 -> 419.0	20927	5.00 µg/L	0.012
M7-MeFOSE	10.591	623.2 -> 58.9	35438	25.00 µg/L	0.000
M9-EtFOSE	10.849	639.2 -> 58.9	25756	25.00 µg/L	0.000
M5-EtFOSA	10.927	531.1 -> 219.0	9535	2.50 µg/L	0.000
M3-MeFOSA	10.683	515.0 -> 219.0	8525	2.50 µg/L	0.000
13C4-PFOS	8.433	502.8 -> 79.9	10614	2.50 µg/L	0.012
13C3-PFBA	3.041	216.0 -> 172.0	40378	5.00 µg/L	0.037
18O2-PFHxS	7.336	403.0 -> 83.9	6936	2.50 µg/L	0.000
13C4-PFOA	7.198	417.1 -> 372.0	81259	2.50 µg/L	0.000
13C2-PFDA	8.245	515.1 -> 470.1	28390	1.25 µg/L	0.000
13C5-PFNA	7.740	468.0 -> 423.0	33565	1.25 µg/L	0.000
13C2-PFHxA	5.602	315.1 -> 270.0	39511	2.50 µg/L	0.012
System Monitoring Compounds					
13C2-4:2FTS	5.265	329.1 -> 80.9	1666	4.61 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 92.1%		
13C2-6:2FTS	6.958	429.1 -> 80.9	2370	4.78 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 95.7%		
13C2-8:2FTS	8.019	529.1 -> 80.9	2768	5.12 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.4%		
13C2-PFDoDA	9.166	615.1 -> 570.0	28199	1.25 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.2%		
13C2-PFTeDA	9.893	715.2 -> 670.0	17131	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.6%		
13C3-PFBS	5.556	302.1 -> 79.9	14748	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.4%		
13C3-PFHxS	7.337	402.1 -> 79.9	8799	2.34 µg/L	0.000

7.52
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 = 93.5%	
13C4-PFBA	3.038	216.8 -> 171.9	90756	9.84 µg/L	0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C4-PFHpA	6.542	367.1 -> 322.0	41603	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.9%	
13C5-PFHxA	5.601	318.0 -> 273.0	39100	2.46 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C5-PFPeA	4.422	268.3 -> 223.0	44380	5.03 µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C6-PFDA	8.245	519.1 -> 474.1	19681	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.4%	
13C7-PFUnDA	8.724	570.0 -> 525.1	24196	1.23 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.1%	
13C8-FOSA	9.568	506.1 -> 77.8	18910	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.5%	
13C8-PFOA	7.197	421.1 -> 376.0	65523	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.2%	
13C8-PFOS	8.432	507.1 -> 79.9	9303	2.74 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.7%	
13C9-PFNA	7.740	472.1 -> 427.0	29368	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.5%	
d3-MeFOSAA	8.290	573.2 -> 419.0	25266	4.94 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.9%	
13C3-HFPO-DA	5.978	286.9 -> 168.9	15846	9.72 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.2%	
d3-MeFOSA	10.683	515.0 -> 219.0	8525	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.9%	
d5-EtFOSAA	8.498	589.2 -> 419.0	20927	4.67 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.3%	
d7-MeFOSE	10.591	623.2 -> 58.9	35438	26.23 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 104.9%	
d9-EtFOSE	10.849	639.2 -> 58.9	25756	24.93 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
d5-EtFOSA	10.927	531.1 -> 219.0	9535	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.7%	
Target Compounds					QValue
4:2FTS	5.266	327.1 -> 307.0	198926	50.20 µg/L	96
		327.1 -> 80.9	45454		
6:2FTS	6.959	427.1 -> 407.0	168323	45.65 µg/L	99
		427.1 -> 80.9	34135		
8:2FTS	8.020	527.1 -> 507.0	99523	43.10 µg/L	97
		527.1 -> 80.8	25589		
EtFOSAA	8.499	584.2 -> 419.1	47690	14.28 µg/L	m 89
		584.2 -> 526.0	26142		
FOSA	9.571	498.1 -> 77.9	231431	30.30 µg/L	m 99
		498.1 -> 478.0	8643		
MeFOSAA	8.290	570.1 -> 419.0	60526	11.62 µg/L	93
		570.1 -> 483.0	11228		
PFBA	3.044	212.8 -> 168.9	118482	50.89 µg/L	100
PFBS	5.557	298.7 -> 79.9	63694	10.67 µg/L	97
		298.7 -> 98.8	29462		
PFDA	8.246	512.9 -> 469.0	316318	13.37 µg/L	100
		512.9 -> 219.0	41791		
PFDoDA	9.166	613.1 -> 569.0	278751	12.57 µg/L	96
		613.1 -> 319.0	35547		
PFDS	9.344	599.0 -> 79.9	38214	11.90 µg/L	95

7.5.2
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	18973			
PFHpA	6.542	363.1 -> 319.0	297622	11.86	µg/L	99
		363.1 -> 169.0	39481			
PFHpS	7.917	449.0 -> 79.9	48765	11.46	µg/L	91
		449.0 -> 98.9	26733			
PFHxA	5.604	313.0 -> 269.0	197447	12.50	µg/L	99
		313.0 -> 118.9	7373			
PFHxS	7.338	398.7 -> 79.9	49218	11.75	µg/L	m 93
		398.7 -> 98.9	26782			
PFNA	7.740	463.0 -> 419.0	523399	25.76	µg/L	m 92
		463.0 -> 219.0	115721			
PFNS	8.911	548.8 -> 79.9	48552	10.81	µg/L	96
		548.8 -> 98.9	30449			
PFOA	7.199	413.0 -> 369.0	785203	26.78	µg/L	m 100
		413.0 -> 169.0	113040			
PFOS	8.434	498.9 -> 79.9	46572	10.34	µg/L	m 90
		498.9 -> 98.8	29504			
PFPeA	4.426	263.0 -> 219.0	241498	24.78	µg/L	100
PFPeS	6.632	349.1 -> 79.9	59493	12.00	µg/L	97
		349.1 -> 98.9	32449			
PFTeDA	9.894	713.1 -> 669.0	248661	12.18	µg/L	100
		713.1 -> 168.9	16054			
PFTrDA	9.550	663.0 -> 619.0	282661	13.35	µg/L	97
		663.0 -> 168.9	21317			
PFUnDA	8.725	563.1 -> 519.0	263199	13.01	µg/L	100
		563.1 -> 269.1	39663			
11CI-PF3OUdS	9.614	630.9 -> 450.9	613170	51.03	µg/L	100
		632.9 -> 452.9	190687			
9CI-PF3ONS	8.776	530.8 -> 351.0	924827	47.37	µg/L	98
		532.8 -> 353.0	289772			
ADONA	6.804	376.9 -> 250.9	1739268	49.37	µg/L	98
		376.9 -> 84.8	378191			
HFPO-DA	5.978	284.9 -> 168.9	82175	51.28	µg/L	98
		284.9 -> 184.9	9255			
3:3FTCA	3.902	241.0 -> 177.0	32480	62.56	µg/L	99
		241.0 -> 117.0	4034			
5:3FTCA	6.232	341.0 -> 237.1	982898	299.15	µg/L	96
		341.0 -> 217.0	865451			
7:3FTCA	7.656	441.0 -> 316.9	717708	324.07	µg/L	92
		441.0 -> 336.9	1386934			
EtFOSA	10.929	526.0 -> 219.0	141417	30.65	µg/L	86
		526.0 -> 169.0	159413			
EtFOSE	10.862	630.0 -> 58.9	167338	147.27	µg/L	100
MeFOSA	10.685	511.9 -> 219.0	112519	29.87	µg/L	81
		511.9 -> 169.0	136774			
MeFOSE	10.604	616.1 -> 58.9	198010	135.28	µg/L	100
PFDoDS	10.033	699.1 -> 79.9	22588	11.28	µg/L	100
		699.1 -> 98.8	13630			
NFDHA	5.483	295.0 -> 201.0	23253	22.69	µg/L	95
		295.0 -> 84.9	10870			
PFMBA	4.826	279.0 -> 85.1	74035	24.36	µg/L	100
PFMPA	3.579	229.0 -> 84.9	66100	24.50	µg/L	100
PFEESA	6.109	314.8 -> 134.9	487684	22.17	µg/L	100
		314.8 -> 82.9	12572			

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

7.5.2
7

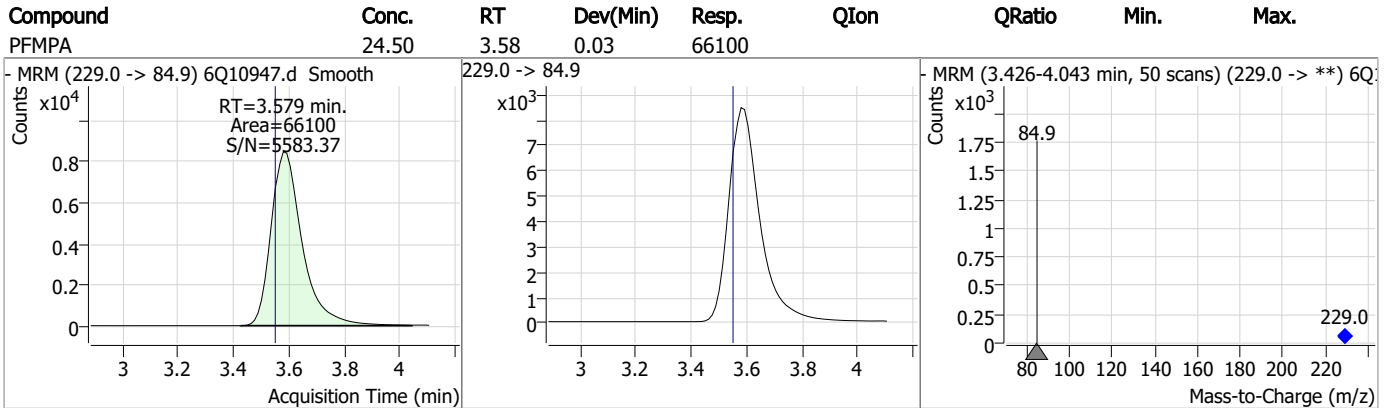
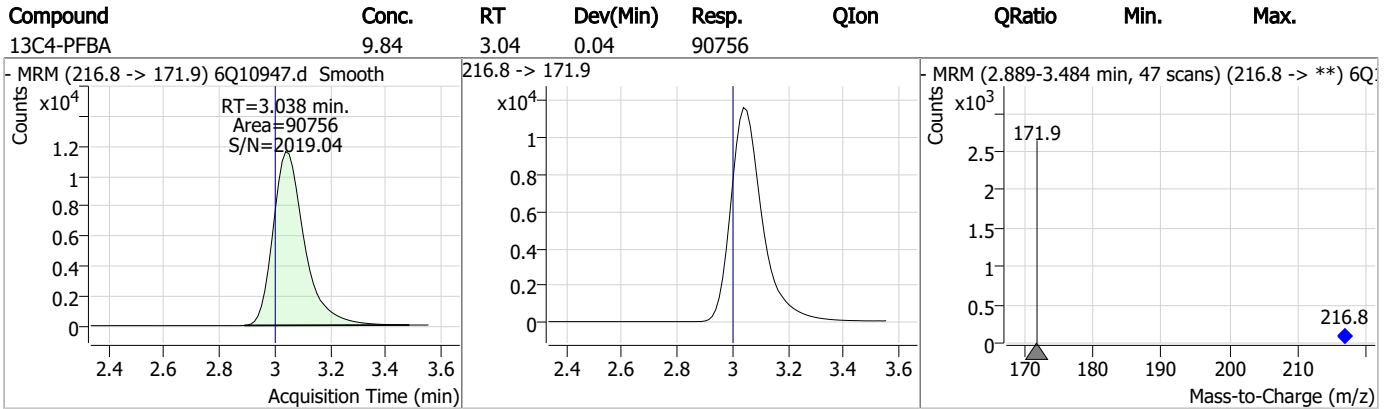
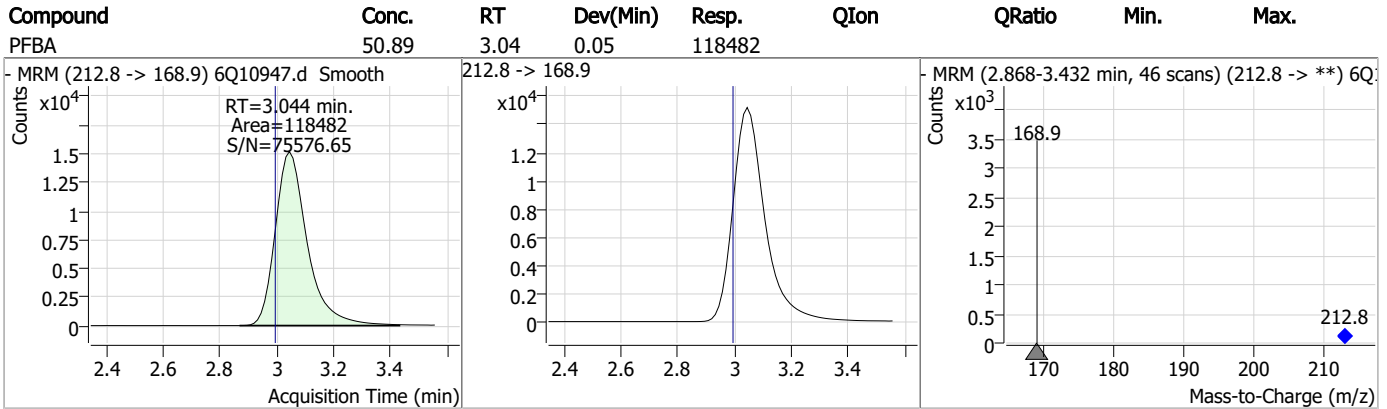
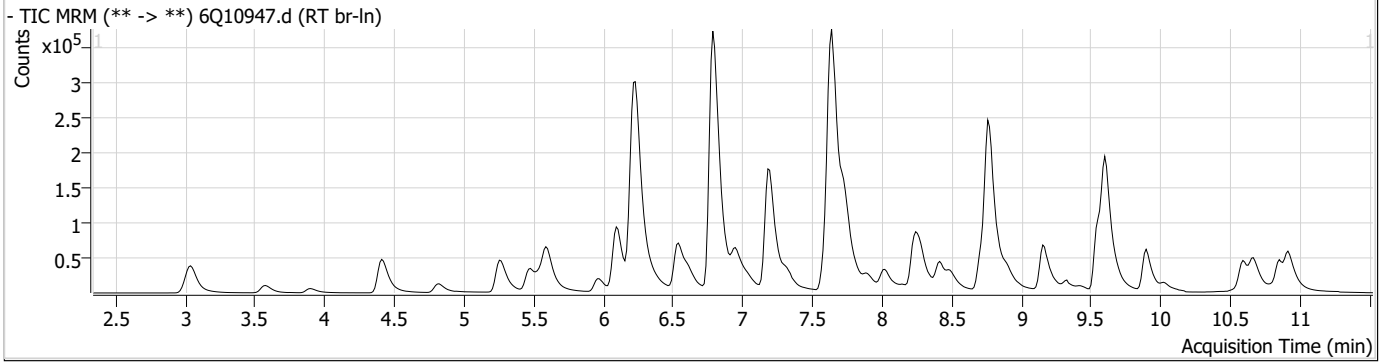
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.5.2

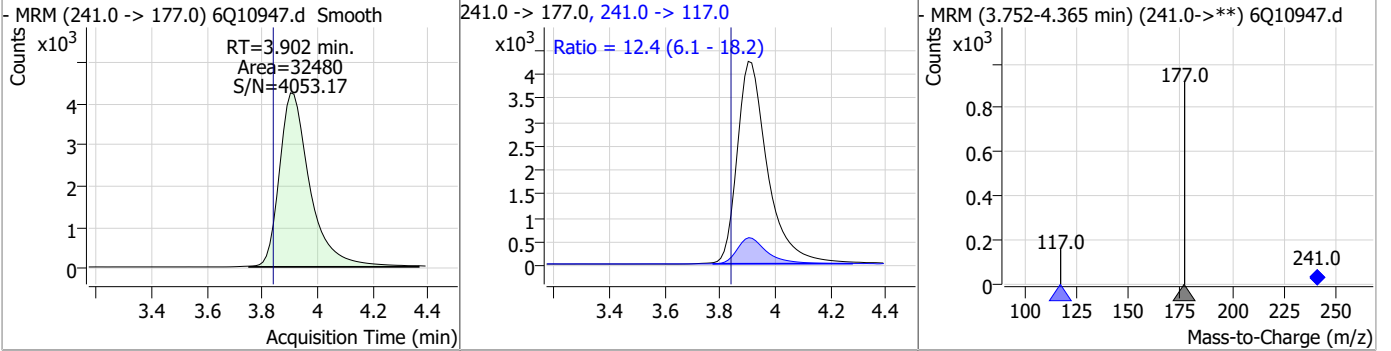
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Perfluorinated Compounds by LC/MS/MS

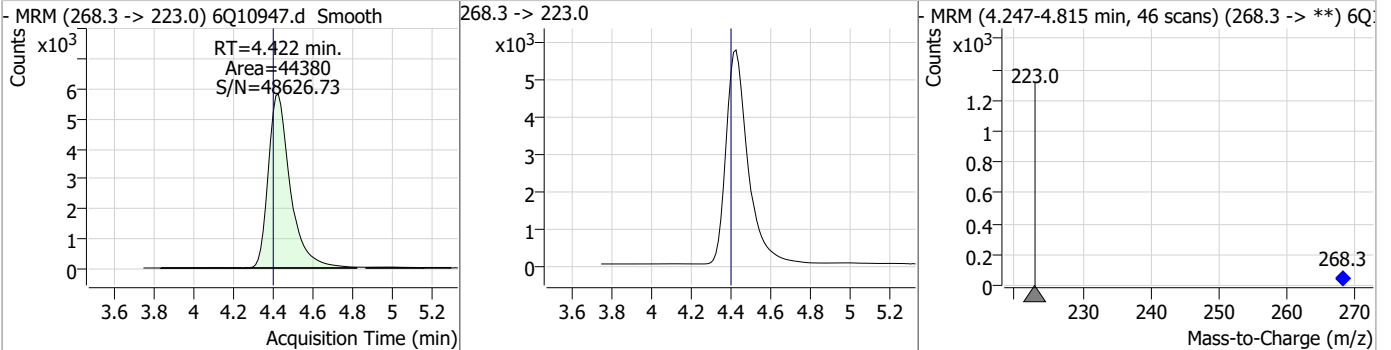


Perfluorinated Compounds by LC/MS/MS

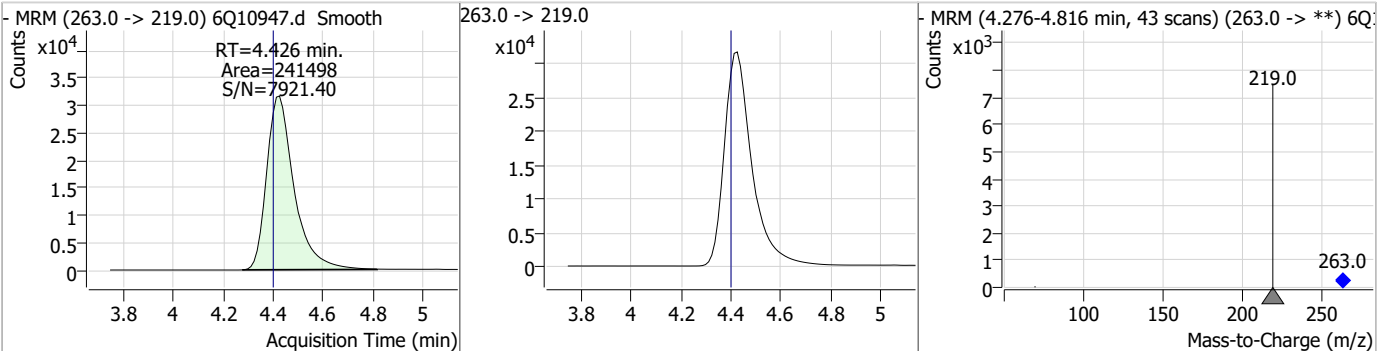
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	62.56	3.90	0.06	32480	241.0 -> 117.0	12.4	6.1	18.2



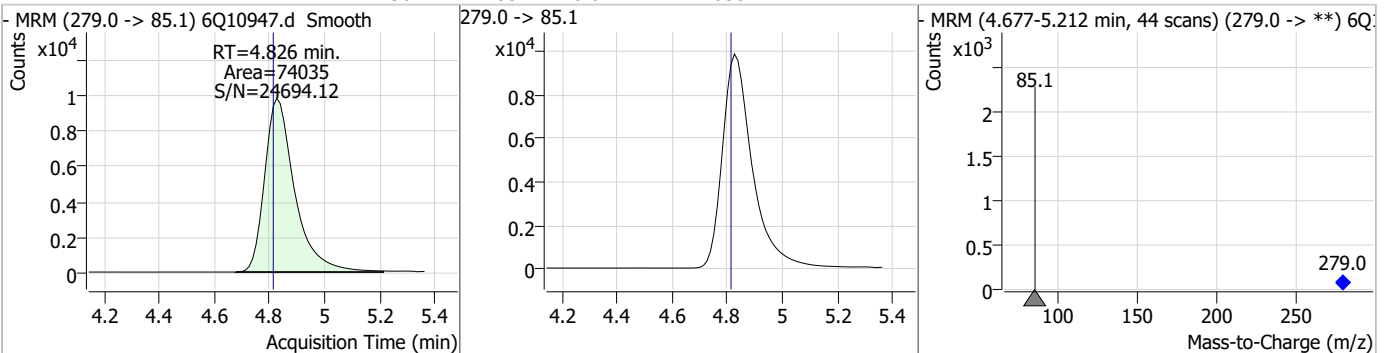
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.03	4.42	0.02	44380				



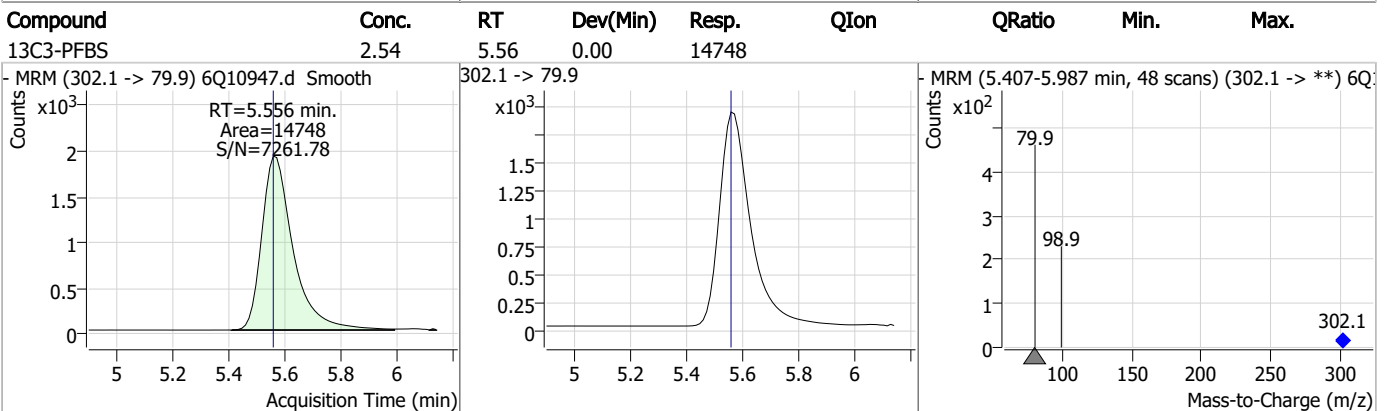
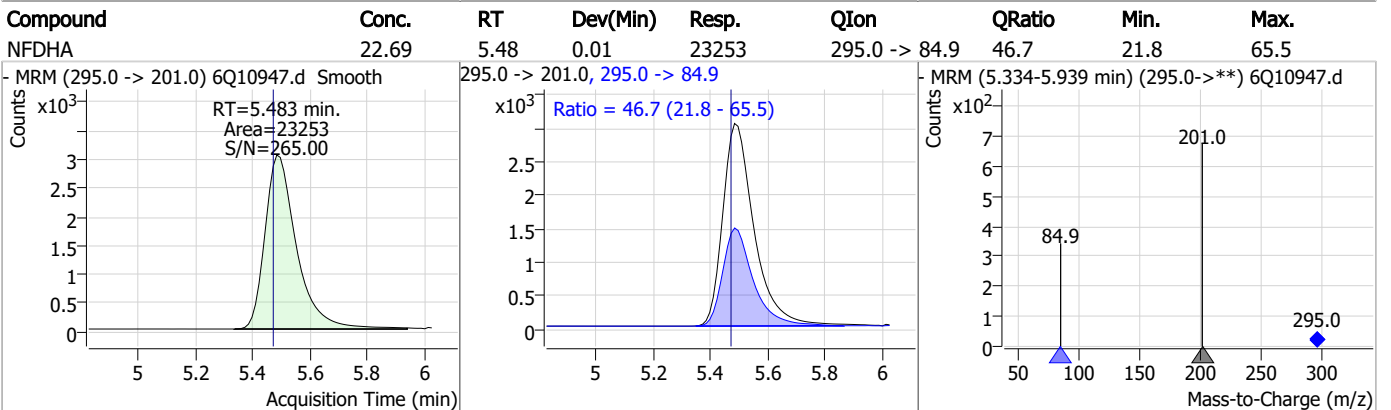
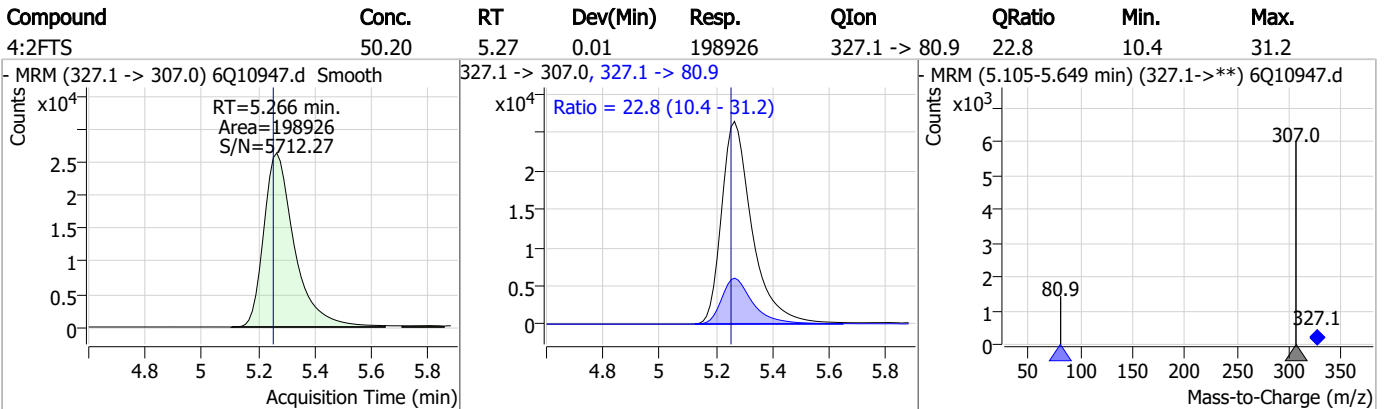
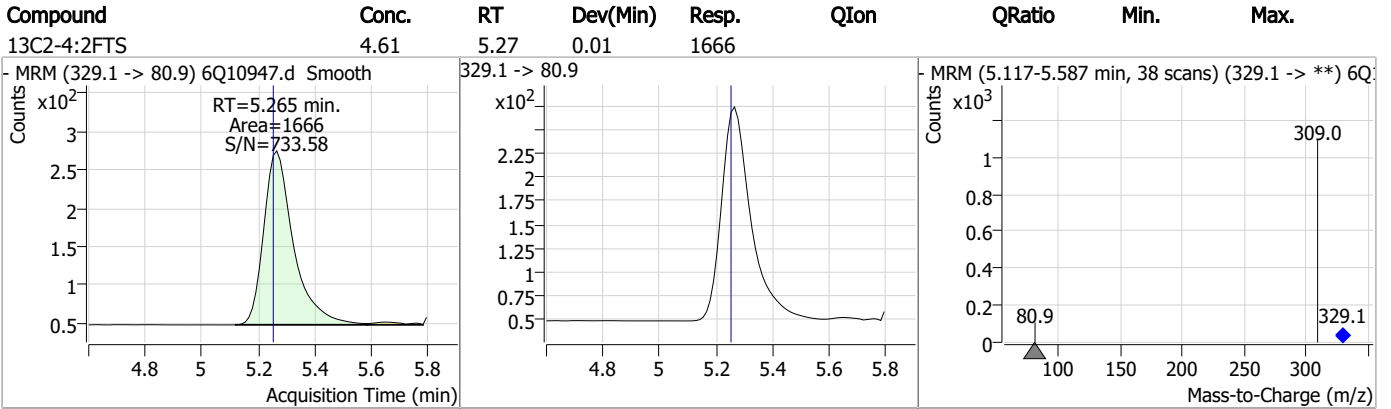
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	24.78	4.43	0.02	241498				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	24.36	4.83	0.01	74035				

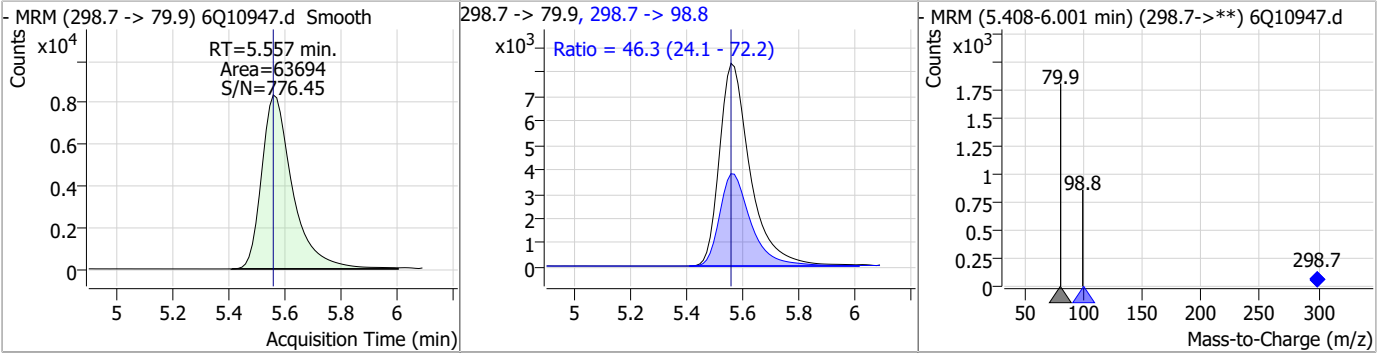


Perfluorinated Compounds by LC/MS/MS

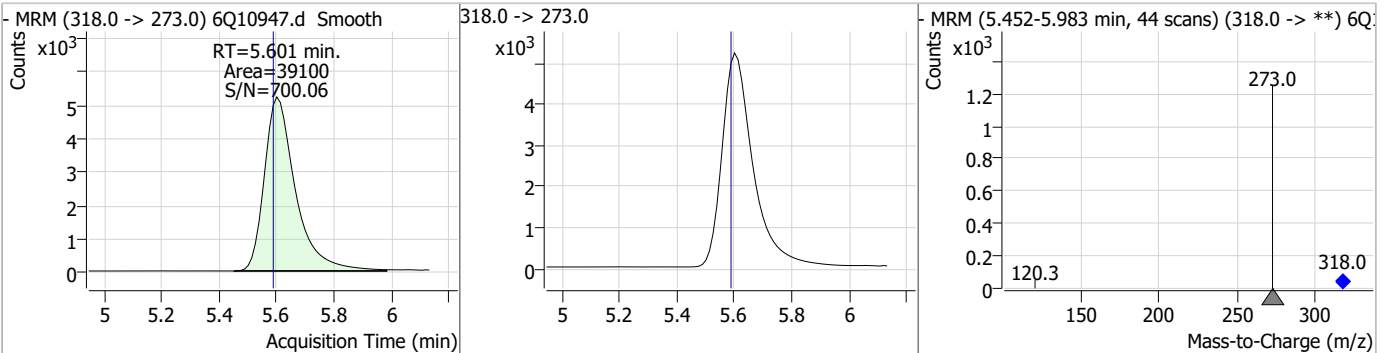


Perfluorinated Compounds by LC/MS/MS

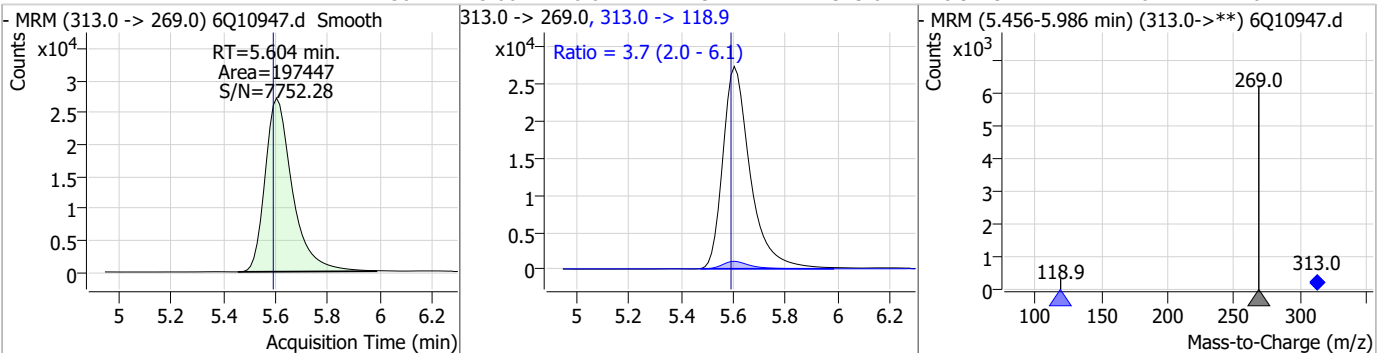
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	10.67	5.56	0.00	63694	298.7 -> 98.8	46.3	24.1	72.2



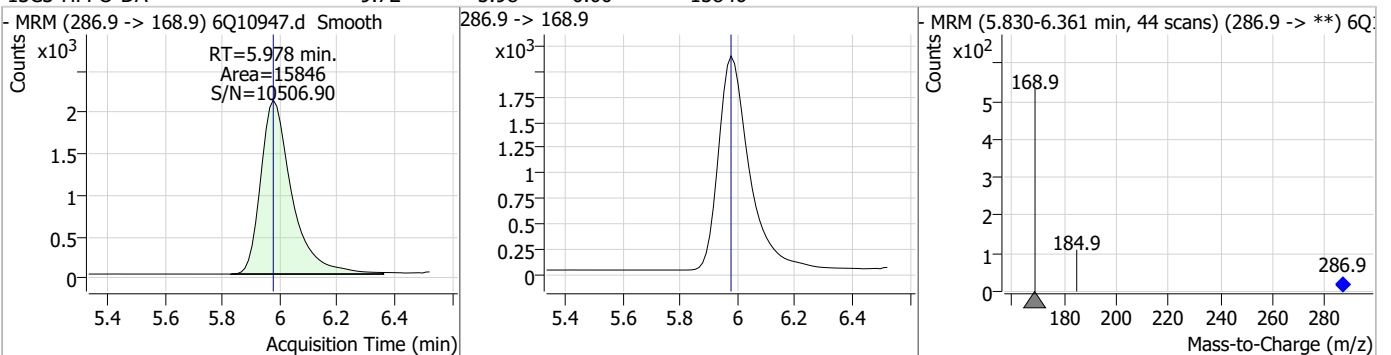
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.46	5.60	0.01	39100				



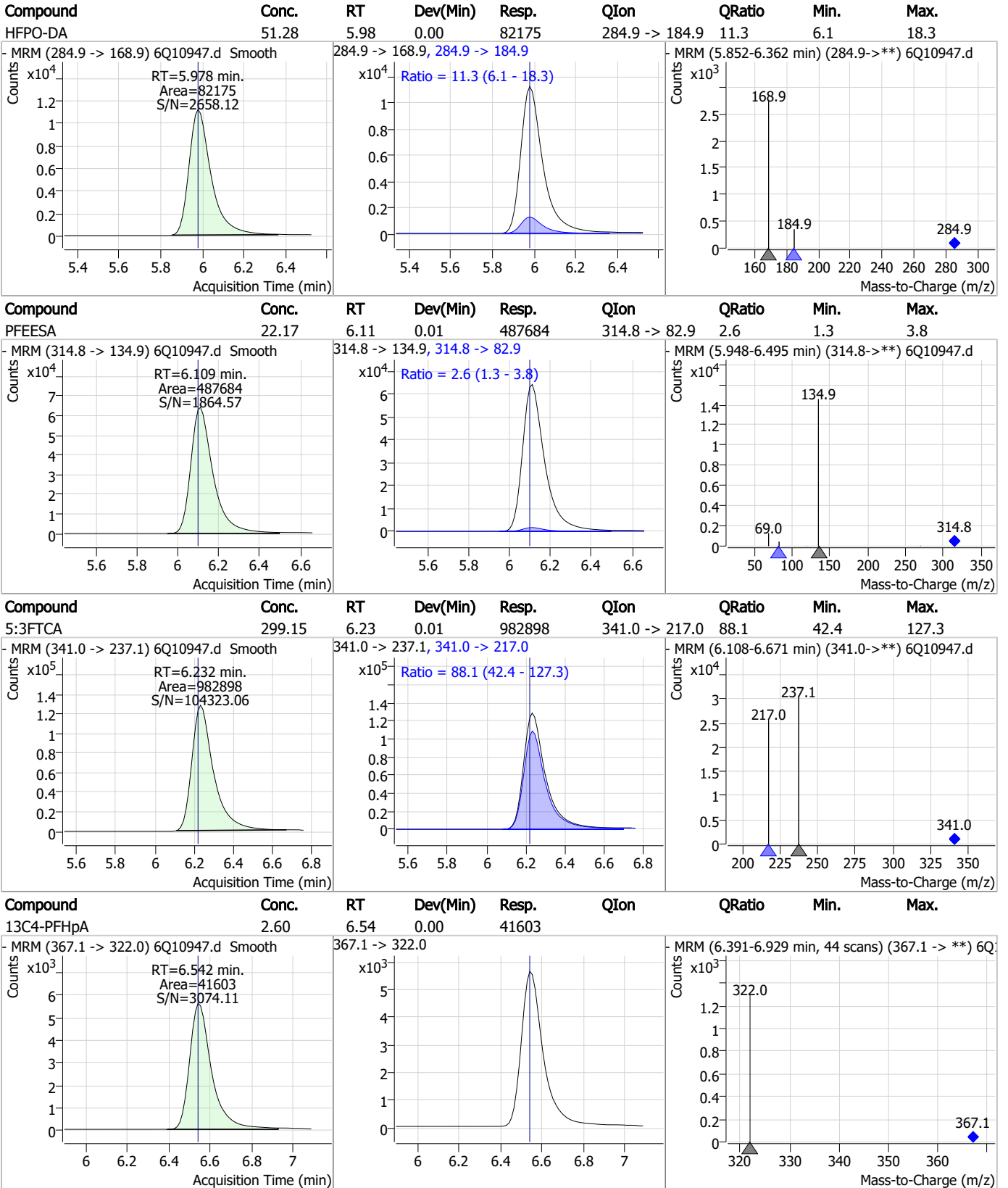
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	12.50	5.60	0.01	197447	313.0 -> 118.9	3.7	2.0	6.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.72	5.98	0.00	15846				



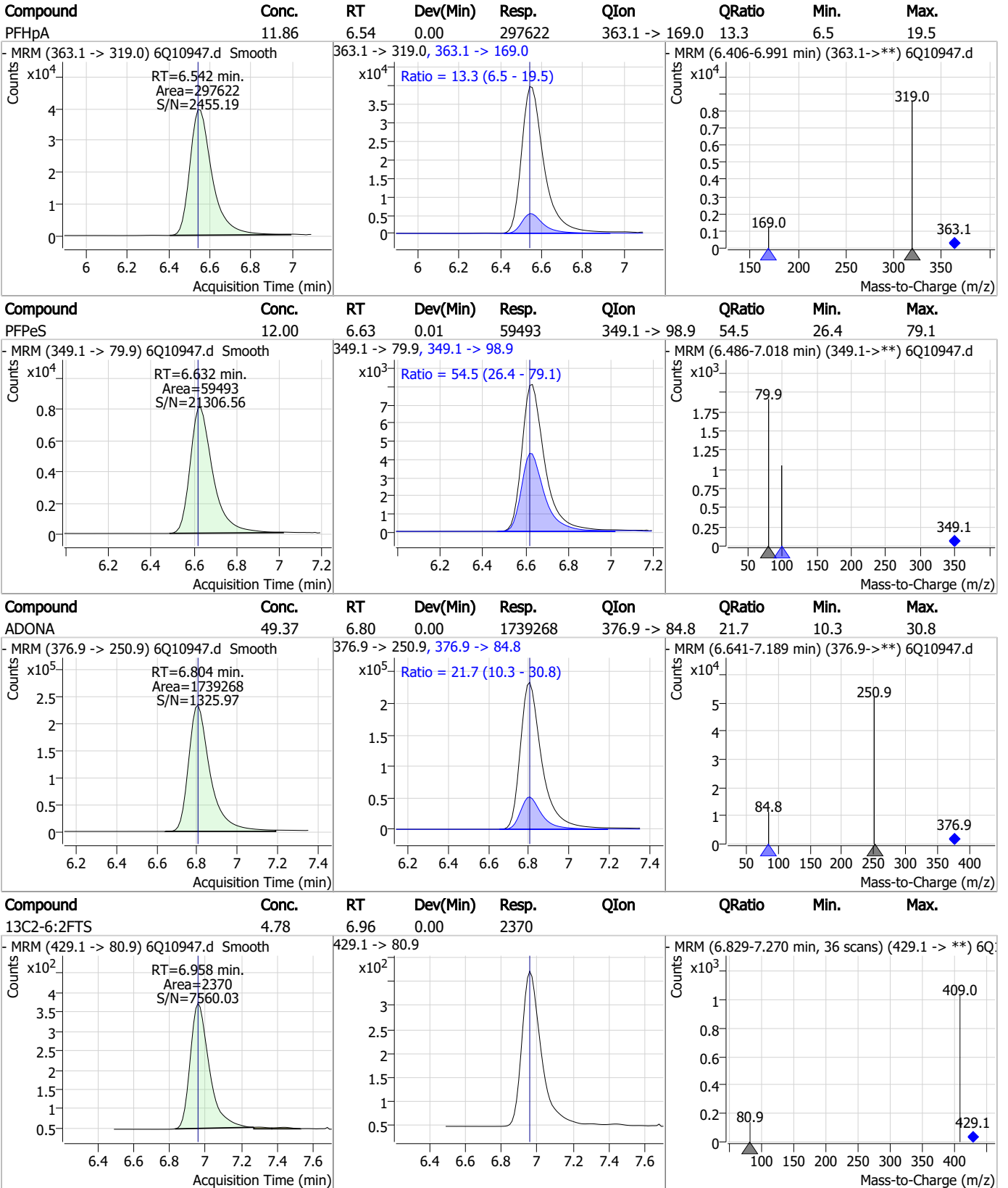
Perfluorinated Compounds by LC/MS/MS



7.5.2

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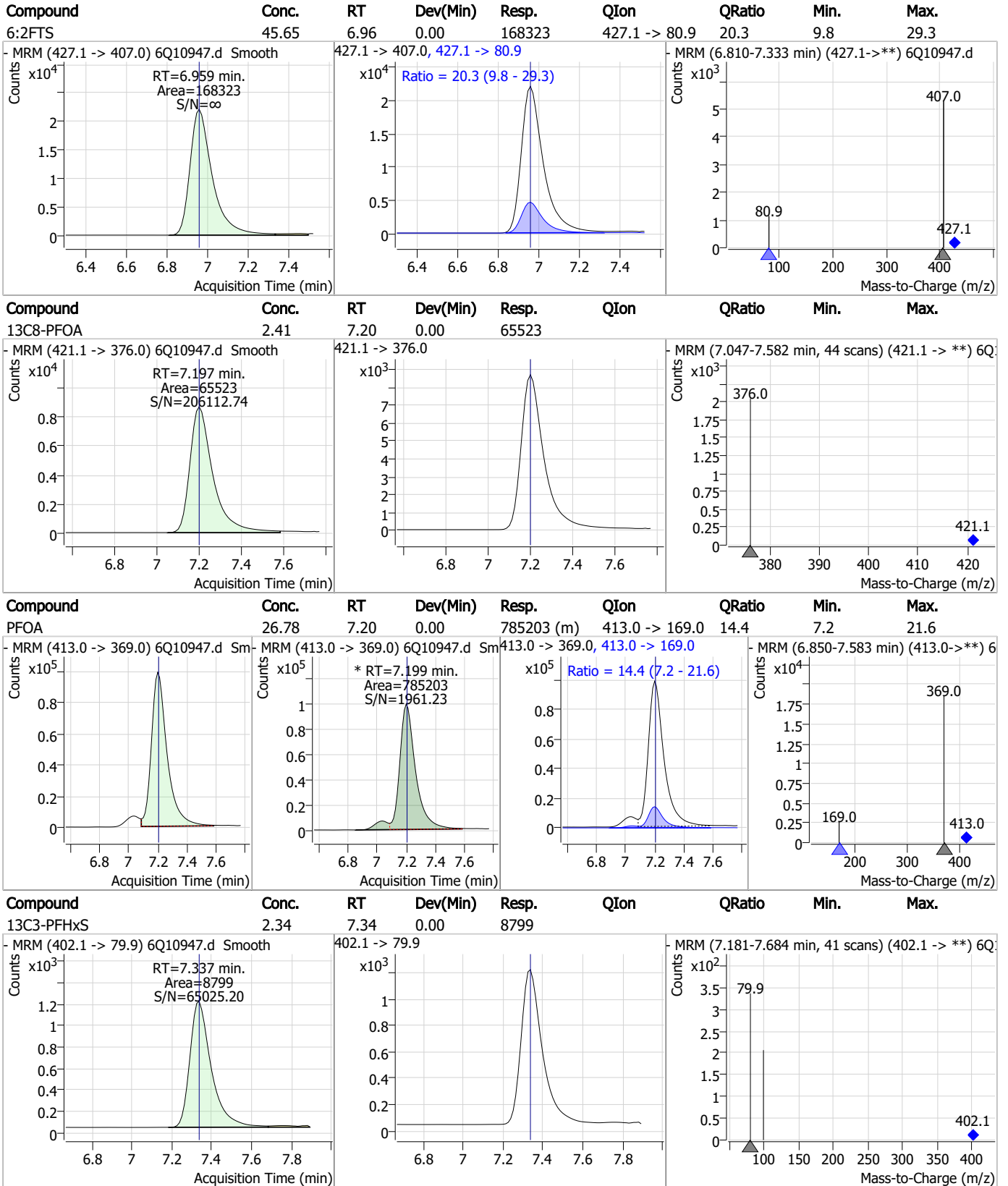
Perfluorinated Compounds by LC/MS/MS



7.5.2

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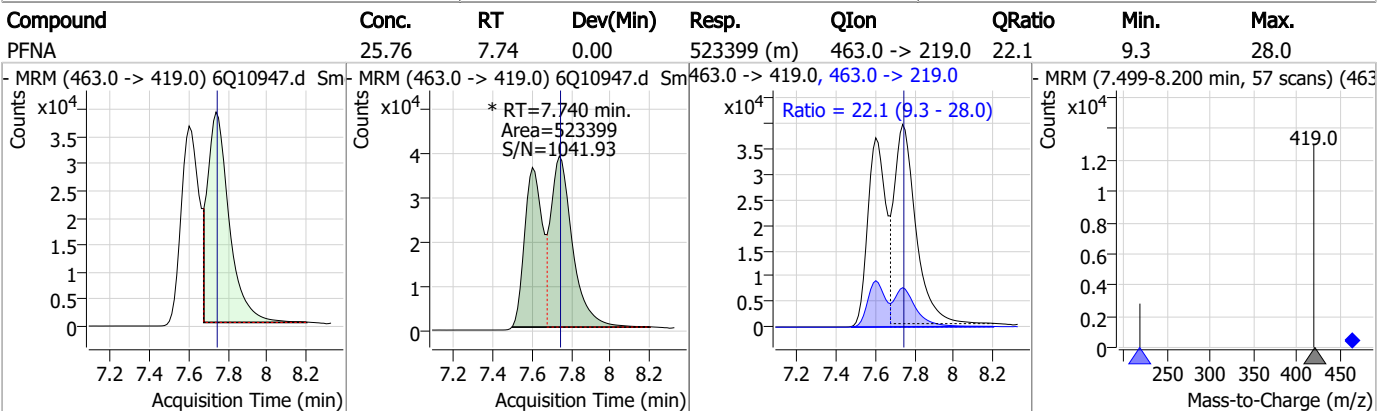
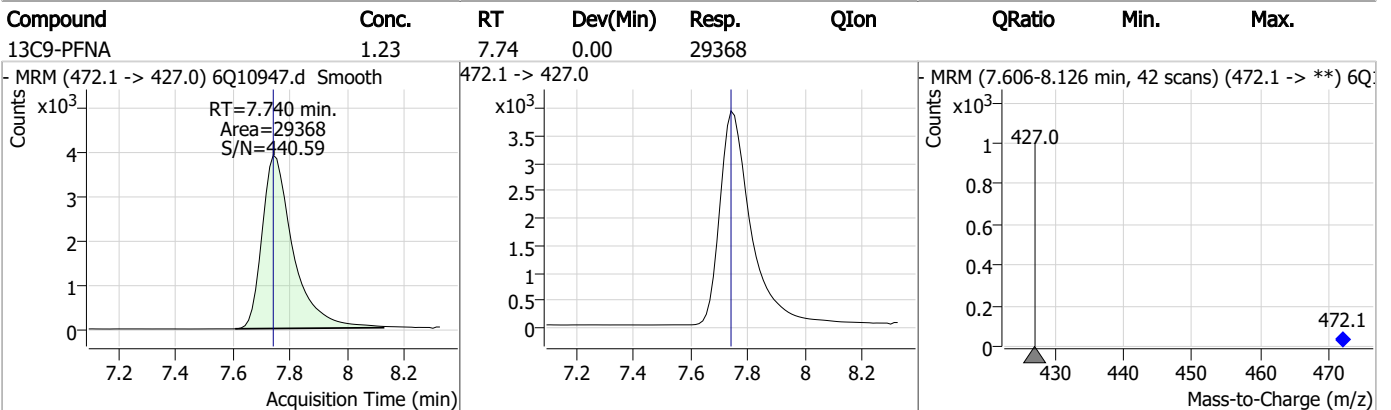
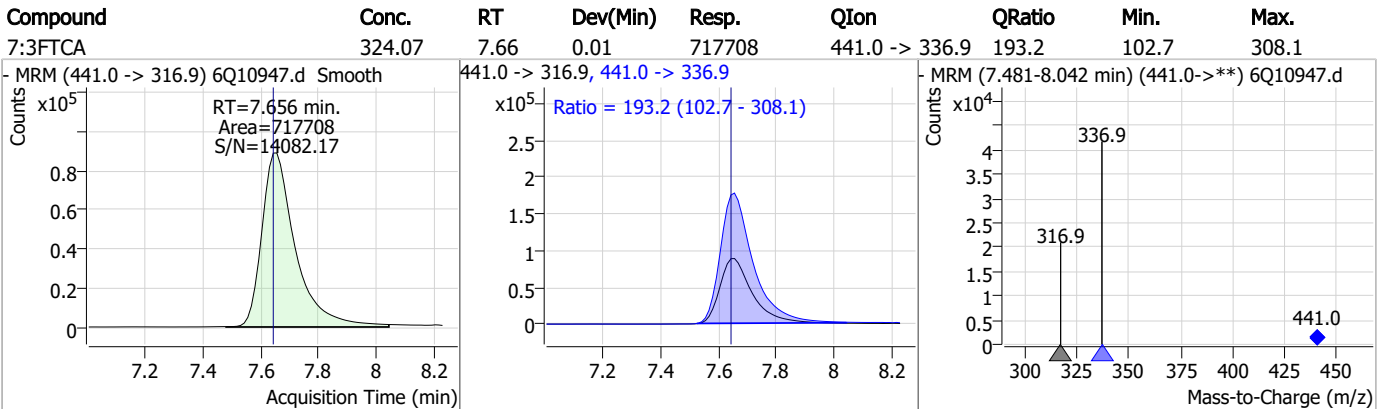
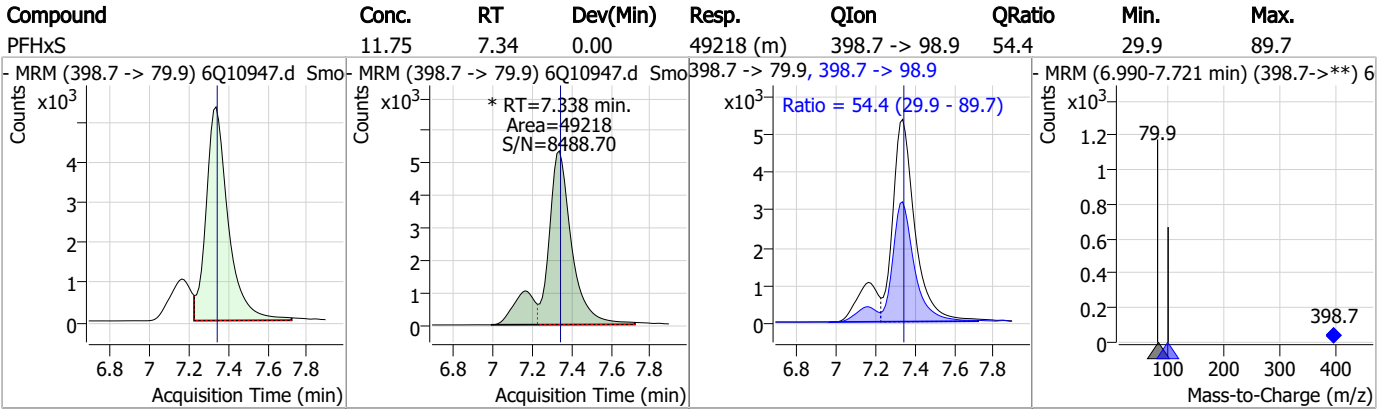
Perfluorinated Compounds by LC/MS/MS



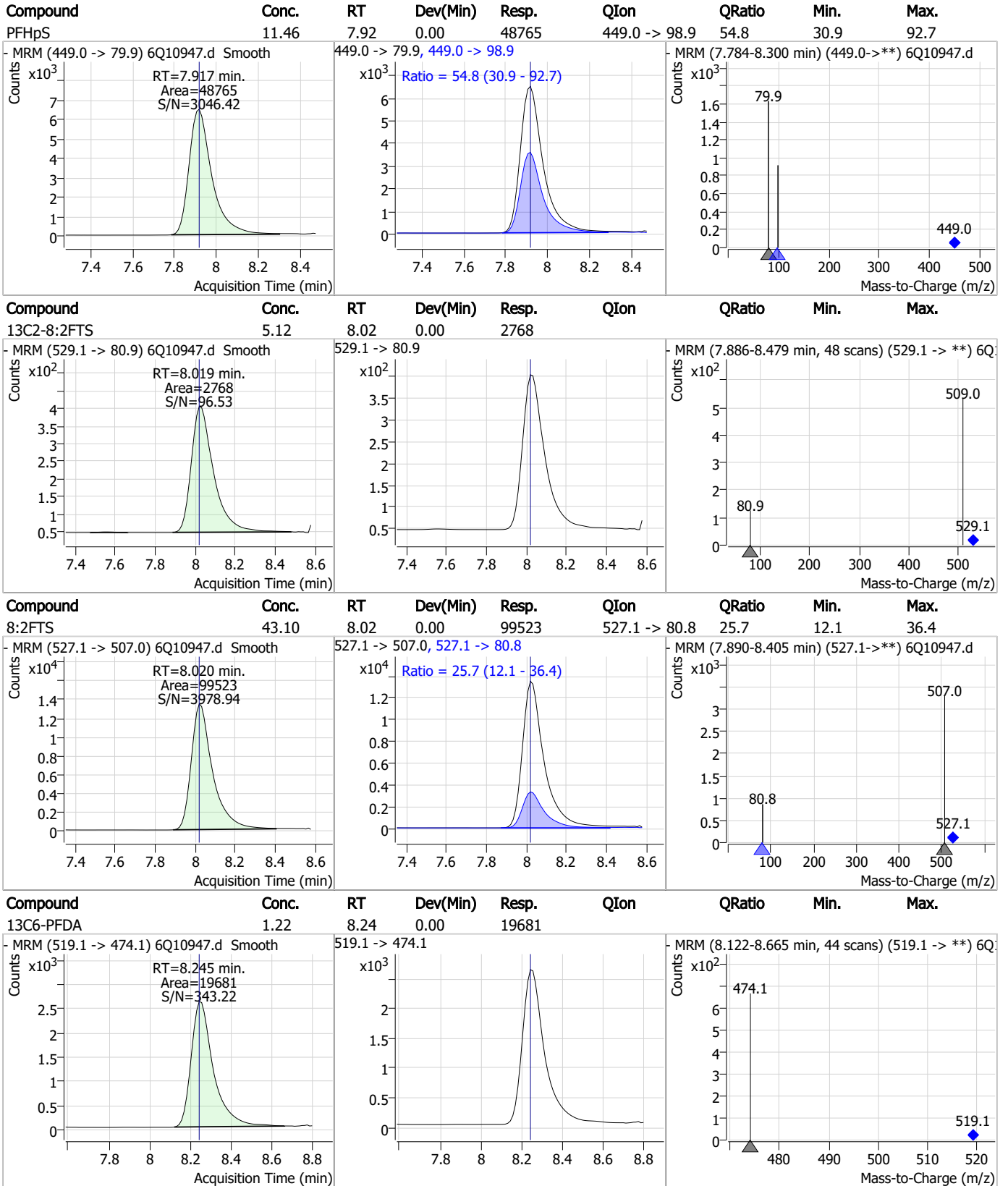
7.5.2

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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



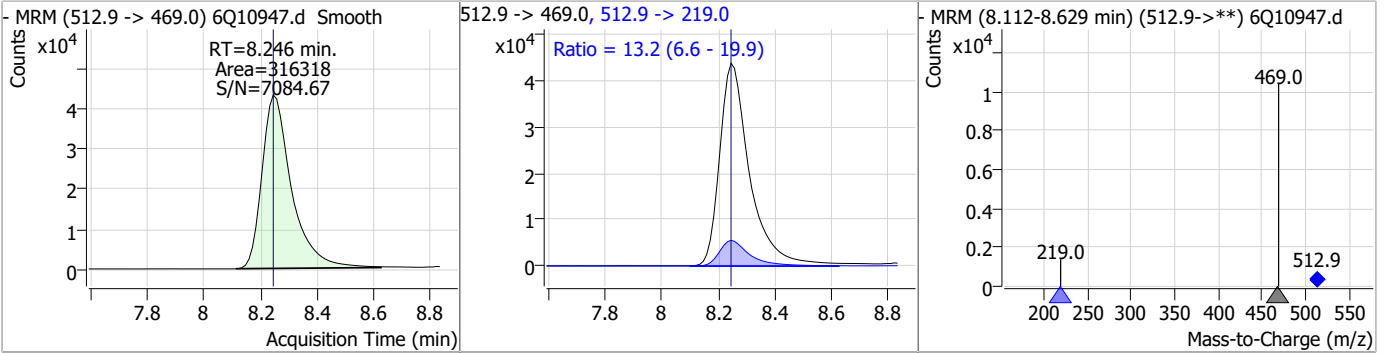
7.5.2

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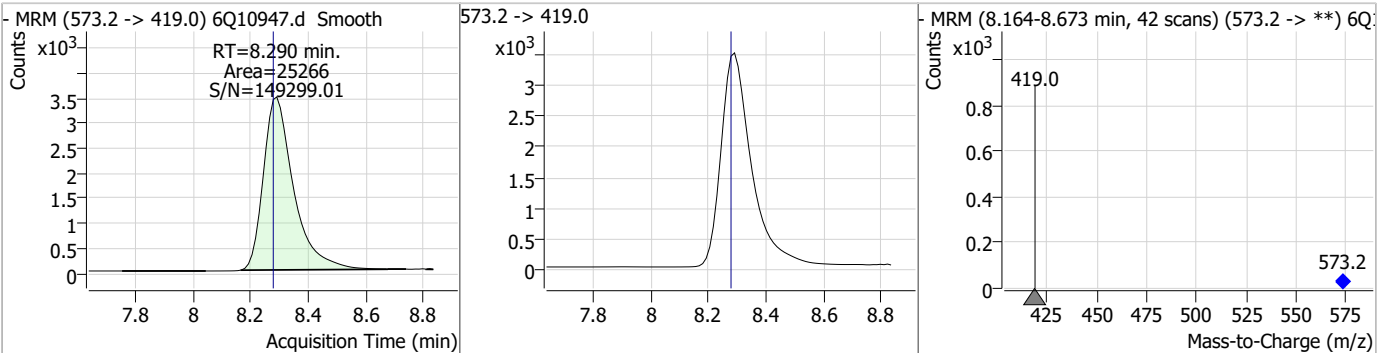


Perfluorinated Compounds by LC/MS/MS

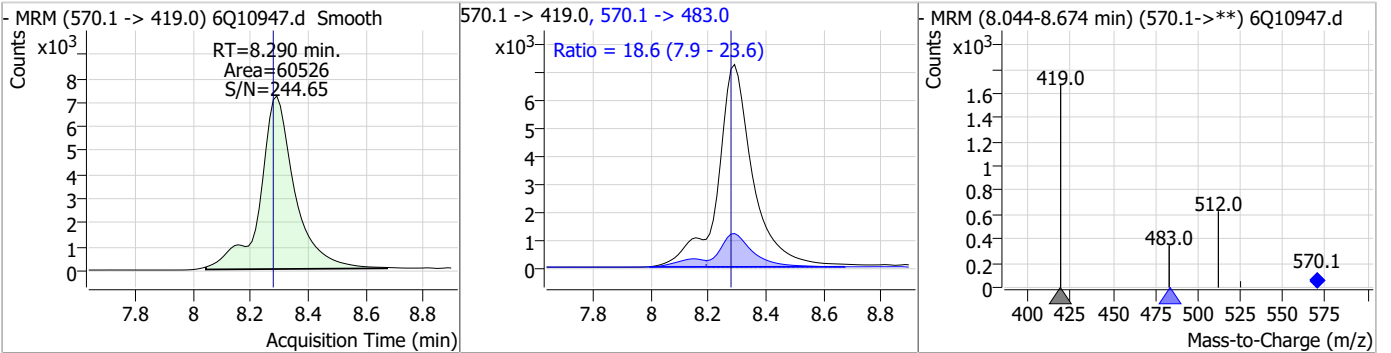
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	13.37	8.25	0.00	316318	512.9 -> 219.0	13.2	6.6	19.9



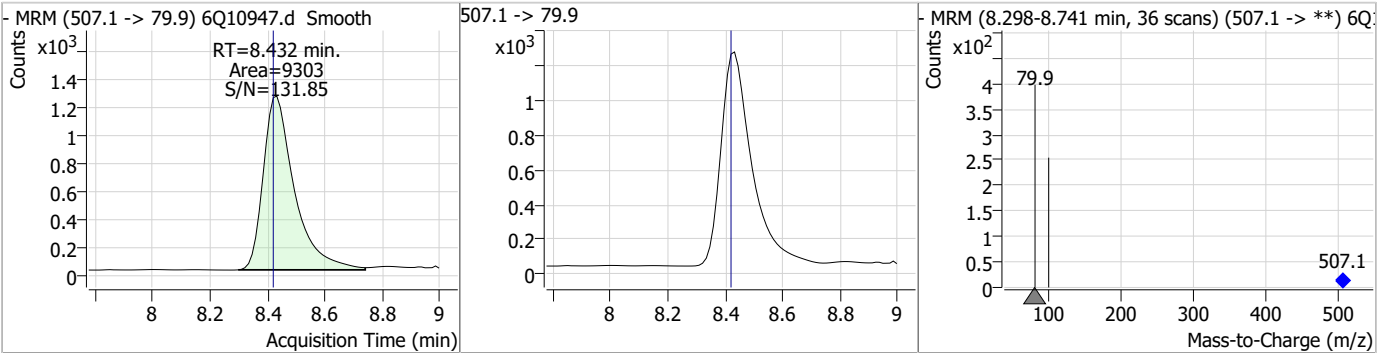
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.94	8.29	0.01	25266				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	11.62	8.29	0.01	60526	570.1 -> 483.0	18.6	7.9	23.6

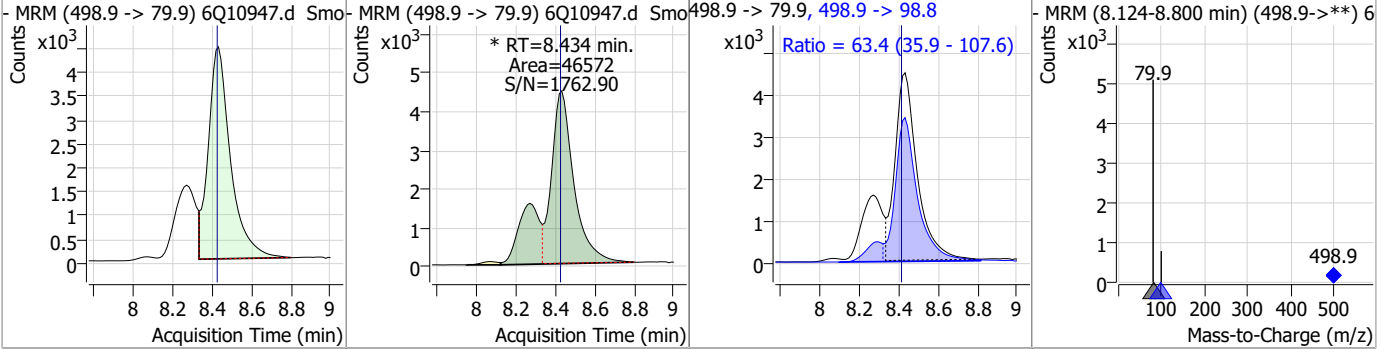


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.74	8.43	0.01	9303				

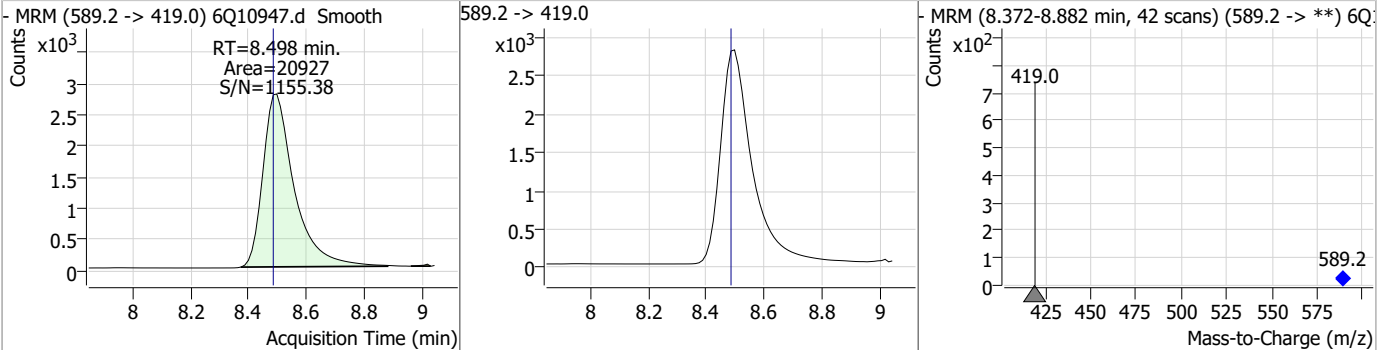


Perfluorinated Compounds by LC/MS/MS

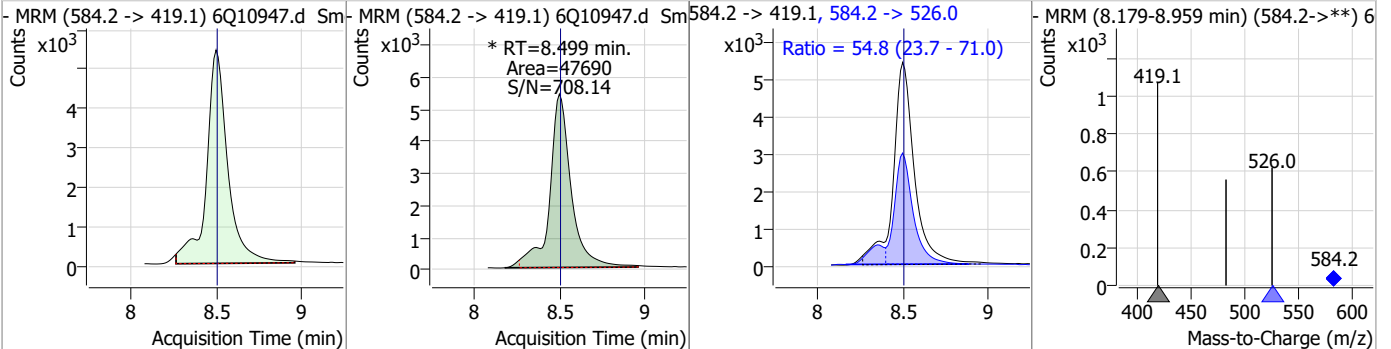
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	10.34	8.43	0.01	46572 (m)	498.9 -> 98.8	63.4	35.9	107.6



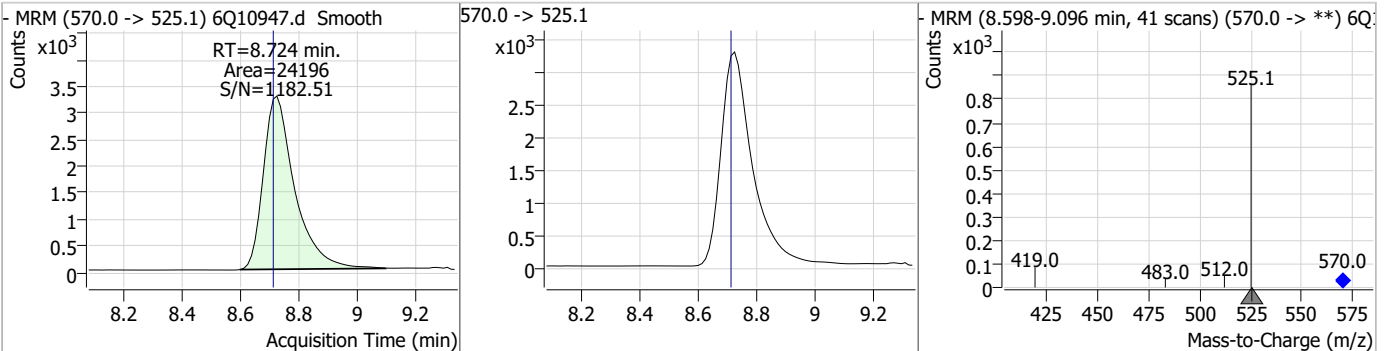
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.67	8.50	0.01	20927				



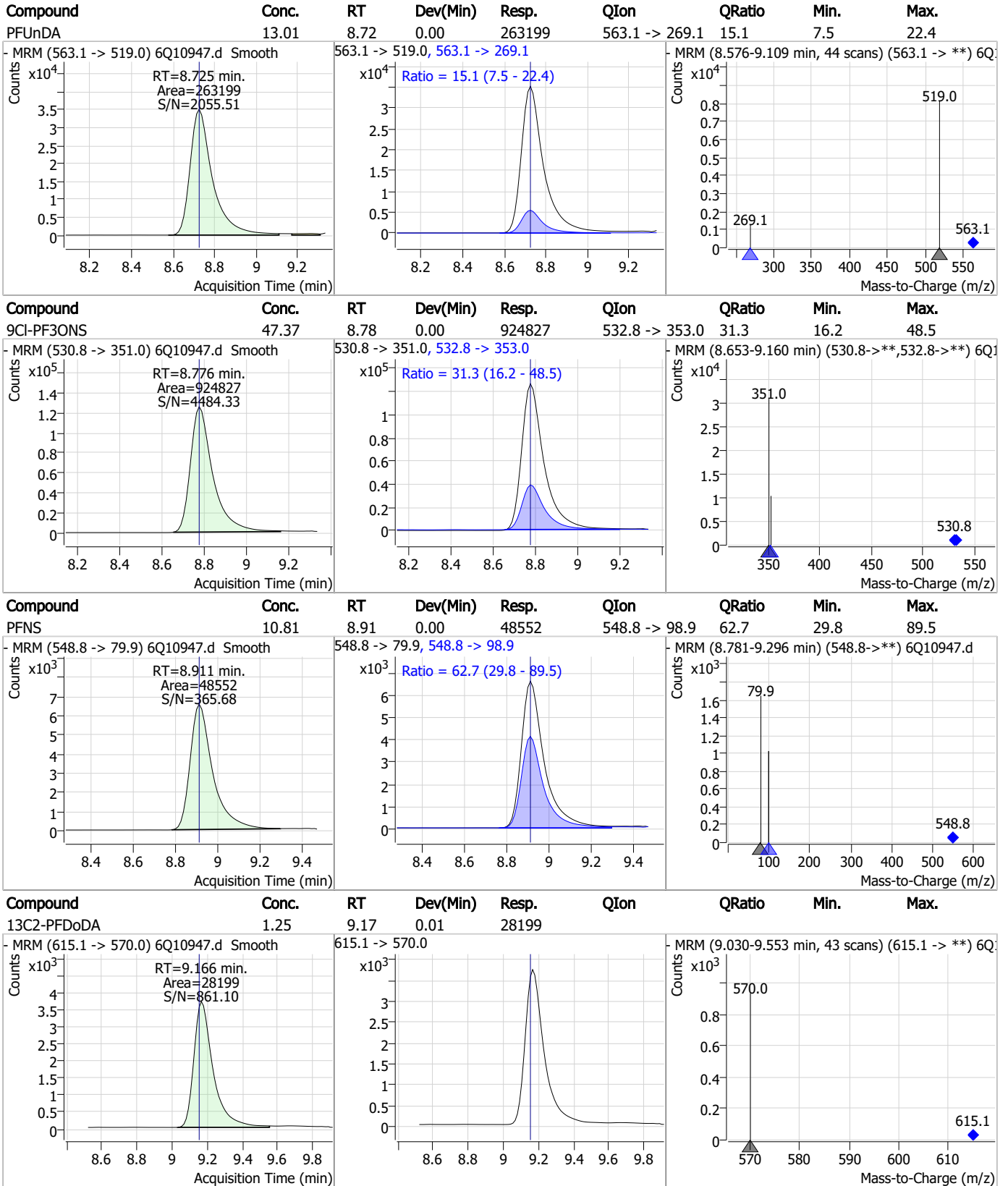
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	14.28	8.50	0.00	47690 (m)	584.2 -> 526.0	54.8	23.7	71.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.23	8.72	0.01	24196				



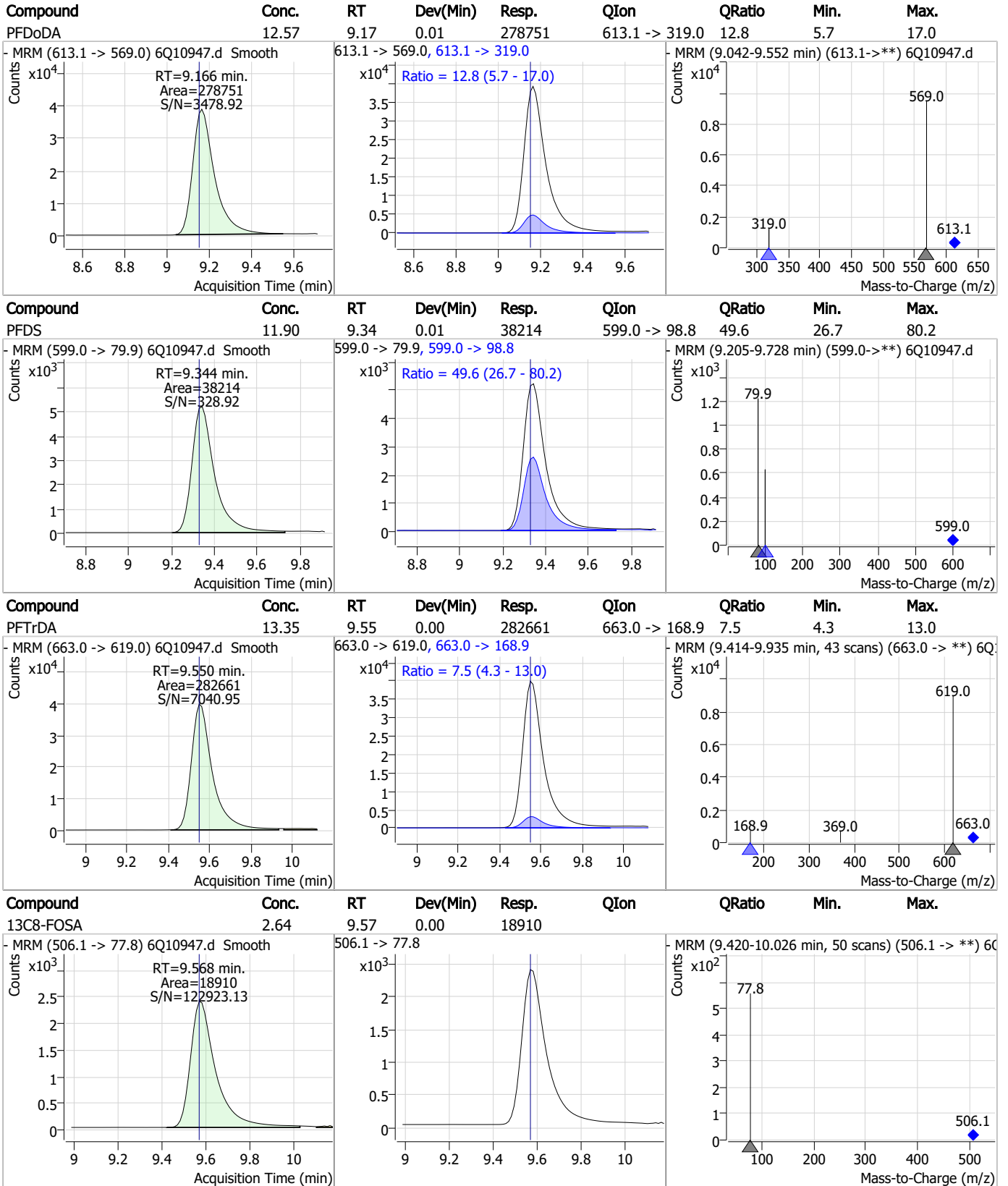
Perfluorinated Compounds by LC/MS/MS



7.5.2

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Perfluorinated Compounds by LC/MS/MS



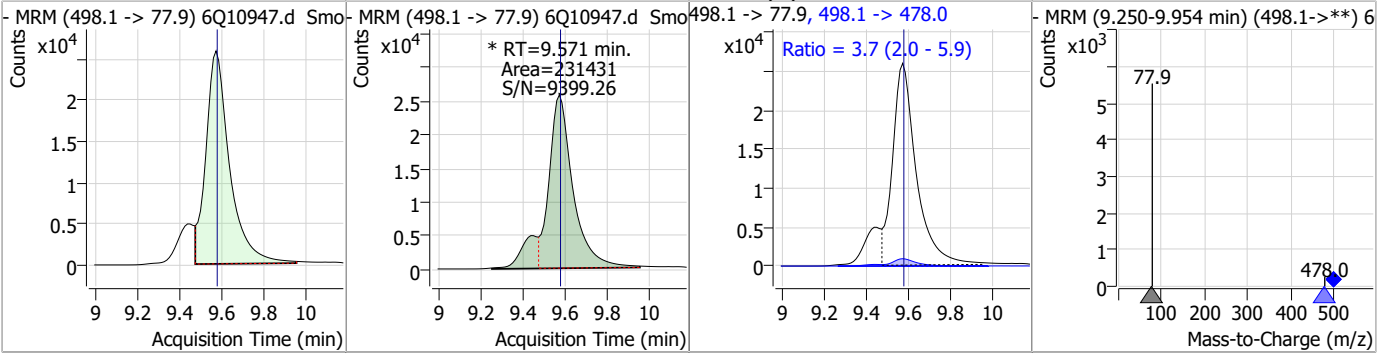
7.5.2

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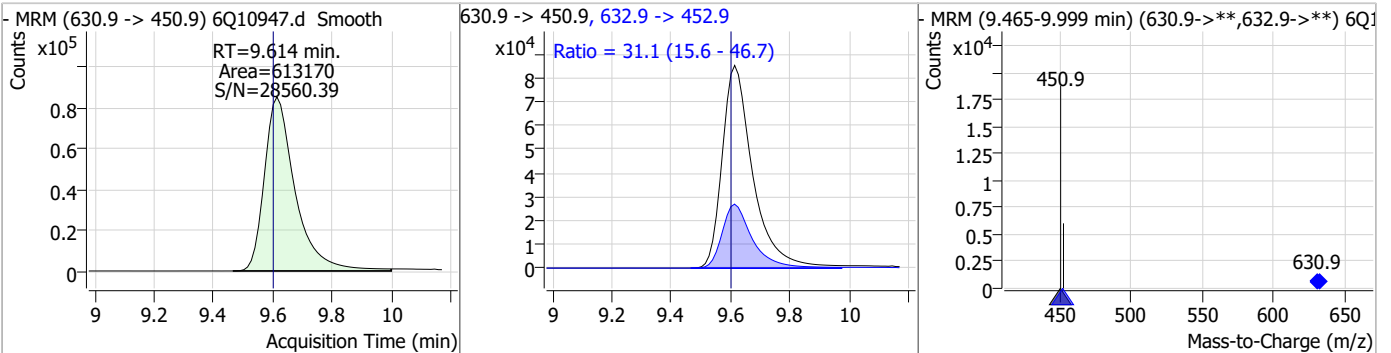


Perfluorinated Compounds by LC/MS/MS

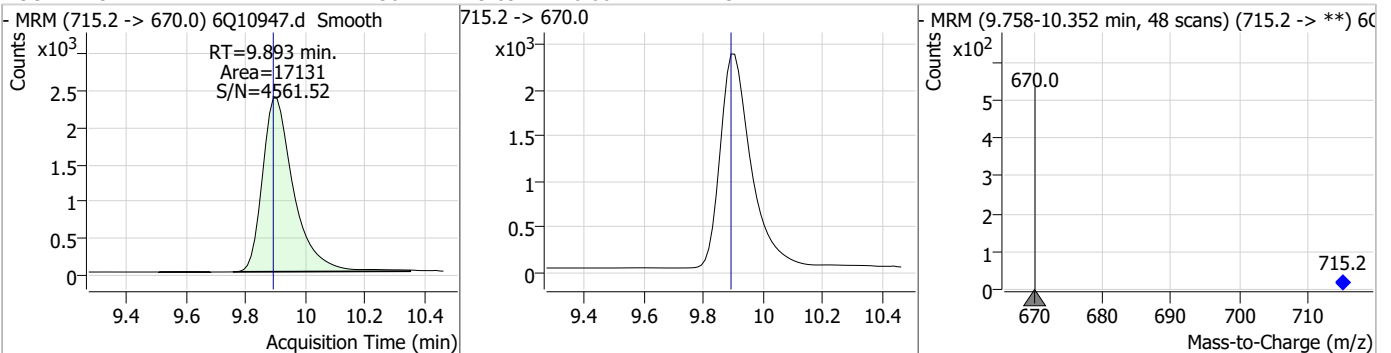
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	30.30	9.57	0.00	231431 (m)	498.1 -> 478.0	3.7	2.0	5.9



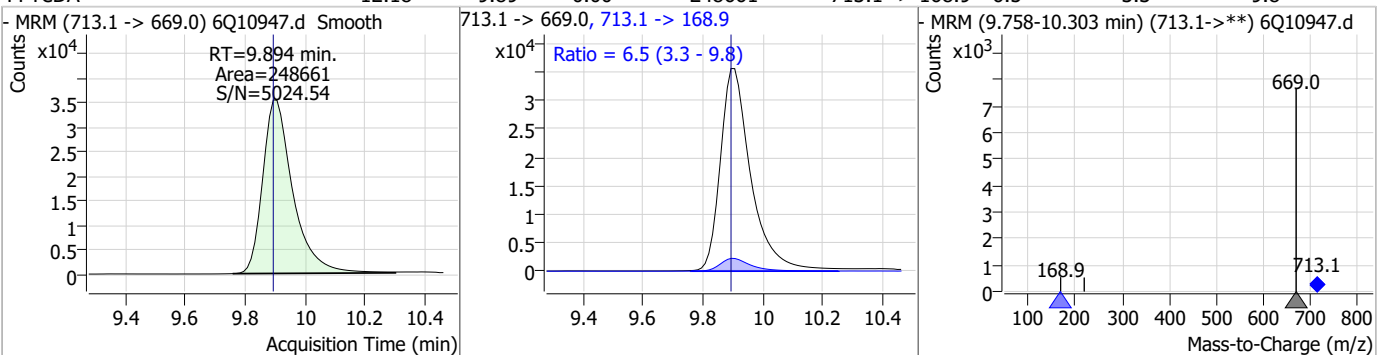
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11CI-PF3OUds	51.03	9.61	0.01	613170	632.9 -> 452.9	31.1	15.6	46.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.30	9.89	0.00	17131	715.2 -> 670.0	-	-	-



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	12.18	9.89	0.00	248661	713.1 -> 168.9	6.5	3.3	9.8



Perfluorinated Compounds by LC/MS/MS

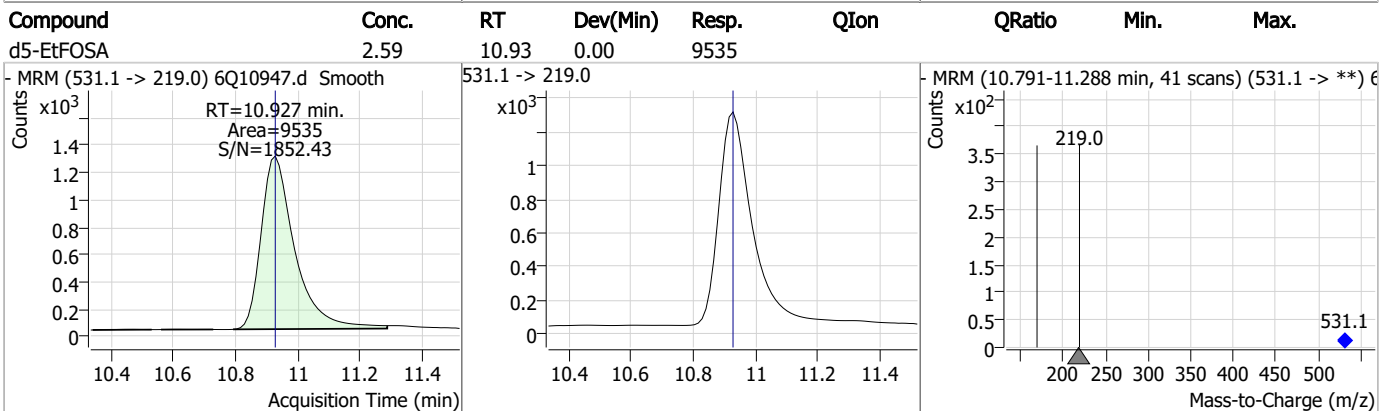
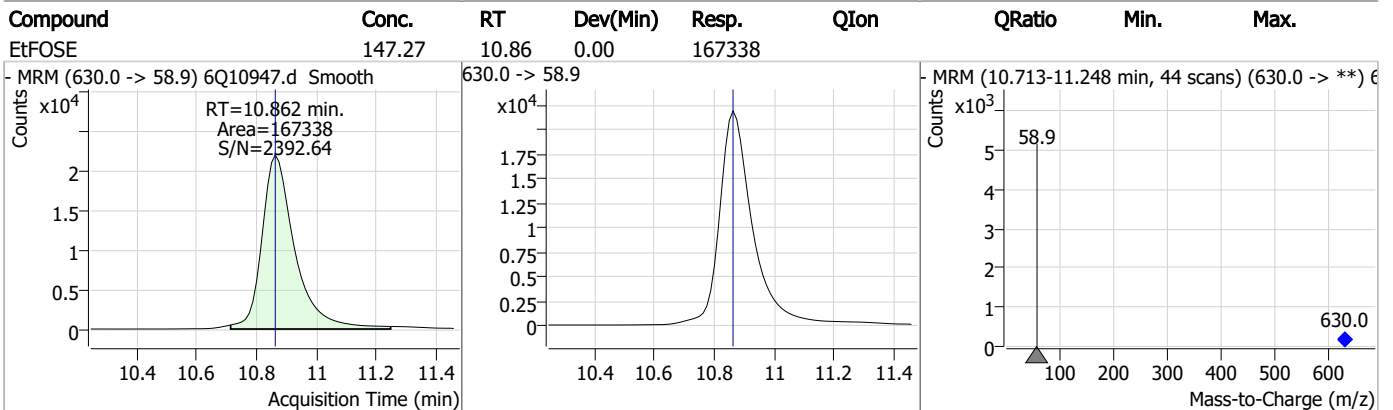
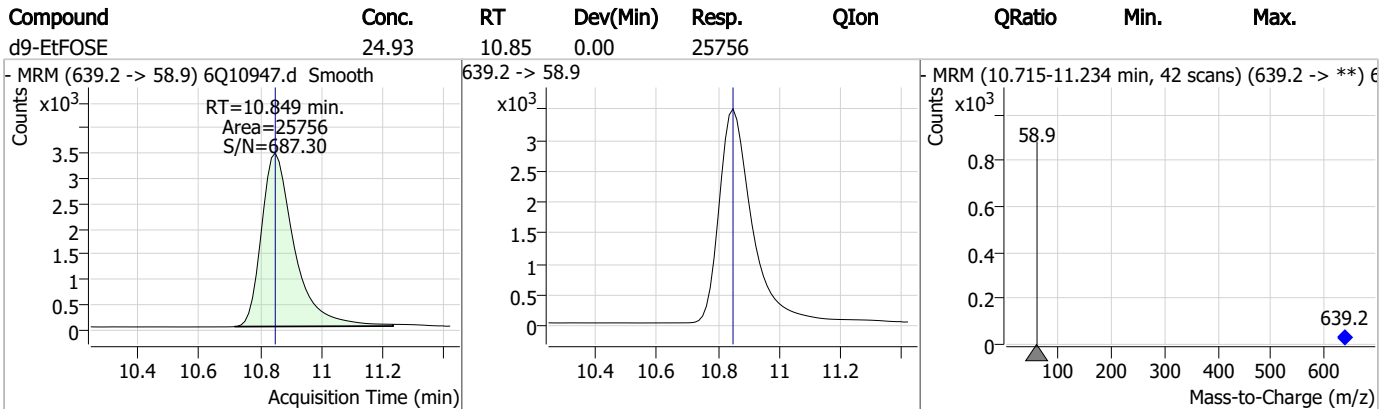
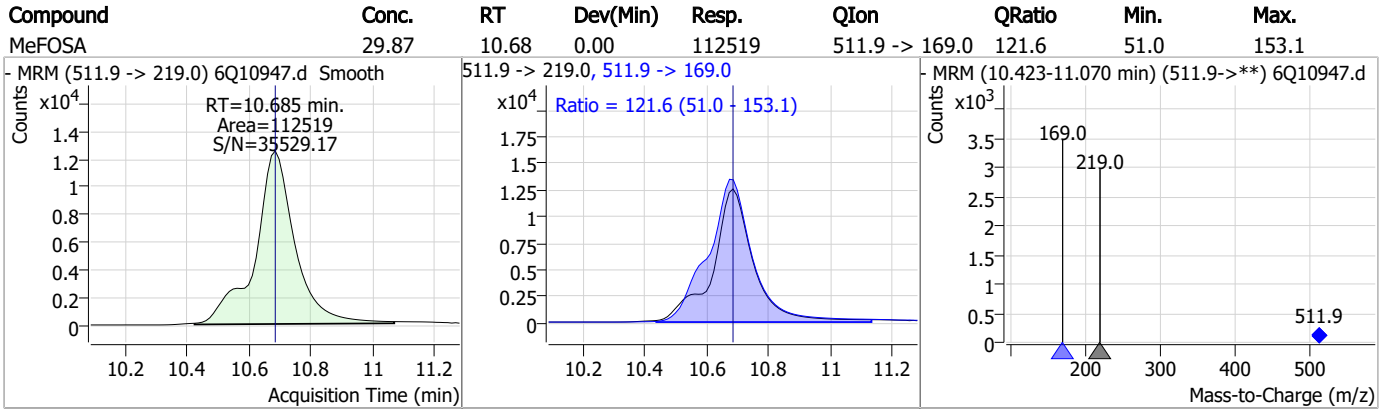
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	11.28	10.03	0.00	22588	699.1 -> 98.8	60.3	30.4	91.1
- MRM (699.1 -> 79.9) 6Q10947.d Smooth			699.1 -> 79.9, 699.1 -> 98.8		- MRM (9.899-10.417 min) (699.1->**) 6Q10947.d			
d7-MeFOSE	26.23	10.59	0.00	35438				
- MRM (623.2 -> 58.9) 6Q10947.d Smooth			623.2 -> 58.9		- MRM (10.459-10.975 min, 42 scans) (623.2 -> **) 6Q10947.d			
MeFOSE	135.28	10.60	0.00	198010				
- MRM (616.1 -> 58.9) 6Q10947.d Smooth			616.1 -> 58.9		- MRM (10.456-11.063 min, 50 scans) (616.1 -> **) 6Q10947.d			
d3-MeFOSA	2.60	10.68	0.00	8525				
- MRM (515.0 -> 219.0) 6Q10947.d Smooth			515.0 -> 219.0		- MRM (10.534-11.068 min, 44 scans) (515.0 -> **) 6Q10947.d			

7.5.2

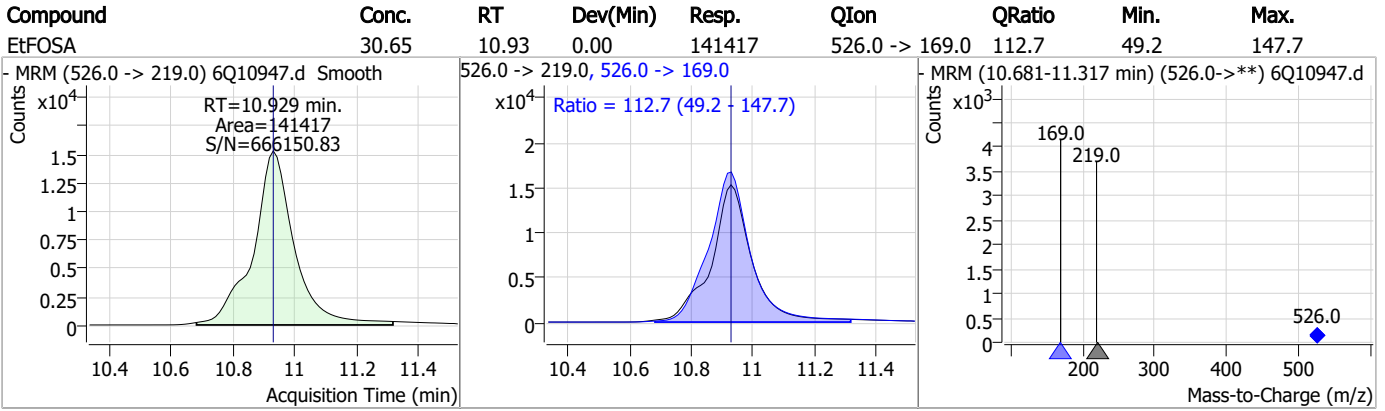
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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.5.2

7

Manual Integration Approval Summary

Sample Number: S6Q174-RT Method: EPA DRAFT 1633
Lab FileID: 6Q10947.D Analyst approved: 01/12/23 11:46 Martha Valls
Injection Time: 01/11/23 11:22 Supervisor approved: 01/12/23 15:42 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.20	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.34	Split peak
Perfluorononanoic acid	375-95-1		7.74	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.43	Split peak
EtFOSAA	2991-50-6		8.50	Split peak
PFOSA	754-91-6		9.57	Split peak

7.5.2.1
7

Manual Integrations
APPROVED
 (compounds with "m" flag)

Mike Eger
 01/17/23 18:24

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q11382.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/16/2023 1:12:17 PM
 Sample Name : RT TDCA
 Vial : P1-B3
 DA Method File : TDCA.quantmethod.xml
 Batch Name : s6q179 TDCA.batch.bin
 Sample Information : OP94795,S6Q179,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)	QValue
Internal Standards						
M8-PFOS	8.383	507.1 -> 79.9	15855	2.50 µg/L	-0.049	
13C4-PFOS	8.384	502.8 -> 79.9	17995	2.50 µg/L	-0.037	
System Monitoring Compounds						
13C8-PFOS	8.383	507.1 -> 79.9	15855	2.23 µg/L	-0.049	
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 89.4%			
Target Compounds						
PFOS	8.385	498.9 -> 79.9 498.9 -> 98.8	19685 11547	3.63 µg/L	#m	73
TCDCa	6.684	498.9 -> 79.9	2858	3.91 ng/ml		100
TDCA	6.833	498.9 -> 79.9	4640	7.00 ng/ml		100
TUDCA	5.795	498.9 -> 79.9	5697	4.05 ng/ml		100

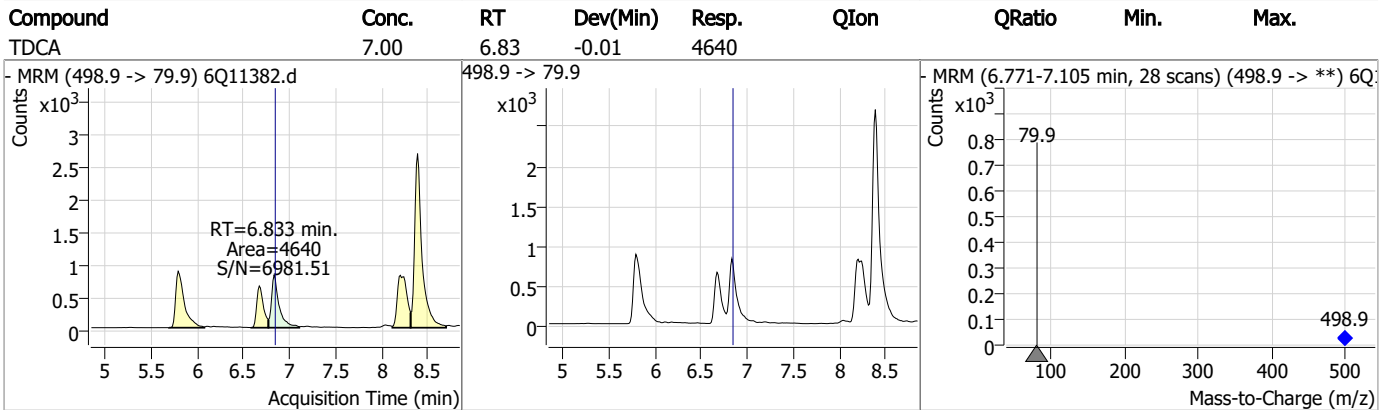
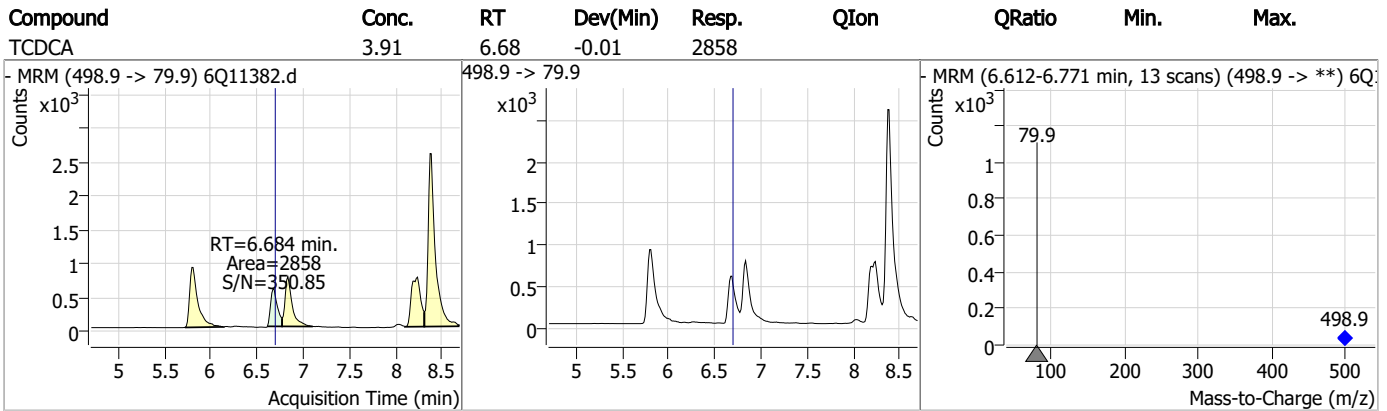
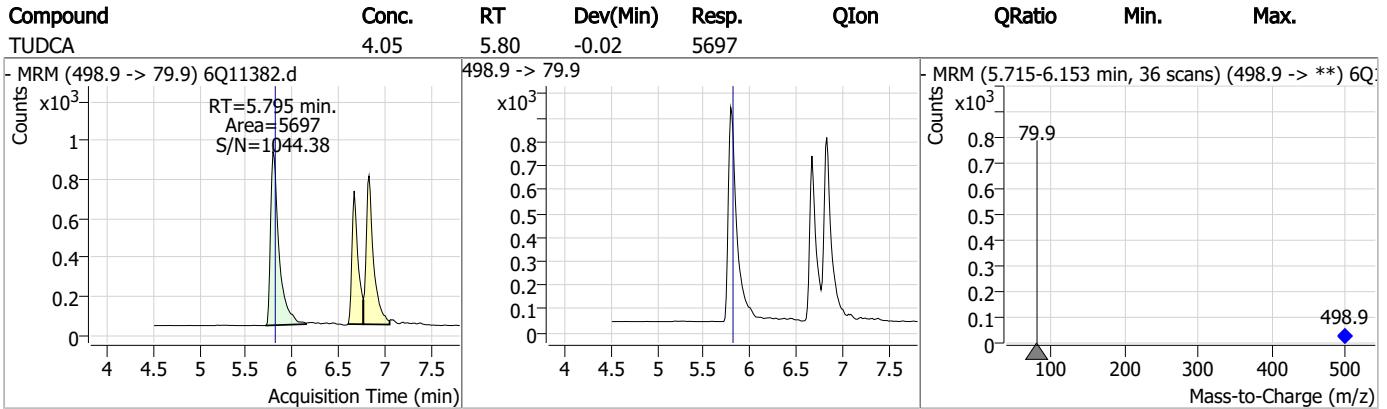
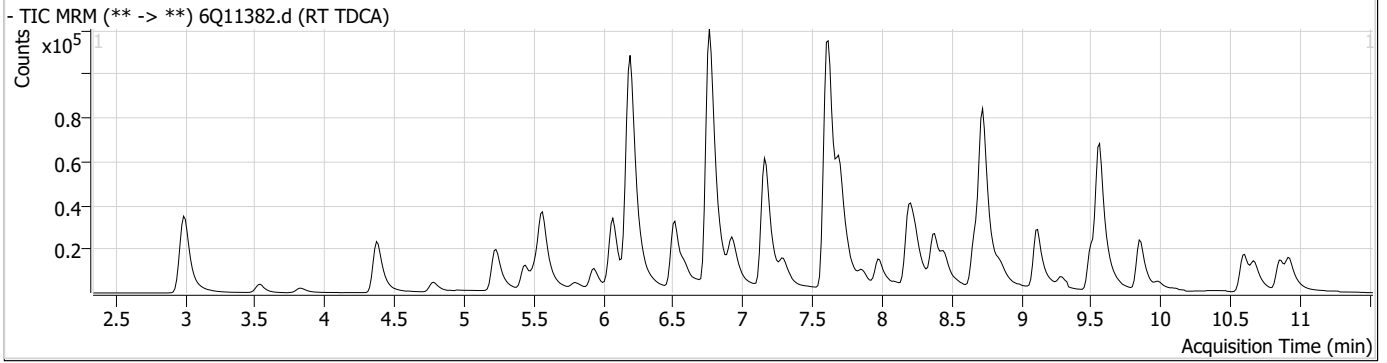
= Qualifier out of range, m = manually integrated, + = Area summed

7.5.3

7

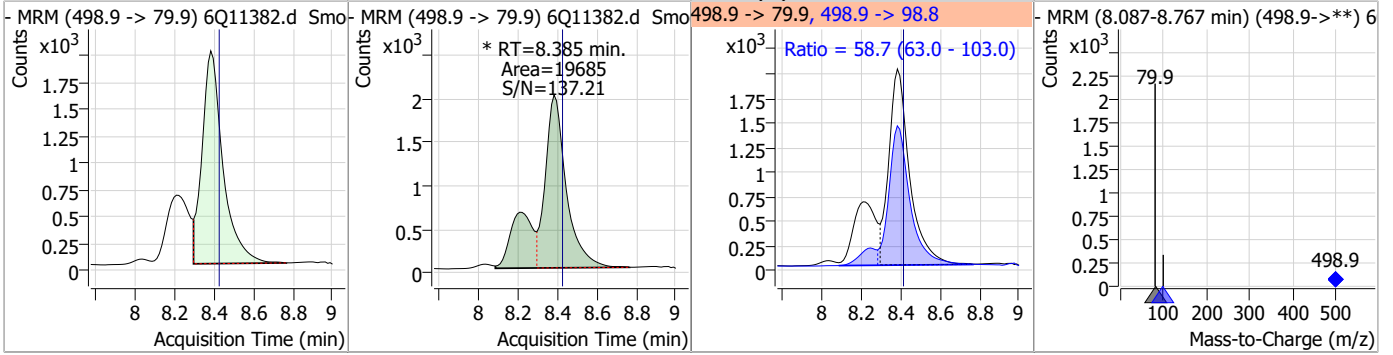


Perfluorinated Compounds by LC/MS/MS

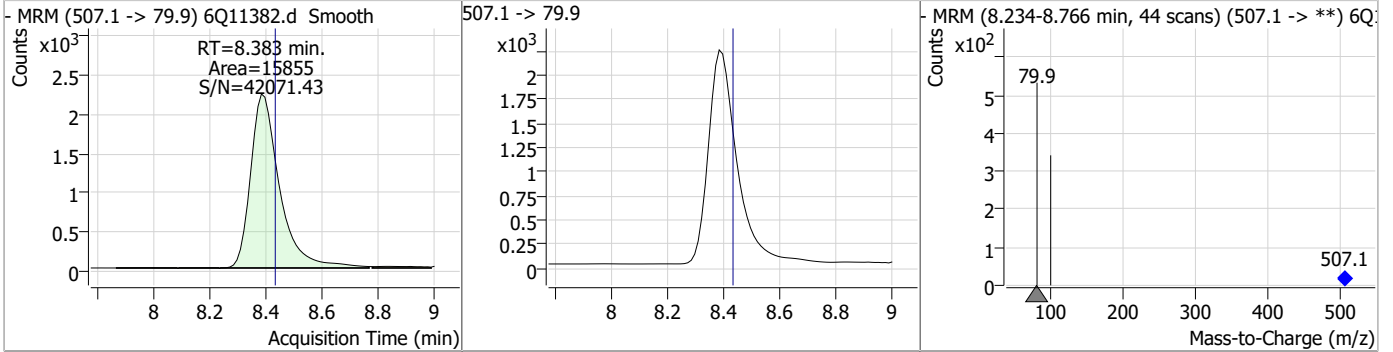


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	3.63	8.38	-0.04	19685 (m)	498.9 -> 98.8	58.7	63.0	103.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.23	8.38	-0.05	15855				



7.5.3

7

Manual Integration Approval Summary

Sample Number: S6Q179-RT Method: EPA DRAFT 1633
Lab FileID: 6Q11382.D Analyst approved: 01/17/23 14:23 Martha Valls
Injection Time: 01/16/23 13:12 Supervisor approved: 01/17/23 18:24 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.38	Split peak

7.5.3.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q11383.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/16/2023 1:26:16 PM
 Sample Name : RT br-ln
 Vial : P1-B4
 DA Method File : 1633_011123_S6Q174.quantmethod.xml
 Batch Name : s6q179.batch.bin
 Sample Information : OP94795,S6Q179,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.000	216.8 -> 171.9	92012	10.00 µg/L	0.000
M5-PFPeA	4.384	268.3 -> 223.0	44076	5.00 µg/L	0.000
M5-PFHxA	5.564	318.0 -> 273.0	39252	2.50 µg/L	0.000
M4-PFHpA	6.516	367.1 -> 322.0	40000	2.50 µg/L	0.000
M8-PFOA	7.160	421.1 -> 376.0	66401	2.50 µg/L	0.000
M9-PFNA	7.702	472.1 -> 427.0	32117	1.25 µg/L	-0.013
M6-PFDA	8.208	519.1 -> 474.1	20979	1.25 µg/L	0.000
M7-PFUnDA	8.674	570.0 -> 525.1	24711	1.25 µg/L	0.000
M2-PFDoDA	9.117	615.1 -> 570.0	29164	1.25 µg/L	0.000
M2-PFTeDA	9.856	715.2 -> 670.0	16263	1.25 µg/L	0.000
M8-FOSA	9.568	506.1 -> 77.8	18820	2.50 µg/L	0.000
M3-PFBS	5.519	302.1 -> 79.9	14766	2.50 µg/L	-0.012
M3-PFHxS	7.300	402.1 -> 79.9	9547	2.50 µg/L	0.000
M8-PFOS	8.383	507.1 -> 79.9	9122	2.50 µg/L	0.000
M2-4:2FTS	5.228	329.1 -> 80.9	1639	5.00 µg/L	0.000
M2-6:2FTS	6.921	429.1 -> 80.9	2652	5.00 µg/L	-0.012
M2-8:2FTS	7.982	529.1 -> 80.9	2528	5.00 µg/L	0.000
M3-MeFOSAA	8.240	573.2 -> 419.0	26435	5.00 µg/L	0.000
M3-HFPO-DA	5.941	286.9 -> 168.9	16827	10.00 µg/L	0.000
M5-EtFOSAA	8.448	589.2 -> 419.0	23010	5.00 µg/L	0.000
M7-MeFOSE	10.591	623.2 -> 58.9	36791	25.00 µg/L	0.000
M9-EtFOSE	10.849	639.2 -> 58.9	25977	25.00 µg/L	0.000
M5-EtFOSA	10.927	531.1 -> 219.0	9305	2.50 µg/L	0.000
M3-MeFOSA	10.683	515.0 -> 219.0	8381	2.50 µg/L	0.000
13C4-PFOS	8.384	502.8 -> 79.9	10908	2.50 µg/L	0.000
13C3-PFBA	3.004	216.0 -> 172.0	40452	5.00 µg/L	0.000
18O2-PFHxS	7.299	403.0 -> 83.9	6745	2.50 µg/L	0.000
13C4-PFOA	7.160	417.1 -> 372.0	80190	2.50 µg/L	-0.012
13C2-PFDA	8.208	515.1 -> 470.1	27687	1.25 µg/L	0.000
13C5-PFNA	7.703	468.0 -> 423.0	33791	1.25 µg/L	0.000
13C2-PFHxA	5.565	315.1 -> 270.0	39838	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.228	329.1 -> 80.9	1639	4.66 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 93.2%		
13C2-6:2FTS	6.921	429.1 -> 80.9	2652	5.50 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.1%		
13C2-8:2FTS	7.982	529.1 -> 80.9	2528	4.81 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.1%		
13C2-PFDoDA	9.117	615.1 -> 570.0	29164	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 106.3%		
13C2-PFTeDA	9.856	715.2 -> 670.0	16263	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.9%		
13C3-PFBS	5.519	302.1 -> 79.9	14766	2.61 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.4%		
13C3-PFHxS	7.300	402.1 -> 79.9	9547	2.61 µg/L	0.000

7.54
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 = 104.3%	
13C4-PFBA	3.000	216.8 -> 171.9	92012	9.96 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C4-PFHpA	6.516	367.1 -> 322.0	40000	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C5-PFHxA	5.564	318.0 -> 273.0	39252	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.2%	
13C5-PFPeA	4.384	268.3 -> 223.0	44076	4.96 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C6-PFDA	8.208	519.1 -> 474.1	20979	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.5%	
13C7-PFUnDA	8.674	570.0 -> 525.1	24711	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.8%	
13C8-FOSA	9.568	506.1 -> 77.8	18820	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C8-PFOA	7.160	421.1 -> 376.0	66401	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.8%	
13C8-PFOS	8.383	507.1 -> 79.9	9122	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.7%	
13C9-PFNA	7.702	472.1 -> 427.0	32117	1.34 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.0%	
d3-MeFOSAA	8.240	573.2 -> 419.0	26435	5.03 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C3-HFPO-DA	5.941	286.9 -> 168.9	16827	10.24 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.4%	
d3-MeFOSA	10.683	515.0 -> 219.0	8381	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.4%	
d5-EtFOSAA	8.448	589.2 -> 419.0	23010	4.99 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
d7-MeFOSE	10.591	623.2 -> 58.9	36791	26.50 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 106.0%	
d9-EtFOSE	10.849	639.2 -> 58.9	25977	24.46 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.9%	
d5-EtFOSA	10.927	531.1 -> 219.0	9305	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.5%	
Target Compounds					QValue
4:2FTS	5.229	327.1 -> 307.0	196062	50.30 µg/L	97
		327.1 -> 80.9	43048		
6:2FTS	6.922	427.1 -> 407.0	178751	43.33 µg/L	98
		427.1 -> 80.9	36178		
8:2FTS	7.983	527.1 -> 507.0	110639	52.47 µg/L	100
		527.1 -> 80.8	26995		
EtFOSAA	8.449	584.2 -> 419.1	46277	12.60 µg/L	m 93
		584.2 -> 526.0	24480		
FOSA	9.571	498.1 -> 77.9	229176	30.14 µg/L	100
		498.1 -> 478.0	8980		
MeFOSAA	8.241	570.1 -> 419.0	67576	12.40 µg/L	m 96
		570.1 -> 483.0	12458		
PFBA	3.007	212.8 -> 168.9	118840	50.34 µg/L	100
PFBS	5.520	298.7 -> 79.9	64747	10.84 µg/L	98
		298.7 -> 98.8	28302		
PFDA	8.208	512.9 -> 469.0	299763	11.89 µg/L	99
		512.9 -> 219.0	41771		
PFDoDA	9.117	613.1 -> 569.0	269145	11.73 µg/L	99
		613.1 -> 319.0	35203		
PFDS	9.293	599.0 -> 79.9	38047	12.09 µg/L	95

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.516	599.0 -> 98.8	18972	12.97	µg/L	98
		363.1 -> 319.0	312892			
PFHpS	7.867	363.1 -> 169.0	38394	11.53	µg/L	98
		449.0 -> 79.9	48137			
PFHxA	5.567	449.0 -> 98.9	28319	12.77	µg/L	100
		313.0 -> 269.0	202511			
PFHxS	7.301	313.0 -> 118.9	6925	10.90	µg/L	m
		398.7 -> 79.9	49529			
PFNA	7.703	398.7 -> 98.9	27876	24.15	µg/L	m
		463.0 -> 419.0	536675			
PFNS	8.862	463.0 -> 219.0	109321	12.17	µg/L	92
		548.8 -> 79.9	53590			
PFOA	7.161	548.8 -> 98.9	30522	28.37	µg/L	m
		413.0 -> 369.0	842939			
PFOS	8.385	413.0 -> 169.0	111492	11.50	µg/L	m
		498.9 -> 79.9	50804			
PFPeA	4.386	498.9 -> 98.8	30466	24.93	µg/L	100
		263.0 -> 219.0	241336			
PFPeS	6.595	349.1 -> 79.9	59583	11.07	µg/L	99
		349.1 -> 98.9	32329			
PFTeDA	9.857	713.1 -> 669.0	244023	12.59	µg/L	100
		713.1 -> 168.9	15772			
PFTrDA	9.513	663.0 -> 619.0	254602	11.63	µg/L	98
		663.0 -> 168.9	19738			
PFUnDA	8.675	563.1 -> 519.0	253680	12.27	µg/L	99
		563.1 -> 269.1	37152			
11CI-PF3OUdS	9.565	630.9 -> 450.9	620028	48.59	µg/L	97
		632.9 -> 452.9	191030			
9CI-PF3ONS	8.727	530.8 -> 351.0	999549	48.21	µg/L	96
		532.8 -> 353.0	313709			
ADONA	6.767	376.9 -> 250.9	1703204	45.52	µg/L	98
		376.9 -> 84.8	365602			
HFPO-DA	5.942	284.9 -> 168.9	85880	50.47	µg/L	97
		284.9 -> 184.9	9553			
3:3FTCA	3.852	241.0 -> 177.0	32162	62.37	µg/L	99
		241.0 -> 117.0	3974			
5:3FTCA	6.194	341.0 -> 237.1	1033415	313.31	µg/L	98
		341.0 -> 217.0	854395			
7:3FTCA	7.618	441.0 -> 316.9	720921	324.26	µg/L	96
		441.0 -> 336.9	1464068			
EtFOSA	10.929	526.0 -> 219.0	141828	31.50	µg/L	97
		526.0 -> 169.0	153934			
EtFOSE	10.862	630.0 -> 58.9	170205	148.52	µg/L	100
		511.9 -> 219.0	115501			
MeFOSA	10.685	511.9 -> 169.0	136971	31.19	µg/L	96
		616.1 -> 58.9	203989			
MeFOSE	10.604	699.1 -> 79.9	23414	134.24	µg/L	100
		699.1 -> 98.8	14237			
PFDoDS	9.996	295.0 -> 201.0	25394	11.93	µg/L	98
		295.0 -> 84.9	11314			
NFDHA	5.446	279.0 -> 85.1	75985	24.69	µg/L	95
		279.0 -> 85.1	75985			
PFMBA	4.789	229.0 -> 84.9	66058	25.17	µg/L	100
		314.8 -> 134.9	474103			
PFMPA	3.538	314.8 -> 82.9	12389	24.66	µg/L	100
		314.8 -> 82.9	12389			
PFEESA	6.072			21.47	µg/L	100

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

7.5.4
7

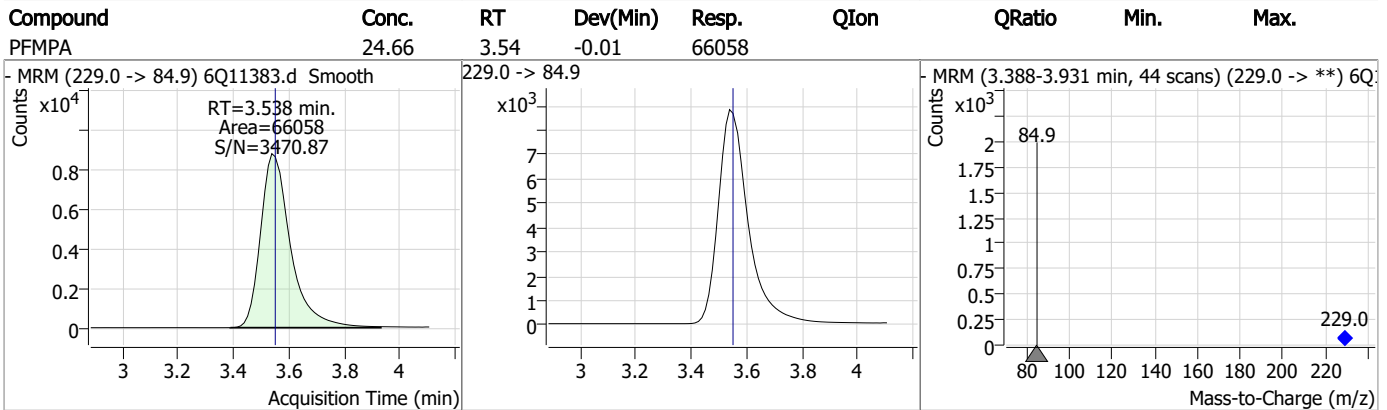
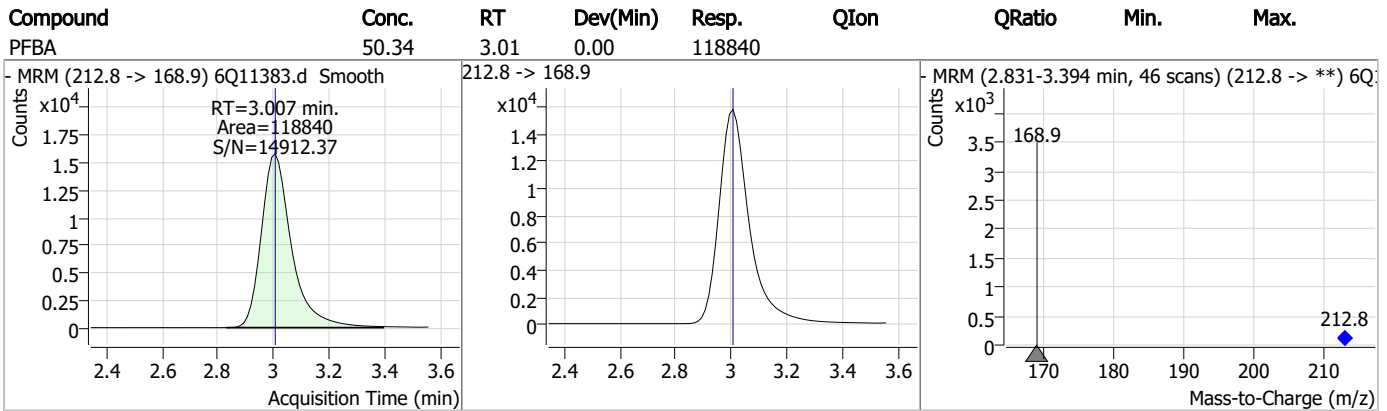
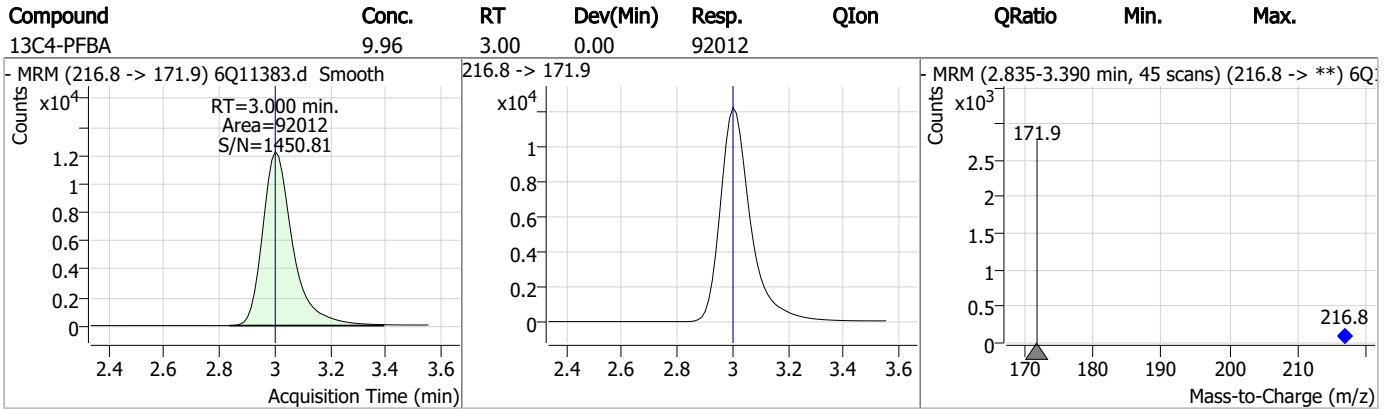
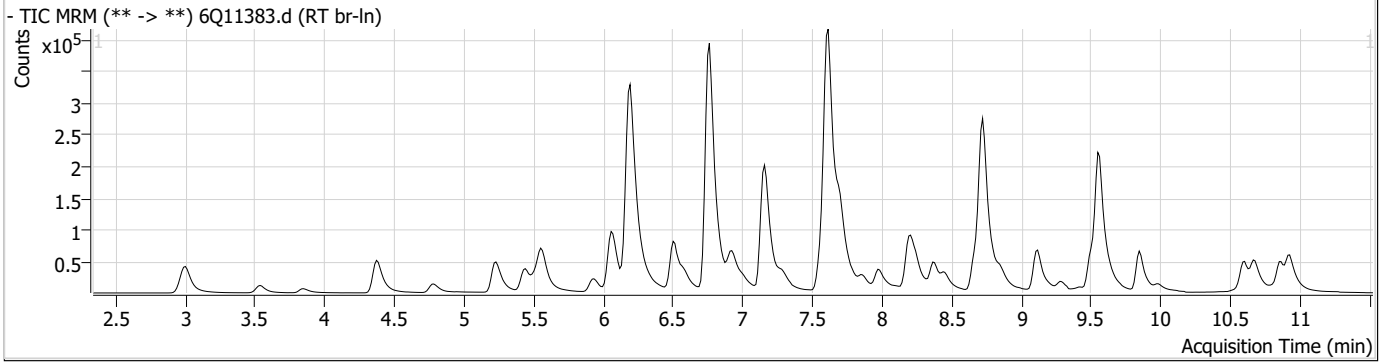
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.5.4

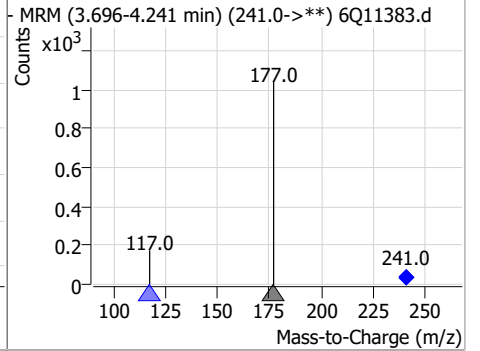
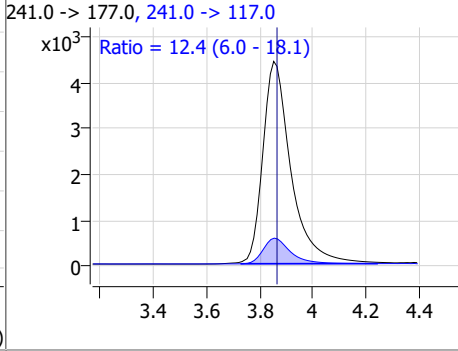
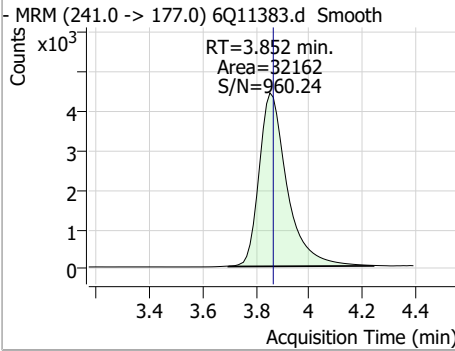
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Perfluorinated Compounds by LC/MS/MS

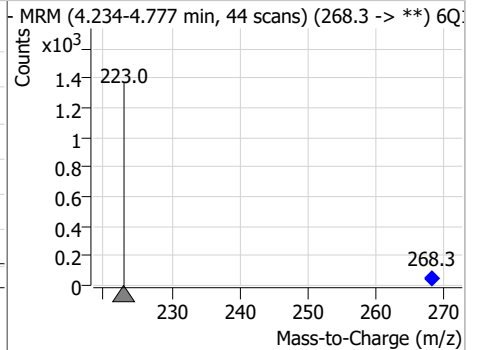
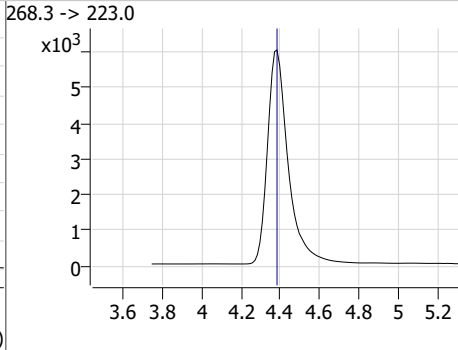
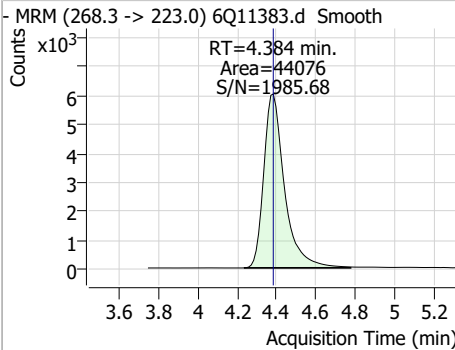


Perfluorinated Compounds by LC/MS/MS

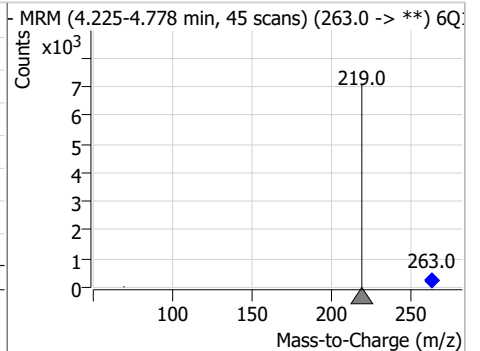
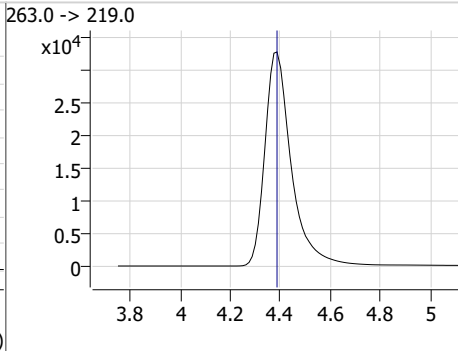
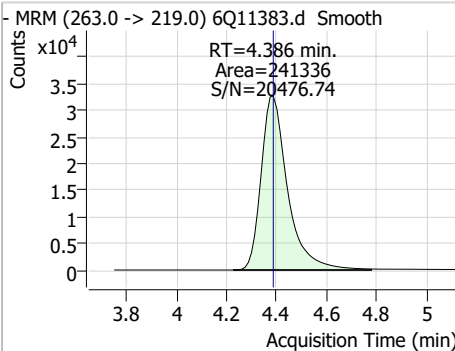
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	62.37	3.85	-0.01	32162	241.0 -> 117.0	12.4	6.0	18.1



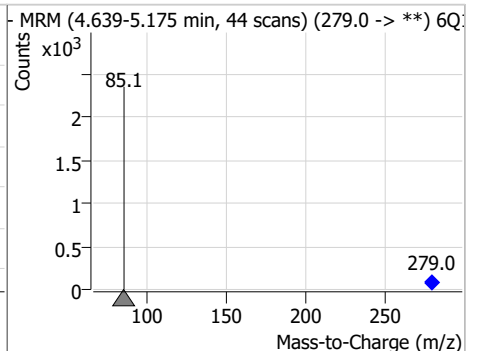
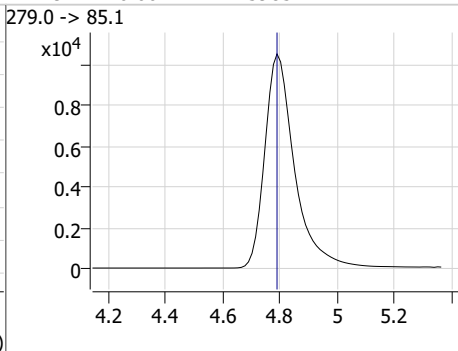
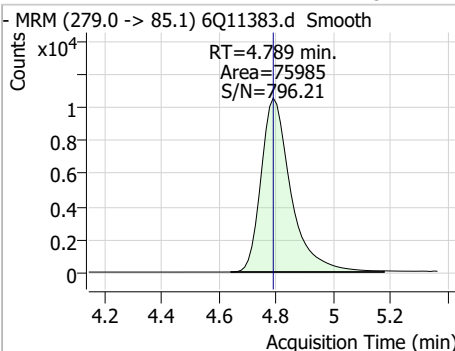
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.96	4.38	0.00	44076				



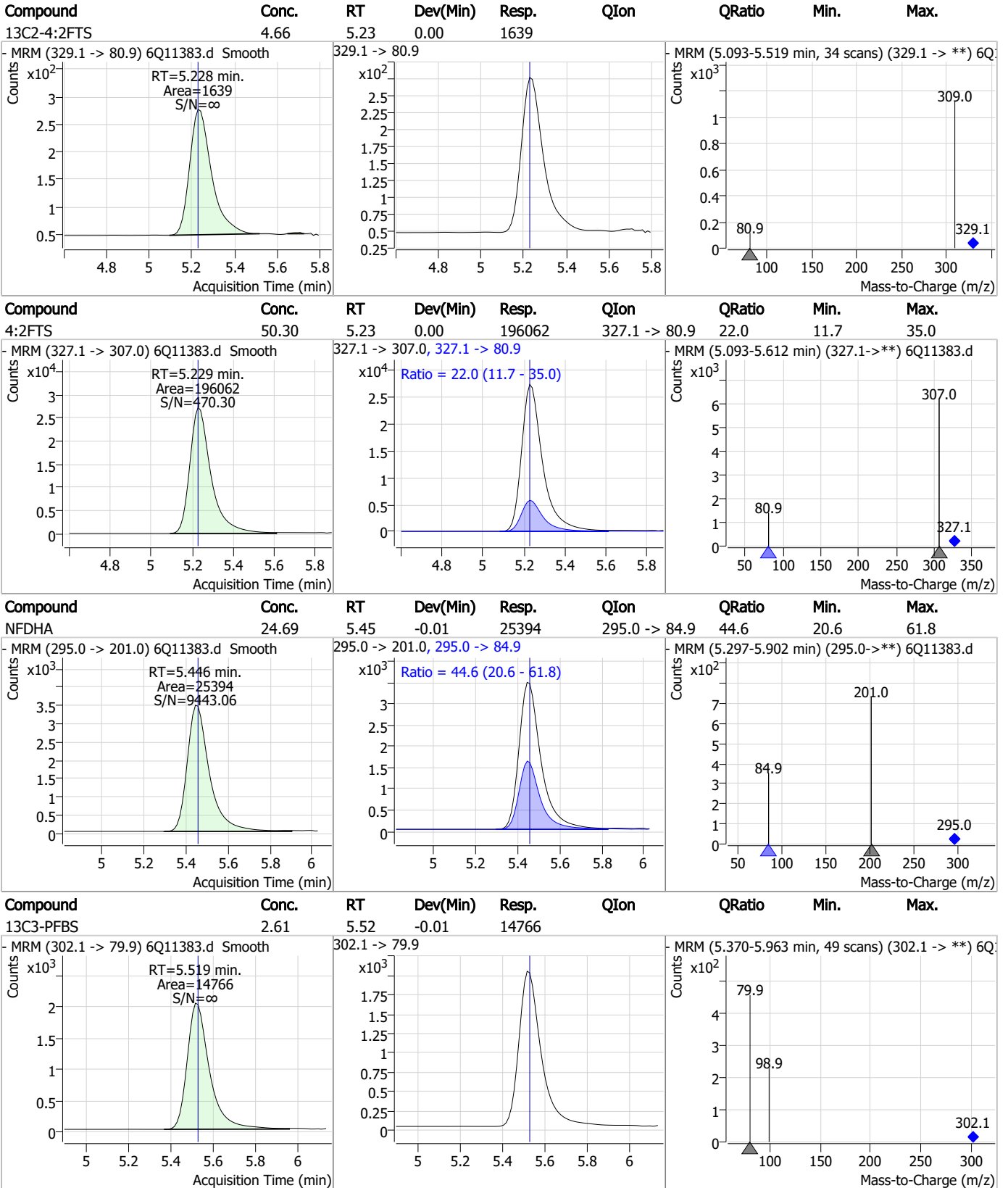
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	24.93	4.39	0.00	241336				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	25.17	4.79	0.00	75985				



Perfluorinated Compounds by LC/MS/MS

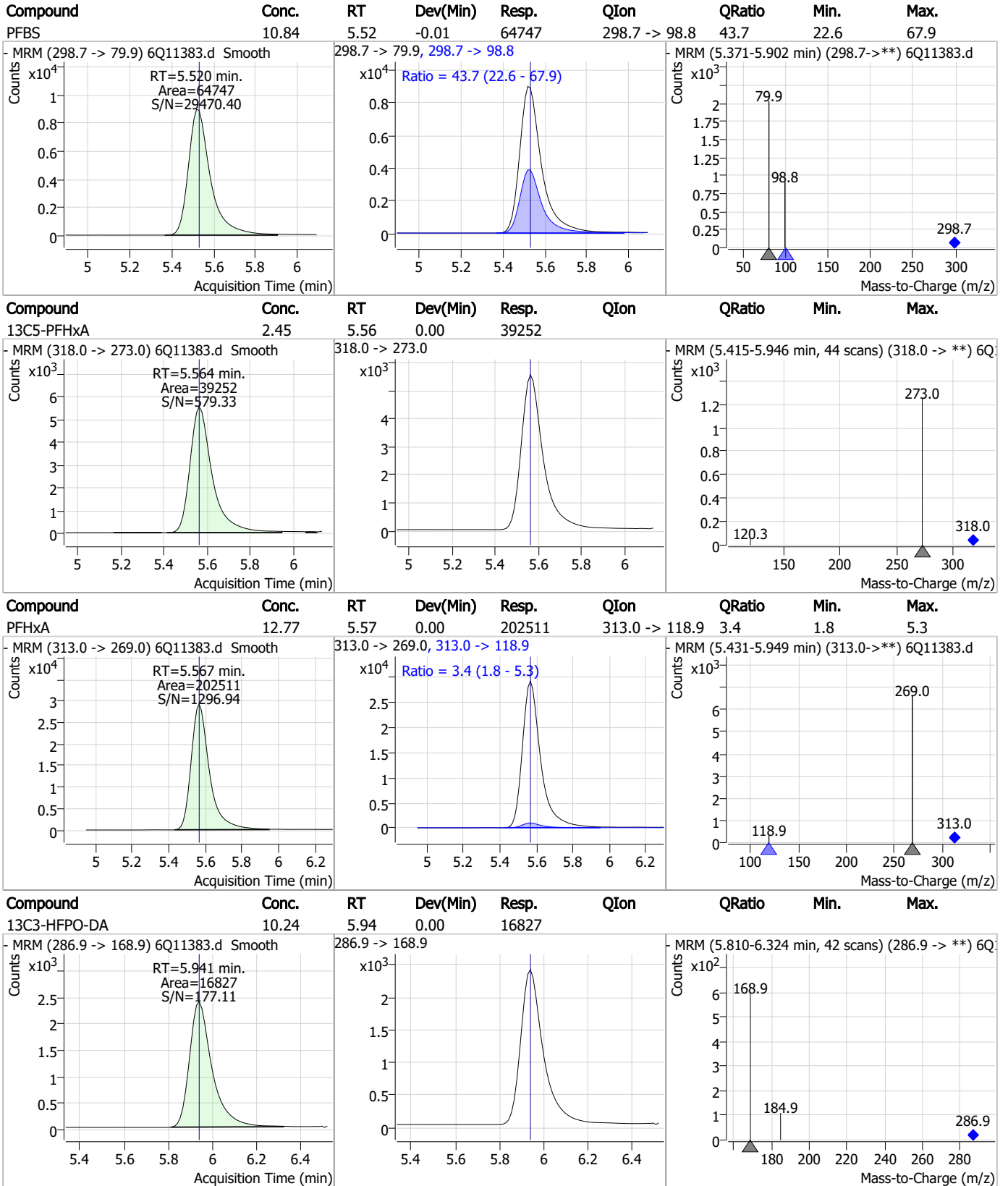


7.5.4

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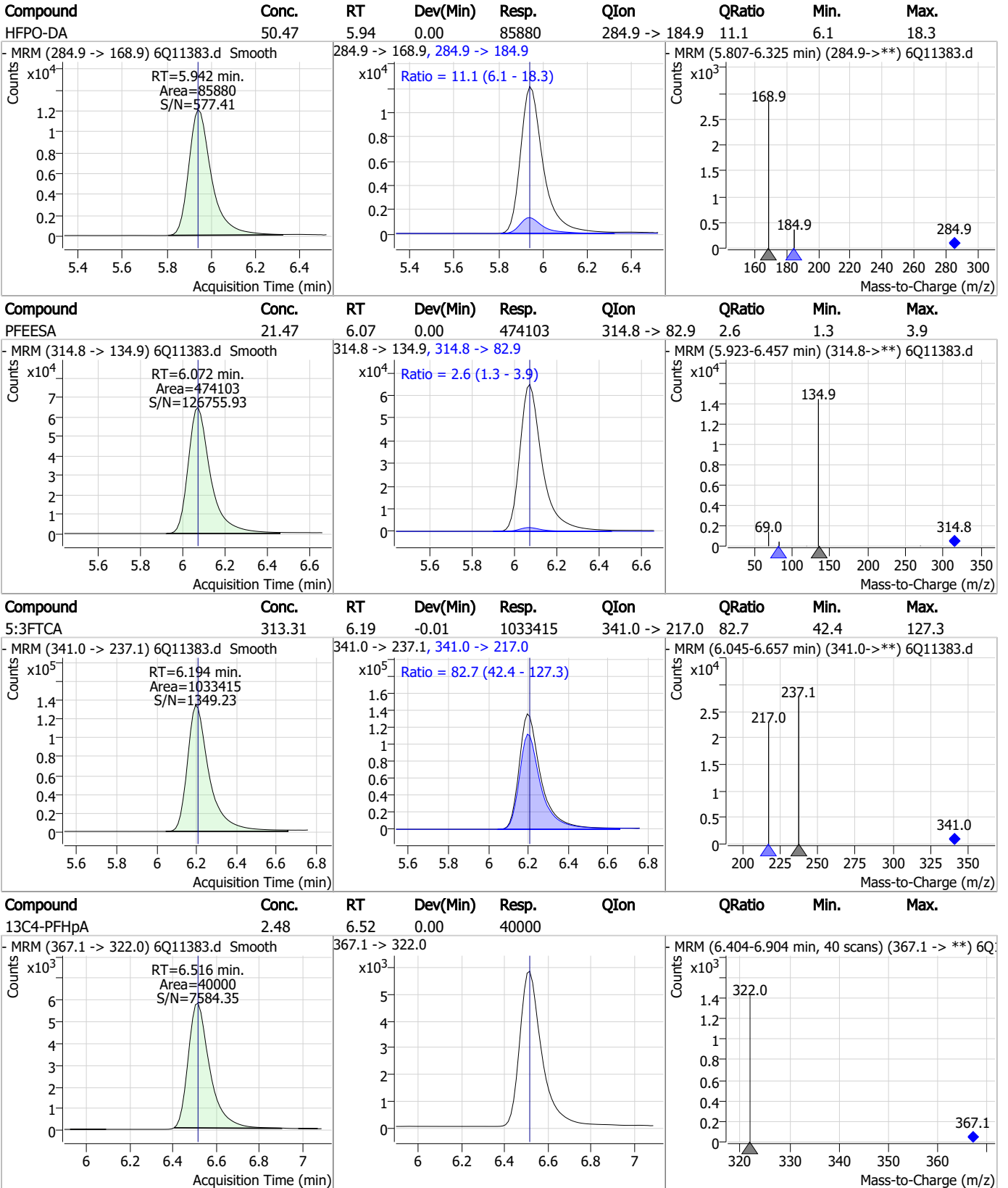
Perfluorinated Compounds by LC/MS/MS



7.5.4

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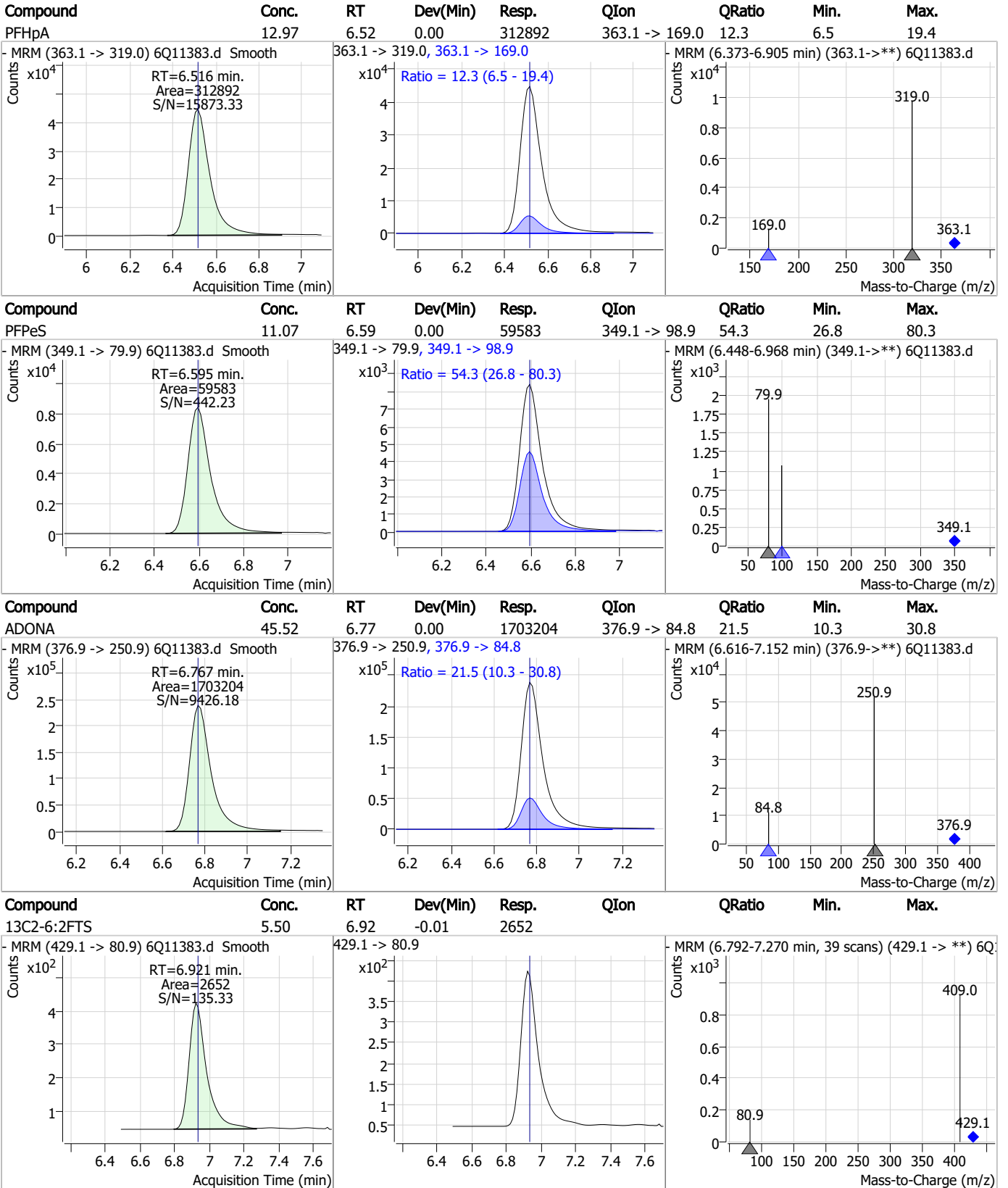
Perfluorinated Compounds by LC/MS/MS



7.5.4

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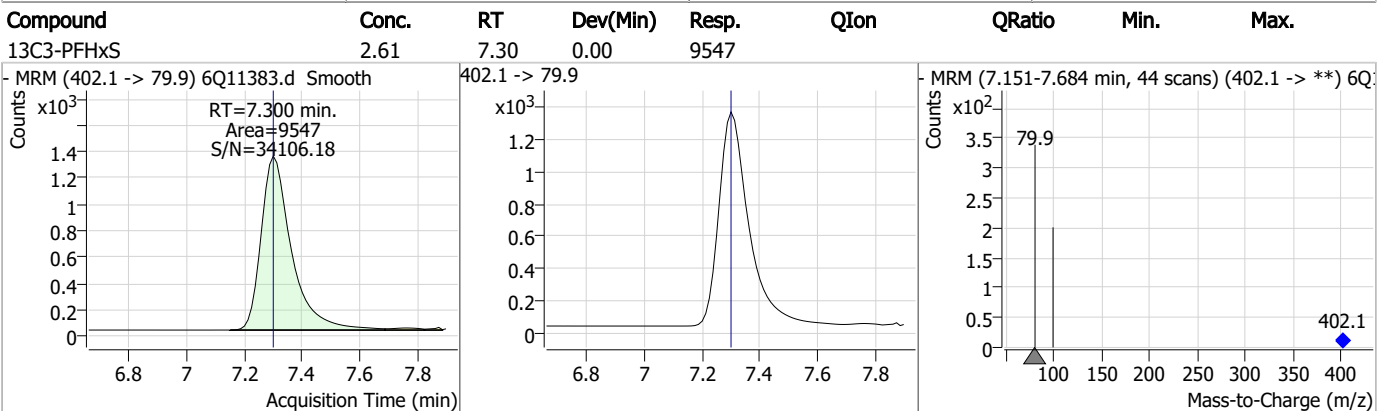
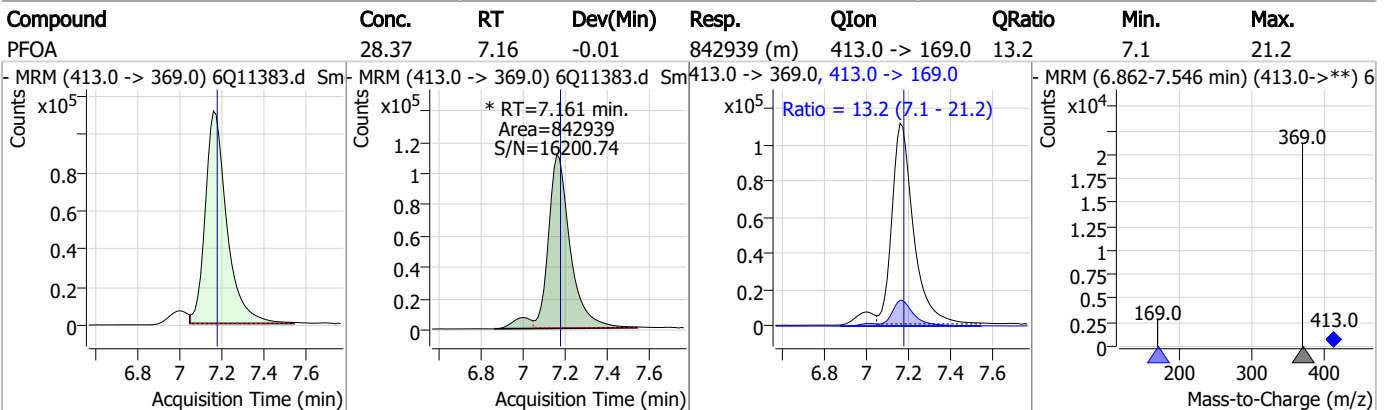
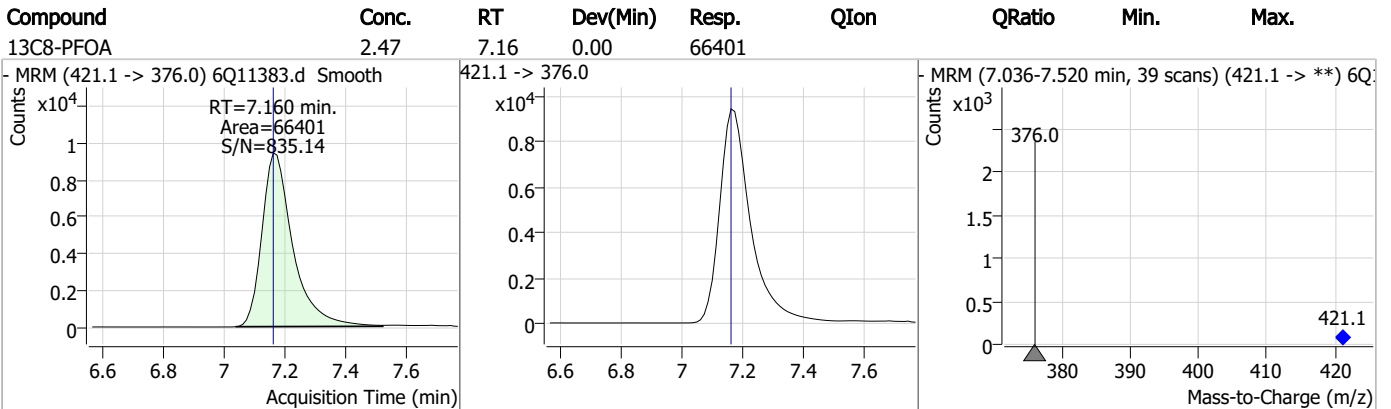
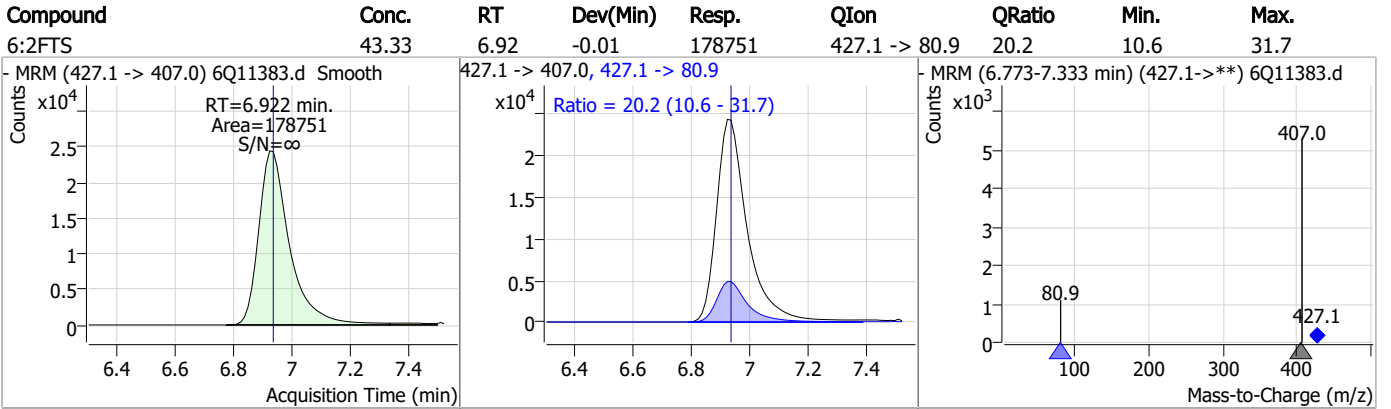
Perfluorinated Compounds by LC/MS/MS



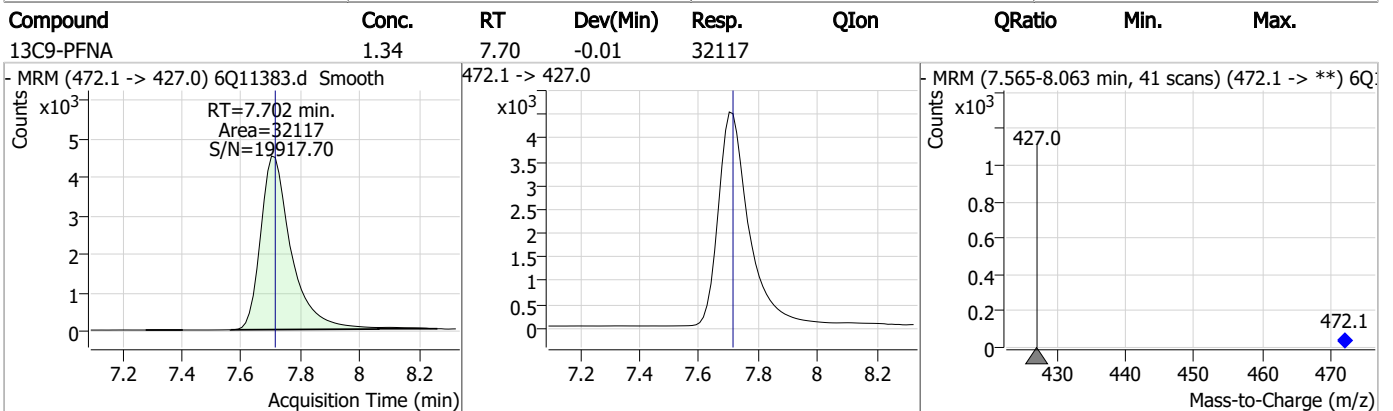
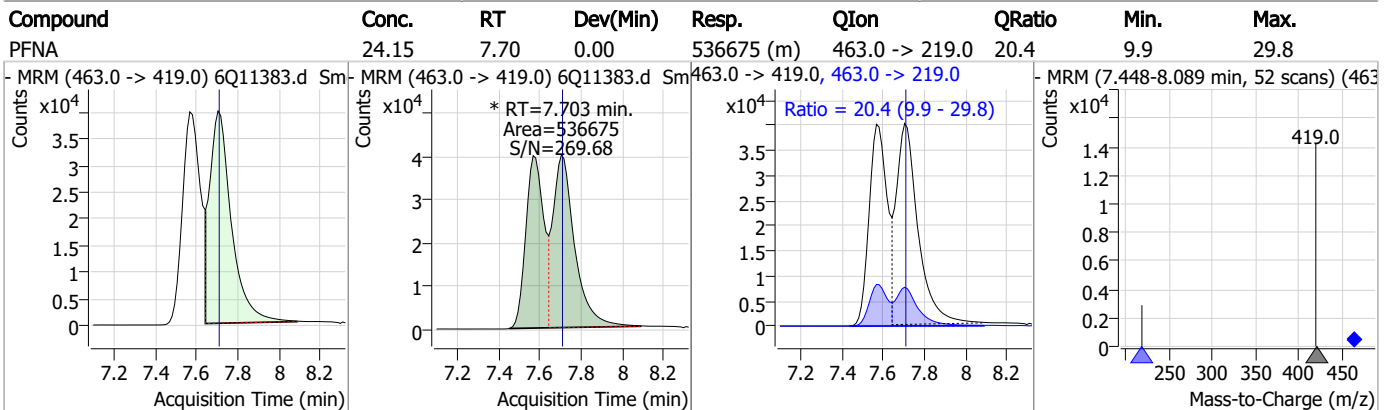
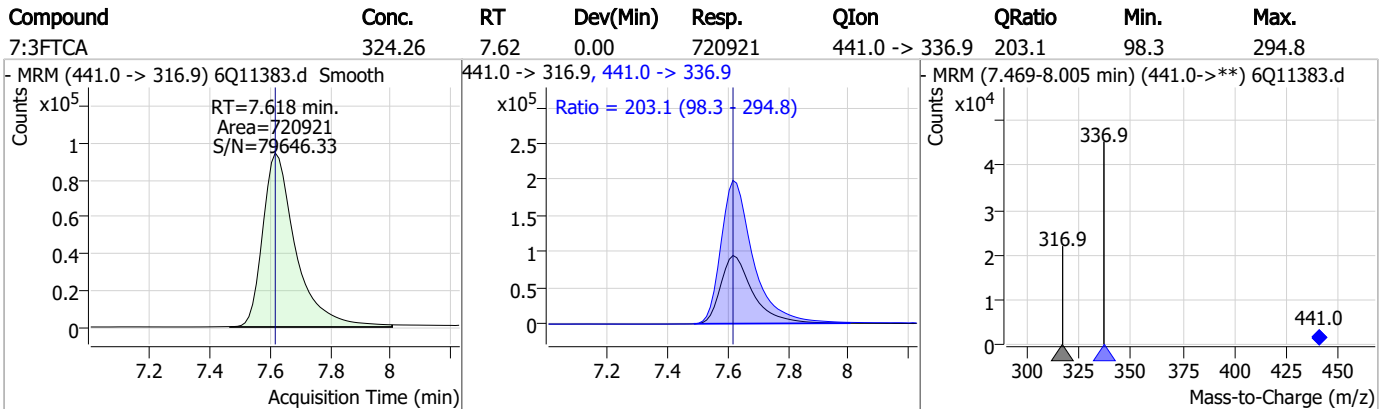
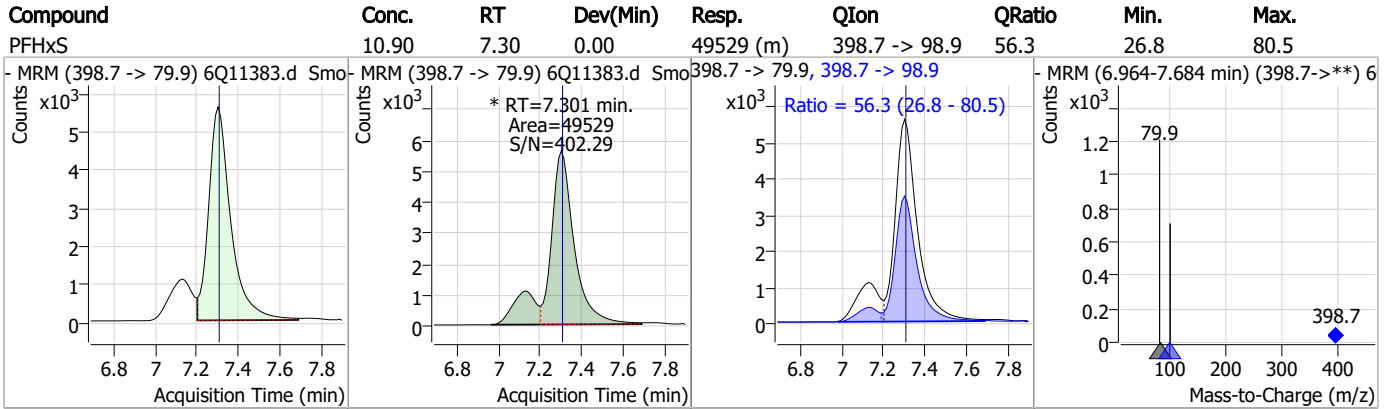
7.5.4

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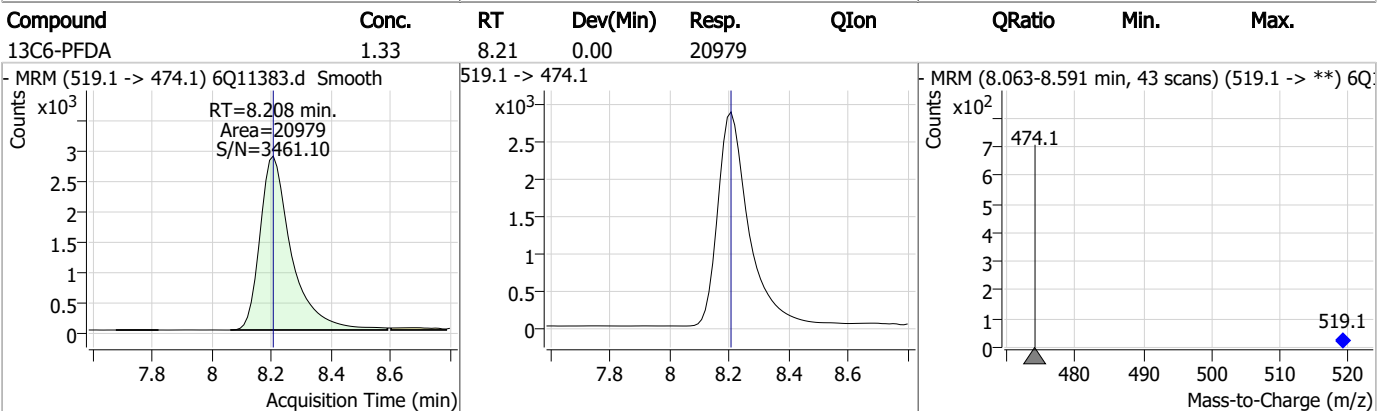
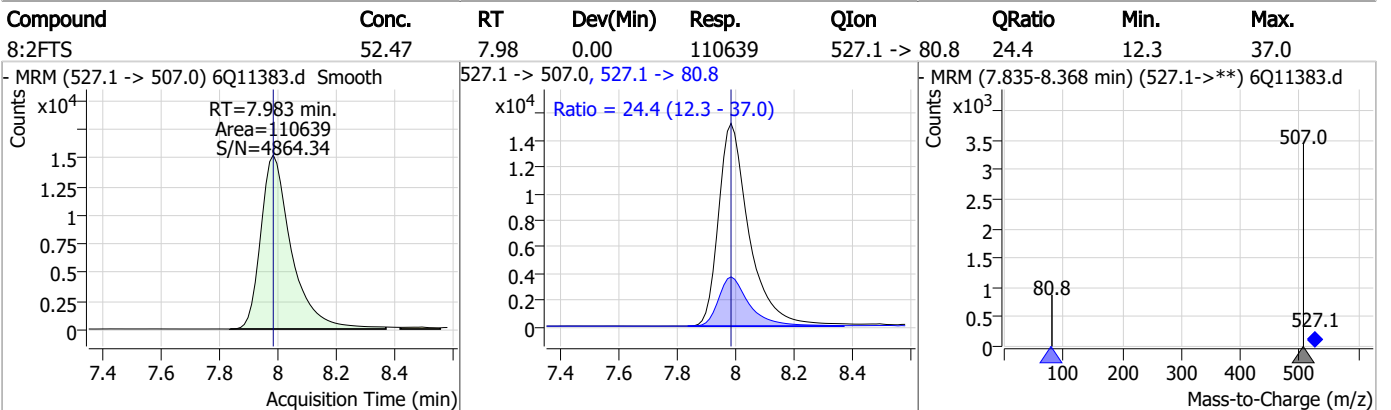
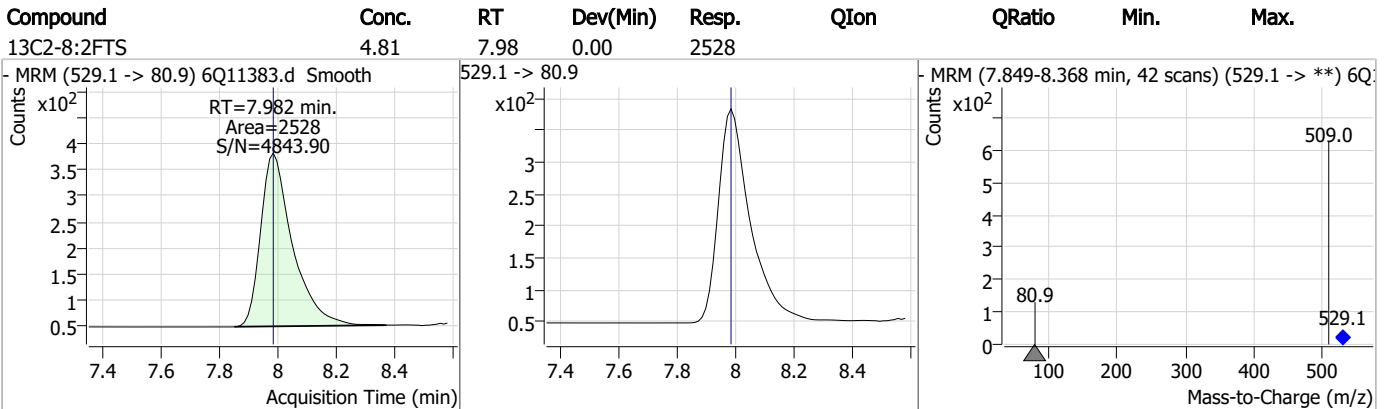
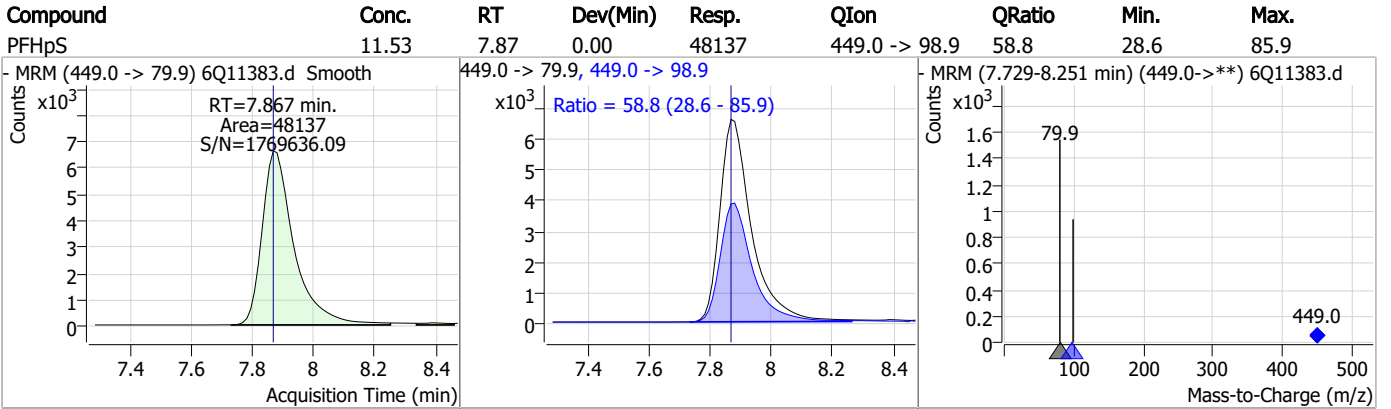
Perfluorinated Compounds by LC/MS/MS



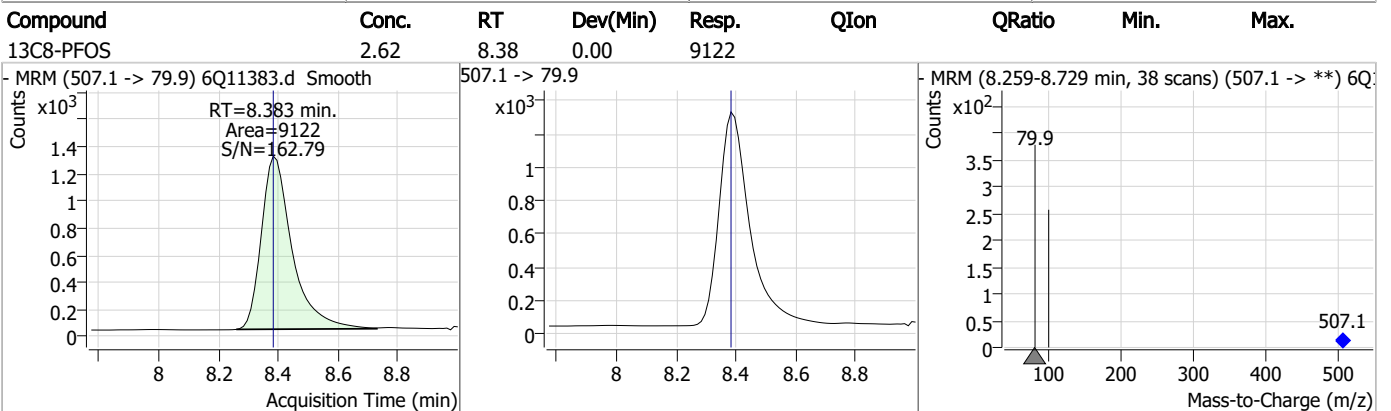
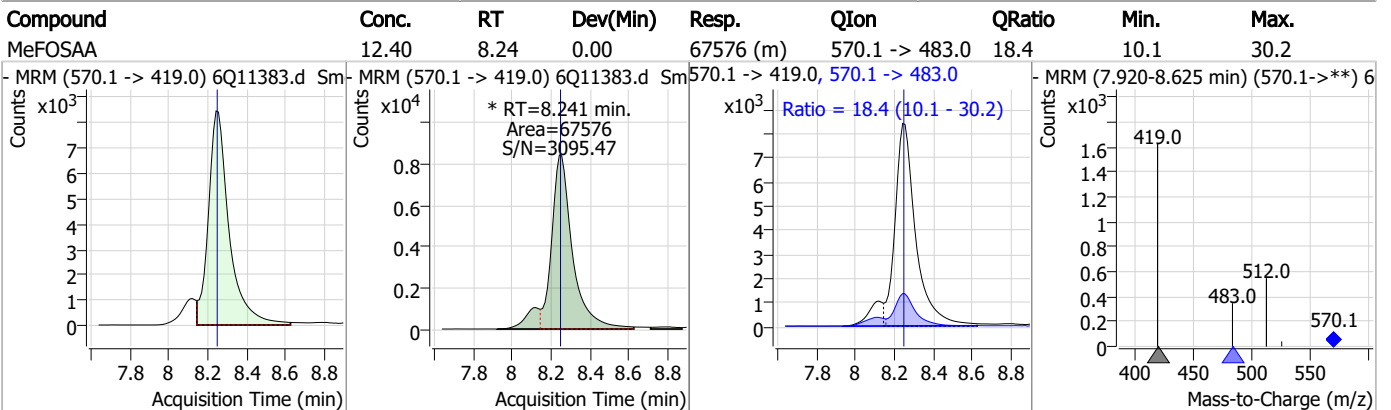
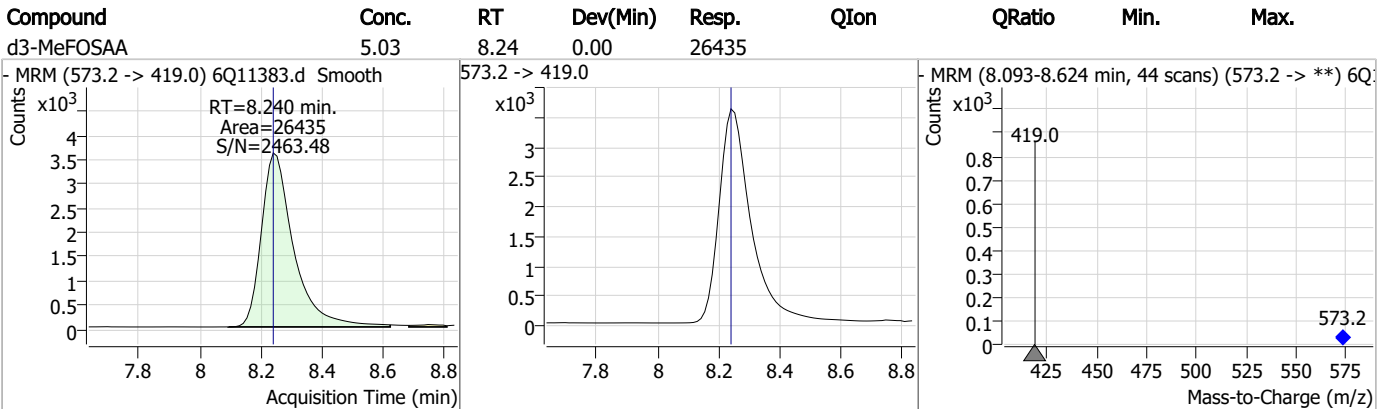
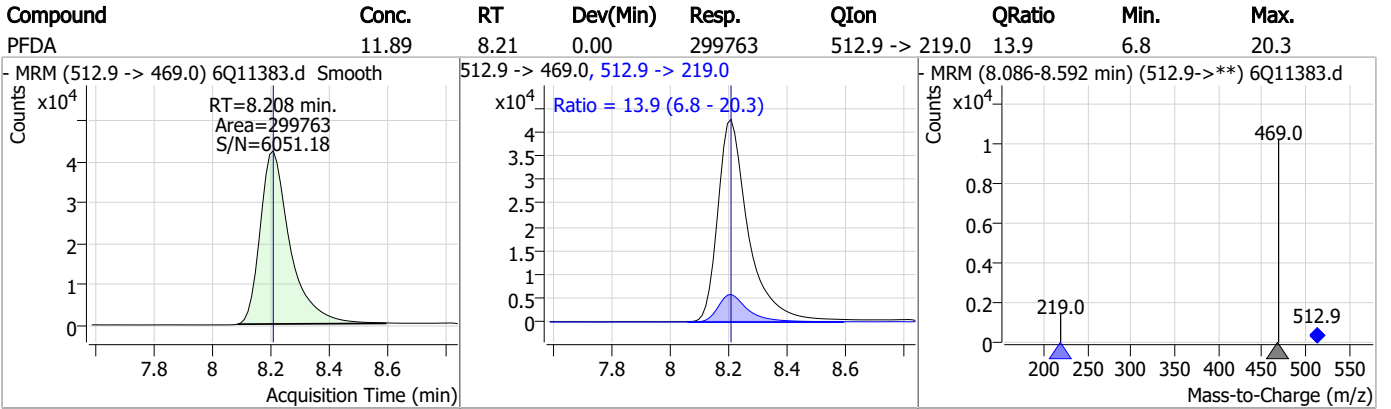
Perfluorinated Compounds by LC/MS/MS



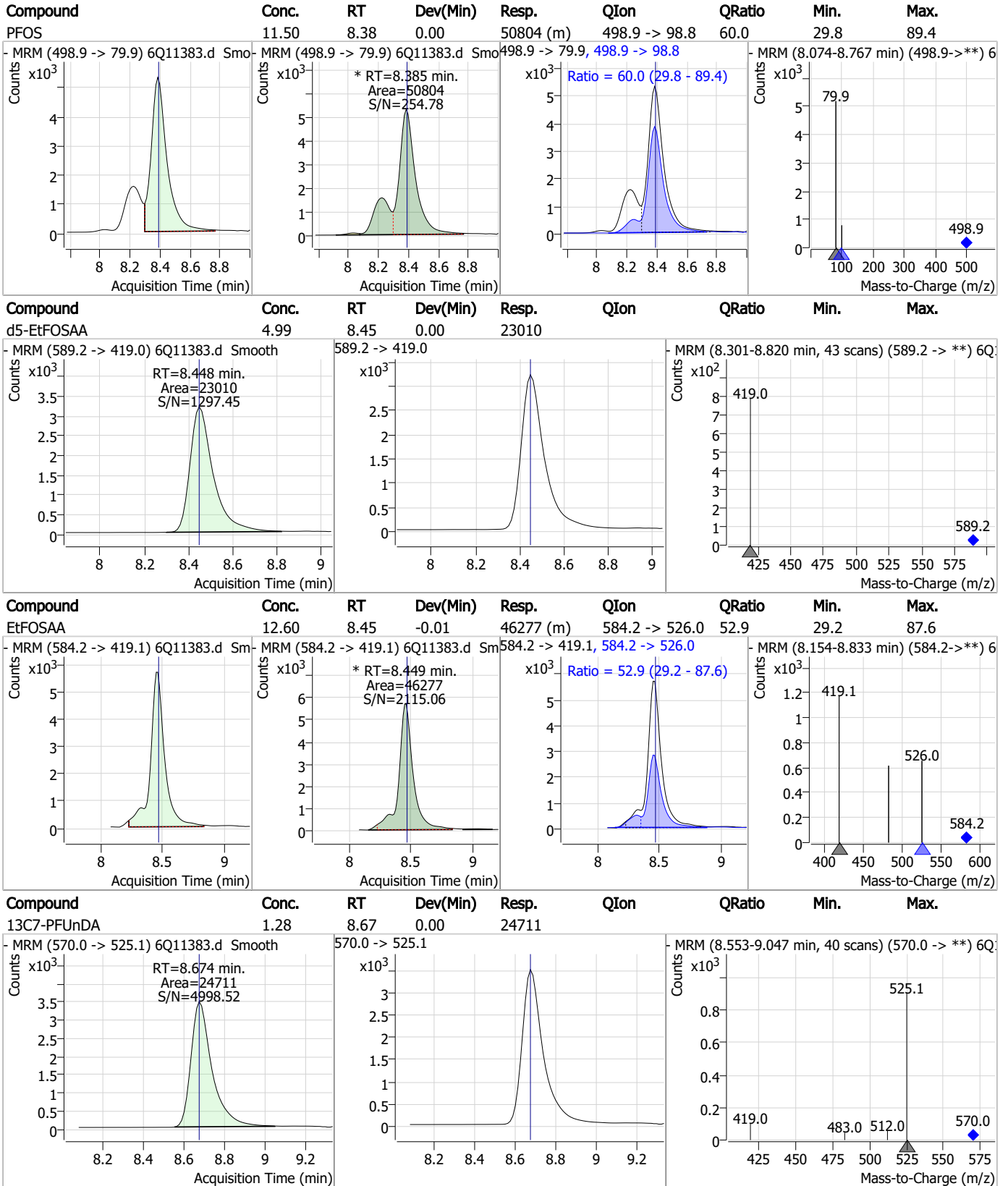
Perfluorinated Compounds by LC/MS/MS



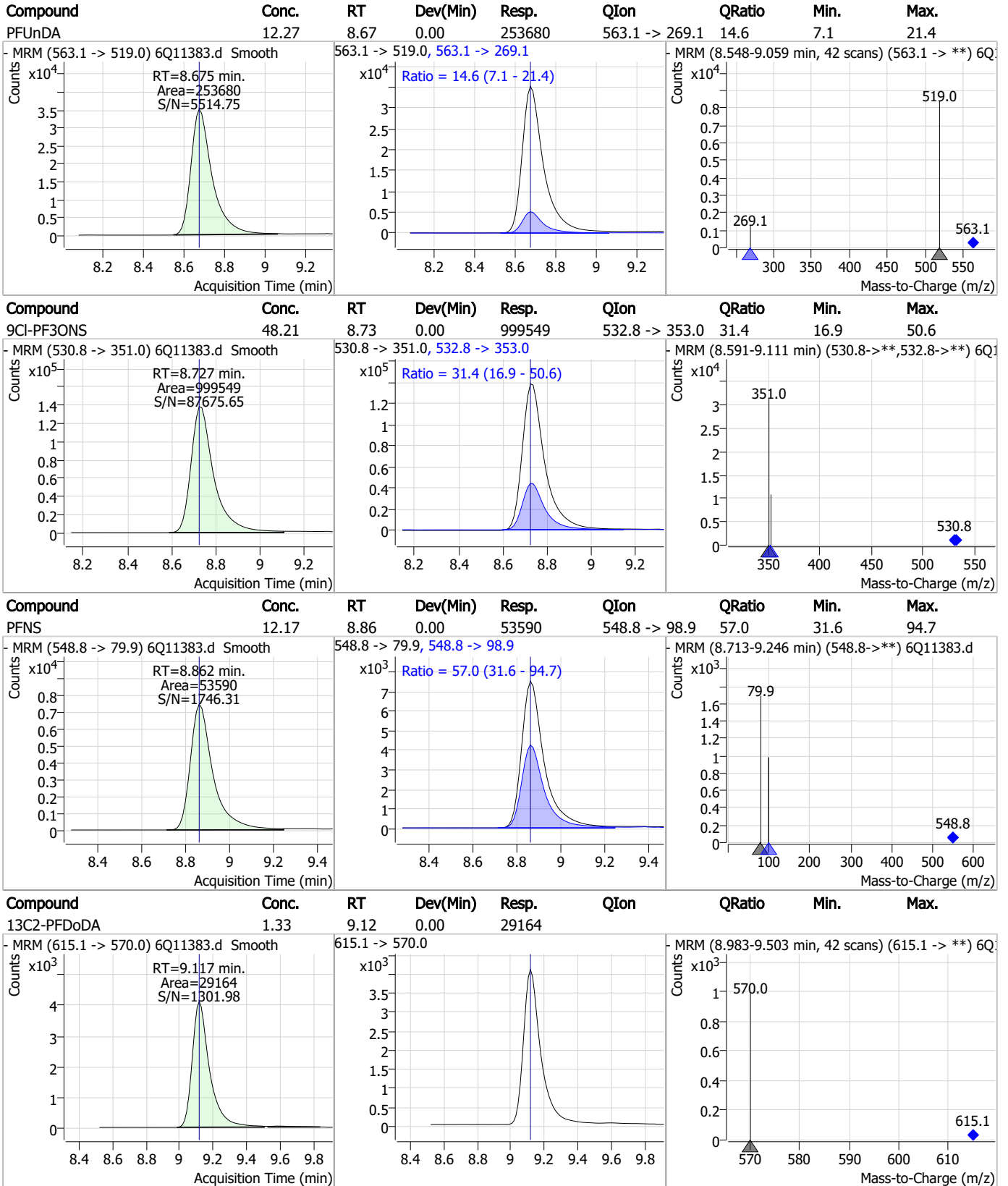
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



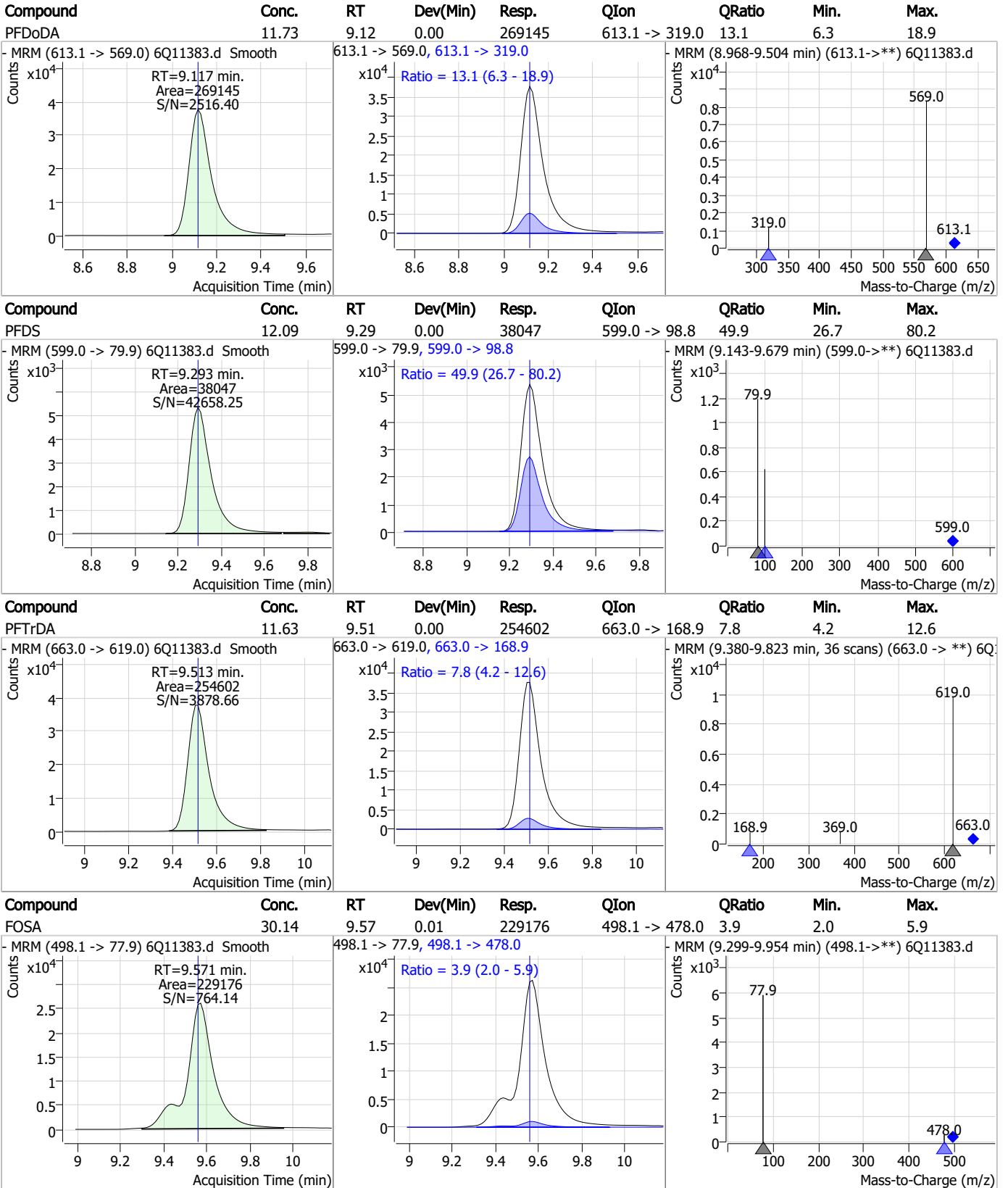
Perfluorinated Compounds by LC/MS/MS



7.5.4

7

Perfluorinated Compounds by LC/MS/MS

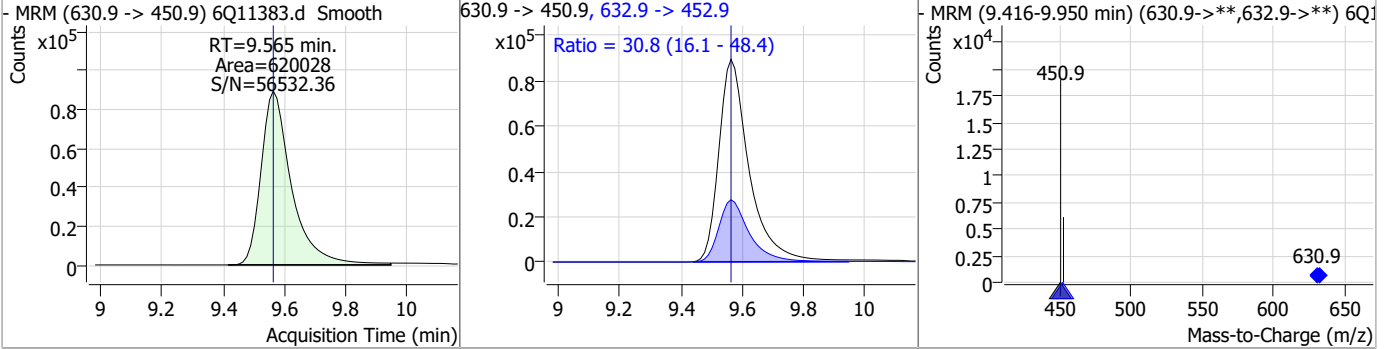


7.5.4

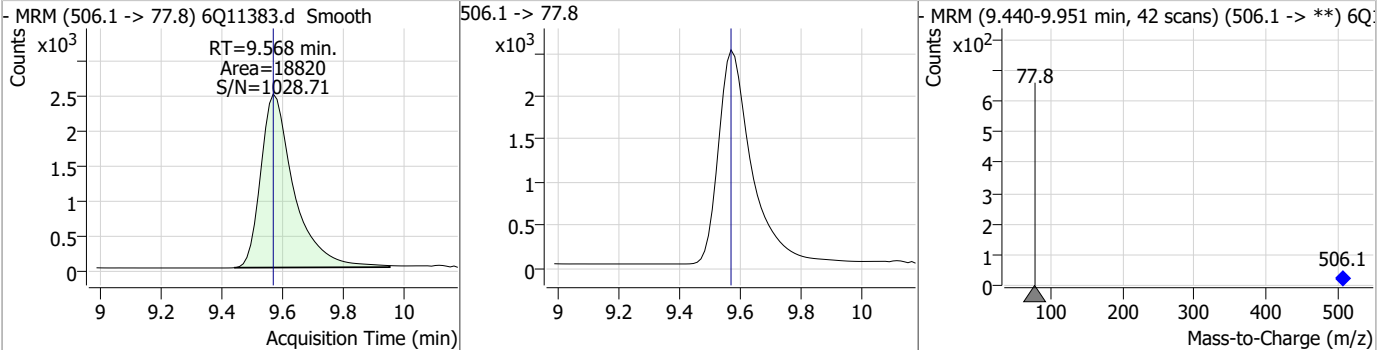
7

Perfluorinated Compounds by LC/MS/MS

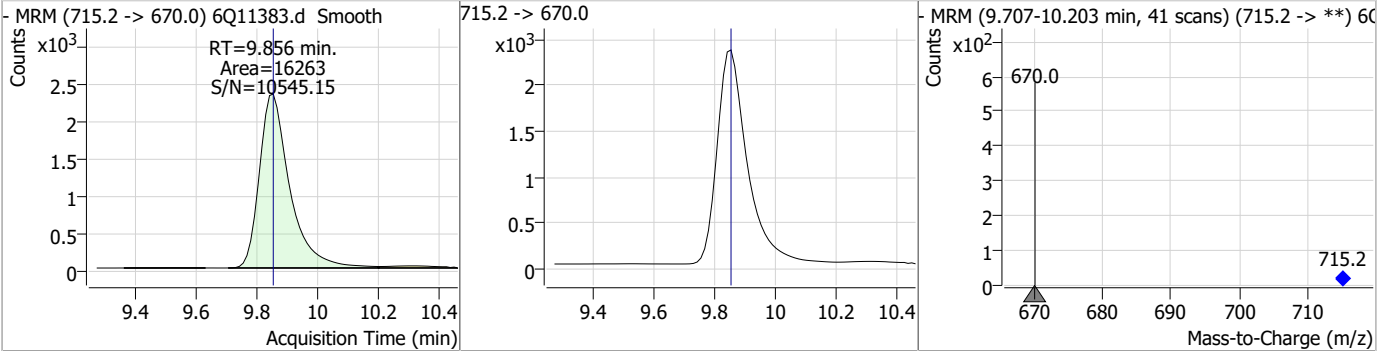
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11CI-PF3OUdS	48.59	9.56	0.00	620028	632.9 -> 452.9	30.8	16.1	48.4



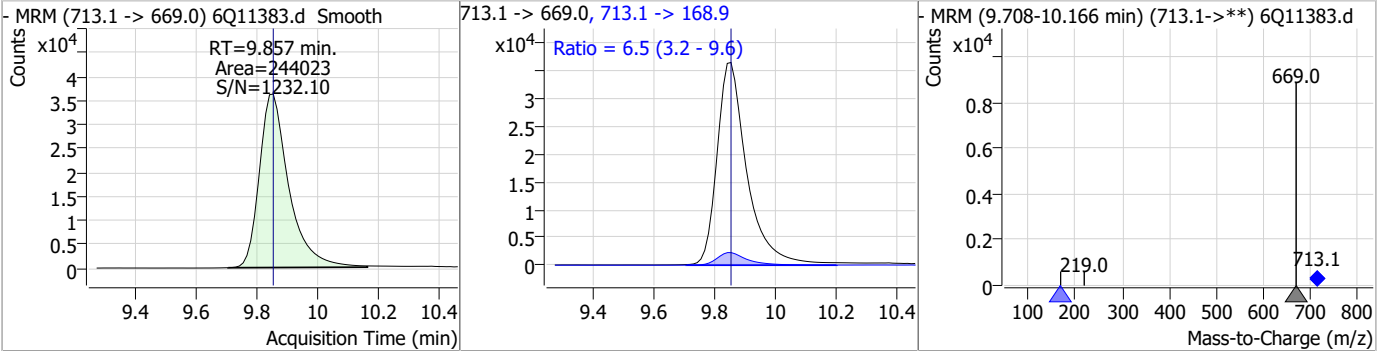
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.55	9.57	0.00	18820				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.26	9.86	0.00	16263				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	12.59	9.86	0.00	244023	713.1 -> 168.9	6.5	3.2	9.6



Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	11.93	10.00	0.00	23414	699.1 -> 98.8	60.8	31.2	93.6
- MRM (699.1 -> 79.9) 6Q11383.d Smooth			699.1 -> 79.9, 699.1 -> 98.8			- MRM (9.847-10.306 min) (699.1->**) 6Q11383.d		
d7-MeFOSE	26.50	10.59	0.00	36791				
- MRM (623.2 -> 58.9) 6Q11383.d Smooth			623.2 -> 58.9			- MRM (10.443-10.975 min, 44 scans) (623.2 -> **) 6Q11383.d		
MeFOSE	134.24	10.60	0.00	203989				
- MRM (616.1 -> 58.9) 6Q11383.d Smooth			616.1 -> 58.9			- MRM (10.456-11.063 min, 50 scans) (616.1 -> **) 6Q11383.d		
d3-MeFOSA	2.48	10.68	0.00	8381				
- MRM (515.0 -> 219.0) 6Q11383.d Smooth			515.0 -> 219.0			- MRM (10.534-11.056 min, 43 scans) (515.0 -> **) 6Q11383.d		

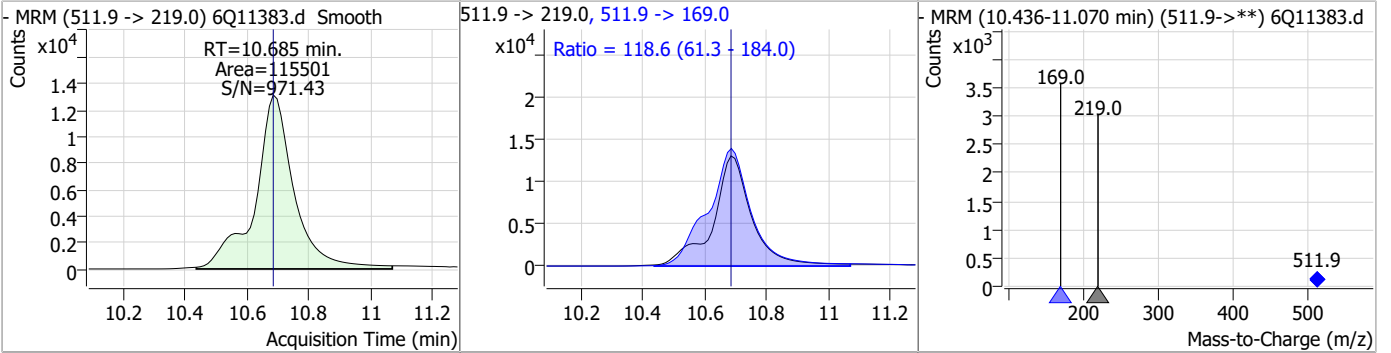
7.5.4

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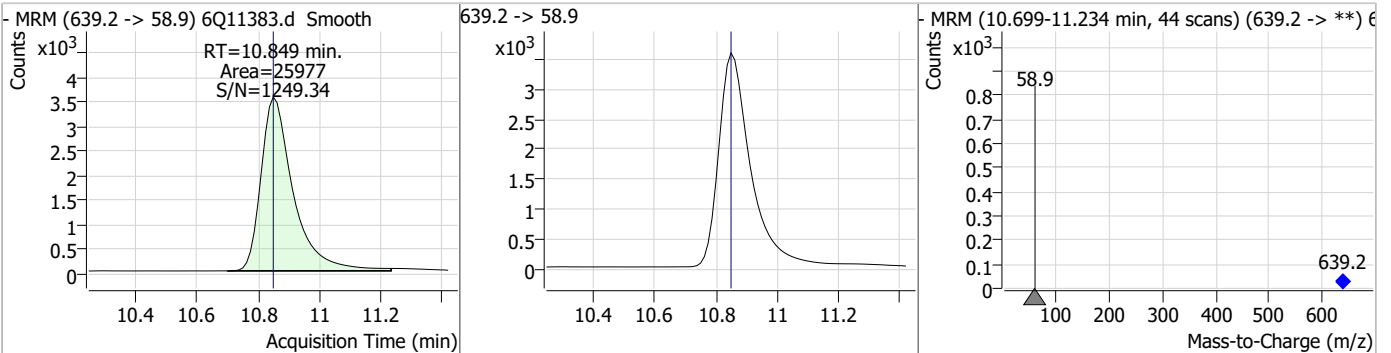


Perfluorinated Compounds by LC/MS/MS

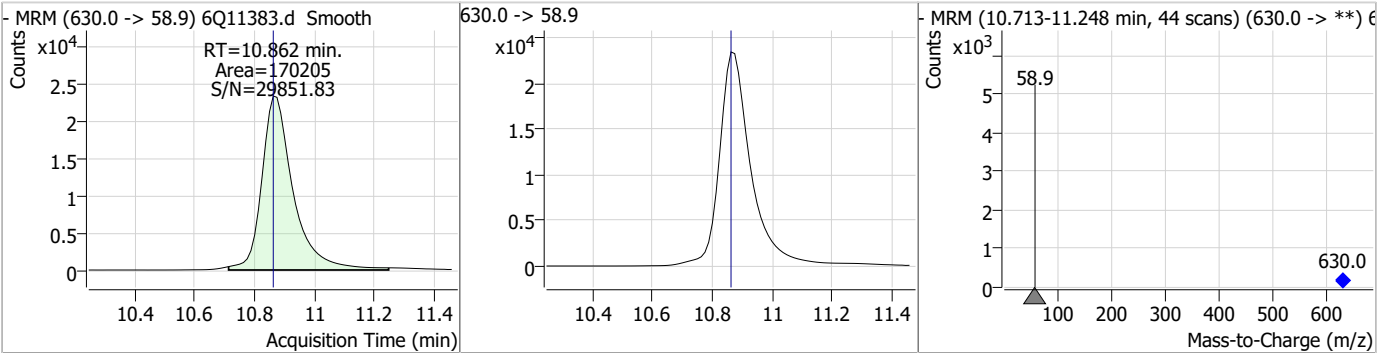
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	31.19	10.68	0.00	115501	511.9 -> 169.0	118.6	61.3	184.0



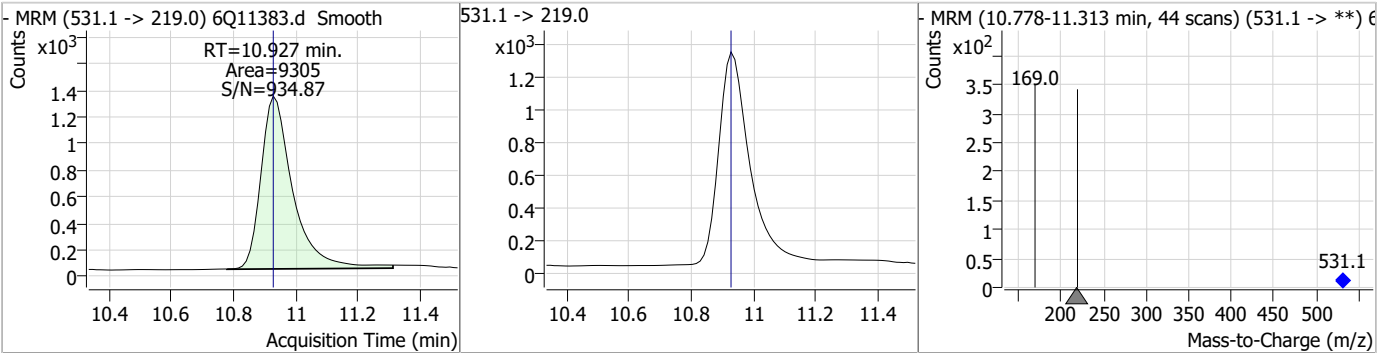
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.46	10.85	0.00	25977				



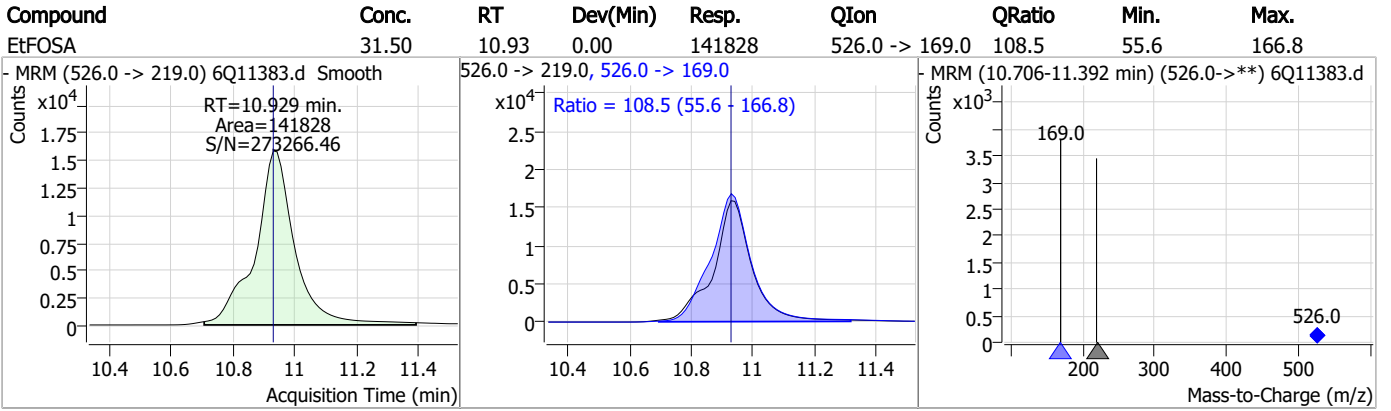
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	148.52	10.86	0.00	170205				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.46	10.93	0.00	9305				



Perfluorinated Compounds by LC/MS/MS



7.5.4

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Manual Integration Approval Summary

Sample Number: S6Q179-RT Method: EPA DRAFT 1633
Lab FileID: 6Q11383.D Analyst approved: 01/17/23 14:23 Martha Valls
Injection Time: 01/16/23 13:26 Supervisor approved: 01/17/23 18:24 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.16	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.30	Split peak
Perfluorononanoic acid	375-95-1		7.70	Split peak
MeFOSAA	2355-31-9		8.24	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.38	Split peak
EtFOSAA	2991-50-6		8.45	Split peak

7.5.4.1
7

Manual Integrations
APPROVED
 (compounds with "m" flag)

Norman Farmer
 01/18/23 12:44

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q11468.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/17/2023 9:23:38 AM
 Sample Name : RT TDCA
 Vial : P1-B3
 DA Method File : TDCA.quantmethod.xml
 Batch Name : s6q179 TDCA.batch.bin
 Sample Information : OP94795,S6Q179,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M8-PFOS	8.383	507.1 -> 79.9	14505	2.50 µg/L	-0.049
13C4-PFOS	8.384	502.8 -> 79.9	18937	2.50 µg/L	-0.037
System Monitoring Compounds					
13C8-PFOS	8.383	507.1 -> 79.9	14505	1.94 µg/L	-0.049
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 77.7%		
Target Compounds					
PFOS	8.385	498.9 -> 79.9 498.9 -> 98.8	19634 10830	3.96 µg/L #m	69
TCDCa	6.672	498.9 -> 79.9	2993	4.47 ng/ml	100
TDCA	6.833	498.9 -> 79.9	4709	7.77 ng/ml	100
TUDCA	5.795	498.9 -> 79.9	5811	4.52 ng/ml	100

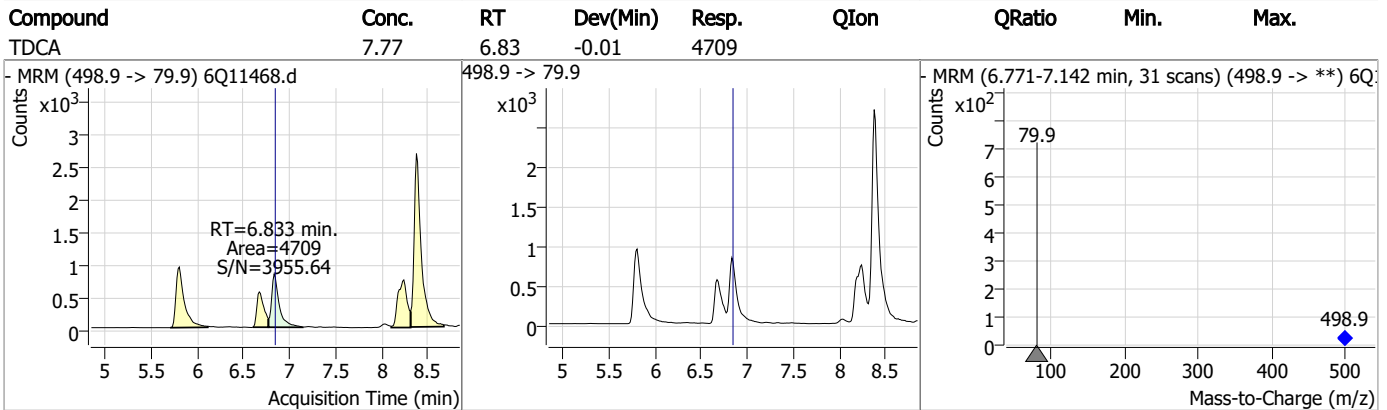
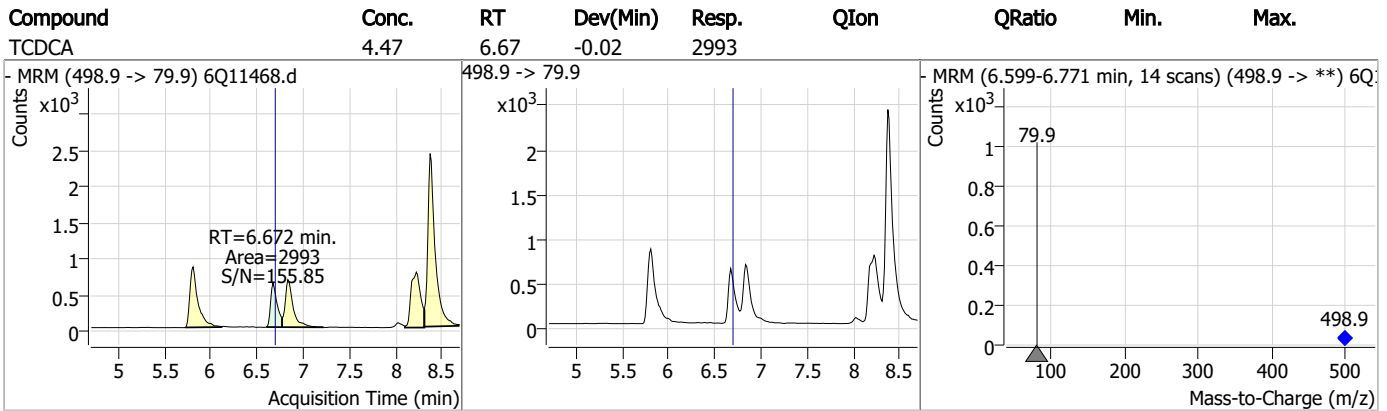
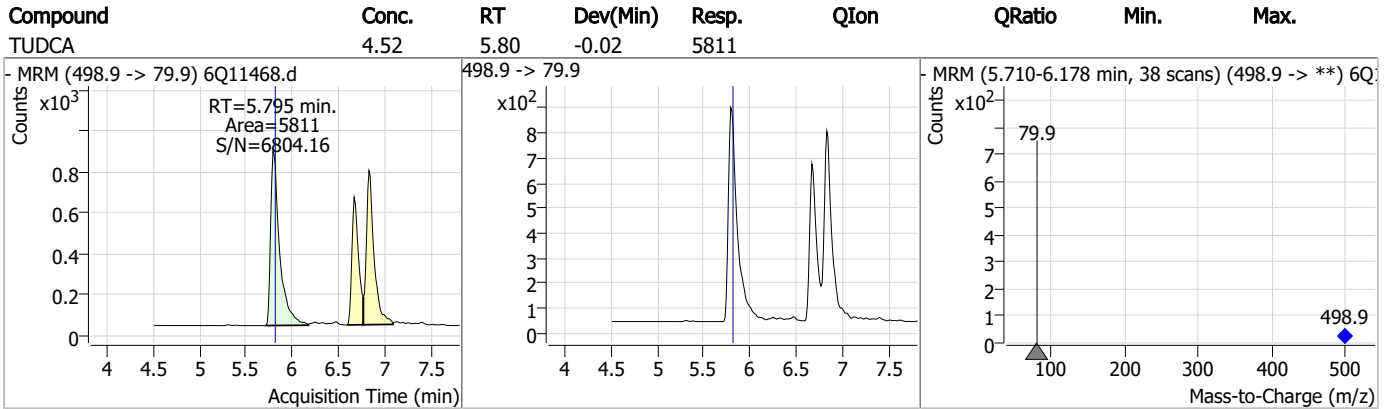
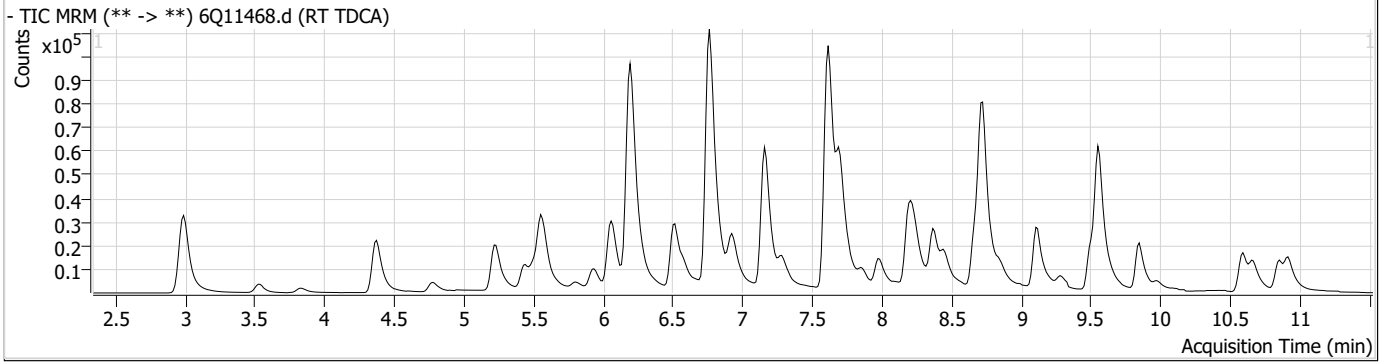
= Qualifier out of range, m = manually integrated, + = Area summed

7.5.5

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Perfluorinated Compounds by LC/MS/MS

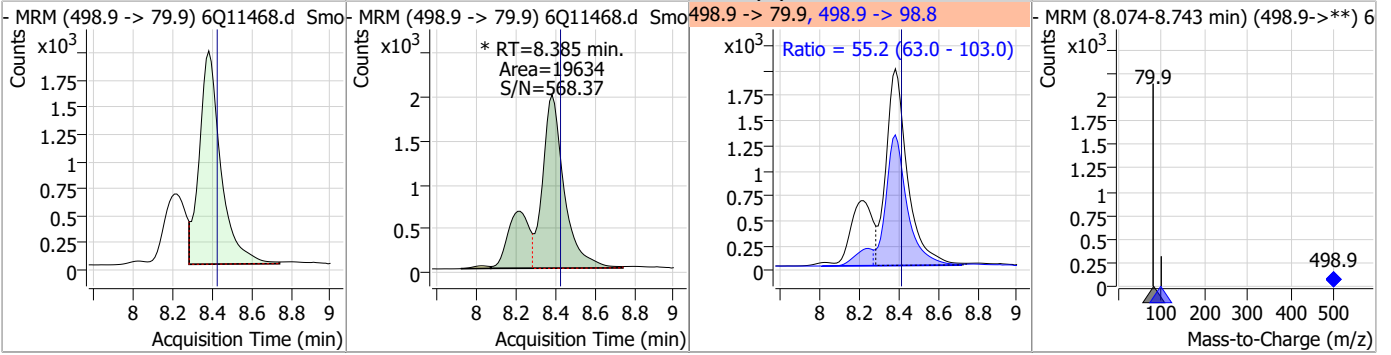


7.5.5

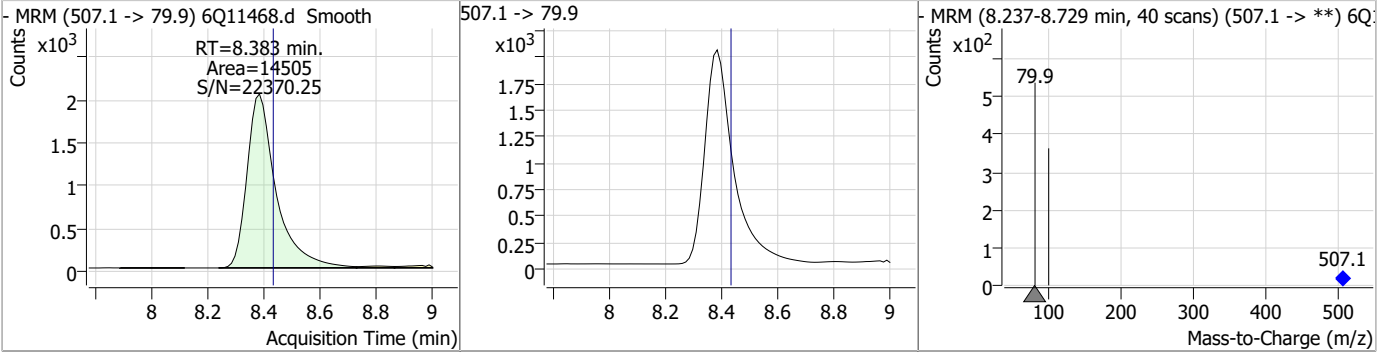
7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	3.96	8.38	-0.04	19634 (m)	498.9 -> 98.8	55.2	63.0	103.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	1.94	8.38	-0.05	14505				



7.5.5

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Manual Integration Approval Summary

Sample Number: S6Q179-RT Method: EPA DRAFT 1633
Lab FileID: 6Q11468.D Analyst approved: 01/18/23 10:54 Martha Valls
Injection Time: 01/17/23 09:23 Supervisor approved: 01/18/23 12:44 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.38	Split peak

7.5.5.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q11469.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/17/2023 9:37:37 AM
 Sample Name : RT br-ln
 Vial : P1-B4
 DA Method File : 1633_011123_S6Q174.quantmethod.xml
 Batch Name : s6q179.batch.bin
 Sample Information : OP94795,S6Q179,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.000	216.8 -> 171.9	86815	10.00 µg/L	0.000
M5-PFPeA	4.371	268.3 -> 223.0	41272	5.00 µg/L	-0.012
M5-PFHxA	5.564	318.0 -> 273.0	36949	2.50 µg/L	0.000
M4-PFHpA	6.516	367.1 -> 322.0	37715	2.50 µg/L	0.000
M8-PFOA	7.172	421.1 -> 376.0	60910	2.50 µg/L	0.012
M9-PFNA	7.715	472.1 -> 427.0	28917	1.25 µg/L	0.000
M6-PFDA	8.208	519.1 -> 474.1	20747	1.25 µg/L	0.000
M7-PFUnDA	8.674	570.0 -> 525.1	21971	1.25 µg/L	0.000
M2-PFDoDA	9.117	615.1 -> 570.0	26993	1.25 µg/L	0.000
M2-PFTeDA	9.856	715.2 -> 670.0	15174	1.25 µg/L	0.000
M8-FOSA	9.568	506.1 -> 77.8	18839	2.50 µg/L	0.000
M3-PFBS	5.519	302.1 -> 79.9	13646	2.50 µg/L	-0.012
M3-PFHxS	7.300	402.1 -> 79.9	9251	2.50 µg/L	0.000
M8-PFOS	8.383	507.1 -> 79.9	9535	2.50 µg/L	0.000
M2-4:2FTS	5.228	329.1 -> 80.9	1657	5.00 µg/L	0.000
M2-6:2FTS	6.934	429.1 -> 80.9	2366	5.00 µg/L	0.000
M2-8:2FTS	7.982	529.1 -> 80.9	2836	5.00 µg/L	0.000
M3-MeFOSAA	8.253	573.2 -> 419.0	26396	5.00 µg/L	0.012
M3-HFPO-DA	5.941	286.9 -> 168.9	15888	10.00 µg/L	0.000
M5-EtFOSAA	8.448	589.2 -> 419.0	23497	5.00 µg/L	0.000
M7-MeFOSE	10.591	623.2 -> 58.9	34569	25.00 µg/L	0.000
M9-EtFOSE	10.849	639.2 -> 58.9	24925	25.00 µg/L	0.000
M5-EtFOSA	10.927	531.1 -> 219.0	8659	2.50 µg/L	0.000
M3-MeFOSA	10.683	515.0 -> 219.0	8301	2.50 µg/L	0.000
13C4-PFOS	8.384	502.8 -> 79.9	10201	2.50 µg/L	0.000
13C3-PFBA	3.004	216.0 -> 172.0	38237	5.00 µg/L	0.000
18O2-PFHxS	7.299	403.0 -> 83.9	6799	2.50 µg/L	0.000
13C4-PFOA	7.173	417.1 -> 372.0	75820	2.50 µg/L	0.000
13C2-PFDA	8.208	515.1 -> 470.1	27299	1.25 µg/L	0.000
13C5-PFNA	7.715	468.0 -> 423.0	34131	1.25 µg/L	0.013
13C2-PFHxA	5.565	315.1 -> 270.0	38586	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.228	329.1 -> 80.9	1657	4.67 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 93.4%		
13C2-6:2FTS	6.934	429.1 -> 80.9	2366	4.87 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.4%		
13C2-8:2FTS	7.982	529.1 -> 80.9	2836	5.35 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.0%		
13C2-PFDoDA	9.117	615.1 -> 570.0	26993	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.8%		
13C2-PFTeDA	9.856	715.2 -> 670.0	15174	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.5%		
13C3-PFBS	5.519	302.1 -> 79.9	13646	2.39 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.7%		
13C3-PFHxS	7.300	402.1 -> 79.9	9251	2.51 µg/L	0.000

7.5.6
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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 = 100.2%	
13C4-PFBA	3.000	216.8 -> 171.9	86815	9.94 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C4-PFHpA	6.516	367.1 -> 322.0	37715	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.4%	
13C5-PFHxA	5.564	318.0 -> 273.0	36949	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.4%	
13C5-PFPeA	4.371	268.3 -> 223.0	41272	4.79 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.9%	
13C6-PFDA	8.208	519.1 -> 474.1	20747	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.8%	
13C7-PFUnDA	8.674	570.0 -> 525.1	21971	1.16 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.7%	
13C8-FOSA	9.568	506.1 -> 77.8	18839	2.73 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.4%	
13C8-PFOA	7.172	421.1 -> 376.0	60910	2.40 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.9%	
13C8-PFOS	8.383	507.1 -> 79.9	9535	2.93 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 117.0%	
13C9-PFNA	7.715	472.1 -> 427.0	28917	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.4%	
d3-MeFOSAA	8.253	573.2 -> 419.0	26396	5.37 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.5%	
13C3-HFPO-DA	5.941	286.9 -> 168.9	15888	9.98 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
d3-MeFOSA	10.683	515.0 -> 219.0	8301	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.3%	
d5-EtFOSAA	8.448	589.2 -> 419.0	23497	5.45 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 109.0%	
d7-MeFOSE	10.591	623.2 -> 58.9	34569	26.62 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 106.5%	
d9-EtFOSE	10.849	639.2 -> 58.9	24925	25.10 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
d5-EtFOSA	10.927	531.1 -> 219.0	8659	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.0%	
Target Compounds					QValue
4:2FTS	5.229	327.1 -> 307.0	190789	48.43 µg/L	100
		327.1 -> 80.9	44291		
6:2FTS	6.934	427.1 -> 407.0	176706	48.00 µg/L	98
		427.1 -> 80.9	35541		
8:2FTS	7.983	527.1 -> 507.0	105961	44.79 µg/L	99
		527.1 -> 80.8	25408		
EtFOSAA	8.462	584.2 -> 419.1	42184	11.25 µg/L	m 95
		584.2 -> 526.0	23145		
FOSA	9.571	498.1 -> 77.9	219481	28.84 µg/L	99
		498.1 -> 478.0	8202		
MeFOSAA	8.254	570.1 -> 419.0	63706	11.71 µg/L	m 99
		570.1 -> 483.0	12631		
PFBA	2.994	212.8 -> 168.9	112035	50.30 µg/L	100
PFBS	5.520	298.7 -> 79.9	63615	11.52 µg/L	99
		298.7 -> 98.8	28275		
PFDA	8.208	512.9 -> 469.0	316227	12.68 µg/L	96
		512.9 -> 219.0	38213		
PFDoDA	9.117	613.1 -> 569.0	254211	11.97 µg/L	98
		613.1 -> 319.0	29846		
PFDS	9.293	599.0 -> 79.9	35897	10.91 µg/L	99

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	18815			
PFHpA	6.516	363.1 -> 319.0	281992	12.40	µg/L	99
		363.1 -> 169.0	37682			
PFHpS	7.879	449.0 -> 79.9	43995	10.09	µg/L	97
		449.0 -> 98.9	26314			
PFHxA	5.567	313.0 -> 269.0	176897	11.85	µg/L	99
		313.0 -> 118.9	6842			
PFHxS	7.301	398.7 -> 79.9	45807	10.40	µg/L	m 94
		398.7 -> 98.9	26650			
PFNA	7.578	463.0 -> 419.0	522939	26.14	µg/L	m 100
		463.0 -> 219.0	103685			
PFNS	8.862	548.8 -> 79.9	51162	11.11	µg/L	90
		548.8 -> 98.9	28181			
PFOA	7.174	413.0 -> 369.0	772110	28.33	µg/L	m 99
		413.0 -> 169.0	105092			
PFOS	8.385	498.9 -> 79.9	49345	10.69	µg/L	m 96
		498.9 -> 98.8	31014			
PFPeA	4.374	263.0 -> 219.0	224095	24.73	µg/L	100
PFPeS	6.595	349.1 -> 79.9	58646	11.25	µg/L	100
		349.1 -> 98.9	31257			
PFTeDA	9.844	713.1 -> 669.0	215392	11.91	µg/L	99
		713.1 -> 168.9	14344			
PFTrDA	9.513	663.0 -> 619.0	248690	12.27	µg/L	97
		663.0 -> 168.9	18524			
PFUnDA	8.675	563.1 -> 519.0	255987	13.93	µg/L	99
		563.1 -> 269.1	37586			
11CI-PF3OUdS	9.565	630.9 -> 450.9	544194	45.17	µg/L	98
		632.9 -> 452.9	169541			
9CI-PF3ONS	8.727	530.8 -> 351.0	870147	44.45	µg/L	98
		532.8 -> 353.0	302193			
ADONA	6.780	376.9 -> 250.9	1685200	47.70	µg/L	99
		376.9 -> 84.8	356114			
HFPO-DA	5.942	284.9 -> 168.9	82948	51.63	µg/L	100
		284.9 -> 184.9	10112			
3:3FTCA	3.852	241.0 -> 177.0	29239	60.56	µg/L	97
		241.0 -> 117.0	3816			
5:3FTCA	6.207	341.0 -> 237.1	927615	298.76	µg/L	98
		341.0 -> 217.0	803580			
7:3FTCA	7.630	441.0 -> 316.9	609353	291.16	µg/L	87
		441.0 -> 336.9	1313689			
EtFOSA	10.929	526.0 -> 219.0	129219	30.84	µg/L	99
		526.0 -> 169.0	145664			
EtFOSE	10.862	630.0 -> 58.9	152371	138.57	µg/L	100
MeFOSA	10.685	511.9 -> 219.0	101573	27.69	µg/L	96
		511.9 -> 169.0	129607			
MeFOSE	10.604	616.1 -> 58.9	190666	133.53	µg/L	100
PFDoDS	9.984	699.1 -> 79.9	21674	10.56	µg/L	99
		699.1 -> 98.8	13417			
NFDHA	5.446	295.0 -> 201.0	23618	24.39	µg/L	94
		295.0 -> 84.9	10562			
PFMBA	4.789	279.0 -> 85.1	70499	24.94	µg/L	100
PFMPA	3.538	229.0 -> 84.9	62750	25.01	µg/L	100
PFEESA	6.072	314.8 -> 134.9	460543	22.16	µg/L	100
		314.8 -> 82.9	11348			

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

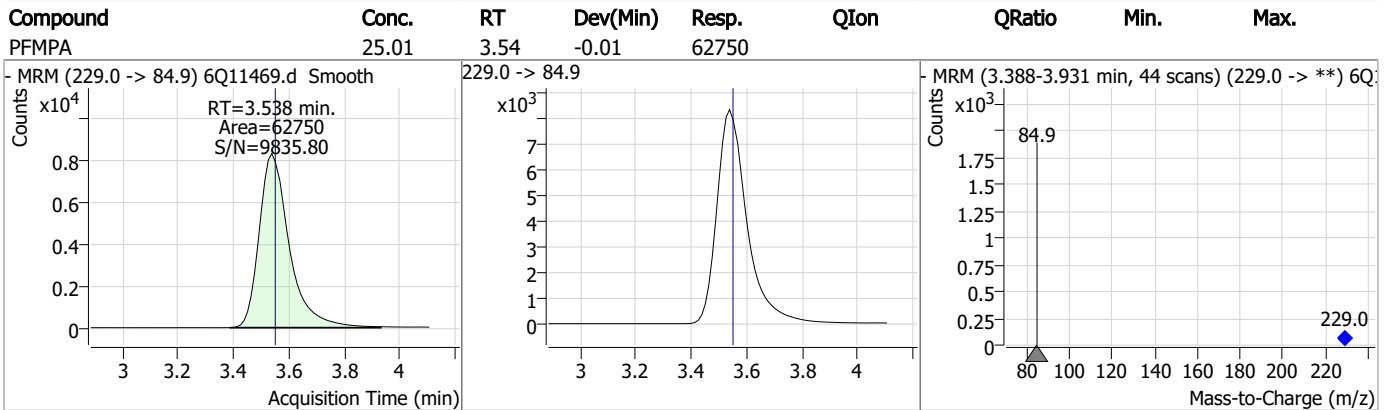
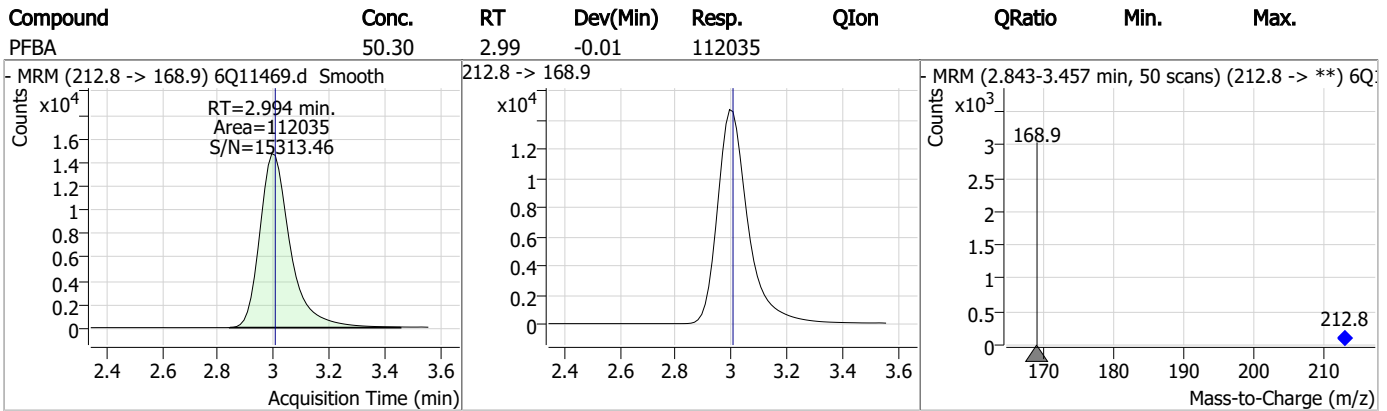
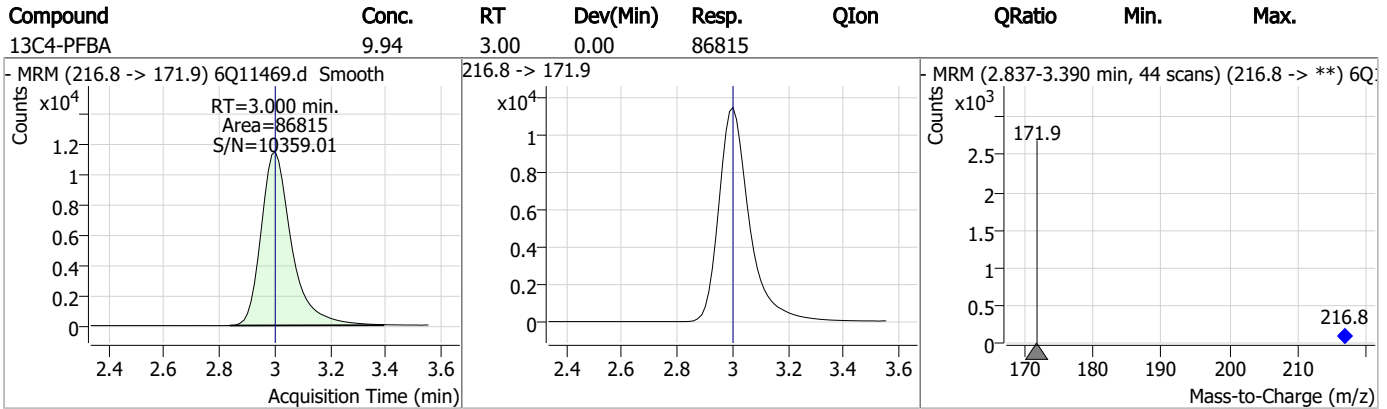
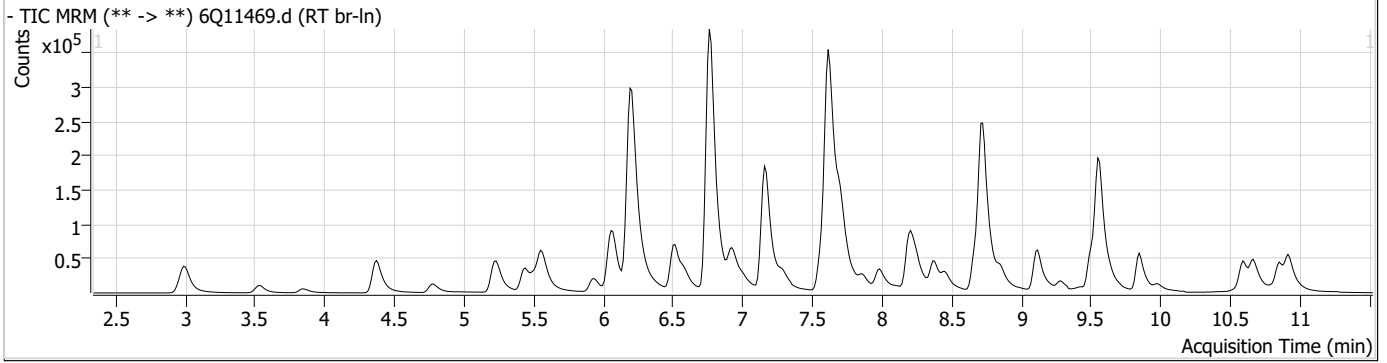
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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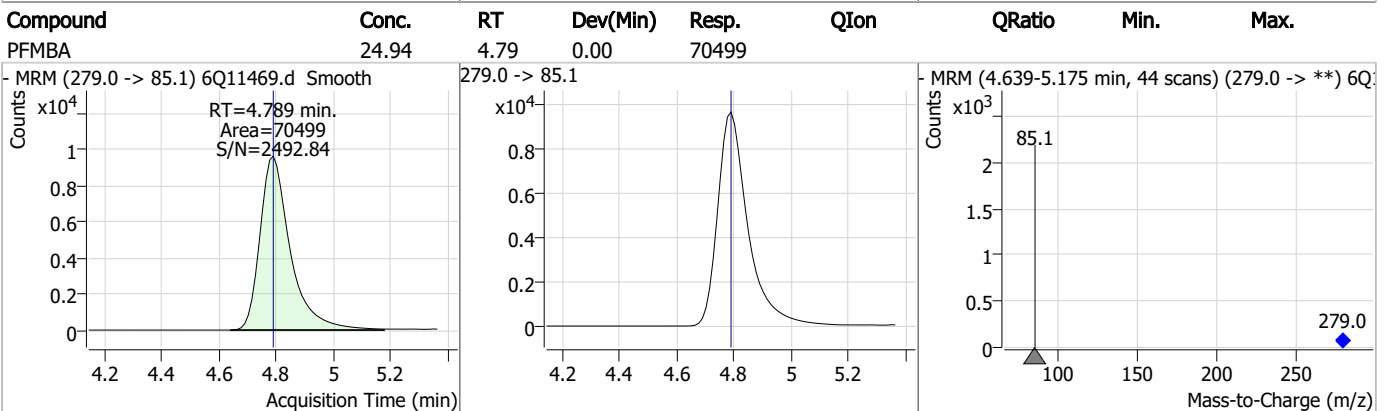
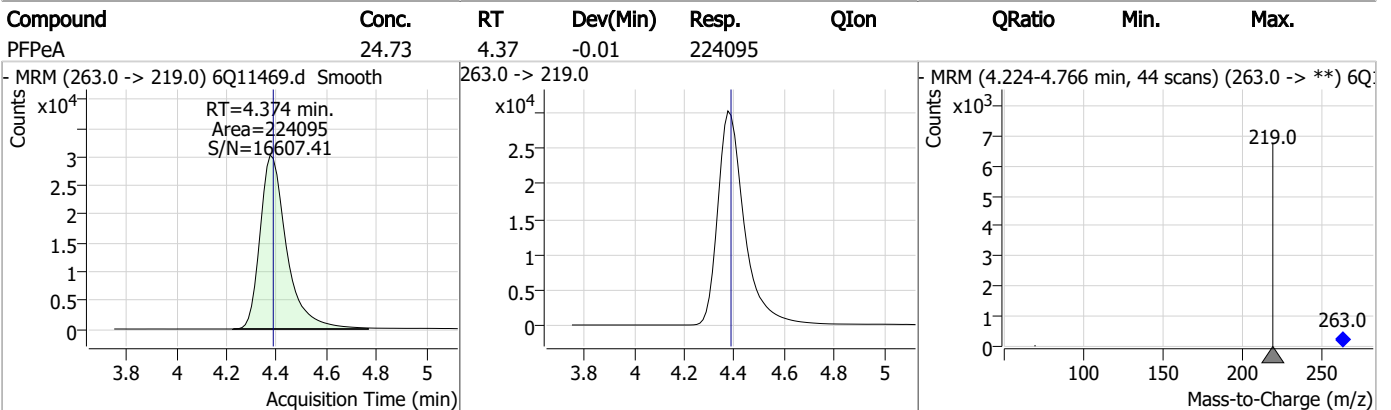
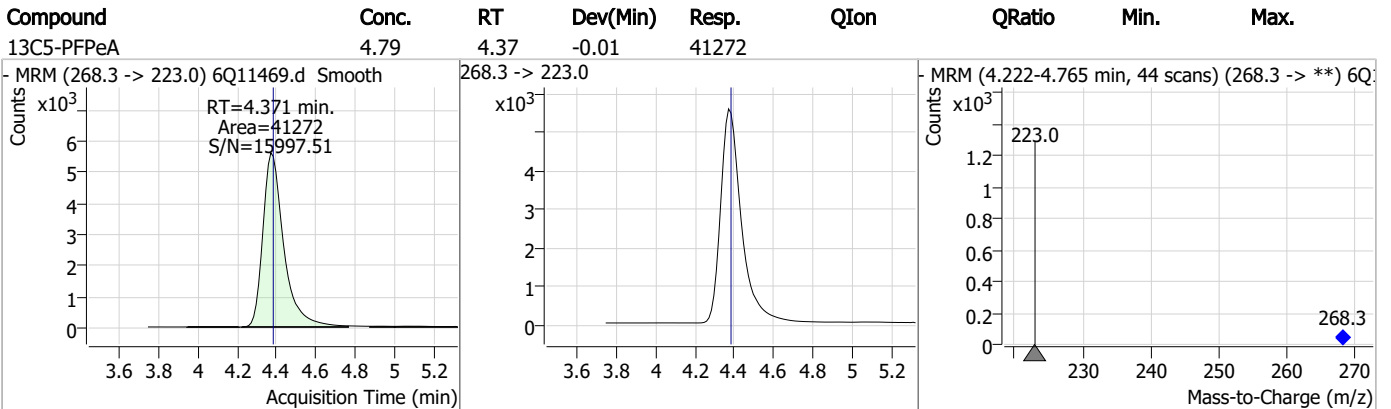
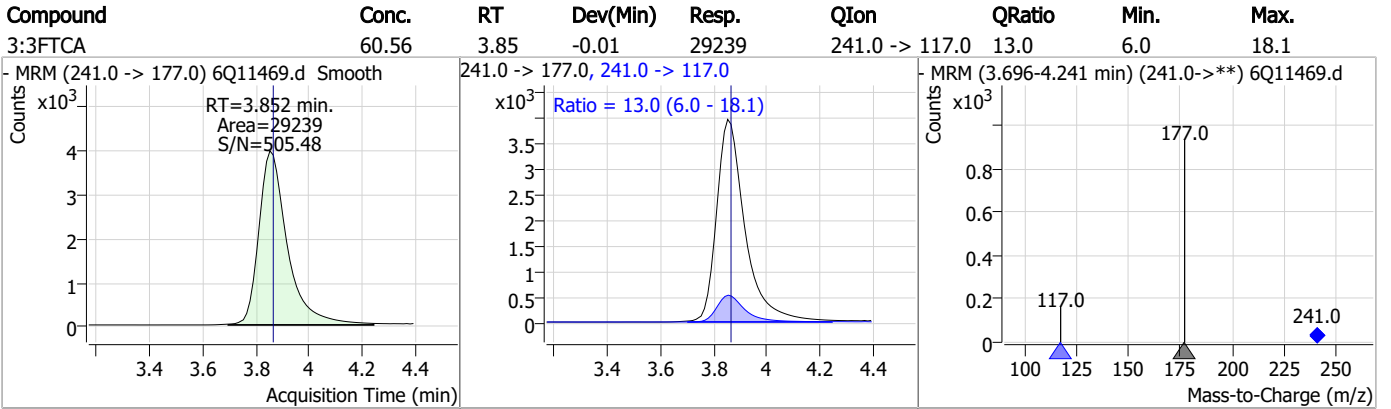
7.5.6

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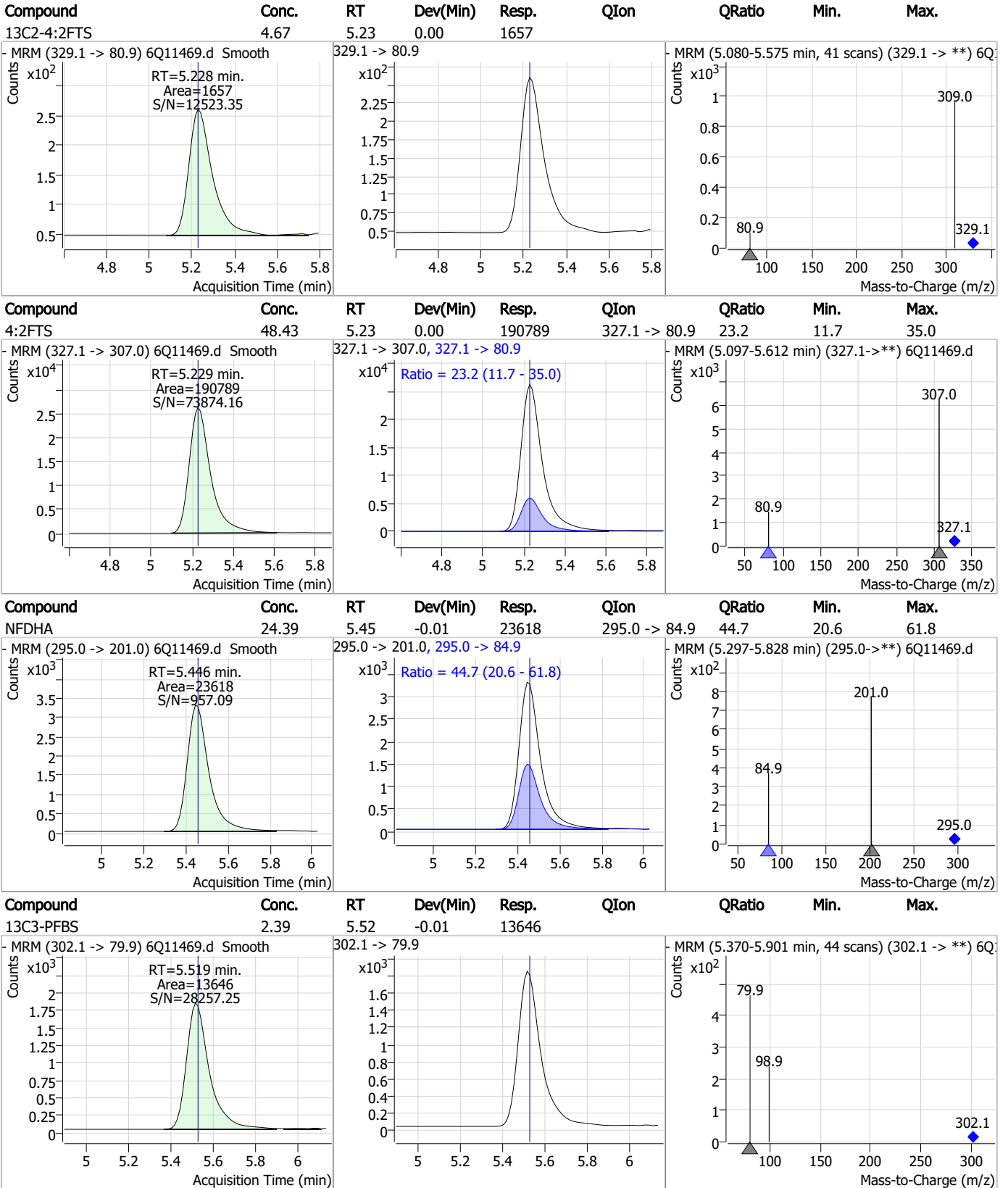
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

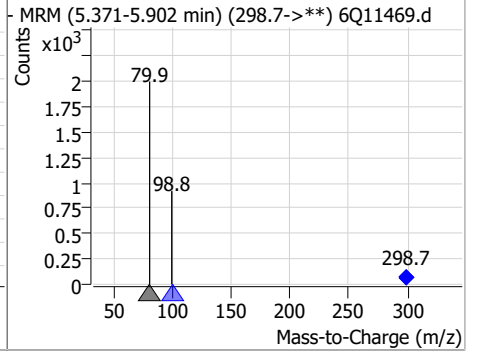
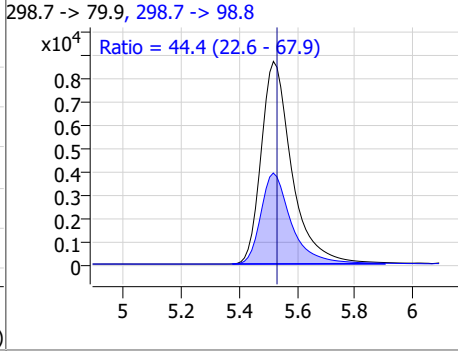
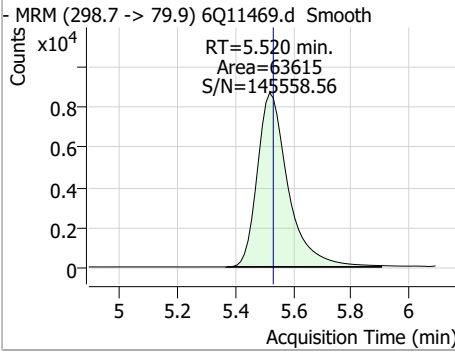


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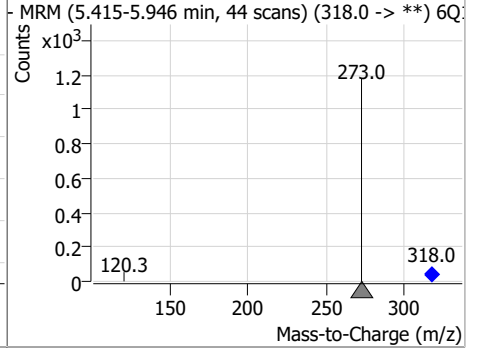
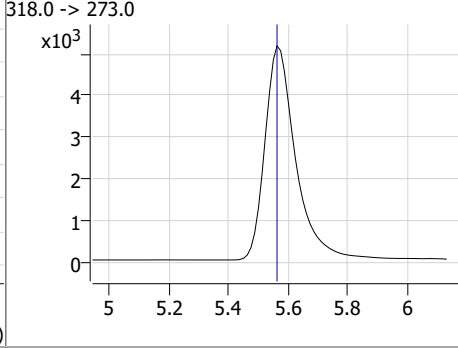
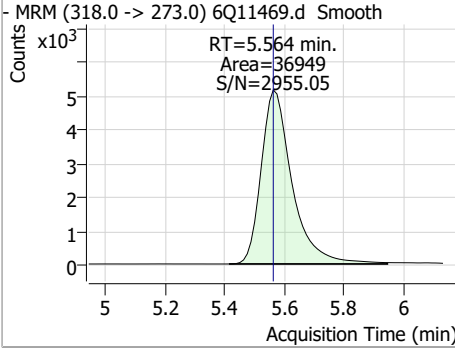
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Perfluorinated Compounds by LC/MS/MS

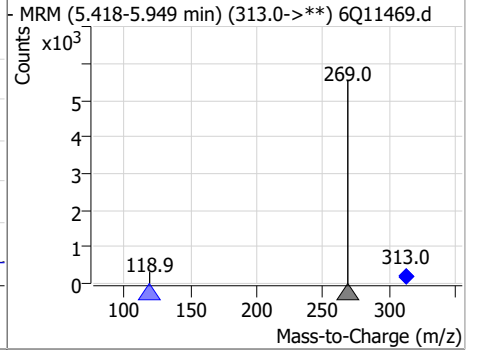
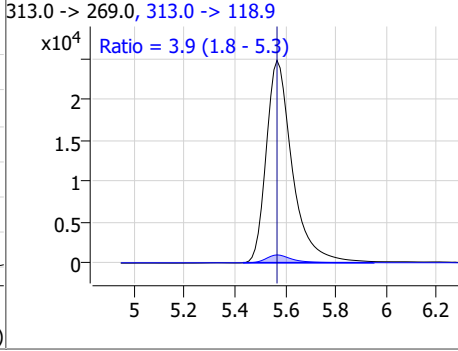
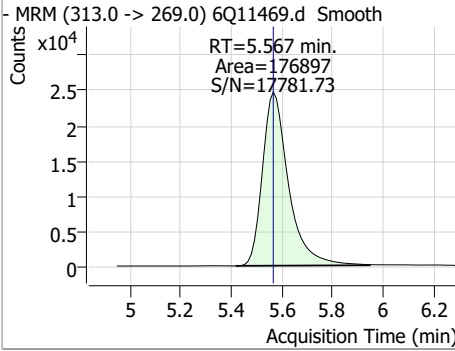
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	11.52	5.52	-0.01	63615	298.7 -> 98.8	44.4	22.6	67.9



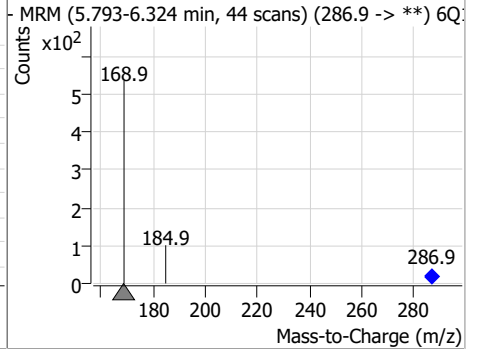
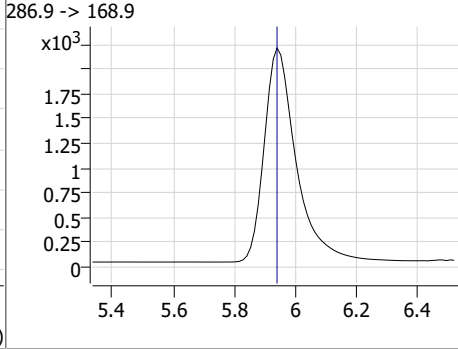
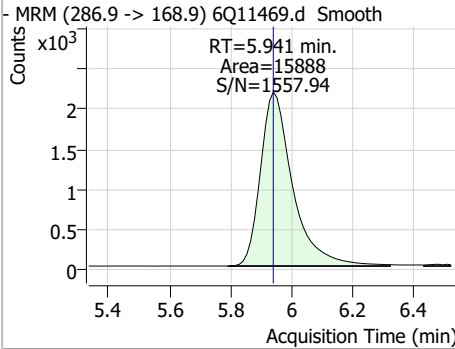
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.39	5.56	0.00	36949				



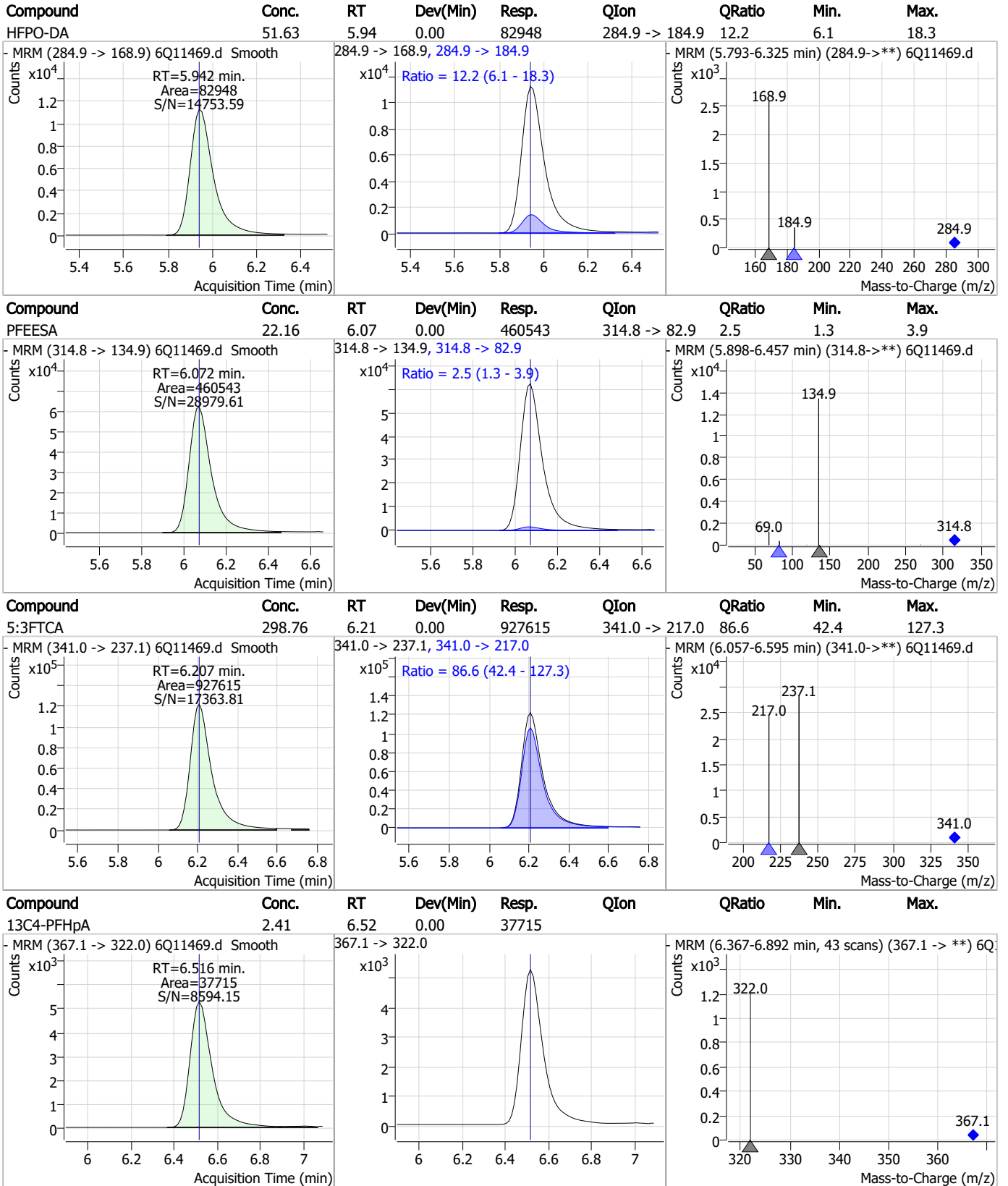
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	11.85	5.57	0.00	176897	313.0 -> 118.9	3.9	1.8	5.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.98	5.94	0.00	15888				



Perfluorinated Compounds by LC/MS/MS

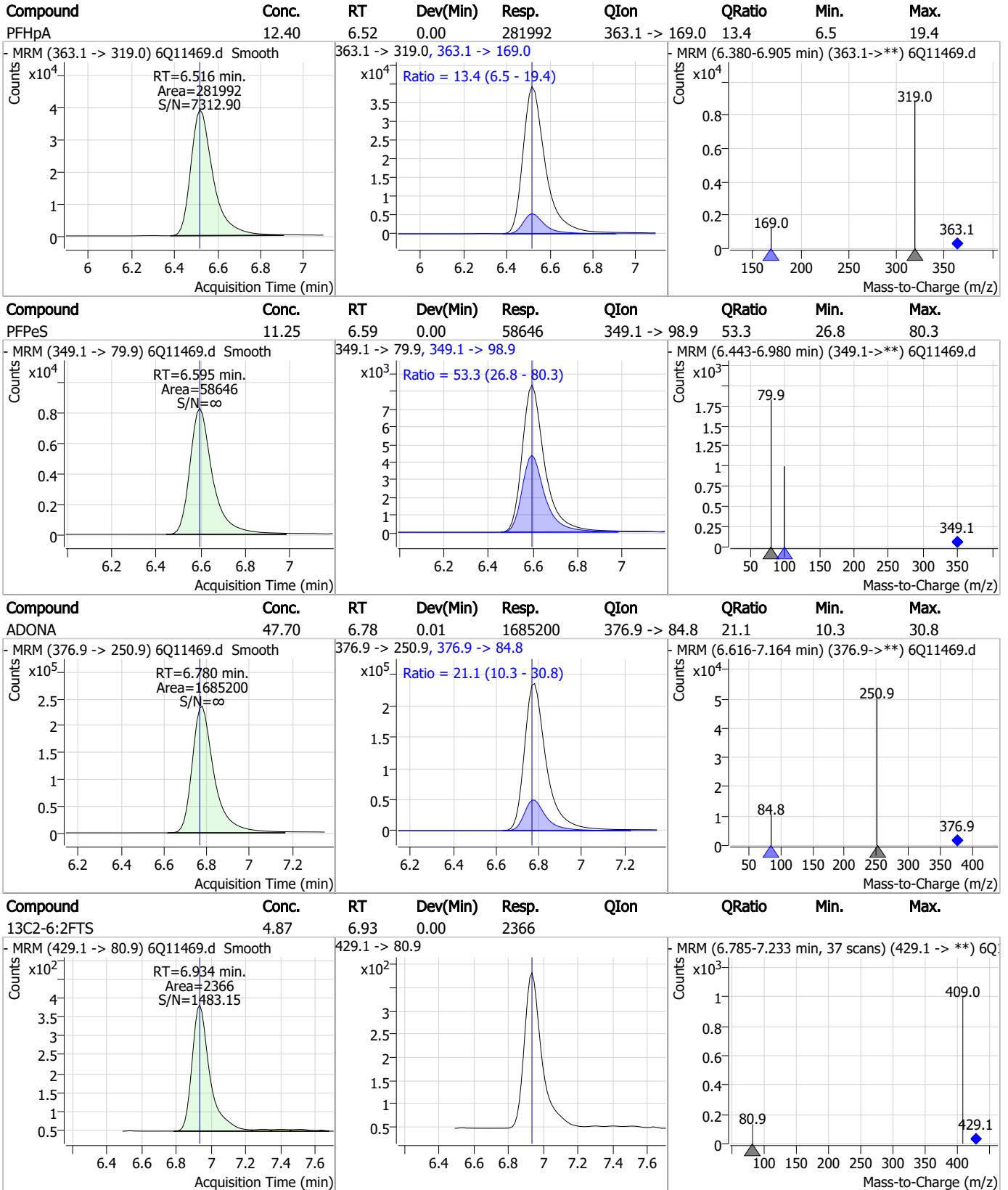


7.5.6

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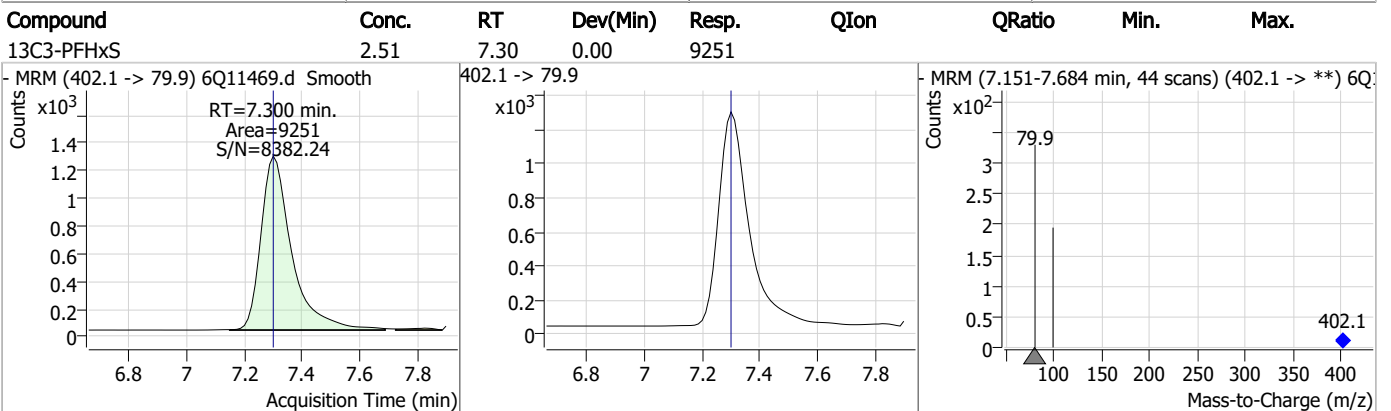
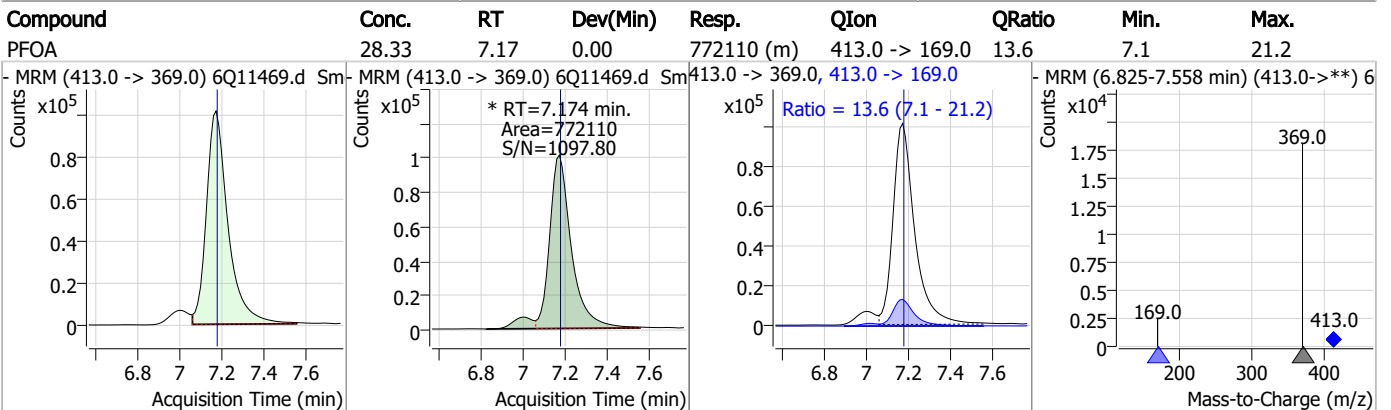
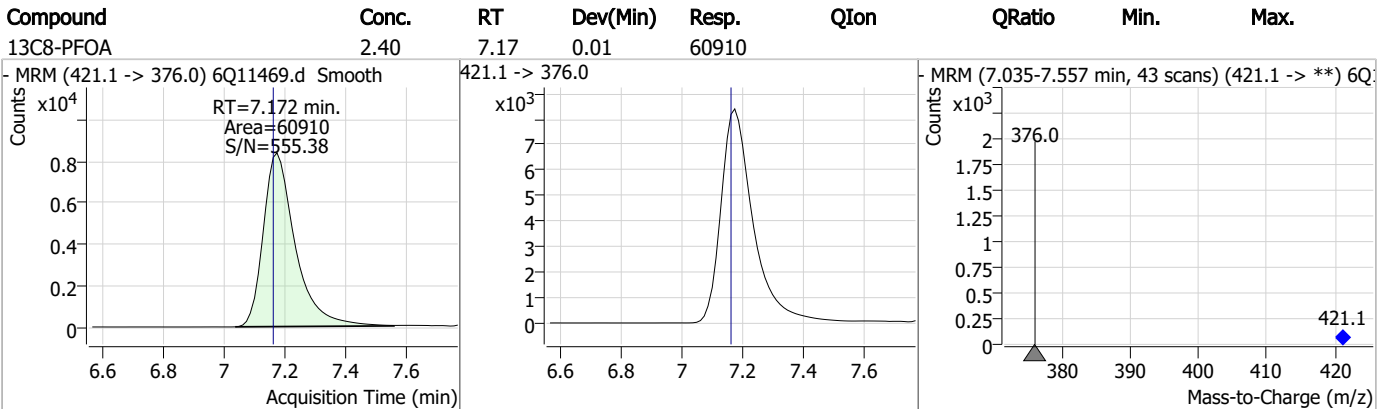
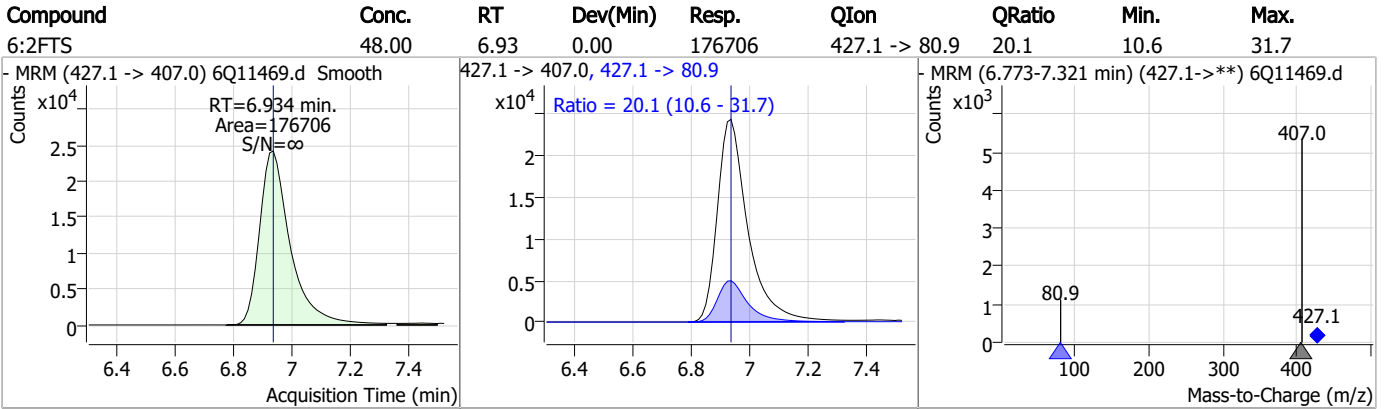
Perfluorinated Compounds by LC/MS/MS



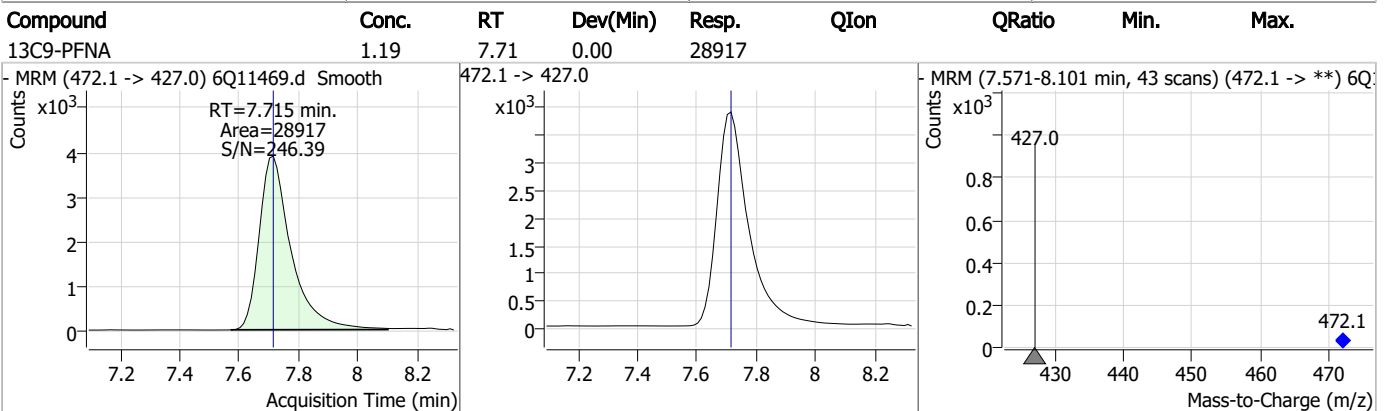
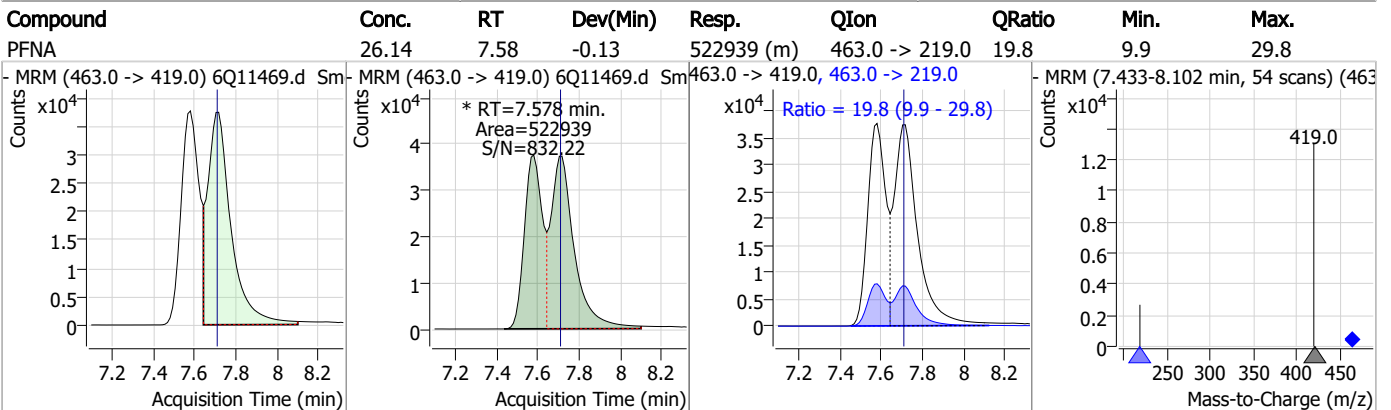
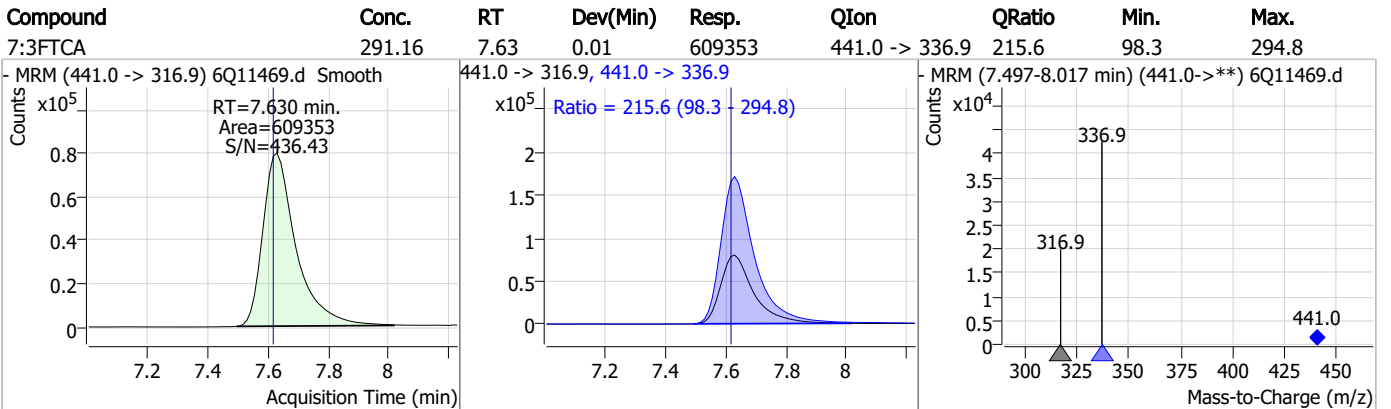
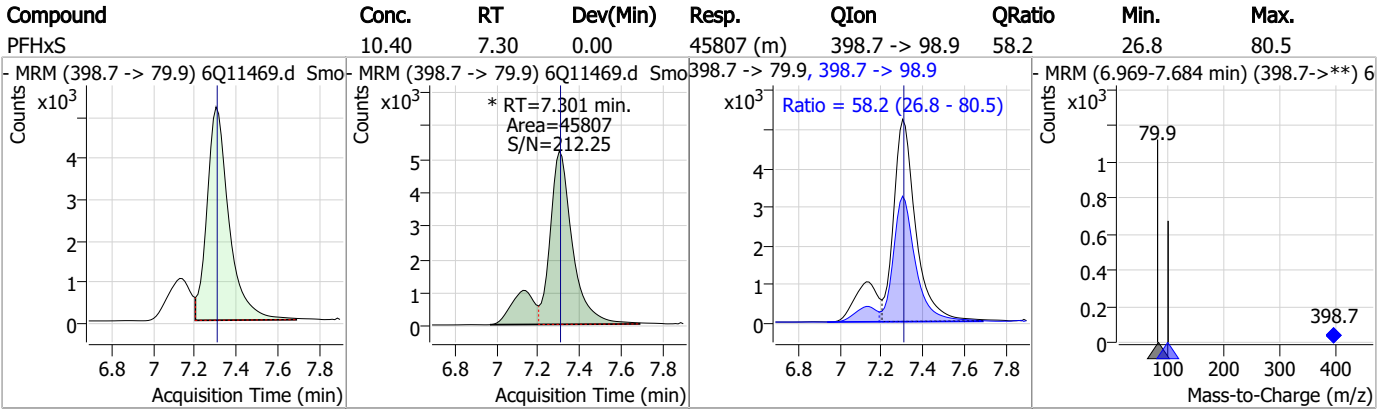
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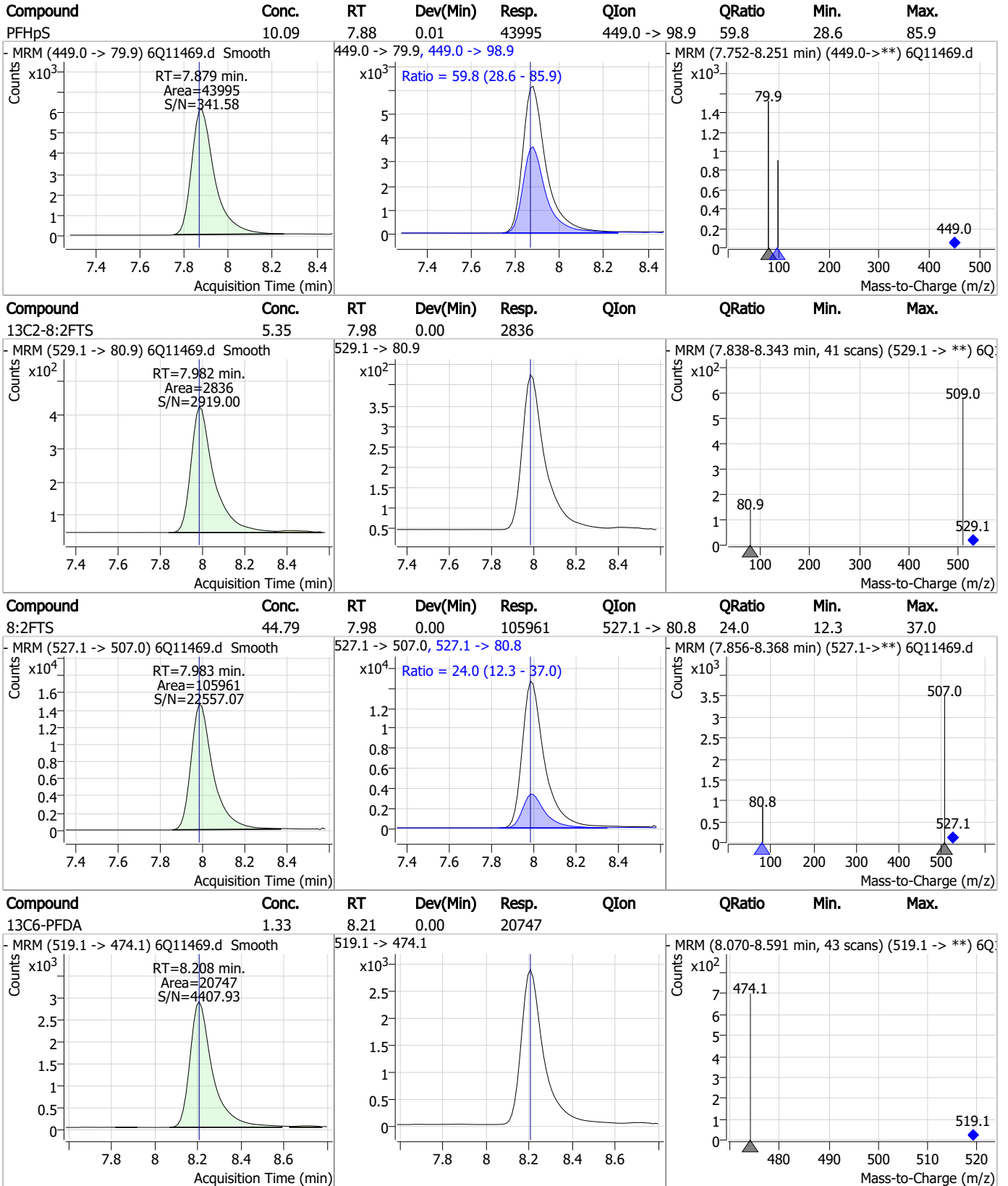
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



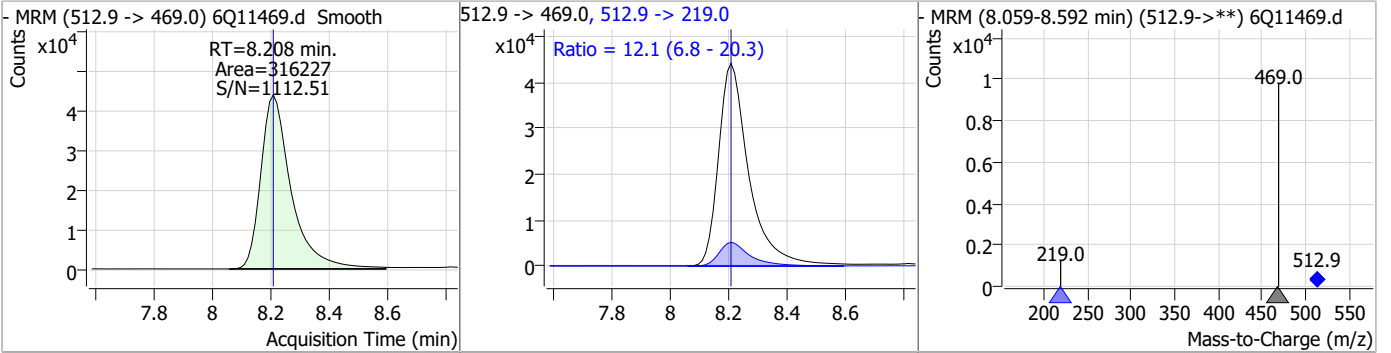
7.5.6

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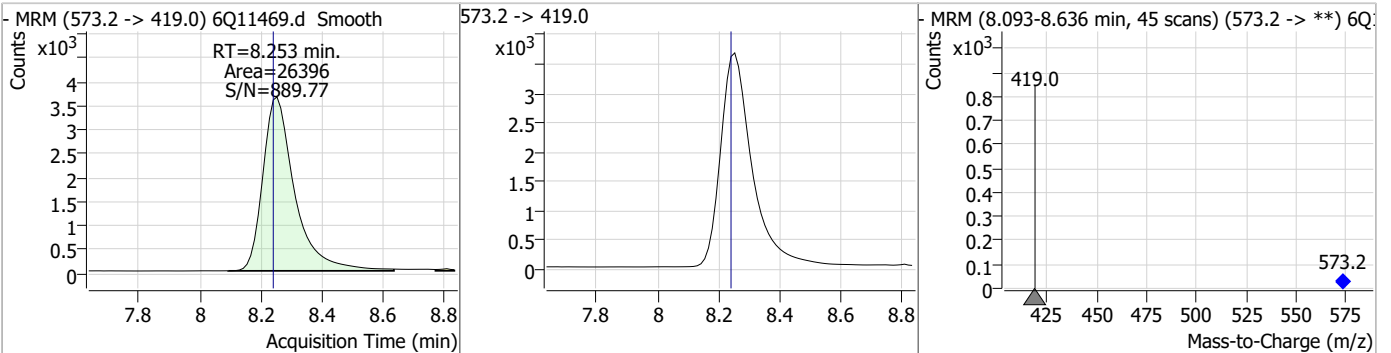


Perfluorinated Compounds by LC/MS/MS

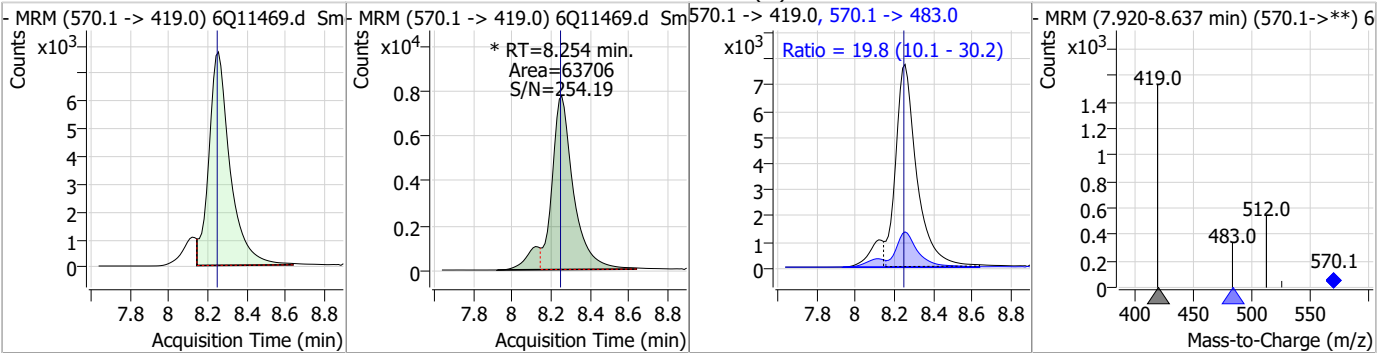
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	12.68	8.21	0.00	316227	512.9 -> 219.0	12.1	6.8	20.3



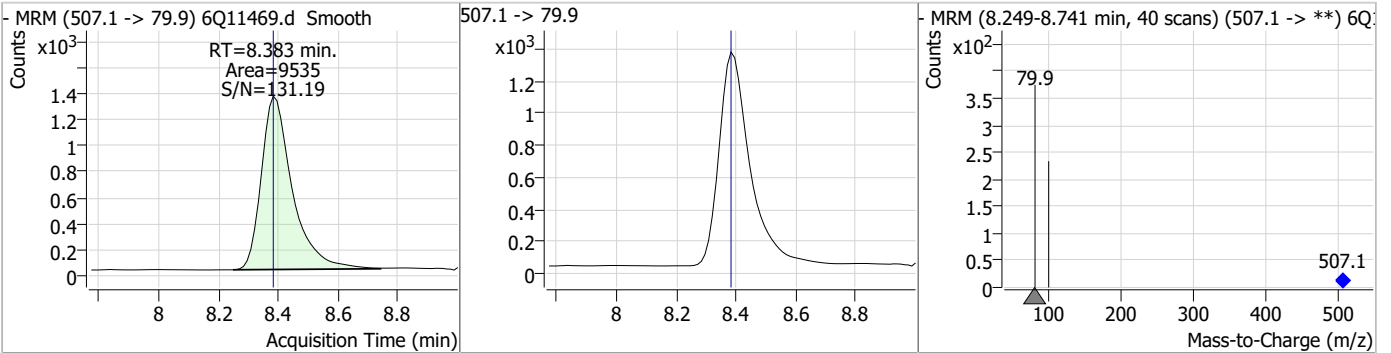
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.37	8.25	0.01	26396				



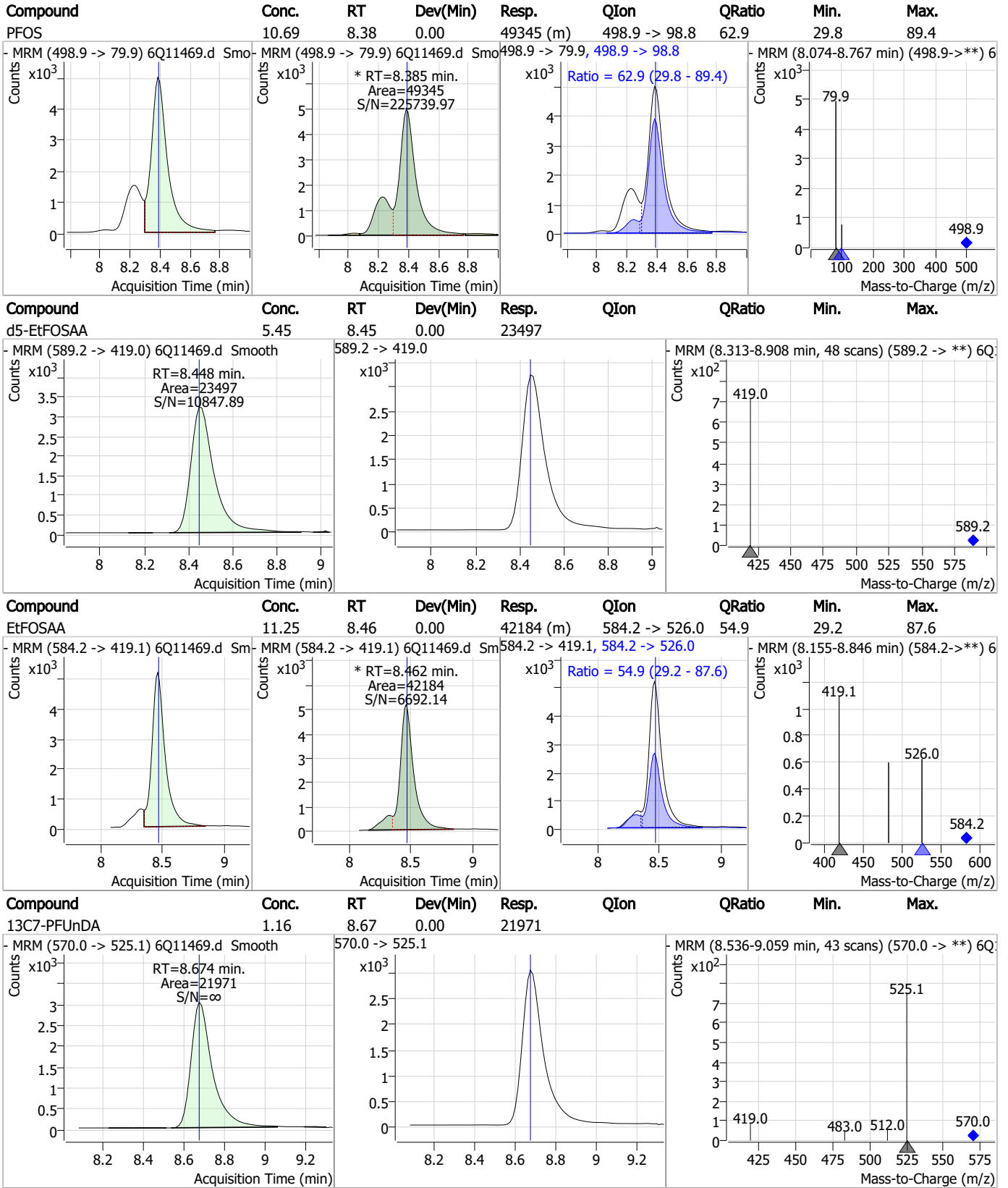
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	11.71	8.25	0.01	63706 (m)	570.1 -> 483.0	19.8	10.1	30.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.93	8.38	0.00	9535				



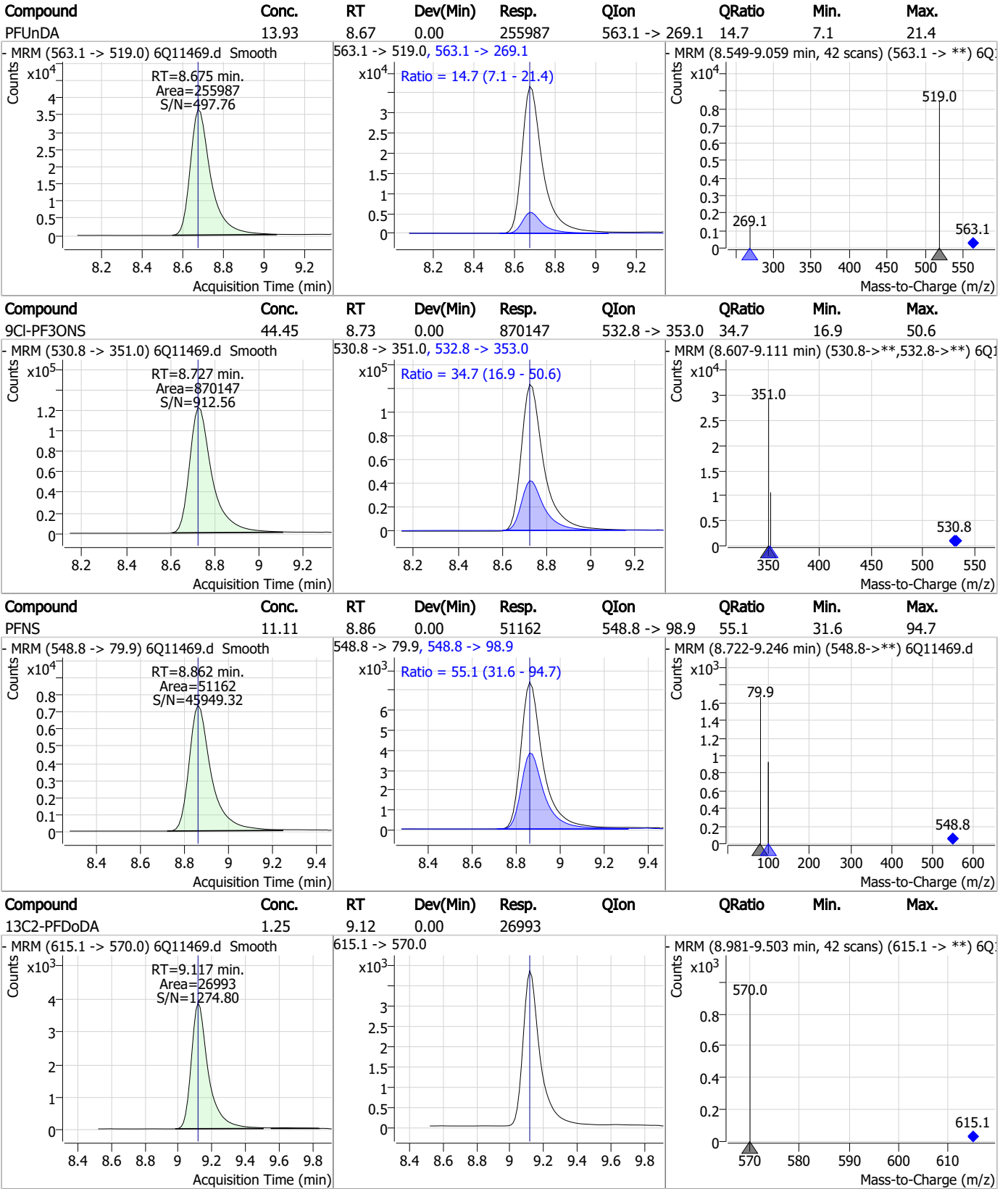
Perfluorinated Compounds by LC/MS/MS



7.5.6

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Perfluorinated Compounds by LC/MS/MS

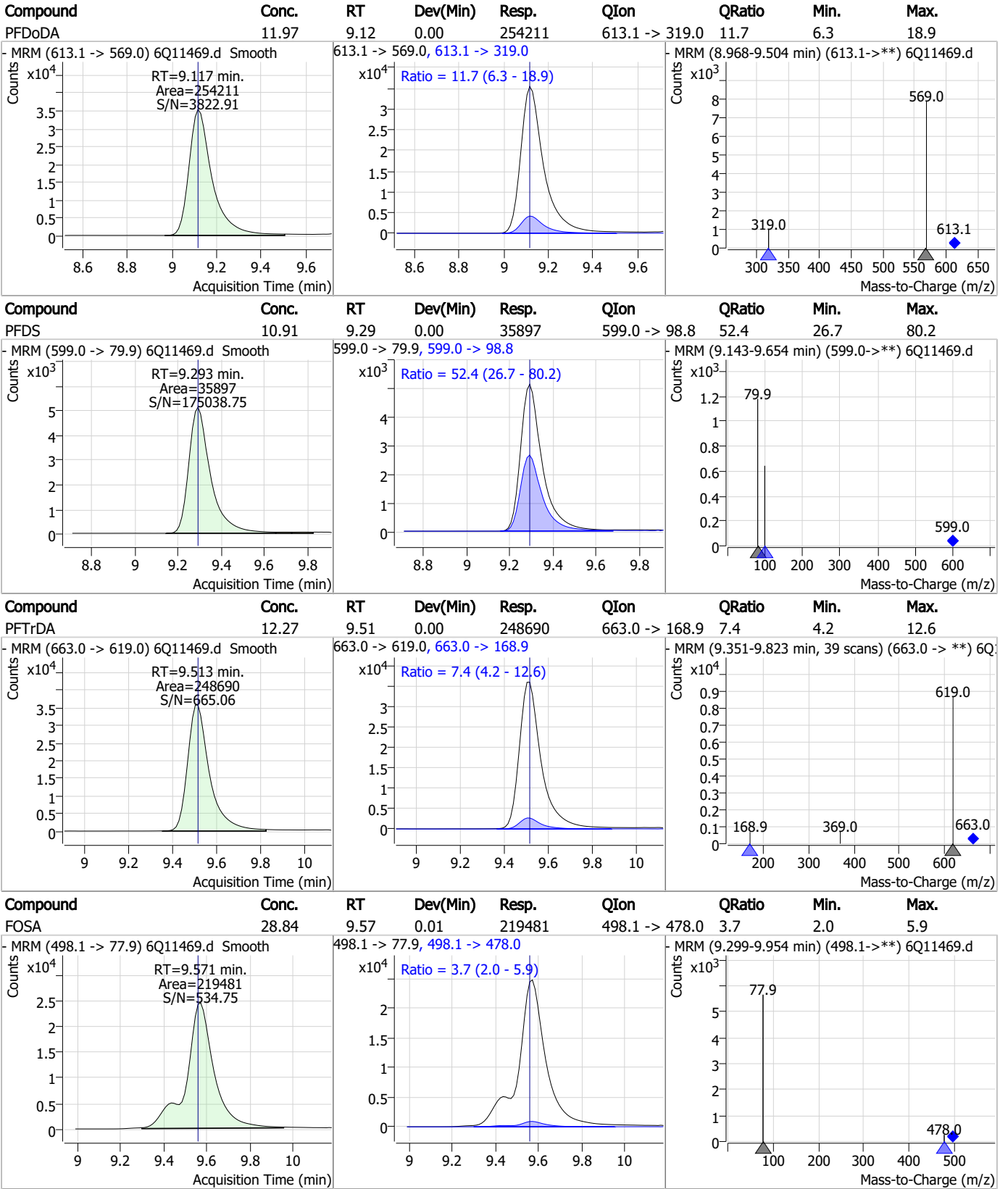


7.5.6

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Perfluorinated Compounds by LC/MS/MS

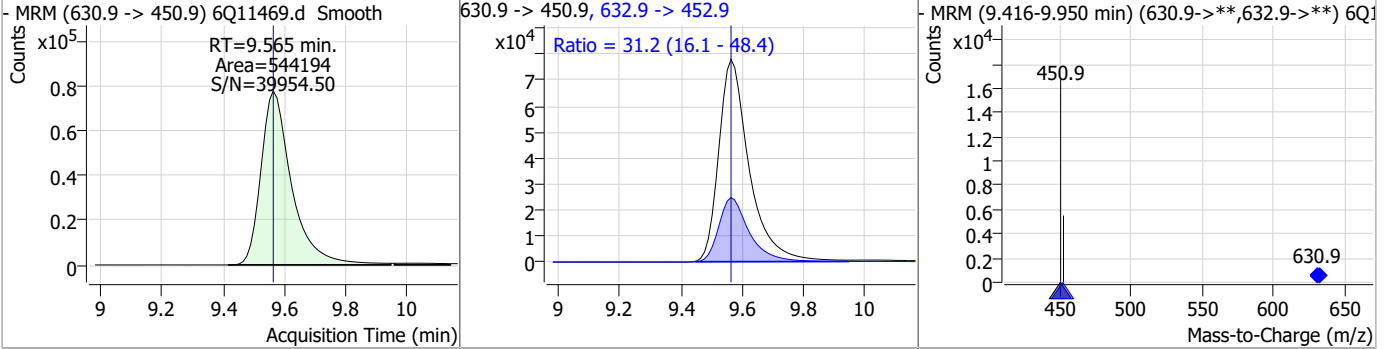


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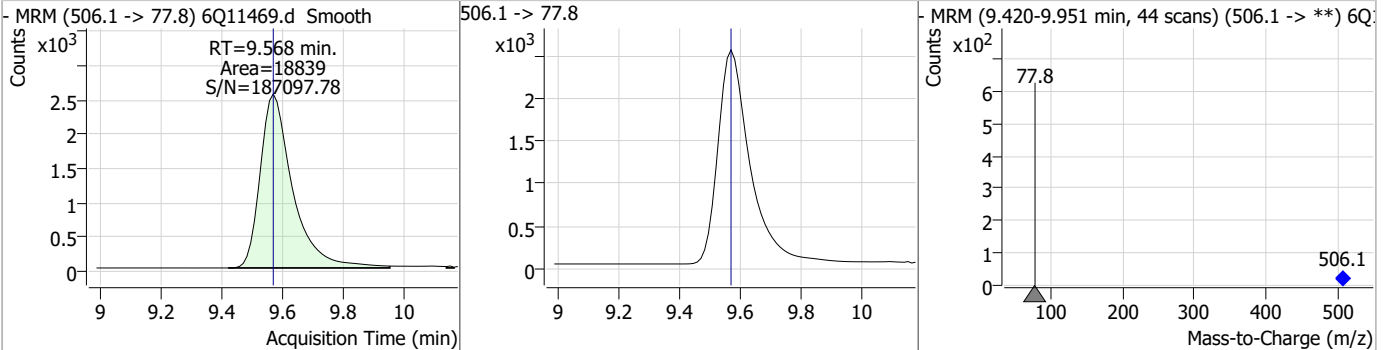
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Perfluorinated Compounds by LC/MS/MS

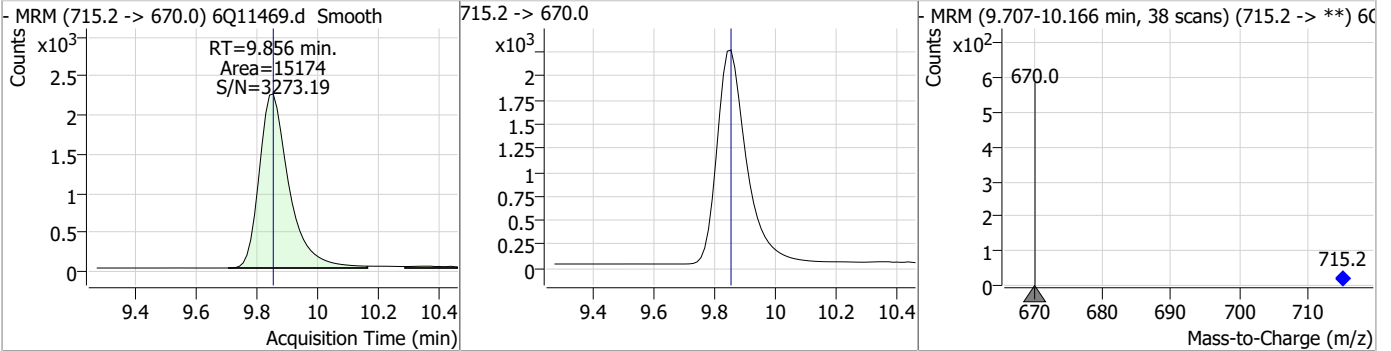
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11CI-PF3OUdS	45.17	9.56	0.00	544194	632.9 -> 452.9	31.2	16.1	48.4



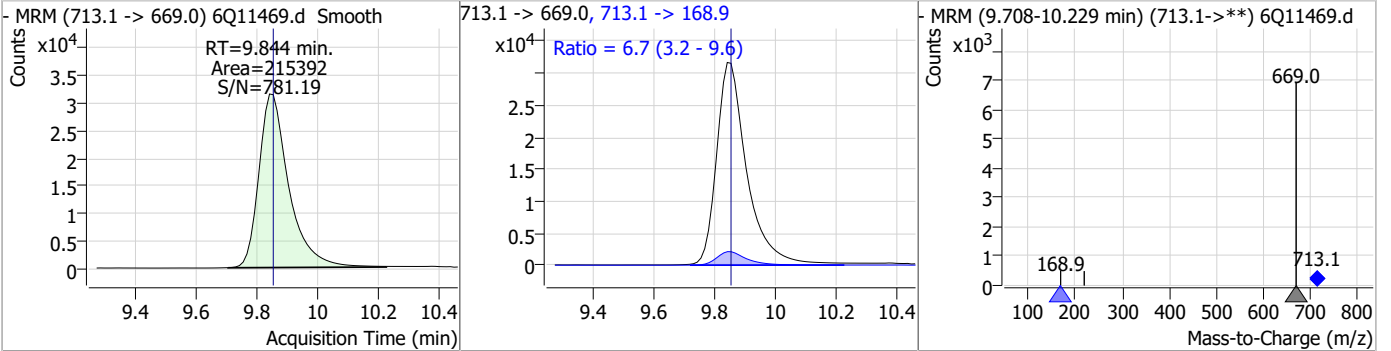
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.73	9.57	0.00	18839				



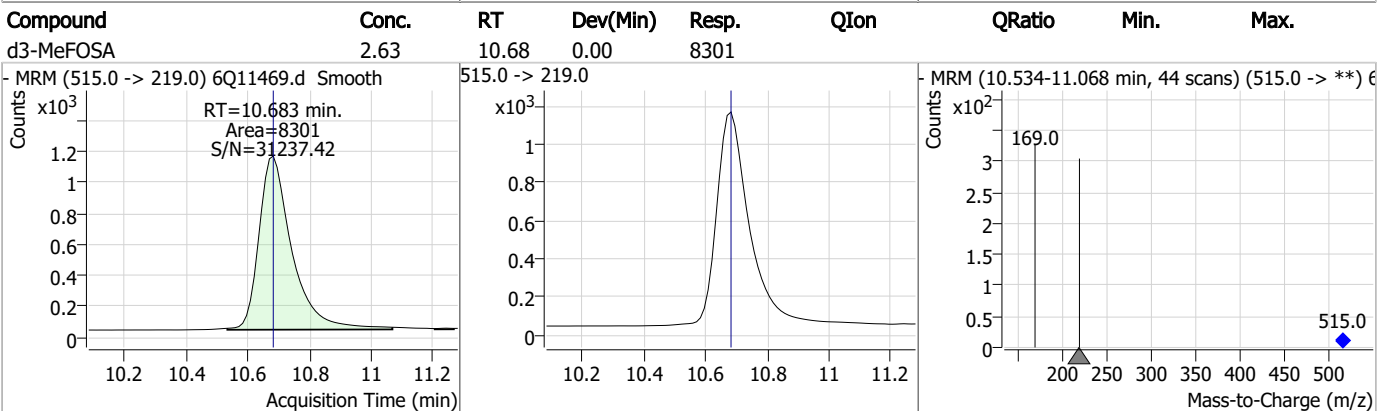
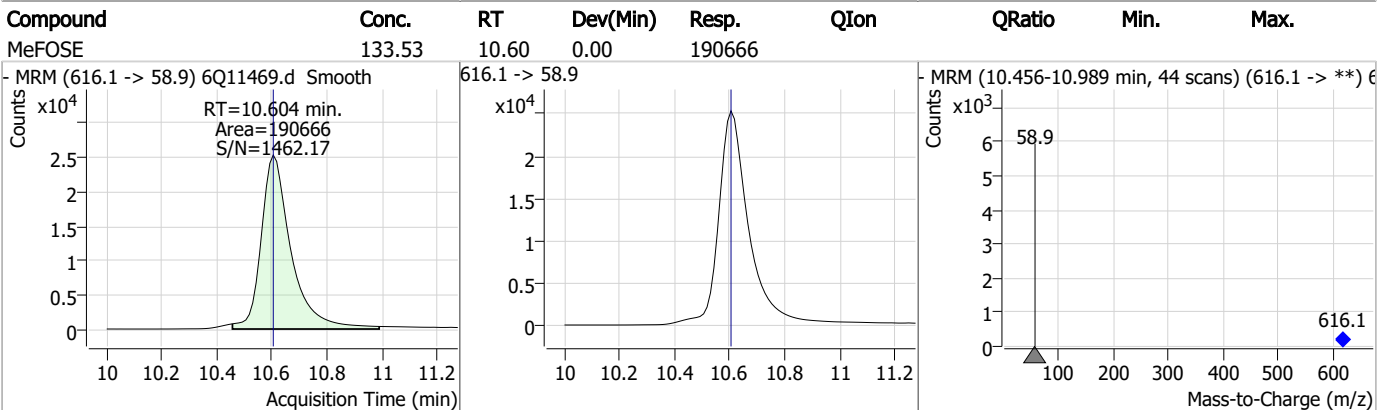
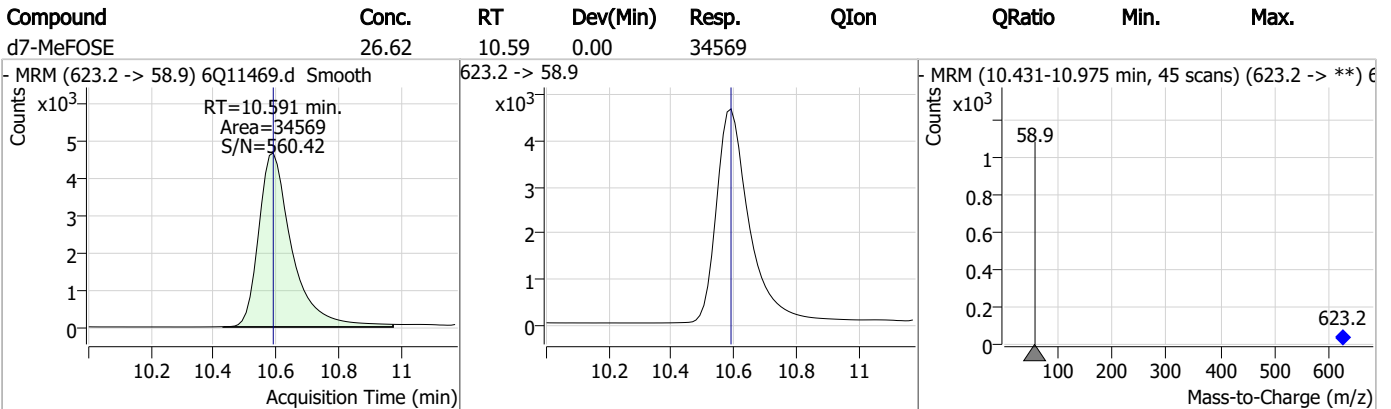
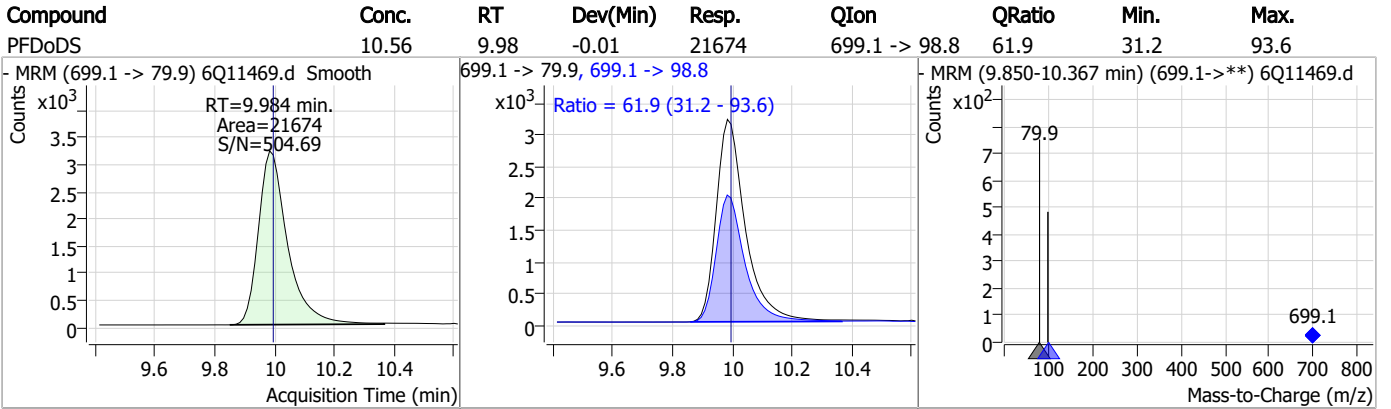
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.19	9.86	0.00	15174				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	11.91	9.84	-0.01	215392	713.1 -> 168.9	6.7	3.2	9.6

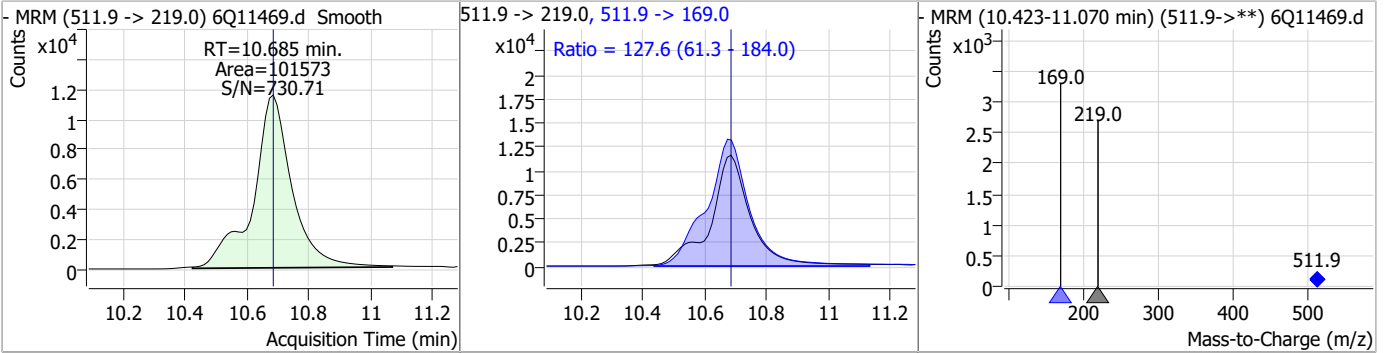


Perfluorinated Compounds by LC/MS/MS

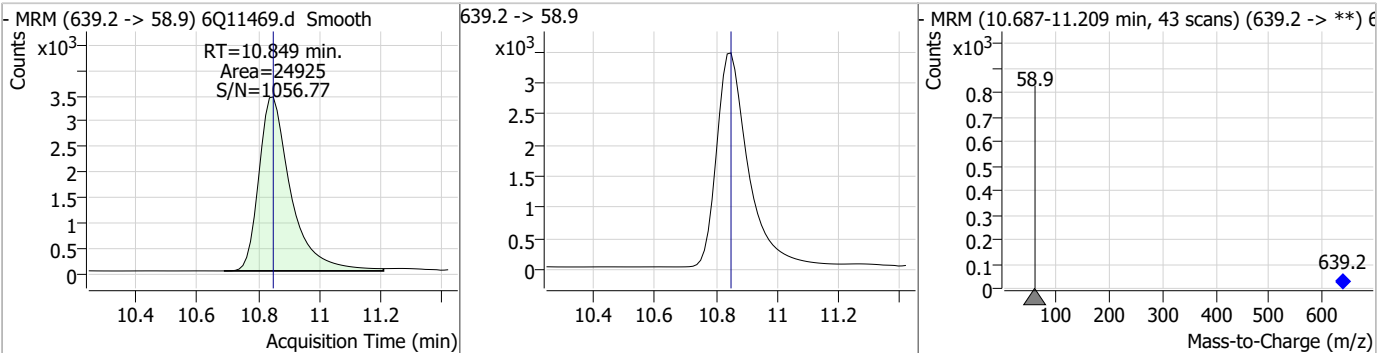


Perfluorinated Compounds by LC/MS/MS

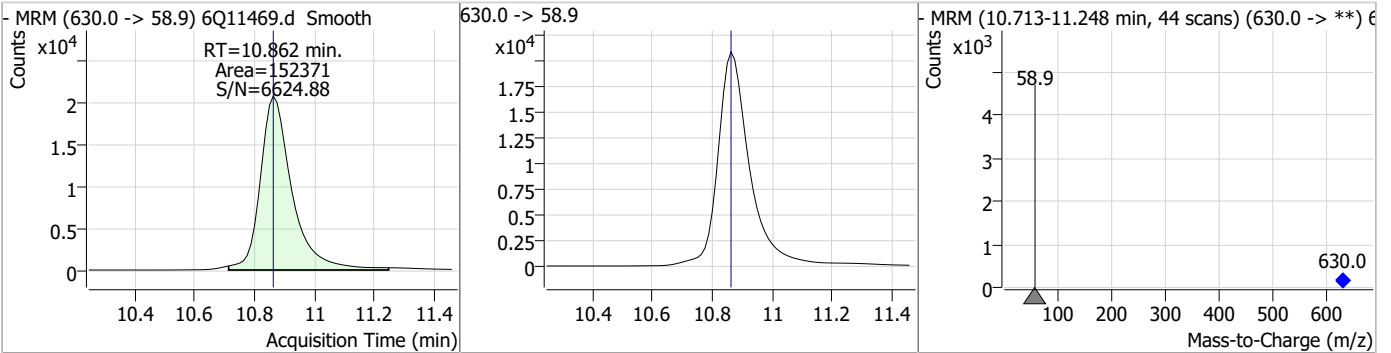
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	27.69	10.68	0.00	101573	511.9 -> 169.0	127.6	61.3	184.0



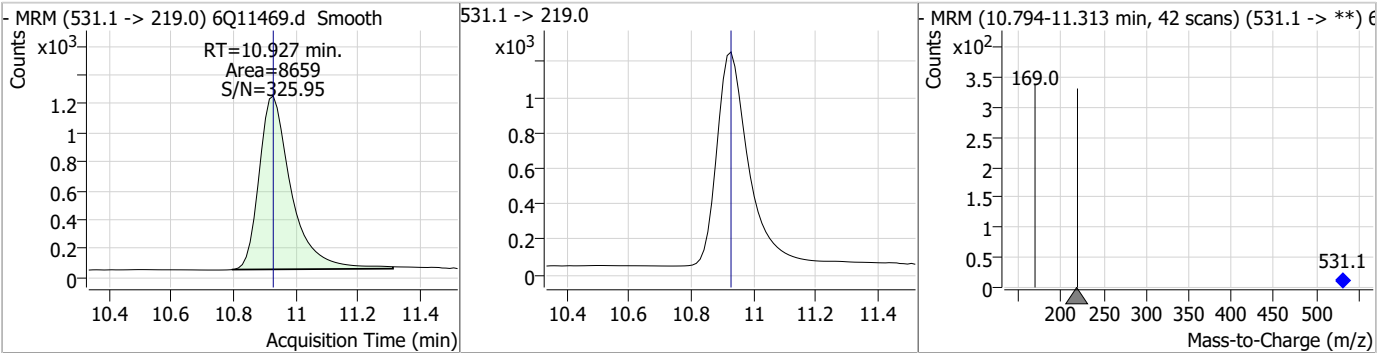
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.10	10.85	0.00	24925				



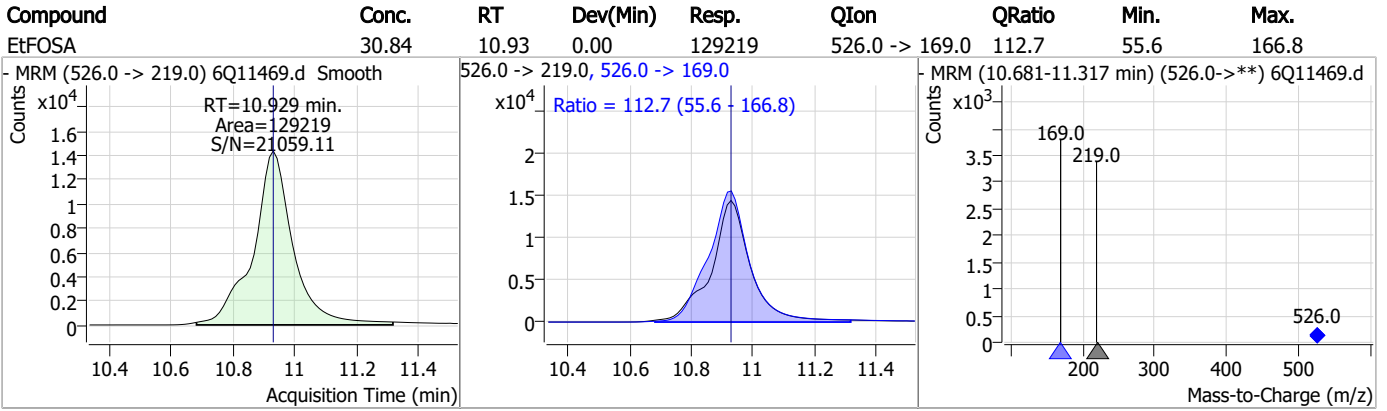
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	138.57	10.86	0.00	152371				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.45	10.93	0.00	8659				



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q179-RT Method: EPA DRAFT 1633
Lab FileID: 6Q11469.D Analyst approved: 01/17/23 14:23 Martha Valls
Injection Time: 01/17/23 09:37 Supervisor approved: 01/17/23 18:24 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.17	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.30	Split peak
Perfluorononanoic acid	375-95-1		7.58	Split peak
MeFOSAA	2355-31-9		8.25	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.38	Split peak
EtFOSAA	2991-50-6		8.46	Split peak

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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 09 January 2023 13:43:14
File Path D:\MassHunter\Tune\QQQ\G6495B\atunes.tune.xml
Ion Source AJS ESI
Ionization Mode AJS ESI
Tuned Resolution All
Vacuum Pressure 1.81E+0 [R] (Torr); 2.93E-5 [H] (Torr)

Source Parameters

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

QQQ Check Tune Report



Negative Results

Analyzer: MS1 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.93	-0.06	Pass	0.70	0.76	0.06	Pass	129412
302.00	301.96	-0.04	Pass	0.70	0.82	0.12	Pass	764588
601.98	601.92	-0.06	Pass	0.70	0.72	0.02	Pass	2698867
1033.99	1033.92	-0.07	Pass	0.70	0.79	0.09	Pass	623573
1633.95	1633.92	-0.03	Pass	0.70	0.81	0.11	Pass	435855
2233.91	2233.91	0.00	Pass	0.70	0.74	0.04	Pass	126955

Analyzer: MS2 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.00	0.00	Pass	0.70	0.63	-0.07	Pass	75547
112.99	112.98	-0.01	Pass	0.70	0.71	0.01	Pass	159011
302.00	301.99	-0.01	Pass	0.70	0.69	-0.01	Pass	629078
601.98	601.94	-0.04	Pass	0.70	0.76	0.06	Pass	2463289
1033.99	1033.96	-0.03	Pass	0.70	0.71	0.01	Pass	1175105
1633.95	1633.92	-0.03	Pass	0.70	0.70	0.00	Pass	992188
2233.91	2233.82	-0.09	Pass	0.70	0.76	0.06	Pass	265829

Analyzer: MS1 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.97	-0.02	Pass	1.20	1.51	0.31	Pass	164722
302.00	301.97	-0.03	Pass	1.20	1.57	0.37	Pass	1078422
601.98	601.86	-0.12	Pass	1.20	1.51	0.31	Pass	3857041
1033.99	1033.82	-0.17	Pass	1.20	1.50	0.30	Pass	1067574
1633.95	1633.81	-0.14	Pass	1.20	1.32	0.12	Pass	827303
2233.91	2233.84	-0.07	Pass	1.20	1.25	0.05	Pass	247249

Analyzer: MS2 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.00	0.00	Pass	1.20	1.13	-0.07	Pass	108161
112.99	112.96	-0.03	Pass	1.20	1.21	0.01	Pass	235819
302.00	302.01	0.01	Pass	1.20	1.26	0.06	Pass	904063
601.98	601.99	0.01	Pass	1.20	1.40	0.20	Pass	4559235
1033.99	1034.01	0.02	Pass	1.20	1.33	0.13	Pass	2608690
1633.95	1633.86	-0.09	Pass	1.20	1.42	0.22	Pass	2396061
2233.91	2233.86	-0.05	Pass	1.20	1.40	0.20	Pass	802767

Analyzer: MS1 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.93	-0.06	Pass	2.50	2.68	0.18	Pass	184379
302.00	301.84	-0.16	Pass	2.50	2.85	0.35	Pass	1269794
601.98	601.70	-0.28	Pass	2.50	2.84	0.34	Pass	4636577
1033.99	1033.77	-0.22	Pass	2.50	2.82	0.32	Pass	1875665
1633.95	1633.78	-0.17	Pass	2.50	2.42	-0.08	Pass	1774762
2233.91	2233.58	-0.33	Pass	2.50	2.39	-0.11	Pass	719306

Analyzer: MS2 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.03	0.03	Pass	2.50	2.52	0.02	Pass	143856
112.99	112.96	-0.03	Pass	2.50	2.62	0.12	Pass	330897
302.00	301.97	-0.03	Pass	2.50	2.59	0.09	Pass	1323975
601.98	601.98	0.00	Pass	2.50	2.86	0.36	Pass	6535398
1033.99	1033.96	-0.03	Pass	2.50	2.50	0.00	Pass	4552139
1633.95	1633.96	0.01	Pass	2.50	2.83	0.33	Pass	4508660
2233.91	2233.74	-0.17	Pass	2.50	2.53	0.03	Pass	2140540

7.6.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q10949.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/11/2023 11:50:22 AM
 Sample Name : ic174-1
 Vial : P1-A2
 DA Method File : 1633_011123_S6Q174.quantmethod.xml
 Batch Name : S6Q174.batch.bin
 Sample Information : OP94795,S6Q174,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.000	216.8 -> 171.9	103231	10.00 µg/L	0.000
M5-PFPeA	4.384	268.3 -> 223.0	49333	5.00 µg/L	-0.014
M5-PFHxA	5.588	318.0 -> 273.0	44817	2.50 µg/L	0.000
M4-PFHpA	6.542	367.1 -> 322.0	44665	2.50 µg/L	0.000
M8-PFOA	7.197	421.1 -> 376.0	74058	2.50 µg/L	0.000
M9-PFNA	7.740	472.1 -> 427.0	36635	1.25 µg/L	0.000
M6-PFDA	8.245	519.1 -> 474.1	22903	1.25 µg/L	0.000
M7-PFUnDA	8.724	570.0 -> 525.1	29444	1.25 µg/L	0.012
M2-PFDoDA	9.166	615.1 -> 570.0	31289	1.25 µg/L	0.012
M2-PFTeDA	9.893	715.2 -> 670.0	18808	1.25 µg/L	0.000
M8-FOSA	9.568	506.1 -> 77.8	20958	2.50 µg/L	0.000
M3-PFBS	5.544	302.1 -> 79.9	15890	2.50 µg/L	-0.012
M3-PFHxS	7.325	402.1 -> 79.9	10304	2.50 µg/L	-0.012
M8-PFOS	8.420	507.1 -> 79.9	9754	2.50 µg/L	0.000
M2-4:2FTS	5.253	329.1 -> 80.9	2131	5.00 µg/L	0.000
M2-6:2FTS	6.946	429.1 -> 80.9	2995	5.00 µg/L	-0.012
M2-8:2FTS	8.019	529.1 -> 80.9	2905	5.00 µg/L	0.000
M3-MeFOSAA	8.277	573.2 -> 419.0	30559	5.00 µg/L	0.000
M3-HFPO-DA	5.965	286.9 -> 168.9	18271	10.00 µg/L	-0.012
M5-EtFOSAA	8.485	589.2 -> 419.0	27529	5.00 µg/L	0.000
M7-MeFOSE	10.591	623.2 -> 58.9	41121	25.00 µg/L	0.000
M9-EtFOSE	10.849	639.2 -> 58.9	30240	25.00 µg/L	0.000
M5-EtFOSA	10.927	531.1 -> 219.0	10377	2.50 µg/L	0.000
M3-MeFOSA	10.683	515.0 -> 219.0	9014	2.50 µg/L	0.000
13C4-PFOS	8.421	502.8 -> 79.9	13051	2.50 µg/L	0.000
13C3-PFBA	2.991	216.0 -> 172.0	45024	5.00 µg/L	-0.012
18O2-PFHxS	7.324	403.0 -> 83.9	7385	2.50 µg/L	-0.012
13C4-PFOA	7.198	417.1 -> 372.0	95459	2.50 µg/L	0.000
13C2-PFDA	8.245	515.1 -> 470.1	30576	1.25 µg/L	0.000
13C5-PFNA	7.740	468.0 -> 423.0	41308	1.25 µg/L	0.000
13C2-PFHxA	5.589	315.1 -> 270.0	43063	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.253	329.1 -> 80.9	2131	5.53 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.6%		
13C2-6:2FTS	6.946	429.1 -> 80.9	2995	5.68 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.5%		
13C2-8:2FTS	8.019	529.1 -> 80.9	2905	5.05 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.9%		
13C2-PFDoDA	9.166	615.1 -> 570.0	31289	1.29 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.3%		
13C2-PFTeDA	9.893	715.2 -> 670.0	18808	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.6%		
13C3-PFBS	5.544	302.1 -> 79.9	15890	2.57 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.6%		
13C3-PFHxS	7.325	402.1 -> 79.9	10304	2.57 µg/L	-0.012

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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 = 102.8%	
13C4-PFBA	3.000	216.8 -> 171.9	103231	10.04 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C4-PFHpA	6.542	367.1 -> 322.0	44665	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C5-PFHxA	5.588	318.0 -> 273.0	44817	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.7%	
13C5-PFPeA	4.384	268.3 -> 223.0	49333	5.14 µg/L	-0.014
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C6-PFDA	8.245	519.1 -> 474.1	22903	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.2%	
13C7-PFUnDA	8.724	570.0 -> 525.1	29444	1.39 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 110.9%	
13C8-FOSA	9.568	506.1 -> 77.8	20958	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.1%	
13C8-PFOA	7.197	421.1 -> 376.0	74058	2.31 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.6%	
13C8-PFOS	8.420	507.1 -> 79.9	9754	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.6%	
13C9-PFNA	7.740	472.1 -> 427.0	36635	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.8%	
d3-MeFOSAA	8.277	573.2 -> 419.0	30559	4.86 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.3%	
13C3-HFPO-DA	5.965	286.9 -> 168.9	18271	10.29 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.9%	
d3-MeFOSA	10.683	515.0 -> 219.0	9014	2.23 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 89.3%	
d5-EtFOSAA	8.485	589.2 -> 419.0	27529	4.99 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
d7-MeFOSE	10.591	623.2 -> 58.9	41121	24.75 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
d9-EtFOSE	10.849	639.2 -> 58.9	30240	23.80 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.2%	
d5-EtFOSA	10.927	531.1 -> 219.0	10377	2.30 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.8%	
Target Compounds					QValue
4:2FTS	5.241	327.1 -> 307.0	4355	0.86 µg/L	90
		327.1 -> 80.9	1117		
6:2FTS	6.946	427.1 -> 407.0	3922	0.84 µg/L	98
		427.1 -> 80.9	805		
8:2FTS	8.020	527.1 -> 507.0	2393	0.99 µg/L	m 94
		527.1 -> 80.8	512		
EtFOSAA	8.499	584.2 -> 419.1	895	0.20 µg/L	m 84
		584.2 -> 526.0	522		
FOSA	9.571	498.1 -> 77.9	1733	0.20 µg/L	99
		498.1 -> 478.0	73		
MeFOSAA	8.290	570.1 -> 419.0	1525	0.24 µg/L	m 87
		570.1 -> 483.0	321		
PFBA	2.994	212.8 -> 168.9	2317	0.87 µg/L	100
PFBS	5.544	298.7 -> 79.9	1309	0.20 µg/L	96
		298.7 -> 98.8	592		
PFDA	8.246	512.9 -> 469.0	5882	0.21 µg/L	93
		512.9 -> 219.0	930		
PFDODA	9.166	613.1 -> 569.0	5269	0.21 µg/L	94
		613.1 -> 319.0	707		
PFDS	9.344	599.0 -> 79.9	668	0.20 µg/L	95

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	380			
PFHpA	6.542	363.1 -> 319.0	5772	0.21	µg/L	96
		363.1 -> 169.0	839			
PFHpS	7.905	449.0 -> 79.9	929	0.21	µg/L	94
		449.0 -> 98.9	531			
PFHxA	5.591	313.0 -> 269.0	4278	0.24	µg/L	98
		313.0 -> 118.9	149			
PFHxS	7.326	398.7 -> 79.9	1069	0.22	µg/L	m 88
		398.7 -> 98.9	539			
PFNA	7.740	463.0 -> 419.0	4975	0.20	µg/L	91
		463.0 -> 219.0	1120			
PFNS	8.911	548.8 -> 79.9	1069	0.23	µg/L	87
		548.8 -> 98.9	530			
PFOA	7.199	413.0 -> 369.0	7998	0.24	µg/L	98
		413.0 -> 169.0	1072			
PFOS	8.421	498.9 -> 79.9	1010	0.21	µg/L	m 91
		498.9 -> 98.8	649			
PFPeA	4.386	263.0 -> 219.0	4878	0.45	µg/L	100
PFPeS	6.619	349.1 -> 79.9	1294	0.22	µg/L	95
		349.1 -> 98.9	635			
PFTeDA	9.894	713.1 -> 669.0	5148	0.23	µg/L	100
		713.1 -> 168.9	332			
PFTrDA	9.550	663.0 -> 619.0	5382	0.23	µg/L	99
		663.0 -> 168.9	490			
PFUnDA	8.725	563.1 -> 519.0	4746	0.19	µg/L	92
		563.1 -> 269.1	859			
11CI-PF3OUdS	9.614	630.9 -> 450.9	11318	0.82	µg/L	95
		632.9 -> 452.9	3842			
9CI-PF3ONS	8.776	530.8 -> 351.0	18047	0.80	µg/L	98
		532.8 -> 353.0	5625			
ADONA	6.792	376.9 -> 250.9	32133	0.79	µg/L	95
		376.9 -> 84.8	7328			
HFPO-DA	5.966	284.9 -> 168.9	1669	0.90	µg/L	94
		284.9 -> 184.9	242			
3:3FTCA	3.839	241.0 -> 177.0	646	1.12	µg/L	100
		241.0 -> 117.0	79			
5:3FTCA	6.207	341.0 -> 237.1	20784	5.52	µg/L	97
		341.0 -> 217.0	17091			
7:3FTCA	7.643	441.0 -> 316.9	13655	5.38	µg/L	95
		441.0 -> 336.9	29035			
EtFOSA	10.929	526.0 -> 219.0	1196	0.24	µg/L	96
		526.0 -> 169.0	1132			
EtFOSE	10.862	630.0 -> 58.9	2809	2.11	µg/L	100
MeFOSA	10.685	511.9 -> 219.0	950	0.24	µg/L	98
		511.9 -> 169.0	952			
MeFOSE	10.604	616.1 -> 58.9	3455	2.03	µg/L	100
PFDoDS	10.033	699.1 -> 79.9	466	0.22	µg/L	85
		699.1 -> 98.8	337			
NFDHA	5.471	295.0 -> 201.0	521	0.44	µg/L	97
		295.0 -> 84.9	218			
PFMBA	4.801	279.0 -> 85.1	1493	0.44	µg/L	100
PFMPA	3.550	229.0 -> 84.9	1307	0.44	µg/L	100
PFEESA	6.097	314.8 -> 134.9	9351	0.37	µg/L	100
		314.8 -> 82.9	238			

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

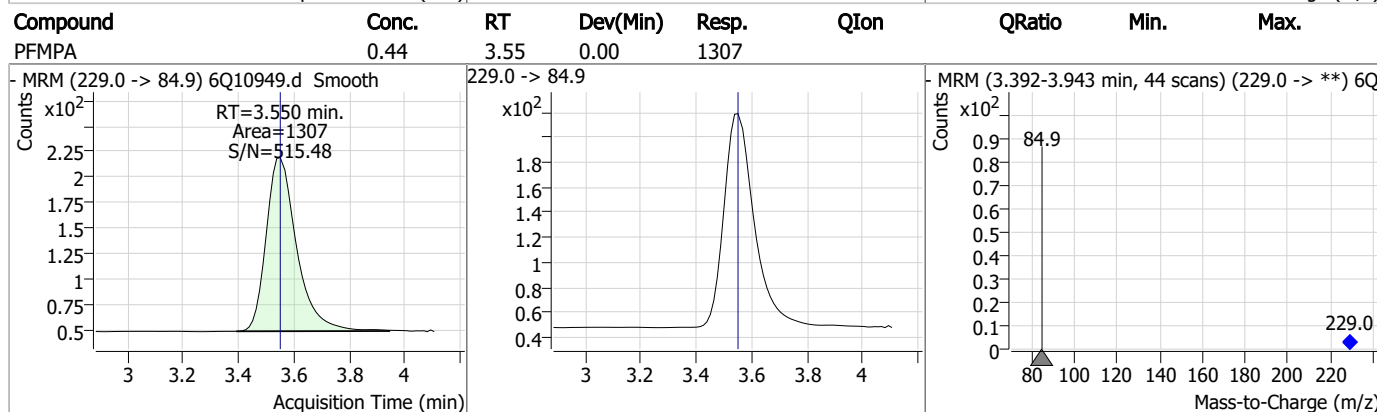
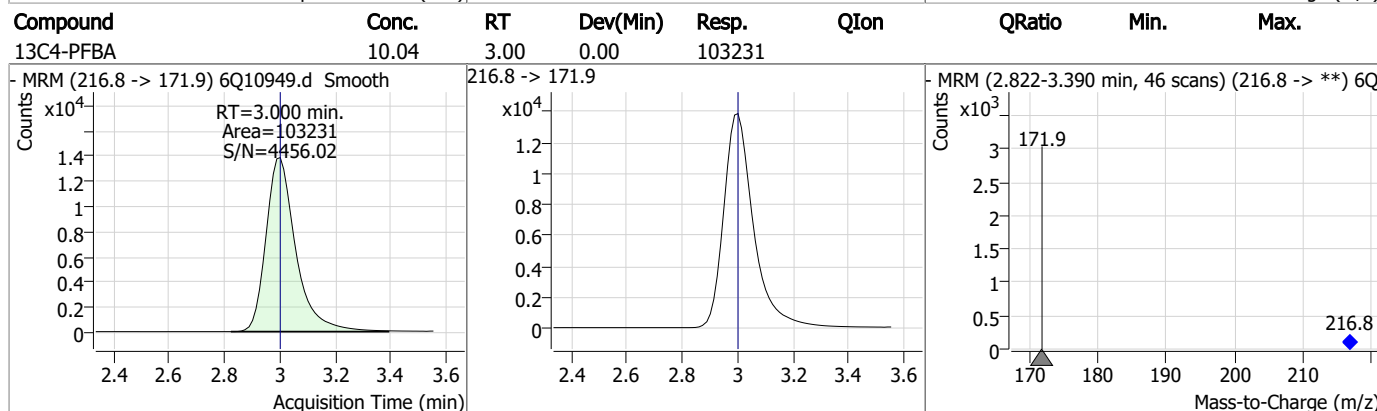
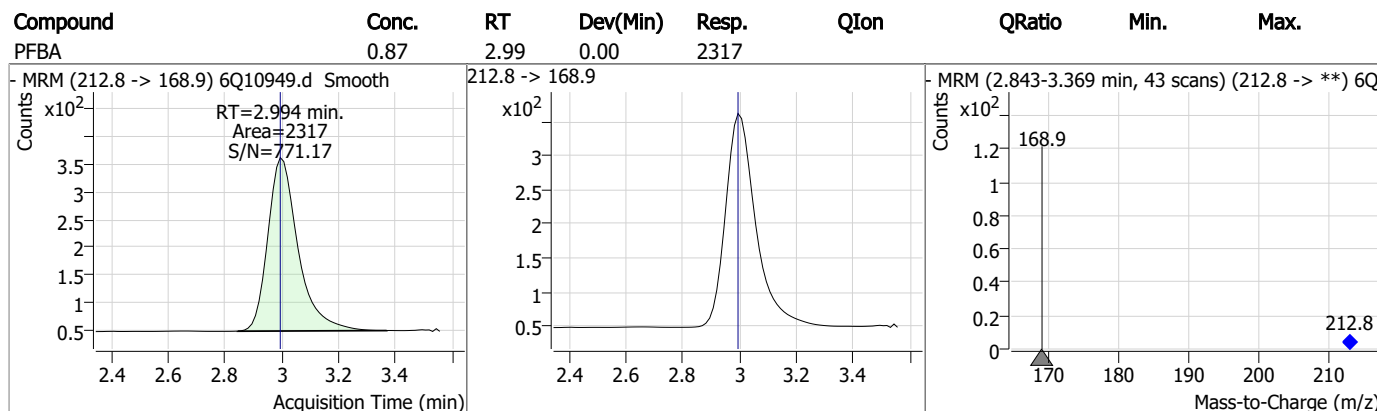
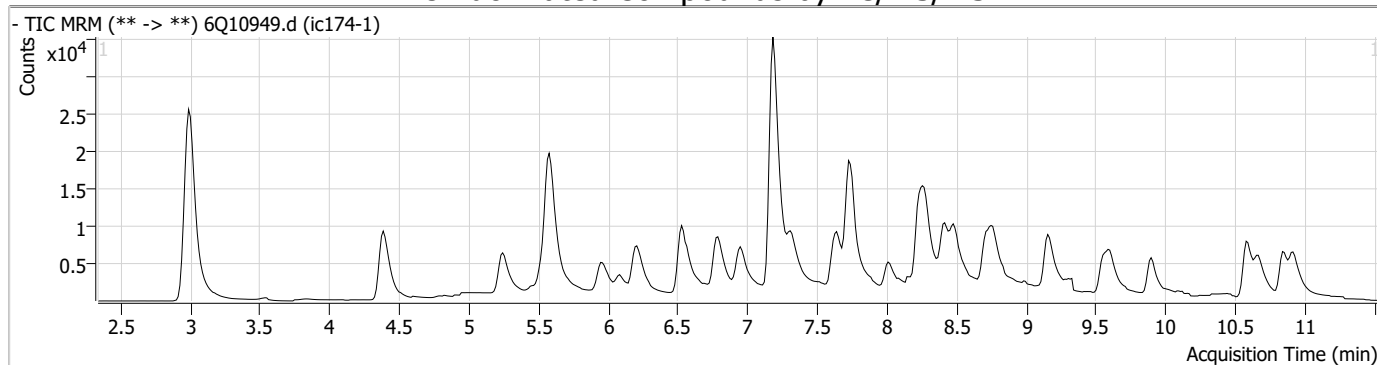
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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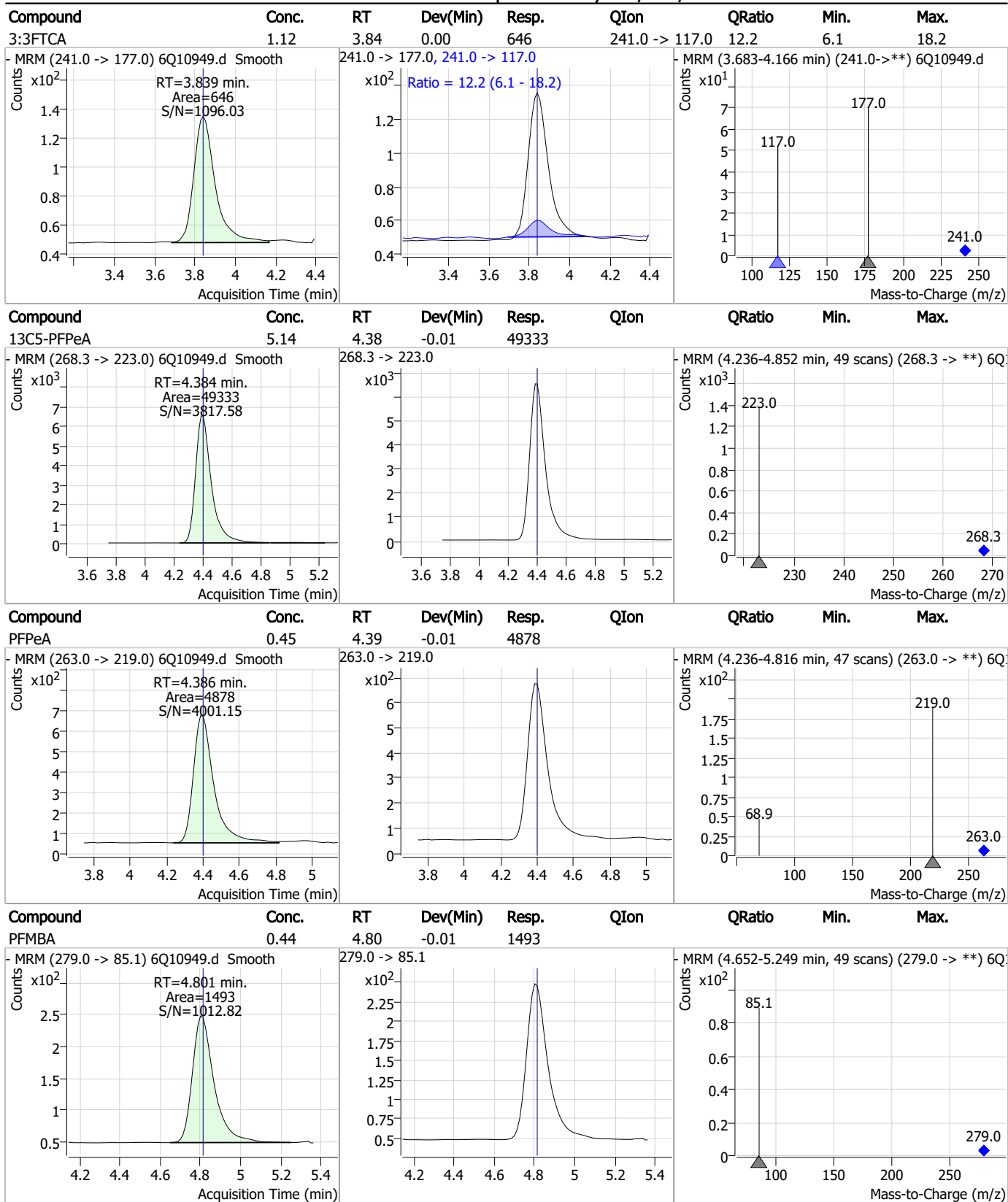
7.6.2
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Perfluorinated Compounds by LC/MS/MS

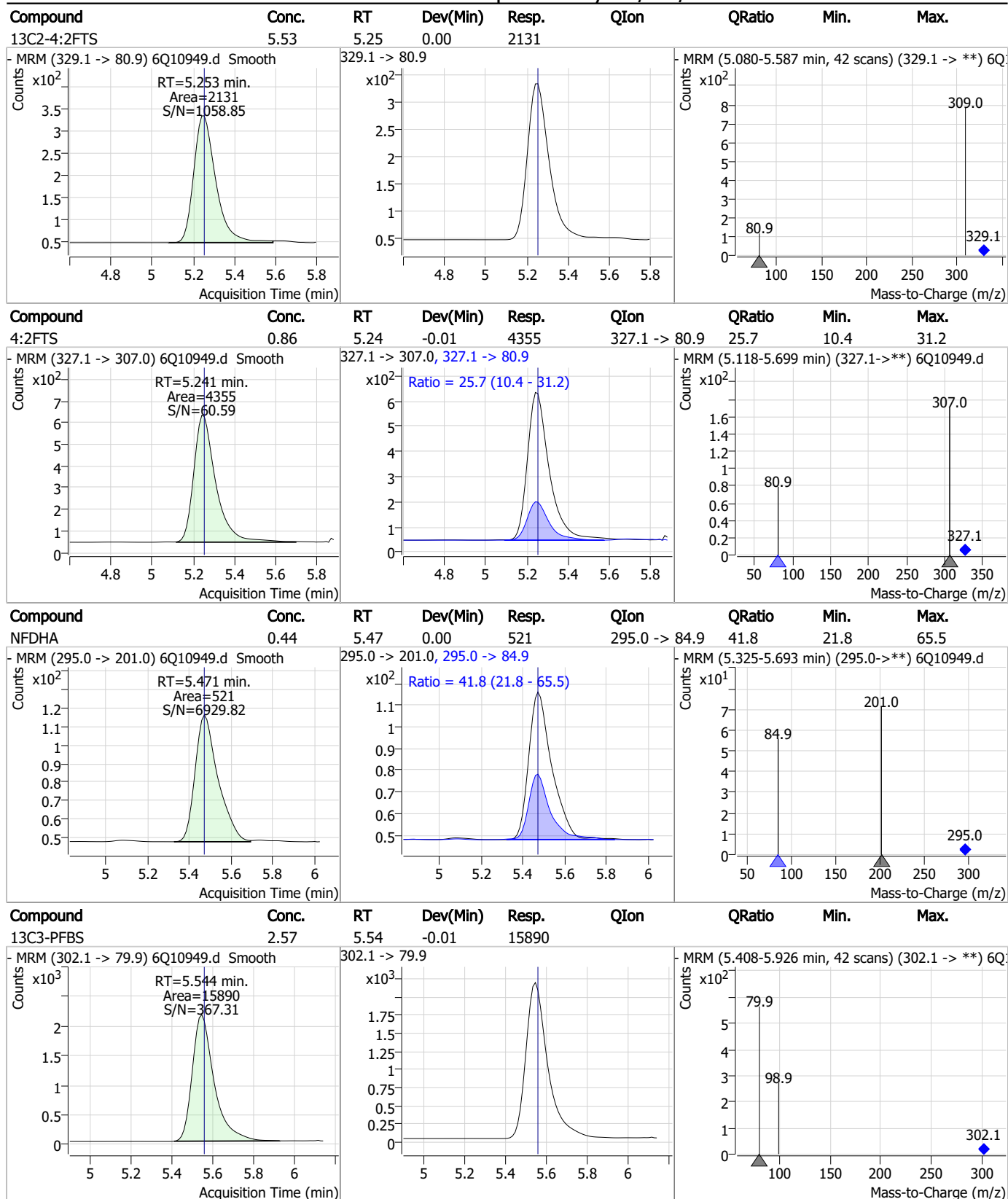


Perfluorinated Compounds by LC/MS/MS



7.6.2
7

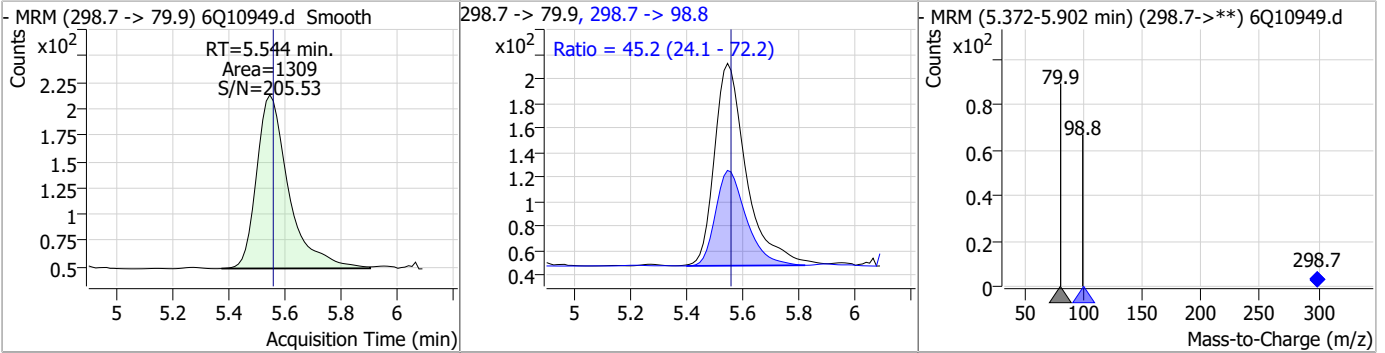
Perfluorinated Compounds by LC/MS/MS



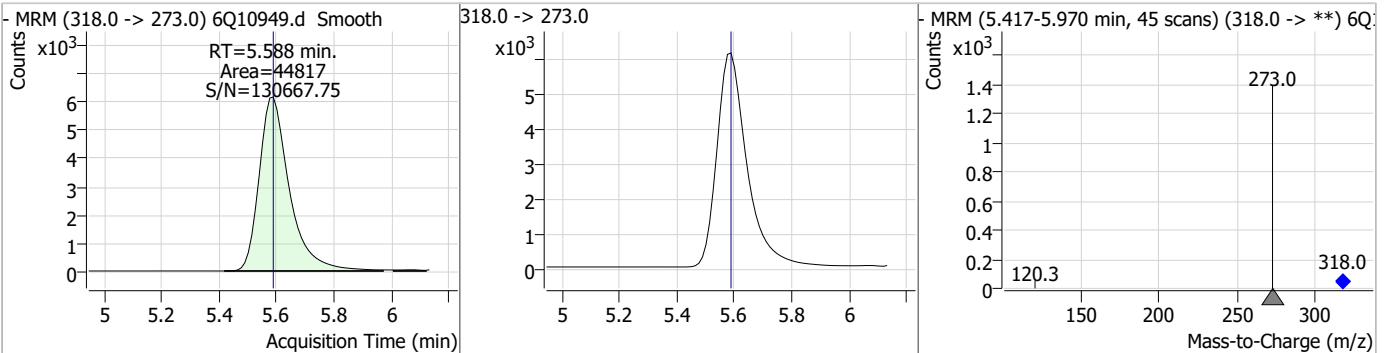
7.6.2
7

Perfluorinated Compounds by LC/MS/MS

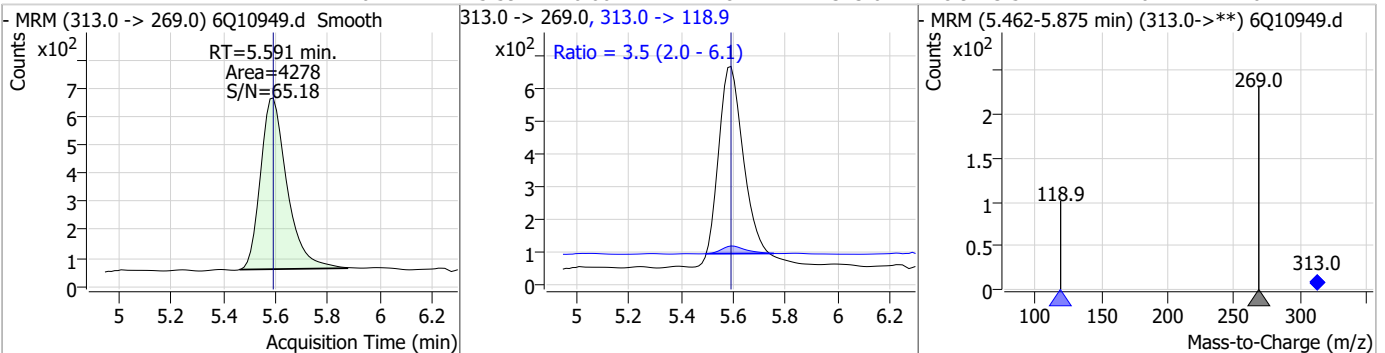
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.20	5.54	-0.01	1309	298.7 -> 98.8	45.2	24.1	72.2



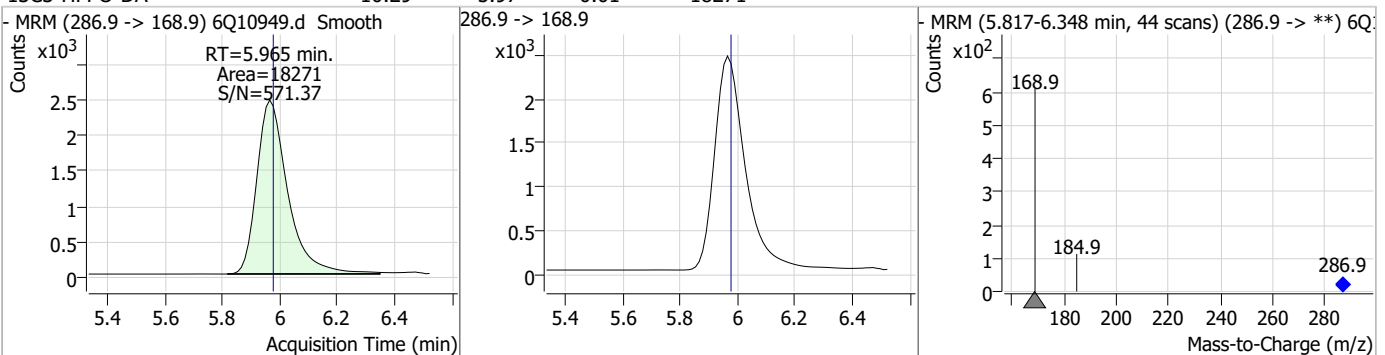
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.59	5.59	0.00	44817				



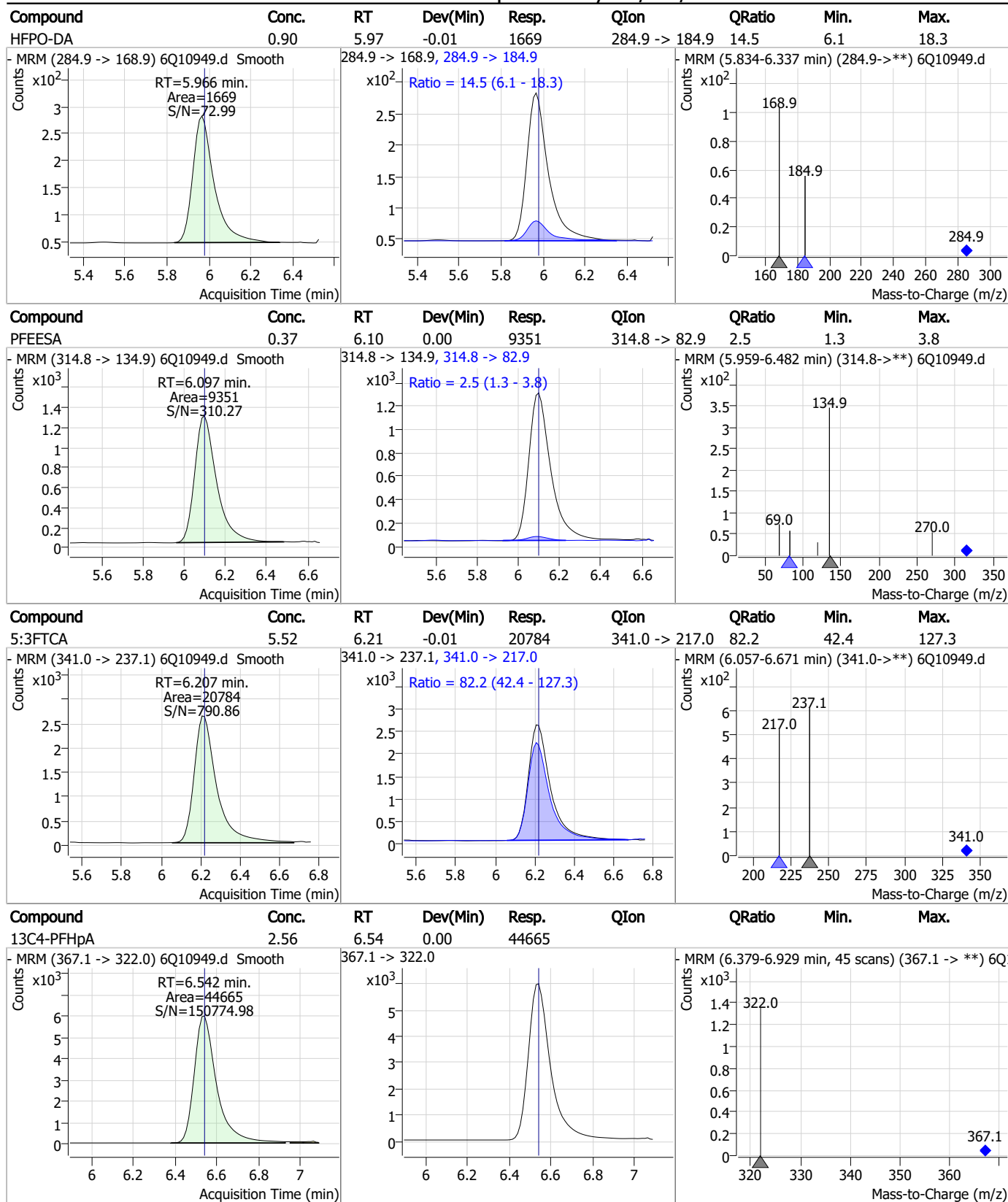
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.24	5.59	0.00	4278	313.0 -> 118.9	3.5	2.0	6.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.29	5.97	-0.01	18271				



Perfluorinated Compounds by LC/MS/MS

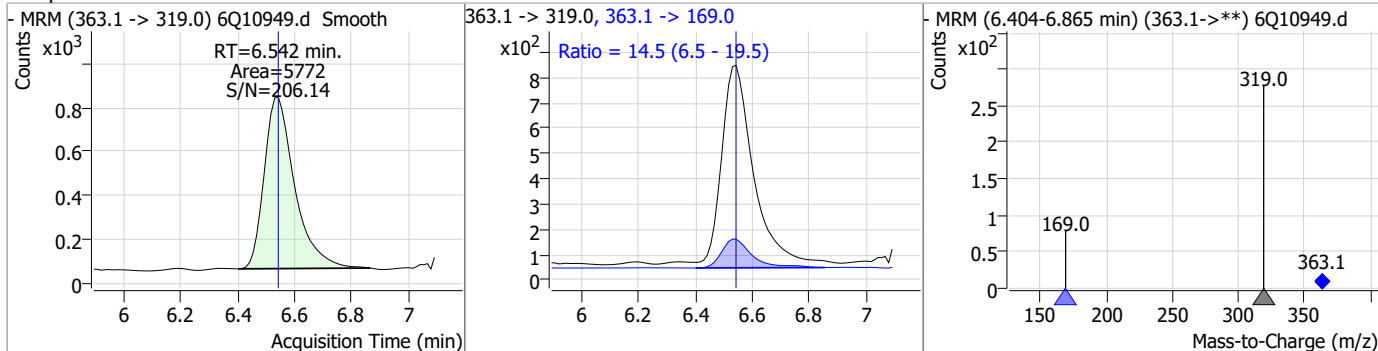


7.6.2
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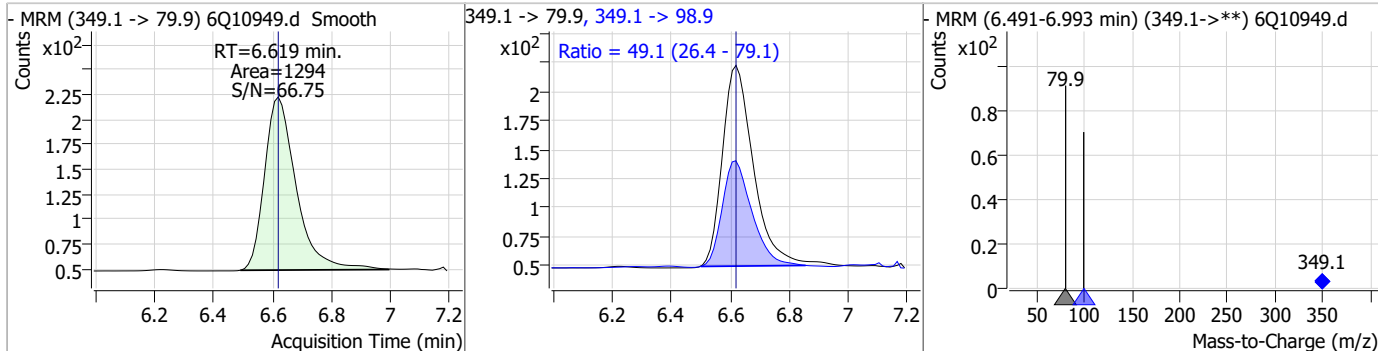


Perfluorinated Compounds by LC/MS/MS

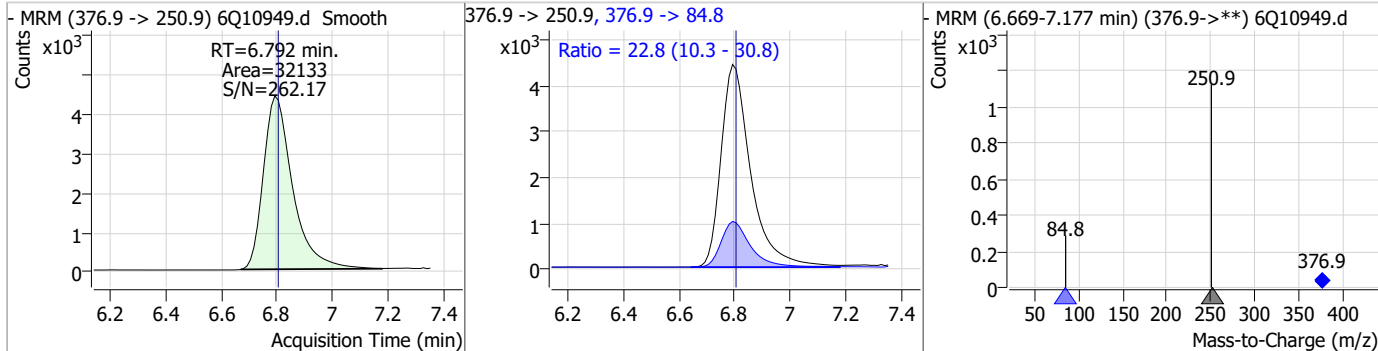
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.21	6.54	0.00	5772	363.1 -> 169.0	14.5	6.5	19.5



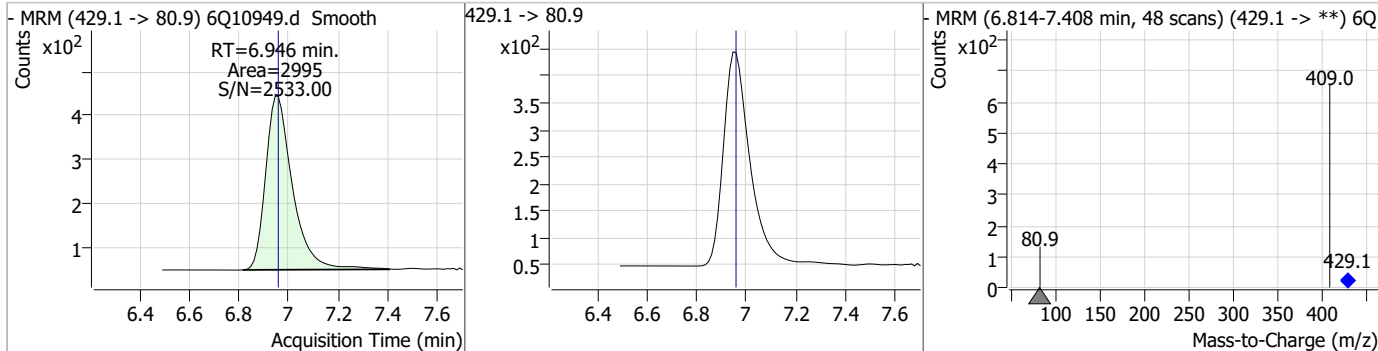
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.22	6.62	0.00	1294	349.1 -> 98.9	49.1	26.4	79.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.79	6.79	-0.01	32133	376.9 -> 84.8	22.8	10.3	30.8

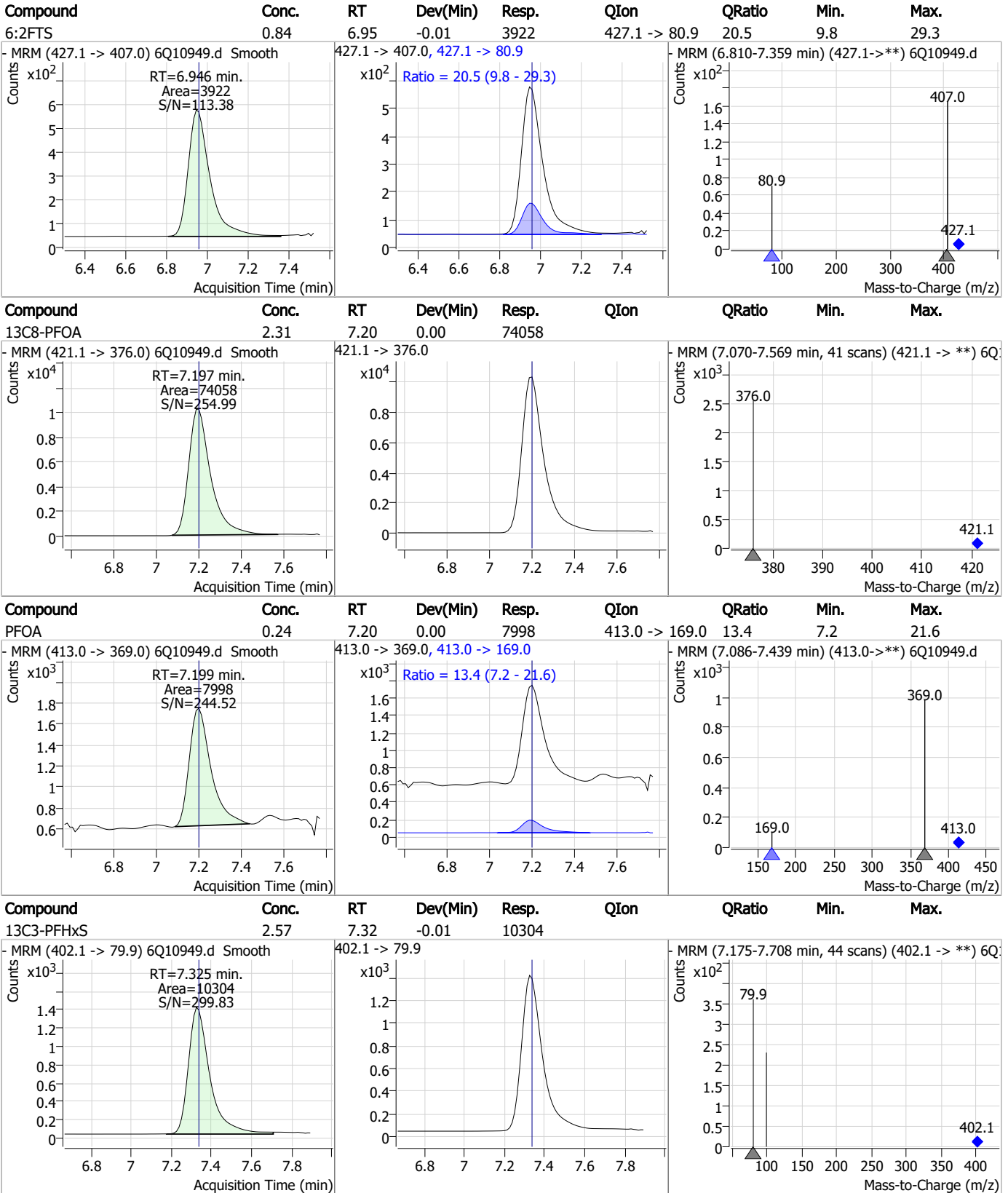


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.68	6.95	-0.01	2995	429.1 -> 80.9			



7.6.2
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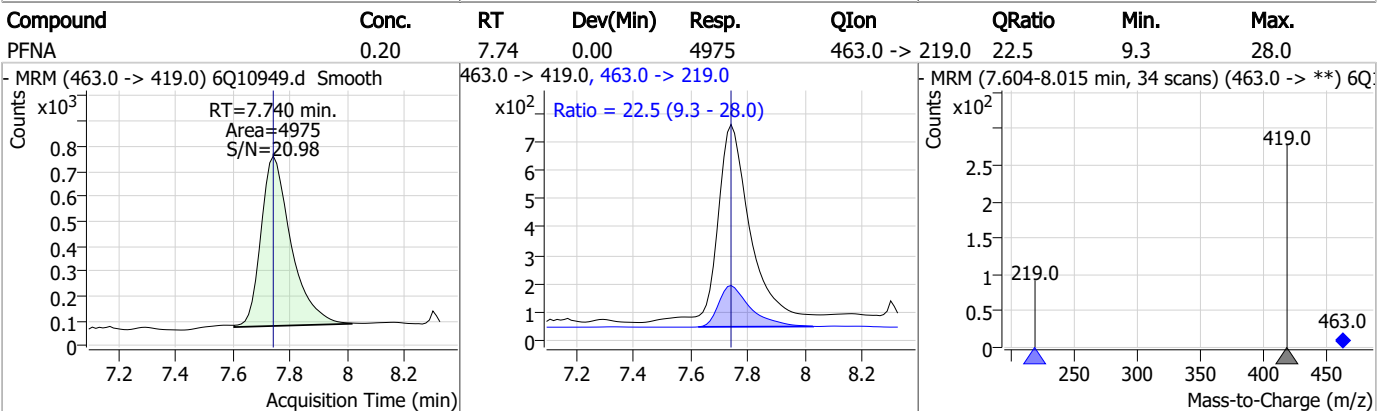
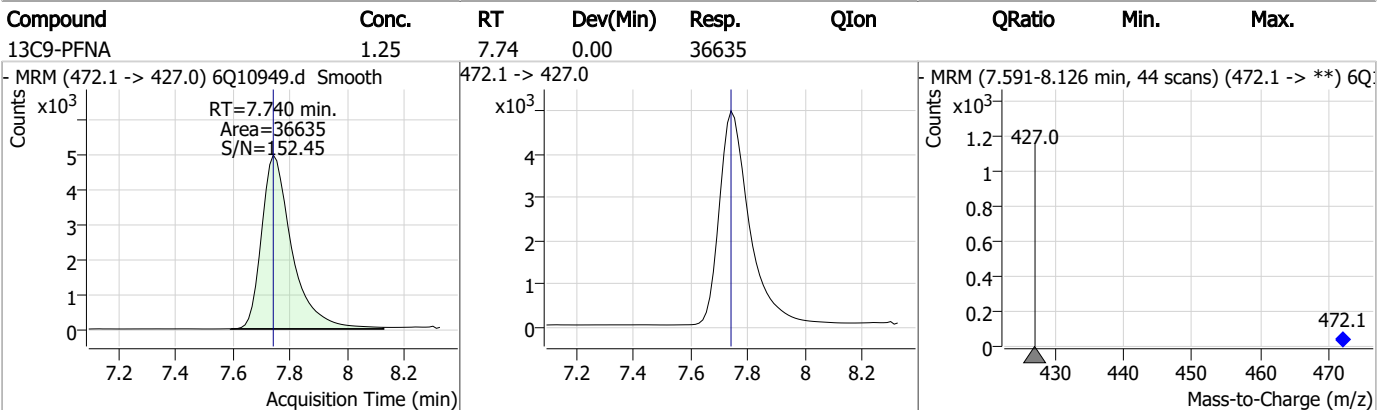
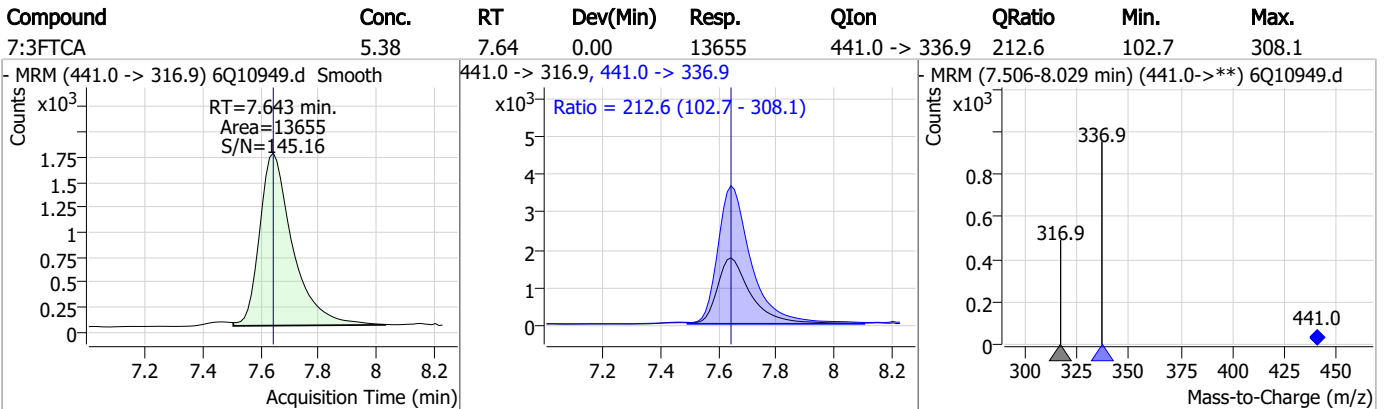
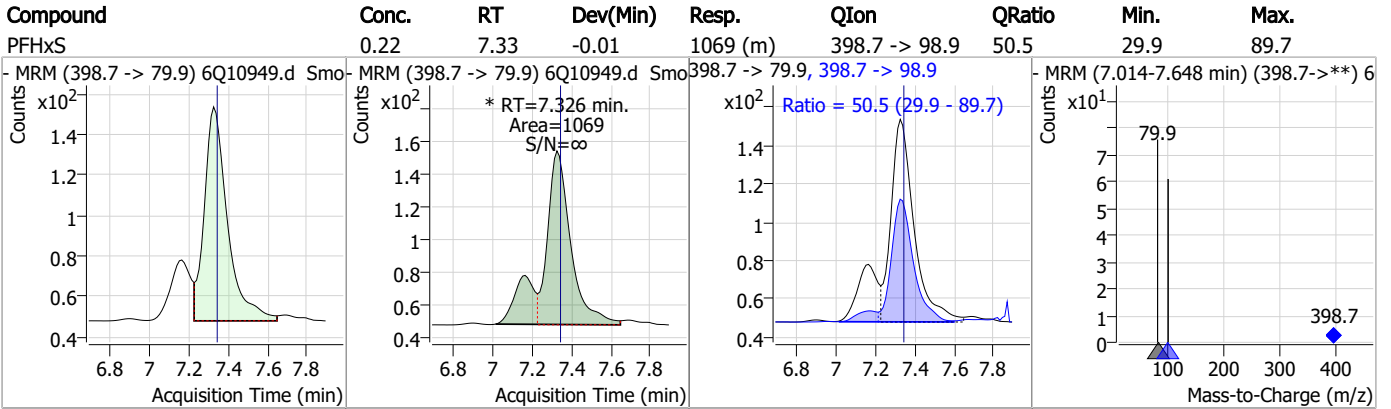
Perfluorinated Compounds by LC/MS/MS



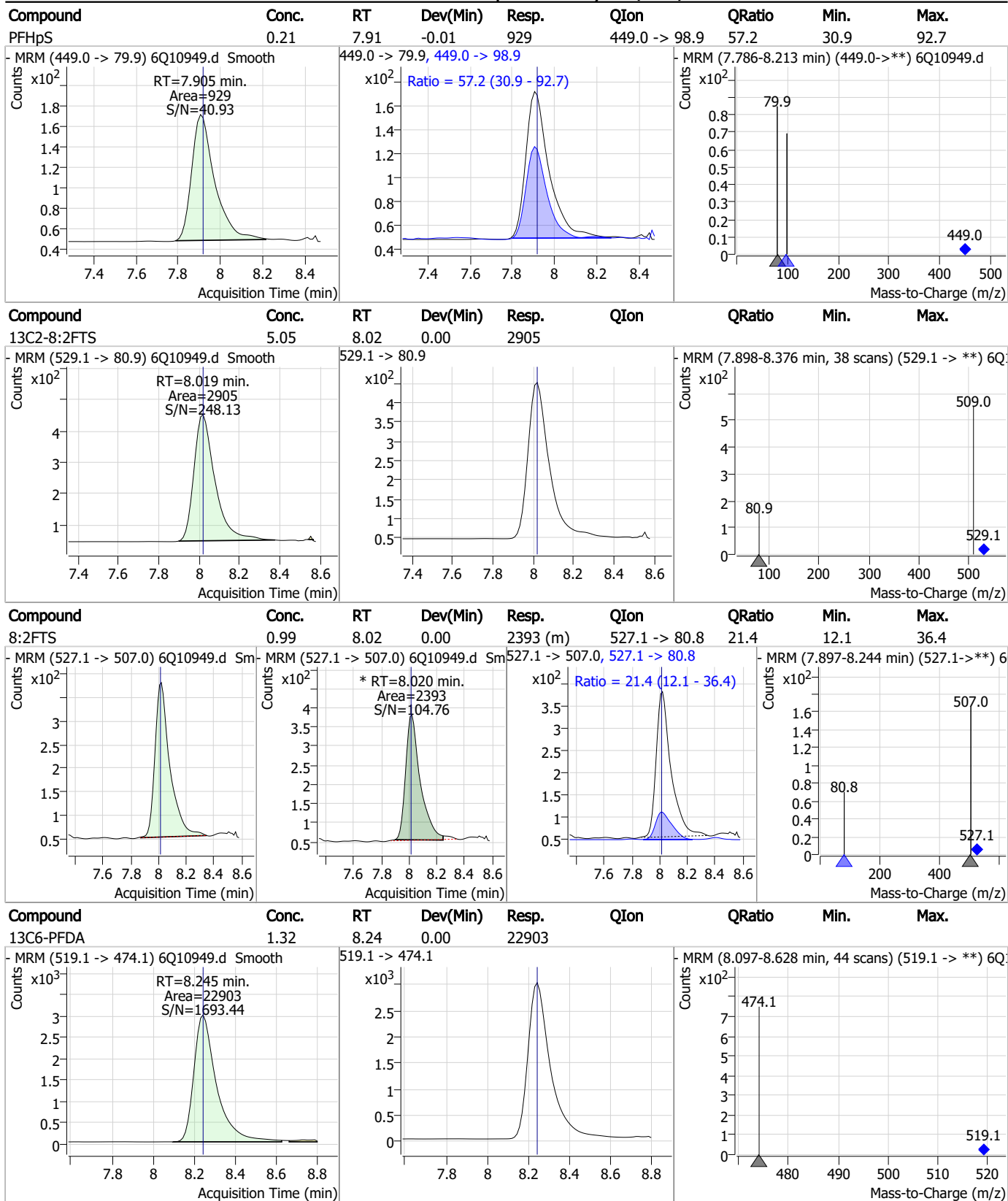
7.6.2

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Perfluorinated Compounds by LC/MS/MS

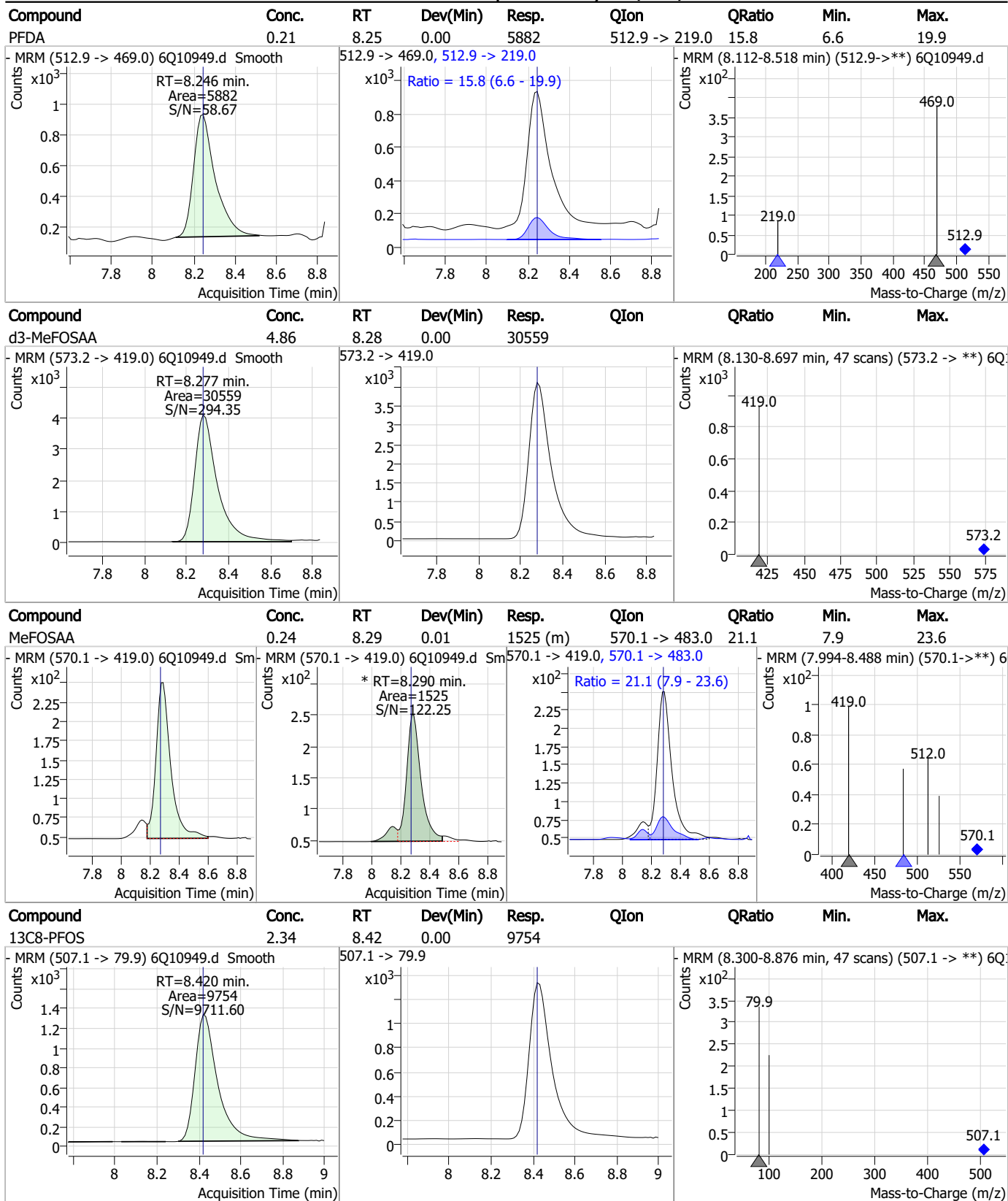


Perfluorinated Compounds by LC/MS/MS



7.6.2
7

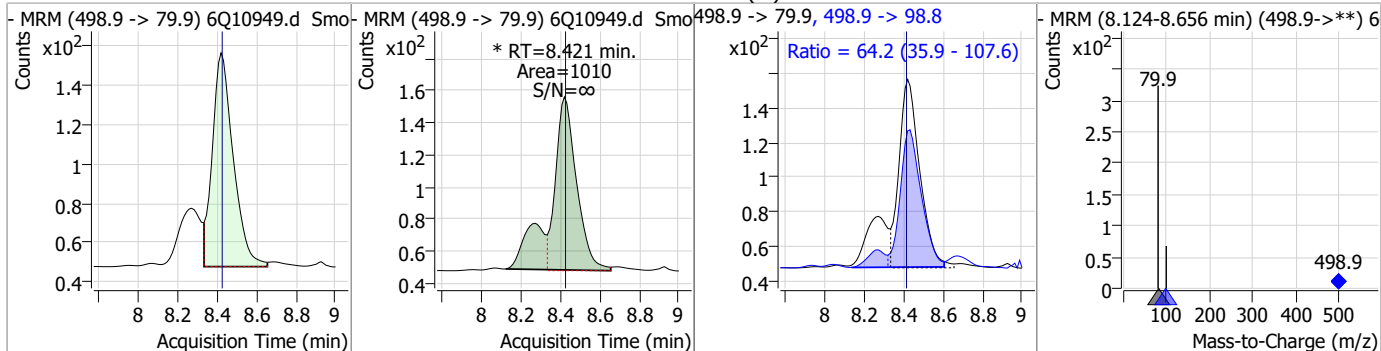
Perfluorinated Compounds by LC/MS/MS



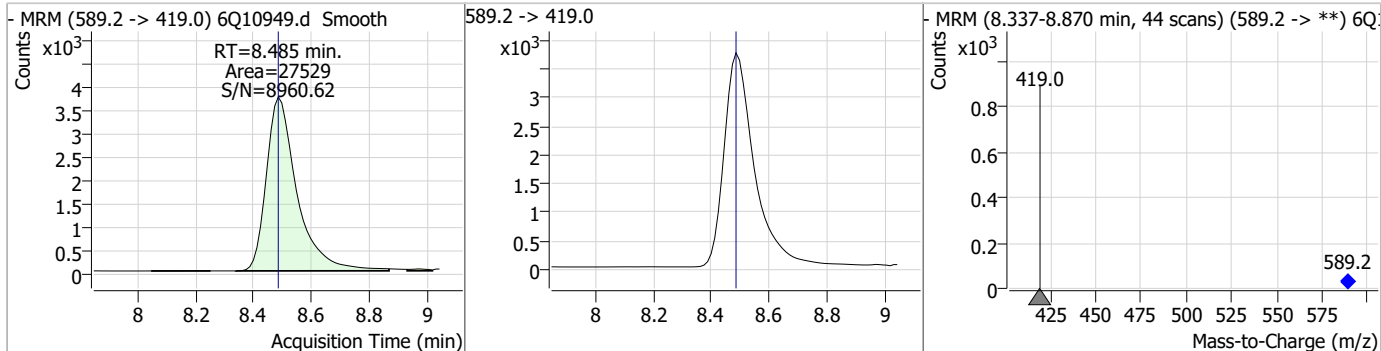
7.6.2
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Perfluorinated Compounds by LC/MS/MS

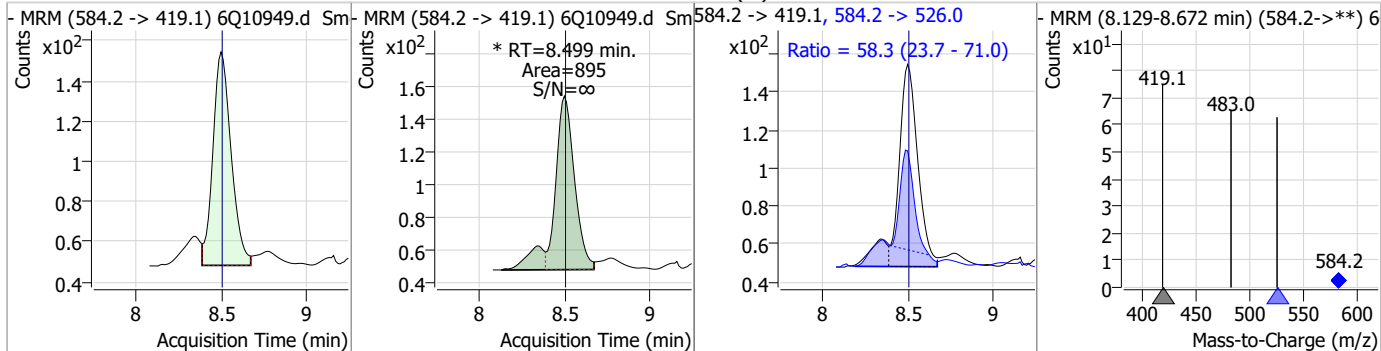
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.21	8.42	0.00	1010 (m)	498.9 -> 98.8	64.2	35.9	107.6



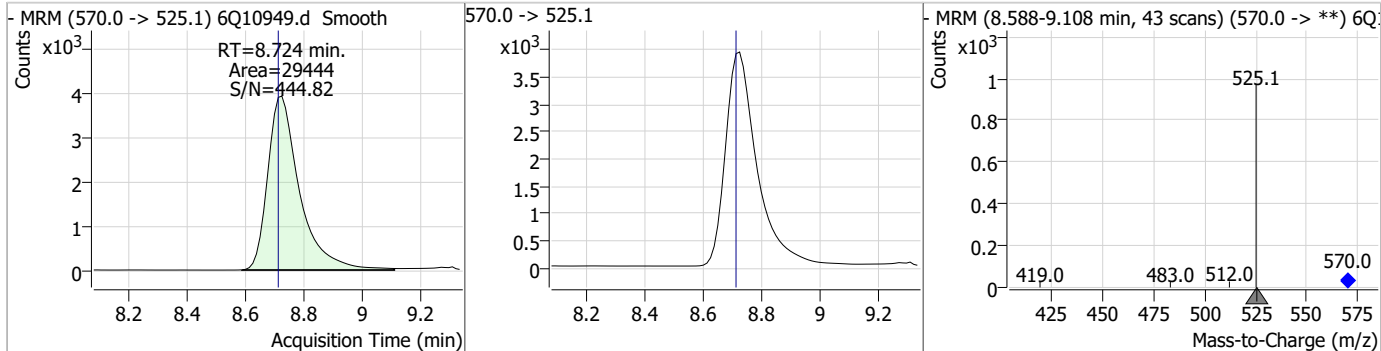
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.99	8.49	0.00	27529				



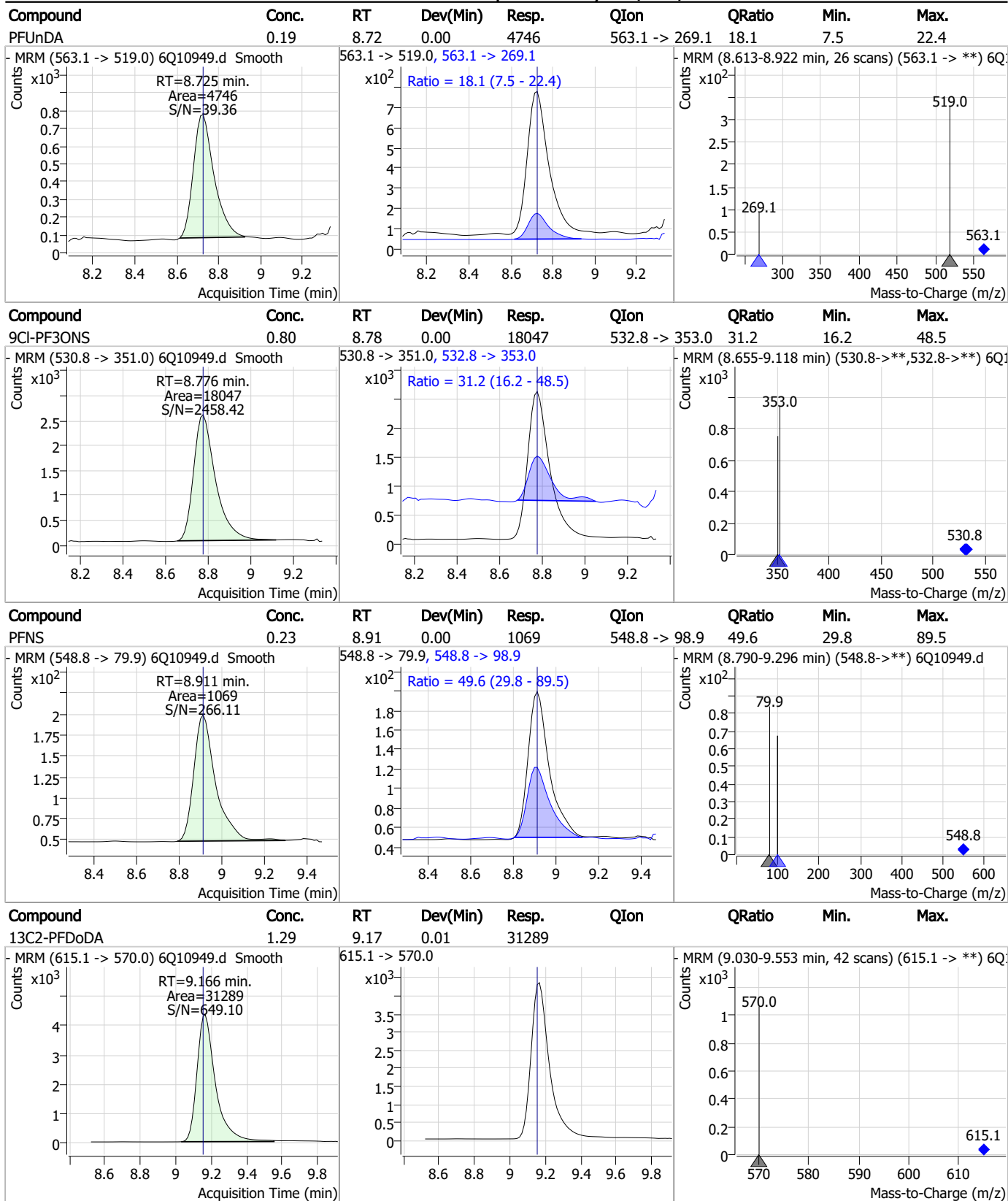
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.20	8.50	0.00	895 (m)	584.2 -> 526.0	58.3	23.7	71.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.39	8.72	0.01	29444				

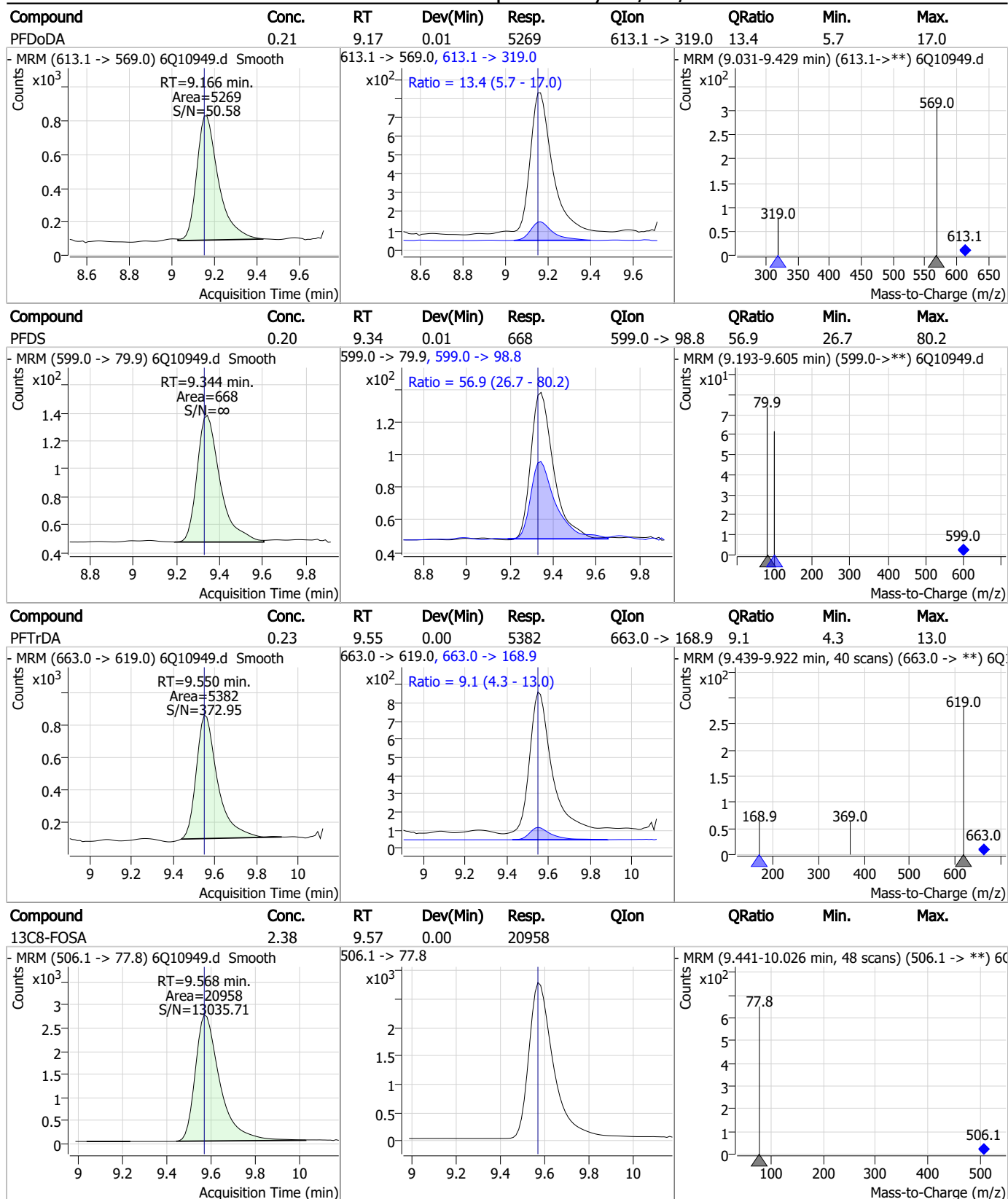


Perfluorinated Compounds by LC/MS/MS



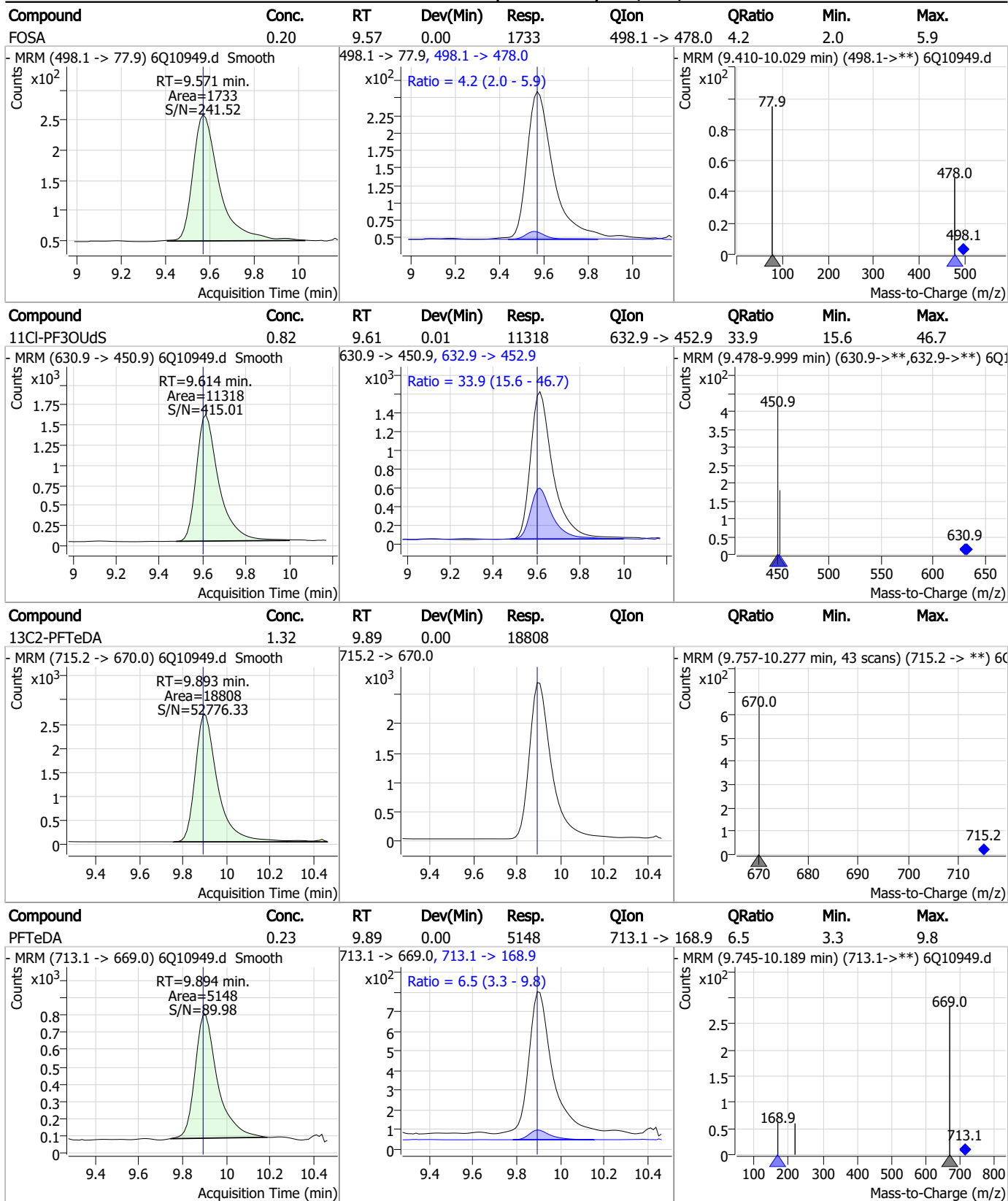
7.6.2
7

Perfluorinated Compounds by LC/MS/MS



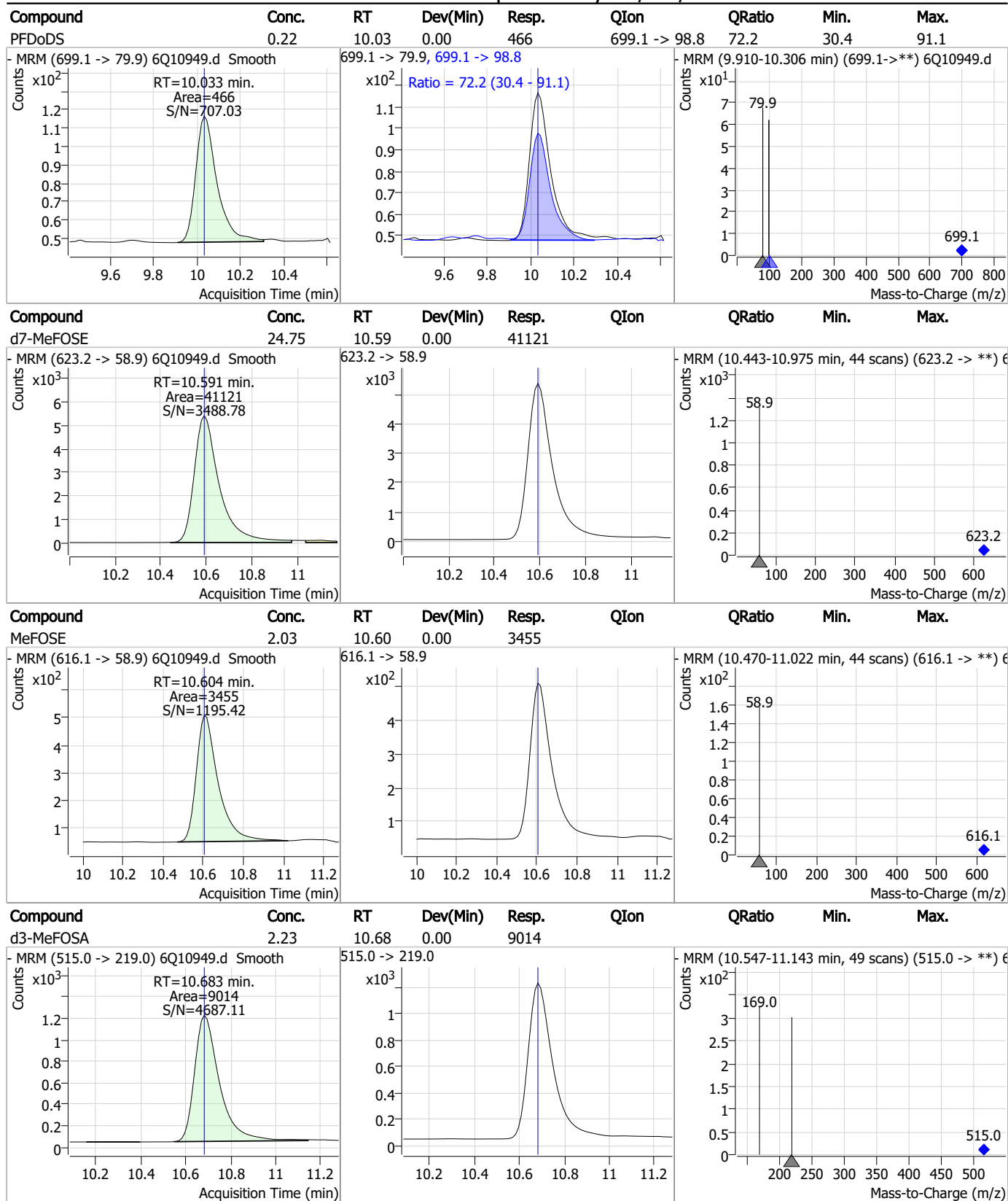
7.6.2
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Perfluorinated Compounds by LC/MS/MS



7.6.2
7

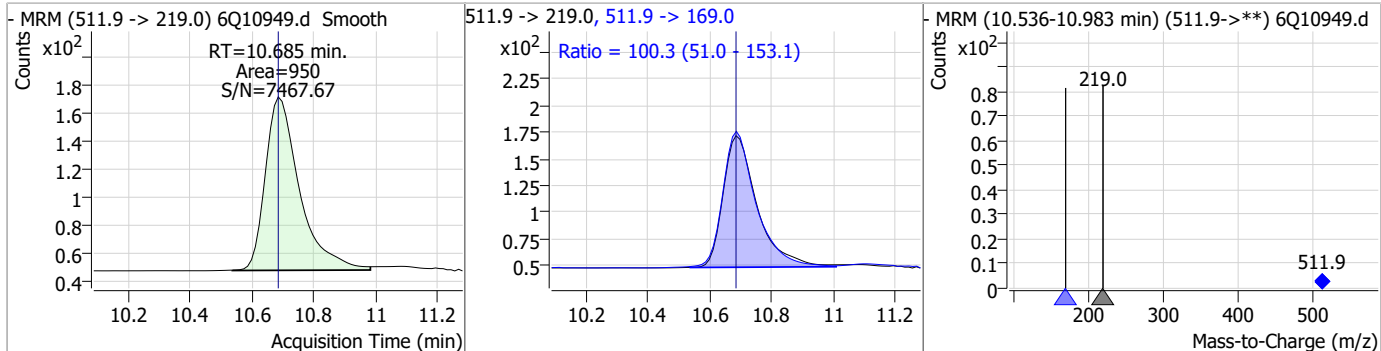
Perfluorinated Compounds by LC/MS/MS



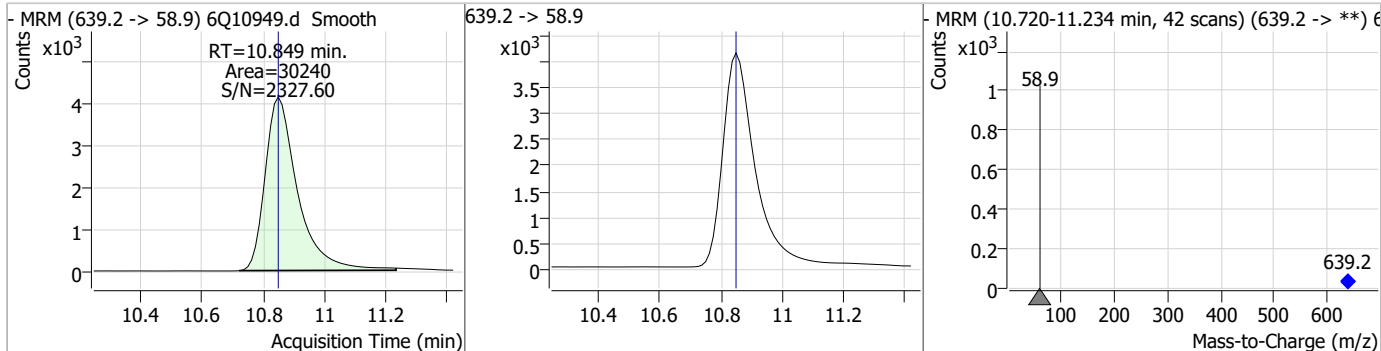
7.6.2
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Perfluorinated Compounds by LC/MS/MS

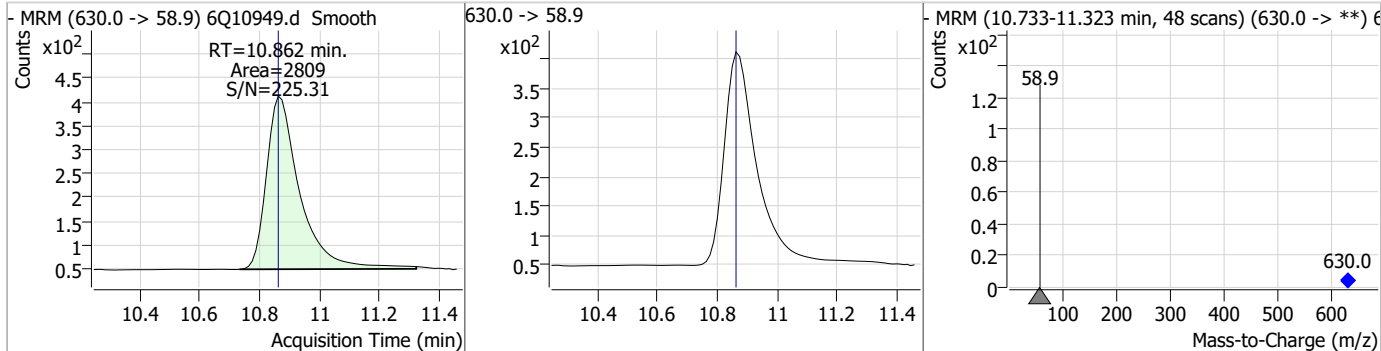
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.24	10.68	0.00	950	511.9 -> 169.0	100.3	51.0	153.1



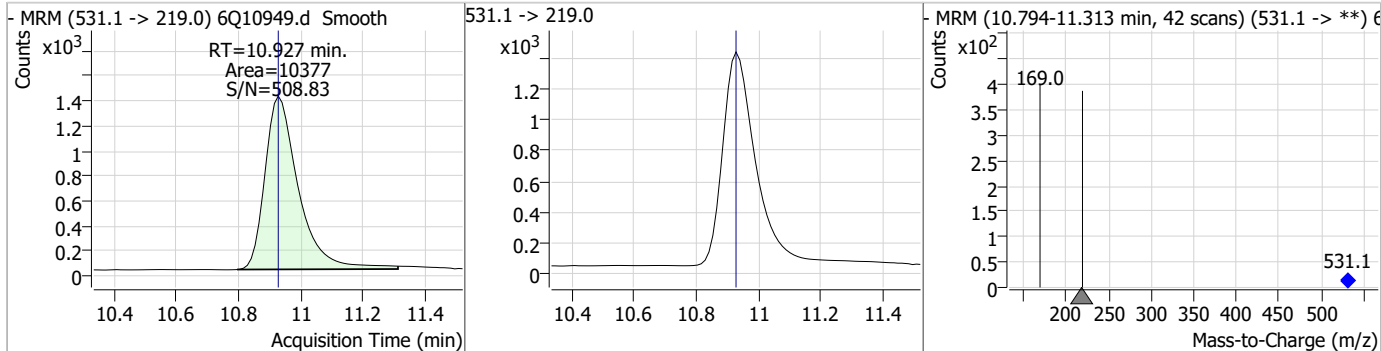
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	23.80	10.85	0.00	30240				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	2.11	10.86	0.00	2809				

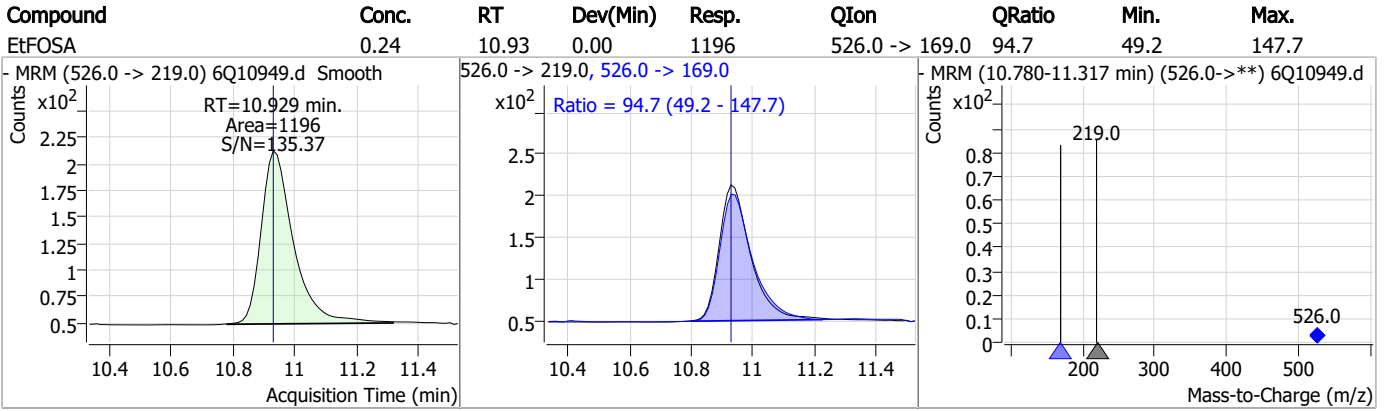


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.30	10.93	0.00	10377				



7.6.2
7

Perfluorinated Compounds by LC/MS/MS



7.6.2

7

Manual Integration Approval Summary

Sample Number: S6Q174-IC174 Method: EPA DRAFT 1633
Lab FileID: 6Q10949.D Analyst approved: 01/12/23 11:46 Martha Valls
Injection Time: 01/11/23 11:50 Supervisor approved: 01/12/23 15:42 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.33	Split peak
8:2 Fluorotelomer sulfonate	39108-34-4		8.02	Split peak
MeFOSAA	2355-31-9		8.29	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.42	Split peak
EtFOSAA	2991-50-6		8.50	Split peak

7.6.2.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q10950.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/11/2023 12:04:23 PM
 Sample Name : ic174-2
 Vial : P1-A3
 DA Method File : 1633_011123_S6Q174.quantmethod.xml
 Batch Name : S6Q174.batch.bin
 Sample Information : OP94795,S6Q174,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.000	216.8 -> 171.9	96471	10.00 µg/L	0.000
M5-PFPeA	4.397	268.3 -> 223.0	45556	5.00 µg/L	0.000
M5-PFHxA	5.588	318.0 -> 273.0	41606	2.50 µg/L	0.000
M4-PFHpA	6.542	367.1 -> 322.0	42417	2.50 µg/L	0.000
M8-PFOA	7.185	421.1 -> 376.0	70596	2.50 µg/L	-0.013
M9-PFNA	7.740	472.1 -> 427.0	33207	1.25 µg/L	0.000
M6-PFDA	8.245	519.1 -> 474.1	23482	1.25 µg/L	0.000
M7-PFUnDA	8.712	570.0 -> 525.1	26775	1.25 µg/L	0.000
M2-PFDoDA	9.154	615.1 -> 570.0	29295	1.25 µg/L	0.000
M2-PFTeDA	9.893	715.2 -> 670.0	18145	1.25 µg/L	0.000
M8-FOSA	9.568	506.1 -> 77.8	20223	2.50 µg/L	0.000
M3-PFBS	5.544	302.1 -> 79.9	14663	2.50 µg/L	-0.012
M3-PFHxS	7.325	402.1 -> 79.9	9171	2.50 µg/L	-0.012
M8-PFOS	8.420	507.1 -> 79.9	9854	2.50 µg/L	0.000
M2-4:2FTS	5.253	329.1 -> 80.9	2021	5.00 µg/L	0.000
M2-6:2FTS	6.946	429.1 -> 80.9	2833	5.00 µg/L	-0.012
M2-8:2FTS	8.019	529.1 -> 80.9	2843	5.00 µg/L	0.000
M3-MeFOSAA	8.277	573.2 -> 419.0	30082	5.00 µg/L	0.000
M3-HFPO-DA	5.965	286.9 -> 168.9	16696	10.00 µg/L	-0.012
M5-EtFOSAA	8.485	589.2 -> 419.0	23900	5.00 µg/L	0.000
M7-MeFOSE	10.591	623.2 -> 58.9	36939	25.00 µg/L	0.000
M9-EtFOSE	10.849	639.2 -> 58.9	29016	25.00 µg/L	0.000
M5-EtFOSA	10.927	531.1 -> 219.0	10178	2.50 µg/L	0.000
M3-MeFOSA	10.683	515.0 -> 219.0	9116	2.50 µg/L	0.000
13C4-PFOS	8.421	502.8 -> 79.9	11165	2.50 µg/L	0.000
13C3-PFBA	3.004	216.0 -> 172.0	42355	5.00 µg/L	0.000
18O2-PFHxS	7.324	403.0 -> 83.9	7223	2.50 µg/L	-0.012
13C4-PFOA	7.185	417.1 -> 372.0	83876	2.50 µg/L	-0.013
13C2-PFDA	8.233	515.1 -> 470.1	29888	1.25 µg/L	-0.012
13C5-PFNA	7.740	468.0 -> 423.0	36626	1.25 µg/L	0.000
13C2-PFHxA	5.589	315.1 -> 270.0	42110	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.253	329.1 -> 80.9	2021	5.36 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.3%		
13C2-6:2FTS	6.946	429.1 -> 80.9	2833	5.49 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.8%		
13C2-8:2FTS	8.019	529.1 -> 80.9	2843	5.05 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.0%		
13C2-PFDoDA	9.154	615.1 -> 570.0	29295	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.9%		
13C2-PFTeDA	9.893	715.2 -> 670.0	18145	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.3%		
13C3-PFBS	5.544	302.1 -> 79.9	14663	2.42 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.8%		
13C3-PFHxS	7.325	402.1 -> 79.9	9171	2.34 µg/L	-0.012

7.6.3
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 = 93.6%	
13C4-PFBA	3.000	216.8 -> 171.9	96471	9.97 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C4-PFHpA	6.542	367.1 -> 322.0	42417	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C5-PFHxA	5.588	318.0 -> 273.0	41606	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C5-PFPeA	4.397	268.3 -> 223.0	45556	4.85 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.0%	
13C6-PFDA	8.245	519.1 -> 474.1	23482	1.38 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 110.4%	
13C7-PFUnDA	8.712	570.0 -> 525.1	26775	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.1%	
13C8-FOSA	9.568	506.1 -> 77.8	20223	2.68 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.3%	
13C8-PFOA	7.185	421.1 -> 376.0	70596	2.51 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C8-PFOS	8.420	507.1 -> 79.9	9854	2.76 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.5%	
13C9-PFNA	7.740	472.1 -> 427.0	33207	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.1%	
d3-MeFOSAA	8.277	573.2 -> 419.0	30082	5.60 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 111.9%	
13C3-HFPO-DA	5.965	286.9 -> 168.9	16696	9.61 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.1%	
d3-MeFOSA	10.683	515.0 -> 219.0	9116	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.6%	
d5-EtFOSAA	8.485	589.2 -> 419.0	23900	5.07 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
d7-MeFOSE	10.591	623.2 -> 58.9	36939	25.99 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 104.0%	
d9-EtFOSE	10.849	639.2 -> 58.9	29016	26.70 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 106.8%	
d5-EtFOSA	10.927	531.1 -> 219.0	10178	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.3%	
Target Compounds					QValue
4:2FTS	5.254	327.1 -> 307.0	8069	1.68 µg/L	97
		327.1 -> 80.9	1802		
6:2FTS	6.946	427.1 -> 407.0	7000	1.59 µg/L	96
		427.1 -> 80.9	1499		
8:2FTS	8.020	527.1 -> 507.0	4258	1.80 µg/L	99
		527.1 -> 80.8	1056		
EtFOSAA	8.486	584.2 -> 419.1	1634	0.43 µg/L	m 90
		584.2 -> 526.0	878		
FOSA	9.571	498.1 -> 77.9	3862	0.47 µg/L	99
		498.1 -> 478.0	137		
MeFOSAA	8.278	570.1 -> 419.0	2473	0.40 µg/L	m 85
		570.1 -> 483.0	547		
PFBA	2.994	212.8 -> 168.9	4463	1.80 µg/L	100
PFBS	5.544	298.7 -> 79.9	2414	0.41 µg/L	97
		298.7 -> 98.8	1214		
PFDA	8.246	512.9 -> 469.0	12094	0.43 µg/L	98
		512.9 -> 219.0	1676		
PFDODA	9.154	613.1 -> 569.0	10142	0.44 µg/L	99
		613.1 -> 319.0	1204		
PFDS	9.329	599.0 -> 79.9	1457	0.43 µg/L	98

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	796			
PFHpA	6.542	363.1 -> 319.0	11616	0.45	µg/L	95
		363.1 -> 169.0	1722			
PFHpS	7.905	449.0 -> 79.9	2021	0.45	µg/L	86
		449.0 -> 98.9	1032			
PFHxA	5.591	313.0 -> 269.0	7750	0.46	µg/L	100
		313.0 -> 118.9	328			
PFHxS	7.326	398.7 -> 79.9	2007	0.46	µg/L	m 88
		398.7 -> 98.9	1023			
PFNA	7.740	463.0 -> 419.0	10207	0.44	µg/L	98
		463.0 -> 219.0	1797			
PFNS	8.899	548.8 -> 79.9	1917	0.40	µg/L	93
		548.8 -> 98.9	1241			
PFOA	7.186	413.0 -> 369.0	14117	0.45	µg/L	97
		413.0 -> 169.0	1861			
PFOS	8.421	498.9 -> 79.9	1775	0.37	µg/L	m 94
		498.9 -> 98.8	1177			
PFPeA	4.401	263.0 -> 219.0	9136	0.91	µg/L	100
PFPeS	6.619	349.1 -> 79.9	2273	0.44	µg/L	95
		349.1 -> 98.9	1275			
PFTeDA	9.894	713.1 -> 669.0	9569	0.44	µg/L	99
		713.1 -> 168.9	591			
PFTrDA	9.550	663.0 -> 619.0	10505	0.48	µg/L	96
		663.0 -> 168.9	759			
PFUnDA	8.712	563.1 -> 519.0	9731	0.43	µg/L	94
		563.1 -> 269.1	1685			
11Cl-PF3OUdS	9.614	630.9 -> 450.9	22312	1.76	µg/L	99
		632.9 -> 452.9	7117			
9Cl-PF3ONS	8.776	530.8 -> 351.0	35459	1.72	µg/L	98
		532.8 -> 353.0	11001			
ADONA	6.792	376.9 -> 250.9	64651	1.74	µg/L	97
		376.9 -> 84.8	14226			
HFPO-DA	5.966	284.9 -> 168.9	2974	1.76	µg/L	95
		284.9 -> 184.9	417			
3:3FTCA	3.839	241.0 -> 177.0	1206	2.26	µg/L	91
		241.0 -> 117.0	191			
5:3FTCA	6.219	341.0 -> 237.1	38836	11.11	µg/L	100
		341.0 -> 217.0	32766			
7:3FTCA	7.643	441.0 -> 316.9	26131	11.09	µg/L	97
		441.0 -> 336.9	54925			
EtFOSA	10.929	526.0 -> 219.0	2232	0.45	µg/L	96
		526.0 -> 169.0	2286			
EtFOSE	10.862	630.0 -> 58.9	5668	4.43	µg/L	100
MeFOSA	10.685	511.9 -> 219.0	1800	0.45	µg/L	99
		511.9 -> 169.0	1822			
MeFOSE	10.604	616.1 -> 58.9	7101	4.65	µg/L	100
PFDoDS	10.033	699.1 -> 79.9	949	0.45	µg/L	99
		699.1 -> 98.8	586			
NFDHA	5.483	295.0 -> 201.0	888	0.81	µg/L	87
		295.0 -> 84.9	462			
PFMBA	4.801	279.0 -> 85.1	2738	0.88	µg/L	100
PFMPA	3.550	229.0 -> 84.9	2563	0.93	µg/L	100
PFEESA	6.097	314.8 -> 134.9	18596	0.79	µg/L	99
		314.8 -> 82.9	530			

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

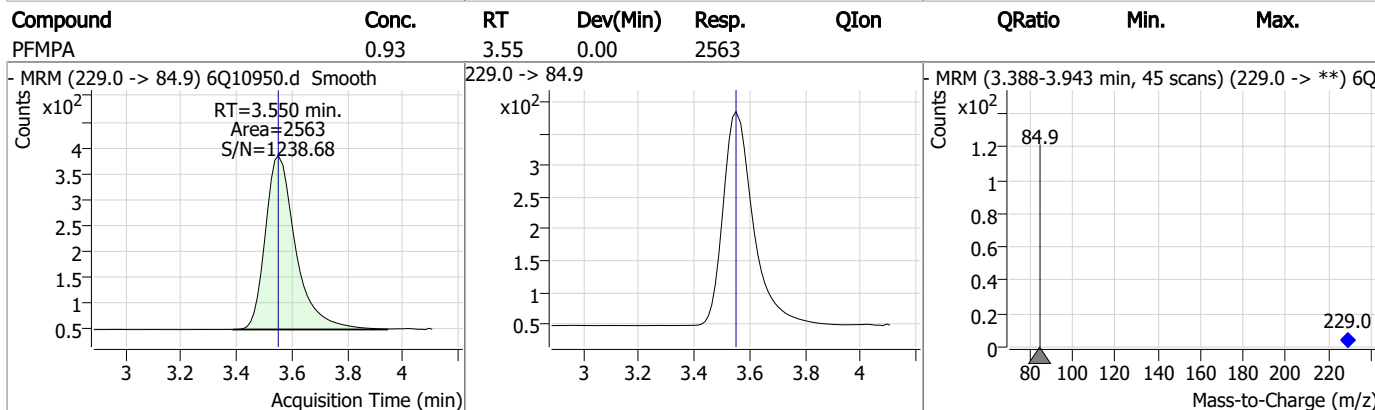
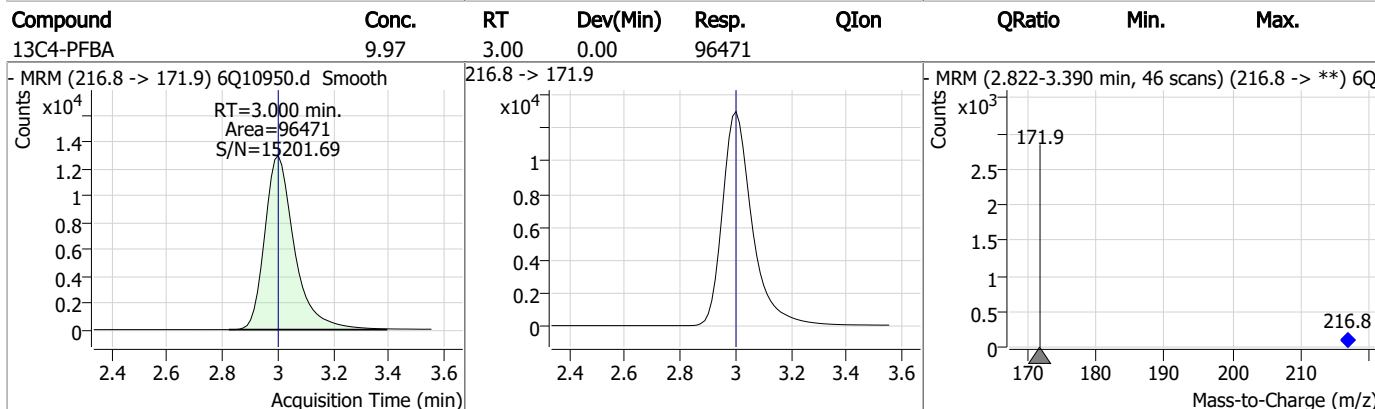
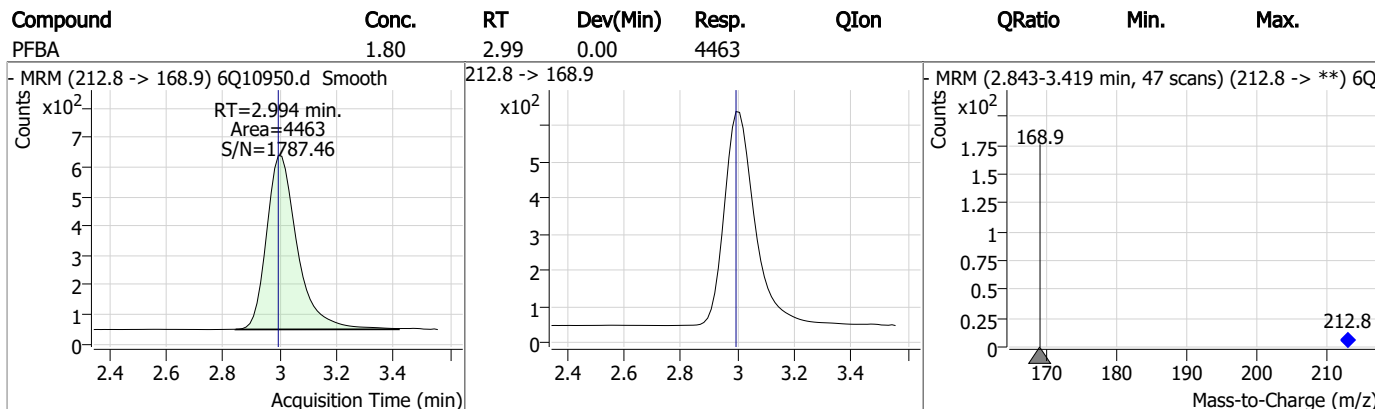
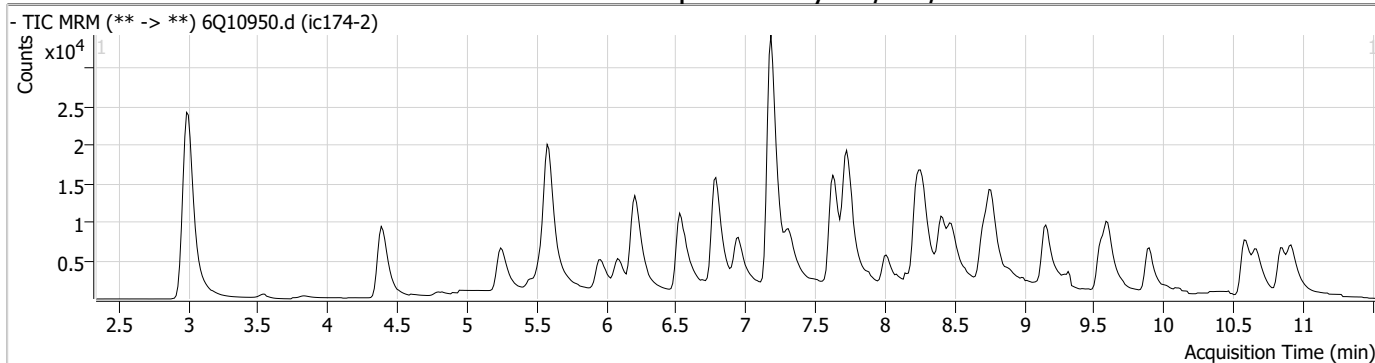
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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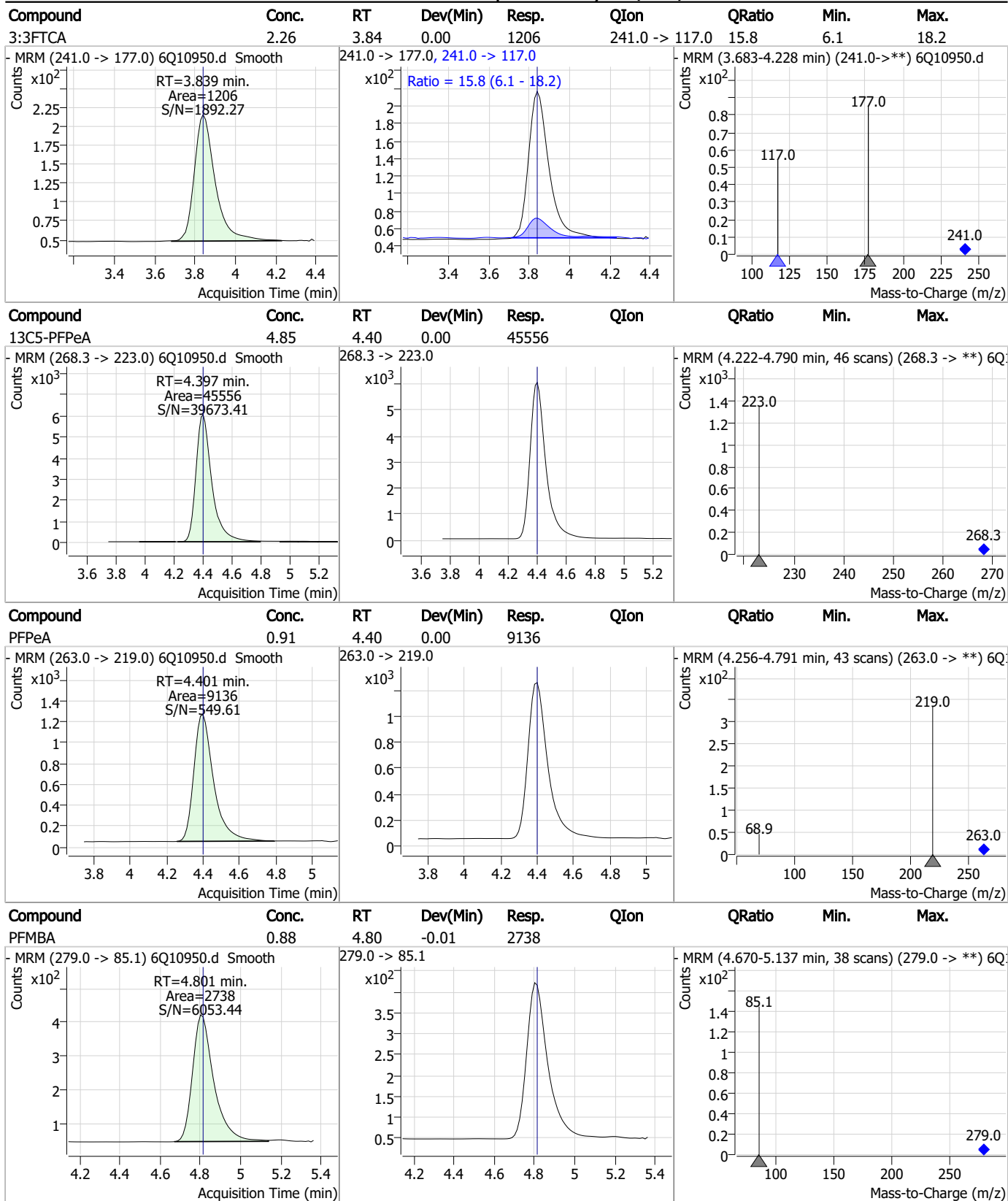
7.6.3

7

Perfluorinated Compounds by LC/MS/MS



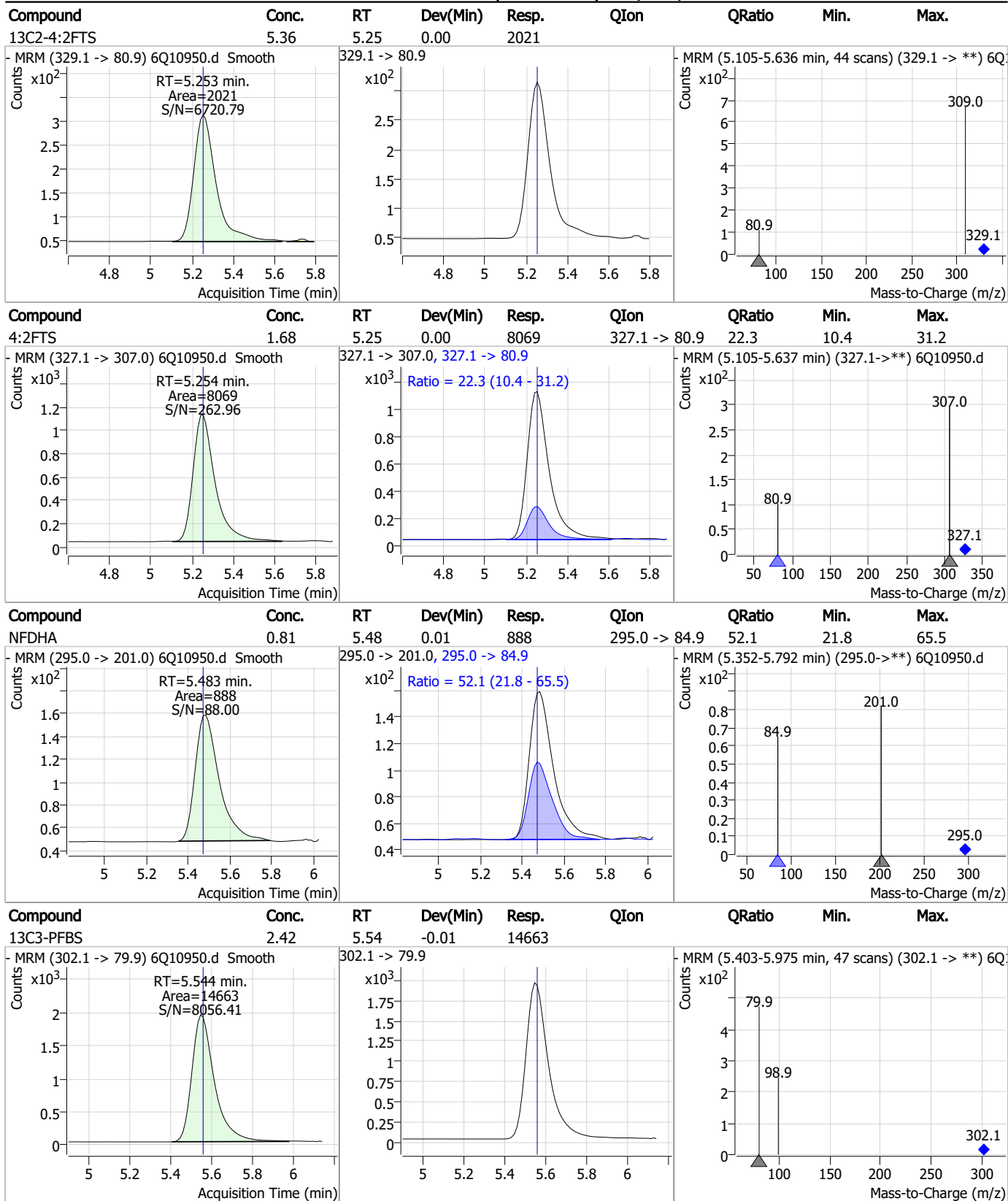
Perfluorinated Compounds by LC/MS/MS



7.6.3

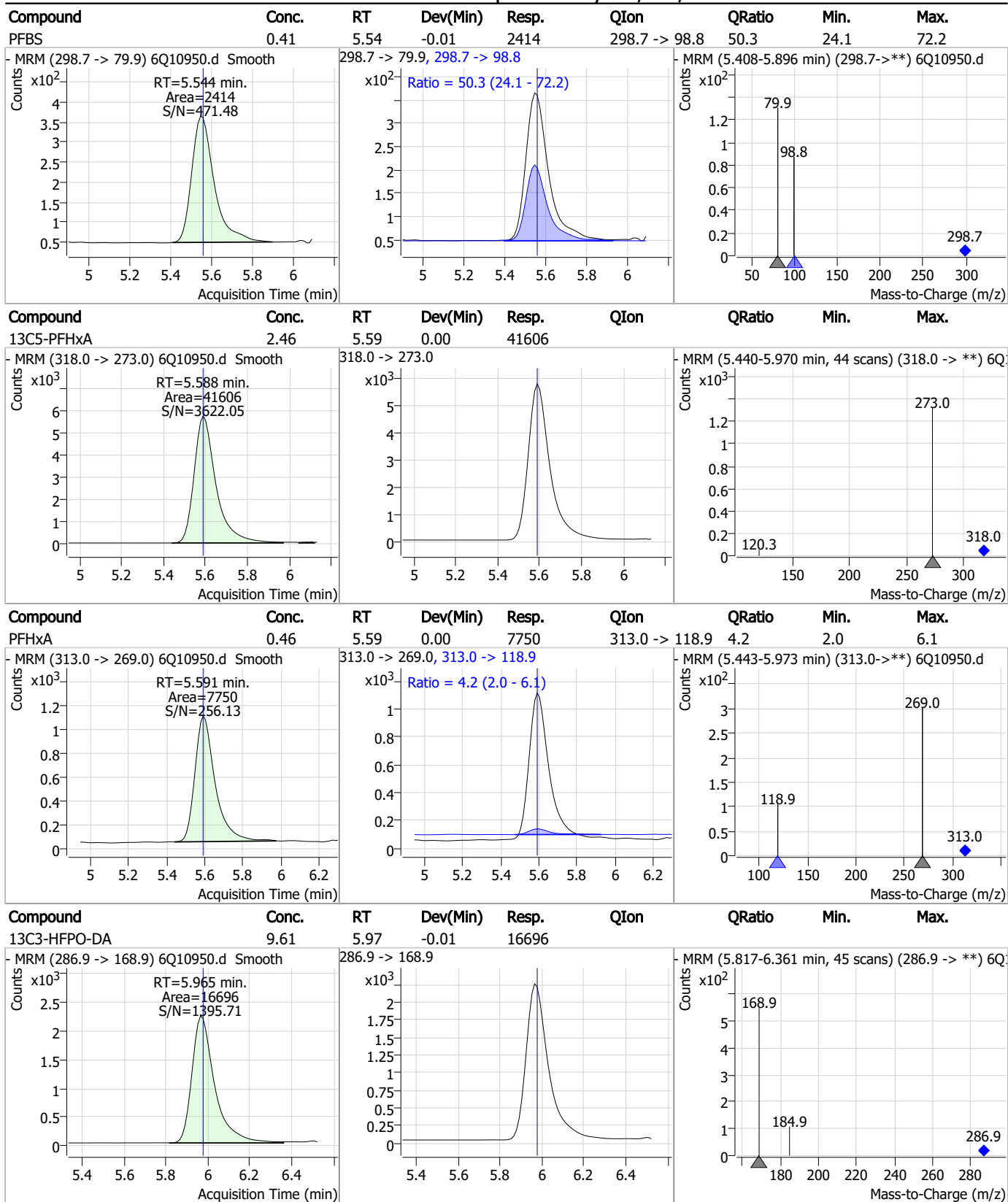
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Perfluorinated Compounds by LC/MS/MS



7.6.3
7

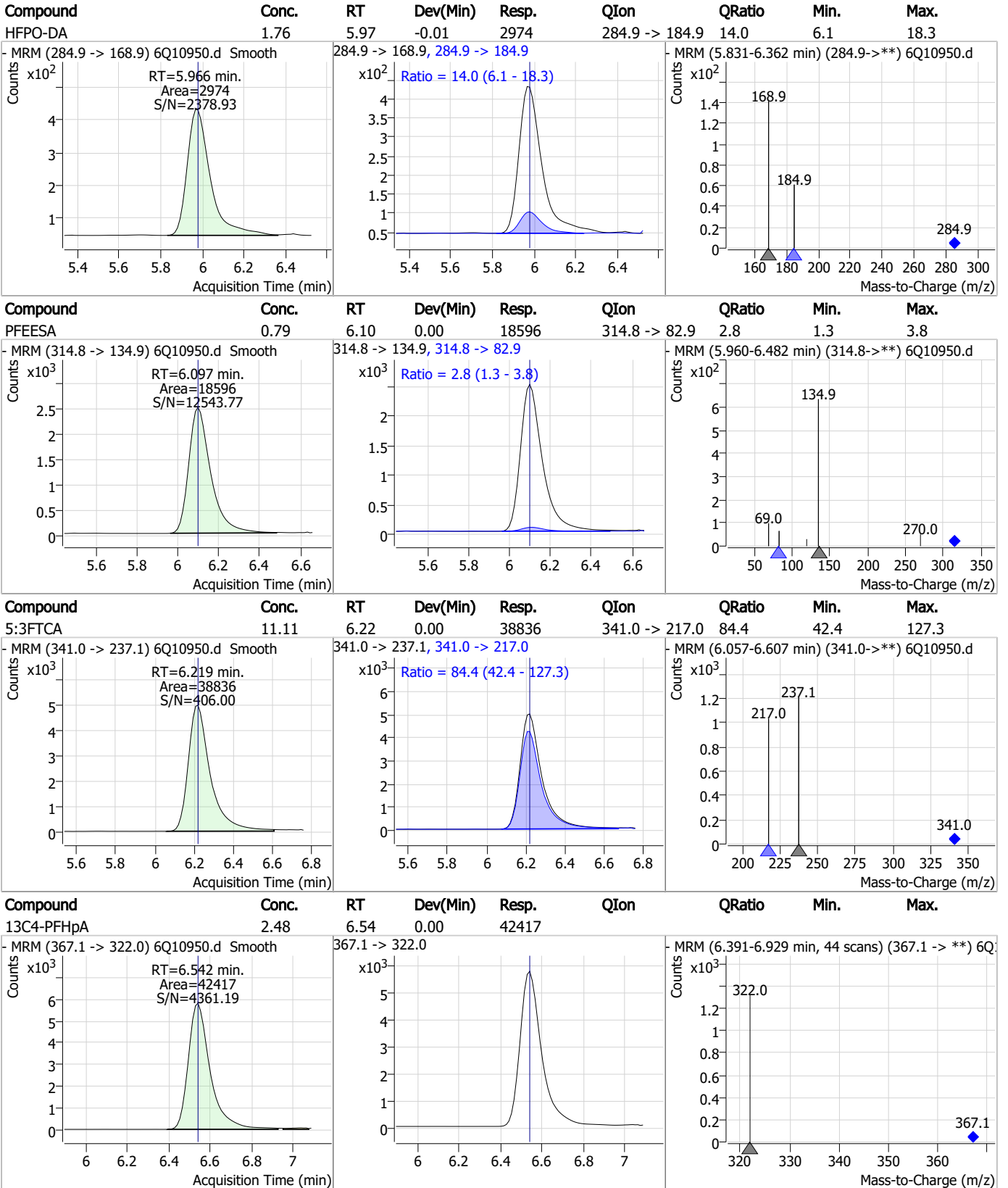
Perfluorinated Compounds by LC/MS/MS



7.6.3

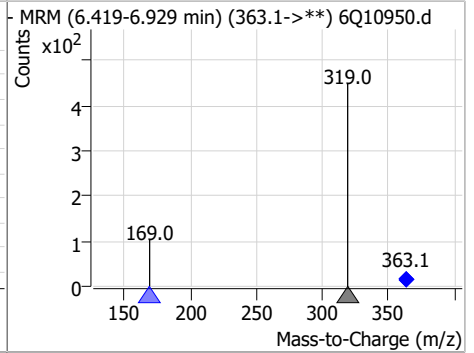
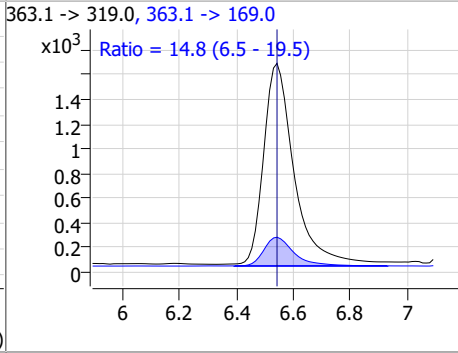
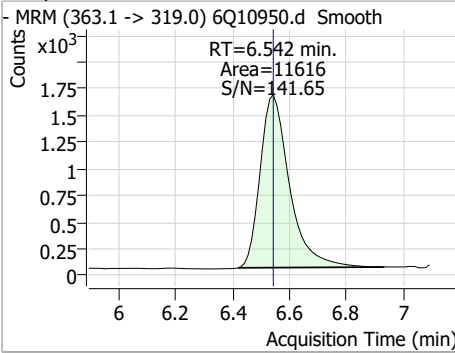
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Perfluorinated Compounds by LC/MS/MS

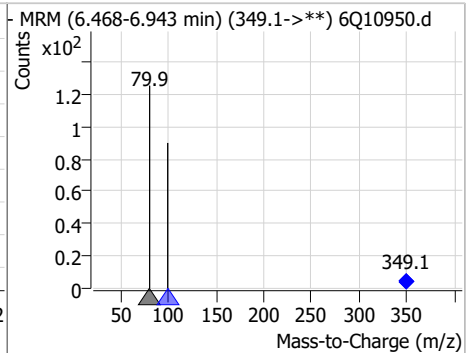
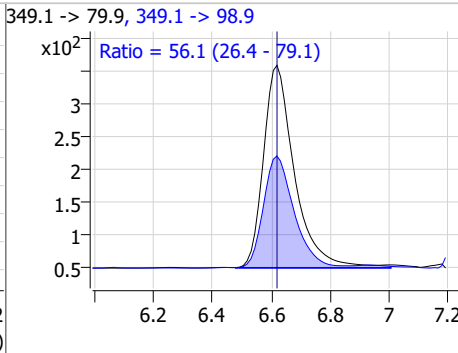
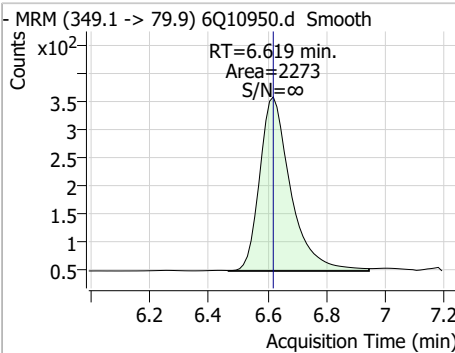


Perfluorinated Compounds by LC/MS/MS

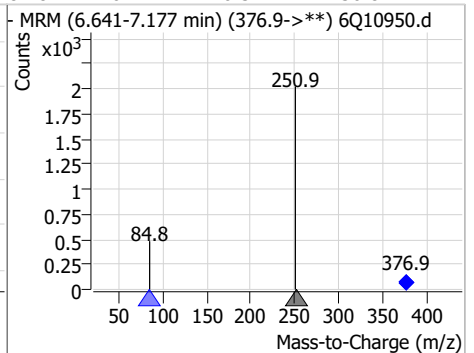
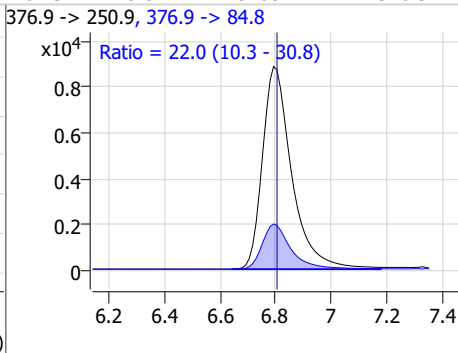
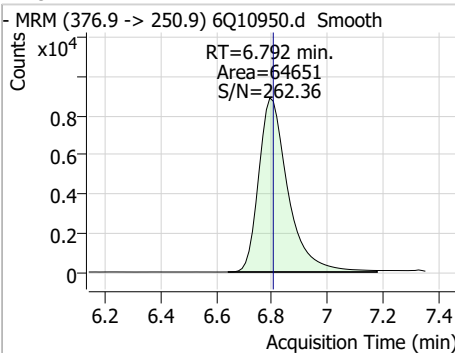
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.45	6.54	0.00	11616	363.1 -> 169.0	14.8	6.5	19.5



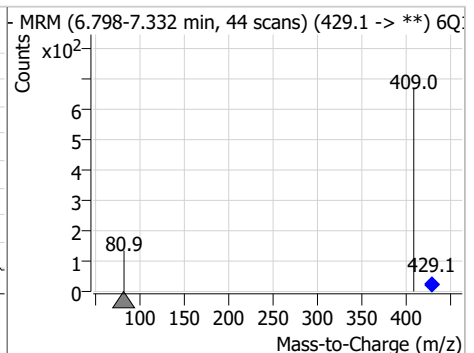
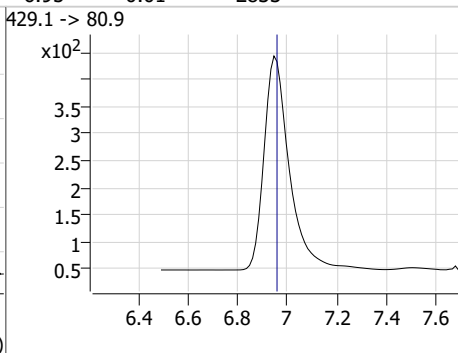
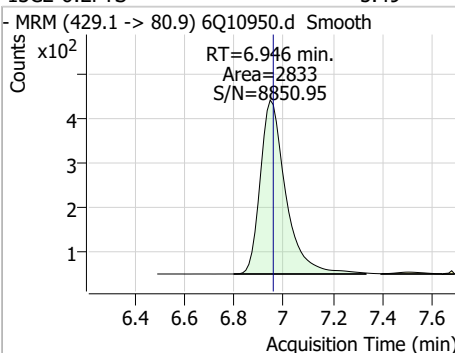
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.44	6.62	0.00	2273	349.1 -> 98.9	56.1	26.4	79.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	1.74	6.79	-0.01	64651	376.9 -> 84.8	22.0	10.3	30.8



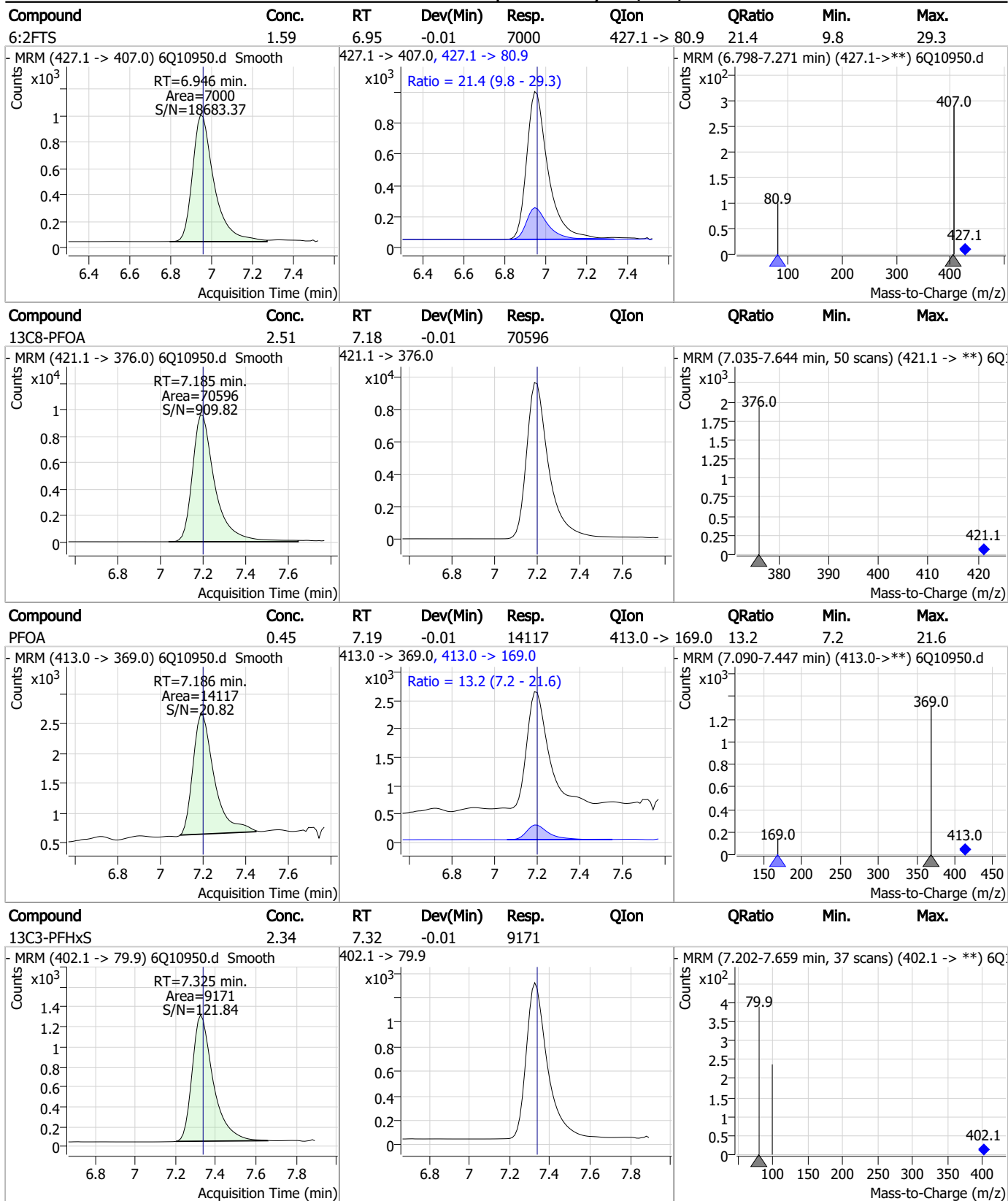
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.49	6.95	-0.01	2833	429.1 -> 80.9			



7.6.3

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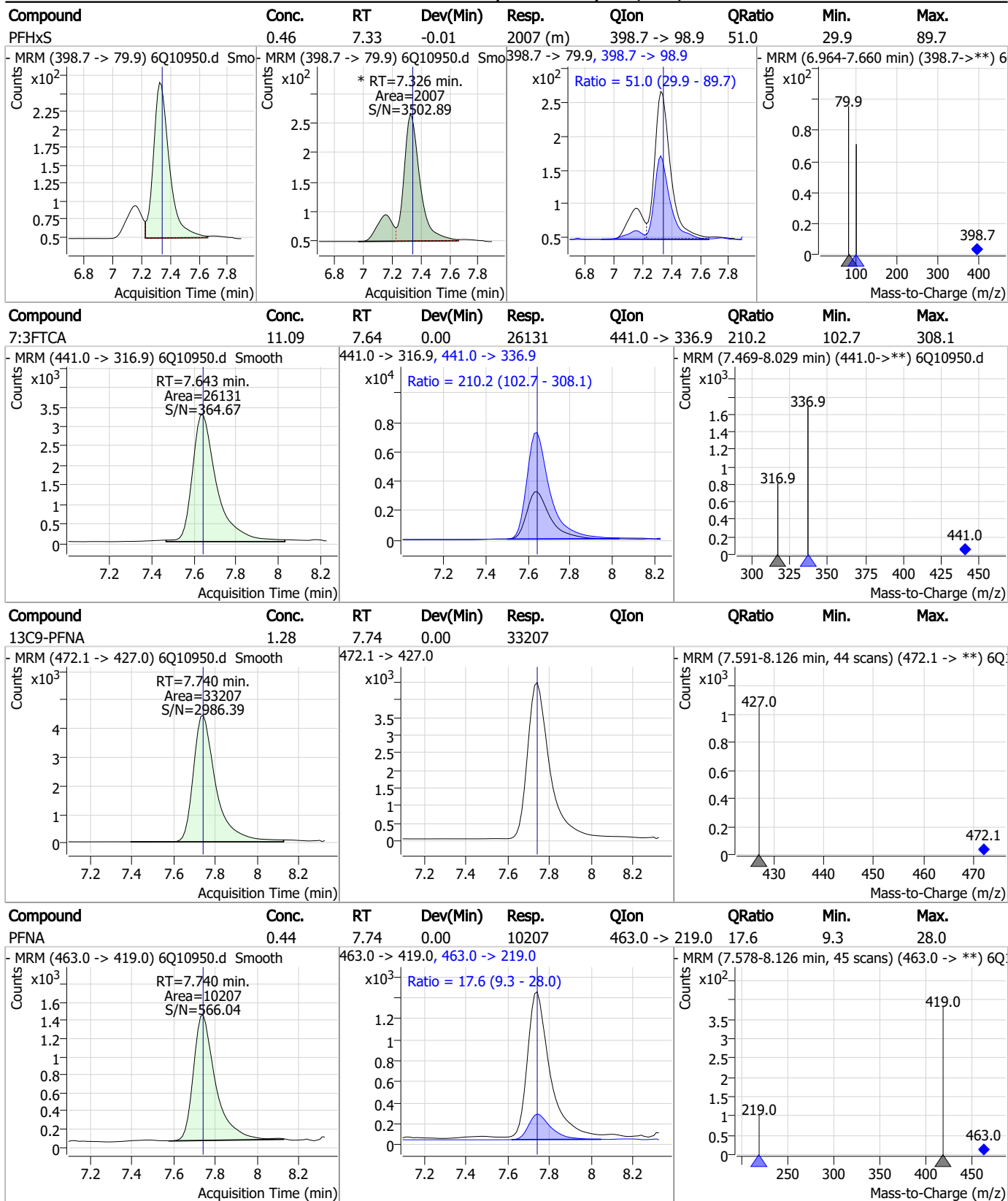
Perfluorinated Compounds by LC/MS/MS



7.6.3

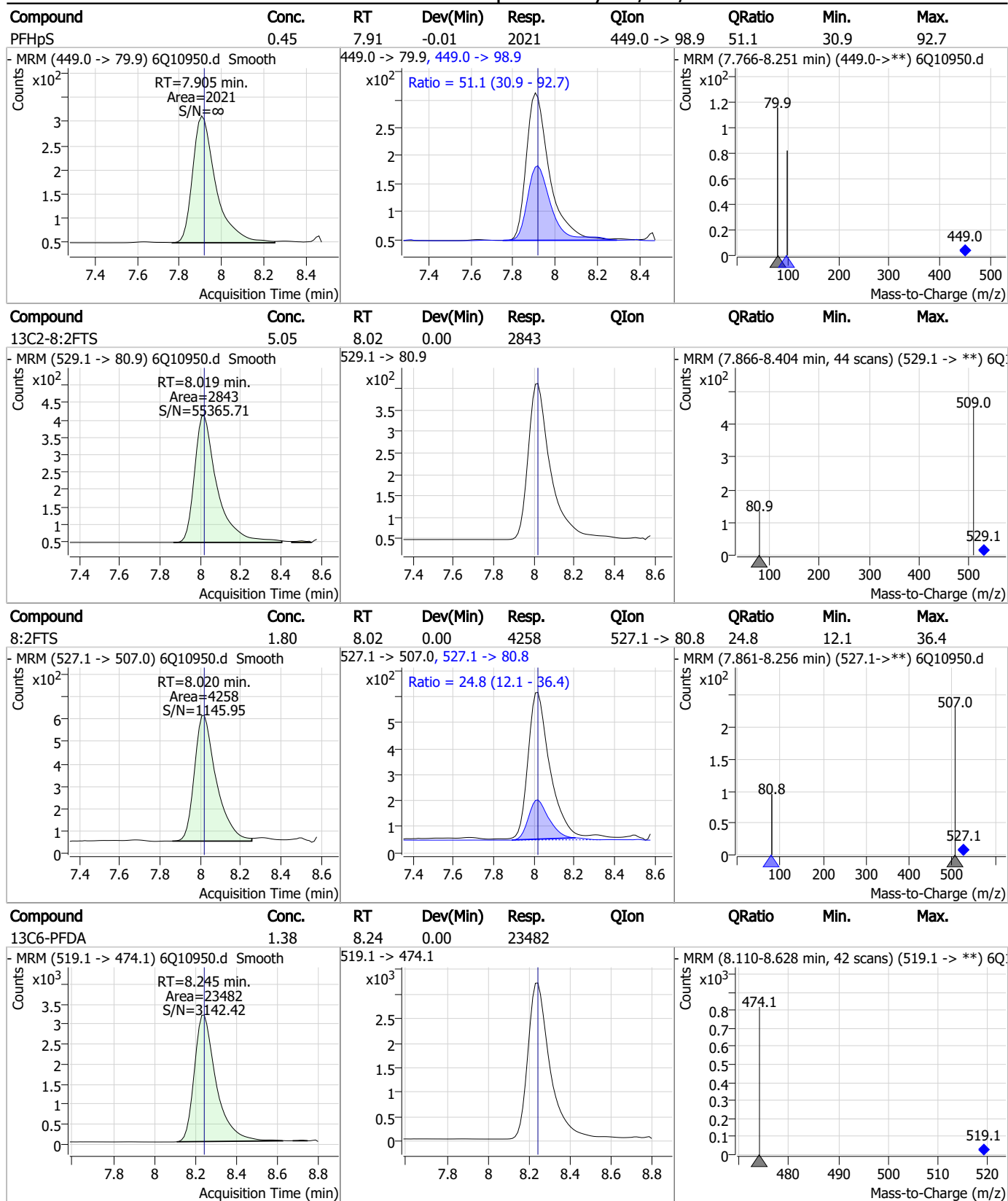
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Perfluorinated Compounds by LC/MS/MS



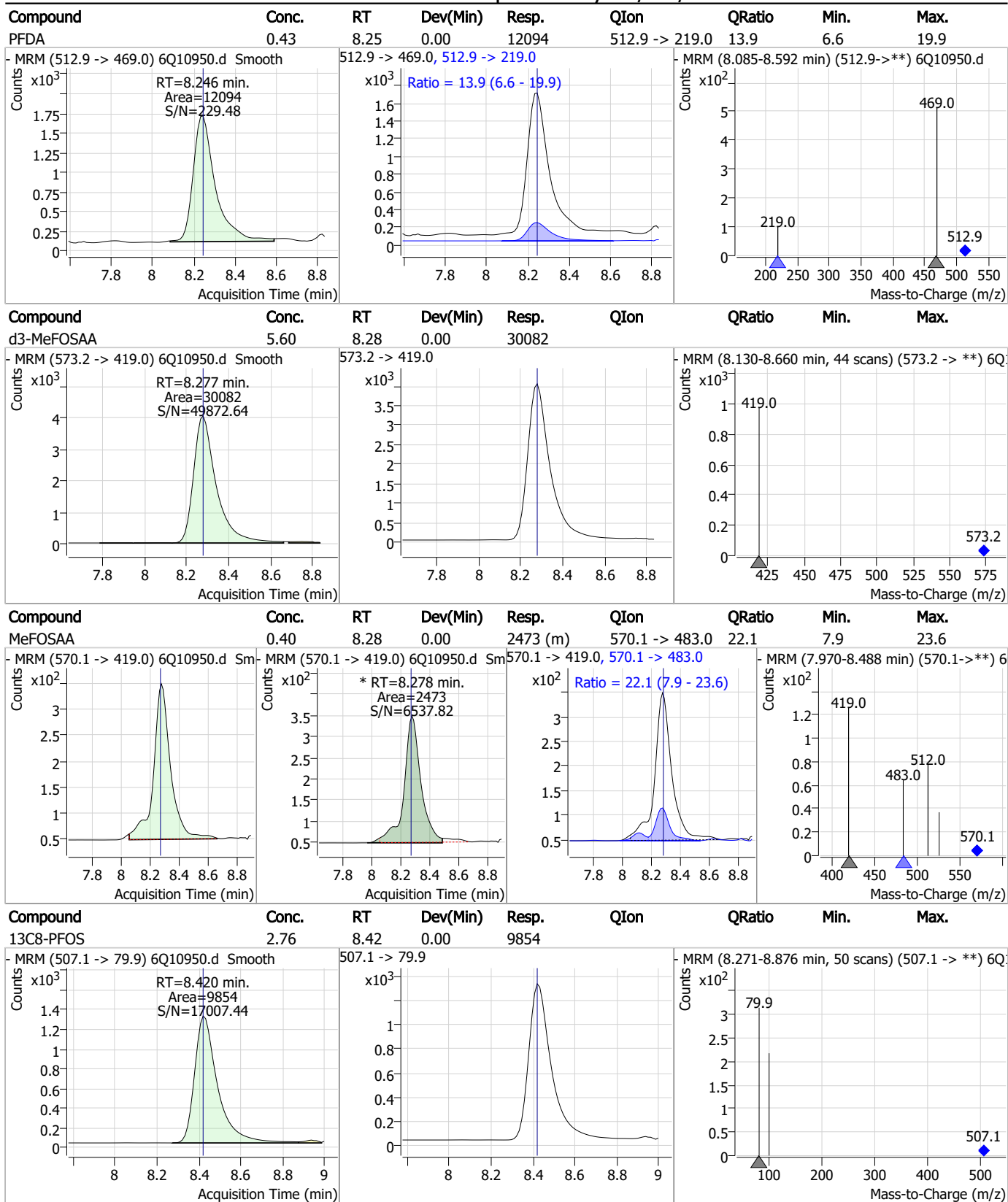
7.6.3
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Perfluorinated Compounds by LC/MS/MS



7.6.3
7

Perfluorinated Compounds by LC/MS/MS

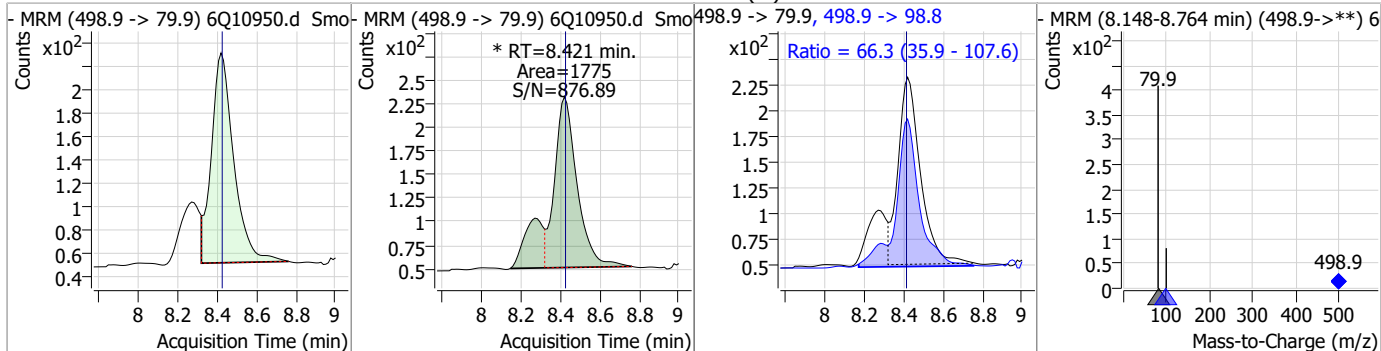


7.6.3

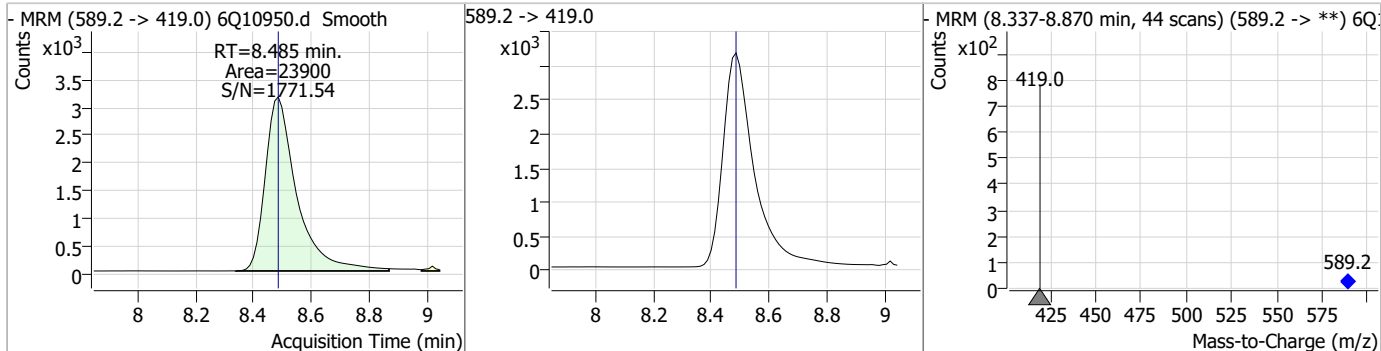
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Perfluorinated Compounds by LC/MS/MS

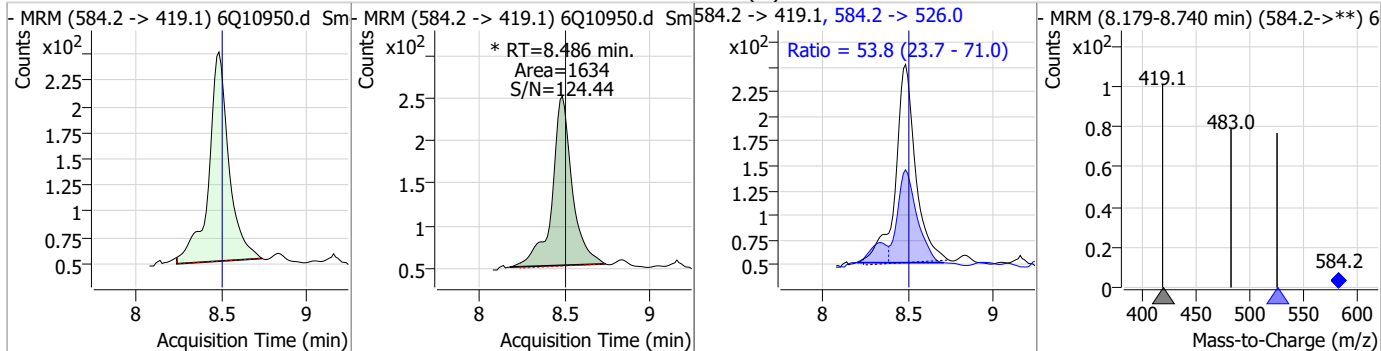
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.37	8.42	0.00	1775 (m)	498.9 -> 98.8	66.3	35.9	107.6



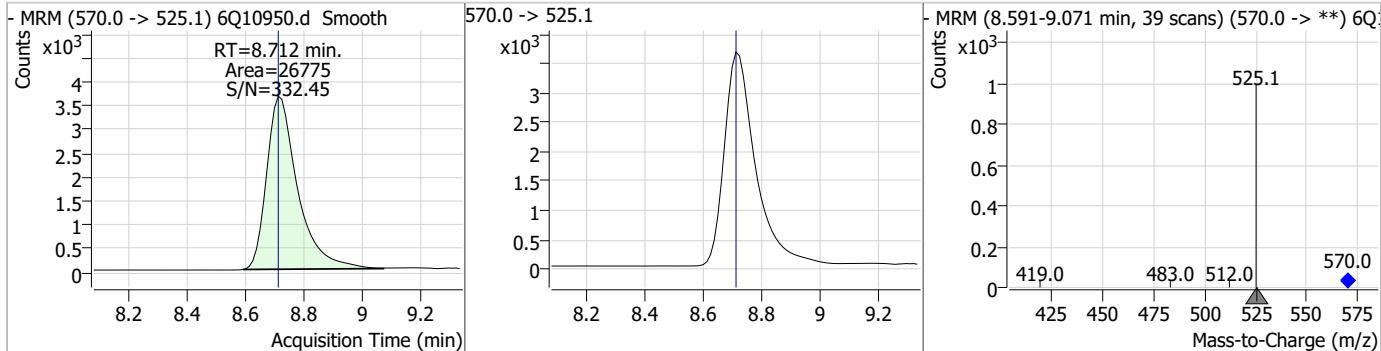
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.07	8.49	0.00	23900				



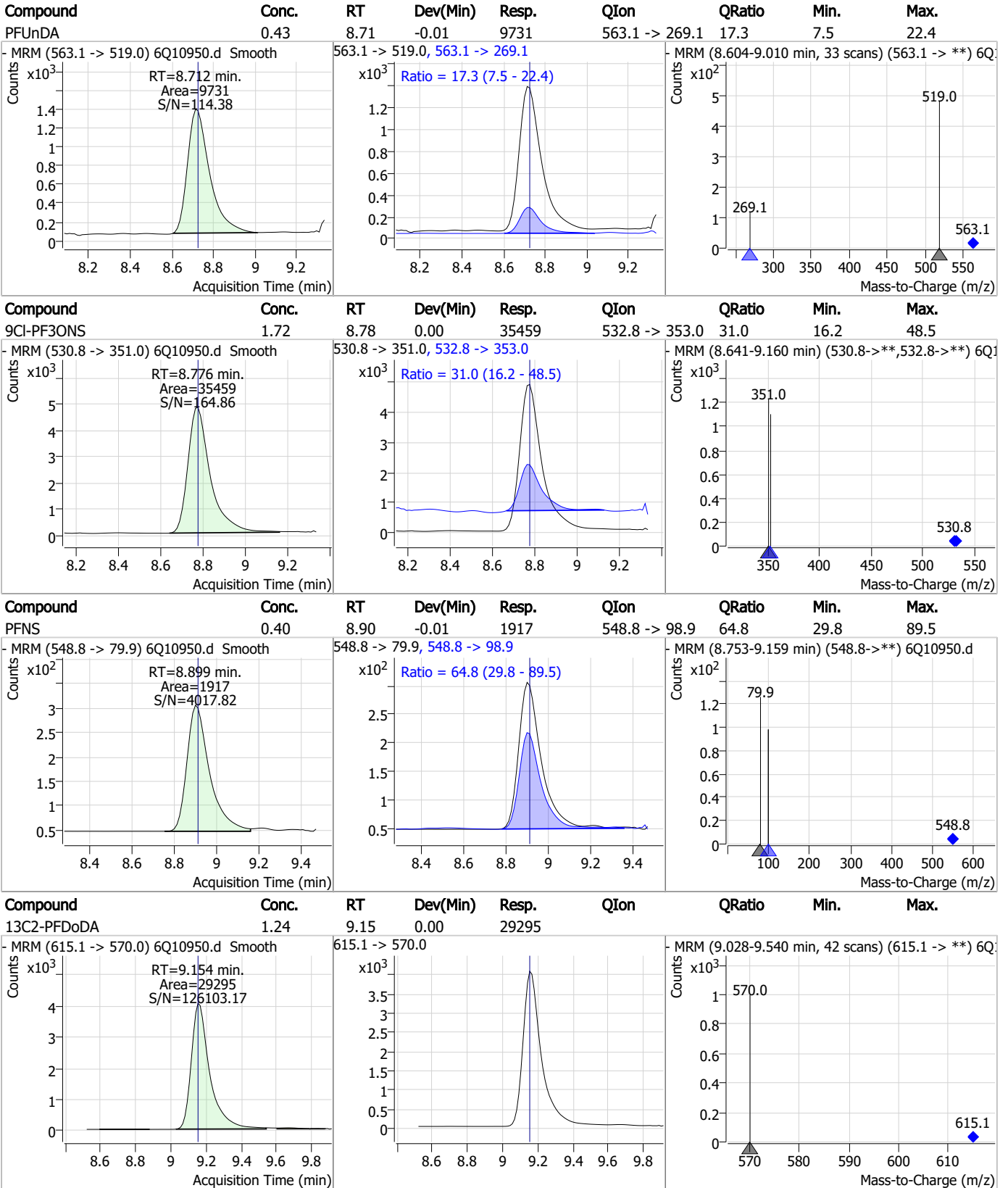
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.43	8.49	-0.01	1634 (m)	584.2 -> 526.0	53.8	23.7	71.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.29	8.71	0.00	26775				



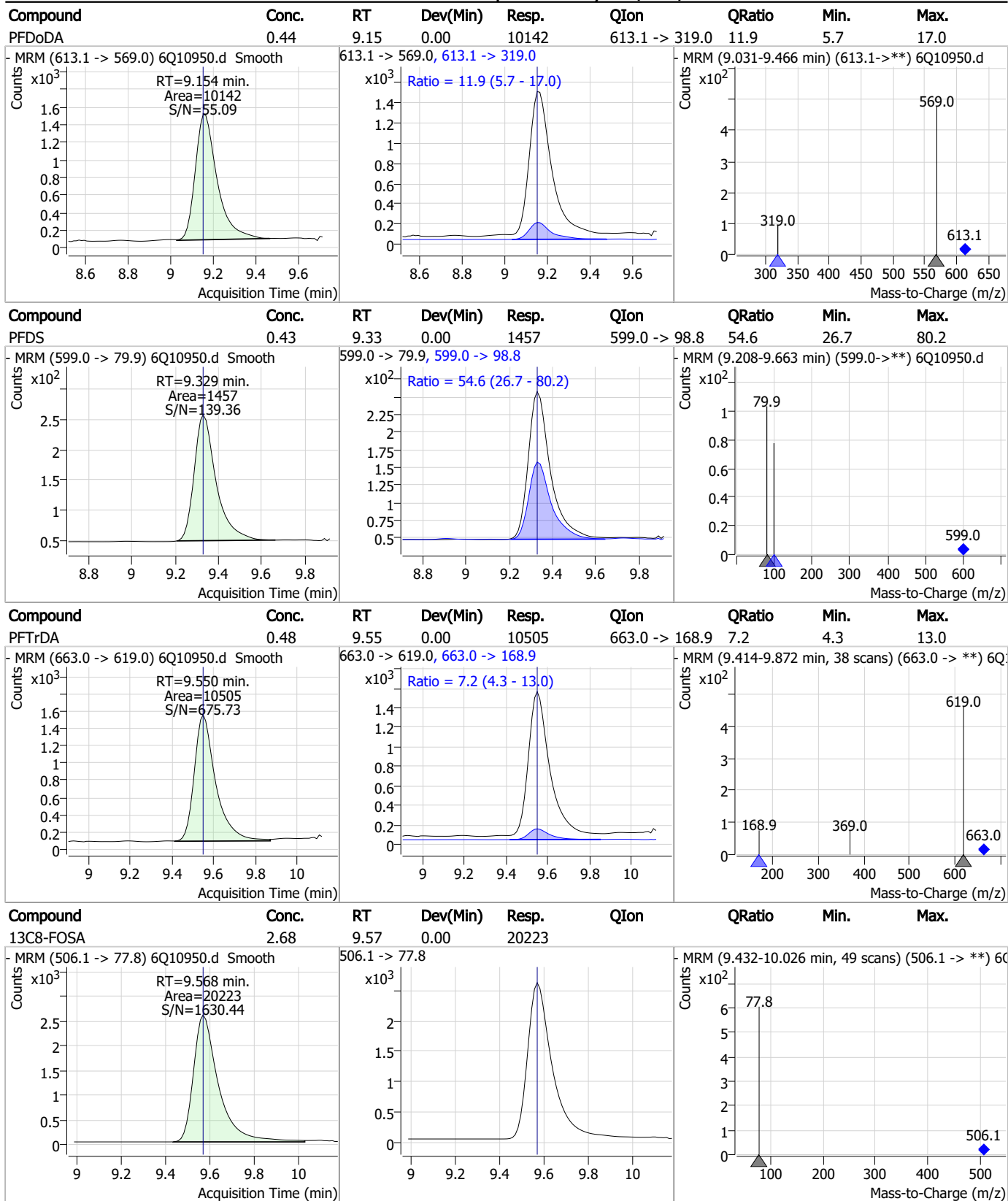
Perfluorinated Compounds by LC/MS/MS



7.6.3

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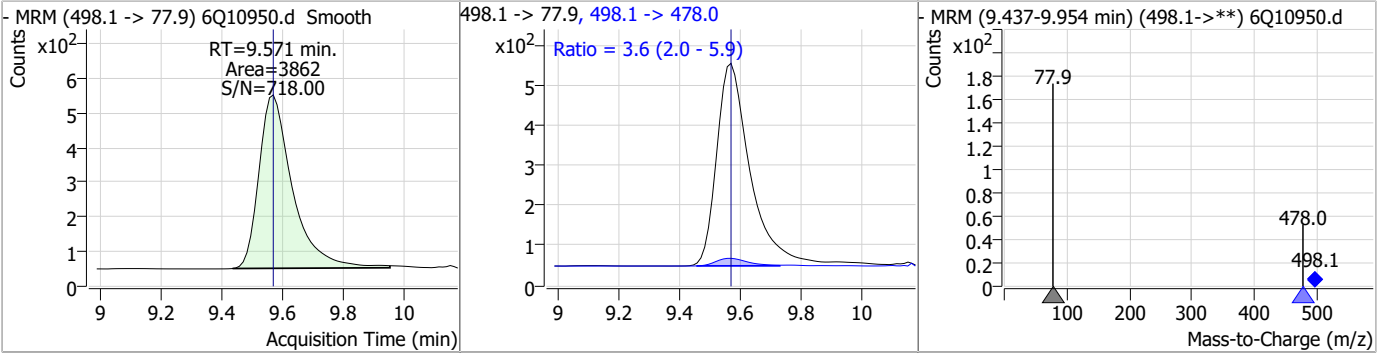
Perfluorinated Compounds by LC/MS/MS



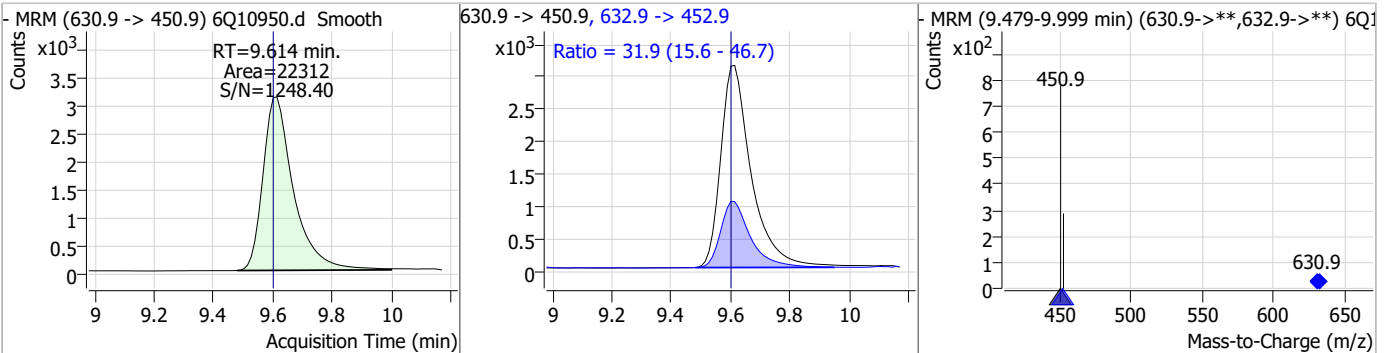
7.6.3
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Perfluorinated Compounds by LC/MS/MS

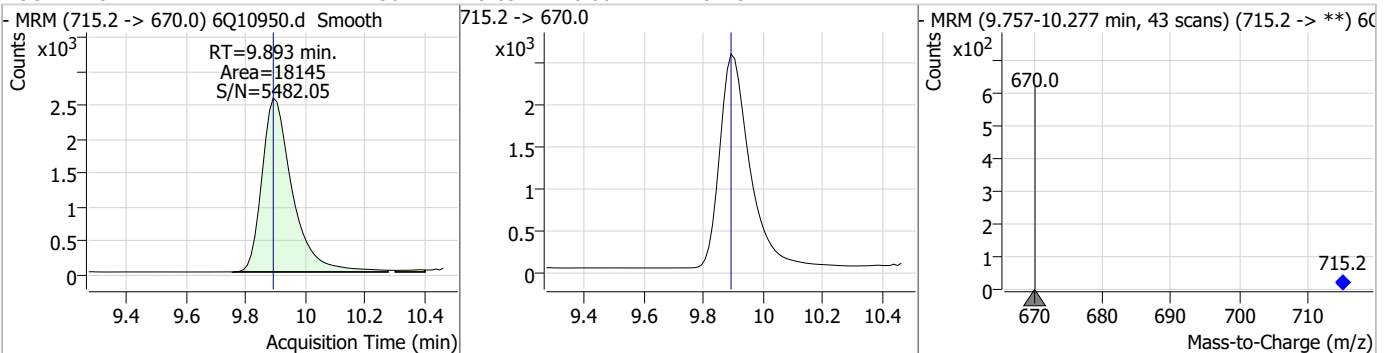
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.47	9.57	0.00	3862	498.1 -> 478.0	3.6	2.0	5.9



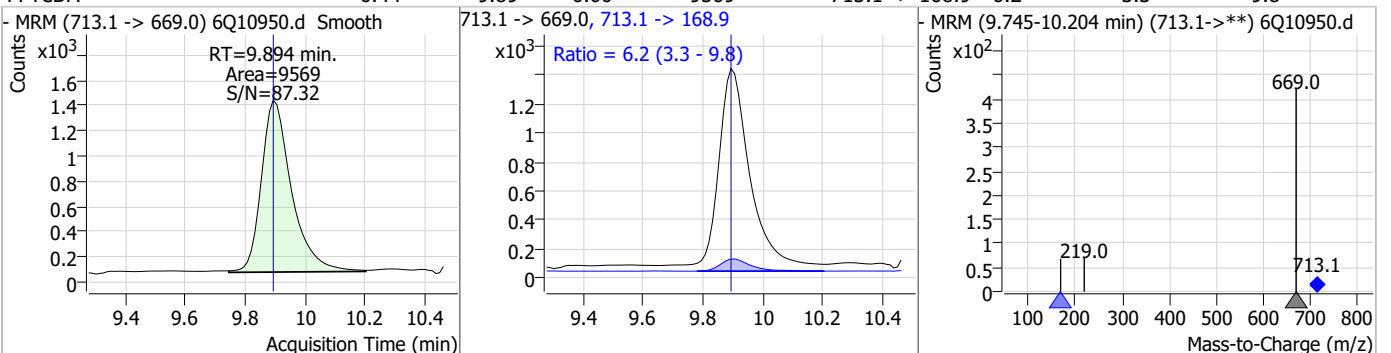
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11CI-PF3OUds	1.76	9.61	0.01	22312	632.9 -> 452.9	31.9	15.6	46.7



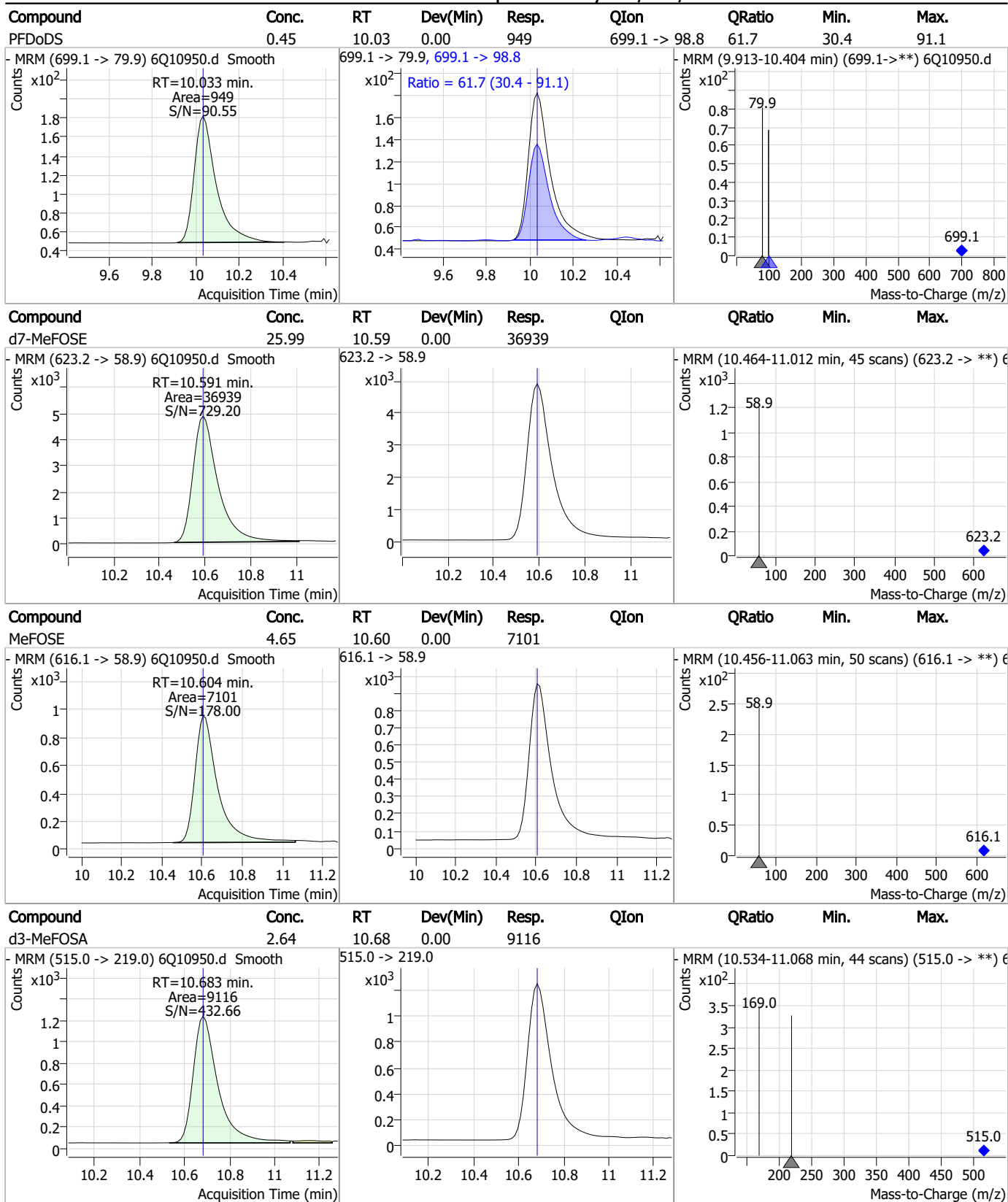
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.30	9.89	0.00	18145	715.2 -> 670.0	6.2	3.3	9.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.44	9.89	0.00	9569	713.1 -> 168.9	6.2	3.3	9.8



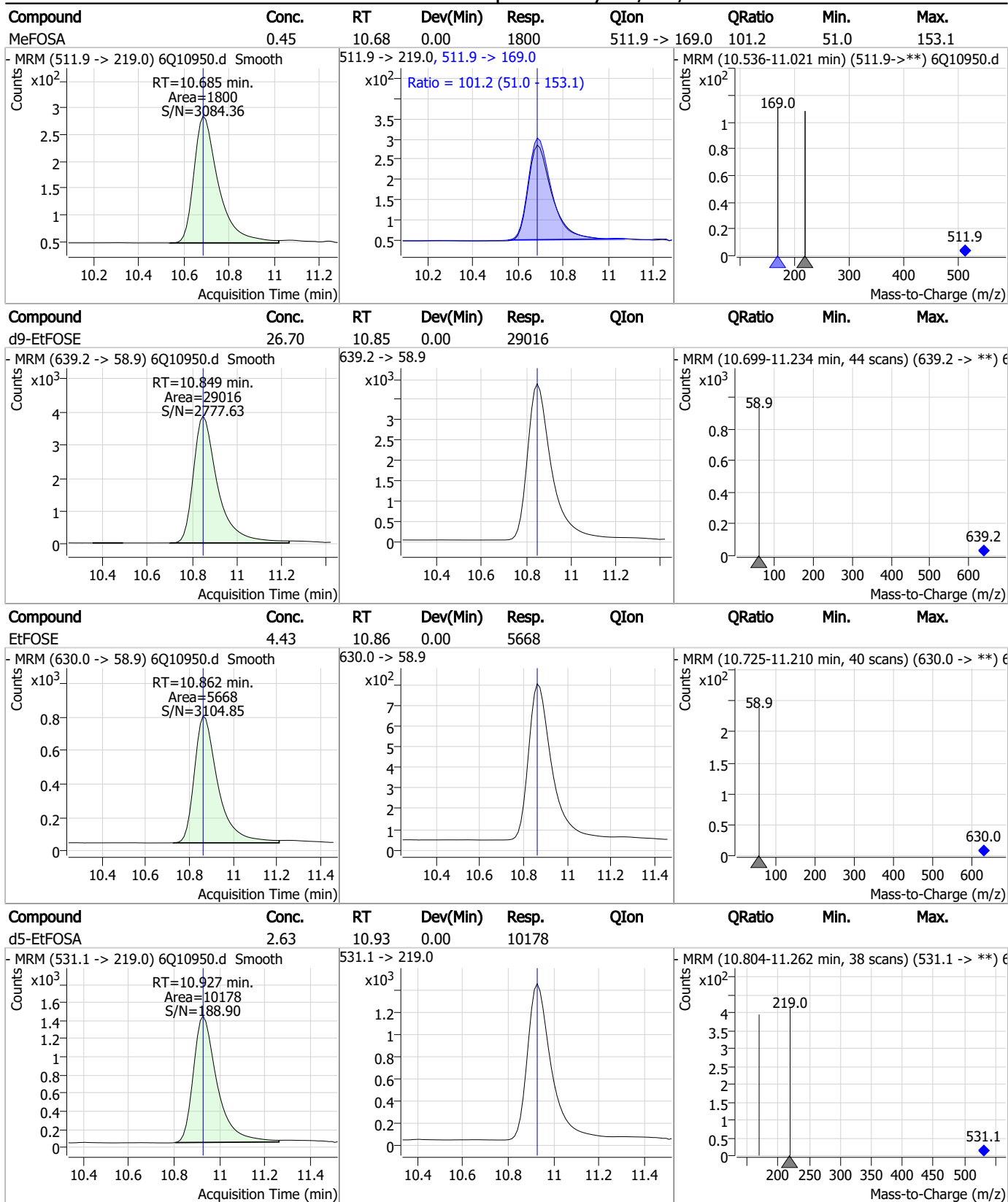
Perfluorinated Compounds by LC/MS/MS



7.6.3

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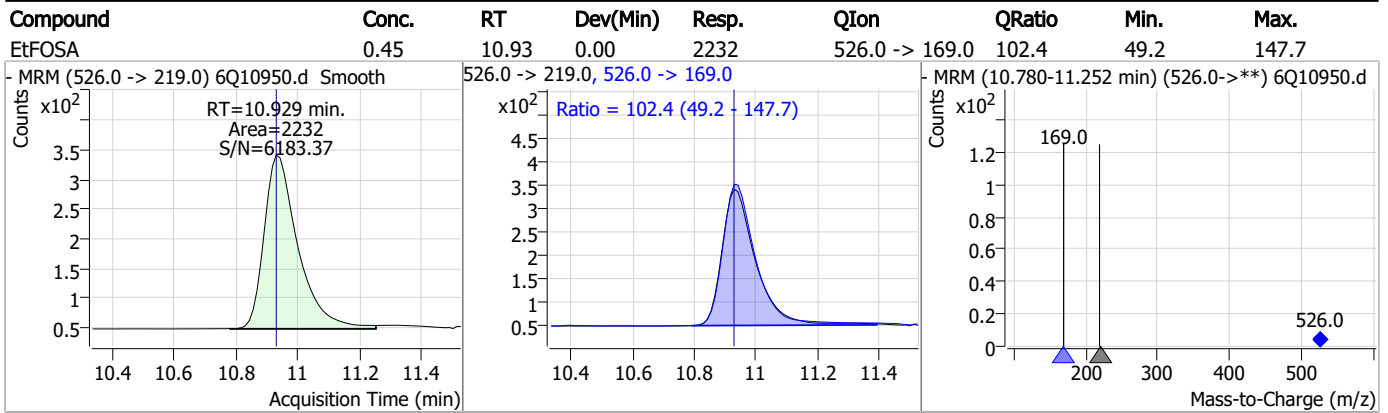
Perfluorinated Compounds by LC/MS/MS



7.6.3

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Perfluorinated Compounds by LC/MS/MS



7.6.3

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Manual Integration Approval Summary

Sample Number: S6Q174-IC174 Method: EPA DRAFT 1633
Lab FileID: 6Q10950.D Analyst approved: 01/12/23 11:46 Martha Valls
Injection Time: 01/11/23 12:04 Supervisor approved: 01/12/23 15:42 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.33	Split peak
MeFOSAA	2355-31-9		8.28	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.42	Split peak
EtFOSAA	2991-50-6		8.49	Split peak

7.6.3.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q10951.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/11/2023 12:18:22 PM
 Sample Name : ic174-3
 Vial : P1-A4
 DA Method File : 1633_011123_S6Q174.quantmethod.xml
 Batch Name : S6Q174.batch.bin
 Sample Information : OP94795,S6Q174,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.000	216.8 -> 171.9	100241	10.00 µg/L	0.000
M5-PFPeA	4.397	268.3 -> 223.0	48491	5.00 µg/L	0.000
M5-PFHxA	5.588	318.0 -> 273.0	43095	2.50 µg/L	0.000
M4-PFHpA	6.542	367.1 -> 322.0	43270	2.50 µg/L	0.000
M8-PFOA	7.197	421.1 -> 376.0	76635	2.50 µg/L	0.000
M9-PFNA	7.740	472.1 -> 427.0	35269	1.25 µg/L	0.000
M6-PFDA	8.245	519.1 -> 474.1	21346	1.25 µg/L	0.000
M7-PFUnDA	8.712	570.0 -> 525.1	27549	1.25 µg/L	0.000
M2-PFDoDA	9.154	615.1 -> 570.0	30915	1.25 µg/L	0.000
M2-PFTeDA	9.893	715.2 -> 670.0	17960	1.25 µg/L	0.000
M8-FOSA	9.568	506.1 -> 77.8	21275	2.50 µg/L	0.000
M3-PFBS	5.556	302.1 -> 79.9	15463	2.50 µg/L	0.000
M3-PFHxS	7.325	402.1 -> 79.9	10731	2.50 µg/L	-0.012
M8-PFOS	8.420	507.1 -> 79.9	10015	2.50 µg/L	0.000
M2-4:2FTS	5.253	329.1 -> 80.9	2117	5.00 µg/L	0.000
M2-6:2FTS	6.958	429.1 -> 80.9	2770	5.00 µg/L	0.000
M2-8:2FTS	8.019	529.1 -> 80.9	3179	5.00 µg/L	0.000
M3-MeFOSAA	8.277	573.2 -> 419.0	30284	5.00 µg/L	0.000
M3-HFPO-DA	5.978	286.9 -> 168.9	17723	10.00 µg/L	0.000
M5-EtFOSAA	8.485	589.2 -> 419.0	25964	5.00 µg/L	0.000
M7-MeFOSE	10.591	623.2 -> 58.9	39443	25.00 µg/L	0.000
M9-EtFOSE	10.849	639.2 -> 58.9	30424	25.00 µg/L	0.000
M5-EtFOSA	10.927	531.1 -> 219.0	10518	2.50 µg/L	0.000
M3-MeFOSA	10.683	515.0 -> 219.0	9514	2.50 µg/L	0.000
13C4-PFOS	8.421	502.8 -> 79.9	12622	2.50 µg/L	0.000
13C3-PFBA	3.004	216.0 -> 172.0	44171	5.00 µg/L	0.000
18O2-PFHxS	7.336	403.0 -> 83.9	7650	2.50 µg/L	0.000
13C4-PFOA	7.198	417.1 -> 372.0	88076	2.50 µg/L	0.000
13C2-PFDA	8.233	515.1 -> 470.1	30571	1.25 µg/L	-0.012
13C5-PFNA	7.740	468.0 -> 423.0	40171	1.25 µg/L	0.000
13C2-PFHxA	5.589	315.1 -> 270.0	42539	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.253	329.1 -> 80.9	2117	5.31 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.1%		
13C2-6:2FTS	6.958	429.1 -> 80.9	2770	5.07 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.4%		
13C2-8:2FTS	8.019	529.1 -> 80.9	3179	5.33 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.6%		
13C2-PFDoDA	9.154	615.1 -> 570.0	30915	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.0%		
13C2-PFTeDA	9.893	715.2 -> 670.0	17960	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.9%		
13C3-PFBS	5.556	302.1 -> 79.9	15463	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.4%		
13C3-PFHxS	7.325	402.1 -> 79.9	10731	2.58 µg/L	-0.012

7.64
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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 = 103.3%	
13C4-PFBA	3.000	216.8 -> 171.9	100241	9.94 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C4-PFHpA	6.542	367.1 -> 322.0	43270	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C5-PFHxA	5.588	318.0 -> 273.0	43095	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C5-PFPeA	4.397	268.3 -> 223.0	48491	5.11 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C6-PFDA	8.245	519.1 -> 474.1	21346	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.1%	
13C7-PFUnDA	8.712	570.0 -> 525.1	27549	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.8%	
13C8-FOSA	9.568	506.1 -> 77.8	21275	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C8-PFOA	7.197	421.1 -> 376.0	76635	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.8%	
13C8-PFOS	8.420	507.1 -> 79.9	10015	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C9-PFNA	7.740	472.1 -> 427.0	35269	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.8%	
d3-MeFOSAA	8.277	573.2 -> 419.0	30284	4.98 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C3-HFPO-DA	5.978	286.9 -> 168.9	17723	10.10 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
d3-MeFOSA	10.683	515.0 -> 219.0	9514	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.5%	
d5-EtFOSAA	8.485	589.2 -> 419.0	25964	4.87 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.4%	
d7-MeFOSE	10.591	623.2 -> 58.9	39443	24.55 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.2%	
d9-EtFOSE	10.849	639.2 -> 58.9	30424	24.76 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
d5-EtFOSA	10.927	531.1 -> 219.0	10518	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.2%	
Target Compounds					QValue
4:2FTS	5.254	327.1 -> 307.0	21266	4.22 µg/L	93
		327.1 -> 80.9	5125		
6:2FTS	6.959	427.1 -> 407.0	19575	4.54 µg/L	96
		427.1 -> 80.9	4230		
8:2FTS	8.008	527.1 -> 507.0	11677	4.40 µg/L	96
		527.1 -> 80.8	3063		
EtFOSAA	8.486	584.2 -> 419.1	5305	1.28 µg/L	m 89
		584.2 -> 526.0	2917		
FOSA	9.571	498.1 -> 77.9	10088	1.17 µg/L	99
		498.1 -> 478.0	416		
MeFOSAA	8.278	570.1 -> 419.0	6632	1.06 µg/L	m 85
		570.1 -> 483.0	1448		
PFBA	3.007	212.8 -> 168.9	12048	4.68 µg/L	100
PFBS	5.557	298.7 -> 79.9	6745	1.08 µg/L	100
		298.7 -> 98.8	3264		
PFDA	8.246	512.9 -> 469.0	32125	1.25 µg/L	97
		512.9 -> 219.0	4621		
PFDODA	9.154	613.1 -> 569.0	30883	1.27 µg/L	100
		613.1 -> 319.0	3503		
PFDS	9.329	599.0 -> 79.9	3823	1.11 µg/L	100

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	2059			
PFHpA	6.542	363.1 -> 319.0	31839	1.22	µg/L	99
		363.1 -> 169.0	4327			
PFHpS	7.905	449.0 -> 79.9	5444	1.19	µg/L	93
		449.0 -> 98.9	3092			
PFHxA	5.591	313.0 -> 269.0	19431	1.12	µg/L	100
		313.0 -> 118.9	781			
PFHxS	7.326	398.7 -> 79.9	5424	1.06	µg/L	m 94
		398.7 -> 98.9	3008			
PFNA	7.740	463.0 -> 419.0	27955	1.15	µg/L	97
		463.0 -> 219.0	5569			
PFNS	8.899	548.8 -> 79.9	5596	1.16	µg/L	97
		548.8 -> 98.9	3208			
PFOA	7.199	413.0 -> 369.0	40454	1.18	µg/L	96
		413.0 -> 169.0	5201			
PFOS	8.421	498.9 -> 79.9	5655	1.17	µg/L	m 81
		498.9 -> 98.8	3168			
PFPeA	4.401	263.0 -> 219.0	24891	2.34	µg/L	100
PFPeS	6.619	349.1 -> 79.9	6582	1.09	µg/L	97
		349.1 -> 98.9	3331			
PFTeDA	9.894	713.1 -> 669.0	25271	1.18	µg/L	99
		713.1 -> 168.9	1786			
PFTrDA	9.550	663.0 -> 619.0	27704	1.19	µg/L	100
		663.0 -> 168.9	2418			
PFUnDA	8.712	563.1 -> 519.0	26956	1.17	µg/L	97
		563.1 -> 269.1	4325			
11CI-PF3OUdS	9.602	630.9 -> 450.9	60453	4.50	µg/L	99
		632.9 -> 452.9	19126			
9CI-PF3ONS	8.763	530.8 -> 351.0	102217	4.68	µg/L	92
		532.8 -> 353.0	28438			
ADONA	6.804	376.9 -> 250.9	189813	4.82	µg/L	99
		376.9 -> 84.8	37841			
HFPO-DA	5.978	284.9 -> 168.9	8595	4.80	µg/L	99
		284.9 -> 184.9	1009			
3:3FTCA	3.839	241.0 -> 177.0	3289	5.80	µg/L	100
		241.0 -> 117.0	402			
5:3FTCA	6.219	341.0 -> 237.1	107263	29.62	µg/L	97
		341.0 -> 217.0	93853			
7:3FTCA	7.643	441.0 -> 316.9	72555	29.72	µg/L	94
		441.0 -> 336.9	156156			
EtFOSA	10.929	526.0 -> 219.0	5832	1.15	µg/L	96
		526.0 -> 169.0	5996			
EtFOSE	10.862	630.0 -> 58.9	15271	11.38	µg/L	100
MeFOSA	10.685	511.9 -> 219.0	4984	1.19	µg/L	98
		511.9 -> 169.0	5166			
MeFOSE	10.604	616.1 -> 58.9	19405	11.91	µg/L	100
PFDoDS	10.033	699.1 -> 79.9	2470	1.15	µg/L	95
		699.1 -> 98.8	1584			
NFDHA	5.471	295.0 -> 201.0	2963	2.62	µg/L	97
		295.0 -> 84.9	1241			
PFMBA	4.813	279.0 -> 85.1	7935	2.39	µg/L	100
PFMPA	3.550	229.0 -> 84.9	6857	2.33	µg/L	100
PFEESA	6.097	314.8 -> 134.9	52360	2.16	µg/L	100
		314.8 -> 82.9	1254			

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

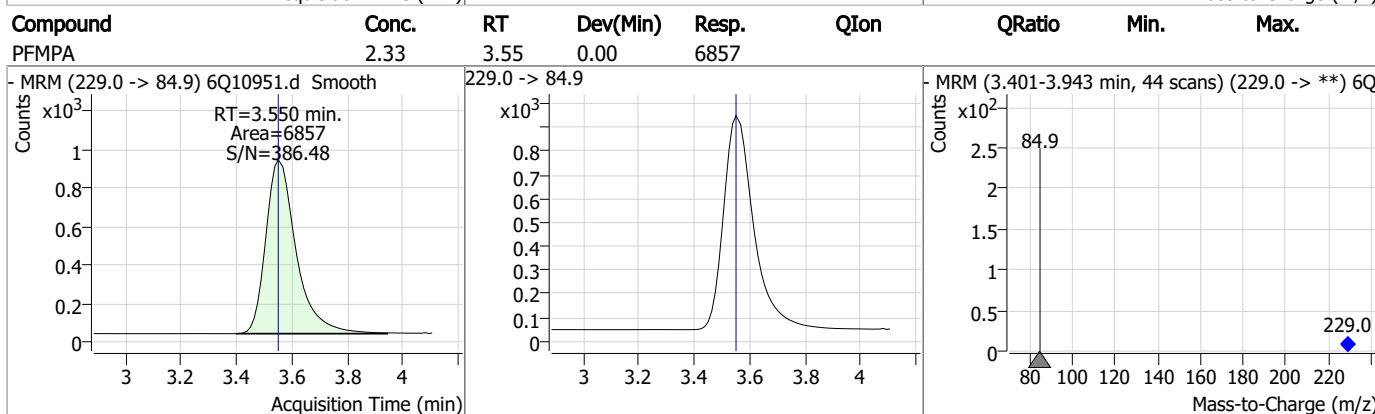
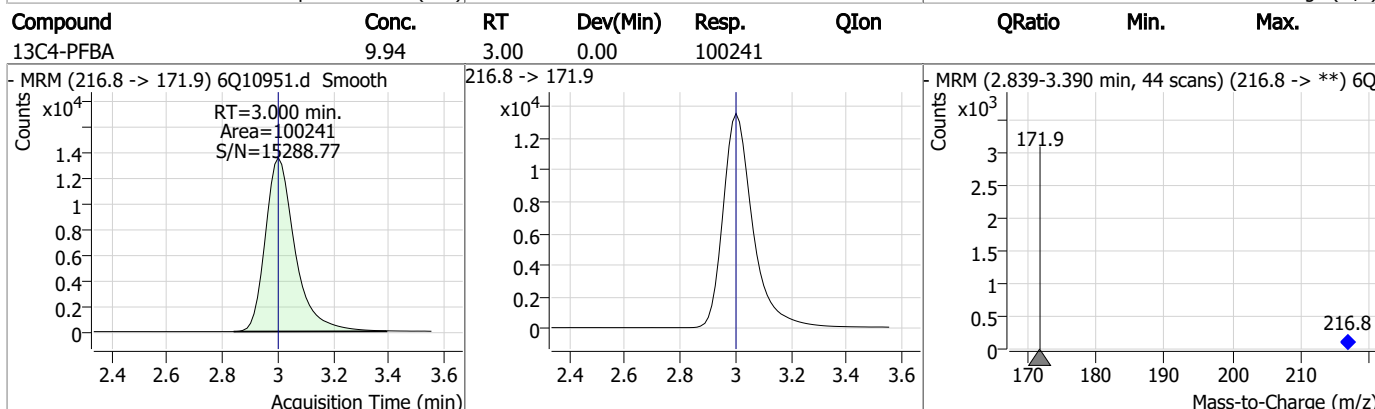
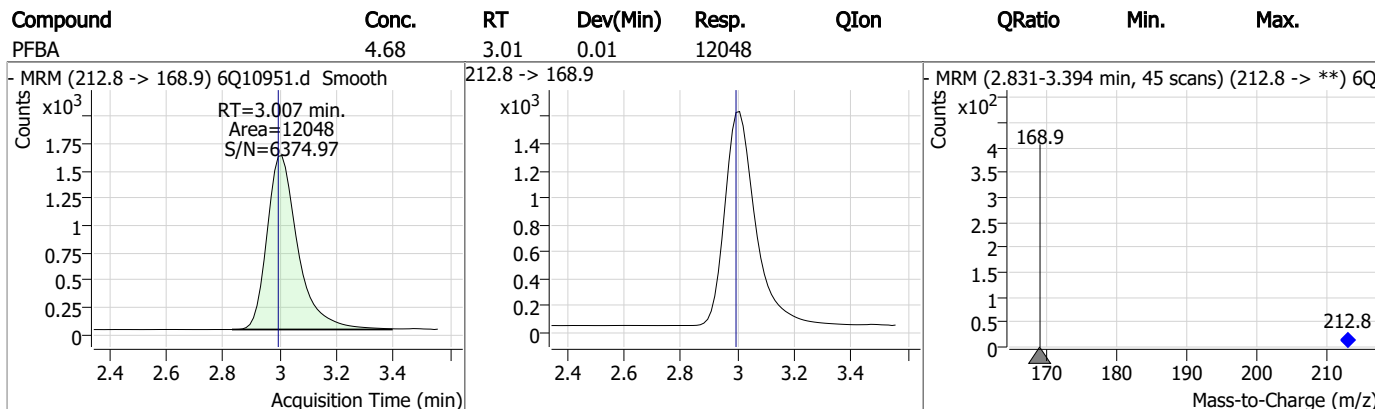
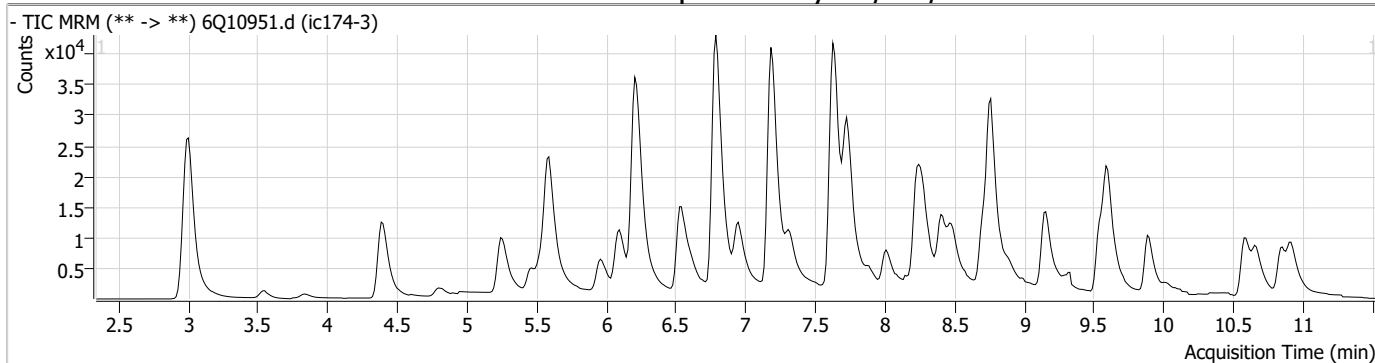
Perfluorinated Compounds by LC/MS/MS

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

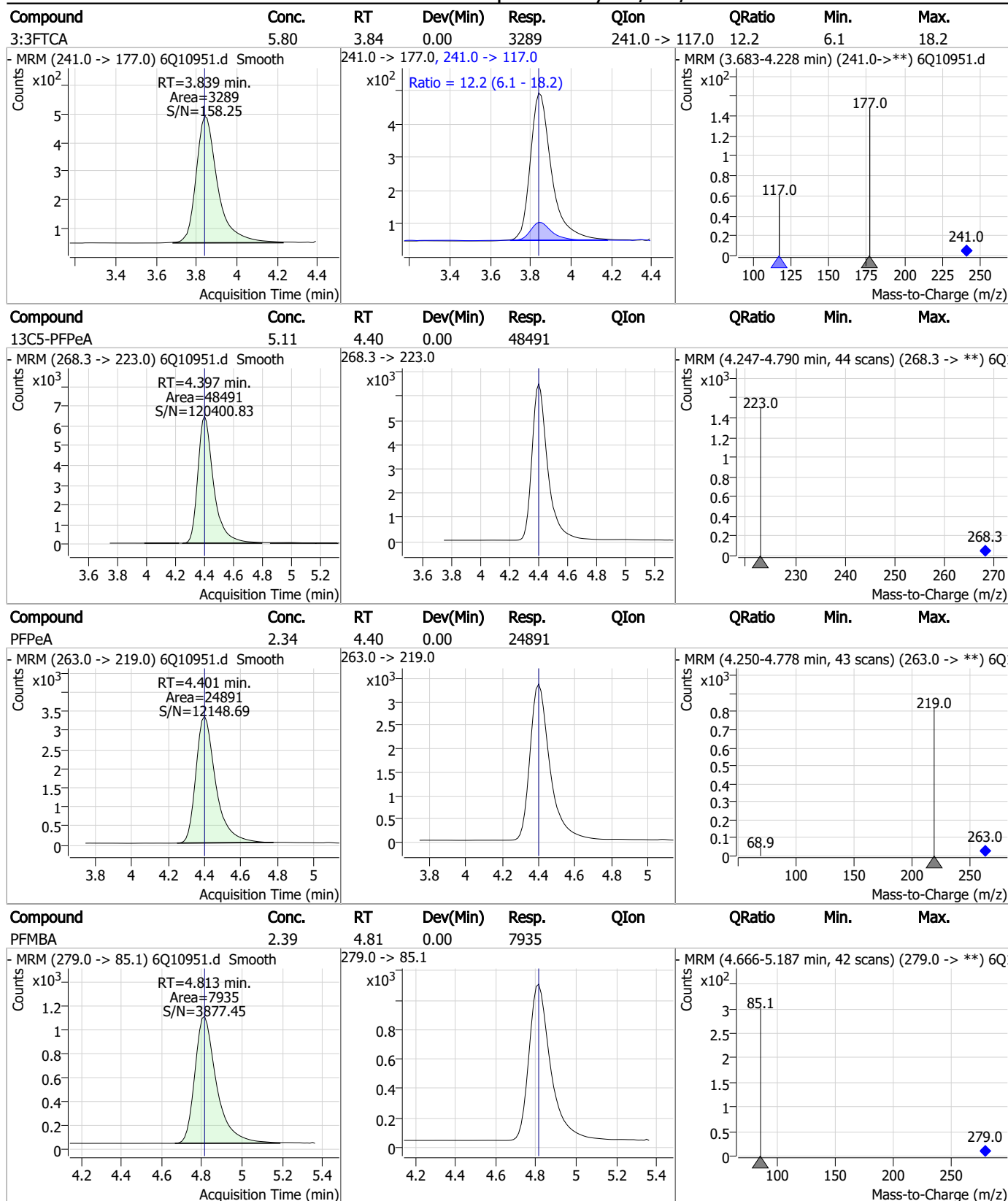
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Perfluorinated Compounds by LC/MS/MS



7.6.4
7

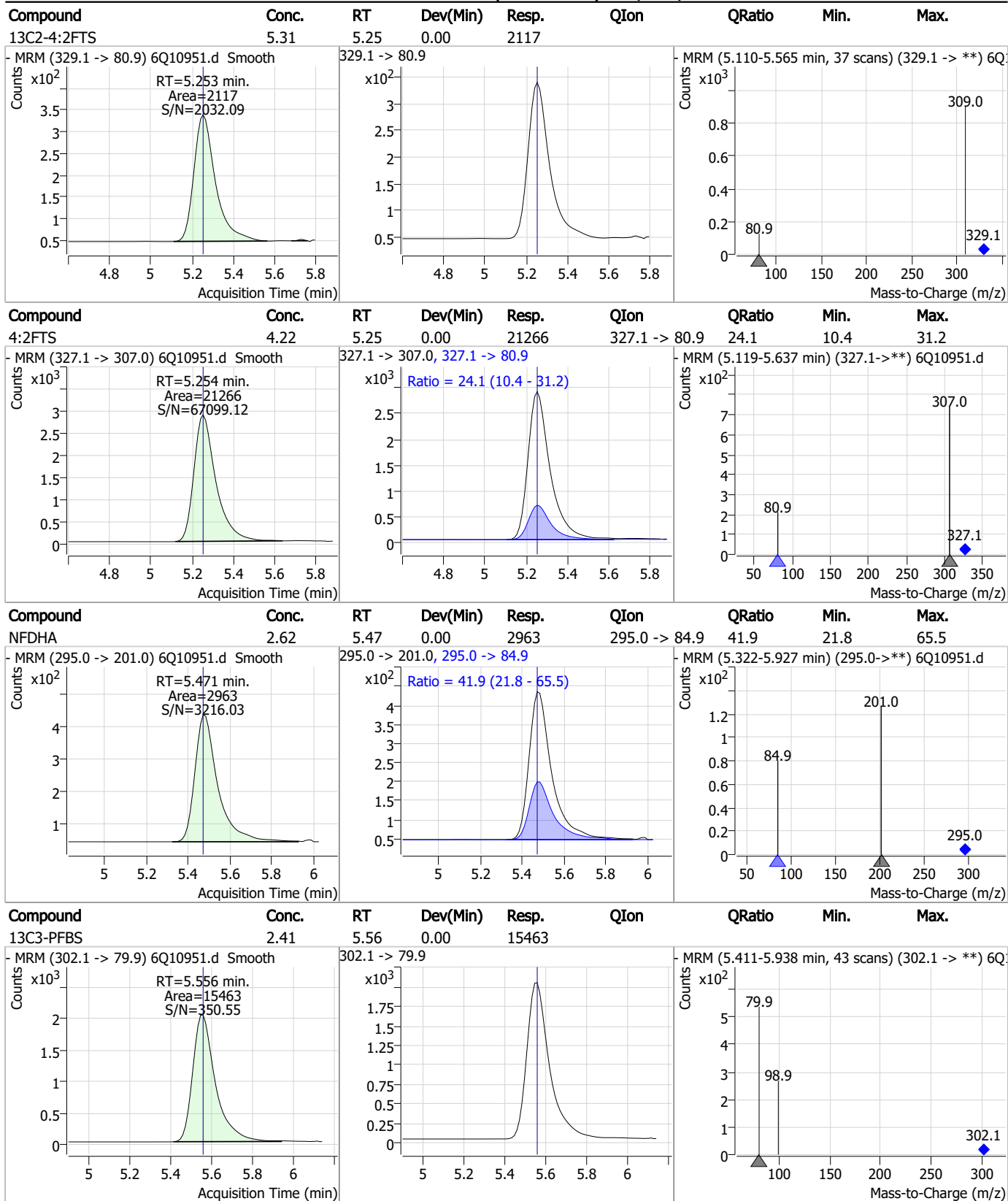
Perfluorinated Compounds by LC/MS/MS



7.6.4

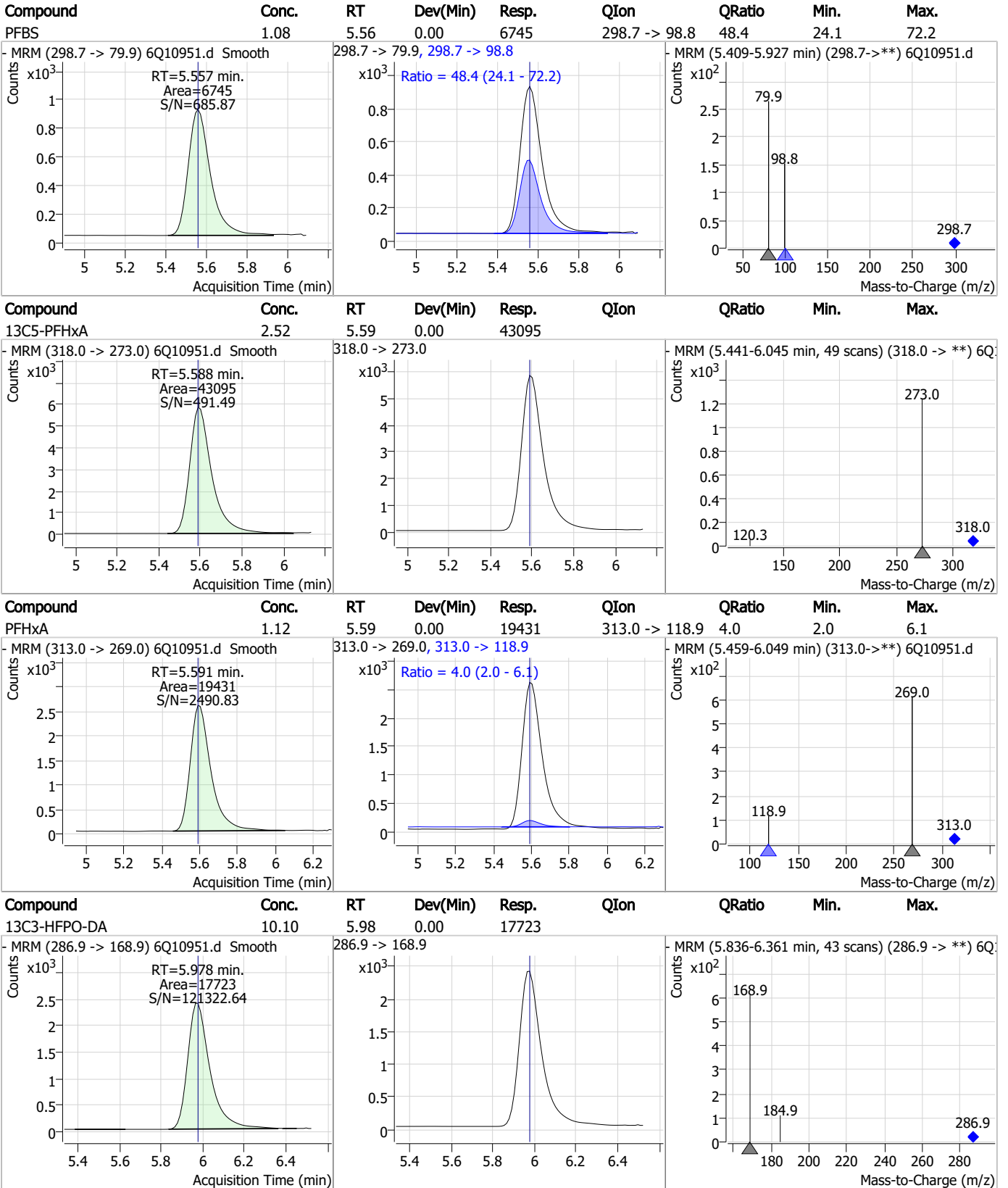
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Perfluorinated Compounds by LC/MS/MS



7.6.4
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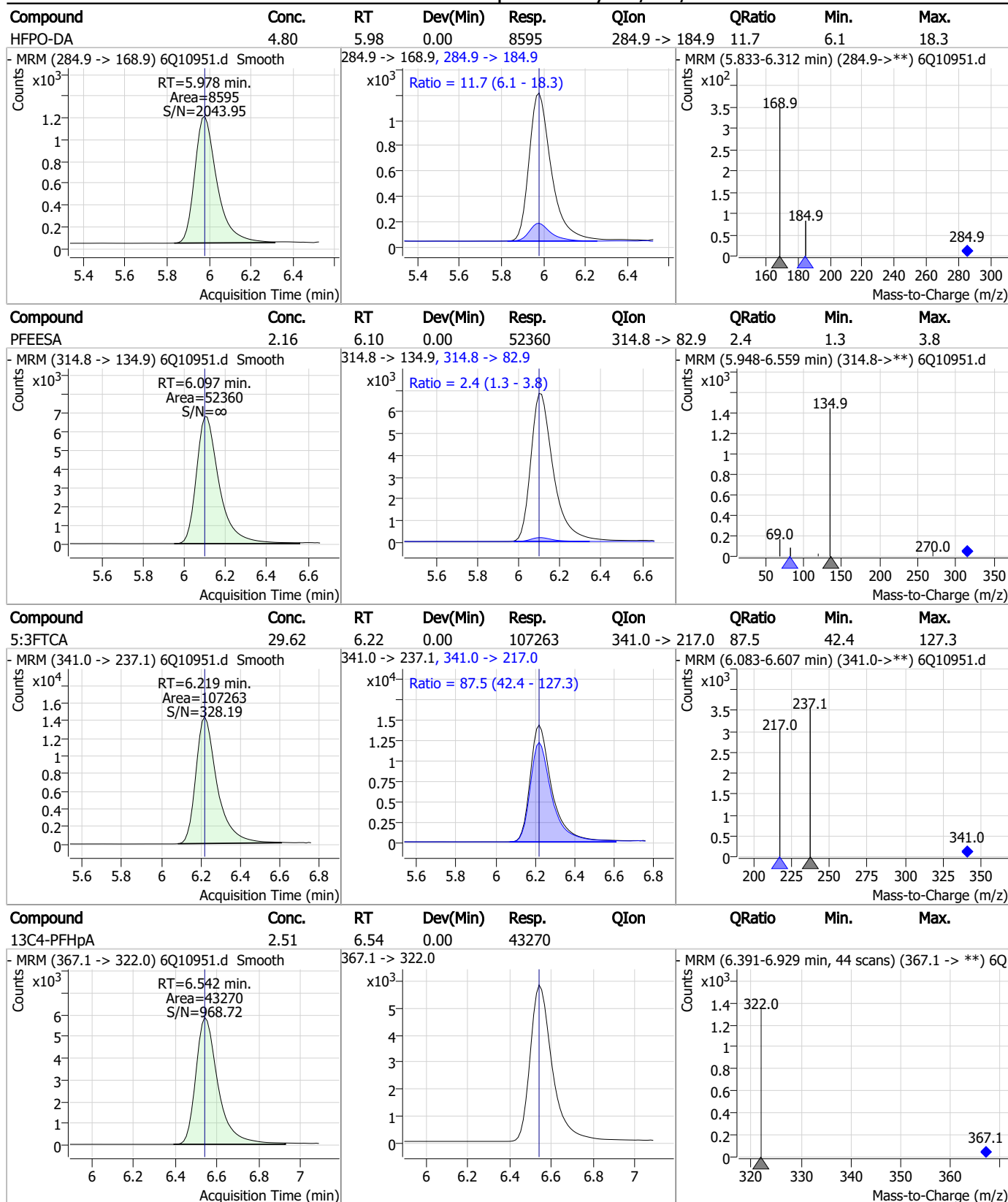
Perfluorinated Compounds by LC/MS/MS



7.6.4

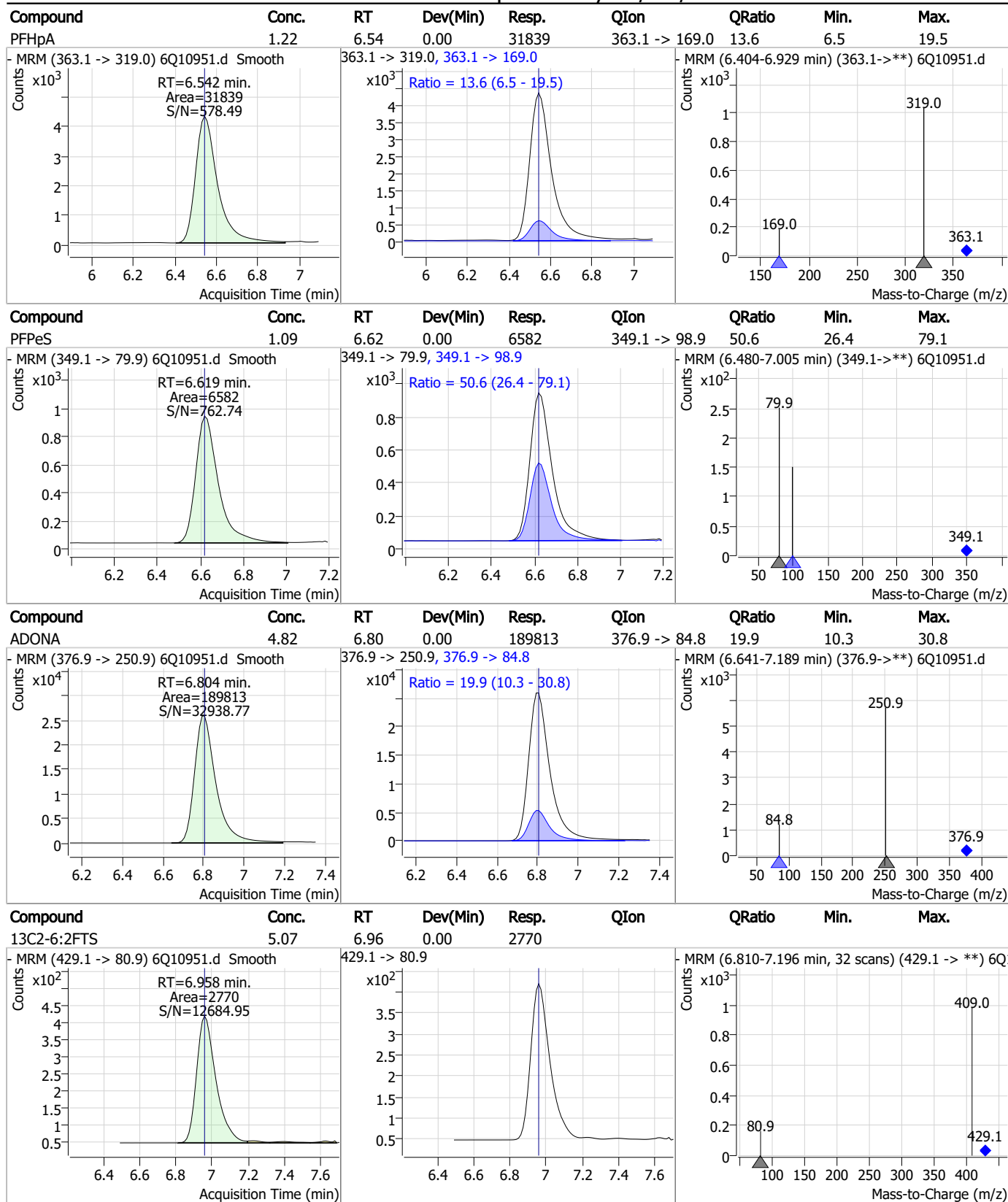
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Perfluorinated Compounds by LC/MS/MS



7.6.4
7

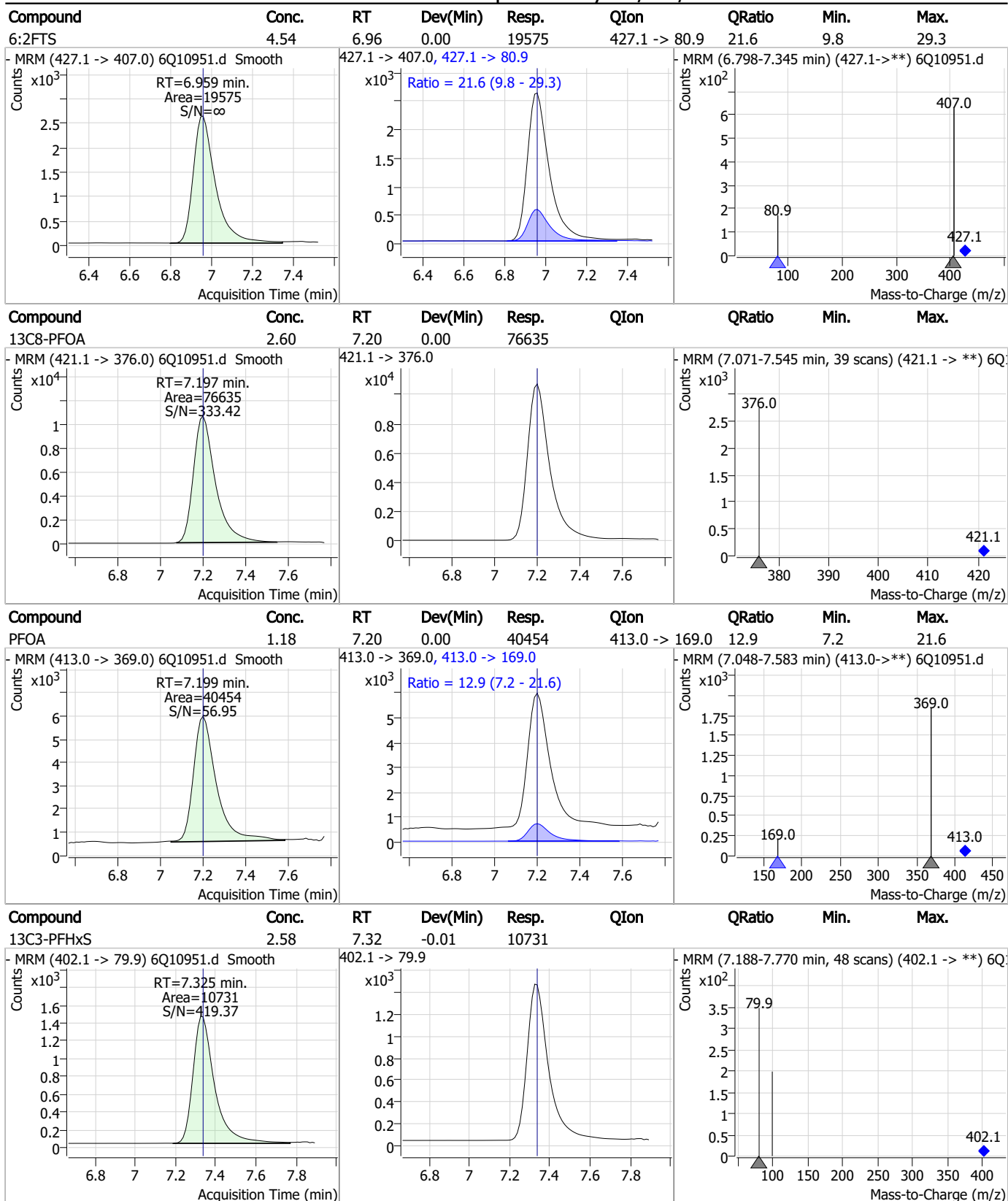
Perfluorinated Compounds by LC/MS/MS



7.6.4

7

Perfluorinated Compounds by LC/MS/MS

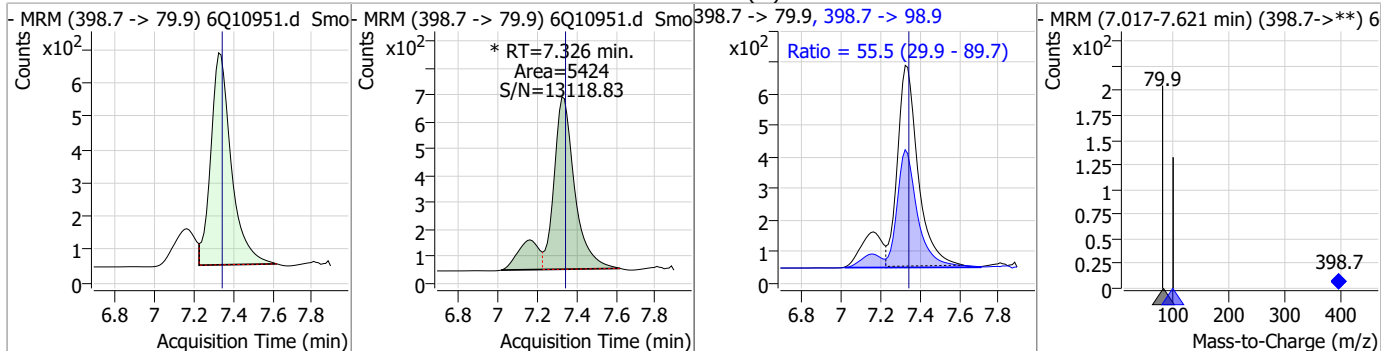


7.6.4

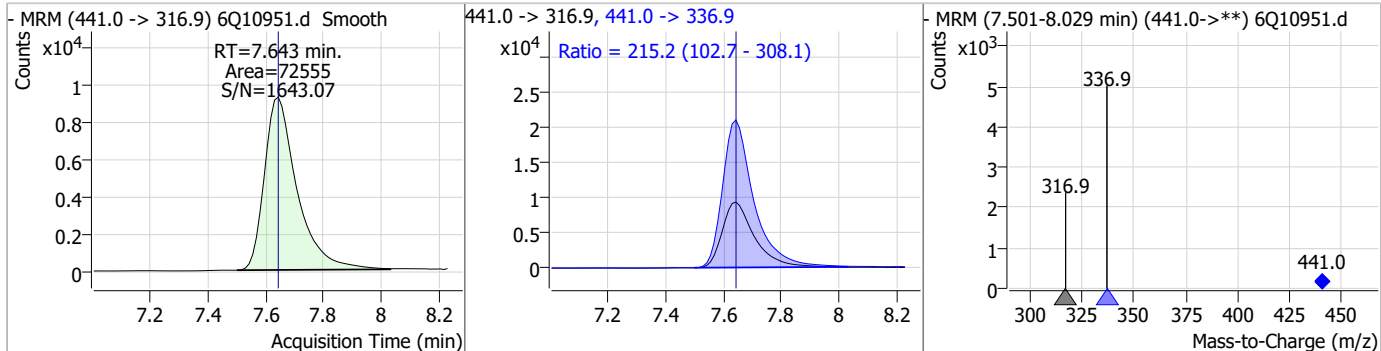
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Perfluorinated Compounds by LC/MS/MS

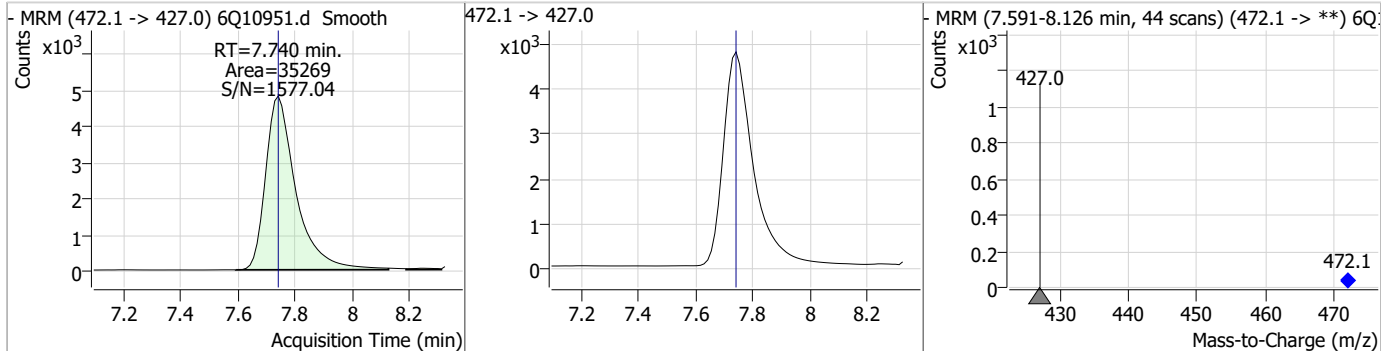
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.06	7.33	-0.01	5424 (m)	398.7 -> 98.9	55.5	29.9	89.7



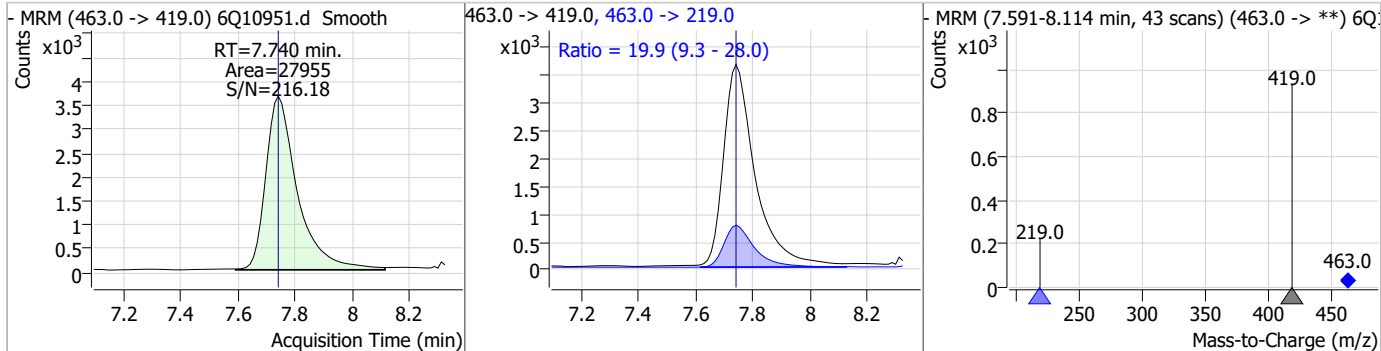
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	29.72	7.64	0.00	72555	441.0 -> 336.9	215.2	102.7	308.1



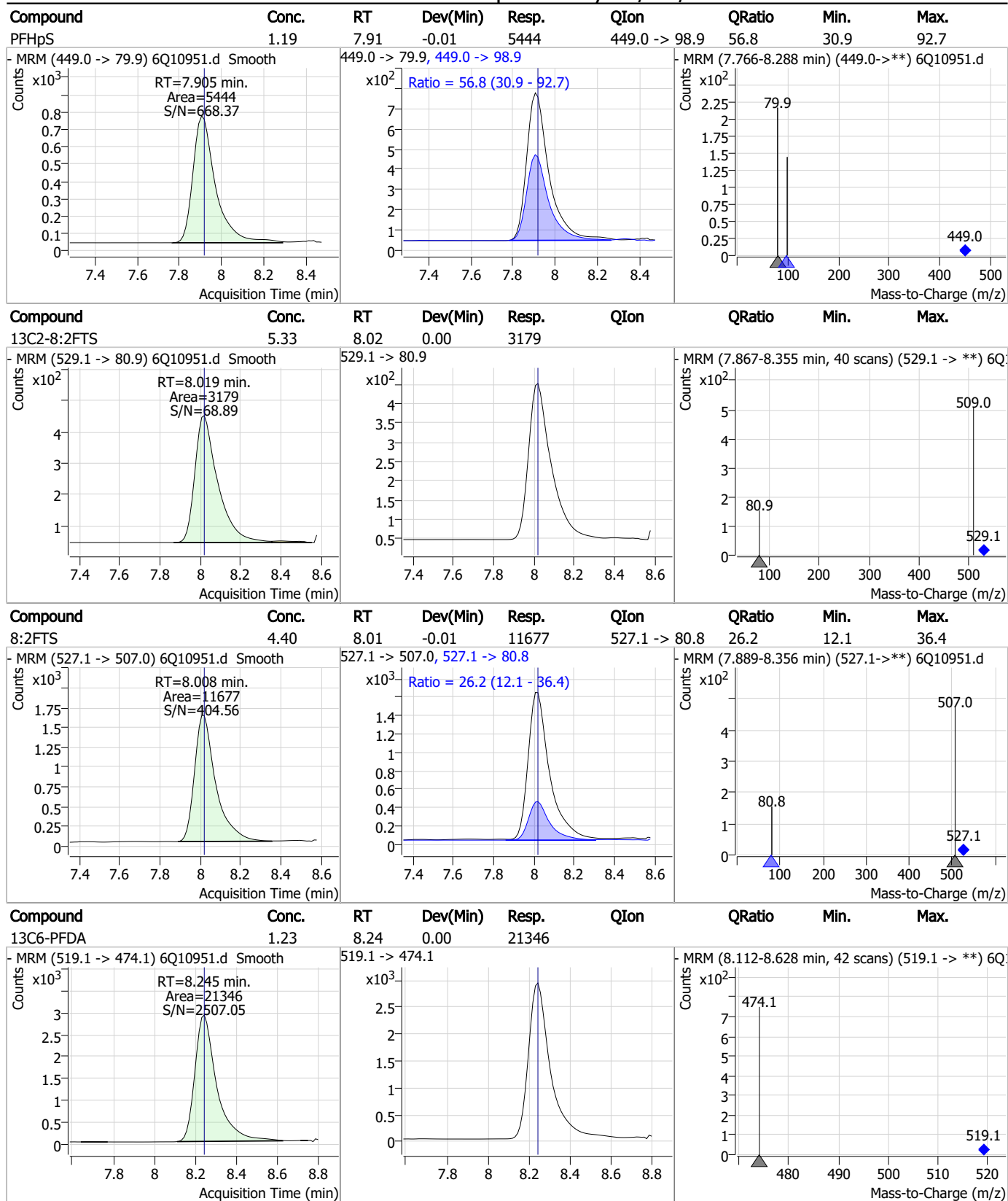
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.24	7.74	0.00	35269				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.15	7.74	0.00	27955	463.0 -> 219.0	19.9	9.3	28.0



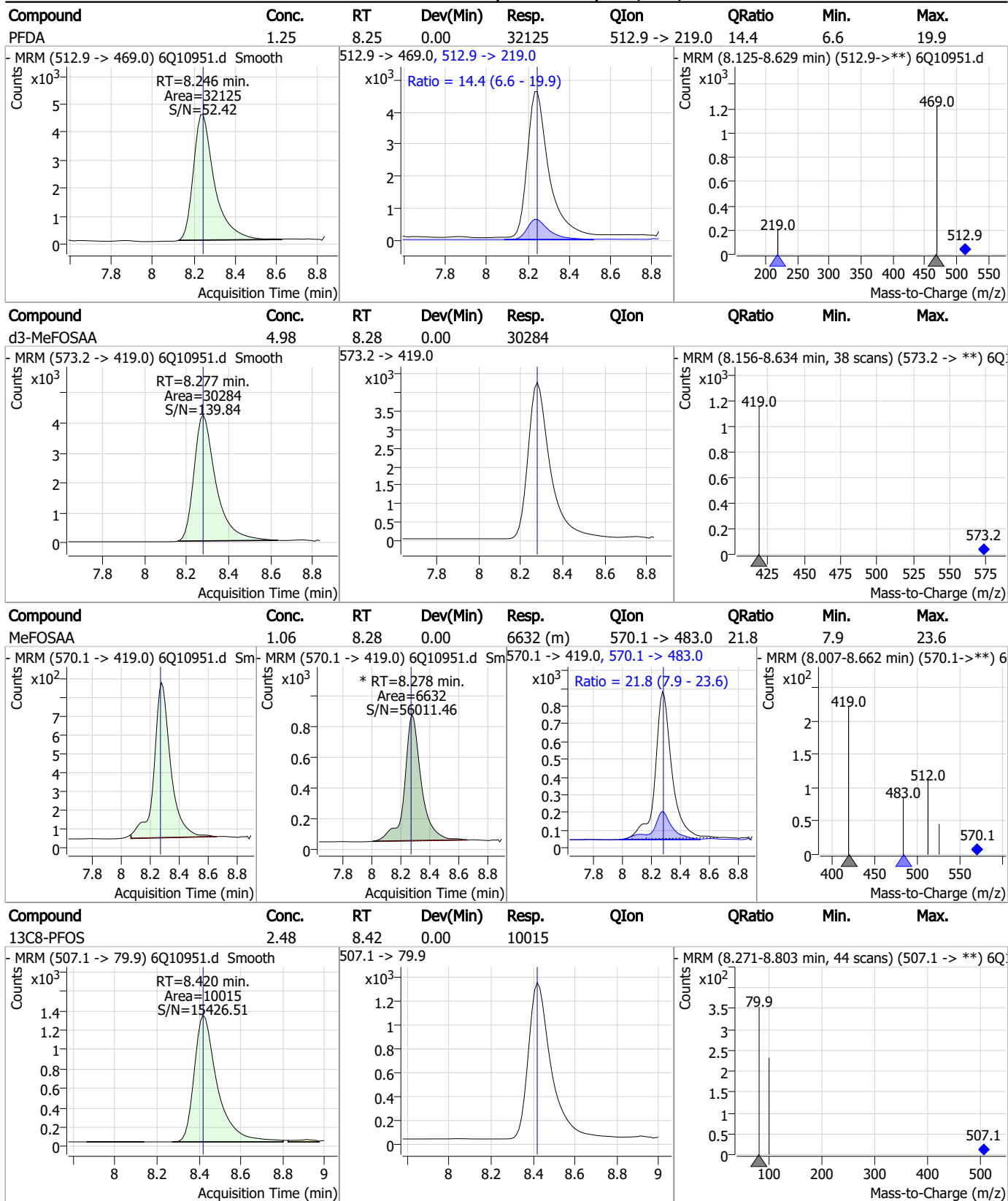
Perfluorinated Compounds by LC/MS/MS



7.6.4

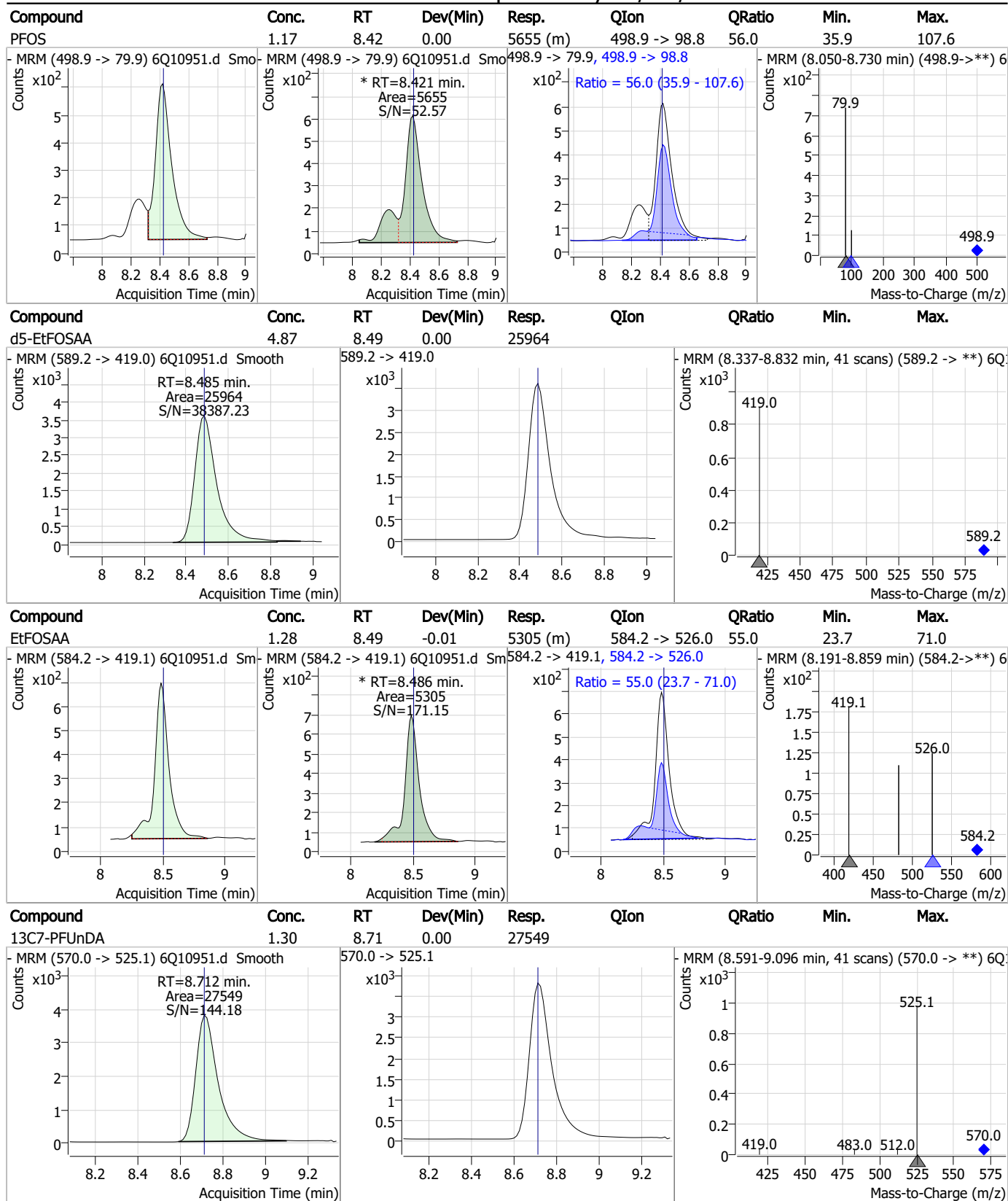
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Perfluorinated Compounds by LC/MS/MS



7.6.4
7

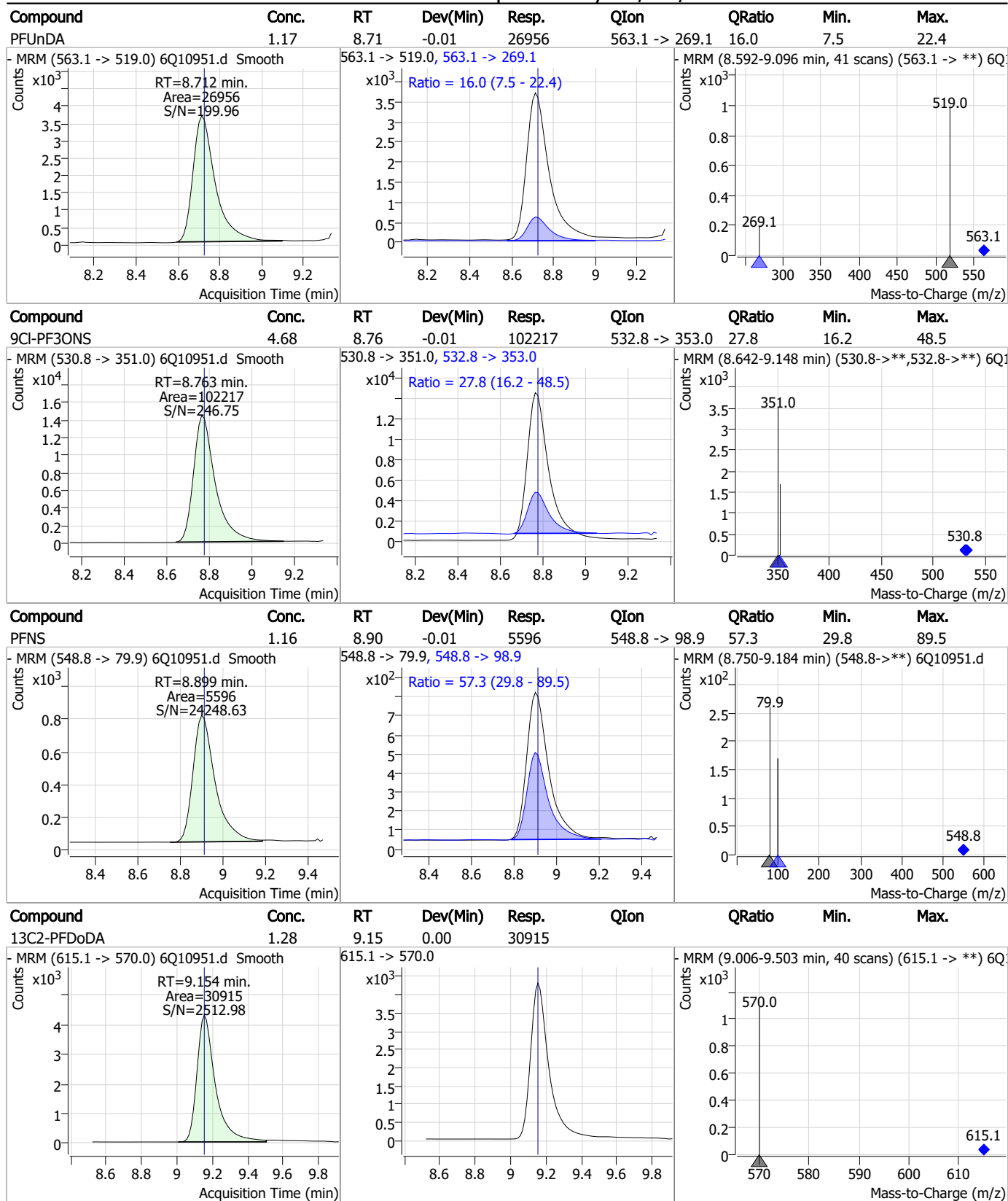
Perfluorinated Compounds by LC/MS/MS



7.6.4

7

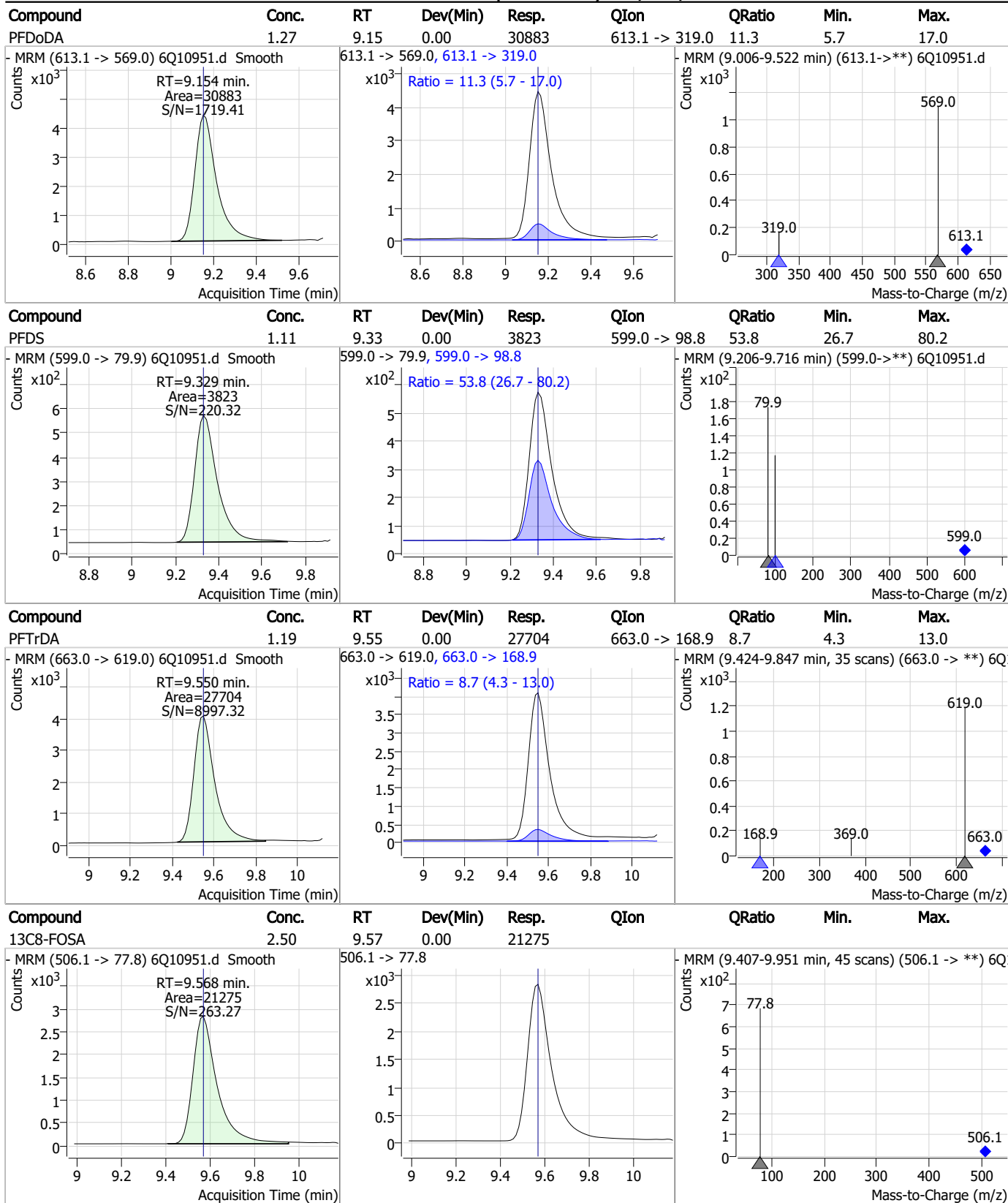
Perfluorinated Compounds by LC/MS/MS



7.6.4

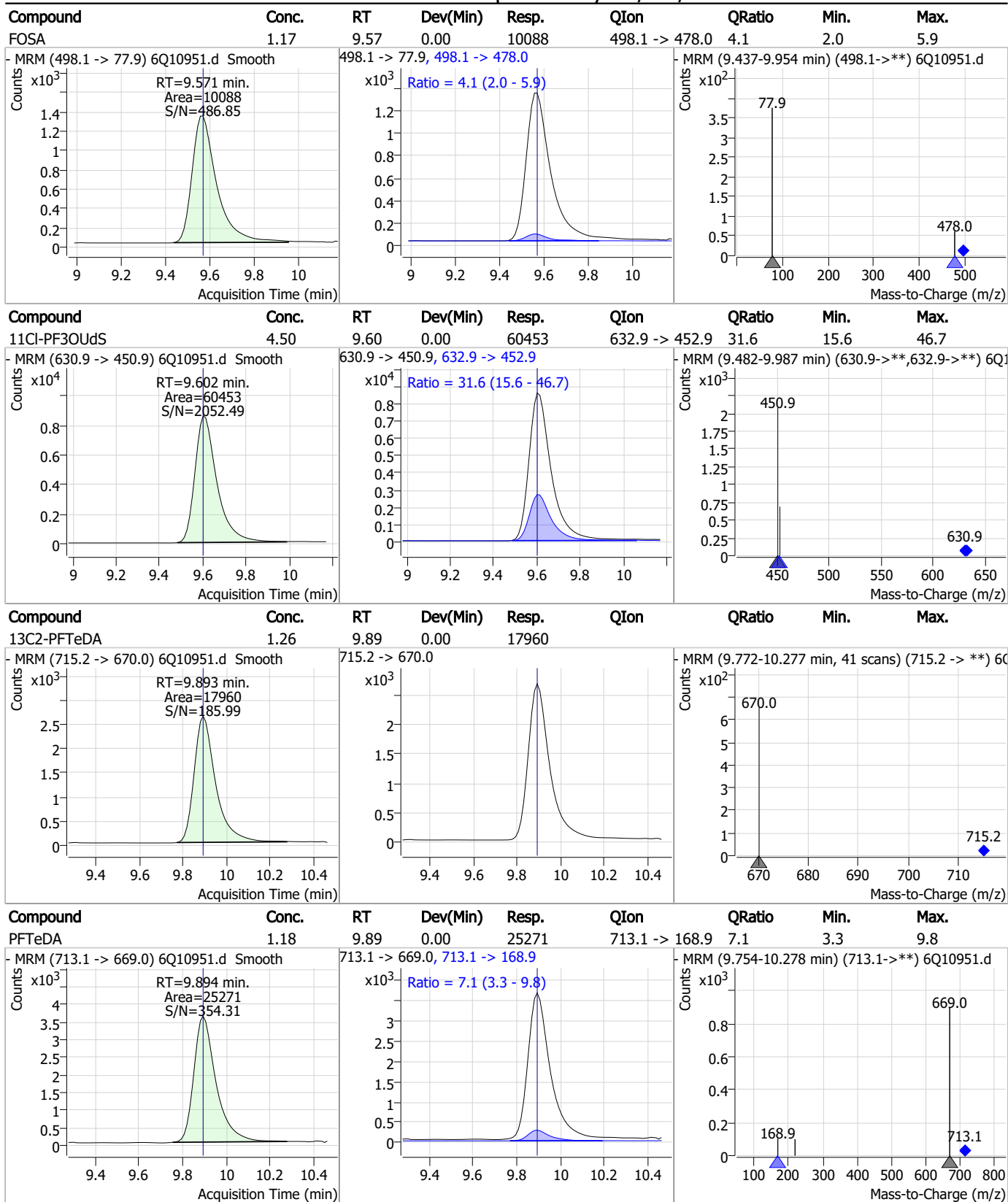
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Perfluorinated Compounds by LC/MS/MS



7.6.4
7

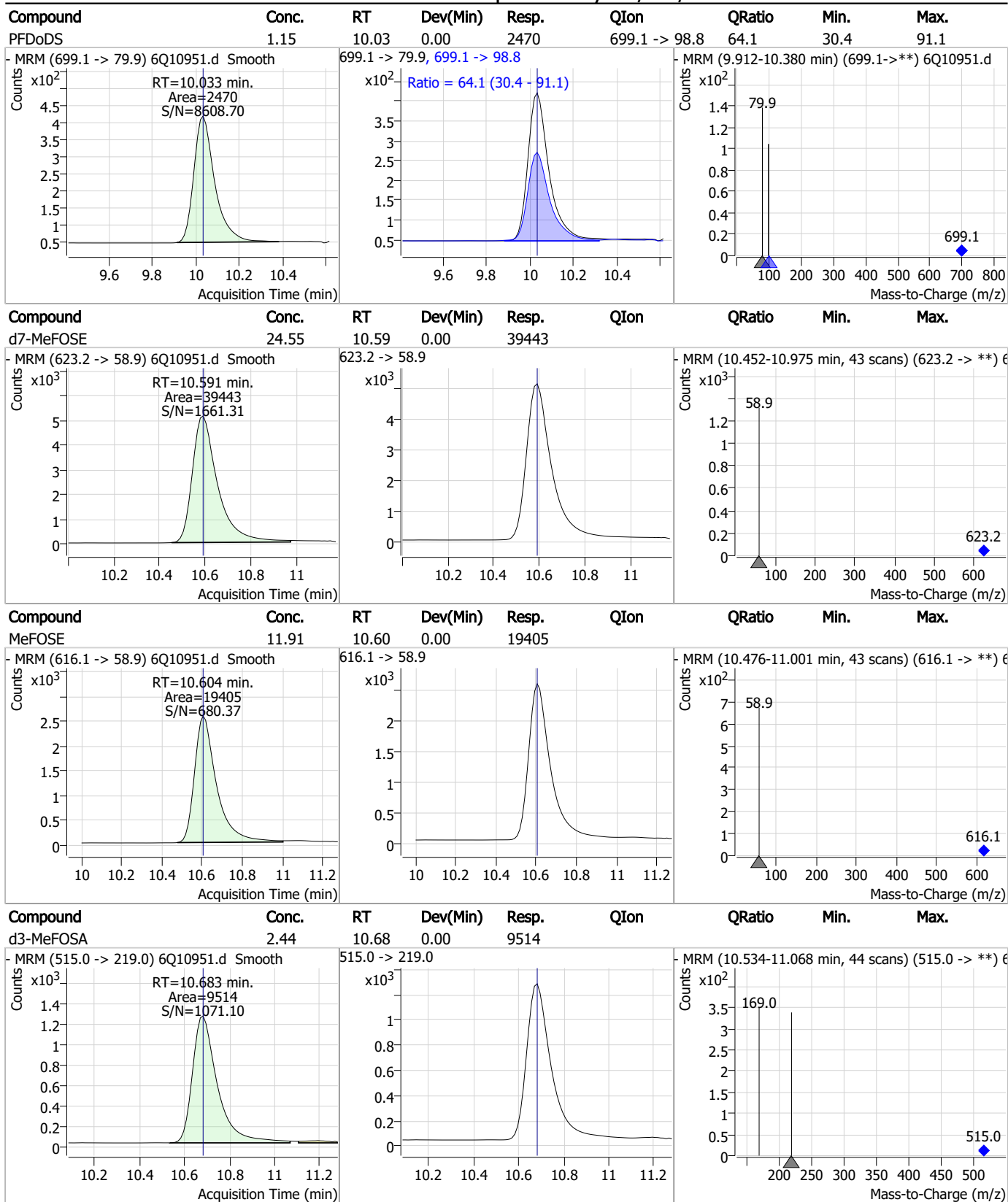
Perfluorinated Compounds by LC/MS/MS



7.6.4

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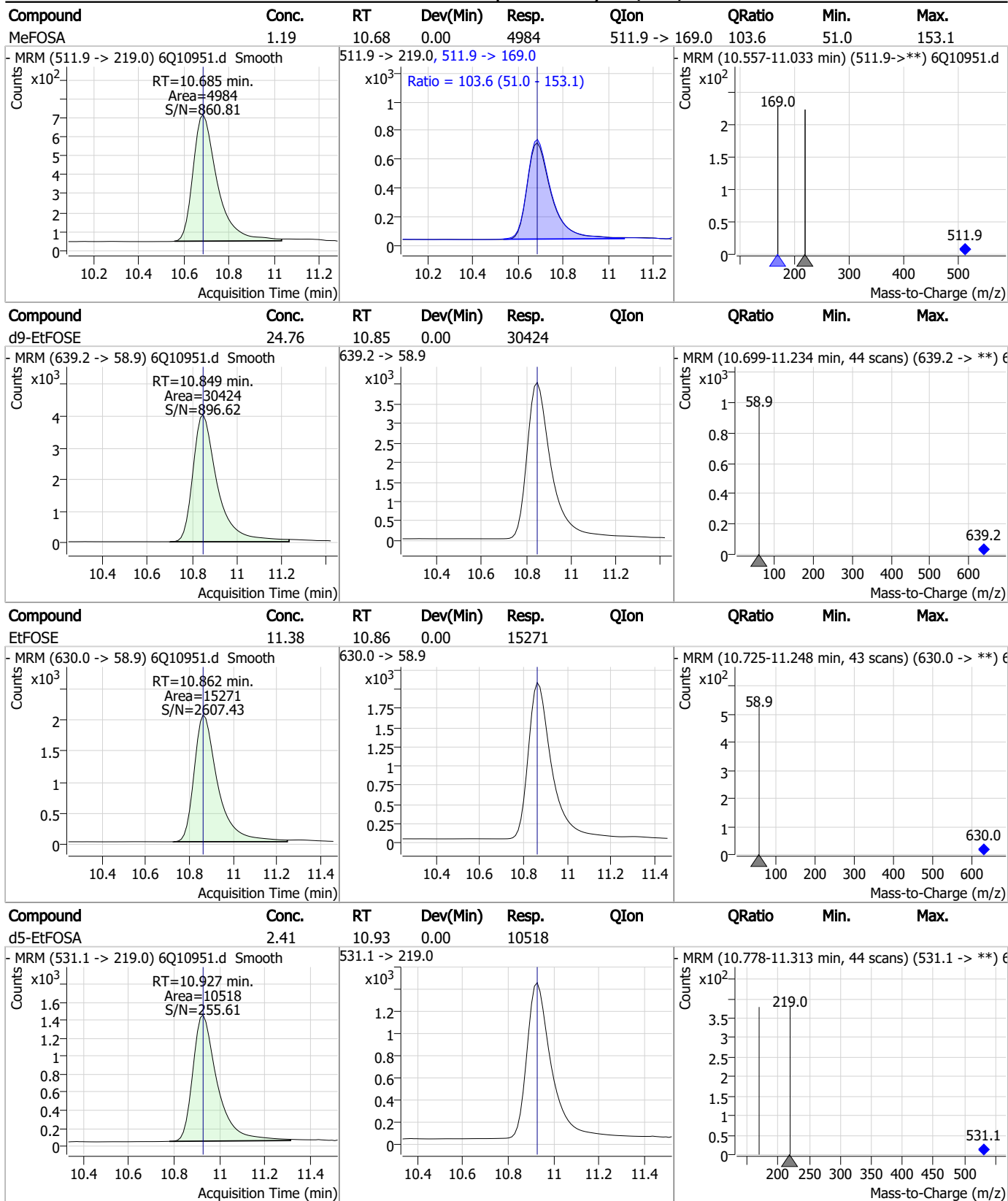
Perfluorinated Compounds by LC/MS/MS



7.6.4

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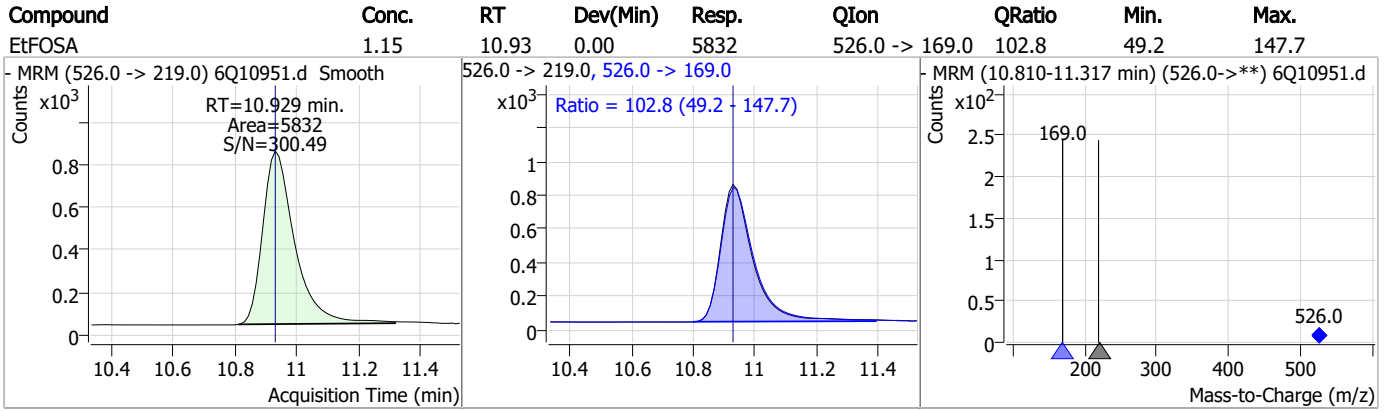
Perfluorinated Compounds by LC/MS/MS



7.6.4

7

Perfluorinated Compounds by LC/MS/MS



7.6.4

7

Manual Integration Approval Summary

Sample Number: S6Q174-IC174 Method: EPA DRAFT 1633
Lab FileID: 6Q10951.D Analyst approved: 01/12/23 11:46 Martha Valls
Injection Time: 01/11/23 12:18 Supervisor approved: 01/12/23 15:42 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.33	Split peak
MeFOSAA	2355-31-9		8.28	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.42	Split peak
EtFOSAA	2991-50-6		8.49	Split peak

7.6.4.1

7

Manual Integrations
APPROVED
 (compounds with "m" flag)

Natasha Gumtje
 01/12/23 15:42

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q10952.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/11/2023 12:32:22 PM
 Sample Name : icc174-4
 Vial : P1-A5
 DA Method File : 1633_011123_S6Q174.quantmethod.xml
 Batch Name : S6Q174.batch.bin
 Sample Information : OP94795,S6Q174,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.000	216.8 -> 171.9	89550	10.00 µg/L	0.000
M5-PFPeA	4.397	268.3 -> 223.0	43155	5.00 µg/L	0.000
M5-PFHxA	5.588	318.0 -> 273.0	38470	2.50 µg/L	0.000
M4-PFHpA	6.542	367.1 -> 322.0	39879	2.50 µg/L	0.000
M8-PFOA	7.197	421.1 -> 376.0	68898	2.50 µg/L	0.000
M9-PFNA	7.740	472.1 -> 427.0	30139	1.25 µg/L	0.000
M6-PFDA	8.245	519.1 -> 474.1	18487	1.25 µg/L	0.000
M7-PFUnDA	8.712	570.0 -> 525.1	23972	1.25 µg/L	0.000
M2-PFDoDA	9.154	615.1 -> 570.0	27086	1.25 µg/L	0.000
M2-PFTeDA	9.893	715.2 -> 670.0	15302	1.25 µg/L	0.000
M8-FOSA	9.568	506.1 -> 77.8	18299	2.50 µg/L	0.000
M3-PFBS	5.556	302.1 -> 79.9	13640	2.50 µg/L	0.000
M3-PFHxS	7.337	402.1 -> 79.9	9088	2.50 µg/L	0.000
M8-PFOS	8.420	507.1 -> 79.9	8687	2.50 µg/L	0.000
M2-4:2FTS	5.253	329.1 -> 80.9	1697	5.00 µg/L	0.000
M2-6:2FTS	6.958	429.1 -> 80.9	2461	5.00 µg/L	0.000
M2-8:2FTS	8.019	529.1 -> 80.9	2567	5.00 µg/L	0.000
M3-MeFOSAA	8.277	573.2 -> 419.0	24418	5.00 µg/L	0.000
M3-HFPO-DA	5.978	286.9 -> 168.9	15461	10.00 µg/L	0.000
M5-EtFOSAA	8.485	589.2 -> 419.0	22734	5.00 µg/L	0.000
M7-MeFOSE	10.591	623.2 -> 58.9	35331	25.00 µg/L	0.000
M9-EtFOSE	10.849	639.2 -> 58.9	26979	25.00 µg/L	0.000
M5-EtFOSA	10.927	531.1 -> 219.0	9293	2.50 µg/L	0.000
M3-MeFOSA	10.683	515.0 -> 219.0	8277	2.50 µg/L	0.000
13C4-PFOS	8.421	502.8 -> 79.9	11479	2.50 µg/L	0.000
13C3-PFBA	3.004	216.0 -> 172.0	38798	5.00 µg/L	0.000
18O2-PFHxS	7.336	403.0 -> 83.9	6688	2.50 µg/L	0.000
13C4-PFOA	7.198	417.1 -> 372.0	80305	2.50 µg/L	0.000
13C2-PFDA	8.245	515.1 -> 470.1	28047	1.25 µg/L	0.000
13C5-PFNA	7.740	468.0 -> 423.0	32723	1.25 µg/L	0.000
13C2-PFHxA	5.589	315.1 -> 270.0	37117	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.253	329.1 -> 80.9	1697	4.86 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.3%		
13C2-6:2FTS	6.958	429.1 -> 80.9	2461	5.15 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.0%		
13C2-8:2FTS	8.019	529.1 -> 80.9	2567	4.92 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.5%		
13C2-PFDoDA	9.154	615.1 -> 570.0	27086	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.4%		
13C2-PFTeDA	9.893	715.2 -> 670.0	15302	1.17 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 93.7%		
13C3-PFBS	5.556	302.1 -> 79.9	13640	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.3%		
13C3-PFHxS	7.337	402.1 -> 79.9	9088	2.50 µg/L	0.000

7.65
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 = 100.1%	
13C4-PFBA	3.000	216.8 -> 171.9	89550	10.11 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C4-PFHpA	6.542	367.1 -> 322.0	39879	2.65 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.0%	
13C5-PFHxA	5.588	318.0 -> 273.0	38470	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.3%	
13C5-PFPeA	4.397	268.3 -> 223.0	43155	5.21 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.2%	
13C6-PFDA	8.245	519.1 -> 474.1	18487	1.16 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.6%	
13C7-PFUnDA	8.712	570.0 -> 525.1	23972	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C8-FOSA	9.568	506.1 -> 77.8	18299	2.36 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.4%	
13C8-PFOA	7.197	421.1 -> 376.0	68898	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C8-PFOS	8.420	507.1 -> 79.9	8687	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.7%	
13C9-PFNA	7.740	472.1 -> 427.0	30139	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.7%	
d3-MeFOSAA	8.277	573.2 -> 419.0	24418	4.42 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 88.4%	
13C3-HFPO-DA	5.978	286.9 -> 168.9	15461	10.10 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
d3-MeFOSA	10.683	515.0 -> 219.0	8277	2.33 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.3%	
d5-EtFOSAA	8.485	589.2 -> 419.0	22734	4.69 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.8%	
d7-MeFOSE	10.591	623.2 -> 58.9	35331	24.18 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.7%	
d9-EtFOSE	10.849	639.2 -> 58.9	26979	24.14 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.6%	
d5-EtFOSA	10.927	531.1 -> 219.0	9293	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.5%	
Target Compounds					QValue
4:2FTS	5.254	327.1 -> 307.0	42347	10.49 µg/L	100
		327.1 -> 80.9	8813		
6:2FTS	6.959	427.1 -> 407.0	38033	9.93 µg/L	100
		427.1 -> 80.9	7438		
8:2FTS	8.020	527.1 -> 507.0	21677	10.12 µg/L	100
		527.1 -> 80.8	5292		
EtFOSAA	8.499	584.2 -> 419.1	9741	2.68 µg/L	89
		584.2 -> 526.0	5340		
FOSA	9.571	498.1 -> 77.9	19028	2.57 µg/L	100
		498.1 -> 478.0	746		
MeFOSAA	8.278	570.1 -> 419.0	13309	2.64 µg/L	92
		570.1 -> 483.0	2511		
PFBA	2.994	212.8 -> 168.9	22649	9.86 µg/L	100
PFBS	5.557	298.7 -> 79.9	12077	2.19 µg/L	100
		298.7 -> 98.8	5816		
PFDA	8.246	512.9 -> 469.0	58217	2.62 µg/L	100
		512.9 -> 219.0	7709		
PFDODA	9.154	613.1 -> 569.0	55821	2.62 µg/L	100
		613.1 -> 319.0	6322		
PFDS	9.329	599.0 -> 79.9	7256	2.42 µg/L	100

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	3879			
PFHpA	6.542	363.1 -> 319.0	59297	2.47	µg/L	100
		363.1 -> 169.0	7712			
PFHpS	7.917	449.0 -> 79.9	8850	2.23	µg/L	100
		449.0 -> 98.9	5471			
PFHxA	5.591	313.0 -> 269.0	37734	2.43	µg/L	100
		313.0 -> 118.9	1533			
PFHxS	7.338	398.7 -> 79.9	9590	2.22	µg/L	m 96
		398.7 -> 98.9	5429			
PFNA	7.740	463.0 -> 419.0	52923	2.54	µg/L	100
		463.0 -> 219.0	9872			
PFNS	8.911	548.8 -> 79.9	9834	2.34	µg/L	100
		548.8 -> 98.9	5870			
PFOA	7.199	413.0 -> 369.0	71417	2.32	µg/L	100
		413.0 -> 169.0	10280			
PFOS	8.421	498.9 -> 79.9	9598	2.28	µg/L	m 84
		498.9 -> 98.8	5634			
PFPeA	4.401	263.0 -> 219.0	46747	4.93	µg/L	100
PFPeS	6.619	349.1 -> 79.9	12161	2.37	µg/L	100
		349.1 -> 98.9	6412			
PFTeDA	9.894	713.1 -> 669.0	49630	2.72	µg/L	100
		713.1 -> 168.9	3259			
PFTrDA	9.550	663.0 -> 619.0	50838	2.50	µg/L	100
		663.0 -> 168.9	4418			
PFUnDA	8.725	563.1 -> 519.0	53925	2.69	µg/L	100
		563.1 -> 269.1	8058			
11Cl-PF3OUdS	9.602	630.9 -> 450.9	116456	9.93	µg/L	100
		632.9 -> 452.9	36248			
9Cl-PF3ONS	8.776	530.8 -> 351.0	182947	9.60	µg/L	100
		532.8 -> 353.0	59168			
ADONA	6.804	376.9 -> 250.9	332881	9.68	µg/L	100
		376.9 -> 84.8	68431			
HFPO-DA	5.978	284.9 -> 168.9	16085	10.29	µg/L	100
		284.9 -> 184.9	1967			
3:3FTCA	3.839	241.0 -> 177.0	6130	12.14	µg/L	100
		241.0 -> 117.0	746			
5:3FTCA	6.219	341.0 -> 237.1	206514	63.88	µg/L	100
		341.0 -> 217.0	175201			
7:3FTCA	7.643	441.0 -> 316.9	140550	64.50	µg/L	100
		441.0 -> 336.9	288653			
EtFOSA	10.929	526.0 -> 219.0	11233	2.50	µg/L	100
		526.0 -> 169.0	11061			
EtFOSE	10.862	630.0 -> 58.9	29388	24.69	µg/L	100
MeFOSA	10.685	511.9 -> 219.0	8942	2.45	µg/L	100
		511.9 -> 169.0	9128			
MeFOSE	10.604	616.1 -> 58.9	34300	23.50	µg/L	100
PFDoDS	10.033	699.1 -> 79.9	4489	2.40	µg/L	100
		699.1 -> 98.8	2725			
NFDHA	5.471	295.0 -> 201.0	5198	5.16	µg/L	100
		295.0 -> 84.9	2271			
PFMBA	4.813	279.0 -> 85.1	14522	4.91	µg/L	100
PFMPA	3.550	229.0 -> 84.9	12905	4.92	µg/L	100
PFEESA	6.097	314.8 -> 134.9	99576	4.60	µg/L	100
		314.8 -> 82.9	2496			

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

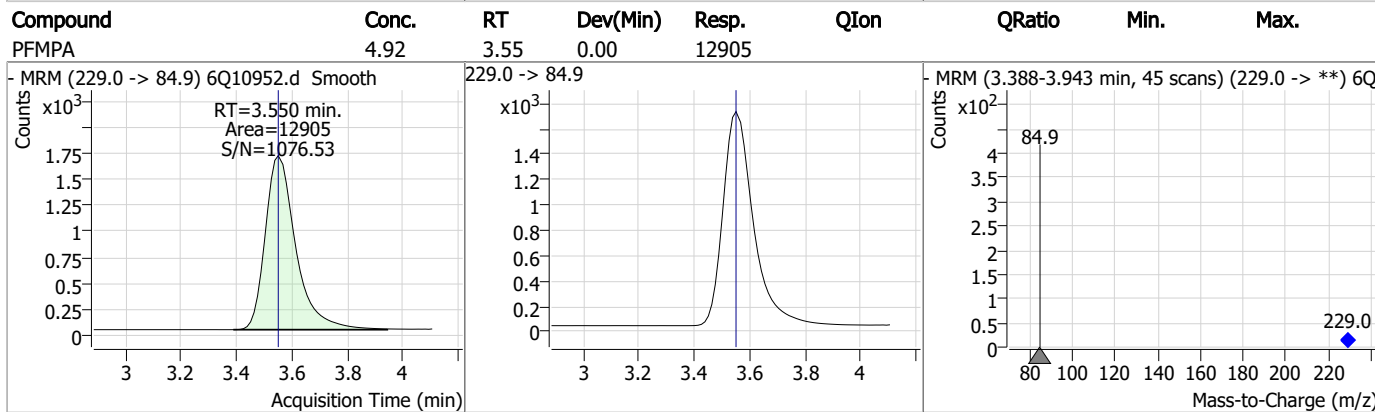
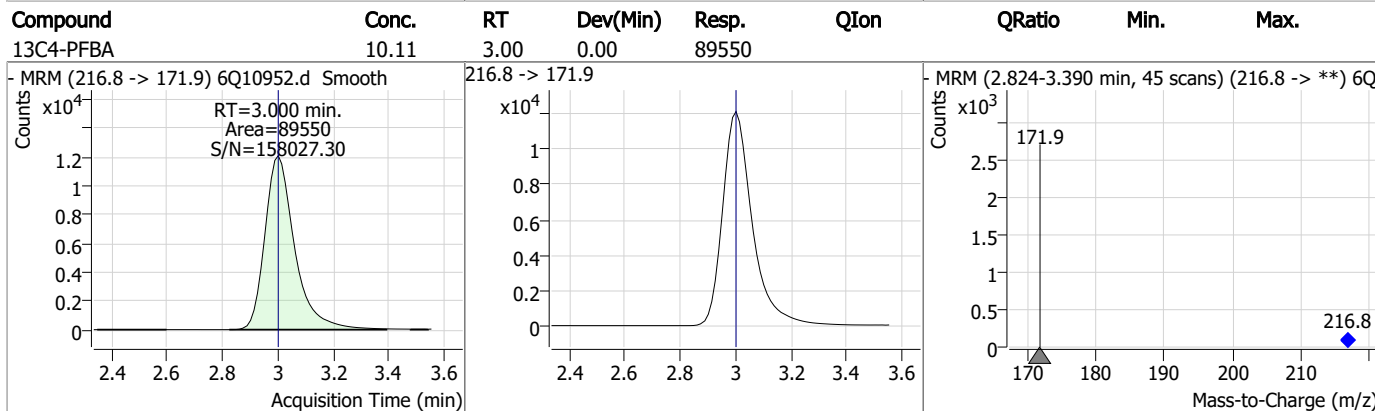
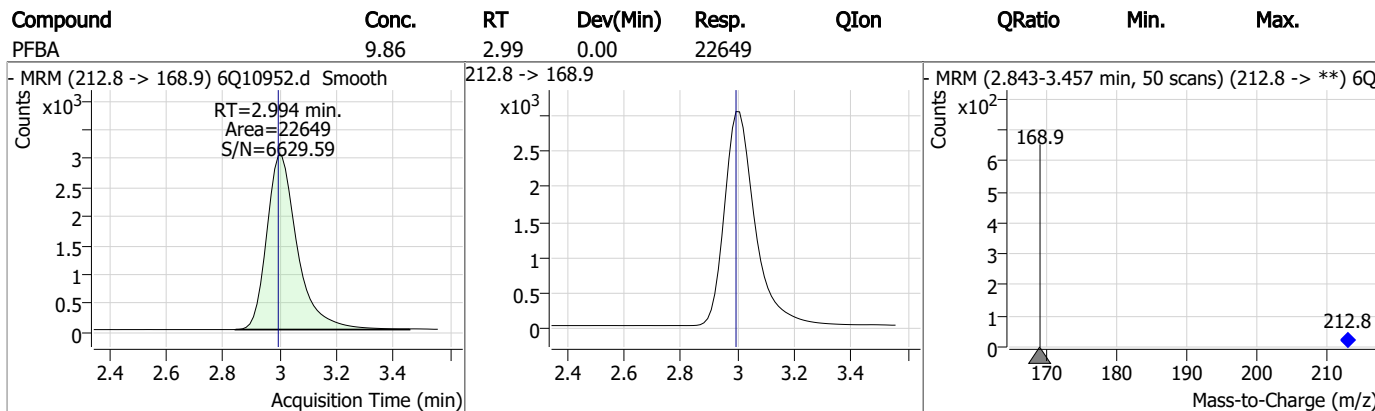
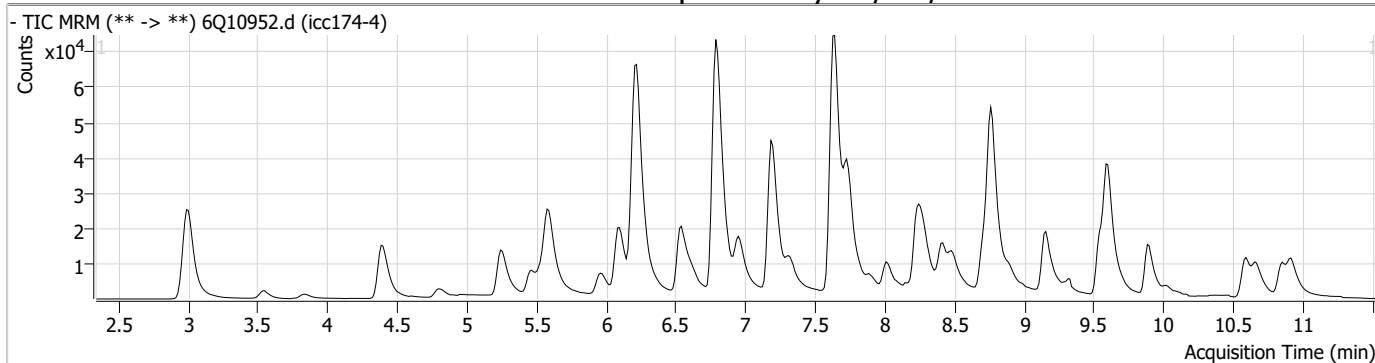
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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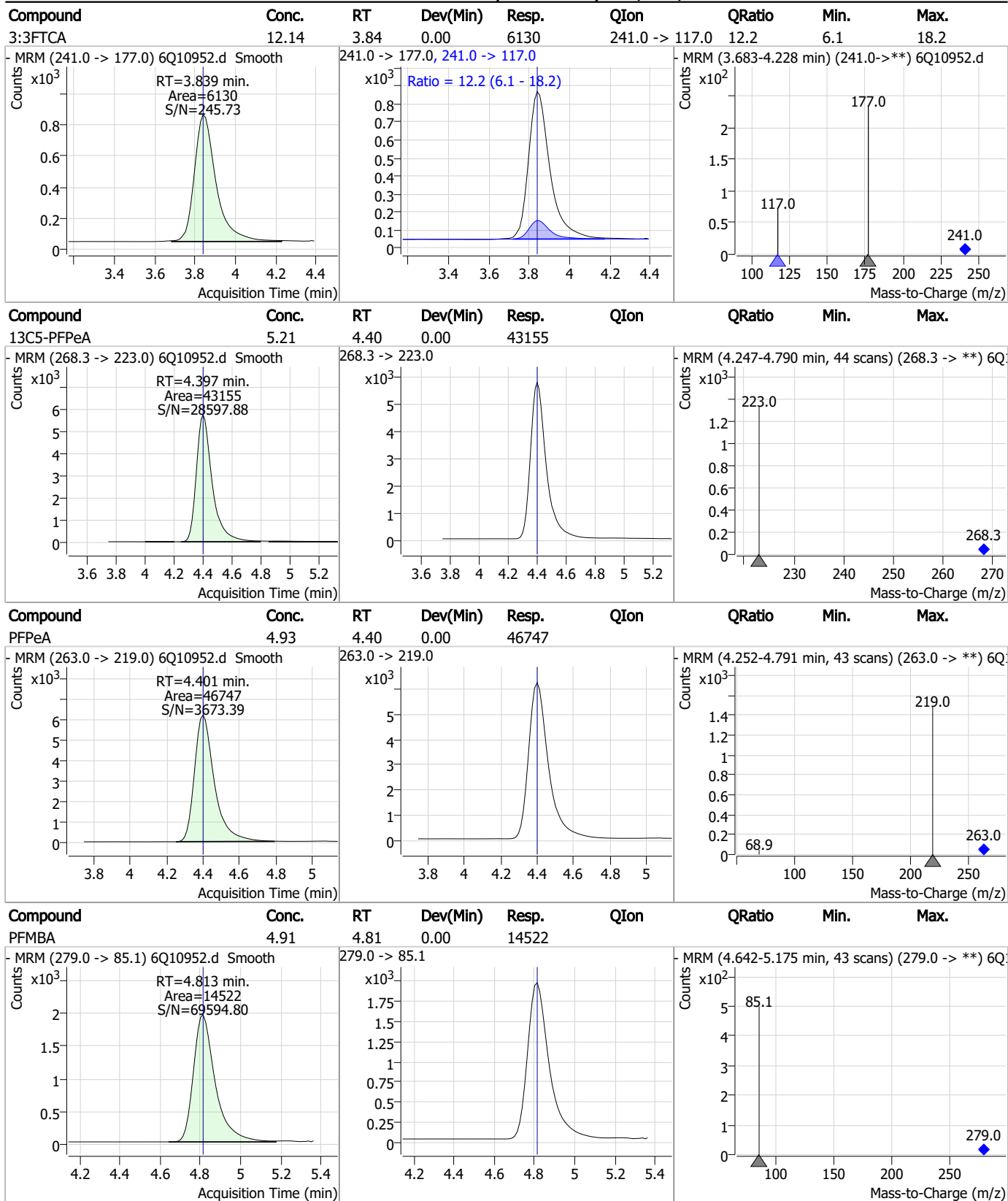
7.6.5

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Perfluorinated Compounds by LC/MS/MS

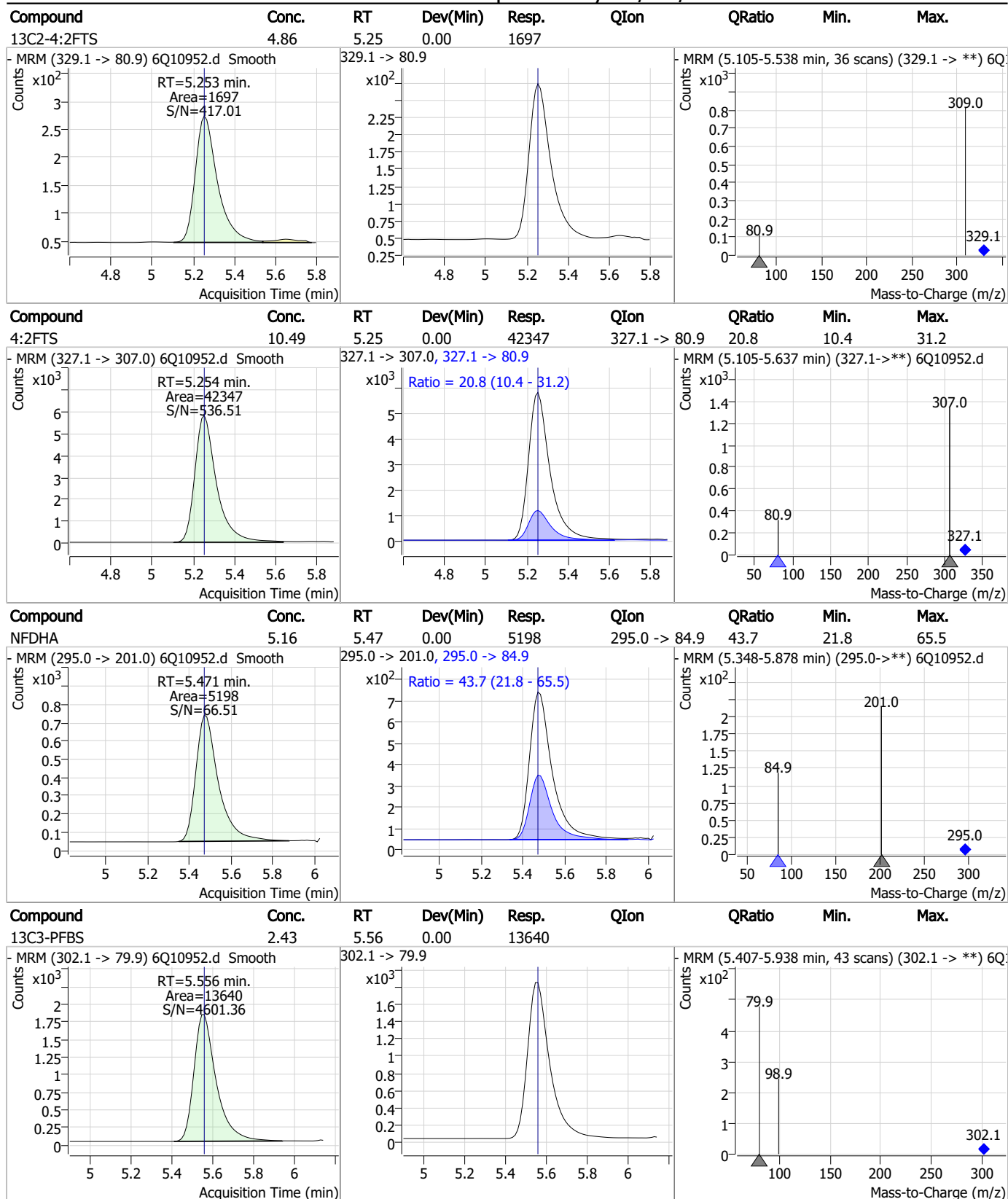


Perfluorinated Compounds by LC/MS/MS



7.6.5
7

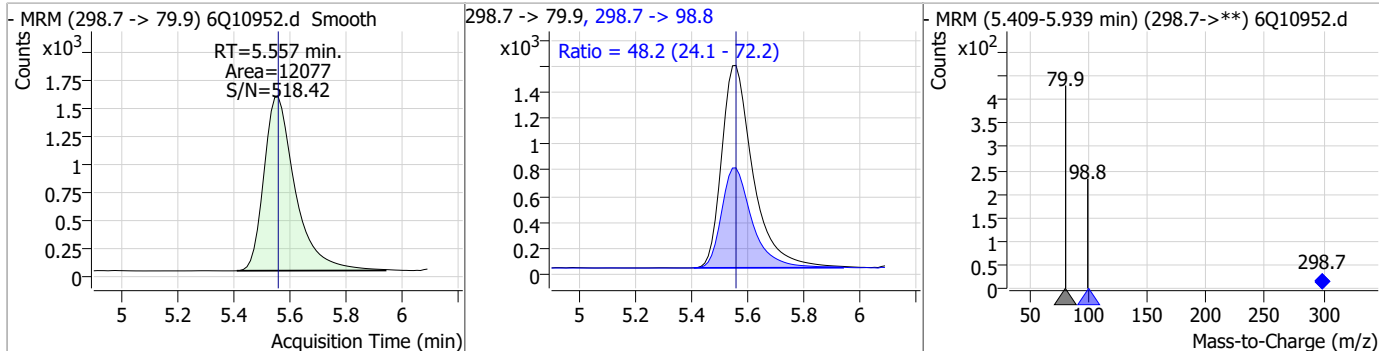
Perfluorinated Compounds by LC/MS/MS



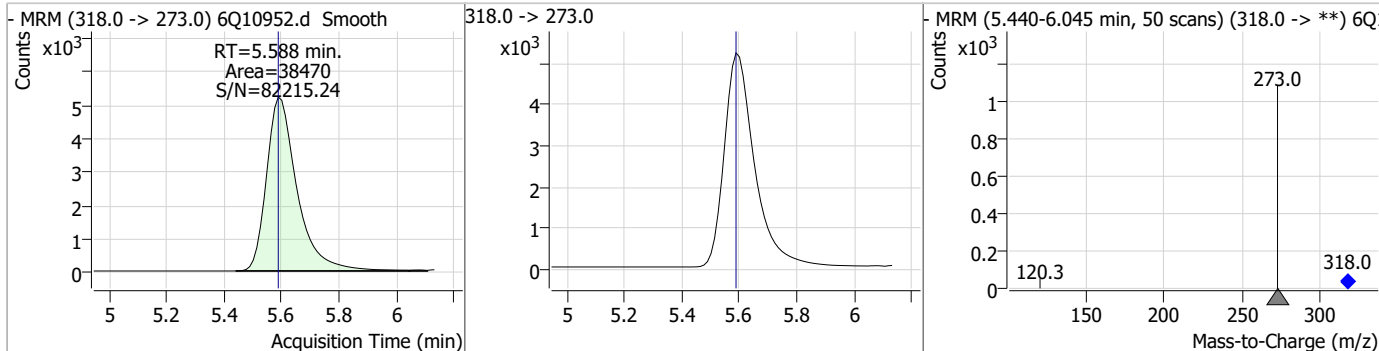
7.6.5
7

Perfluorinated Compounds by LC/MS/MS

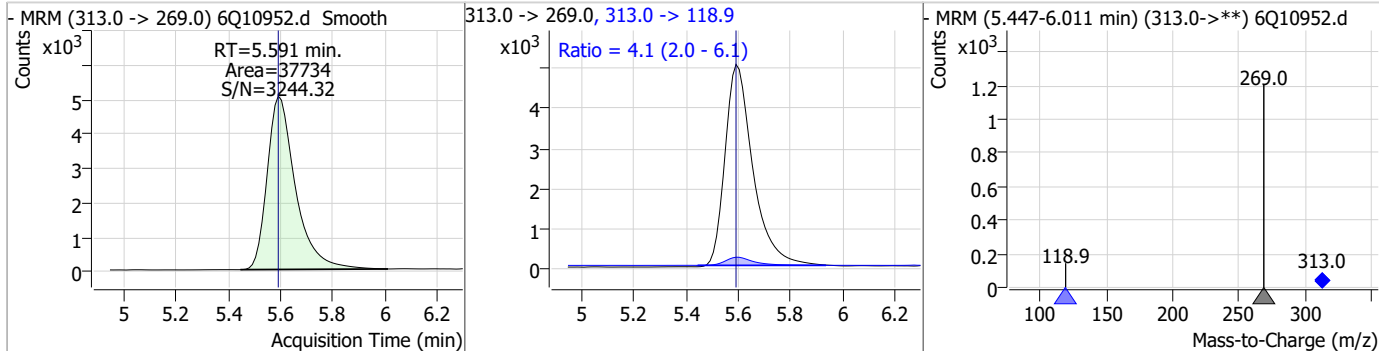
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.19	5.56	0.00	12077	298.7 -> 98.8	48.2	24.1	72.2



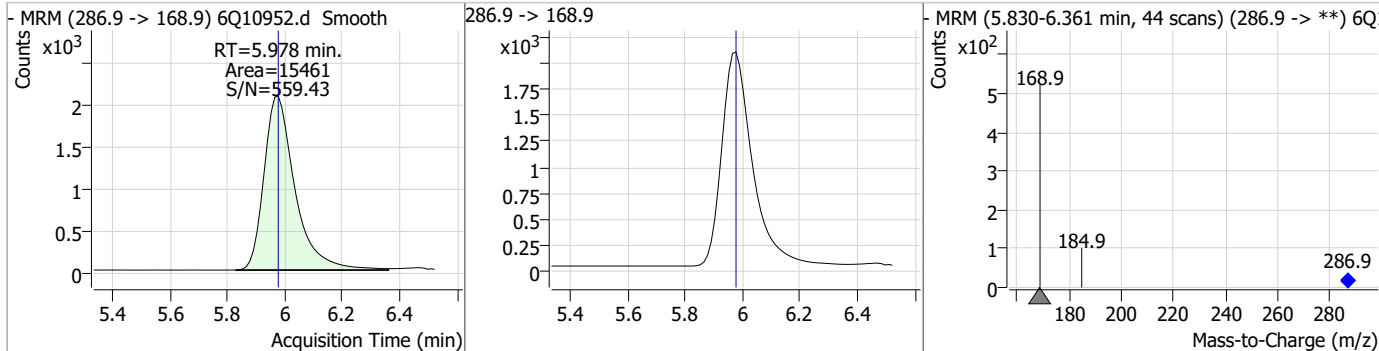
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.58	5.59	0.00	38470				



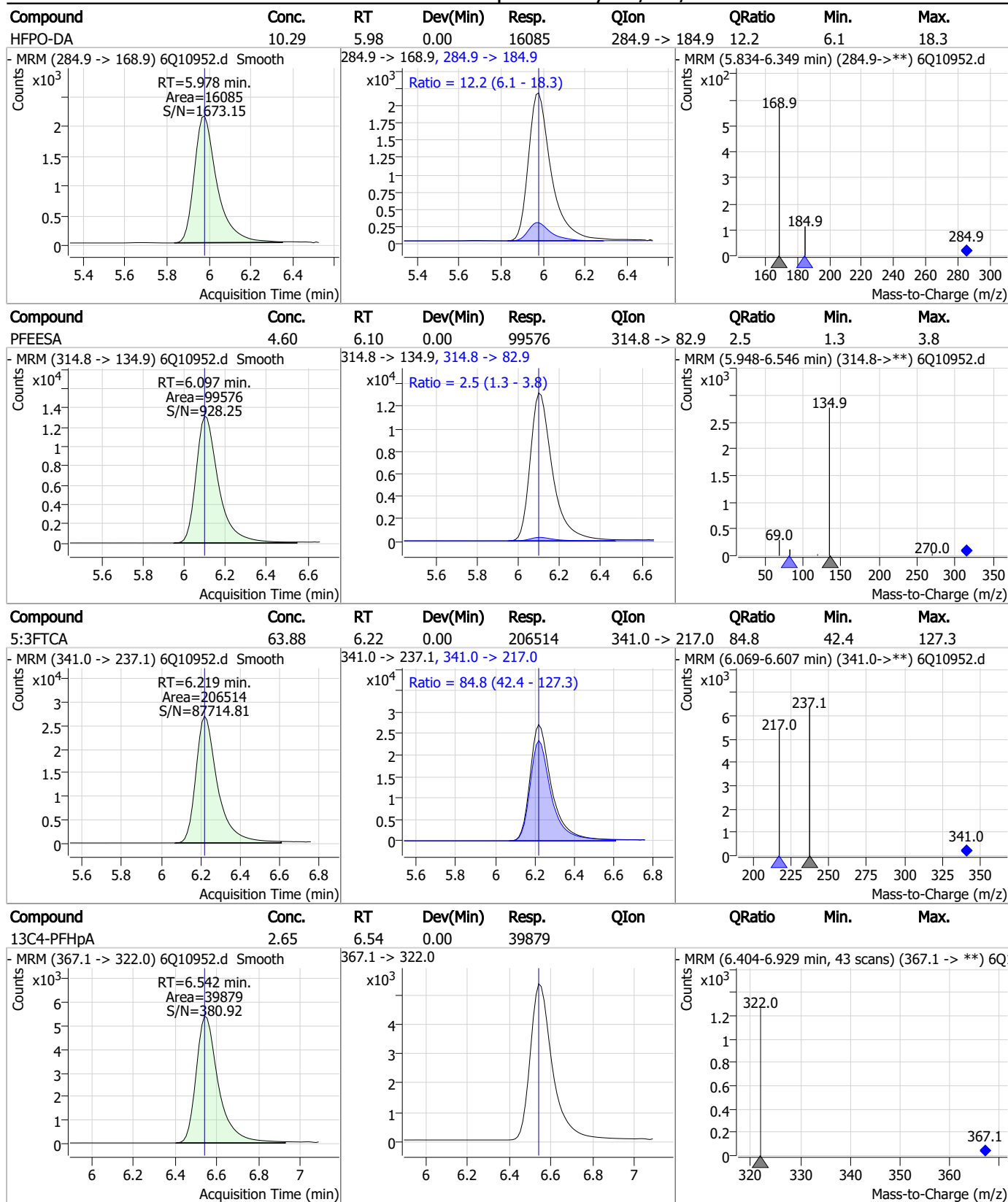
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.43	5.59	0.00	37734	313.0 -> 118.9	4.1	2.0	6.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.10	5.98	0.00	15461				

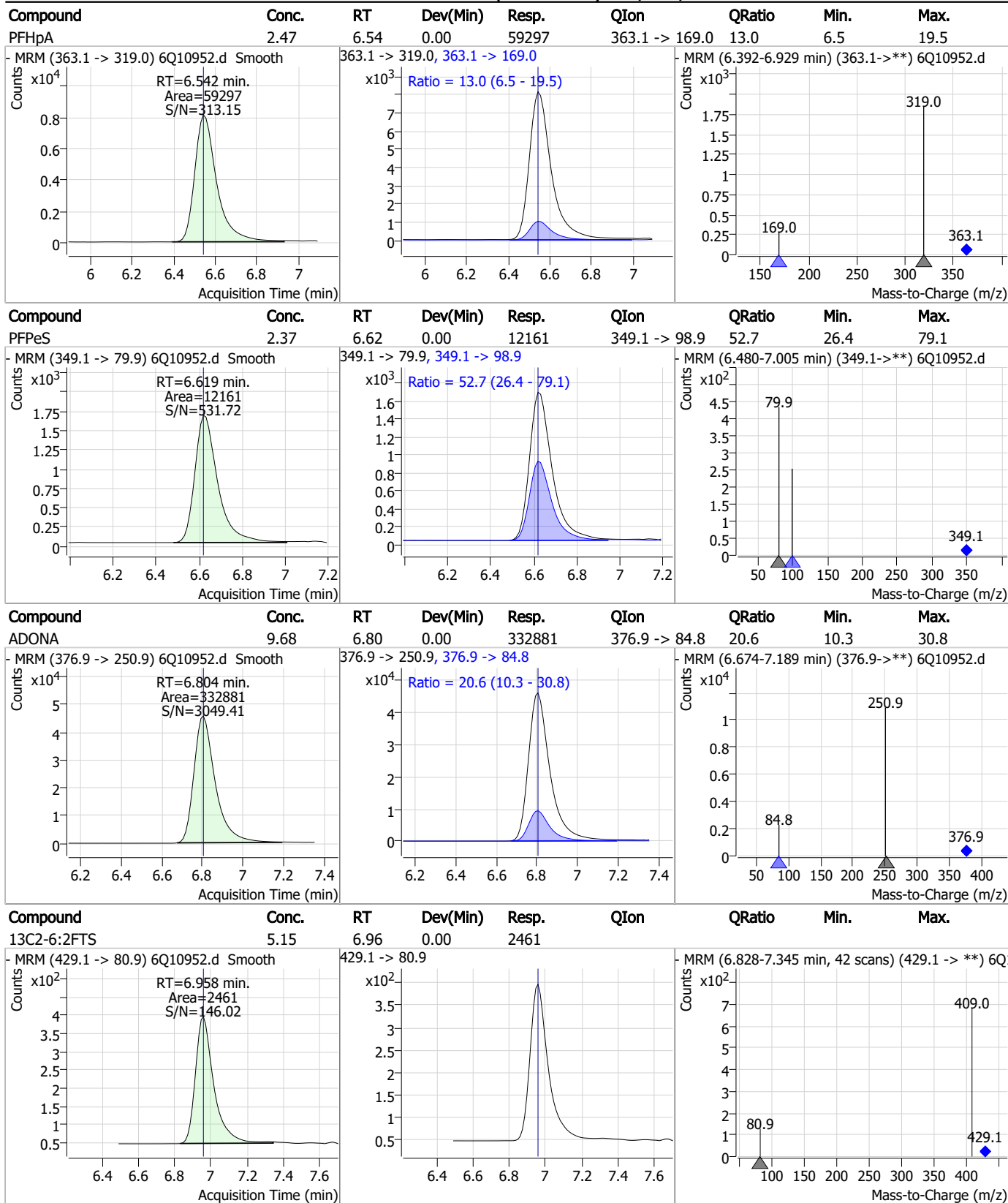


Perfluorinated Compounds by LC/MS/MS



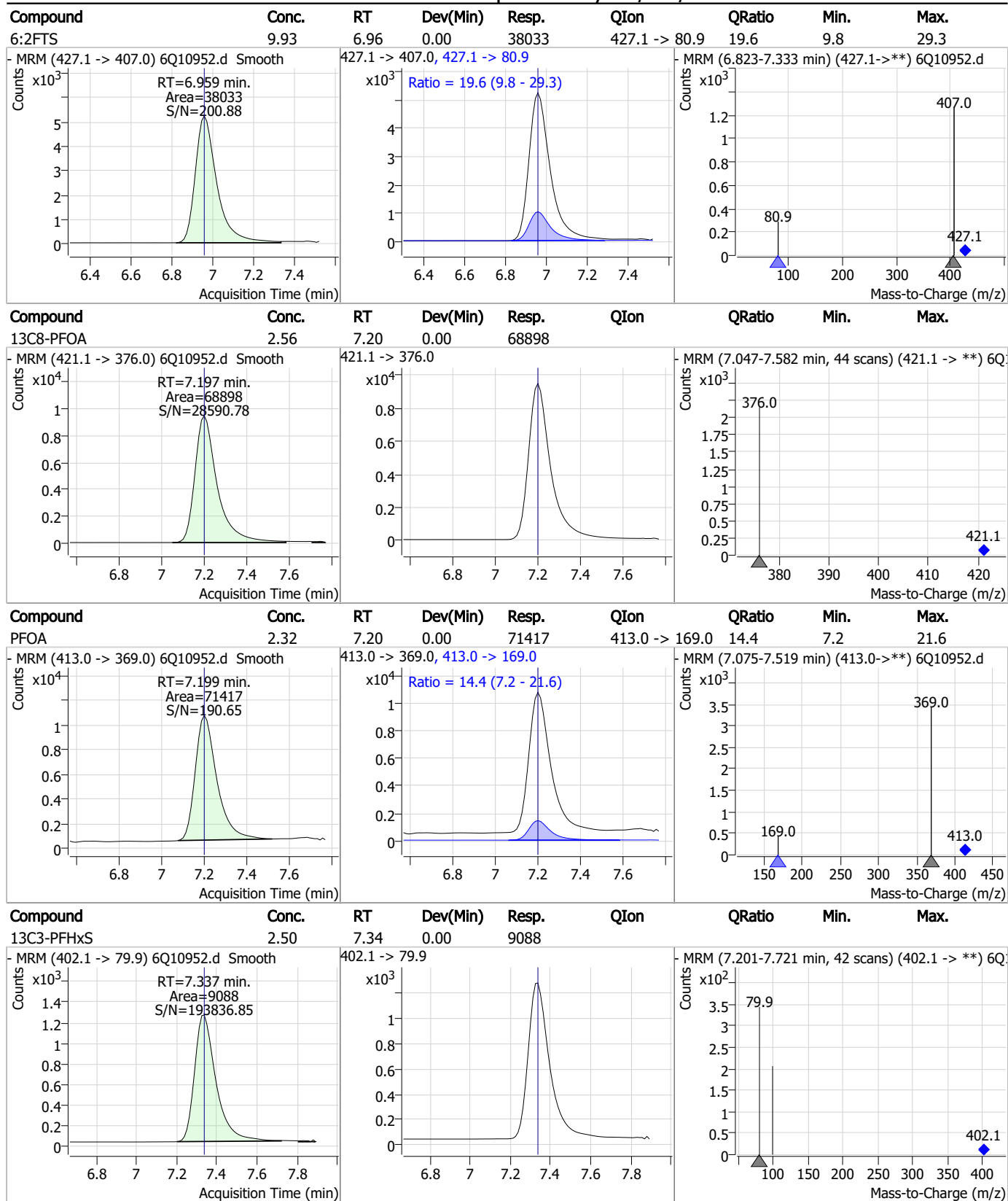
7.6.5
7

Perfluorinated Compounds by LC/MS/MS



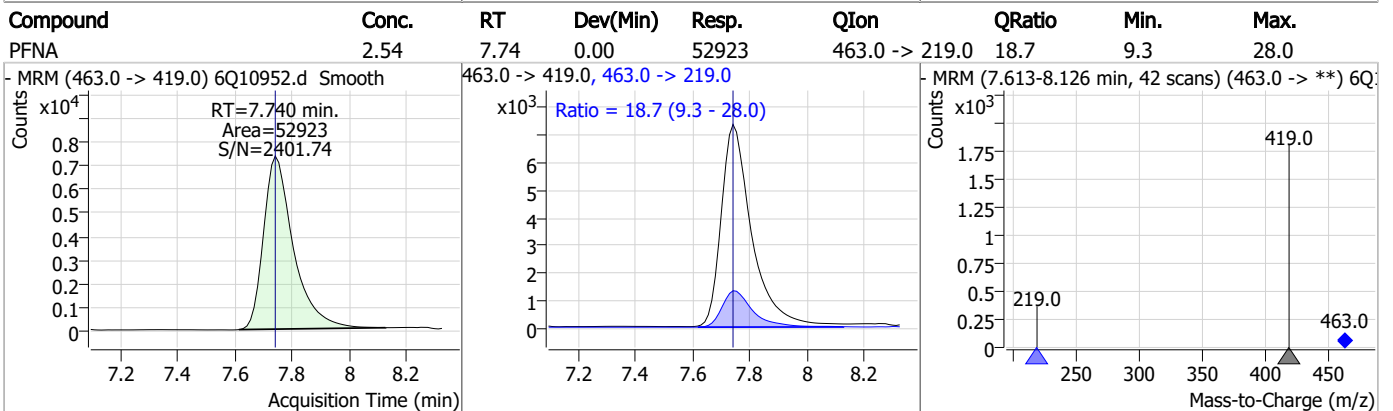
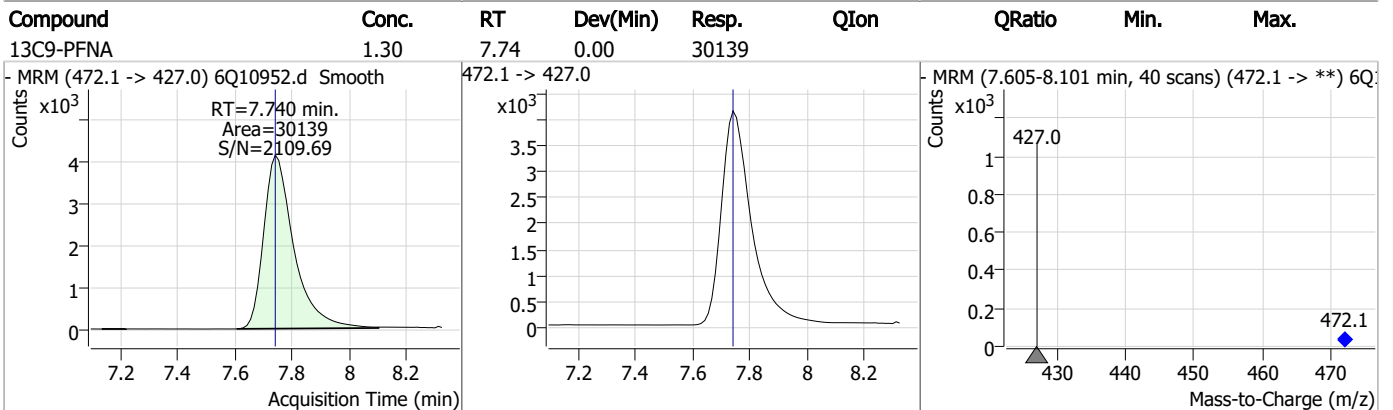
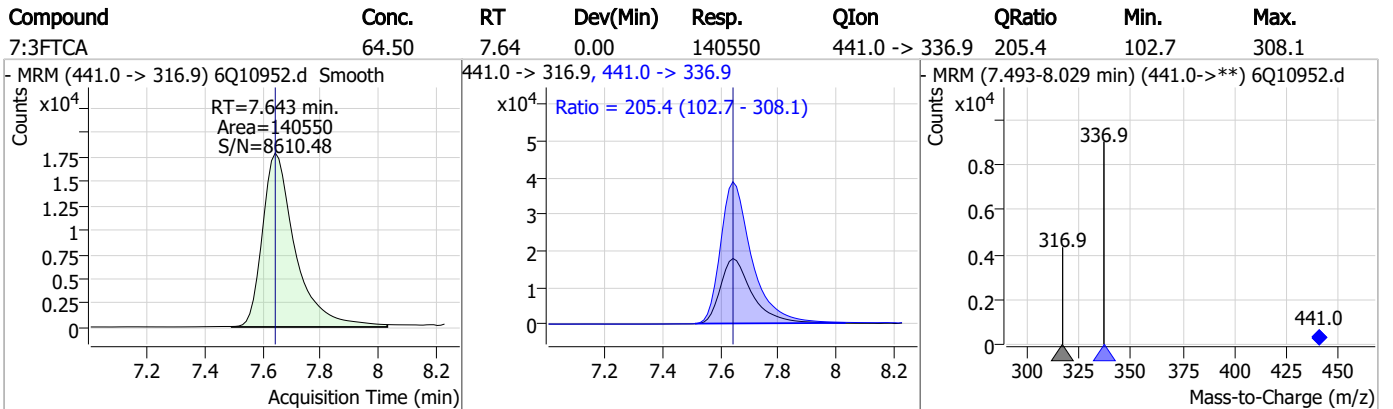
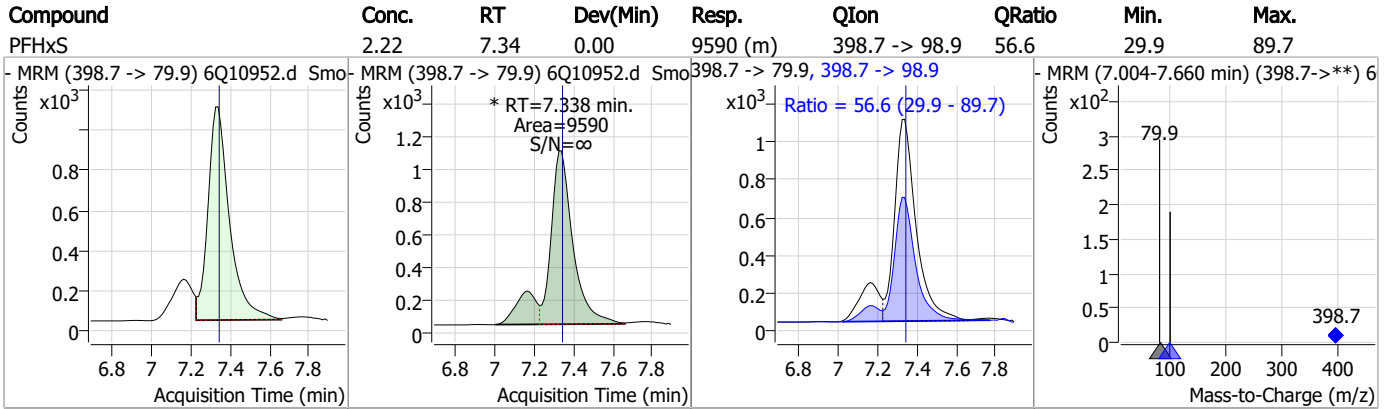
7.6.5
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Perfluorinated Compounds by LC/MS/MS



7.6.5
7

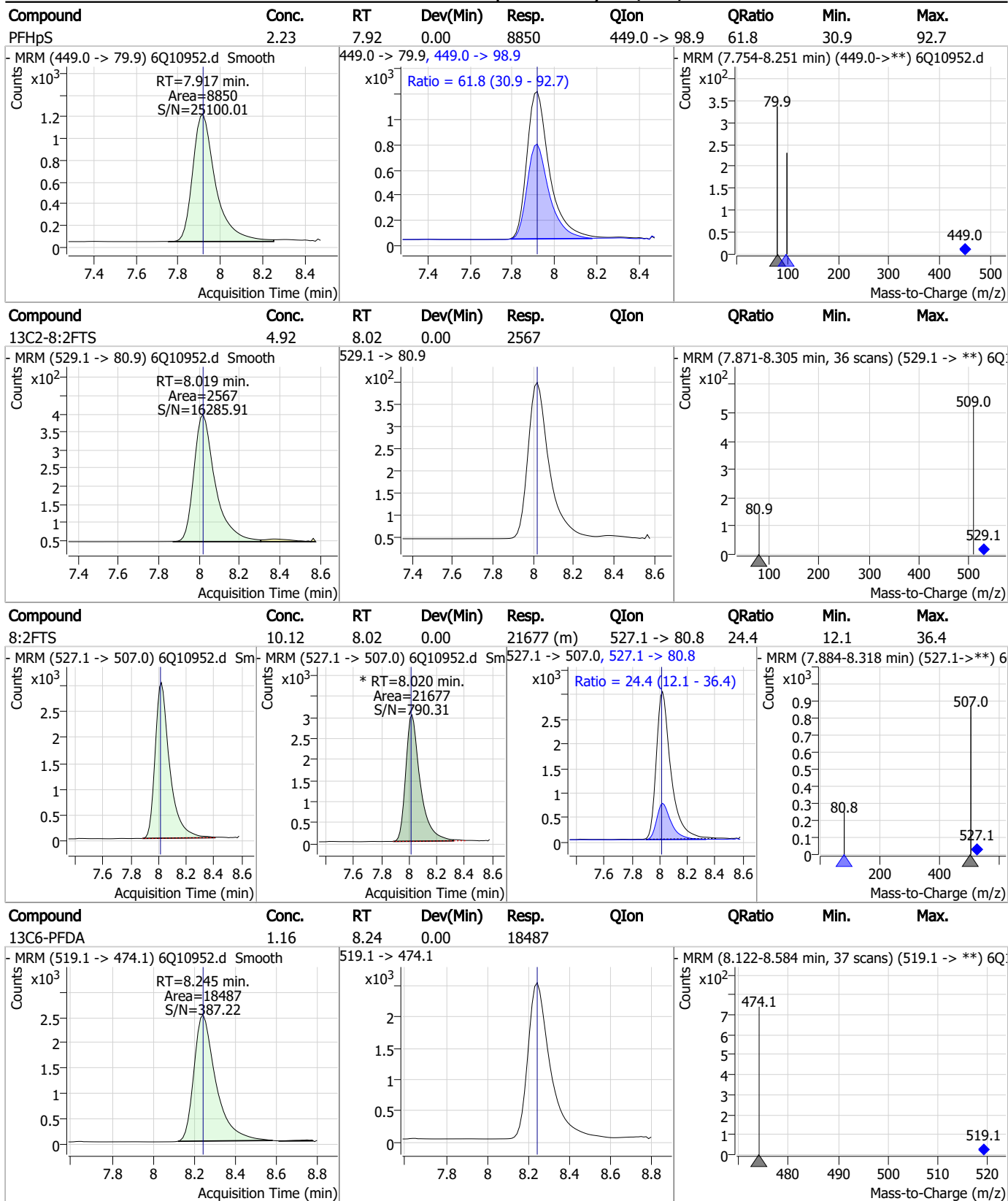
Perfluorinated Compounds by LC/MS/MS



7.6.5

7

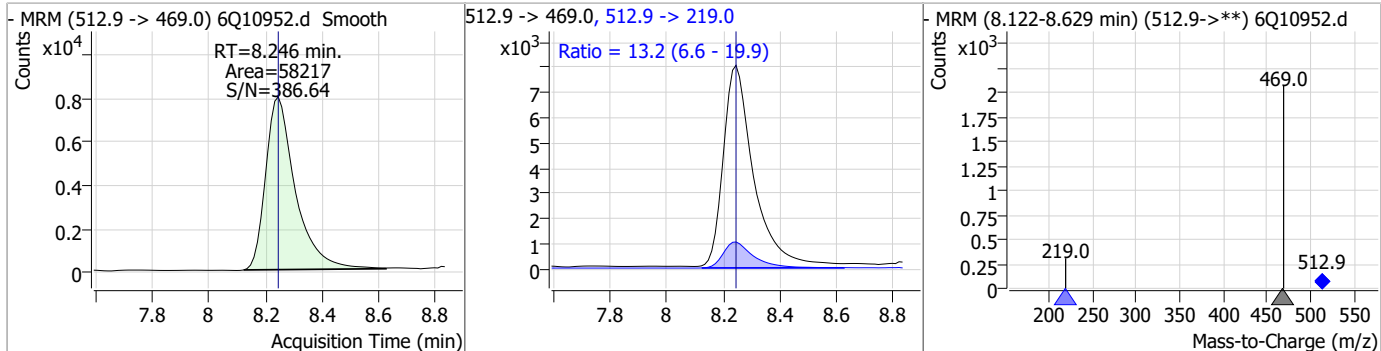
Perfluorinated Compounds by LC/MS/MS



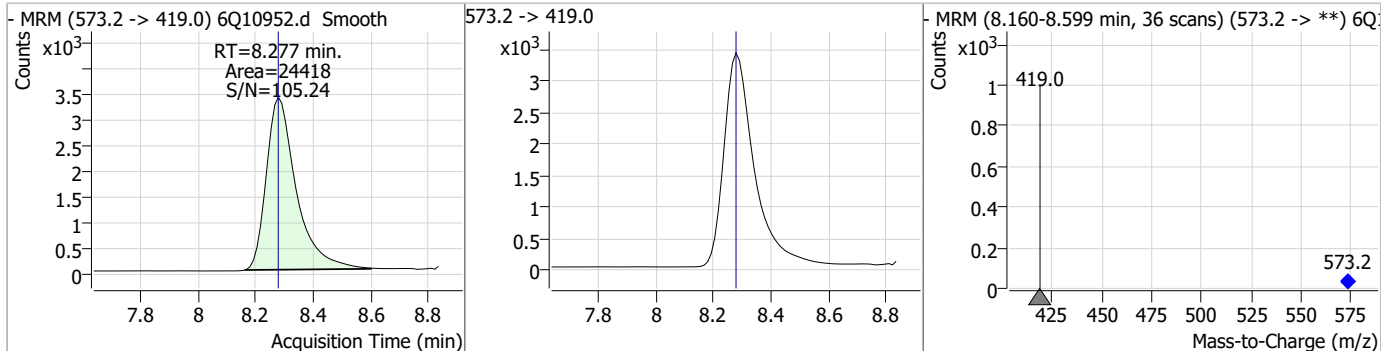
7.6.5
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Perfluorinated Compounds by LC/MS/MS

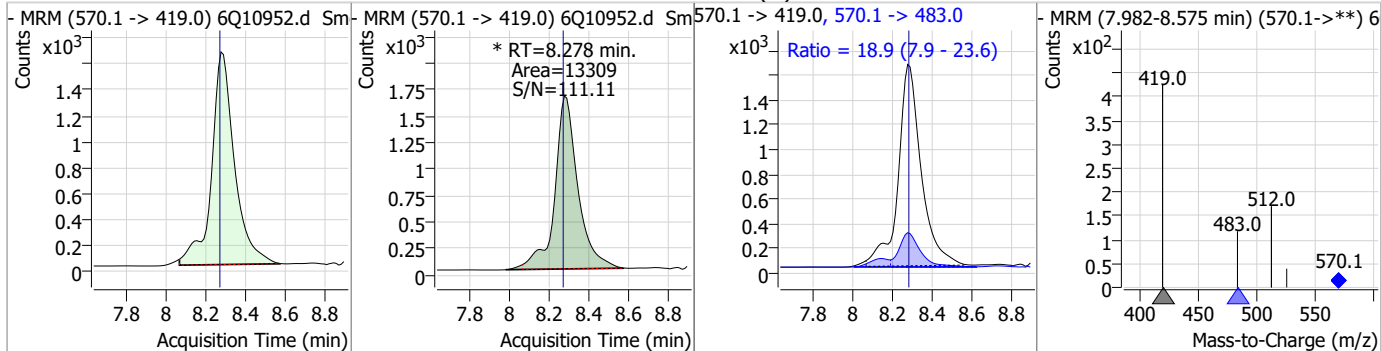
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.62	8.25	0.00	58217	512.9 -> 219.0	13.2	6.6	19.9



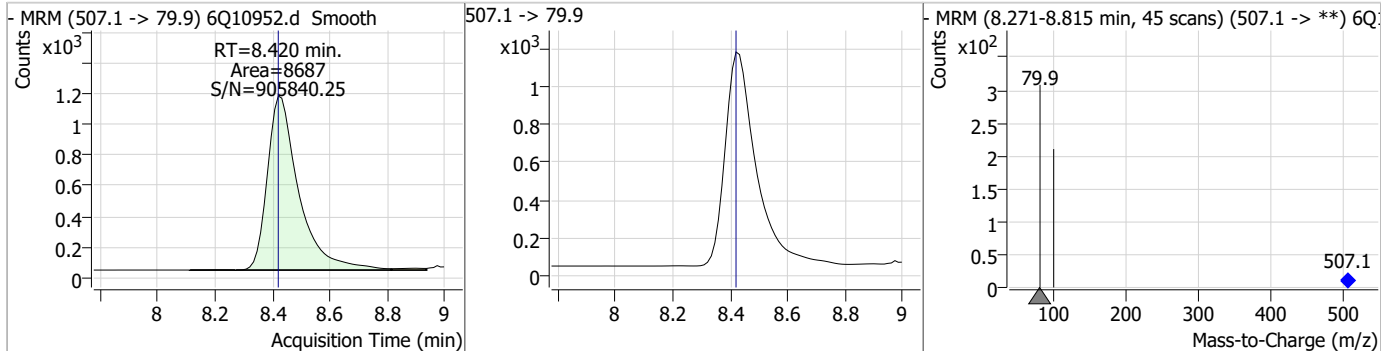
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.42	8.28	0.00	24418				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.64	8.28	0.00	13309 (m)	570.1 -> 483.0	18.9	7.9	23.6

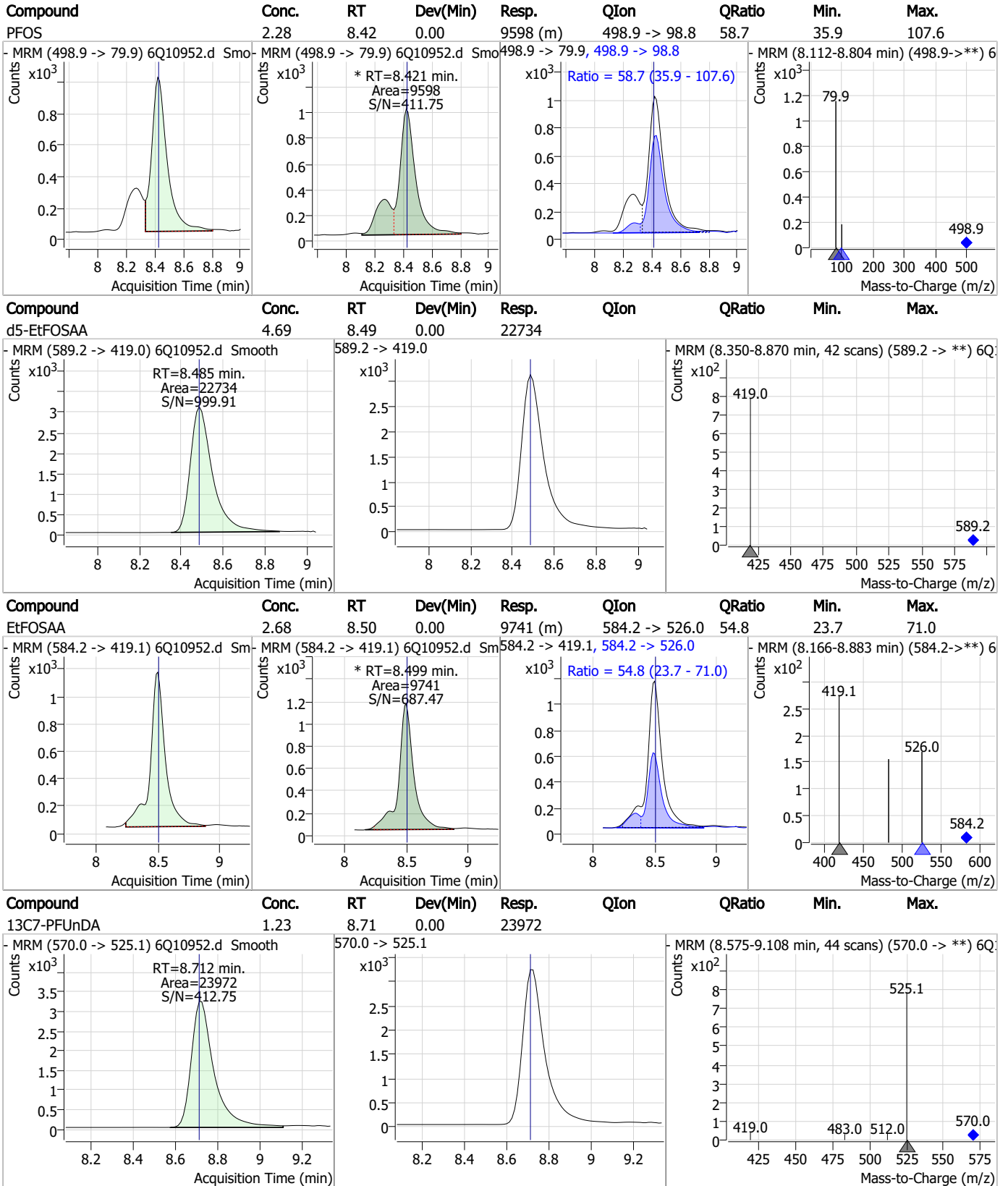


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.37	8.42	0.00	8687				



7.6.5
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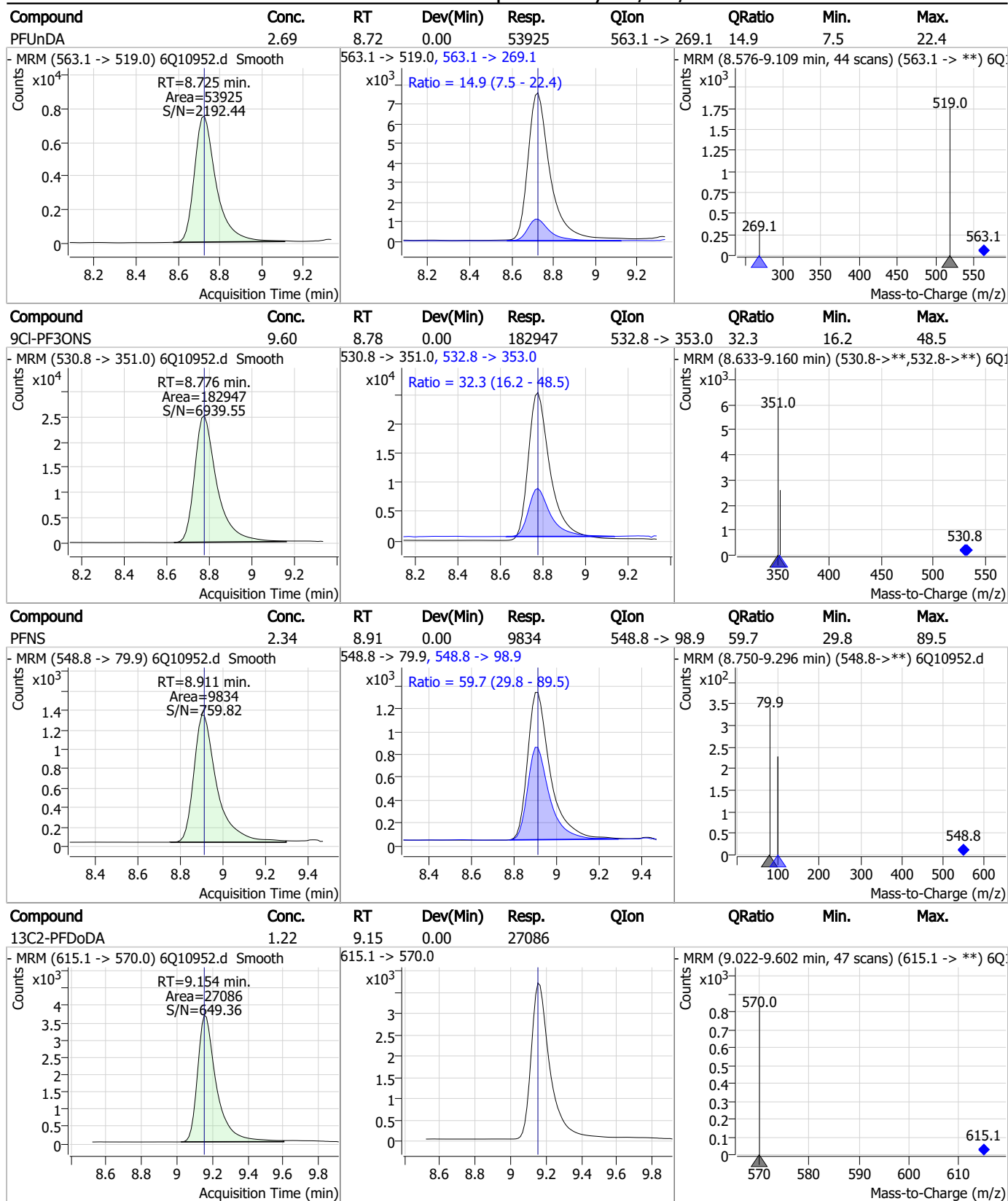
Perfluorinated Compounds by LC/MS/MS



7.6.5

7

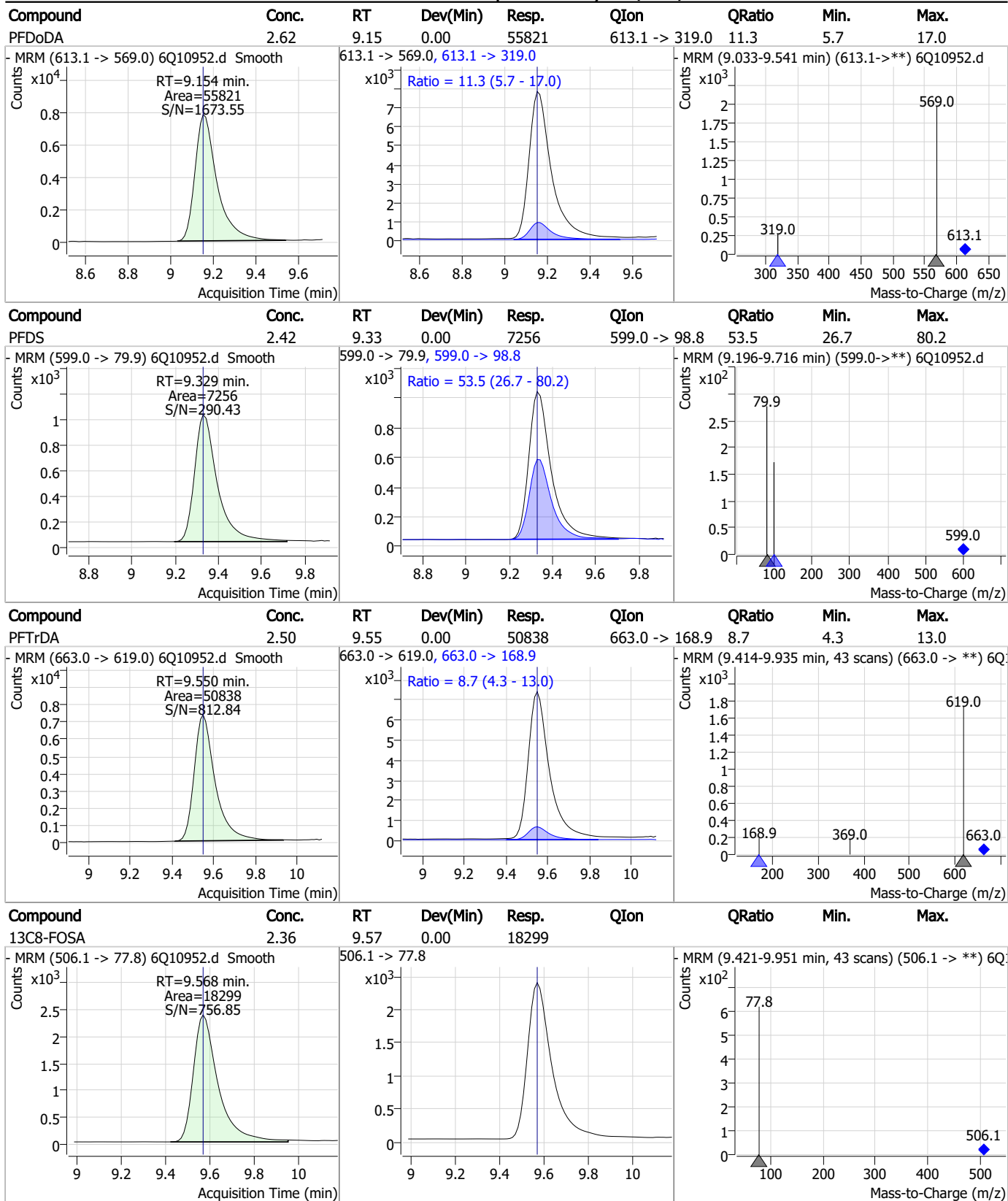
Perfluorinated Compounds by LC/MS/MS



7.6.5
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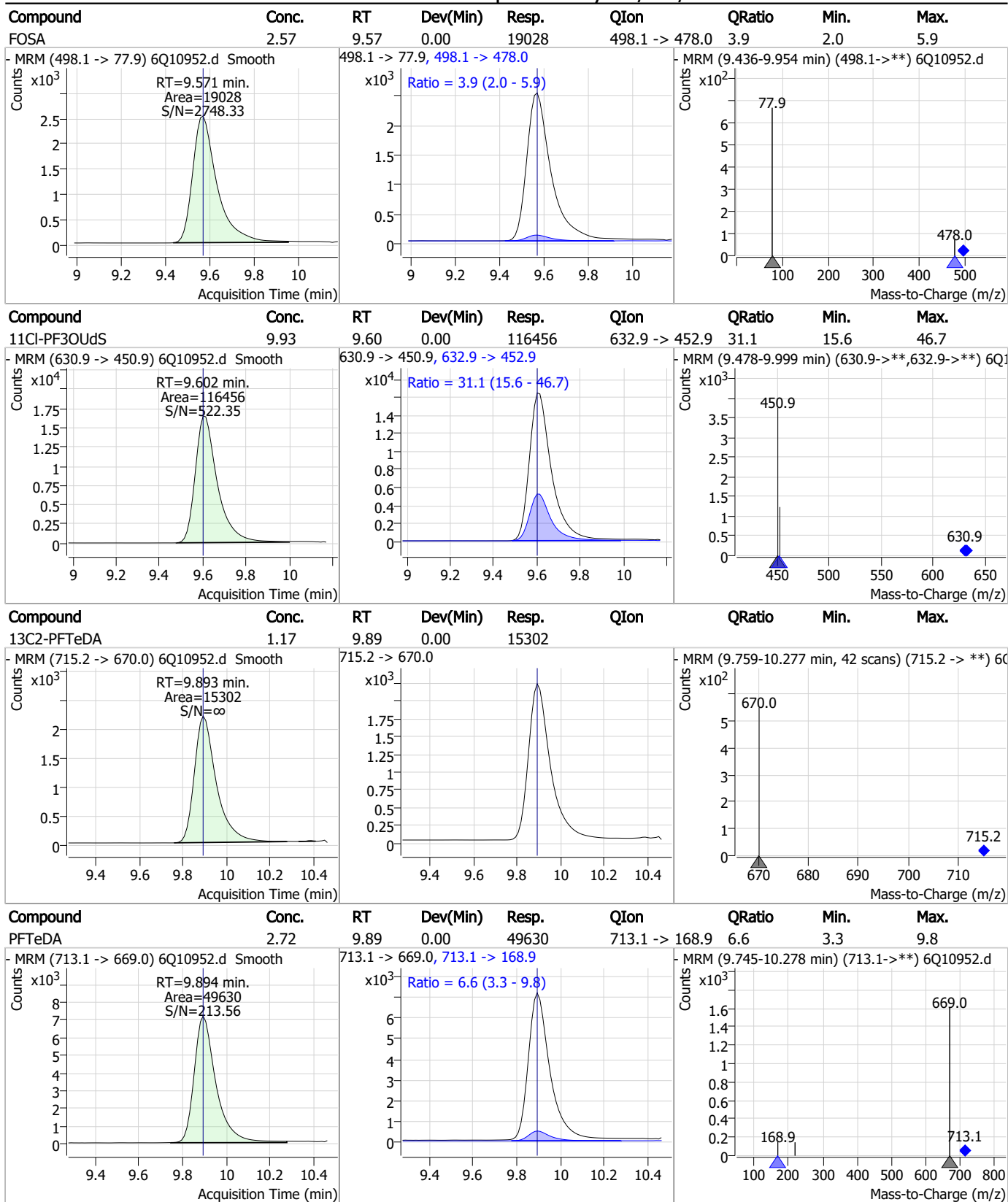


Perfluorinated Compounds by LC/MS/MS



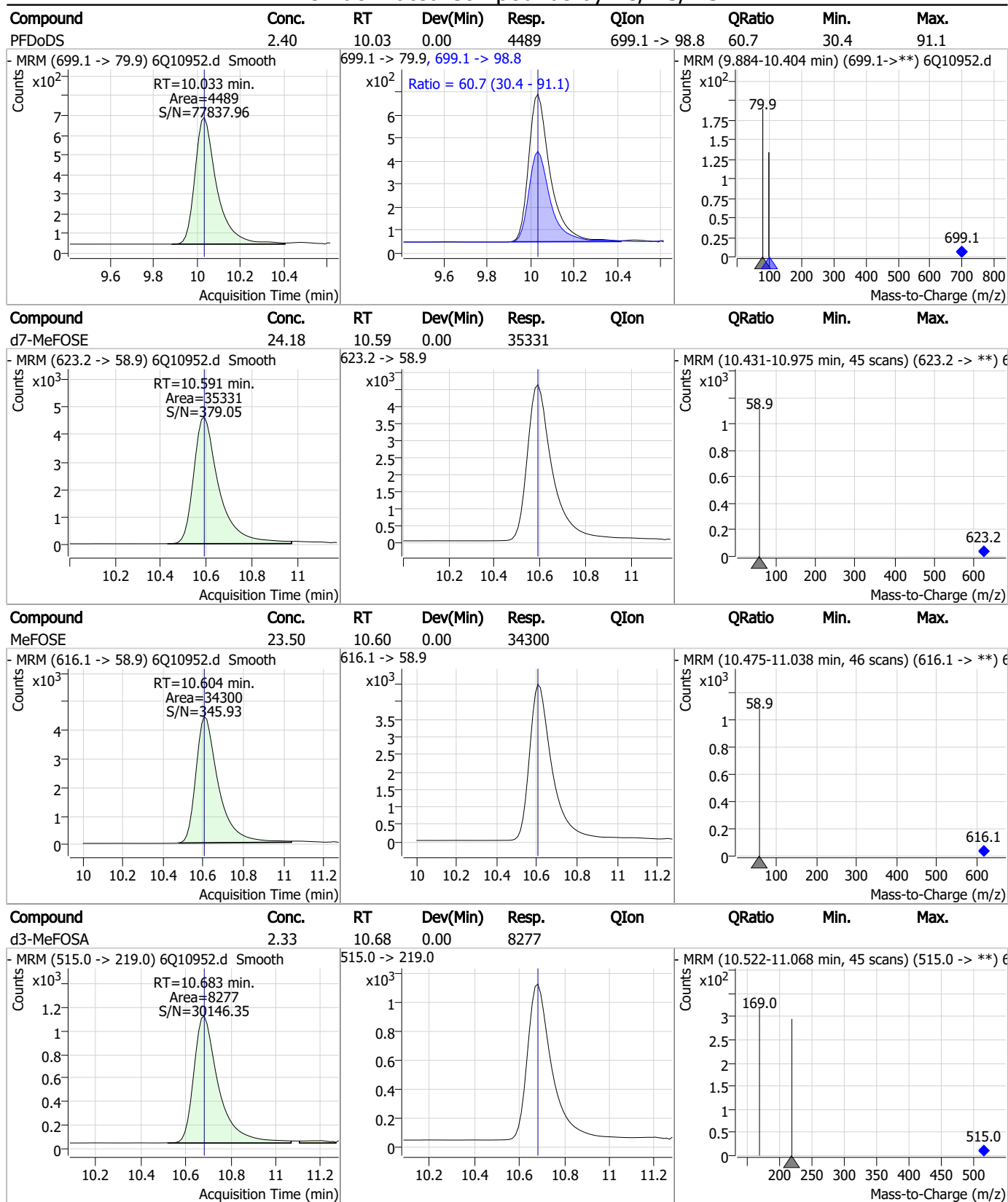
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Perfluorinated Compounds by LC/MS/MS



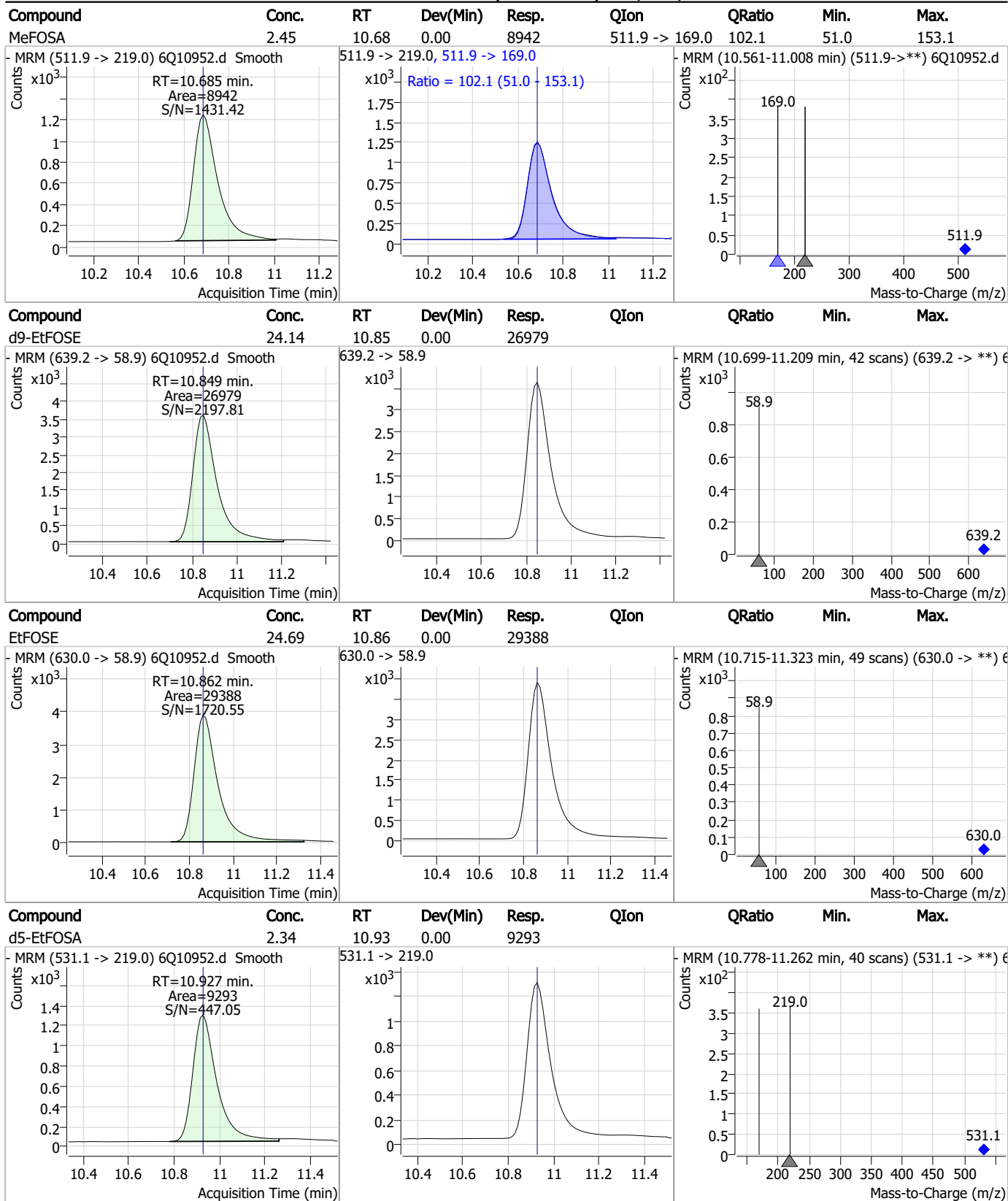
7.6.5
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Perfluorinated Compounds by LC/MS/MS



7.6.5
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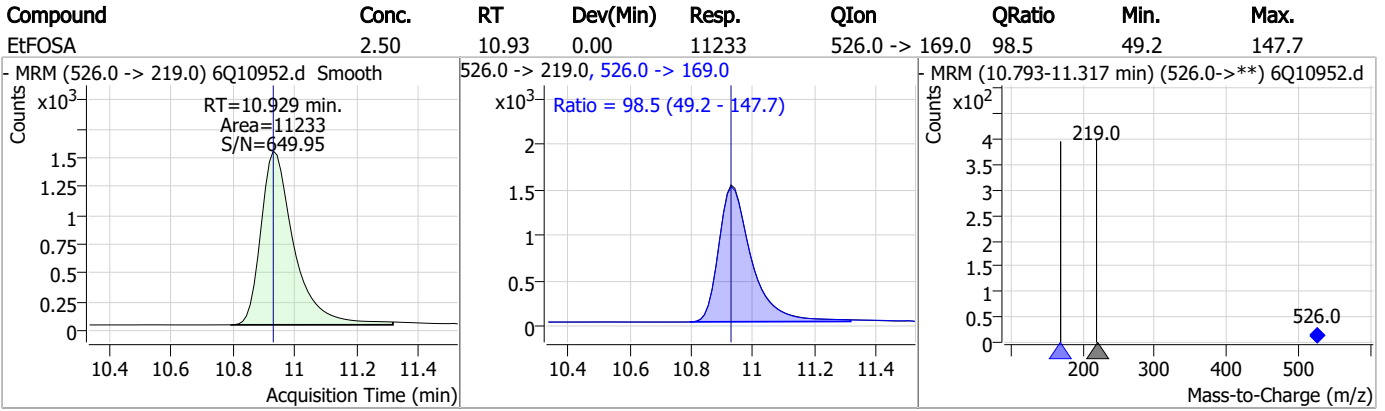
Perfluorinated Compounds by LC/MS/MS



7.6.5

7

Perfluorinated Compounds by LC/MS/MS



7.6.5

7



Manual Integration Approval Summary

Sample Number: S6Q174-ICC174 Method: EPA DRAFT 1633
Lab FileID: 6Q10952.D Analyst approved: 01/12/23 11:46 Martha Valls
Injection Time: 01/11/23 12:32 Supervisor approved: 01/12/23 15:42 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.34	Split peak
8:2 Fluorotelomer sulfonate	39108-34-4		8.02	Split peak
MeFOSAA	2355-31-9		8.28	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.42	Split peak
EtFOSAA	2991-50-6		8.50	Split peak

7.6.5.1
7

Manual Integrations
APPROVED
 (compounds with "m" flag)

Natasha Gumtje
 01/12/23 15:42

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q10953.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/11/2023 12:46:21 PM
 Sample Name : ic174-5
 Vial : P1-A6
 DA Method File : 1633_011123_S6Q174.quantmethod.xml
 Batch Name : S6Q174.batch.bin
 Sample Information : OP94795,S6Q174,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.000	216.8 -> 171.9	94150	10.00 µg/L	0.000
M5-PFPeA	4.397	268.3 -> 223.0	45048	5.00 µg/L	0.000
M5-PFHxA	5.588	318.0 -> 273.0	39977	2.50 µg/L	0.000
M4-PFHpA	6.542	367.1 -> 322.0	41152	2.50 µg/L	0.000
M8-PFOA	7.197	421.1 -> 376.0	69424	2.50 µg/L	0.000
M9-PFNA	7.740	472.1 -> 427.0	29894	1.25 µg/L	0.000
M6-PFDA	8.245	519.1 -> 474.1	19962	1.25 µg/L	0.000
M7-PFUnDA	8.724	570.0 -> 525.1	26040	1.25 µg/L	0.012
M2-PFDoDA	9.166	615.1 -> 570.0	28150	1.25 µg/L	0.012
M2-PFTeDA	9.893	715.2 -> 670.0	16692	1.25 µg/L	0.000
M8-FOSA	9.568	506.1 -> 77.8	20003	2.50 µg/L	0.000
M3-PFBS	5.544	302.1 -> 79.9	14919	2.50 µg/L	-0.012
M3-PFHxS	7.337	402.1 -> 79.9	10110	2.50 µg/L	0.000
M8-PFOS	8.420	507.1 -> 79.9	9393	2.50 µg/L	0.000
M2-4:2FTS	5.253	329.1 -> 80.9	1970	5.00 µg/L	0.000
M2-6:2FTS	6.958	429.1 -> 80.9	2535	5.00 µg/L	0.000
M2-8:2FTS	8.019	529.1 -> 80.9	2748	5.00 µg/L	0.000
M3-MeFOSAA	8.277	573.2 -> 419.0	27474	5.00 µg/L	0.000
M3-HFPO-DA	5.978	286.9 -> 168.9	16179	10.00 µg/L	0.000
M5-EtFOSAA	8.485	589.2 -> 419.0	24744	5.00 µg/L	0.000
M7-MeFOSE	10.591	623.2 -> 58.9	34960	25.00 µg/L	0.000
M9-EtFOSE	10.849	639.2 -> 58.9	27281	25.00 µg/L	0.000
M5-EtFOSA	10.927	531.1 -> 219.0	10233	2.50 µg/L	0.000
M3-MeFOSA	10.683	515.0 -> 219.0	8716	2.50 µg/L	0.000
13C4-PFOS	8.421	502.8 -> 79.9	11377	2.50 µg/L	0.000
13C3-PFBA	2.991	216.0 -> 172.0	41316	5.00 µg/L	-0.012
18O2-PFHxS	7.336	403.0 -> 83.9	7205	2.50 µg/L	0.000
13C4-PFOA	7.198	417.1 -> 372.0	83477	2.50 µg/L	0.000
13C2-PFDA	8.245	515.1 -> 470.1	33376	1.25 µg/L	0.000
13C5-PFNA	7.740	468.0 -> 423.0	36374	1.25 µg/L	0.000
13C2-PFHxA	5.589	315.1 -> 270.0	38127	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.253	329.1 -> 80.9	1970	5.24 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.8%		
13C2-6:2FTS	6.958	429.1 -> 80.9	2535	4.93 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.5%		
13C2-8:2FTS	8.019	529.1 -> 80.9	2748	4.89 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.8%		
13C2-PFDoDA	9.166	615.1 -> 570.0	28150	1.06 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 85.1%		
13C2-PFTeDA	9.893	715.2 -> 670.0	16692	1.07 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 85.9%		
13C3-PFBS	5.544	302.1 -> 79.9	14919	2.47 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.8%		
13C3-PFHxS	7.337	402.1 -> 79.9	10110	2.58 µg/L	0.000

7.6.6
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 = 103.4%		
13C4-PFBA	3.000	216.8 -> 171.9	94150	9.98 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 99.8%		
13C4-PFHpA	6.542	367.1 -> 322.0	41152	2.66 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 106.5%		
13C5-PFHxA	5.588	318.0 -> 273.0	39977	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.5%		
13C5-PFPeA	4.397	268.3 -> 223.0	45048	5.30 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.9%		
13C6-PFDA	8.245	519.1 -> 474.1	19962	1.05 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 84.0%		
13C7-PFUnDA	8.724	570.0 -> 525.1	26040	1.12 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 89.8%		
13C8-FOSA	9.568	506.1 -> 77.8	20003	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.1%		
13C8-PFOA	7.197	421.1 -> 376.0	69424	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.3%		
13C8-PFOS	8.420	507.1 -> 79.9	9393	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.3%		
13C9-PFNA	7.740	472.1 -> 427.0	29894	1.16 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 92.5%		
d3-MeFOSAA	8.277	573.2 -> 419.0	27474	5.02 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.3%		
13C3-HFPO-DA	5.978	286.9 -> 168.9	16179	10.29 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 102.9%		
d3-MeFOSA	10.683	515.0 -> 219.0	8716	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.1%		
d5-EtFOSAA	8.485	589.2 -> 419.0	24744	5.15 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.0%		
d7-MeFOSE	10.591	623.2 -> 58.9	34960	24.14 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 96.6%		
d9-EtFOSE	10.849	639.2 -> 58.9	27281	24.63 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 98.5%		
d5-EtFOSA	10.927	531.1 -> 219.0	10233	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.9%		
Target Compounds					QValue
4:2FTS	5.254	327.1 -> 307.0	82074	17.52 µg/L	94
		327.1 -> 80.9	19218		
6:2FTS	6.959	427.1 -> 407.0	78105	19.80 µg/L	100
		427.1 -> 80.9	15219		
8:2FTS	8.020	527.1 -> 507.0	44933	19.60 µg/L	100
		527.1 -> 80.8	10977		
EtFOSAA	8.499	584.2 -> 419.1	18803	4.76 µg/L	m 89
		584.2 -> 526.0	10246		
FOSA	9.571	498.1 -> 77.9	39389	4.87 µg/L	100
		498.1 -> 478.0	1521		
MeFOSAA	8.278	570.1 -> 419.0	27530	4.86 µg/L	m 91
		570.1 -> 483.0	5396		
PFBA	2.994	212.8 -> 168.9	46897	19.42 µg/L	100
PFBS	5.557	298.7 -> 79.9	25909	4.29 µg/L	95
		298.7 -> 98.8	11639		
PFDA	8.246	512.9 -> 469.0	117743	4.91 µg/L	98
		512.9 -> 219.0	16304		
PFDoDA	9.166	613.1 -> 569.0	114786	5.18 µg/L	100
		613.1 -> 319.0	12770		
PFDS	9.329	599.0 -> 79.9	14697	4.53 µg/L	100

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	7896			
PFHpA	6.542	363.1 -> 319.0	123008	4.96	µg/L	98
		363.1 -> 169.0	17035			
PFHpS	7.905	449.0 -> 79.9	20211	4.70	µg/L	93
		449.0 -> 98.9	11344			
PFHxA	5.591	313.0 -> 269.0	77280	4.78	µg/L	99
		313.0 -> 118.9	2855			
PFHxS	7.338	398.7 -> 79.9	19825	4.12	µg/L	m 95
		398.7 -> 98.9	11095			
PFNA	7.740	463.0 -> 419.0	114716	5.55	µg/L	98
		463.0 -> 219.0	20540			
PFNS	8.911	548.8 -> 79.9	20466	4.51	µg/L	96
		548.8 -> 98.9	11640			
PFOA	7.199	413.0 -> 369.0	150226	4.84	µg/L	99
		413.0 -> 169.0	20789			
PFOS	8.421	498.9 -> 79.9	19890	4.37	µg/L	m 88
		498.9 -> 98.8	12261			
PFPeA	4.401	263.0 -> 219.0	97371	9.84	µg/L	100
PFPeS	6.619	349.1 -> 79.9	24385	4.28	µg/L	95
		349.1 -> 98.9	13640			
PFTeDA	9.894	713.1 -> 669.0	97104	4.88	µg/L	100
		713.1 -> 168.9	6268			
PFTrDA	9.550	663.0 -> 619.0	108770	5.15	µg/L	98
		663.0 -> 168.9	8646			
PFUnDA	8.725	563.1 -> 519.0	106630	4.90	µg/L	100
		563.1 -> 269.1	16033			
11CI-PF3OUdS	9.614	630.9 -> 450.9	245103	19.98	µg/L	97
		632.9 -> 452.9	71805			
9CI-PF3ONS	8.776	530.8 -> 351.0	374484	18.79	µg/L	97
		532.8 -> 353.0	115620			
ADONA	6.804	376.9 -> 250.9	710208	19.74	µg/L	99
		376.9 -> 84.8	141390			
HFPO-DA	5.978	284.9 -> 168.9	32539	19.89	µg/L	100
		284.9 -> 184.9	3971			
3:3FTCA	3.839	241.0 -> 177.0	12645	23.99	µg/L	99
		241.0 -> 117.0	1593			
5:3FTCA	6.219	341.0 -> 237.1	402418	119.79	µg/L	97
		341.0 -> 217.0	350627			
7:3FTCA	7.643	441.0 -> 316.9	288019	127.20	µg/L	99
		441.0 -> 336.9	585941			
EtFOSA	10.929	526.0 -> 219.0	23533	4.75	µg/L	97
		526.0 -> 169.0	22580			
EtFOSE	10.862	630.0 -> 58.9	60268	50.08	µg/L	100
MeFOSA	10.685	511.9 -> 219.0	18903	4.91	µg/L	99
		511.9 -> 169.0	19105			
MeFOSE	10.604	616.1 -> 58.9	75505	52.29	µg/L	100
PFDoDS	10.033	699.1 -> 79.9	9005	4.45	µg/L	92
		699.1 -> 98.8	6016			
NFDHA	5.483	295.0 -> 201.0	10350	9.88	µg/L	97
		295.0 -> 84.9	4312			
PFMBA	4.813	279.0 -> 85.1	29815	9.66	µg/L	100
PFMPA	3.550	229.0 -> 84.9	26558	9.70	µg/L	100
PFEESA	6.097	314.8 -> 134.9	208362	9.26	µg/L	100
		314.8 -> 82.9	5069			

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

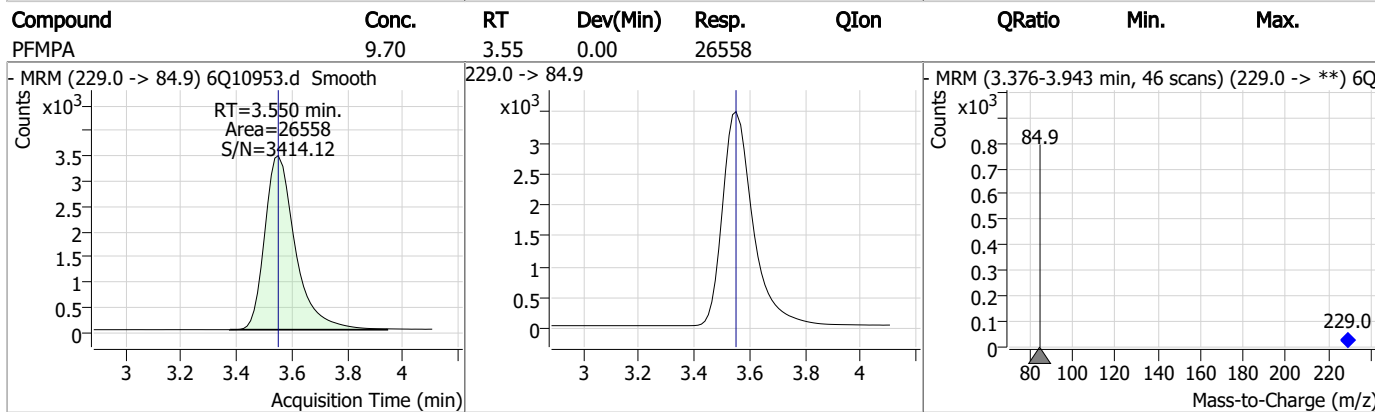
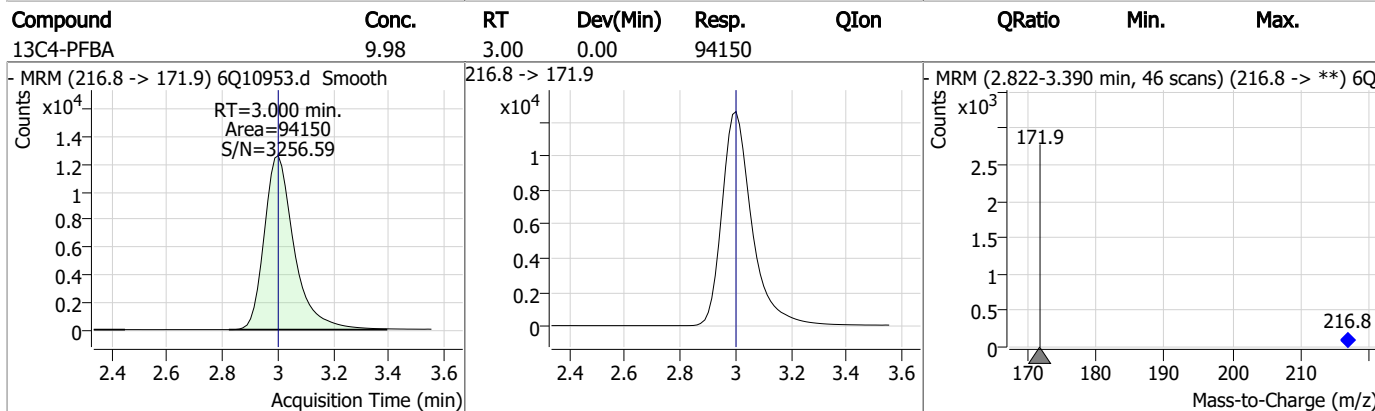
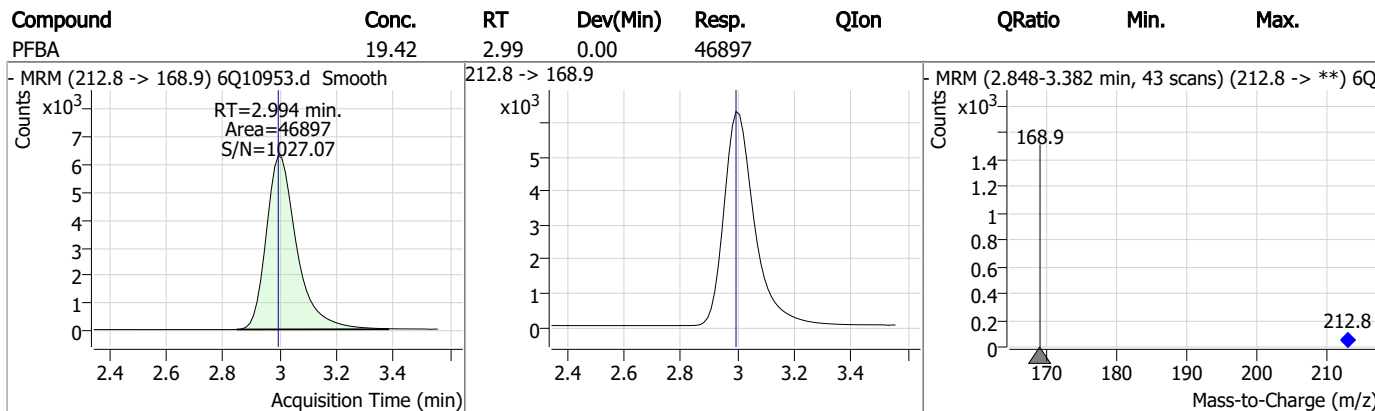
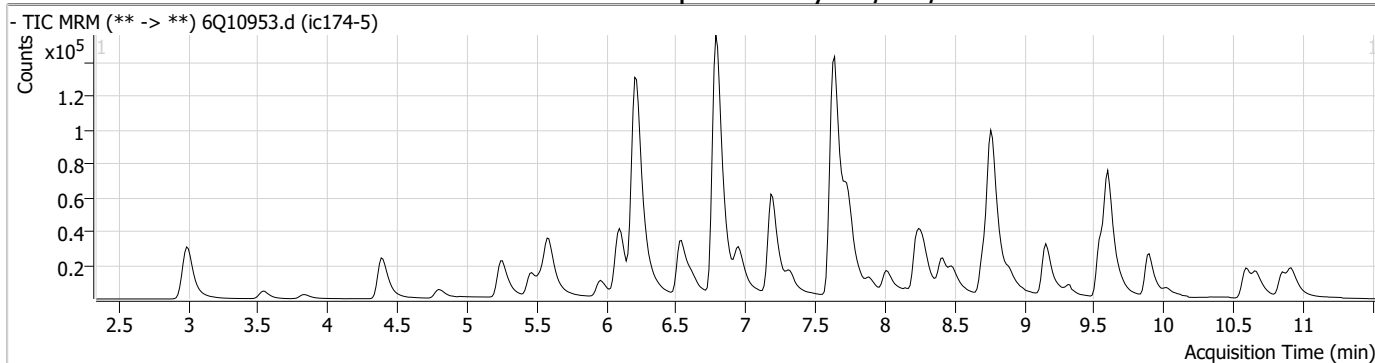
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.6.6

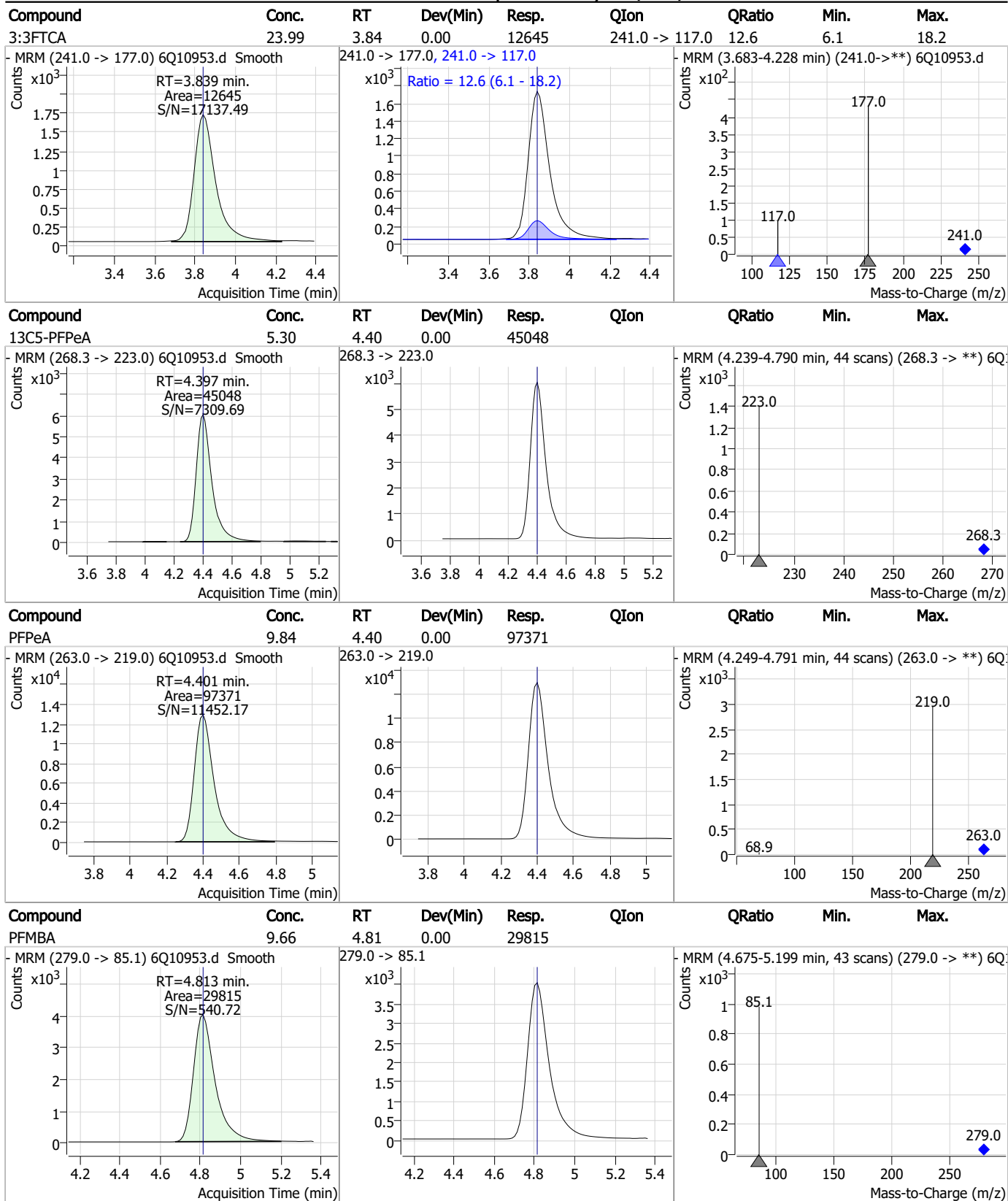
7

Perfluorinated Compounds by LC/MS/MS



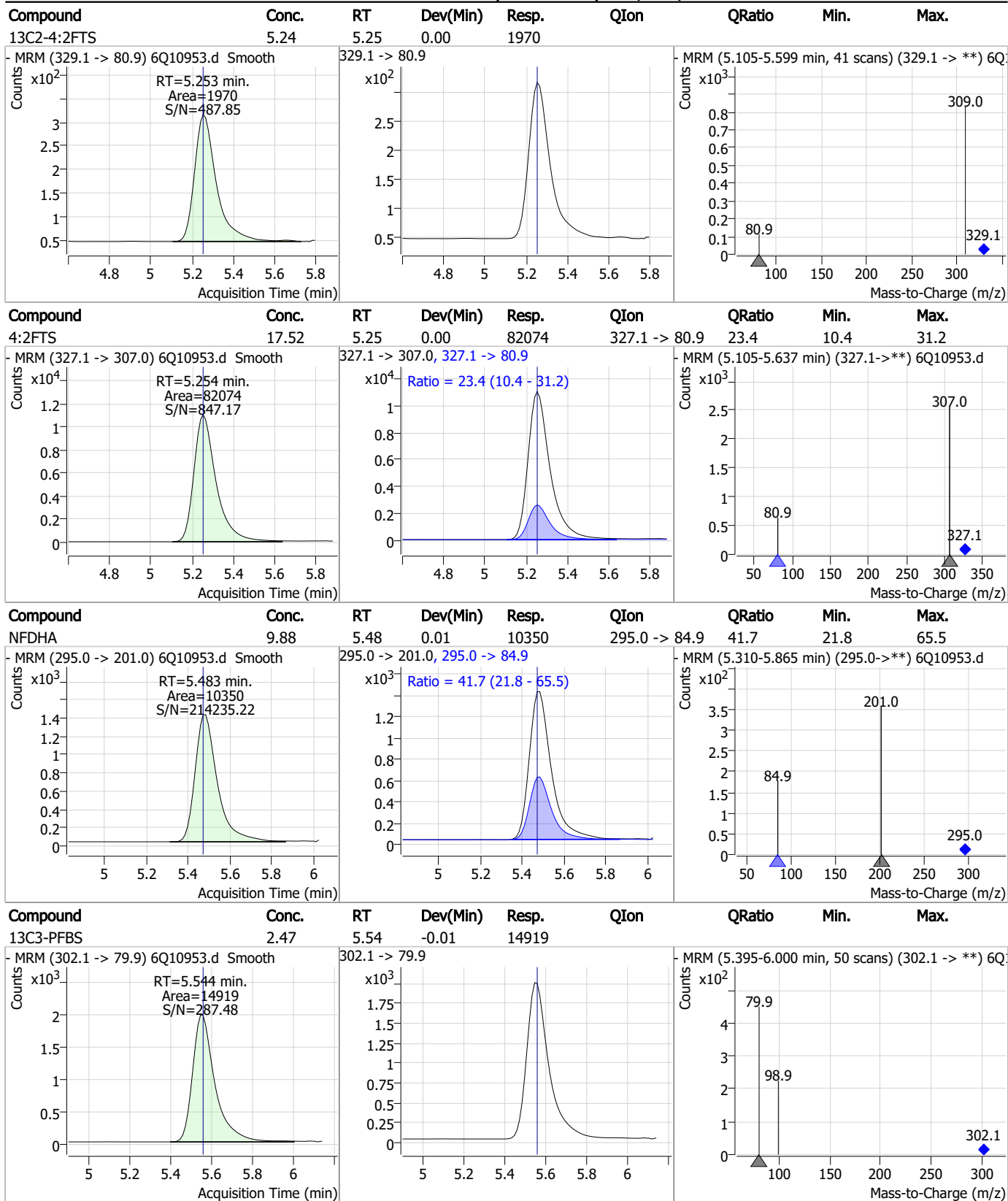
7.6.6
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Perfluorinated Compounds by LC/MS/MS



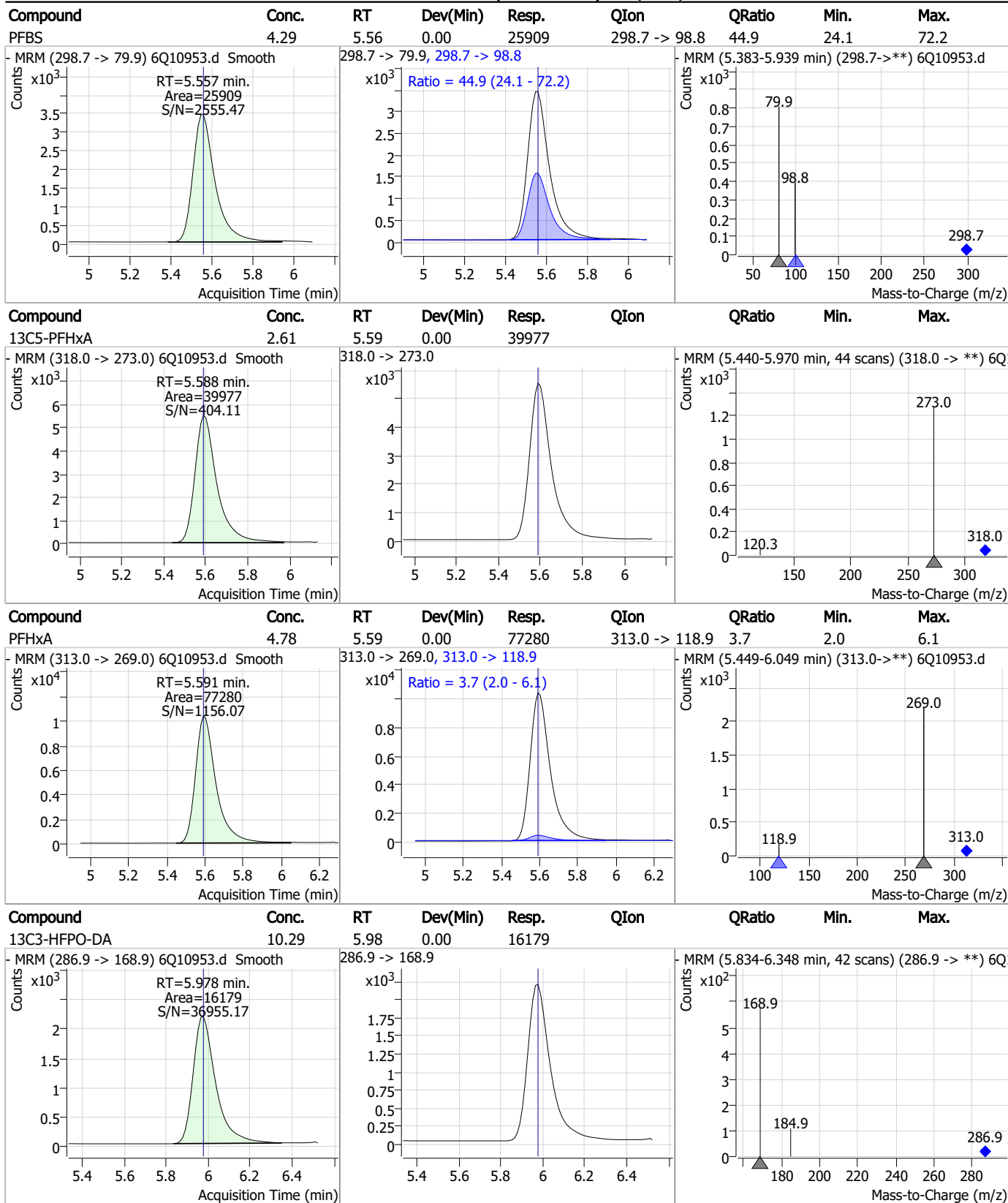
7.6.6
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Perfluorinated Compounds by LC/MS/MS



7.6.6
7

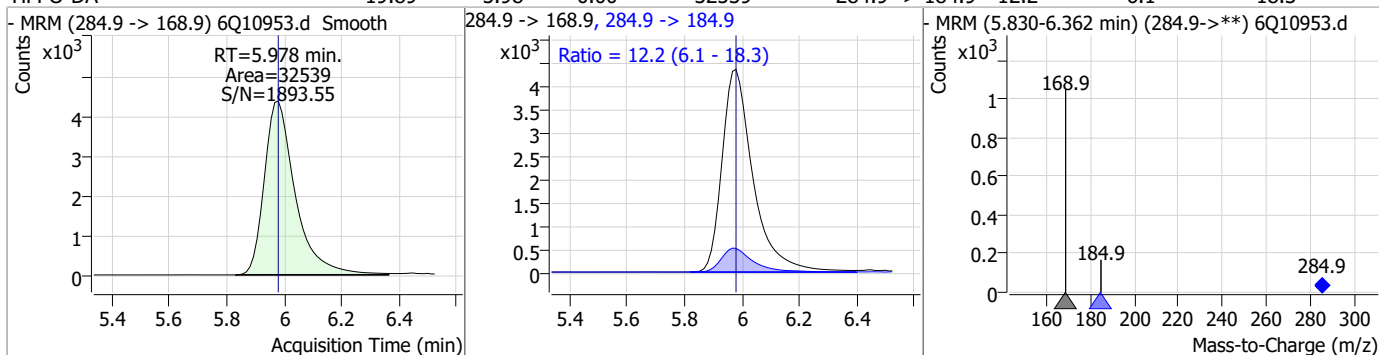
Perfluorinated Compounds by LC/MS/MS



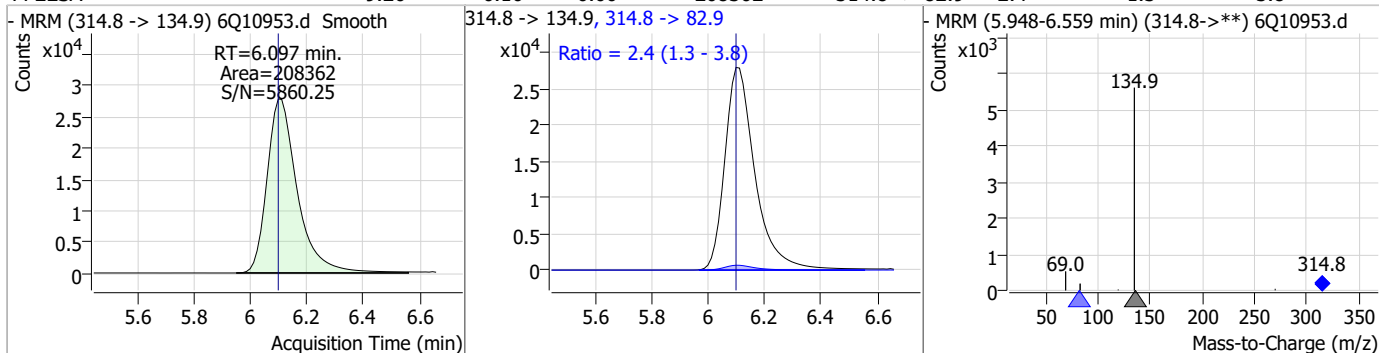
7.6.6
7

Perfluorinated Compounds by LC/MS/MS

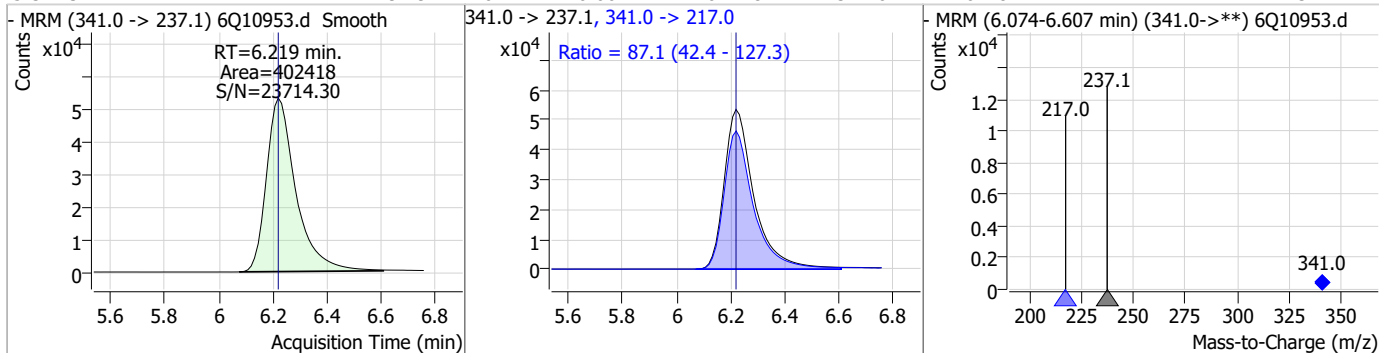
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	19.89	5.98	0.00	32539	284.9 -> 184.9	12.2	6.1	18.3



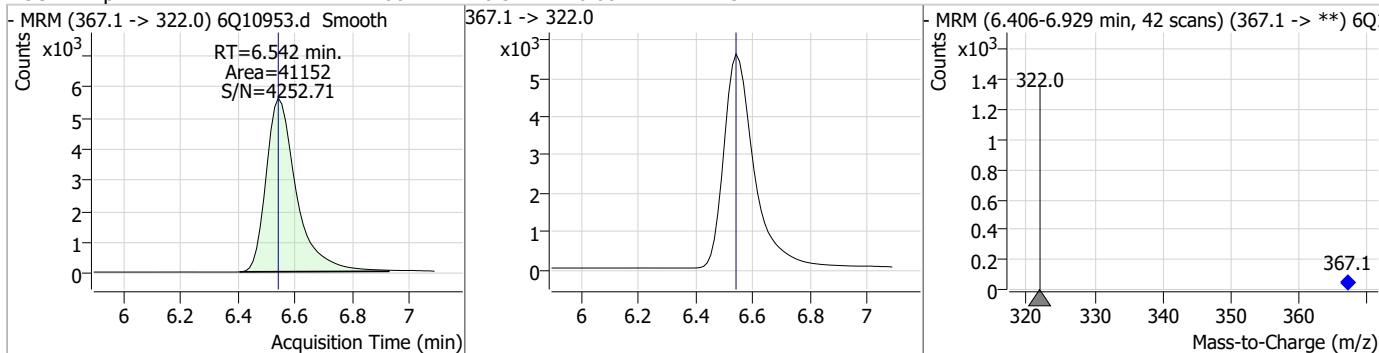
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	9.26	6.10	0.00	208362	314.8 -> 82.9	2.4	1.3	3.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	119.79	6.22	0.00	402418	341.0 -> 217.0	87.1	42.4	127.3

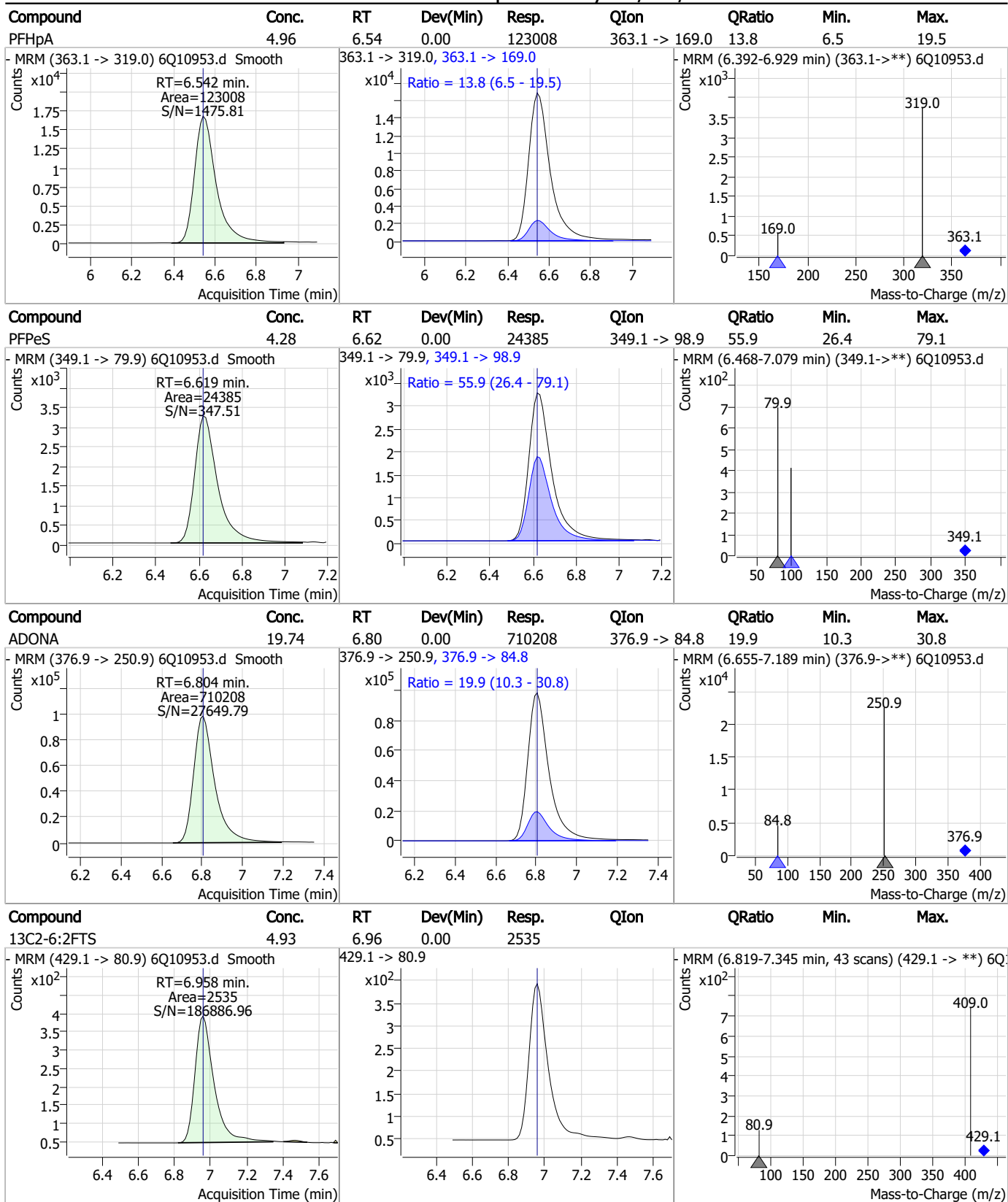


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.66	6.54	0.00	41152				



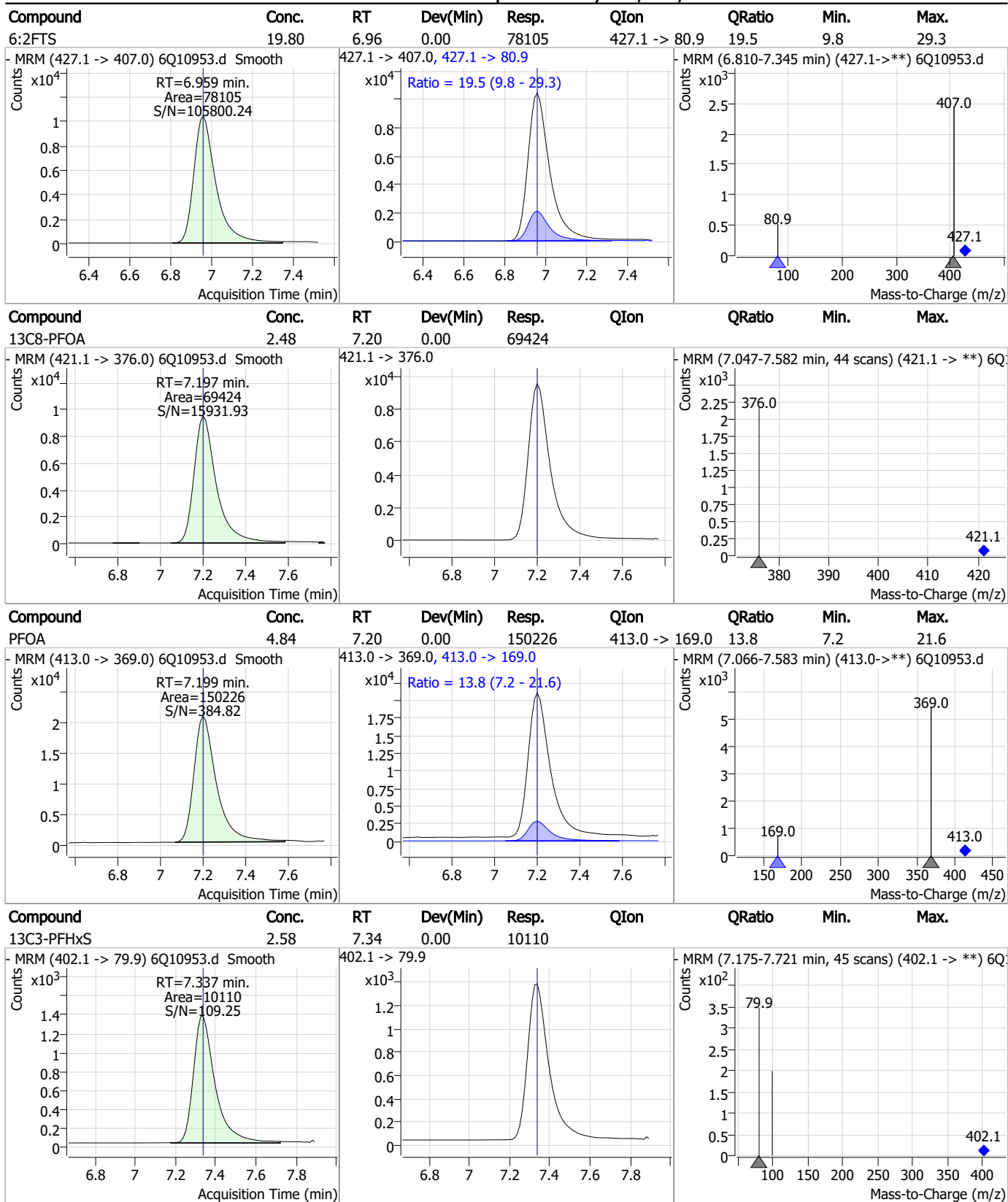
7.6.6
7

Perfluorinated Compounds by LC/MS/MS



7.6.6
7

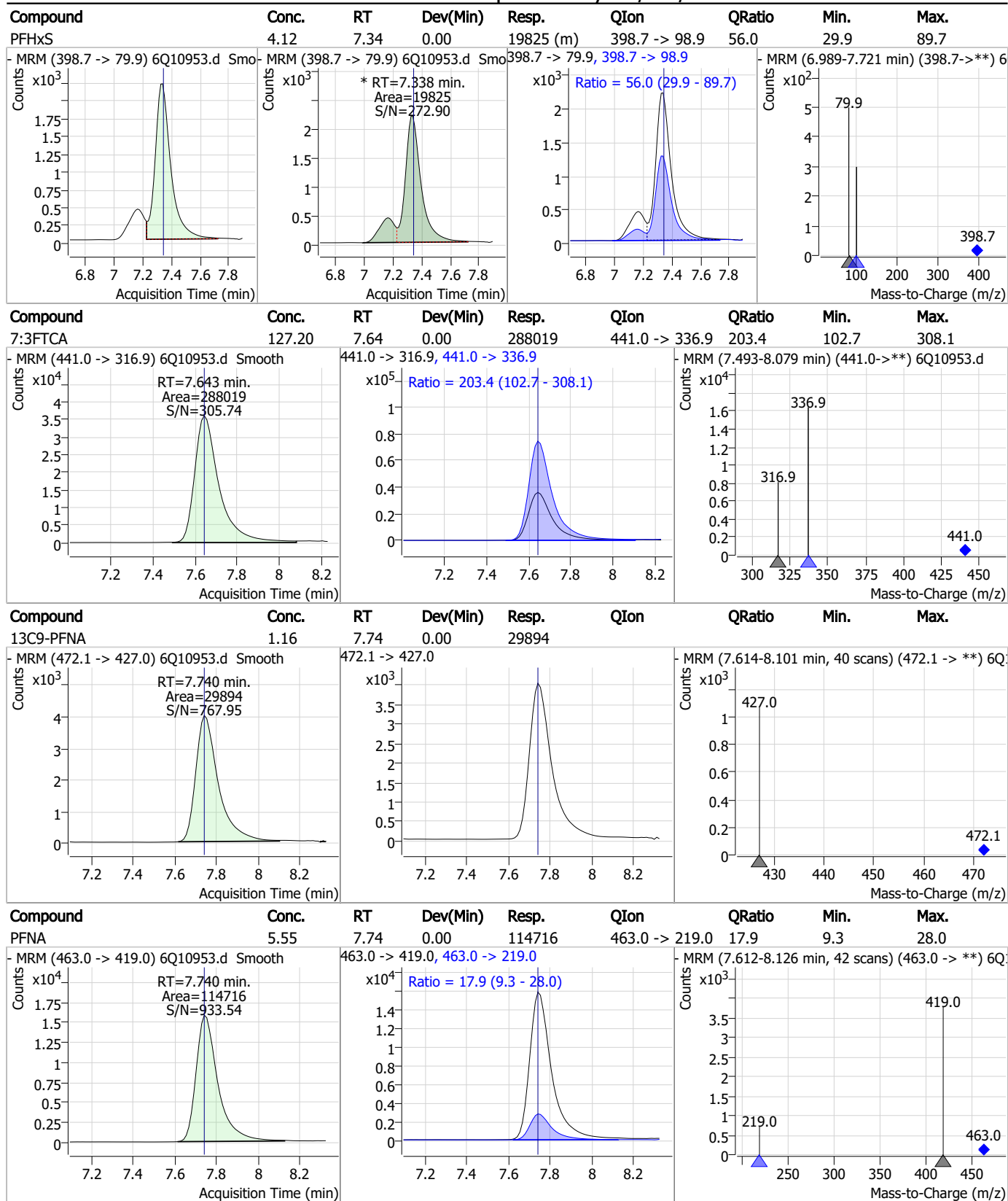
Perfluorinated Compounds by LC/MS/MS



7.6.6

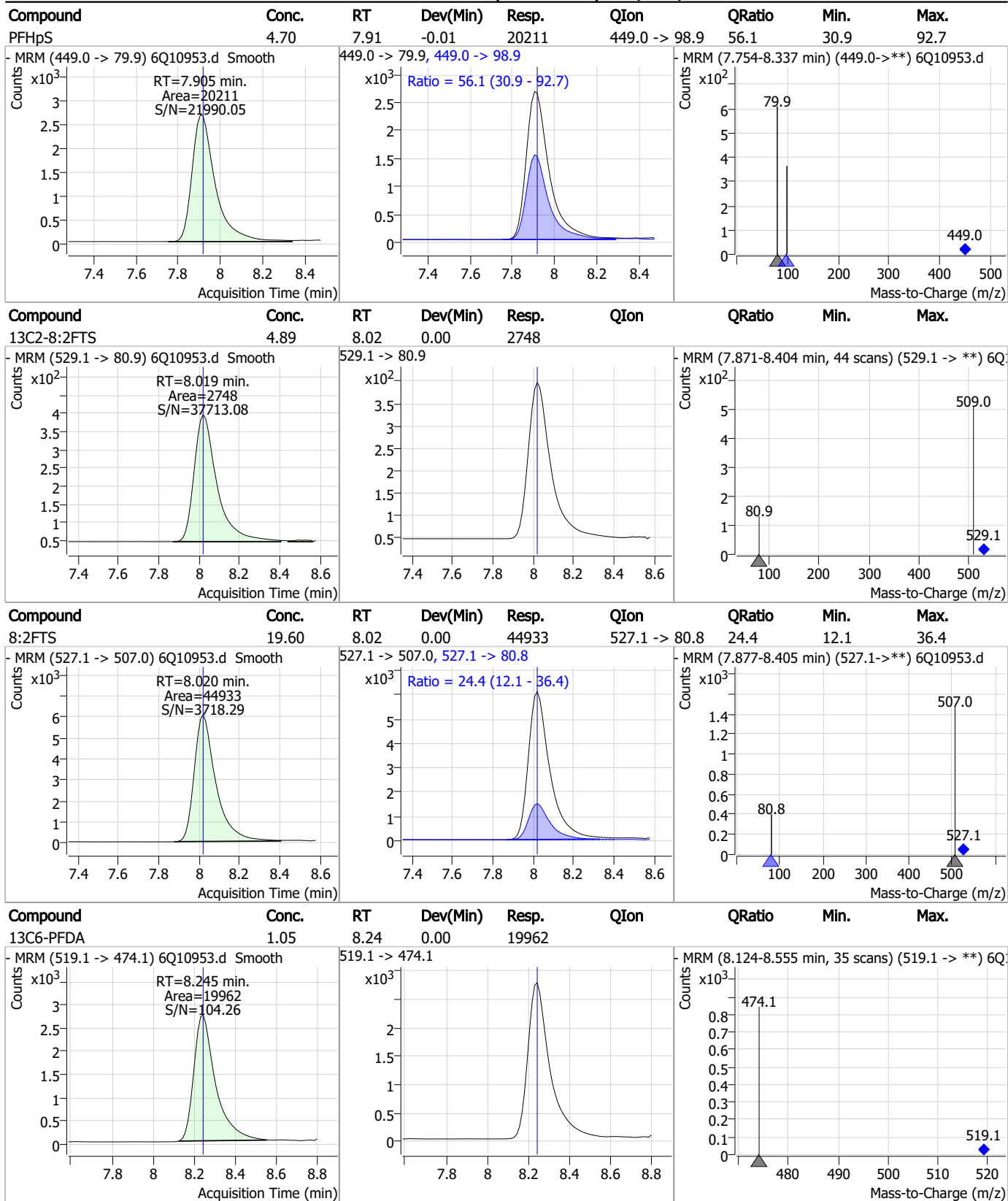
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Perfluorinated Compounds by LC/MS/MS



7.6.6
7

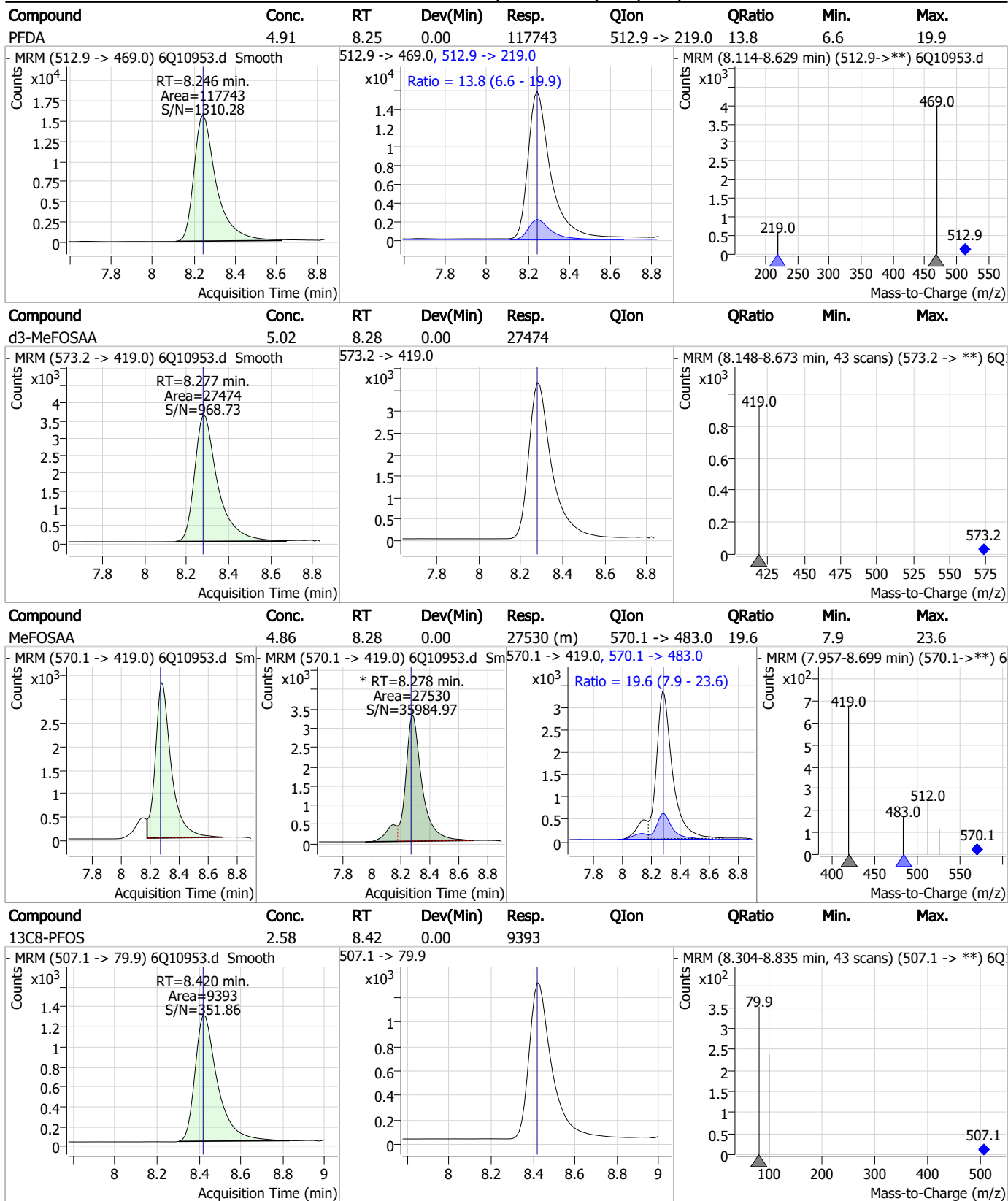
Perfluorinated Compounds by LC/MS/MS



7.6.6

7

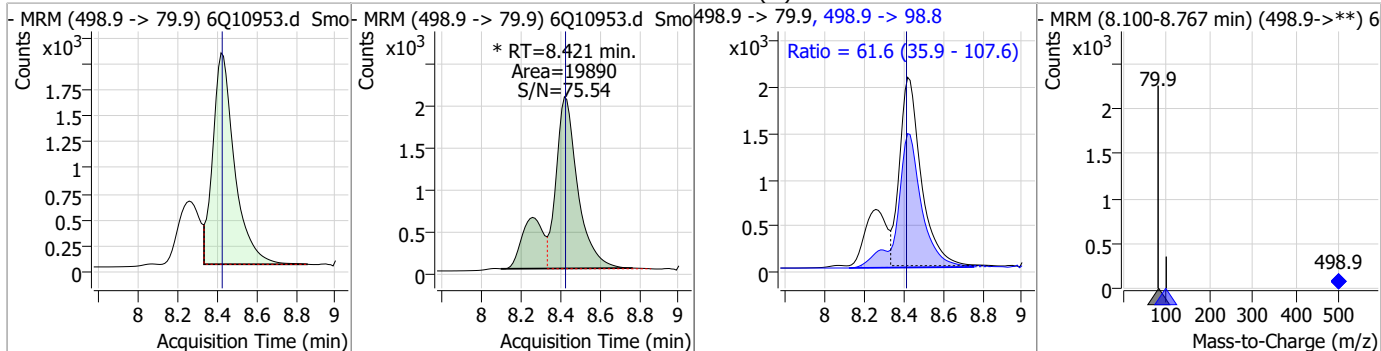
Perfluorinated Compounds by LC/MS/MS



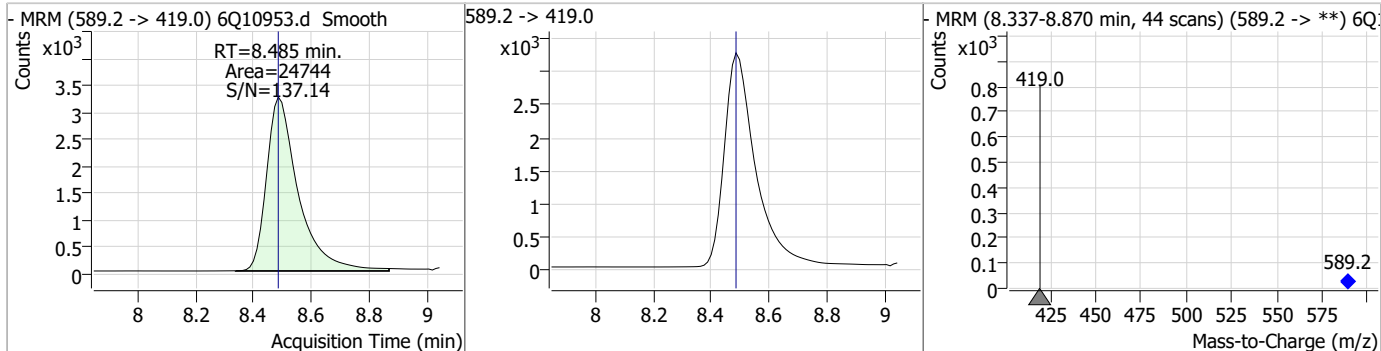
7.6.6
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Perfluorinated Compounds by LC/MS/MS

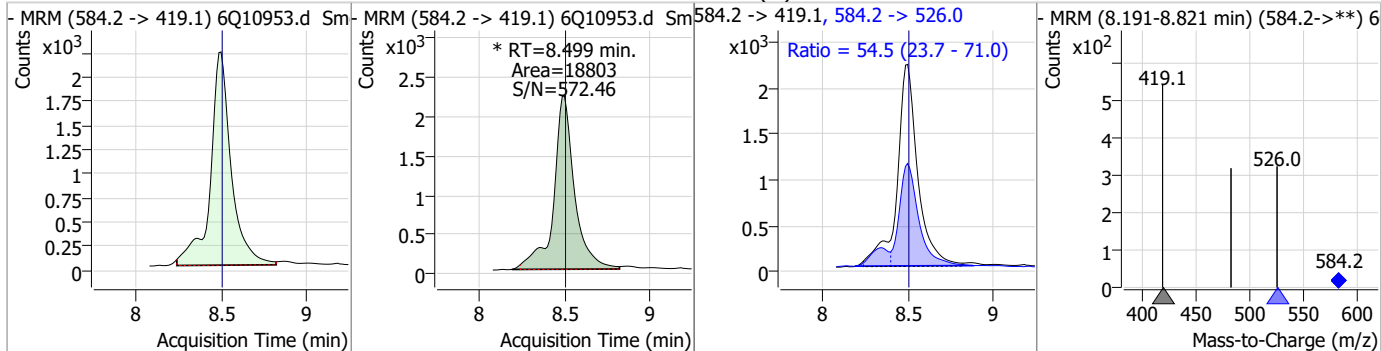
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	4.37	8.42	0.00	19890 (m)	498.9 -> 98.8	61.6	35.9	107.6



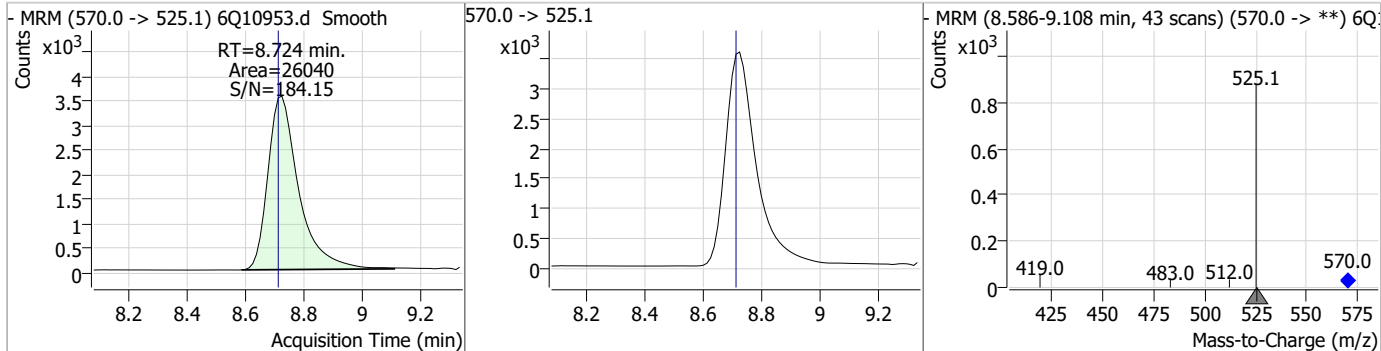
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.15	8.49	0.00	24744				



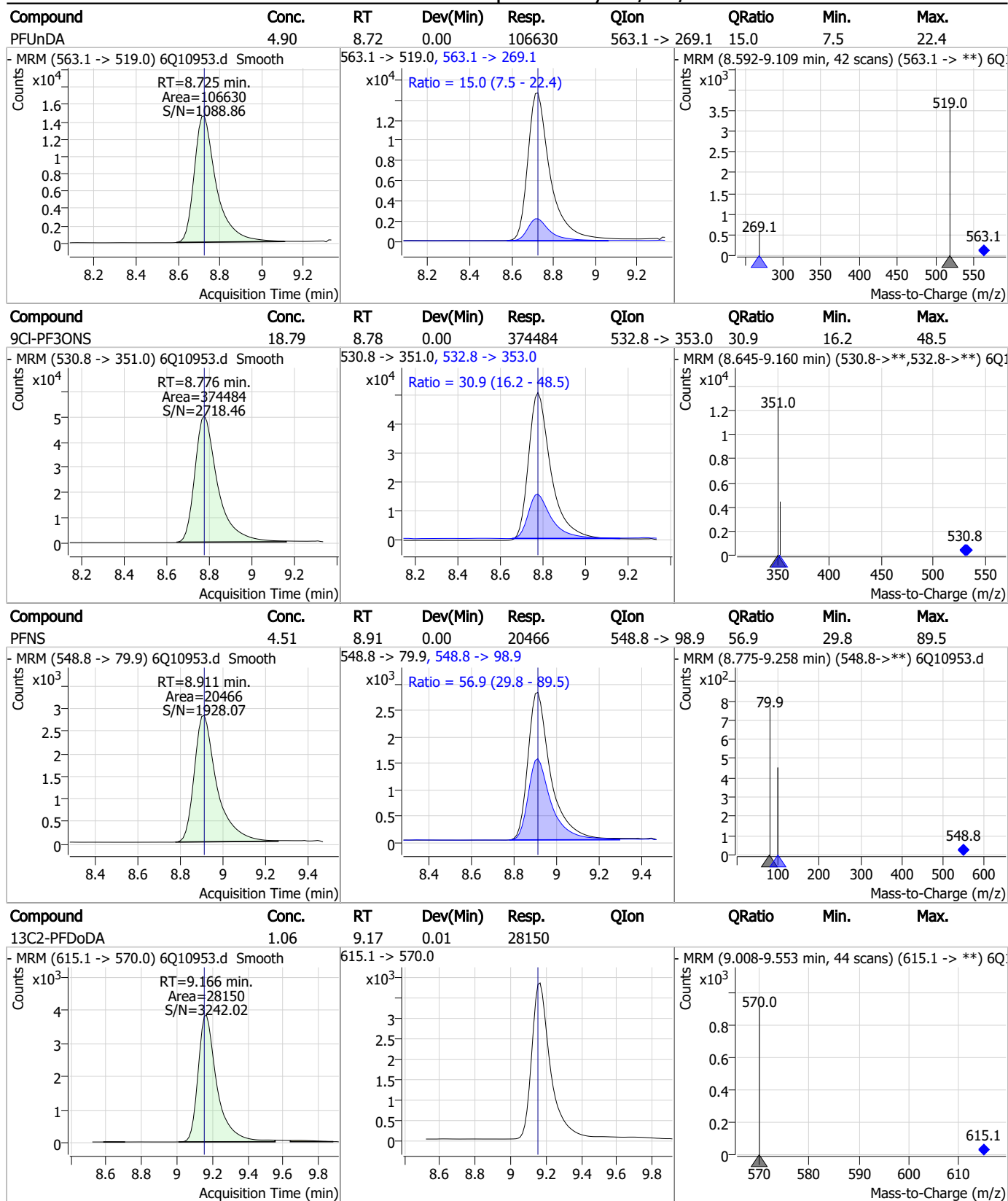
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	4.76	8.50	0.00	18803 (m)	584.2 -> 526.0	54.5	23.7	71.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.12	8.72	0.01	26040				



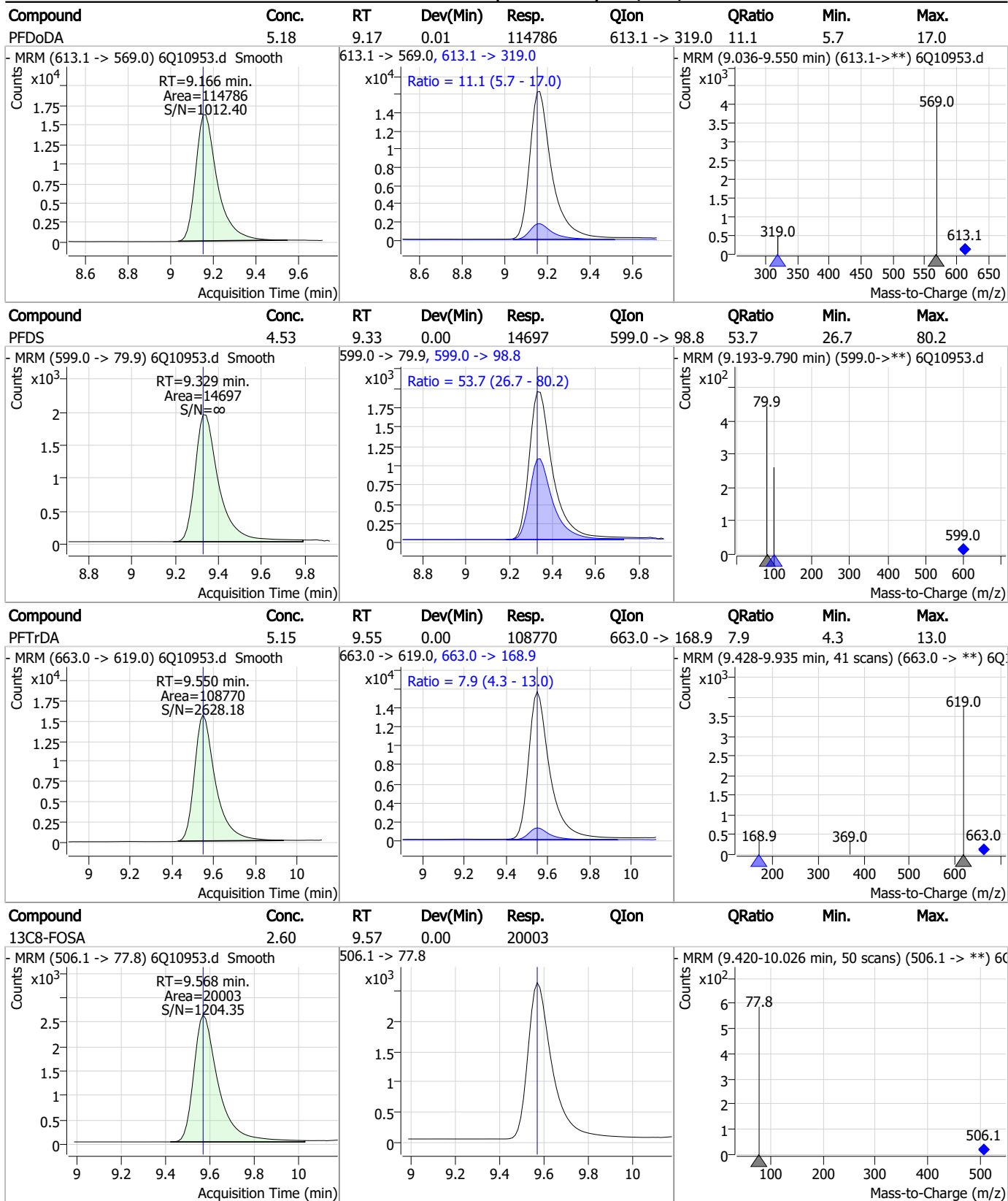
Perfluorinated Compounds by LC/MS/MS



7.6.6

7

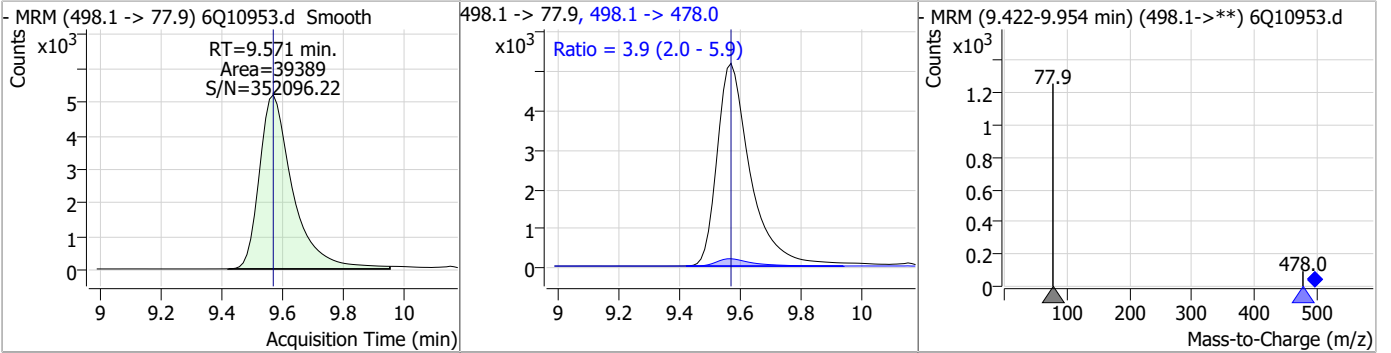
Perfluorinated Compounds by LC/MS/MS



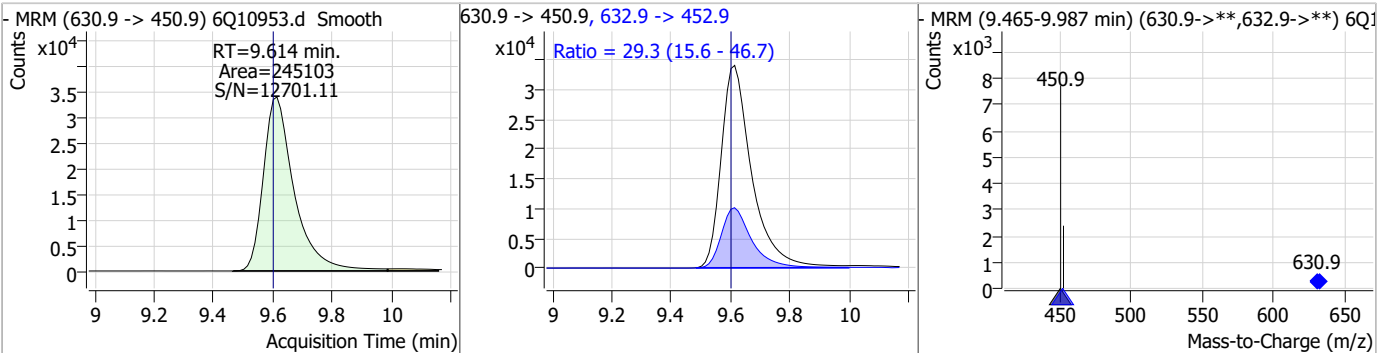
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Perfluorinated Compounds by LC/MS/MS

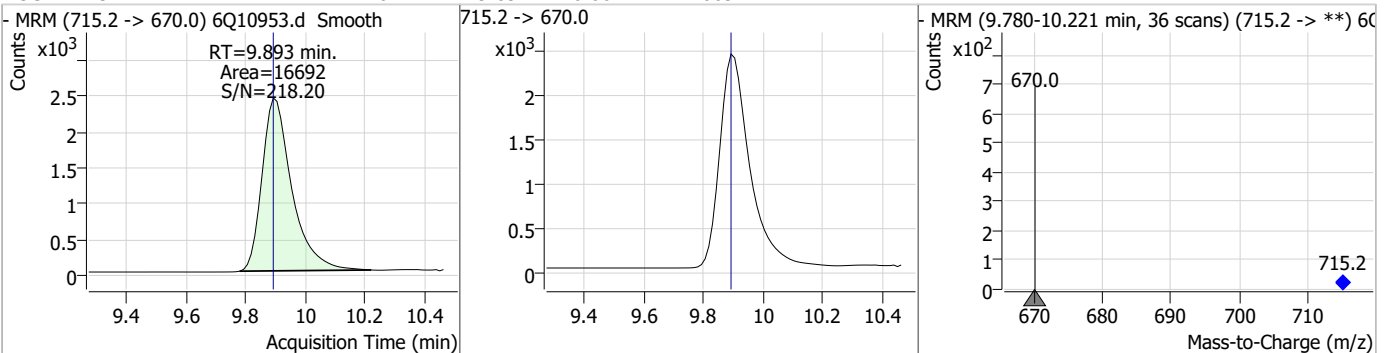
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	4.87	9.57	0.00	39389	498.1 -> 478.0	3.9	2.0	5.9



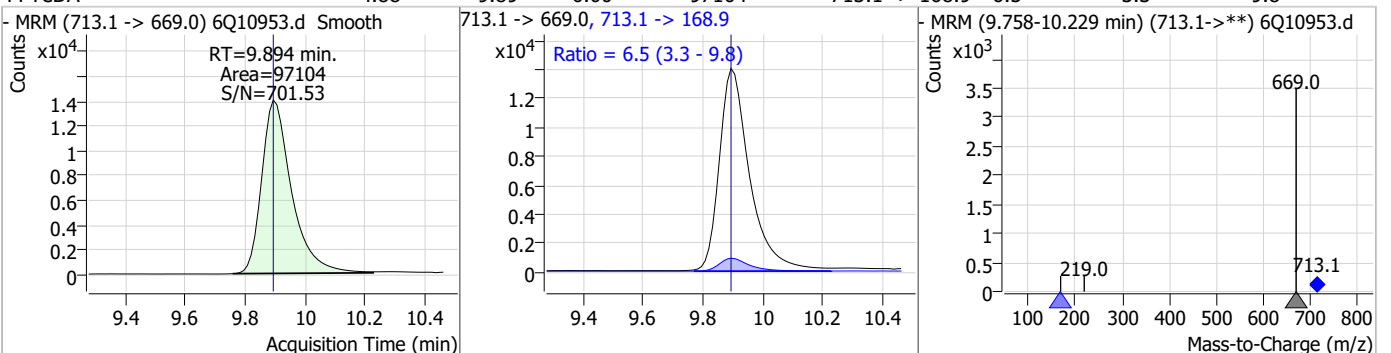
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUds	19.98	9.61	0.01	245103	632.9 -> 452.9	29.3	15.6	46.7



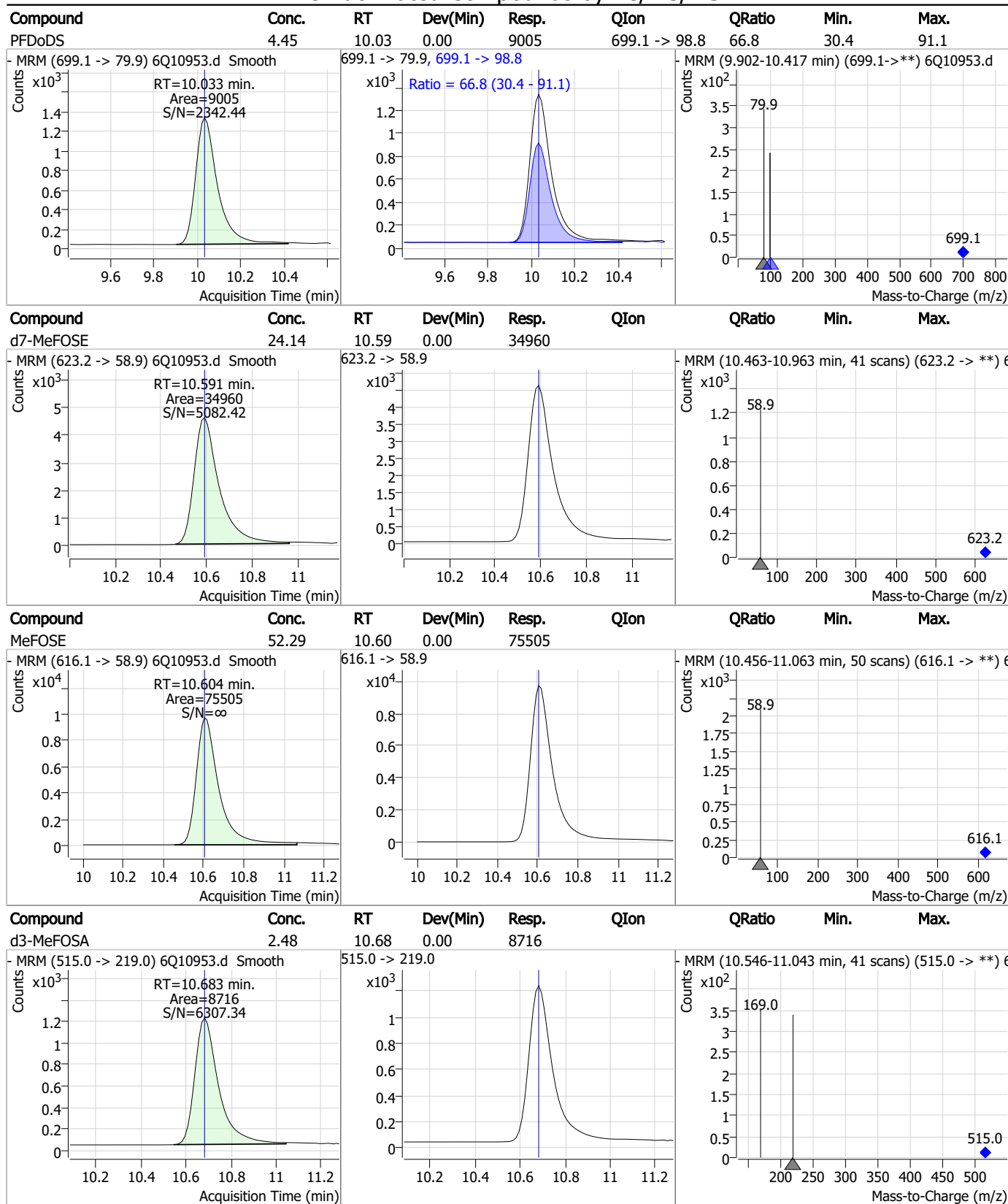
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.07	9.89	0.00	16692	715.2 -> 670.0	6.5	3.3	9.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	4.88	9.89	0.00	97104	713.1 -> 168.9	6.5	3.3	9.8



Perfluorinated Compounds by LC/MS/MS

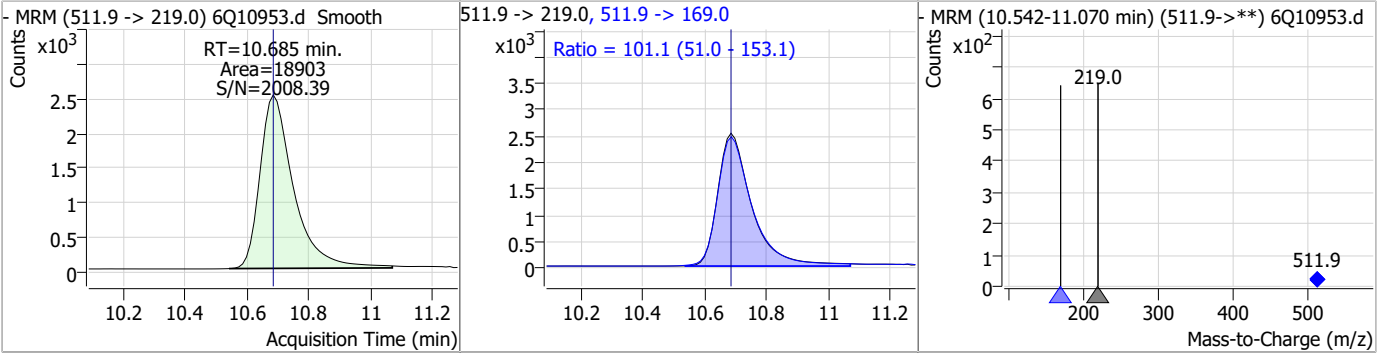


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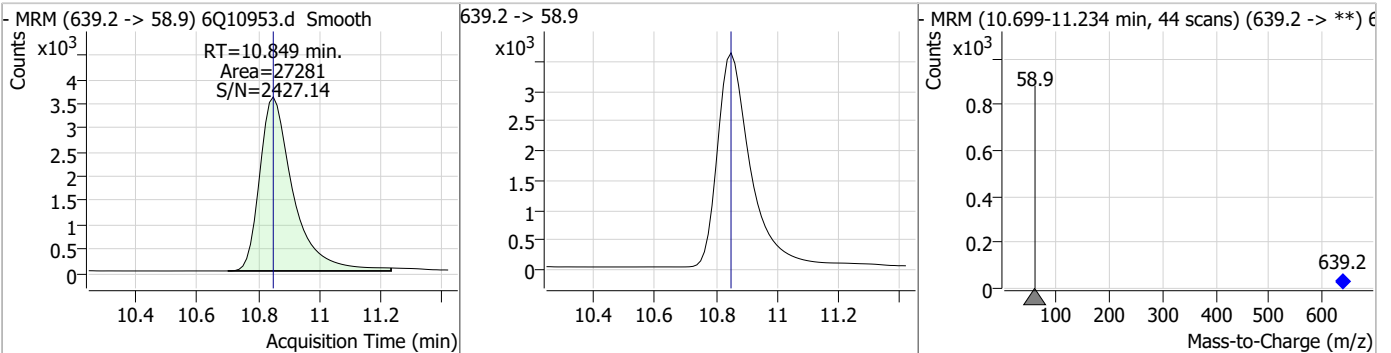
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Perfluorinated Compounds by LC/MS/MS

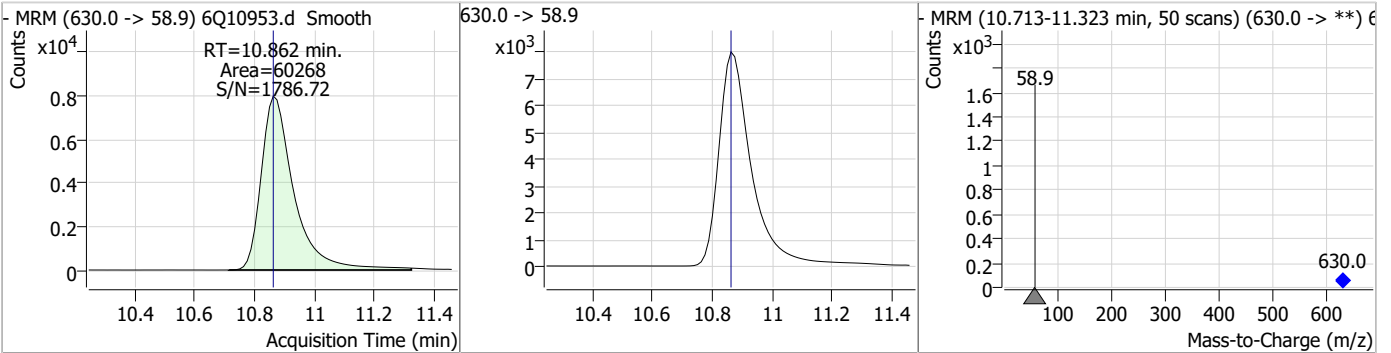
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOFA	4.91	10.68	0.00	18903	511.9 -> 169.0	101.1	51.0	153.1



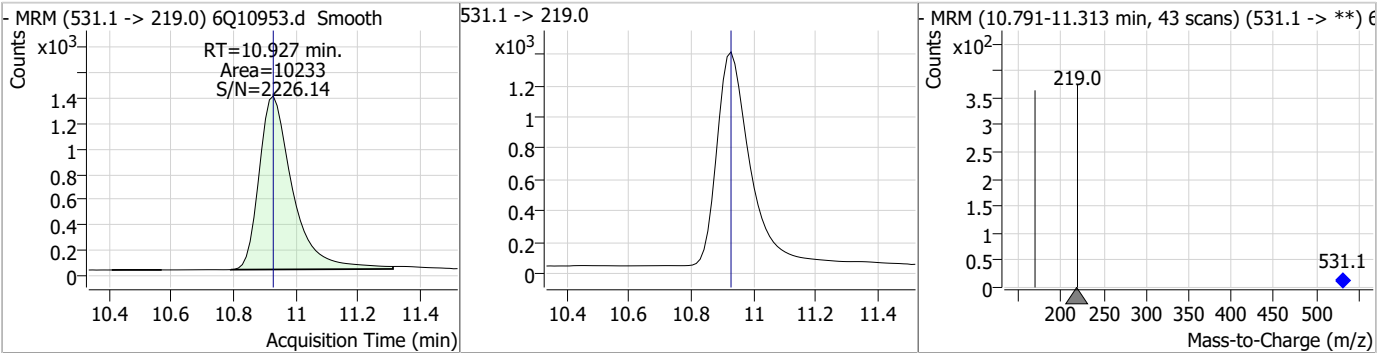
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.63	10.85	0.00	27281				



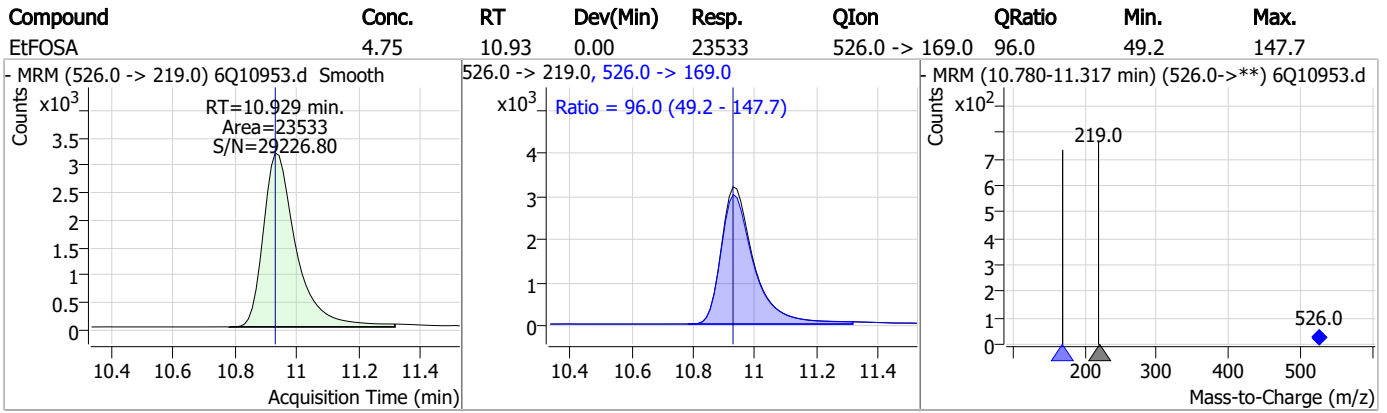
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	50.08	10.86	0.00	60268				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOFA	2.60	10.93	0.00	10233				



Perfluorinated Compounds by LC/MS/MS



7.6.6

7

Manual Integration Approval Summary

Sample Number: S6Q174-IC174 Method: EPA DRAFT 1633
Lab FileID: 6Q10953.D Analyst approved: 01/12/23 11:46 Martha Valls
Injection Time: 01/11/23 12:46 Supervisor approved: 01/12/23 15:42 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.34	Split peak
MeFOSAA	2355-31-9		8.28	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.42	Split peak
EtFOSAA	2991-50-6		8.50	Split peak

7.6.6.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q10954.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/11/2023 1:00:22 PM
 Sample Name : ic174-6
 Vial : P1-A7
 DA Method File : 1633_011123_S6Q174.quantmethod.xml
 Batch Name : S6Q174.batch.bin
 Sample Information : OP94795,S6Q174,500,,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.000	216.8 -> 171.9	92217	10.00 µg/L	0.000
M5-PFPeA	4.384	268.3 -> 223.0	44297	5.00 µg/L	-0.014
M5-PFHxA	5.588	318.0 -> 273.0	41367	2.50 µg/L	0.000
M4-PFHpA	6.529	367.1 -> 322.0	39252	2.50 µg/L	-0.012
M8-PFOA	7.197	421.1 -> 376.0	67489	2.50 µg/L	0.000
M9-PFNA	7.740	472.1 -> 427.0	31077	1.25 µg/L	0.000
M6-PFDA	8.245	519.1 -> 474.1	20814	1.25 µg/L	0.000
M7-PFUnDA	8.712	570.0 -> 525.1	25464	1.25 µg/L	0.000
M2-PFDoDA	9.166	615.1 -> 570.0	27510	1.25 µg/L	0.012
M2-PFTeDA	9.893	715.2 -> 670.0	16926	1.25 µg/L	0.000
M8-FOSA	9.568	506.1 -> 77.8	18883	2.50 µg/L	0.000
M3-PFBS	5.544	302.1 -> 79.9	14948	2.50 µg/L	-0.012
M3-PFHxS	7.325	402.1 -> 79.9	9476	2.50 µg/L	-0.012
M8-PFOS	8.420	507.1 -> 79.9	8861	2.50 µg/L	0.000
M2-4:2FTS	5.253	329.1 -> 80.9	1727	5.00 µg/L	0.000
M2-6:2FTS	6.946	429.1 -> 80.9	2249	5.00 µg/L	-0.012
M2-8:2FTS	8.019	529.1 -> 80.9	2867	5.00 µg/L	0.000
M3-MeFOSAA	8.277	573.2 -> 419.0	27941	5.00 µg/L	0.000
M3-HFPO-DA	5.965	286.9 -> 168.9	16175	10.00 µg/L	-0.012
M5-EtFOSAA	8.485	589.2 -> 419.0	24353	5.00 µg/L	0.000
M7-MeFOSE	10.591	623.2 -> 58.9	35108	25.00 µg/L	0.000
M9-EtFOSE	10.849	639.2 -> 58.9	28117	25.00 µg/L	0.000
M5-EtFOSA	10.927	531.1 -> 219.0	9627	2.50 µg/L	0.000
M3-MeFOSA	10.683	515.0 -> 219.0	8755	2.50 µg/L	0.000
13C4-PFOS	8.421	502.8 -> 79.9	10671	2.50 µg/L	0.000
13C3-PFBA	2.991	216.0 -> 172.0	40040	5.00 µg/L	-0.012
18O2-PFHxS	7.324	403.0 -> 83.9	6610	2.50 µg/L	-0.012
13C4-PFOA	7.198	417.1 -> 372.0	81796	2.50 µg/L	0.000
13C2-PFDA	8.233	515.1 -> 470.1	28205	1.25 µg/L	-0.012
13C5-PFNA	7.740	468.0 -> 423.0	33812	1.25 µg/L	0.000
13C2-PFHxA	5.589	315.1 -> 270.0	38839	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.253	329.1 -> 80.9	1727	5.01 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.2%		
13C2-6:2FTS	6.946	429.1 -> 80.9	2249	4.76 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 95.3%		
13C2-8:2FTS	8.019	529.1 -> 80.9	2867	5.56 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.3%		
13C2-PFDoDA	9.166	615.1 -> 570.0	27510	1.23 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.4%		
13C2-PFTeDA	9.893	715.2 -> 670.0	16926	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.1%		
13C3-PFBS	5.544	302.1 -> 79.9	14948	2.70 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 107.8%		
13C3-PFHxS	7.325	402.1 -> 79.9	9476	2.64 µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.6%		
13C4-PFBA	3.000	216.8 -> 171.9	92217	10.08 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 100.8%		
13C4-PFHpA	6.529	367.1 -> 322.0	39252	2.49 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.7%		
13C5-PFHxA	5.588	318.0 -> 273.0	41367	2.65 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 106.1%		
13C5-PFPeA	4.384	268.3 -> 223.0	44297	5.11 µg/L	-0.014
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.2%		
13C6-PFDA	8.245	519.1 -> 474.1	20814	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.7%		
13C7-PFUnDA	8.712	570.0 -> 525.1	25464	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.0%		
13C8-FOSA	9.568	506.1 -> 77.8	18883	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.8%		
13C8-PFOA	7.197	421.1 -> 376.0	67489	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.5%		
13C8-PFOS	8.420	507.1 -> 79.9	8861	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.0%		
13C9-PFNA	7.740	472.1 -> 427.0	31077	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.5%		
d3-MeFOSAA	8.277	573.2 -> 419.0	27941	5.44 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.8%		
13C3-HFPO-DA	5.965	286.9 -> 168.9	16175	10.10 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 101.0%		
d3-MeFOSA	10.683	515.0 -> 219.0	8755	2.65 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 106.1%		
d5-EtFOSAA	8.485	589.2 -> 419.0	24353	5.40 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.0%		
d7-MeFOSE	10.591	623.2 -> 58.9	35108	25.85 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 103.4%		
d9-EtFOSE	10.849	639.2 -> 58.9	28117	27.07 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 108.3%		
d5-EtFOSA	10.927	531.1 -> 219.0	9627	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.2%		
Target Compounds					QValue
4:2FTS	5.254	327.1 -> 307.0	201122	48.98 µg/L	99
		327.1 -> 80.9	42615		
6:2FTS	6.946	427.1 -> 407.0	187405	53.56 µg/L	97
		427.1 -> 80.9	33915		
8:2FTS	8.020	527.1 -> 507.0	104670	43.76 µg/L	99
		527.1 -> 80.8	25097		
EtFOSAA	8.486	584.2 -> 419.1	49024	12.61 µg/L	m 91
		584.2 -> 526.0	26211		
FOSA	9.571	498.1 -> 77.9	97242	12.75 µg/L	100
		498.1 -> 478.0	3637		
MeFOSAA	8.278	570.1 -> 419.0	70786	12.29 µg/L	m 97
		570.1 -> 483.0	12037		
PFBA	2.994	212.8 -> 168.9	120133	50.78 µg/L	100
PFBS	5.544	298.7 -> 79.9	64129	10.60 µg/L	98
		298.7 -> 98.8	30047		
PFDA	8.246	512.9 -> 469.0	315749	12.62 µg/L	99
		512.9 -> 219.0	41045		
PFDoDA	9.166	613.1 -> 569.0	296002	13.68 µg/L	100
		613.1 -> 319.0	33299		
PFDS	9.344	599.0 -> 79.9	38201	12.49 µg/L	97

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	19702			
PFHpA	6.542	363.1 -> 319.0	292591	12.36	µg/L	97
		363.1 -> 169.0	41425			
PFHpS	7.905	449.0 -> 79.9	47584	11.74	µg/L	96
		449.0 -> 98.9	28122			
PFHxA	5.591	313.0 -> 269.0	202700	12.13	µg/L	98
		313.0 -> 118.9	6940			
PFHxS	7.326	398.7 -> 79.9	49483	10.97	µg/L	m 97
		398.7 -> 98.9	28545			
PFNA	7.740	463.0 -> 419.0	271895	12.64	µg/L	97
		463.0 -> 219.0	54185			
PFNS	8.911	548.8 -> 79.9	53146	12.42	µg/L	95
		548.8 -> 98.9	29586			
PFOA	7.199	413.0 -> 369.0	402245	13.32	µg/L	97
		413.0 -> 169.0	52784			
PFOS	8.421	498.9 -> 79.9	49171	11.46	µg/L	m 92
		498.9 -> 98.8	31986			
PFPeA	4.386	263.0 -> 219.0	245454	25.23	µg/L	100
PFPeS	6.619	349.1 -> 79.9	63352	11.86	µg/L	96
		349.1 -> 98.9	31811			
PFTeDA	9.894	713.1 -> 669.0	247494	12.27	µg/L	100
		713.1 -> 168.9	16342			
PFTrDA	9.550	663.0 -> 619.0	264779	12.82	µg/L	98
		663.0 -> 168.9	20772			
PFUnDA	8.725	563.1 -> 519.0	260777	12.24	µg/L	98
		563.1 -> 269.1	40882			
11CI-PF3OUdS	9.614	630.9 -> 450.9	590408	48.14	µg/L	99
		632.9 -> 452.9	186466			
9CI-PF3ONS	8.776	530.8 -> 351.0	993809	49.87	µg/L	93
		532.8 -> 353.0	283609			
ADONA	6.792	376.9 -> 250.9	1730332	48.11	µg/L	100
		376.9 -> 84.8	358331			
HFPO-DA	5.966	284.9 -> 168.9	85963	52.55	µg/L	97
		284.9 -> 184.9	9345			
3:3FTCA	3.839	241.0 -> 177.0	31953	61.66	µg/L	99
		241.0 -> 117.0	4061			
5:3FTCA	6.207	341.0 -> 237.1	1031457	296.72	µg/L	98
		341.0 -> 217.0	896985			
7:3FTCA	7.643	441.0 -> 316.9	681231	290.74	µg/L	99
		441.0 -> 336.9	1412114			
EtFOSA	10.929	526.0 -> 219.0	59947	12.87	µg/L	97
		526.0 -> 169.0	57485			
EtFOSE	10.862	630.0 -> 58.9	154172	124.29	µg/L	100
MeFOSA	10.685	511.9 -> 219.0	47568	12.30	µg/L	98
		511.9 -> 169.0	49654			
MeFOSE	10.604	616.1 -> 58.9	191364	131.97	µg/L	100
PFDoDS	10.033	699.1 -> 79.9	22793	11.95	µg/L	96
		699.1 -> 98.8	14489			
NFDHA	5.471	295.0 -> 201.0	25964	23.95	µg/L	98
		295.0 -> 84.9	11616			
PFMBA	4.801	279.0 -> 85.1	77596	25.57	µg/L	100
PFMPA	3.550	229.0 -> 84.9	67432	25.05	µg/L	100
PFEESA	6.097	314.8 -> 134.9	489320	21.03	µg/L	100
		314.8 -> 82.9	12850			

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

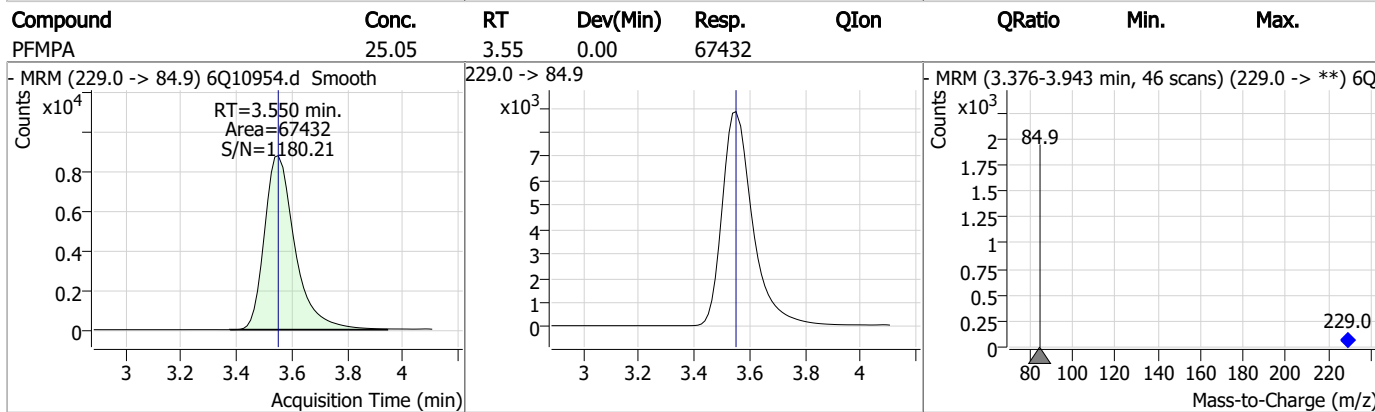
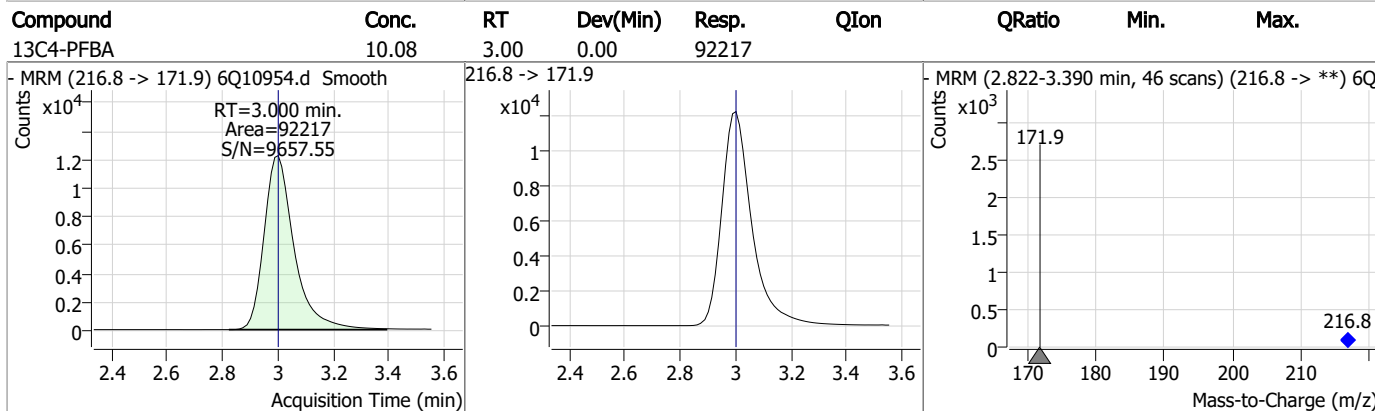
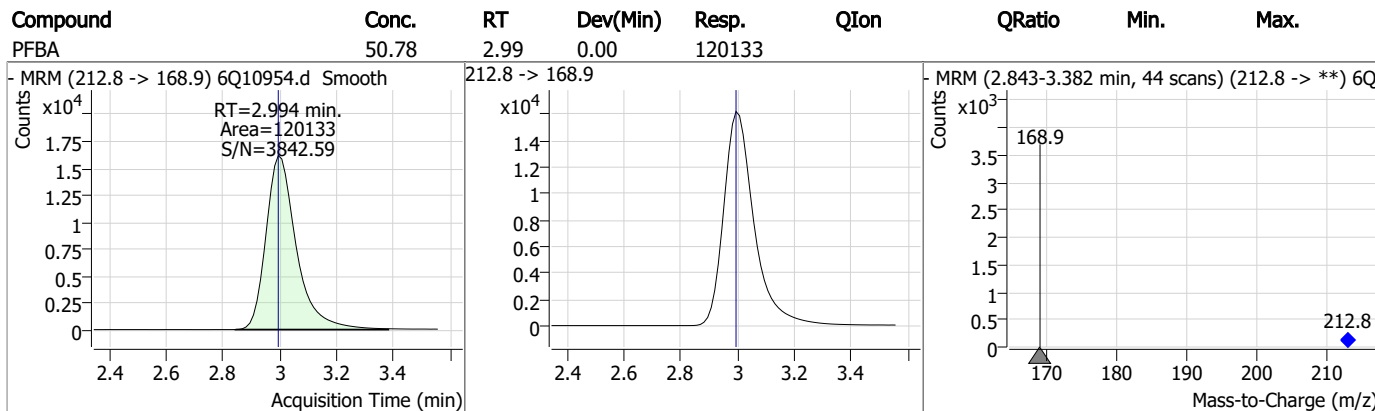
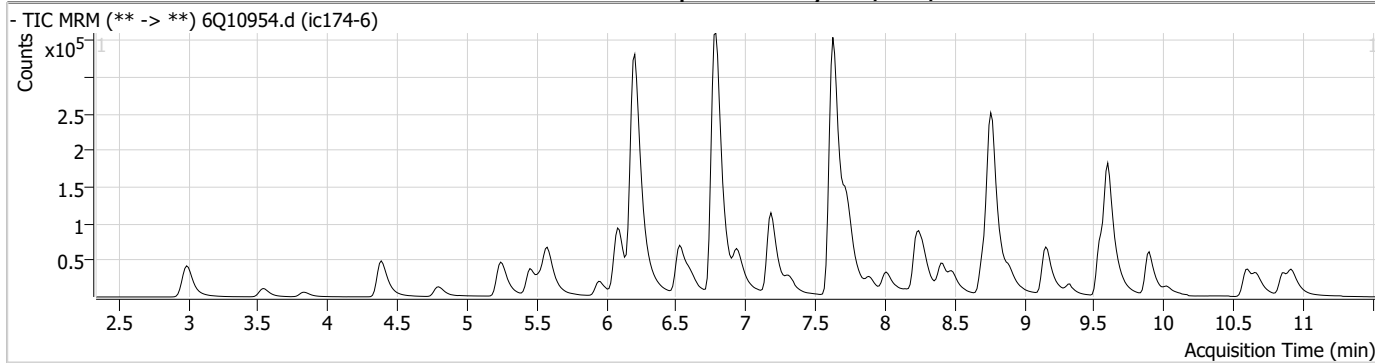
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.6.7

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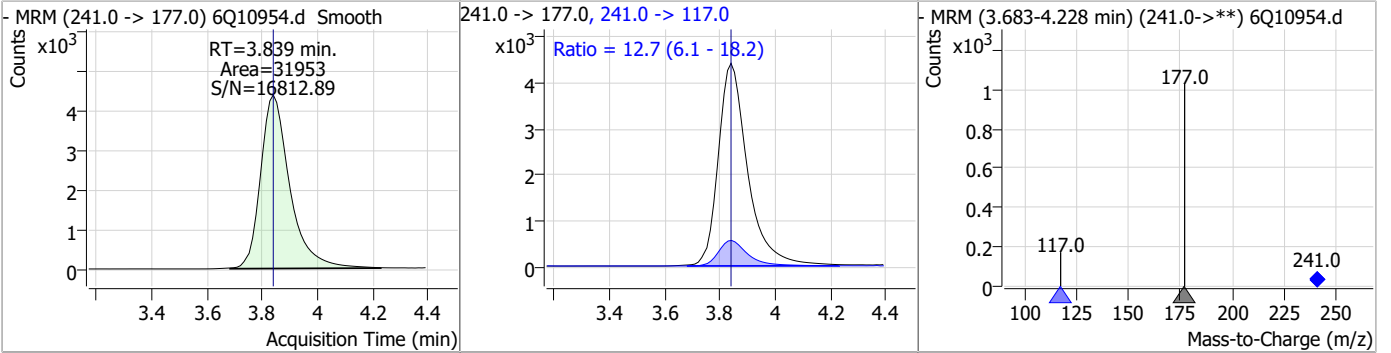
Perfluorinated Compounds by LC/MS/MS



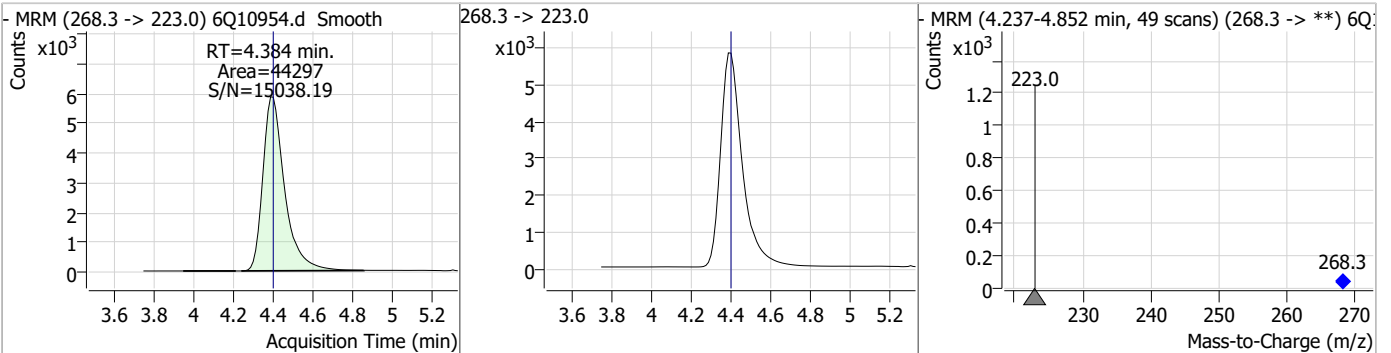
7.6.7
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Perfluorinated Compounds by LC/MS/MS

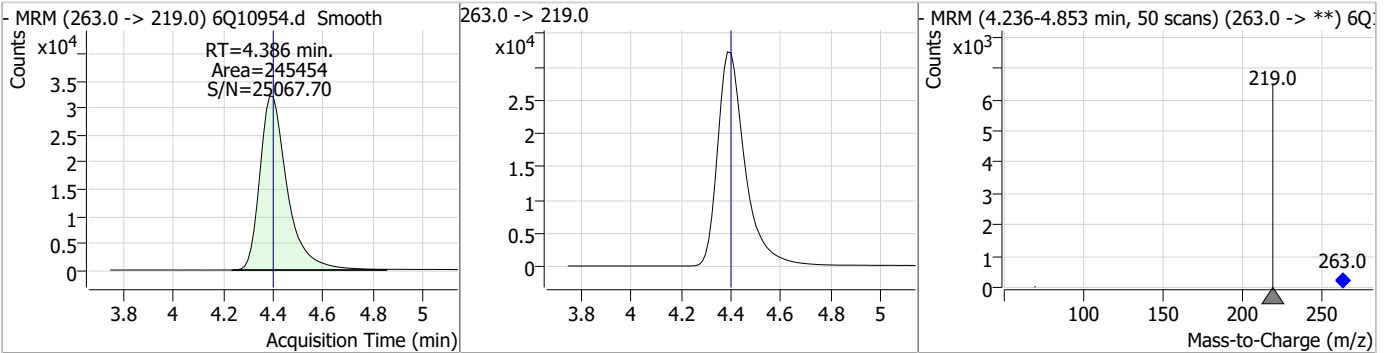
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	61.66	3.84	0.00	31953	241.0 -> 117.0	12.7	6.1	18.2



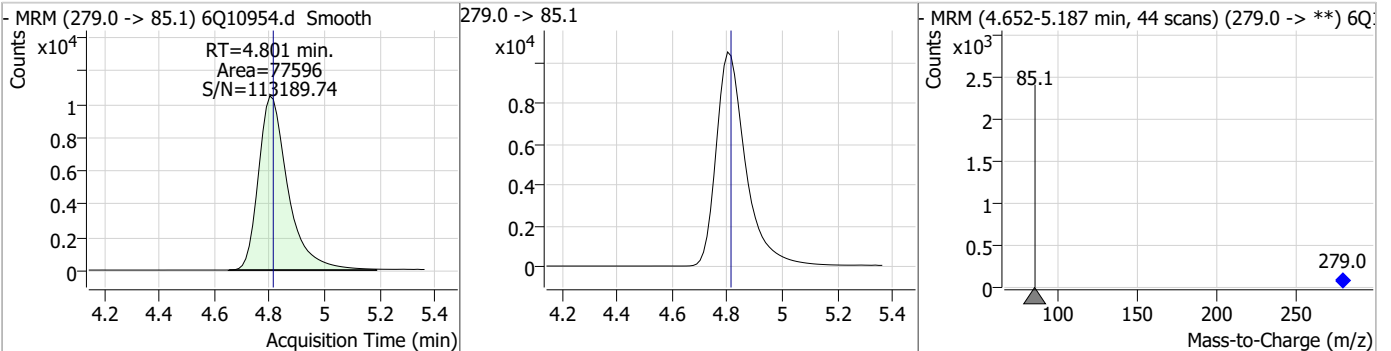
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.11	4.38	-0.01	44297				



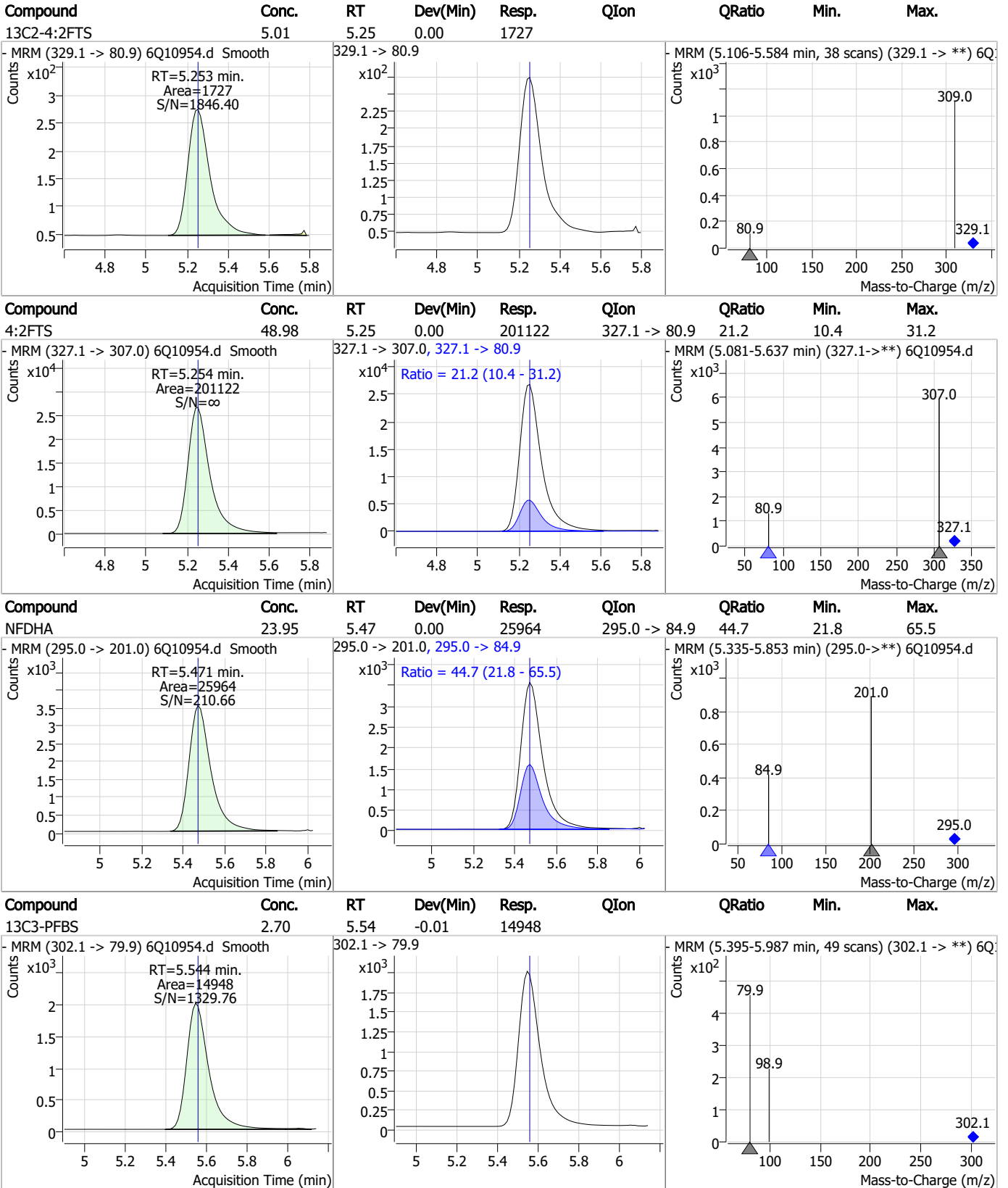
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	25.23	4.39	-0.01	245454				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	25.57	4.80	-0.01	77596				



Perfluorinated Compounds by LC/MS/MS

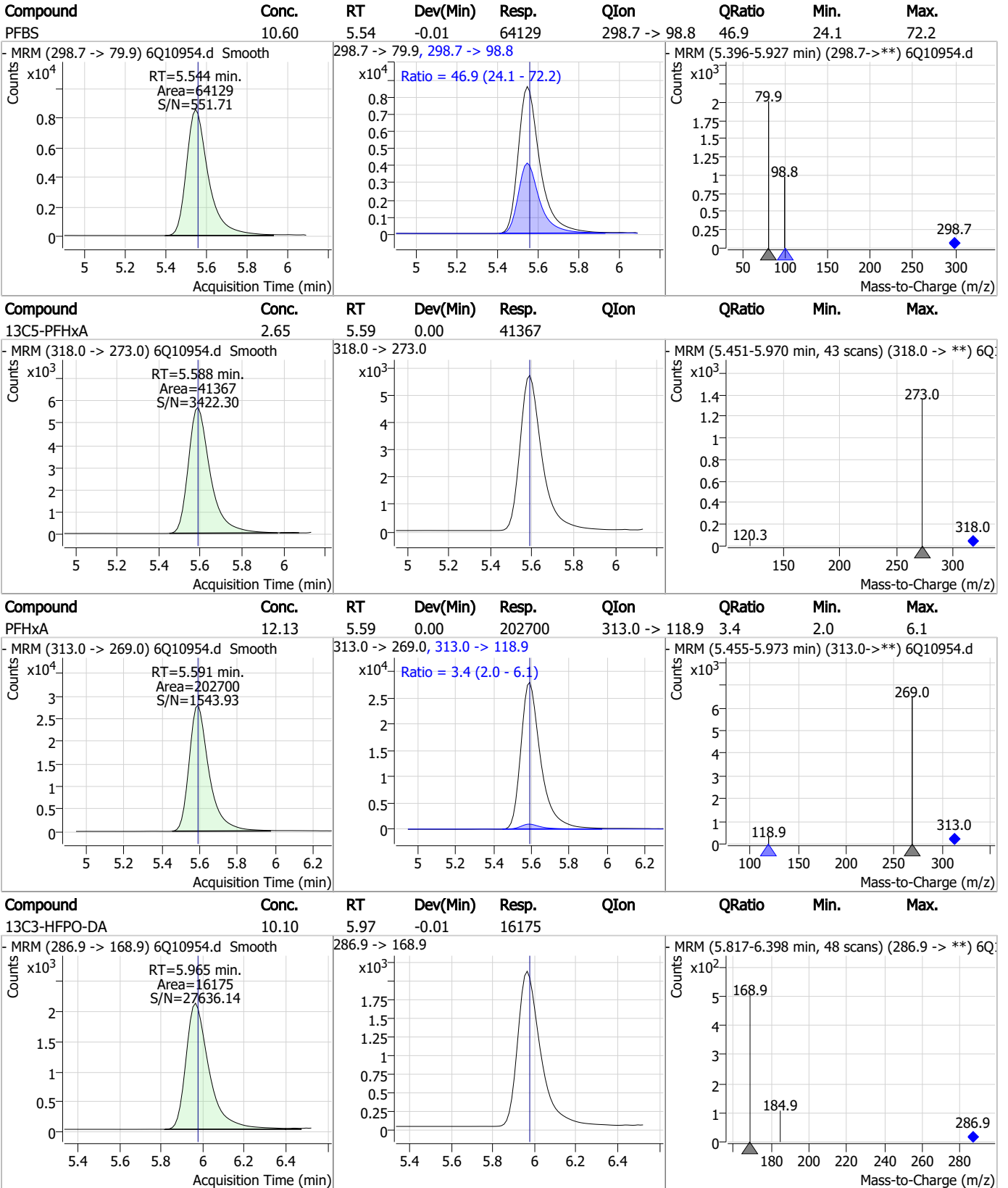


7.6.7

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Perfluorinated Compounds by LC/MS/MS

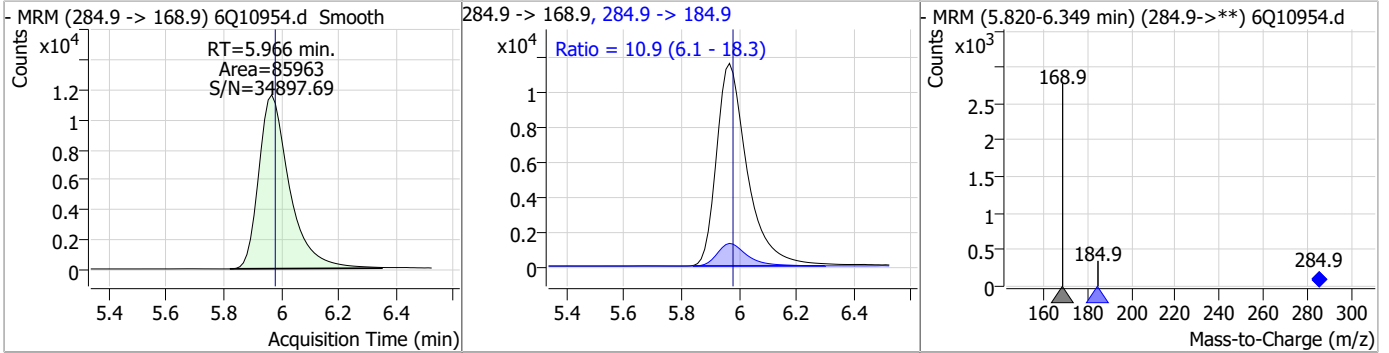


7.6.7

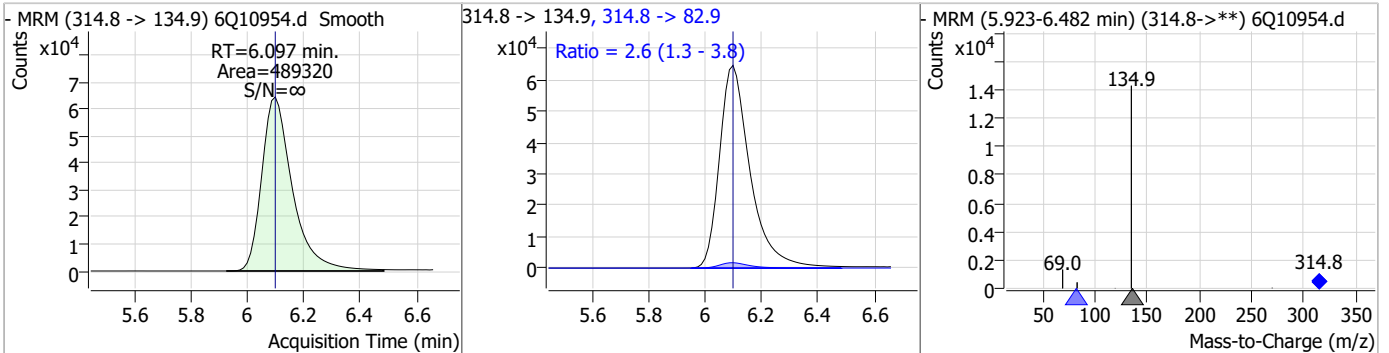
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Perfluorinated Compounds by LC/MS/MS

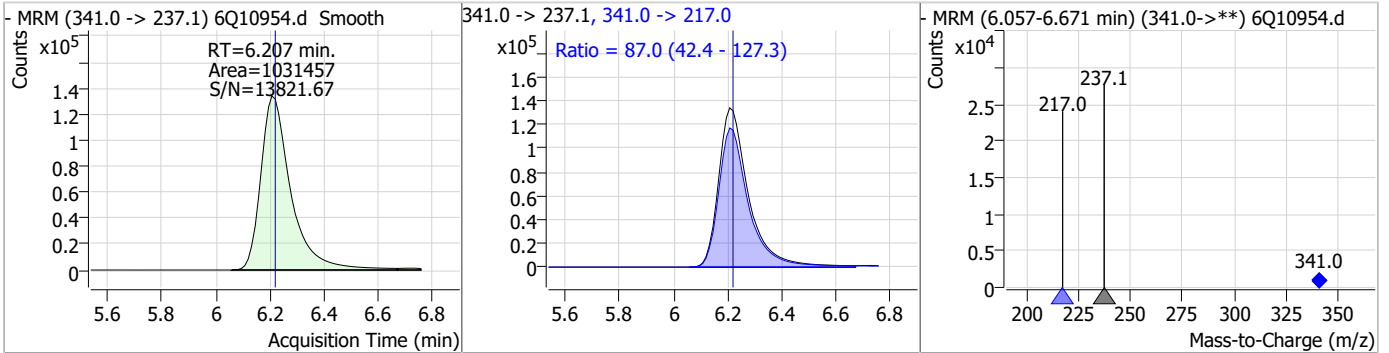
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	52.55	5.97	-0.01	85963	284.9 -> 184.9	10.9	6.1	18.3



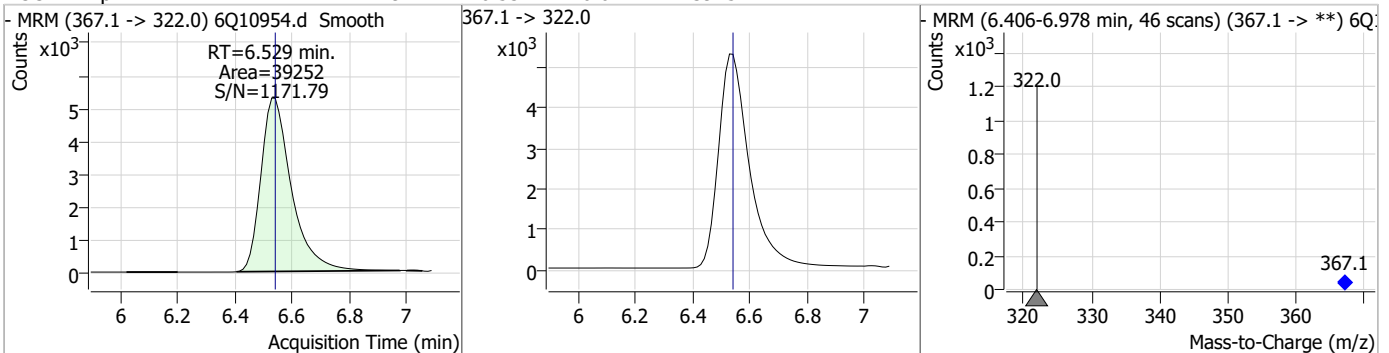
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	21.03	6.10	0.00	489320	314.8 -> 82.9	2.6	1.3	3.8



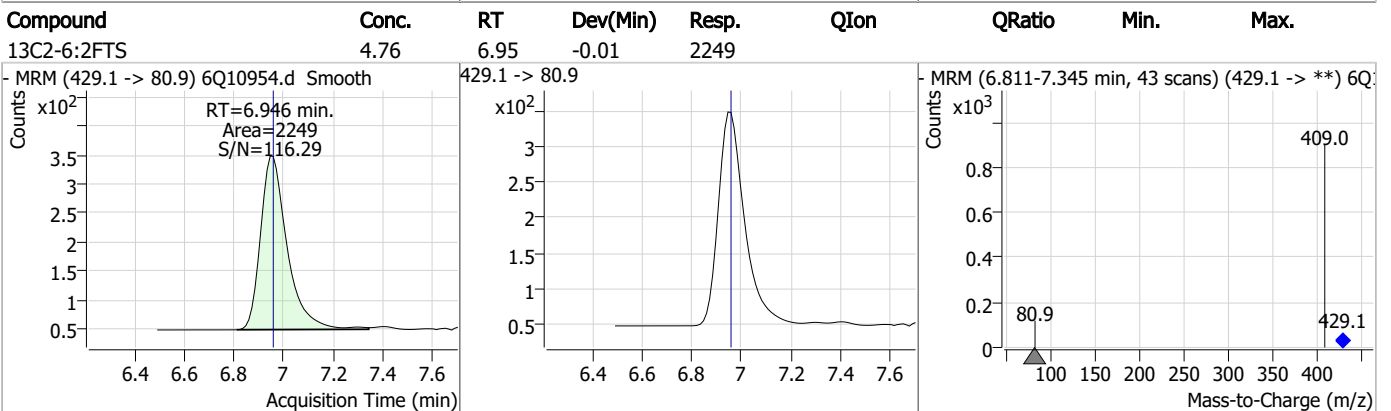
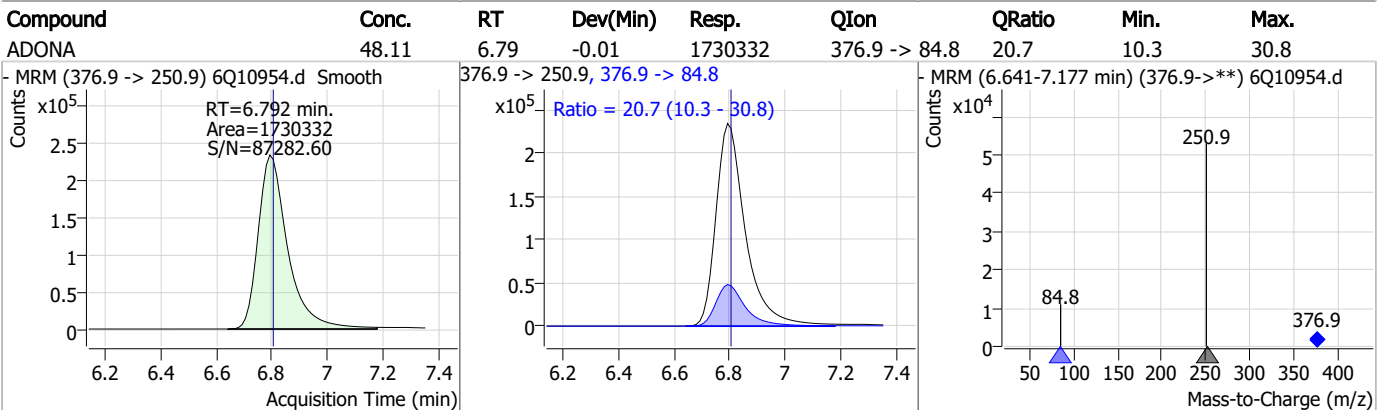
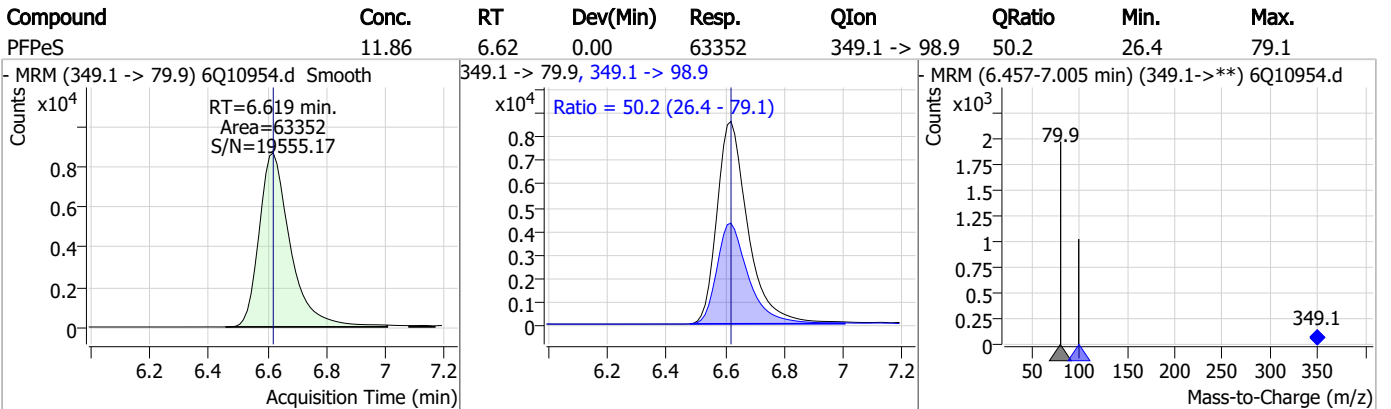
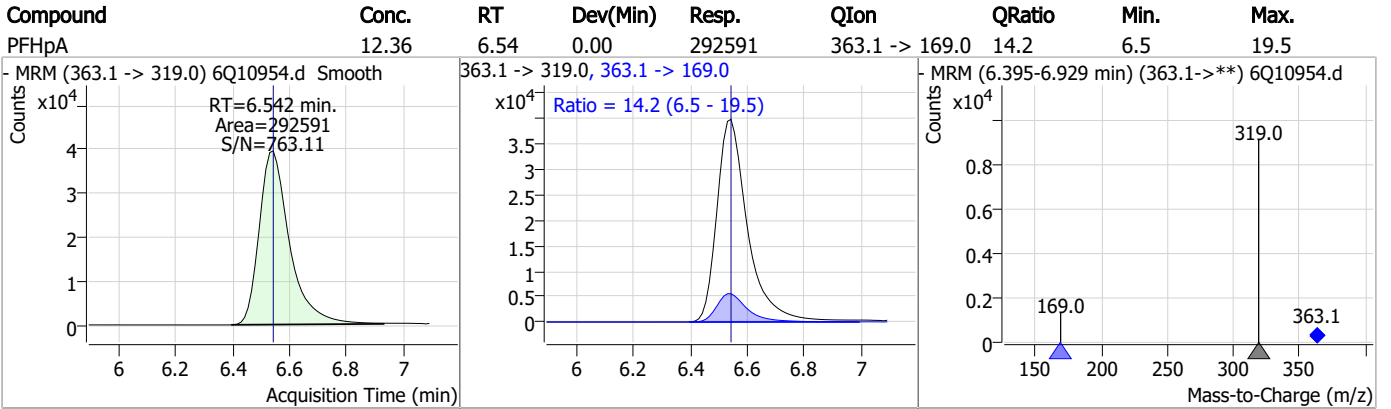
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	296.72	6.21	-0.01	1031457	341.0 -> 217.0	87.0	42.4	127.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpa	2.49	6.53	-0.01	39252	367.1 -> 322.0			



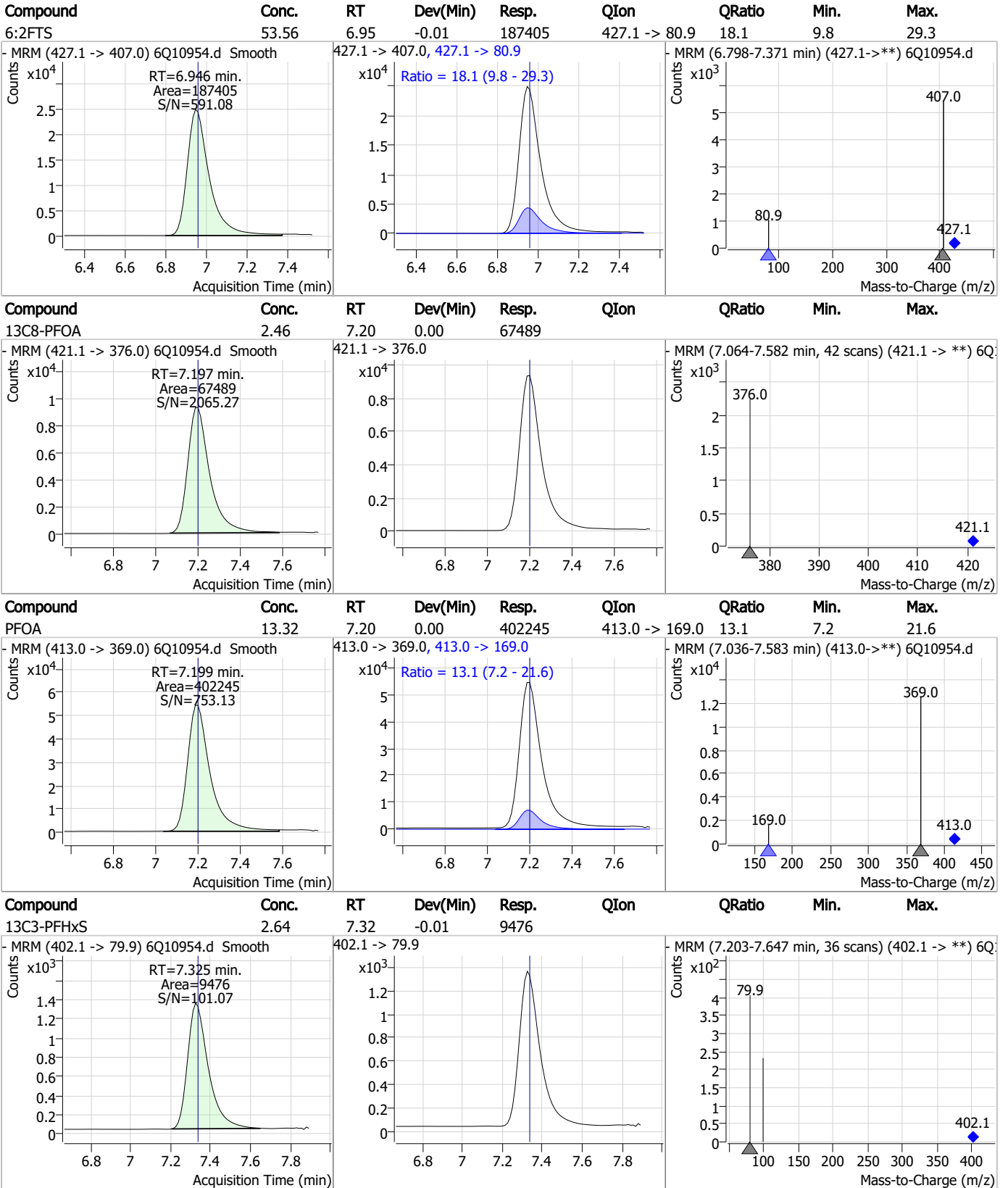
Perfluorinated Compounds by LC/MS/MS



7.67

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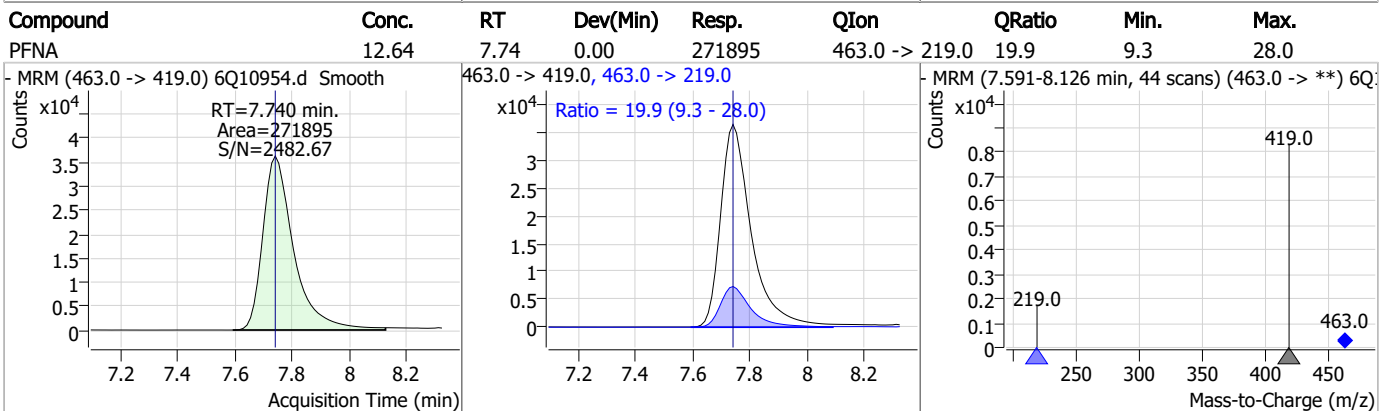
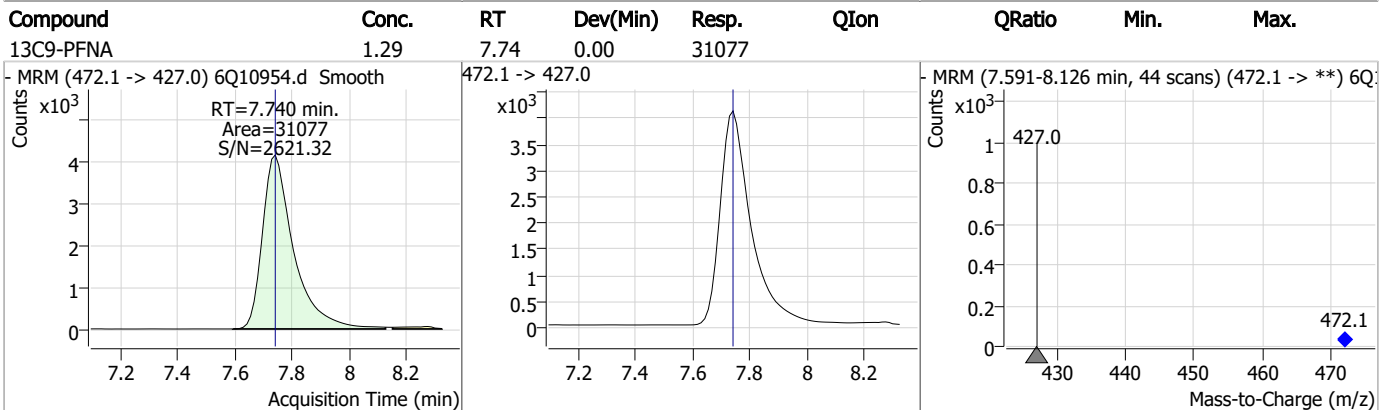
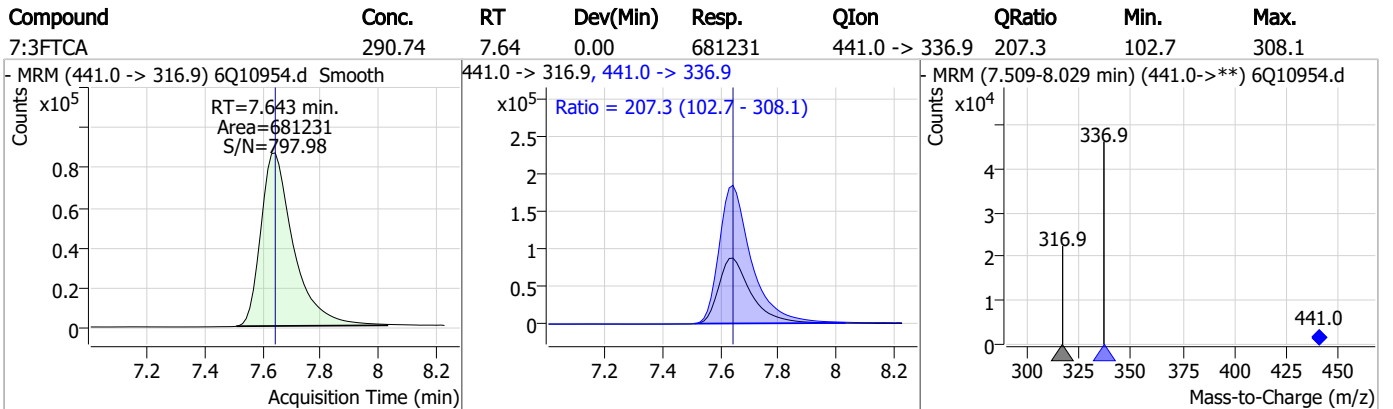
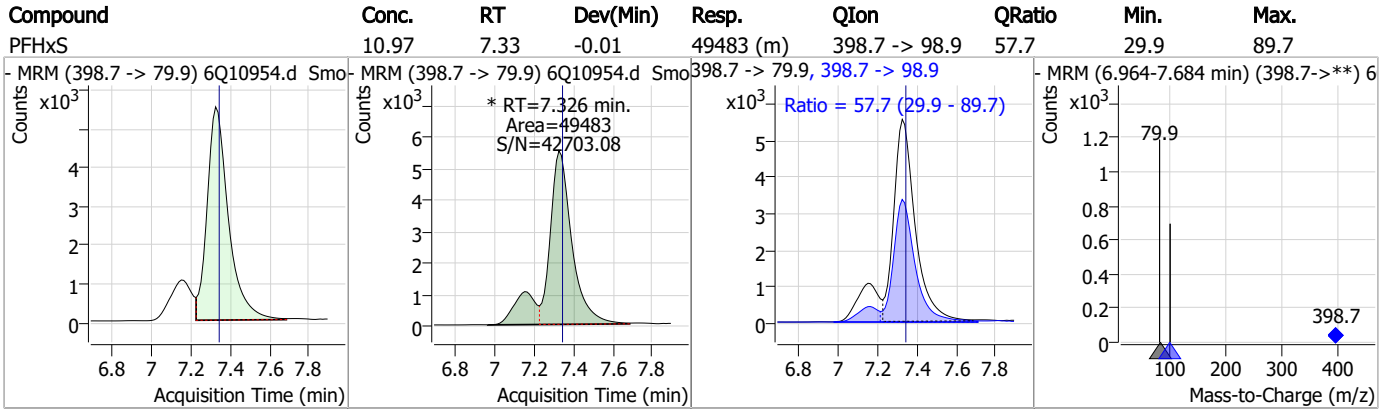
Perfluorinated Compounds by LC/MS/MS



7.6.7

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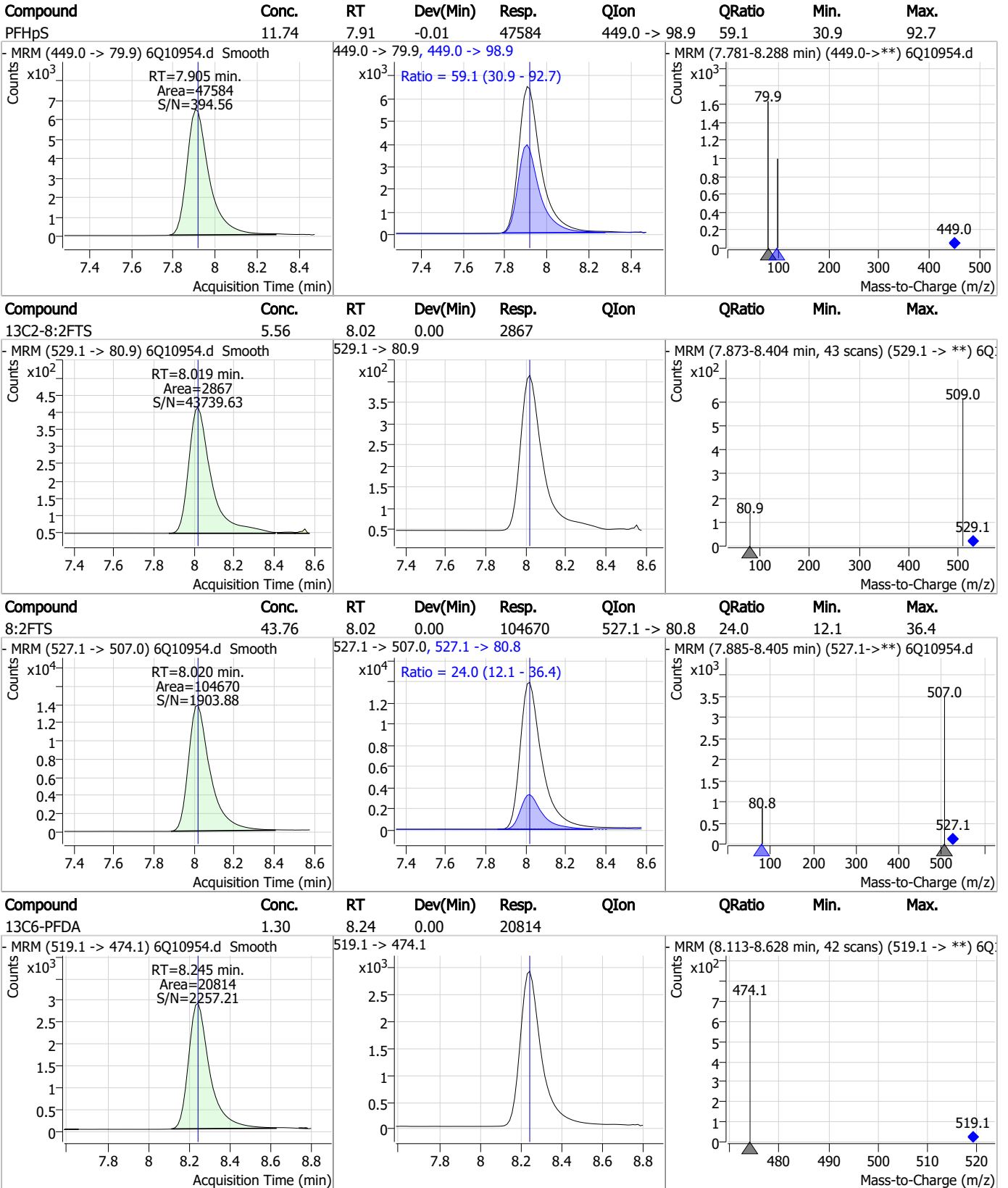
Perfluorinated Compounds by LC/MS/MS



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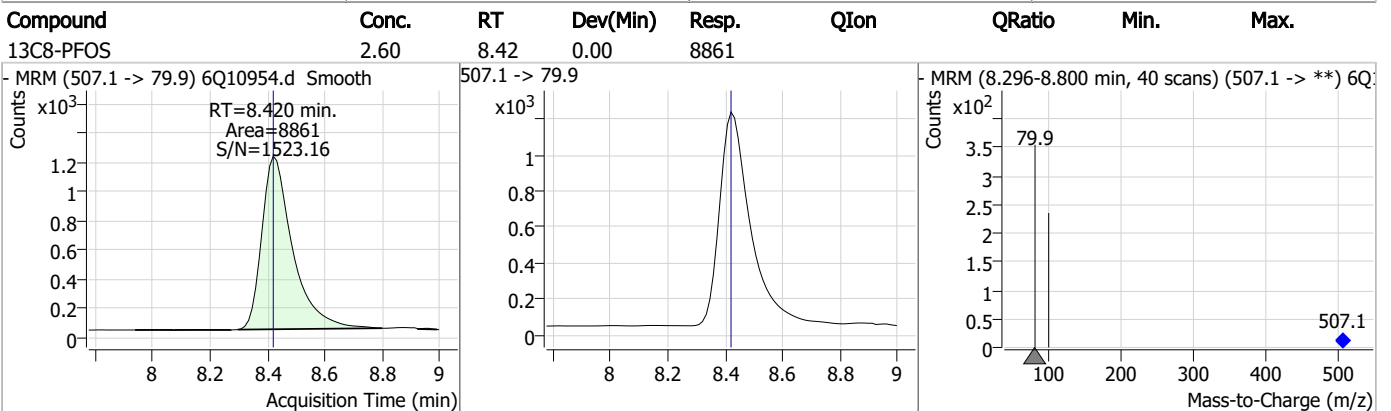
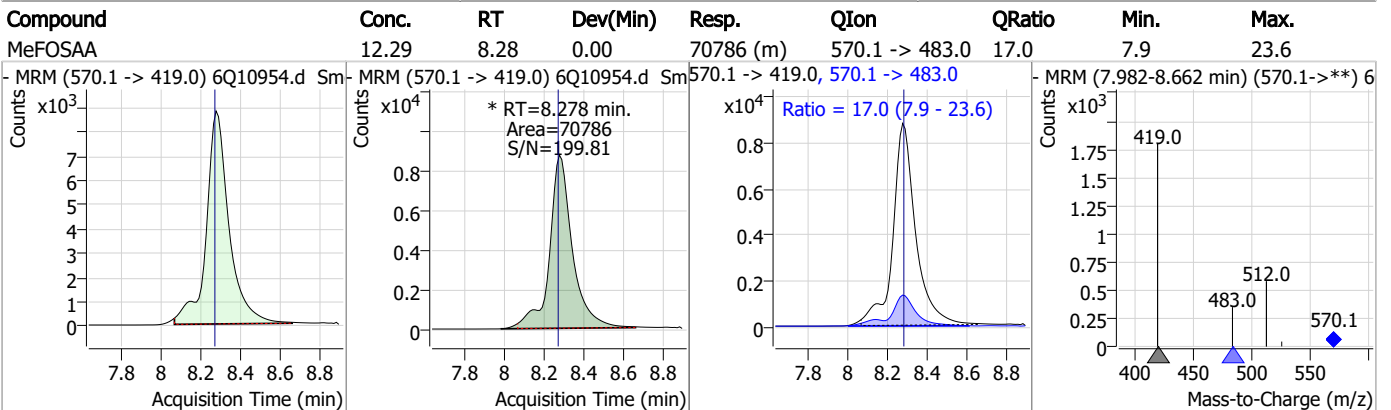
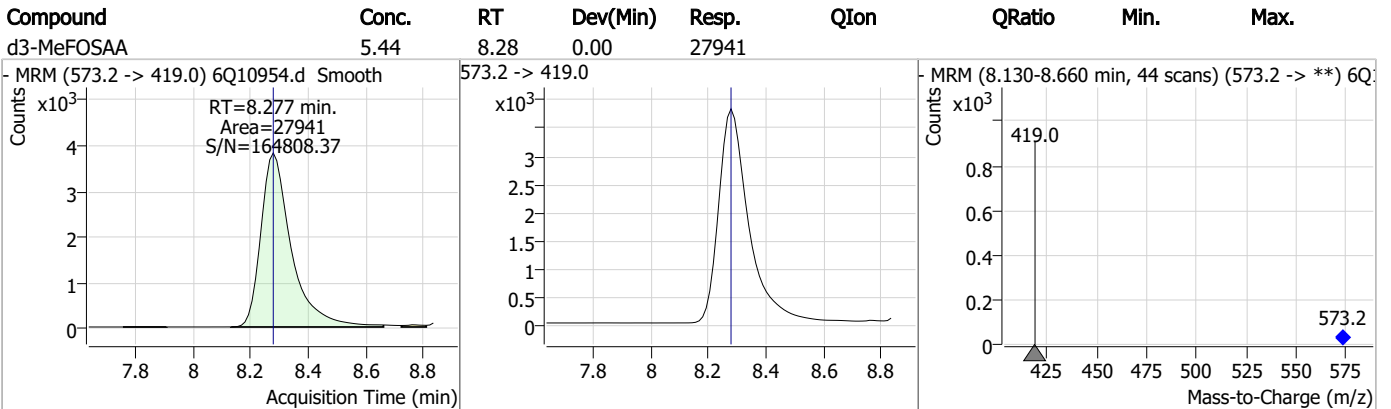
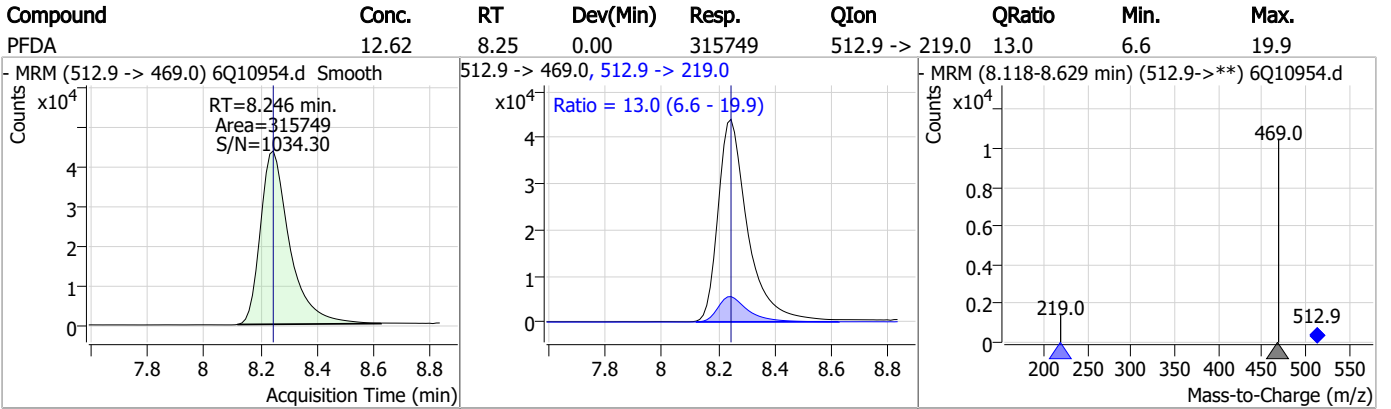
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

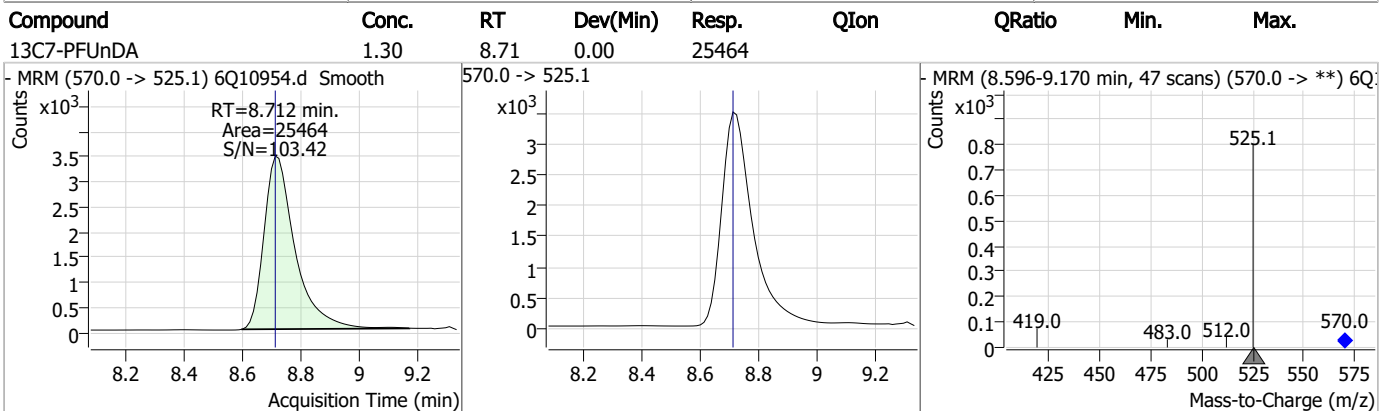
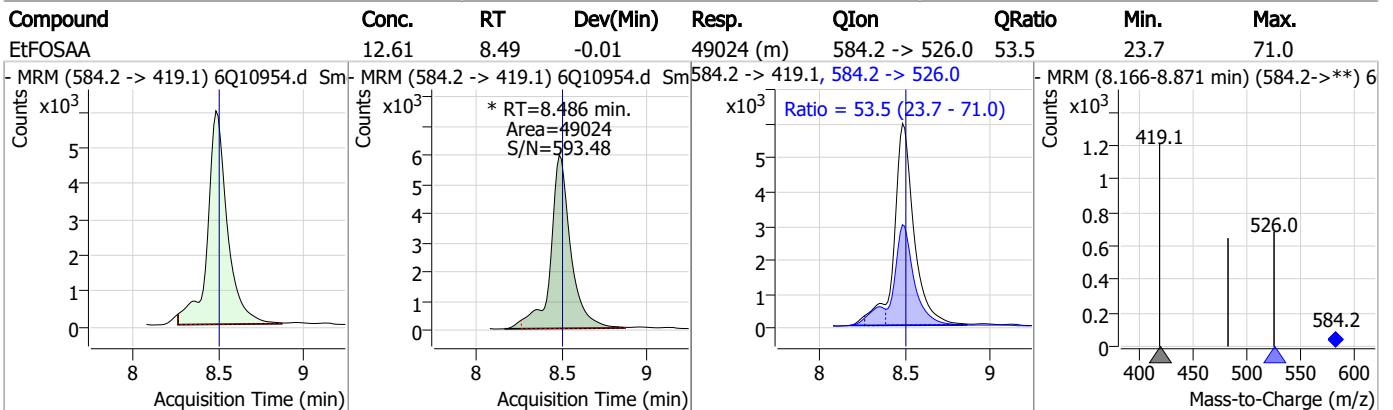
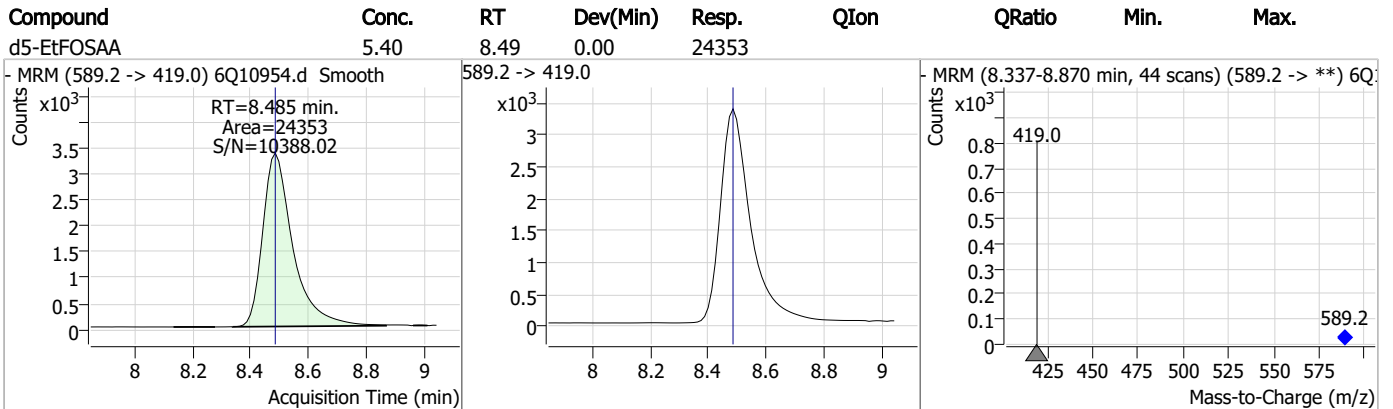
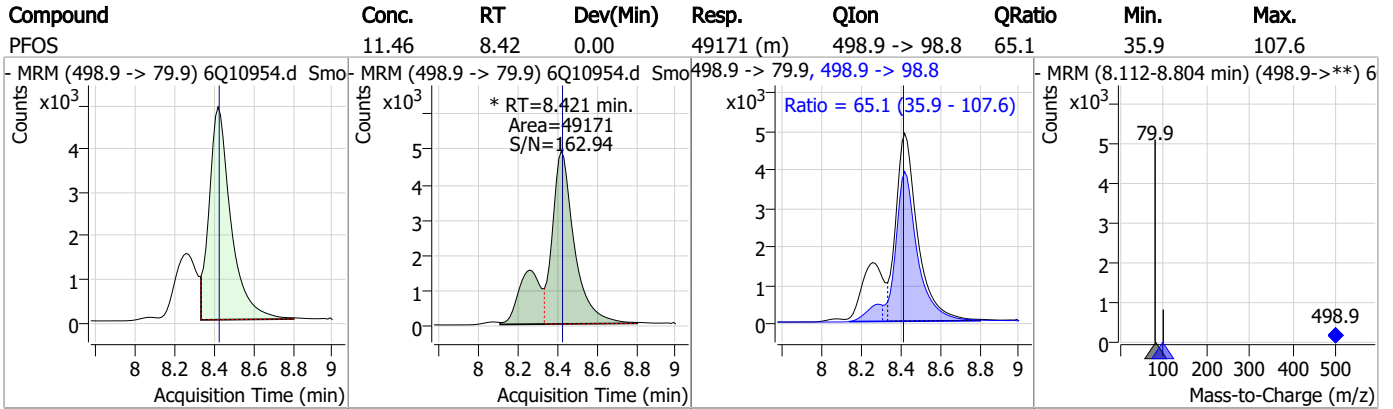


7.6.7

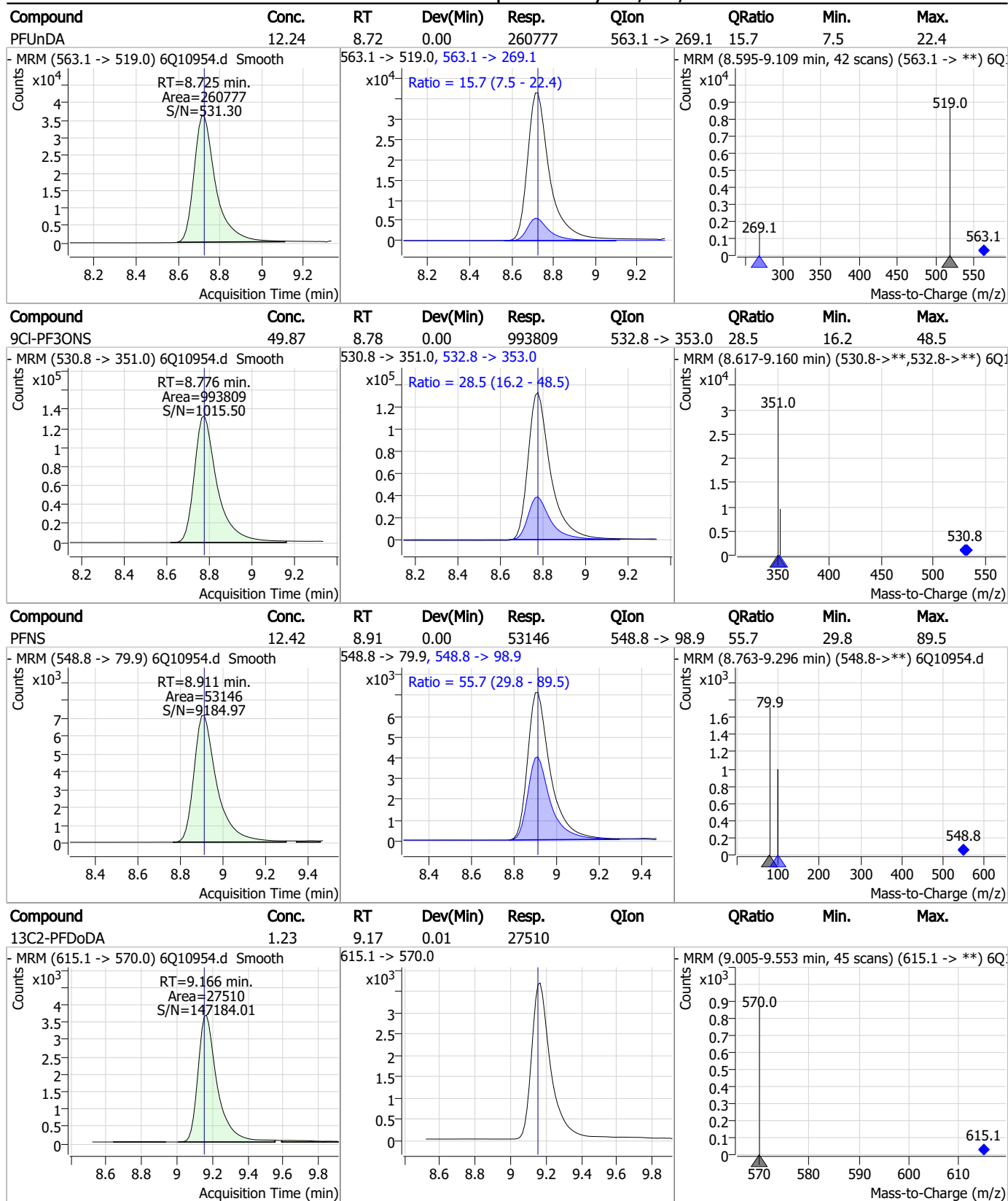
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Perfluorinated Compounds by LC/MS/MS

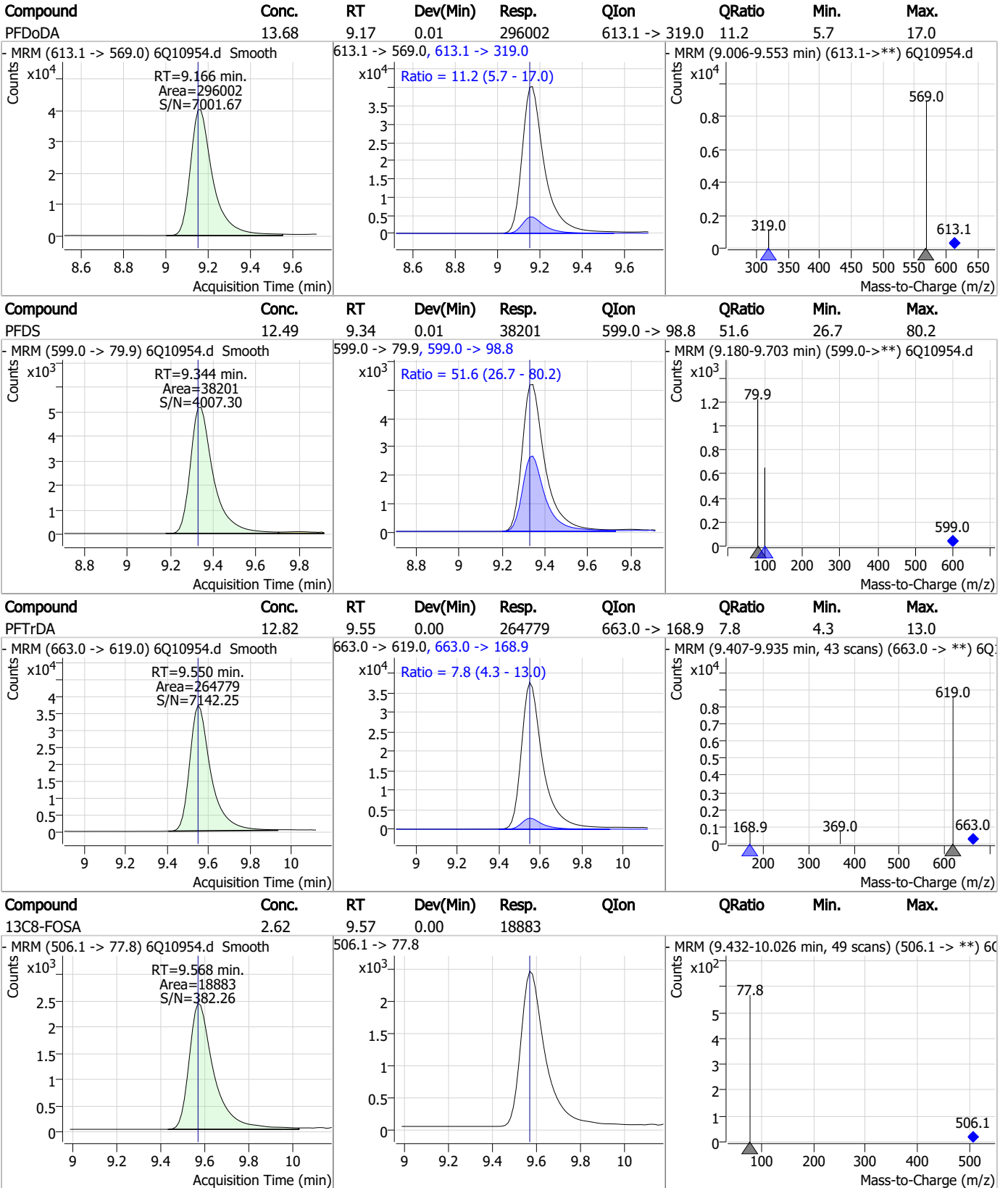


Perfluorinated Compounds by LC/MS/MS



7.67
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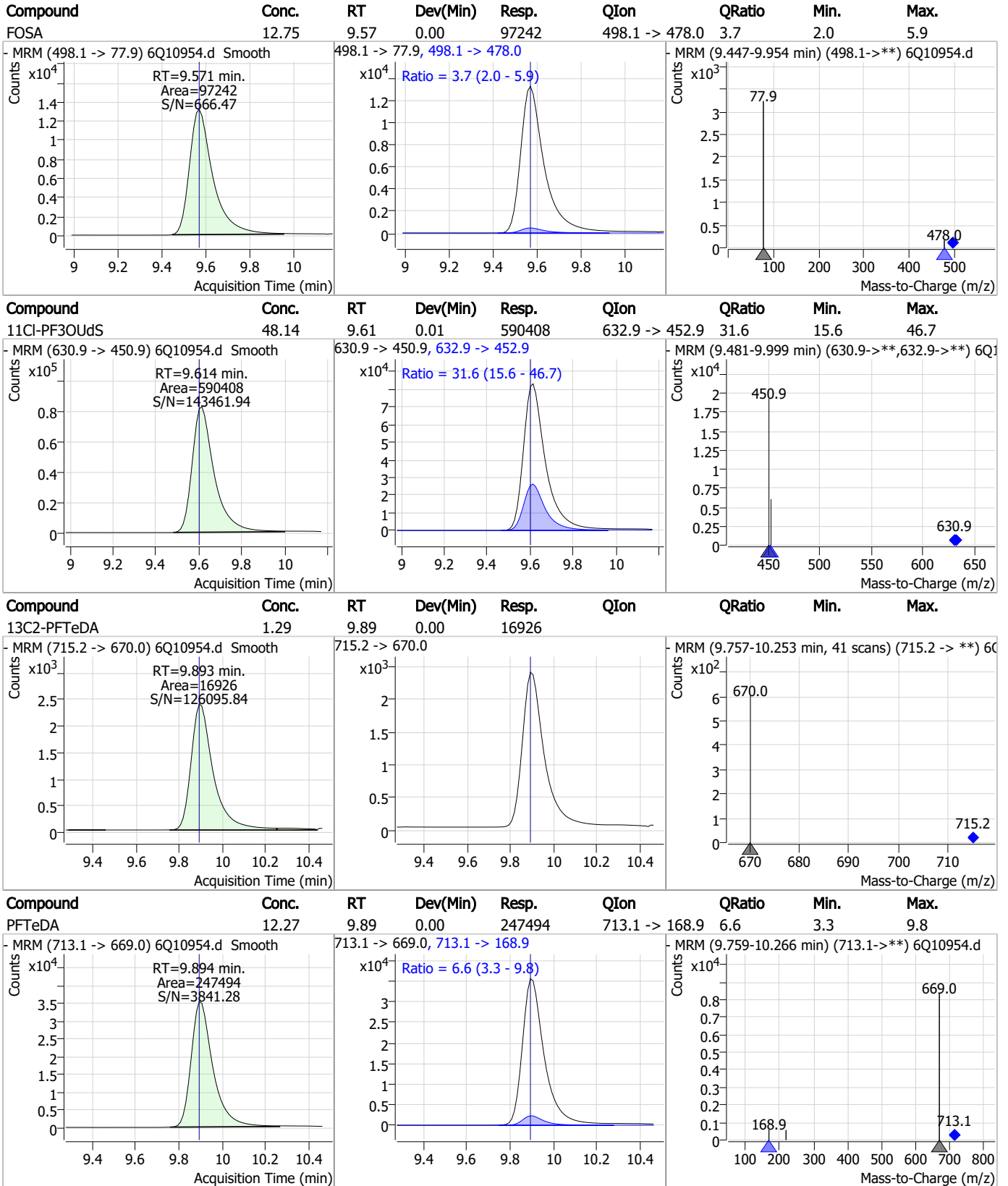
Perfluorinated Compounds by LC/MS/MS



7.67
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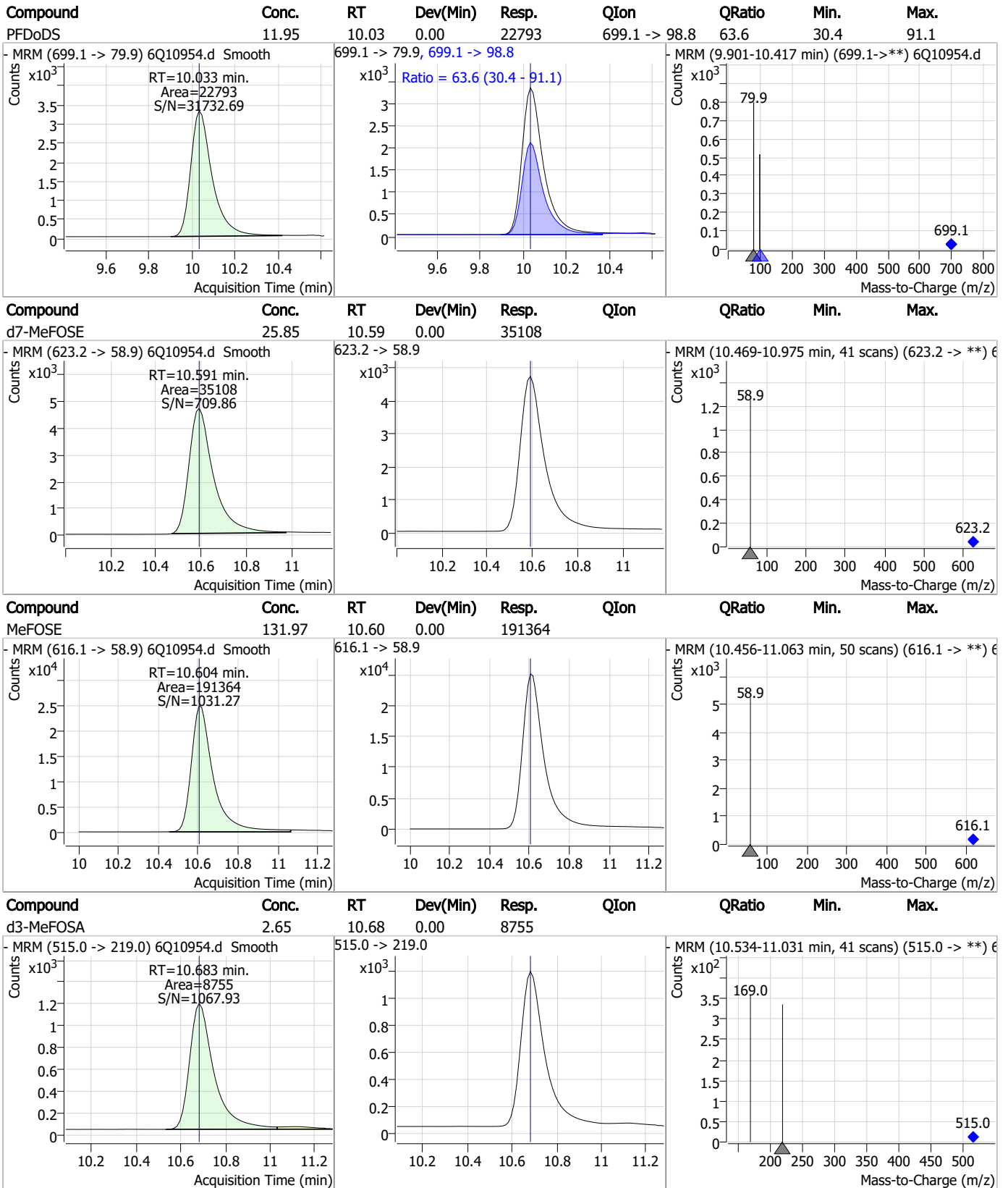


Perfluorinated Compounds by LC/MS/MS



7.6.7
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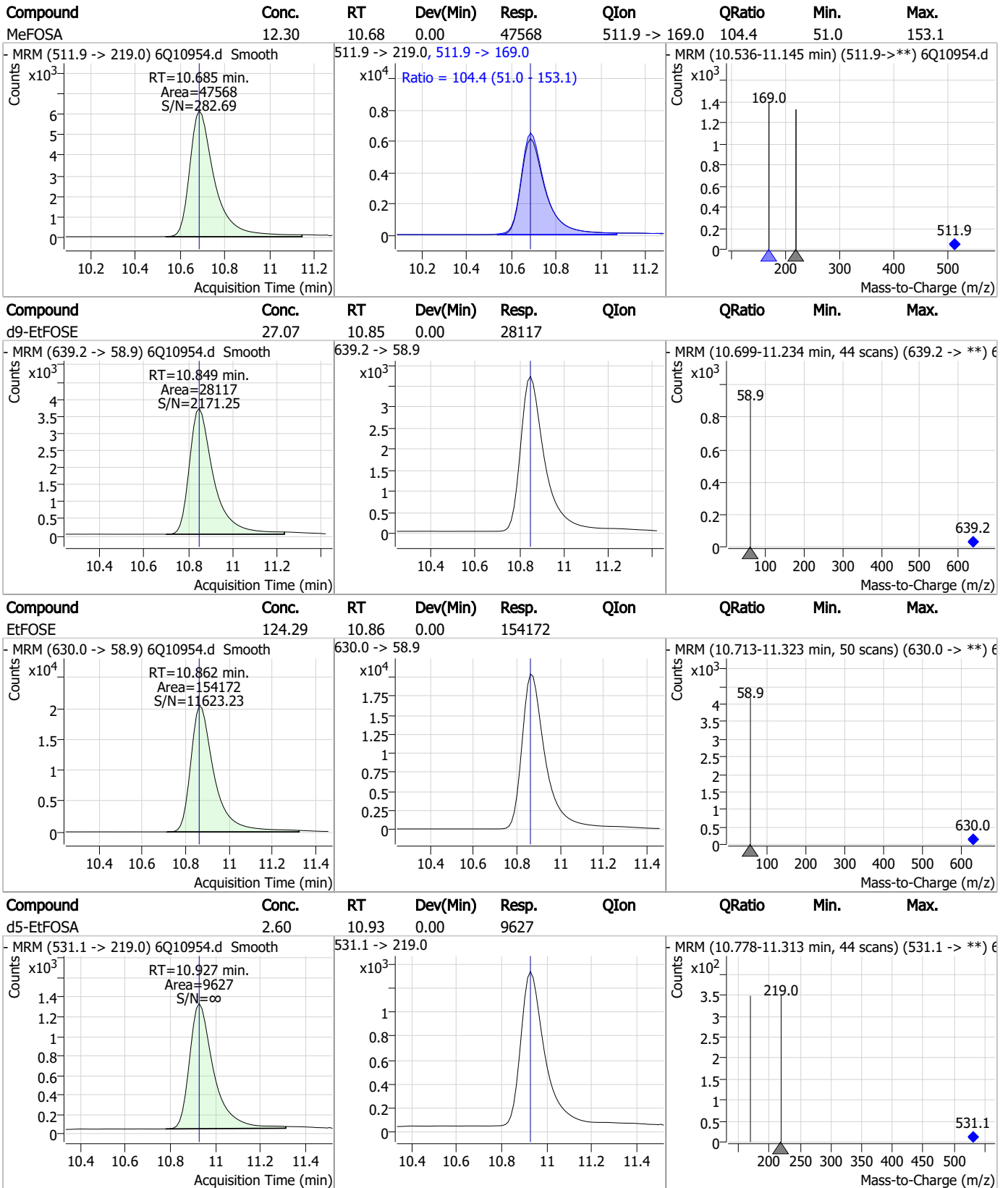
Perfluorinated Compounds by LC/MS/MS



7.6.7

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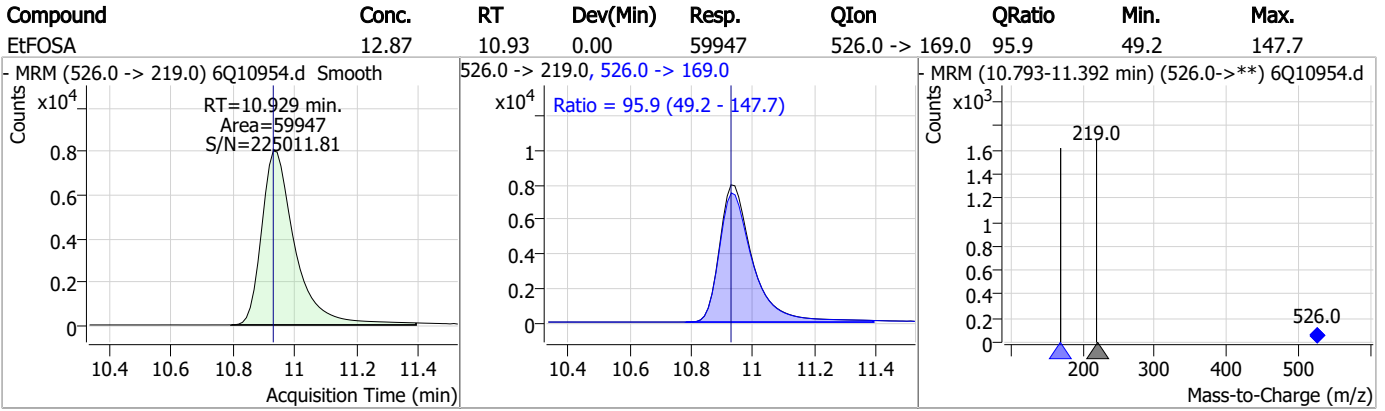
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



7.6.7

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Manual Integration Approval Summary

Sample Number: S6Q174-IC174 Method: EPA DRAFT 1633
Lab FileID: 6Q10954.D Analyst approved: 01/12/23 11:46 Martha Valls
Injection Time: 01/11/23 13:00 Supervisor approved: 01/12/23 15:42 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.33	Split peak
MeFOSAA	2355-31-9		8.28	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.42	Split peak
EtFOSAA	2991-50-6		8.49	Split peak

7.6.7.1

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Manual Integrations
APPROVED
 (compounds with "m" flag)

Natasha Gumtie
 01/12/23 15:42

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q10955.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/11/2023 1:14:21 PM
 Sample Name : ic174-7
 Vial : P1-A8
 DA Method File : 1633_011123_S6Q174.quantmethod.xml
 Batch Name : S6Q174.batch.bin
 Sample Information : OP94795,S6Q174,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.013	216.8 -> 171.9	94242	10.00 µg/L	0.012
M5-PFPeA	4.397	268.3 -> 223.0	46850	5.00 µg/L	0.000
M5-PFHxA	5.588	318.0 -> 273.0	41197	2.50 µg/L	0.000
M4-PFHpA	6.529	367.1 -> 322.0	42348	2.50 µg/L	-0.012
M8-PFOA	7.185	421.1 -> 376.0	73364	2.50 µg/L	-0.013
M9-PFNA	7.740	472.1 -> 427.0	32774	1.25 µg/L	0.000
M6-PFDA	8.233	519.1 -> 474.1	22359	1.25 µg/L	-0.012
M7-PFUnDA	8.712	570.0 -> 525.1	24695	1.25 µg/L	0.000
M2-PFDoDA	9.154	615.1 -> 570.0	31086	1.25 µg/L	0.000
M2-PFTeDA	9.893	715.2 -> 670.0	18500	1.25 µg/L	0.000
M8-FOSA	9.568	506.1 -> 77.8	19338	2.50 µg/L	0.000
M3-PFBS	5.544	302.1 -> 79.9	16092	2.50 µg/L	-0.012
M3-PFHxS	7.325	402.1 -> 79.9	9782	2.50 µg/L	-0.012
M8-PFOS	8.420	507.1 -> 79.9	8758	2.50 µg/L	0.000
M2-4:2FTS	5.253	329.1 -> 80.9	1740	5.00 µg/L	0.000
M2-6:2FTS	6.946	429.1 -> 80.9	2442	5.00 µg/L	-0.012
M2-8:2FTS	8.019	529.1 -> 80.9	2561	5.00 µg/L	0.000
M3-MeFOSAA	8.277	573.2 -> 419.0	26481	5.00 µg/L	0.000
M3-HFPO-DA	5.965	286.9 -> 168.9	17609	10.00 µg/L	-0.012
M5-EtFOSAA	8.485	589.2 -> 419.0	24975	5.00 µg/L	0.000
M7-MeFOSE	10.591	623.2 -> 58.9	37644	25.00 µg/L	0.000
M9-EtFOSE	10.849	639.2 -> 58.9	28788	25.00 µg/L	0.000
M5-EtFOSA	10.927	531.1 -> 219.0	10119	2.50 µg/L	0.000
M3-MeFOSA	10.683	515.0 -> 219.0	9034	2.50 µg/L	0.000
13C4-PFOS	8.421	502.8 -> 79.9	11918	2.50 µg/L	0.000
13C3-PFBA	3.004	216.0 -> 172.0	41829	5.00 µg/L	0.000
18O2-PFHxS	7.324	403.0 -> 83.9	7802	2.50 µg/L	-0.012
13C4-PFOA	7.185	417.1 -> 372.0	84877	2.50 µg/L	-0.013
13C2-PFDA	8.245	515.1 -> 470.1	29037	1.25 µg/L	0.000
13C5-PFNA	7.740	468.0 -> 423.0	36106	1.25 µg/L	0.000
13C2-PFHxA	5.589	315.1 -> 270.0	44255	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.253	329.1 -> 80.9	1740	4.28 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 85.5%		
13C2-6:2FTS	6.946	429.1 -> 80.9	2442	4.38 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 87.6%		
13C2-8:2FTS	8.019	529.1 -> 80.9	2561	4.21 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 84.2%		
13C2-PFDoDA	9.154	615.1 -> 570.0	31086	1.35 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 108.0%		
13C2-PFTeDA	9.893	715.2 -> 670.0	18500	1.37 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 109.4%		
13C3-PFBS	5.544	302.1 -> 79.9	16092	2.46 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.4%		
13C3-PFHxS	7.325	402.1 -> 79.9	9782	2.31 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 = 92.4%		
13C4-PFBA	3.013	216.8 -> 171.9	94242	9.86 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 98.6%		
13C4-PFHpA	6.529	367.1 -> 322.0	42348	2.36 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 94.4%		
13C5-PFHxA	5.588	318.0 -> 273.0	41197	2.32 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 92.7%		
13C5-PFPeA	4.397	268.3 -> 223.0	46850	4.75 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.9%		
13C6-PFDA	8.233	519.1 -> 474.1	22359	1.35 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 108.2%		
13C7-PFUnDA	8.712	570.0 -> 525.1	24695	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.9%		
13C8-FOSA	9.568	506.1 -> 77.8	19338	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.1%		
13C8-PFOA	7.185	421.1 -> 376.0	73364	2.58 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.2%		
13C8-PFOS	8.420	507.1 -> 79.9	8758	2.30 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 92.0%		
13C9-PFNA	7.740	472.1 -> 427.0	32774	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.2%		
d3-MeFOSAA	8.277	573.2 -> 419.0	26481	4.61 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 92.3%		
13C3-HFPO-DA	5.965	286.9 -> 168.9	17609	9.65 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 96.5%		
d3-MeFOSA	10.683	515.0 -> 219.0	9034	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.0%		
d5-EtFOSAA	8.485	589.2 -> 419.0	24975	4.96 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.2%		
d7-MeFOSE	10.591	623.2 -> 58.9	37644	24.81 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 99.3%		
d9-EtFOSE	10.849	639.2 -> 58.9	28788	24.81 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 99.3%		
d5-EtFOSA	10.927	531.1 -> 219.0	10119	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.0%		
Target Compounds					QValue
4:2FTS	5.254	327.1 -> 307.0	395478	95.58 µg/L	96
		327.1 -> 80.9	89202		
6:2FTS	6.946	427.1 -> 407.0	365857	96.30 µg/L	100
		427.1 -> 80.9	71919		
8:2FTS	8.008	527.1 -> 507.0	222499	104.16 µg/L	m 98
		527.1 -> 80.8	51918		
EtFOSAA	8.486	584.2 -> 419.1	101013	25.34 µg/L	m 81
		584.2 -> 526.0	60476		
FOSA	9.571	498.1 -> 77.9	204174	26.14 µg/L	100
		498.1 -> 478.0	7845		
MeFOSAA	8.278	570.1 -> 419.0	156526	28.67 µg/L	m 95
		570.1 -> 483.0	28087		
PFBA	3.007	212.8 -> 168.9	259456	107.31 µg/L	100
PFBS	5.544	298.7 -> 79.9	148823	22.85 µg/L	95
		298.7 -> 98.8	66441		
PFDA	8.233	512.9 -> 469.0	703054	26.16 µg/L	99
		512.9 -> 219.0	94923		
PFDoDA	9.166	613.1 -> 569.0	594934	24.33 µg/L	99
		613.1 -> 319.0	69794		
PFDS	9.329	599.0 -> 79.9	87972	29.10 µg/L	91

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	41419			
PFHpA	6.530	363.1 -> 319.0	672878	26.35	µg/L	97
		363.1 -> 169.0	94787			
PFHpS	7.905	449.0 -> 79.9	102383	25.55	µg/L	98
		449.0 -> 98.9	61572			
PFHxA	5.591	313.0 -> 269.0	459703	27.62	µg/L	98
		313.0 -> 118.9	15796			
PFHxS	7.326	398.7 -> 79.9	106513	22.87	µg/L	m 98
		398.7 -> 98.9	62438			
PFNA	7.740	463.0 -> 419.0	610217	26.91	µg/L	100
		463.0 -> 219.0	114469			
PFNS	8.899	548.8 -> 79.9	112476	26.59	µg/L	98
		548.8 -> 98.9	68719			
PFOA	7.186	413.0 -> 369.0	832284	25.35	µg/L	98
		413.0 -> 169.0	111893			
PFOS	8.421	498.9 -> 79.9	109938	25.92	µg/L	m 88
		498.9 -> 98.8	67410			
PFPeA	4.401	263.0 -> 219.0	534954	52.00	µg/L	100
PFPeS	6.607	349.1 -> 79.9	134131	24.33	µg/L	98
		349.1 -> 98.9	72240			
PFTeDA	9.894	713.1 -> 669.0	538783	24.43	µg/L	99
		713.1 -> 168.9	36658			
PFTrDA	9.550	663.0 -> 619.0	594224	25.45	µg/L	96
		663.0 -> 168.9	44192			
PFUnDA	8.712	563.1 -> 519.0	575926	27.89	µg/L	99
		563.1 -> 269.1	82714			
11Cl-PF3OUdS	9.614	630.9 -> 450.9	1304343	97.69	µg/L	97
		632.9 -> 452.9	381122			
9Cl-PF3ONS	8.763	530.8 -> 351.0	2056594	94.80	µg/L	97
		532.8 -> 353.0	634385			
ADONA	6.792	376.9 -> 250.9	3655446	93.36	µg/L	99
		376.9 -> 84.8	767389			
HFPO-DA	5.966	284.9 -> 168.9	185000	103.89	µg/L	98
		284.9 -> 184.9	21042			
3:3FTCA	3.852	241.0 -> 177.0	72631	132.51	µg/L	100
		241.0 -> 117.0	8963			
5:3FTCA	6.207	341.0 -> 237.1	2352215	679.47	µg/L	95
		341.0 -> 217.0	1885412			
7:3FTCA	7.630	441.0 -> 316.9	1508764	646.59	µg/L	96
		441.0 -> 336.9	3192430			
EtFOSA	10.929	526.0 -> 219.0	129043	26.35	µg/L	99
		526.0 -> 169.0	127823			
EtFOSE	10.862	630.0 -> 58.9	335570	264.23	µg/L	100
MeFOSA	10.685	511.9 -> 219.0	106013	26.56	µg/L	98
		511.9 -> 169.0	105873			
MeFOSE	10.604	616.1 -> 58.9	406063	261.16	µg/L	100
PFDoS	10.033	699.1 -> 79.9	50431	26.75	µg/L	99
		699.1 -> 98.8	31186			
NFDHA	5.471	295.0 -> 201.0	57674	53.42	µg/L	97
		295.0 -> 84.9	24070			
PFMBA	4.801	279.0 -> 85.1	168789	52.60	µg/L	100
PFMPA	3.550	229.0 -> 84.9	150387	52.81	µg/L	100
PFEESA	6.097	314.8 -> 134.9	1070136	46.18	µg/L	100
		314.8 -> 82.9	27484			

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

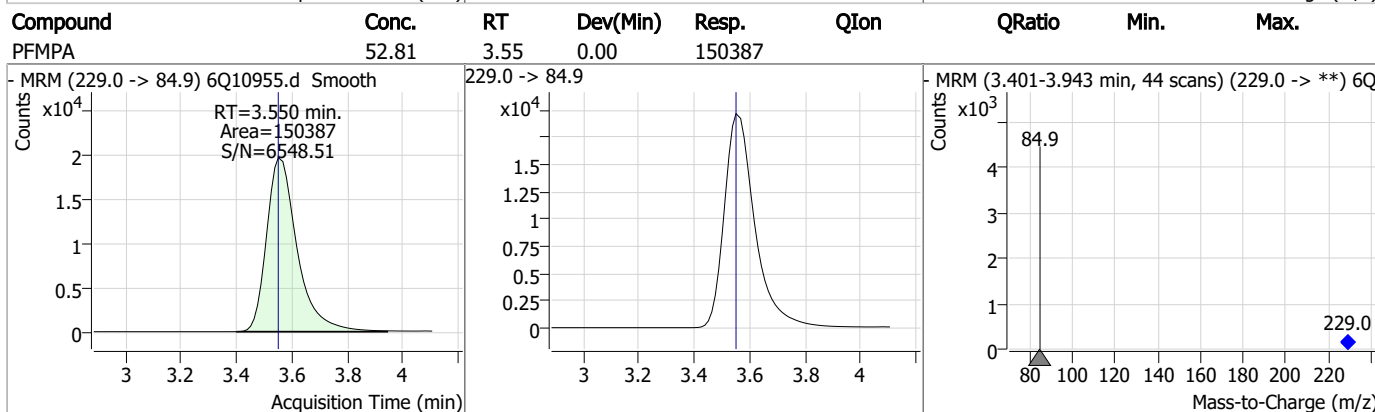
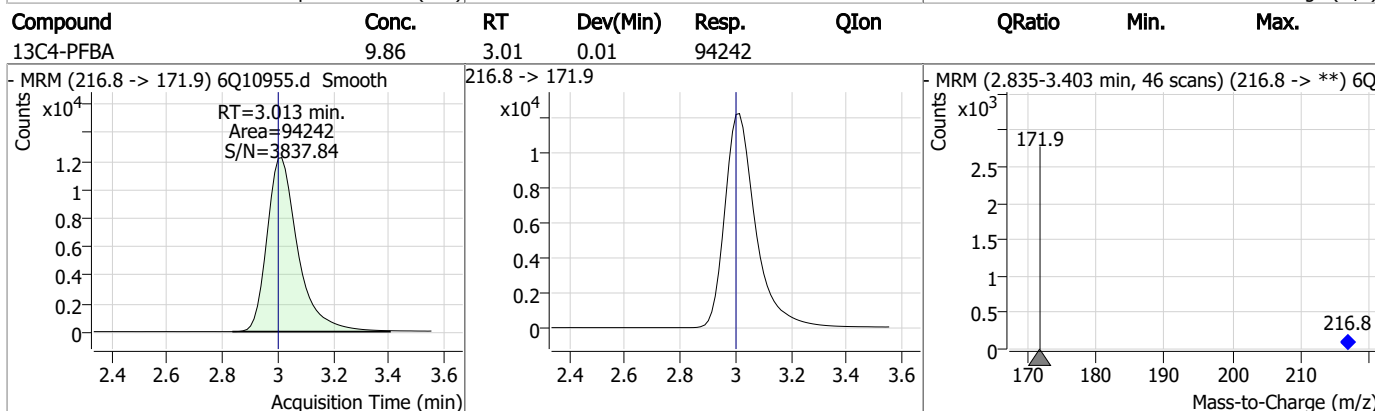
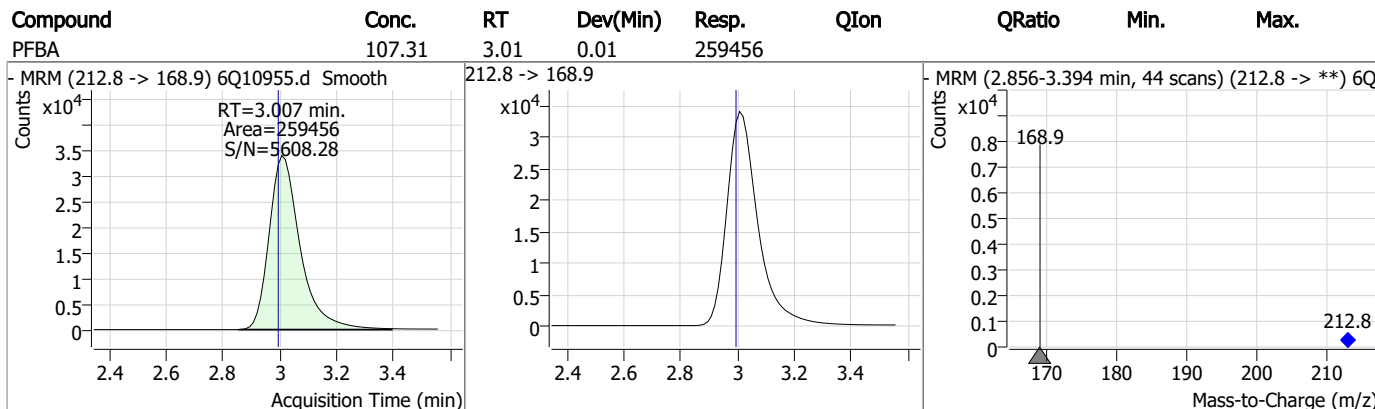
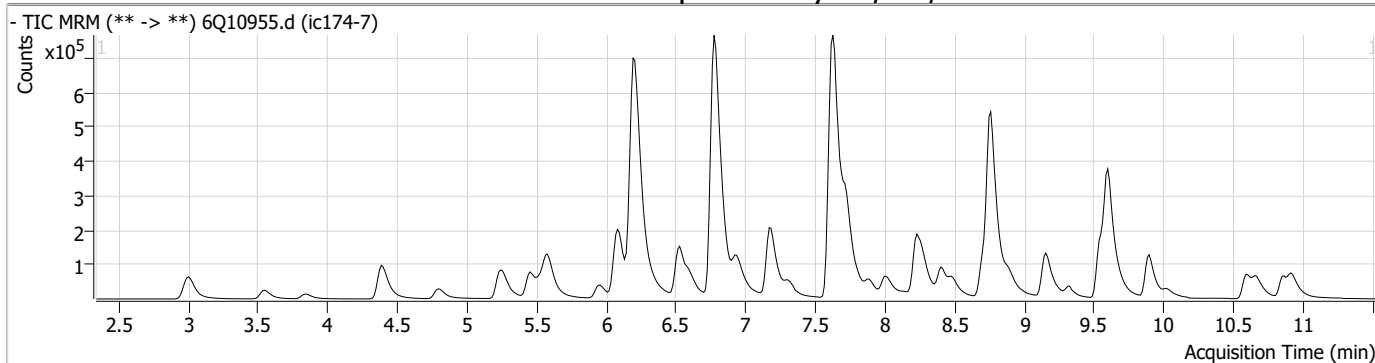
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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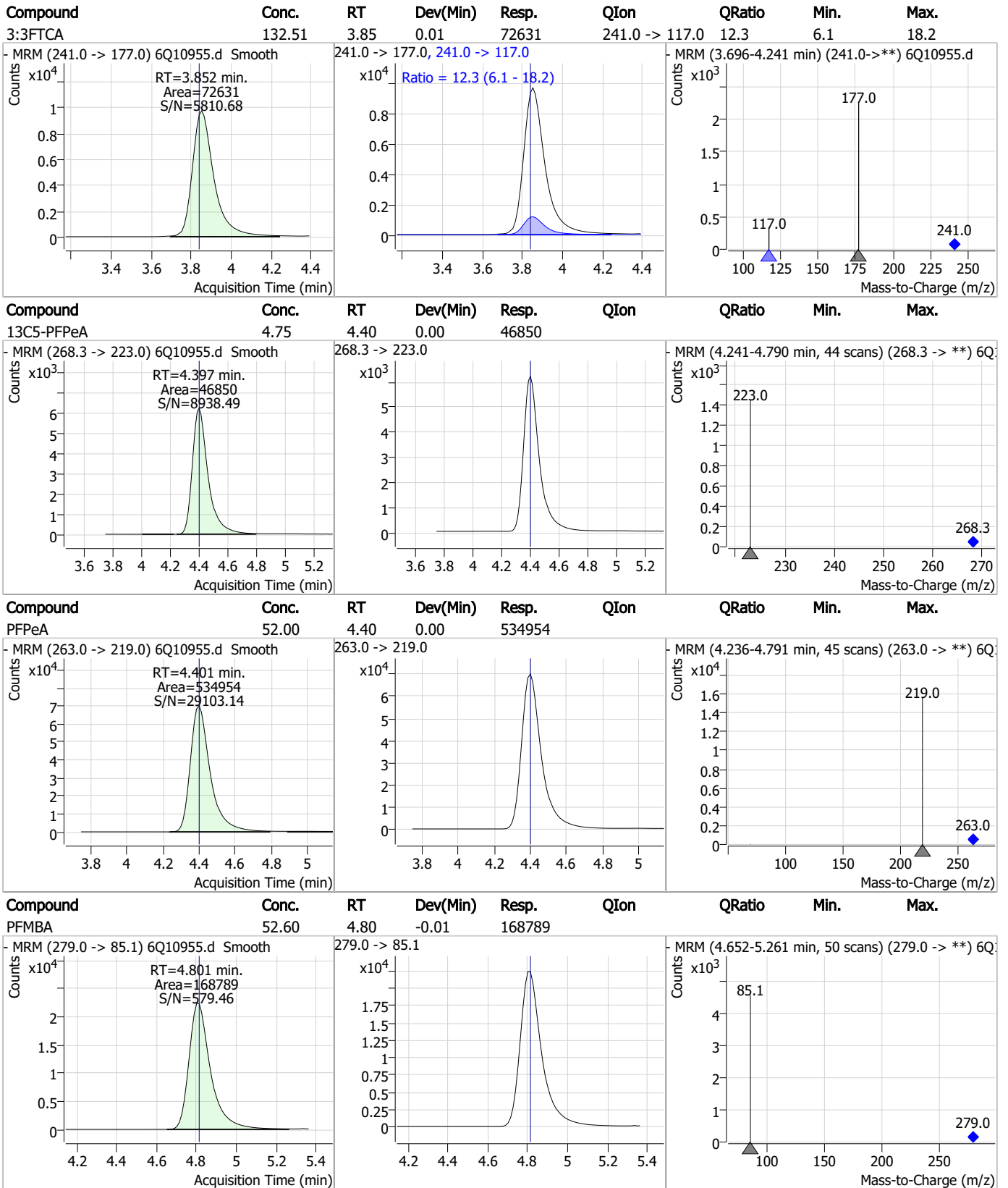
7.6.8
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Perfluorinated Compounds by LC/MS/MS



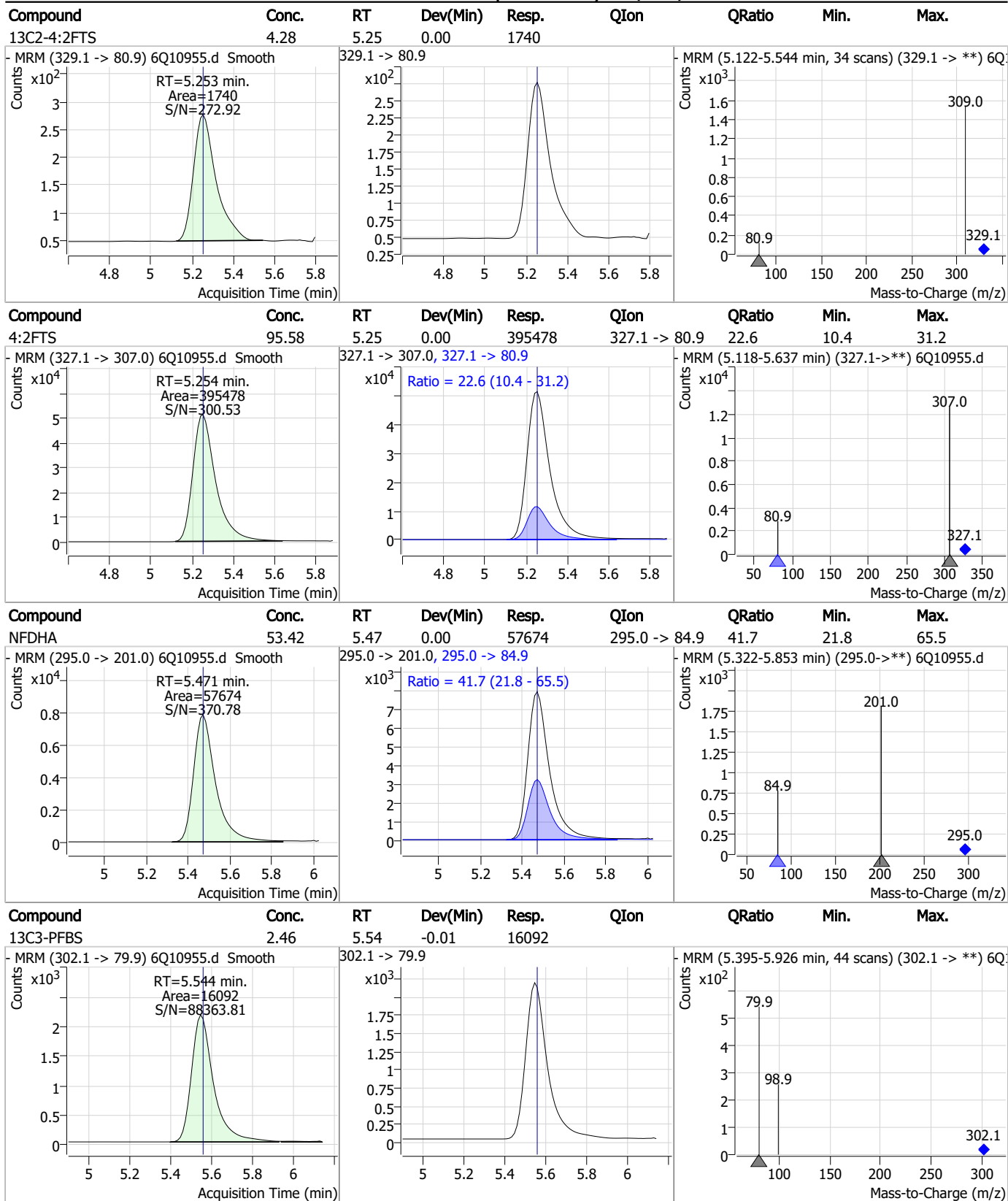
Perfluorinated Compounds by LC/MS/MS



7.6.8

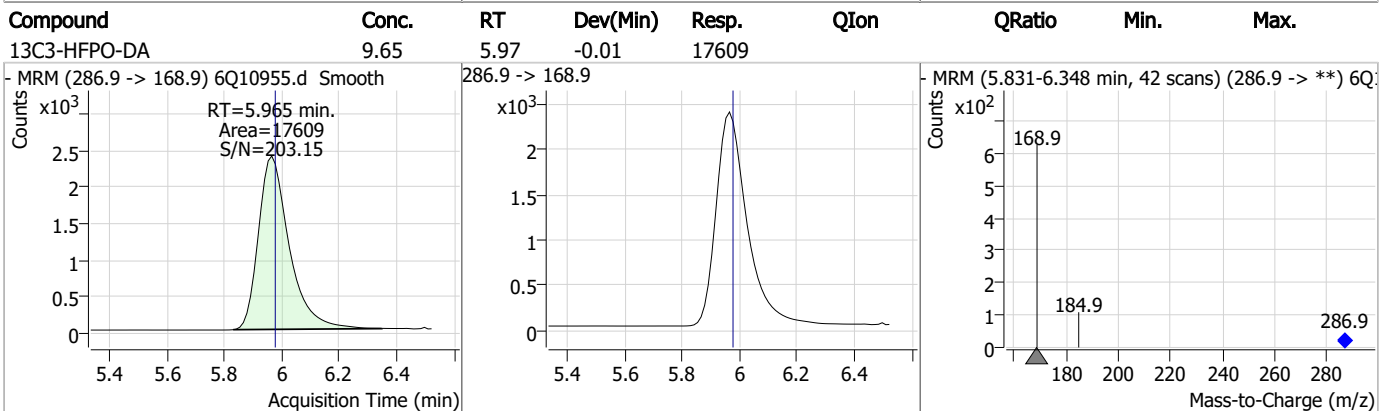
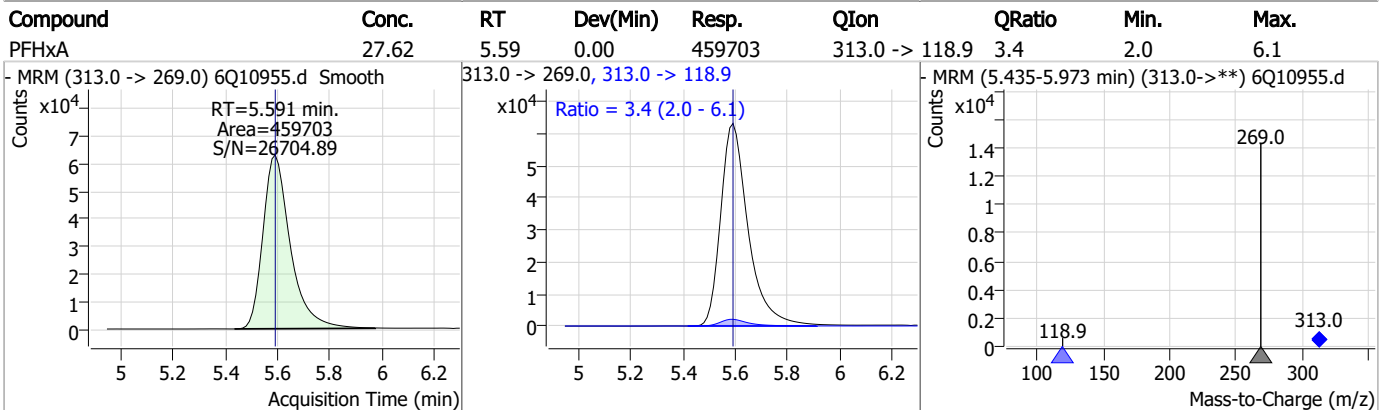
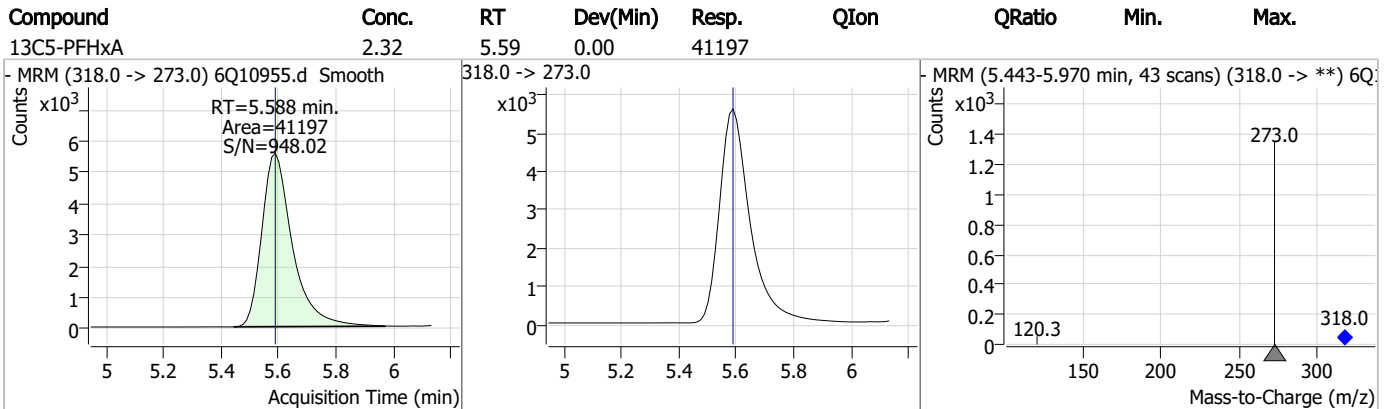
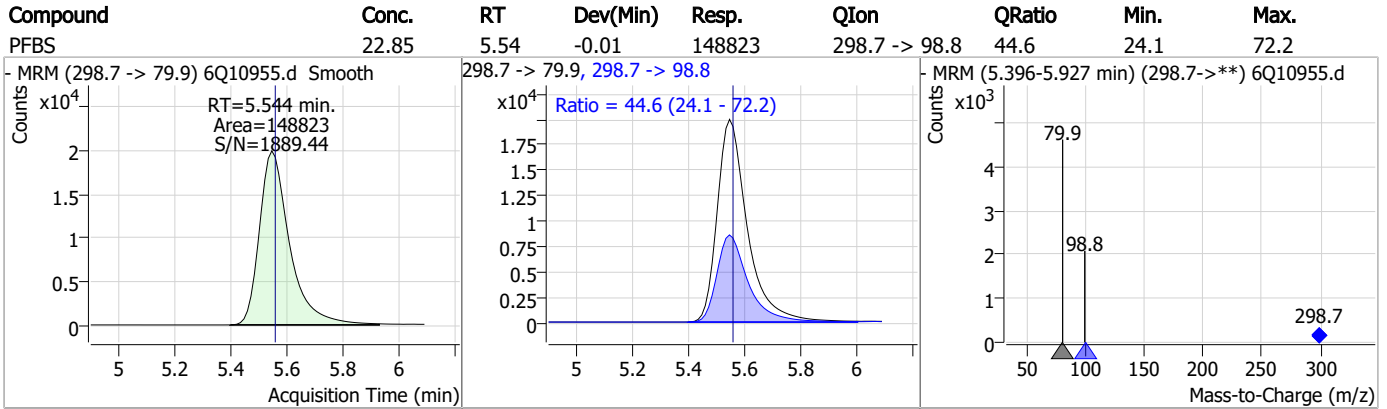
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Perfluorinated Compounds by LC/MS/MS



7.6.8
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Perfluorinated Compounds by LC/MS/MS

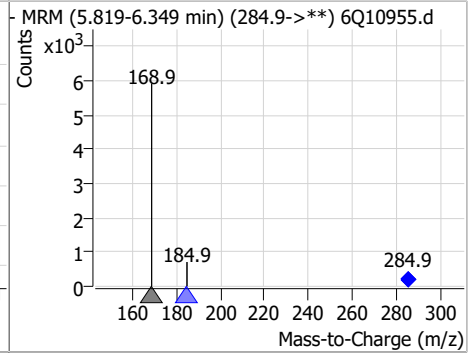
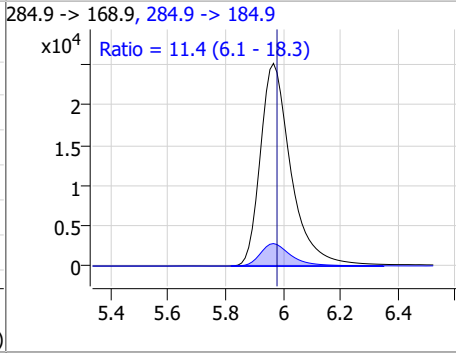
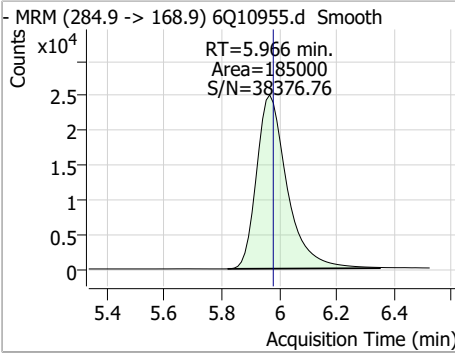


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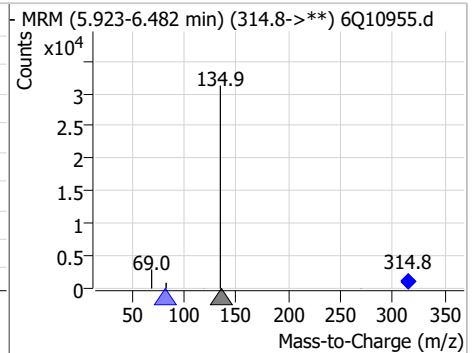
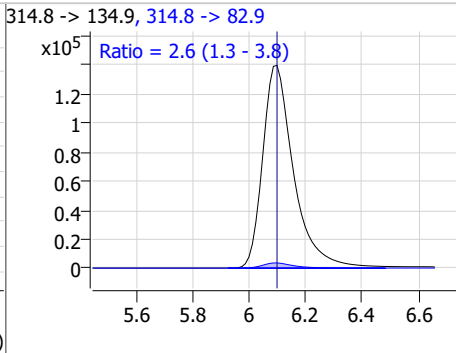
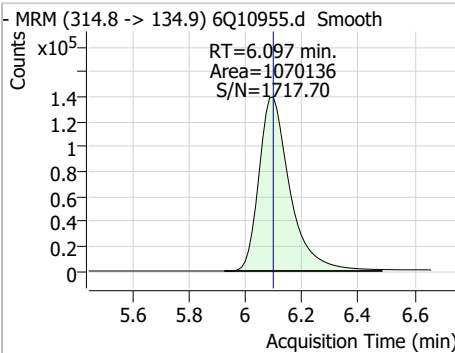
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Perfluorinated Compounds by LC/MS/MS

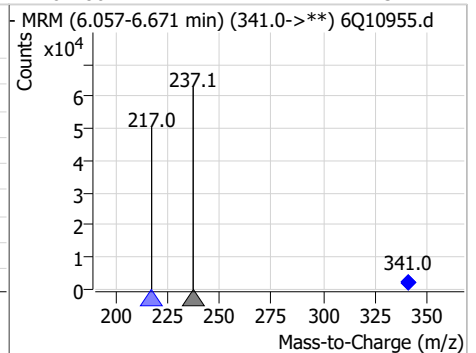
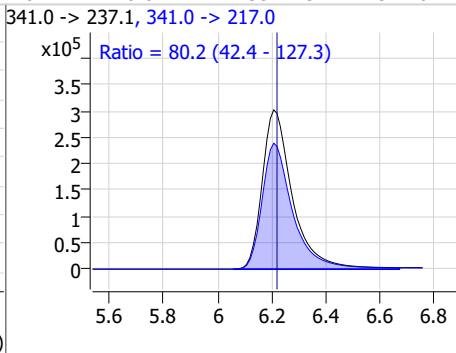
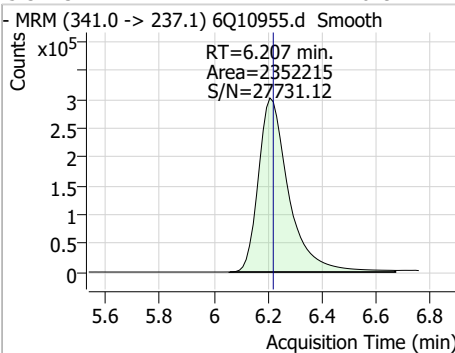
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	103.89	5.97	-0.01	185000	284.9 -> 184.9	11.4	6.1	18.3



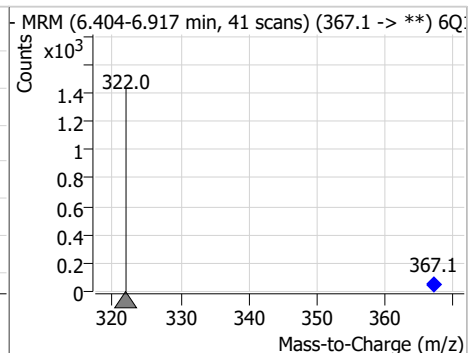
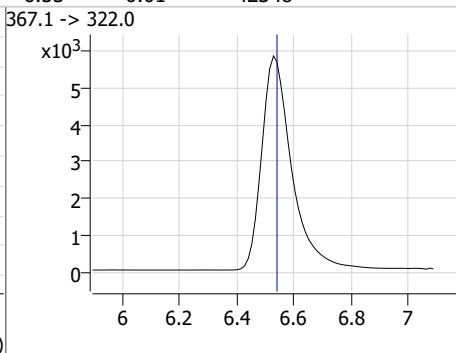
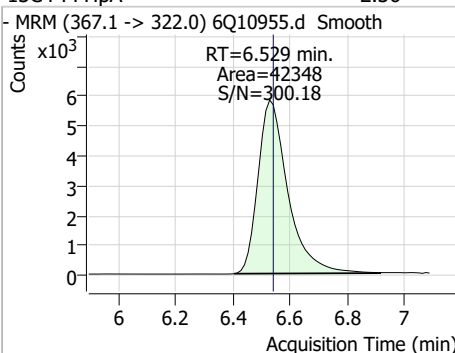
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	46.18	6.10	0.00	1070136	314.8 -> 82.9	2.6	1.3	3.8



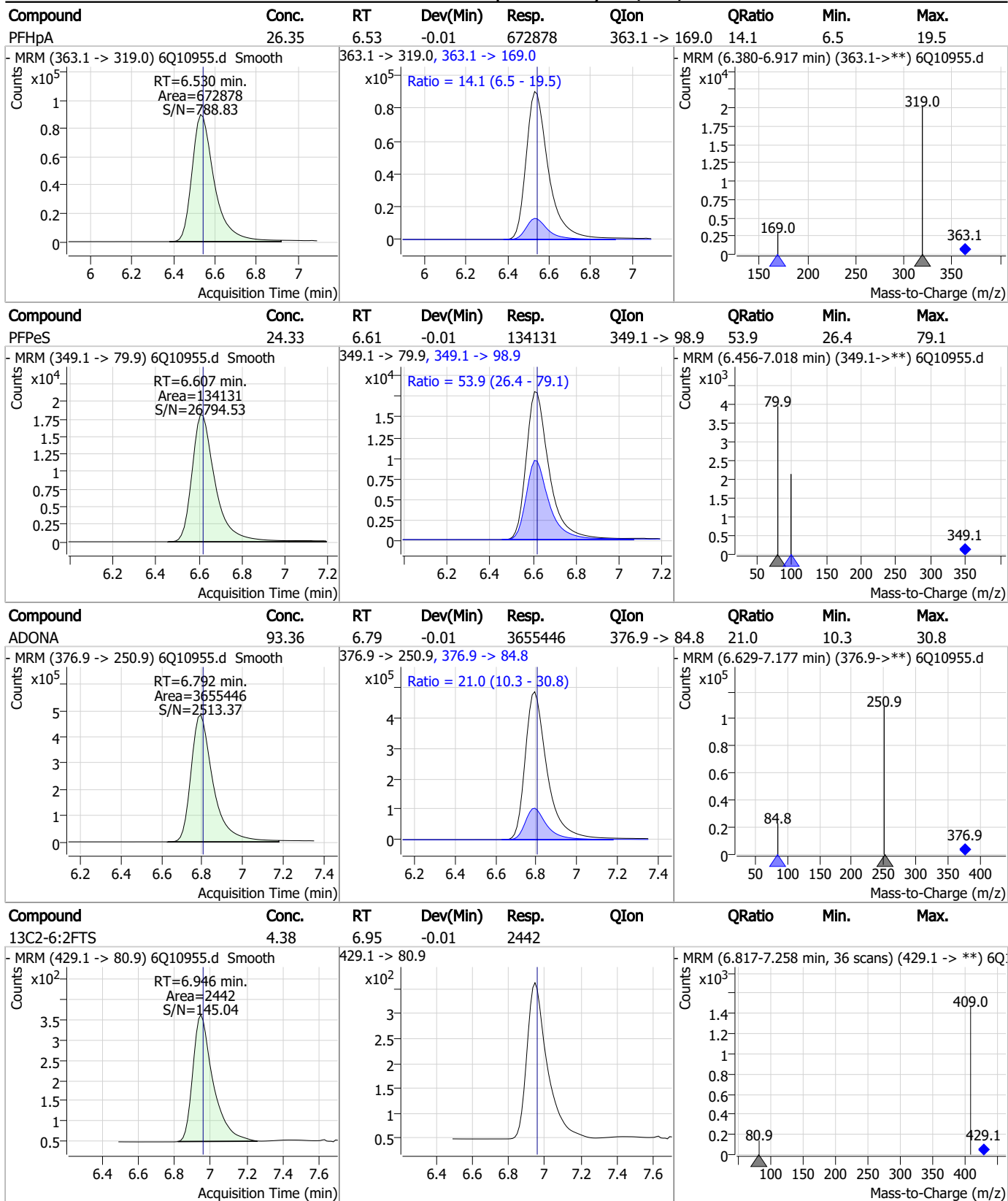
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	679.47	6.21	-0.01	2352215	341.0 -> 217.0	80.2	42.4	127.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.36	6.53	-0.01	42348	367.1 -> 322.0			

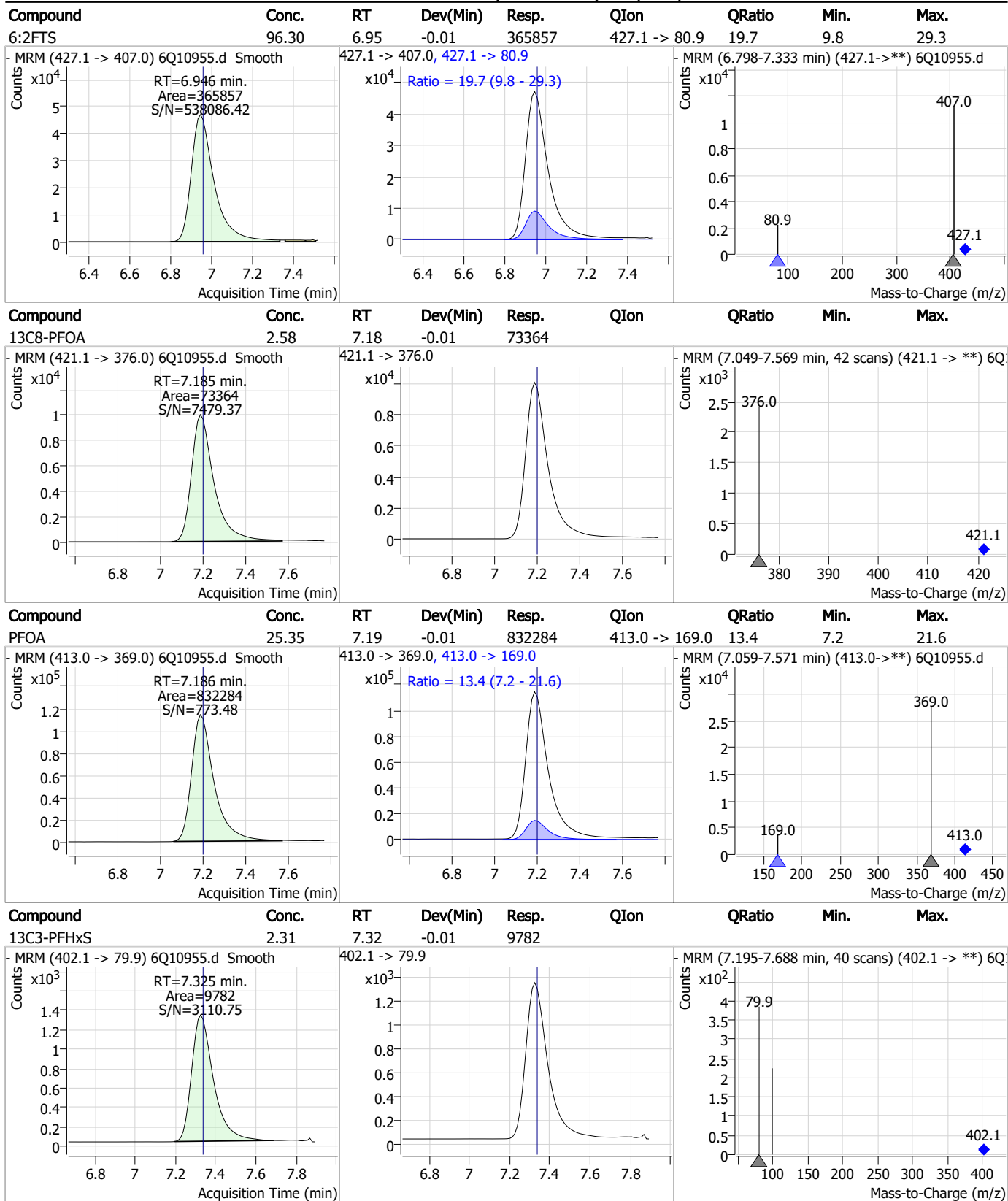


Perfluorinated Compounds by LC/MS/MS



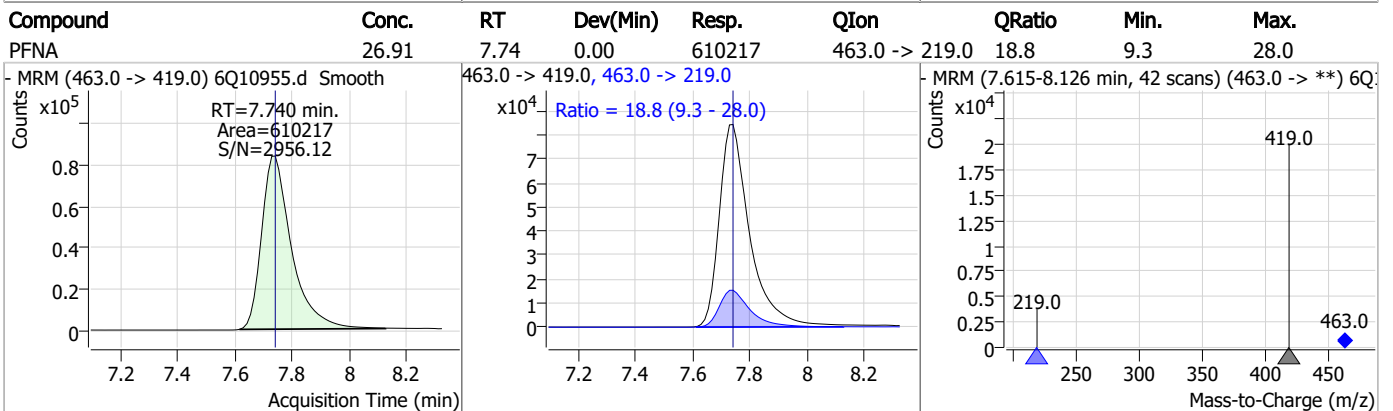
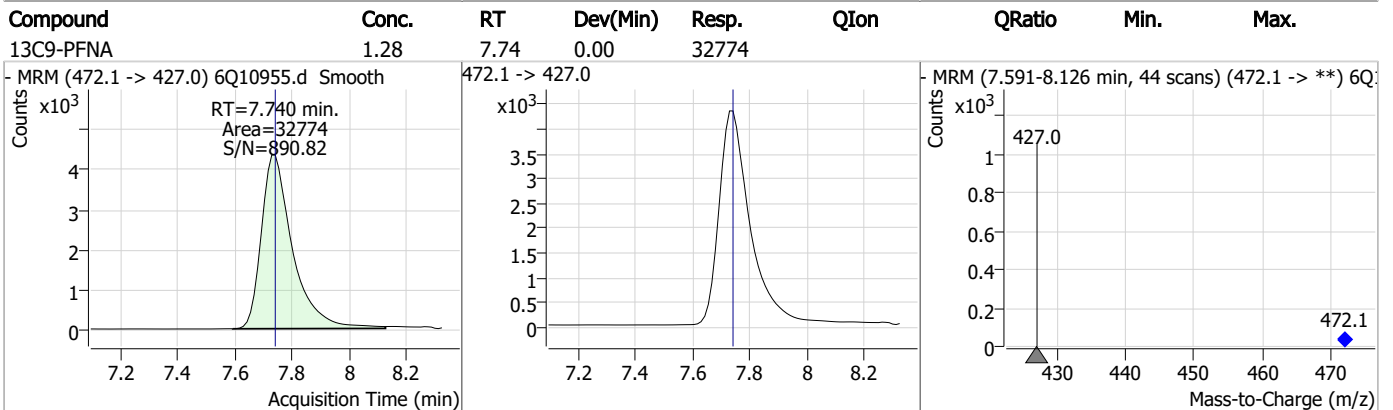
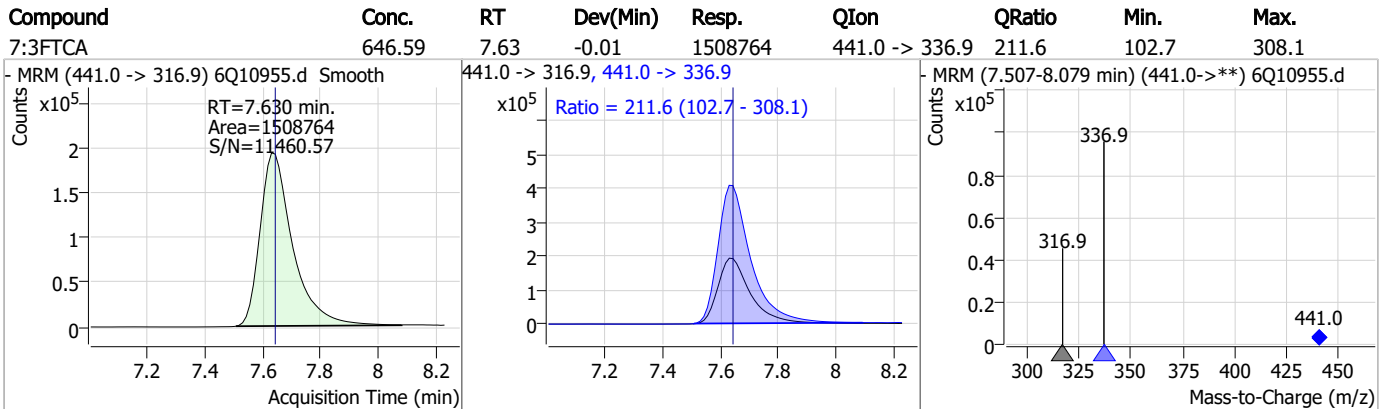
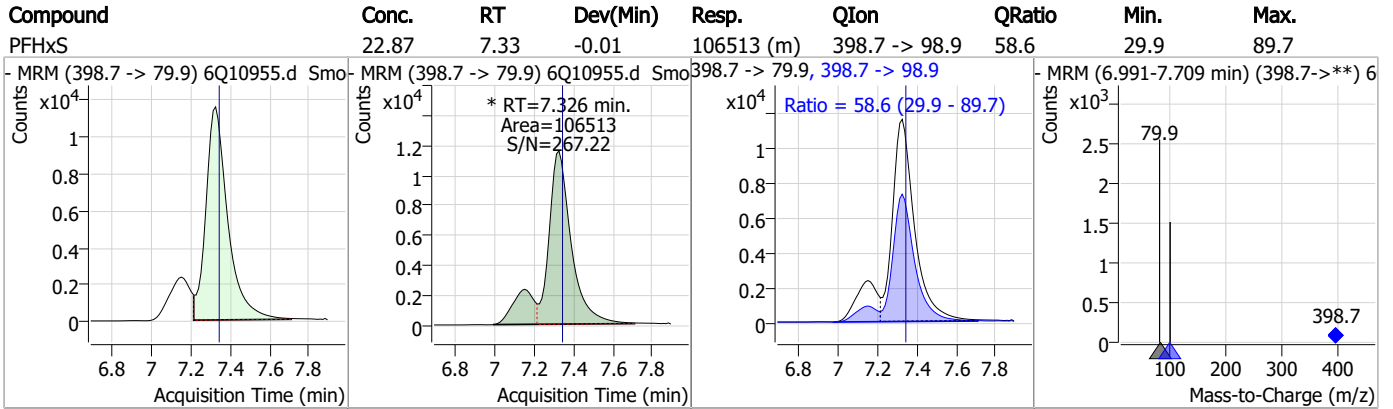
7.6.8
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Perfluorinated Compounds by LC/MS/MS



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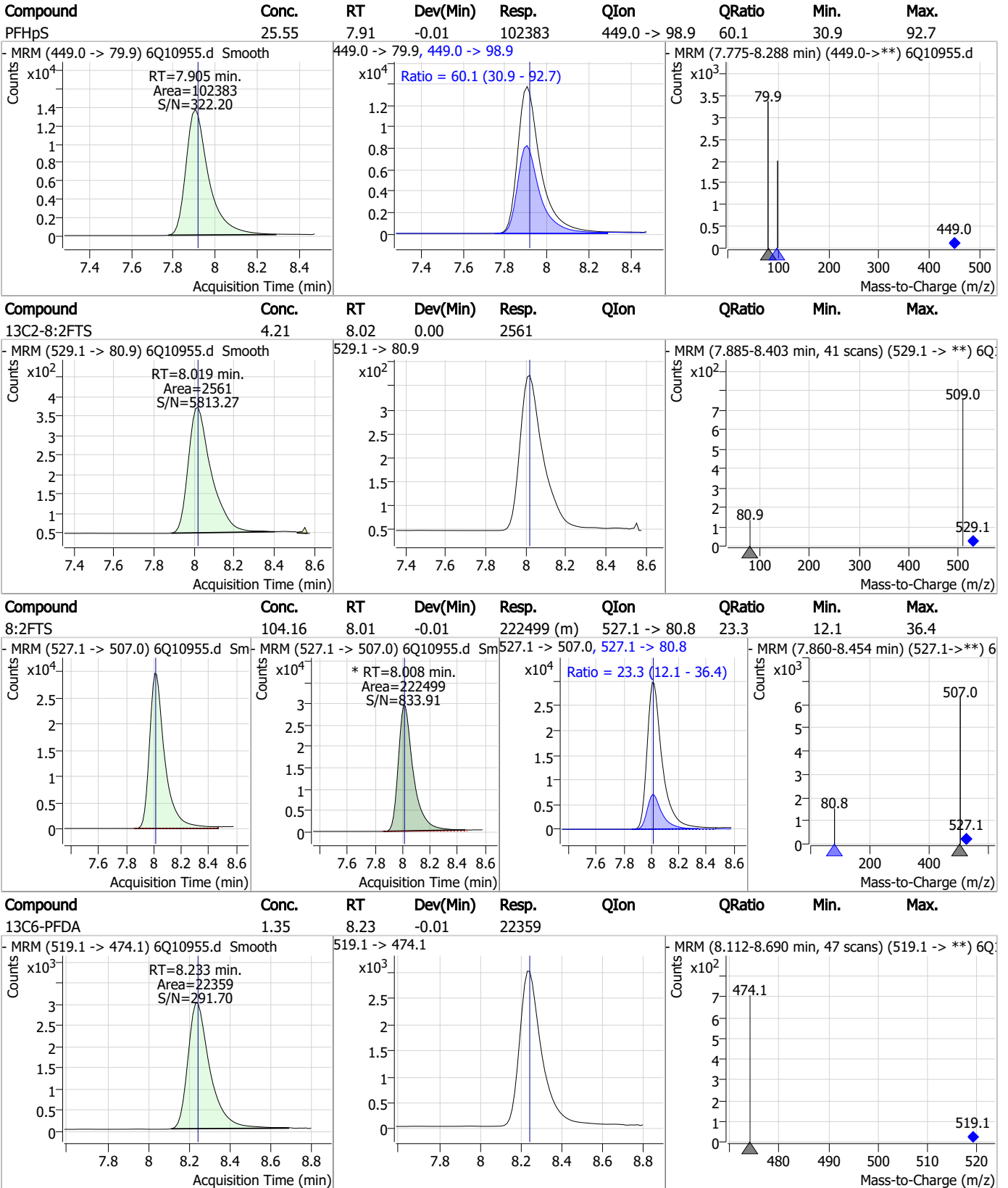
Perfluorinated Compounds by LC/MS/MS



7.6.8

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Perfluorinated Compounds by LC/MS/MS



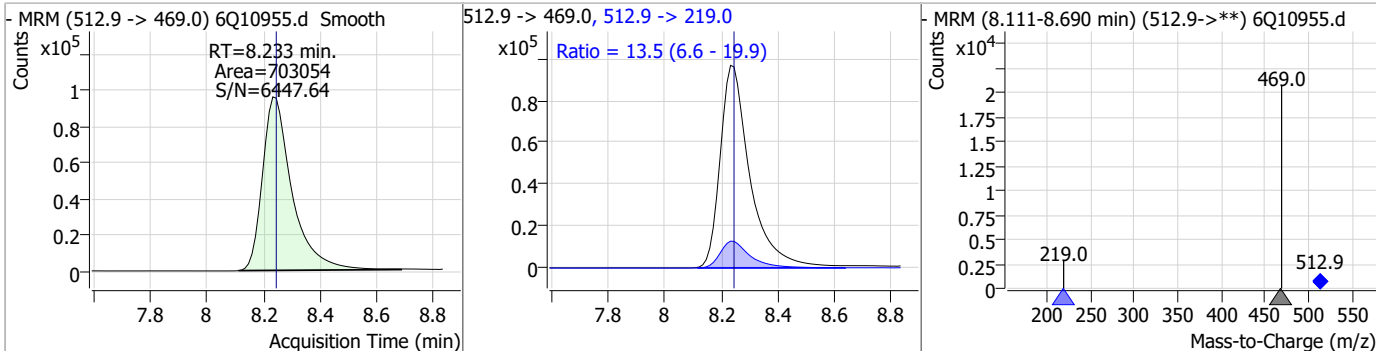
7.6.8

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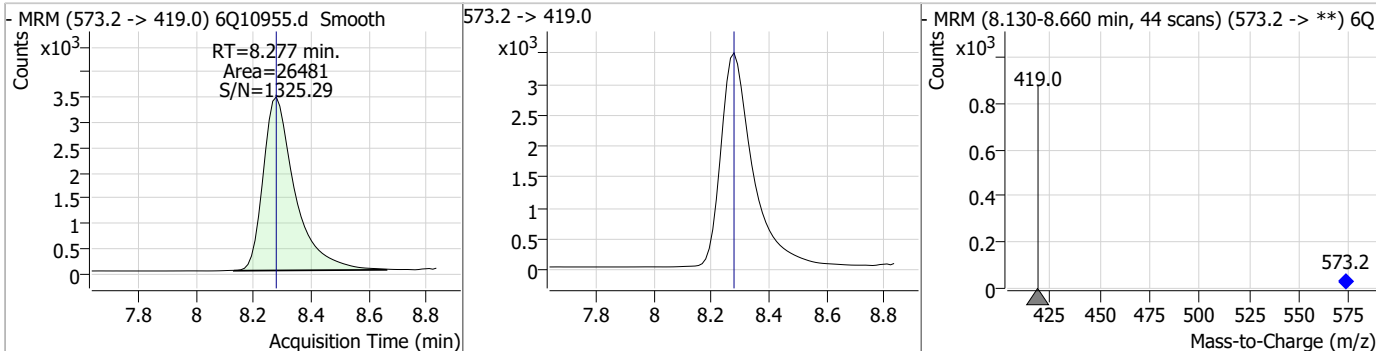


Perfluorinated Compounds by LC/MS/MS

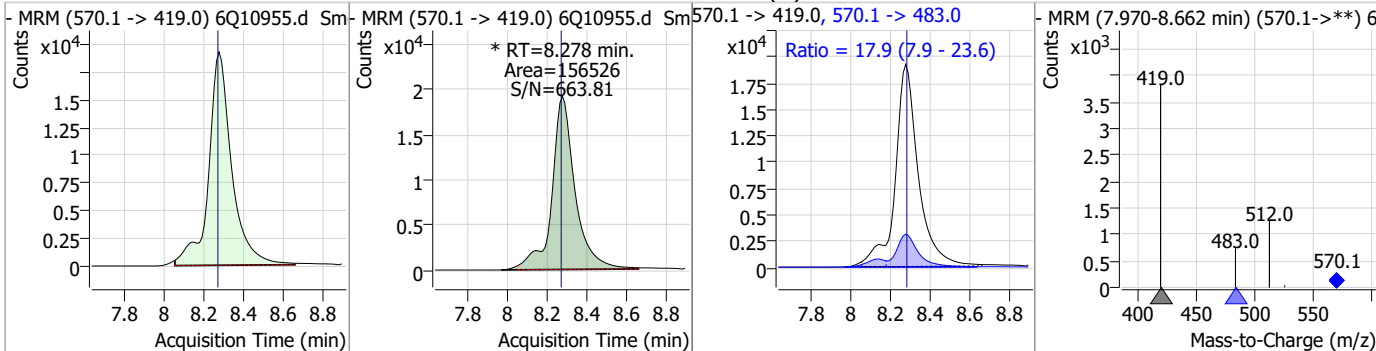
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	26.16	8.23	-0.01	703054	512.9 -> 219.0	13.5	6.6	19.9



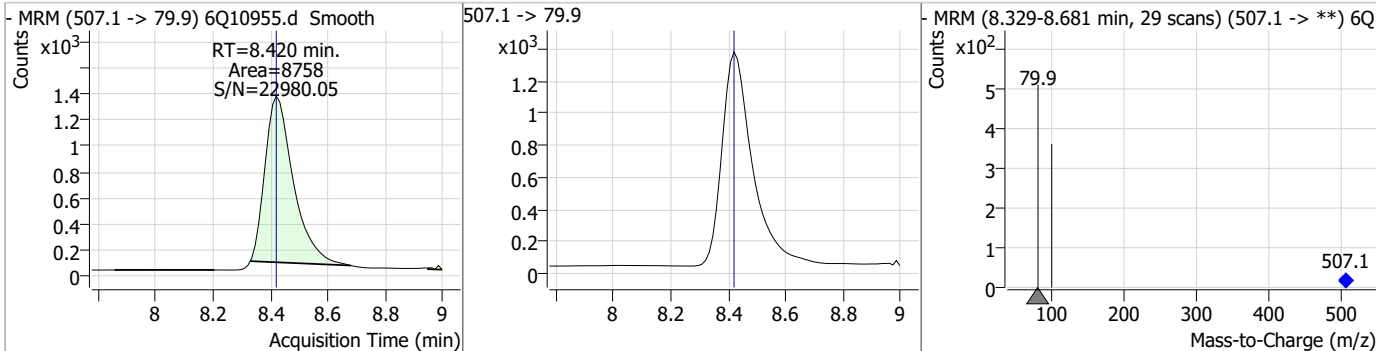
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.61	8.28	0.00	26481				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	28.67	8.28	0.00	156526 (m)	570.1 -> 483.0	17.9	7.9	23.6



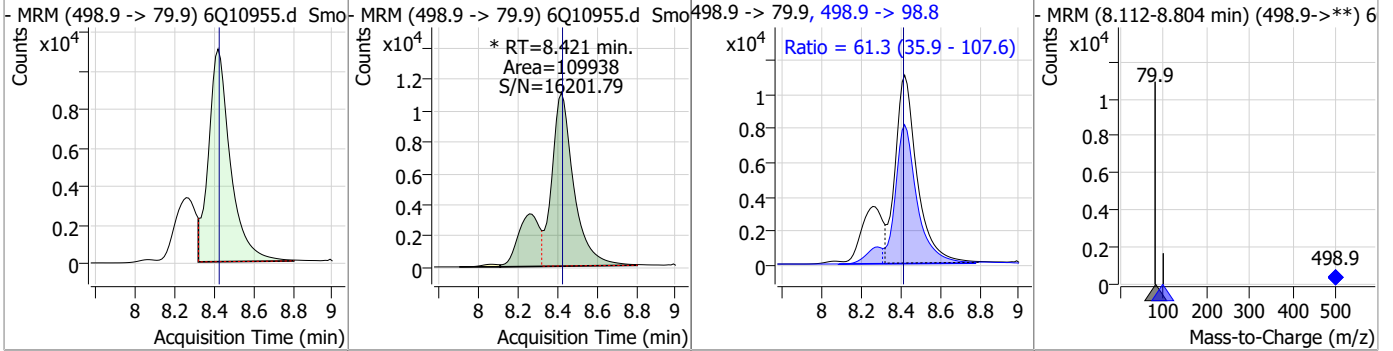
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.30	8.42	0.00	8758				



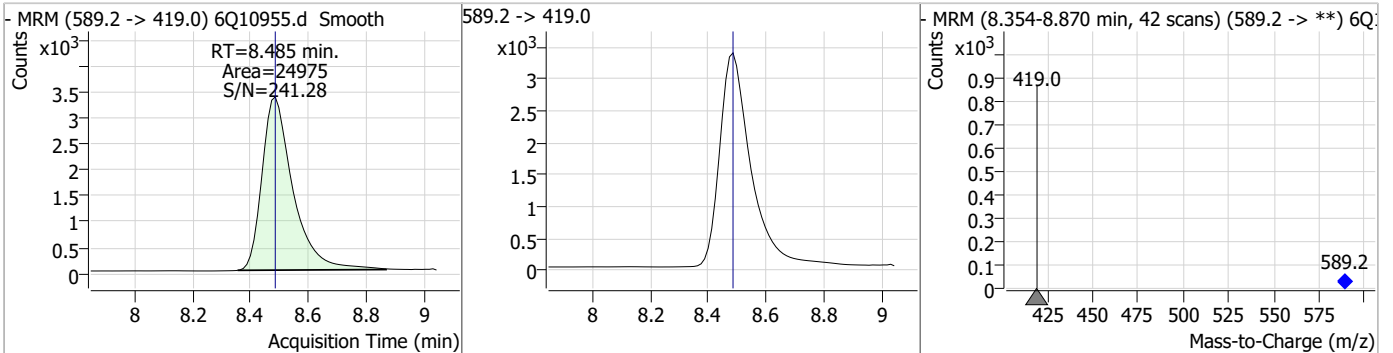
7.6.8
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Perfluorinated Compounds by LC/MS/MS

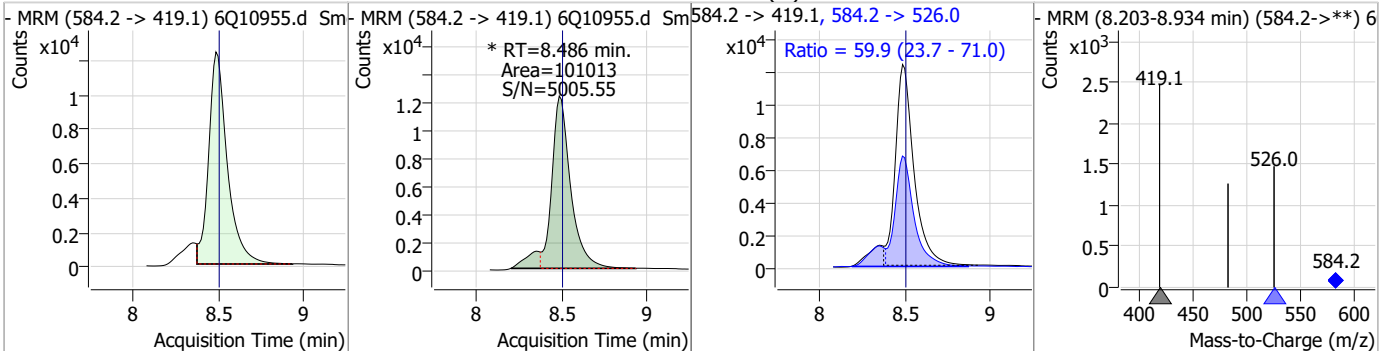
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	25.92	8.42	0.00	109938 (m)	498.9 -> 98.8	61.3	35.9	107.6



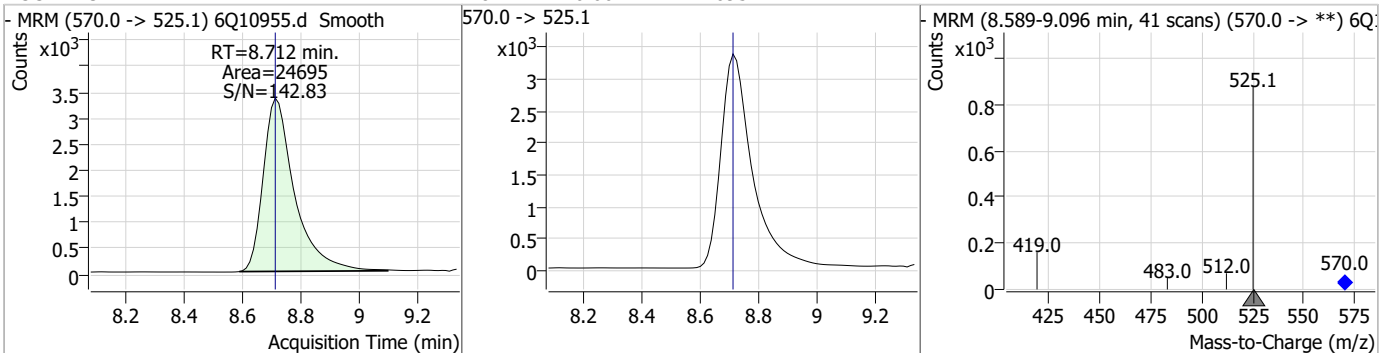
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.96	8.49	0.00	24975				



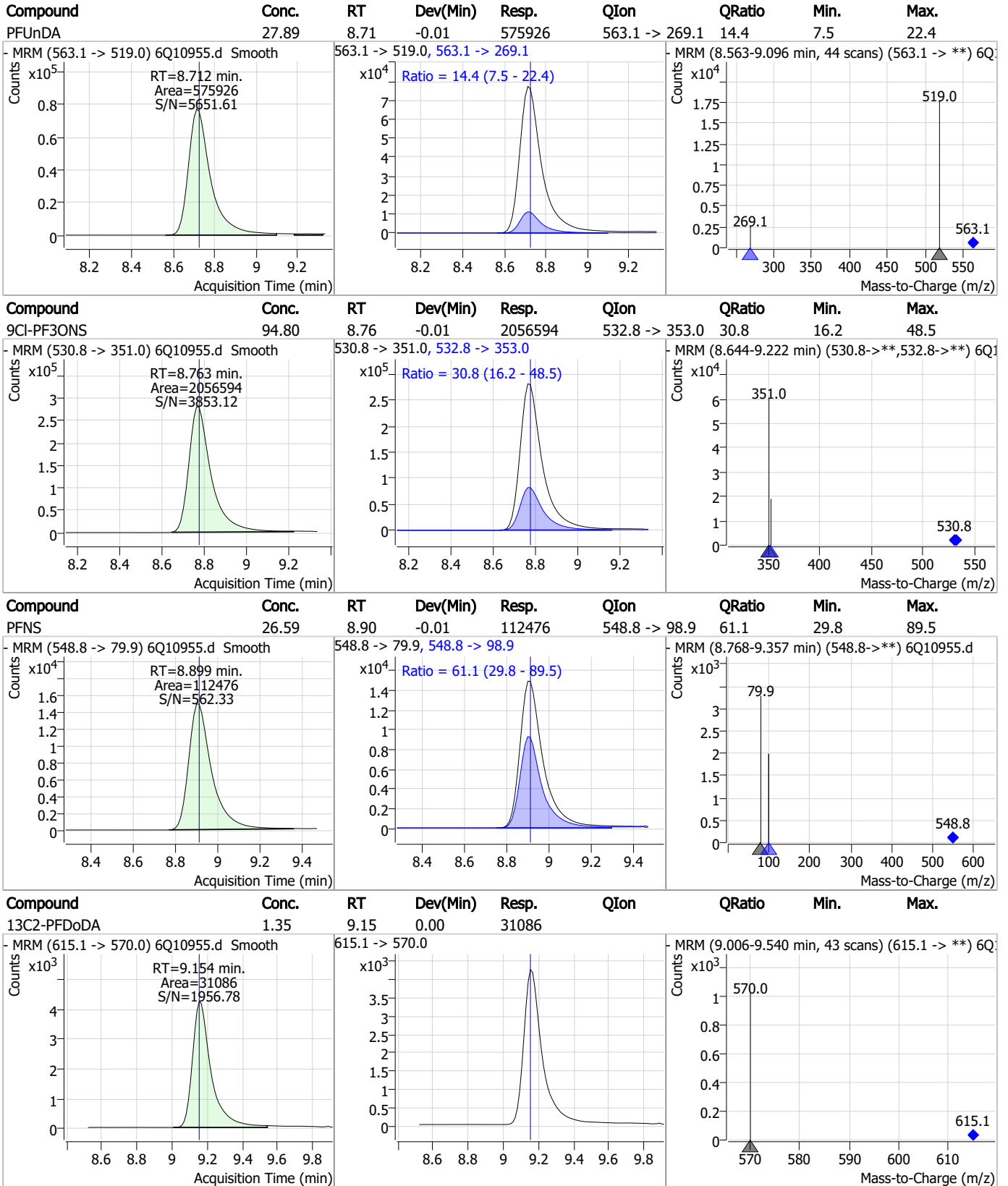
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	25.34	8.49	-0.01	101013 (m)	584.2 -> 526.0	59.9	23.7	71.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.22	8.71	0.00	24695				



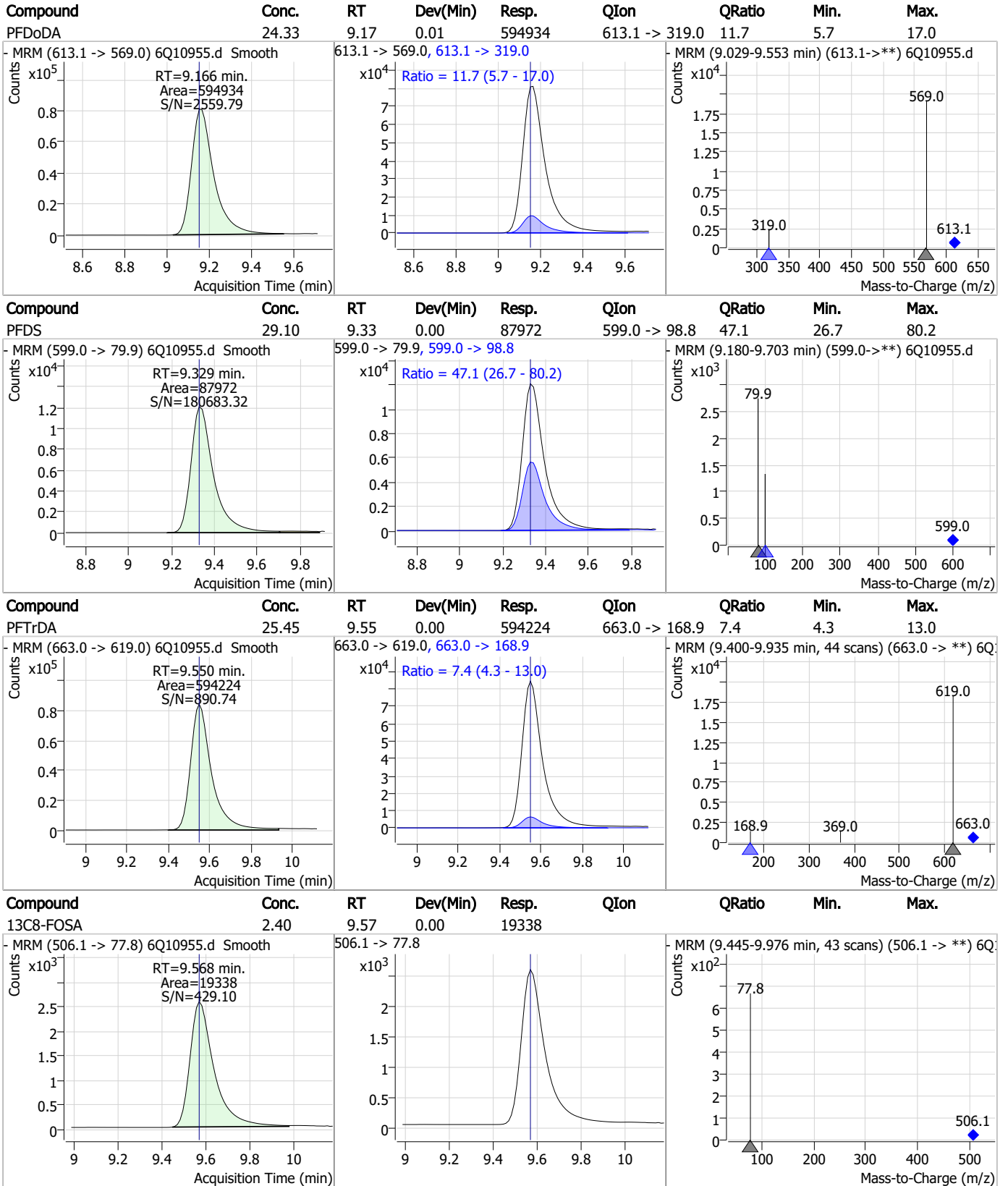
Perfluorinated Compounds by LC/MS/MS



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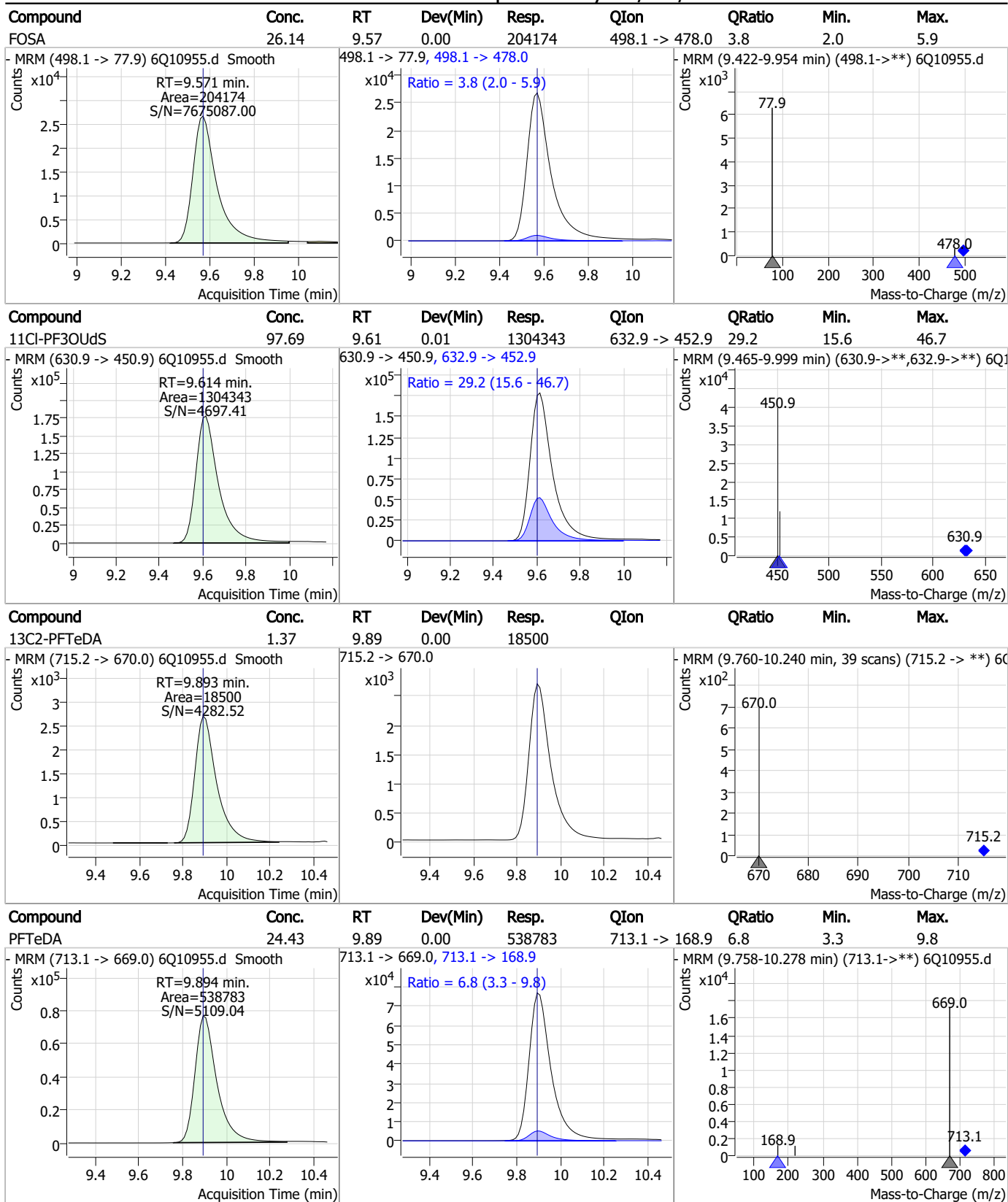
Perfluorinated Compounds by LC/MS/MS



7.6.8

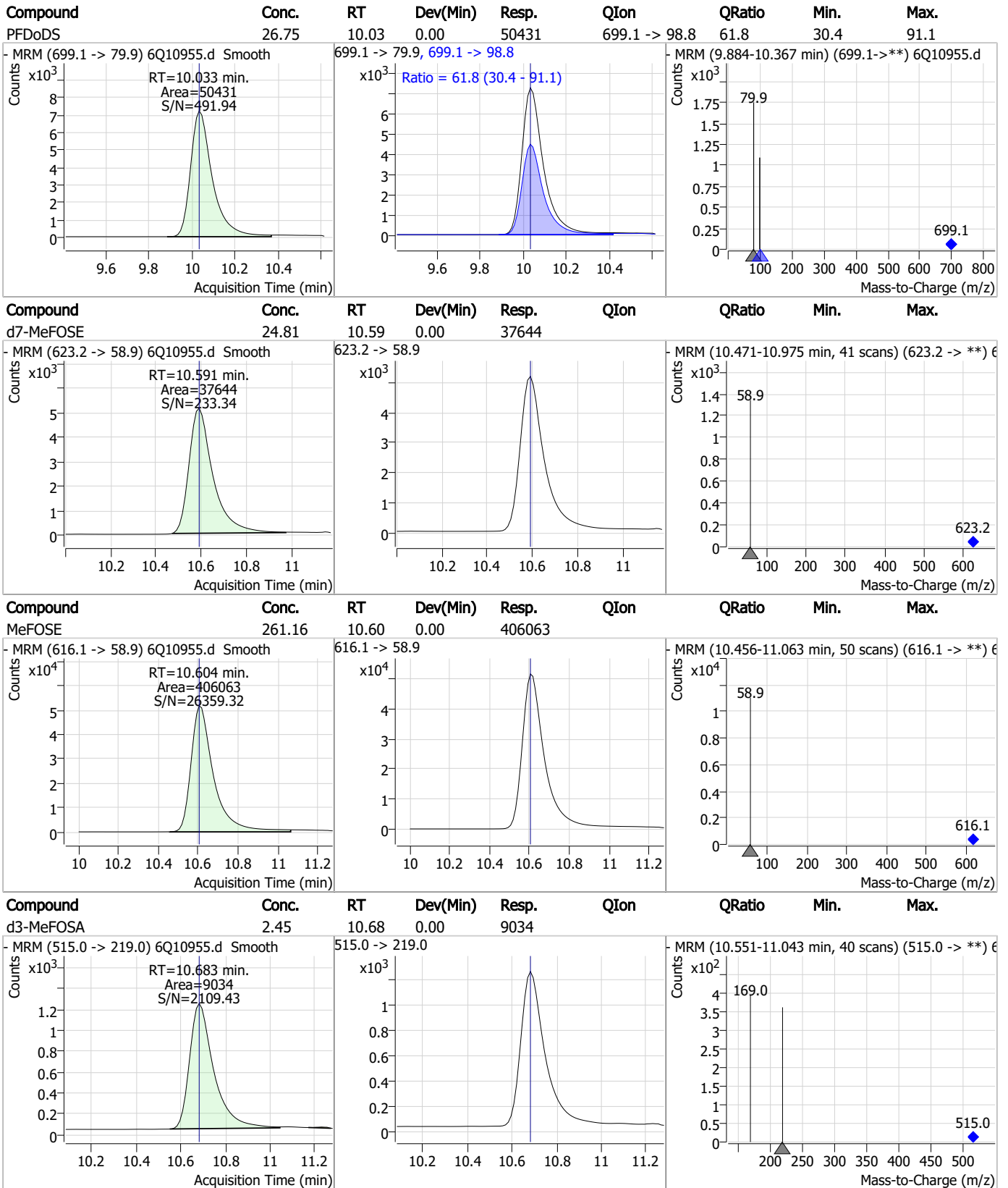
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Perfluorinated Compounds by LC/MS/MS



7.6.8
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Perfluorinated Compounds by LC/MS/MS

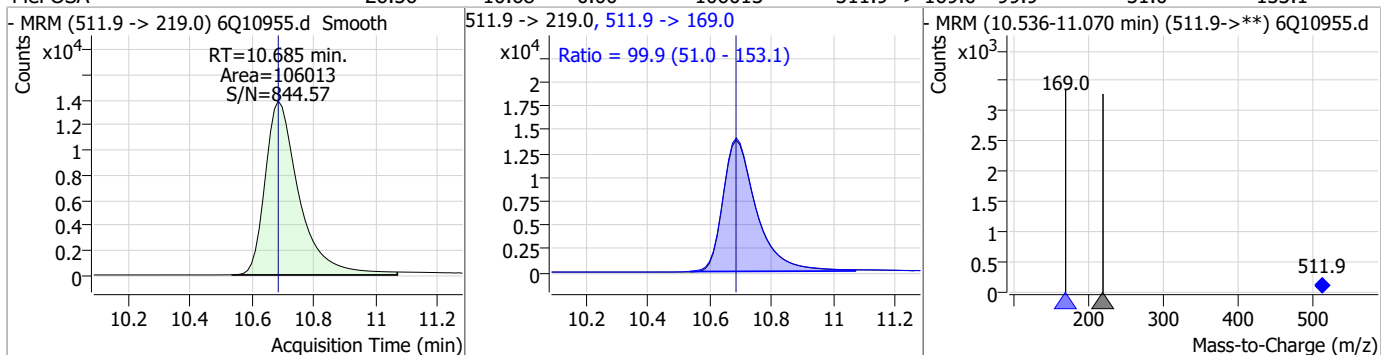


7.6.8

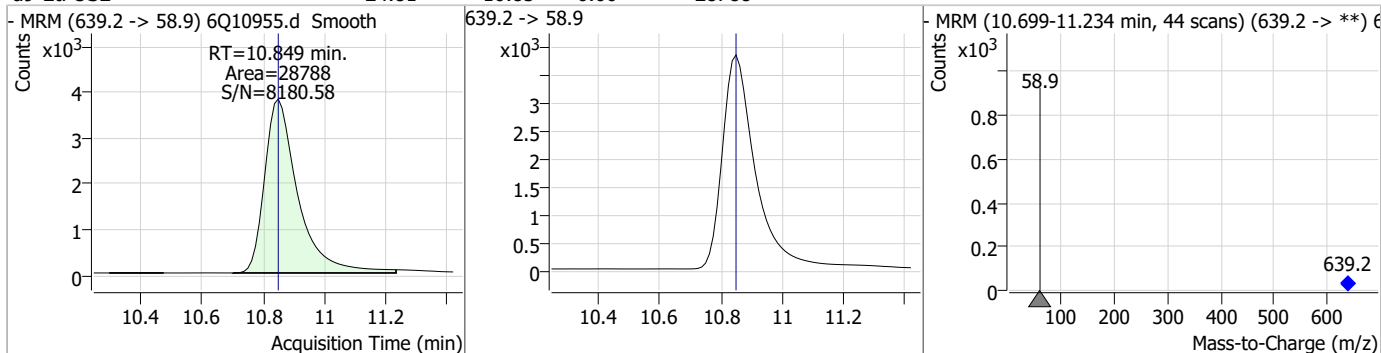
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Perfluorinated Compounds by LC/MS/MS

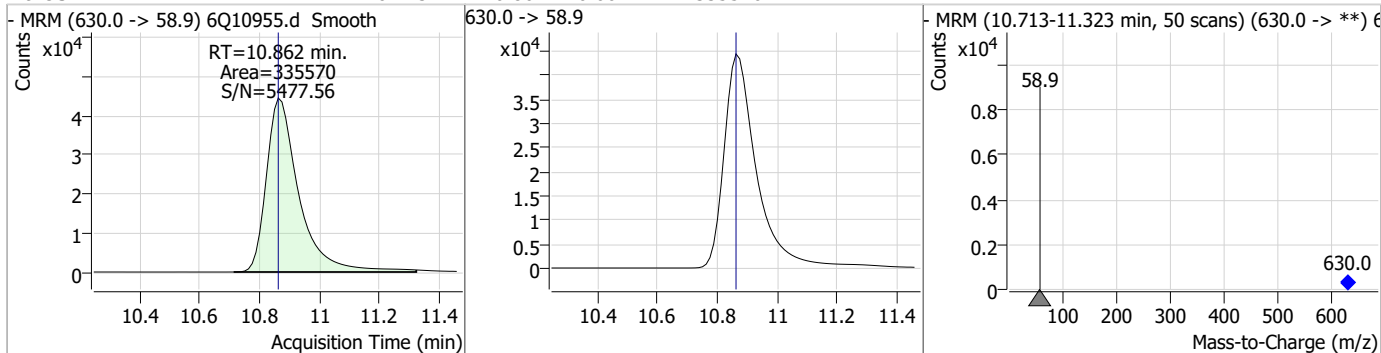
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	26.56	10.68	0.00	106013	511.9 -> 169.0	99.9	51.0	153.1



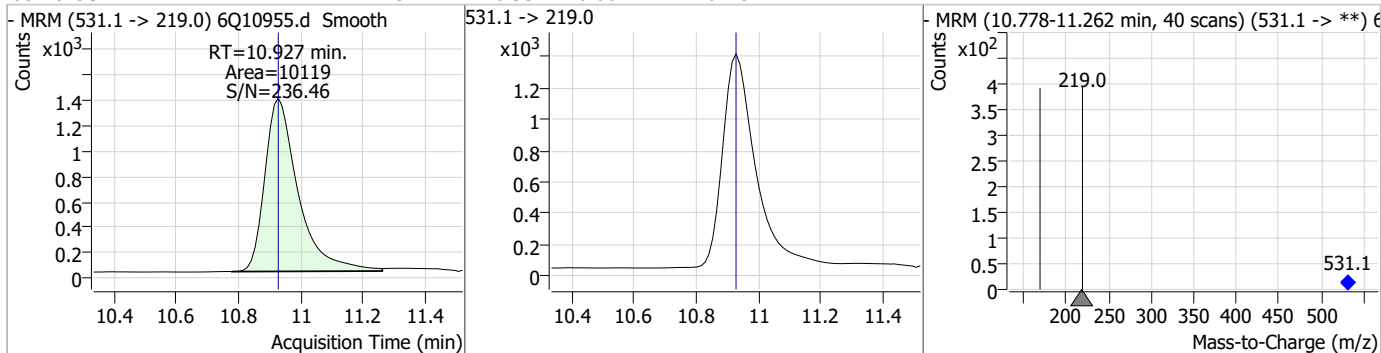
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.81	10.85	0.00	28788				



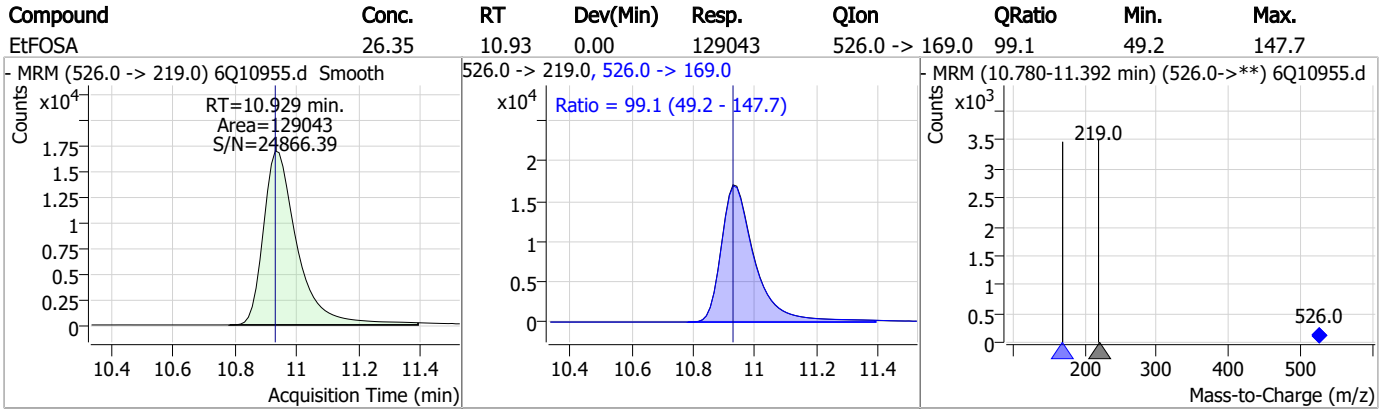
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	264.23	10.86	0.00	335570				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.45	10.93	0.00	10119				



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q174-IC174 Method: EPA DRAFT 1633
Lab FileID: 6Q10955.D Analyst approved: 01/12/23 11:46 Martha Valls
Injection Time: 01/11/23 13:14 Supervisor approved: 01/12/23 15:42 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.33	Split peak
8:2 Fluorotelomer sulfonate	39108-34-4		8.01	Split peak
MeFOSAA	2355-31-9		8.28	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.42	Split peak
EtFOSAA	2991-50-6		8.49	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q10956.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/11/2023 1:28:22 PM
 Sample Name : ic174-8
 Vial : P1-A9
 DA Method File : 1633_011123_S6Q174.quantmethod.xml
 Batch Name : S6Q174.batch.bin
 Sample Information : OP94795,S6Q174,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.000	216.8 -> 171.9	79370	10.00 µg/L	0.000
M5-PFPeA	4.397	268.3 -> 223.0	40898	5.00 µg/L	0.000
M5-PFHxA	5.588	318.0 -> 273.0	36614	2.50 µg/L	0.000
M4-PFHpA	6.529	367.1 -> 322.0	37385	2.50 µg/L	-0.012
M8-PFOA	7.185	421.1 -> 376.0	66306	2.50 µg/L	-0.013
M9-PFNA	7.727	472.1 -> 427.0	28759	1.25 µg/L	-0.012
M6-PFDA	8.233	519.1 -> 474.1	19824	1.25 µg/L	-0.012
M7-PFUnDA	8.712	570.0 -> 525.1	22798	1.25 µg/L	0.000
M2-PFDoDA	9.154	615.1 -> 570.0	30157	1.25 µg/L	0.000
M2-PFTeDA	9.893	715.2 -> 670.0	16117	1.25 µg/L	0.000
M8-FOSA	9.568	506.1 -> 77.8	16947	2.50 µg/L	0.000
M3-PFBS	5.544	302.1 -> 79.9	13690	2.50 µg/L	-0.012
M3-PFHxS	7.325	402.1 -> 79.9	8593	2.50 µg/L	-0.012
M8-PFOS	8.420	507.1 -> 79.9	8360	2.50 µg/L	0.000
M2-4:2FTS	5.253	329.1 -> 80.9	1473	5.00 µg/L	0.000
M2-6:2FTS	6.946	429.1 -> 80.9	2076	5.00 µg/L	-0.012
M2-8:2FTS	8.007	529.1 -> 80.9	2491	5.00 µg/L	-0.012
M3-MeFOSAA	8.277	573.2 -> 419.0	24911	5.00 µg/L	0.000
M3-HFPO-DA	5.965	286.9 -> 168.9	16431	10.00 µg/L	-0.012
M5-EtFOSAA	8.473	589.2 -> 419.0	20989	5.00 µg/L	-0.012
M7-MeFOSE	10.591	623.2 -> 58.9	33387	25.00 µg/L	0.000
M9-EtFOSE	10.849	639.2 -> 58.9	23901	25.00 µg/L	0.000
M5-EtFOSA	10.927	531.1 -> 219.0	9460	2.50 µg/L	0.000
M3-MeFOSA	10.683	515.0 -> 219.0	8755	2.50 µg/L	0.000
13C4-PFOS	8.421	502.8 -> 79.9	10197	2.50 µg/L	0.000
13C3-PFBA	3.004	216.0 -> 172.0	34682	5.00 µg/L	0.000
18O2-PFHxS	7.324	403.0 -> 83.9	6407	2.50 µg/L	-0.012
13C4-PFOA	7.185	417.1 -> 372.0	79245	2.50 µg/L	-0.013
13C2-PFDA	8.233	515.1 -> 470.1	28496	1.25 µg/L	-0.012
13C5-PFNA	7.728	468.0 -> 423.0	33247	1.25 µg/L	-0.012
13C2-PFHxA	5.589	315.1 -> 270.0	40373	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.253	329.1 -> 80.9	1473	4.41 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 88.2%		
13C2-6:2FTS	6.946	429.1 -> 80.9	2076	4.54 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 90.7%		
13C2-8:2FTS	8.007	529.1 -> 80.9	2491	4.99 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.7%		
13C2-PFDoDA	9.154	615.1 -> 570.0	30157	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 106.8%		
13C2-PFTeDA	9.893	715.2 -> 670.0	16117	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.1%		
13C3-PFBS	5.544	302.1 -> 79.9	13690	2.55 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.9%		
13C3-PFHxS	7.325	402.1 -> 79.9	8593	2.47 µg/L	-0.012

7.6.9
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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	3.000	216.8 -> 171.9	79370	10.02 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C4-PFHpA	6.529	367.1 -> 322.0	37385	2.28 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.4%	
13C5-PFHxA	5.588	318.0 -> 273.0	36614	2.26 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 90.4%	
13C5-PFPeA	4.397	268.3 -> 223.0	40898	4.54 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 90.8%	
13C6-PFDA	8.233	519.1 -> 474.1	19824	1.22 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.7%	
13C7-PFUnDA	8.712	570.0 -> 525.1	22798	1.15 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.1%	
13C8-FOSA	9.568	506.1 -> 77.8	16947	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C8-PFOA	7.185	421.1 -> 376.0	66306	2.50 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C8-PFOS	8.420	507.1 -> 79.9	8360	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C9-PFNA	7.727	472.1 -> 427.0	28759	1.22 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.4%	
d3-MeFOSAA	8.277	573.2 -> 419.0	24911	5.07 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C3-HFPO-DA	5.965	286.9 -> 168.9	16431	9.87 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.7%	
d3-MeFOSA	10.683	515.0 -> 219.0	8755	2.78 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 111.1%	
d5-EtFOSAA	8.473	589.2 -> 419.0	20989	4.87 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.4%	
d7-MeFOSE	10.591	623.2 -> 58.9	33387	25.72 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.9%	
d9-EtFOSE	10.849	639.2 -> 58.9	23901	24.08 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.3%	
d5-EtFOSA	10.927	531.1 -> 219.0	9460	2.68 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.1%	
Target Compounds					QValue
4:2FTS	5.254	327.1 -> 307.0	771556	220.19 µg/L	97
		327.1 -> 80.9	170201		
6:2FTS	6.946	427.1 -> 407.0	667918	206.83 µg/L	98
		427.1 -> 80.9	124662		
8:2FTS	8.008	527.1 -> 507.0	394006	189.61 µg/L	100
		527.1 -> 80.8	96542		
EtFOSAA	8.486	584.2 -> 419.1	220634	65.85 µg/L	m 89
		584.2 -> 526.0	120684		
FOSA	9.558	498.1 -> 77.9	437314	63.88 µg/L	100
		498.1 -> 478.0	16631		
MeFOSAA	8.278	570.1 -> 419.0	315357	61.41 µg/L	m 94
		570.1 -> 483.0	57455		
PFBA	3.007	212.8 -> 168.9	520559	255.65 µg/L	100
PFBS	5.544	298.7 -> 79.9	313537	56.59 µg/L	92
		298.7 -> 98.8	134972		
PFDA	8.233	512.9 -> 469.0	1471830	61.76 µg/L	98
		512.9 -> 219.0	205480		
PFDoDA	9.154	613.1 -> 569.0	1307115	55.10 µg/L	99
		613.1 -> 319.0	153346		
PFDS	9.329	599.0 -> 79.9	171070	59.29 µg/L	98

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	94189			
PFHpA	6.530	363.1 -> 319.0	1443289	64.02	µg/L	98
		363.1 -> 169.0	200325			
PFHpS	7.905	449.0 -> 79.9	226296	59.17	µg/L	92
		449.0 -> 98.9	125090			
PFHxA	5.591	313.0 -> 269.0	926227	62.60	µg/L	99
		313.0 -> 118.9	34054			
PFHxS	7.326	398.7 -> 79.9	243616	59.55	µg/L	m 92
		398.7 -> 98.9	130869			
PFNA	7.728	463.0 -> 419.0	1245836	62.61	µg/L	97
		463.0 -> 219.0	252280			
PFNS	8.899	548.8 -> 79.9	234927	58.19	µg/L	93
		548.8 -> 98.9	127874			
PFOA	7.186	413.0 -> 369.0	1820649	61.37	µg/L	98
		413.0 -> 169.0	249157			
PFOS	8.422	498.9 -> 79.9	237773	58.73	µg/L	m 88
		498.9 -> 98.8	146545			
PFPeA	4.401	263.0 -> 219.0	1129397	125.75	µg/L	100
PFPeS	6.619	349.1 -> 79.9	282998	58.44	µg/L	98
		349.1 -> 98.9	153216			
PFTeDA	9.894	713.1 -> 669.0	1199680	62.45	µg/L	100
		713.1 -> 168.9	77274			
PFTrDA	9.550	663.0 -> 619.0	1235480	54.55	µg/L	97
		663.0 -> 168.9	93968			
PFUnDA	8.712	563.1 -> 519.0	1288624	67.58	µg/L	98
		563.1 -> 269.1	180179			
11Cl-PF3OUdS	9.602	630.9 -> 450.9	2573208	206.53	µg/L	96
		632.9 -> 452.9	855312			
9Cl-PF3ONS	8.763	530.8 -> 351.0	4223511	208.63	µg/L	95
		532.8 -> 353.0	1255312			
ADONA	6.792	376.9 -> 250.9	8090011	221.44	µg/L	98
		376.9 -> 84.8	1580012			
HFPO-DA	5.966	284.9 -> 168.9	381104	229.36	µg/L	99
		284.9 -> 184.9	44444			
3:3FTCA	3.852	241.0 -> 177.0	158055	330.34	µg/L	99
		241.0 -> 117.0	19807			
5:3FTCA	6.207	341.0 -> 237.1	4951121	1609.21	µg/L	97
		341.0 -> 217.0	4069459			
7:3FTCA	7.630	441.0 -> 316.9	3430083	1653.98	µg/L	96
		441.0 -> 336.9	6823309			
EtFOSA	10.929	526.0 -> 219.0	272688	59.57	µg/L	95
		526.0 -> 169.0	280949			
EtFOSE	10.862	630.0 -> 58.9	732117	694.36	µg/L	100
MeFOSA	10.685	511.9 -> 219.0	231799	59.92	µg/L	100
		511.9 -> 169.0	235937			
MeFOSE	10.604	616.1 -> 58.9	873056	633.09	µg/L	100
PFDoDS	10.033	699.1 -> 79.9	108114	60.09	µg/L	99
		699.1 -> 98.8	66417			
NFDHA	5.471	295.0 -> 201.0	117715	122.69	µg/L	99
		295.0 -> 84.9	52002			
PFMBA	4.813	279.0 -> 85.1	363709	129.84	µg/L	100
PFMPA	3.550	229.0 -> 84.9	323758	130.24	µg/L	100
PFEESA	6.097	314.8 -> 134.9	2376224	115.37	µg/L	100
		314.8 -> 82.9	57001			

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

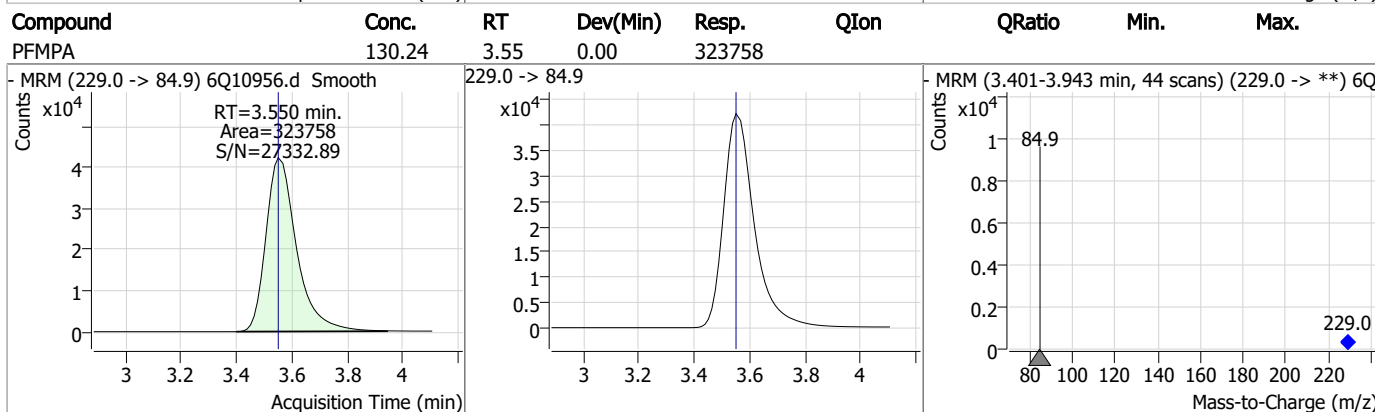
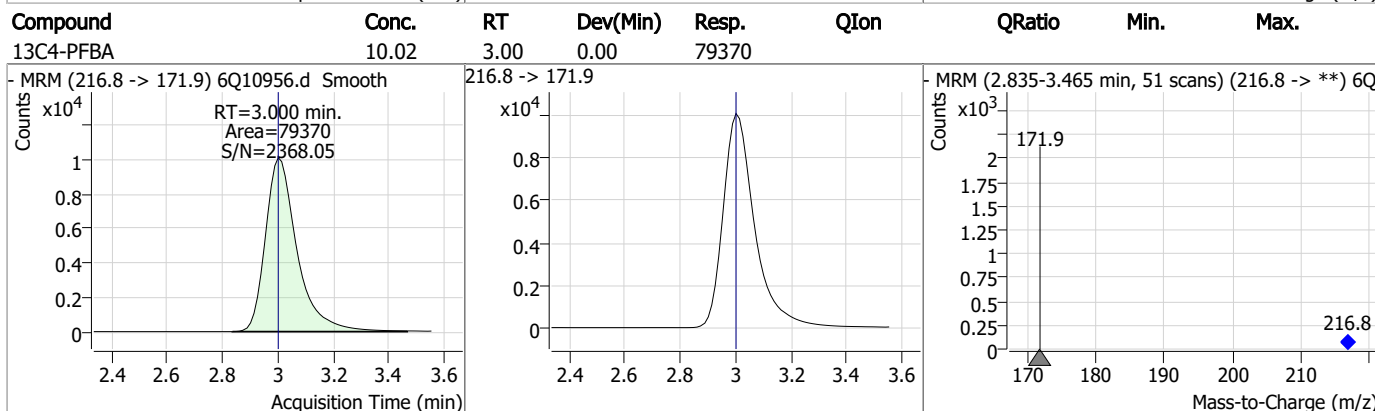
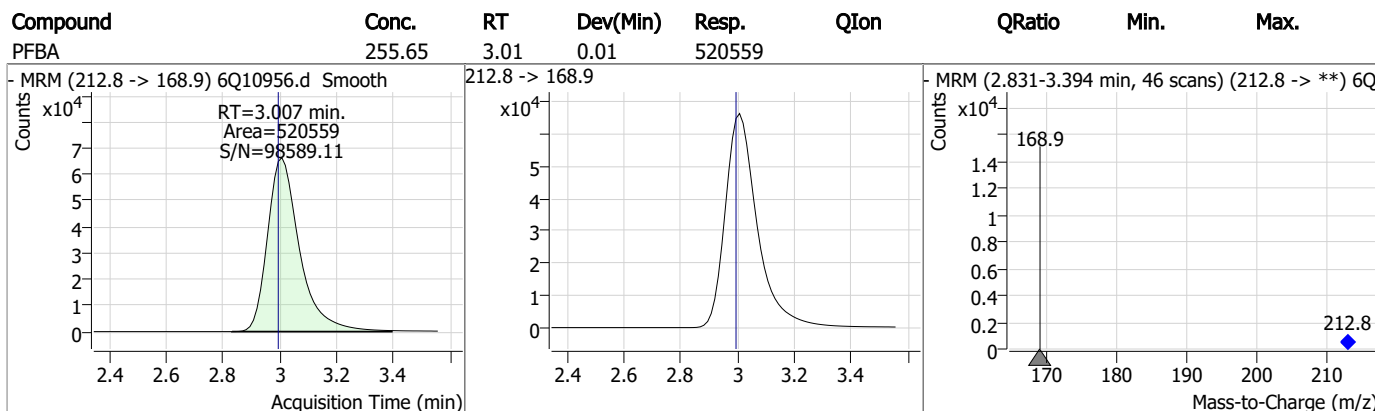
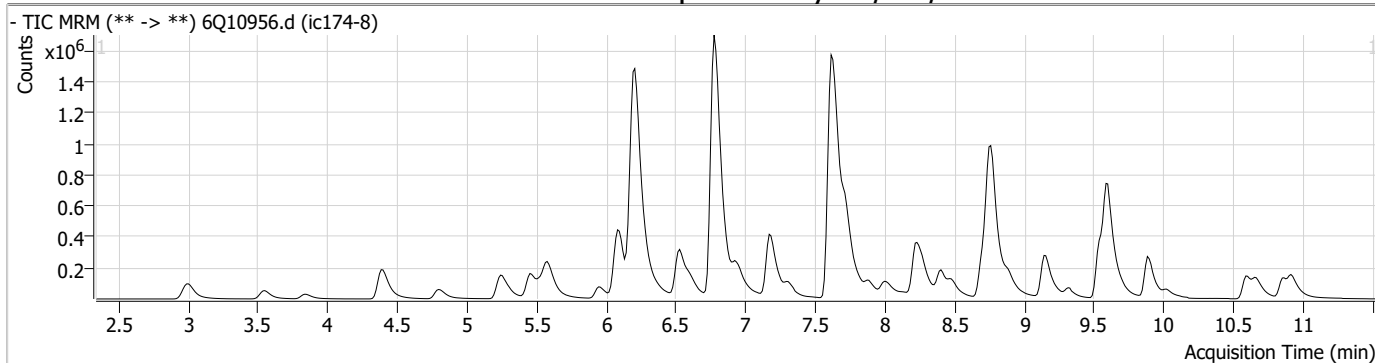
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.6.9

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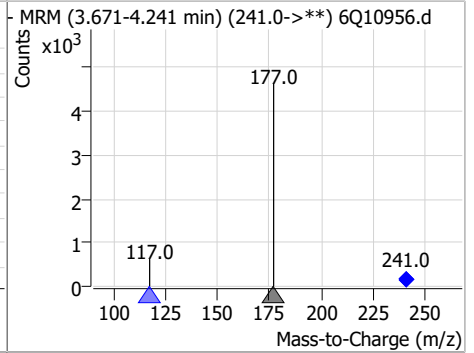
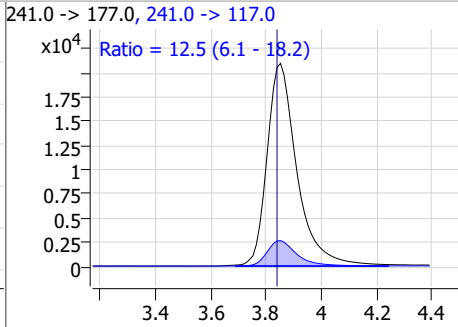
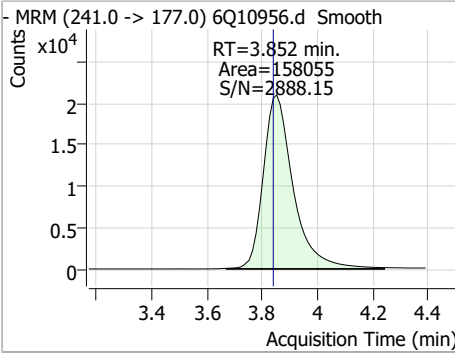
Perfluorinated Compounds by LC/MS/MS



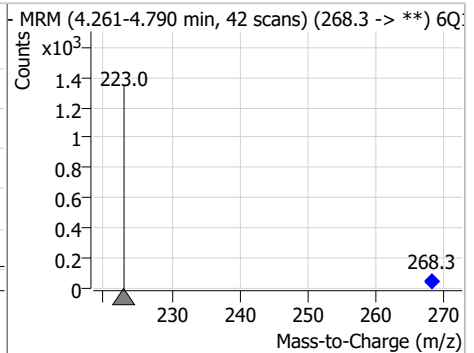
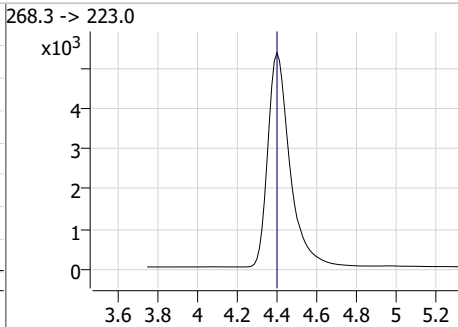
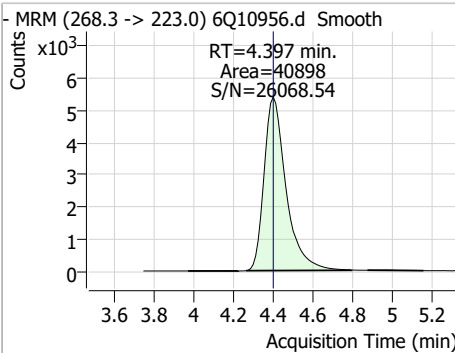
7.6.9
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Perfluorinated Compounds by LC/MS/MS

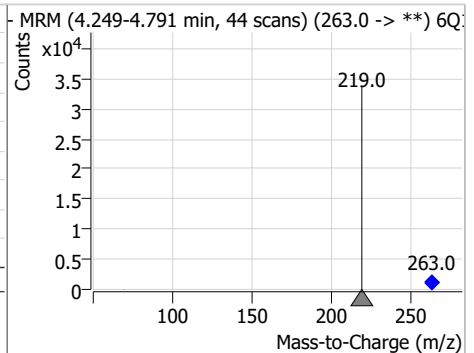
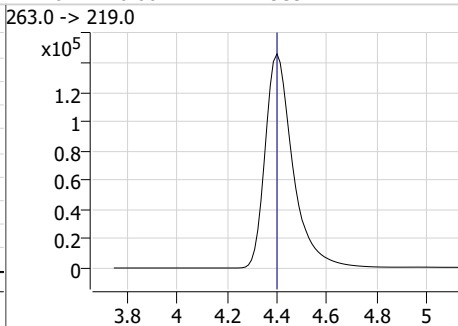
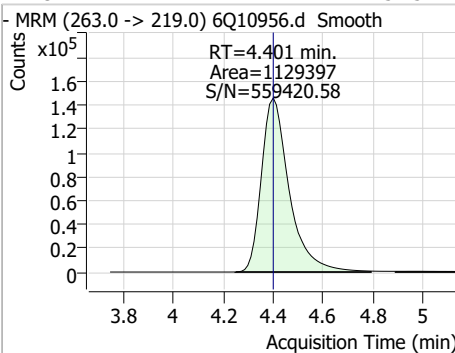
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	330.34	3.85	0.01	158055	241.0 -> 117.0	12.5	6.1	18.2



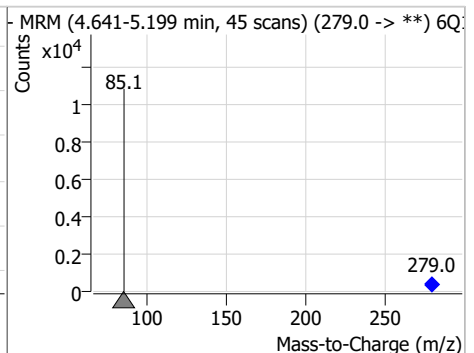
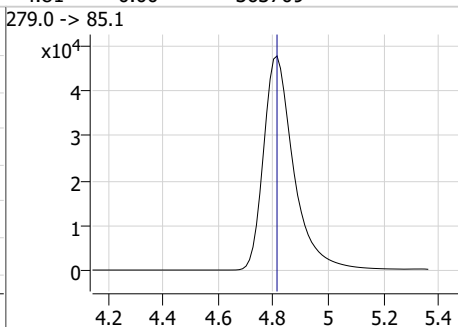
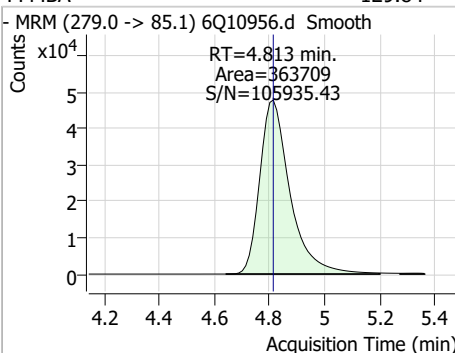
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.54	4.40	0.00	40898				



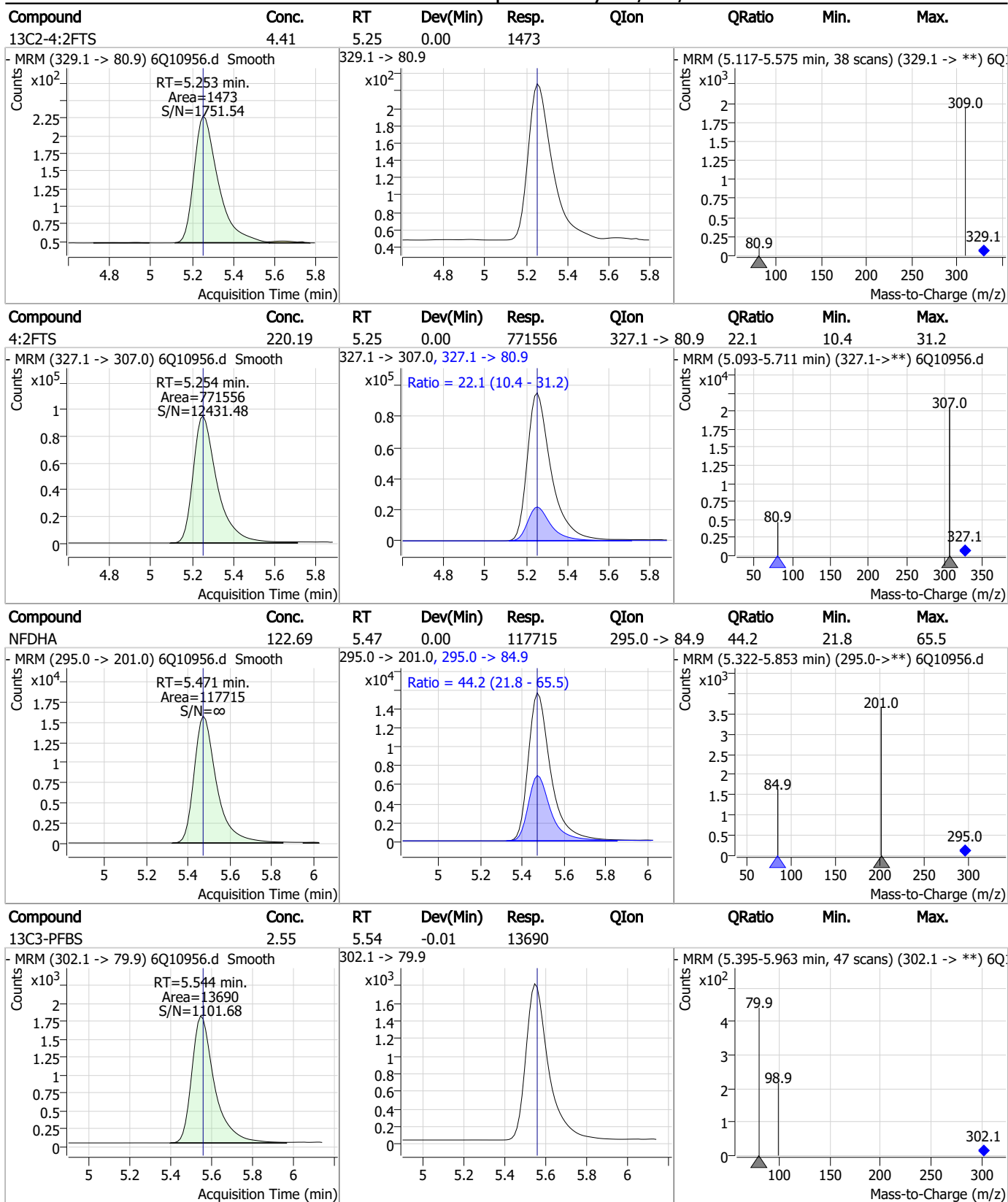
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	125.75	4.40	0.00	1129397				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	129.84	4.81	0.00	363709				



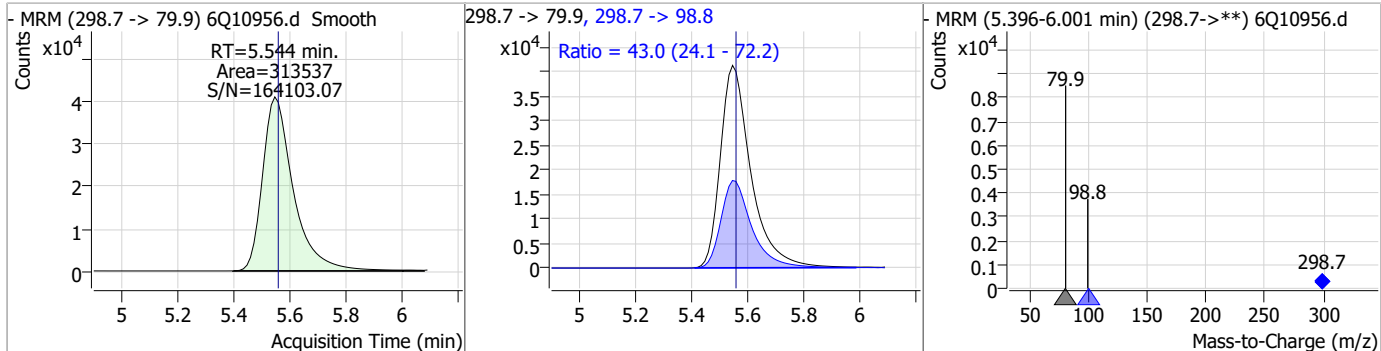
Perfluorinated Compounds by LC/MS/MS



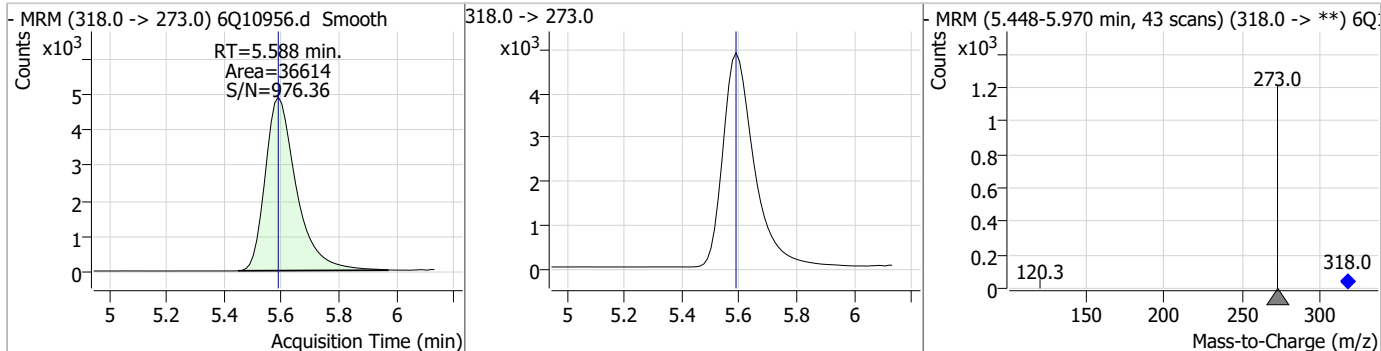
7.6.9
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Perfluorinated Compounds by LC/MS/MS

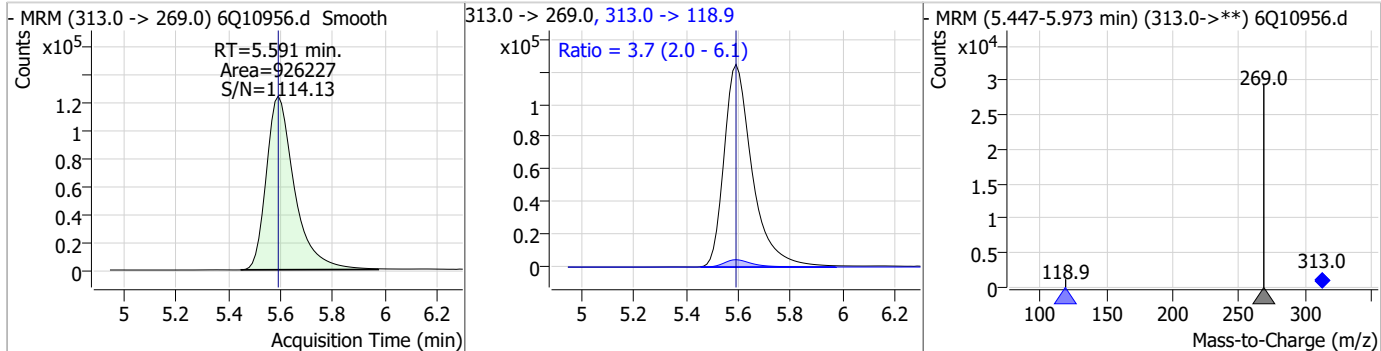
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	56.59	5.54	-0.01	313537	298.7 -> 98.8	43.0	24.1	72.2



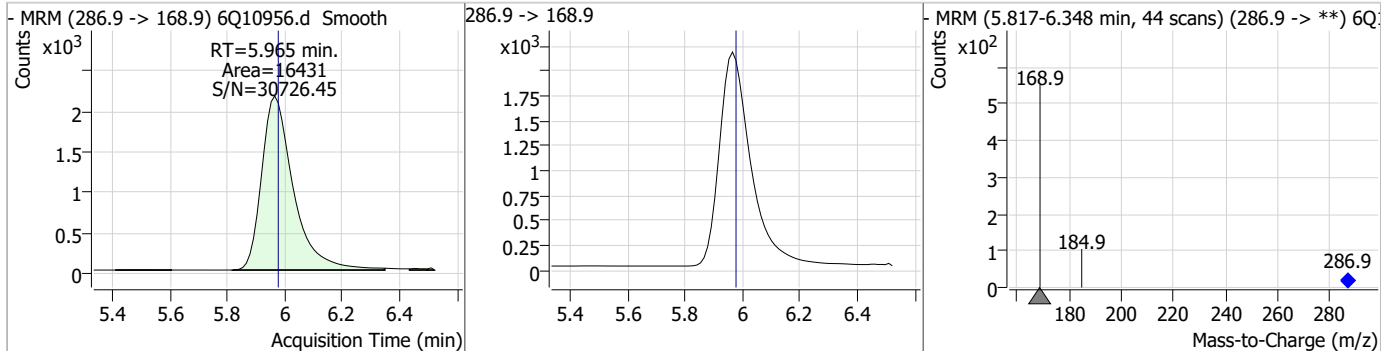
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.26	5.59	0.00	36614				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	62.60	5.59	0.00	926227	313.0 -> 118.9	3.7	2.0	6.1

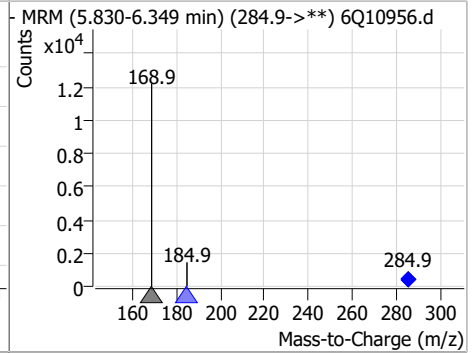
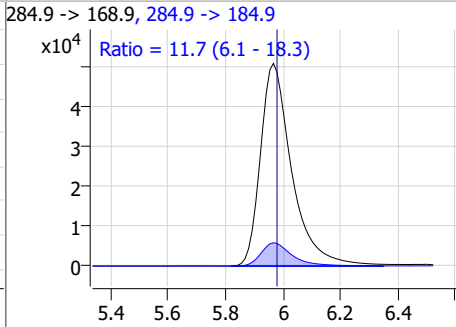
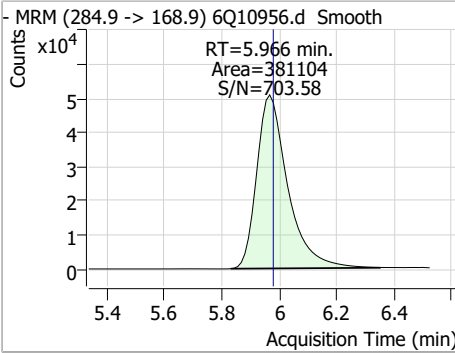


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.87	5.97	-0.01	16431				

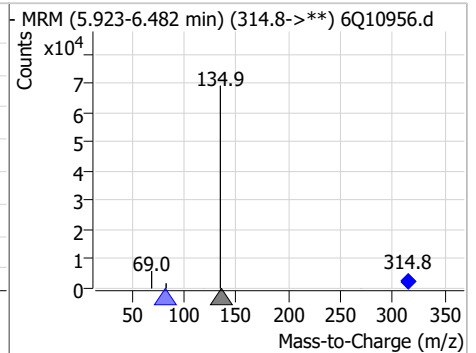
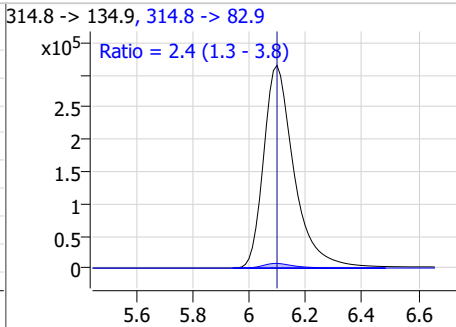
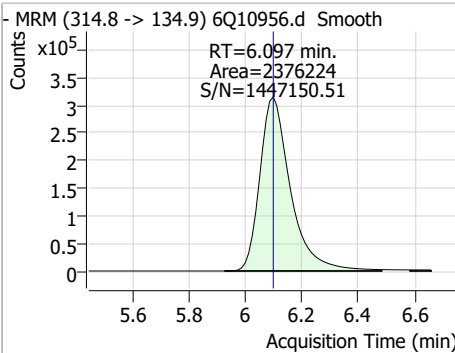


Perfluorinated Compounds by LC/MS/MS

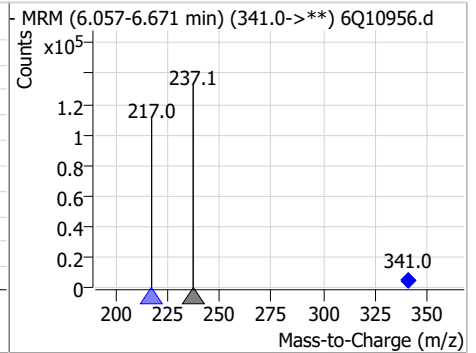
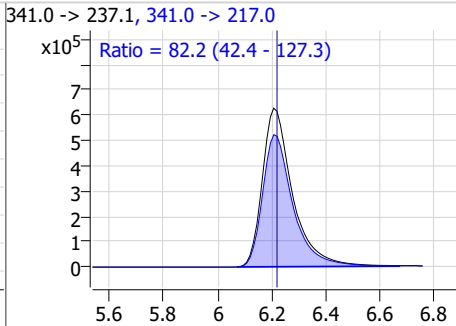
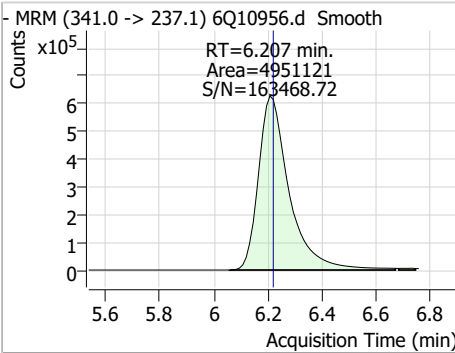
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	229.36	5.97	-0.01	381104	284.9 -> 184.9	11.7	6.1	18.3



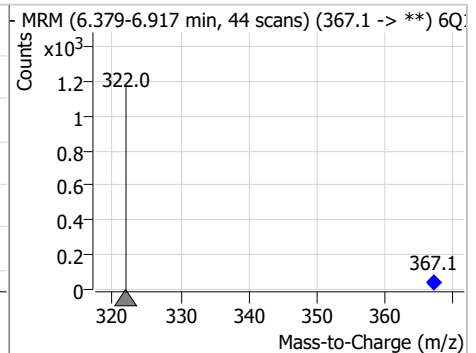
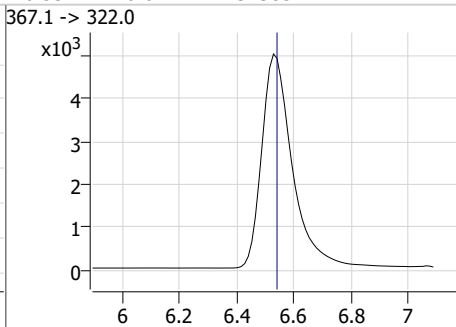
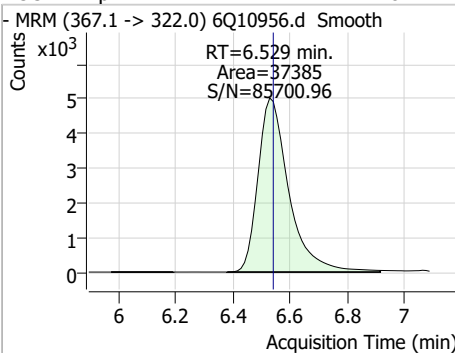
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	115.37	6.10	0.00	2376224	314.8 -> 82.9	2.4	1.3	3.8



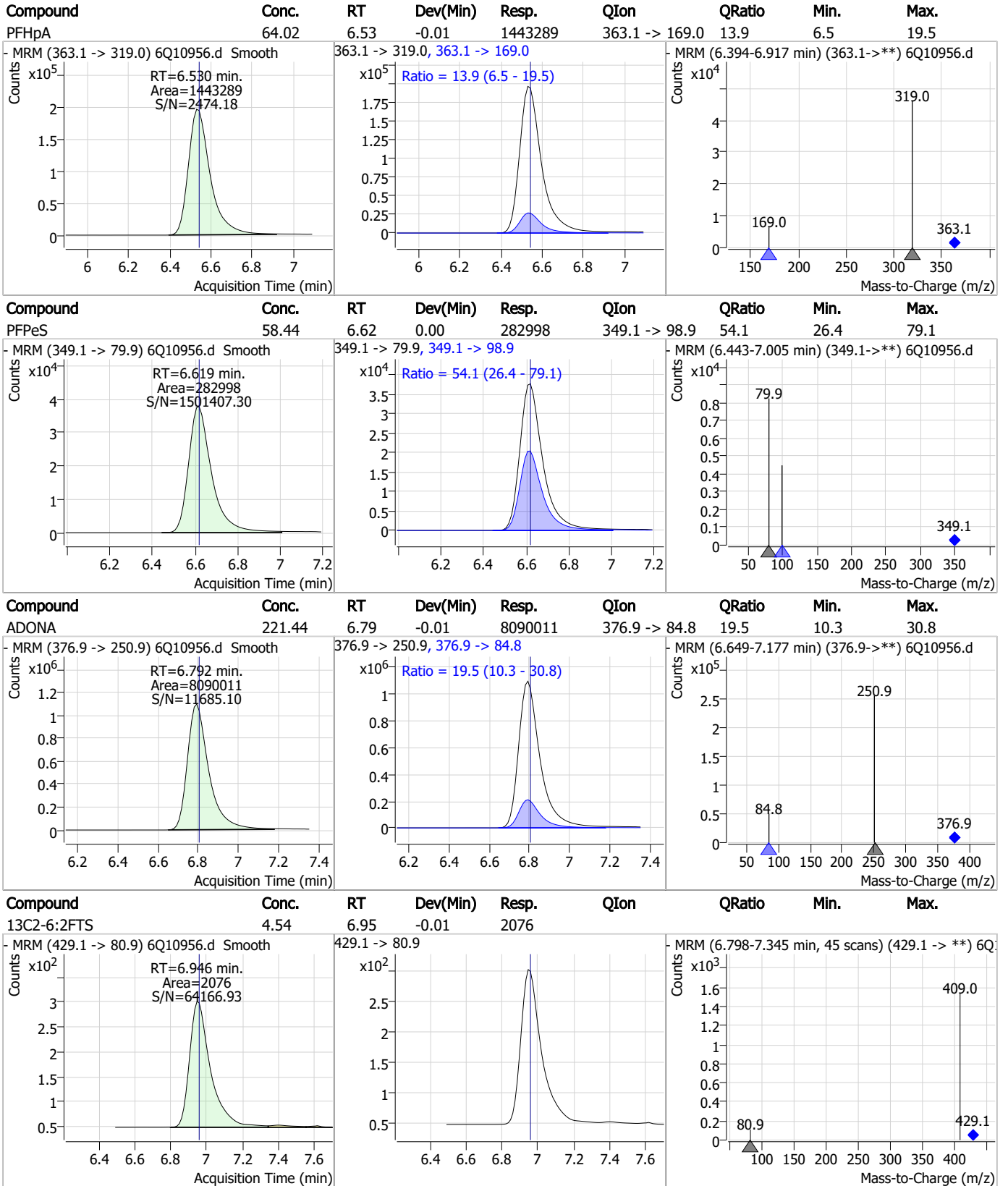
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	1609.21	6.21	-0.01	4951121	341.0 -> 217.0	82.2	42.4	127.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.28	6.53	-0.01	37385	367.1 -> 322.0			



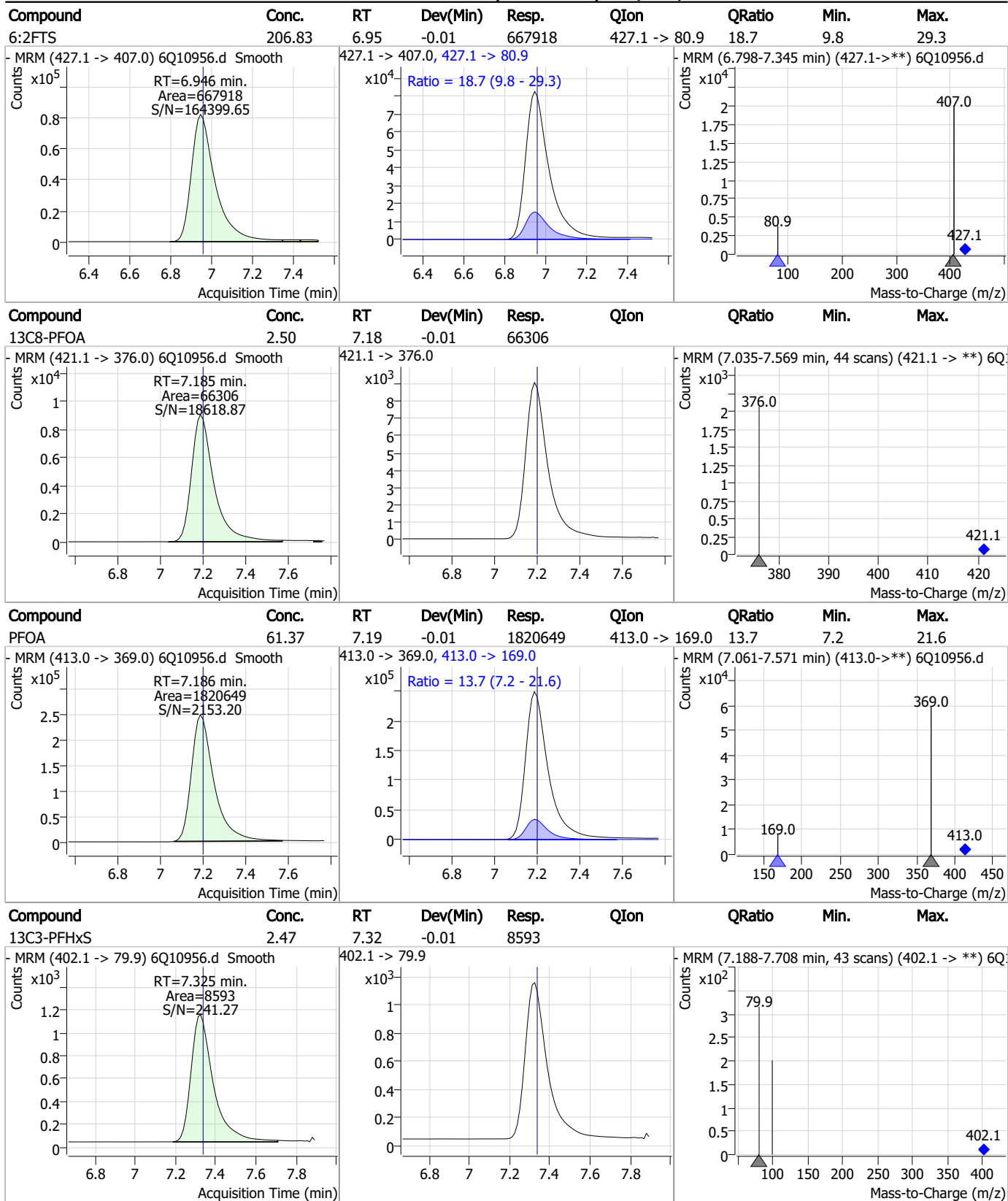
Perfluorinated Compounds by LC/MS/MS



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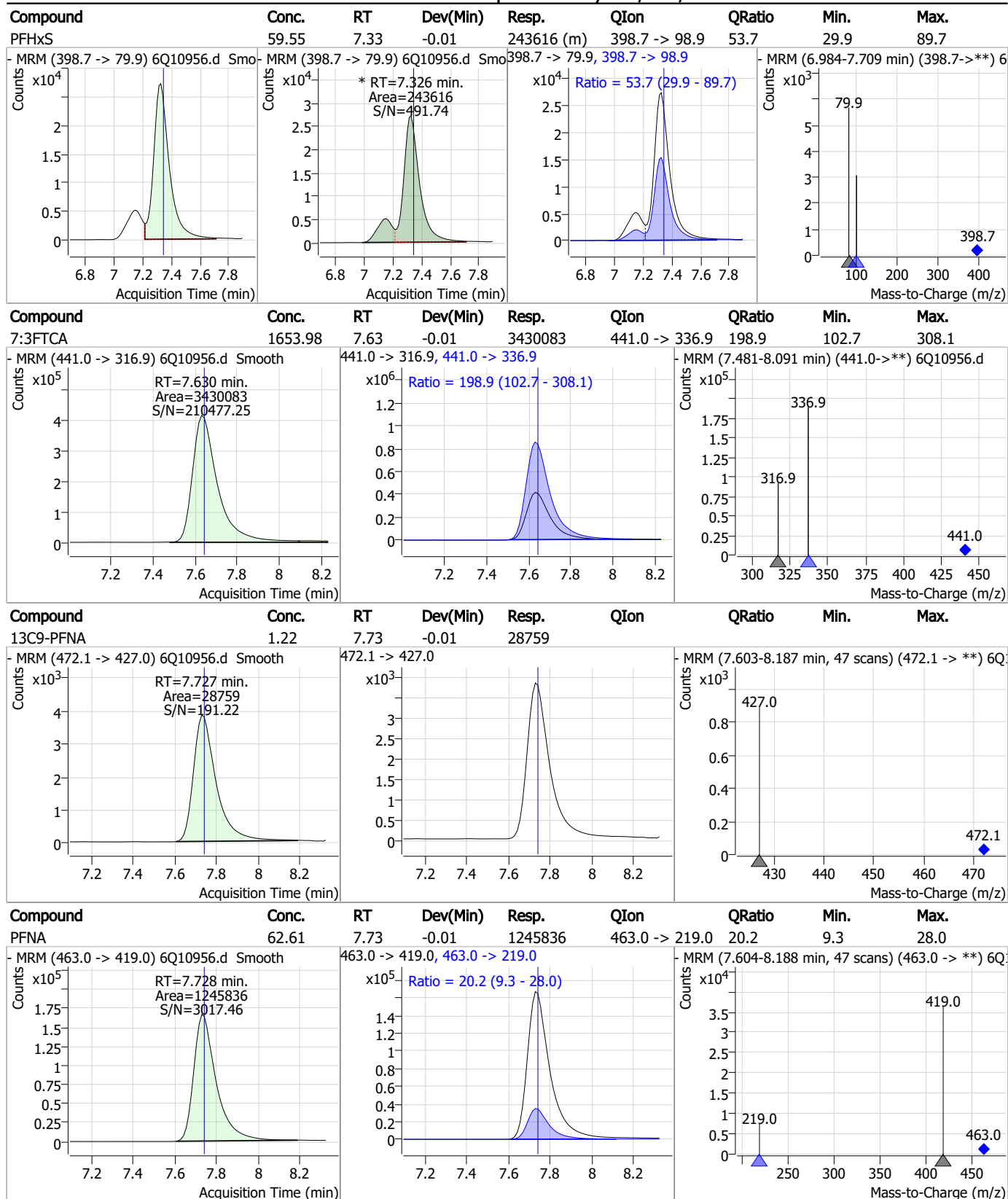
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Perfluorinated Compounds by LC/MS/MS



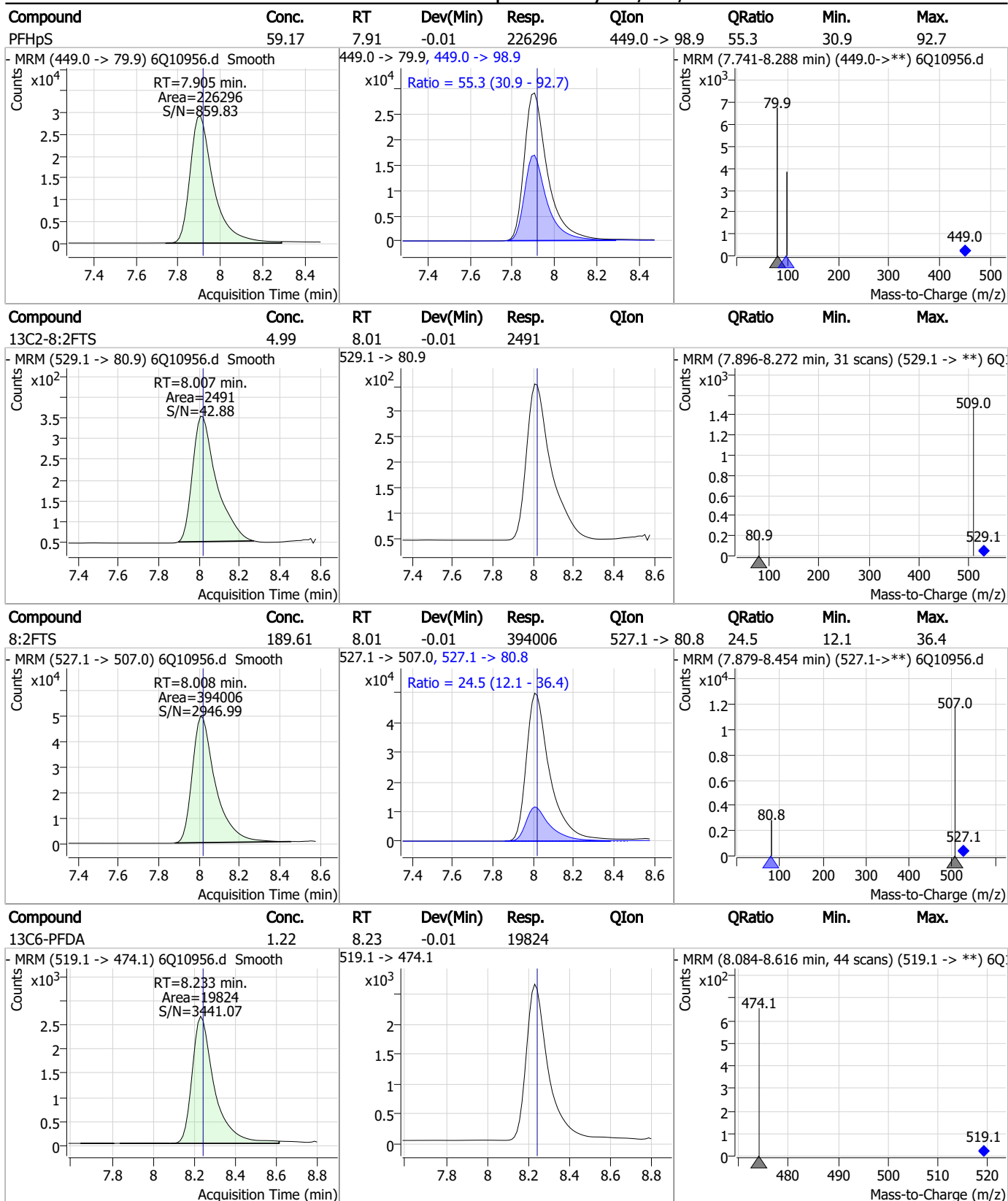
7.6.9

Perfluorinated Compounds by LC/MS/MS



7.6.9

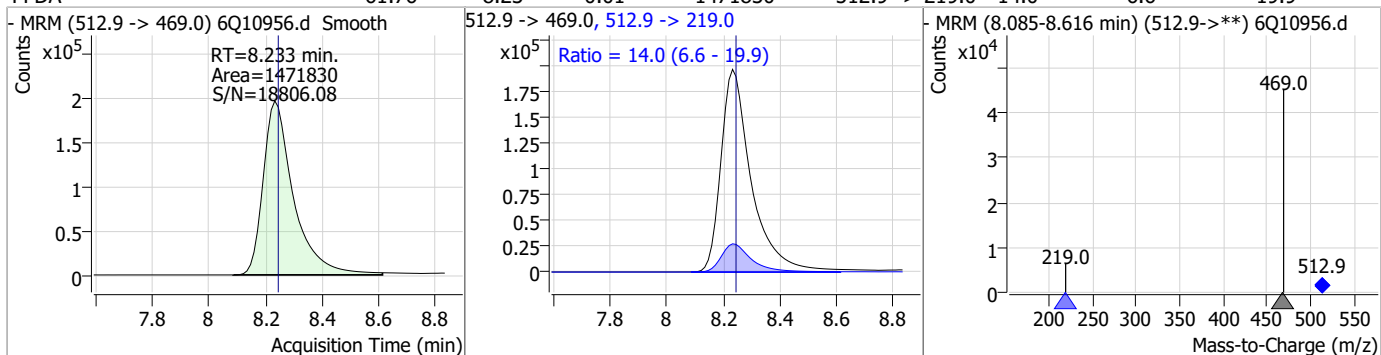
Perfluorinated Compounds by LC/MS/MS



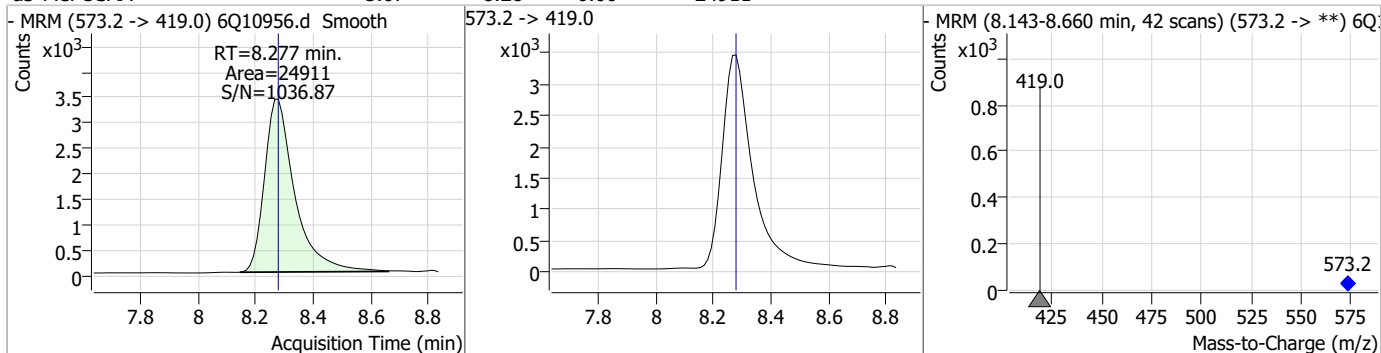
7.6.9
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Perfluorinated Compounds by LC/MS/MS

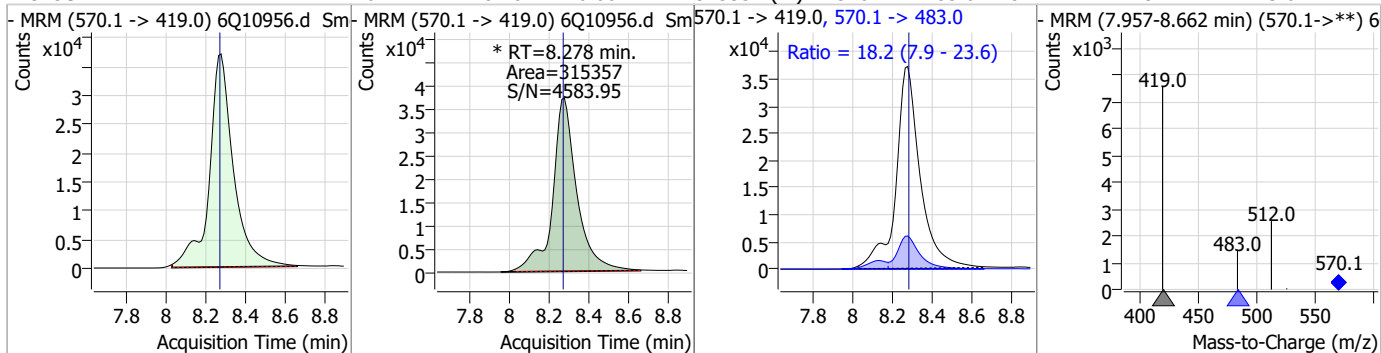
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	61.76	8.23	-0.01	1471830	512.9 -> 219.0	14.0	6.6	19.9



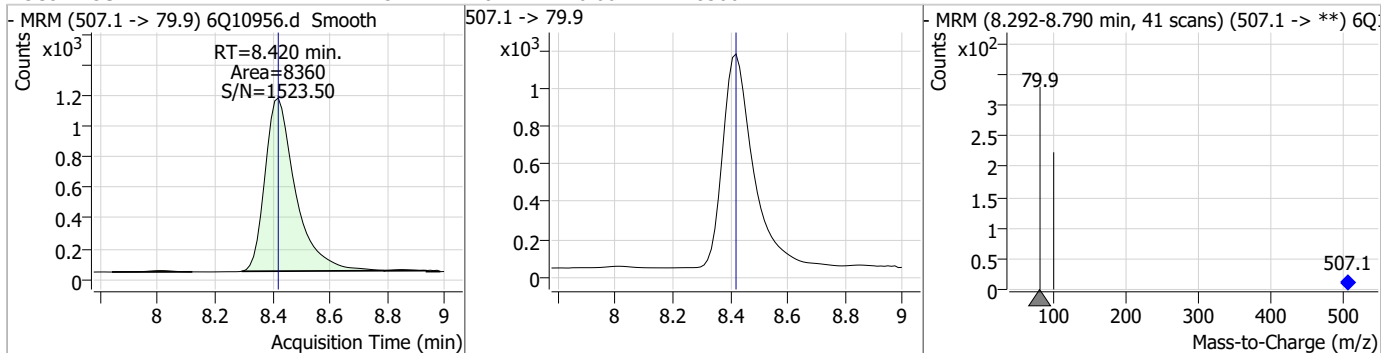
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.07	8.28	0.00	24911				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	61.41	8.28	0.00	315357 (m)	570.1 -> 483.0	18.2	7.9	23.6

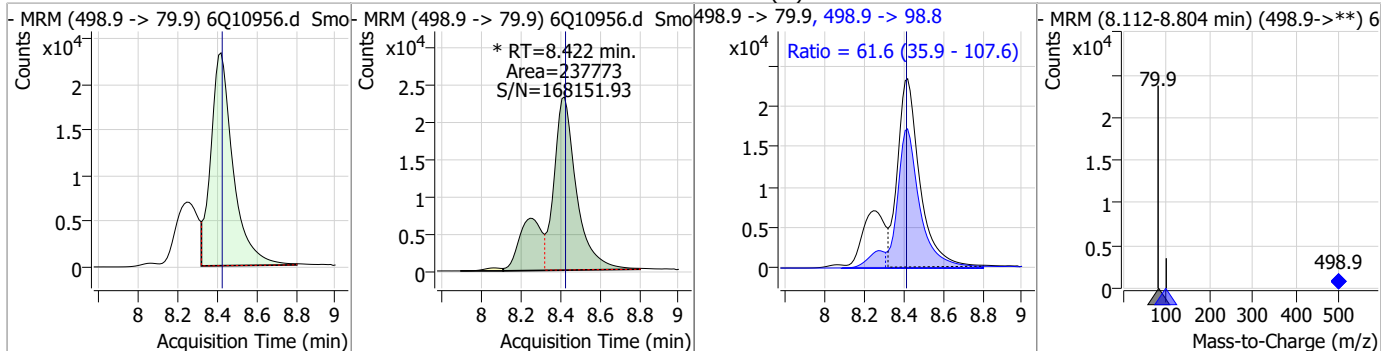


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.57	8.42	0.00	8360				

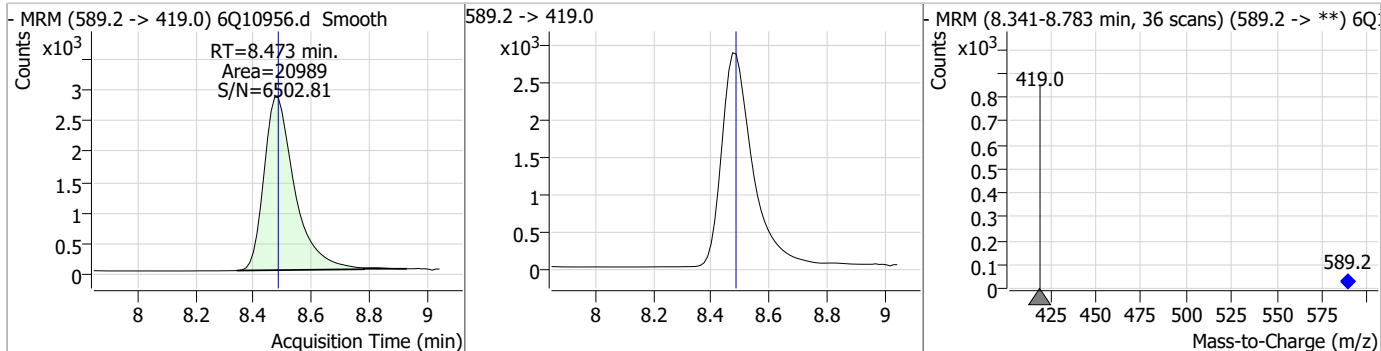


Perfluorinated Compounds by LC/MS/MS

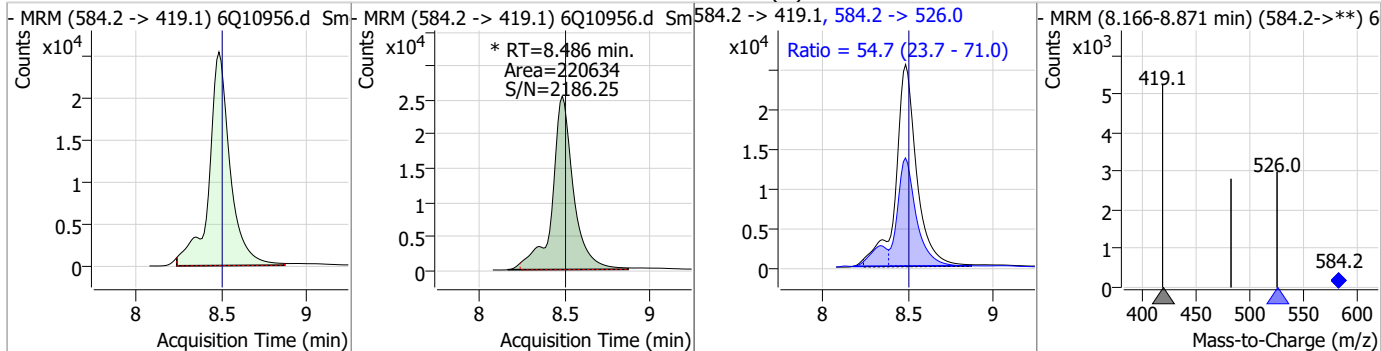
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	58.73	8.42	0.00	237773 (m)	498.9 -> 98.8	61.6	35.9	107.6



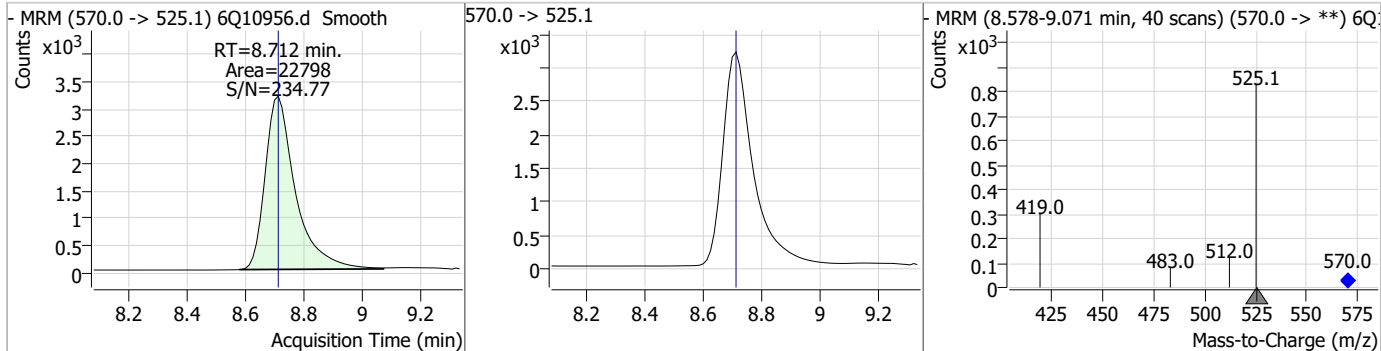
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.87	8.47	-0.01	20989				



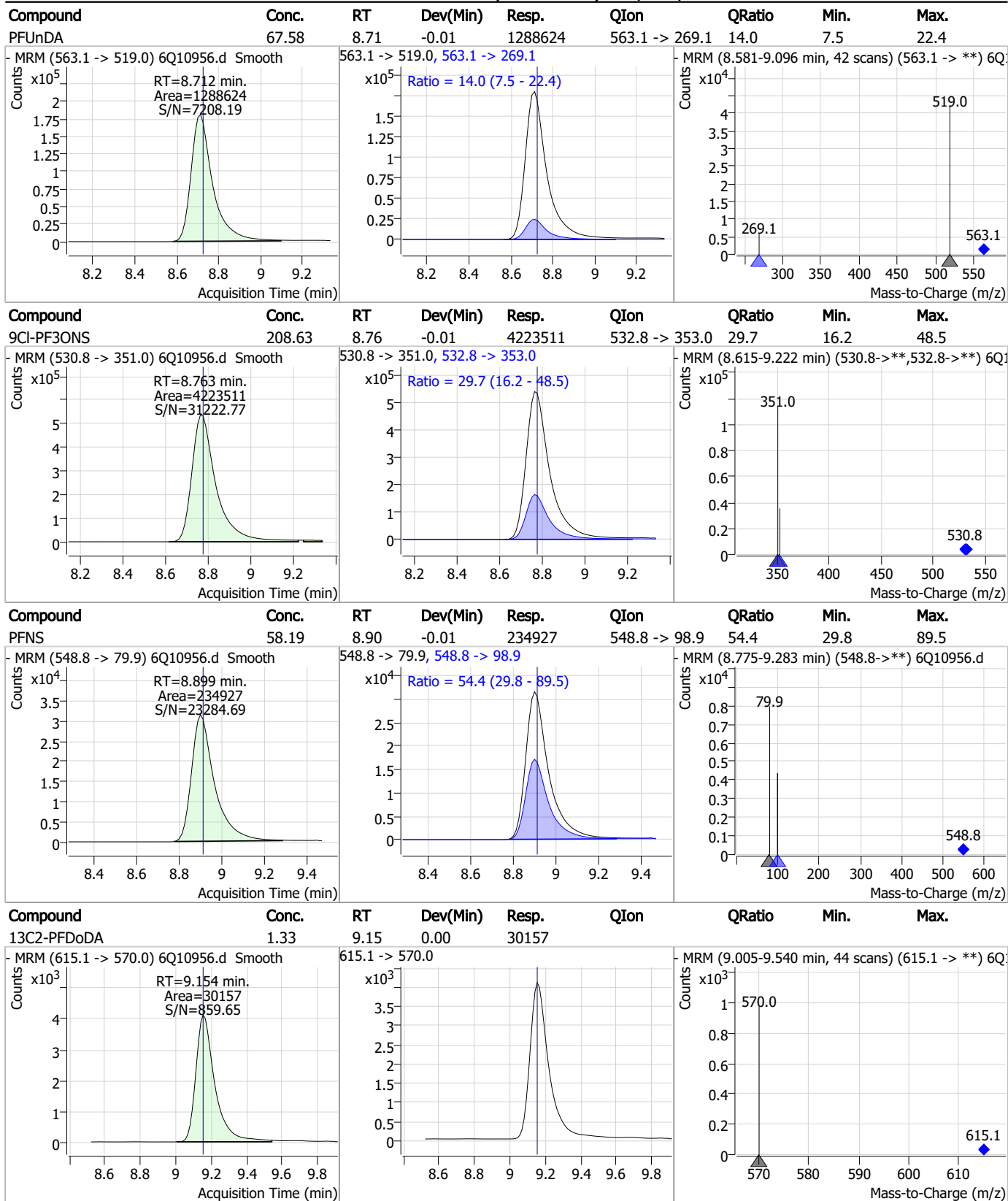
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	65.85	8.49	-0.01	220634 (m)	584.2 -> 526.0	54.7	23.7	71.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.15	8.71	0.00	22798				



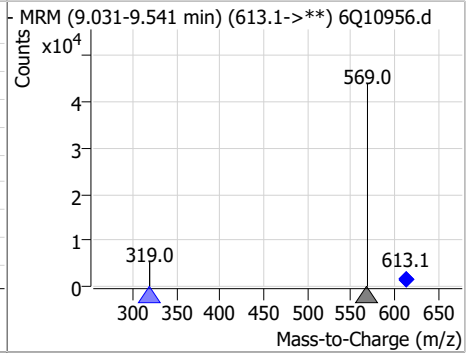
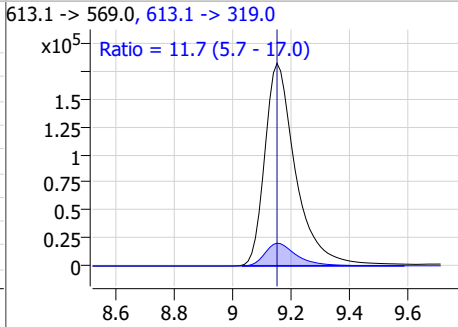
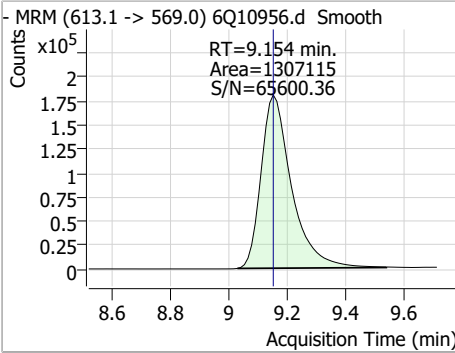
Perfluorinated Compounds by LC/MS/MS



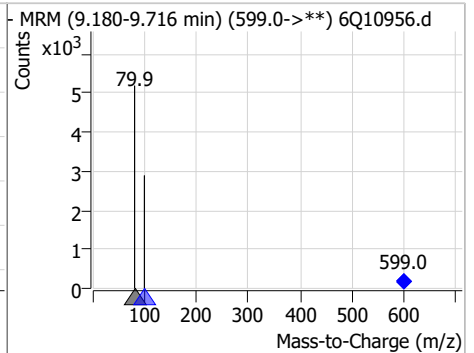
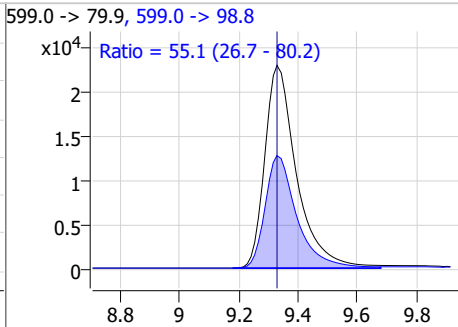
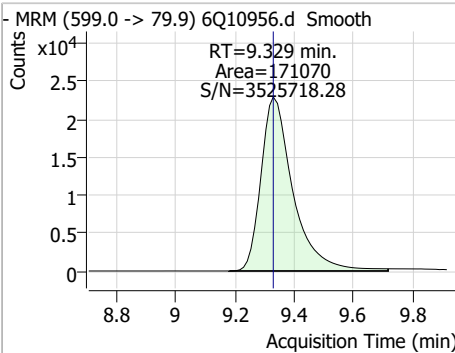
7.6.9
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Perfluorinated Compounds by LC/MS/MS

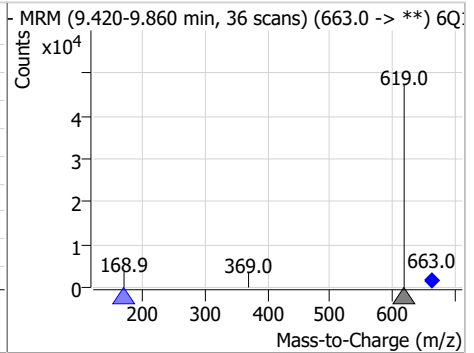
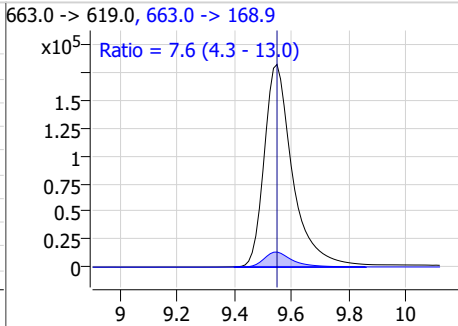
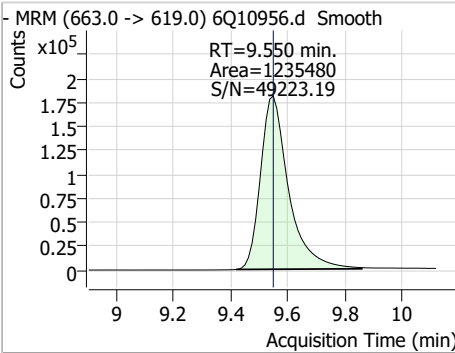
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDODA	55.10	9.15	0.00	1307115	613.1 -> 319.0	11.7	5.7	17.0



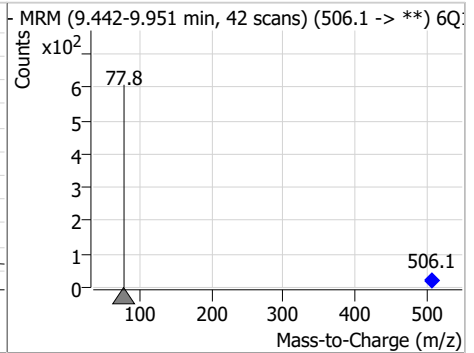
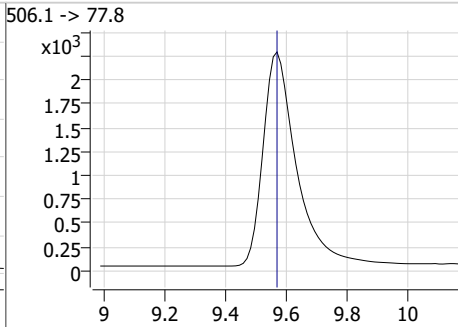
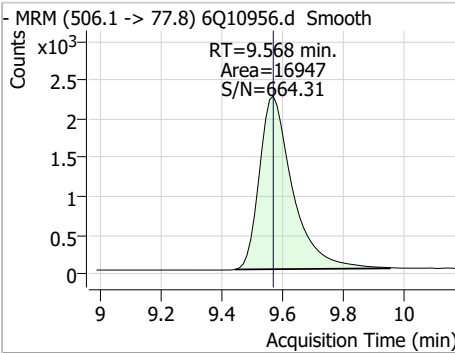
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFD5	59.29	9.33	0.00	171070	599.0 -> 98.8	55.1	26.7	80.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	54.55	9.55	0.00	1235480	663.0 -> 168.9	7.6	4.3	13.0

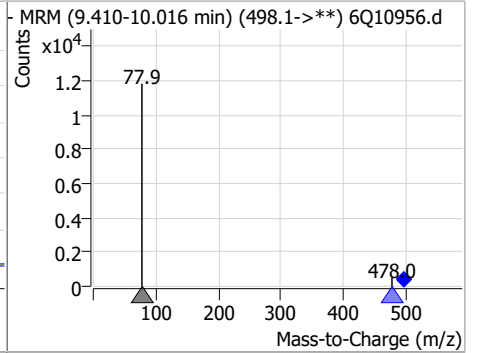
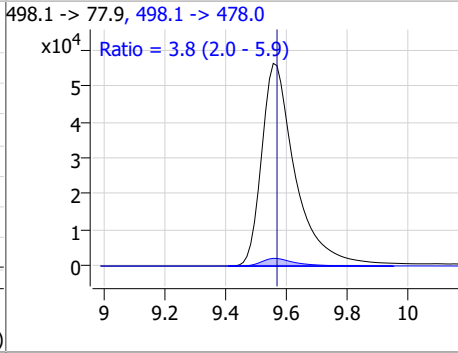
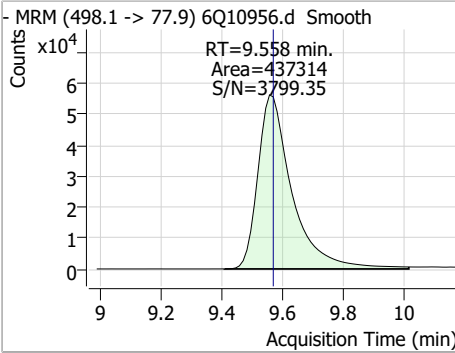


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.46	9.57	0.00	16947	506.1 -> 77.8			

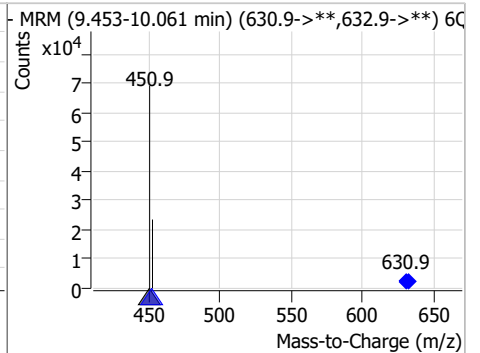
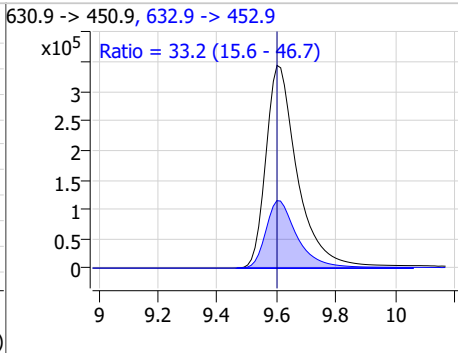
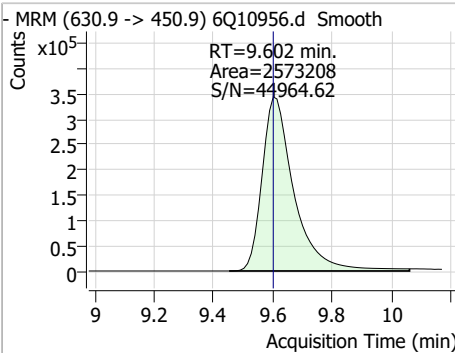


Perfluorinated Compounds by LC/MS/MS

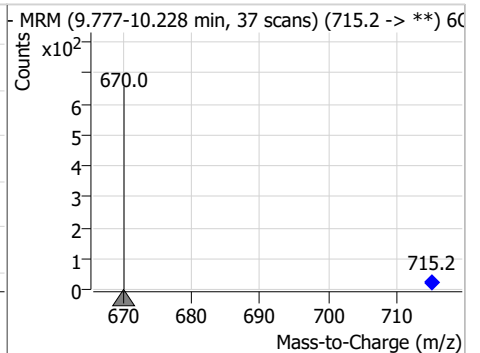
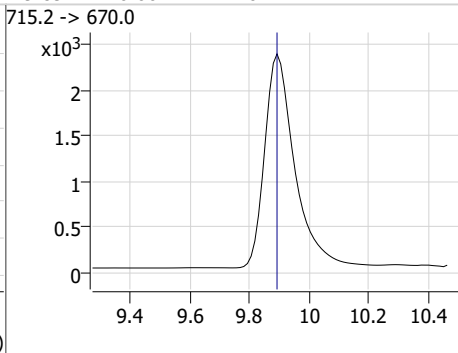
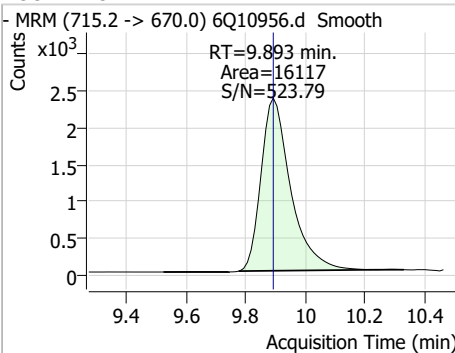
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	63.88	9.56	-0.01	437314	498.1 -> 478.0	3.8	2.0	5.9



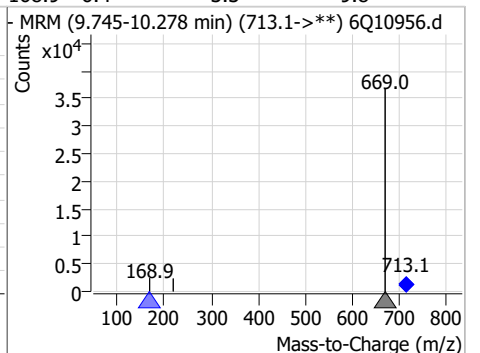
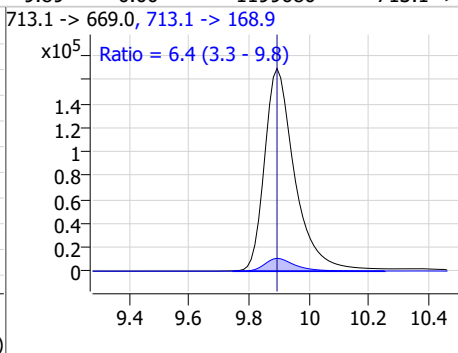
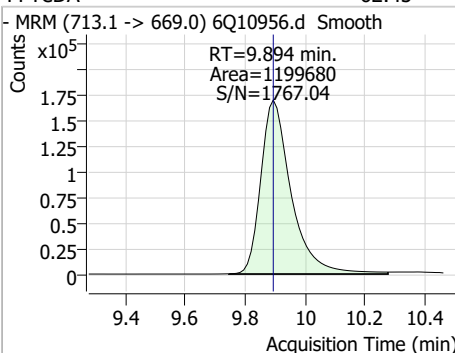
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11CI-PF3OUdS	206.53	9.60	0.00	2573208	632.9 -> 452.9	33.2	15.6	46.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.21	9.89	0.00	16117	715.2 -> 670.0	6.4	3.3	9.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	62.45	9.89	0.00	1199680	713.1 -> 168.9	6.4	3.3	9.8



Perfluorinated Compounds by LC/MS/MS

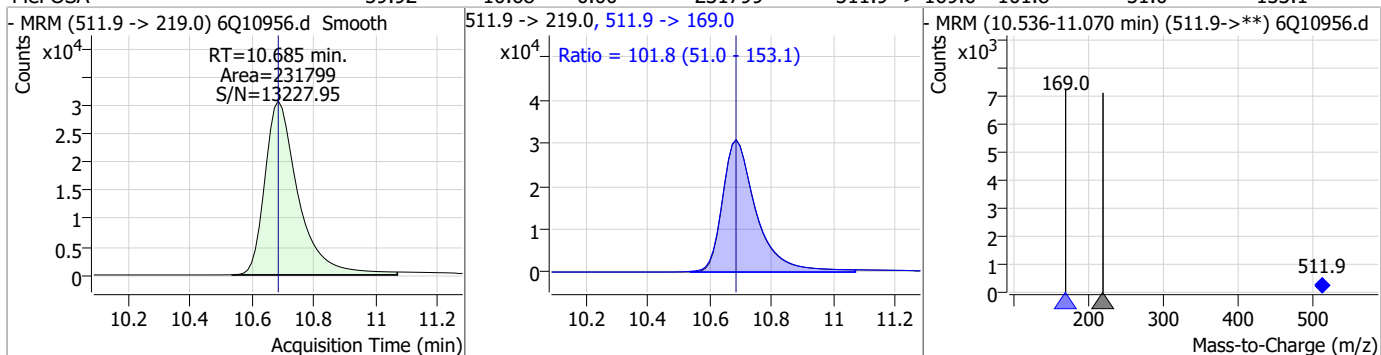
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	60.09	10.03	0.00	108114	699.1 -> 98.8	61.4	30.4	91.1
d7-MeFOSE	25.72	10.59	0.00	33387	623.2 -> 58.9	61.4	30.4	91.1
MeFOSE	633.09	10.60	0.00	873056	616.1 -> 58.9	61.4	30.4	91.1
d3-MeFOSA	2.78	10.68	0.00	8755	515.0 -> 219.0	61.4	30.4	91.1

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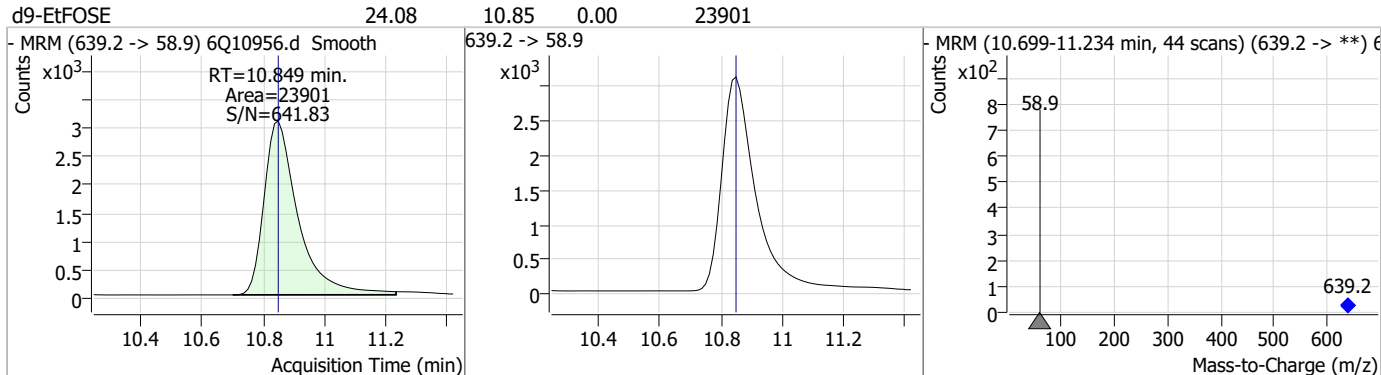


Perfluorinated Compounds by LC/MS/MS

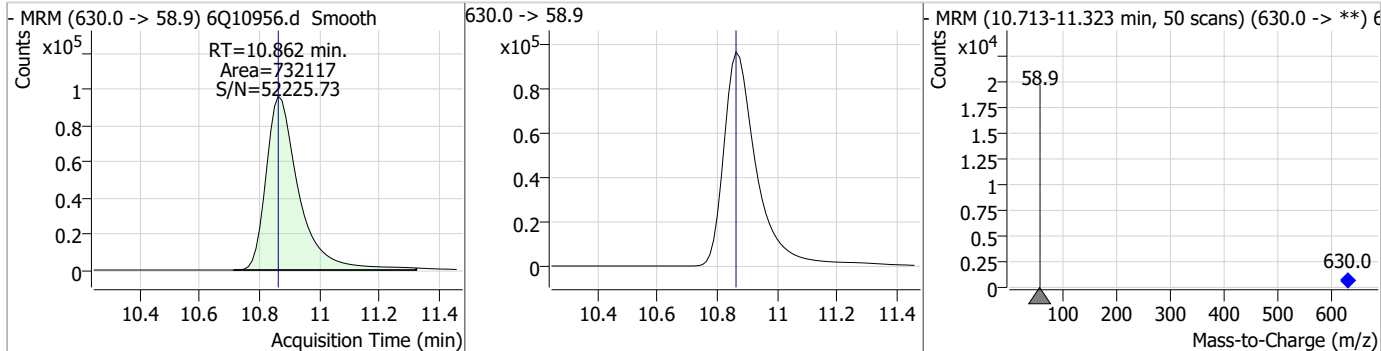
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	59.92	10.68	0.00	231799	511.9 -> 169.0	101.8	51.0	153.1



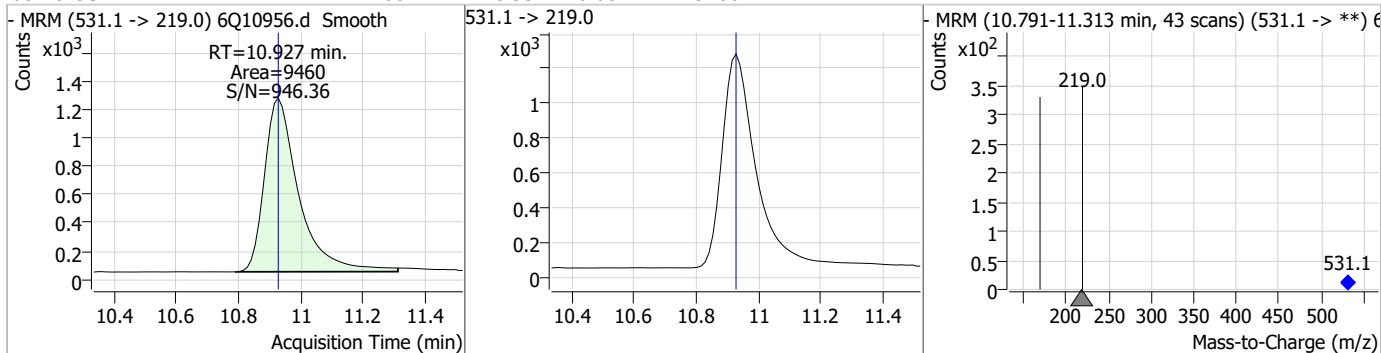
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.08	10.85	0.00	23901				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	694.36	10.86	0.00	732117				

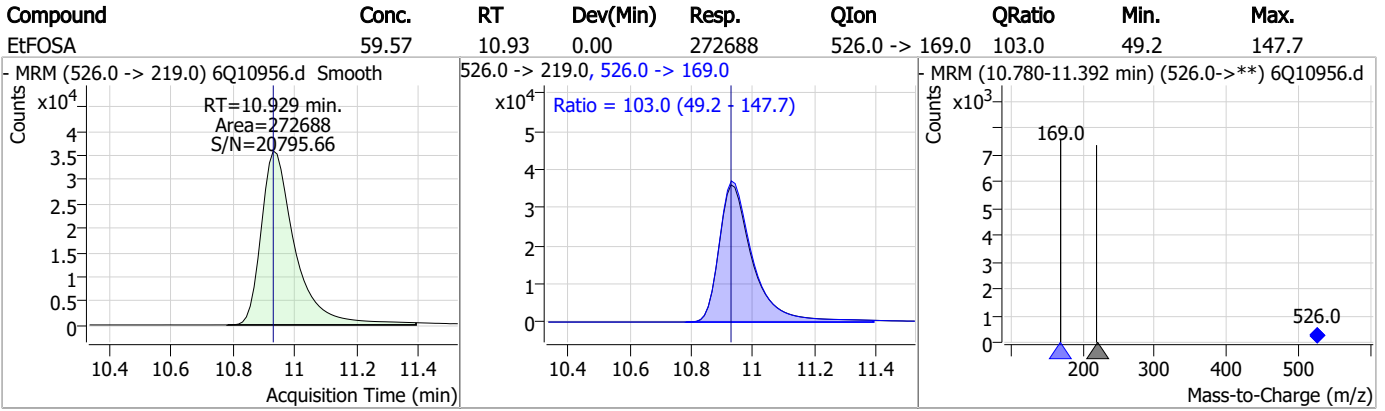


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.68	10.93	0.00	9460				



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q174-IC174 Method: EPA DRAFT 1633
Lab FileID: 6Q10956.D Analyst approved: 01/12/23 11:46 Martha Valls
Injection Time: 01/11/23 13:28 Supervisor approved: 01/12/23 15:42 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.33	Split peak
MeFOSAA	2355-31-9		8.28	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.42	Split peak
EtFOSAA	2991-50-6		8.49	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q10958.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/11/2023 1:56:24 PM
 Sample Name : icv174-4
 Vial : P1-B1
 DA Method File : 1633_011123_S6Q174.quantmethod.xml
 Batch Name : S6Q174.batch.bin
 Sample Information : OP94795,S6Q174,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.000	216.8 -> 171.9	94901	10.00 µg/L	0.000
M5-PFPeA	4.397	268.3 -> 223.0	45906	5.00 µg/L	0.000
M5-PFHxA	5.588	318.0 -> 273.0	41172	2.50 µg/L	0.000
M4-PFHpA	6.542	367.1 -> 322.0	40700	2.50 µg/L	0.000
M8-PFOA	7.197	421.1 -> 376.0	70499	2.50 µg/L	0.000
M9-PFNA	7.740	472.1 -> 427.0	30901	1.25 µg/L	0.000
M6-PFDA	8.245	519.1 -> 474.1	21296	1.25 µg/L	0.000
M7-PFUnDA	8.712	570.0 -> 525.1	27415	1.25 µg/L	0.000
M2-PFDoDA	9.154	615.1 -> 570.0	28264	1.25 µg/L	0.000
M2-PFTeDA	9.893	715.2 -> 670.0	16598	1.25 µg/L	0.000
M8-FOSA	9.568	506.1 -> 77.8	18964	2.50 µg/L	0.000
M3-PFBS	5.544	302.1 -> 79.9	15173	2.50 µg/L	-0.012
M3-PFHxS	7.325	402.1 -> 79.9	9307	2.50 µg/L	-0.012
M8-PFOS	8.420	507.1 -> 79.9	9236	2.50 µg/L	0.000
M2-4:2FTS	5.253	329.1 -> 80.9	1827	5.00 µg/L	0.000
M2-6:2FTS	6.958	429.1 -> 80.9	2774	5.00 µg/L	0.000
M2-8:2FTS	8.019	529.1 -> 80.9	2776	5.00 µg/L	0.000
M3-MeFOSAA	8.277	573.2 -> 419.0	29279	5.00 µg/L	0.000
M3-HFPO-DA	5.978	286.9 -> 168.9	16000	10.00 µg/L	0.000
M5-EtFOSAA	8.485	589.2 -> 419.0	23370	5.00 µg/L	0.000
M7-MeFOSE	10.591	623.2 -> 58.9	36838	25.00 µg/L	0.000
M9-EtFOSE	10.849	639.2 -> 58.9	28219	25.00 µg/L	0.000
M5-EtFOSA	10.927	531.1 -> 219.0	9434	2.50 µg/L	0.000
M3-MeFOSA	10.683	515.0 -> 219.0	8402	2.50 µg/L	0.000
13C4-PFOS	8.421	502.8 -> 79.9	10657	2.50 µg/L	0.000
13C3-PFBA	3.004	216.0 -> 172.0	41345	5.00 µg/L	0.000
18O2-PFHxS	7.336	403.0 -> 83.9	7425	2.50 µg/L	0.000
13C4-PFOA	7.198	417.1 -> 372.0	87458	2.50 µg/L	0.000
13C2-PFDA	8.245	515.1 -> 470.1	31152	1.25 µg/L	0.000
13C5-PFNA	7.740	468.0 -> 423.0	34546	1.25 µg/L	0.000
13C2-PFHxA	5.589	315.1 -> 270.0	40456	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.253	329.1 -> 80.9	1827	4.72 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.3%		
13C2-6:2FTS	6.958	429.1 -> 80.9	2774	5.23 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.6%		
13C2-8:2FTS	8.019	529.1 -> 80.9	2776	4.80 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 95.9%		
13C2-PFDoDA	9.154	615.1 -> 570.0	28264	1.14 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 91.6%		
13C2-PFTeDA	9.893	715.2 -> 670.0	16598	1.14 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 91.5%		
13C3-PFBS	5.544	302.1 -> 79.9	15173	2.44 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.5%		
13C3-PFHxS	7.325	402.1 -> 79.9	9307	2.31 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 = 92.4%		
13C4-PFBA	3.000	216.8 -> 171.9	94901	10.05 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 100.5%		
13C4-PFHpA	6.542	367.1 -> 322.0	40700	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.3%		
13C5-PFHxA	5.588	318.0 -> 273.0	41172	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.4%		
13C5-PFPeA	4.397	268.3 -> 223.0	45906	5.09 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.7%		
13C6-PFDA	8.245	519.1 -> 474.1	21296	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.0%		
13C7-PFUnDA	8.712	570.0 -> 525.1	27415	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.3%		
13C8-FOSA	9.568	506.1 -> 77.8	18964	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.4%		
13C8-PFOA	7.197	421.1 -> 376.0	70499	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.2%		
13C8-PFOS	8.420	507.1 -> 79.9	9236	2.71 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 108.5%		
13C9-PFNA	7.740	472.1 -> 427.0	30901	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.7%		
d3-MeFOSAA	8.277	573.2 -> 419.0	29279	5.71 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 114.1%		
13C3-HFPO-DA	5.978	286.9 -> 168.9	16000	9.59 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 95.9%		
d3-MeFOSA	10.683	515.0 -> 219.0	8402	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.0%		
d5-EtFOSAA	8.485	589.2 -> 419.0	23370	5.19 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.8%		
d7-MeFOSE	10.591	623.2 -> 58.9	36838	27.16 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 108.6%		
d9-EtFOSE	10.849	639.2 -> 58.9	28219	27.20 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 108.8%		
d5-EtFOSA	10.927	531.1 -> 219.0	9434	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.2%		
Target Compounds					QValue
4:2FTS	5.254	327.1 -> 307.0	38960	8.97 µg/L	93
		327.1 -> 80.9	9301		
6:2FTS	6.959	427.1 -> 407.0	34981	8.11 µg/L	97
		427.1 -> 80.9	7344		
8:2FTS	8.020	527.1 -> 507.0	21129	9.12 µg/L	100
		527.1 -> 80.8	5163		
EtFOSAA	8.486	584.2 -> 419.1	8911	2.39 µg/L	m 88
		584.2 -> 526.0	4960		
FOSA	9.558	498.1 -> 77.9	18859	2.46 µg/L	100
		498.1 -> 478.0	720		
MeFOSAA	8.278	570.1 -> 419.0	13283	2.20 µg/L	m 91
		570.1 -> 483.0	2570		
PFBA	2.994	212.8 -> 168.9	21730	8.93 µg/L	100
PFBS	5.544	298.7 -> 79.9	11648	1.90 µg/L	98
		298.7 -> 98.8	5761		
PFDA	8.246	512.9 -> 469.0	60898	2.38 µg/L	99
		512.9 -> 219.0	8188		
PFDODA	9.154	613.1 -> 569.0	51541	2.32 µg/L	97
		613.1 -> 319.0	6493		
PFDS	9.329	599.0 -> 79.9	6999	2.20 µg/L	98

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	3634			
PFHpA	6.542	363.1 -> 319.0	56266	2.29	µg/L	98
		363.1 -> 169.0	7758			
PFHpS	7.905	449.0 -> 79.9	8924	2.11	µg/L	97
		449.0 -> 98.9	5295			
PFHxA	5.591	313.0 -> 269.0	37373	2.25	µg/L	100
		313.0 -> 118.9	1483			
PFHxS	7.326	398.7 -> 79.9	9541	2.15	µg/L	m 100
		398.7 -> 98.9	5712			
PFNA	7.740	463.0 -> 419.0	50686	2.37	µg/L	97
		463.0 -> 219.0	10057			
PFNS	8.899	548.8 -> 79.9	10674	2.39	µg/L	86
		548.8 -> 98.9	5249			
PFOA	7.199	413.0 -> 369.0	69296	2.20	µg/L	98
		413.0 -> 169.0	9368			
PFOS	8.421	498.9 -> 79.9	9234	2.06	µg/L	m 87
		498.9 -> 98.8	5626			
PFPeA	4.401	263.0 -> 219.0	44785	4.44	µg/L	100
PFPeS	6.619	349.1 -> 79.9	11794	2.25	µg/L	100
		349.1 -> 98.9	6245			
PFTeDA	9.894	713.1 -> 669.0	46250	2.34	µg/L	99
		713.1 -> 168.9	2903			
PFTrDA	9.550	663.0 -> 619.0	50432	2.38	µg/L	97
		663.0 -> 168.9	3908			
PFUnDA	8.712	563.1 -> 519.0	49469	2.16	µg/L	99
		563.1 -> 269.1	7562			
11CI-PF3OUdS	9.602	630.9 -> 450.9	111938	9.23	µg/L	99
		632.9 -> 452.9	35128			
9CI-PF3ONS	8.776	530.8 -> 351.0	181557	9.21	µg/L	94
		532.8 -> 353.0	52579			
ADONA	6.804	376.9 -> 250.9	325010	9.14	µg/L	98
		376.9 -> 84.8	69526			
HFPO-DA	5.966	284.9 -> 168.9	15023	9.28	µg/L	100
		284.9 -> 184.9	1850			
3:3FTCA	3.839	241.0 -> 177.0	5908	11.00	µg/L	97
		241.0 -> 117.0	800			
5:3FTCA	6.219	341.0 -> 237.1	191517	55.35	µg/L	98
		341.0 -> 217.0	166382			
7:3FTCA	7.643	441.0 -> 316.9	134591	57.71	µg/L	97
		441.0 -> 336.9	281724			
EtFOSA	10.929	526.0 -> 219.0	11152	2.44	µg/L	100
		526.0 -> 169.0	11032			
EtFOSE	10.862	630.0 -> 58.9	27851	22.37	µg/L	100
MeFOSA	10.685	511.9 -> 219.0	9129	2.46	µg/L	100
		511.9 -> 169.0	9299			
MeFOSE	10.604	616.1 -> 58.9	35106	23.07	µg/L	100
PFDoDS	10.033	699.1 -> 79.9	4453	2.24	µg/L	98
		699.1 -> 98.8	2647			
NFDHA	5.471	295.0 -> 201.0	5050	4.68	µg/L	98
		295.0 -> 84.9	2258			
PFMBA	4.813	279.0 -> 85.1	14355	4.57	µg/L	100
PFMPA	3.550	229.0 -> 84.9	12536	4.49	µg/L	100
PFEESA	6.097	314.8 -> 134.9	95264	4.11	µg/L	100
		314.8 -> 82.9	2381			

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

7.6.10
7

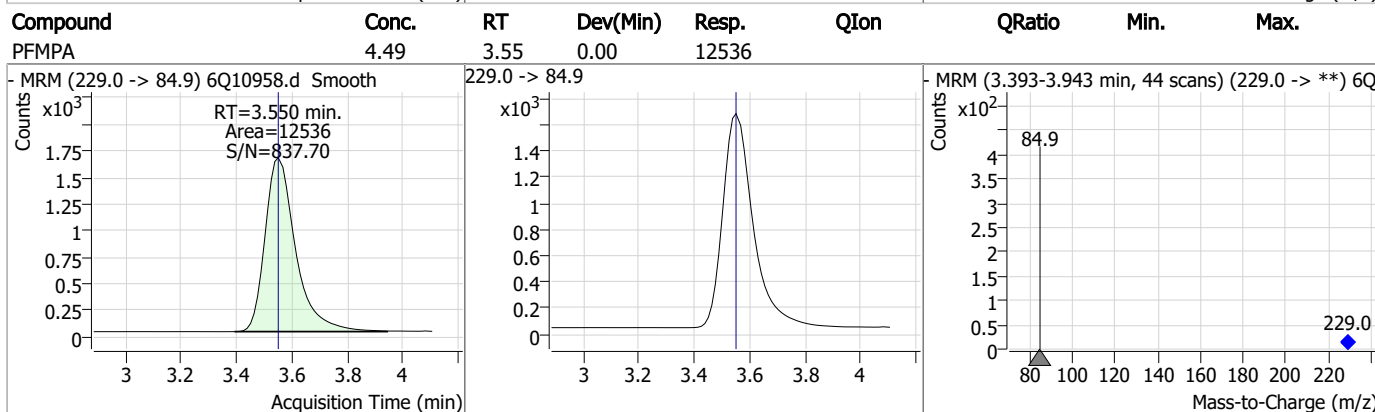
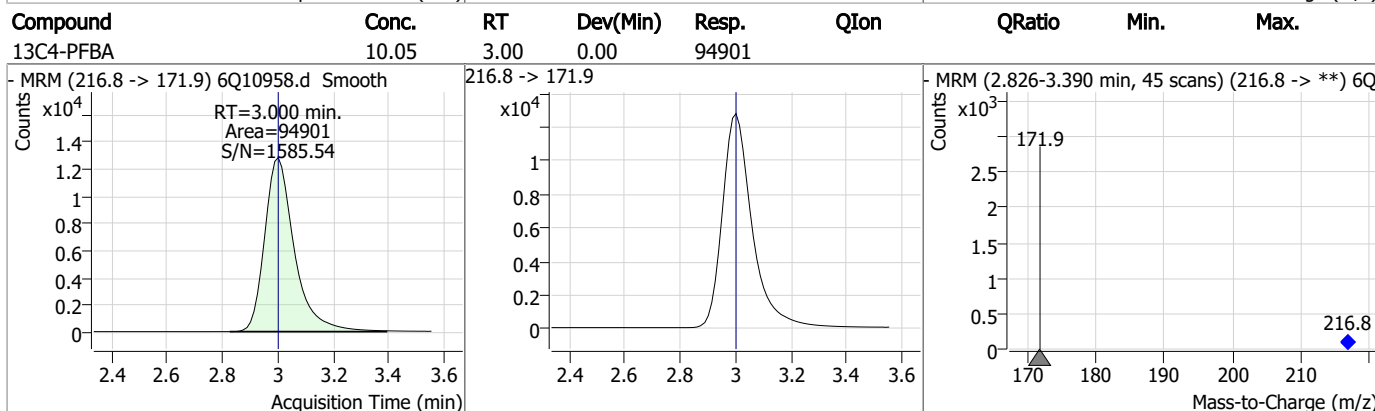
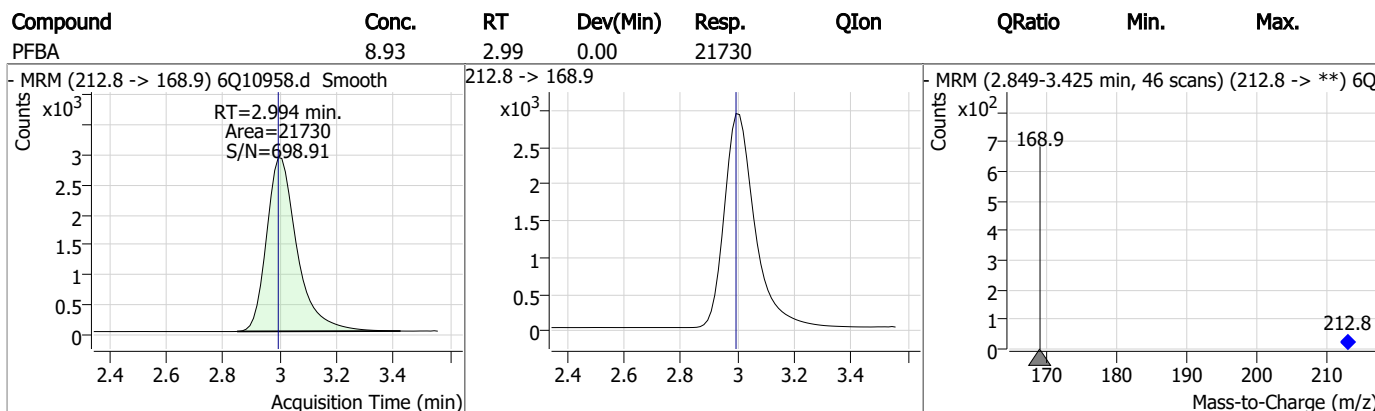
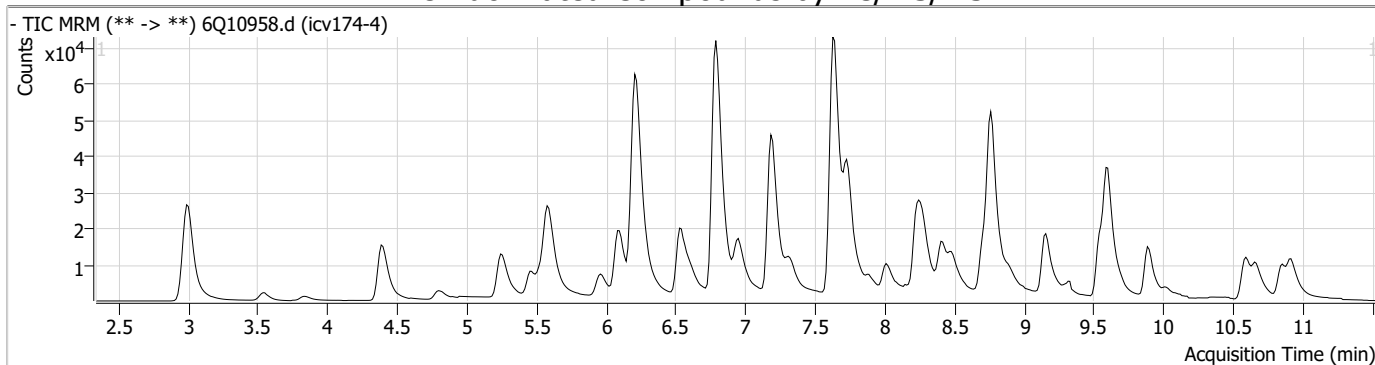
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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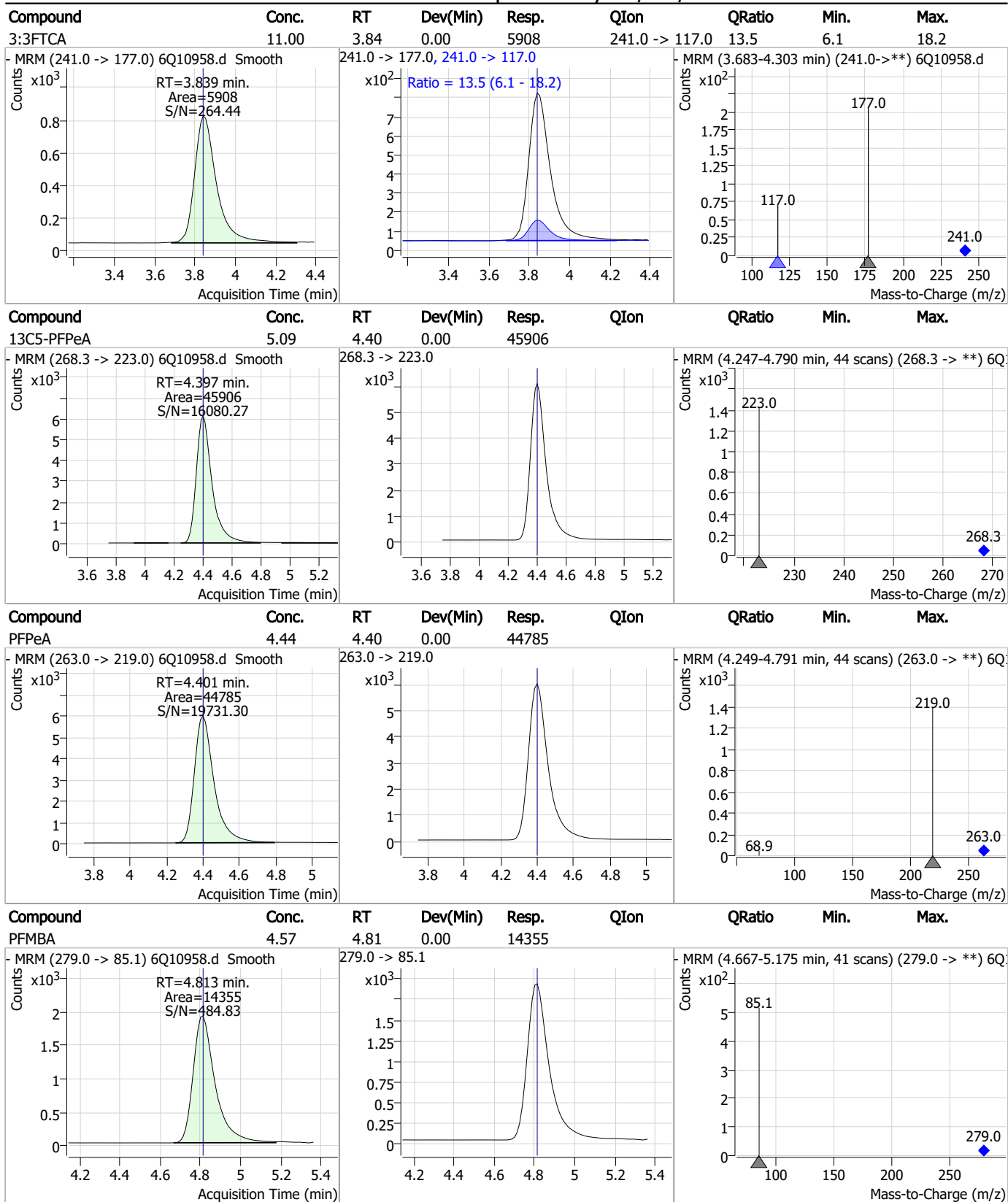
7.6.10

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Perfluorinated Compounds by LC/MS/MS

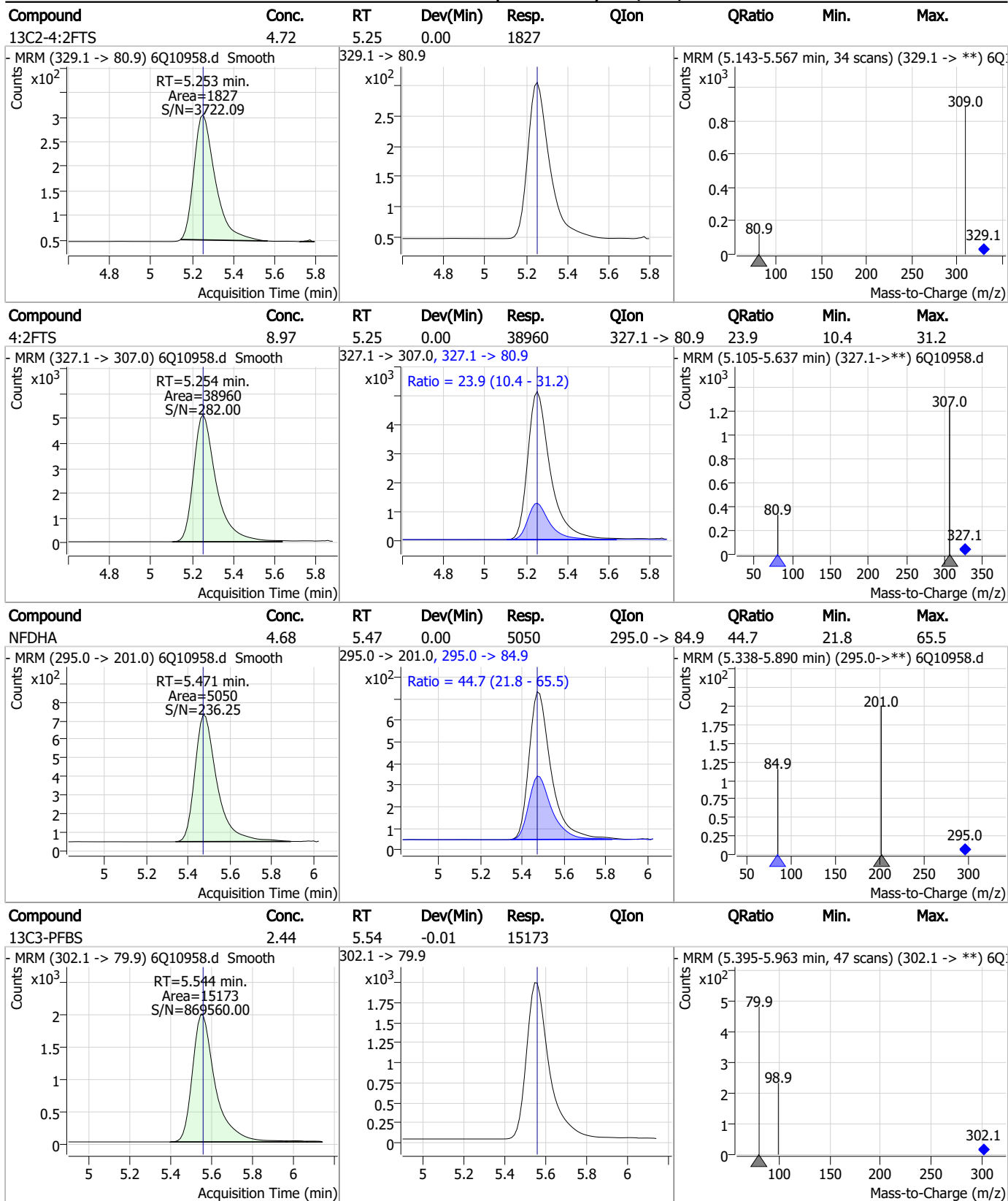


Perfluorinated Compounds by LC/MS/MS



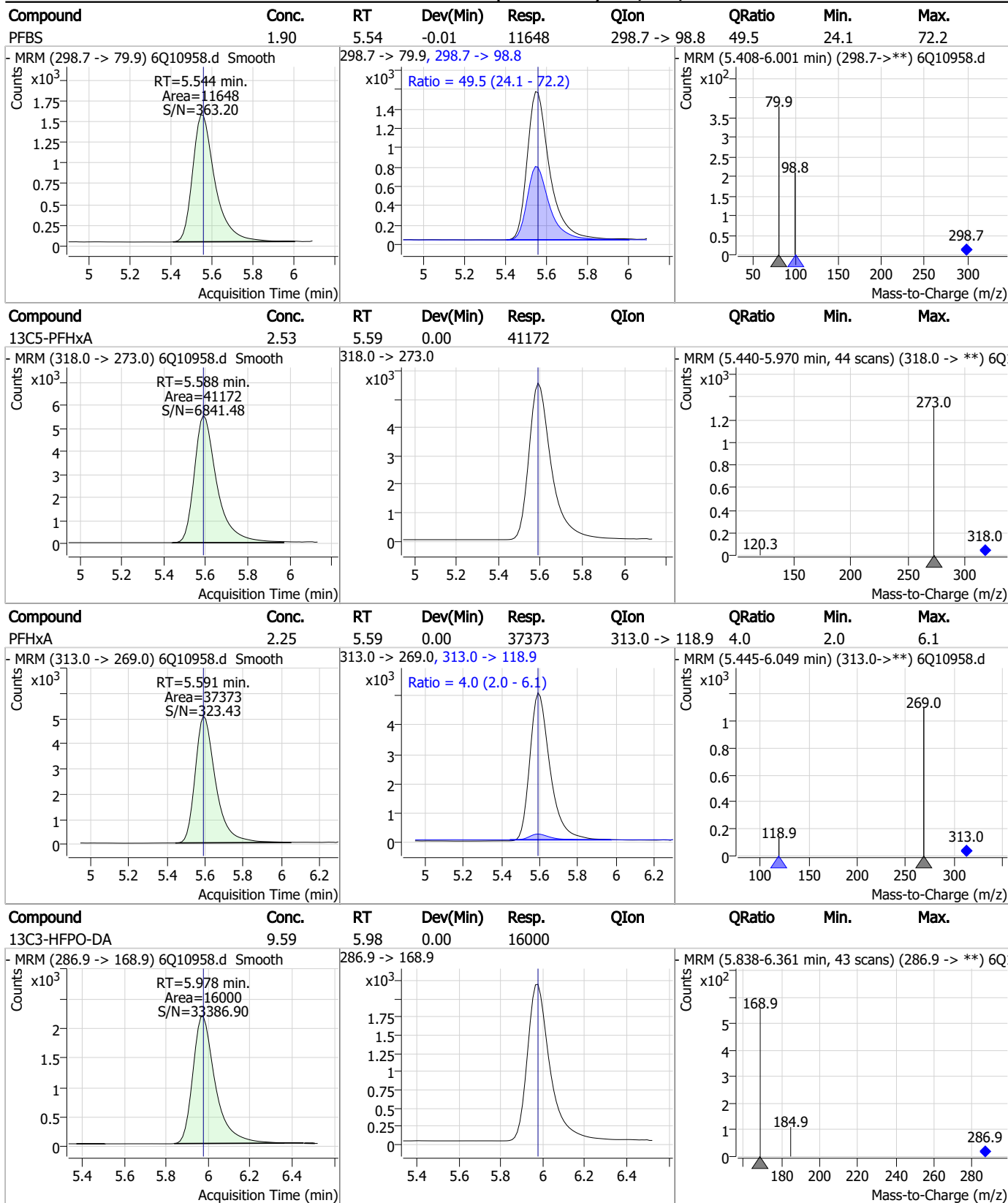
7.6.10 7

Perfluorinated Compounds by LC/MS/MS



7.6.10
7

Perfluorinated Compounds by LC/MS/MS

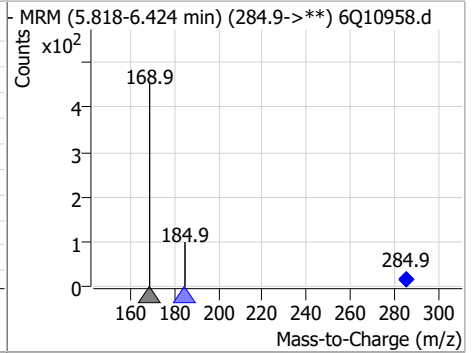
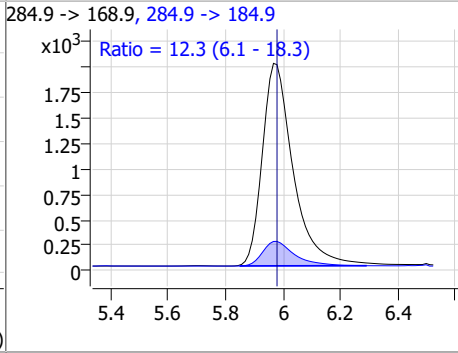
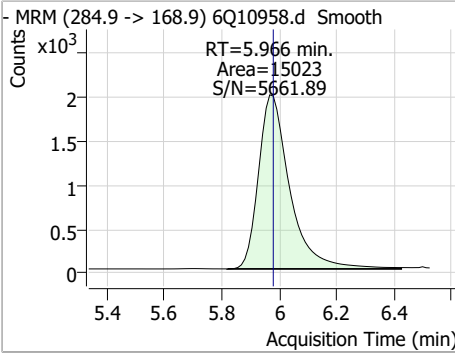


7.6.10
7

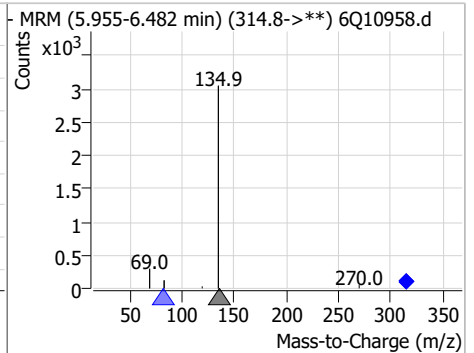
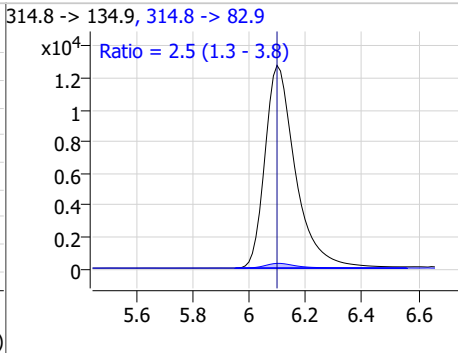
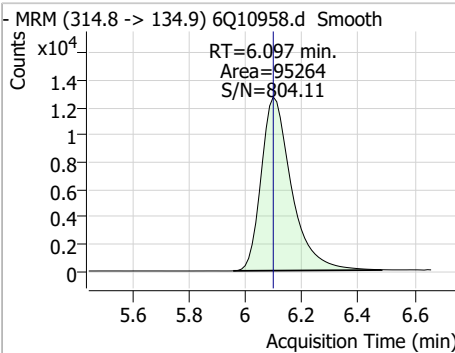


Perfluorinated Compounds by LC/MS/MS

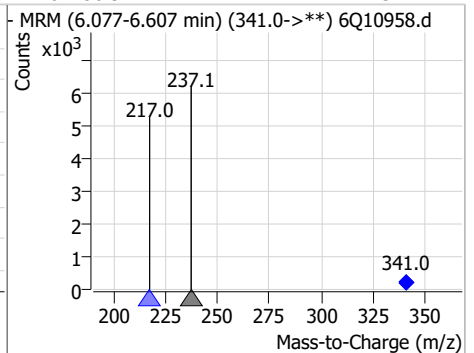
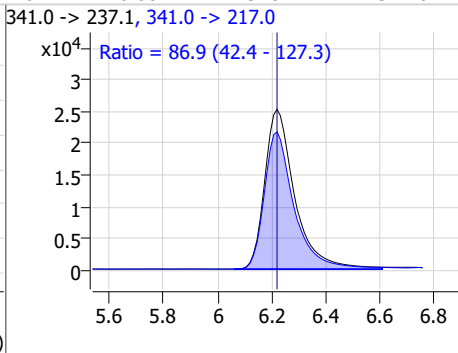
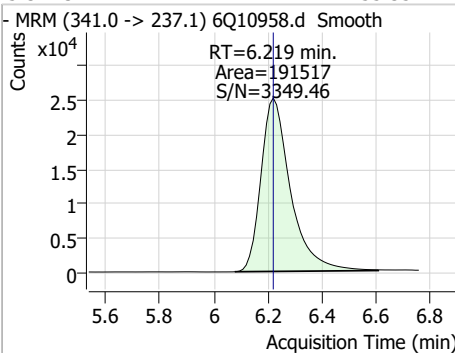
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	9.28	5.97	-0.01	15023	284.9 -> 184.9	12.3	6.1	18.3



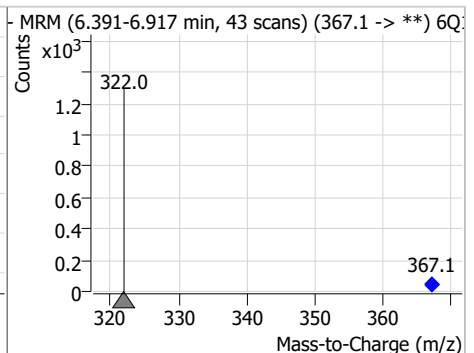
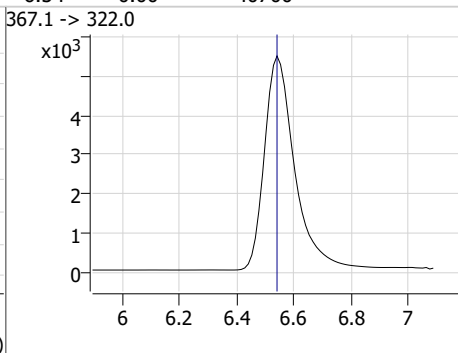
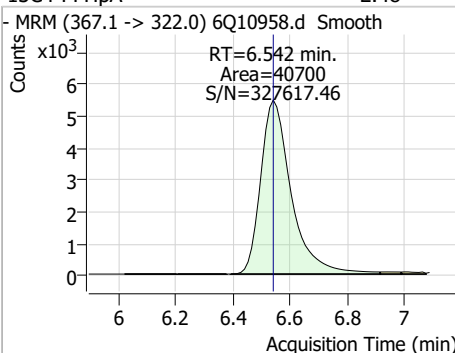
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.11	6.10	0.00	95264	314.8 -> 82.9	2.5	1.3	3.8



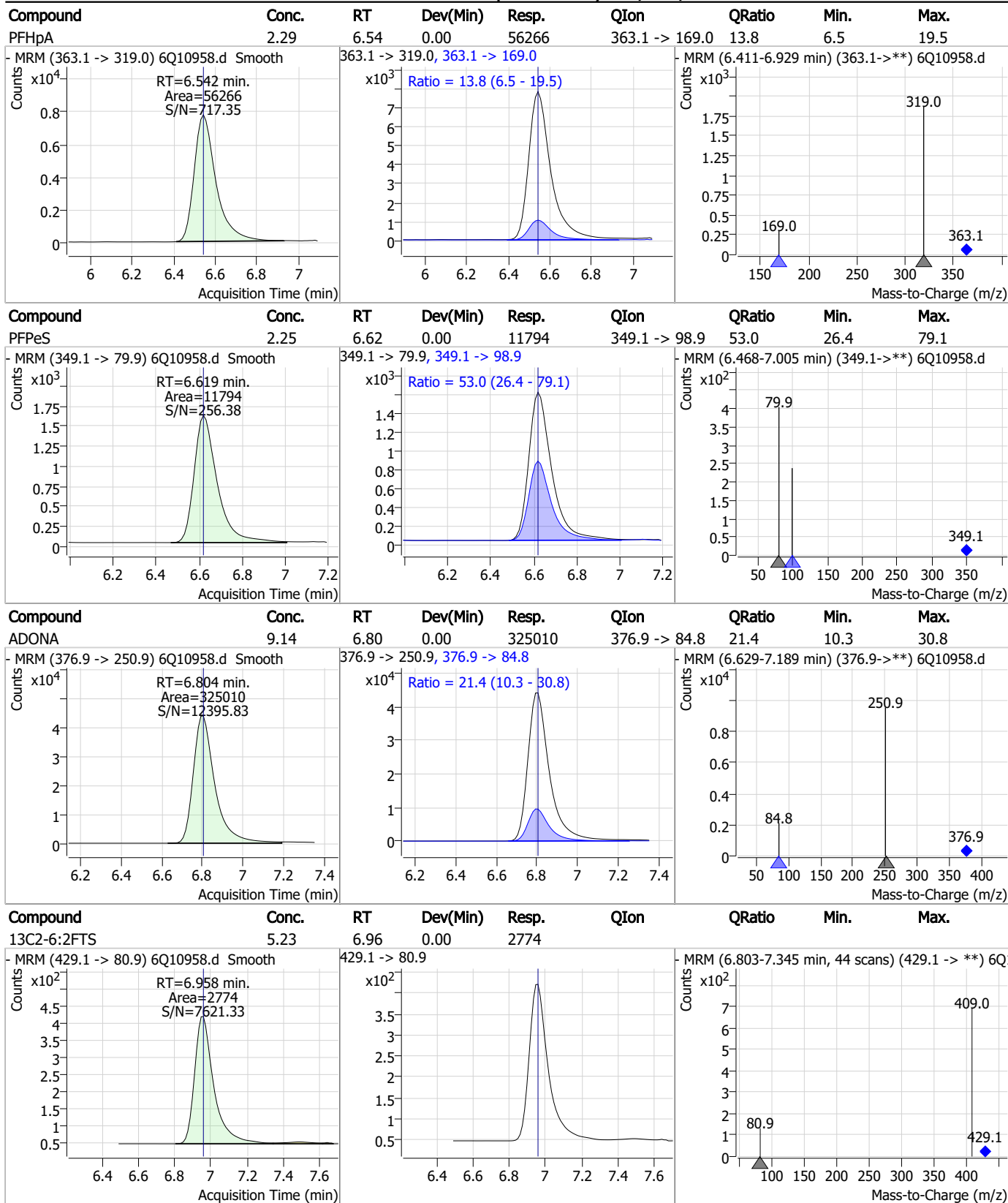
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	55.35	6.22	0.00	191517	341.0 -> 217.0	86.9	42.4	127.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpa	2.48	6.54	0.00	40700	367.1 -> 322.0			



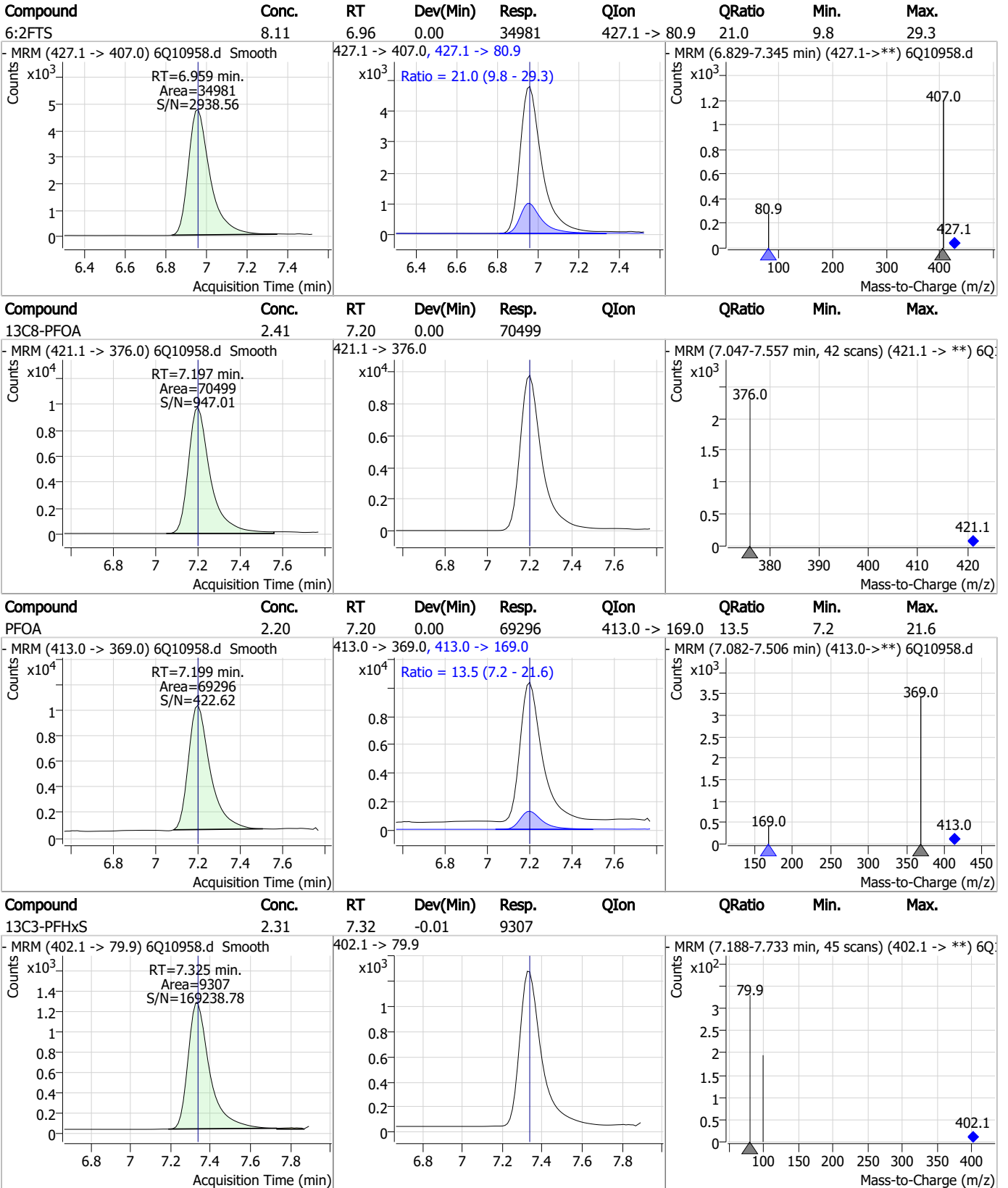
Perfluorinated Compounds by LC/MS/MS



7.6.10 7



Perfluorinated Compounds by LC/MS/MS

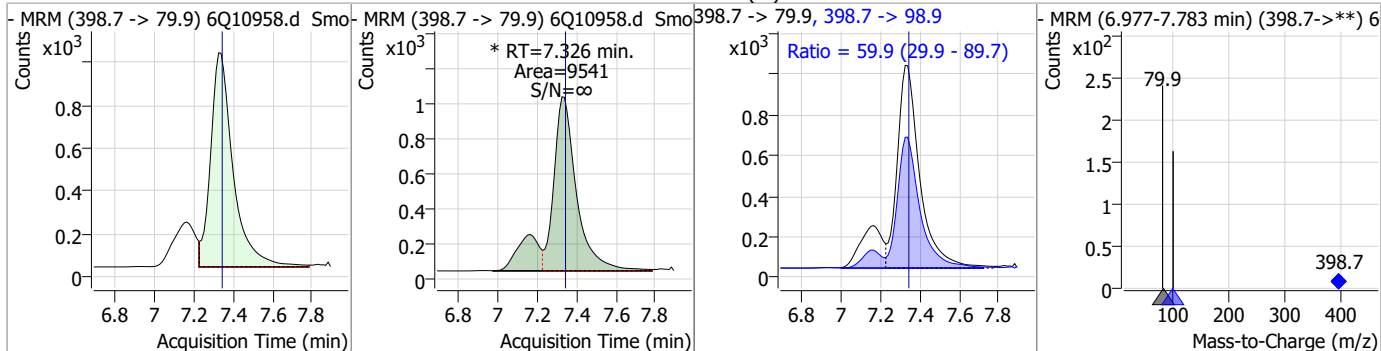


7.6.10 7

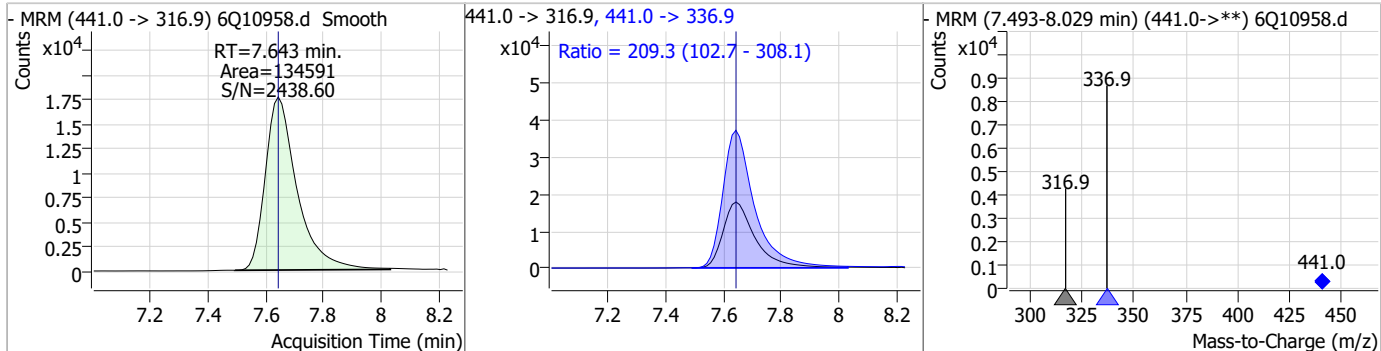


Perfluorinated Compounds by LC/MS/MS

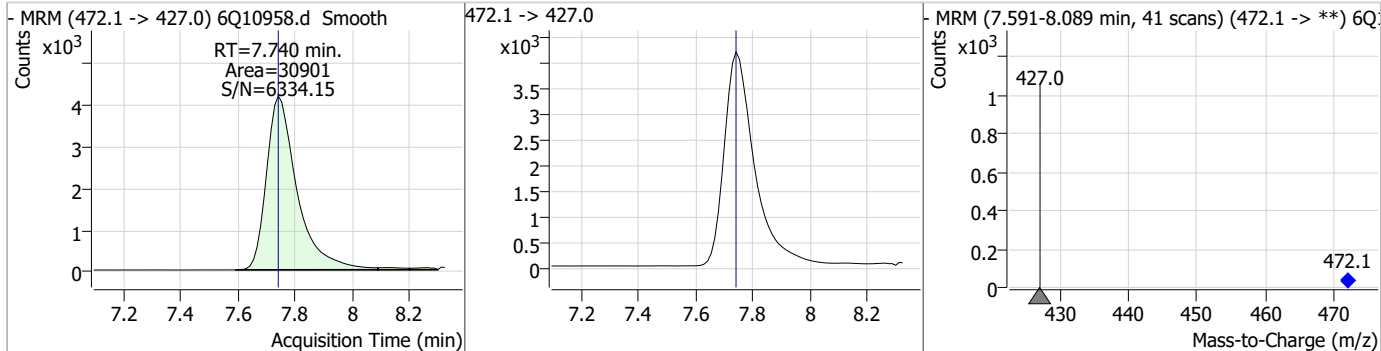
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.15	7.33	-0.01	9541 (m)	398.7 -> 98.9	59.9	29.9	89.7



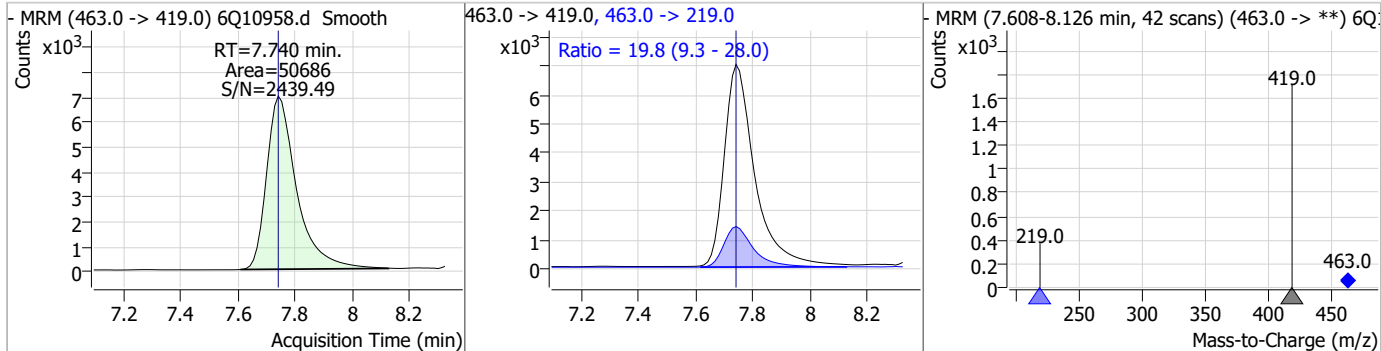
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	57.71	7.64	0.00	134591	441.0 -> 336.9	209.3	102.7	308.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.26	7.74	0.00	30901				

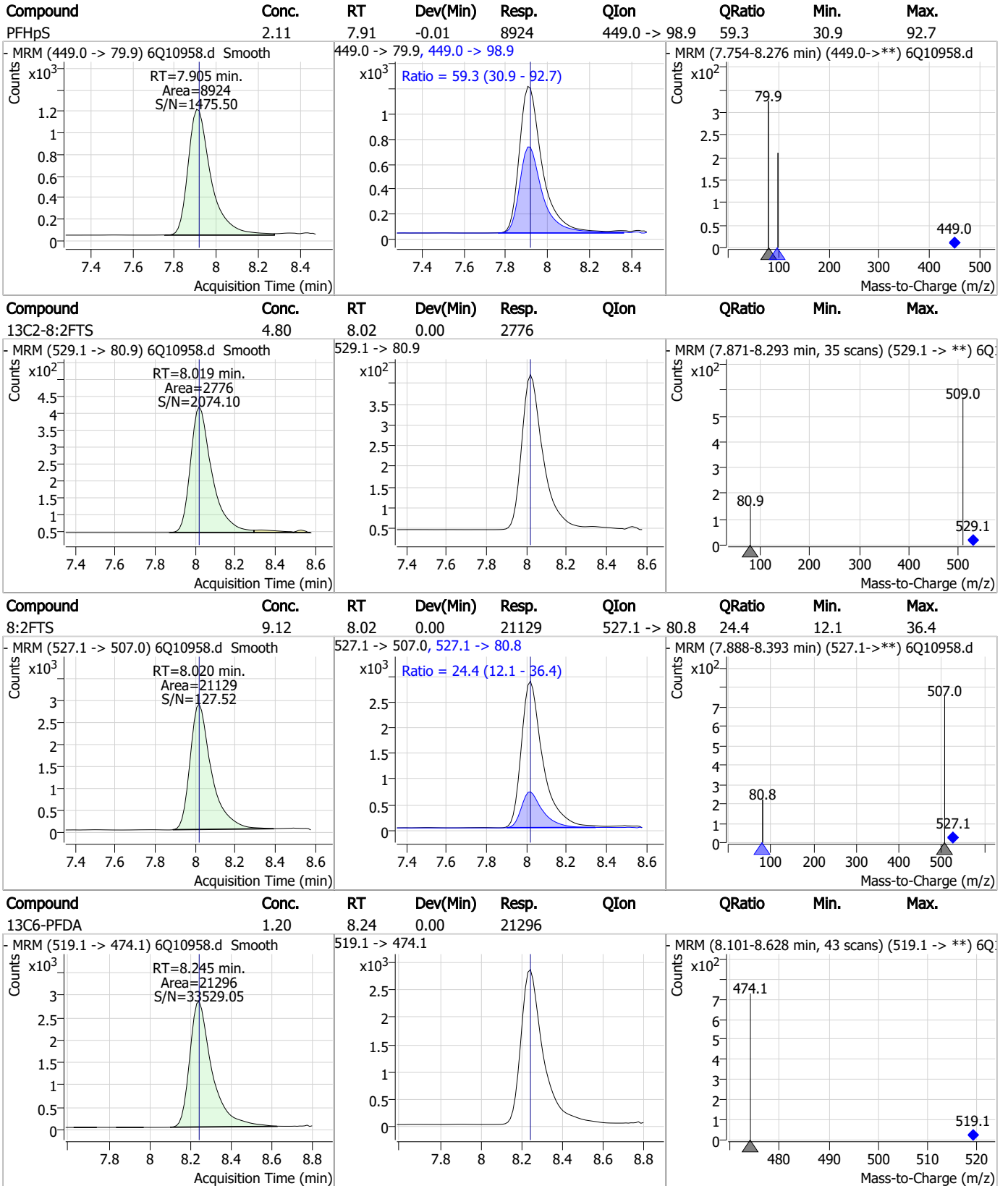


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.37	7.74	0.00	50686	463.0 -> 219.0	19.8	9.3	28.0



7.6.10
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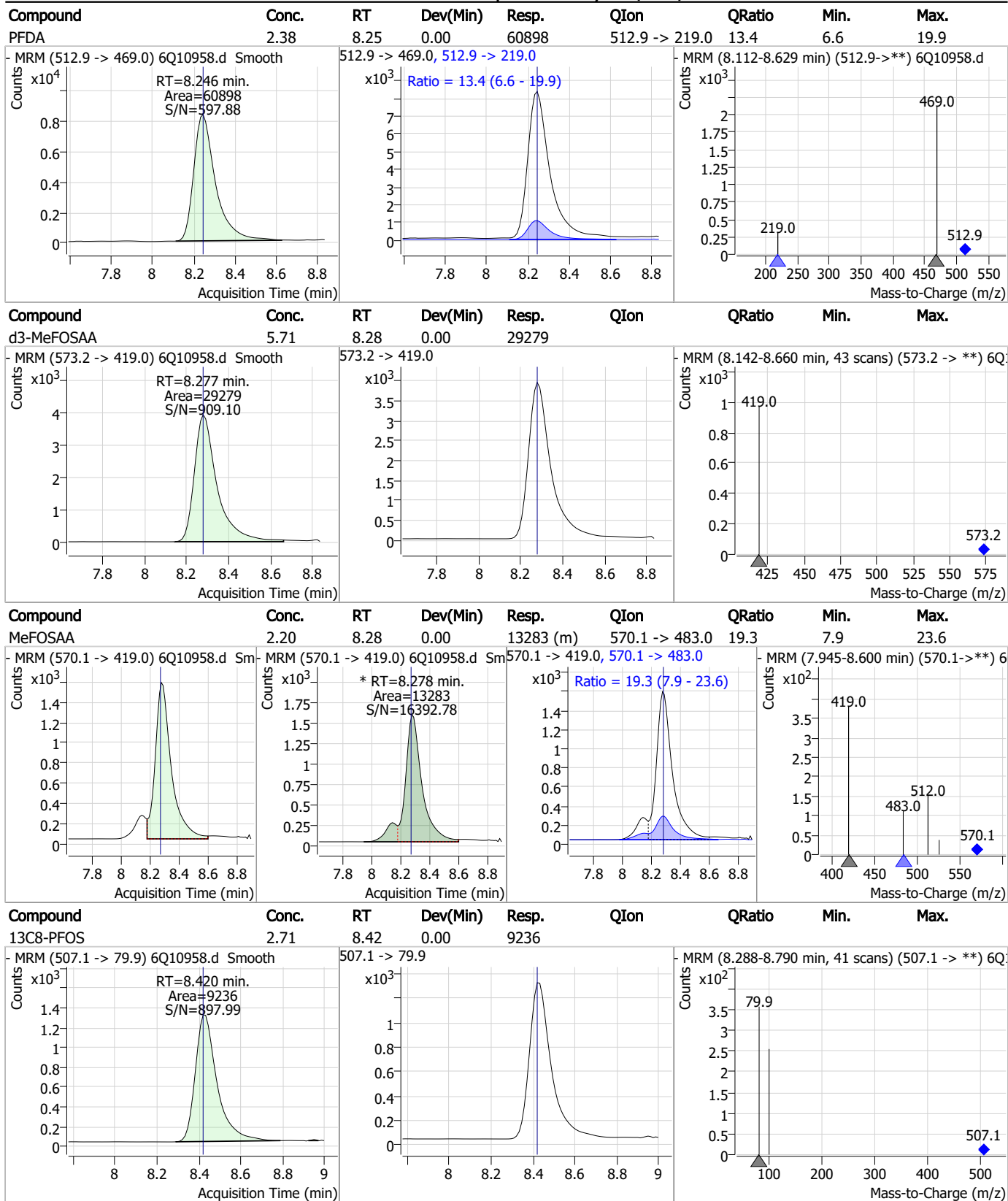
Perfluorinated Compounds by LC/MS/MS



7.6.10 7

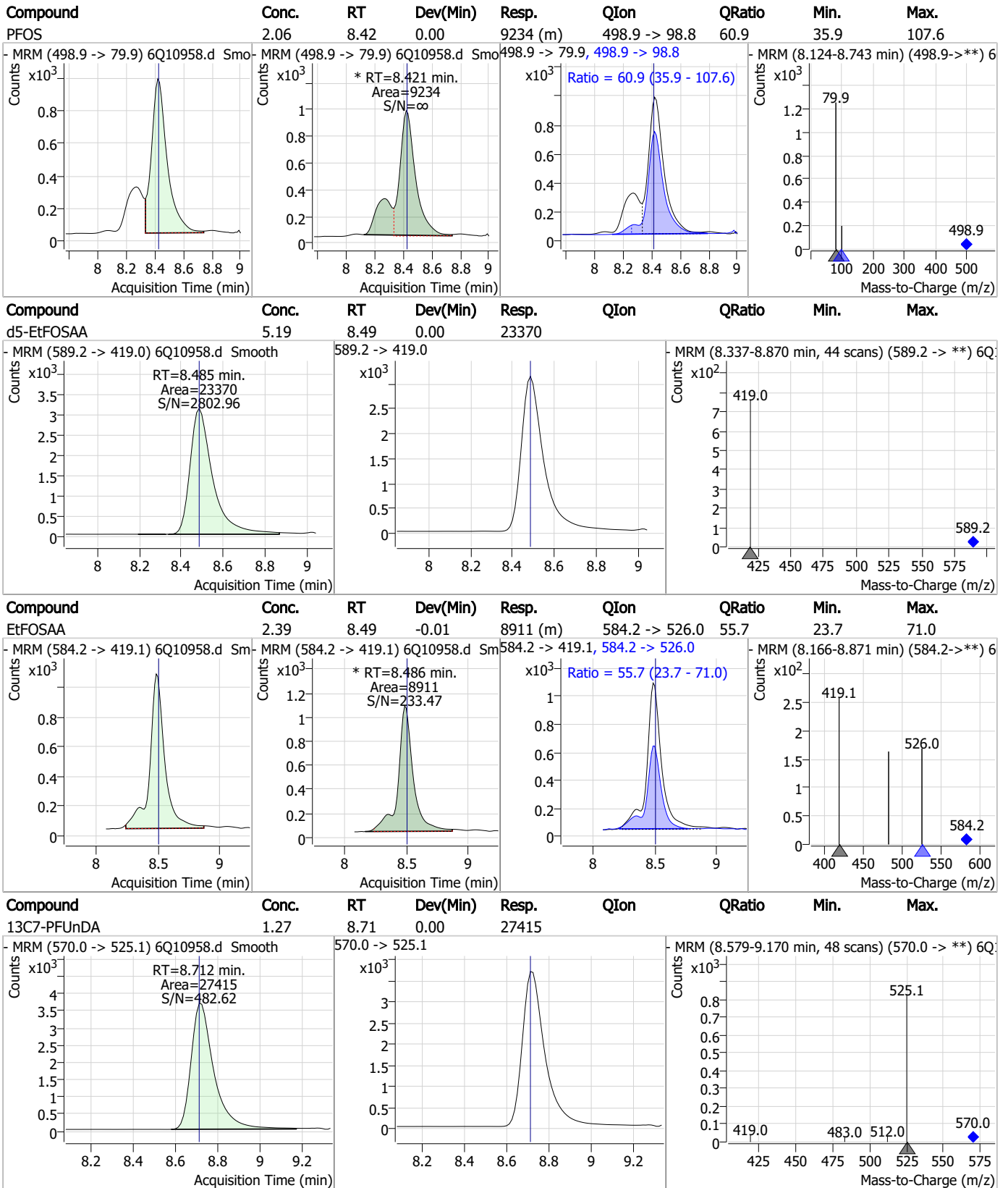


Perfluorinated Compounds by LC/MS/MS



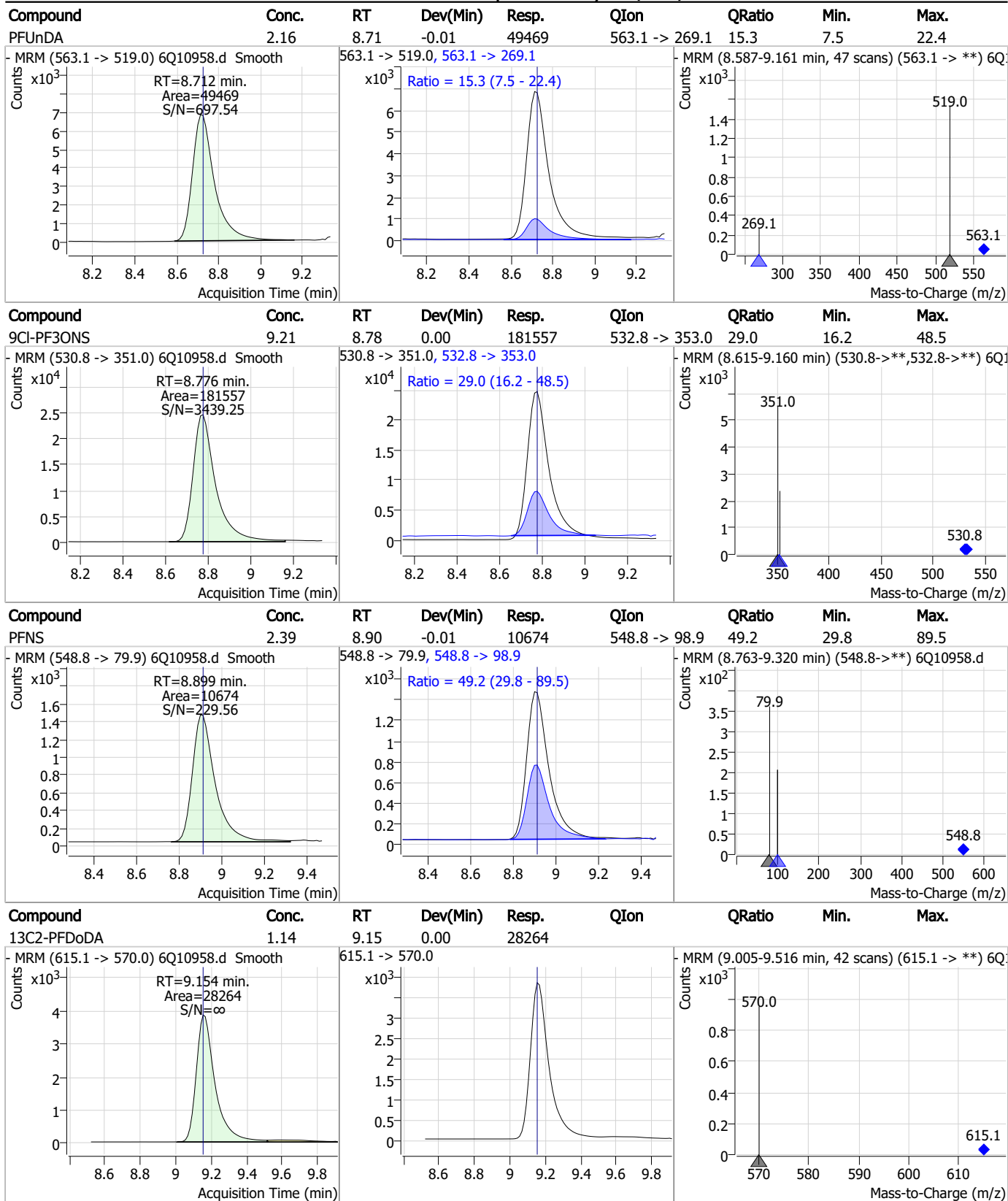
7.6.10
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Perfluorinated Compounds by LC/MS/MS



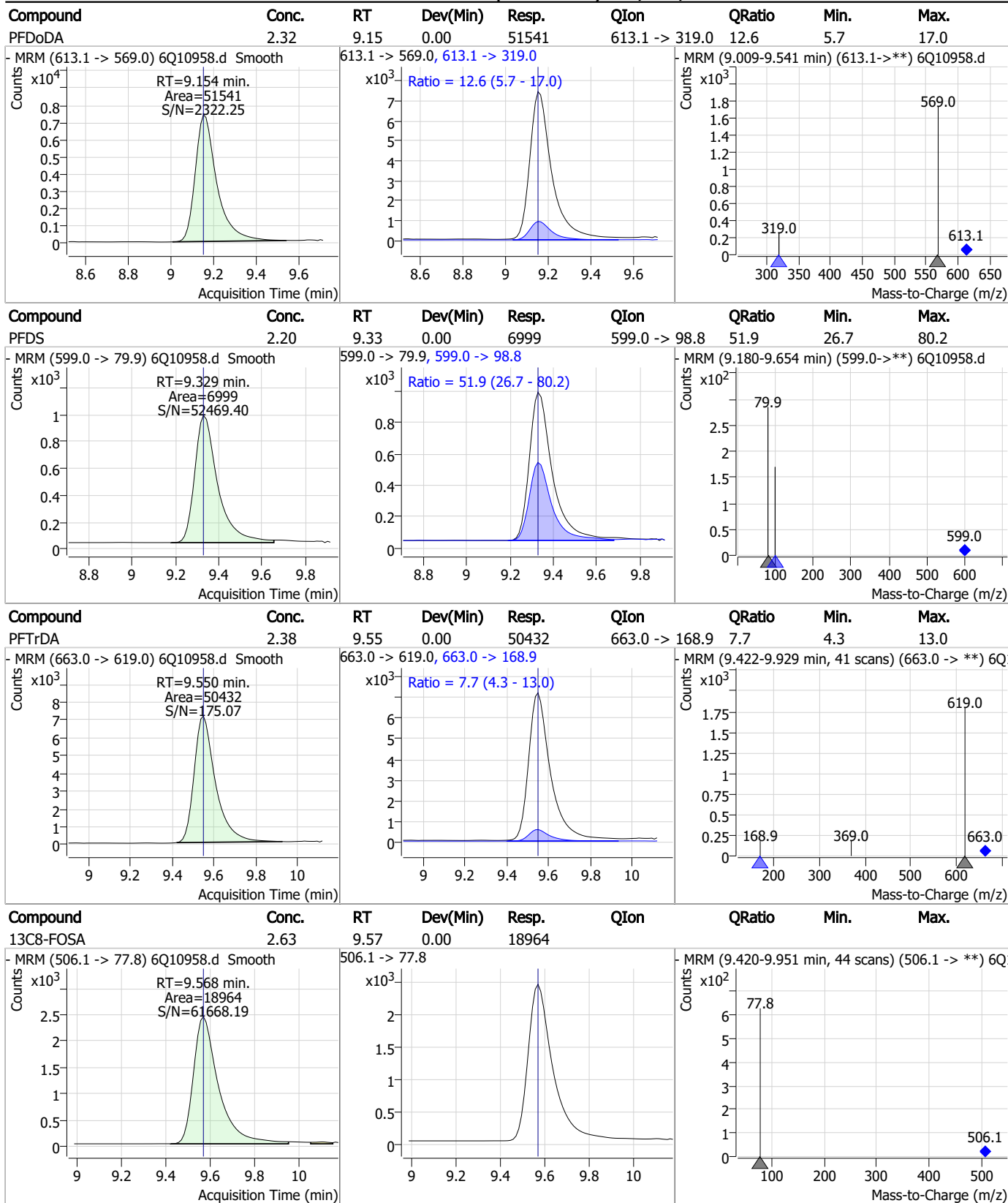
7.6.10 7

Perfluorinated Compounds by LC/MS/MS



7.6.10 7

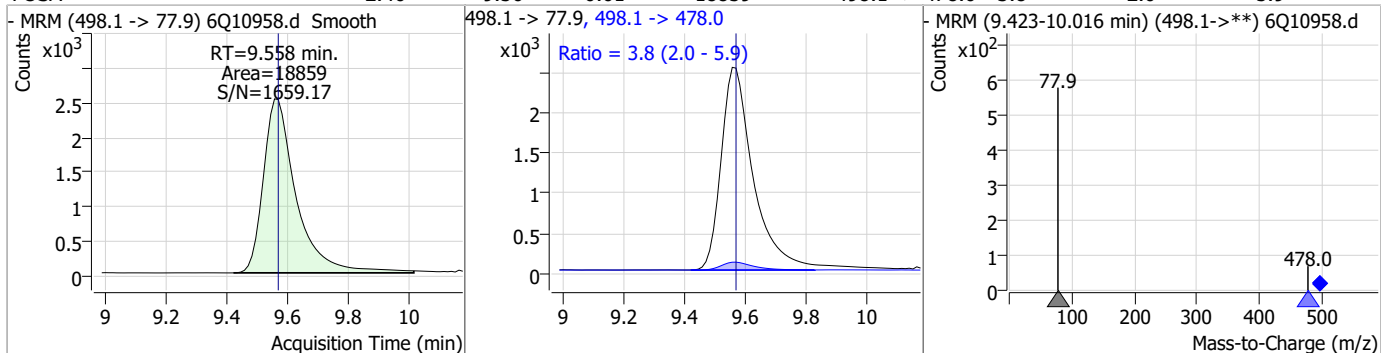
Perfluorinated Compounds by LC/MS/MS



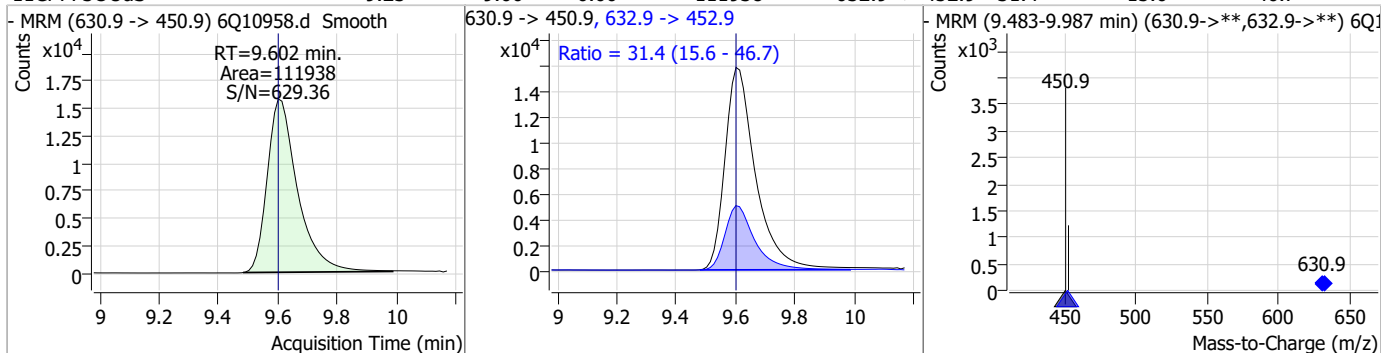
7.6.10 7

Perfluorinated Compounds by LC/MS/MS

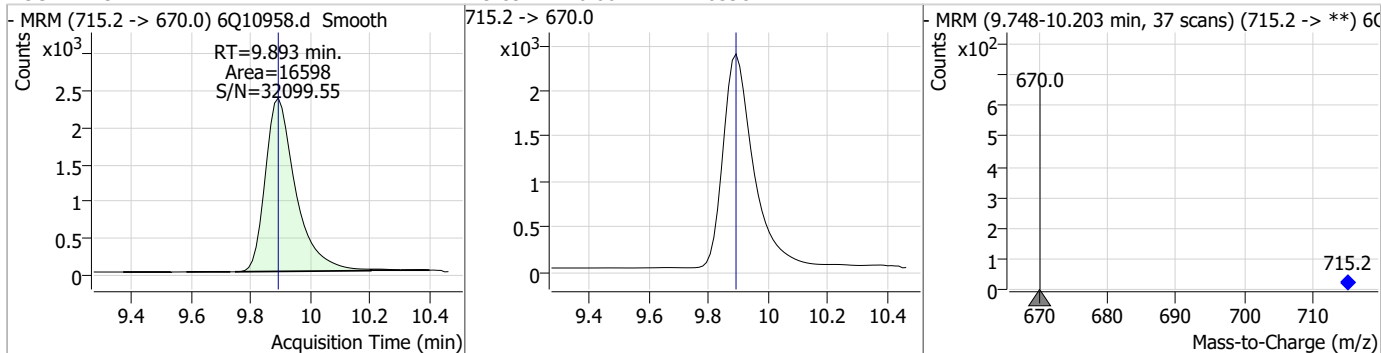
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.46	9.56	-0.01	18859	498.1 -> 478.0	3.8	2.0	5.9



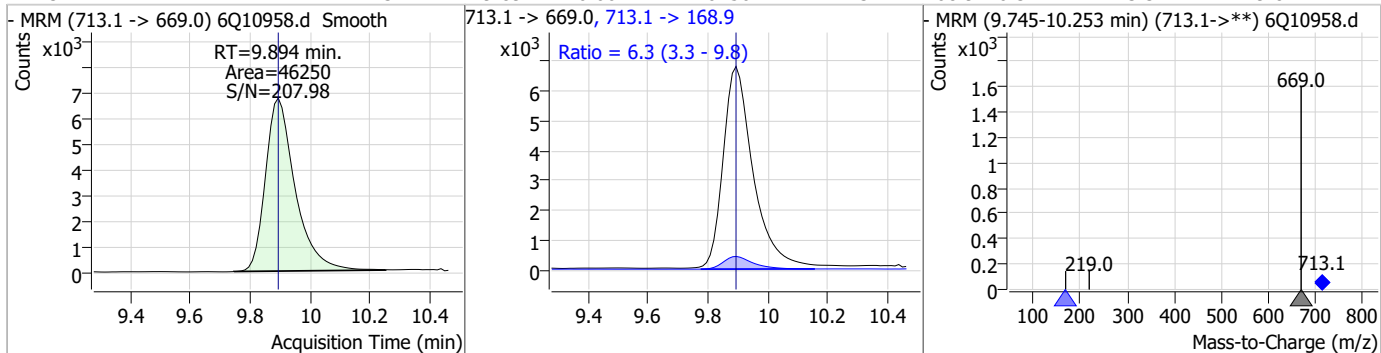
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUds	9.23	9.60	0.00	111938	632.9 -> 452.9	31.4	15.6	46.7



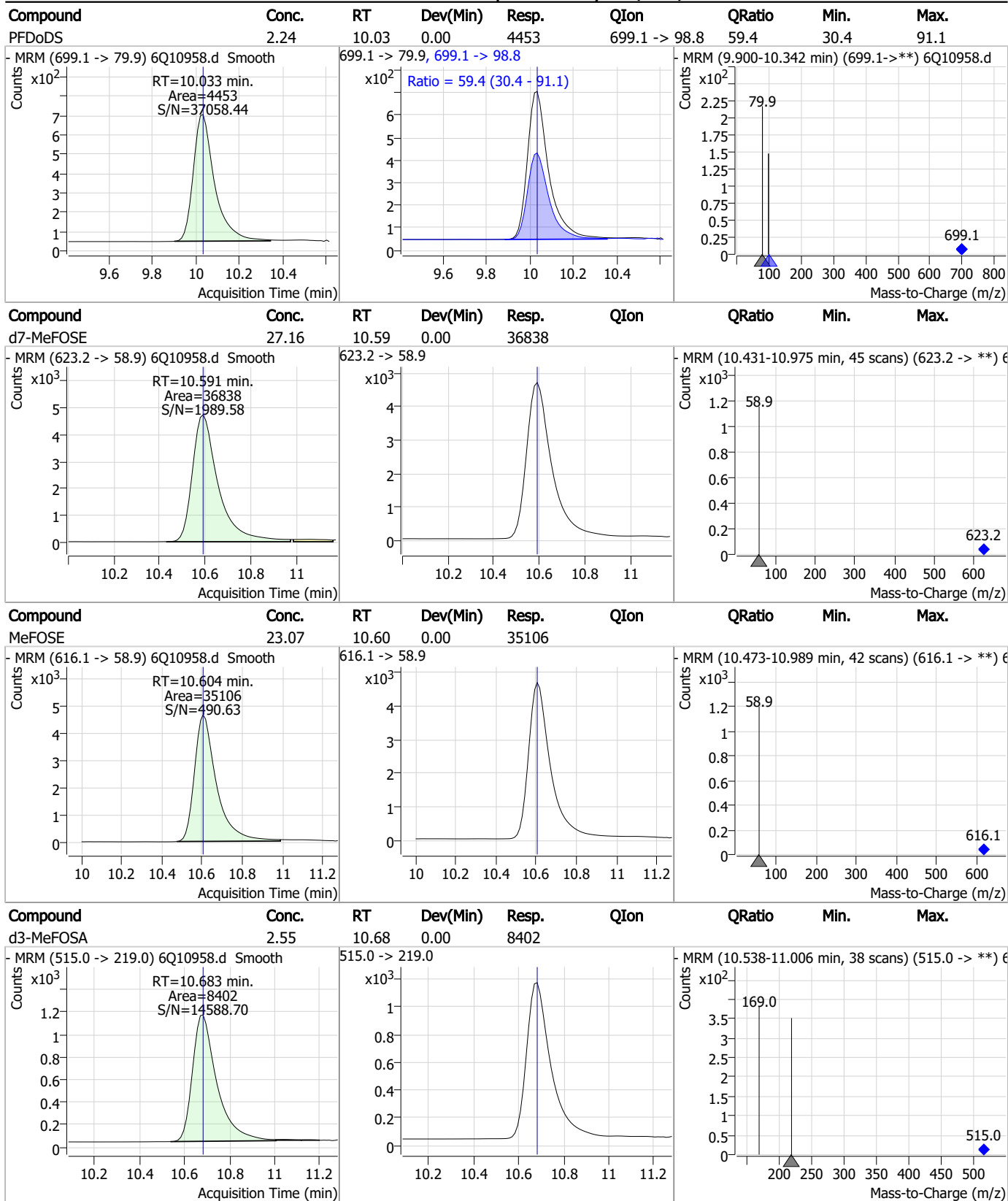
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.14	9.89	0.00	16598	715.2 -> 670.0	6.3	3.3	9.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.34	9.89	0.00	46250	713.1 -> 168.9	6.3	3.3	9.8



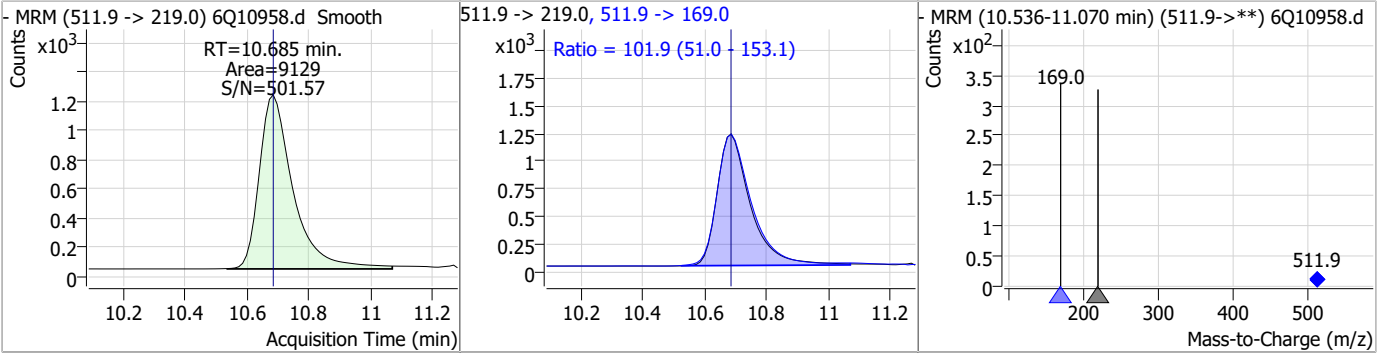
Perfluorinated Compounds by LC/MS/MS



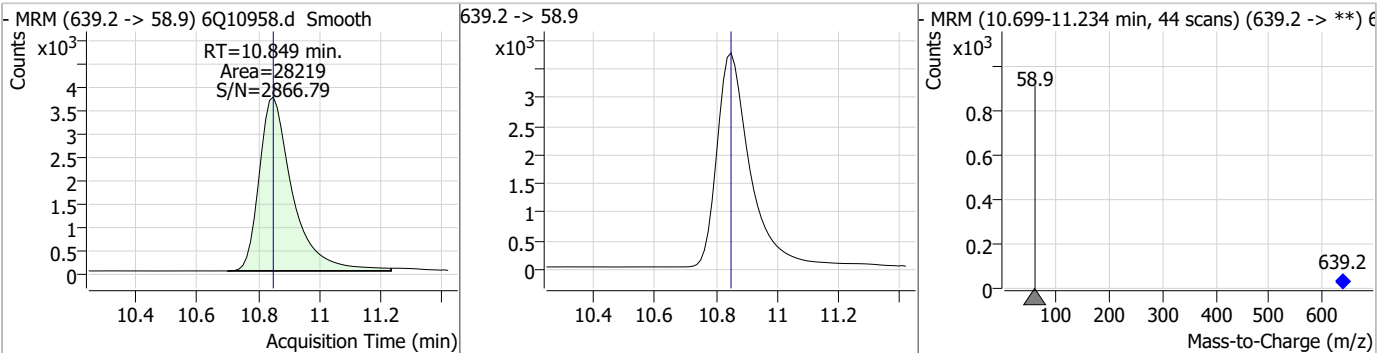
7.6.10
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Perfluorinated Compounds by LC/MS/MS

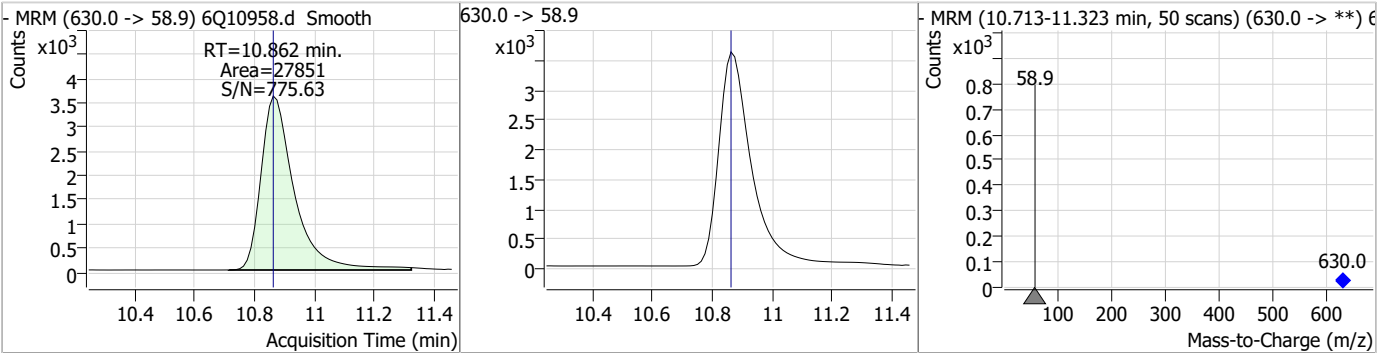
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	2.46	10.68	0.00	9129	511.9 -> 169.0	101.9	51.0	153.1



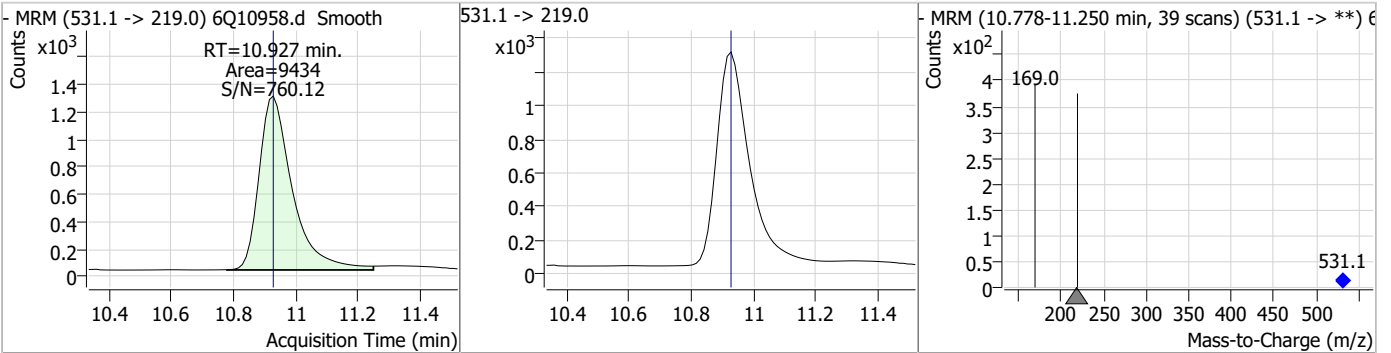
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	27.20	10.85	0.00	28219				



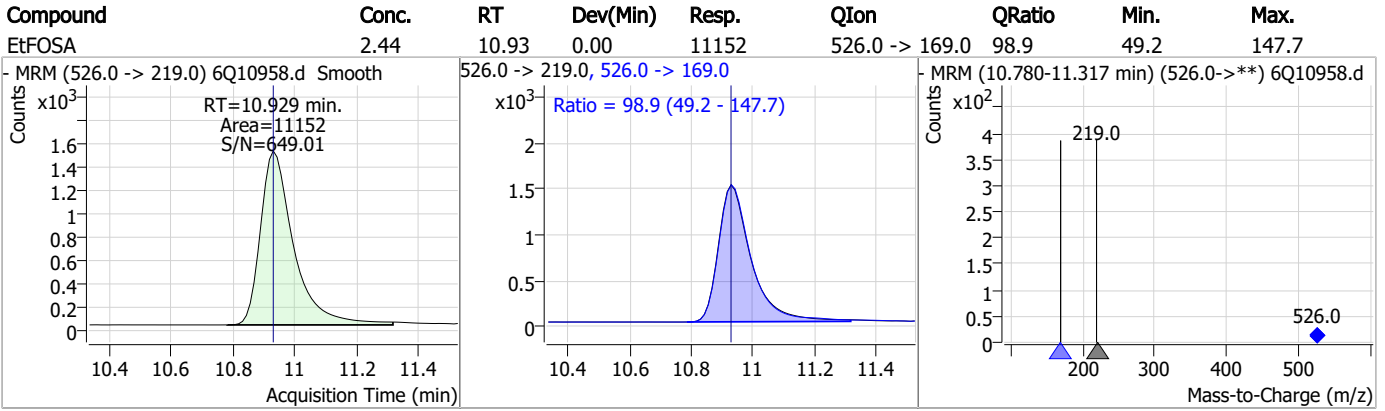
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	22.37	10.86	0.00	27851				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.56	10.93	0.00	9434				



Perfluorinated Compounds by LC/MS/MS



7.6.10

7

Manual Integration Approval Summary

Sample Number: S6Q174-ICV174 Method: EPA DRAFT 1633
Lab FileID: 6Q10958.D Analyst approved: 01/12/23 11:46 Martha Valls
Injection Time: 01/11/23 13:56 Supervisor approved: 01/12/23 15:42 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.33	Split peak
MeFOSAA	2355-31-9		8.28	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.42	Split peak
EtFOSAA	2991-50-6		8.49	Split peak

7.6.10.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q10959.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/11/2023 2:10:24 PM
 Sample Name : icv174-4
 Vial : P1-B2
 DA Method File : 1633_011123_S6Q174.quantmethod.xml
 Batch Name : S6Q174.batch.bin
 Sample Information : OP94795,S6Q174,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.000	216.8 -> 171.9	100978	10.00 µg/L	0.000
M5-PFPeA	4.397	268.3 -> 223.0	48730	5.00 µg/L	0.000
M5-PFHxA	5.588	318.0 -> 273.0	42839	2.50 µg/L	0.000
M4-PFHpA	6.542	367.1 -> 322.0	41473	2.50 µg/L	0.000
M8-PFOA	7.185	421.1 -> 376.0	73461	2.50 µg/L	-0.013
M9-PFNA	7.740	472.1 -> 427.0	32525	1.25 µg/L	0.000
M6-PFDA	8.245	519.1 -> 474.1	21969	1.25 µg/L	0.000
M7-PFUnDA	8.712	570.0 -> 525.1	28181	1.25 µg/L	0.000
M2-PFDoDA	9.154	615.1 -> 570.0	30557	1.25 µg/L	0.000
M2-PFTeDA	9.893	715.2 -> 670.0	17690	1.25 µg/L	0.000
M8-FOSA	9.568	506.1 -> 77.8	20784	2.50 µg/L	0.000
M3-PFBS	5.544	302.1 -> 79.9	15185	2.50 µg/L	-0.012
M3-PFHxS	7.325	402.1 -> 79.9	9836	2.50 µg/L	-0.012
M8-PFOS	8.420	507.1 -> 79.9	10009	2.50 µg/L	0.000
M2-4:2FTS	5.253	329.1 -> 80.9	2033	5.00 µg/L	0.000
M2-6:2FTS	6.946	429.1 -> 80.9	2668	5.00 µg/L	-0.012
M2-8:2FTS	8.007	529.1 -> 80.9	3042	5.00 µg/L	-0.012
M3-MeFOSAA	8.277	573.2 -> 419.0	29025	5.00 µg/L	0.000
M3-HFPO-DA	5.965	286.9 -> 168.9	18143	10.00 µg/L	-0.012
M5-EtFOSAA	8.485	589.2 -> 419.0	25415	5.00 µg/L	0.000
M7-MeFOSE	10.591	623.2 -> 58.9	38926	25.00 µg/L	0.000
M9-EtFOSE	10.849	639.2 -> 58.9	29222	25.00 µg/L	0.000
M5-EtFOSA	10.927	531.1 -> 219.0	10420	2.50 µg/L	0.000
M3-MeFOSA	10.683	515.0 -> 219.0	9460	2.50 µg/L	0.000
13C4-PFOS	8.421	502.8 -> 79.9	11604	2.50 µg/L	0.000
13C3-PFBA	3.004	216.0 -> 172.0	44216	5.00 µg/L	0.000
18O2-PFHxS	7.324	403.0 -> 83.9	7564	2.50 µg/L	-0.012
13C4-PFOA	7.185	417.1 -> 372.0	86264	2.50 µg/L	-0.013
13C2-PFDA	8.233	515.1 -> 470.1	30790	1.25 µg/L	-0.012
13C5-PFNA	7.740	468.0 -> 423.0	34672	1.25 µg/L	0.000
13C2-PFHxA	5.589	315.1 -> 270.0	43052	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.253	329.1 -> 80.9	2033	5.15 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.1%		
13C2-6:2FTS	6.946	429.1 -> 80.9	2668	4.94 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.8%		
13C2-8:2FTS	8.007	529.1 -> 80.9	3042	5.16 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.2%		
13C2-PFDoDA	9.154	615.1 -> 570.0	30557	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.1%		
13C2-PFTeDA	9.893	715.2 -> 670.0	17690	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.7%		
13C3-PFBS	5.544	302.1 -> 79.9	15185	2.39 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.7%		
13C3-PFHxS	7.325	402.1 -> 79.9	9836	2.40 µg/L	-0.012

7.6.11
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 = 95.8%	
13C4-PFBA	3.000	216.8 -> 171.9	100978	10.00 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C4-PFHpA	6.542	367.1 -> 322.0	41473	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.0%	
13C5-PFHxA	5.588	318.0 -> 273.0	42839	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C5-PFPeA	4.397	268.3 -> 223.0	48730	5.07 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C6-PFDA	8.245	519.1 -> 474.1	21969	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C7-PFUnDA	8.712	570.0 -> 525.1	28181	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.4%	
13C8-FOSA	9.568	506.1 -> 77.8	20784	2.65 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.1%	
13C8-PFOA	7.185	421.1 -> 376.0	73461	2.54 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C8-PFOS	8.420	507.1 -> 79.9	10009	2.70 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.0%	
13C9-PFNA	7.740	472.1 -> 427.0	32525	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.6%	
d3-MeFOSAA	8.277	573.2 -> 419.0	29025	5.19 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.9%	
13C3-HFPO-DA	5.965	286.9 -> 168.9	18143	10.22 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.2%	
d3-MeFOSA	10.683	515.0 -> 219.0	9460	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.4%	
d5-EtFOSAA	8.485	589.2 -> 419.0	25415	5.18 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.7%	
d7-MeFOSE	10.591	623.2 -> 58.9	38926	26.35 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 105.4%	
d9-EtFOSE	10.849	639.2 -> 58.9	29222	25.87 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.5%	
d5-EtFOSA	10.927	531.1 -> 219.0	10420	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.7%	
Target Compounds					QValue
4:2FTS	5.254	327.1 -> 307.0	94854	19.62 µg/L	98
		327.1 -> 80.9	20755		
6:2FTS	6.946	427.1 -> 407.0	89332	21.52 µg/L	99
		427.1 -> 80.9	17765		
8:2FTS	8.020	527.1 -> 507.0	50172	19.77 µg/L	99
		527.1 -> 80.8	12416		
EtFOSAA	8.486	584.2 -> 419.1	89466	22.05 µg/L	m 95
		584.2 -> 526.0	45022		
FOSA	9.571	498.1 -> 77.9	176999	21.08 µg/L	99
		498.1 -> 478.0	6328		
MeFOSAA	8.278	570.1 -> 419.0	122275	20.44 µg/L	m 97
		570.1 -> 483.0	20722		
PFBA	3.007	212.8 -> 168.9	52772	20.37 µg/L	100
PFBS	5.544	298.7 -> 79.9	142452	23.18 µg/L	94
		298.7 -> 98.8	62958		
PFDA	8.246	512.9 -> 469.0	585468	22.17 µg/L	97
		512.9 -> 219.0	71290		
PFDoDA	9.166	613.1 -> 569.0	467387	19.44 µg/L	99
		613.1 -> 319.0	54487		
PFDS	9.329	599.0 -> 79.9	70517	20.41 µg/L	99

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.542	599.0 -> 98.8	37133	21.57	µg/L	100
		363.1 -> 319.0	539475			
PFHpS	7.905	363.1 -> 169.0	71161	20.23	µg/L	93
		449.0 -> 79.9	92621			
PFHxA	5.591	449.0 -> 98.9	52135	20.74	µg/L	99
		313.0 -> 269.0	359052			
PFHxS	7.326	313.0 -> 118.9	13229	22.38	µg/L	96
		398.7 -> 79.9	104821			
PFNA	7.740	398.7 -> 98.9	59440	22.55	µg/L	99
		463.0 -> 419.0	507555			
PFNS	8.899	463.0 -> 219.0	92020	20.07	µg/L	94
		548.8 -> 79.9	97016			
PFOA	7.199	548.8 -> 98.9	53572	20.36	µg/L	97
		413.0 -> 369.0	669338			
PFOS	8.421	413.0 -> 169.0	89217	17.62	µg/L	84
		498.9 -> 79.9	85416			
PFPeA	4.401	498.9 -> 98.8	49863	20.53	µg/L	100
		263.0 -> 219.0	219736			
PFPeS	6.619	349.1 -> 79.9	117334	21.17	µg/L	99
		349.1 -> 98.9	63077			
PFTeDA	9.894	713.1 -> 669.0	443517	21.03	µg/L	100
		713.1 -> 168.9	29251			
PFTrDA	9.550	663.0 -> 619.0	443820	19.34	µg/L	95
		663.0 -> 168.9	30944			
PFUnDA	8.712	563.1 -> 519.0	470288	19.95	µg/L	99
		563.1 -> 269.1	68651			
11CI-PF3OUdS	9.614	630.9 -> 450.9	303444	22.06	µg/L	98
		632.9 -> 452.9	90396			
9CI-PF3ONS	8.776	530.8 -> 351.0	433853	19.41	µg/L	98
		532.8 -> 353.0	136476			
ADONA	6.792	376.9 -> 250.9	823930	20.42	µg/L	98
		376.9 -> 84.8	176101			
HFPO-DA	5.966	284.9 -> 168.9	35374	19.28	µg/L	99
		284.9 -> 184.9	4203			
3:3FTCA	3.852	241.0 -> 177.0	11283	19.79	µg/L	99
		241.0 -> 117.0	1423			
5:3FTCA	6.219	341.0 -> 237.1	75530	20.98	µg/L	94
		341.0 -> 217.0	60034			
7:3FTCA	7.643	441.0 -> 316.9	50973	21.01	µg/L	99
		441.0 -> 336.9	104055			
EtFOSA	10.929	526.0 -> 219.0	102522	20.33	µg/L	97
		526.0 -> 169.0	97484			
EtFOSE	10.862	630.0 -> 58.9	127043	98.55	µg/L	100
MeFOSA	10.685	511.9 -> 219.0	83626	20.01	µg/L	99
		511.9 -> 169.0	86170			
MeFOSE	10.604	616.1 -> 58.9	150257	93.45	µg/L	100
PFDoDS	10.033	699.1 -> 79.9	41926	19.46	µg/L	100
		699.1 -> 98.8	25388			
NFDHA	5.471	295.0 -> 201.0	21661	19.30	µg/L	98
		295.0 -> 84.9	9720			
PFMBA	4.813	279.0 -> 85.1	65102	19.50	µg/L	100
PFMPA	3.550	229.0 -> 84.9	58639	19.80	µg/L	100
PFEESA	6.097	314.8 -> 134.9	419223	17.40	µg/L	100
		314.8 -> 82.9	10463			

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

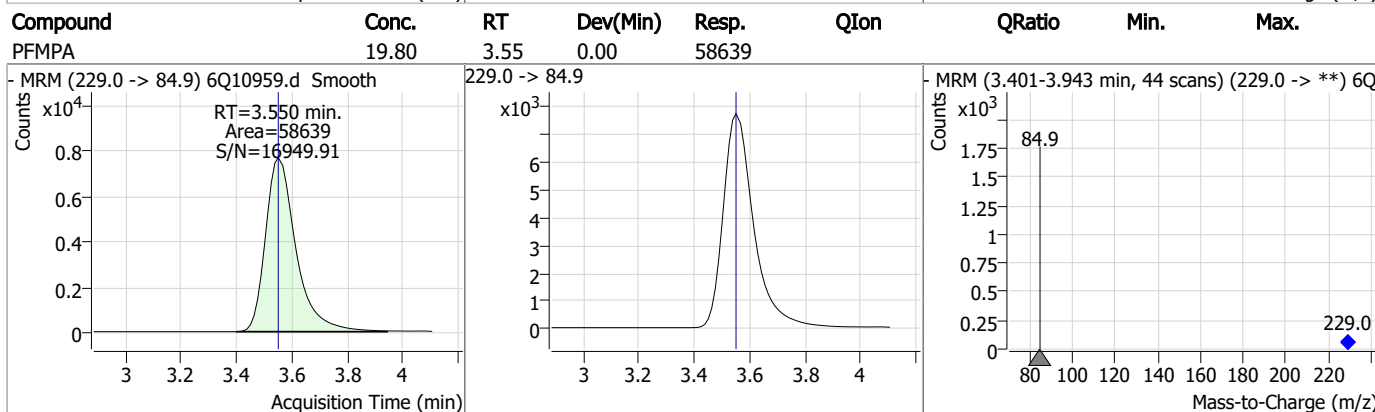
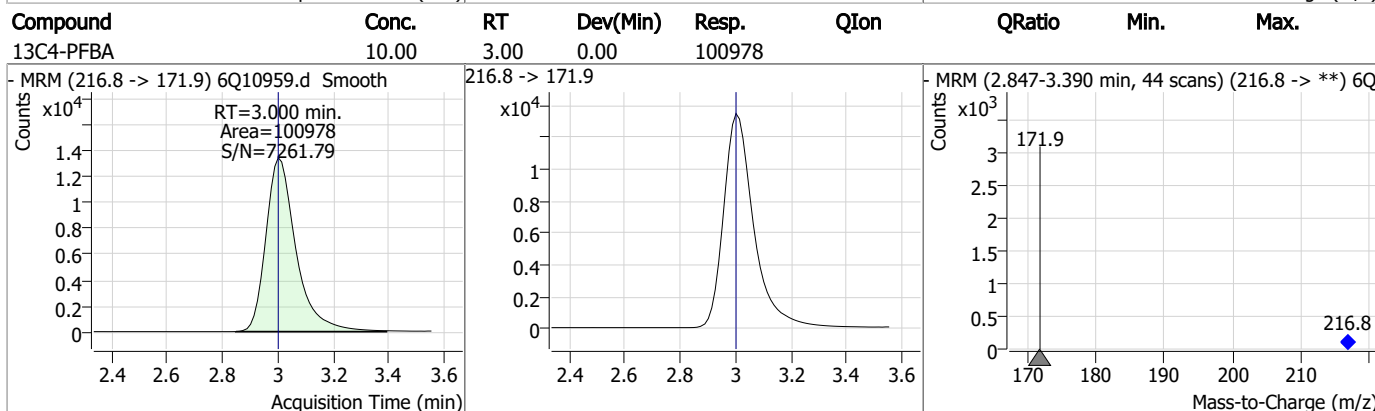
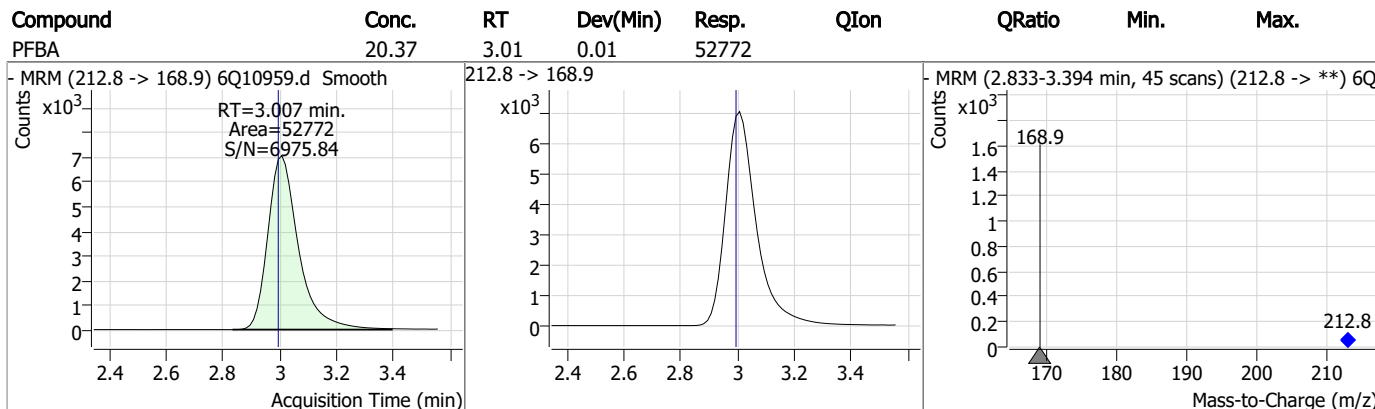
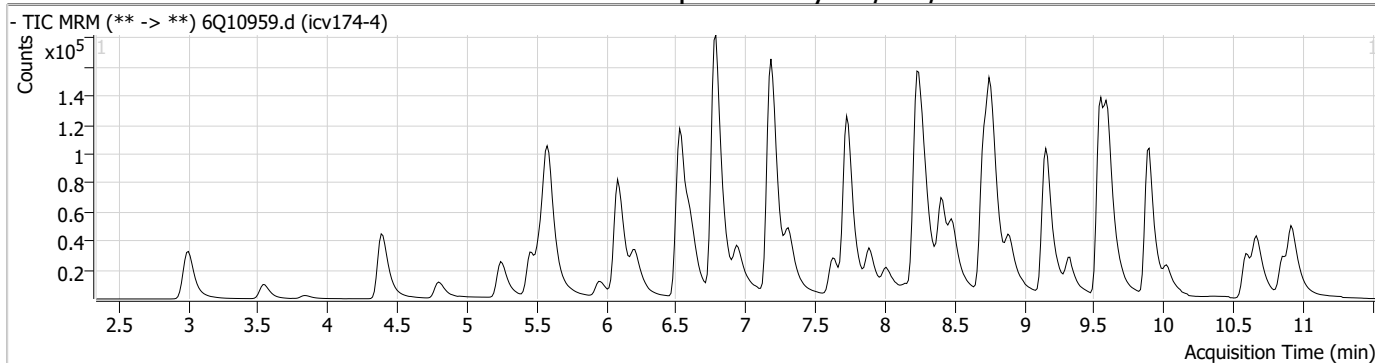
Perfluorinated Compounds by LC/MS/MS

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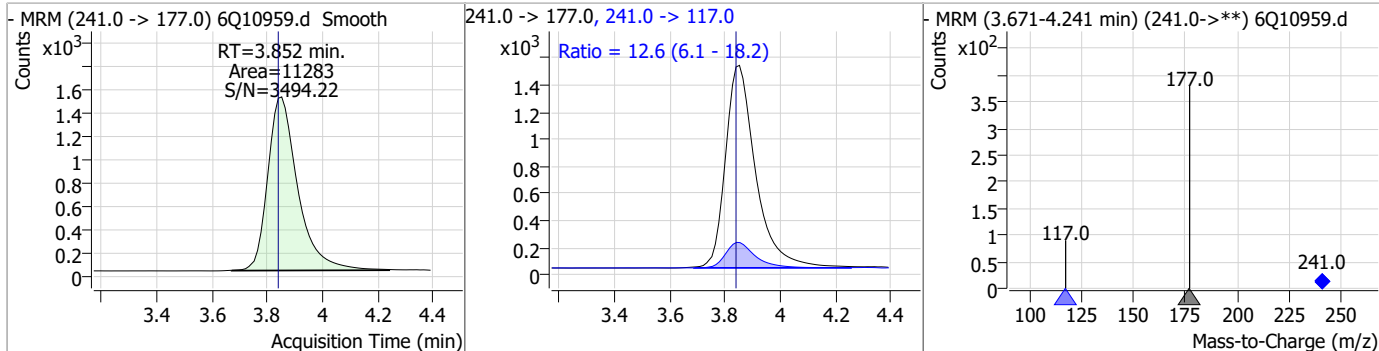
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Perfluorinated Compounds by LC/MS/MS

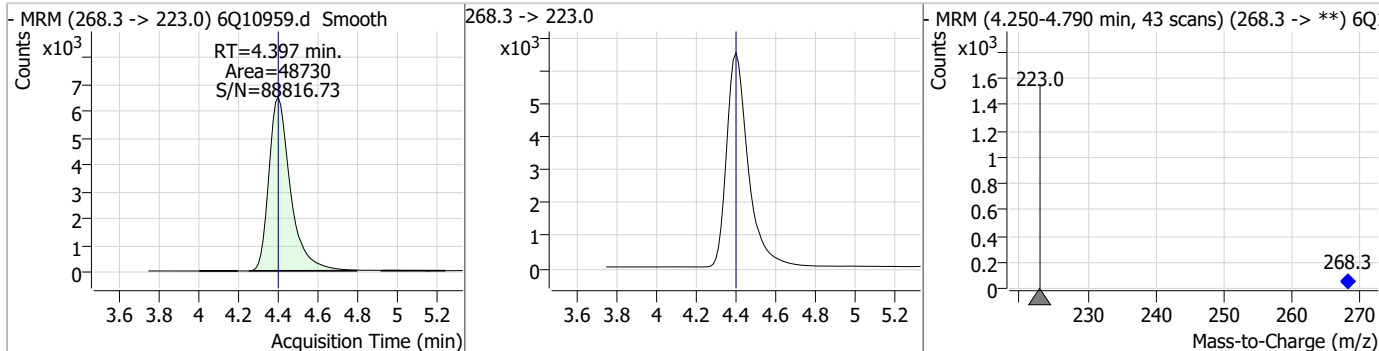


Perfluorinated Compounds by LC/MS/MS

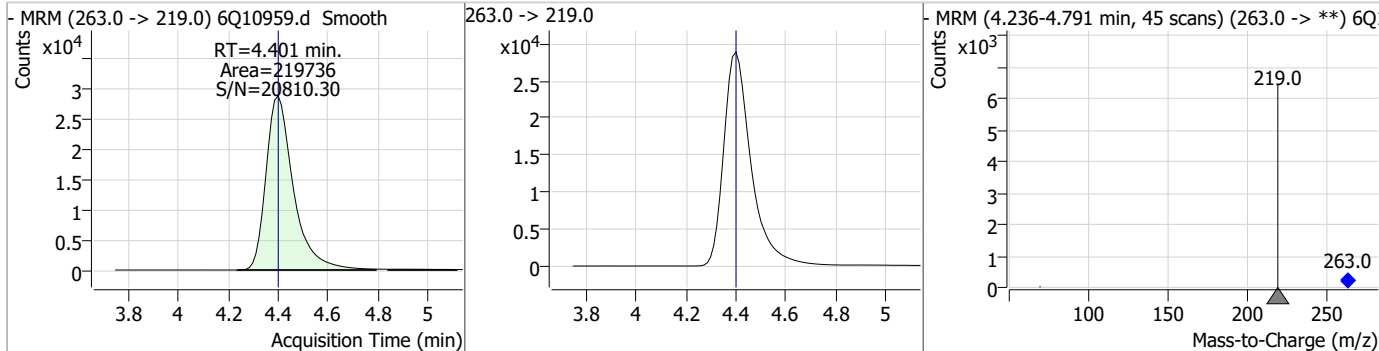
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	19.79	3.85	0.01	11283	241.0 -> 117.0	12.6	6.1	18.2



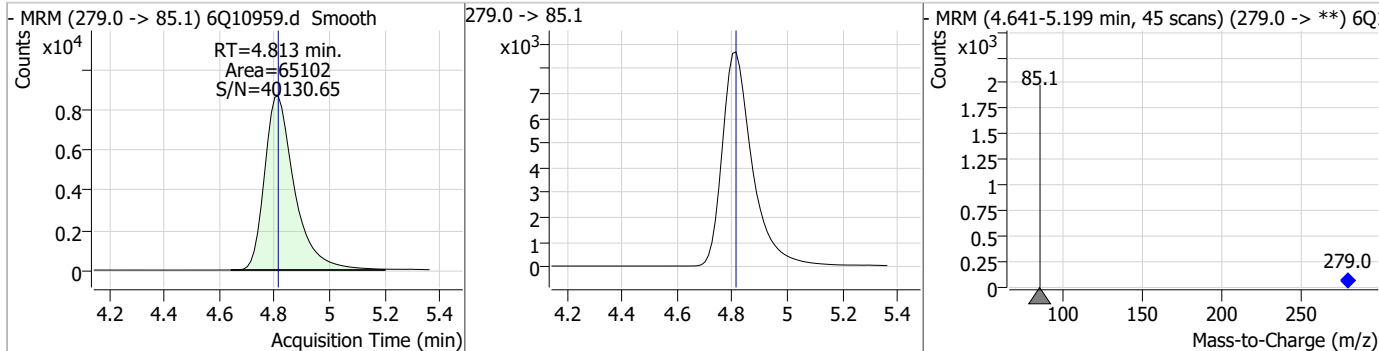
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.07	4.40	0.00	48730				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	20.53	4.40	0.00	219736				

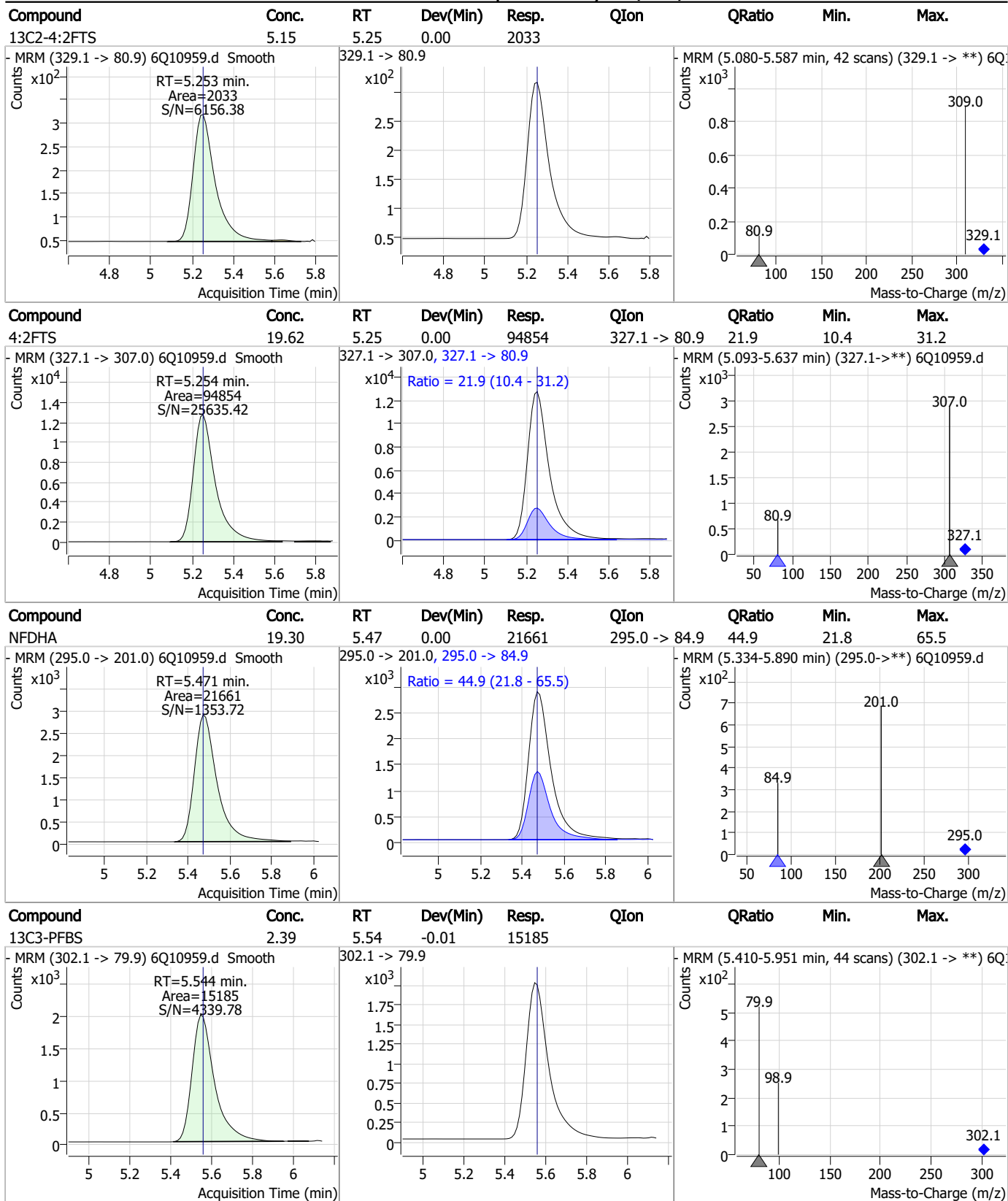


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	19.50	4.81	0.00	65102				



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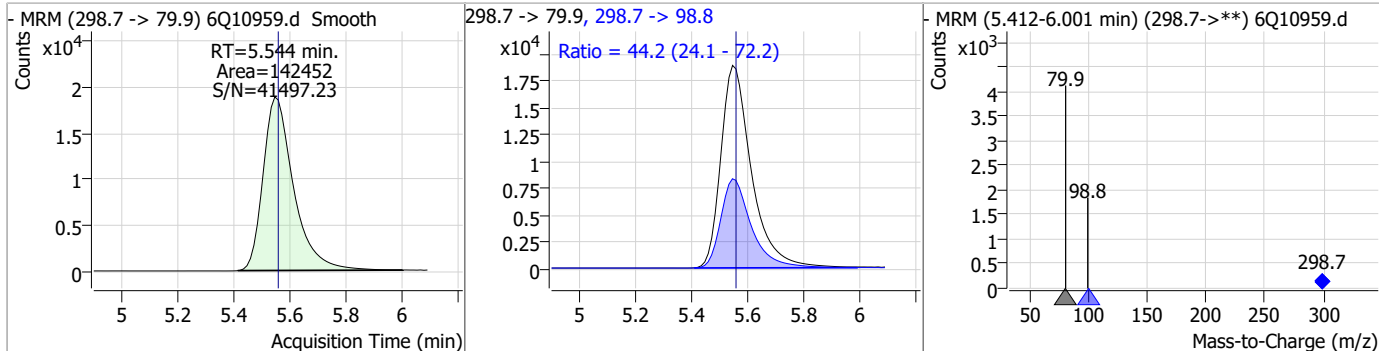
Perfluorinated Compounds by LC/MS/MS



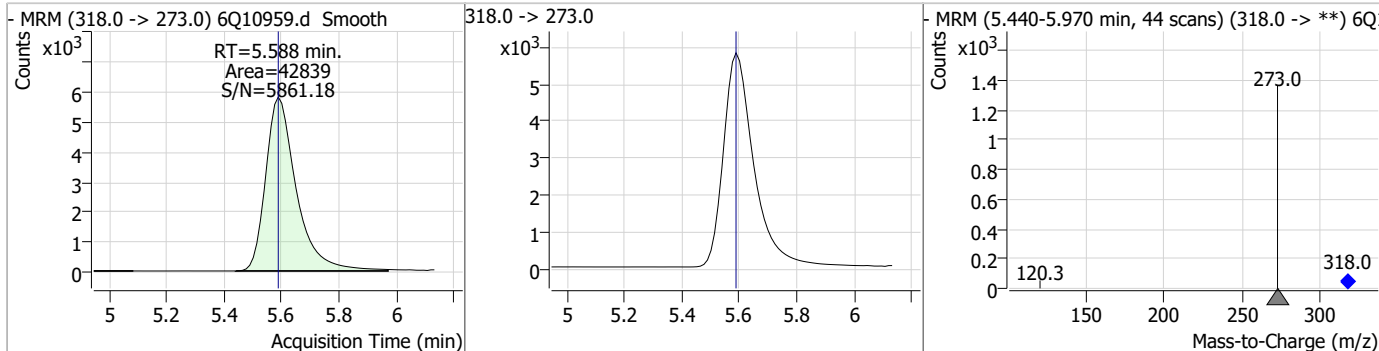
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Perfluorinated Compounds by LC/MS/MS

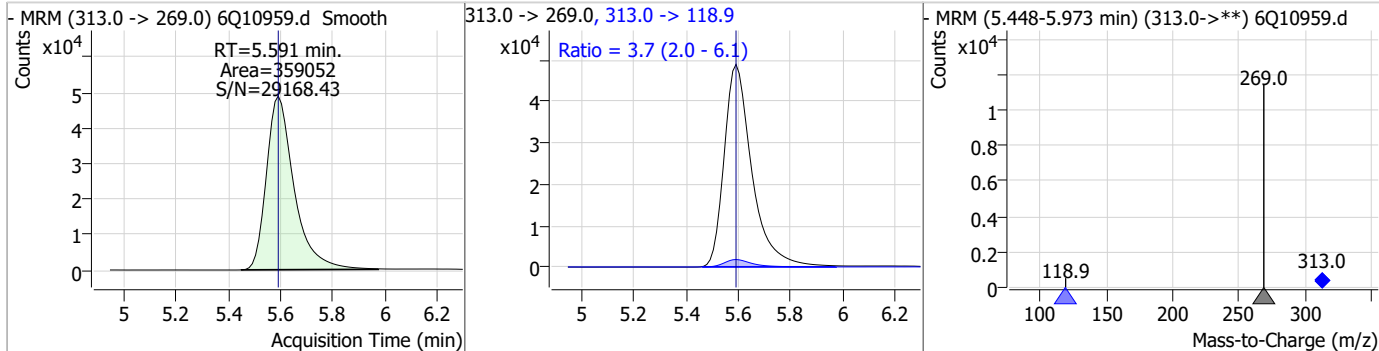
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	23.18	5.54	-0.01	142452	298.7 -> 98.8	44.2	24.1	72.2



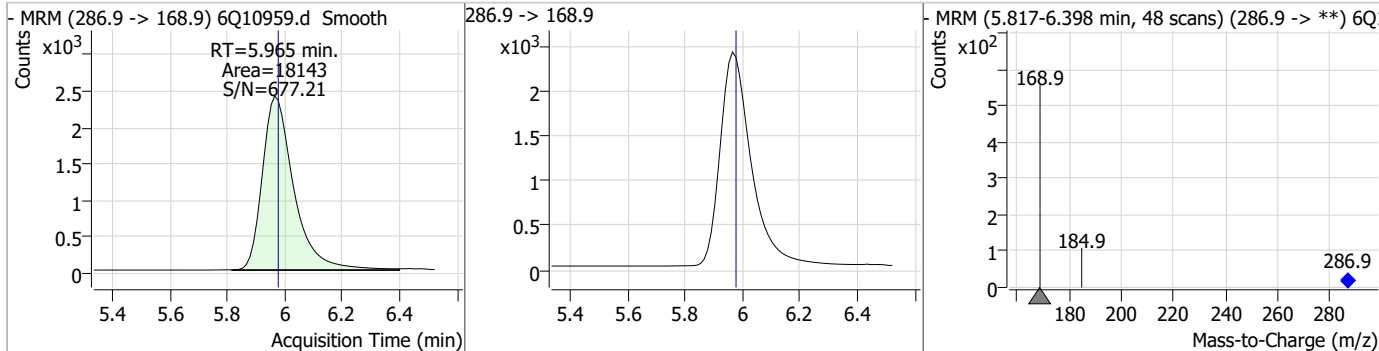
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.48	5.59	0.00	42839				



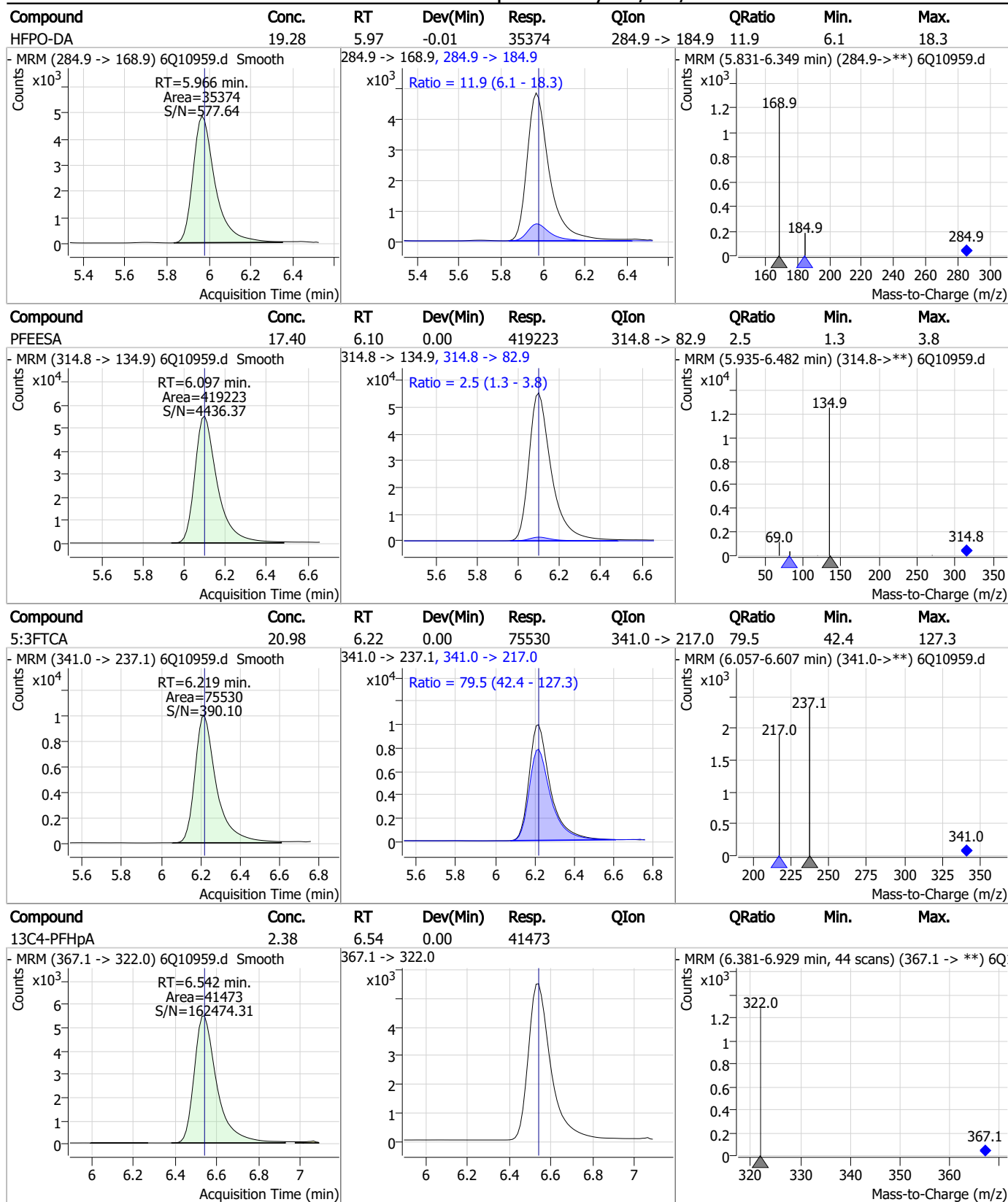
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.74	5.59	0.00	359052	313.0 -> 118.9	3.7	2.0	6.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.22	5.97	-0.01	18143				



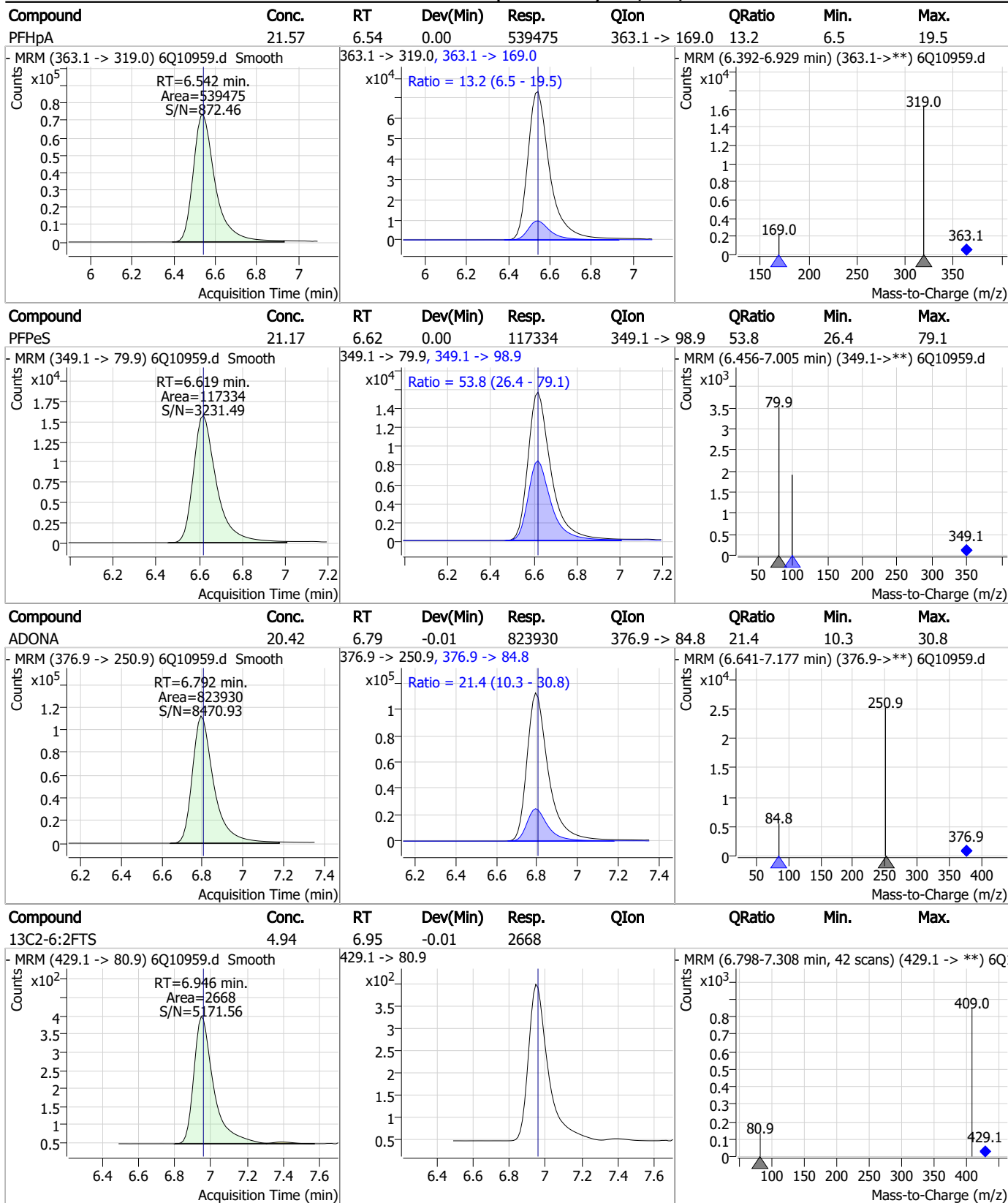
Perfluorinated Compounds by LC/MS/MS



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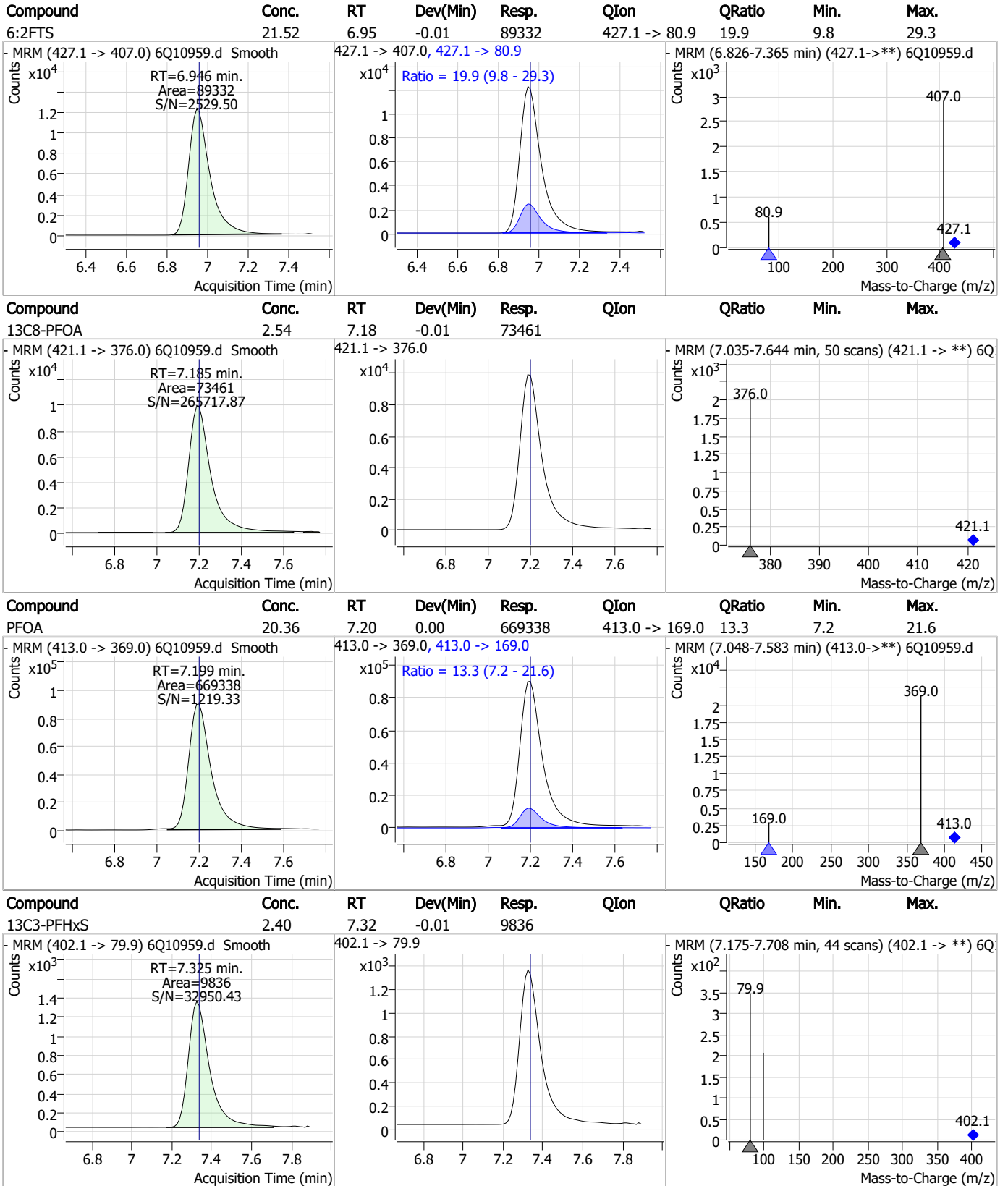
Perfluorinated Compounds by LC/MS/MS



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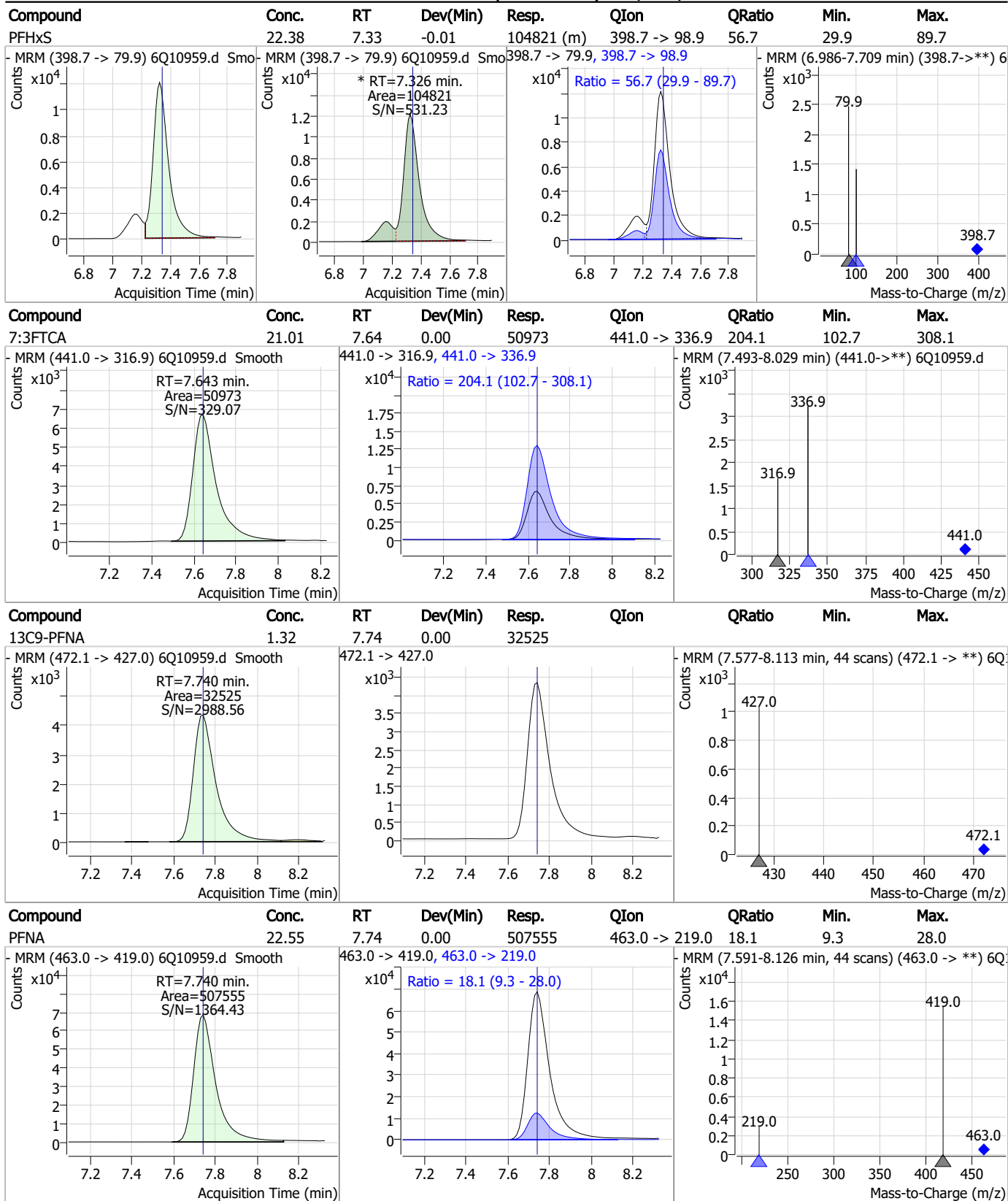
Perfluorinated Compounds by LC/MS/MS



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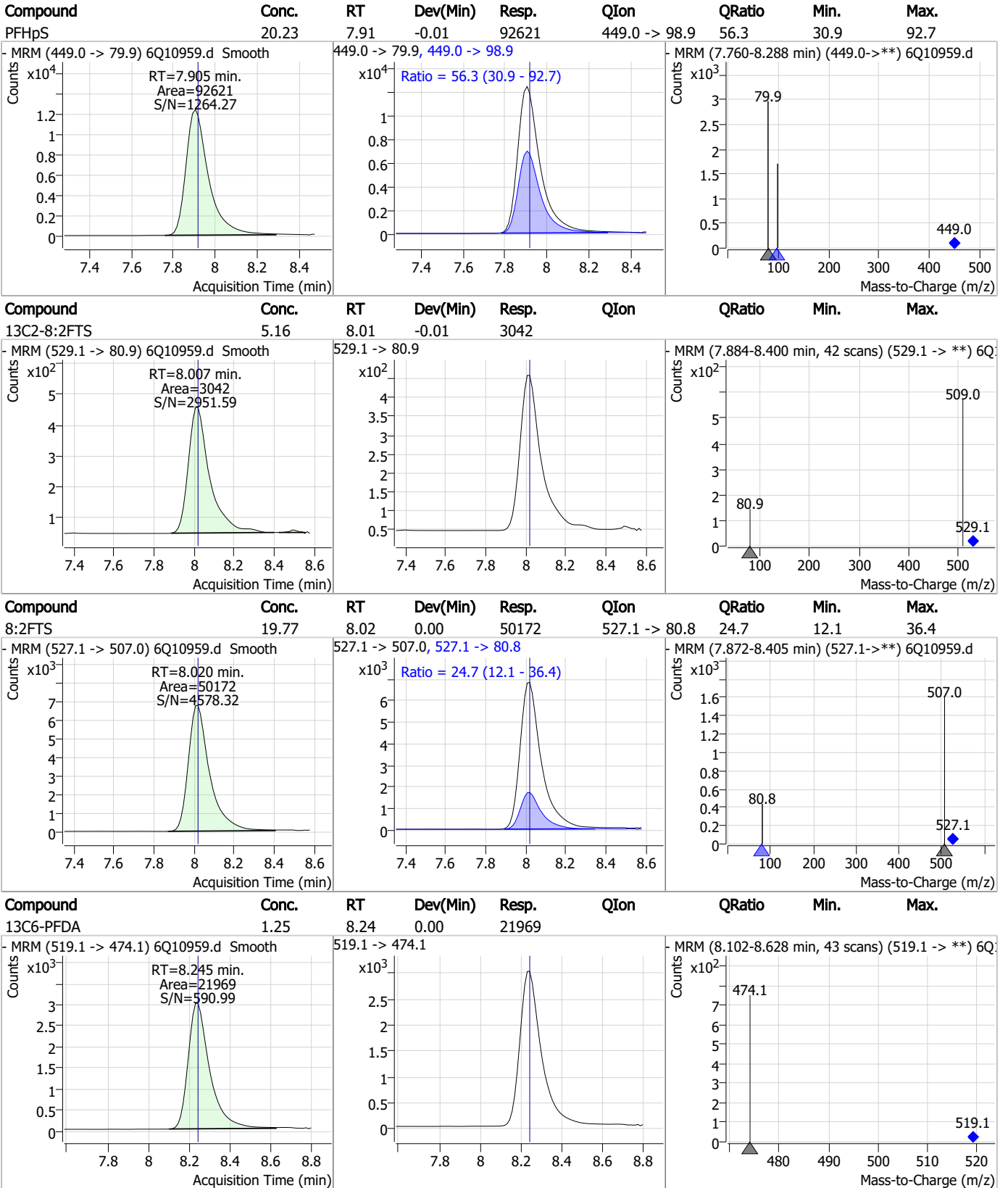
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

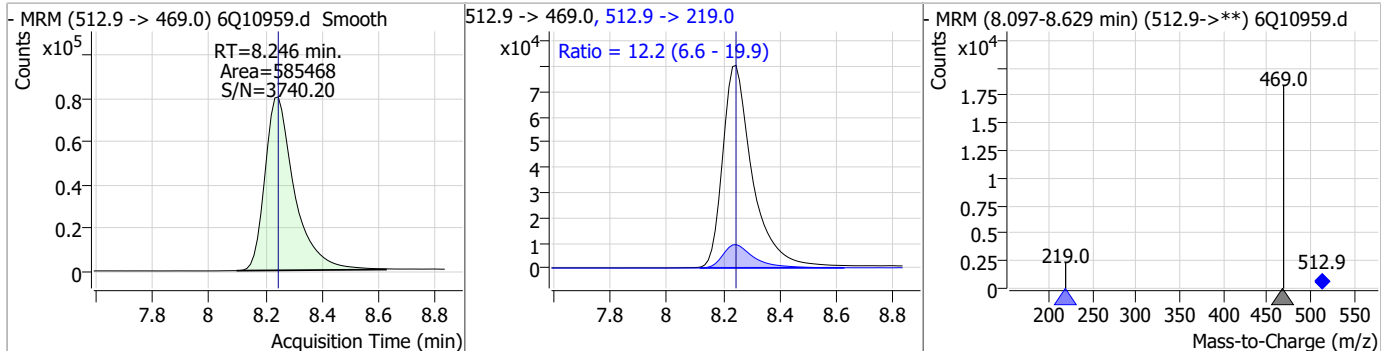


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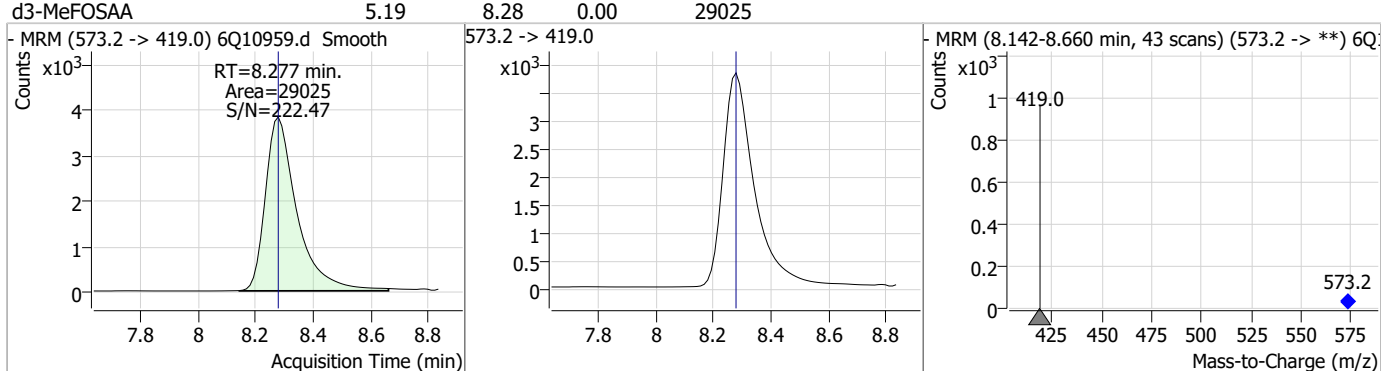
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Perfluorinated Compounds by LC/MS/MS

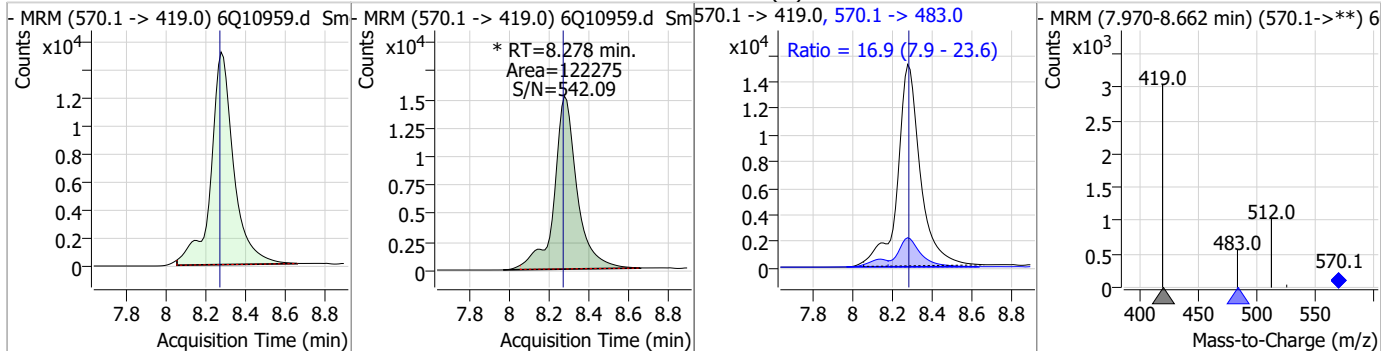
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	22.17	8.25	0.00	585468	512.9 -> 219.0	12.2	6.6	19.9



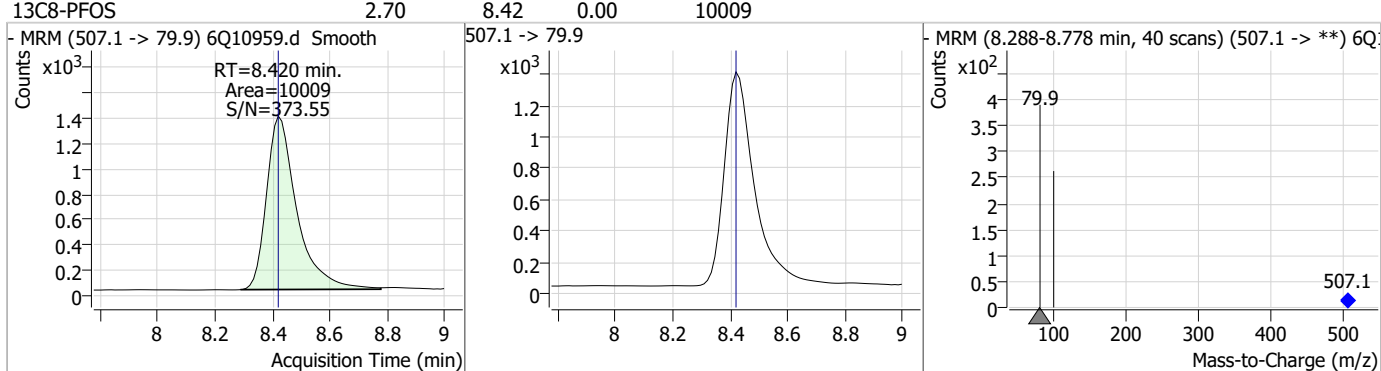
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.19	8.28	0.00	29025				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.44	8.28	0.00	122275 (m)	570.1 -> 483.0	16.9	7.9	23.6



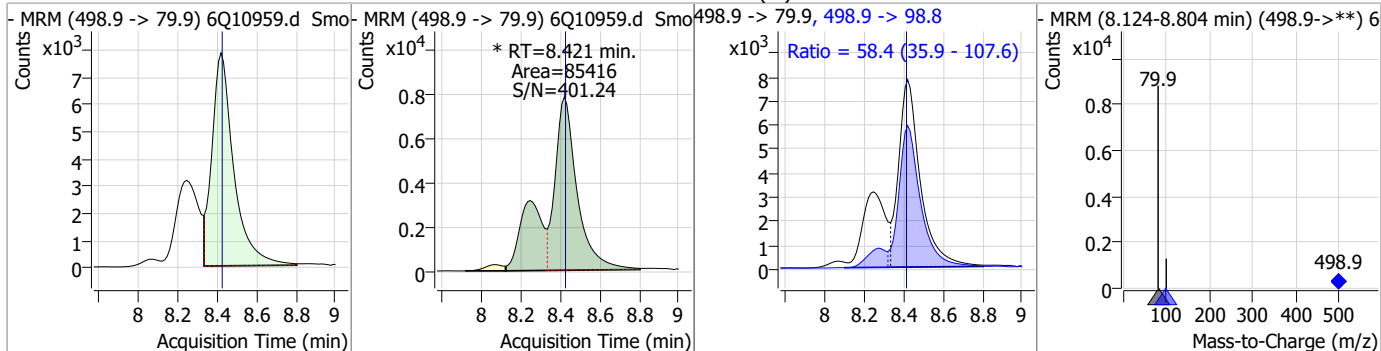
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.70	8.42	0.00	10009				



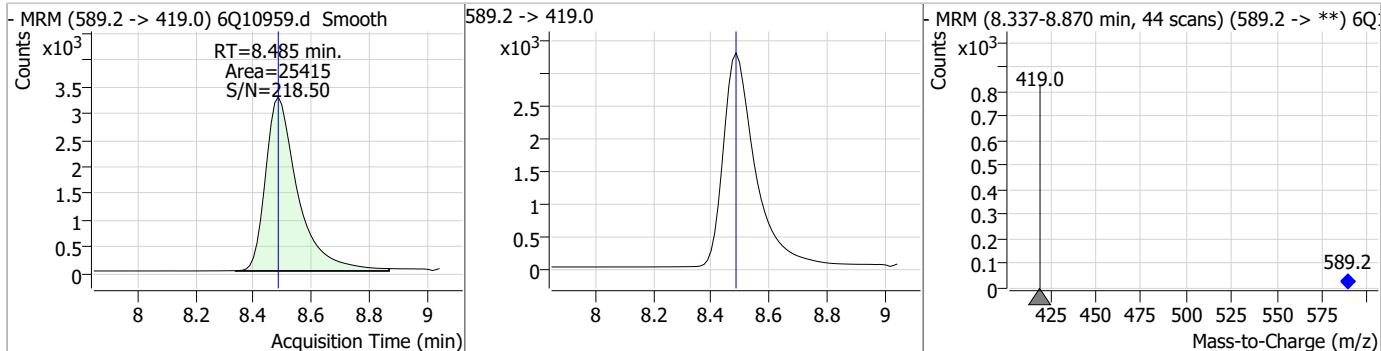
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Perfluorinated Compounds by LC/MS/MS

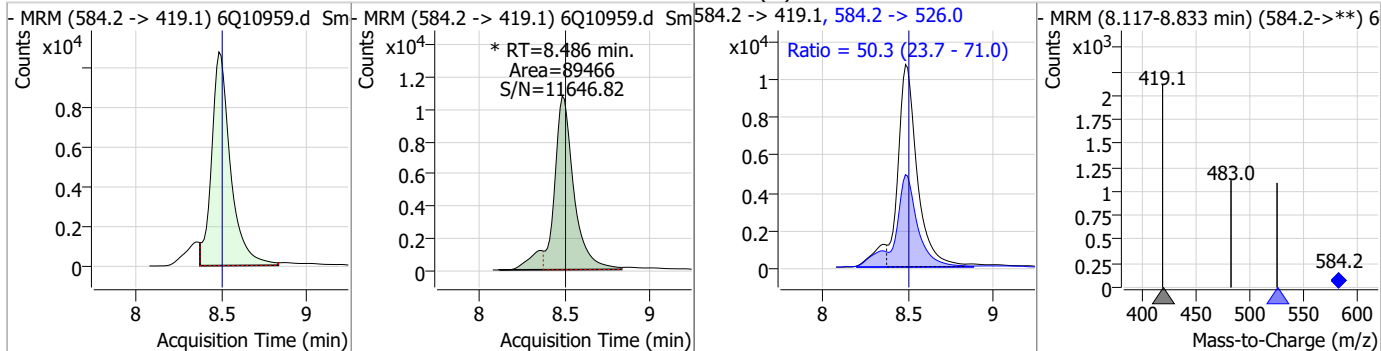
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	17.62	8.42	0.00	85416 (m)	498.9 -> 98.8	58.4	35.9	107.6



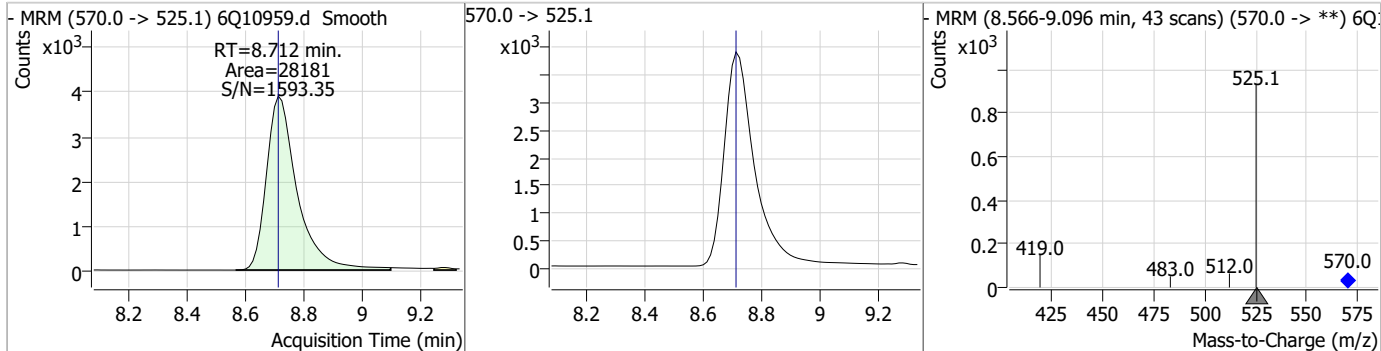
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.18	8.49	0.00	25415				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	22.05	8.49	-0.01	89466 (m)	584.2 -> 526.0	50.3	23.7	71.0

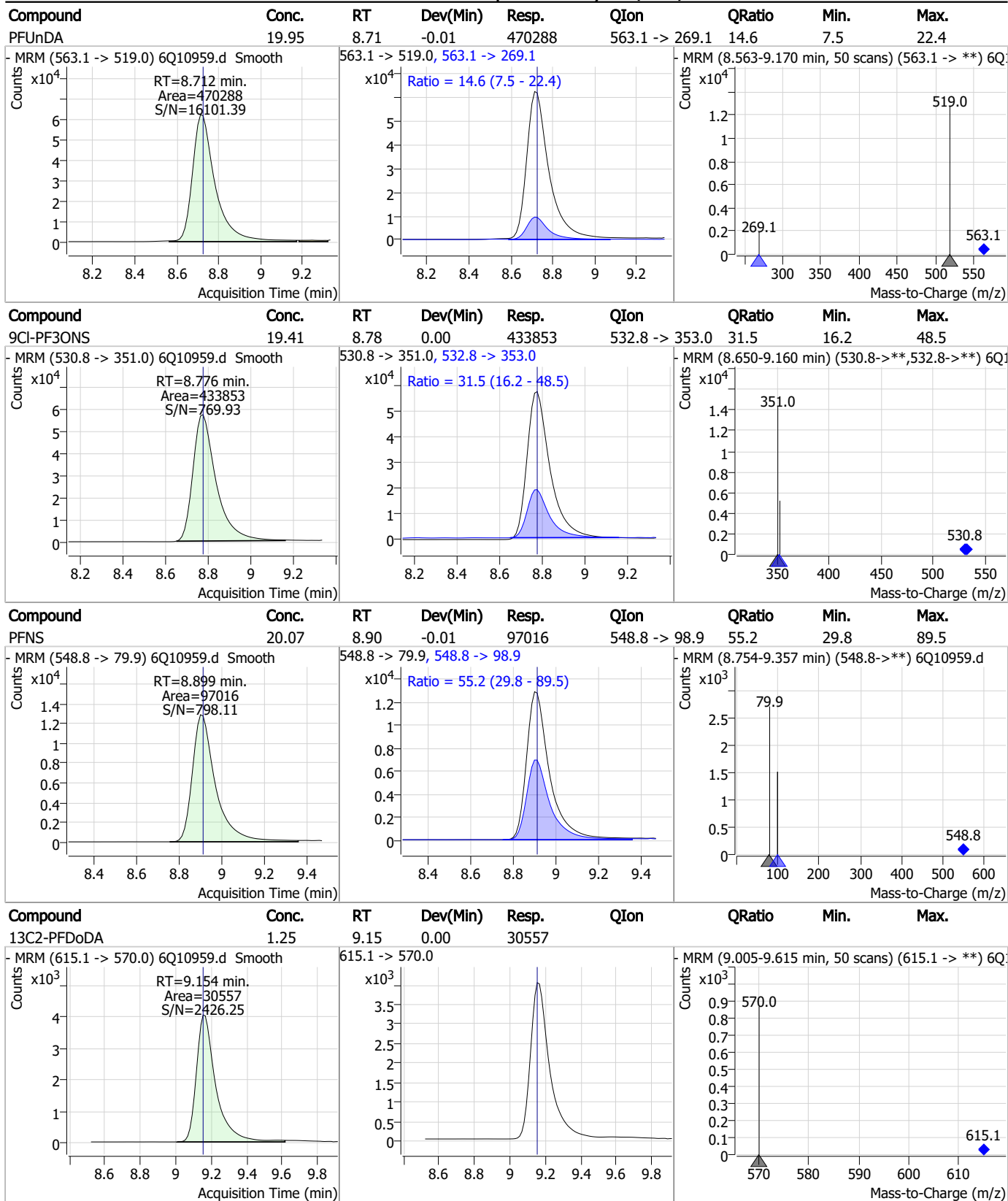


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.32	8.71	0.00	28181				



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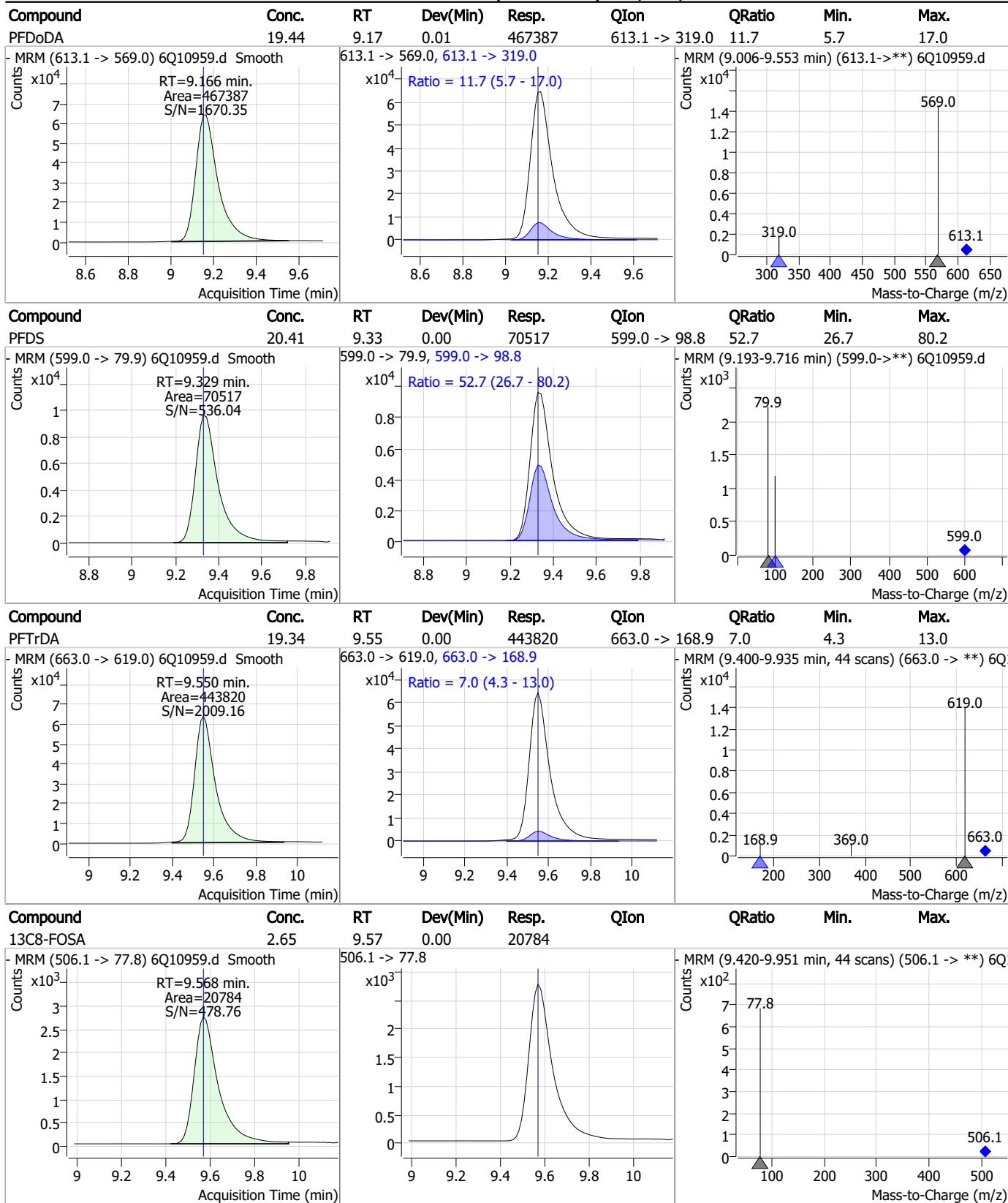
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

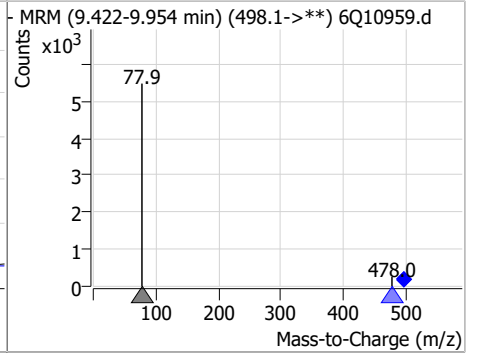
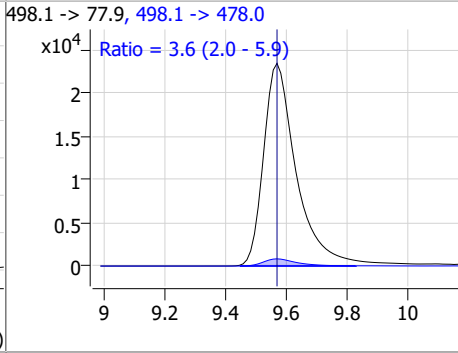
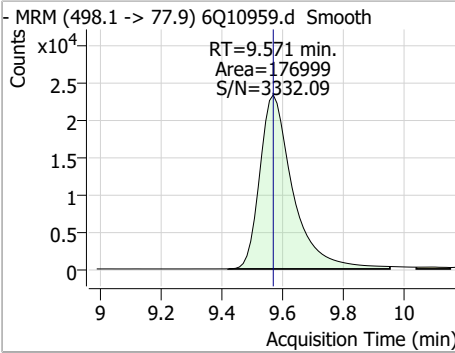


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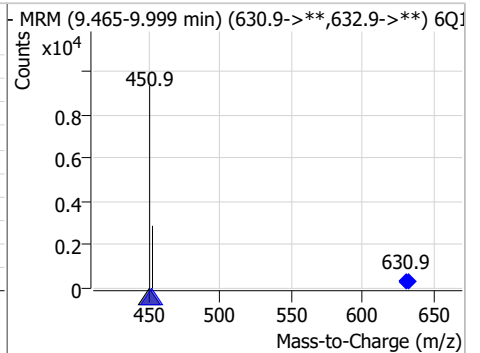
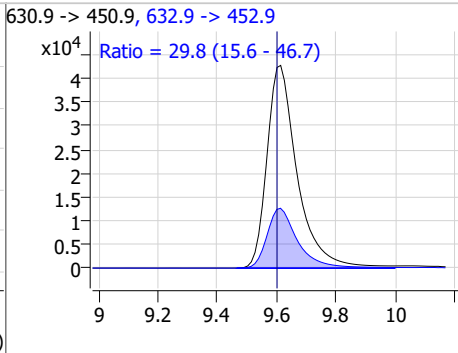
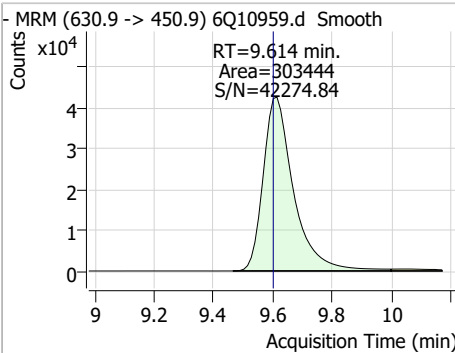
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Perfluorinated Compounds by LC/MS/MS

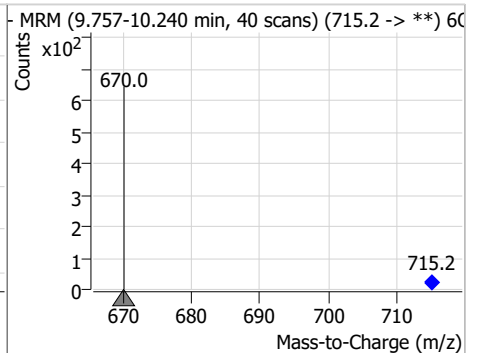
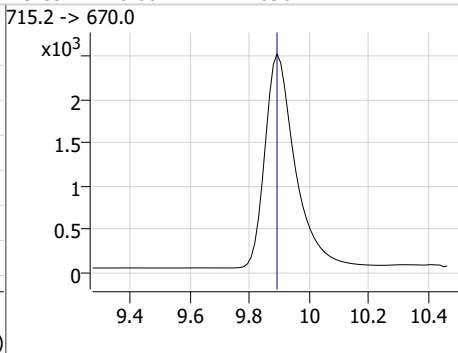
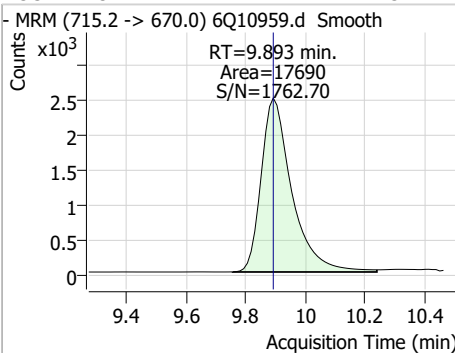
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	21.08	9.57	0.00	176999	498.1 -> 478.0	3.6	2.0	5.9



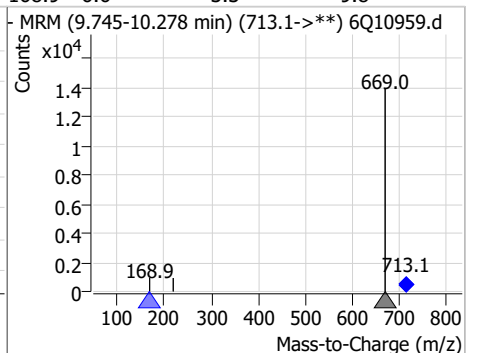
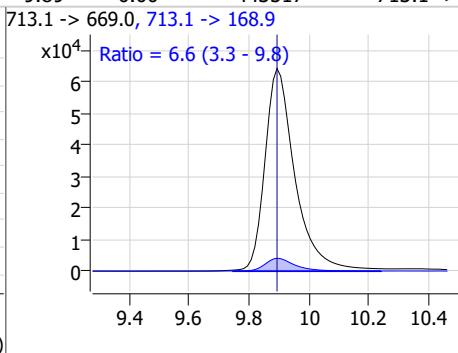
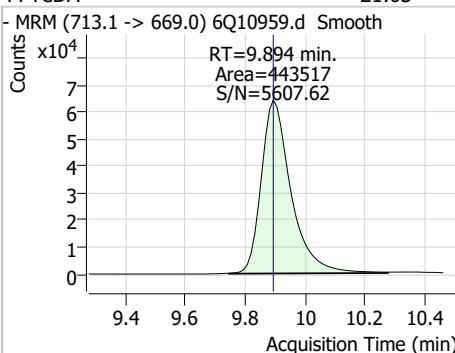
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUds	22.06	9.61	0.01	303444	632.9 -> 452.9	29.8	15.6	46.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.23	9.89	0.00	17690	715.2 -> 670.0			

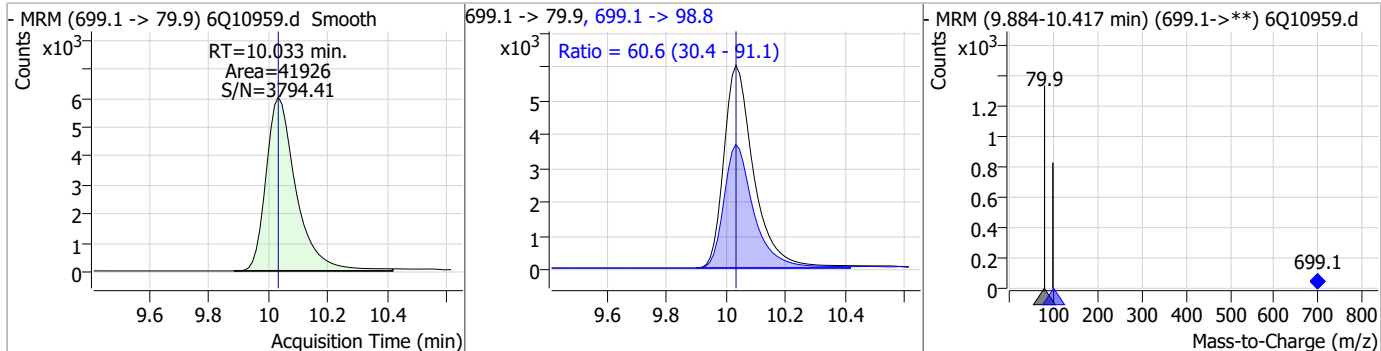


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	21.03	9.89	0.00	443517	713.1 -> 168.9	6.6	3.3	9.8

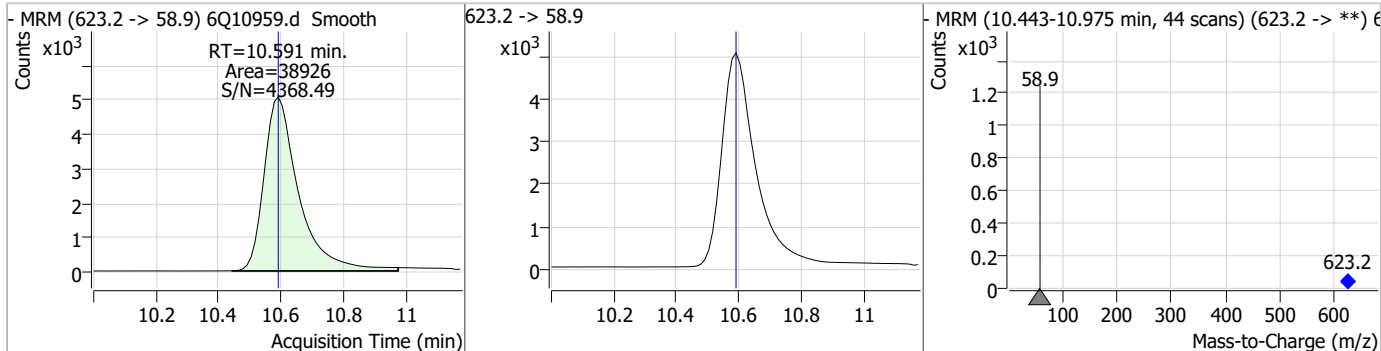


Perfluorinated Compounds by LC/MS/MS

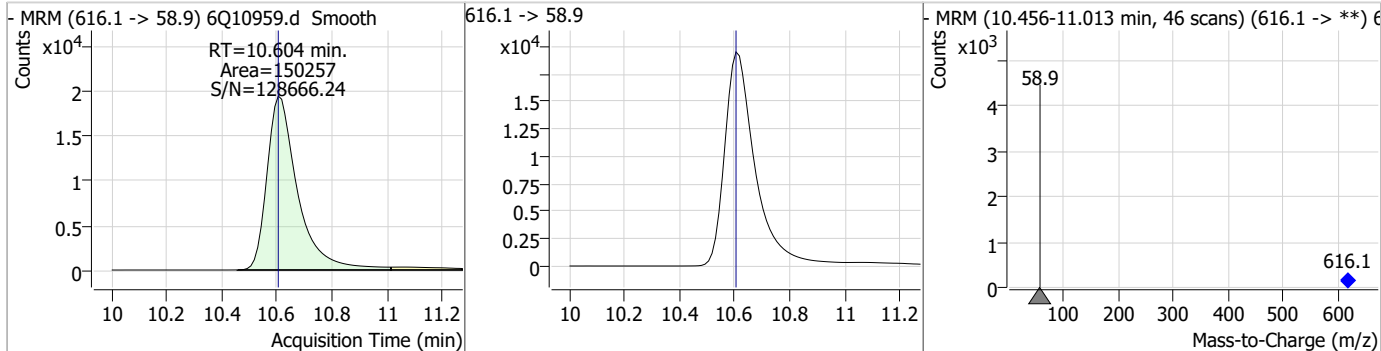
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	19.46	10.03	0.00	41926	699.1 -> 98.8	60.6	30.4	91.1



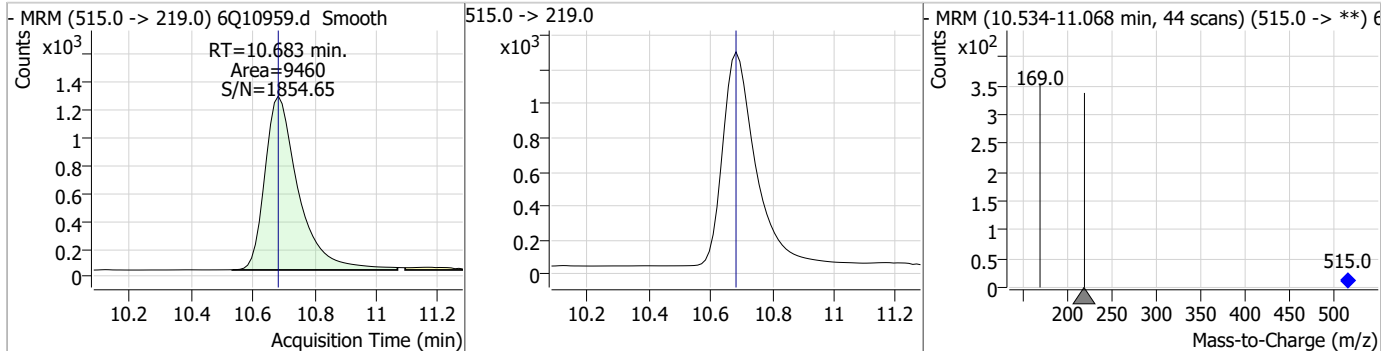
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	26.35	10.59	0.00	38926				



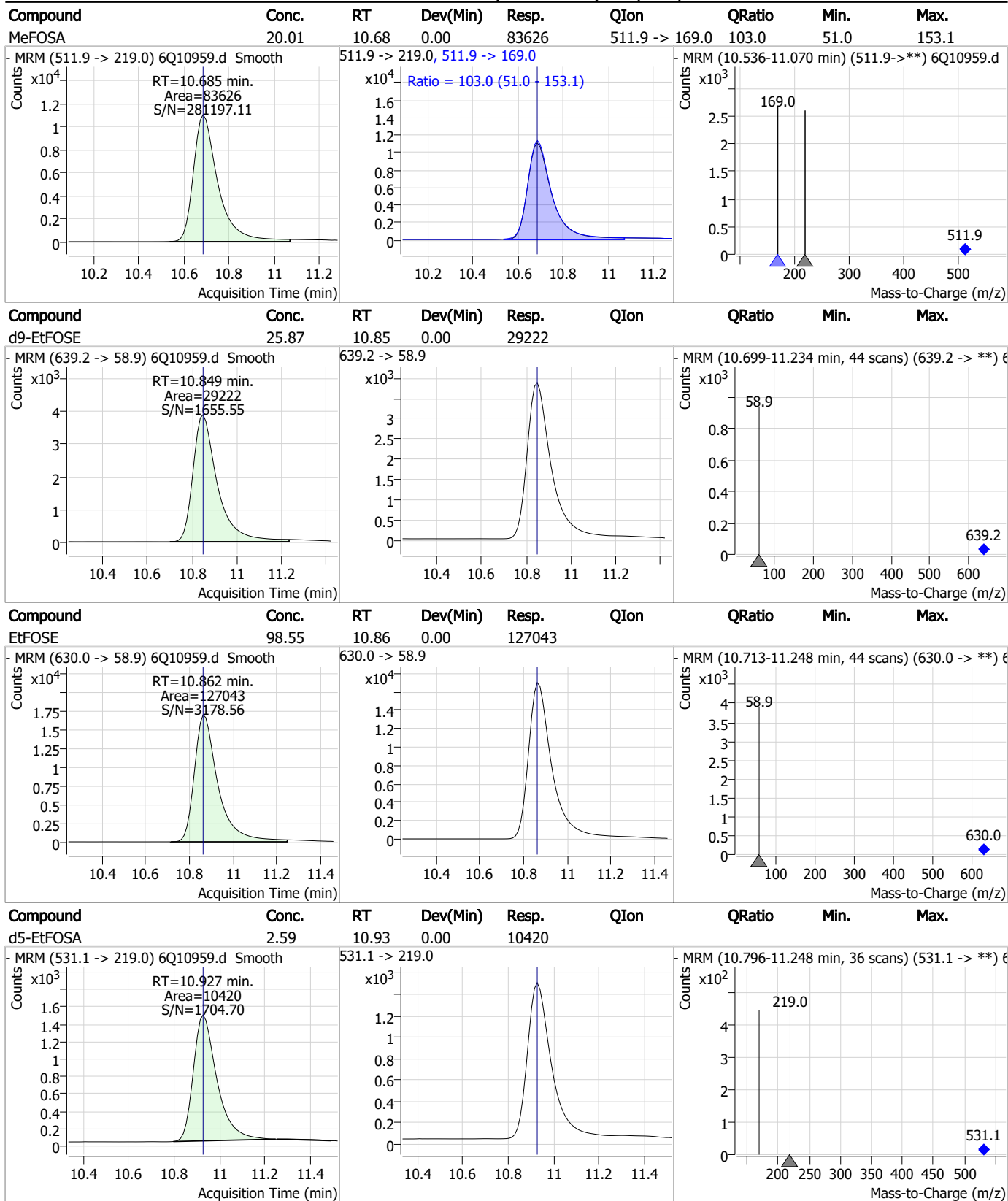
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	93.45	10.60	0.00	150257				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.64	10.68	0.00	9460				



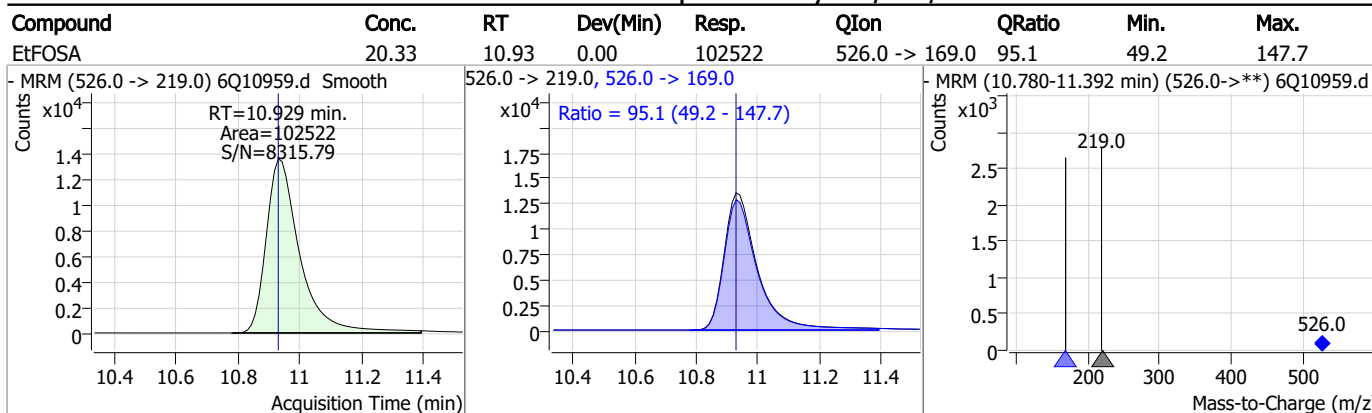
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q174-ICV174 Method: EPA DRAFT 1633
Lab FileID: 6Q10959.D Analyst approved: 01/12/23 11:46 Martha Valls
Injection Time: 01/11/23 14:10 Supervisor approved: 01/12/23 15:42 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.33	Split peak
MeFOSAA	2355-31-9		8.28	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.42	Split peak
EtFOSAA	2991-50-6		8.49	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q11423.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/16/2023 10:54:05 PM
 Sample Name : cc174-1.0LL
 Vial : P1-C2
 DA Method File : 1633_011123_S6Q174.quantmethod.xml
 Batch Name : s6q179.batch.bin
 Sample Information : OP94795,S6Q179,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.975	216.8 -> 171.9	83129	10.00 µg/L	-0.025
M5-PFPeA	4.371	268.3 -> 223.0	39159	5.00 µg/L	-0.012
M5-PFHxA	5.564	318.0 -> 273.0	34700	2.50 µg/L	0.000
M4-PFHpA	6.516	367.1 -> 322.0	35258	2.50 µg/L	0.000
M8-PFOA	7.160	421.1 -> 376.0	62697	2.50 µg/L	0.000
M9-PFNA	7.715	472.1 -> 427.0	28034	1.25 µg/L	0.000
M6-PFDA	8.208	519.1 -> 474.1	19081	1.25 µg/L	0.000
M7-PFUnDA	8.674	570.0 -> 525.1	22940	1.25 µg/L	0.000
M2-PFDoDA	9.117	615.1 -> 570.0	25359	1.25 µg/L	0.000
M2-PFTeDA	9.844	715.2 -> 670.0	14732	1.25 µg/L	-0.012
M8-FOSA	9.568	506.1 -> 77.8	18093	2.50 µg/L	0.000
M3-PFBS	5.519	302.1 -> 79.9	12523	2.50 µg/L	-0.012
M3-PFHxS	7.300	402.1 -> 79.9	8988	2.50 µg/L	0.000
M8-PFOS	8.383	507.1 -> 79.9	8893	2.50 µg/L	0.000
M2-4:2FTS	5.228	329.1 -> 80.9	1746	5.00 µg/L	0.000
M2-6:2FTS	6.934	429.1 -> 80.9	2625	5.00 µg/L	0.000
M2-8:2FTS	7.982	529.1 -> 80.9	2510	5.00 µg/L	0.000
M3-MeFOSAA	8.240	573.2 -> 419.0	25282	5.00 µg/L	0.000
M3-HFPO-DA	5.941	286.9 -> 168.9	14183	10.00 µg/L	0.000
M5-EtFOSAA	8.448	589.2 -> 419.0	23278	5.00 µg/L	0.000
M7-MeFOSE	10.591	623.2 -> 58.9	33164	25.00 µg/L	0.000
M9-EtFOSE	10.849	639.2 -> 58.9	24911	25.00 µg/L	0.000
M5-EtFOSA	10.927	531.1 -> 219.0	8356	2.50 µg/L	0.000
M3-MeFOSA	10.683	515.0 -> 219.0	7909	2.50 µg/L	0.000
13C4-PFOS	8.384	502.8 -> 79.9	10068	2.50 µg/L	0.000
13C3-PFBA	2.979	216.0 -> 172.0	36119	5.00 µg/L	-0.025
18O2-PFHxS	7.299	403.0 -> 83.9	6121	2.50 µg/L	0.000
13C4-PFOA	7.173	417.1 -> 372.0	78917	2.50 µg/L	0.000
13C2-PFDA	8.208	515.1 -> 470.1	25574	1.25 µg/L	0.000
13C5-PFNA	7.703	468.0 -> 423.0	31875	1.25 µg/L	0.000
13C2-PFHxA	5.565	315.1 -> 270.0	36032	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.228	329.1 -> 80.9	1746	5.47 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.3%		
13C2-6:2FTS	6.934	429.1 -> 80.9	2625	6.00 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 120.1%		
13C2-8:2FTS	7.982	529.1 -> 80.9	2510	5.26 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.2%		
13C2-PFDoDA	9.117	615.1 -> 570.0	25359	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.1%		
13C2-PFTeDA	9.844	715.2 -> 670.0	14732	1.24 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.9%		
13C3-PFBS	5.519	302.1 -> 79.9	12523	2.44 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.6%		
13C3-PFHxS	7.300	402.1 -> 79.9	8988	2.70 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 = 108.2%		
13C4-PFBA	2.975	216.8 -> 171.9	83129	10.08 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 100.8%		
13C4-PFHpA	6.516	367.1 -> 322.0	35258	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.5%		
13C5-PFHxA	5.564	318.0 -> 273.0	34700	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.9%		
13C5-PFPeA	4.371	268.3 -> 223.0	39159	4.87 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.4%		
13C6-PFDA	8.208	519.1 -> 474.1	19081	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.8%		
13C7-PFUnDA	8.674	570.0 -> 525.1	22940	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.3%		
13C8-FOSA	9.568	506.1 -> 77.8	18093	2.66 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 106.4%		
13C8-PFOA	7.160	421.1 -> 376.0	62697	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 94.8%		
13C8-PFOS	8.383	507.1 -> 79.9	8893	2.76 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 110.6%		
13C9-PFNA	7.715	472.1 -> 427.0	28034	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.0%		
d3-MeFOSAA	8.240	573.2 -> 419.0	25282	5.22 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.3%		
13C3-HFPO-DA	5.941	286.9 -> 168.9	14183	9.54 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 95.4%		
d3-MeFOSA	10.683	515.0 -> 219.0	7909	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.6%		
d5-EtFOSAA	8.448	589.2 -> 419.0	23278	5.47 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.5%		
d7-MeFOSE	10.591	623.2 -> 58.9	33164	25.88 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 103.5%		
d9-EtFOSE	10.849	639.2 -> 58.9	24911	25.42 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 101.7%		
d5-EtFOSA	10.927	531.1 -> 219.0	8356	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.8%		
Target Compounds					QValue
4:2FTS	5.229	327.1 -> 307.0	3075	0.74 µg/L	96
		327.1 -> 80.9	657		
6:2FTS	6.934	427.1 -> 407.0	2644	0.65 µg/L	95
		427.1 -> 80.9	615		
8:2FTS	7.983	527.1 -> 507.0	1678	0.80 µg/L	95
		527.1 -> 80.8	457		
EtFOSAA	8.462	584.2 -> 419.1	604	0.16 µg/L	m 91
		584.2 -> 526.0	395		
FOSA	9.558	498.1 -> 77.9	1340	0.18 µg/L	99
		498.1 -> 478.0	58		
MeFOSAA	8.241	570.1 -> 419.0	967	0.19 µg/L	m 94
		570.1 -> 483.0	166		
PFBA	2.982	212.8 -> 168.9	1559	0.73 µg/L	100
PFBS	5.520	298.7 -> 79.9	891	0.18 µg/L	94
		298.7 -> 98.8	370		
PFDA	8.208	512.9 -> 469.0	4695	0.20 µg/L	94
		512.9 -> 219.0	512		
PFDODA	9.117	613.1 -> 569.0	3617	0.18 µg/L	93
		613.1 -> 319.0	559		
PFDS	9.293	599.0 -> 79.9	460	0.15 µg/L	92

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	221			
PFHpA	6.516	363.1 -> 319.0	3903	0.18	µg/L	96
		363.1 -> 169.0	576			
PFHpS	7.867	449.0 -> 79.9	554	0.14	µg/L	68
		449.0 -> 98.9	448			
PFHxA	5.567	313.0 -> 269.0	2510	0.18	µg/L	95
		313.0 -> 118.9	132			
PFHxS	7.301	398.7 -> 79.9	693	0.16	µg/L	m 97
		398.7 -> 98.9	388			
PFNA	7.716	463.0 -> 419.0	3879	0.20	µg/L	90
		463.0 -> 219.0	598			
PFNS	8.862	548.8 -> 79.9	631	0.15	µg/L	92
		548.8 -> 98.9	436			
PFOA	7.174	413.0 -> 369.0	4651	0.17	µg/L	99
		413.0 -> 169.0	669			
PFOS	8.385	498.9 -> 79.9	728	0.17	µg/L	m 98
		498.9 -> 98.8	421			
PFPeA	4.374	263.0 -> 219.0	3263	0.38	µg/L	100
PFPeS	6.582	349.1 -> 79.9	878	0.17	µg/L	95
		349.1 -> 98.9	503			
PFTeDA	9.844	713.1 -> 669.0	3142	0.18	µg/L	99
		713.1 -> 168.9	215			
PFTrDA	9.501	663.0 -> 619.0	3689	0.19	µg/L	100
		663.0 -> 168.9	305			
PFUnDA	8.675	563.1 -> 519.0	3428	0.18	µg/L	100
		563.1 -> 269.1	488			
11CI-PF3OUdS	9.565	630.9 -> 450.9	7676	0.71	µg/L	97
		632.9 -> 452.9	2615			
9CI-PF3ONS	8.727	530.8 -> 351.0	12315	0.70	µg/L	98
		532.8 -> 353.0	4325			
ADONA	6.767	376.9 -> 250.9	21943	0.70	µg/L	96
		376.9 -> 84.8	4876			
HFPO-DA	5.929	284.9 -> 168.9	1038	0.72	µg/L	99
		284.9 -> 184.9	132			
3:3FTCA	3.827	241.0 -> 177.0	423	0.92	µg/L	93
		241.0 -> 117.0	63			
5:3FTCA	6.194	341.0 -> 237.1	13027	4.47	µg/L	94
		341.0 -> 217.0	11770			
7:3FTCA	7.618	441.0 -> 316.9	8804	4.48	µg/L	83
		441.0 -> 336.9	19509			
EtFOSA	10.929	526.0 -> 219.0	738	0.18	µg/L	84
		526.0 -> 169.0	693			
EtFOSE	10.862	630.0 -> 58.9	1917	1.74	µg/L	100
MeFOSA	10.685	511.9 -> 219.0	676	0.19	µg/L	83
		511.9 -> 169.0	698			
MeFOSE	10.604	616.1 -> 58.9	2369	1.73	µg/L	100
PFDoDS	9.984	699.1 -> 79.9	312	0.16	µg/L	91
		699.1 -> 98.8	172			
NFDHA	5.446	295.0 -> 201.0	316	0.35	µg/L	97
		295.0 -> 84.9	125			
PFMBA	4.776	279.0 -> 85.1	1004	0.37	µg/L	100
PFMPA	3.525	229.0 -> 84.9	879	0.37	µg/L	100
PFEESA	6.060	314.8 -> 134.9	6747	0.35	µg/L	98
		314.8 -> 82.9	138			

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

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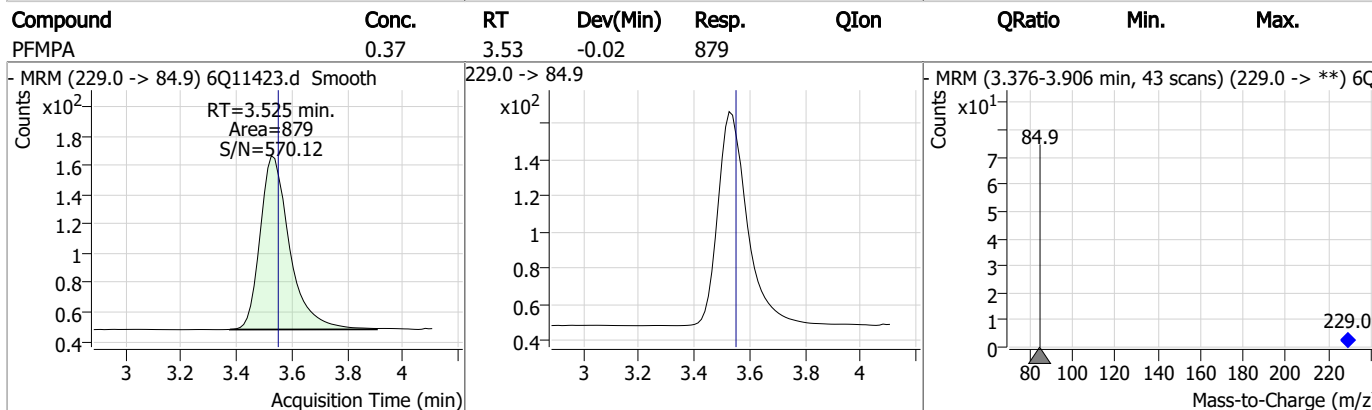
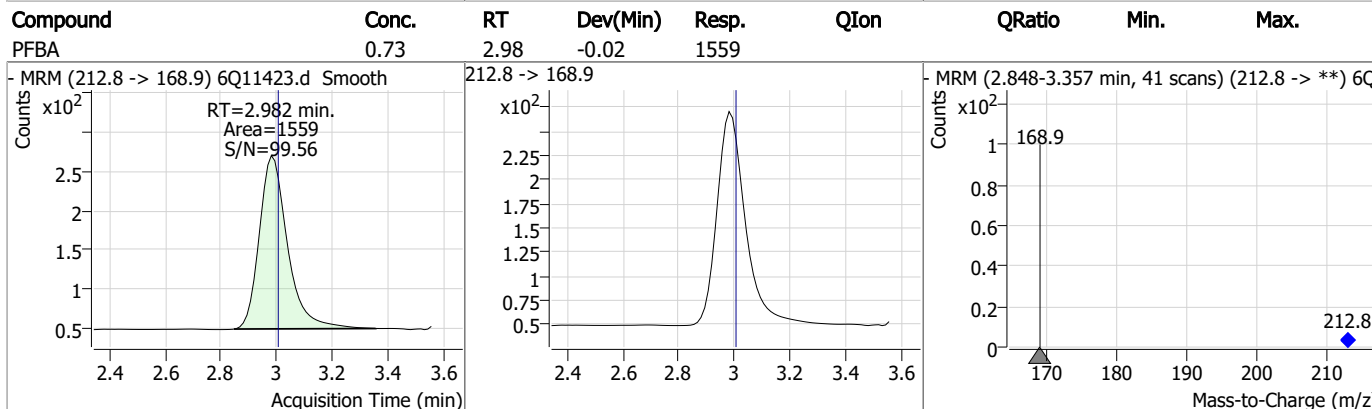
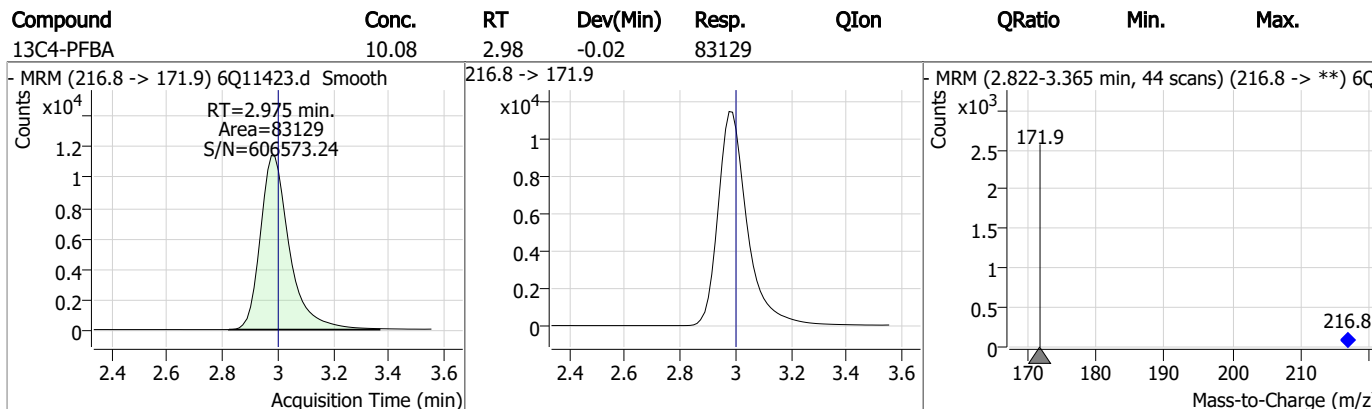
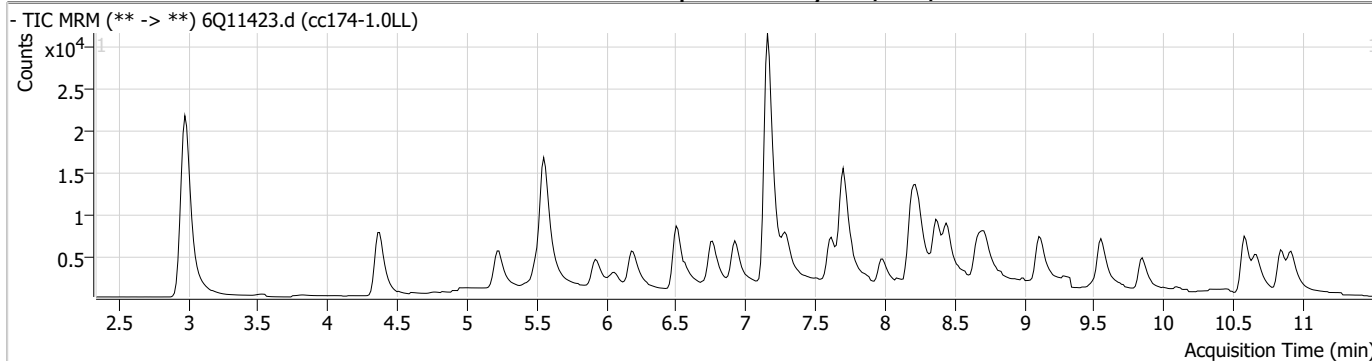
Perfluorinated Compounds by LC/MS/MS

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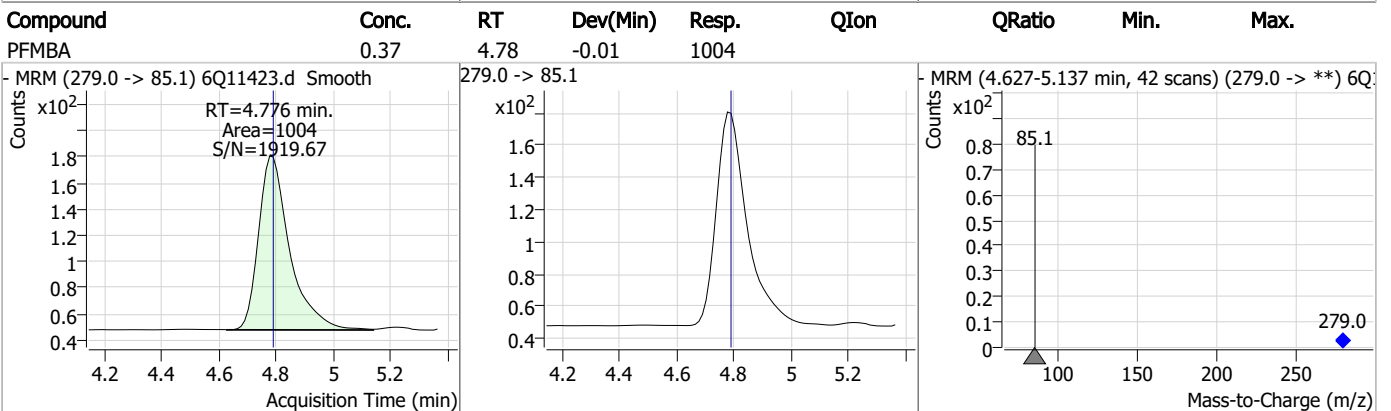
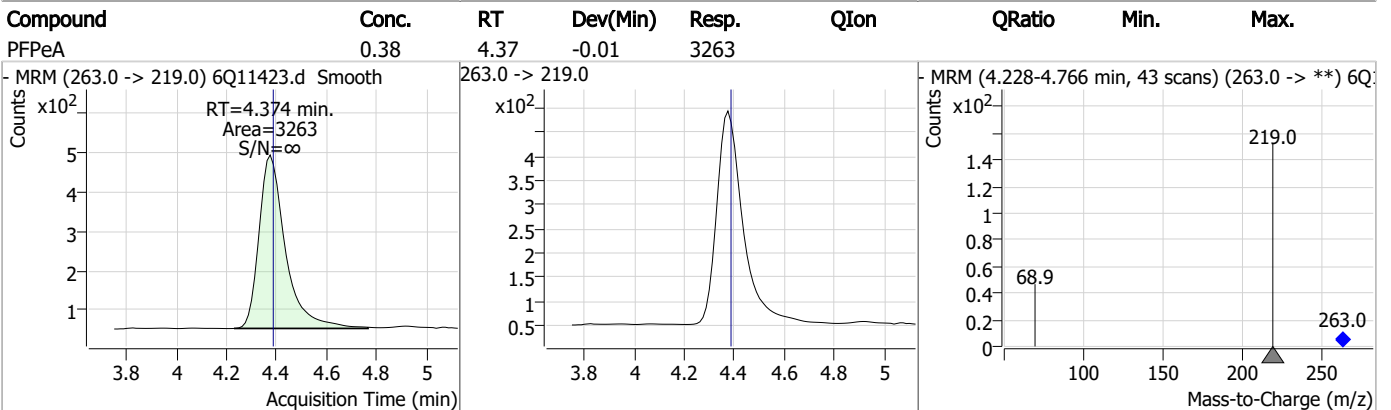
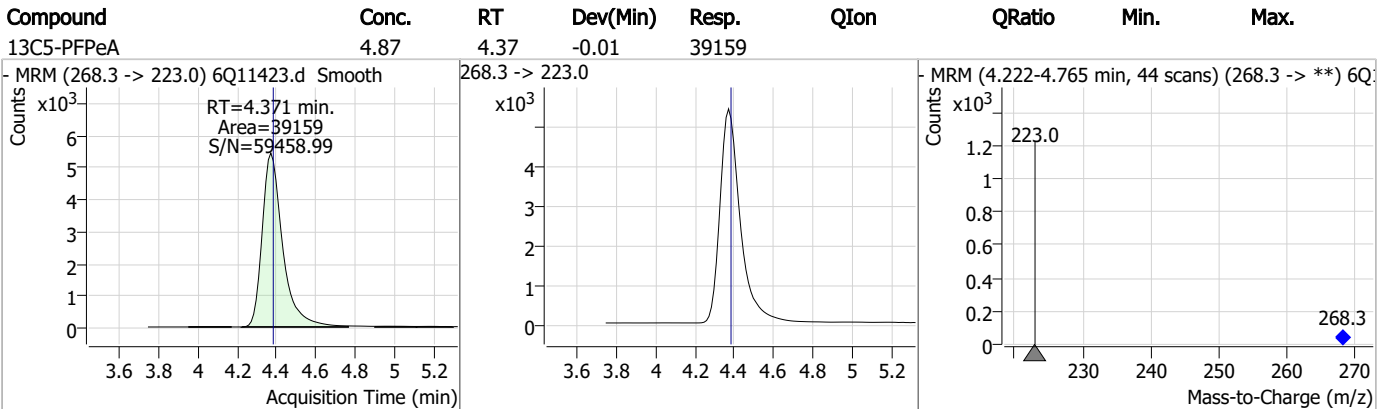
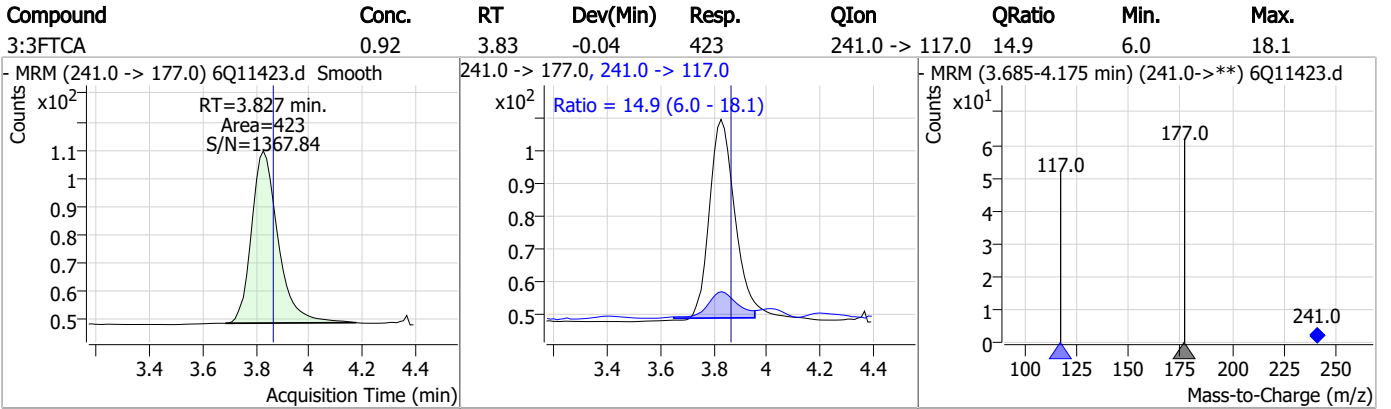
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Perfluorinated Compounds by LC/MS/MS



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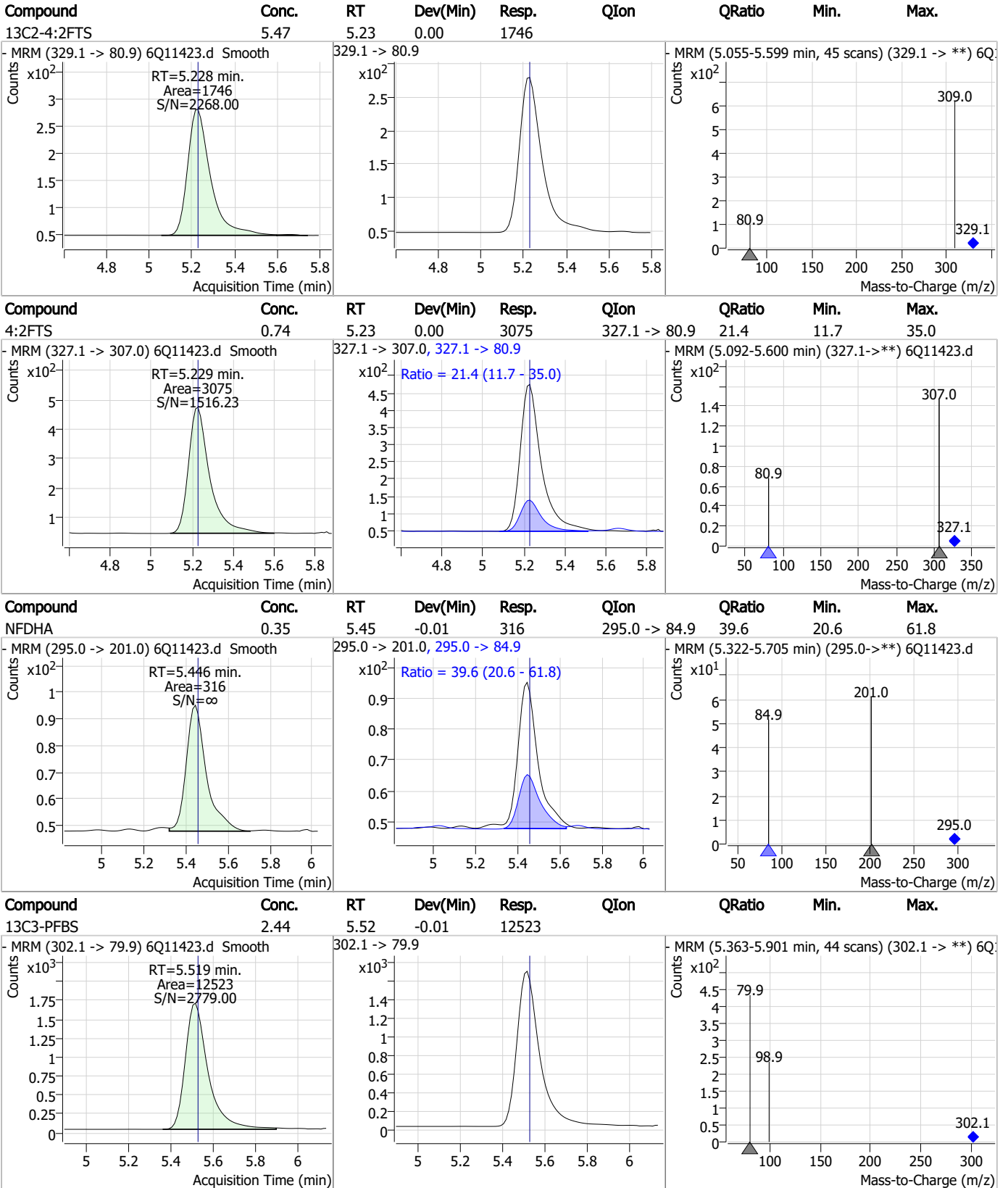
Perfluorinated Compounds by LC/MS/MS



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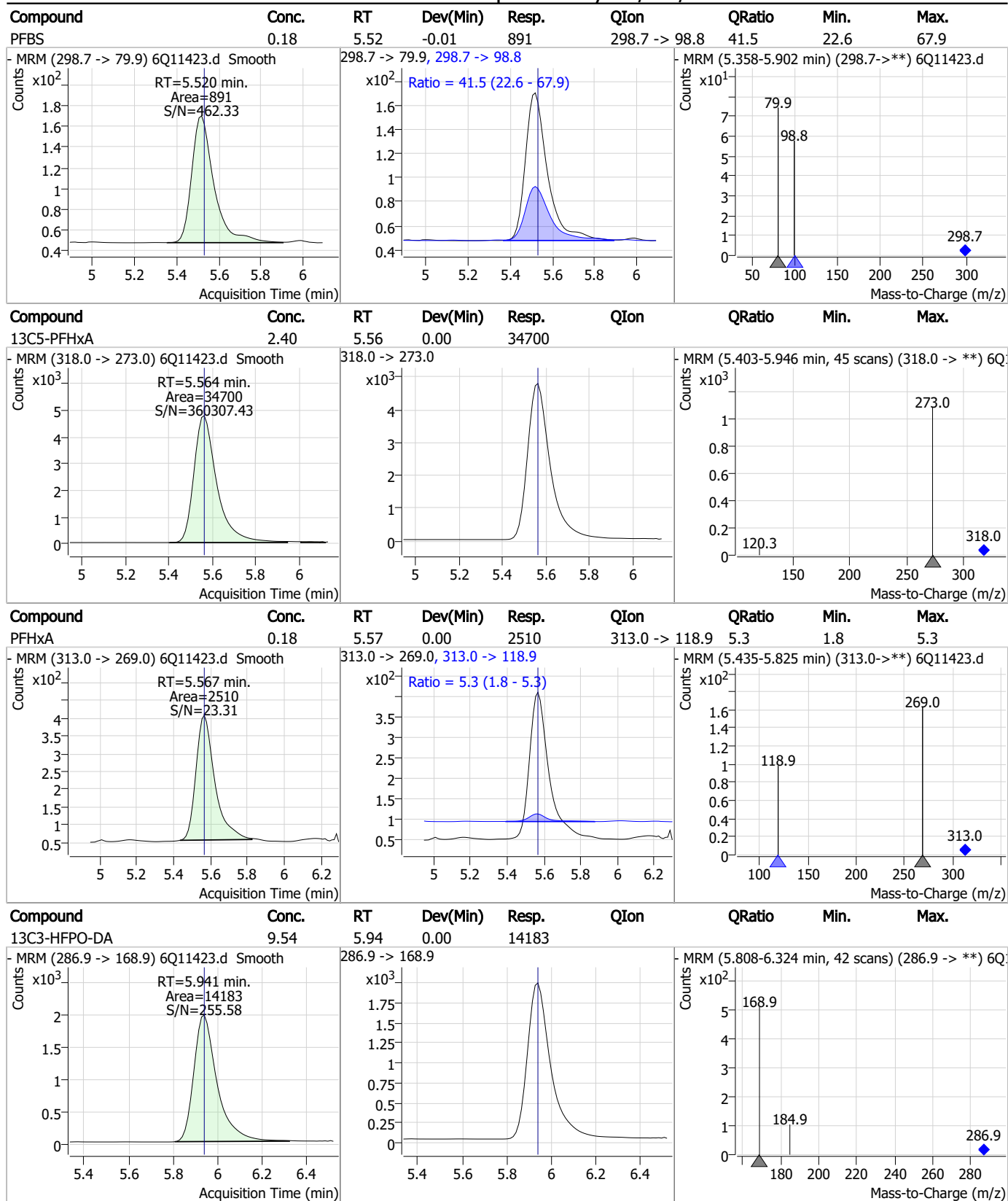
Perfluorinated Compounds by LC/MS/MS



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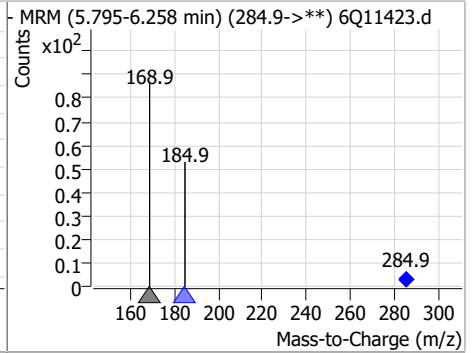
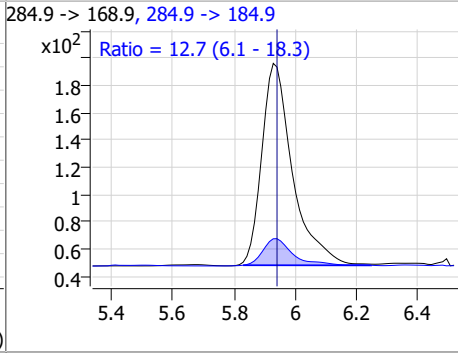
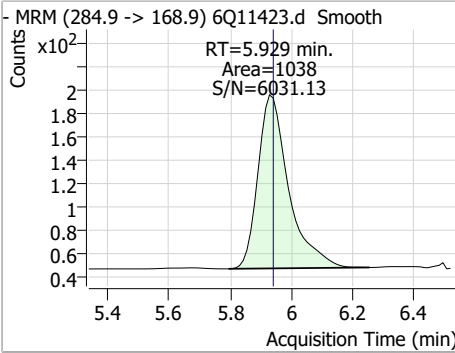
Perfluorinated Compounds by LC/MS/MS



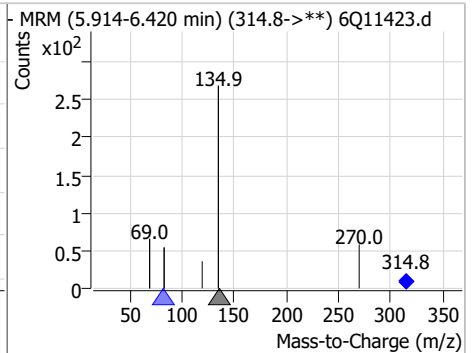
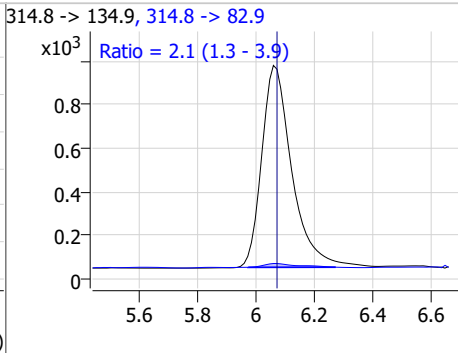
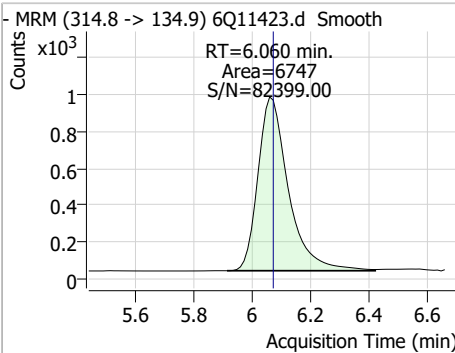
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Perfluorinated Compounds by LC/MS/MS

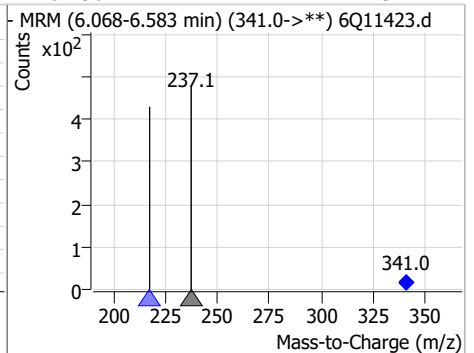
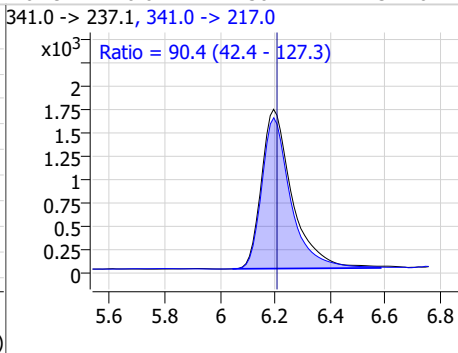
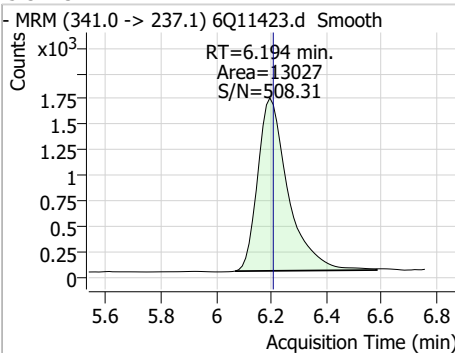
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.72	5.93	-0.01	1038	284.9 -> 184.9	12.7	6.1	18.3



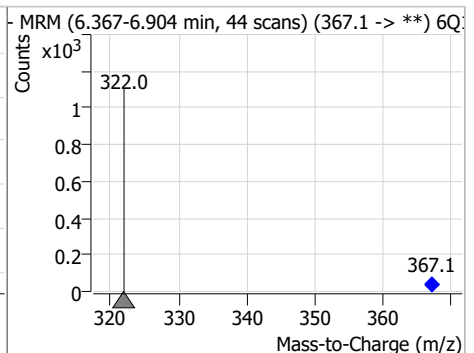
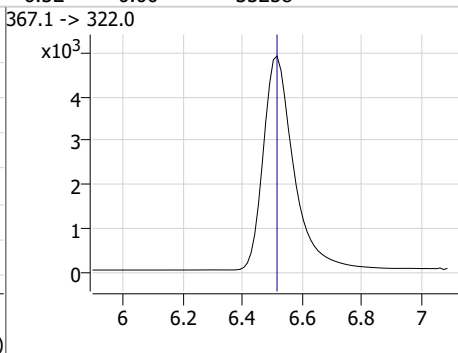
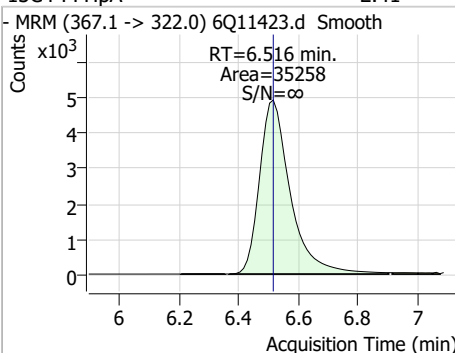
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	0.35	6.06	-0.01	6747	314.8 -> 82.9	2.1	1.3	3.9



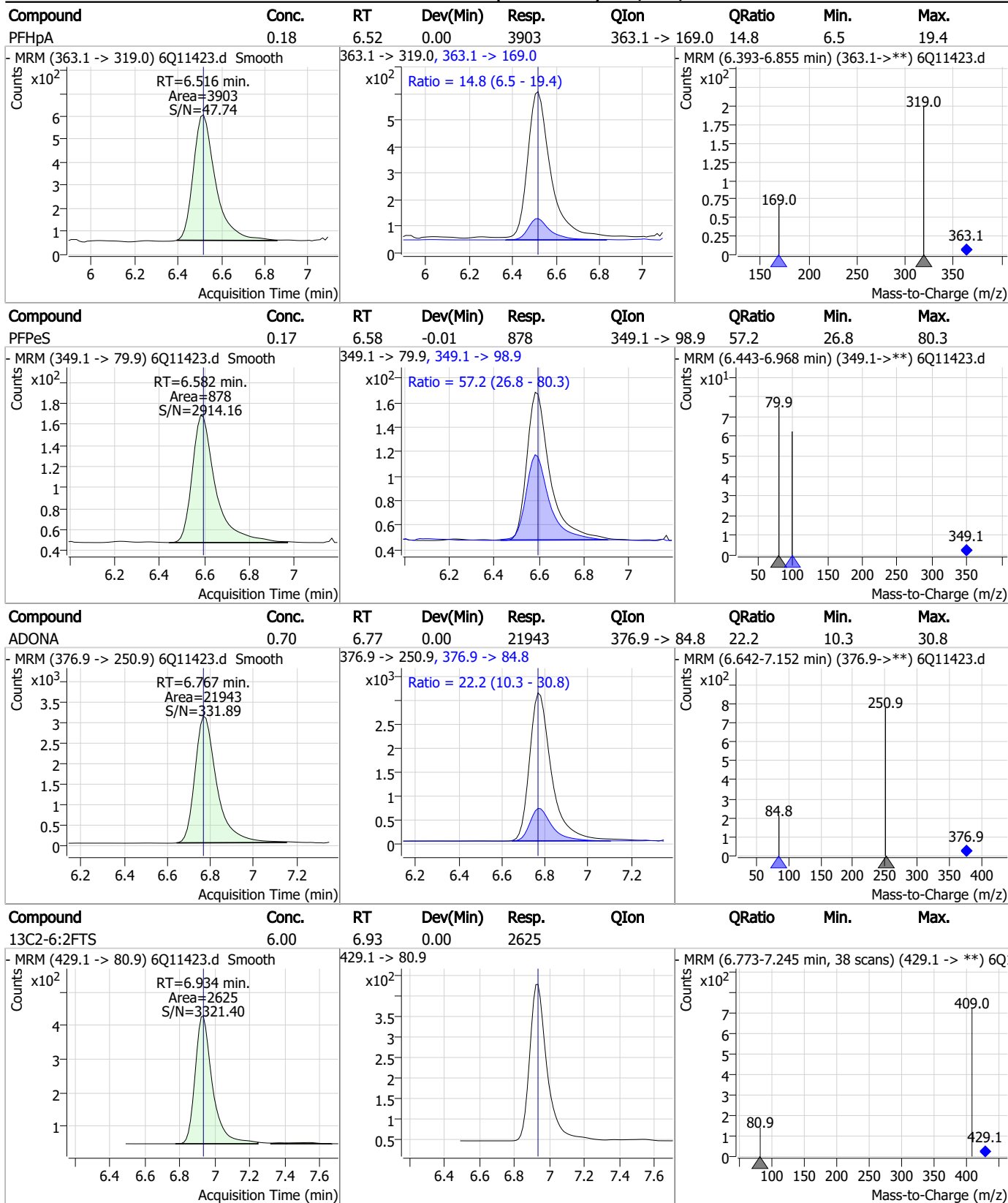
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	4.47	6.19	-0.01	13027	341.0 -> 217.0	90.4	42.4	127.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.41	6.52	0.00	35258	367.1 -> 322.0			

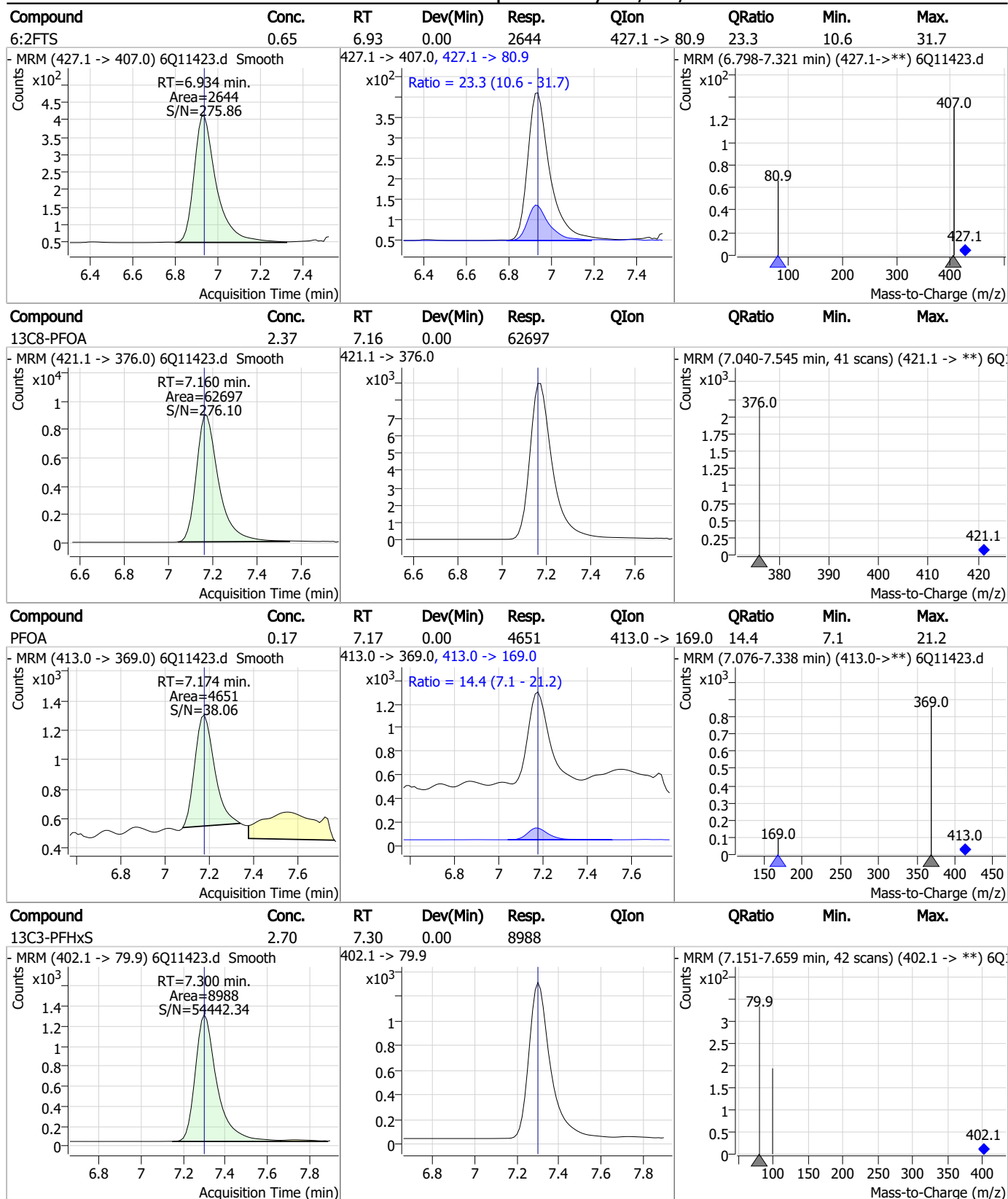


Perfluorinated Compounds by LC/MS/MS



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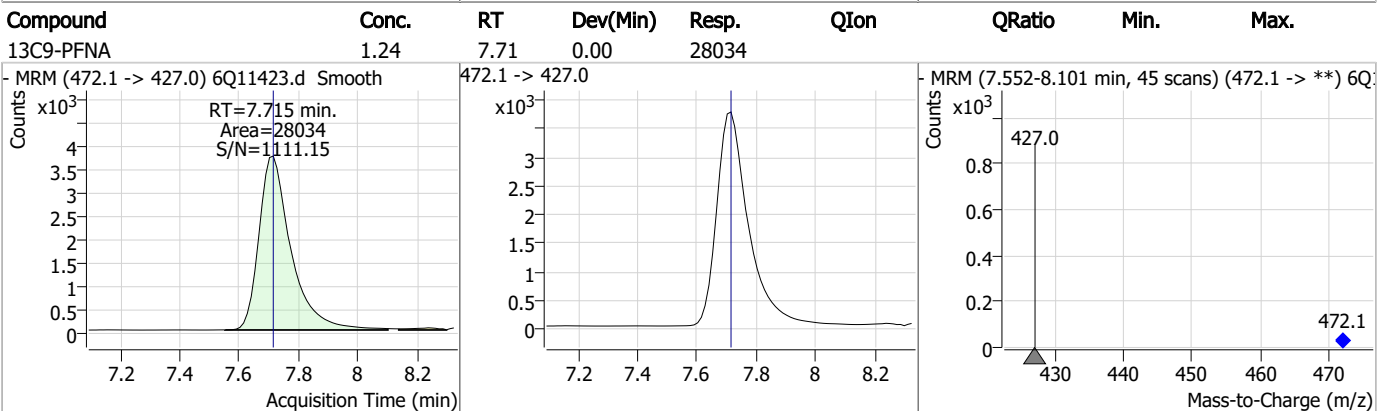
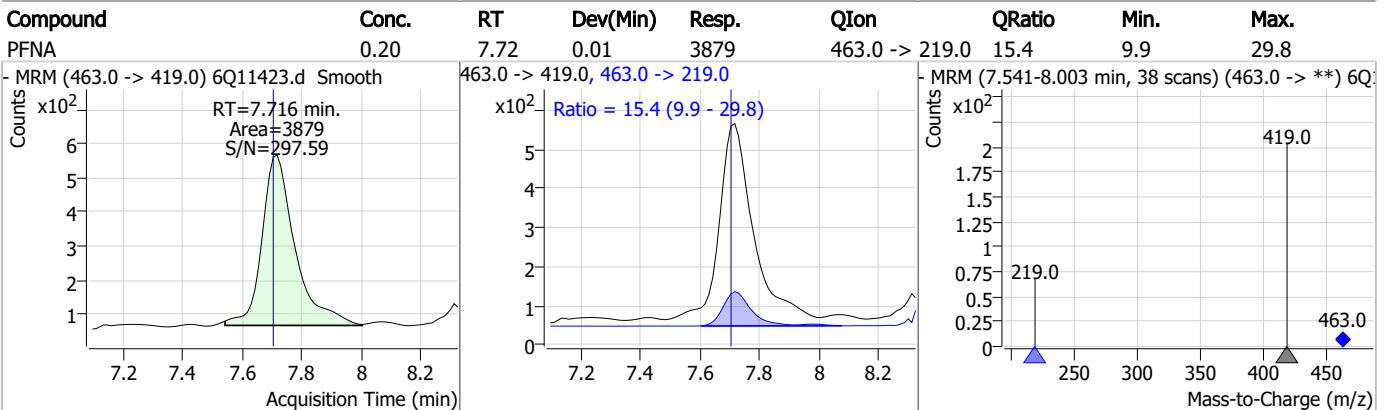
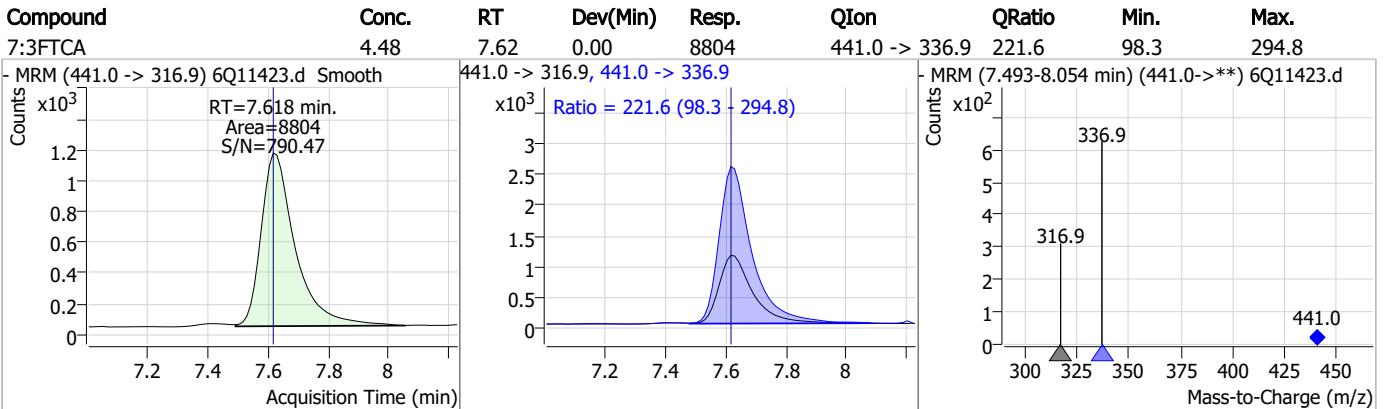
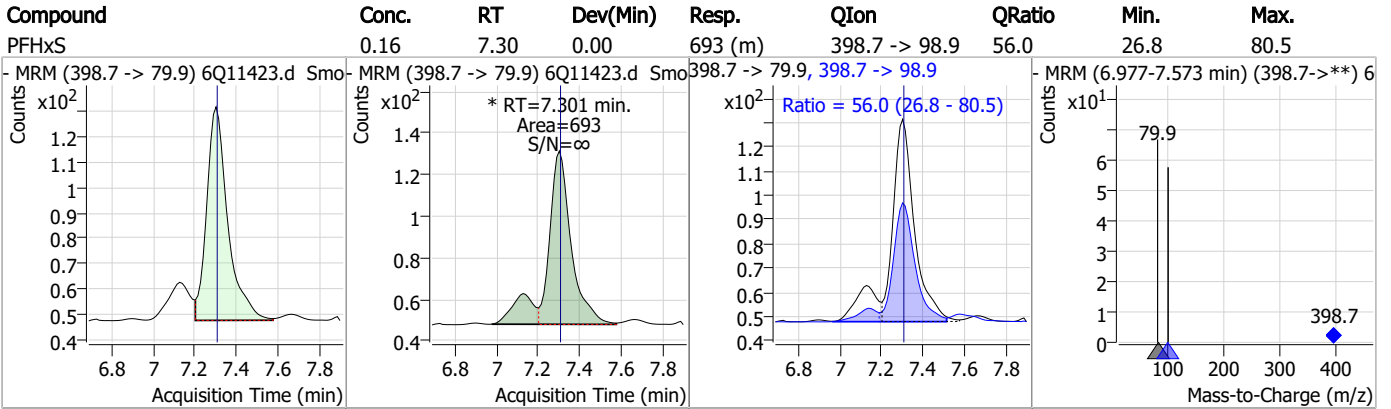
Perfluorinated Compounds by LC/MS/MS



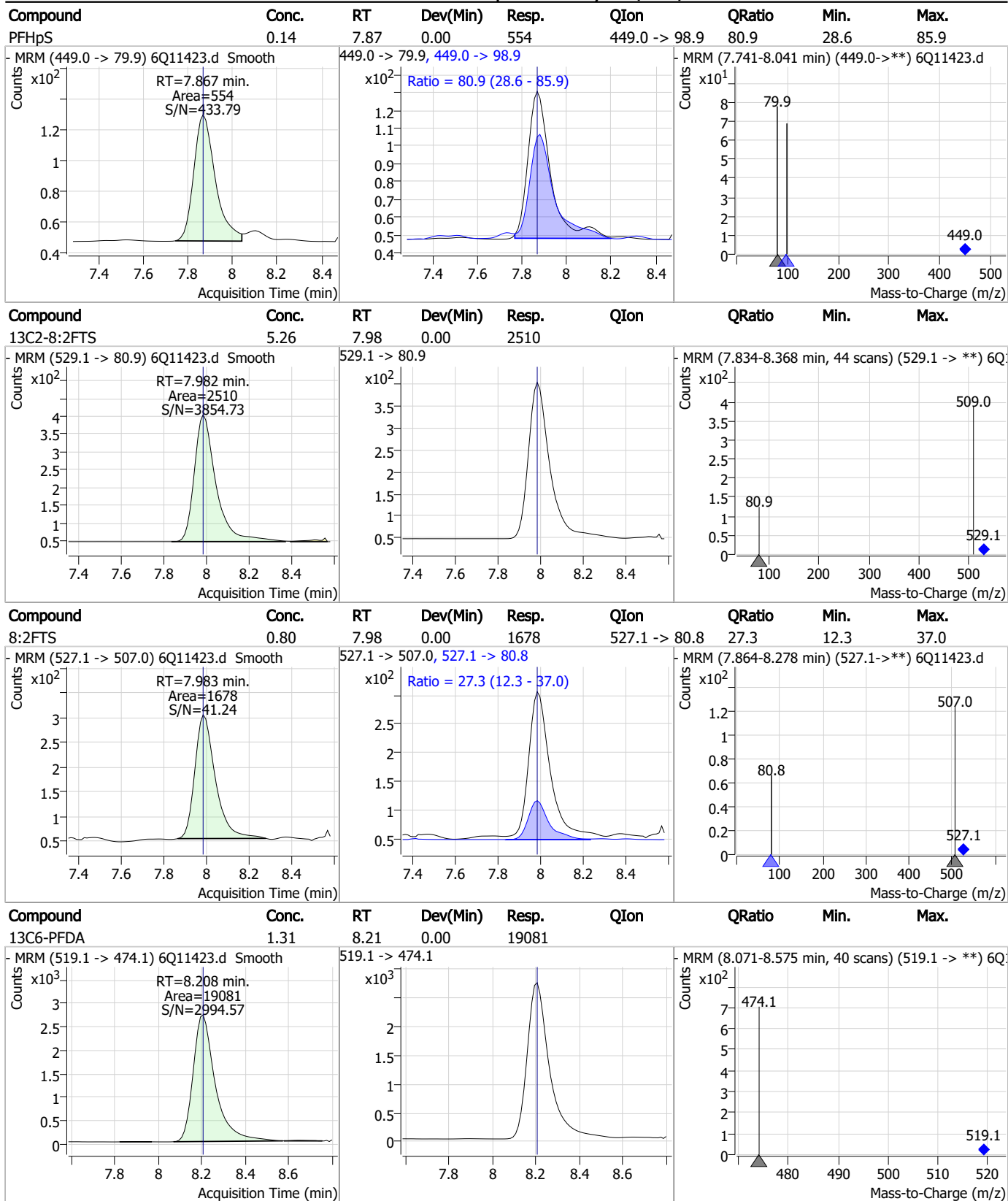
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Perfluorinated Compounds by LC/MS/MS



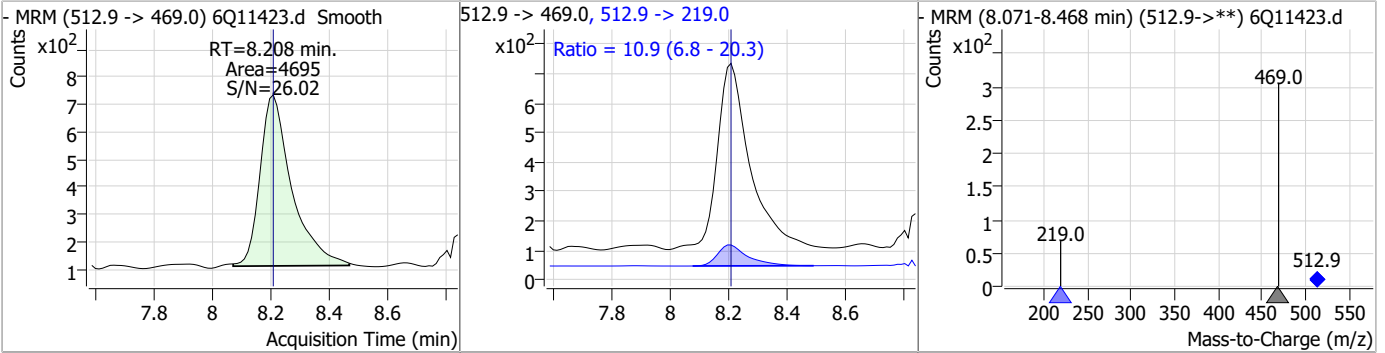
Perfluorinated Compounds by LC/MS/MS



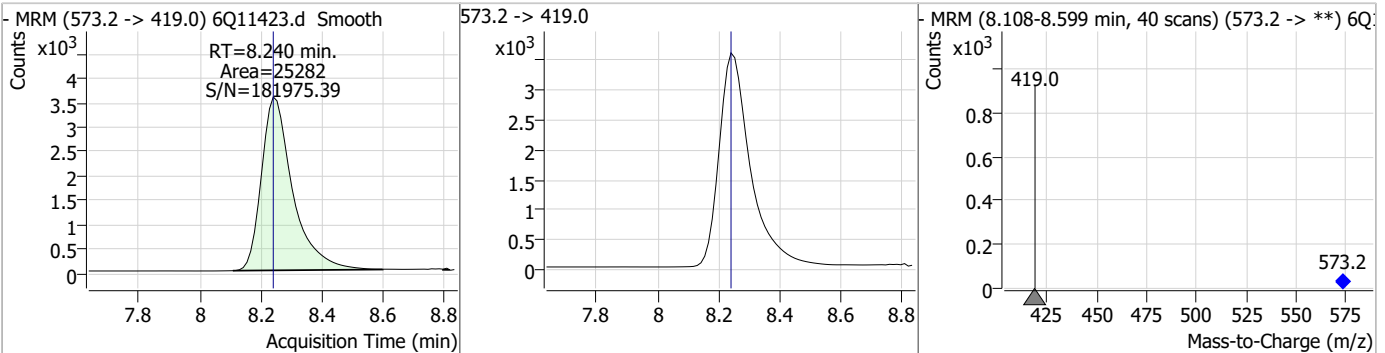
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Perfluorinated Compounds by LC/MS/MS

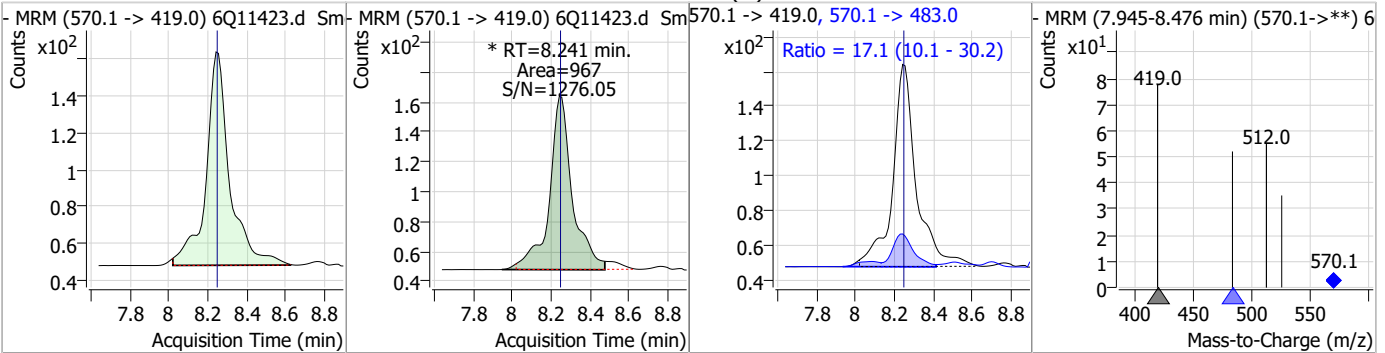
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.20	8.21	0.00	4695	512.9 -> 219.0	10.9	6.8	20.3



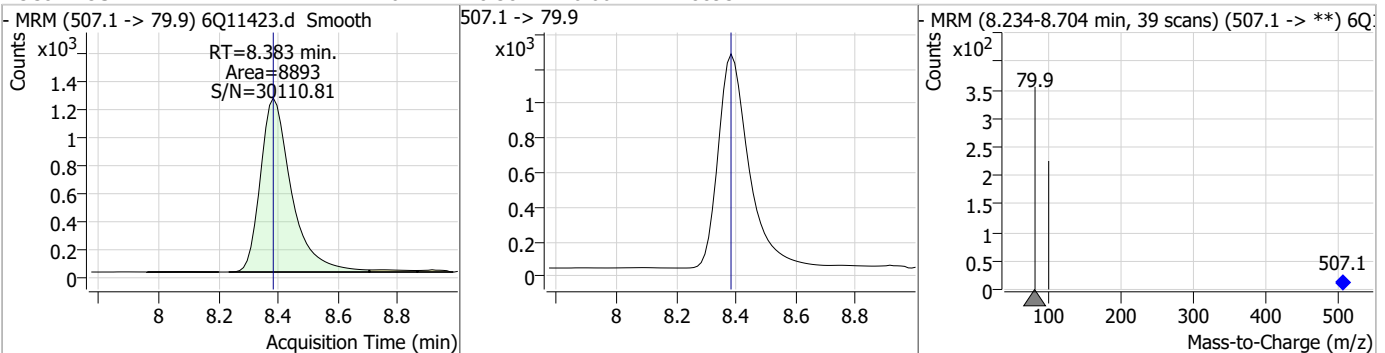
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.22	8.24	0.00	25282				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.19	8.24	0.00	967 (m)	570.1 -> 483.0	17.1	10.1	30.2

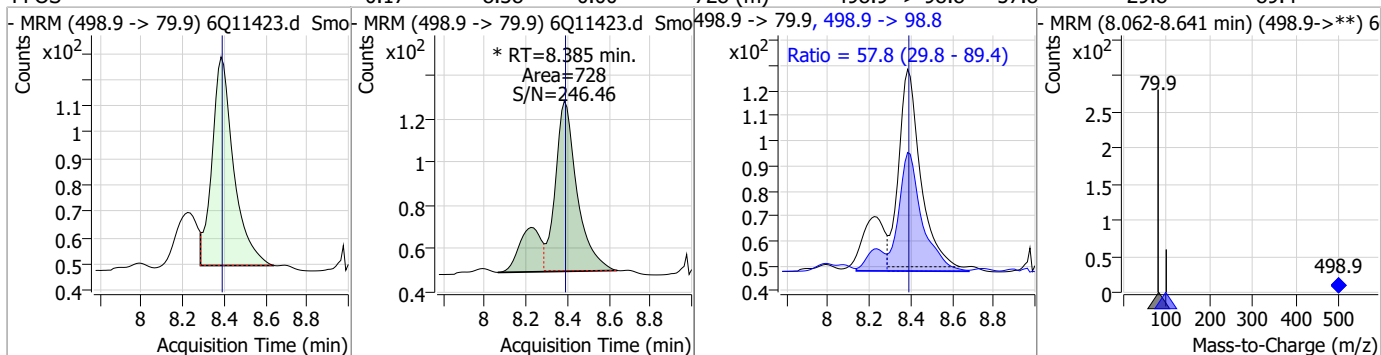


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.76	8.38	0.00	8893				

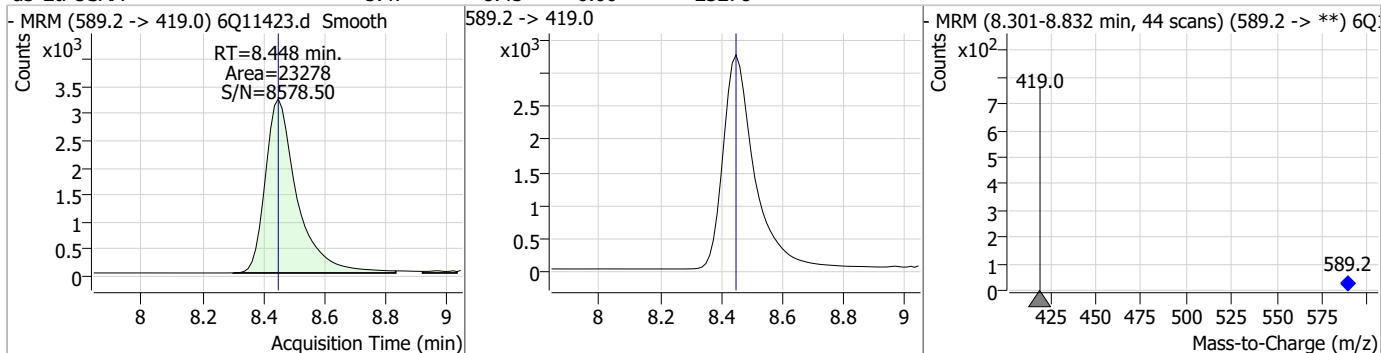


Perfluorinated Compounds by LC/MS/MS

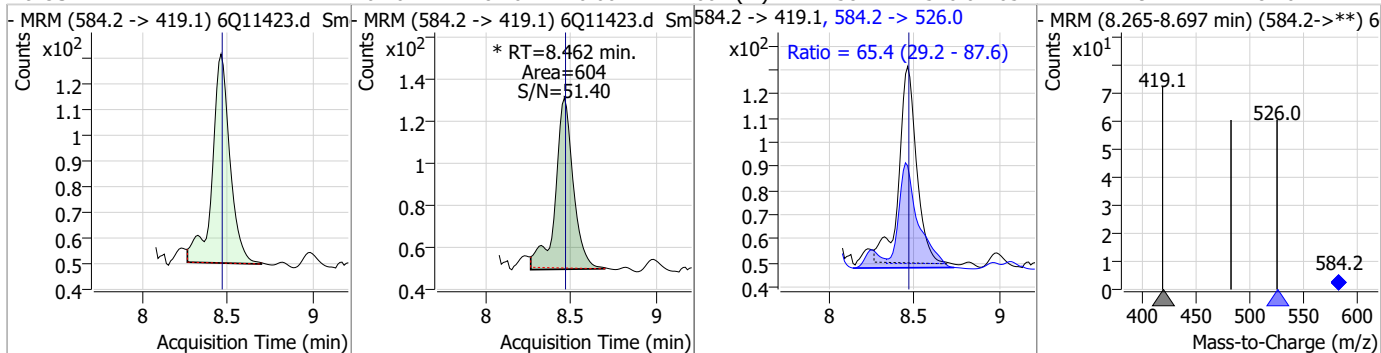
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.17	8.38	0.00	728 (m)	498.9 -> 98.8	57.8	29.8	89.4



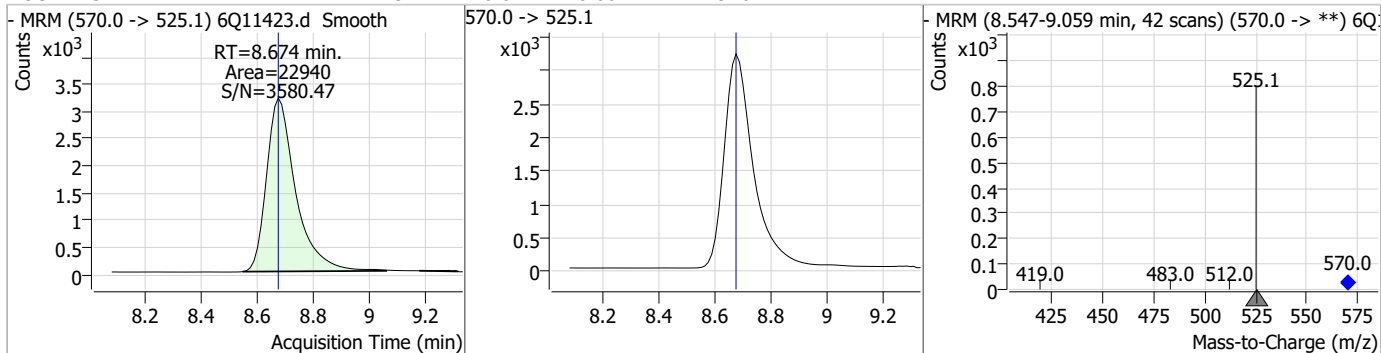
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.47	8.45	0.00	23278				



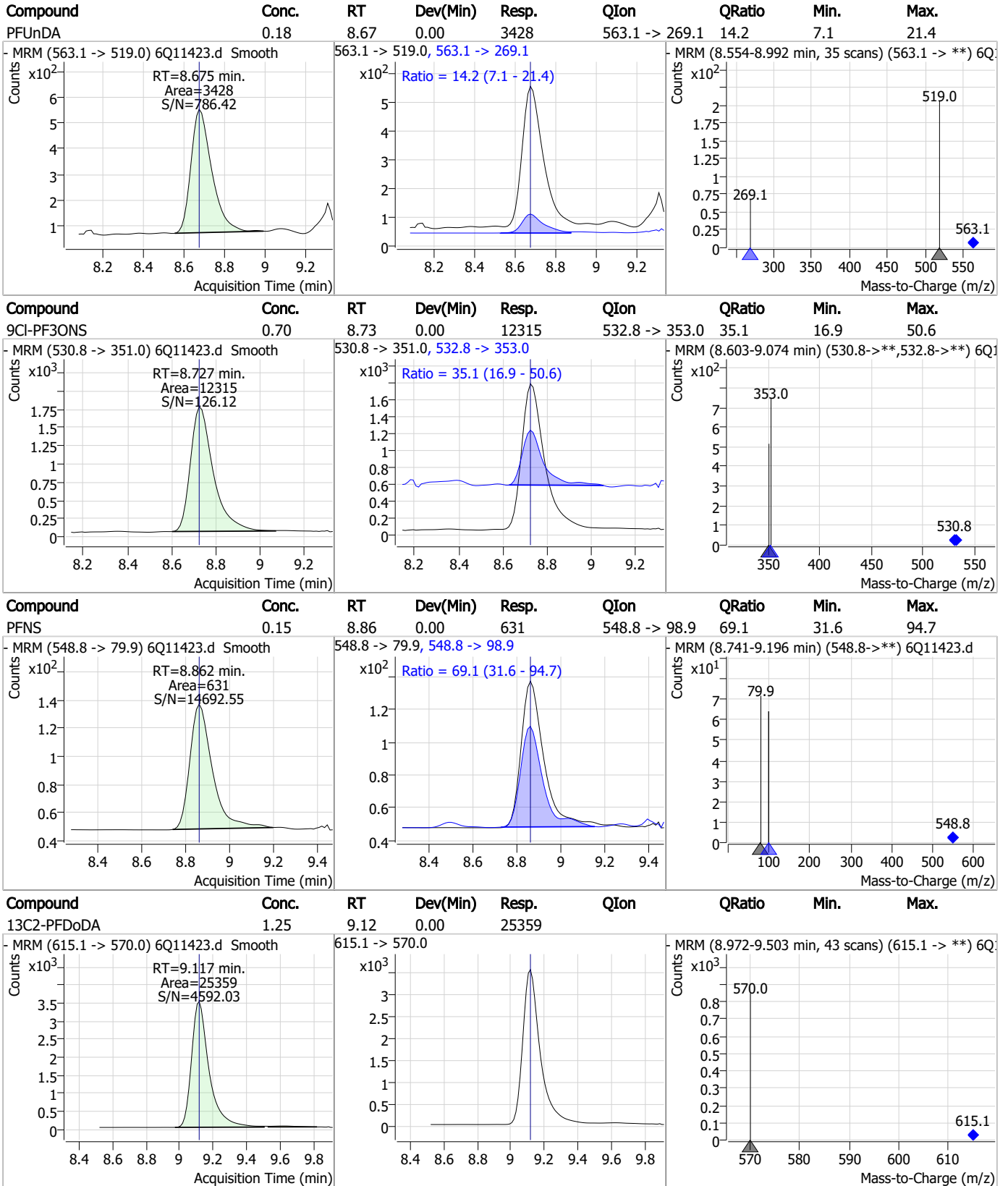
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.16	8.46	0.00	604 (m)	584.2 -> 526.0	65.4	29.2	87.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.29	8.67	0.00	22940				



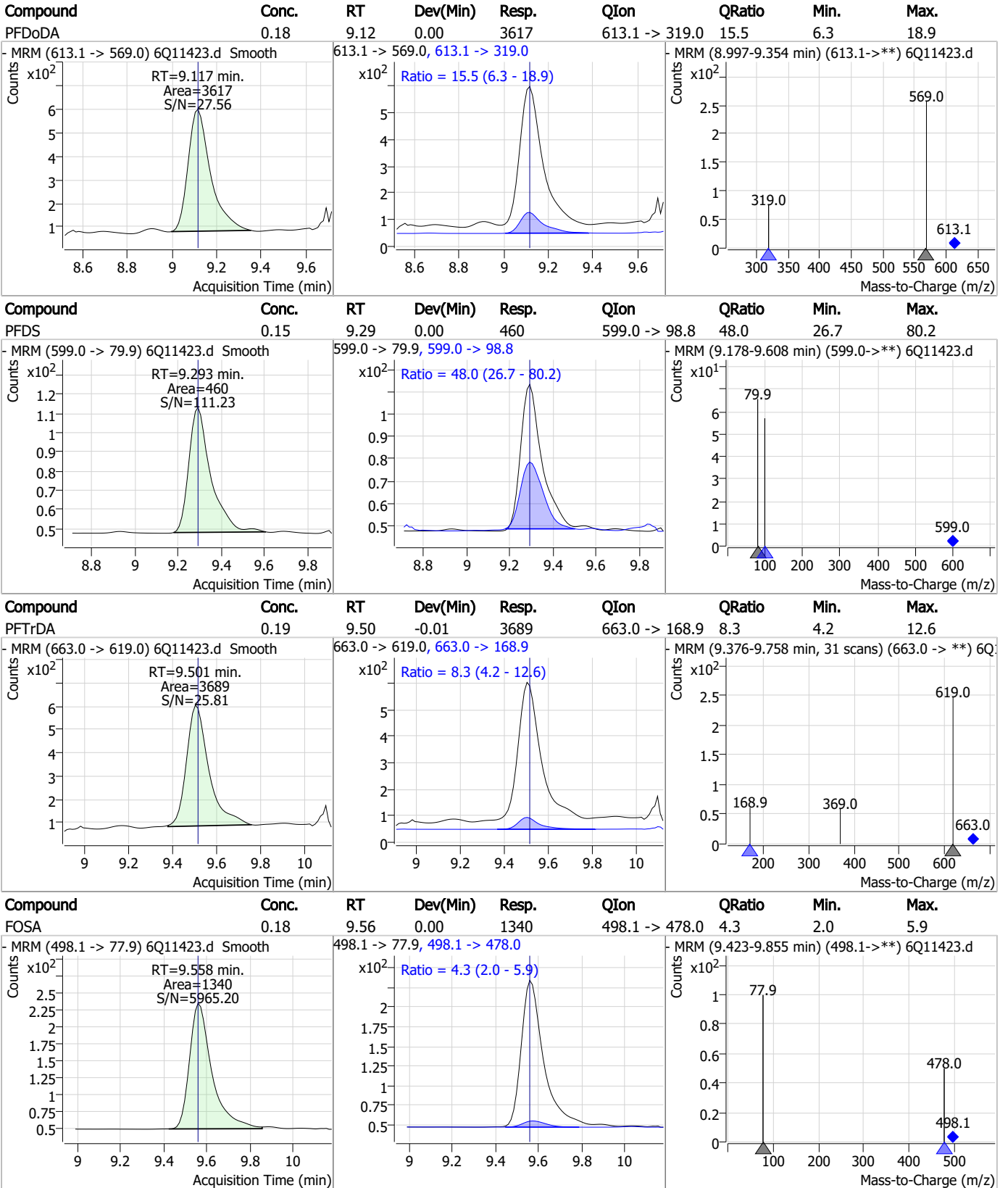
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



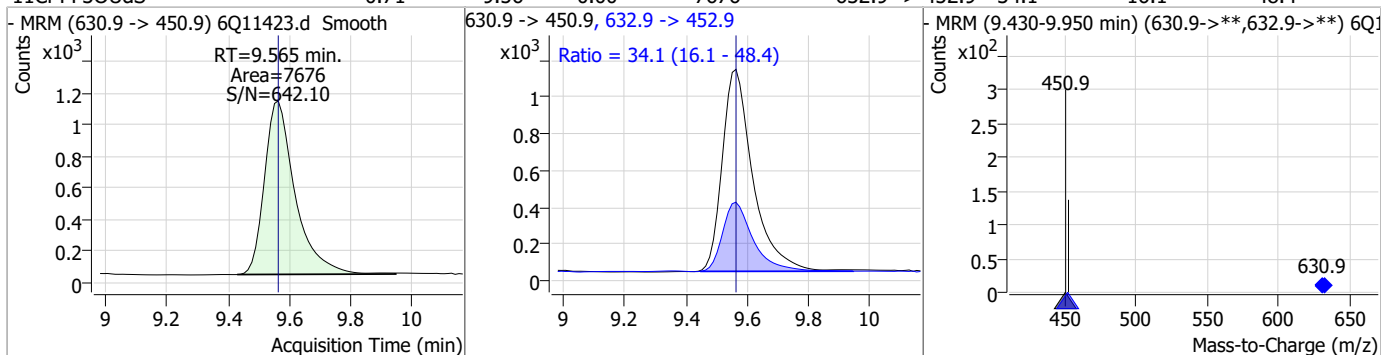
7.6.12

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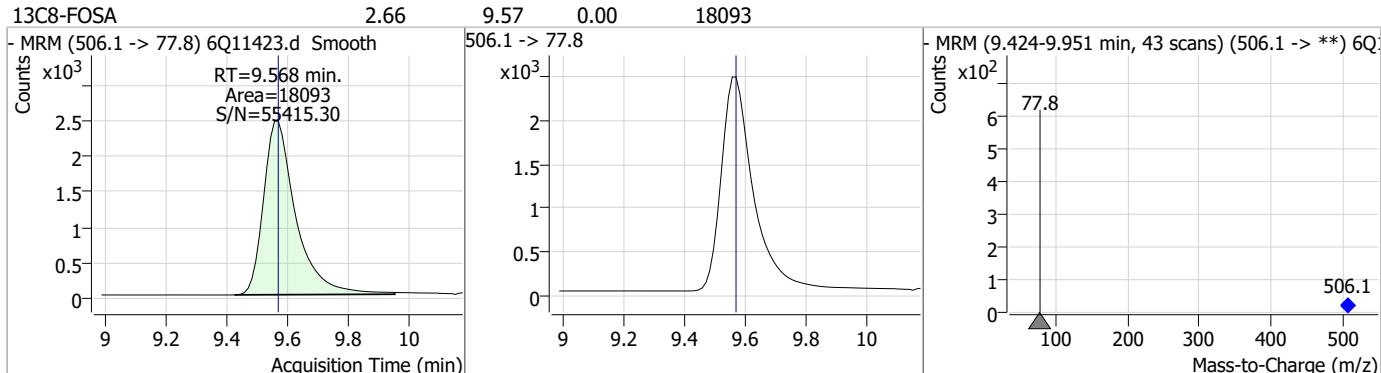


Perfluorinated Compounds by LC/MS/MS

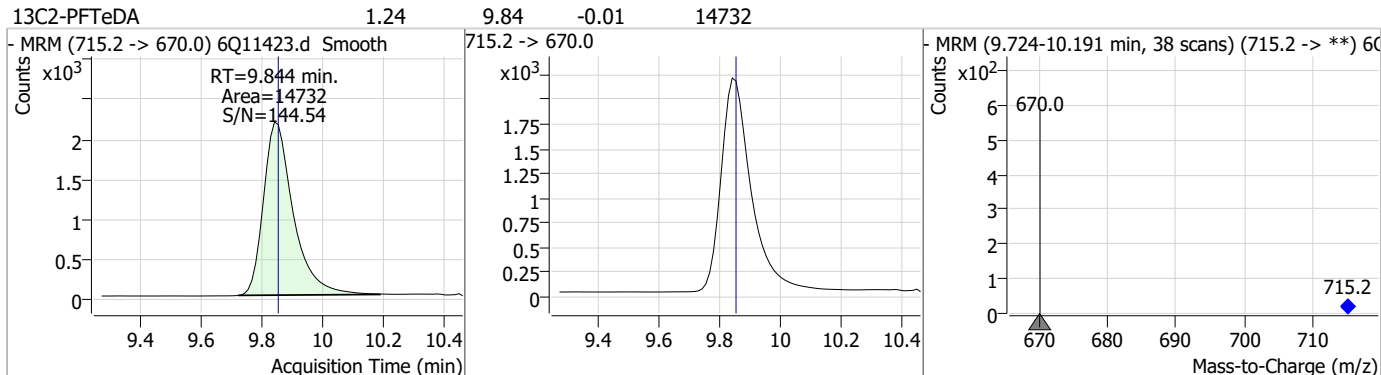
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.71	9.56	0.00	7676	632.9 -> 452.9	34.1	16.1	48.4



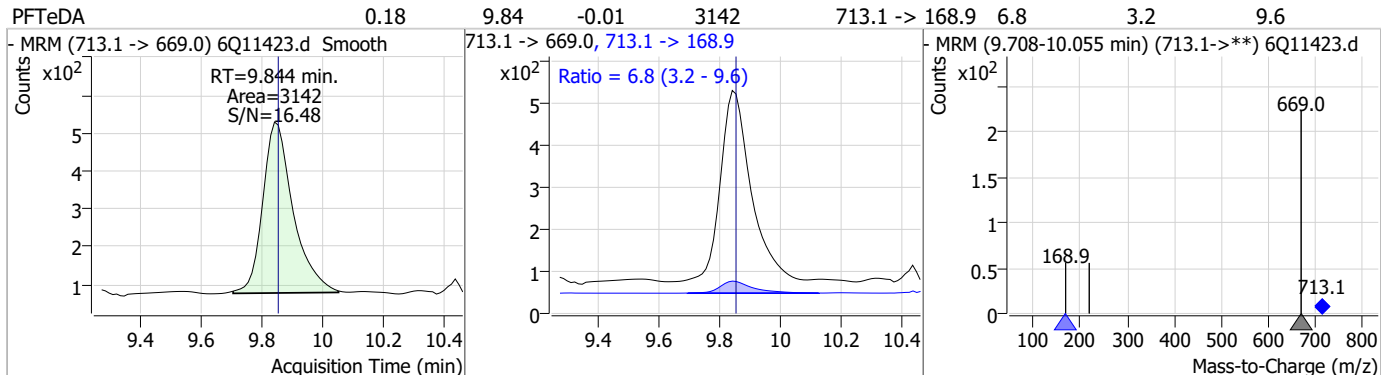
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.66	9.57	0.00	18093				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.24	9.84	-0.01	14732				

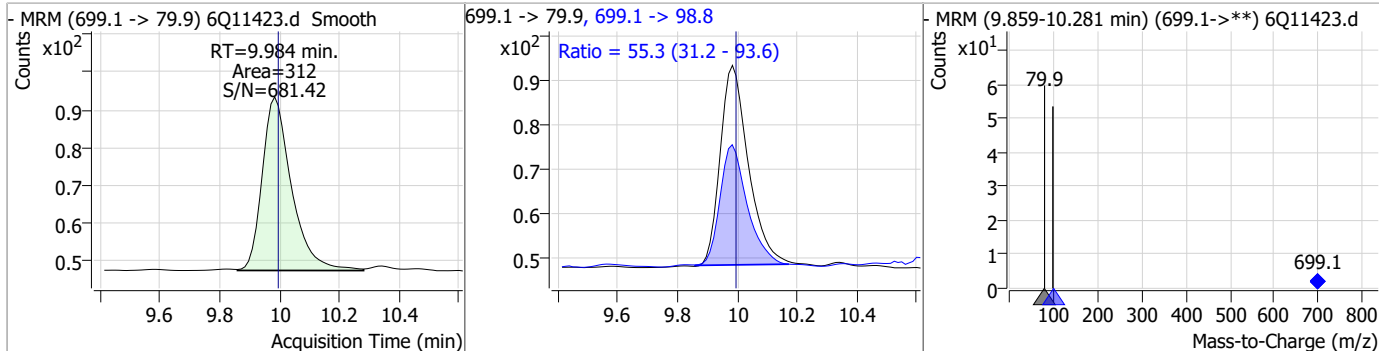


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.18	9.84	-0.01	3142	713.1 -> 168.9	6.8	3.2	9.6

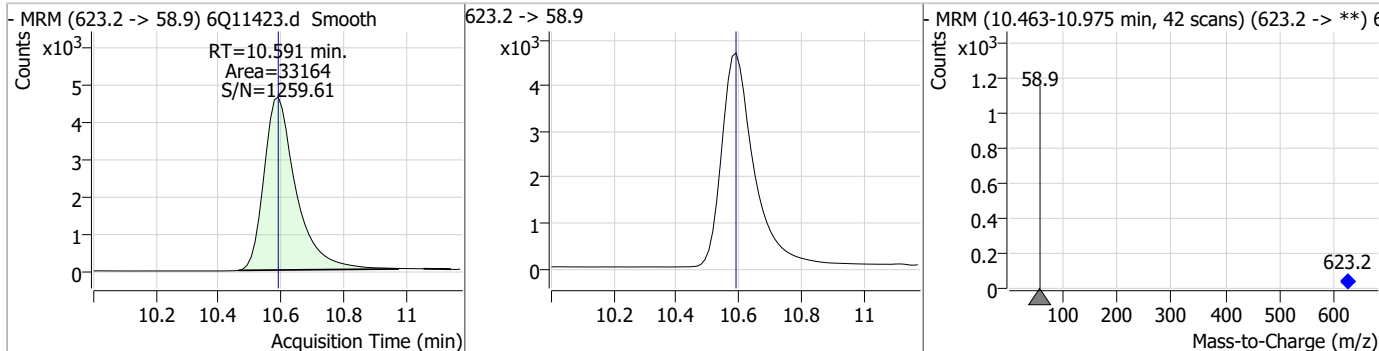


Perfluorinated Compounds by LC/MS/MS

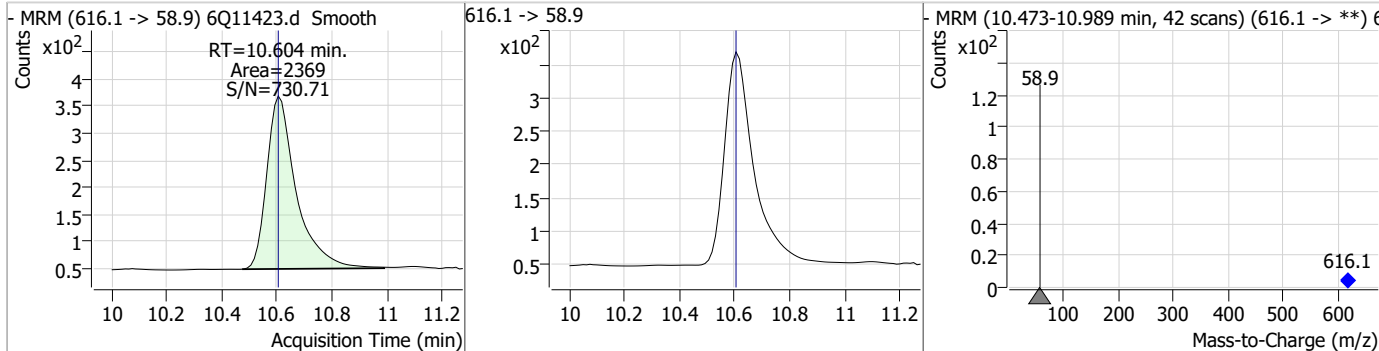
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFD _o DS	0.16	9.98	-0.01	312	699.1 -> 98.8	55.3	31.2	93.6



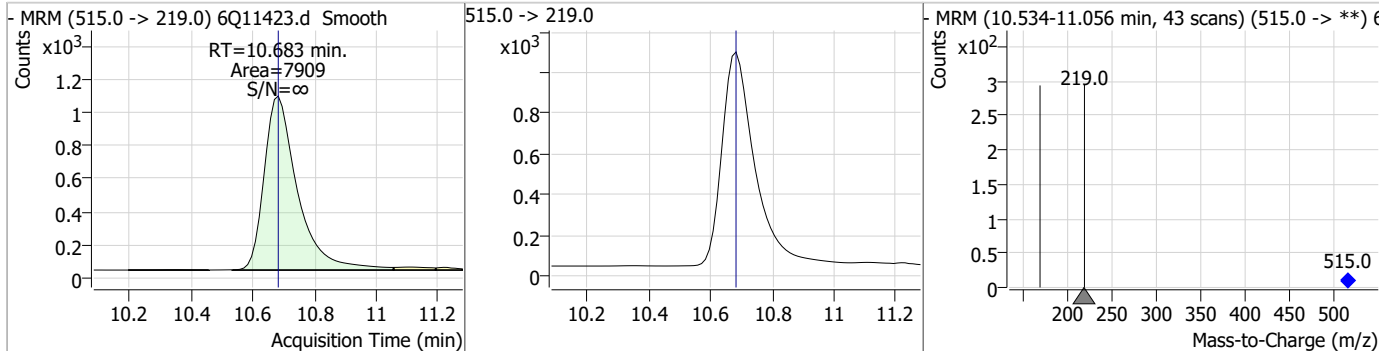
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.88	10.59	0.00	33164				



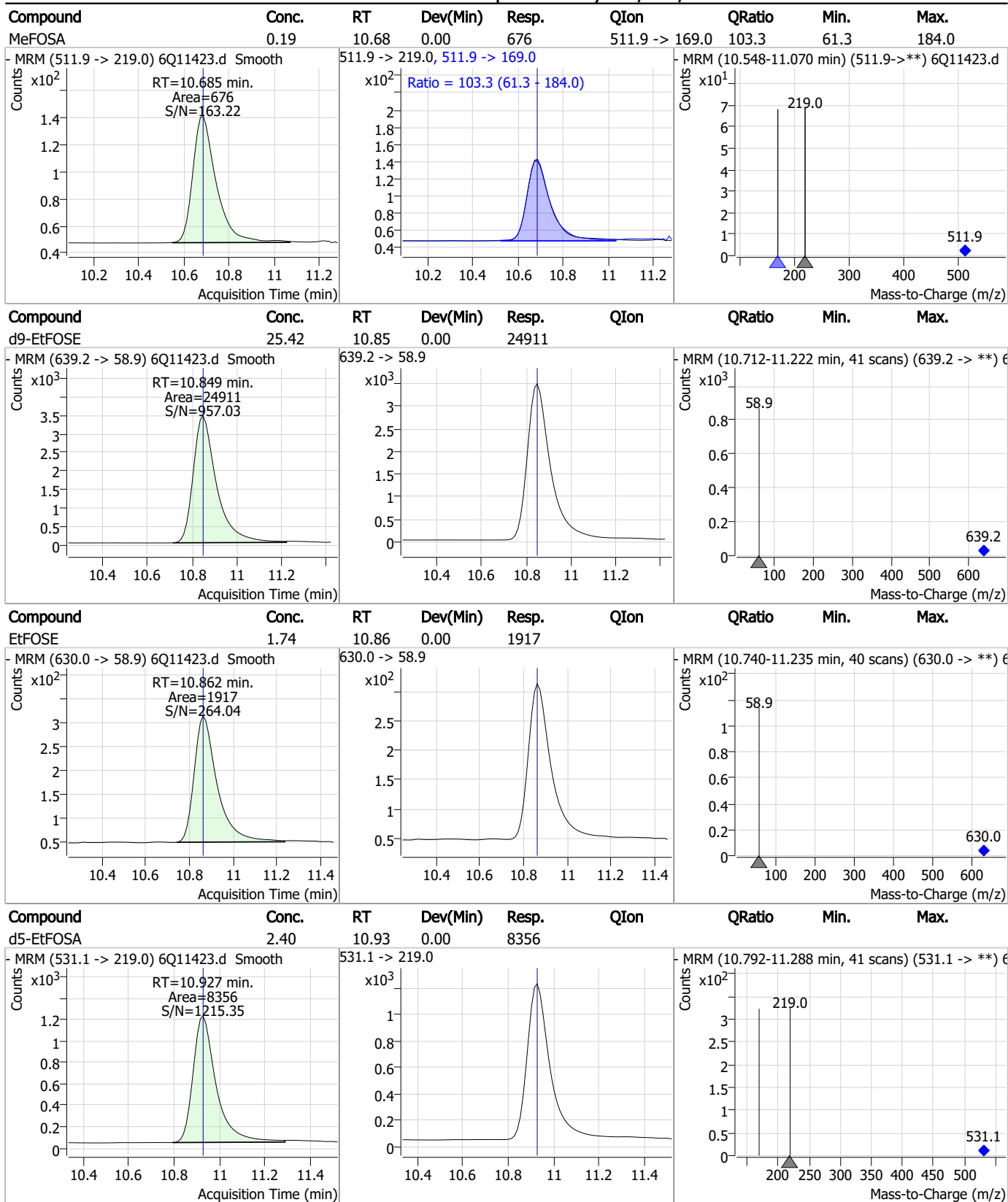
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	1.73	10.60	0.00	2369				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.54	10.68	0.00	7909				



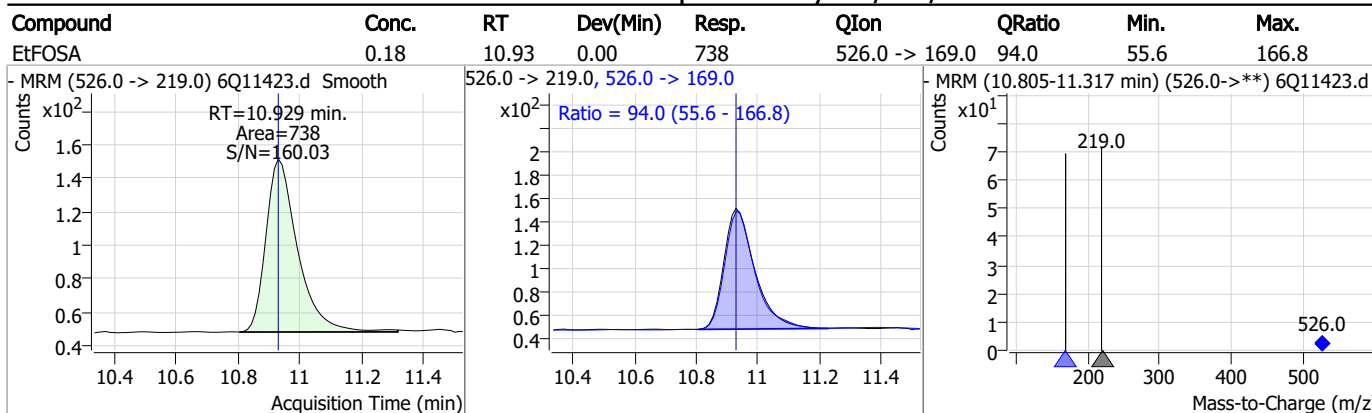
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q179-CC174 Method: EPA DRAFT 1633
Lab FileID: 6Q11423.D Analyst approved: 01/17/23 14:23 Martha Valls
Injection Time: 01/16/23 22:54 Supervisor approved: 01/17/23 18:24 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.30	Split peak
MeFOSAA	2355-31-9		8.24	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.38	Split peak
EtFOSAA	2991-50-6		8.46	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q11434.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/17/2023 1:27:58 AM
 Sample Name : cc174-4
 Vial : P1-C3
 DA Method File : 1633_011123_S6Q174.quantmethod.xml
 Batch Name : s6q179.batch.bin
 Sample Information : OP94795,S6Q179,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.988	216.8 -> 171.9	84553	10.00 µg/L	-0.012
M5-PFPeA	4.371	268.3 -> 223.0	40572	5.00 µg/L	-0.012
M5-PFHxA	5.564	318.0 -> 273.0	34866	2.50 µg/L	0.000
M4-PFHpA	6.516	367.1 -> 322.0	36768	2.50 µg/L	0.000
M8-PFOA	7.160	421.1 -> 376.0	65670	2.50 µg/L	0.000
M9-PFNA	7.702	472.1 -> 427.0	30918	1.25 µg/L	-0.013
M6-PFDA	8.195	519.1 -> 474.1	18912	1.25 µg/L	-0.012
M7-PFUnDA	8.674	570.0 -> 525.1	23583	1.25 µg/L	0.000
M2-PFDoDA	9.104	615.1 -> 570.0	26957	1.25 µg/L	-0.012
M2-PFTeDA	9.844	715.2 -> 670.0	15890	1.25 µg/L	-0.012
M8-FOSA	9.556	506.1 -> 77.8	17731	2.50 µg/L	-0.012
M3-PFBS	5.519	302.1 -> 79.9	14028	2.50 µg/L	-0.012
M3-PFHxS	7.300	402.1 -> 79.9	9084	2.50 µg/L	0.000
M8-PFOS	8.383	507.1 -> 79.9	9264	2.50 µg/L	0.000
M2-4:2FTS	5.241	329.1 -> 80.9	1792	5.00 µg/L	0.012
M2-6:2FTS	6.921	429.1 -> 80.9	2419	5.00 µg/L	-0.012
M2-8:2FTS	7.982	529.1 -> 80.9	2755	5.00 µg/L	0.000
M3-MeFOSAA	8.240	573.2 -> 419.0	25200	5.00 µg/L	0.000
M3-HFPO-DA	5.941	286.9 -> 168.9	15800	10.00 µg/L	0.000
M5-EtFOSAA	8.448	589.2 -> 419.0	23788	5.00 µg/L	0.000
M7-MeFOSE	10.579	623.2 -> 58.9	34042	25.00 µg/L	-0.012
M9-EtFOSE	10.849	639.2 -> 58.9	25432	25.00 µg/L	0.000
M5-EtFOSA	10.927	531.1 -> 219.0	8456	2.50 µg/L	0.000
M3-MeFOSA	10.670	515.0 -> 219.0	7395	2.50 µg/L	-0.012
13C4-PFOS	8.384	502.8 -> 79.9	10310	2.50 µg/L	0.000
13C3-PFBA	2.991	216.0 -> 172.0	36635	5.00 µg/L	-0.012
18O2-PFHxS	7.299	403.0 -> 83.9	6701	2.50 µg/L	0.000
13C4-PFOA	7.160	417.1 -> 372.0	76716	2.50 µg/L	-0.012
13C2-PFDA	8.208	515.1 -> 470.1	26075	1.25 µg/L	0.000
13C5-PFNA	7.703	468.0 -> 423.0	31106	1.25 µg/L	0.000
13C2-PFHxA	5.565	315.1 -> 270.0	35647	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.241	329.1 -> 80.9	1792	5.13 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.6%		
13C2-6:2FTS	6.921	429.1 -> 80.9	2419	5.05 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.1%		
13C2-8:2FTS	7.982	529.1 -> 80.9	2755	5.27 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.5%		
13C2-PFDoDA	9.104	615.1 -> 570.0	26957	1.30 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.3%		
13C2-PFTeDA	9.844	715.2 -> 670.0	15890	1.31 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.7%		
13C3-PFBS	5.519	302.1 -> 79.9	14028	2.50 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.8%		
13C3-PFHxS	7.300	402.1 -> 79.9	9084	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 = 99.9%		
13C4-PFBA	2.988	216.8 -> 171.9	84553	10.11 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 101.1%		
13C4-PFHpA	6.516	367.1 -> 322.0	36768	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.8%		
13C5-PFHxA	5.564	318.0 -> 273.0	34866	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.4%		
13C5-PFPeA	4.371	268.3 -> 223.0	40572	5.10 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.0%		
13C6-PFDA	8.195	519.1 -> 474.1	18912	1.27 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.9%		
13C7-PFUnDA	8.674	570.0 -> 525.1	23583	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.1%		
13C8-FOSA	9.556	506.1 -> 77.8	17731	2.55 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.8%		
13C8-PFOA	7.160	421.1 -> 376.0	65670	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.2%		
13C8-PFOS	8.383	507.1 -> 79.9	9264	2.81 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 112.5%		
13C9-PFNA	7.702	472.1 -> 427.0	30918	1.40 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 111.9%		
d3-MeFOSAA	8.240	573.2 -> 419.0	25200	5.08 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.5%		
13C3-HFPO-DA	5.941	286.9 -> 168.9	15800	10.75 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 107.5%		
d3-MeFOSA	10.670	515.0 -> 219.0	7395	2.32 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 92.8%		
d5-EtFOSAA	8.448	589.2 -> 419.0	23788	5.46 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.2%		
d7-MeFOSE	10.579	623.2 -> 58.9	34042	25.94 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 103.8%		
d9-EtFOSE	10.849	639.2 -> 58.9	25432	25.34 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 101.4%		
d5-EtFOSA	10.927	531.1 -> 219.0	8456	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 94.7%		
Target Compounds					QValue
4:2FTS	5.229	327.1 -> 307.0	36232	8.50 µg/L	99
		327.1 -> 80.9	8579		
6:2FTS	6.922	427.1 -> 407.0	34927	9.28 µg/L	94
		427.1 -> 80.9	6327		
8:2FTS	7.983	527.1 -> 507.0	21466	9.34 µg/L	99
		527.1 -> 80.8	5201		
EtFOSAA	8.449	584.2 -> 419.1	7960	2.10 µg/L	m 97
		584.2 -> 526.0	4854		
FOSA	9.558	498.1 -> 77.9	17992	2.51 µg/L	98
		498.1 -> 478.0	612		
MeFOSAA	8.241	570.1 -> 419.0	11887	2.29 µg/L	m 100
		570.1 -> 483.0	2386		
PFBA	2.994	212.8 -> 168.9	19806	9.13 µg/L	100
PFBS	5.520	298.7 -> 79.9	11096	1.95 µg/L	95
		298.7 -> 98.8	4694		
PFDA	8.196	512.9 -> 469.0	56102	2.47 µg/L	100
		512.9 -> 219.0	7518		
PFDoDA	9.105	613.1 -> 569.0	45256	2.13 µg/L	99
		613.1 -> 319.0	5492		
PFDS	9.280	599.0 -> 79.9	6780	2.12 µg/L	93

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.516	599.0 -> 98.8	3261	2.29	µg/L	98
		363.1 -> 319.0	50777			
PFHpS	7.867	363.1 -> 169.0	7035	2.11	µg/L	100
		449.0 -> 79.9	8924			
PFHxA	5.567	449.0 -> 98.9	5106	2.36	µg/L	99
		313.0 -> 269.0	33206			
PFHxS	7.301	313.0 -> 118.9	1312	1.99	µg/L	95
		398.7 -> 79.9	8602			
PFNA	7.703	398.7 -> 98.9	4942	2.22	µg/L	98
		463.0 -> 419.0	47503			
PFNS	8.862	463.0 -> 219.0	8995	2.08	µg/L	86
		548.8 -> 79.9	9317			
PFOA	7.161	548.8 -> 98.9	4879	2.13	µg/L	99
		413.0 -> 369.0	62546			
PFOS	8.385	413.0 -> 169.0	9113	2.00	µg/L	94
		498.9 -> 79.9	8991			
PFPeA	4.374	498.9 -> 98.8	4922	4.53	µg/L	100
		263.0 -> 219.0	40363			
PFPeS	6.595	349.1 -> 79.9	10570	2.06	µg/L	95
		349.1 -> 98.9	5273			
PFTeDA	9.844	713.1 -> 669.0	42938	2.27	µg/L	99
		713.1 -> 168.9	2589			
PFTrDA	9.501	663.0 -> 619.0	47047	2.32	µg/L	97
		663.0 -> 168.9	3517			
PFUnDA	8.675	563.1 -> 519.0	45510	2.31	µg/L	98
		563.1 -> 269.1	6072			
11CI-PF3OUdS	9.552	630.9 -> 450.9	105694	8.82	µg/L	93
		632.9 -> 452.9	30177			
9CI-PF3ONS	8.727	530.8 -> 351.0	156472	8.04	µg/L	99
		532.8 -> 353.0	51629			
ADONA	6.767	376.9 -> 250.9	292720	8.33	µg/L	97
		376.9 -> 84.8	63911			
HFPO-DA	5.942	284.9 -> 168.9	13529	8.47	µg/L	98
		284.9 -> 184.9	1557			
3:3FTCA	3.827	241.0 -> 177.0	5234	11.03	µg/L	97
		241.0 -> 117.0	687			
5:3FTCA	6.194	341.0 -> 237.1	173474	59.21	µg/L	99
		341.0 -> 217.0	145079			
7:3FTCA	7.618	441.0 -> 316.9	125864	63.73	µg/L	93
		441.0 -> 336.9	233818			
EtFOSA	10.929	526.0 -> 219.0	9888	2.42	µg/L	85
		526.0 -> 169.0	9461			
EtFOSE	10.862	630.0 -> 58.9	25221	22.48	µg/L	100
		511.9 -> 219.0	7836			
MeFOSA	10.685	511.9 -> 169.0	7989	2.40	µg/L	82
		616.1 -> 58.9	31512			
MeFOSE	10.604	699.1 -> 79.9	4179	22.41	µg/L	100
		699.1 -> 98.8	2468			
PFDoDS	9.984	295.0 -> 201.0	4312	2.10	µg/L	96
		295.0 -> 84.9	2090			
NFDHA	5.458	279.0 -> 85.1	12751	4.72	µg/L	88
		229.0 -> 84.9	11347			
PFMBA	4.789	314.8 -> 134.9	83840	4.59	µg/L	100
		314.8 -> 82.9	2199			
PFMPA	3.538			4.60	µg/L	100
PFEESA	6.072			4.27	µg/L	100

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



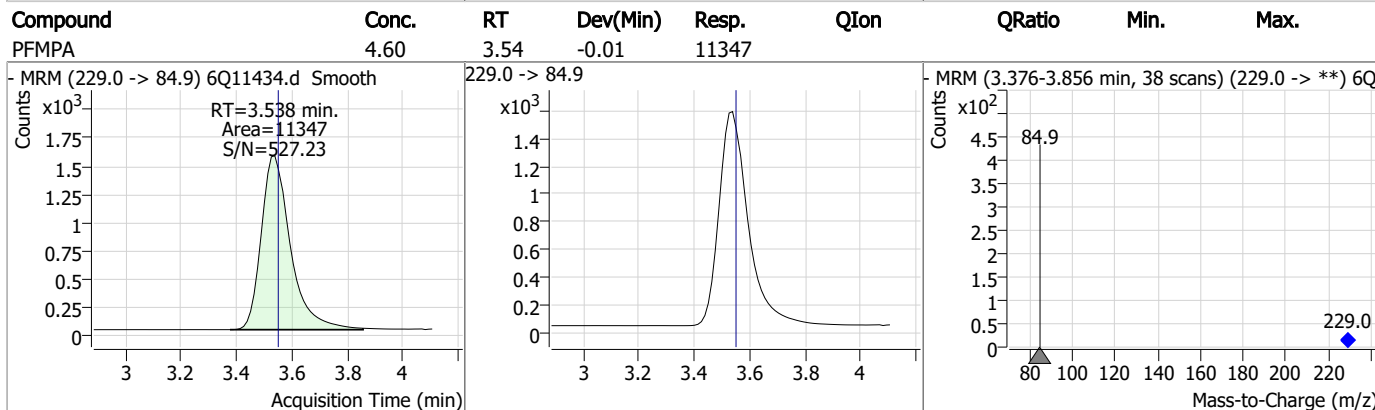
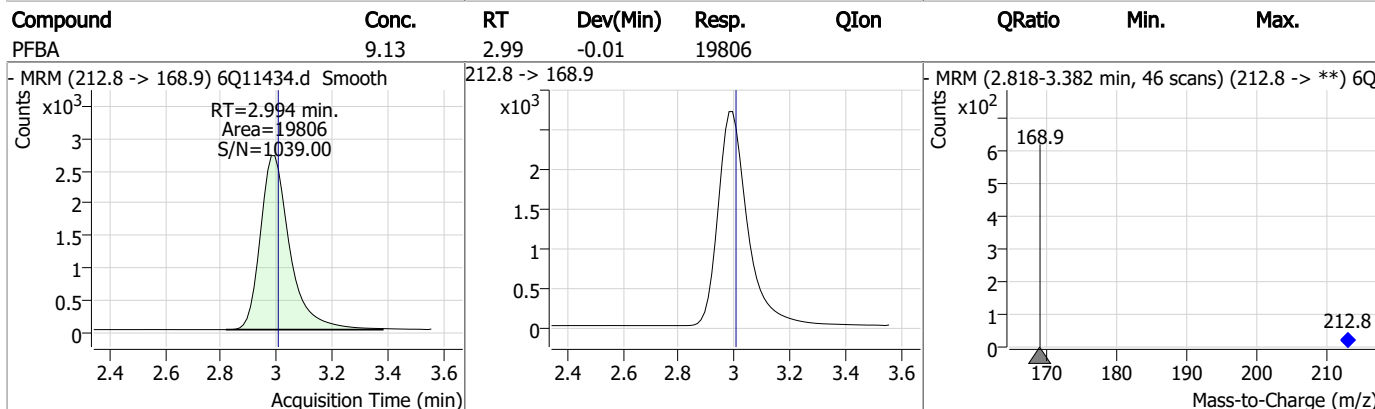
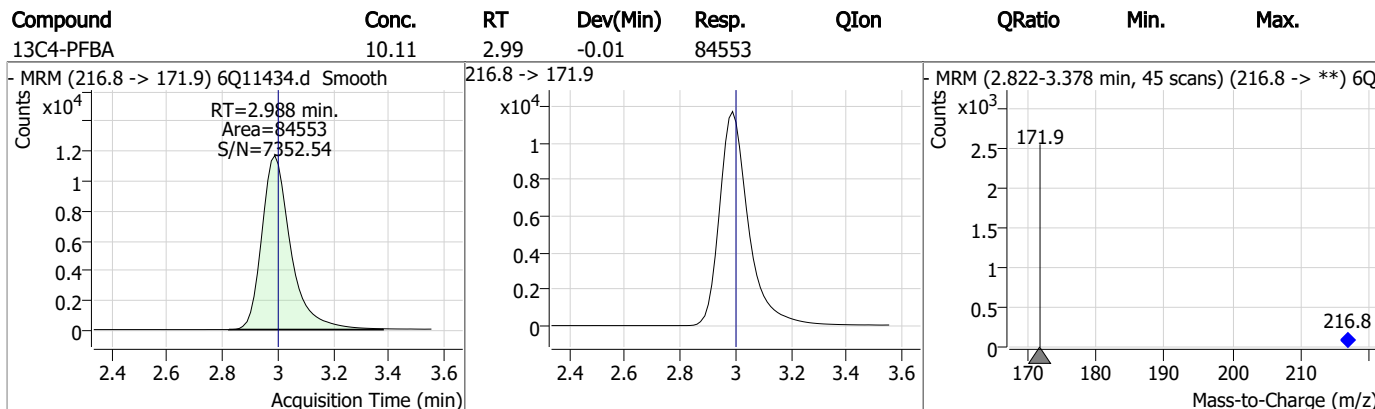
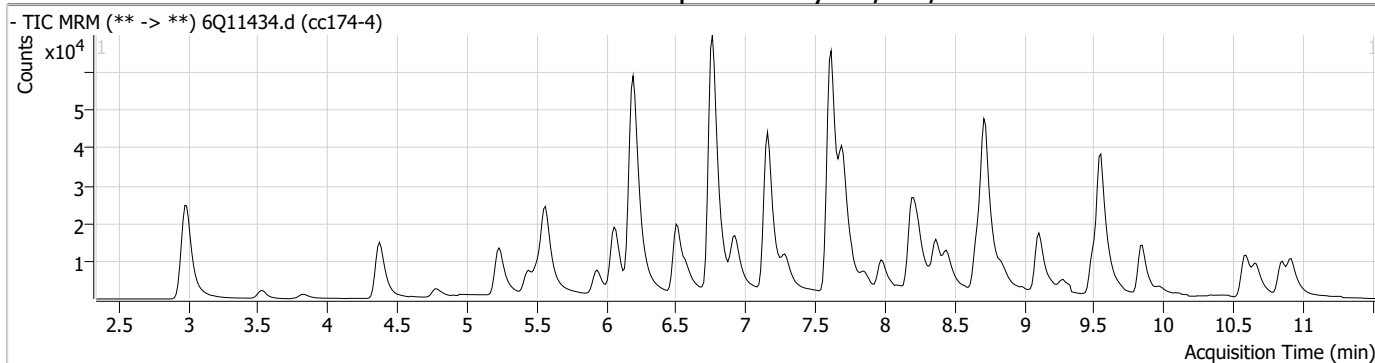
Perfluorinated Compounds by LC/MS/MS

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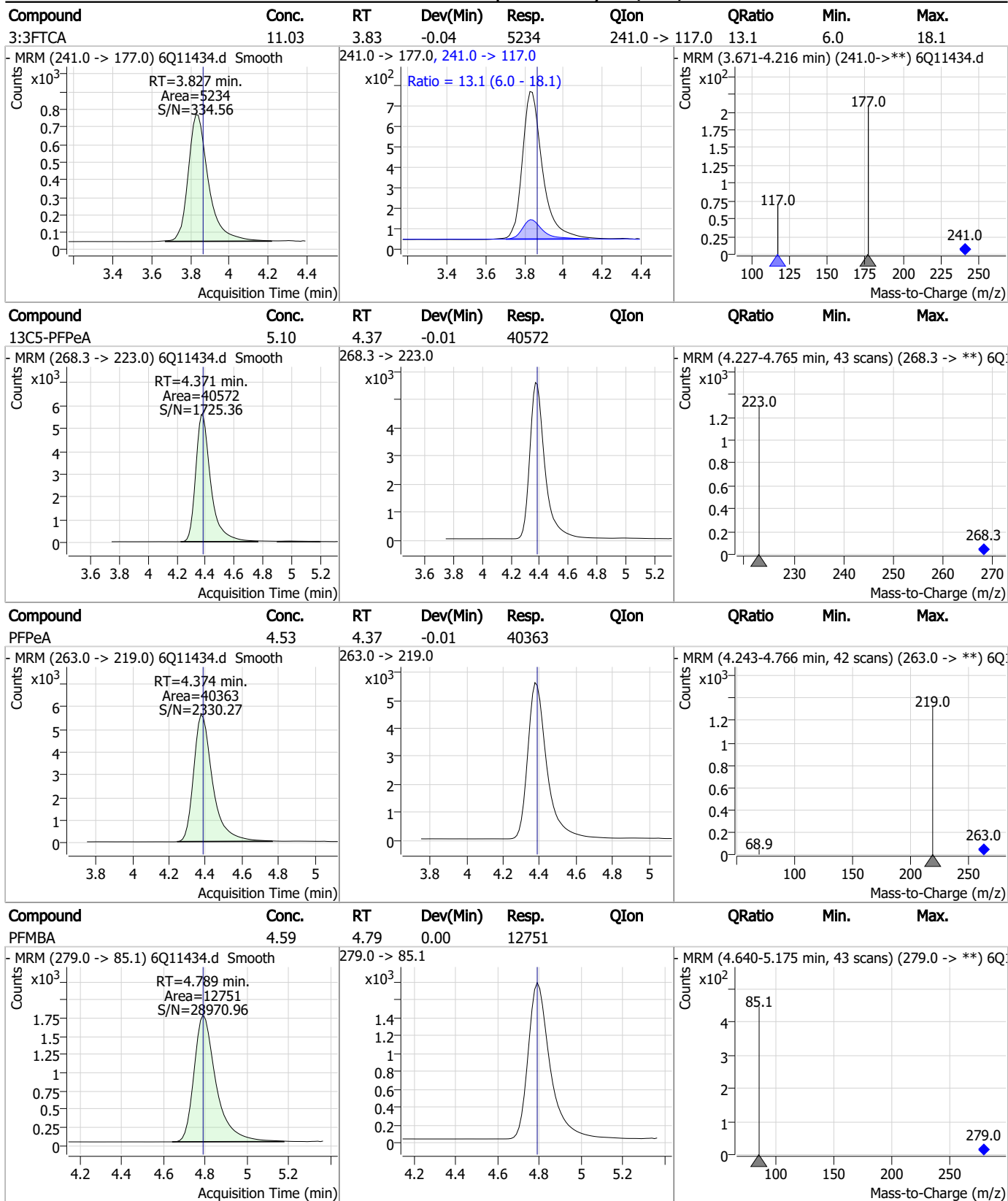
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Perfluorinated Compounds by LC/MS/MS



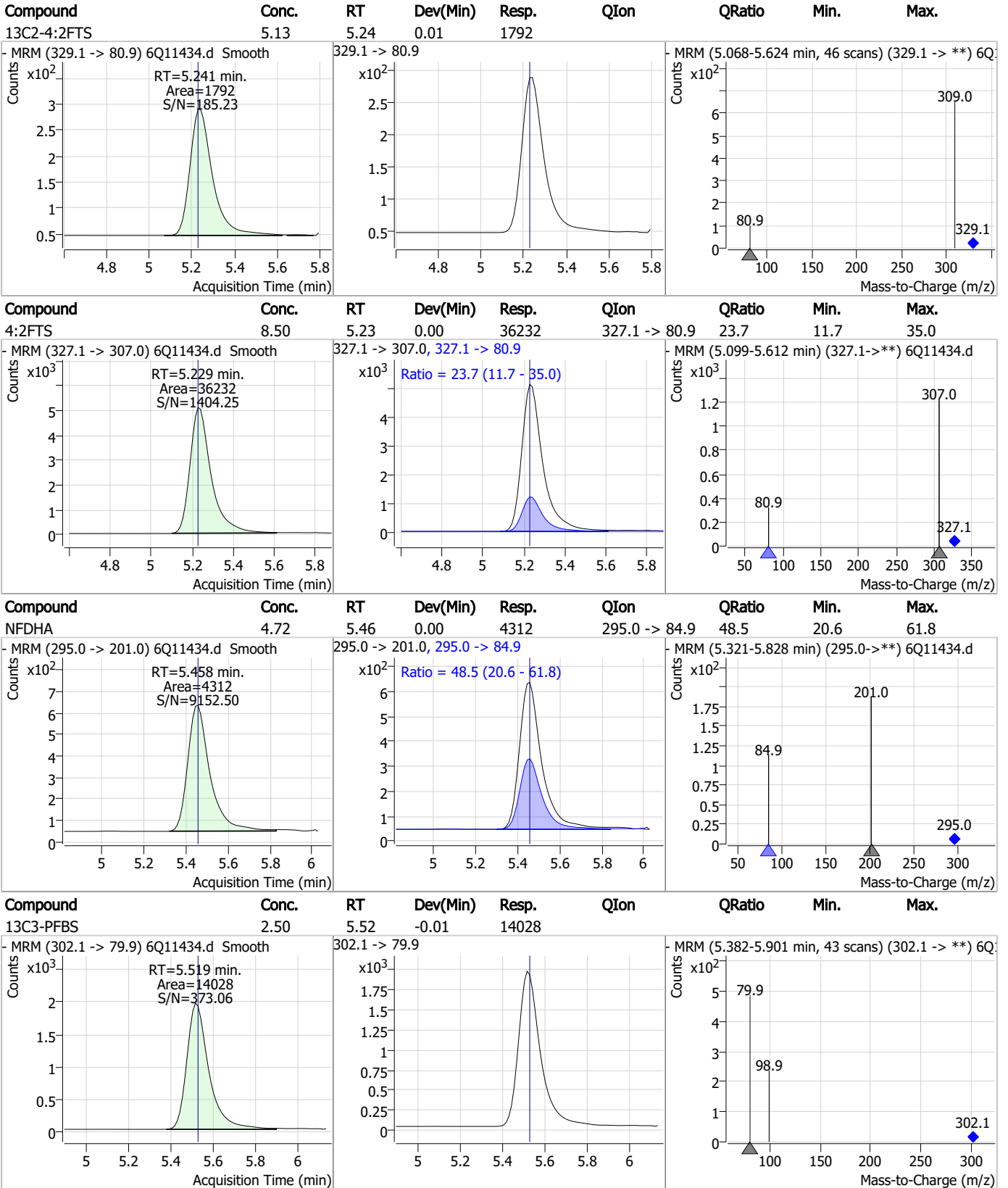
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Perfluorinated Compounds by LC/MS/MS



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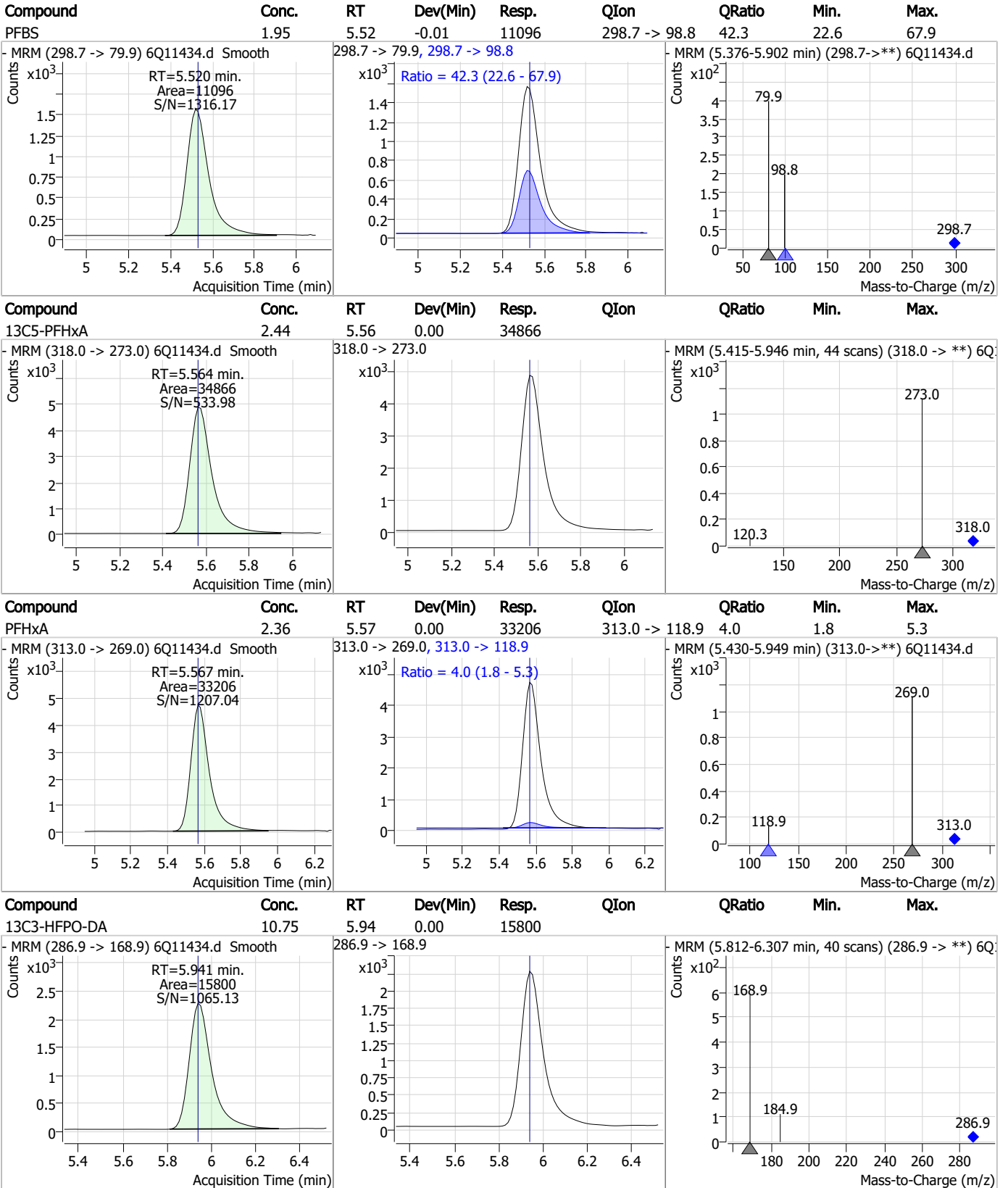
Perfluorinated Compounds by LC/MS/MS



7.6.13

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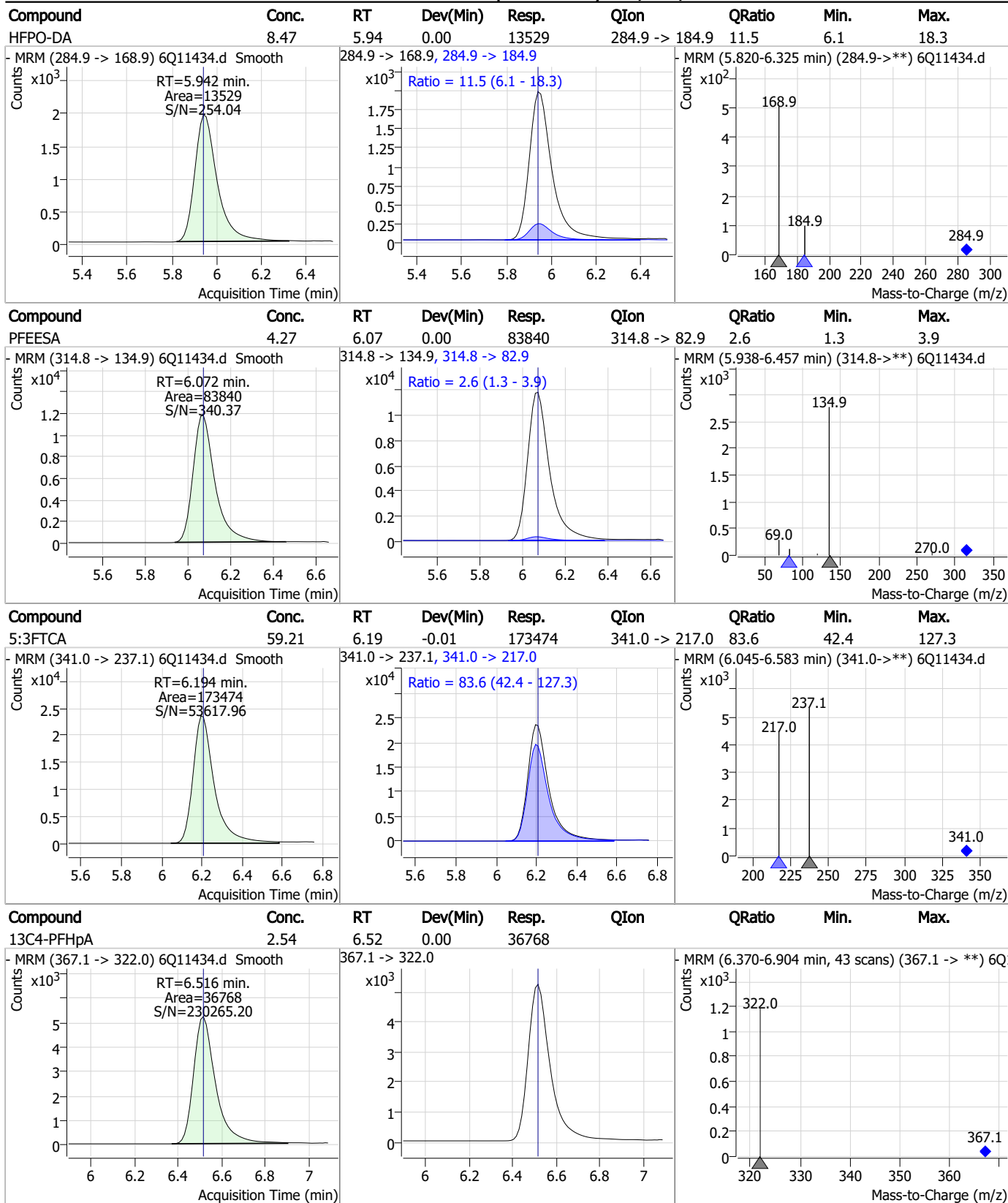
Perfluorinated Compounds by LC/MS/MS



7.6.13
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Perfluorinated Compounds by LC/MS/MS

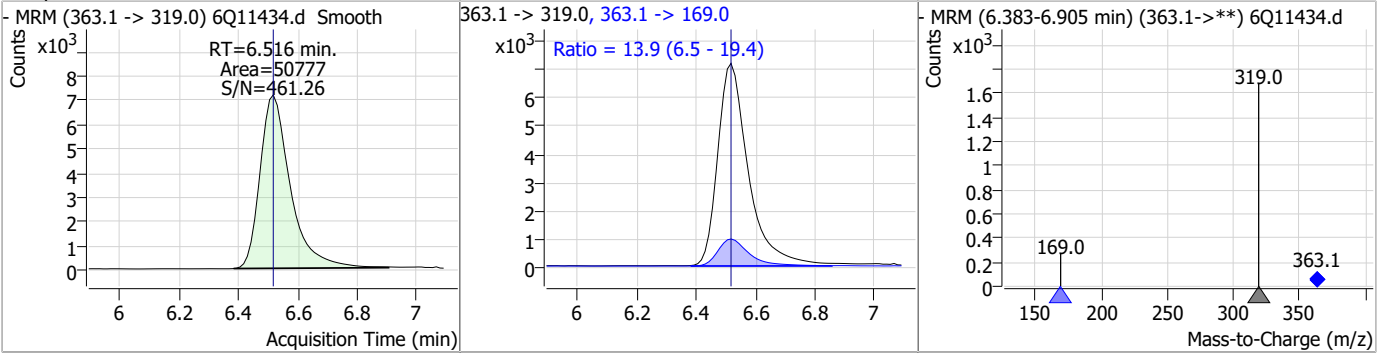


7.6.13

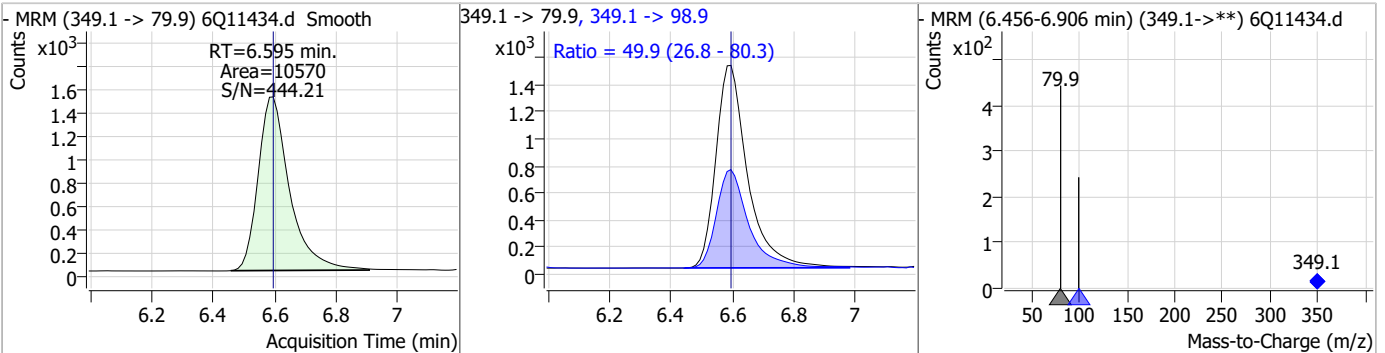
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Perfluorinated Compounds by LC/MS/MS

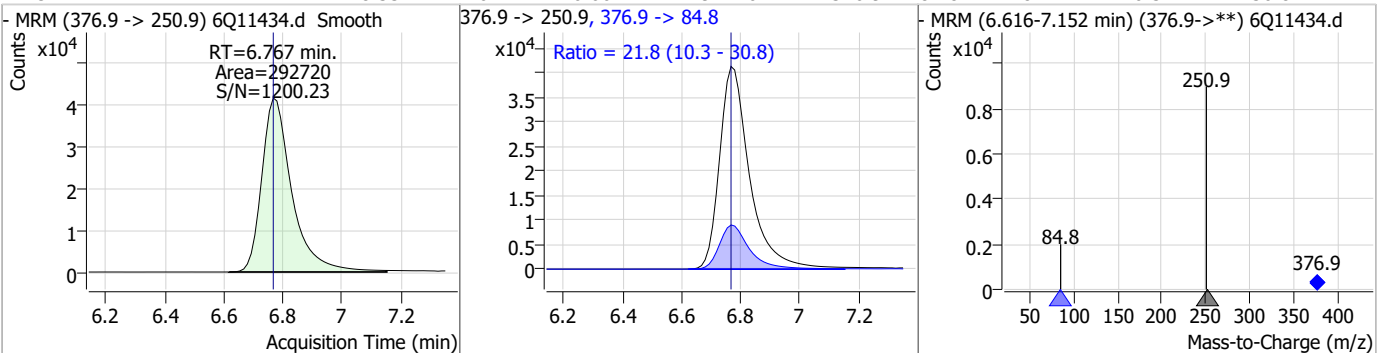
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.29	6.52	0.00	50777	363.1 -> 169.0	13.9	6.5	19.4



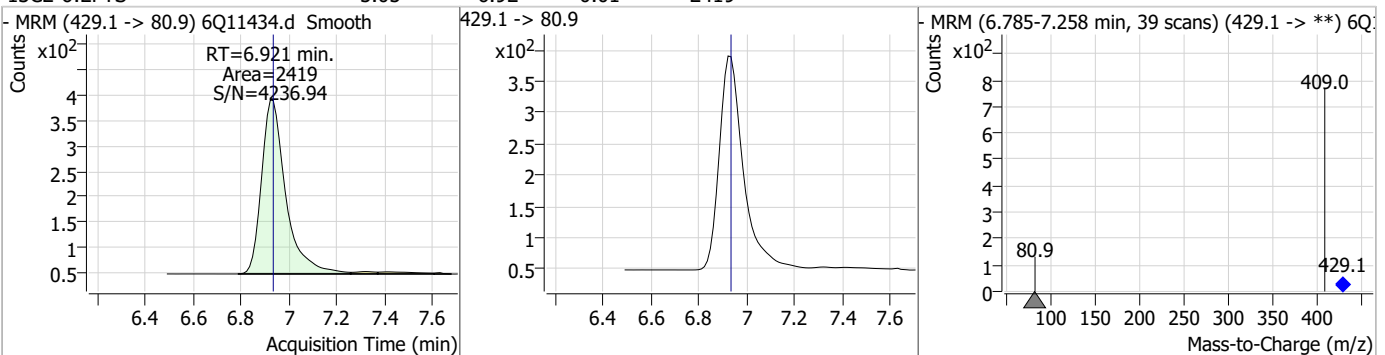
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.06	6.59	0.00	10570	349.1 -> 98.9	49.9	26.8	80.3



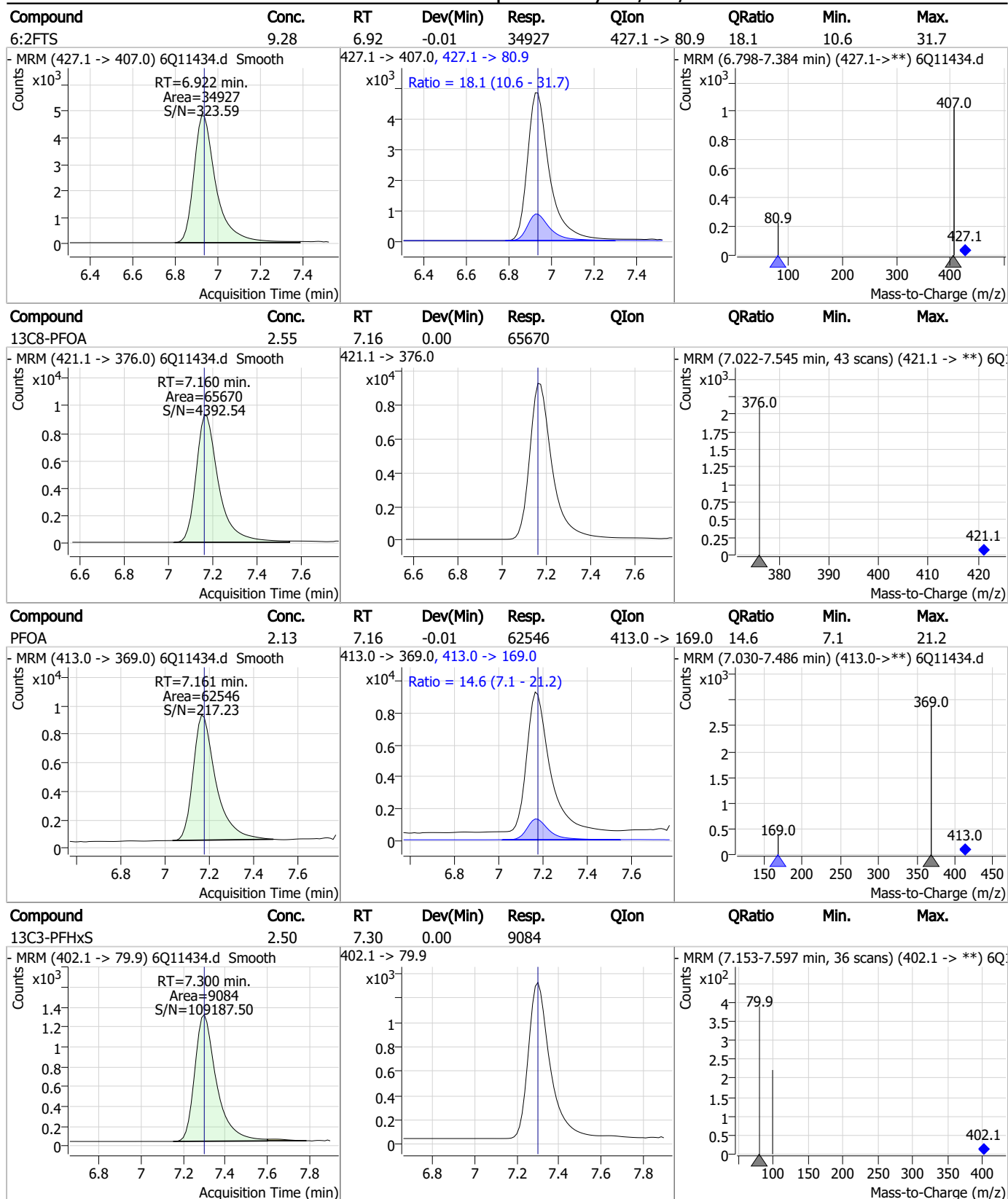
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	8.33	6.77	0.00	292720	376.9 -> 84.8	21.8	10.3	30.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.05	6.92	-0.01	2419	429.1 -> 80.9	-	-	-



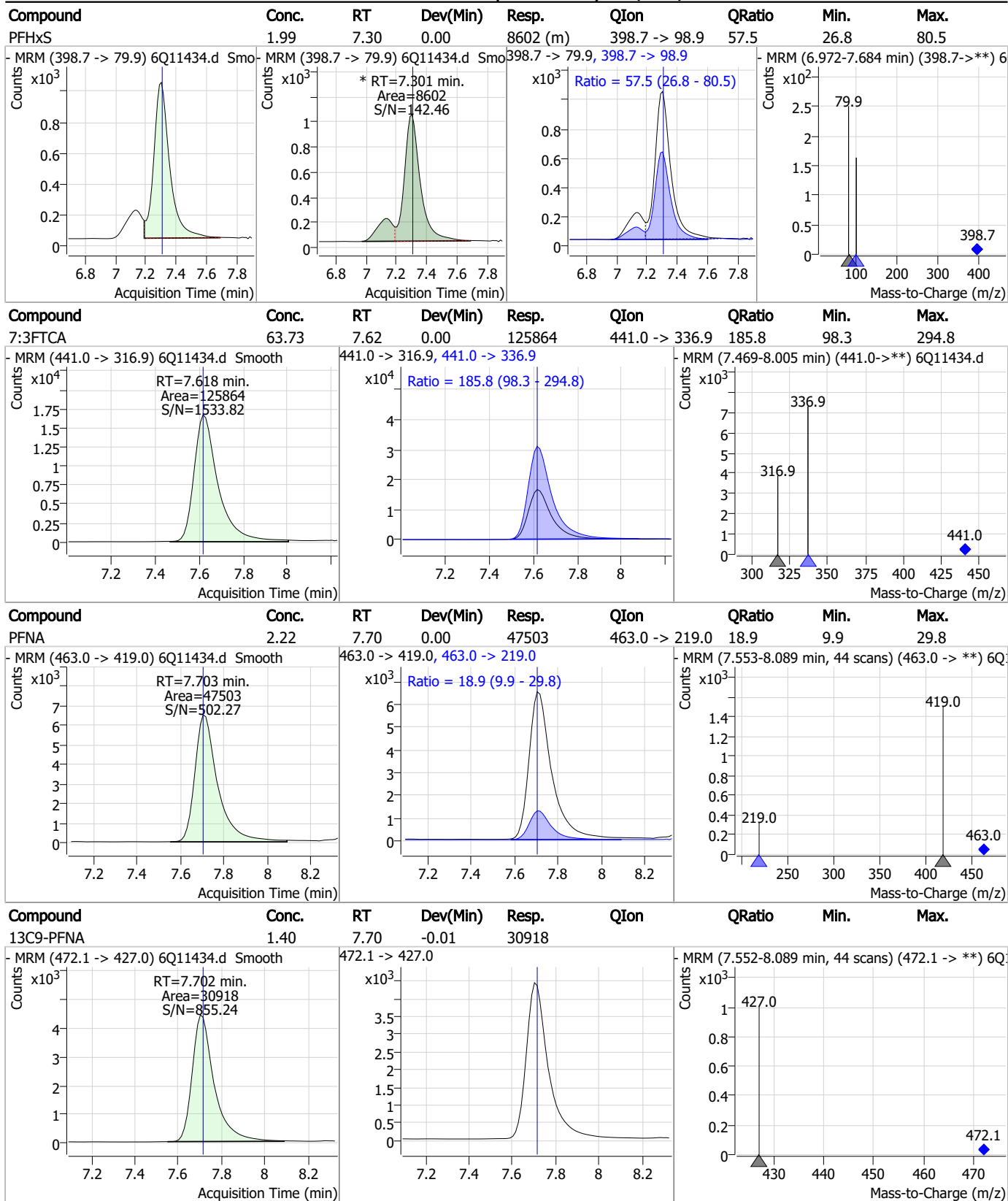
Perfluorinated Compounds by LC/MS/MS



7.6.13

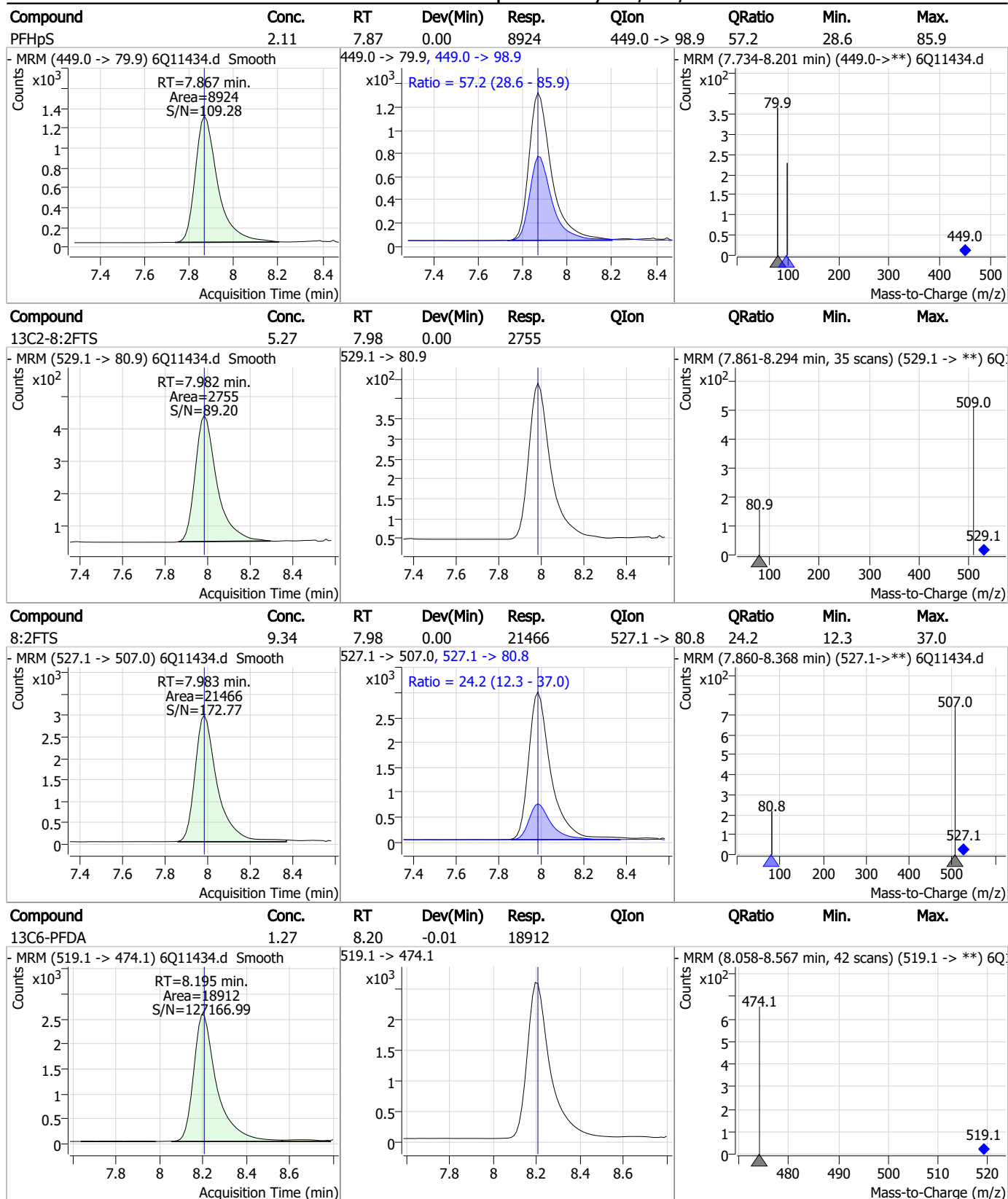
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Perfluorinated Compounds by LC/MS/MS



7.6.13
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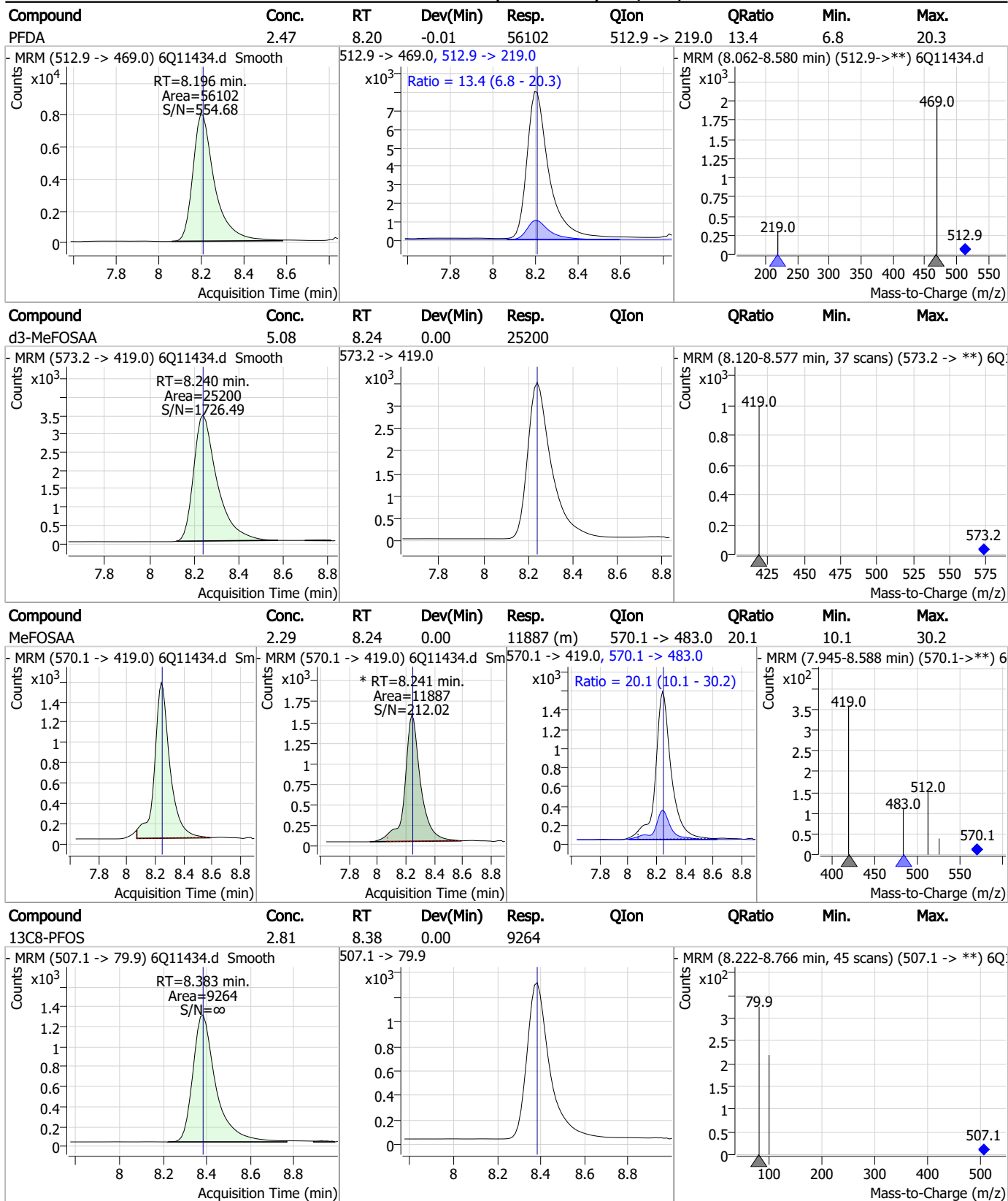
Perfluorinated Compounds by LC/MS/MS



7.6.13

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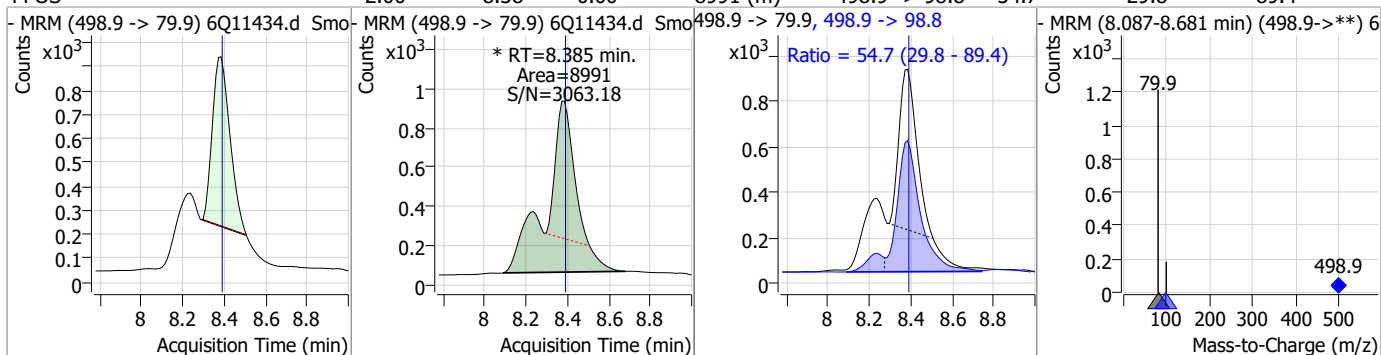
Perfluorinated Compounds by LC/MS/MS



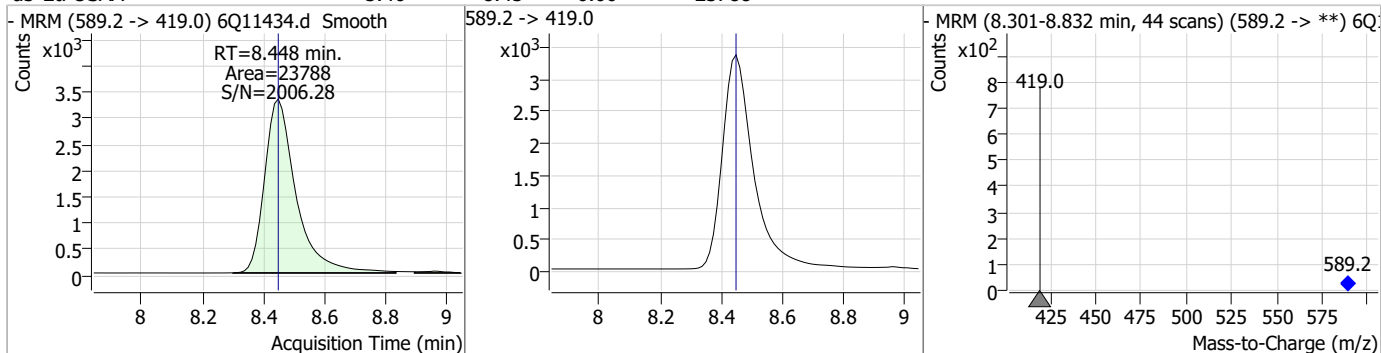
7.6.13
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Perfluorinated Compounds by LC/MS/MS

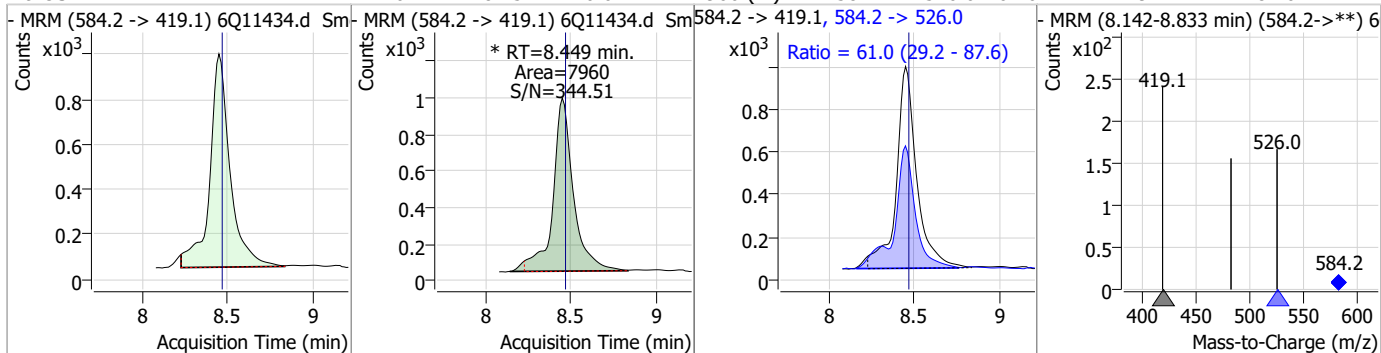
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.00	8.38	0.00	8991 (m)	498.9 -> 98.8	54.7	29.8	89.4



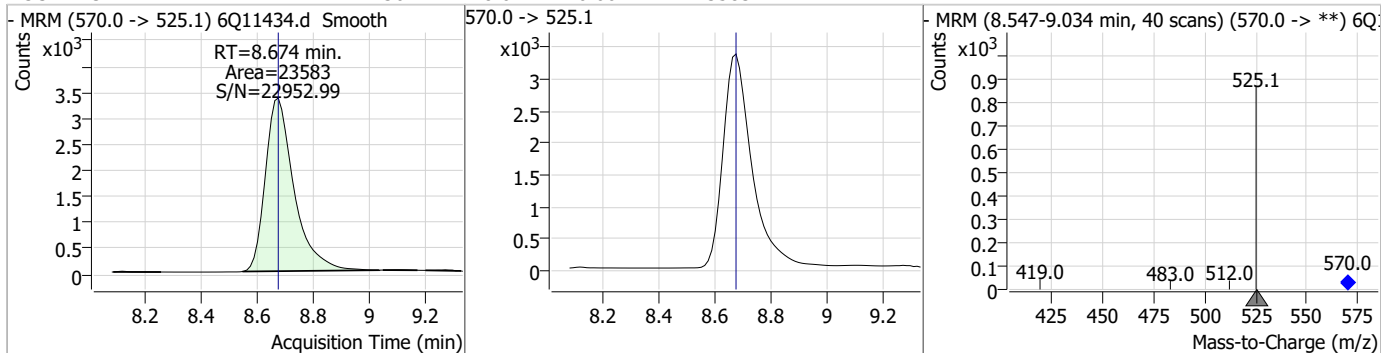
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.46	8.45	0.00	23788				



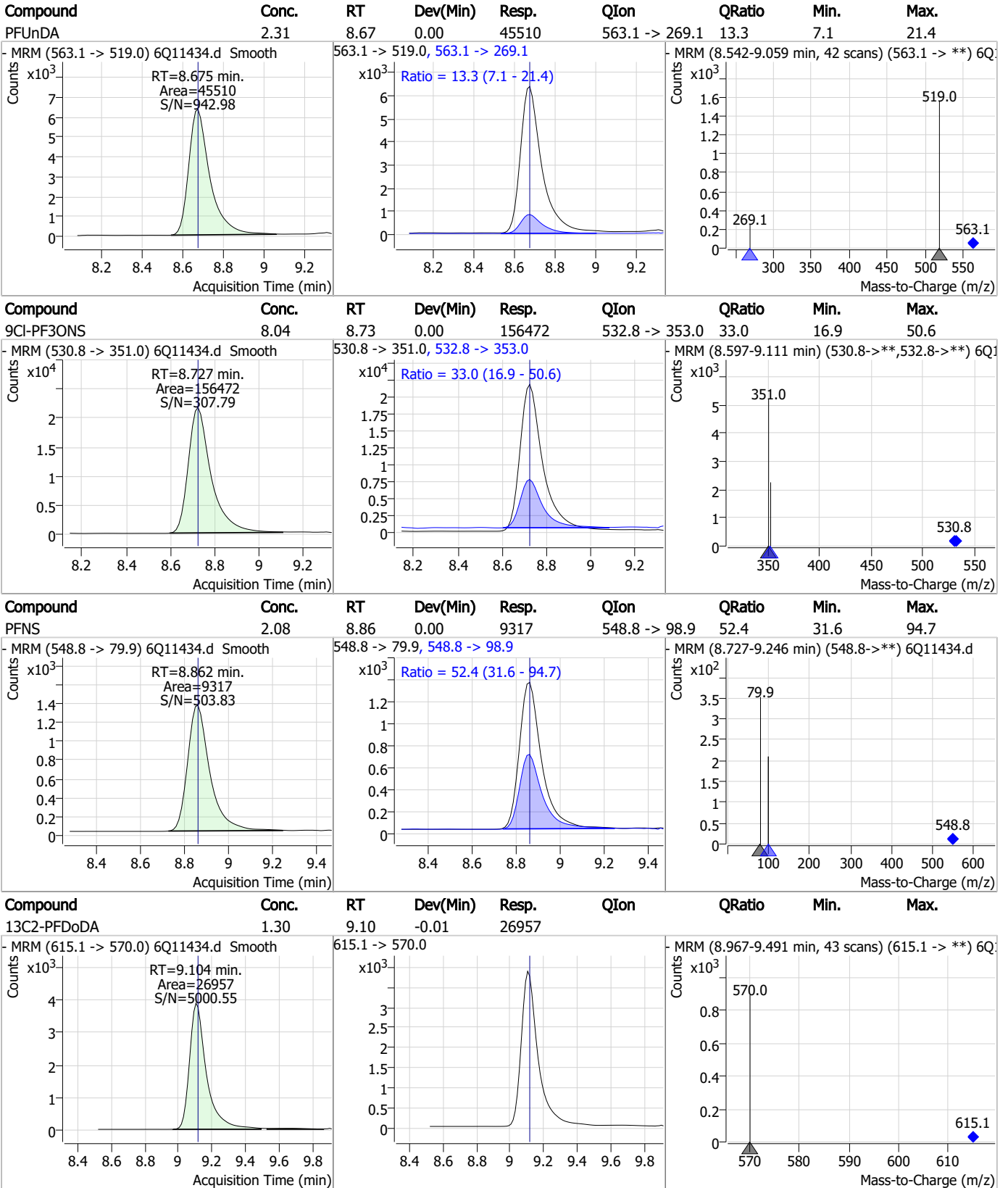
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.10	8.45	-0.01	7960 (m)	584.2 -> 526.0	61.0	29.2	87.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.30	8.67	0.00	23583				



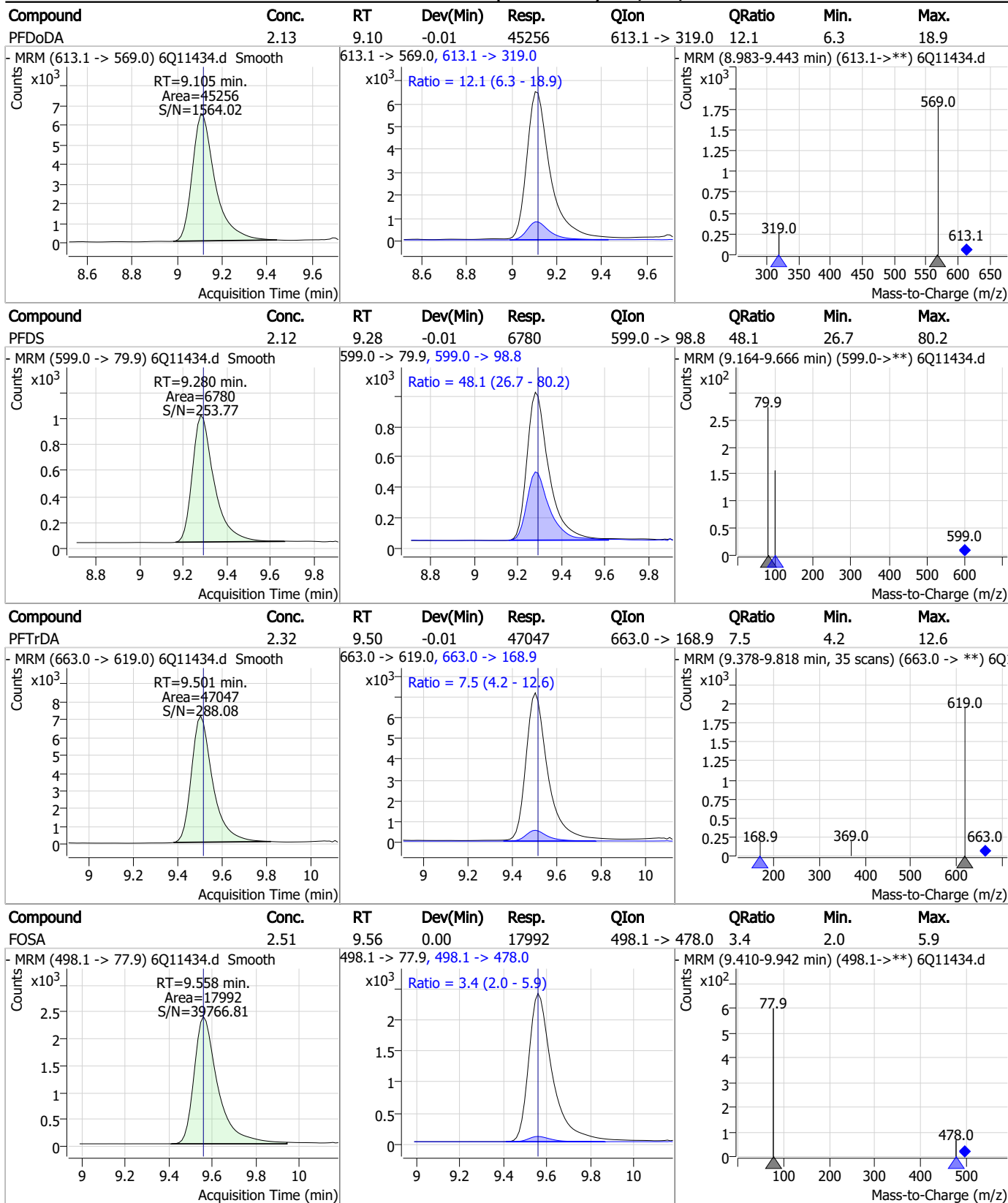
Perfluorinated Compounds by LC/MS/MS



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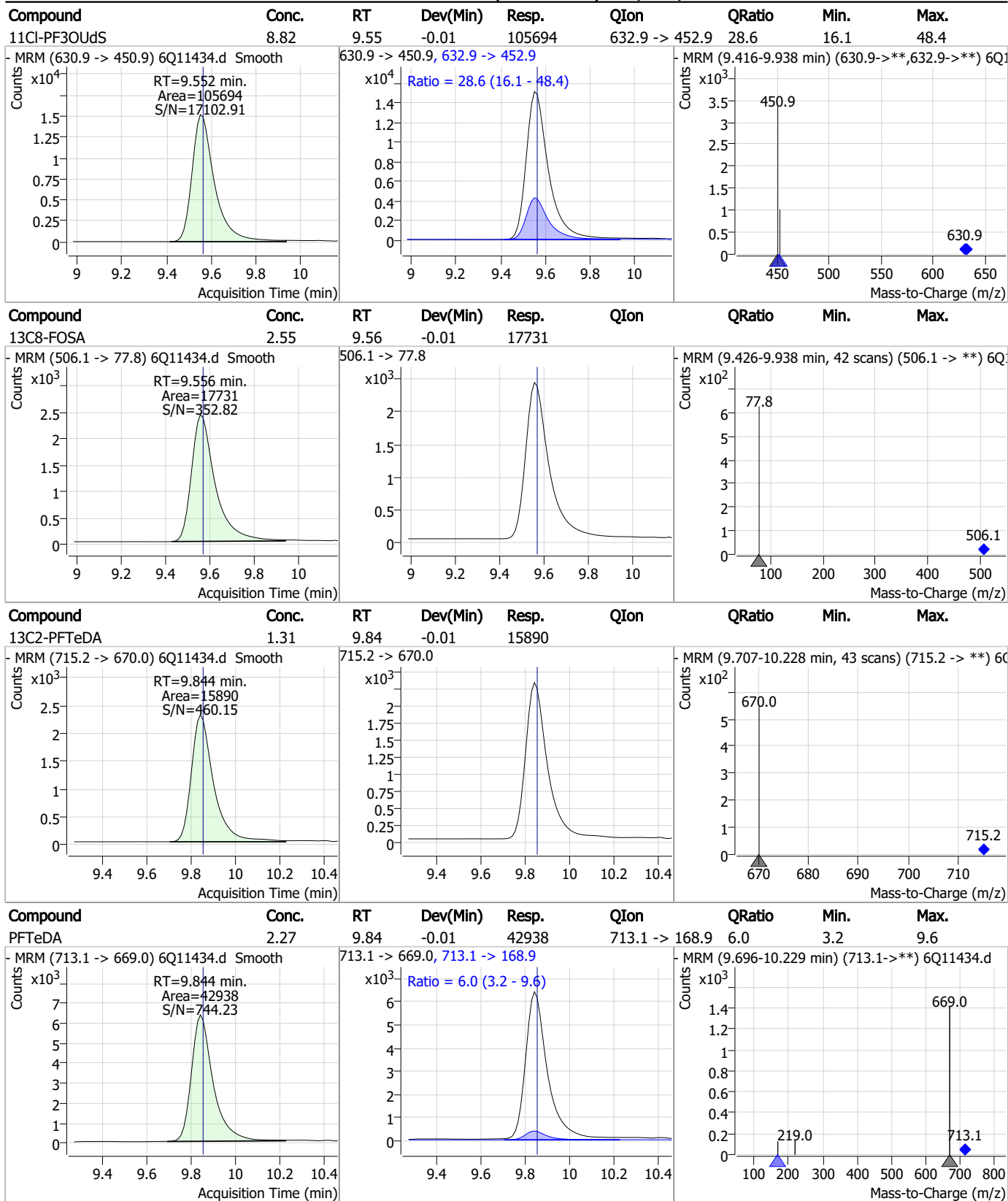
Perfluorinated Compounds by LC/MS/MS



7.6.13

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Perfluorinated Compounds by LC/MS/MS

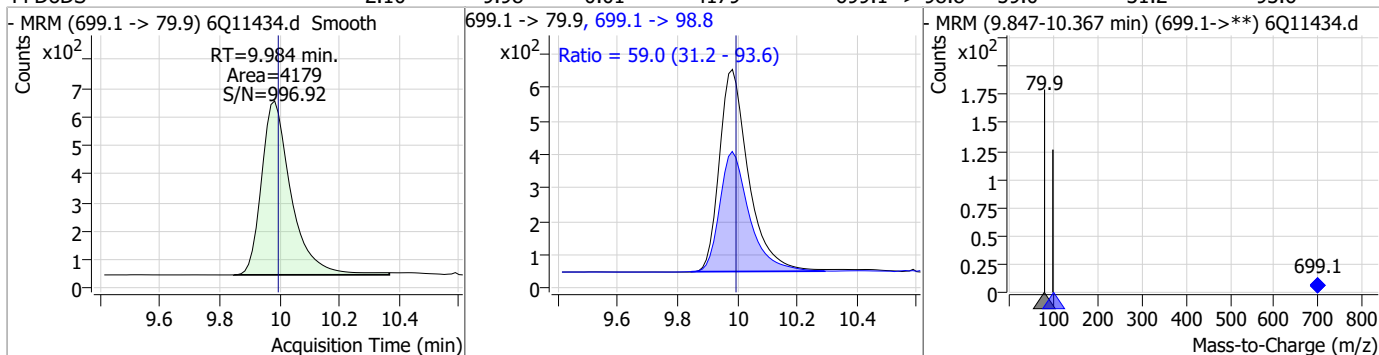


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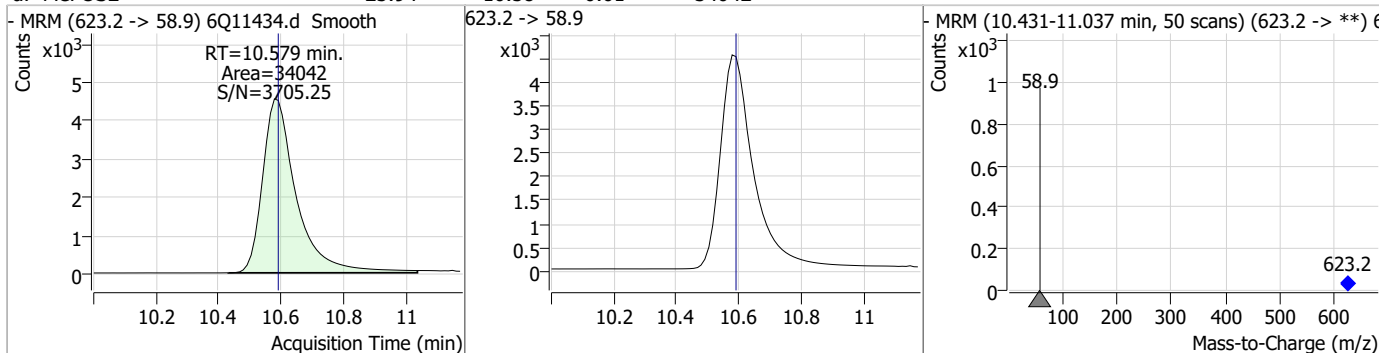
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Perfluorinated Compounds by LC/MS/MS

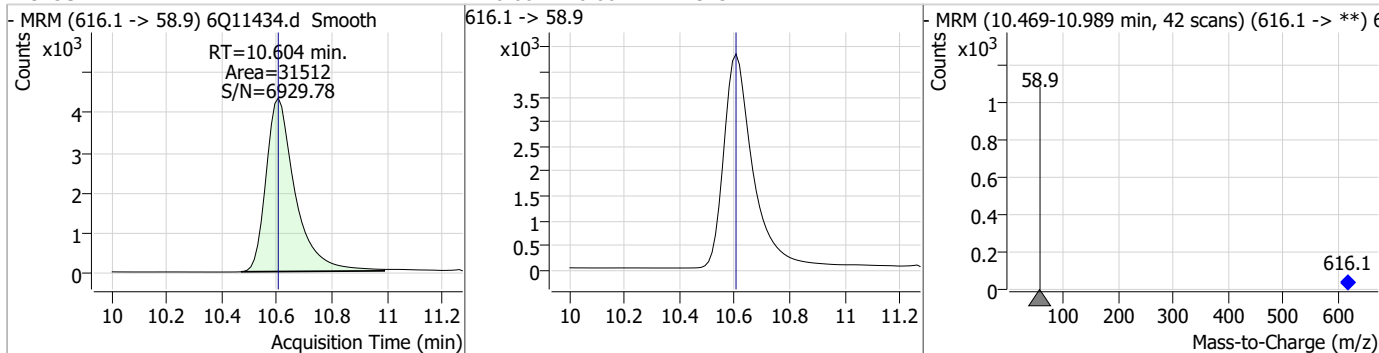
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.10	9.98	-0.01	4179	699.1 -> 98.8	59.0	31.2	93.6



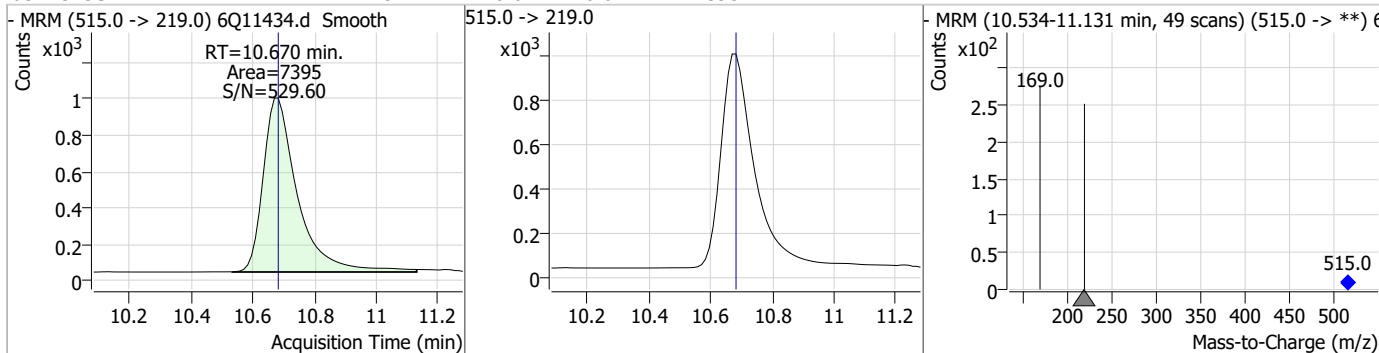
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.94	10.58	-0.01	34042				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	22.41	10.60	0.00	31512				



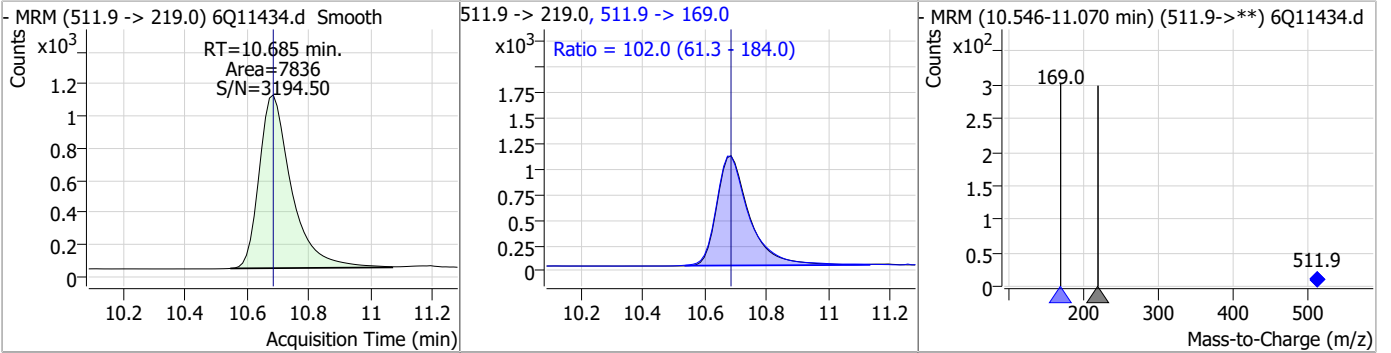
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.32	10.67	-0.01	7395				



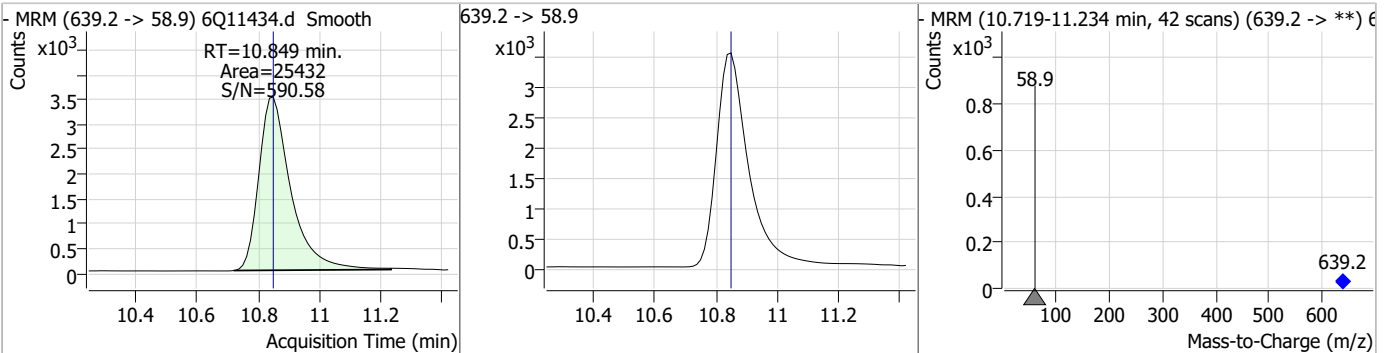
7.6.13
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Perfluorinated Compounds by LC/MS/MS

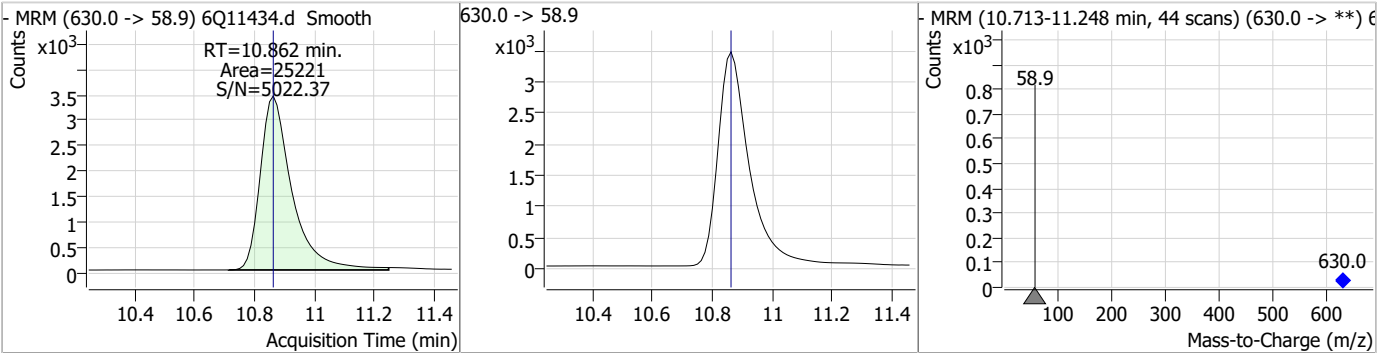
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	2.40	10.68	0.00	7836	511.9 -> 169.0	102.0	61.3	184.0



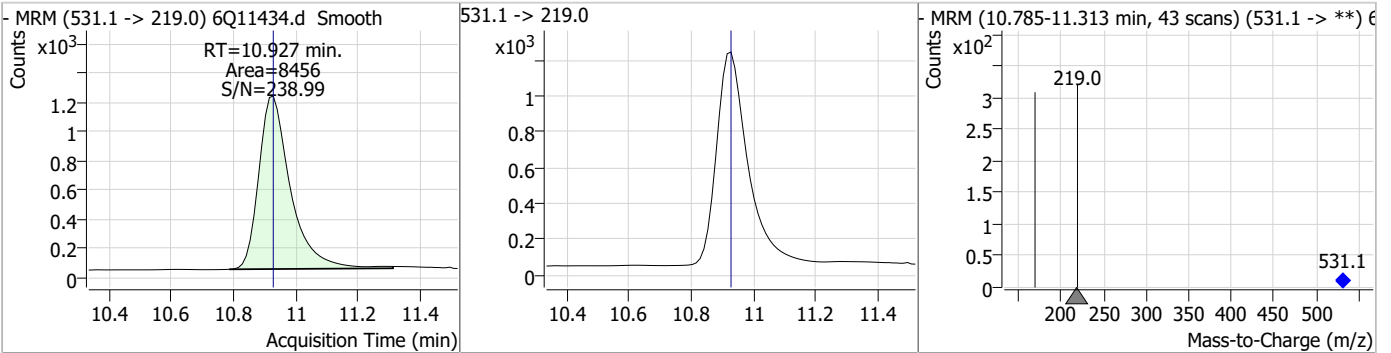
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.34	10.85	0.00	25432				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	22.48	10.86	0.00	25221				



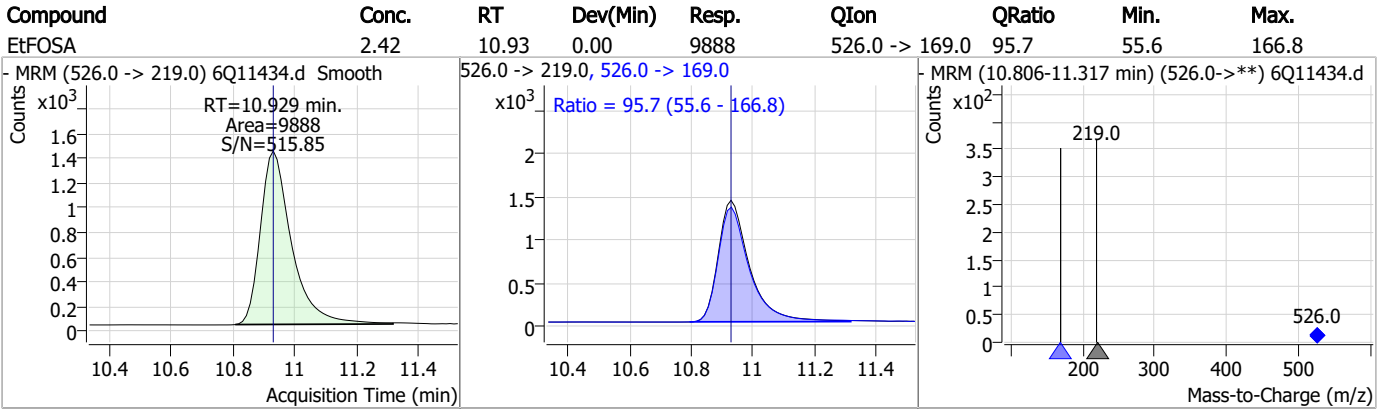
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.37	10.93	0.00	8456				



7.6.13
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Perfluorinated Compounds by LC/MS/MS



7.6.13

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Manual Integration Approval Summary

Sample Number: S6Q179-CC174 Method: EPA DRAFT 1633
Lab FileID: 6Q11434.D Analyst approved: 01/17/23 14:23 Martha Valls
Injection Time: 01/17/23 01:27 Supervisor approved: 01/17/23 18:24 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.30	Split peak
MeFOSAA	2355-31-9		8.24	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.38	Split peak
EtFOSAA	2991-50-6		8.45	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q11445.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/17/2023 4:01:49 AM
 Sample Name : cc174-4
 Vial : P1-C3
 DA Method File : 1633_011123_S6Q174.quantmethod.xml
 Batch Name : s6q179.batch.bin
 Sample Information : OP94795,S6Q179,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.988	216.8 -> 171.9	86142	10.00 µg/L	-0.012
M5-PFPeA	4.371	268.3 -> 223.0	41103	5.00 µg/L	-0.012
M5-PFHxA	5.564	318.0 -> 273.0	35374	2.50 µg/L	0.000
M4-PFHpA	6.516	367.1 -> 322.0	37029	2.50 µg/L	0.000
M8-PFOA	7.160	421.1 -> 376.0	63910	2.50 µg/L	0.000
M9-PFNA	7.702	472.1 -> 427.0	29889	1.25 µg/L	-0.013
M6-PFDA	8.208	519.1 -> 474.1	19492	1.25 µg/L	0.000
M7-PFUnDA	8.674	570.0 -> 525.1	22847	1.25 µg/L	0.000
M2-PFDoDA	9.117	615.1 -> 570.0	27404	1.25 µg/L	0.000
M2-PFTeDA	9.844	715.2 -> 670.0	15501	1.25 µg/L	-0.012
M8-FOSA	9.568	506.1 -> 77.8	18455	2.50 µg/L	0.000
M3-PFBS	5.519	302.1 -> 79.9	14334	2.50 µg/L	-0.012
M3-PFHxS	7.300	402.1 -> 79.9	9041	2.50 µg/L	0.000
M8-PFOS	8.383	507.1 -> 79.9	9110	2.50 µg/L	0.000
M2-4:2FTS	5.228	329.1 -> 80.9	1935	5.00 µg/L	0.000
M2-6:2FTS	6.921	429.1 -> 80.9	2533	5.00 µg/L	-0.012
M2-8:2FTS	7.982	529.1 -> 80.9	2715	5.00 µg/L	0.000
M3-MeFOSAA	8.240	573.2 -> 419.0	23655	5.00 µg/L	0.000
M3-HFPO-DA	5.941	286.9 -> 168.9	15420	10.00 µg/L	0.000
M5-EtFOSAA	8.448	589.2 -> 419.0	23745	5.00 µg/L	0.000
M7-MeFOSE	10.591	623.2 -> 58.9	33653	25.00 µg/L	0.000
M9-EtFOSE	10.849	639.2 -> 58.9	25682	25.00 µg/L	0.000
M5-EtFOSA	10.927	531.1 -> 219.0	8708	2.50 µg/L	0.000
M3-MeFOSA	10.683	515.0 -> 219.0	7751	2.50 µg/L	0.000
13C4-PFOS	8.384	502.8 -> 79.9	11170	2.50 µg/L	0.000
13C3-PFBA	2.991	216.0 -> 172.0	37418	5.00 µg/L	-0.012
18O2-PFHxS	7.299	403.0 -> 83.9	6922	2.50 µg/L	0.000
13C4-PFOA	7.160	417.1 -> 372.0	75337	2.50 µg/L	-0.012
13C2-PFDA	8.208	515.1 -> 470.1	26751	1.25 µg/L	0.000
13C5-PFNA	7.703	468.0 -> 423.0	31258	1.25 µg/L	0.000
13C2-PFHxA	5.565	315.1 -> 270.0	36545	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.228	329.1 -> 80.9	1935	5.36 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.2%		
13C2-6:2FTS	6.921	429.1 -> 80.9	2533	5.12 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.5%		
13C2-8:2FTS	7.982	529.1 -> 80.9	2715	5.03 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.6%		
13C2-PFDoDA	9.117	615.1 -> 570.0	27404	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.4%		
13C2-PFTeDA	9.844	715.2 -> 670.0	15501	1.24 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.5%		
13C3-PFBS	5.519	302.1 -> 79.9	14334	2.47 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.8%		
13C3-PFHxS	7.300	402.1 -> 79.9	9041	2.41 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 = 96.2%	
13C4-PFBA	2.988	216.8 -> 171.9	86142	10.08 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C4-PFHpA	6.516	367.1 -> 322.0	37029	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C5-PFHxA	5.564	318.0 -> 273.0	35374	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.4%	
13C5-PFPeA	4.371	268.3 -> 223.0	41103	5.04 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C6-PFDA	8.208	519.1 -> 474.1	19492	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C7-PFUnDA	8.674	570.0 -> 525.1	22847	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.3%	
13C8-FOSA	9.568	506.1 -> 77.8	18455	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.8%	
13C8-PFOA	7.160	421.1 -> 376.0	63910	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C8-PFOS	8.383	507.1 -> 79.9	9110	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.1%	
13C9-PFNA	7.702	472.1 -> 427.0	29889	1.35 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.6%	
d3-MeFOSAA	8.240	573.2 -> 419.0	23655	4.40 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 88.0%	
13C3-HFPO-DA	5.941	286.9 -> 168.9	15420	10.23 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.3%	
d3-MeFOSA	10.683	515.0 -> 219.0	7751	2.24 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 89.8%	
d5-EtFOSAA	8.448	589.2 -> 419.0	23745	5.03 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
d7-MeFOSE	10.591	623.2 -> 58.9	33653	23.67 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 94.7%	
d9-EtFOSE	10.849	639.2 -> 58.9	25682	23.62 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 94.5%	
d5-EtFOSA	10.927	531.1 -> 219.0	8708	2.25 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 90.0%	
Target Compounds					QValue
4:2FTS	5.229	327.1 -> 307.0	36419	7.92 µg/L	97
		327.1 -> 80.9	9057		
6:2FTS	6.922	427.1 -> 407.0	32784	8.32 µg/L	97
		427.1 -> 80.9	7436		
8:2FTS	7.983	527.1 -> 507.0	20590	9.09 µg/L	98
		527.1 -> 80.8	5295		
EtFOSAA	8.449	584.2 -> 419.1	8143	2.15 µg/L	m 100
		584.2 -> 526.0	4757		
FOSA	9.558	498.1 -> 77.9	17813	2.39 µg/L	100
		498.1 -> 478.0	734		
MeFOSAA	8.241	570.1 -> 419.0	12086	2.48 µg/L	m 96
		570.1 -> 483.0	2214		
PFBA	2.982	212.8 -> 168.9	20168	9.13 µg/L	100
PFBS	5.520	298.7 -> 79.9	11116	1.92 µg/L	94
		298.7 -> 98.8	5506		
PFDA	8.208	512.9 -> 469.0	56433	2.41 µg/L	98
		512.9 -> 219.0	7141		
PFDoDA	9.117	613.1 -> 569.0	48173	2.23 µg/L	99
		613.1 -> 319.0	6311		
PFDS	9.280	599.0 -> 79.9	6967	2.22 µg/L	92

7.6.14
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.516	599.0 -> 98.8	3315	2.36	µg/L	98
		363.1 -> 319.0	52654			
PFHpS	7.867	363.1 -> 169.0	7348	2.07	µg/L	99
		449.0 -> 79.9	8637			
PFHxA	5.567	449.0 -> 98.9	5025	2.30	µg/L	100
		313.0 -> 269.0	32941			
PFHxS	7.301	313.0 -> 118.9	1203	2.11	µg/L	97
		398.7 -> 79.9	9087			
PFNA	7.703	398.7 -> 98.9	5072	2.25	µg/L	100
		463.0 -> 419.0	46485			
PFNS	8.862	463.0 -> 219.0	9154	2.07	µg/L	97
		548.8 -> 79.9	9093			
PFOA	7.161	548.8 -> 98.9	5509	2.27	µg/L	99
		413.0 -> 369.0	64911			
PFOS	8.385	413.0 -> 169.0	9492	2.15	µg/L	99
		498.9 -> 79.9	9491			
PFPeA	4.374	498.9 -> 98.8	5605	4.59	µg/L	100
		263.0 -> 219.0	41406			
PFPeS	6.582	349.1 -> 79.9	11366	2.23	µg/L	98
		349.1 -> 98.9	5956			
PFTeDA	9.844	713.1 -> 669.0	43090	2.33	µg/L	99
		713.1 -> 168.9	2907			
PFTrDA	9.501	663.0 -> 619.0	49141	2.39	µg/L	98
		663.0 -> 168.9	3744			
PFUnDA	8.675	563.1 -> 519.0	44790	2.34	µg/L	97
		563.1 -> 269.1	6920			
11CI-PF3OUdS	9.565	630.9 -> 450.9	103958	8.89	µg/L	97
		632.9 -> 452.9	31963			
9CI-PF3ONS	8.727	530.8 -> 351.0	161131	8.48	µg/L	99
		532.8 -> 353.0	53338			
ADONA	6.767	376.9 -> 250.9	293974	8.57	µg/L	96
		376.9 -> 84.8	65692			
HFPO-DA	5.942	284.9 -> 168.9	14358	9.21	µg/L	99
		284.9 -> 184.9	1790			
3:3FTCA	3.827	241.0 -> 177.0	5367	11.16	µg/L	98
		241.0 -> 117.0	690			
5:3FTCA	6.194	341.0 -> 237.1	177738	59.79	µg/L	93
		341.0 -> 217.0	139959			
7:3FTCA	7.618	441.0 -> 316.9	118452	59.12	µg/L	86
		441.0 -> 336.9	257453			
EtFOSA	10.929	526.0 -> 219.0	9782	2.32	µg/L	91
		526.0 -> 169.0	9926			
EtFOSE	10.862	630.0 -> 58.9	25115	22.17	µg/L	100
		511.9 -> 219.0	8074			
MeFOSA	10.685	511.9 -> 169.0	8419	2.36	µg/L	84
		616.1 -> 58.9	32291			
MeFOSE	10.604	699.1 -> 79.9	4067	23.23	µg/L	100
		699.1 -> 98.8	2574			
PFDoDS	9.984	295.0 -> 201.0	4295	2.07	µg/L	99
		295.0 -> 84.9	2088			
NFDHA	5.446	279.0 -> 85.1	13332	4.63	µg/L	88
		229.0 -> 84.9	11785			
PFMBA	4.789	314.8 -> 134.9	82837	4.74	µg/L	100
PFMPA	3.525	314.8 -> 82.9	2046	4.72	µg/L	100
PFEESA	6.060			4.16	µg/L	100

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



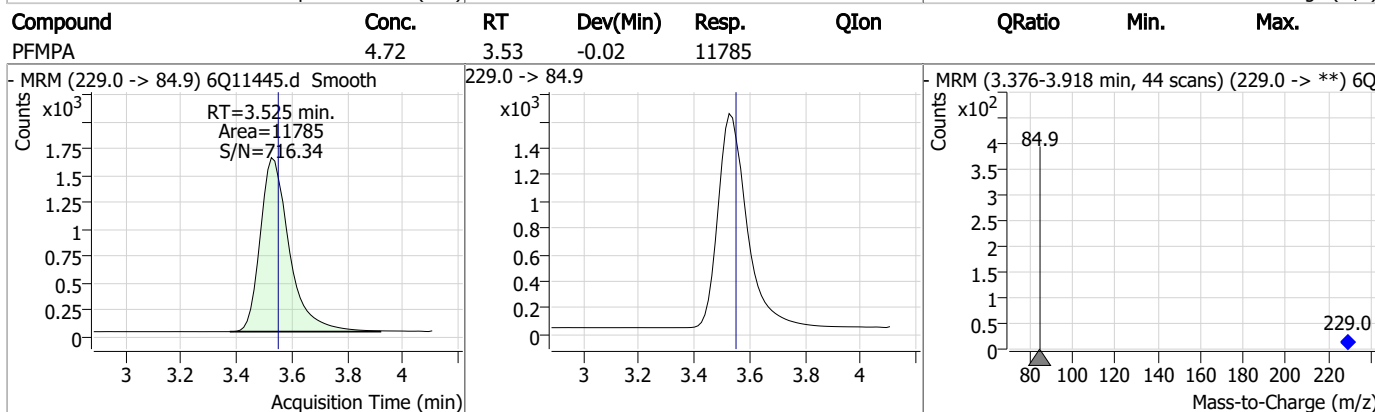
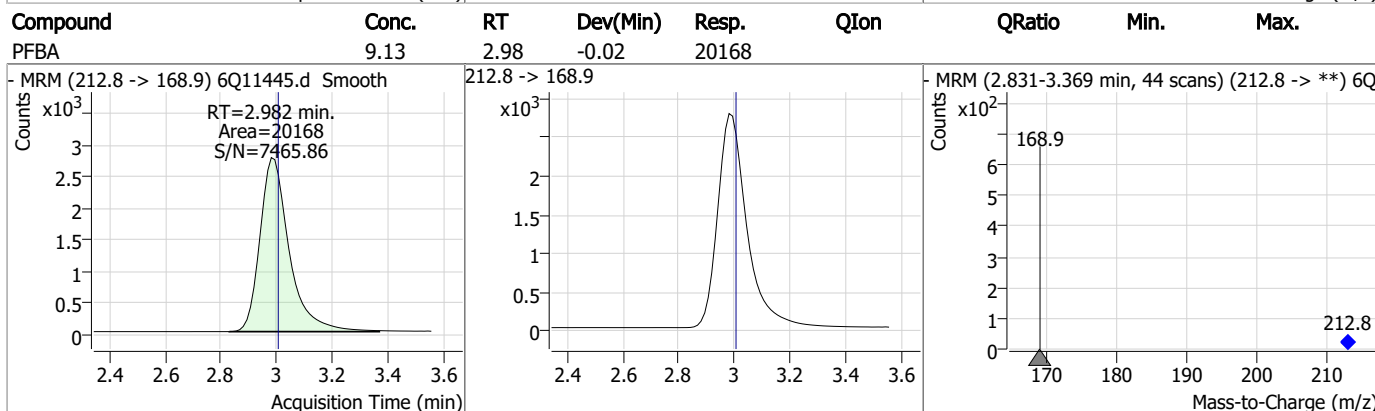
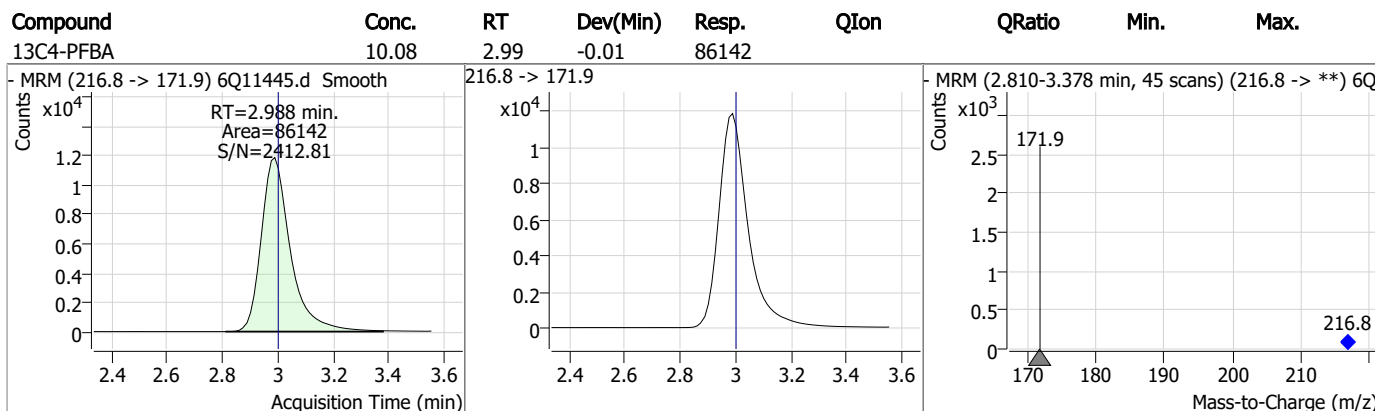
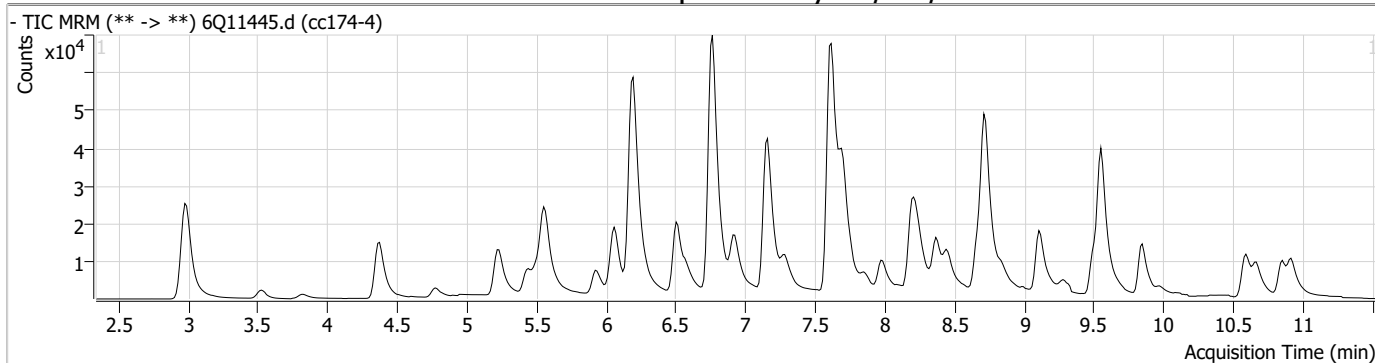
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.6.14

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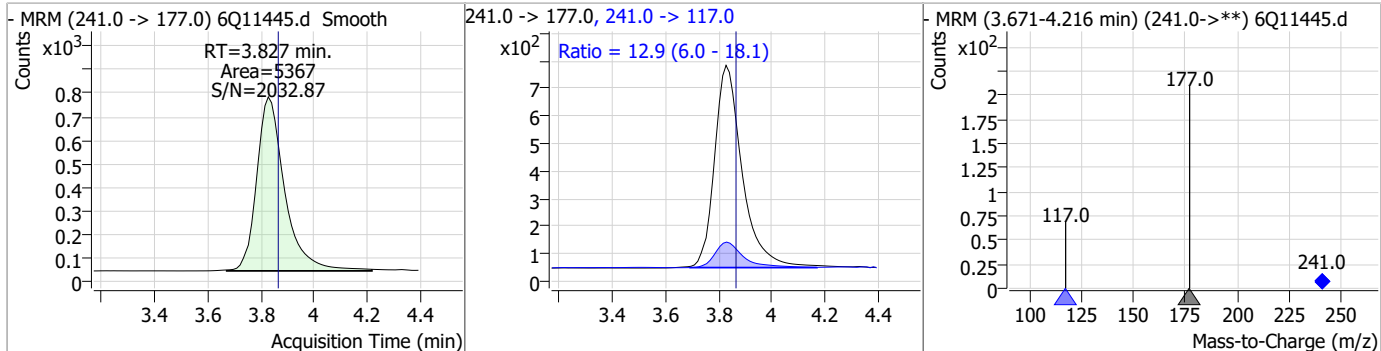
Perfluorinated Compounds by LC/MS/MS



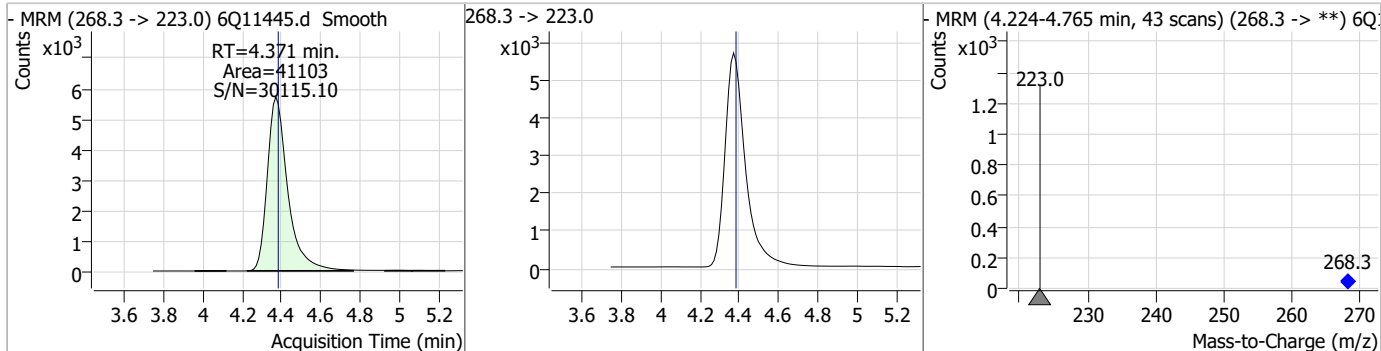
7.6.14
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Perfluorinated Compounds by LC/MS/MS

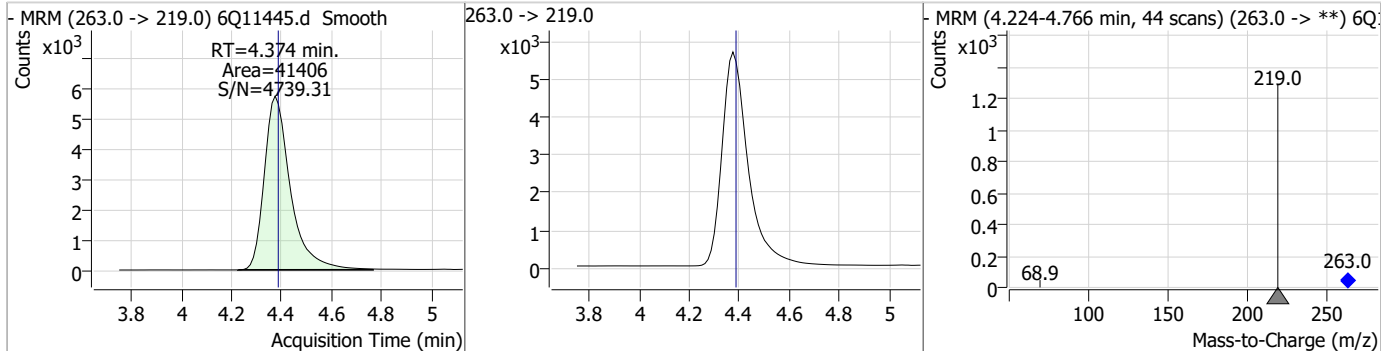
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	11.16	3.83	-0.04	5367	241.0 -> 117.0	12.9	6.0	18.1



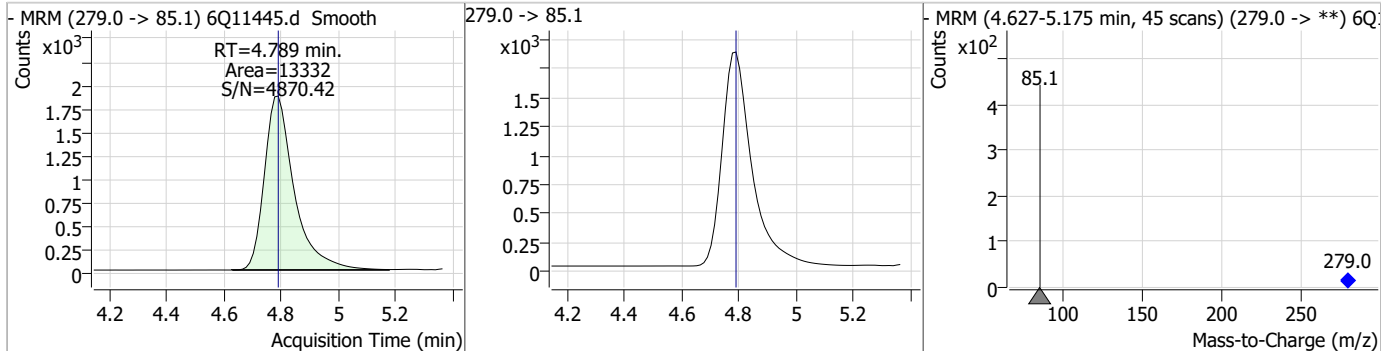
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.04	4.37	-0.01	41103				



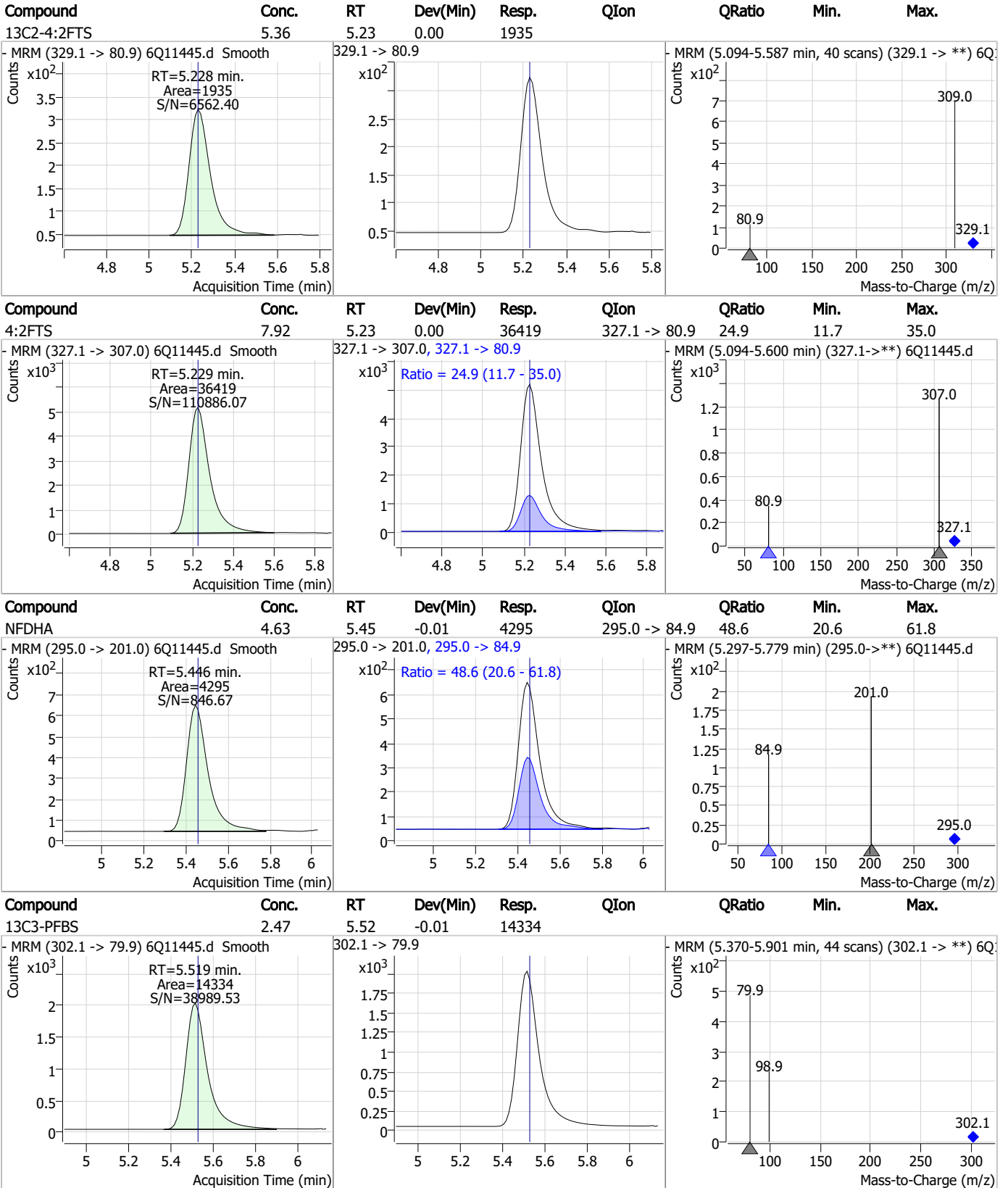
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.59	4.37	-0.01	41406				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	4.74	4.79	0.00	13332				



Perfluorinated Compounds by LC/MS/MS

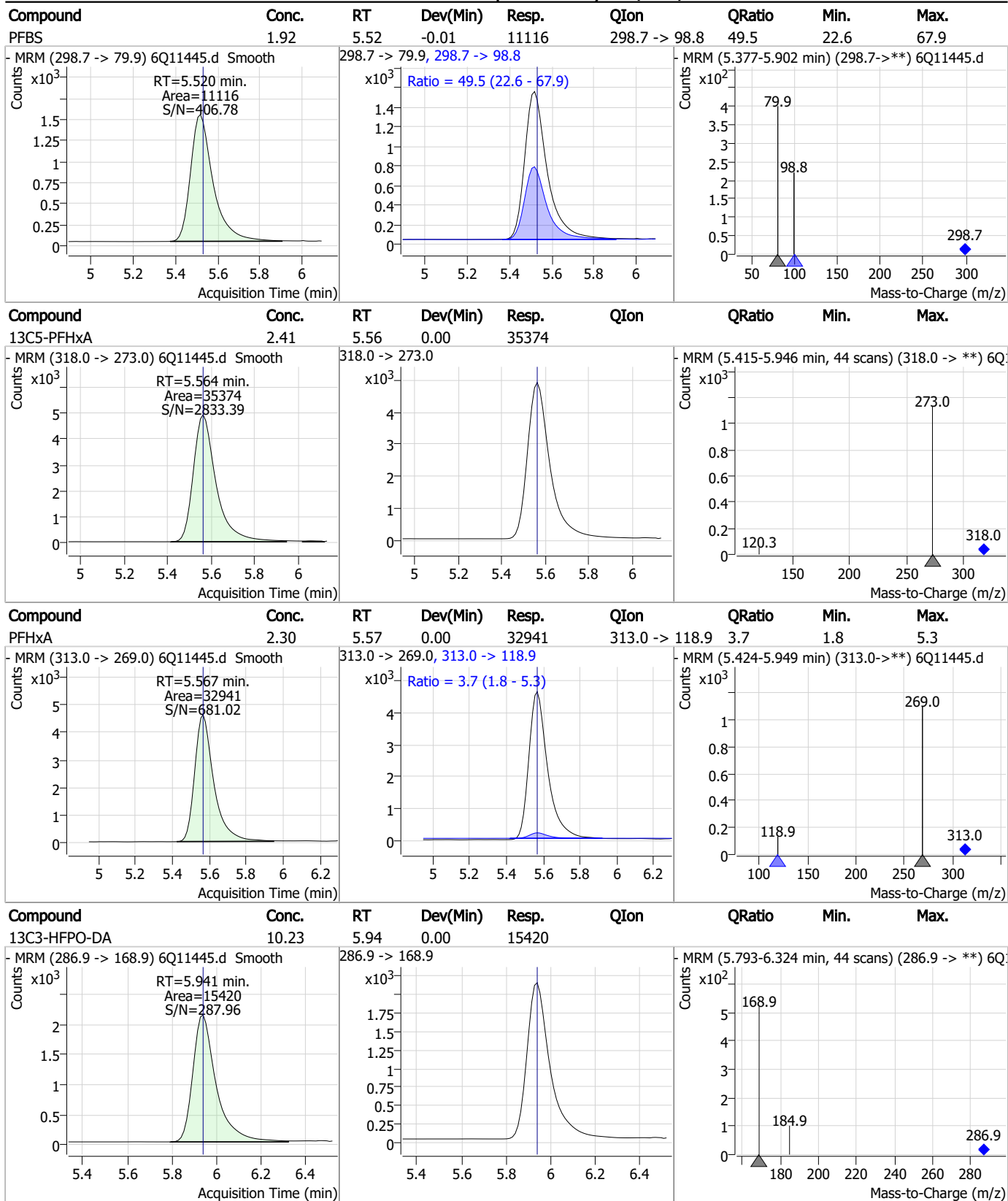


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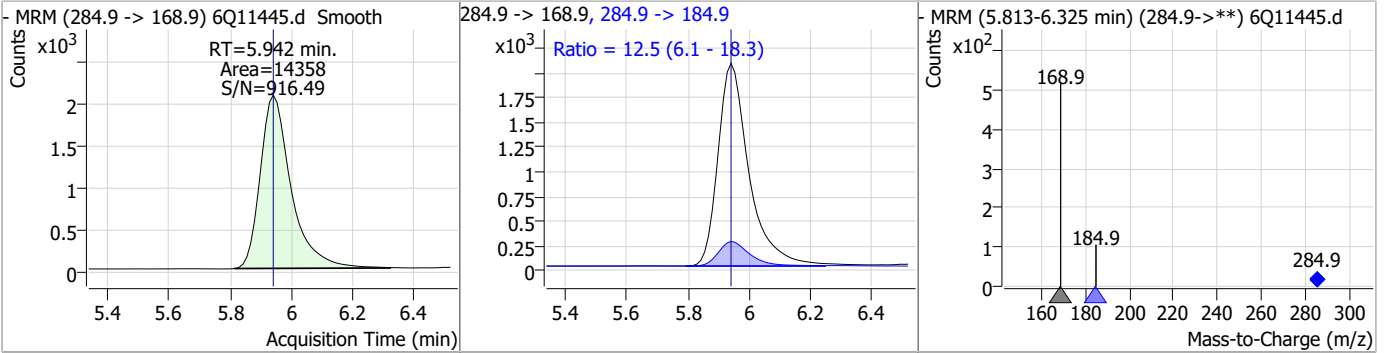
Perfluorinated Compounds by LC/MS/MS



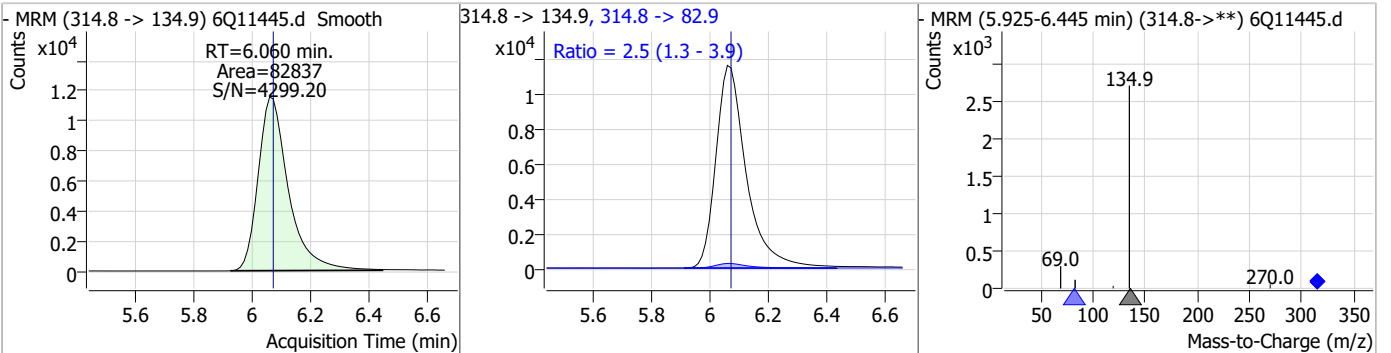
7.6.14
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Perfluorinated Compounds by LC/MS/MS

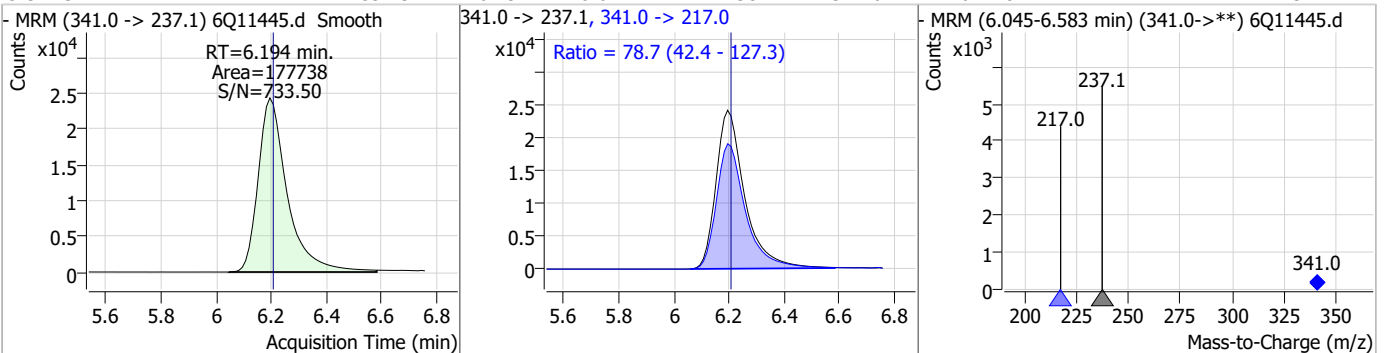
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	9.21	5.94	0.00	14358	284.9 -> 184.9	12.5	6.1	18.3



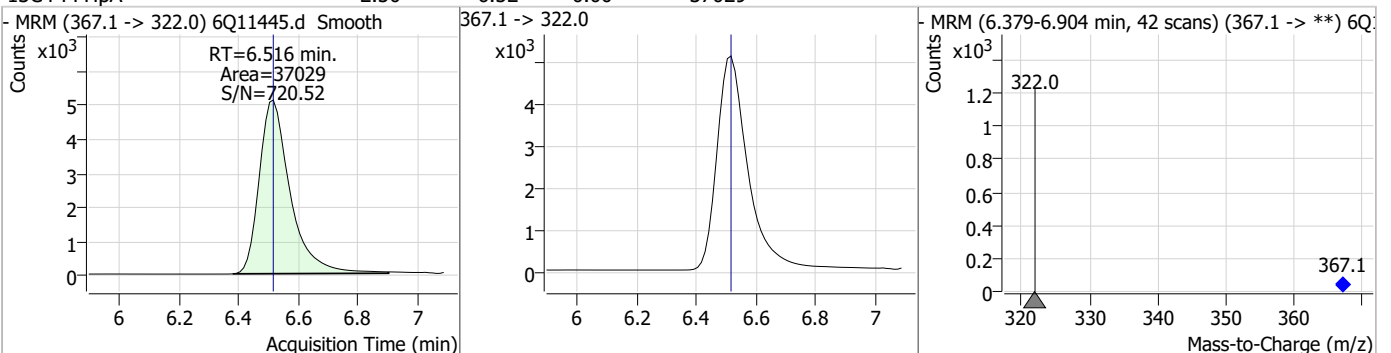
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.16	6.06	-0.01	82837	314.8 -> 82.9	2.5	1.3	3.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	59.79	6.19	-0.01	177738	341.0 -> 217.0	78.7	42.4	127.3

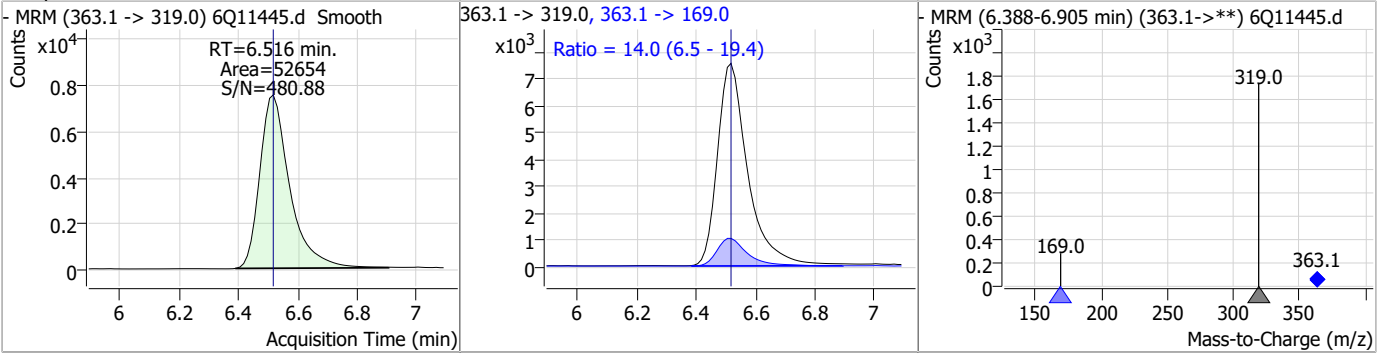


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.50	6.52	0.00	37029	367.1 -> 322.0	-	-	-

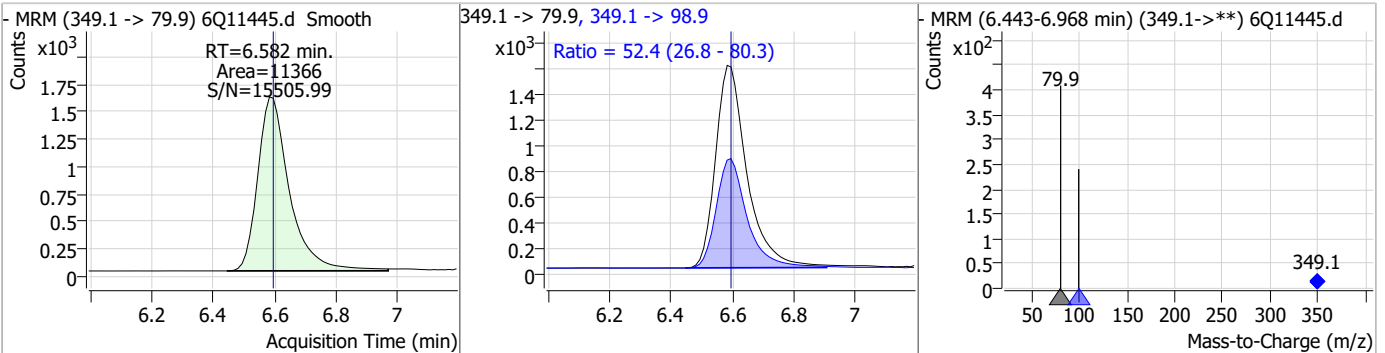


Perfluorinated Compounds by LC/MS/MS

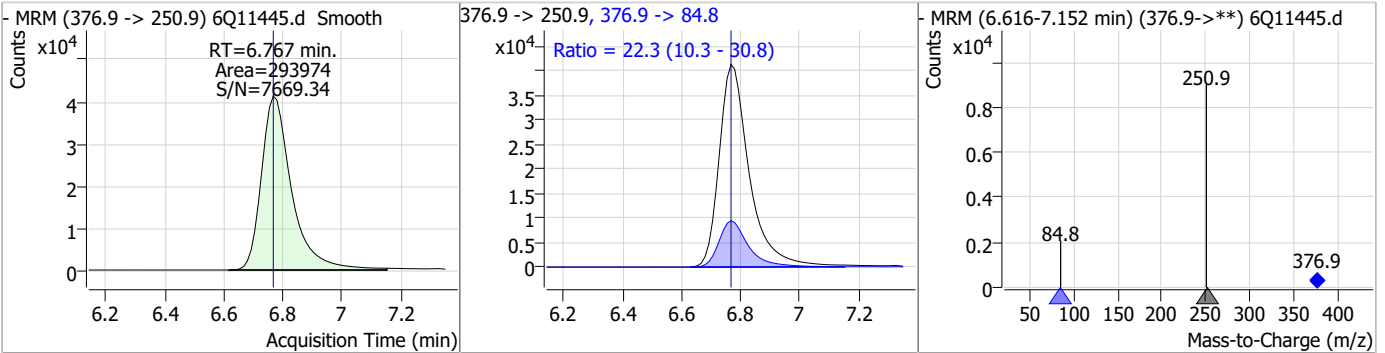
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.36	6.52	0.00	52654	363.1 -> 169.0	14.0	6.5	19.4



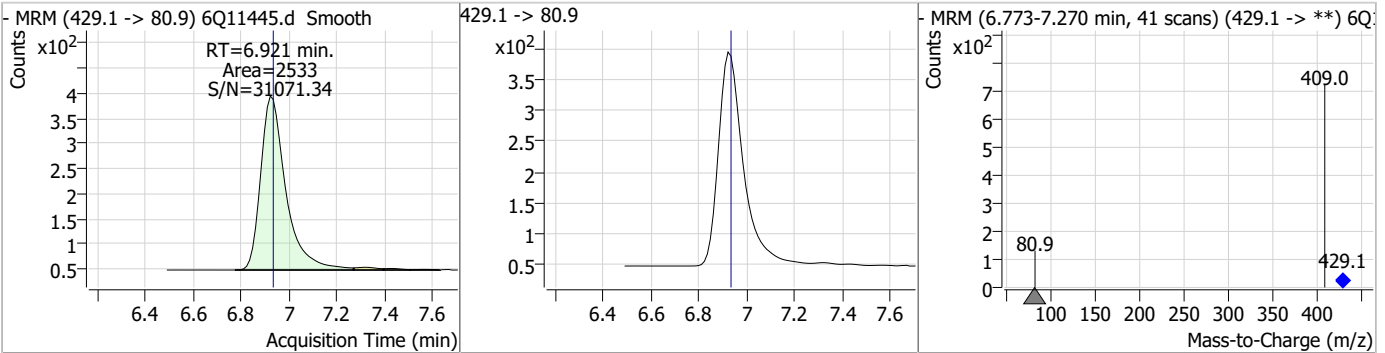
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.23	6.58	-0.01	11366	349.1 -> 98.9	52.4	26.8	80.3



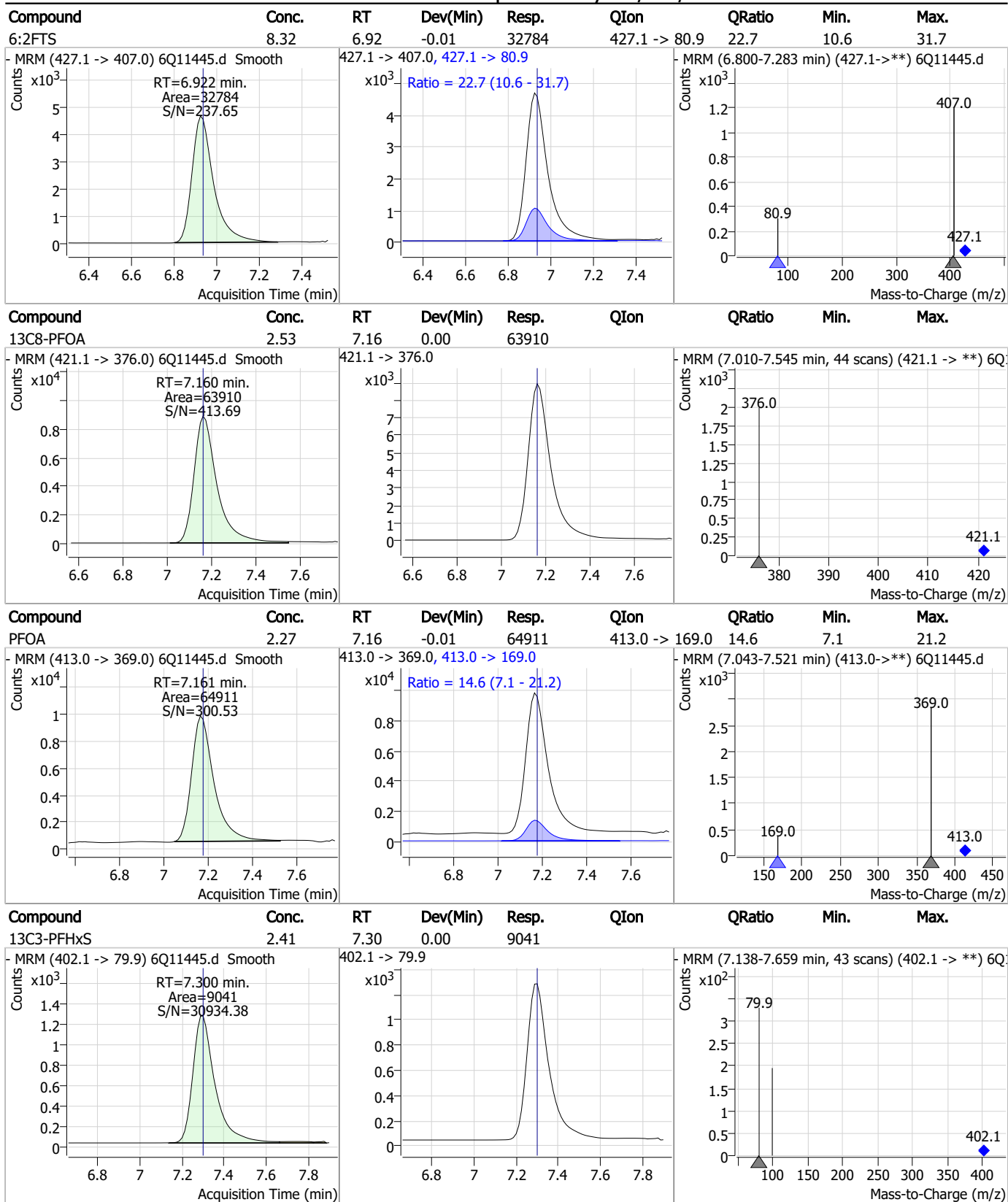
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	8.57	6.77	0.00	293974	376.9 -> 84.8	22.3	10.3	30.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6-2FTS	5.12	6.92	-0.01	2533	429.1 -> 80.9			



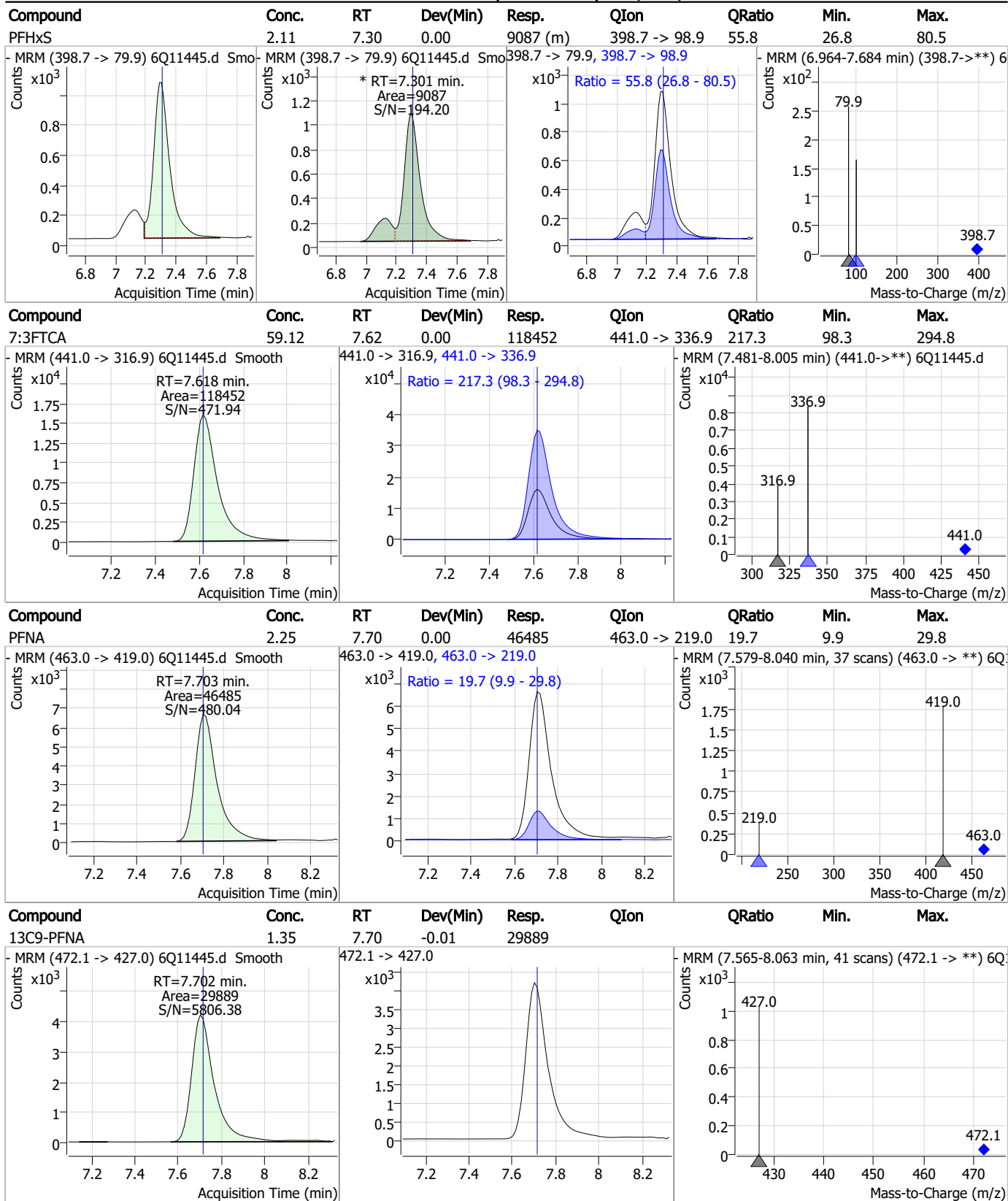
Perfluorinated Compounds by LC/MS/MS



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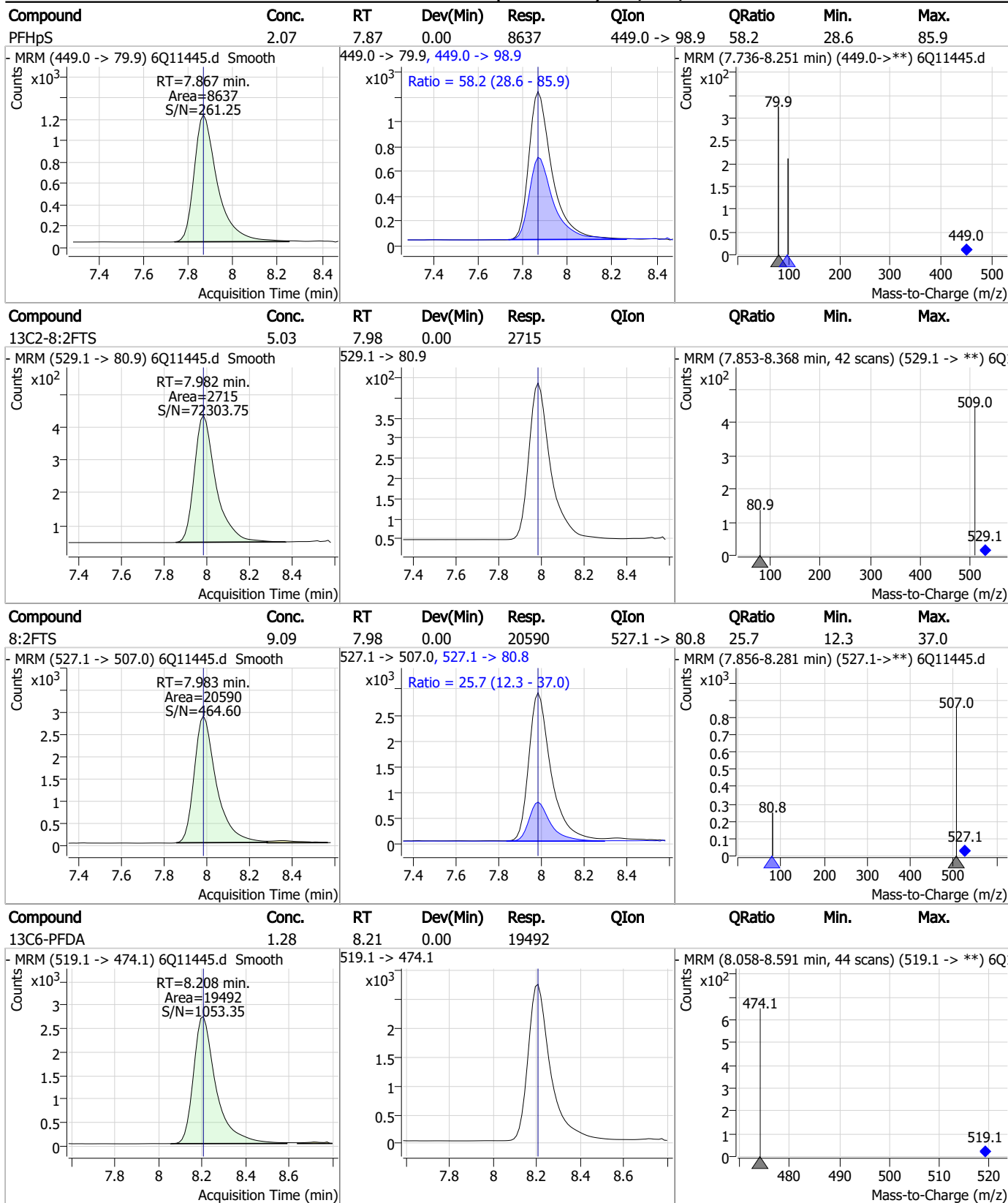
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

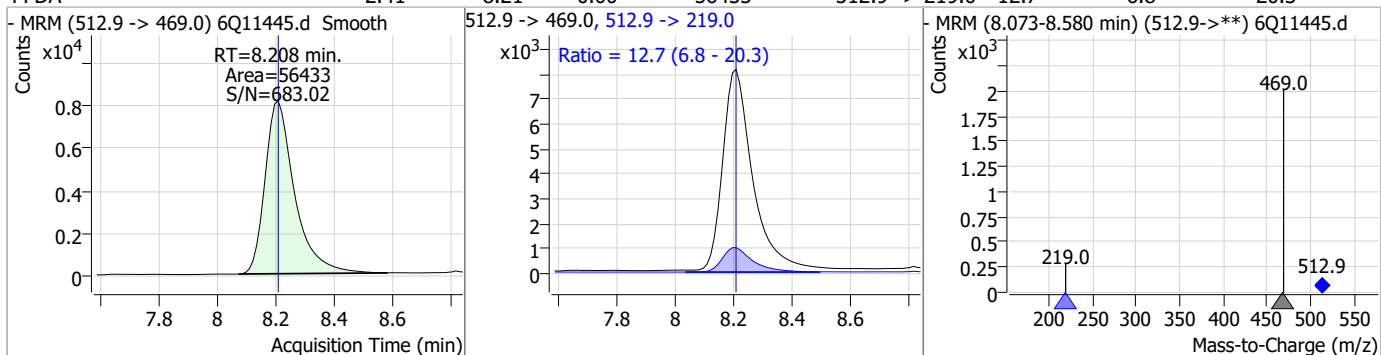


7.6.14

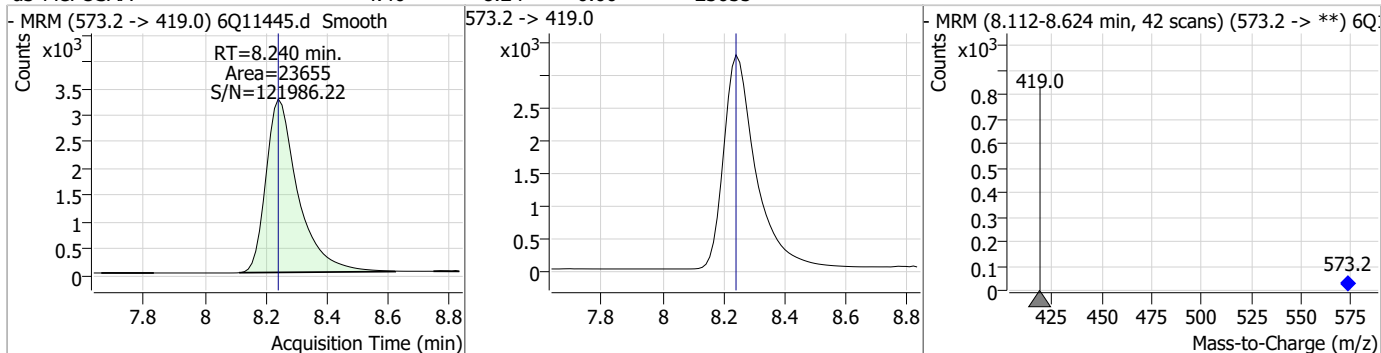
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Perfluorinated Compounds by LC/MS/MS

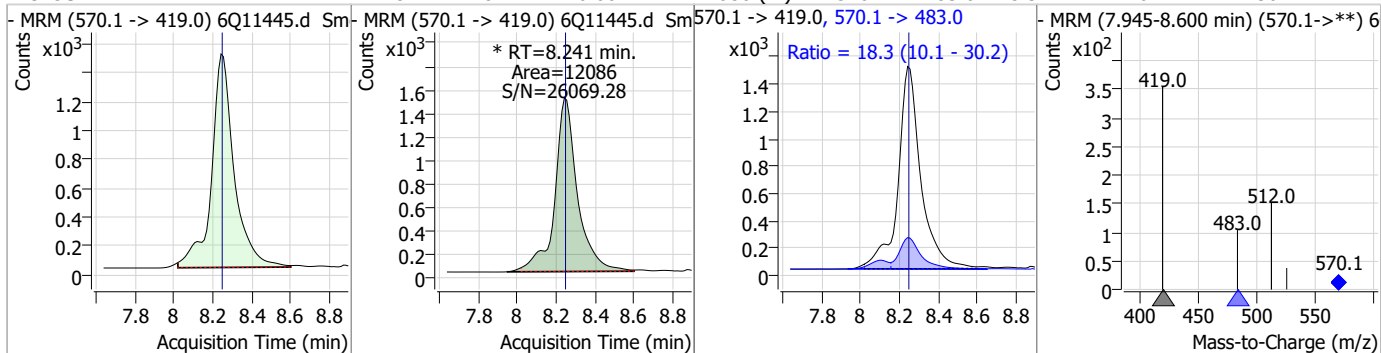
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.41	8.21	0.00	56433	512.9 -> 219.0	12.7	6.8	20.3



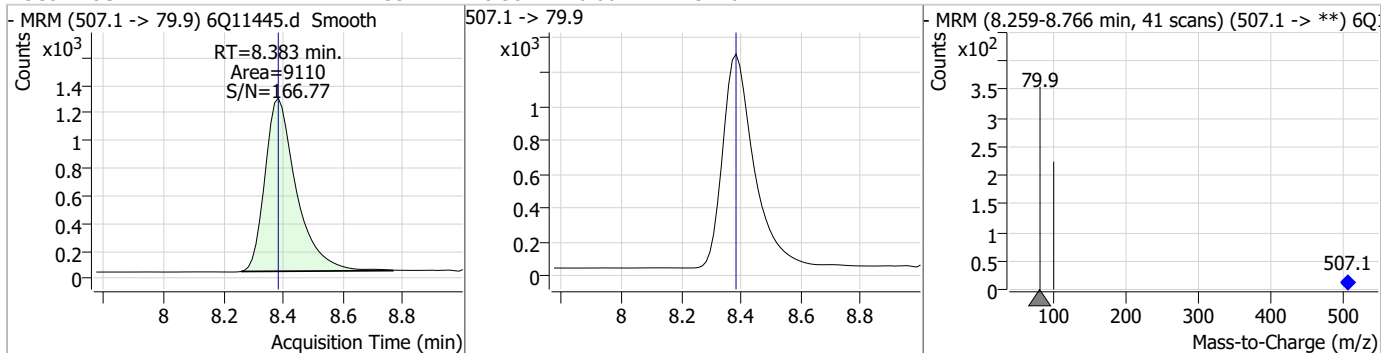
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.40	8.24	0.00	23655				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.48	8.24	0.00	12086 (m)	570.1 -> 483.0	18.3	10.1	30.2

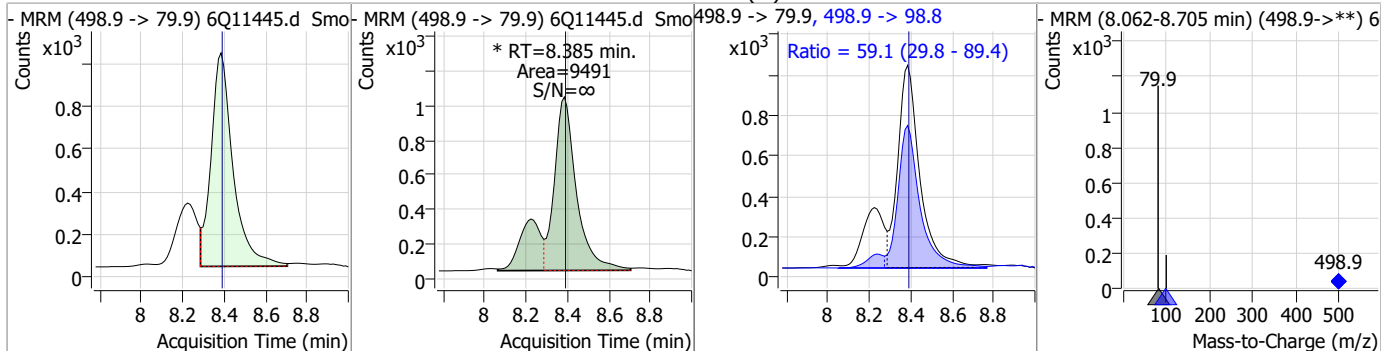


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.55	8.38	0.00	9110				

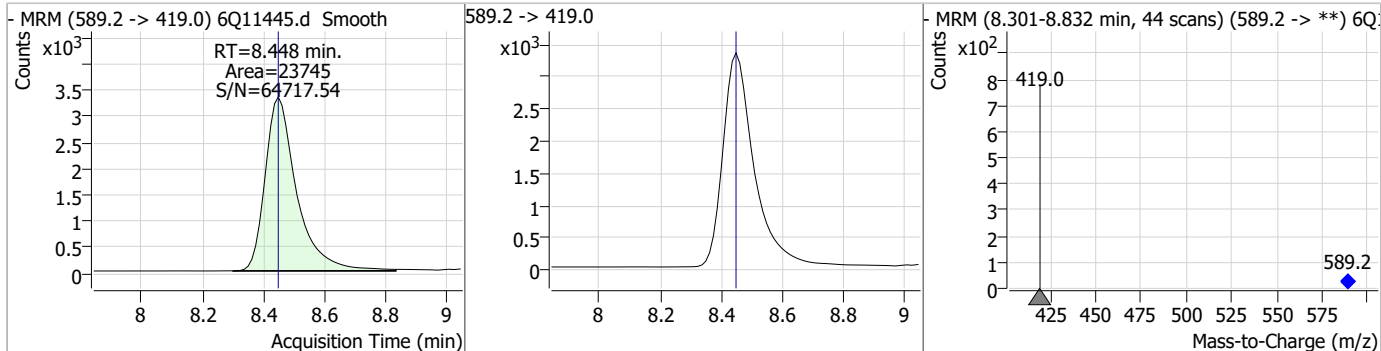


Perfluorinated Compounds by LC/MS/MS

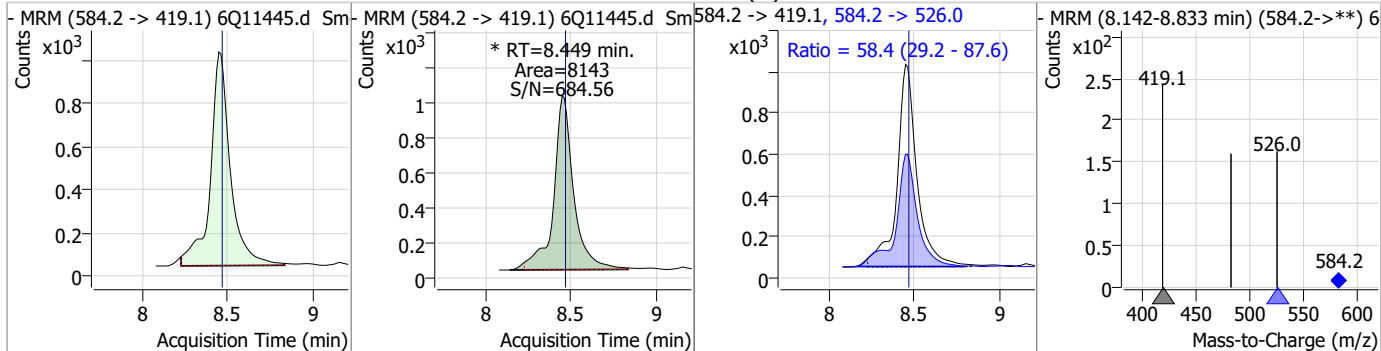
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.15	8.38	0.00	9491 (m)	498.9 -> 98.8	59.1	29.8	89.4



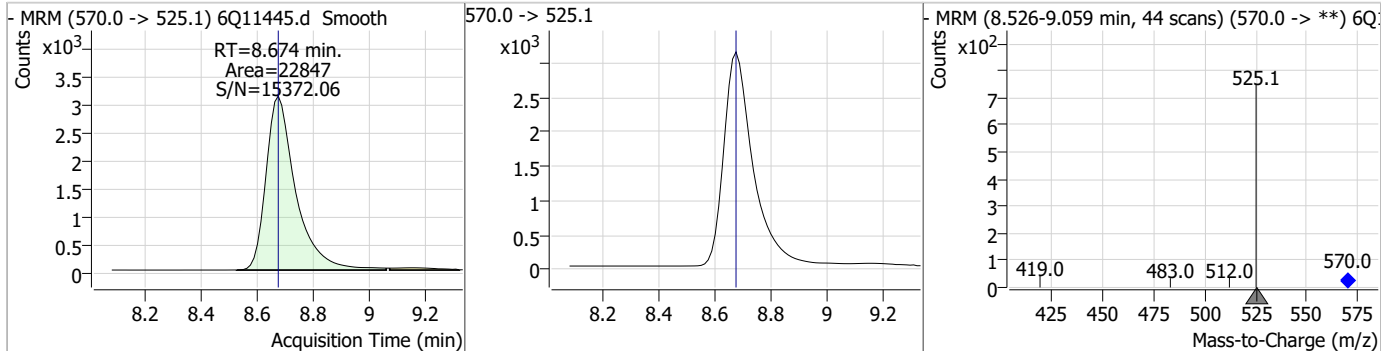
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.03	8.45	0.00	23745				



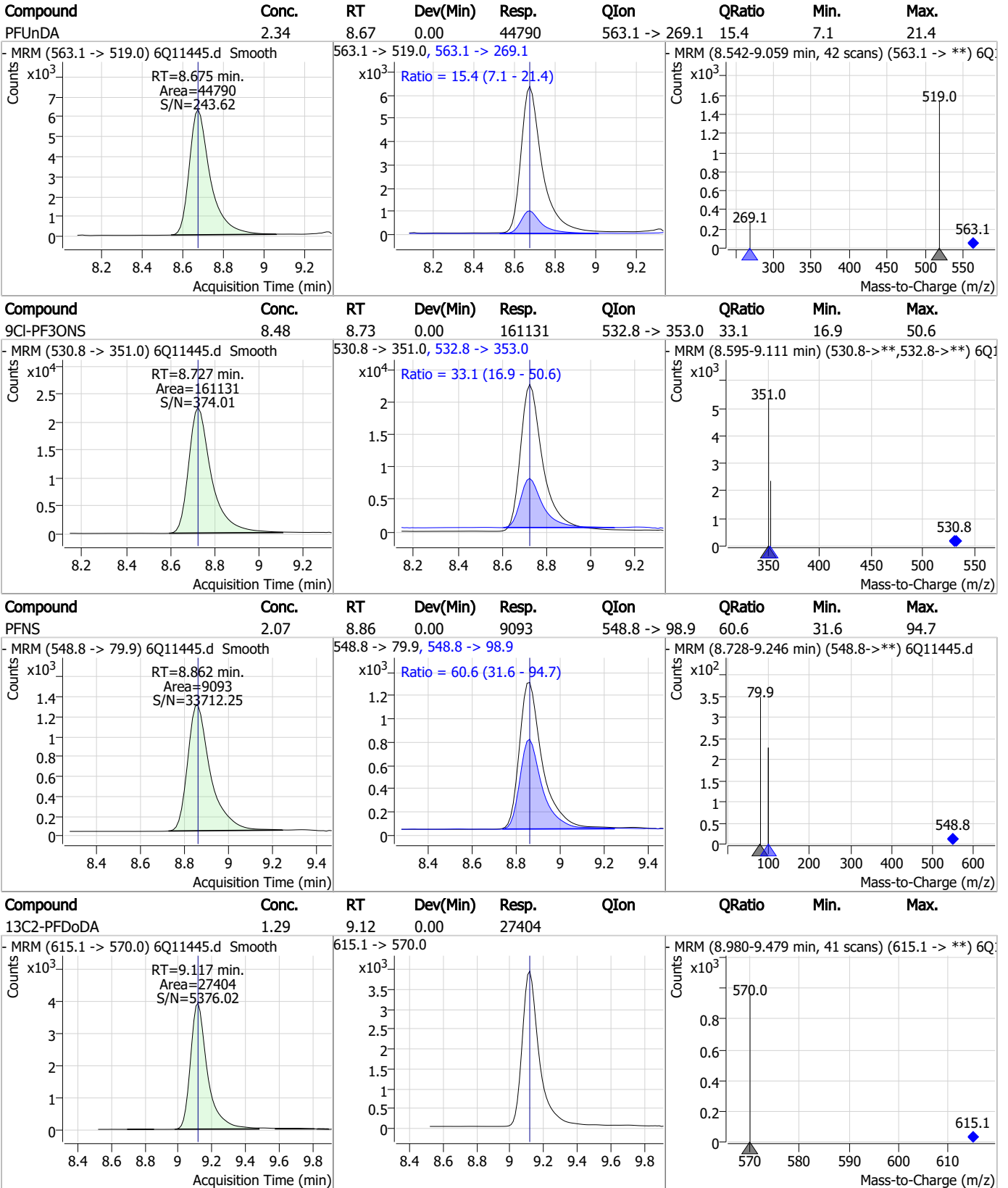
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.15	8.45	-0.01	8143 (m)	584.2 -> 526.0	58.4	29.2	87.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.23	8.67	0.00	22847				



Perfluorinated Compounds by LC/MS/MS

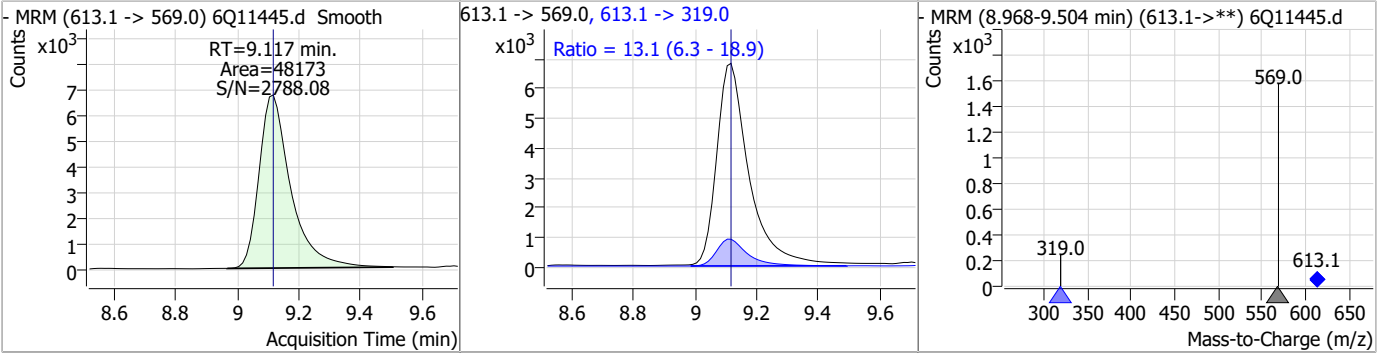


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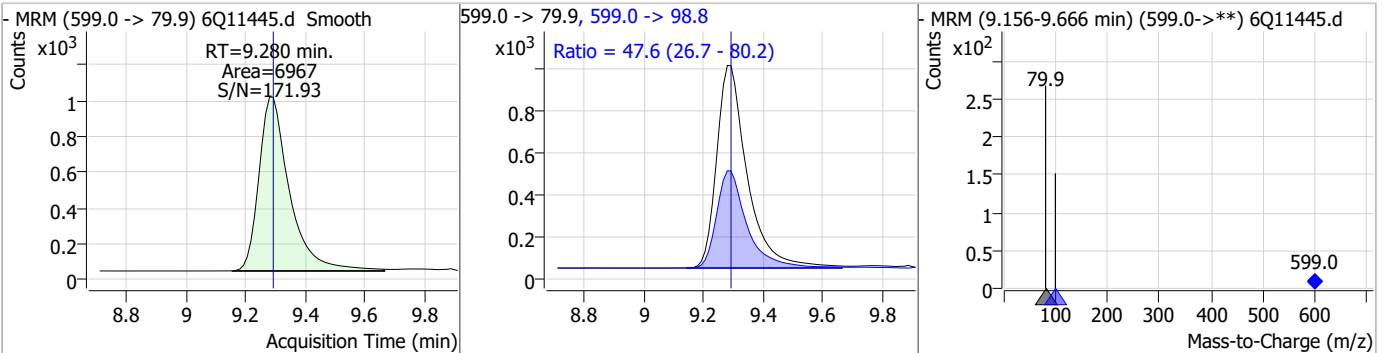


Perfluorinated Compounds by LC/MS/MS

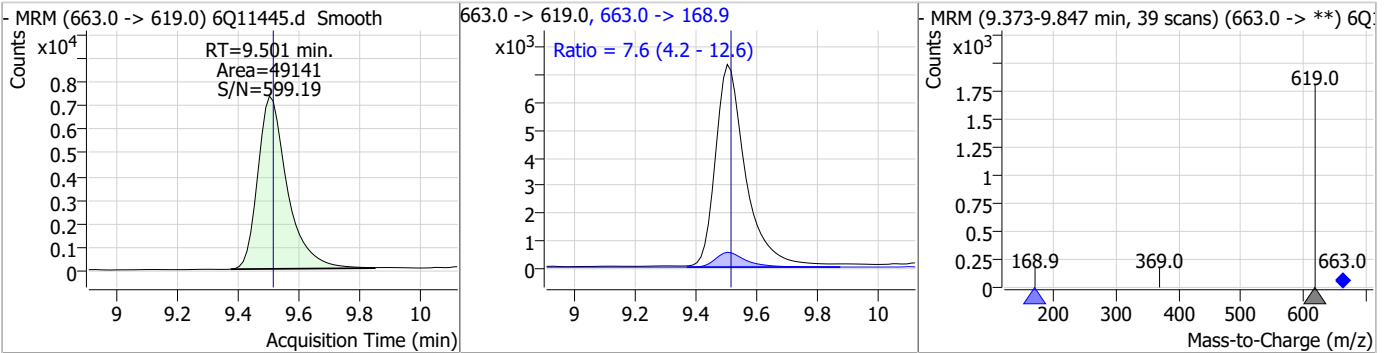
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFD _o DA	2.23	9.12	0.00	48173	613.1 -> 319.0	13.1	6.3	18.9



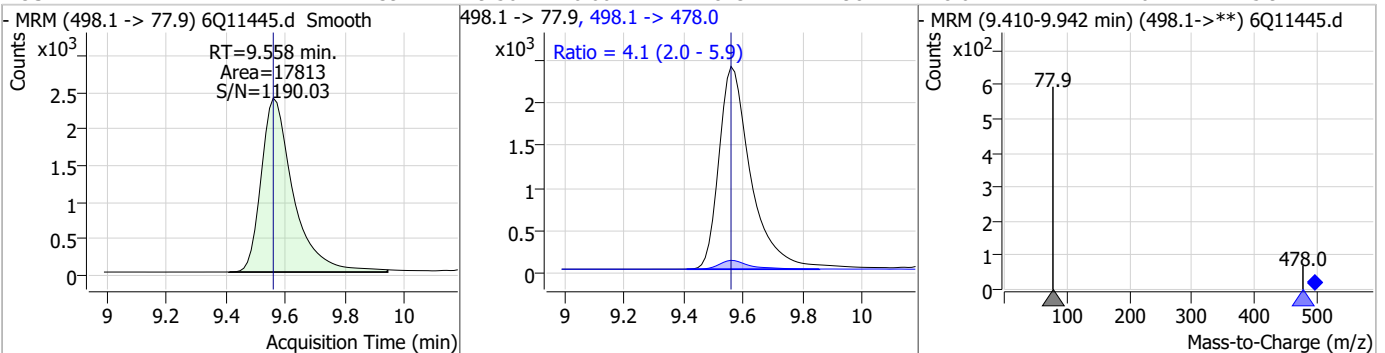
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.22	9.28	-0.01	6967	599.0 -> 98.8	47.6	26.7	80.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFT _r DA	2.39	9.50	-0.01	49141	663.0 -> 168.9	7.6	4.2	12.6



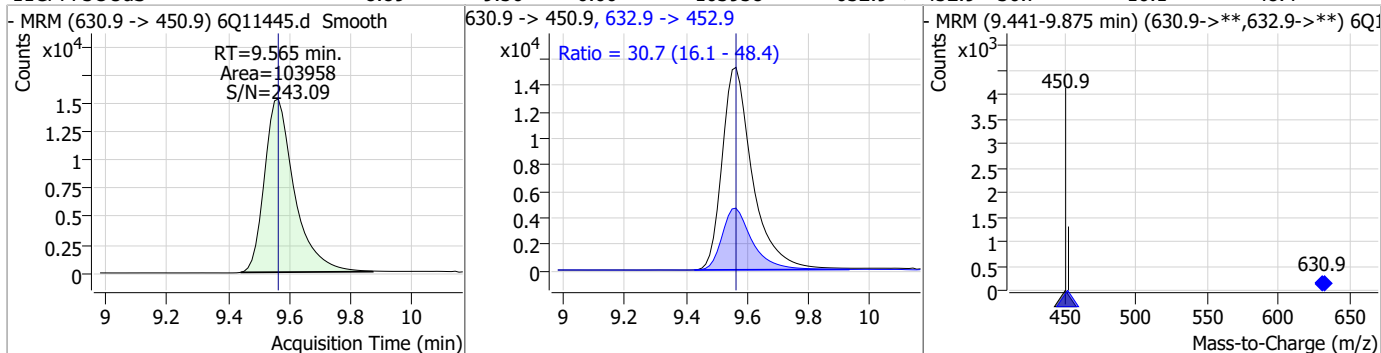
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.39	9.56	0.00	17813	498.1 -> 478.0	4.1	2.0	5.9



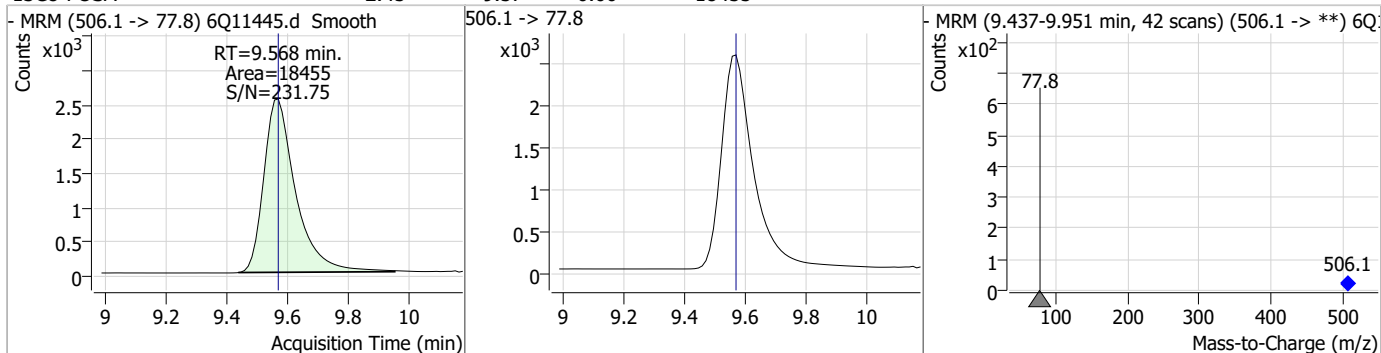
7.6.14
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Perfluorinated Compounds by LC/MS/MS

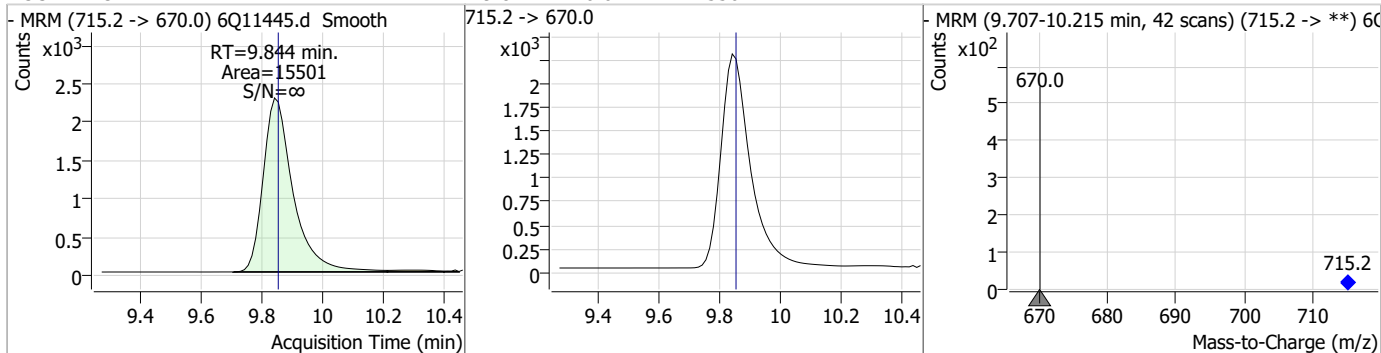
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11CI-PF3OUdS	8.89	9.56	0.00	103958	632.9 -> 452.9	30.7	16.1	48.4



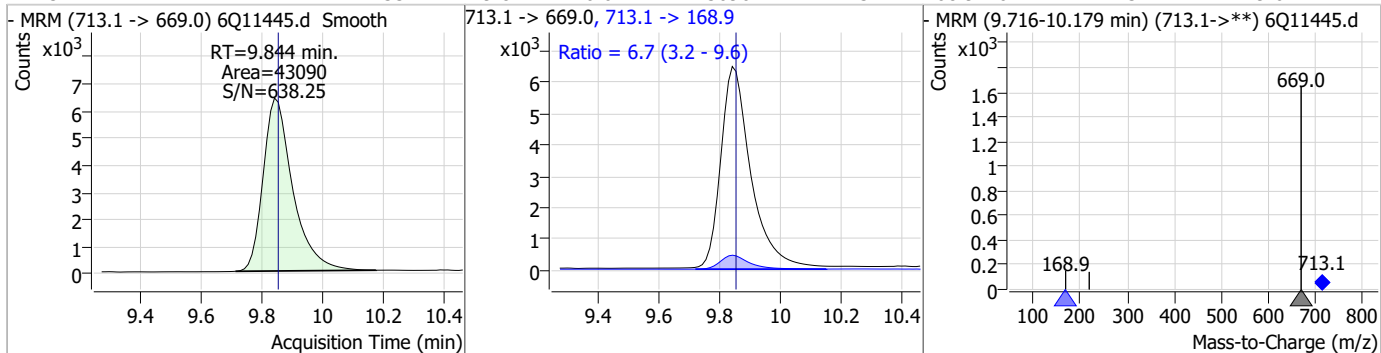
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.45	9.57	0.00	18455				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.24	9.84	-0.01	15501				

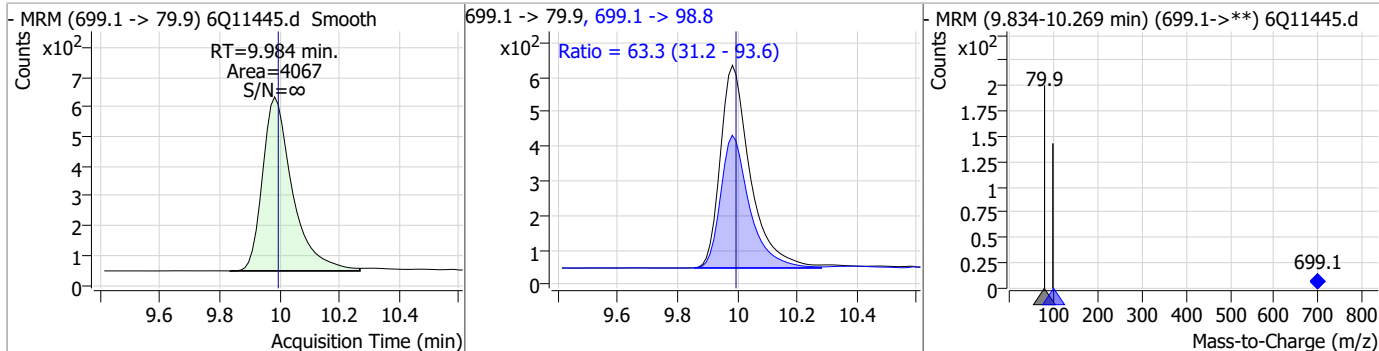


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.33	9.84	-0.01	43090	713.1 -> 168.9	6.7	3.2	9.6

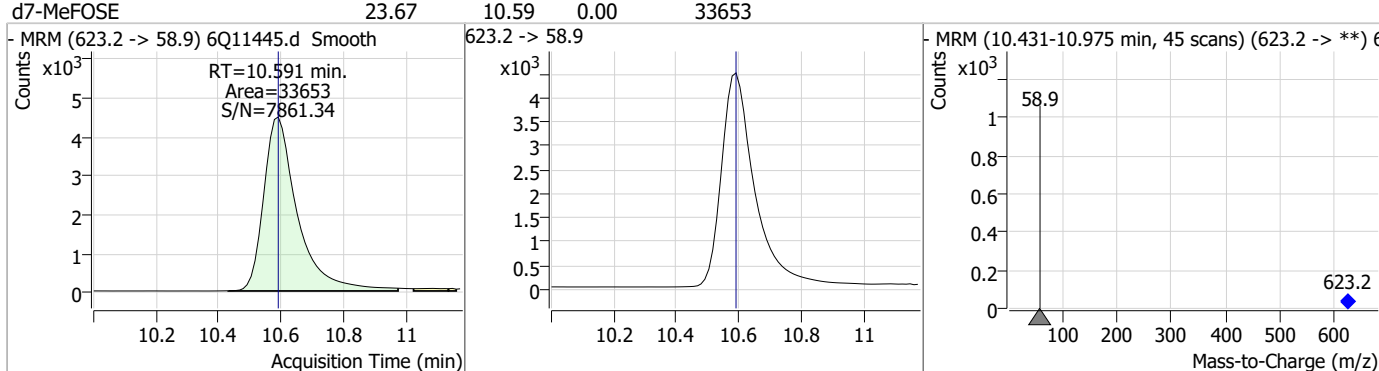


Perfluorinated Compounds by LC/MS/MS

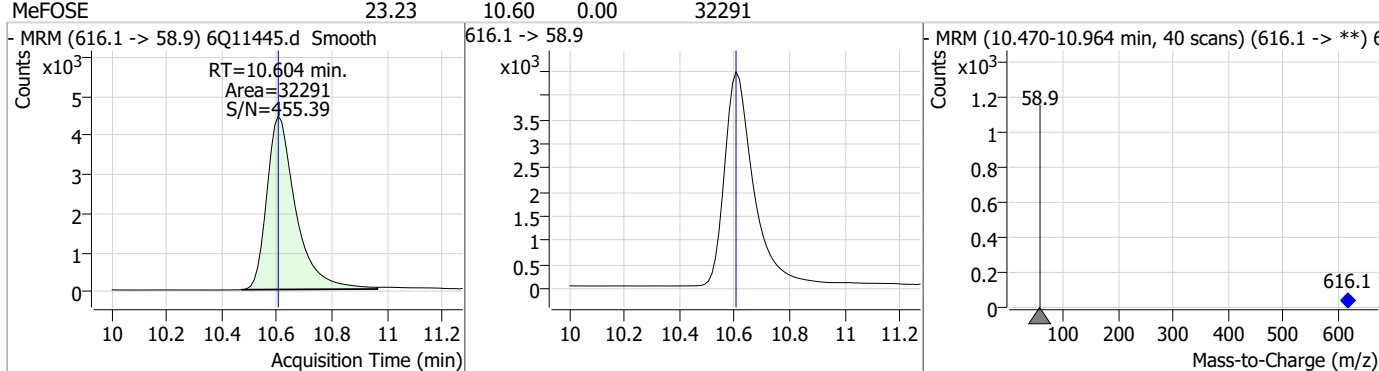
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.07	9.98	-0.01	4067	699.1 -> 98.8	63.3	31.2	93.6



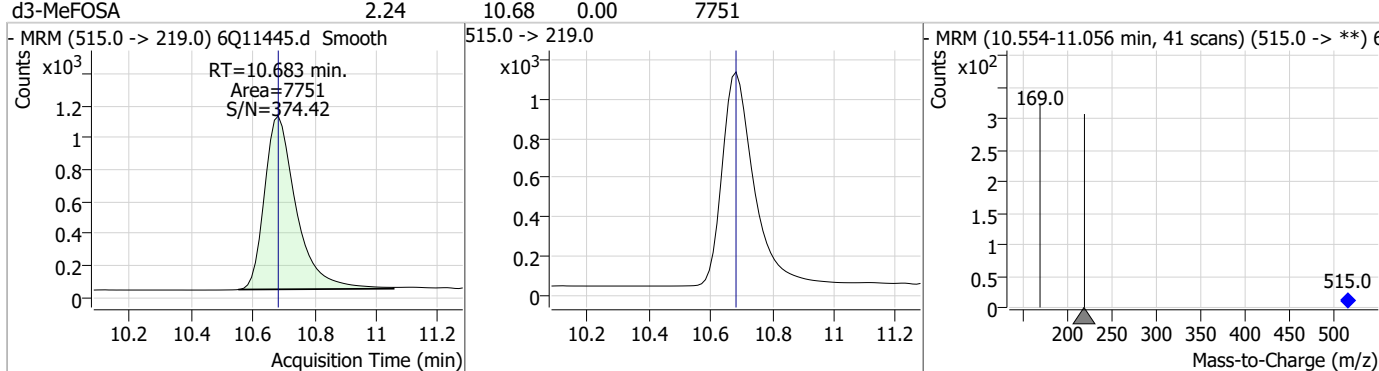
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	23.67	10.59	0.00	33653				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	23.23	10.60	0.00	32291				



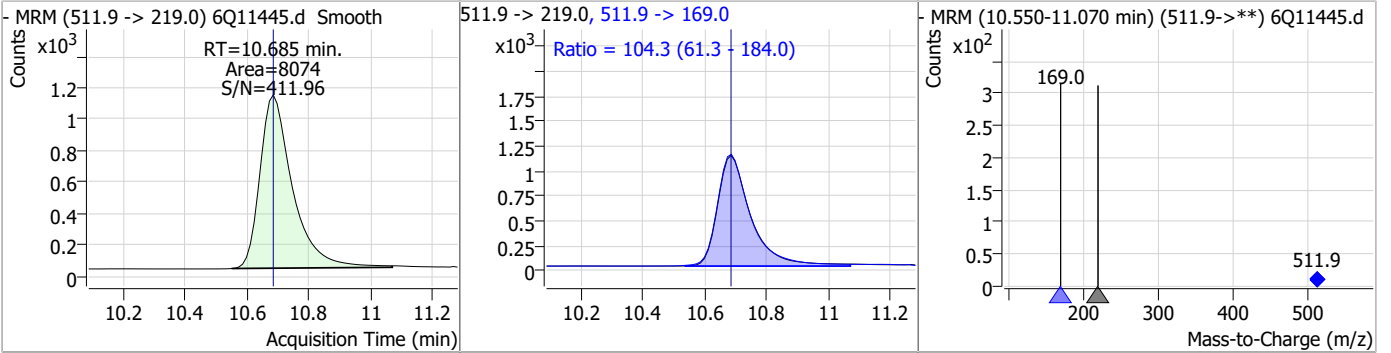
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.24	10.68	0.00	7751				



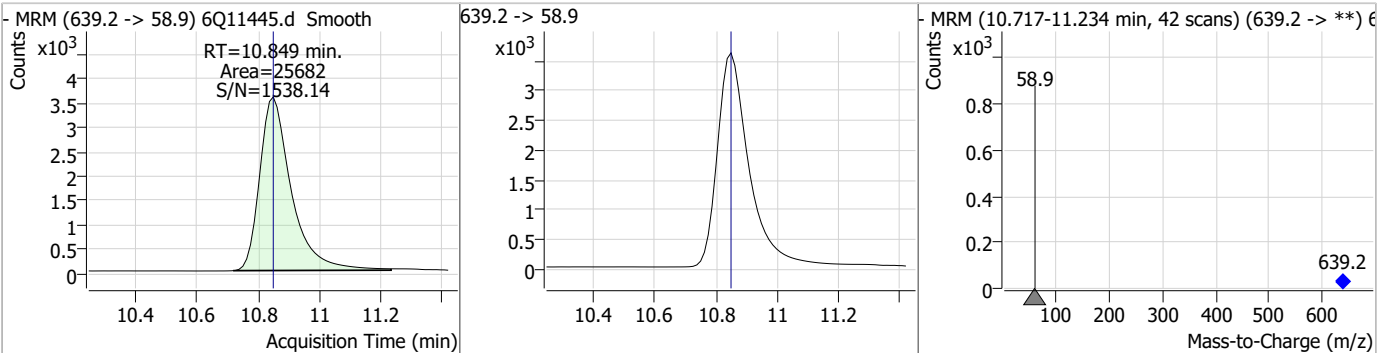
7.6.14
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Perfluorinated Compounds by LC/MS/MS

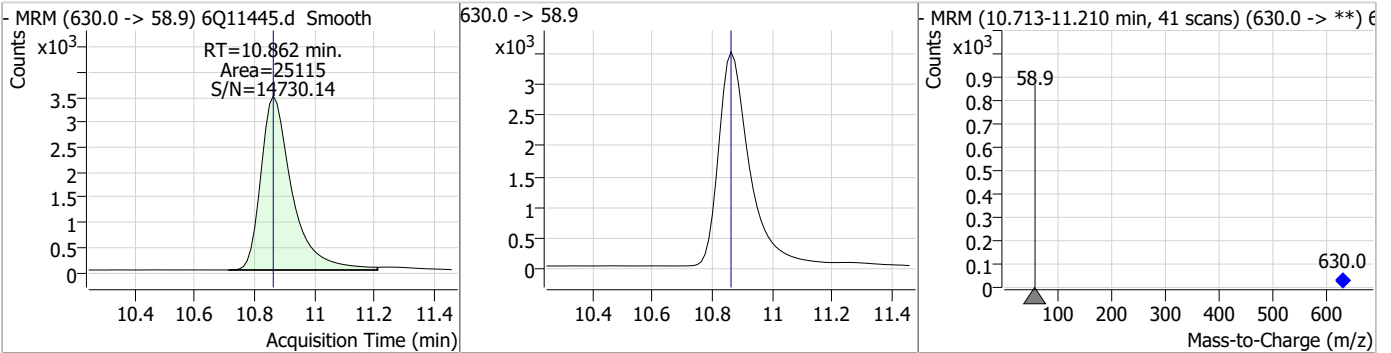
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	2.36	10.68	0.00	8074	511.9 -> 169.0	104.3	61.3	184.0



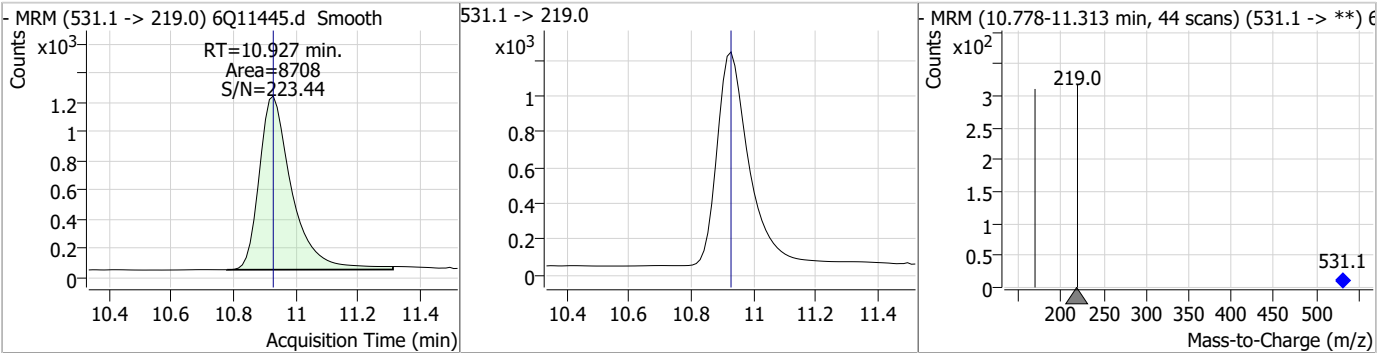
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	23.62	10.85	0.00	25682				



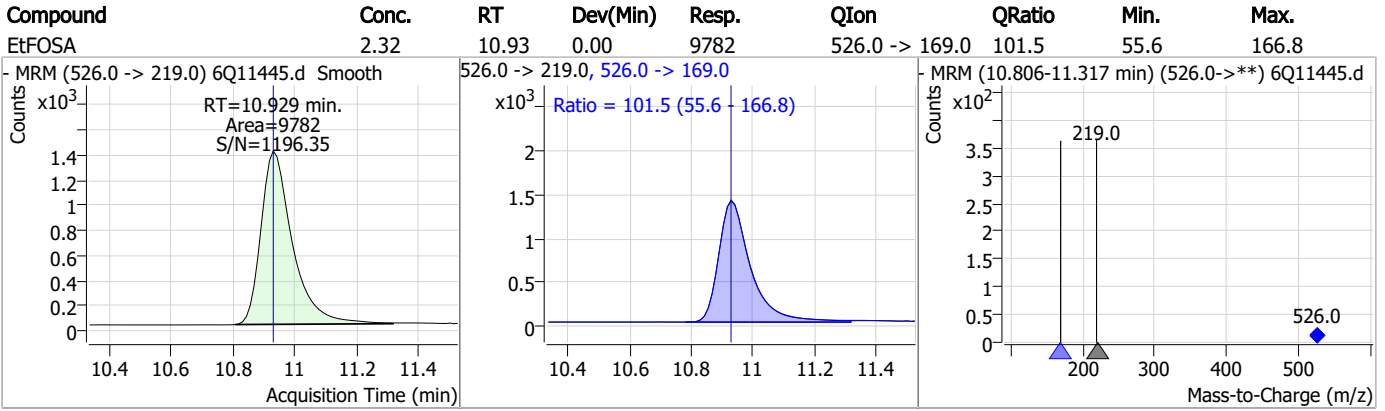
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	22.17	10.86	0.00	25115				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.25	10.93	0.00	8708				



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q179-CC174 Method: EPA DRAFT 1633
Lab FileID: 6Q11445.D Analyst approved: 01/17/23 14:23 Martha Valls
Injection Time: 01/17/23 04:01 Supervisor approved: 01/17/23 18:24 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.30	Split peak
MeFOSAA	2355-31-9		8.24	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.38	Split peak
EtFOSAA	2991-50-6		8.45	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q11457.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/17/2023 6:49:39 AM
 Sample Name : cc174-4
 Vial : P1-C3
 DA Method File : 1633_011123_S6Q174.quantmethod.xml
 Batch Name : s6q179.batch.bin
 Sample Information : OP94795,S6Q179,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.988	216.8 -> 171.9	87932	10.00 µg/L	-0.012
M5-PFPeA	4.371	268.3 -> 223.0	42058	5.00 µg/L	-0.012
M5-PFHxA	5.564	318.0 -> 273.0	36822	2.50 µg/L	0.000
M4-PFHpA	6.503	367.1 -> 322.0	38018	2.50 µg/L	-0.012
M8-PFOA	7.160	421.1 -> 376.0	68975	2.50 µg/L	0.000
M9-PFNA	7.702	472.1 -> 427.0	31029	1.25 µg/L	-0.013
M6-PFDA	8.195	519.1 -> 474.1	20739	1.25 µg/L	-0.012
M7-PFUnDA	8.674	570.0 -> 525.1	23122	1.25 µg/L	0.000
M2-PFDoDA	9.117	615.1 -> 570.0	27091	1.25 µg/L	0.000
M2-PFTeDA	9.856	715.2 -> 670.0	15717	1.25 µg/L	0.000
M8-FOSA	9.568	506.1 -> 77.8	18367	2.50 µg/L	0.000
M3-PFBS	5.519	302.1 -> 79.9	13845	2.50 µg/L	-0.012
M3-PFHxS	7.288	402.1 -> 79.9	9457	2.50 µg/L	-0.012
M8-PFOS	8.371	507.1 -> 79.9	9540	2.50 µg/L	-0.012
M2-4:2FTS	5.228	329.1 -> 80.9	1855	5.00 µg/L	0.000
M2-6:2FTS	6.921	429.1 -> 80.9	2858	5.00 µg/L	-0.012
M2-8:2FTS	7.982	529.1 -> 80.9	2659	5.00 µg/L	0.000
M3-MeFOSAA	8.240	573.2 -> 419.0	26166	5.00 µg/L	0.000
M3-HFPO-DA	5.928	286.9 -> 168.9	15954	10.00 µg/L	-0.012
M5-EtFOSAA	8.448	589.2 -> 419.0	25040	5.00 µg/L	0.000
M7-MeFOSE	10.591	623.2 -> 58.9	34768	25.00 µg/L	0.000
M9-EtFOSE	10.849	639.2 -> 58.9	26717	25.00 µg/L	0.000
M5-EtFOSA	10.927	531.1 -> 219.0	8582	2.50 µg/L	0.000
M3-MeFOSA	10.683	515.0 -> 219.0	8058	2.50 µg/L	0.000
13C4-PFOS	8.372	502.8 -> 79.9	11153	2.50 µg/L	-0.012
13C3-PFBA	2.979	216.0 -> 172.0	38460	5.00 µg/L	-0.025
18O2-PFHxS	7.299	403.0 -> 83.9	6366	2.50 µg/L	0.000
13C4-PFOA	7.160	417.1 -> 372.0	75955	2.50 µg/L	-0.012
13C2-PFDA	8.196	515.1 -> 470.1	26791	1.25 µg/L	-0.012
13C5-PFNA	7.703	468.0 -> 423.0	33942	1.25 µg/L	0.000
13C2-PFHxA	5.565	315.1 -> 270.0	38062	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.228	329.1 -> 80.9	1855	5.59 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.7%		
13C2-6:2FTS	6.921	429.1 -> 80.9	2858	6.29 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 125.7%		
13C2-8:2FTS	7.982	529.1 -> 80.9	2659	5.36 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.2%		
13C2-PFDoDA	9.117	615.1 -> 570.0	27091	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.0%		
13C2-PFTeDA	9.856	715.2 -> 670.0	15717	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.7%		
13C3-PFBS	5.519	302.1 -> 79.9	13845	2.59 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.7%		
13C3-PFHxS	7.288	402.1 -> 79.9	9457	2.74 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 = 109.5%		
13C4-PFBA	2.988	216.8 -> 171.9	87932	10.01 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 100.1%		
13C4-PFHpA	6.503	367.1 -> 322.0	38018	2.46 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.5%		
13C5-PFHxA	5.564	318.0 -> 273.0	36822	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.4%		
13C5-PFPeA	4.371	268.3 -> 223.0	42058	4.95 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.1%		
13C6-PFDA	8.195	519.1 -> 474.1	20739	1.36 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 108.8%		
13C7-PFUnDA	8.674	570.0 -> 525.1	23122	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.4%		
13C8-FOSA	9.568	506.1 -> 77.8	18367	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.5%		
13C8-PFOA	7.160	421.1 -> 376.0	68975	2.71 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 108.4%		
13C8-PFOS	8.371	507.1 -> 79.9	9540	2.68 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 107.1%		
13C9-PFNA	7.702	472.1 -> 427.0	31029	1.29 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.9%		
d3-MeFOSAA	8.240	573.2 -> 419.0	26166	4.87 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.4%		
13C3-HFPO-DA	5.928	286.9 -> 168.9	15954	10.16 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 101.6%		
d3-MeFOSA	10.683	515.0 -> 219.0	8058	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 93.4%		
d5-EtFOSAA	8.448	589.2 -> 419.0	25040	5.31 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.3%		
d7-MeFOSE	10.591	623.2 -> 58.9	34768	24.49 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 98.0%		
d9-EtFOSE	10.849	639.2 -> 58.9	26717	24.61 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 98.4%		
d5-EtFOSA	10.927	531.1 -> 219.0	8582	2.22 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 88.9%		
Target Compounds					QValue
4:2FTS	5.216	327.1 -> 307.0	39096	8.86 µg/L	99
		327.1 -> 80.9	8903		
6:2FTS	6.922	427.1 -> 407.0	35349	7.95 µg/L	99
		427.1 -> 80.9	7249		
8:2FTS	7.983	527.1 -> 507.0	20880	9.41 µg/L	98
		527.1 -> 80.8	5346		
EtFOSAA	8.449	584.2 -> 419.1	9441	2.36 µg/L	m 91
		584.2 -> 526.0	4871		
FOSA	9.571	498.1 -> 77.9	17983	2.42 µg/L	97
		498.1 -> 478.0	536		
MeFOSAA	8.241	570.1 -> 419.0	12812	2.38 µg/L	m 96
		570.1 -> 483.0	2321		
PFBA	2.982	212.8 -> 168.9	20795	9.22 µg/L	100
PFBS	5.520	298.7 -> 79.9	12143	2.17 µg/L	99
		298.7 -> 98.8	5603		
PFDA	8.196	512.9 -> 469.0	57367	2.30 µg/L	99
		512.9 -> 219.0	7970		
PFDODA	9.117	613.1 -> 569.0	47748	2.24 µg/L	98
		613.1 -> 319.0	5730		
PFDS	9.293	599.0 -> 79.9	6827	2.07 µg/L	98

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.516	599.0 -> 98.8	3735	2.34	µg/L	99
		363.1 -> 319.0	53598			
PFHpS	7.867	363.1 -> 169.0	7253	1.97	µg/L	95
		449.0 -> 79.9	8617			
PFHxA	5.567	449.0 -> 98.9	5272	2.34	µg/L	98
		313.0 -> 269.0	34790			
PFHxS	7.289	313.0 -> 118.9	1395	2.05	µg/L	97
		398.7 -> 79.9	9230			
PFNA	7.703	398.7 -> 98.9	5161	2.26	µg/L	98
		463.0 -> 419.0	48450			
PFNS	8.862	463.0 -> 219.0	9115	2.12	µg/L	92
		548.8 -> 79.9	9782			
PFOA	7.161	548.8 -> 98.9	5533	2.15	µg/L	100
		413.0 -> 369.0	66204			
PFOS	8.372	413.0 -> 169.0	9265	2.03	µg/L	95
		498.9 -> 79.9	9391			
PFPeA	4.374	498.9 -> 98.8	5934	4.61	µg/L	100
		263.0 -> 219.0	42610			
PFPeS	6.582	349.1 -> 79.9	10780	2.02	µg/L	97
		349.1 -> 98.9	5966			
PFTeDA	9.844	713.1 -> 669.0	44696	2.39	µg/L	100
		713.1 -> 168.9	2888			
PFTrDA	9.513	663.0 -> 619.0	49431	2.43	µg/L	99
		663.0 -> 168.9	3989			
PFUnDA	8.675	563.1 -> 519.0	45554	2.36	µg/L	96
		563.1 -> 269.1	7176			
11CI-PF3OUdS	9.565	630.9 -> 450.9	109037	9.01	µg/L	97
		632.9 -> 452.9	33110			
9CI-PF3ONS	8.727	530.8 -> 351.0	161139	8.20	µg/L	95
		532.8 -> 353.0	49458			
ADONA	6.767	376.9 -> 250.9	299422	8.44	µg/L	96
		376.9 -> 84.8	66272			
HFPO-DA	5.929	284.9 -> 168.9	15363	9.52	µg/L	99
		284.9 -> 184.9	1816			
3:3FTCA	3.827	241.0 -> 177.0	5392	10.96	µg/L	98
		241.0 -> 117.0	699			
5:3FTCA	6.194	341.0 -> 237.1	182576	59.01	µg/L	96
		341.0 -> 217.0	149006			
7:3FTCA	7.618	441.0 -> 316.9	122926	58.94	µg/L	91
		441.0 -> 336.9	257526			
EtFOSA	10.929	526.0 -> 219.0	10192	2.45	µg/L	85
		526.0 -> 169.0	9703			
EtFOSE	10.862	630.0 -> 58.9	26127	22.17	µg/L	100
		511.9 -> 219.0	8414			
MeFOSA	10.685	511.9 -> 169.0	8310	2.36	µg/L	79
		616.1 -> 58.9	32384			
MeFOSE	10.604	699.1 -> 79.9	4194	22.55	µg/L	100
		699.1 -> 98.8	2698			
PFDoDS	9.984	295.0 -> 201.0	4519	2.04	µg/L	98
		295.0 -> 84.9	2141			
NFDHA	5.446	279.0 -> 85.1	13292	4.68	µg/L	90
		229.0 -> 84.9	11693			
PFMBA	4.776	314.8 -> 134.9	86956	4.57	µg/L	100
		314.8 -> 82.9	2220			
PFMPA	3.525			4.20	µg/L	100
PFEESA	6.060			4.20	µg/L	100

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



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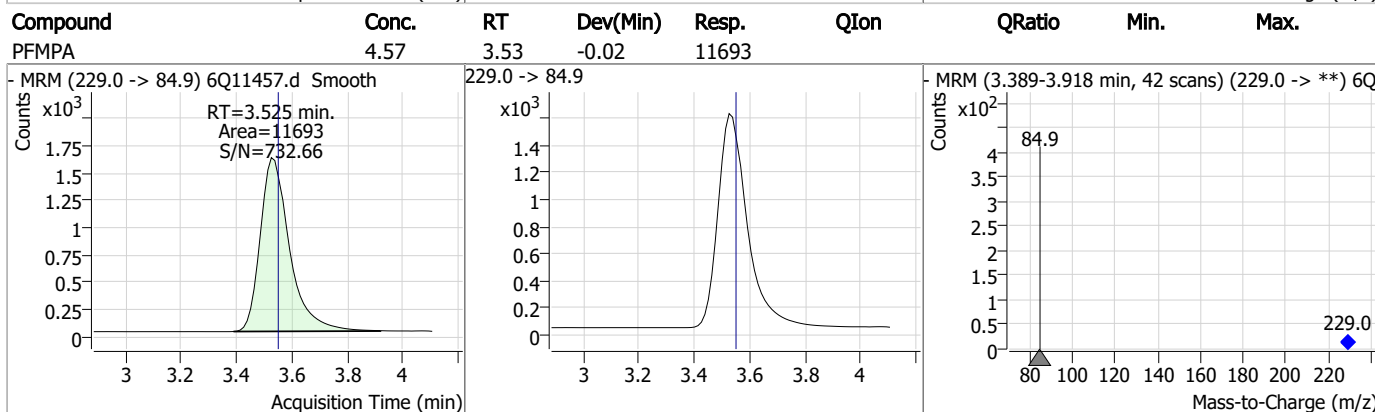
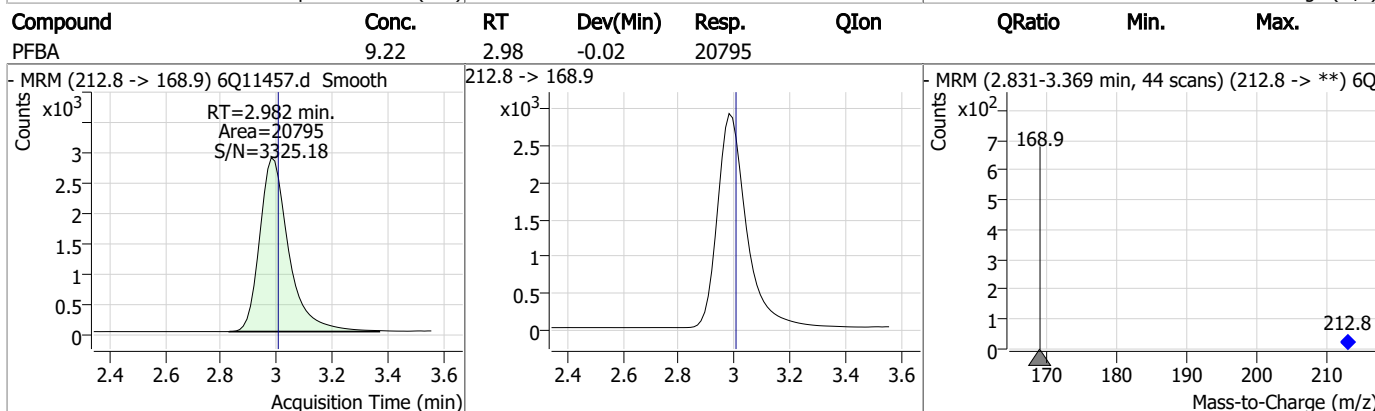
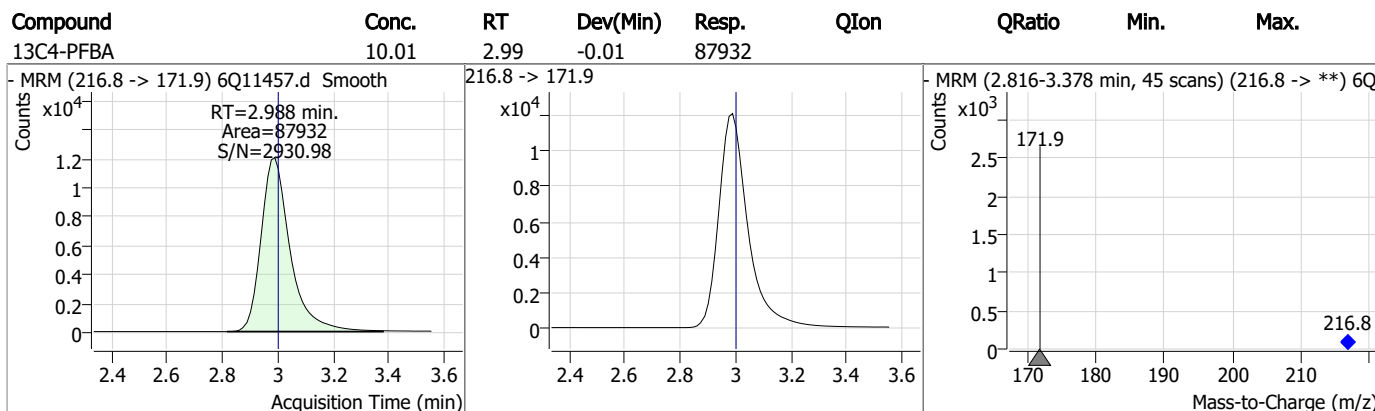
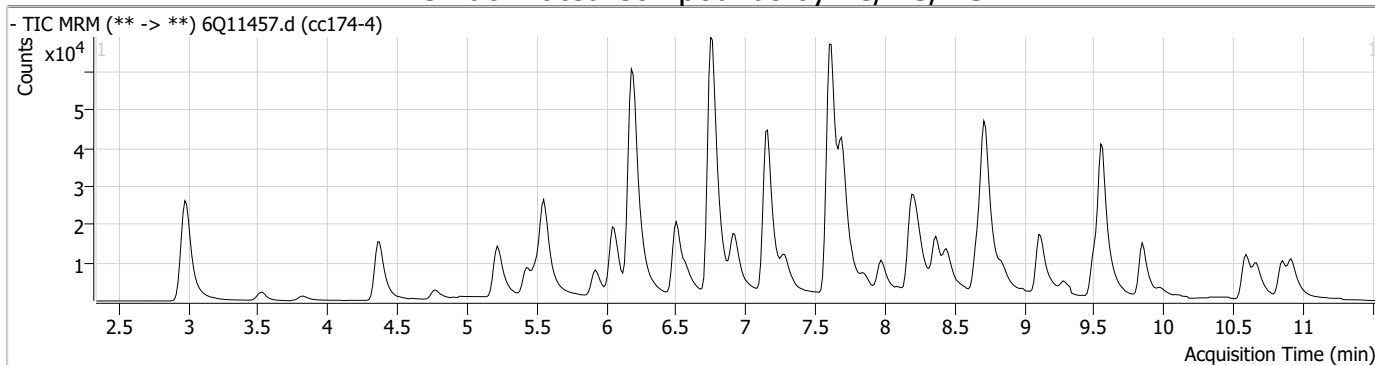
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.6.15

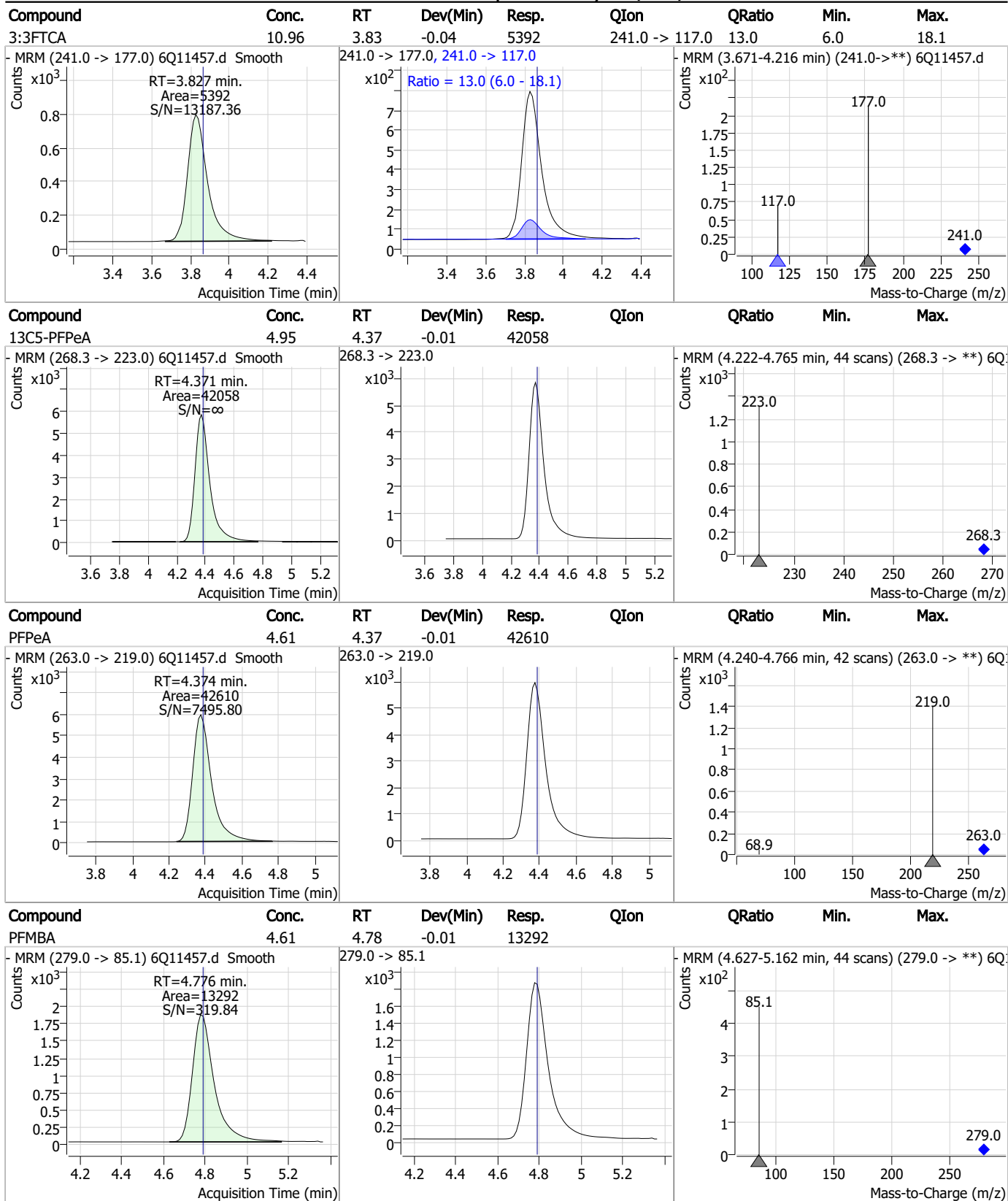
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Perfluorinated Compounds by LC/MS/MS



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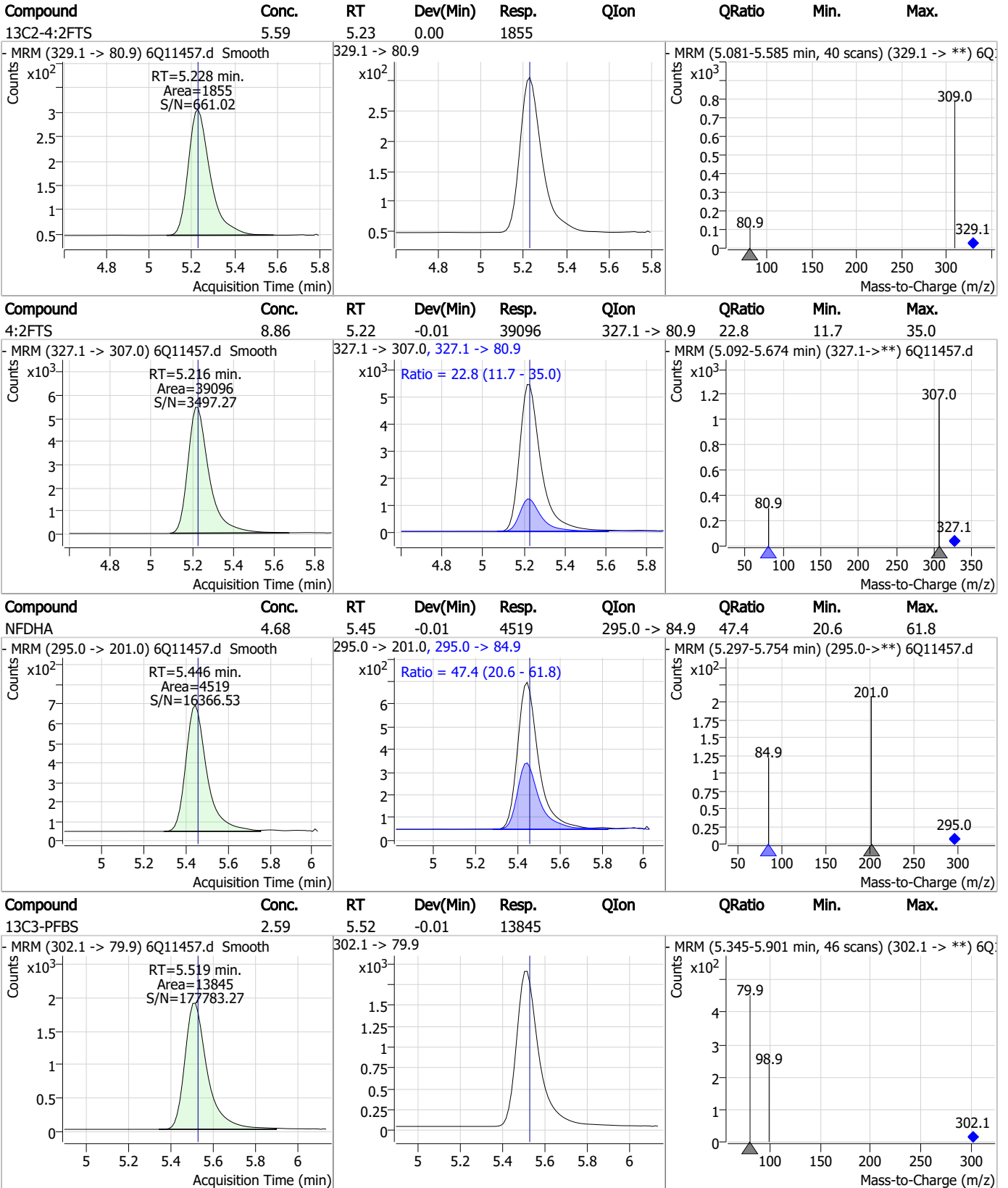
Perfluorinated Compounds by LC/MS/MS



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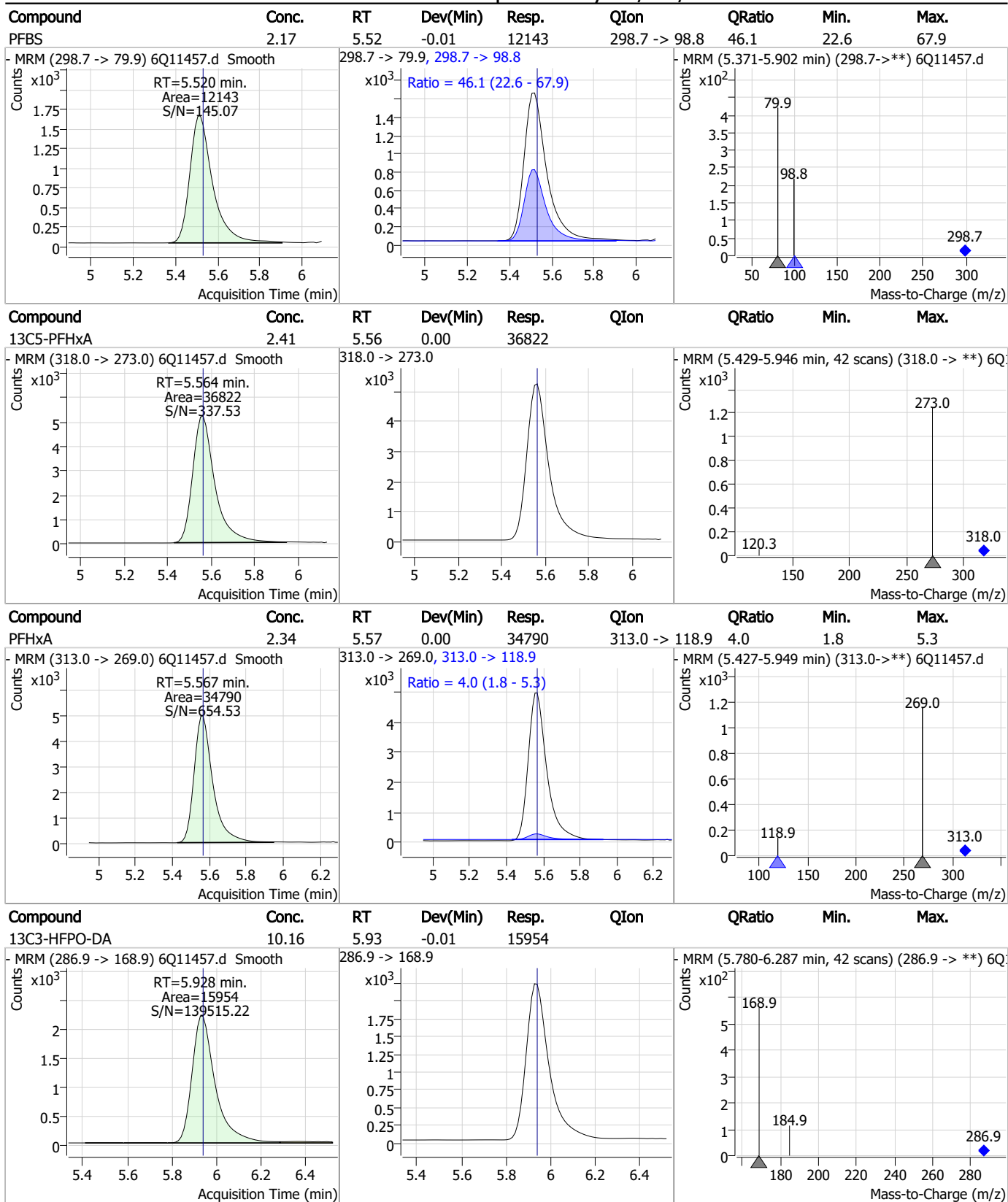
Perfluorinated Compounds by LC/MS/MS



7.6.15 7

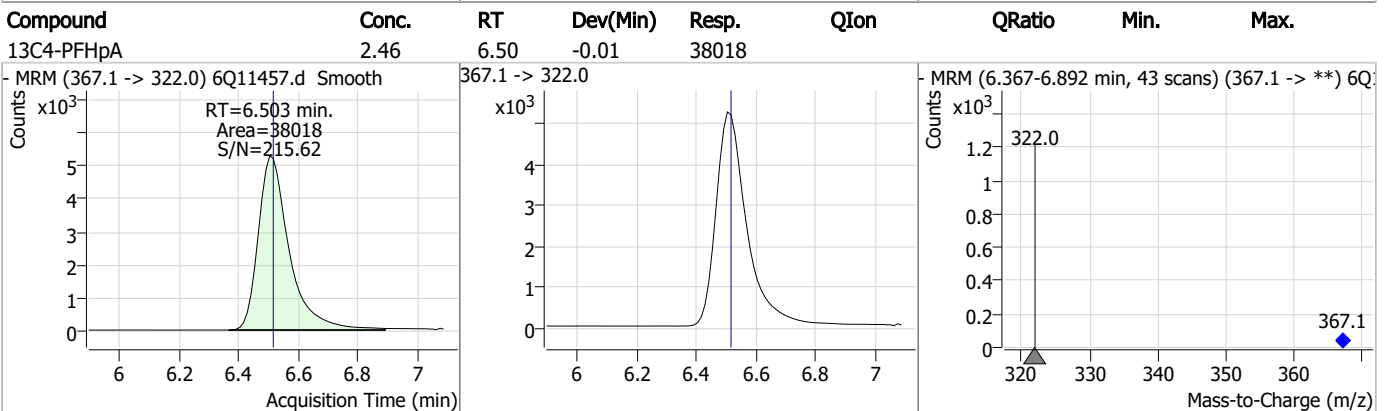
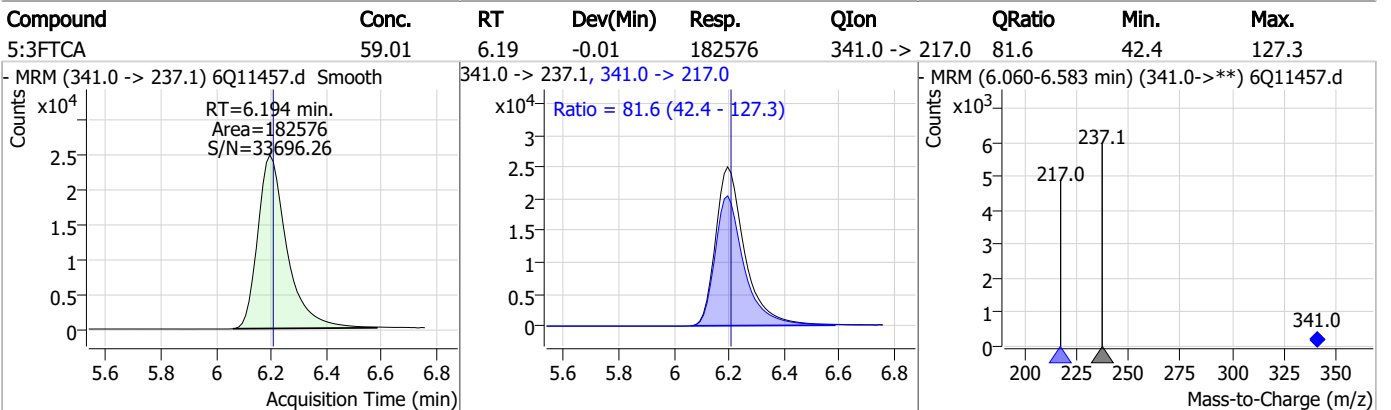
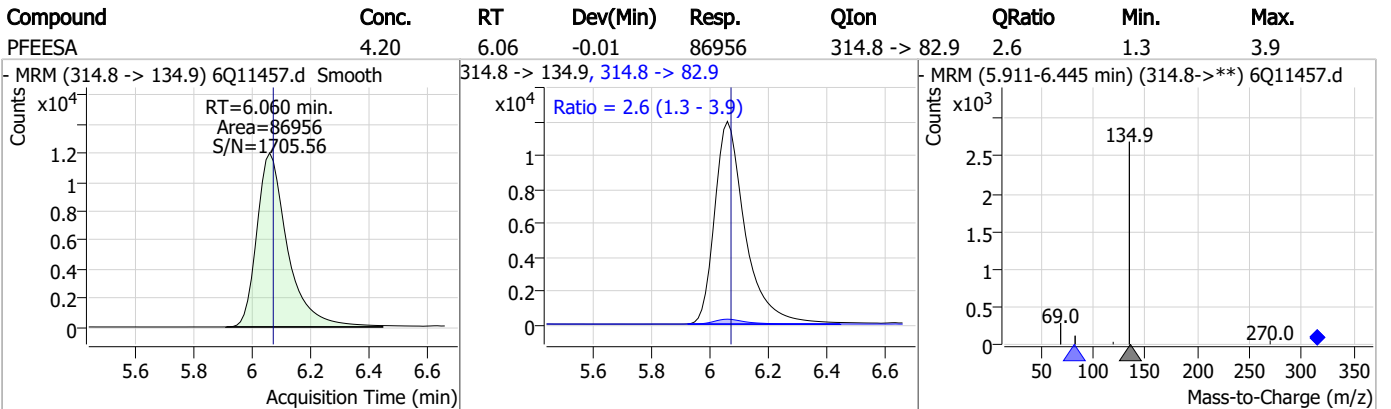
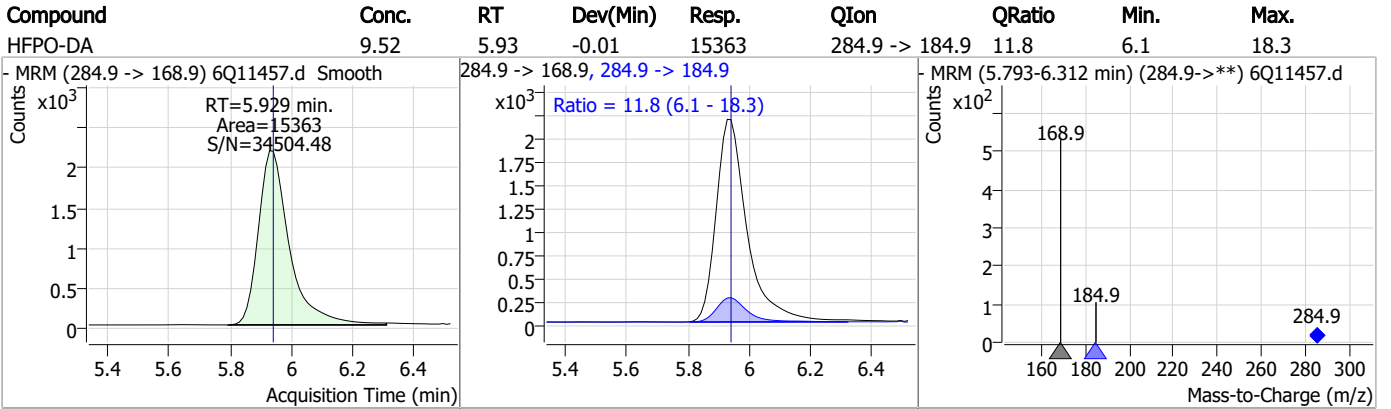


Perfluorinated Compounds by LC/MS/MS



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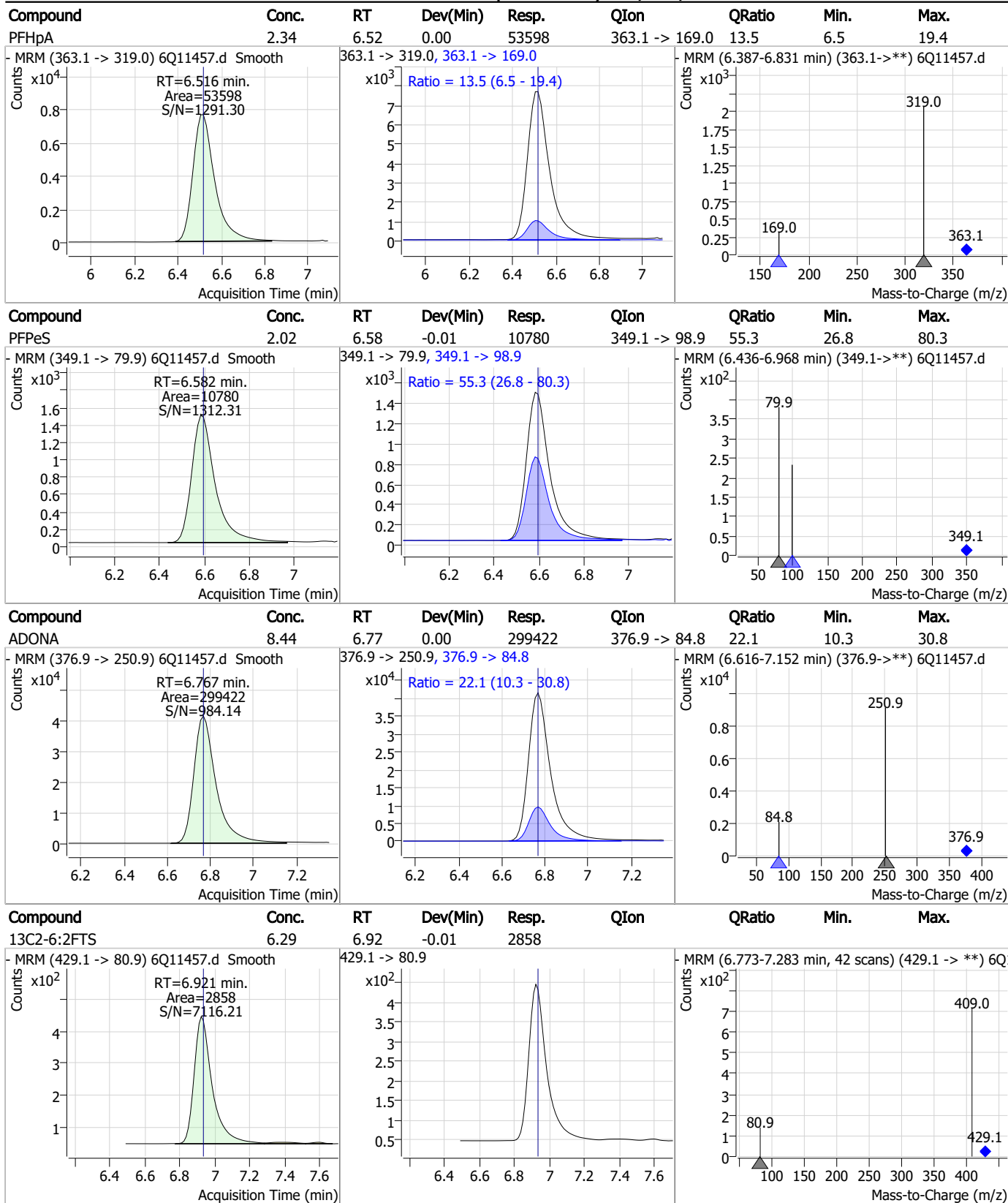
Perfluorinated Compounds by LC/MS/MS



7.6.15 7



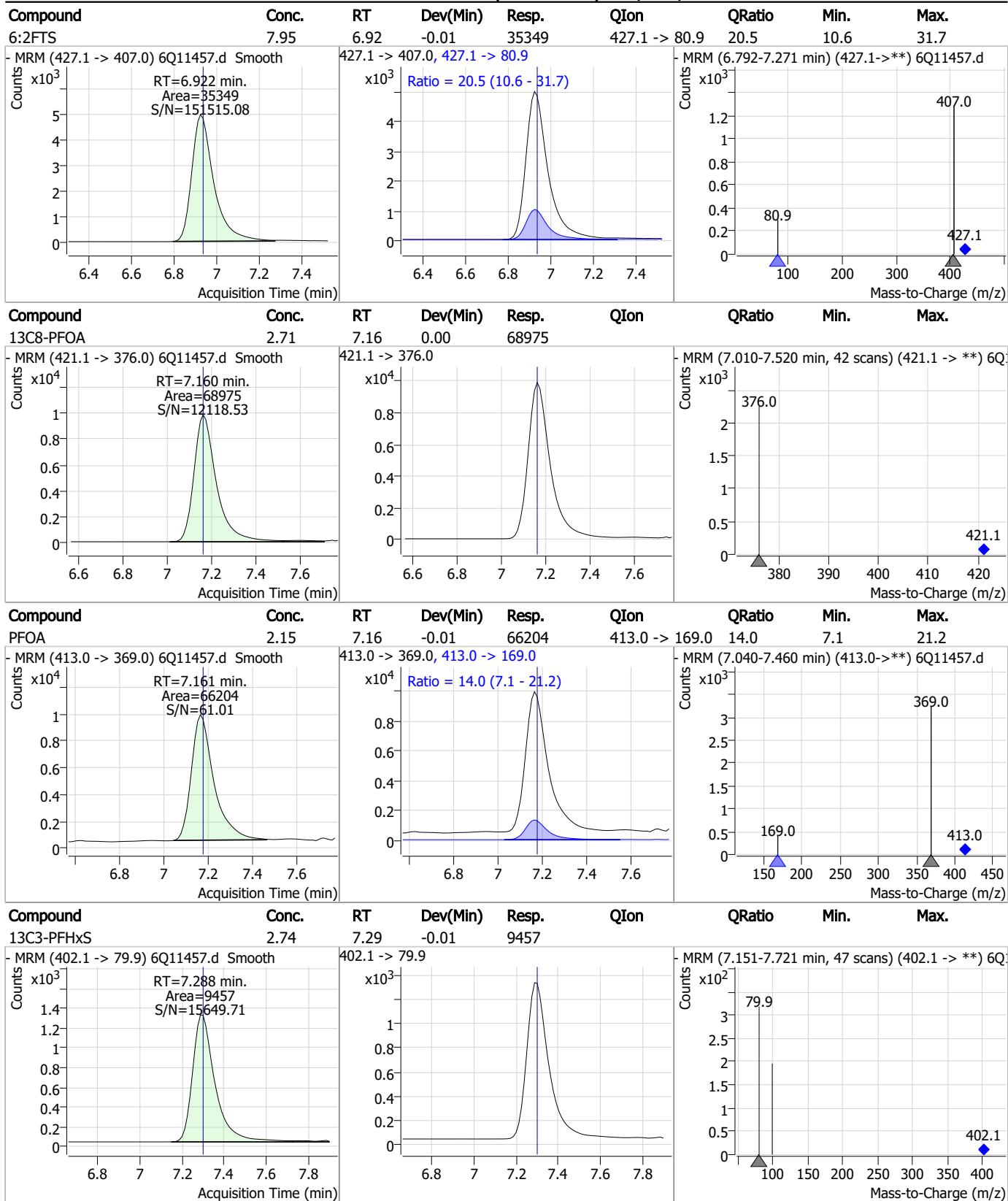
Perfluorinated Compounds by LC/MS/MS



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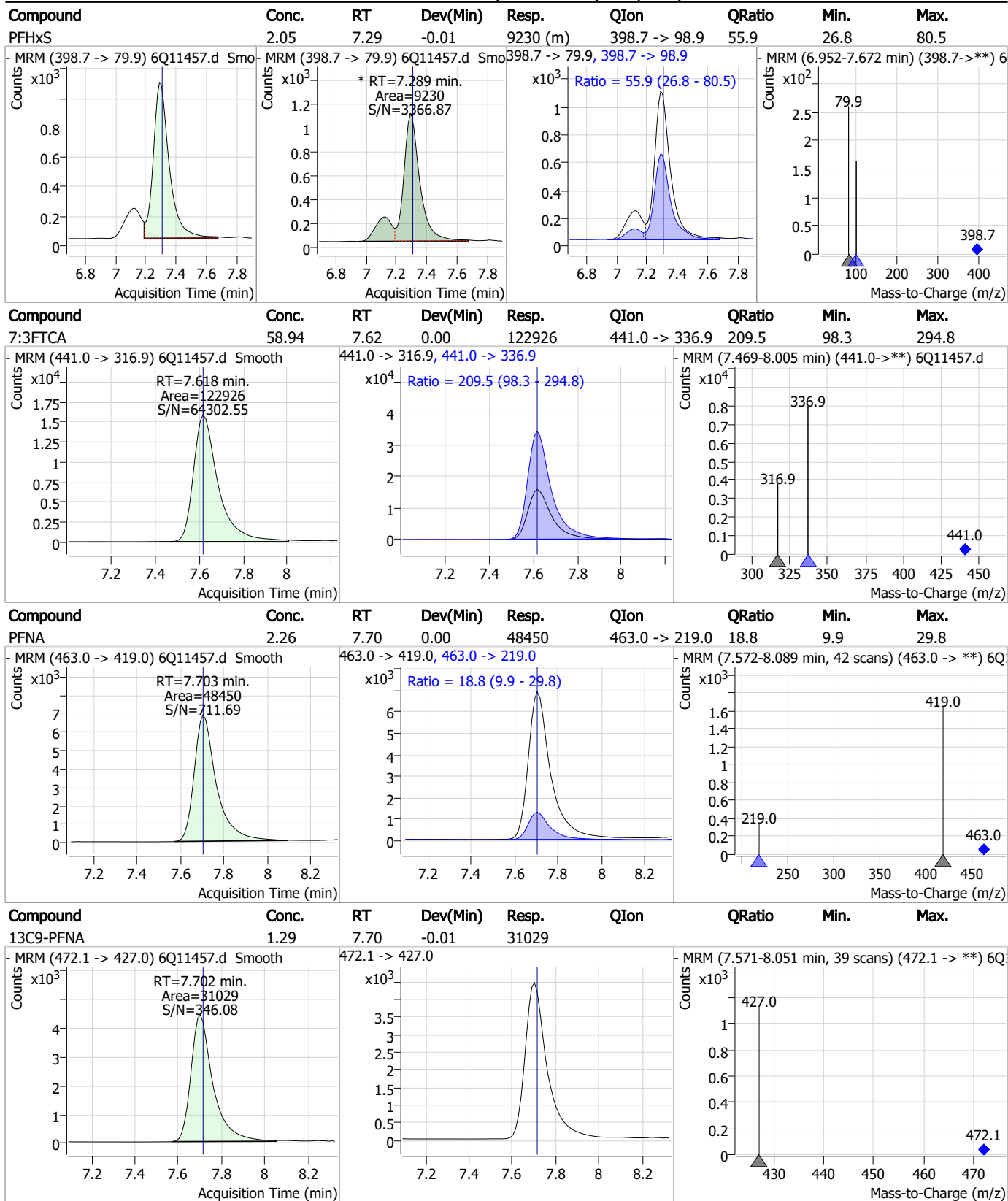
Perfluorinated Compounds by LC/MS/MS



7.6.15

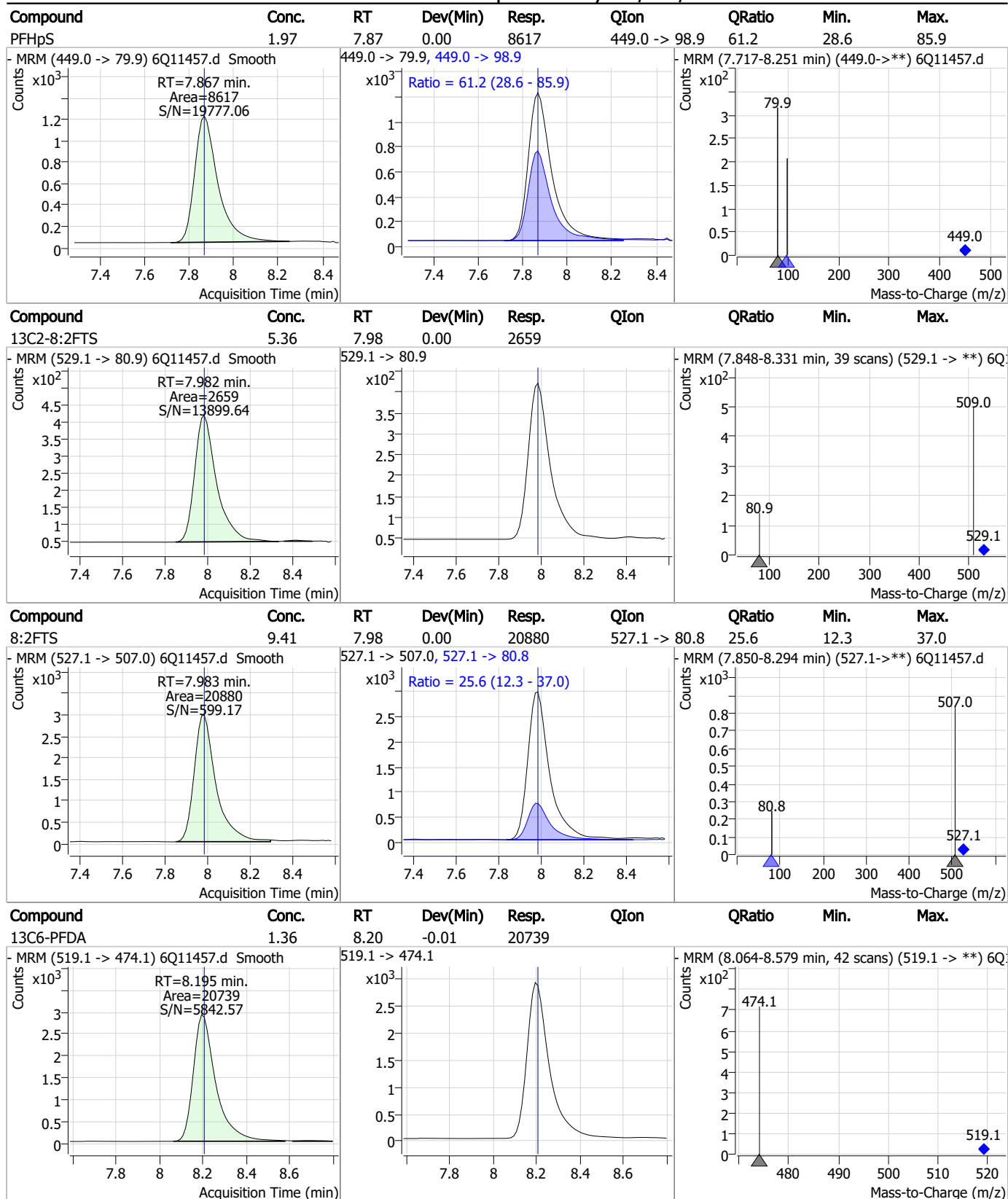


Perfluorinated Compounds by LC/MS/MS



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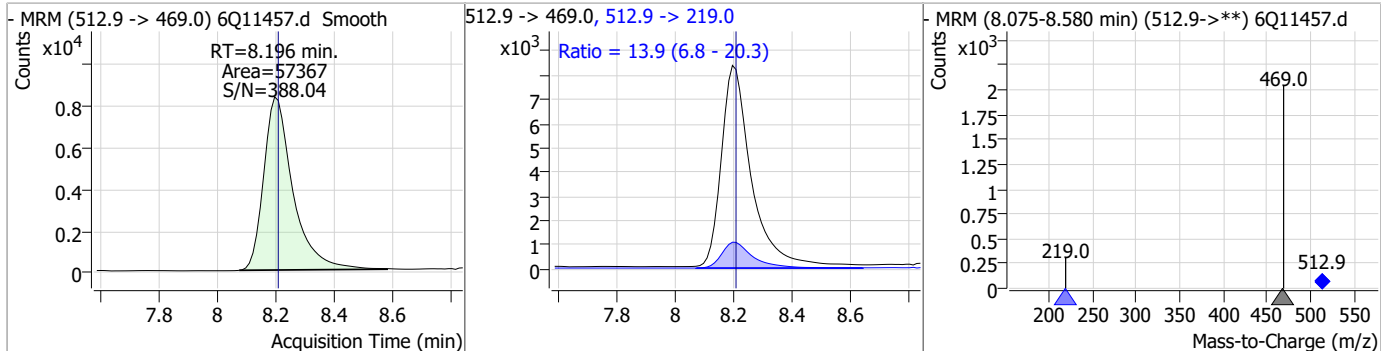
Perfluorinated Compounds by LC/MS/MS



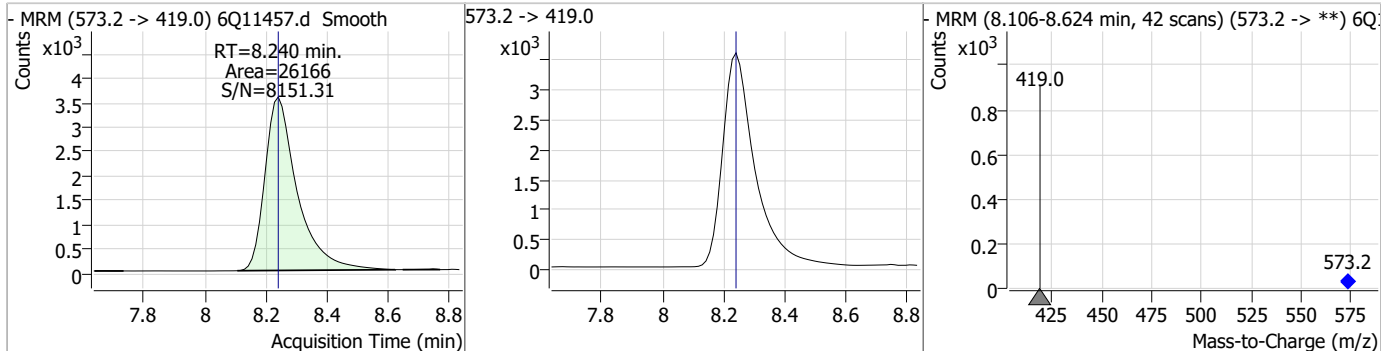
7.6.15

Perfluorinated Compounds by LC/MS/MS

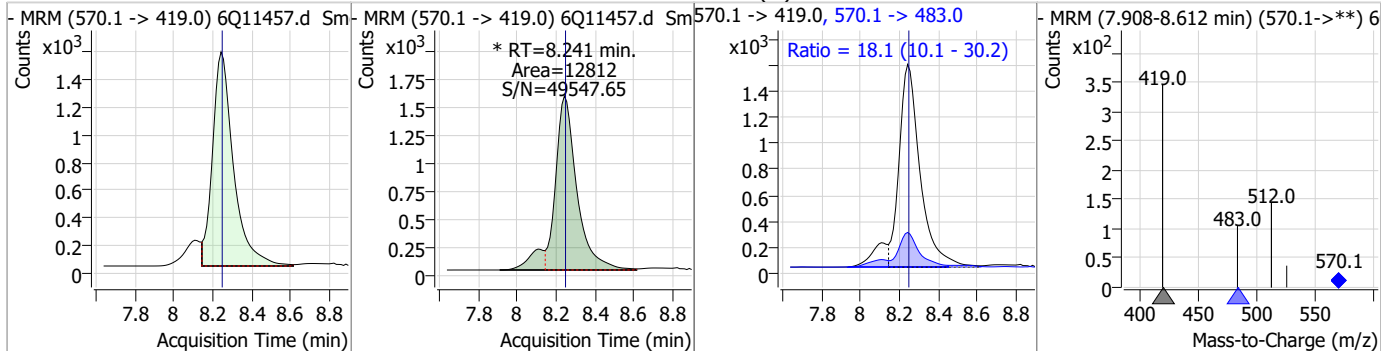
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.30	8.20	-0.01	57367	512.9 -> 219.0	13.9	6.8	20.3



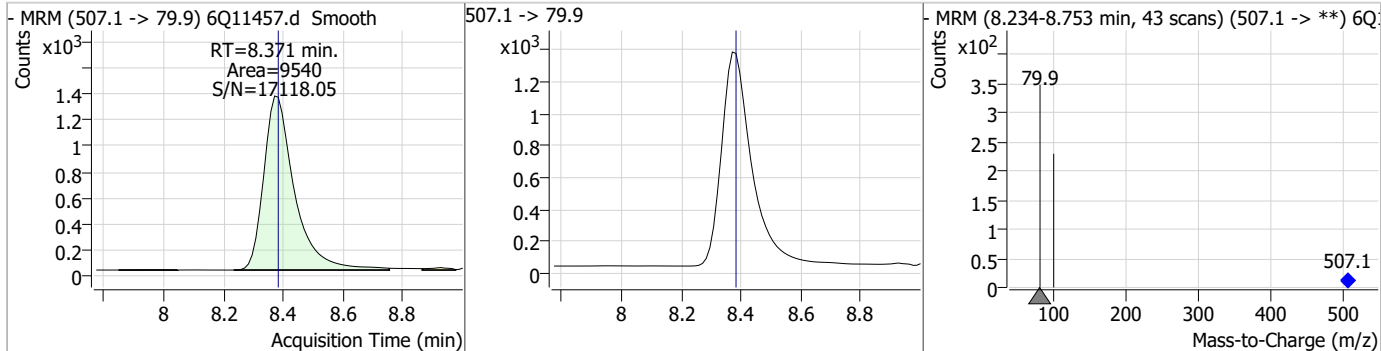
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.87	8.24	0.00	26166				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.38	8.24	0.00	12812 (m)	570.1 -> 483.0	18.1	10.1	30.2



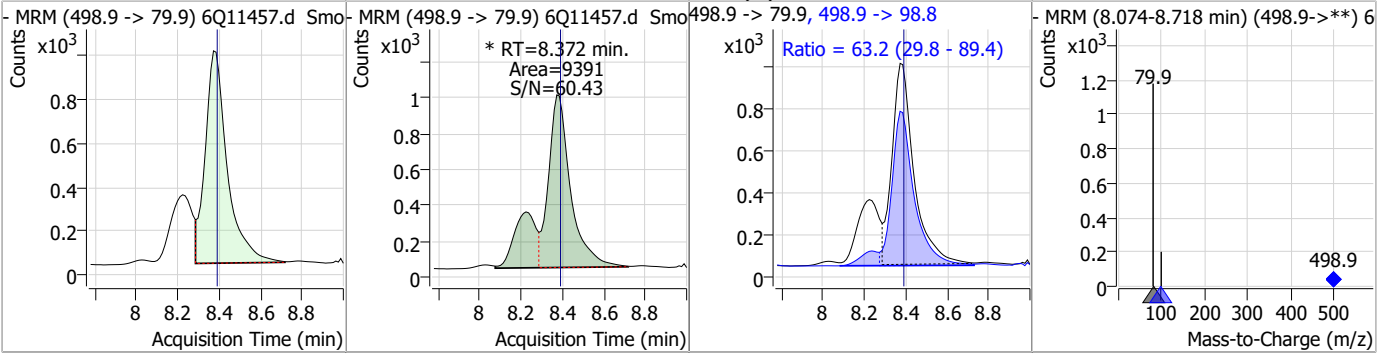
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.68	8.37	-0.01	9540				



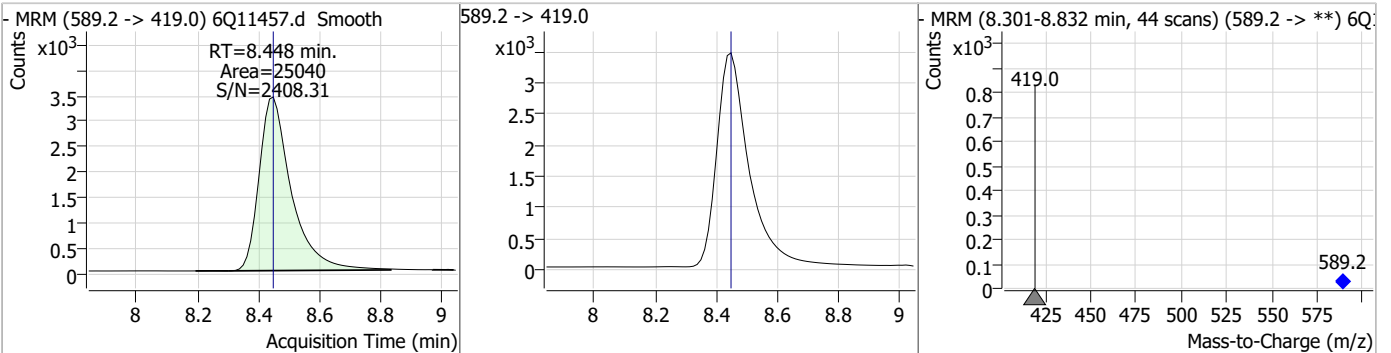
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Perfluorinated Compounds by LC/MS/MS

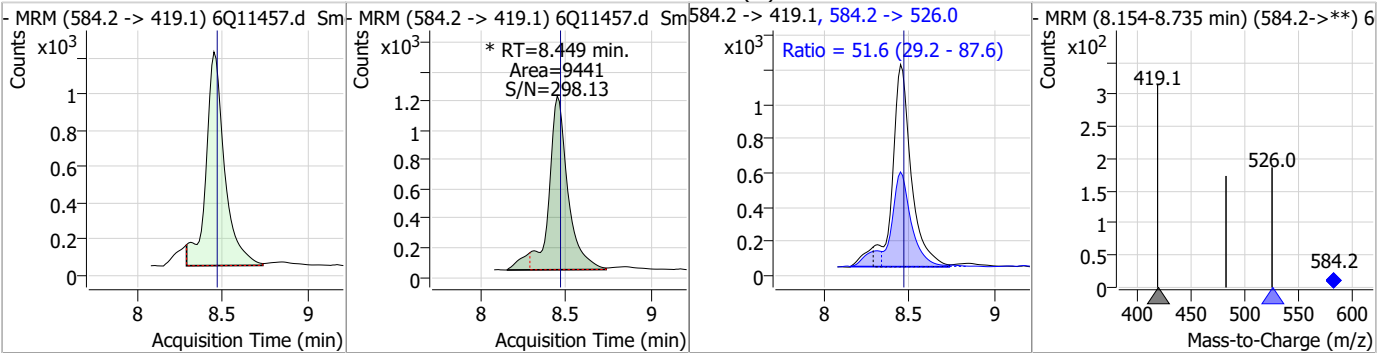
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.03	8.37	-0.01	9391 (m)	498.9 -> 98.8	63.2	29.8	89.4



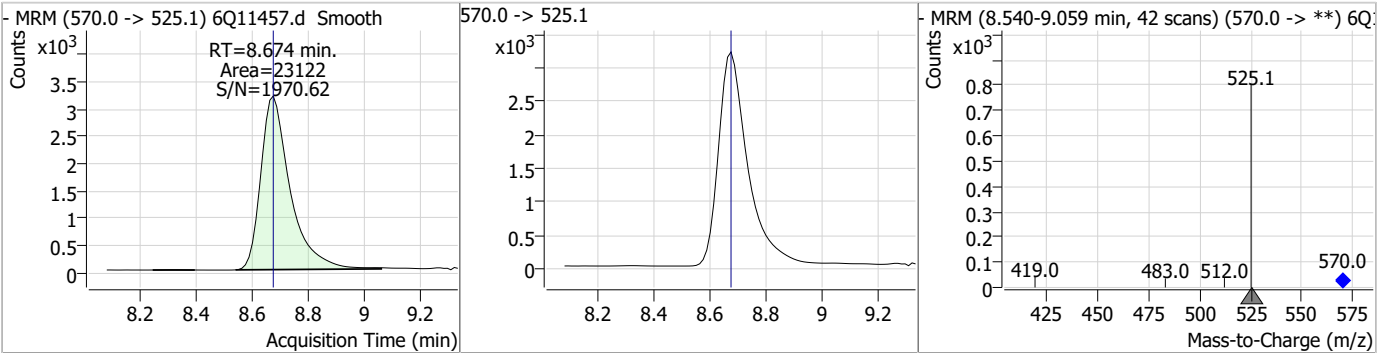
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.31	8.45	0.00	25040				



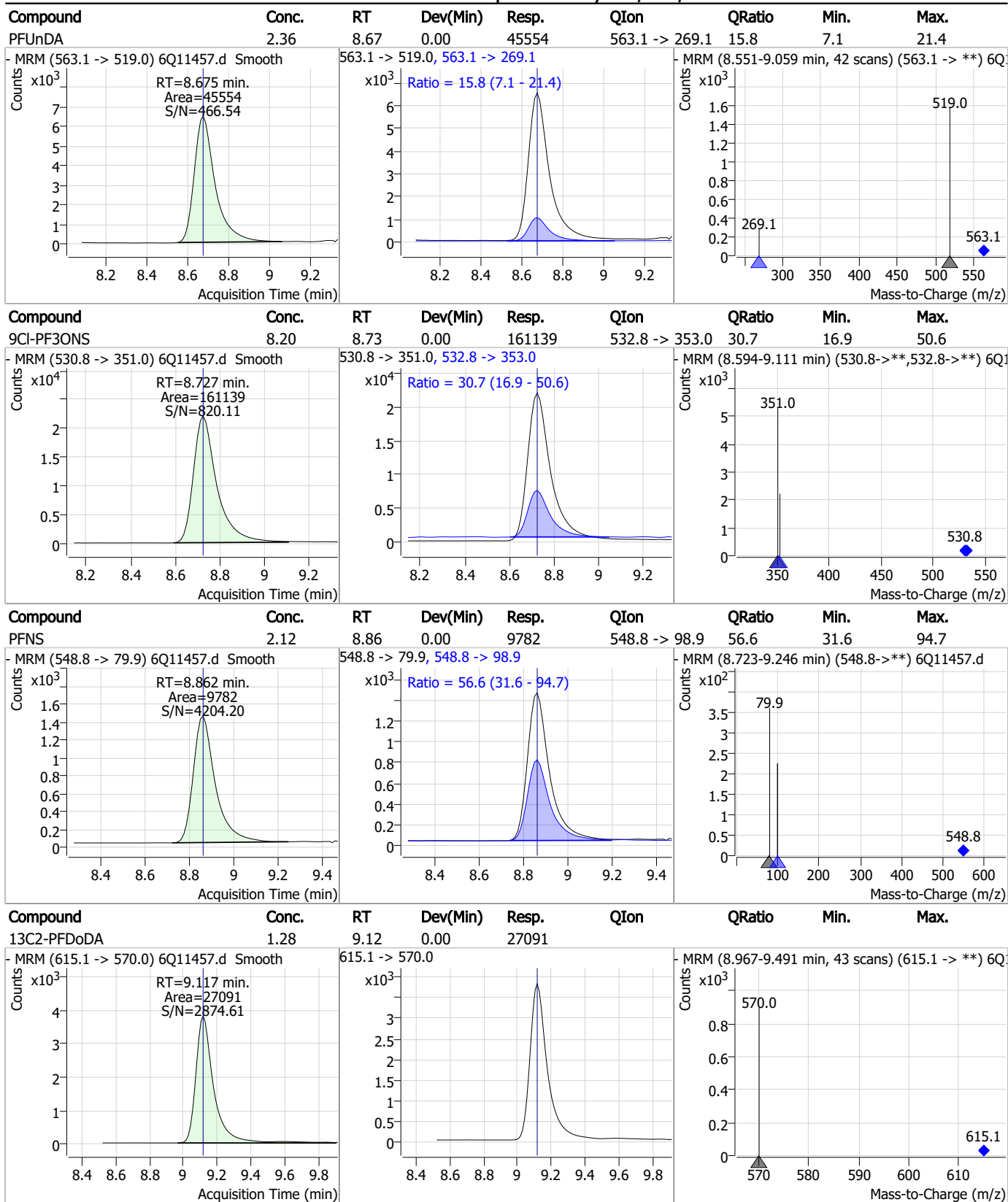
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.36	8.45	-0.01	9441 (m)	584.2 -> 526.0	51.6	29.2	87.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.24	8.67	0.00	23122				



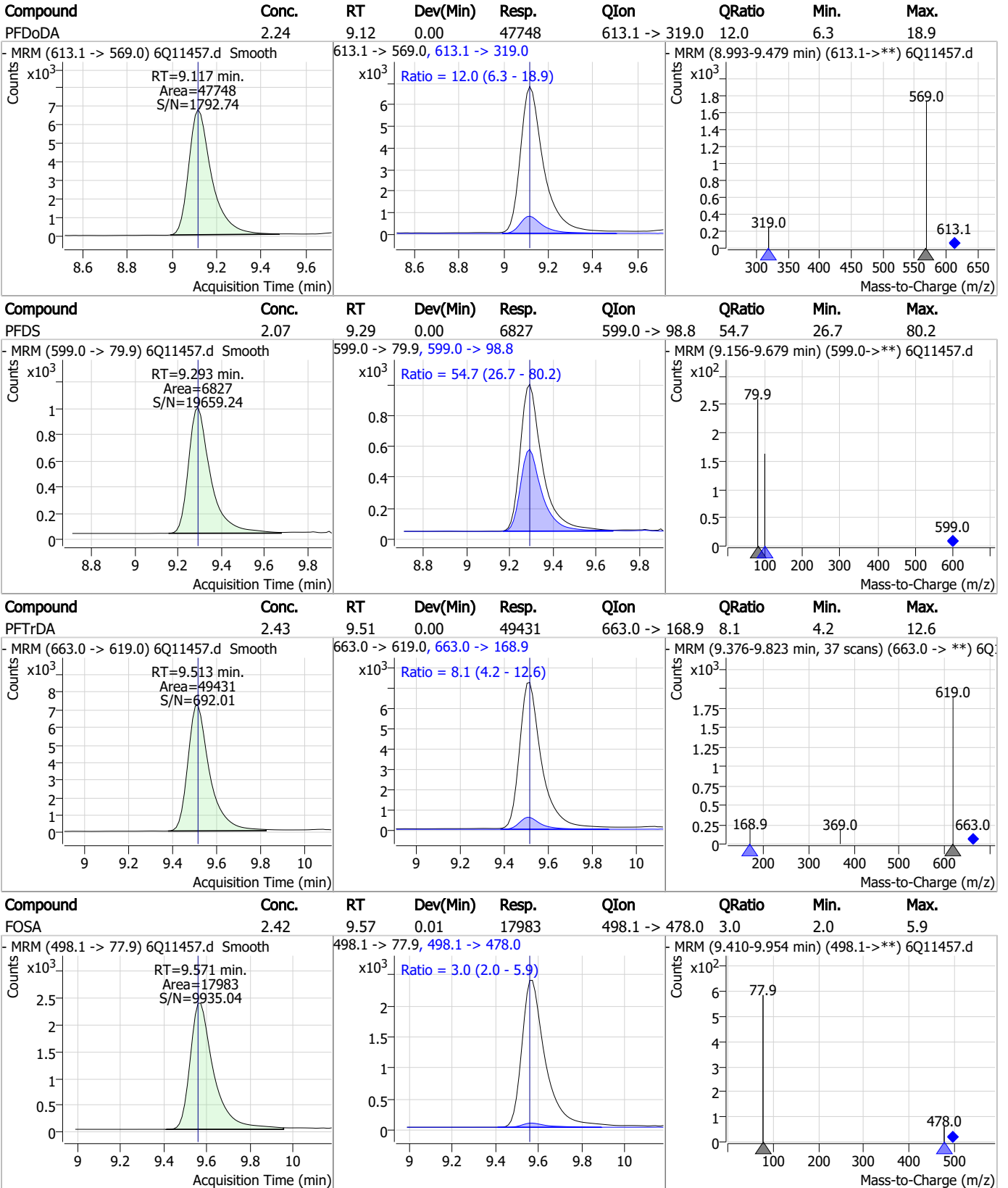
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

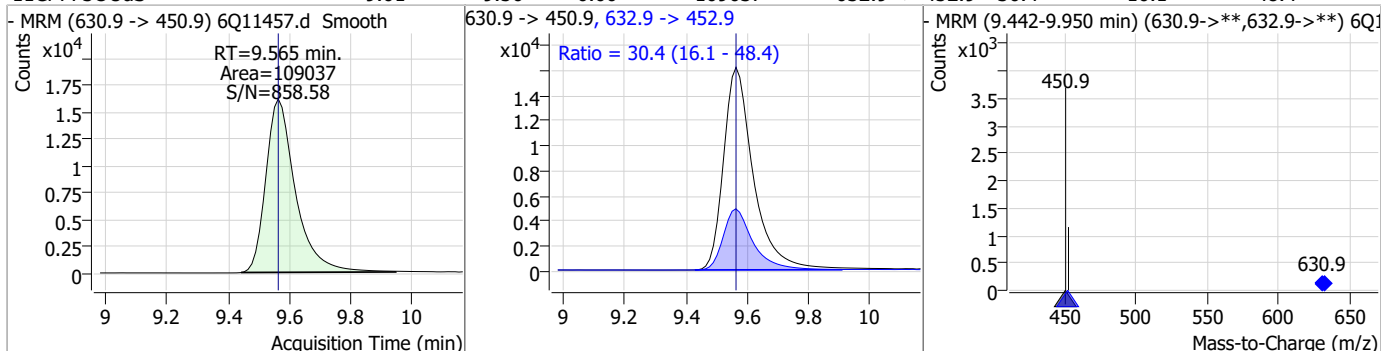


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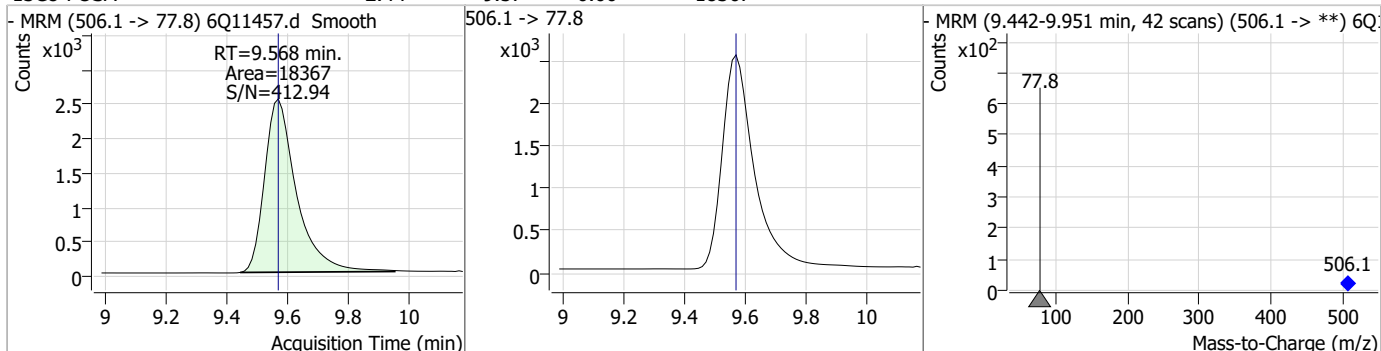


Perfluorinated Compounds by LC/MS/MS

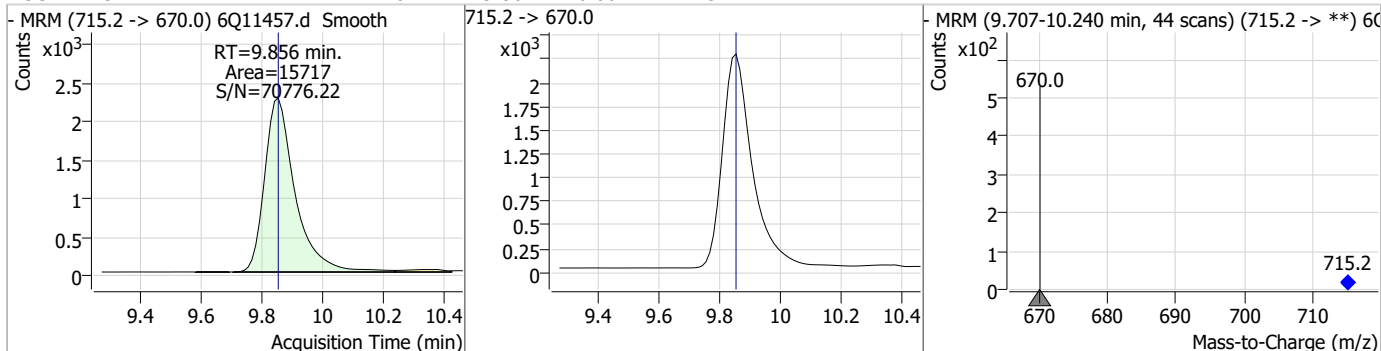
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	9.01	9.56	0.00	109037	632.9 -> 452.9	30.4	16.1	48.4



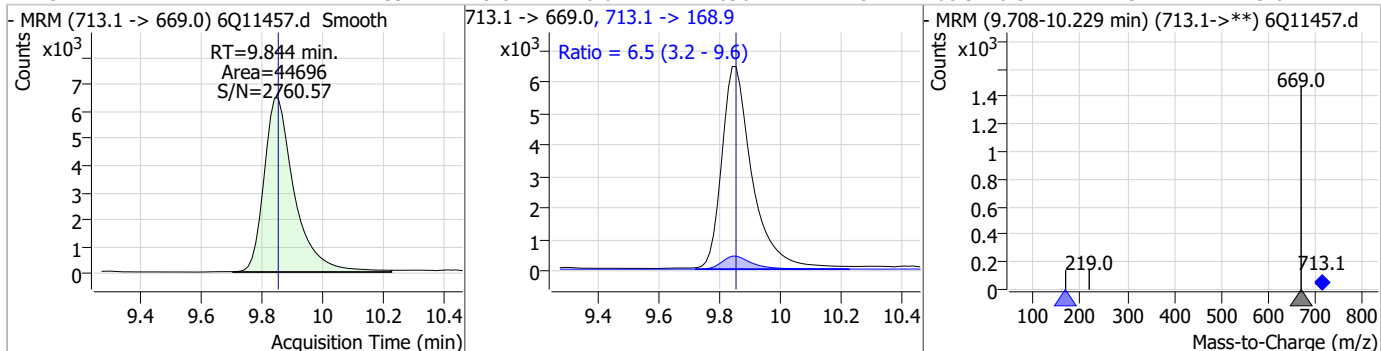
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.44	9.57	0.00	18367				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.26	9.86	0.00	15717				



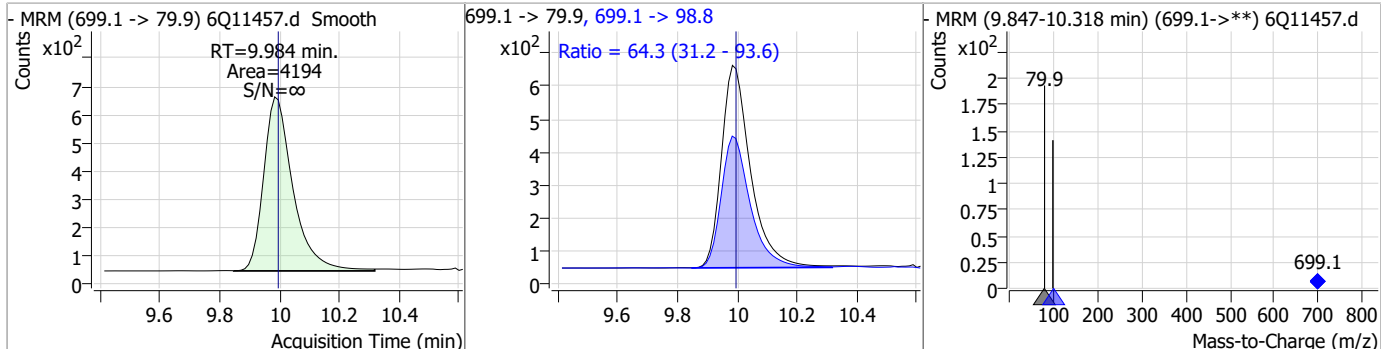
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.39	9.84	-0.01	44696	713.1 -> 168.9	6.5	3.2	9.6



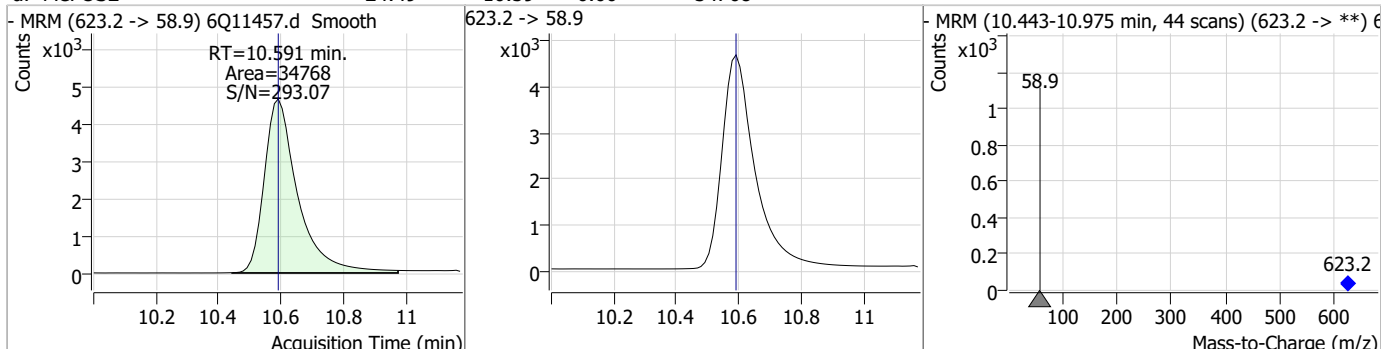
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Perfluorinated Compounds by LC/MS/MS

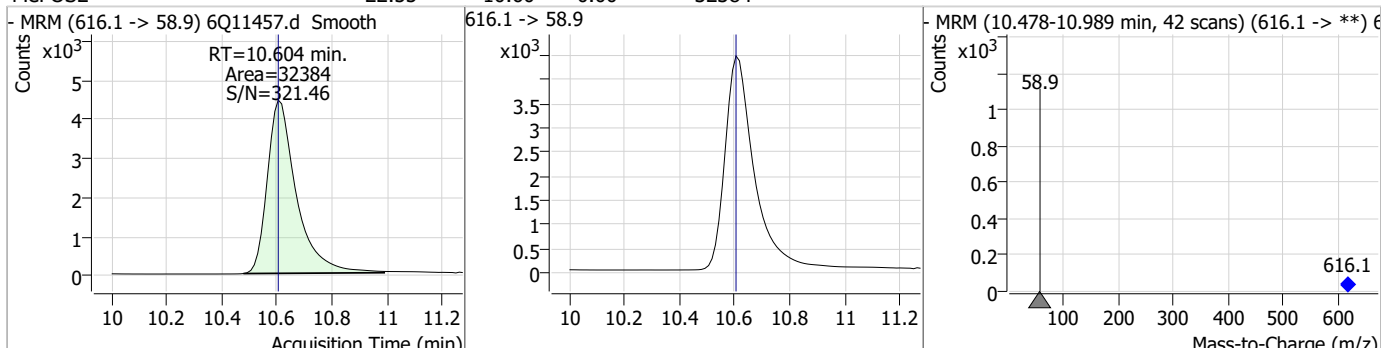
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.04	9.98	-0.01	4194	699.1 -> 98.8	64.3	31.2	93.6



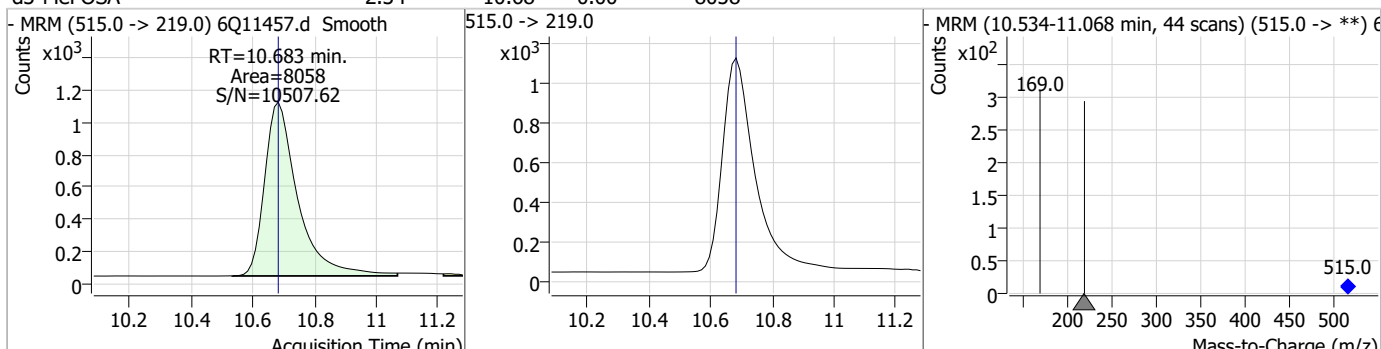
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.49	10.59	0.00	34768				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	22.55	10.60	0.00	32384				

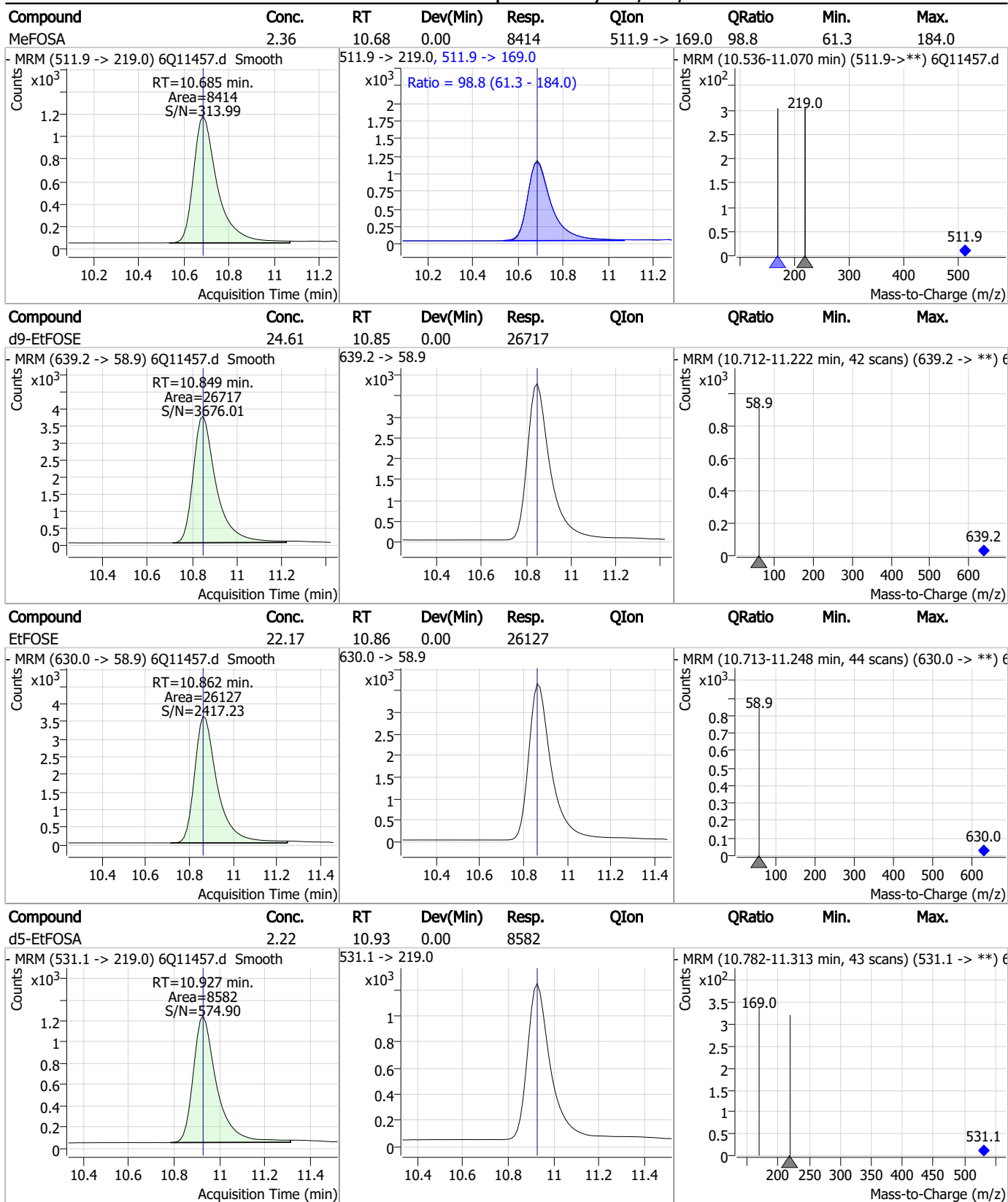


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.34	10.68	0.00	8058				



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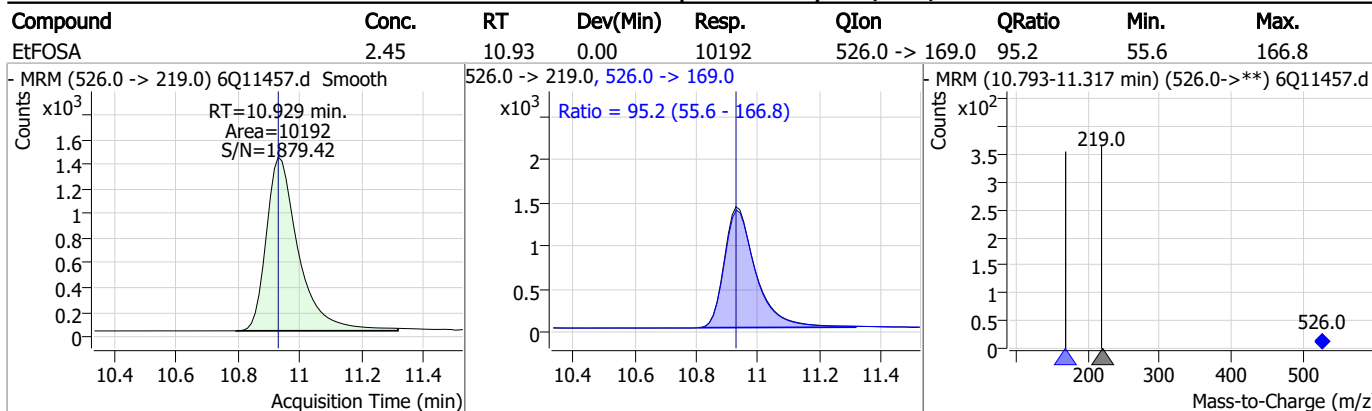
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q179-CC174 Method: EPA DRAFT 1633
Lab FileID: 6Q11457.D Analyst approved: 01/17/23 14:23 Martha Valls
Injection Time: 01/17/23 06:49 Supervisor approved: 01/17/23 18:24 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.29	Split peak
MeFOSAA	2355-31-9		8.24	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.37	Split peak
EtFOSAA	2991-50-6		8.45	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q11466.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/17/2023 8:55:38 AM
 Sample Name : cc174-4
 Vial : P1-C3
 DA Method File : 1633_011123_S6Q174.quantmethod.xml
 Batch Name : s6q179.batch.bin
 Sample Information : OP94795,S6Q179,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.988	216.8 -> 171.9	87242	10.00 µg/L	-0.012
M5-PFPeA	4.371	268.3 -> 223.0	42315	5.00 µg/L	-0.012
M5-PFHxA	5.564	318.0 -> 273.0	38446	2.50 µg/L	0.000
M4-PFHpA	6.516	367.1 -> 322.0	38636	2.50 µg/L	0.000
M8-PFOA	7.160	421.1 -> 376.0	67226	2.50 µg/L	0.000
M9-PFNA	7.702	472.1 -> 427.0	30052	1.25 µg/L	-0.013
M6-PFDA	8.195	519.1 -> 474.1	20287	1.25 µg/L	-0.012
M7-PFUnDA	8.674	570.0 -> 525.1	25088	1.25 µg/L	0.000
M2-PFDoDA	9.117	615.1 -> 570.0	28477	1.25 µg/L	0.000
M2-PFTeDA	9.844	715.2 -> 670.0	15613	1.25 µg/L	-0.012
M8-FOSA	9.556	506.1 -> 77.8	18446	2.50 µg/L	-0.012
M3-PFBS	5.519	302.1 -> 79.9	13728	2.50 µg/L	-0.012
M3-PFHxS	7.300	402.1 -> 79.9	8759	2.50 µg/L	0.000
M8-PFOS	8.371	507.1 -> 79.9	8974	2.50 µg/L	-0.012
M2-4:2FTS	5.228	329.1 -> 80.9	1825	5.00 µg/L	0.000
M2-6:2FTS	6.921	429.1 -> 80.9	2722	5.00 µg/L	-0.012
M2-8:2FTS	7.982	529.1 -> 80.9	2747	5.00 µg/L	0.000
M3-MeFOSAA	8.240	573.2 -> 419.0	28396	5.00 µg/L	0.000
M3-HFPO-DA	5.941	286.9 -> 168.9	16199	10.00 µg/L	0.000
M5-EtFOSAA	8.448	589.2 -> 419.0	22515	5.00 µg/L	0.000
M7-MeFOSE	10.591	623.2 -> 58.9	35339	25.00 µg/L	0.000
M9-EtFOSE	10.849	639.2 -> 58.9	27076	25.00 µg/L	0.000
M5-EtFOSA	10.927	531.1 -> 219.0	9026	2.50 µg/L	0.000
M3-MeFOSA	10.683	515.0 -> 219.0	8084	2.50 µg/L	0.000
13C4-PFOS	8.372	502.8 -> 79.9	10769	2.50 µg/L	-0.012
13C3-PFBA	2.991	216.0 -> 172.0	38268	5.00 µg/L	-0.012
18O2-PFHxS	7.299	403.0 -> 83.9	7027	2.50 µg/L	0.000
13C4-PFOA	7.160	417.1 -> 372.0	75631	2.50 µg/L	-0.012
13C2-PFDA	8.196	515.1 -> 470.1	26448	1.25 µg/L	-0.012
13C5-PFNA	7.703	468.0 -> 423.0	33856	1.25 µg/L	0.000
13C2-PFHxA	5.565	315.1 -> 270.0	37638	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.228	329.1 -> 80.9	1825	4.98 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.6%		
13C2-6:2FTS	6.921	429.1 -> 80.9	2722	5.42 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.5%		
13C2-8:2FTS	7.982	529.1 -> 80.9	2747	5.01 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.3%		
13C2-PFDoDA	9.117	615.1 -> 570.0	28477	1.36 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 108.6%		
13C2-PFTeDA	9.844	715.2 -> 670.0	15613	1.27 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.4%		
13C3-PFBS	5.519	302.1 -> 79.9	13728	2.33 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 93.2%		
13C3-PFHxS	7.300	402.1 -> 79.9	8759	2.30 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 = 91.8%		
13C4-PFBA	2.988	216.8 -> 171.9	87242	9.98 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 99.8%		
13C4-PFHpA	6.516	367.1 -> 322.0	38636	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.3%		
13C5-PFHxA	5.564	318.0 -> 273.0	38446	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.8%		
13C5-PFPeA	4.371	268.3 -> 223.0	42315	5.04 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.8%		
13C6-PFDA	8.195	519.1 -> 474.1	20287	1.35 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 107.8%		
13C7-PFUnDA	8.674	570.0 -> 525.1	25088	1.37 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 109.2%		
13C8-FOSA	9.556	506.1 -> 77.8	18446	2.54 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.4%		
13C8-PFOA	7.160	421.1 -> 376.0	67226	2.65 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 106.1%		
13C8-PFOS	8.371	507.1 -> 79.9	8974	2.61 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.3%		
13C9-PFNA	7.702	472.1 -> 427.0	30052	1.25 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.9%		
d3-MeFOSAA	8.240	573.2 -> 419.0	28396	5.48 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.5%		
13C3-HFPO-DA	5.941	286.9 -> 168.9	16199	10.43 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 104.3%		
d3-MeFOSA	10.683	515.0 -> 219.0	8084	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.1%		
d5-EtFOSAA	8.448	589.2 -> 419.0	22515	4.95 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.0%		
d7-MeFOSE	10.591	623.2 -> 58.9	35339	25.78 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 103.1%		
d9-EtFOSE	10.849	639.2 -> 58.9	27076	25.83 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 103.3%		
d5-EtFOSA	10.927	531.1 -> 219.0	9026	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.8%		
Target Compounds					QValue
4:2FTS	5.229	327.1 -> 307.0	40300	9.28 µg/L	98
		327.1 -> 80.9	9059		
6:2FTS	6.922	427.1 -> 407.0	33851	7.99 µg/L	100
		427.1 -> 80.9	7214		
8:2FTS	7.983	527.1 -> 507.0	20486	8.94 µg/L	98
		527.1 -> 80.8	5262		
EtFOSAA	8.449	584.2 -> 419.1	7608	2.12 µg/L	m 86
		584.2 -> 526.0	5251		
FOSA	9.558	498.1 -> 77.9	17970	2.41 µg/L	98
		498.1 -> 478.0	623		
MeFOSAA	8.241	570.1 -> 419.0	12678	2.17 µg/L	m 97
		570.1 -> 483.0	2368		
PFBA	2.994	212.8 -> 168.9	20470	9.15 µg/L	100
PFBS	5.520	298.7 -> 79.9	11979	2.16 µg/L	100
		298.7 -> 98.8	5428		
PFDA	8.196	512.9 -> 469.0	53854	2.21 µg/L	96
		512.9 -> 219.0	8072		
PFDODA	9.117	613.1 -> 569.0	50311	2.25 µg/L	99
		613.1 -> 319.0	6168		
PFDS	9.280	599.0 -> 79.9	6498	2.10 µg/L	95

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	3724			
PFHpA	6.516	363.1 -> 319.0	54307	2.33	µg/L	99
		363.1 -> 169.0	7173			
PFHpS	7.867	449.0 -> 79.9	8679	2.11	µg/L	97
		449.0 -> 98.9	5153			
PFHxA	5.567	313.0 -> 269.0	34605	2.23	µg/L	99
		313.0 -> 118.9	1297			
PFHxS	7.289	398.7 -> 79.9	8932	2.14	µg/L	m 98
		398.7 -> 98.9	4949			
PFNA	7.703	463.0 -> 419.0	46596	2.24	µg/L	99
		463.0 -> 219.0	9040			
PFNS	8.850	548.8 -> 79.9	9536	2.20	µg/L	97
		548.8 -> 98.9	5788			
PFOA	7.161	413.0 -> 369.0	66451	2.21	µg/L	98
		413.0 -> 169.0	8866			
PFOS	8.372	498.9 -> 79.9	9205	2.12	µg/L	m 97
		498.9 -> 98.8	5684			
PFPeA	4.374	263.0 -> 219.0	42168	4.54	µg/L	100
PFPeS	6.582	349.1 -> 79.9	10378	2.10	µg/L	98
		349.1 -> 98.9	5715			
PFTeDA	9.844	713.1 -> 669.0	46456	2.50	µg/L	99
		713.1 -> 168.9	2869			
PFTrDA	9.501	663.0 -> 619.0	50253	2.35	µg/L	99
		663.0 -> 168.9	3970			
PFUnDA	8.662	563.1 -> 519.0	47544	2.27	µg/L	100
		563.1 -> 269.1	6709			
11CI-PF3OUdS	9.565	630.9 -> 450.9	107652	8.76	µg/L	98
		632.9 -> 452.9	33452			
9CI-PF3ONS	8.727	530.8 -> 351.0	176603	8.85	µg/L	94
		532.8 -> 353.0	53921			
ADONA	6.767	376.9 -> 250.9	306026	8.50	µg/L	99
		376.9 -> 84.8	64800			
HFPO-DA	5.942	284.9 -> 168.9	14341	8.75	µg/L	97
		284.9 -> 184.9	1907			
3:3FTCA	3.839	241.0 -> 177.0	5531	11.17	µg/L	98
		241.0 -> 117.0	696			
5:3FTCA	6.194	341.0 -> 237.1	176363	54.59	µg/L	99
		341.0 -> 217.0	151796			
7:3FTCA	7.618	441.0 -> 316.9	127315	58.47	µg/L	95
		441.0 -> 336.9	241155			
EtFOSA	10.929	526.0 -> 219.0	9773	2.24	µg/L	87
		526.0 -> 169.0	9543			
EtFOSE	10.862	630.0 -> 58.9	25857	21.65	µg/L	100
MeFOSA	10.685	511.9 -> 219.0	8448	2.37	µg/L	82
		511.9 -> 169.0	8628			
MeFOSE	10.604	616.1 -> 58.9	32054	21.96	µg/L	100
PFDoS	9.984	699.1 -> 79.9	4330	2.24	µg/L	94
		699.1 -> 98.8	2496			
NFDHA	5.446	295.0 -> 201.0	4684	4.65	µg/L	93
		295.0 -> 84.9	2124			
PFMBA	4.789	279.0 -> 85.1	13108	4.52	µg/L	100
PFMPA	3.538	229.0 -> 84.9	11913	4.63	µg/L	100
PFEESA	6.072	314.8 -> 134.9	85844	3.97	µg/L	100
		314.8 -> 82.9	2127			

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



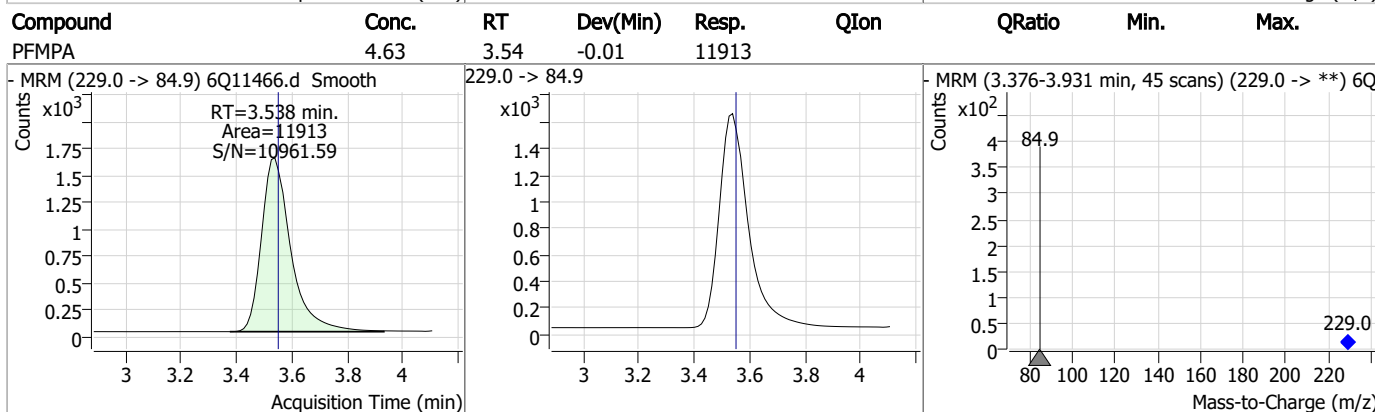
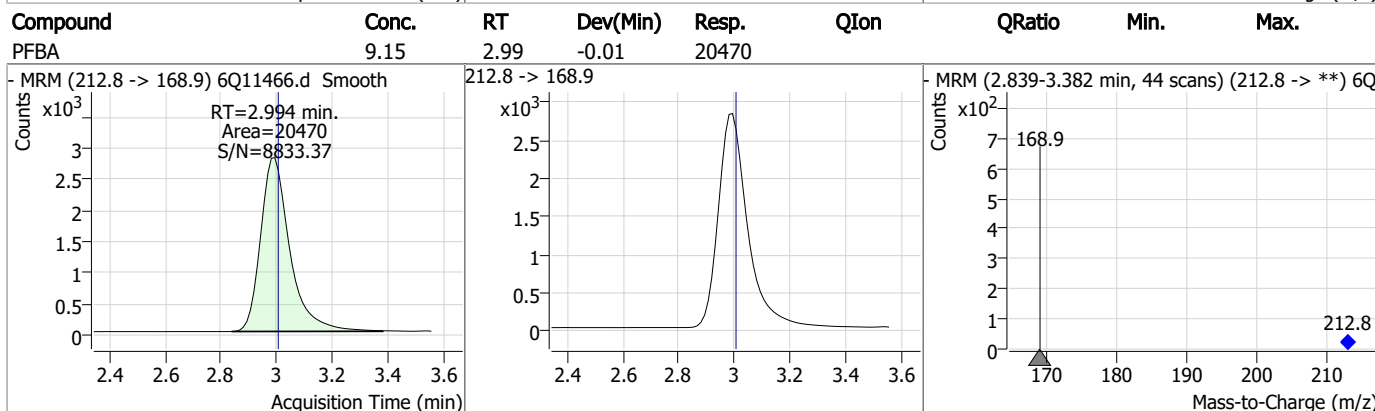
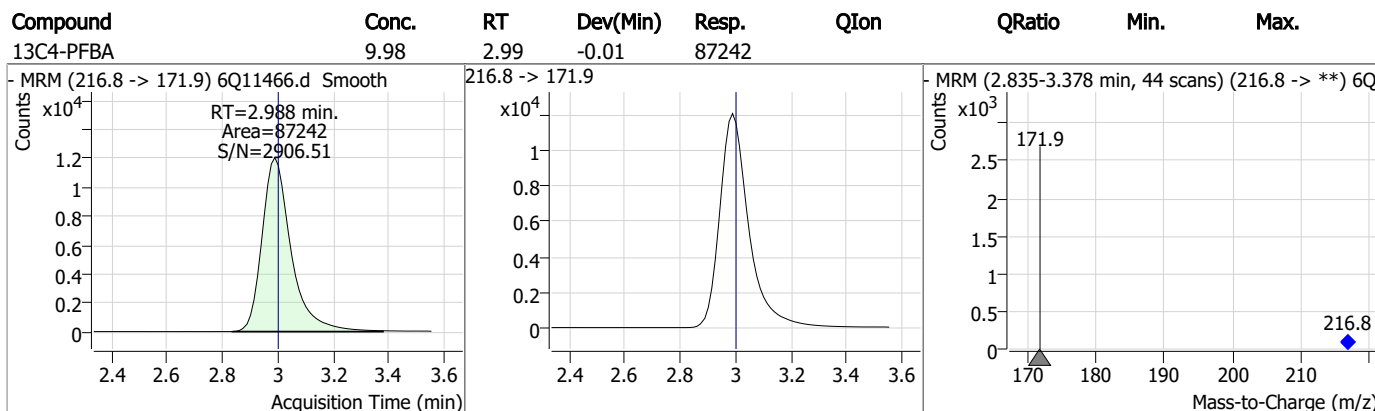
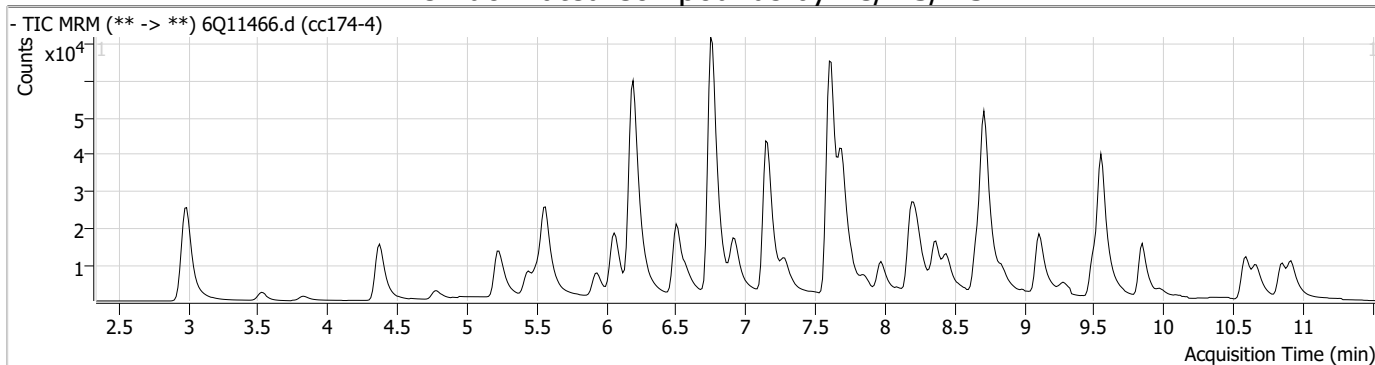
Perfluorinated Compounds by LC/MS/MS

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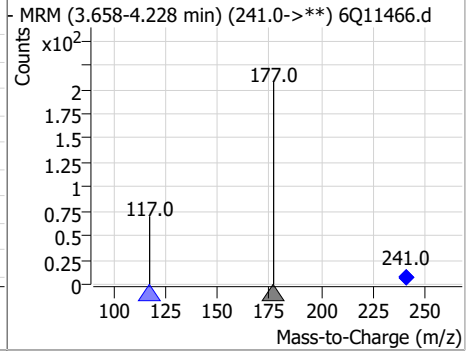
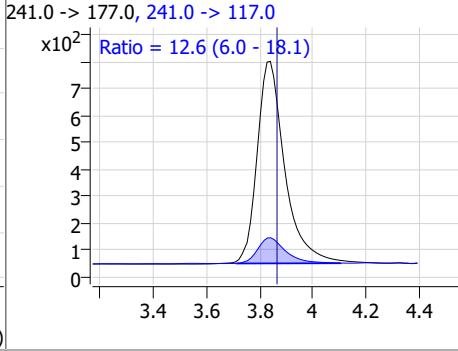
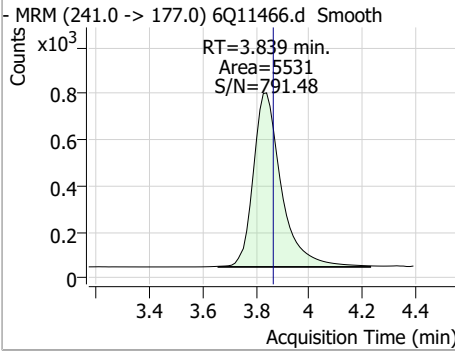
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Perfluorinated Compounds by LC/MS/MS

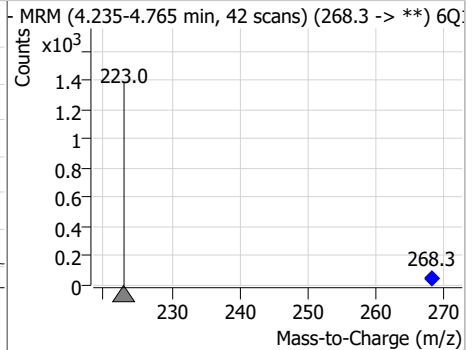
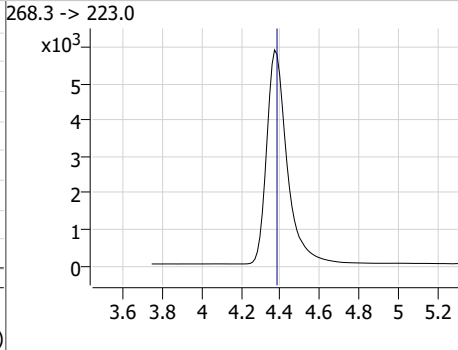
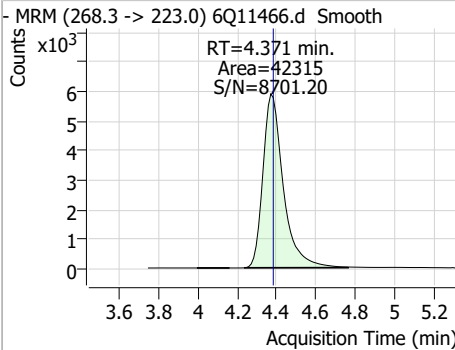


Perfluorinated Compounds by LC/MS/MS

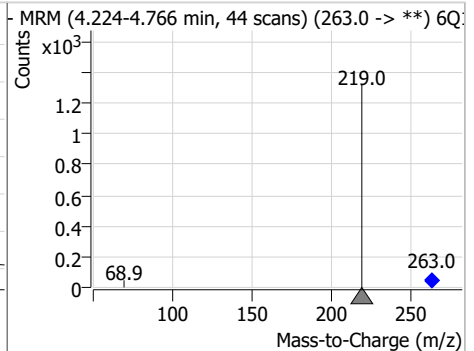
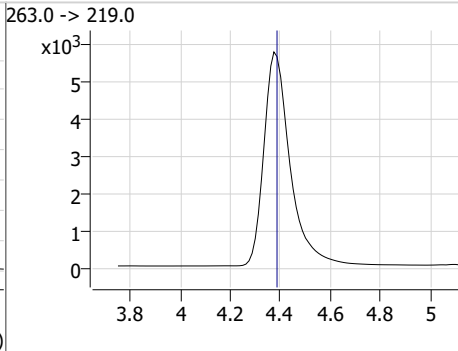
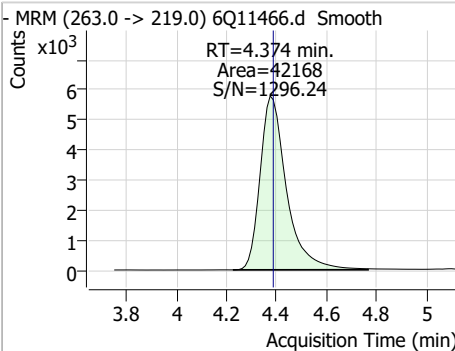
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	11.17	3.84	-0.02	5531	241.0 -> 117.0	12.6	6.0	18.1



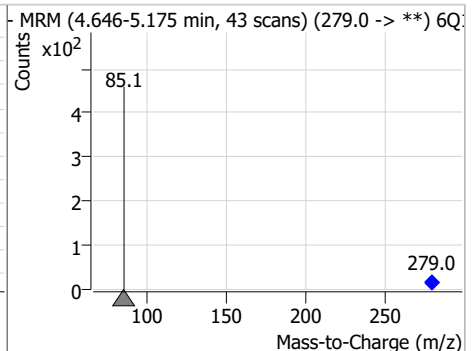
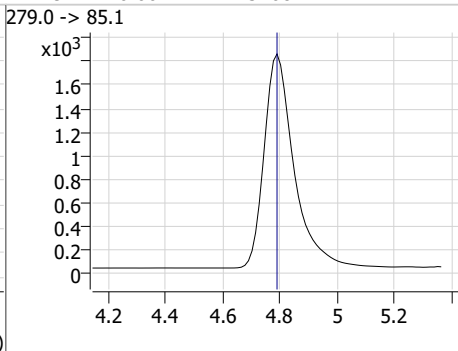
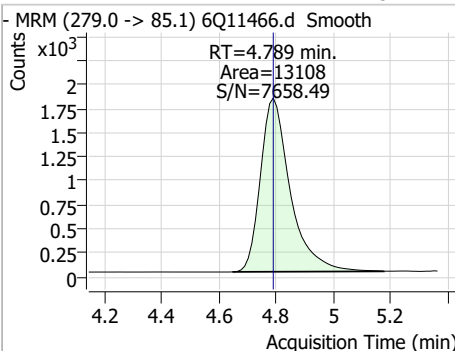
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.04	4.37	-0.01	42315				



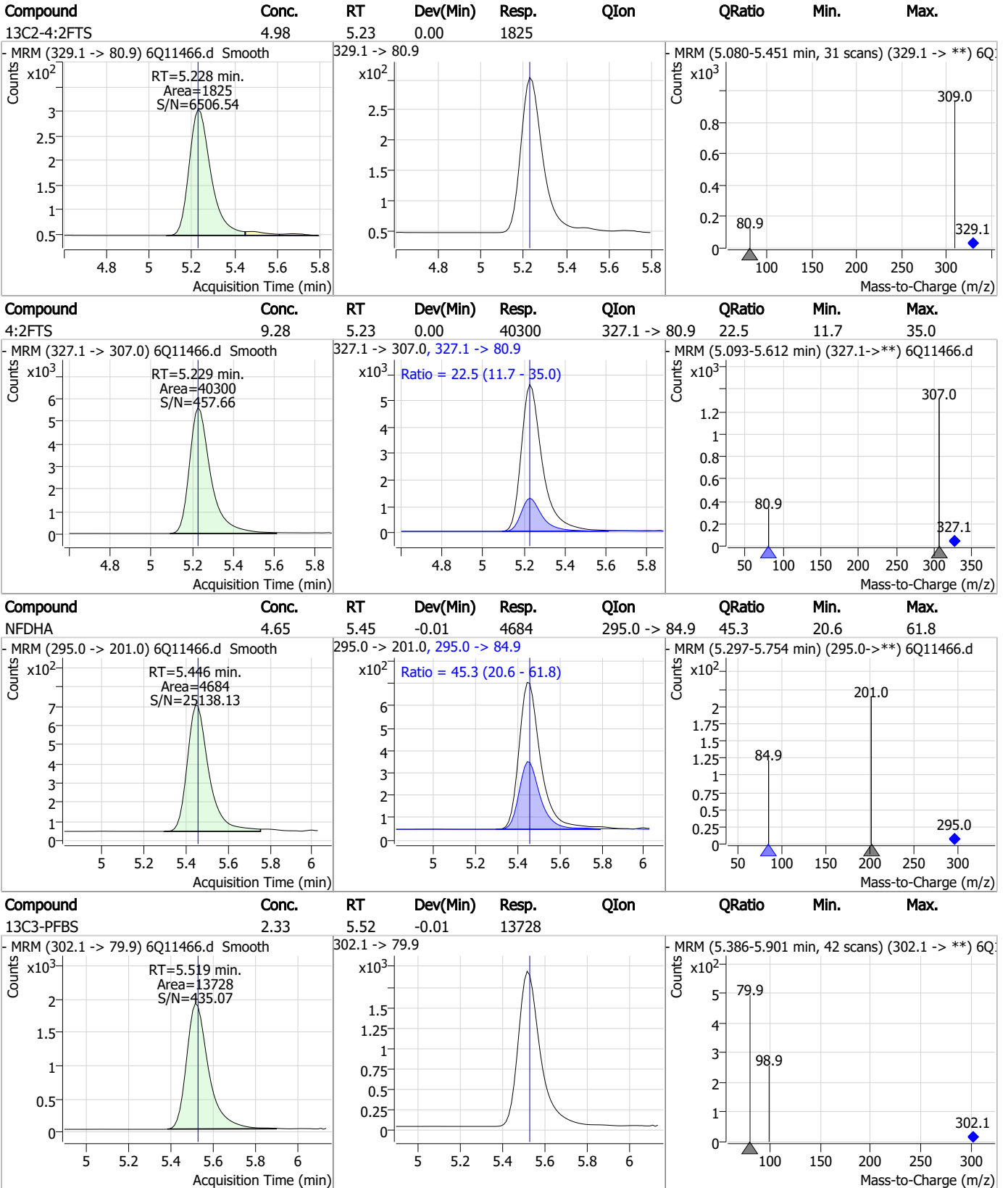
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.54	4.37	-0.01	42168				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	4.52	4.79	0.00	13108				



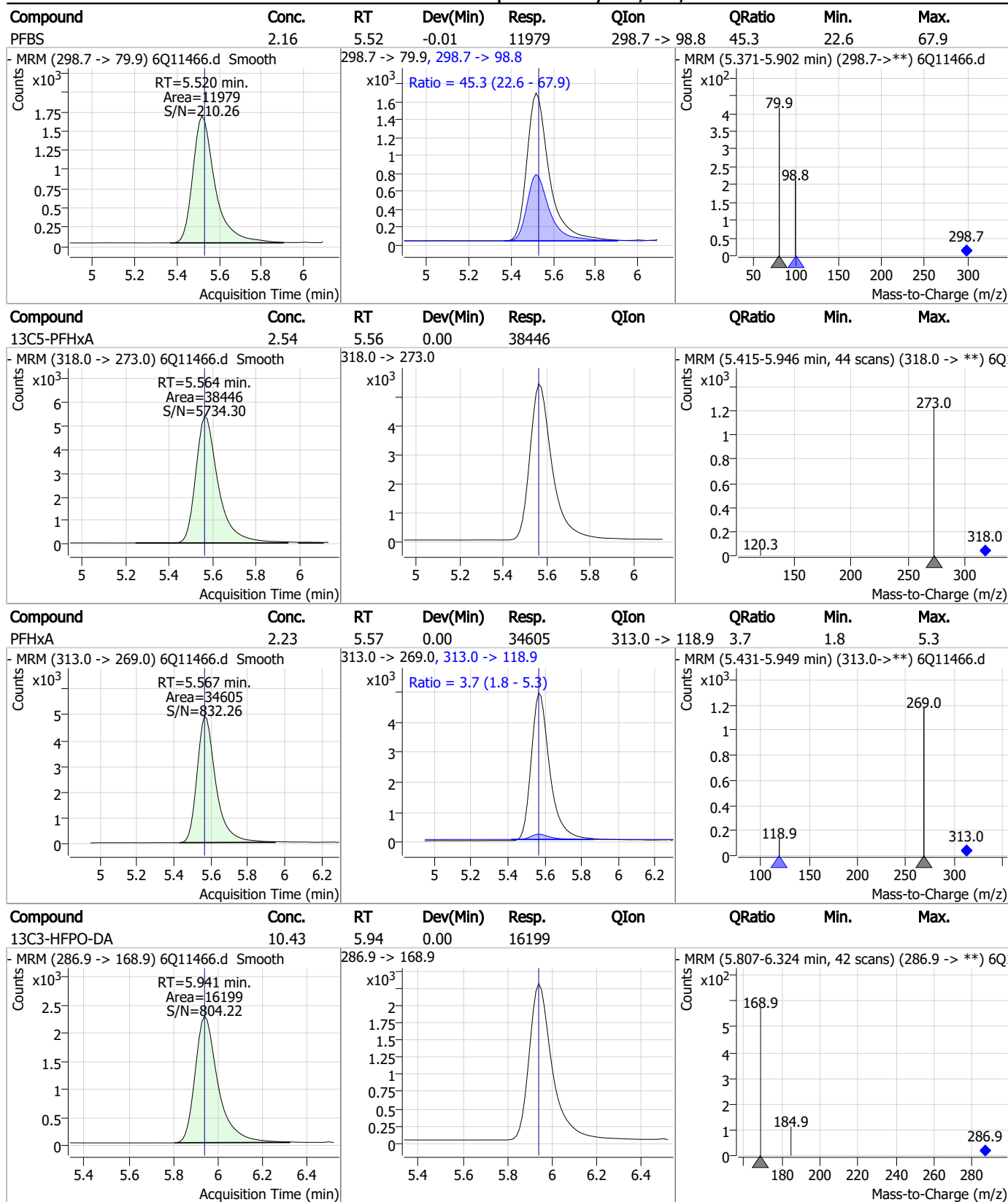
Perfluorinated Compounds by LC/MS/MS



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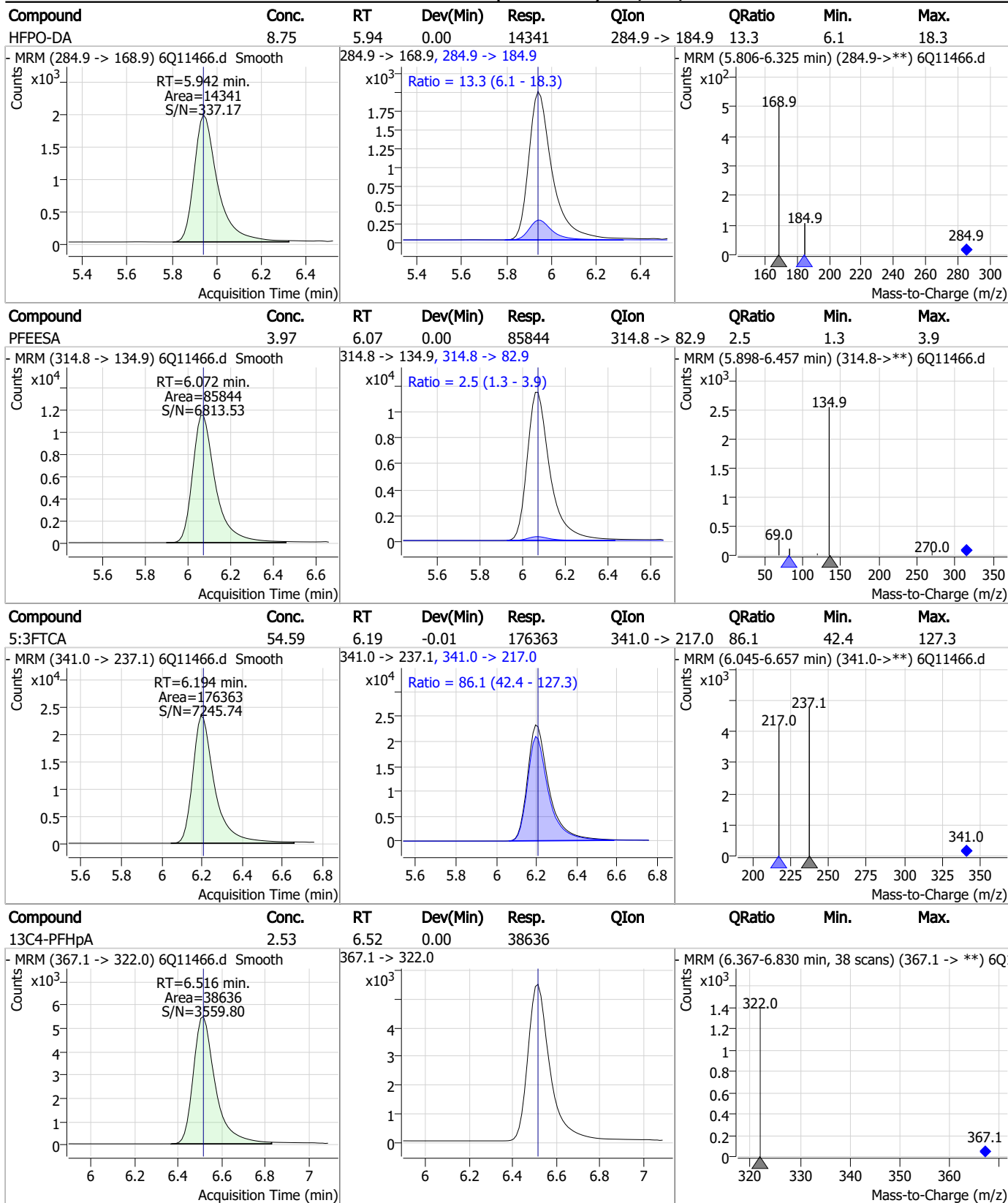
Perfluorinated Compounds by LC/MS/MS



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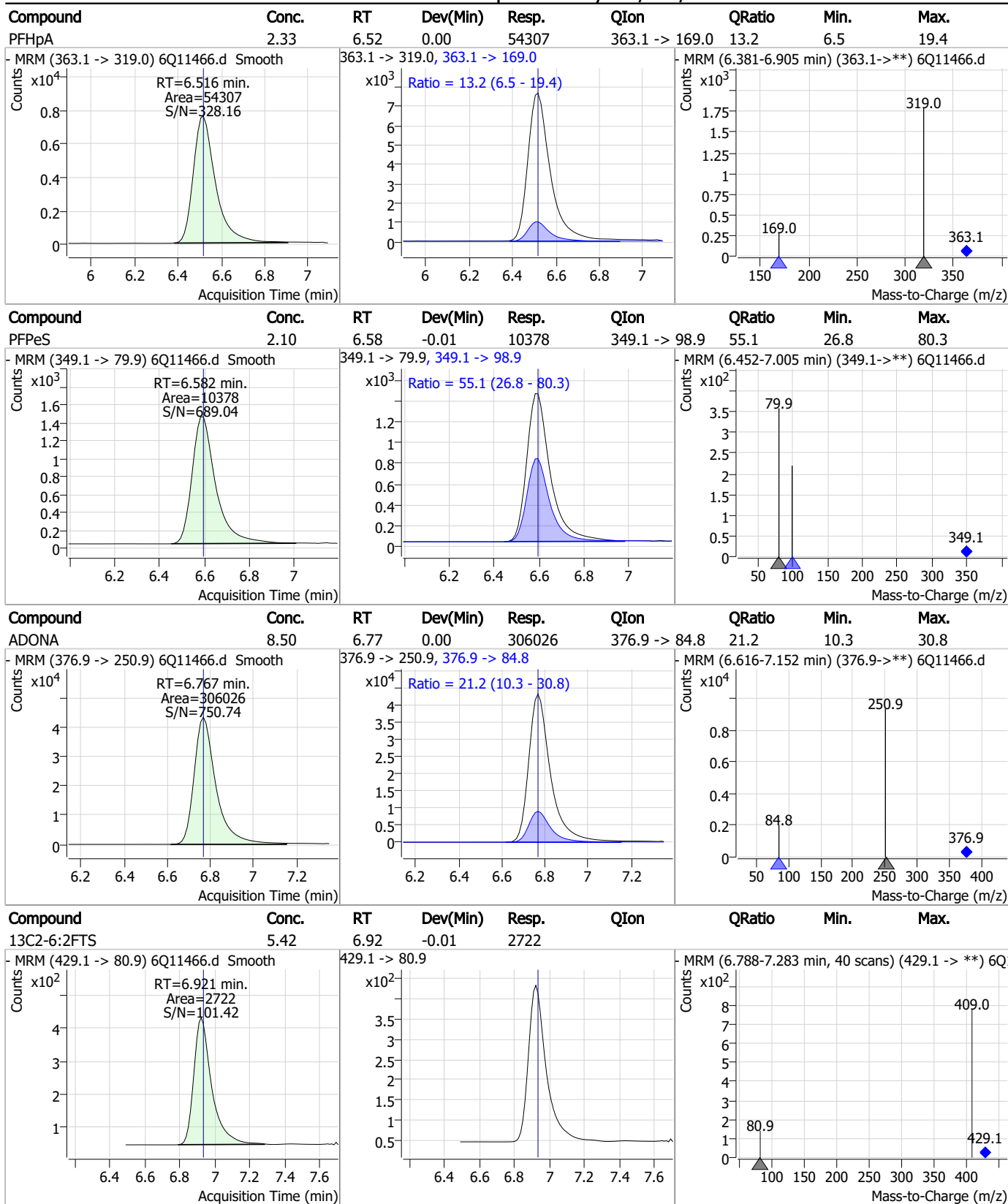
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Perfluorinated Compounds by LC/MS/MS



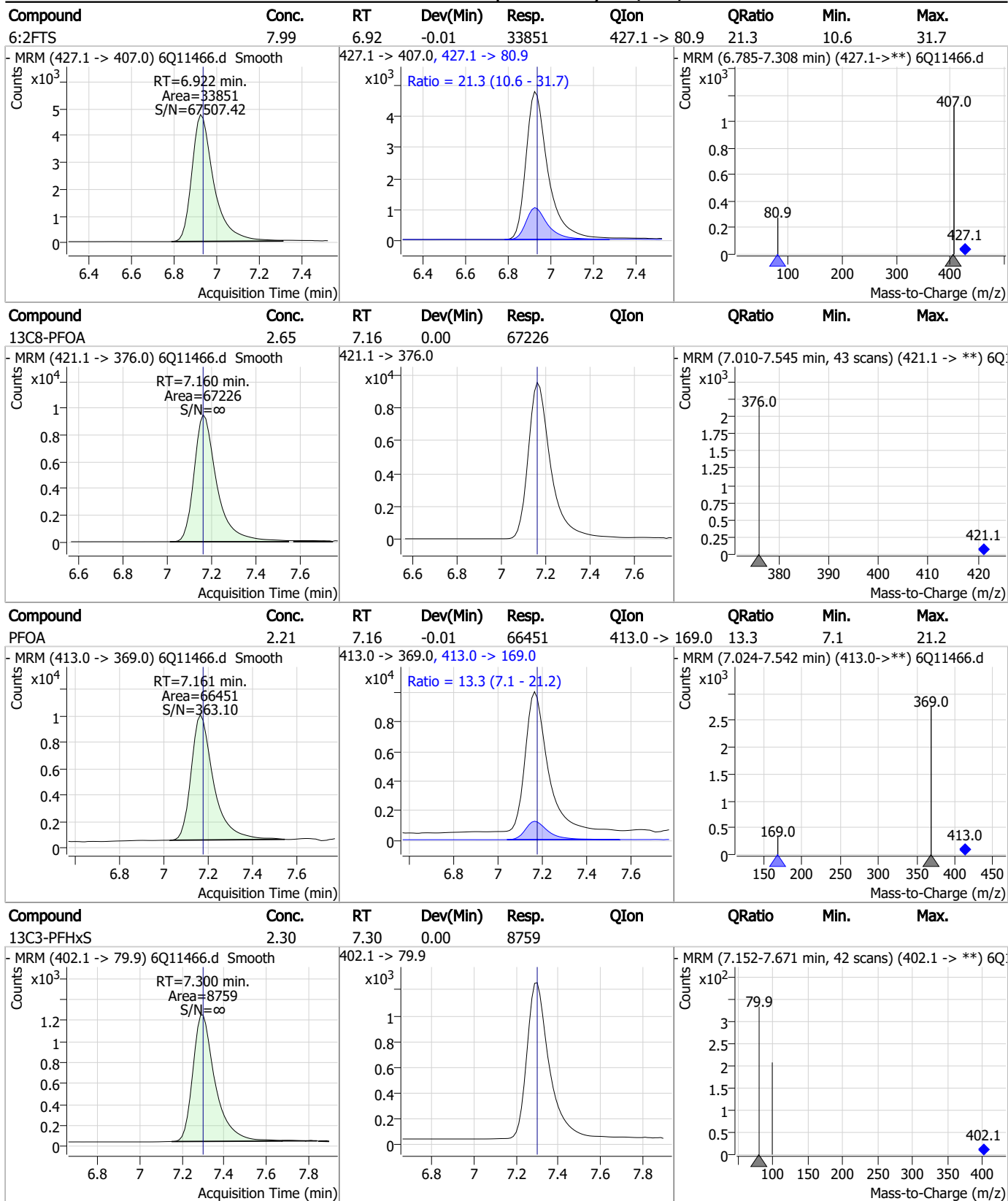
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Perfluorinated Compounds by LC/MS/MS



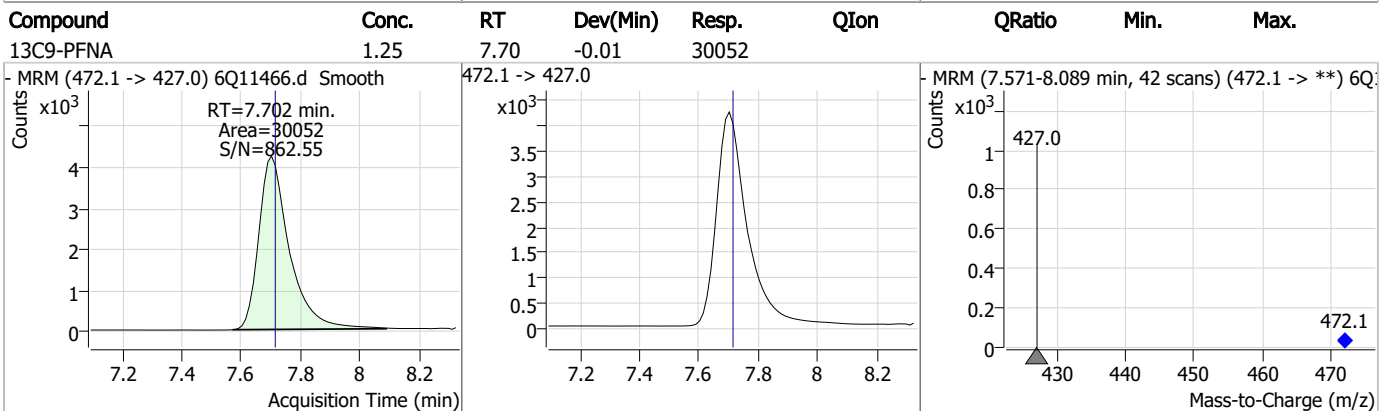
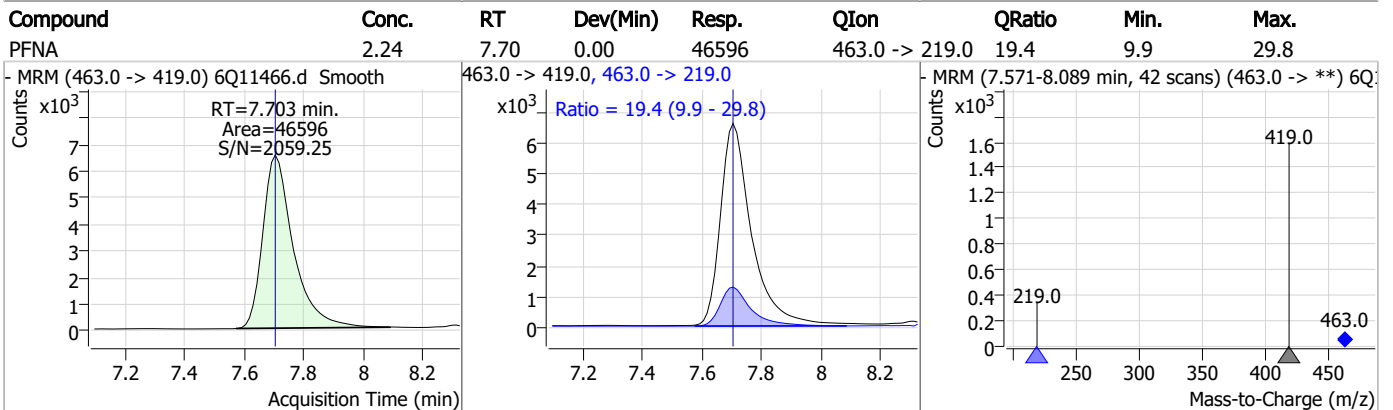
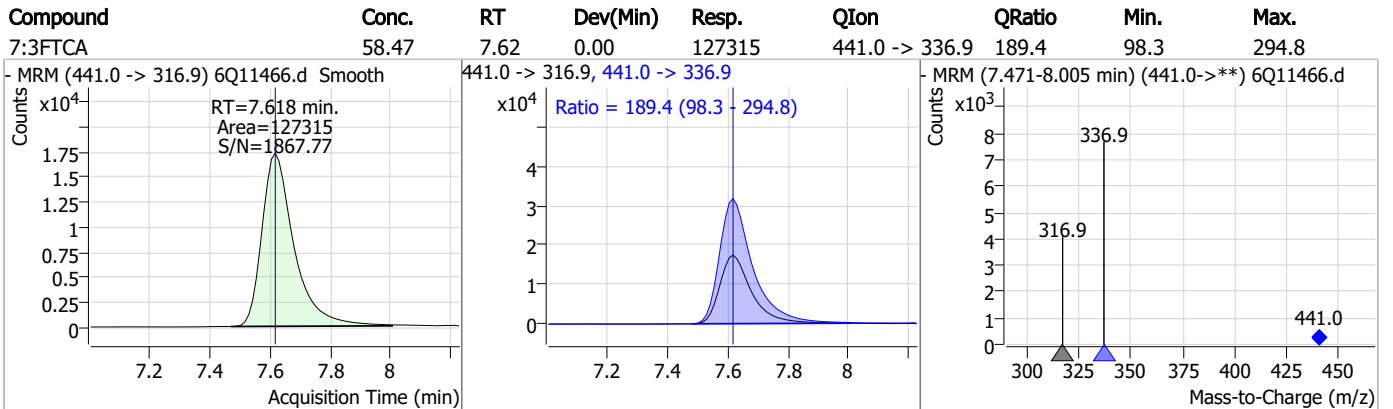
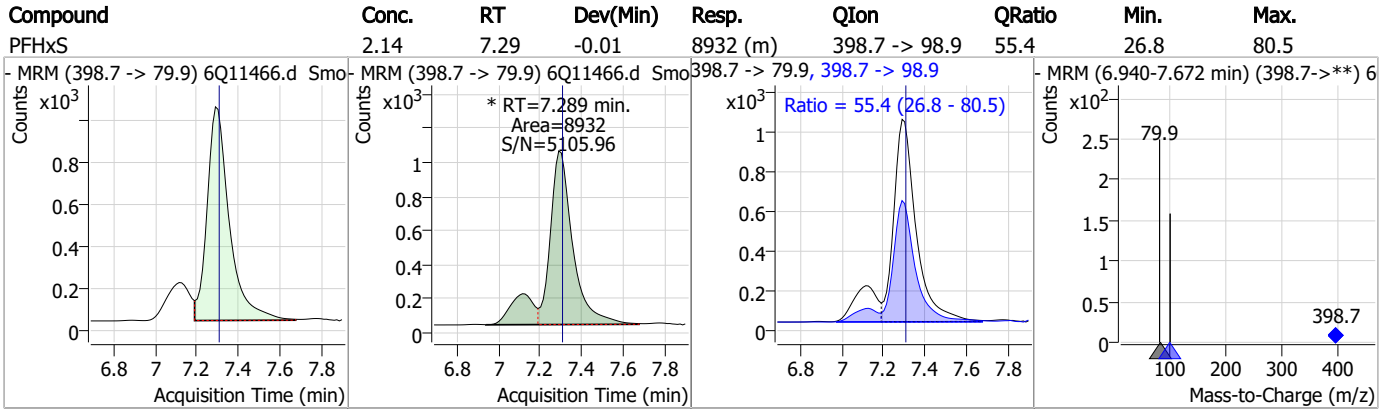
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Perfluorinated Compounds by LC/MS/MS



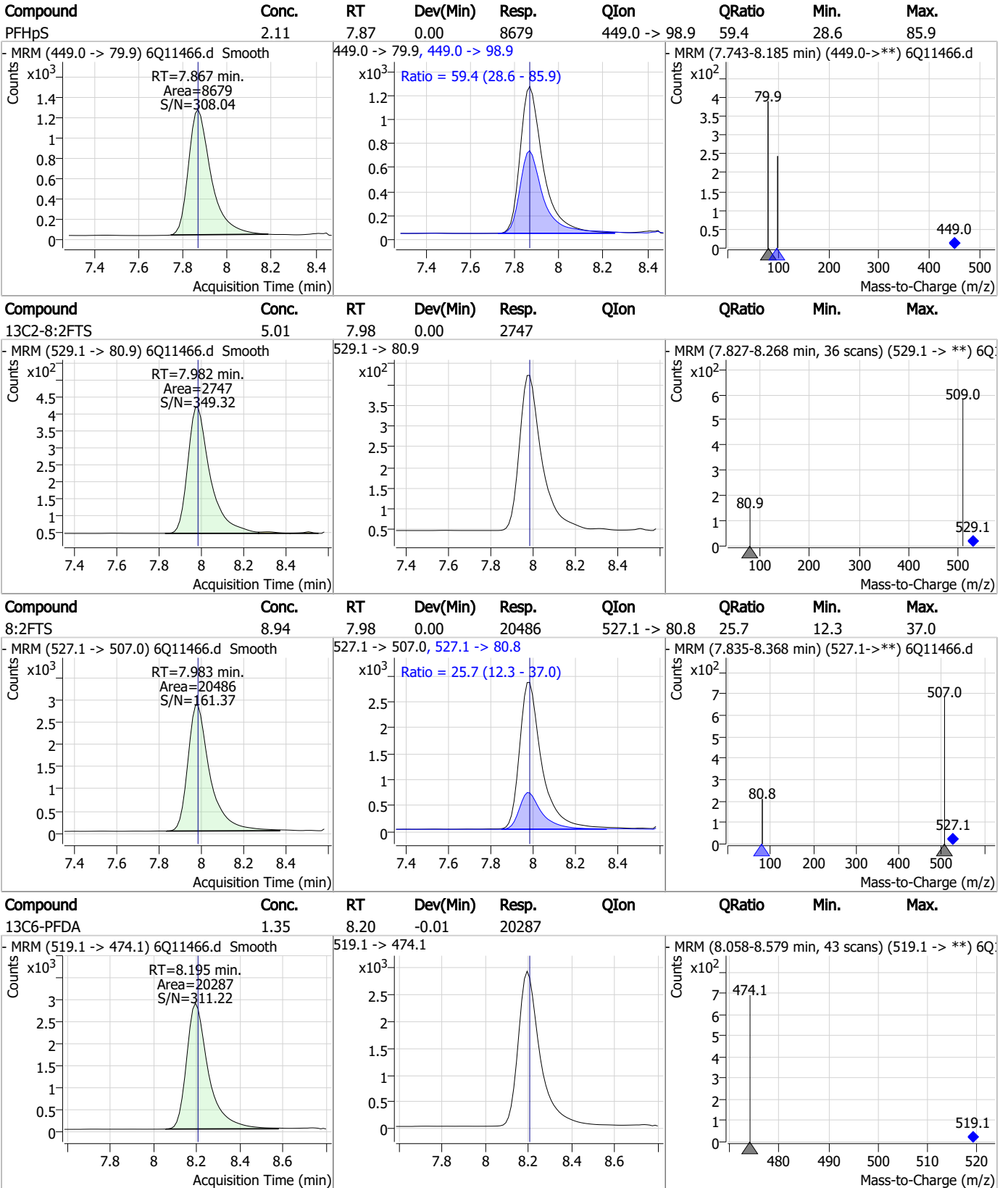
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Perfluorinated Compounds by LC/MS/MS



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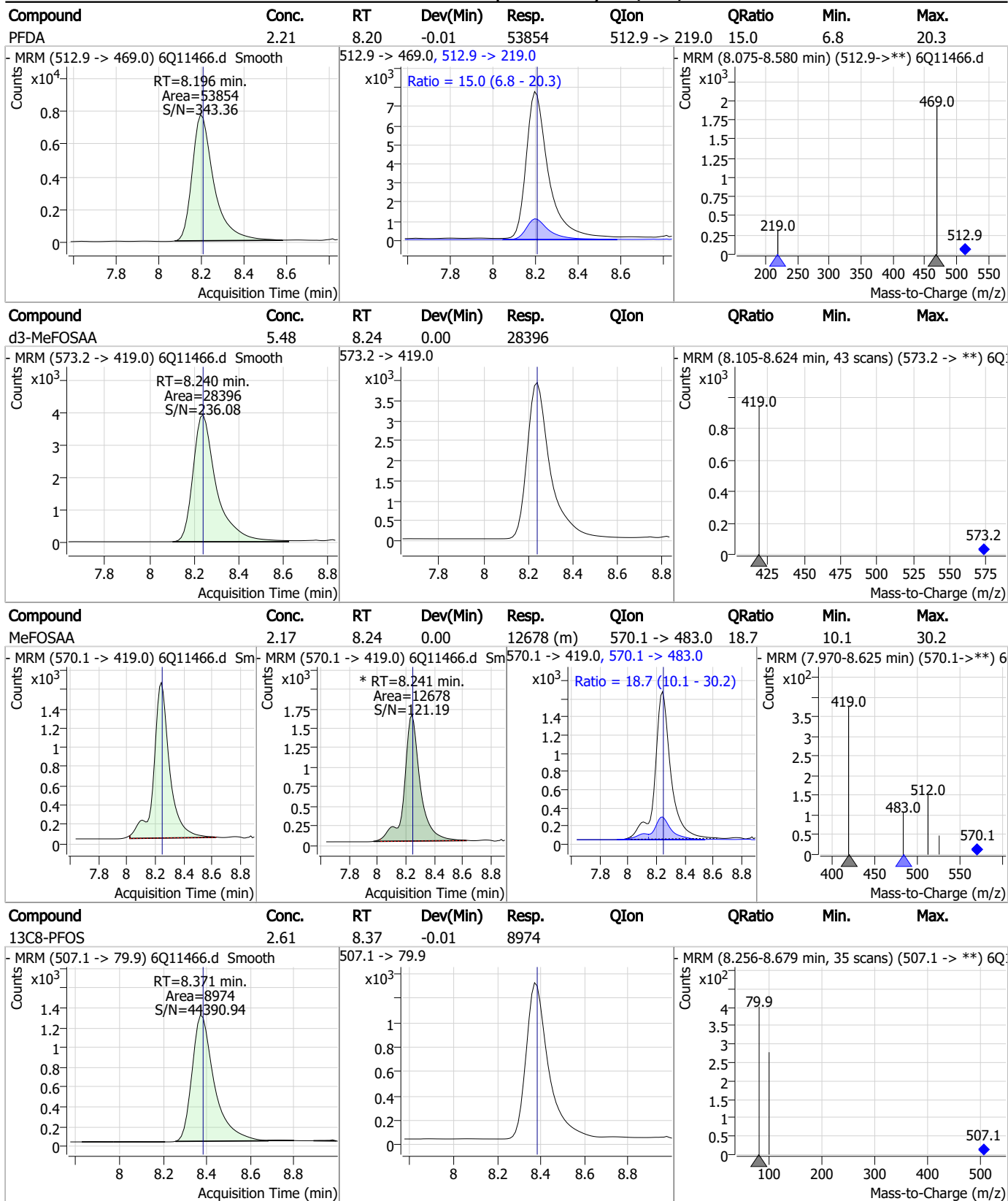
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

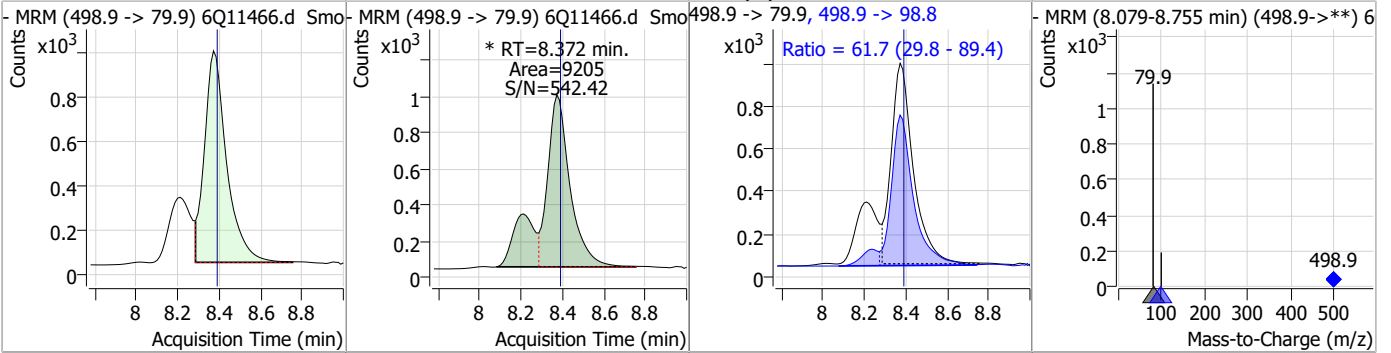


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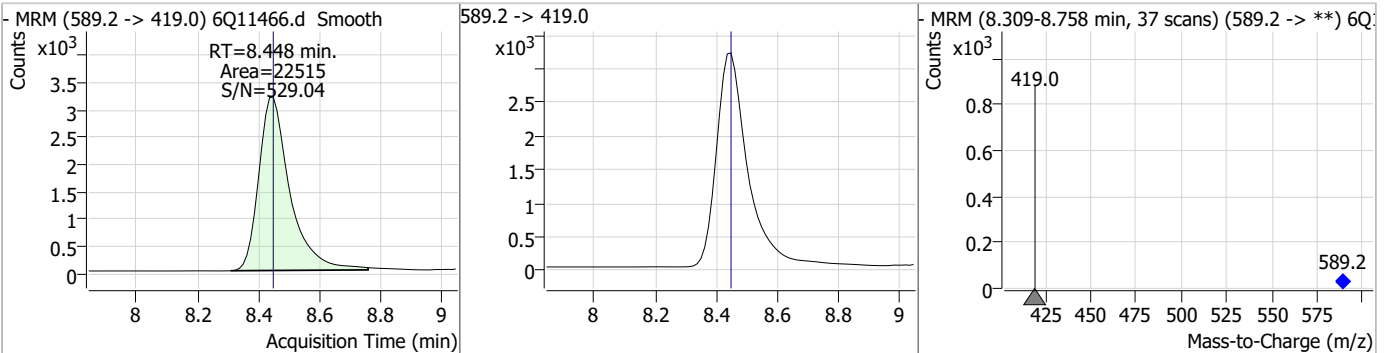
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Perfluorinated Compounds by LC/MS/MS

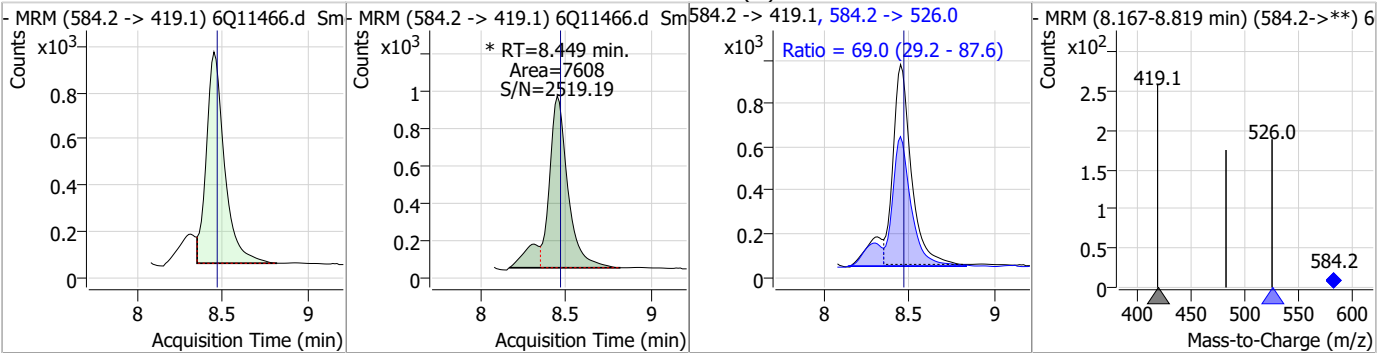
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.12	8.37	-0.01	9205 (m)	498.9 -> 98.8	61.7	29.8	89.4



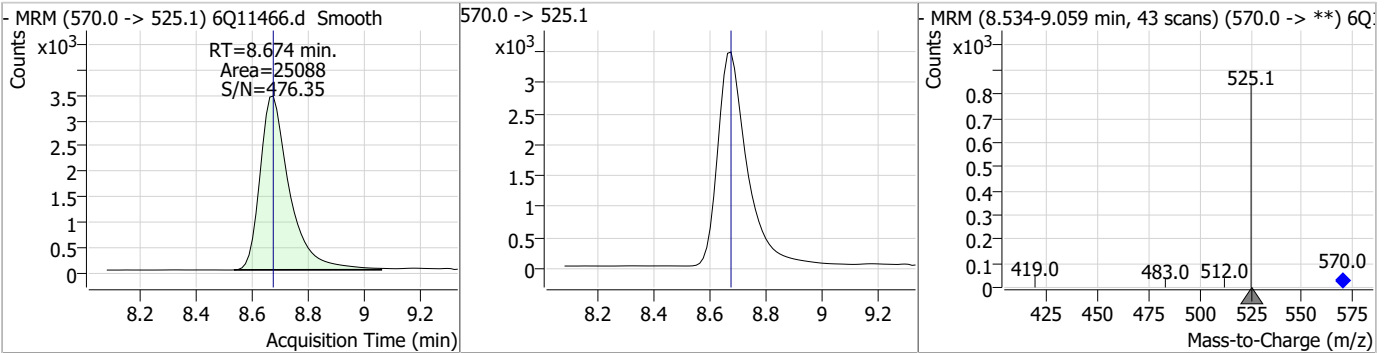
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.95	8.45	0.00	22515				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.12	8.45	-0.01	7608 (m)	584.2 -> 526.0	69.0	29.2	87.6

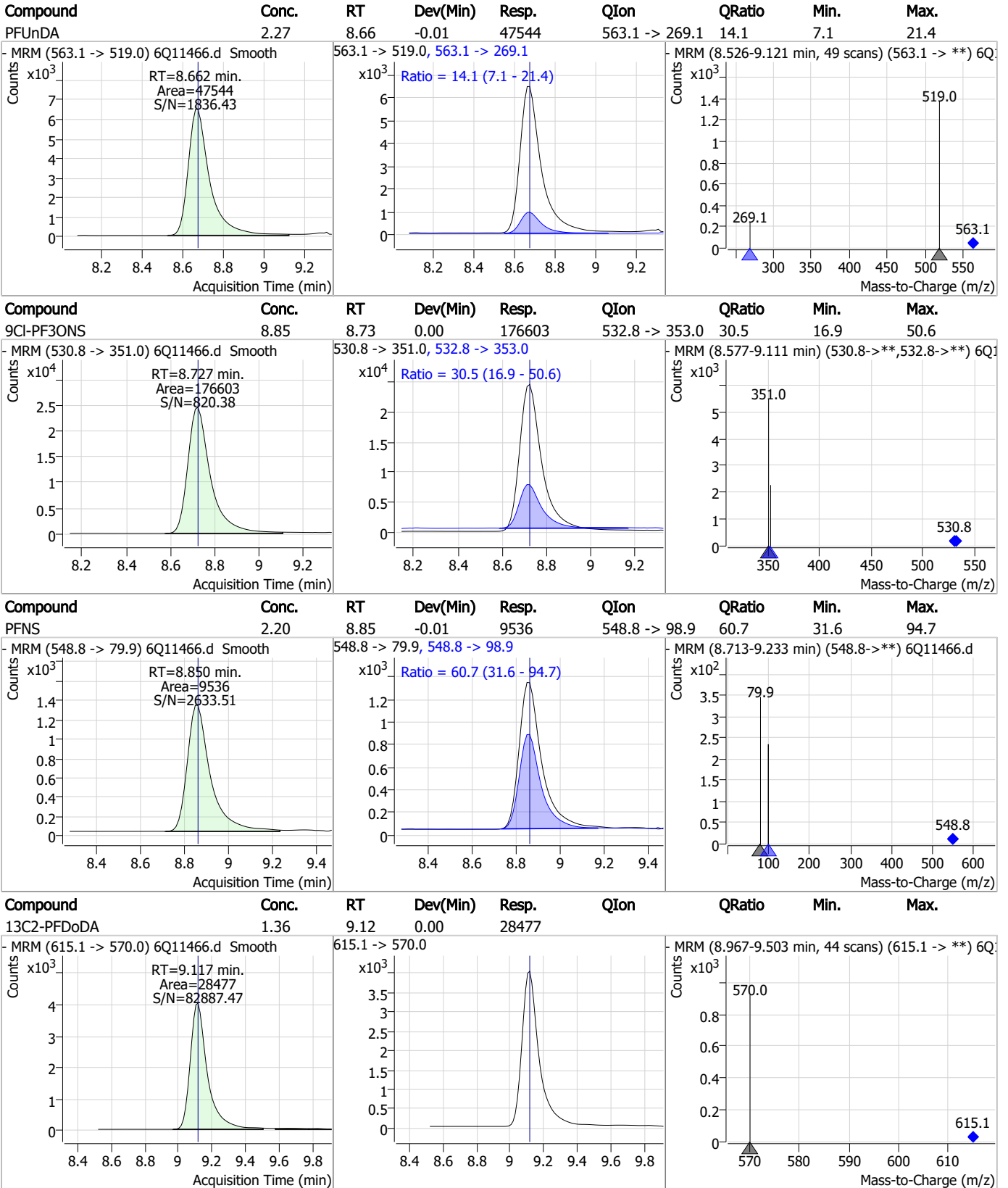


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.37	8.67	0.00	25088				



7.6.16
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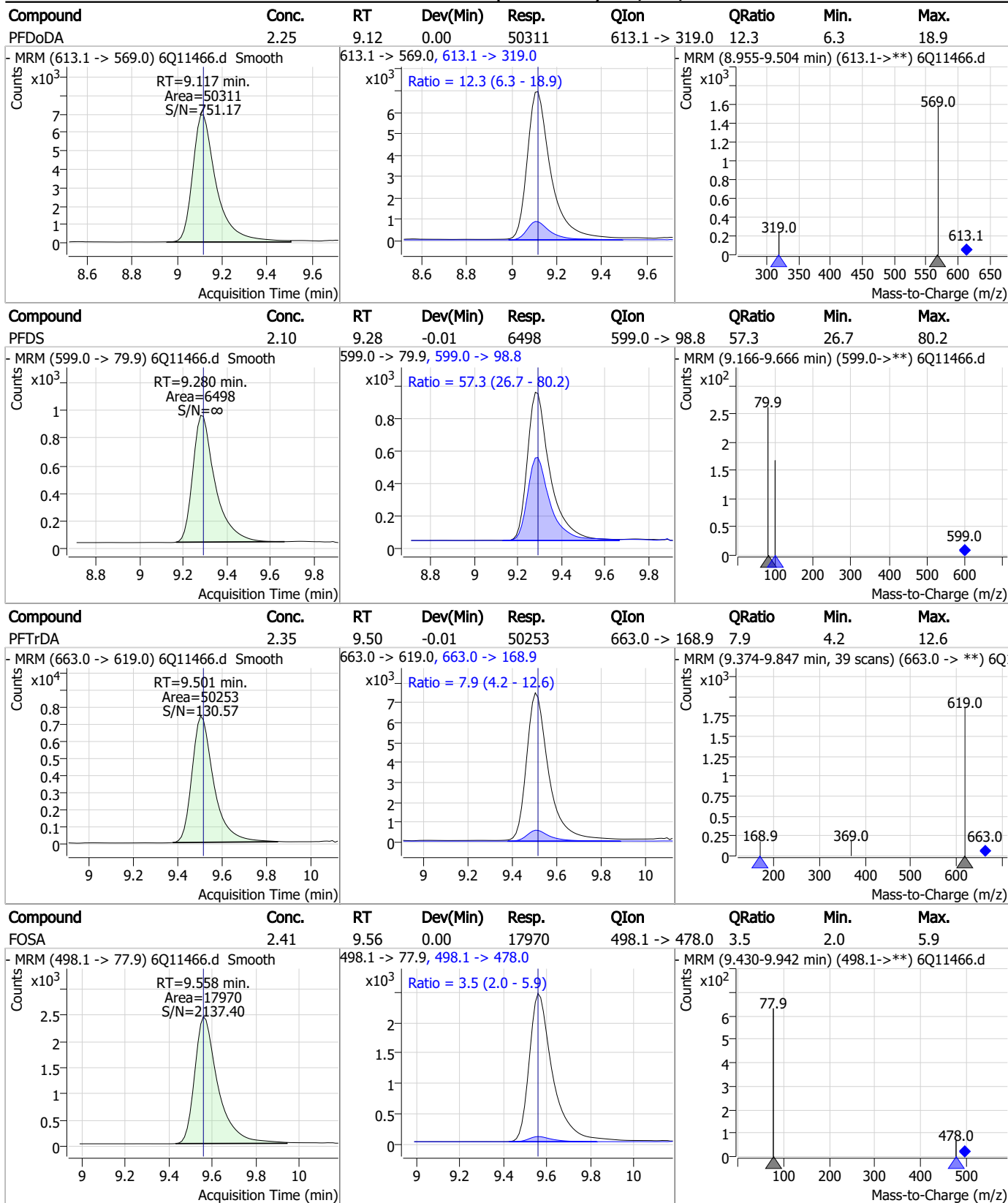
Perfluorinated Compounds by LC/MS/MS



7.6.16 7



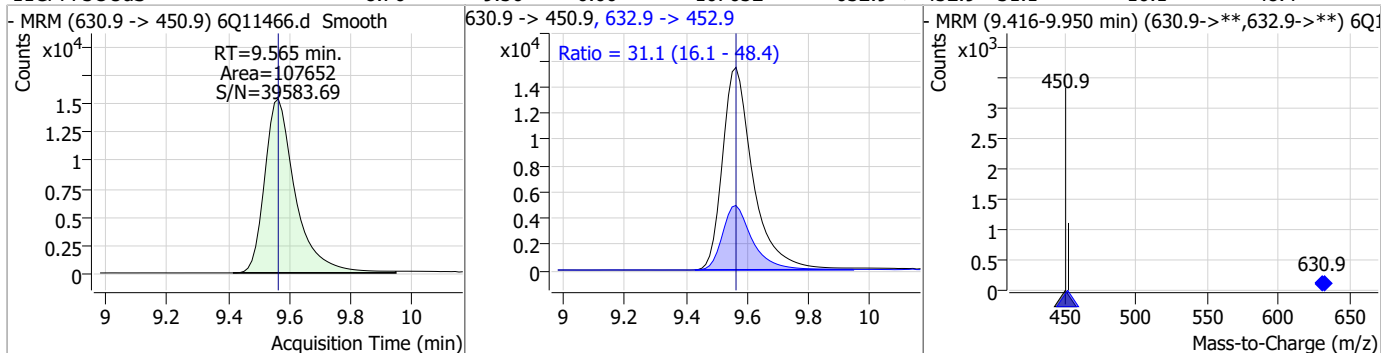
Perfluorinated Compounds by LC/MS/MS



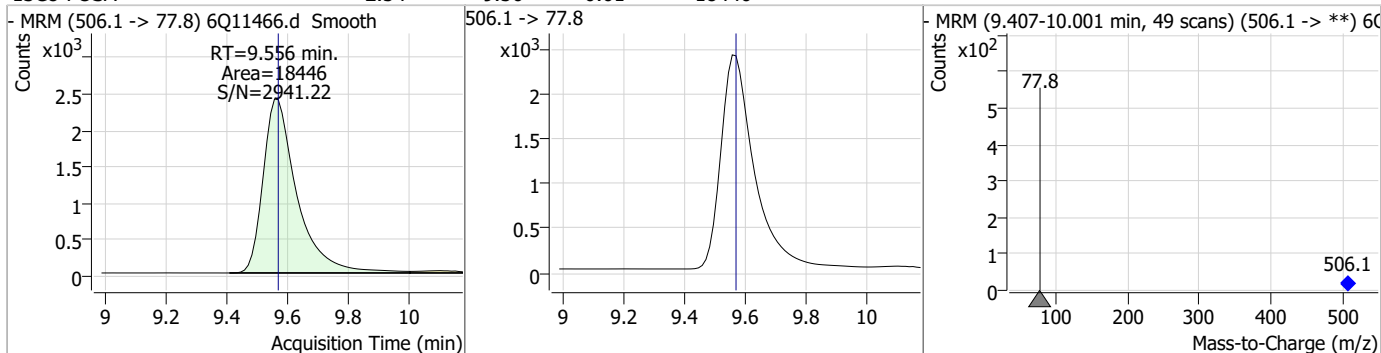
7.6.16
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Perfluorinated Compounds by LC/MS/MS

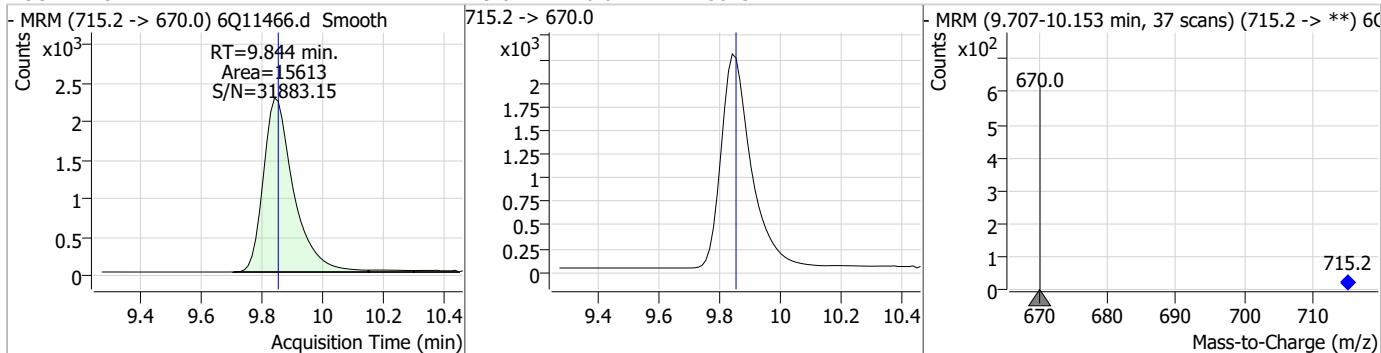
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUds	8.76	9.56	0.00	107652	632.9 -> 452.9	31.1	16.1	48.4



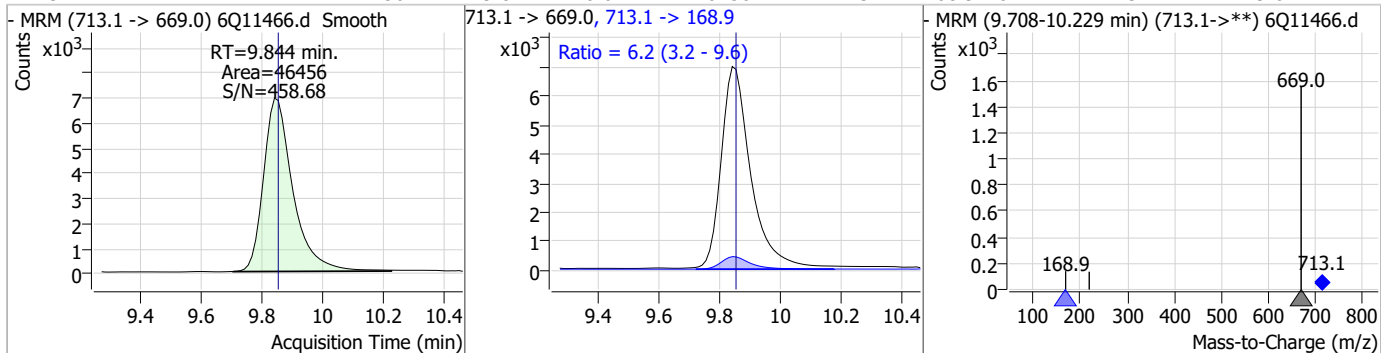
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.54	9.56	-0.01	18446				



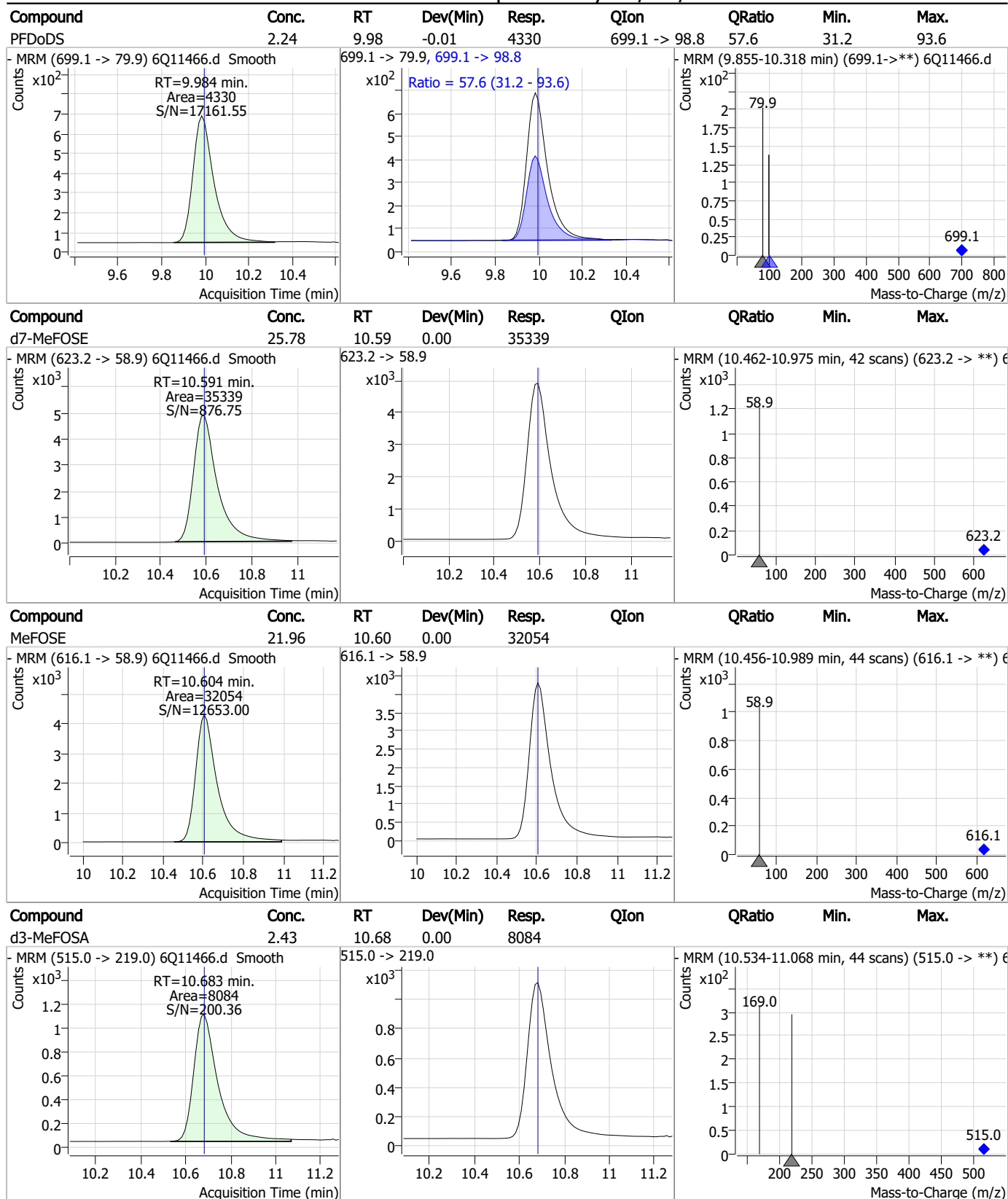
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.27	9.84	-0.01	15613				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.50	9.84	-0.01	46456	713.1 -> 168.9	6.2	3.2	9.6



Perfluorinated Compounds by LC/MS/MS

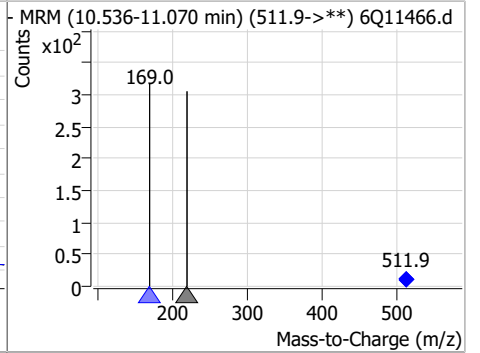
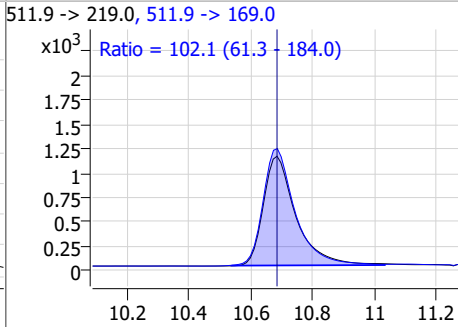
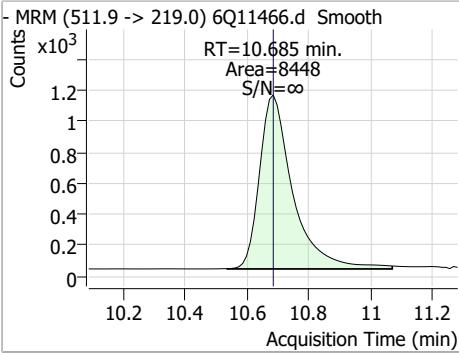


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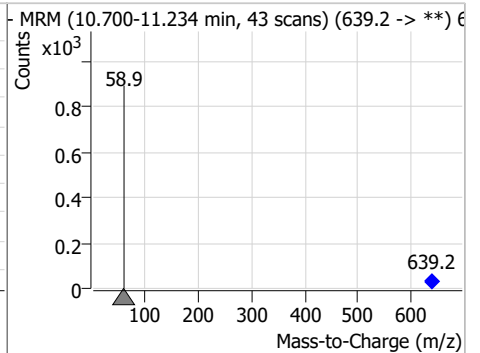
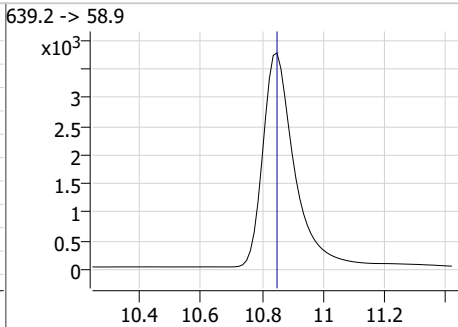
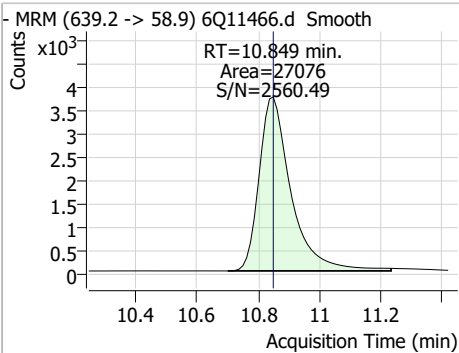
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Perfluorinated Compounds by LC/MS/MS

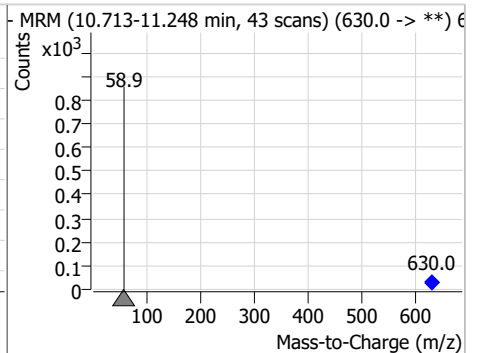
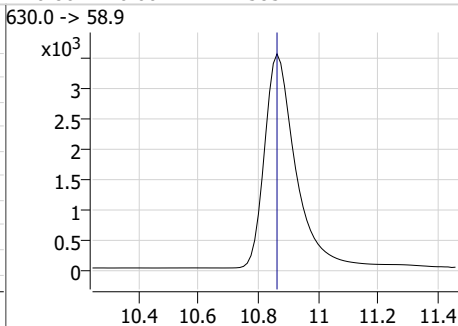
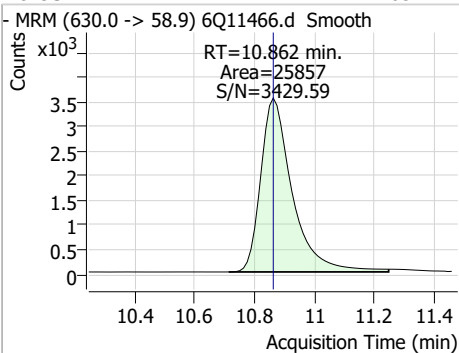
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	2.37	10.68	0.00	8448	511.9 -> 169.0	102.1	61.3	184.0



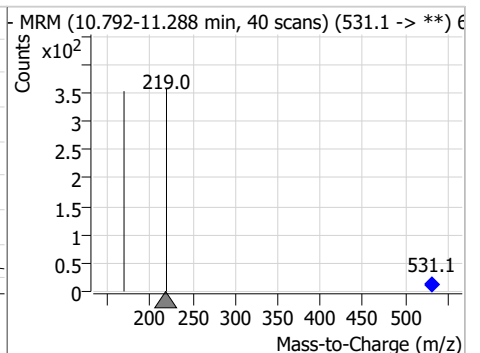
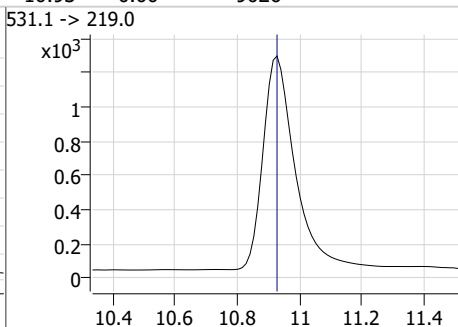
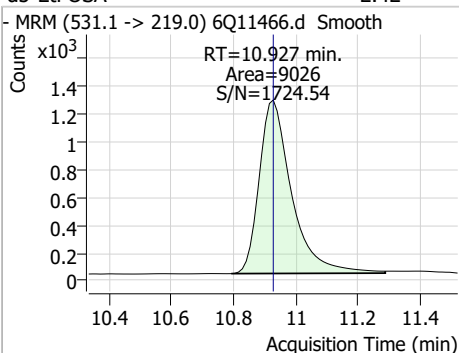
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.83	10.85	0.00	27076				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	21.65	10.86	0.00	25857				



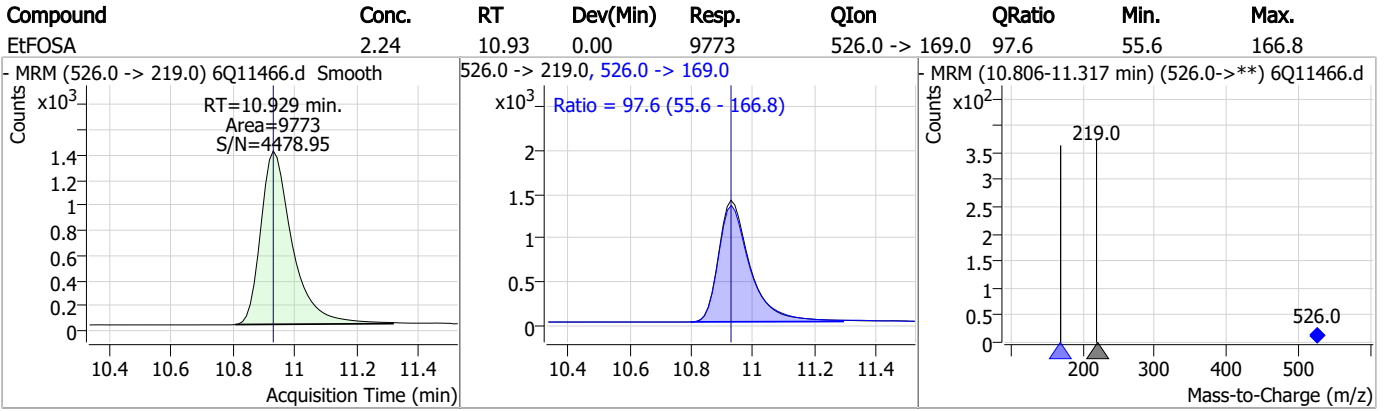
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.42	10.93	0.00	9026				



7.6.16
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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q179-CC174 Method: EPA DRAFT 1633
Lab FileID: 6Q11466.D Analyst approved: 01/17/23 14:23 Martha Valls
Injection Time: 01/17/23 08:55 Supervisor approved: 01/17/23 18:24 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.29	Split peak
MeFOSAA	2355-31-9		8.24	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.37	Split peak
EtFOSAA	2991-50-6		8.45	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q11472.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/17/2023 10:19:35 AM
 Sample Name : cc174-1.0LL
 Vial : P1-C2
 DA Method File : 1633_011123_S6Q174.quantmethod.xml
 Batch Name : s6q179.batch.bin
 Sample Information : OP94795,S6Q179,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.975	216.8 -> 171.9	86243	10.00 µg/L	-0.025
M5-PFPeA	4.371	268.3 -> 223.0	42186	5.00 µg/L	-0.012
M5-PFHxA	5.564	318.0 -> 273.0	35713	2.50 µg/L	0.000
M4-PFHpA	6.503	367.1 -> 322.0	38749	2.50 µg/L	-0.012
M8-PFOA	7.160	421.1 -> 376.0	64538	2.50 µg/L	0.000
M9-PFNA	7.702	472.1 -> 427.0	28098	1.25 µg/L	-0.013
M6-PFDA	8.195	519.1 -> 474.1	20892	1.25 µg/L	-0.012
M7-PFUnDA	8.674	570.0 -> 525.1	22603	1.25 µg/L	0.000
M2-PFDoDA	9.117	615.1 -> 570.0	26348	1.25 µg/L	0.000
M2-PFTeDA	9.856	715.2 -> 670.0	14593	1.25 µg/L	0.000
M8-FOSA	9.568	506.1 -> 77.8	18007	2.50 µg/L	0.000
M3-PFBS	5.506	302.1 -> 79.9	14632	2.50 µg/L	-0.025
M3-PFHxS	7.288	402.1 -> 79.9	8886	2.50 µg/L	-0.012
M8-PFOS	8.371	507.1 -> 79.9	9361	2.50 µg/L	-0.012
M2-4:2FTS	5.216	329.1 -> 80.9	1848	5.00 µg/L	-0.012
M2-6:2FTS	6.921	429.1 -> 80.9	2609	5.00 µg/L	-0.012
M2-8:2FTS	7.982	529.1 -> 80.9	2763	5.00 µg/L	0.000
M3-MeFOSAA	8.240	573.2 -> 419.0	25178	5.00 µg/L	0.000
M3-HFPO-DA	5.928	286.9 -> 168.9	16185	10.00 µg/L	-0.012
M5-EtFOSAA	8.448	589.2 -> 419.0	22410	5.00 µg/L	0.000
M7-MeFOSE	10.591	623.2 -> 58.9	33401	25.00 µg/L	0.000
M9-EtFOSE	10.849	639.2 -> 58.9	25705	25.00 µg/L	0.000
M5-EtFOSA	10.927	531.1 -> 219.0	8684	2.50 µg/L	0.000
M3-MeFOSA	10.683	515.0 -> 219.0	7556	2.50 µg/L	0.000
13C4-PFOS	8.384	502.8 -> 79.9	10666	2.50 µg/L	0.000
13C3-PFBA	2.979	216.0 -> 172.0	38124	5.00 µg/L	-0.025
18O2-PFHxS	7.299	403.0 -> 83.9	6668	2.50 µg/L	0.000
13C4-PFOA	7.160	417.1 -> 372.0	75639	2.50 µg/L	-0.012
13C2-PFDA	8.196	515.1 -> 470.1	25835	1.25 µg/L	-0.012
13C5-PFNA	7.703	468.0 -> 423.0	31321	1.25 µg/L	0.000
13C2-PFHxA	5.552	315.1 -> 270.0	38301	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.216	329.1 -> 80.9	1848	5.31 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.2%		
13C2-6:2FTS	6.921	429.1 -> 80.9	2609	5.48 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.6%		
13C2-8:2FTS	7.982	529.1 -> 80.9	2763	5.31 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.3%		
13C2-PFDoDA	9.117	615.1 -> 570.0	26348	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.9%		
13C2-PFTeDA	9.856	715.2 -> 670.0	14593	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.0%		
13C3-PFBS	5.506	302.1 -> 79.9	14632	2.62 µg/L	-0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.7%		
13C3-PFHxS	7.288	402.1 -> 79.9	8886	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 = 98.2%		
13C4-PFBA	2.975	216.8 -> 171.9	86243	9.90 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 99.0%		
13C4-PFHpA	6.503	367.1 -> 322.0	38749	2.50 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.8%		
13C5-PFHxA	5.564	318.0 -> 273.0	35713	2.32 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 92.9%		
13C5-PFPeA	4.371	268.3 -> 223.0	42186	4.94 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.7%		
13C6-PFDA	8.195	519.1 -> 474.1	20892	1.42 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 113.6%		
13C7-PFUnDA	8.674	570.0 -> 525.1	22603	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.7%		
13C8-FOSA	9.568	506.1 -> 77.8	18007	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.0%		
13C8-PFOA	7.160	421.1 -> 376.0	64538	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.8%		
13C8-PFOS	8.371	507.1 -> 79.9	9361	2.75 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 109.9%		
13C9-PFNA	7.702	472.1 -> 427.0	28098	1.26 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.0%		
d3-MeFOSAA	8.240	573.2 -> 419.0	25178	4.90 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.0%		
13C3-HFPO-DA	5.928	286.9 -> 168.9	16185	10.25 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 102.5%		
d3-MeFOSA	10.683	515.0 -> 219.0	7556	2.29 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 91.6%		
d5-EtFOSAA	8.448	589.2 -> 419.0	22410	4.97 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.5%		
d7-MeFOSE	10.591	623.2 -> 58.9	33401	24.60 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 98.4%		
d9-EtFOSE	10.849	639.2 -> 58.9	25705	24.76 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 99.0%		
d5-EtFOSA	10.927	531.1 -> 219.0	8684	2.35 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 94.0%		
Target Compounds					QValue
4:2FTS	5.216	327.1 -> 307.0	3125	0.71 µg/L	99
		327.1 -> 80.9	714		
6:2FTS	6.922	427.1 -> 407.0	2701	0.67 µg/L	94
		427.1 -> 80.9	648		
8:2FTS	7.971	527.1 -> 507.0	1698	0.74 µg/L	99
		527.1 -> 80.8	428		
EtFOSAA	8.449	584.2 -> 419.1	785	0.22 µg/L	m 69
		584.2 -> 526.0	277		
FOSA	9.571	498.1 -> 77.9	1547	0.21 µg/L	95
		498.1 -> 478.0	35		
MeFOSAA	8.254	570.1 -> 419.0	1106	0.21 µg/L	m 91
		570.1 -> 483.0	177		
PFBA	2.982	212.8 -> 168.9	1625	0.73 µg/L	100
PFBS	5.507	298.7 -> 79.9	981	0.17 µg/L	92
		298.7 -> 98.8	496		
PFDA	8.196	512.9 -> 469.0	3895	0.16 µg/L	94
		512.9 -> 219.0	617		
PFDODA	9.117	613.1 -> 569.0	3765	0.18 µg/L	98
		613.1 -> 319.0	438		
PFDS	9.293	599.0 -> 79.9	520	0.16 µg/L	96

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.504	599.0 -> 98.8	293	0.17	µg/L	94
		363.1 -> 319.0	4073			
PFHpS	7.867	363.1 -> 169.0	629	0.16	µg/L	90
		449.0 -> 79.9	699			
PFHxA	5.554	449.0 -> 98.9	351	0.21	µg/L	99
		313.0 -> 269.0	3080			
PFHxS	7.301	313.0 -> 118.9	99	0.18	µg/L	91
		398.7 -> 79.9	777			
PFNA	7.703	398.7 -> 98.9	466	0.20	µg/L	98
		463.0 -> 419.0	3837			
PFNS	8.862	463.0 -> 219.0	807	0.17	µg/L	91
		548.8 -> 79.9	781			
PFOA	7.161	548.8 -> 98.9	441	0.23	µg/L	92
		413.0 -> 369.0	6617			
PFOS	8.385	413.0 -> 169.0	723	0.17	µg/L	83
		498.9 -> 79.9	787			
PFPeA	4.374	498.9 -> 98.8	569	0.34	µg/L	100
		263.0 -> 219.0	3195			
PFPeS	6.582	349.1 -> 79.9	845	0.17	µg/L	96
		349.1 -> 98.9	476			
PFTeDA	9.857	713.1 -> 669.0	3540	0.20	µg/L	99
		713.1 -> 168.9	215			
PFTrDA	9.501	663.0 -> 619.0	3878	0.20	µg/L	97
		663.0 -> 168.9	288			
PFUnDA	8.675	563.1 -> 519.0	3404	0.18	µg/L	94
		563.1 -> 269.1	565			
11Cl-PF3OUdS	9.565	630.9 -> 450.9	8137	0.66	µg/L	99
		632.9 -> 452.9	2561			
9Cl-PF3ONS	8.727	530.8 -> 351.0	13685	0.69	µg/L	99
		532.8 -> 353.0	4695			
ADONA	6.767	376.9 -> 250.9	22398	0.62	µg/L	94
		376.9 -> 84.8	5245			
HFPO-DA	5.929	284.9 -> 168.9	1086	0.66	µg/L	96
		284.9 -> 184.9	151			
3:3FTCA	3.827	241.0 -> 177.0	445	0.90	µg/L	86
		241.0 -> 117.0	77			
5:3FTCA	6.194	341.0 -> 237.1	13951	4.65	µg/L	98
		341.0 -> 217.0	11630			
7:3FTCA	7.618	441.0 -> 316.9	9678	4.78	µg/L	86
		441.0 -> 336.9	21043			
EtFOSA	10.929	526.0 -> 219.0	810	0.19	µg/L	96
		526.0 -> 169.0	867			
EtFOSE	10.862	630.0 -> 58.9	2203	1.94	µg/L	100
		511.9 -> 219.0	682			
MeFOSA	10.685	511.9 -> 169.0	689	0.20	µg/L	81
		616.1 -> 58.9	2497			
MeFOSE	10.604	699.1 -> 79.9	414	1.81	µg/L	100
		699.1 -> 98.8	219			
PFDoDS	9.996	295.0 -> 201.0	361	0.21	µg/L	88
		295.0 -> 84.9	154			
NFDHA	5.433	279.0 -> 85.1	1099	0.39	µg/L	97
		229.0 -> 84.9	933			
PFMBA	4.776	314.8 -> 134.9	6530	0.38	µg/L	100
		314.8 -> 82.9	219			
PFMPA	3.525			0.36	µg/L	100
PFEESA	6.060			0.33	µg/L	98

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

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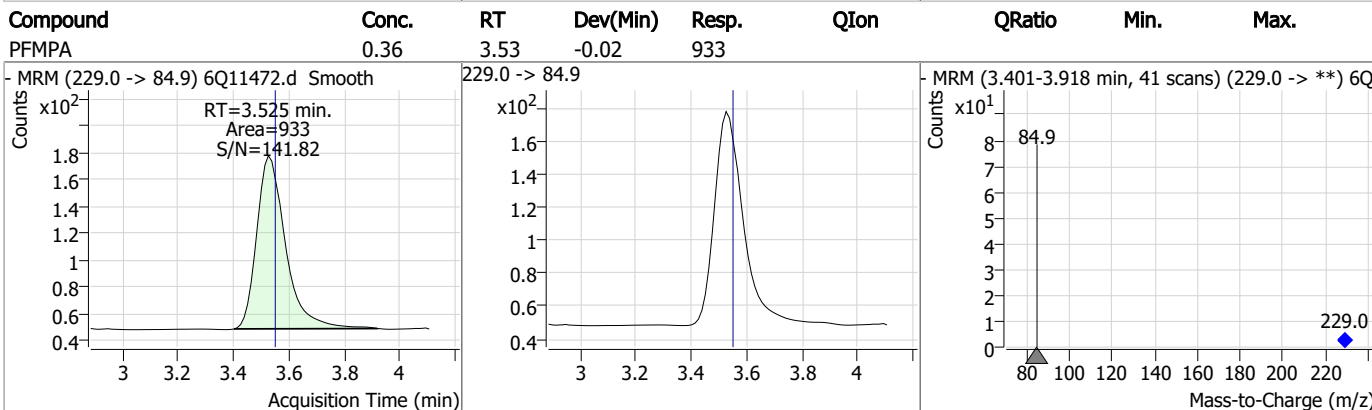
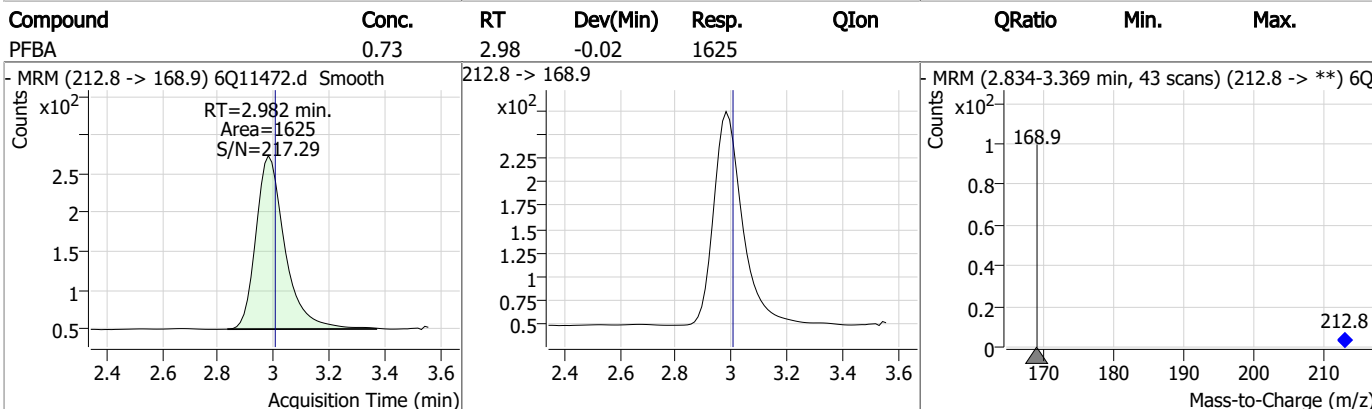
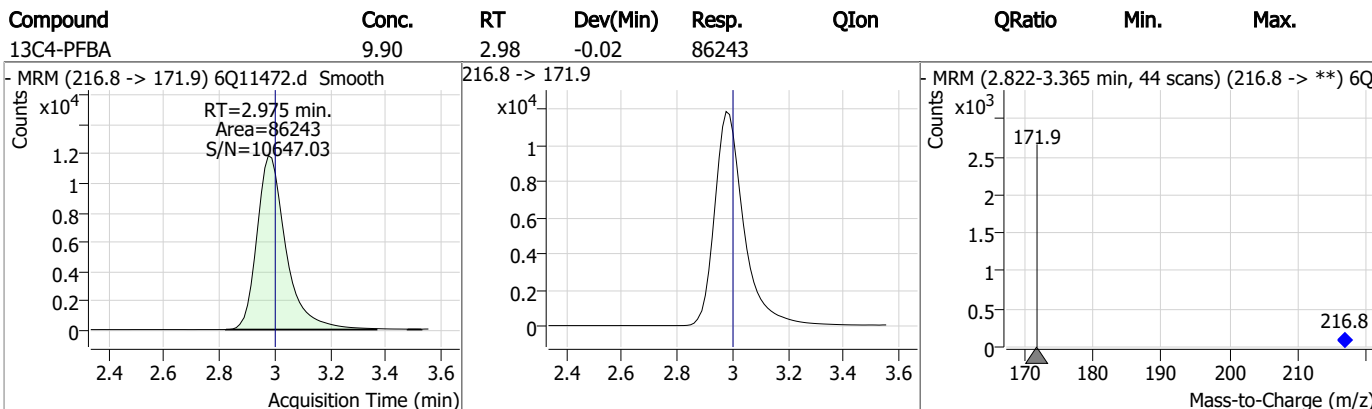
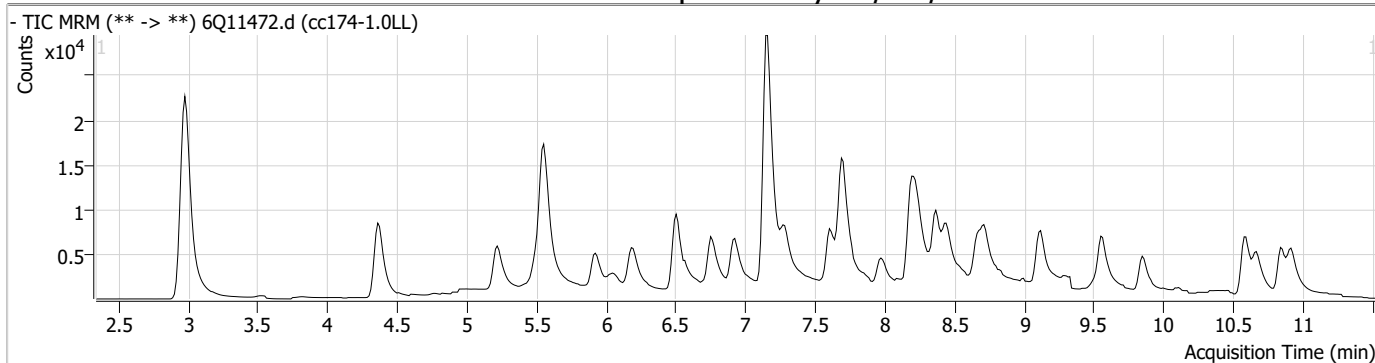
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.6.17

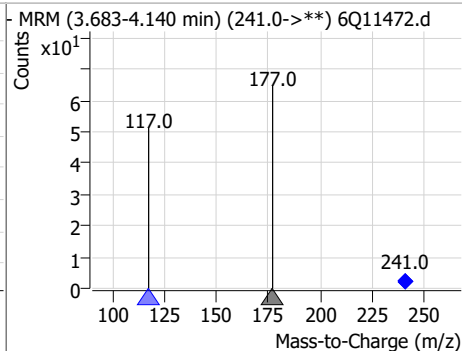
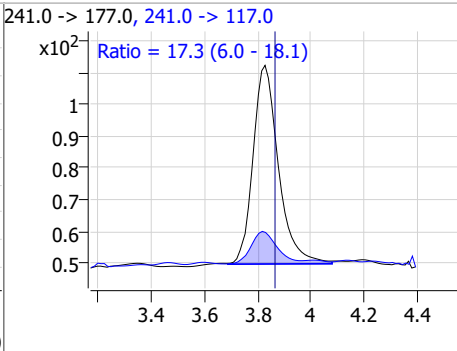
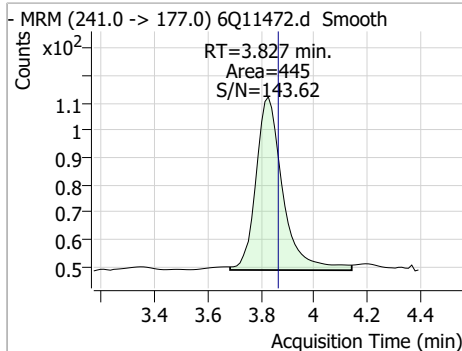
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Perfluorinated Compounds by LC/MS/MS

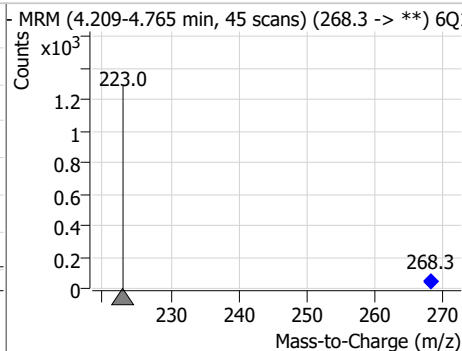
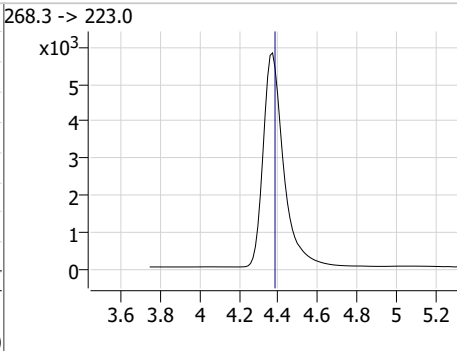
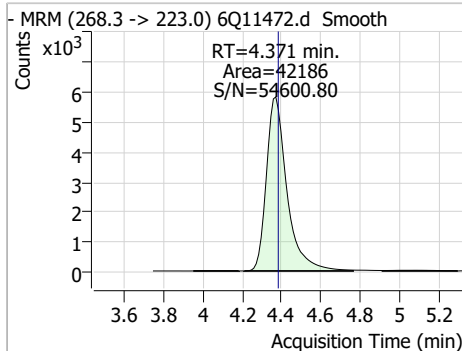


Perfluorinated Compounds by LC/MS/MS

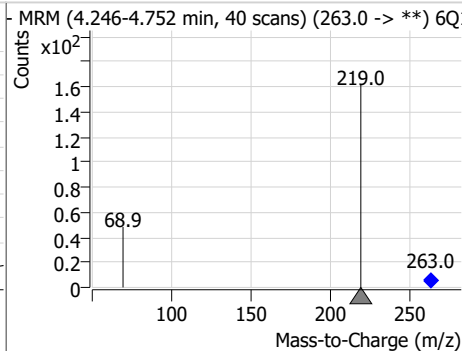
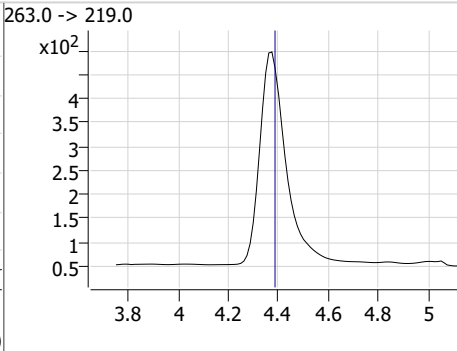
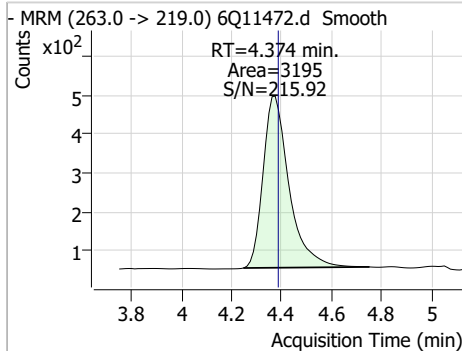
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	0.90	3.83	-0.04	445	241.0 -> 117.0	17.3	6.0	18.1



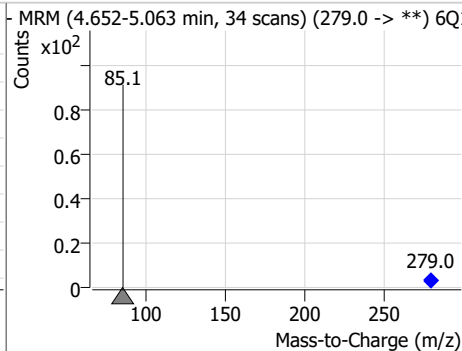
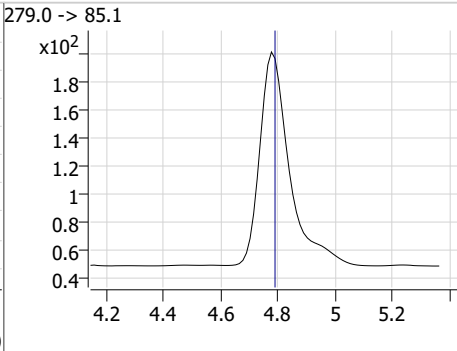
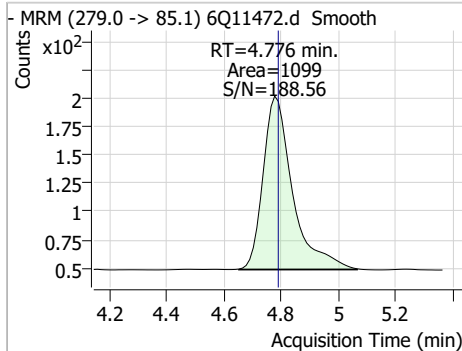
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.94	4.37	-0.01	42186				



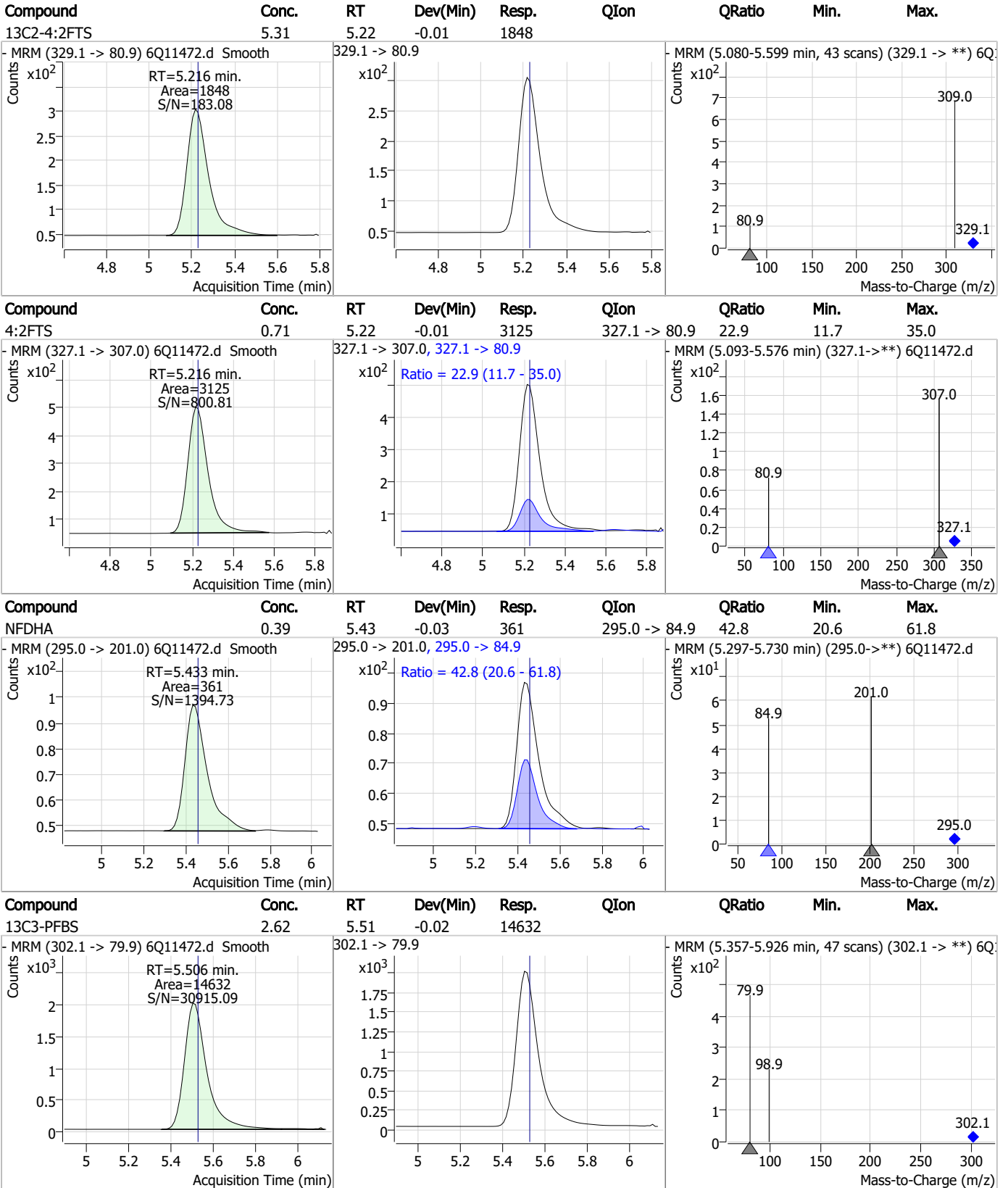
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.34	4.37	-0.01	3195				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	0.38	4.78	-0.01	1099				



Perfluorinated Compounds by LC/MS/MS

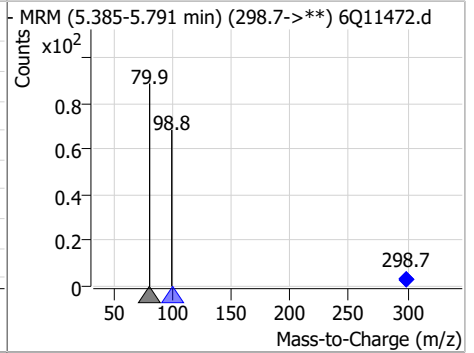
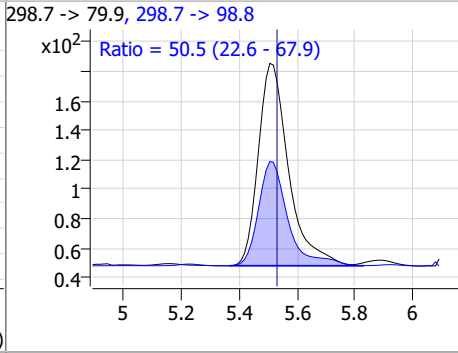
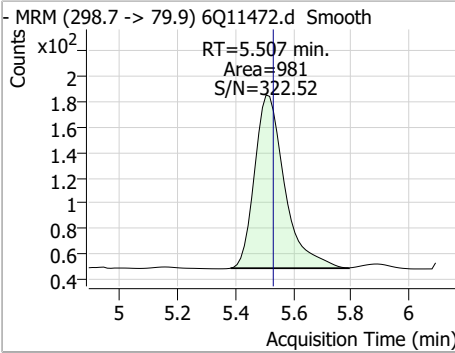


7.6.17

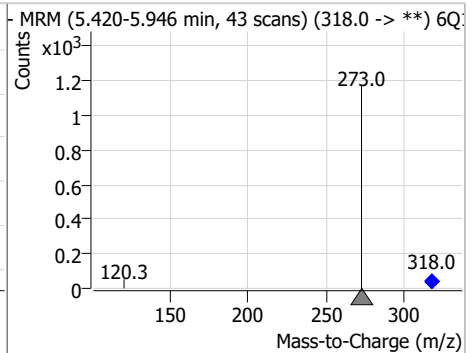
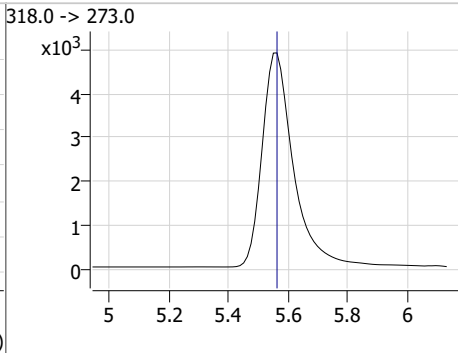
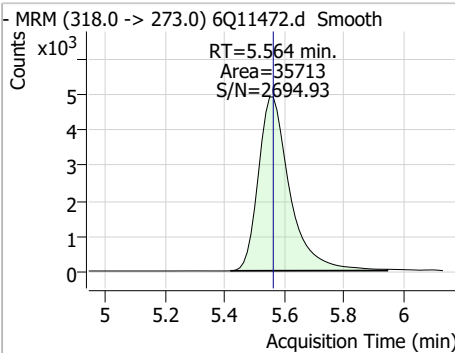
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Perfluorinated Compounds by LC/MS/MS

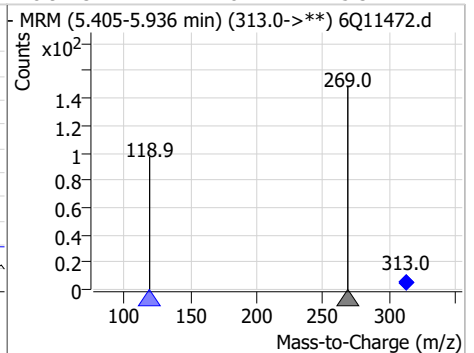
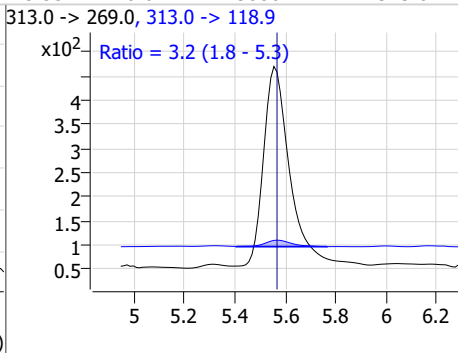
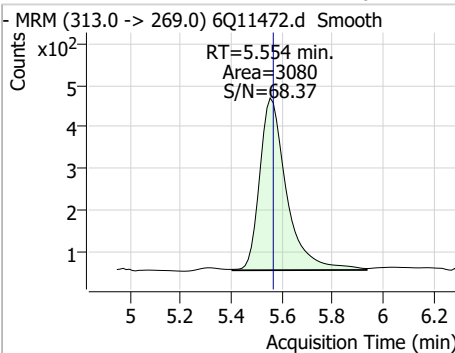
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.17	5.51	-0.02	981	298.7 -> 98.8	50.5	22.6	67.9



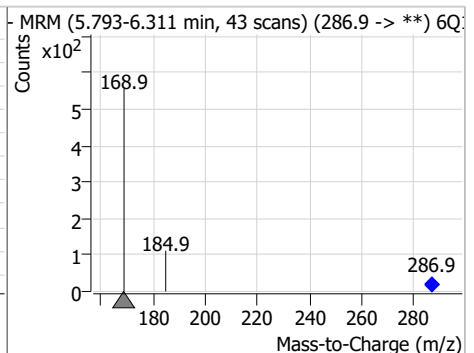
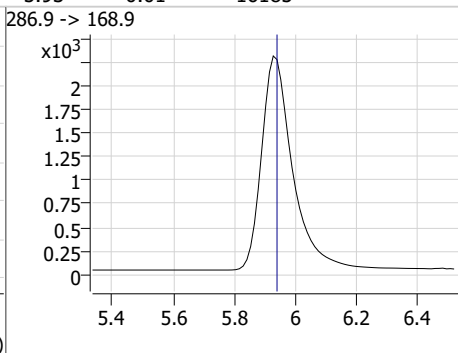
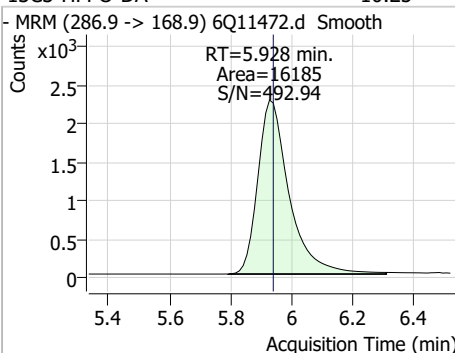
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.32	5.56	0.00	35713				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.21	5.55	-0.01	3080	313.0 -> 118.9	3.2	1.8	5.3

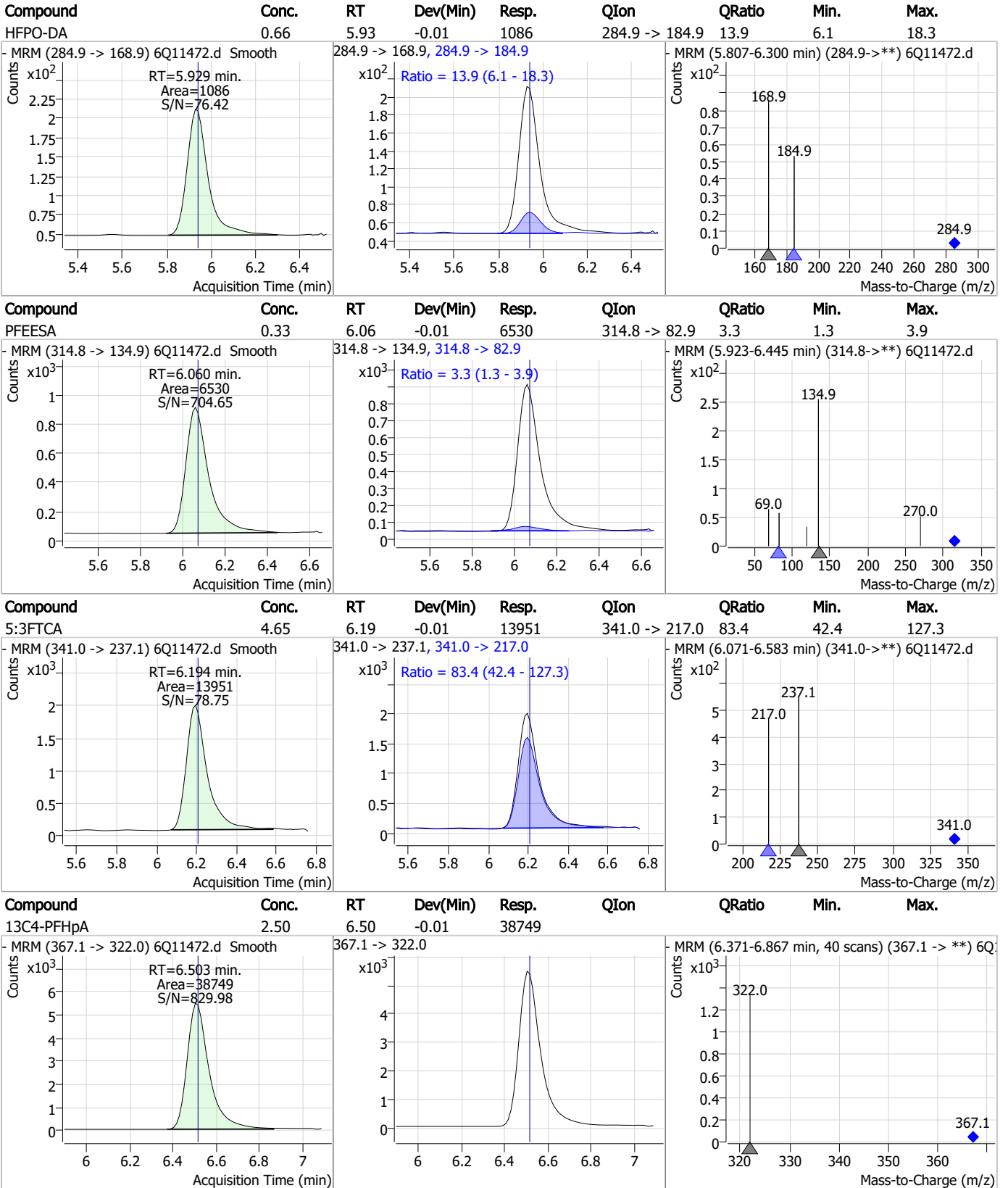


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.25	5.93	-0.01	16185				



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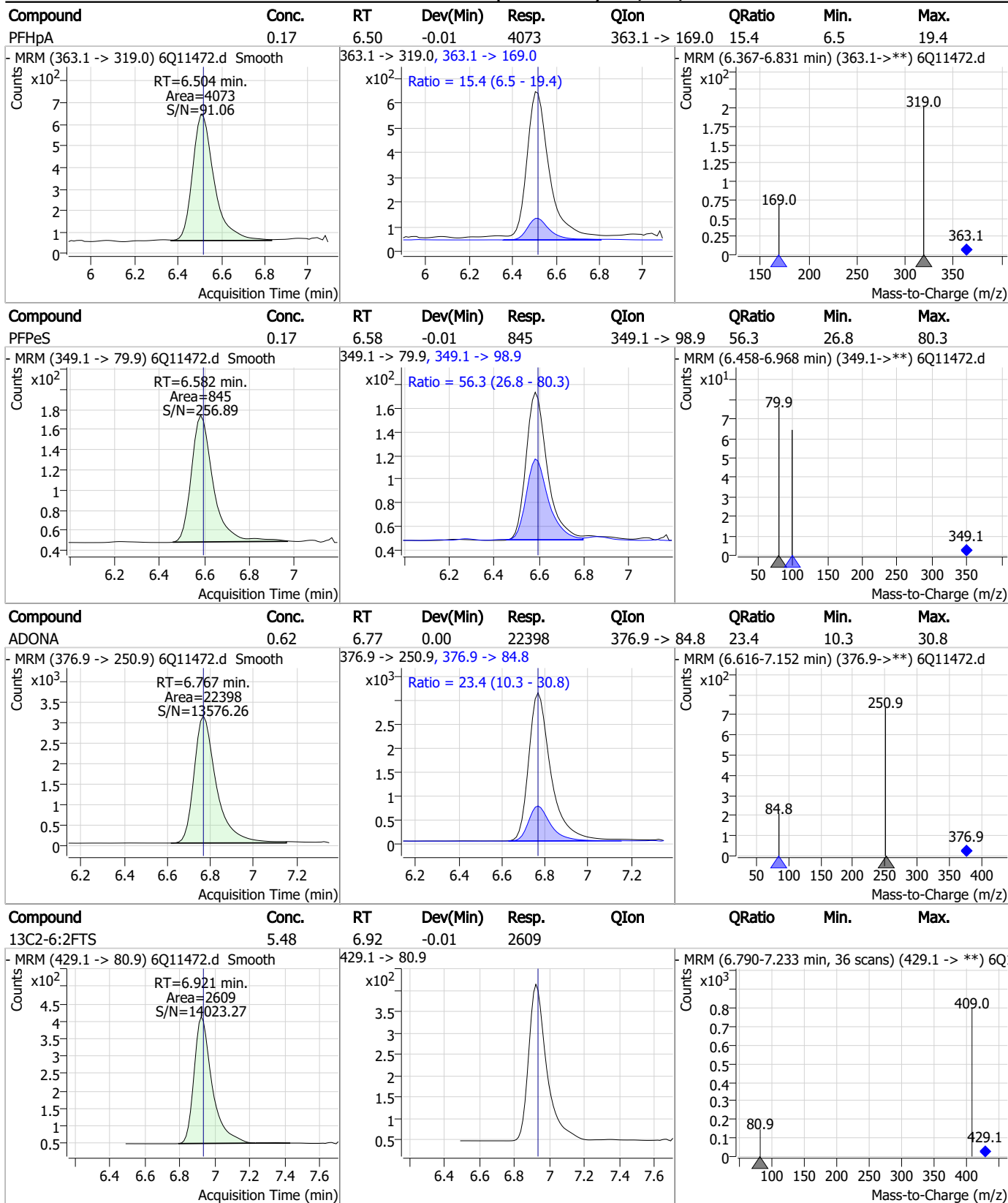
Perfluorinated Compounds by LC/MS/MS



7.6.17



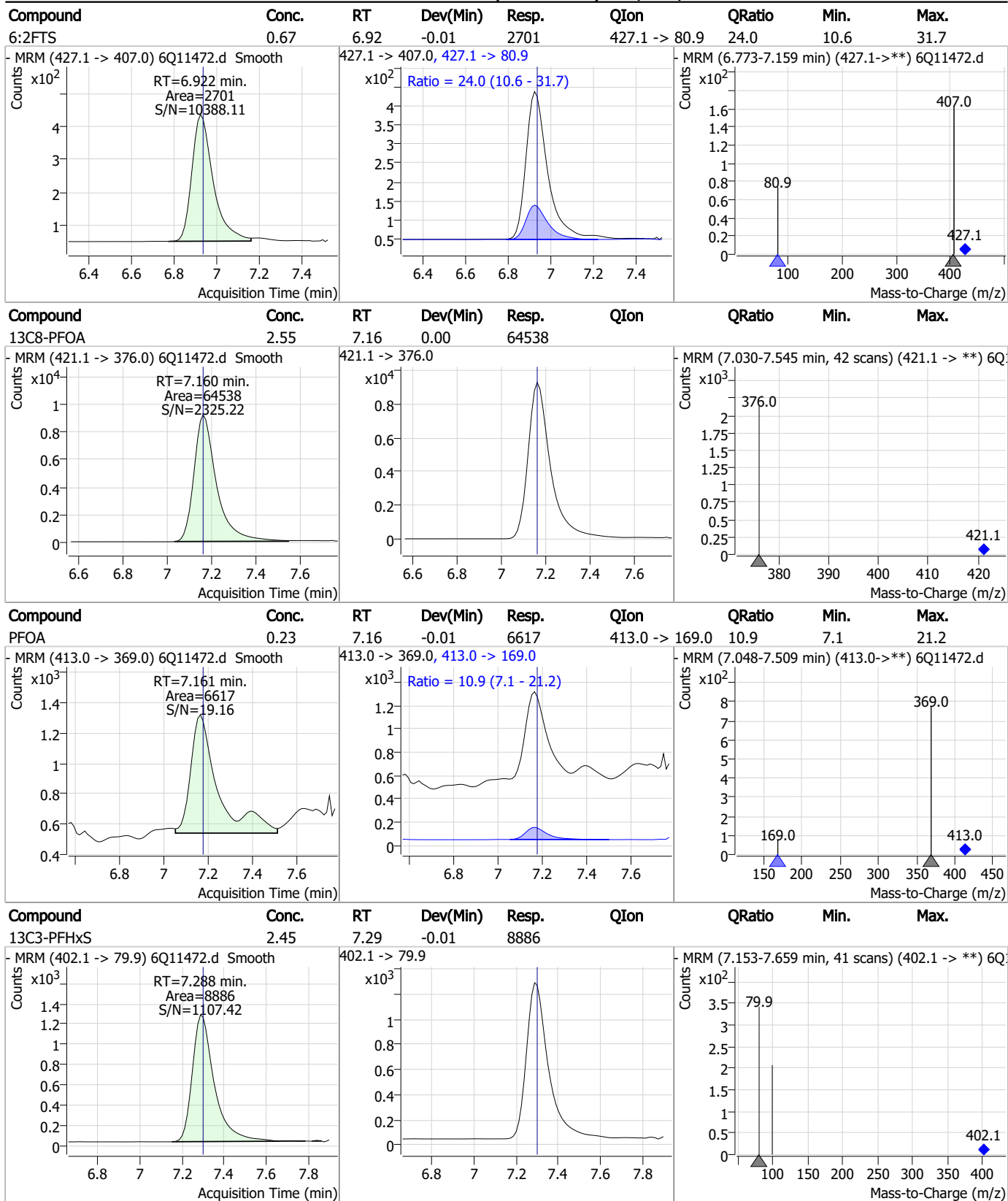
Perfluorinated Compounds by LC/MS/MS



7.6.17

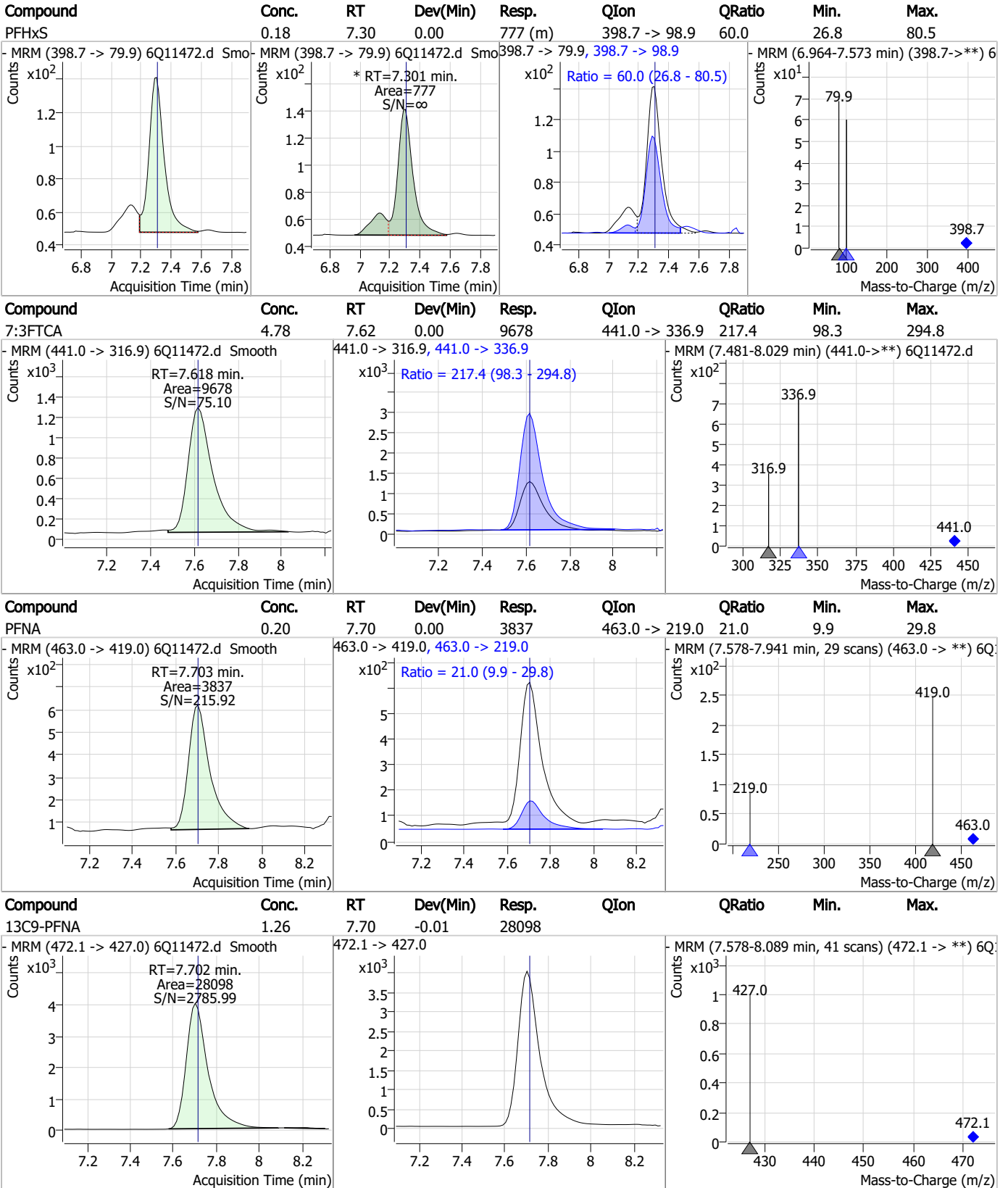


Perfluorinated Compounds by LC/MS/MS



7.6.17

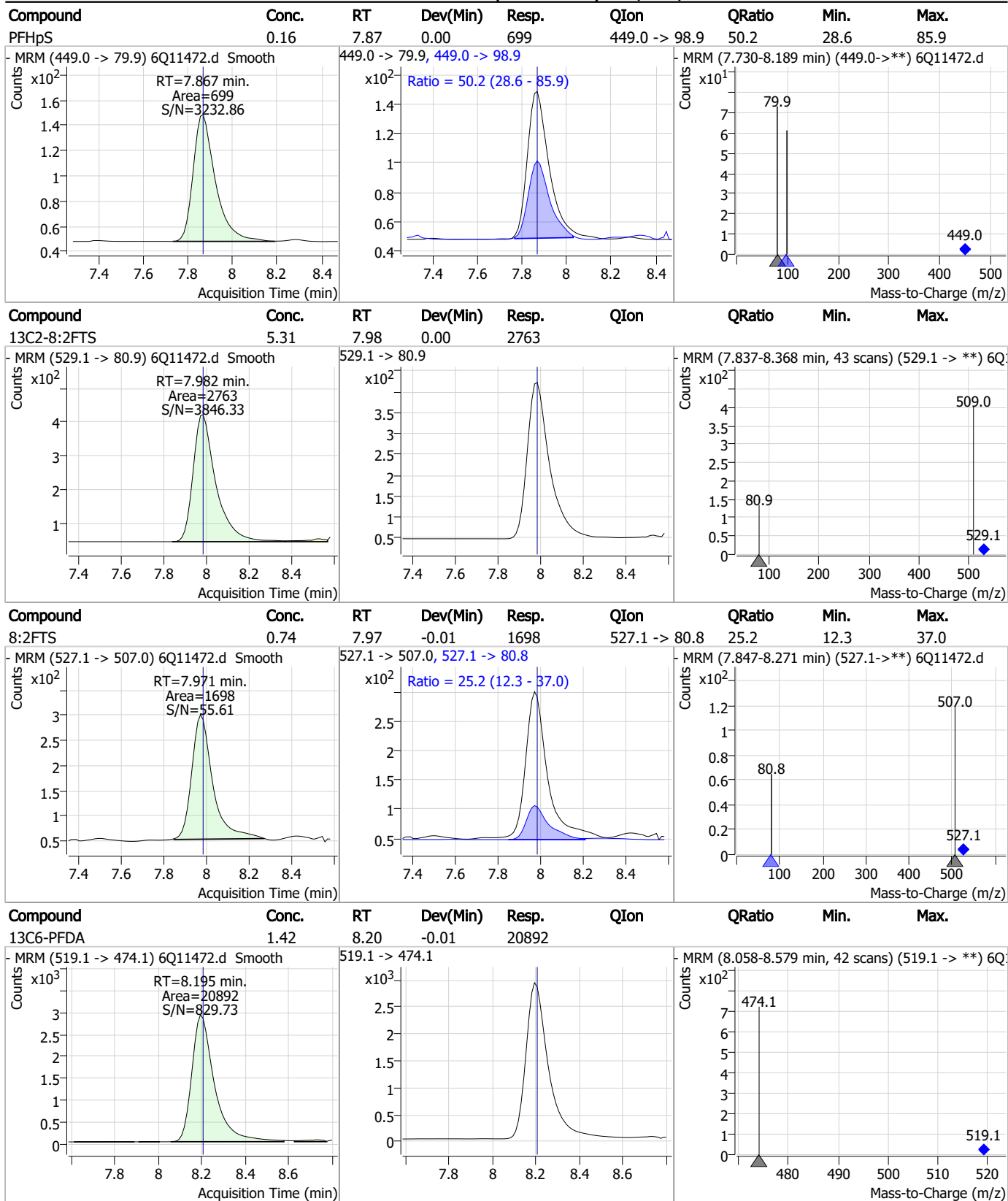
Perfluorinated Compounds by LC/MS/MS



7.6.17

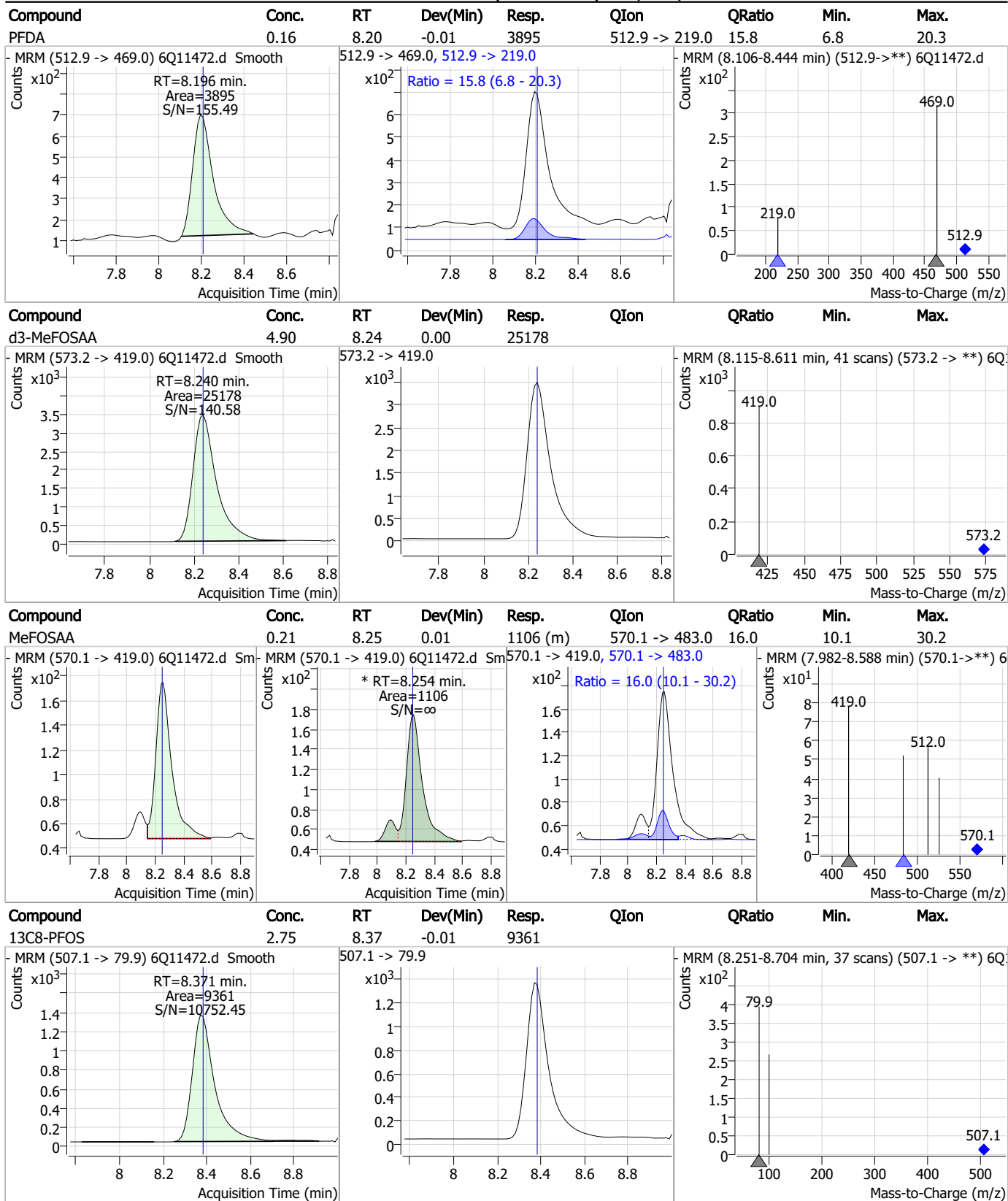


Perfluorinated Compounds by LC/MS/MS



7.6.17

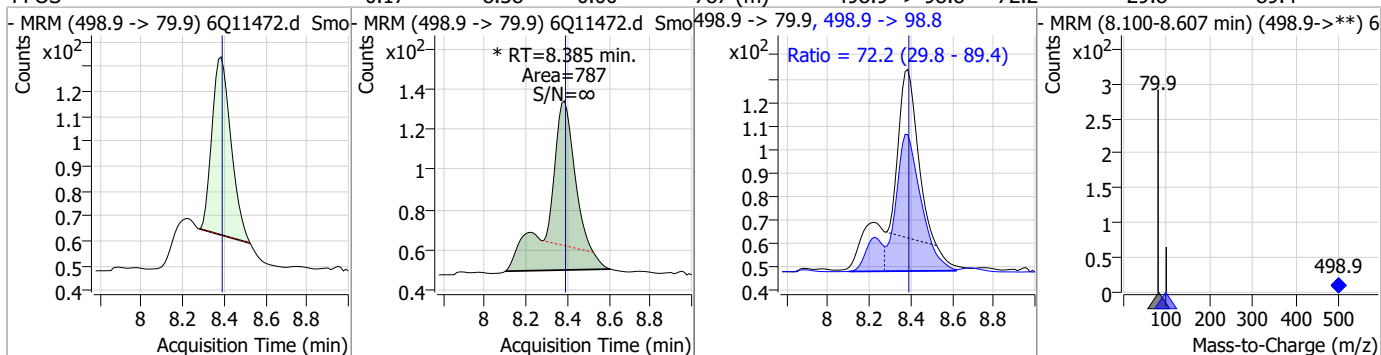
Perfluorinated Compounds by LC/MS/MS



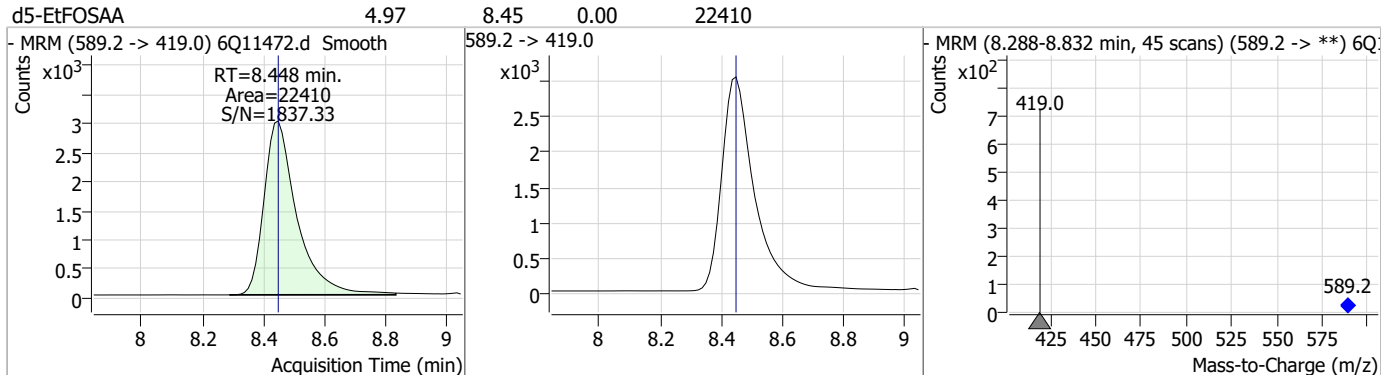
7.6.17

Perfluorinated Compounds by LC/MS/MS

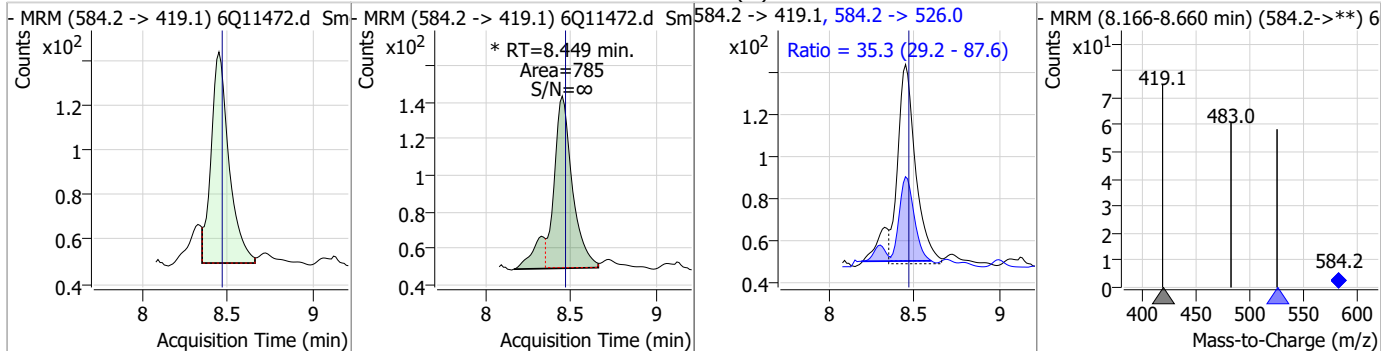
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.17	8.38	0.00	787 (m)	498.9 -> 98.8	72.2	29.8	89.4



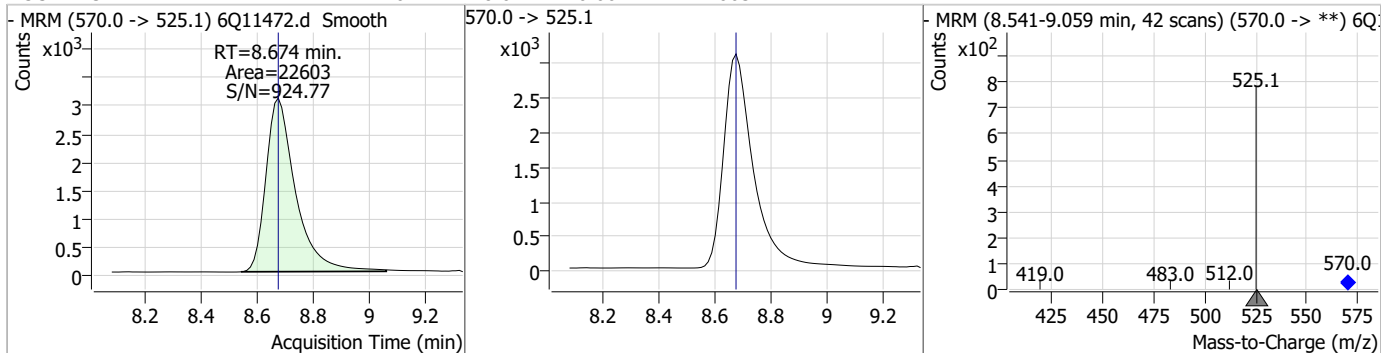
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.97	8.45	0.00	22410				



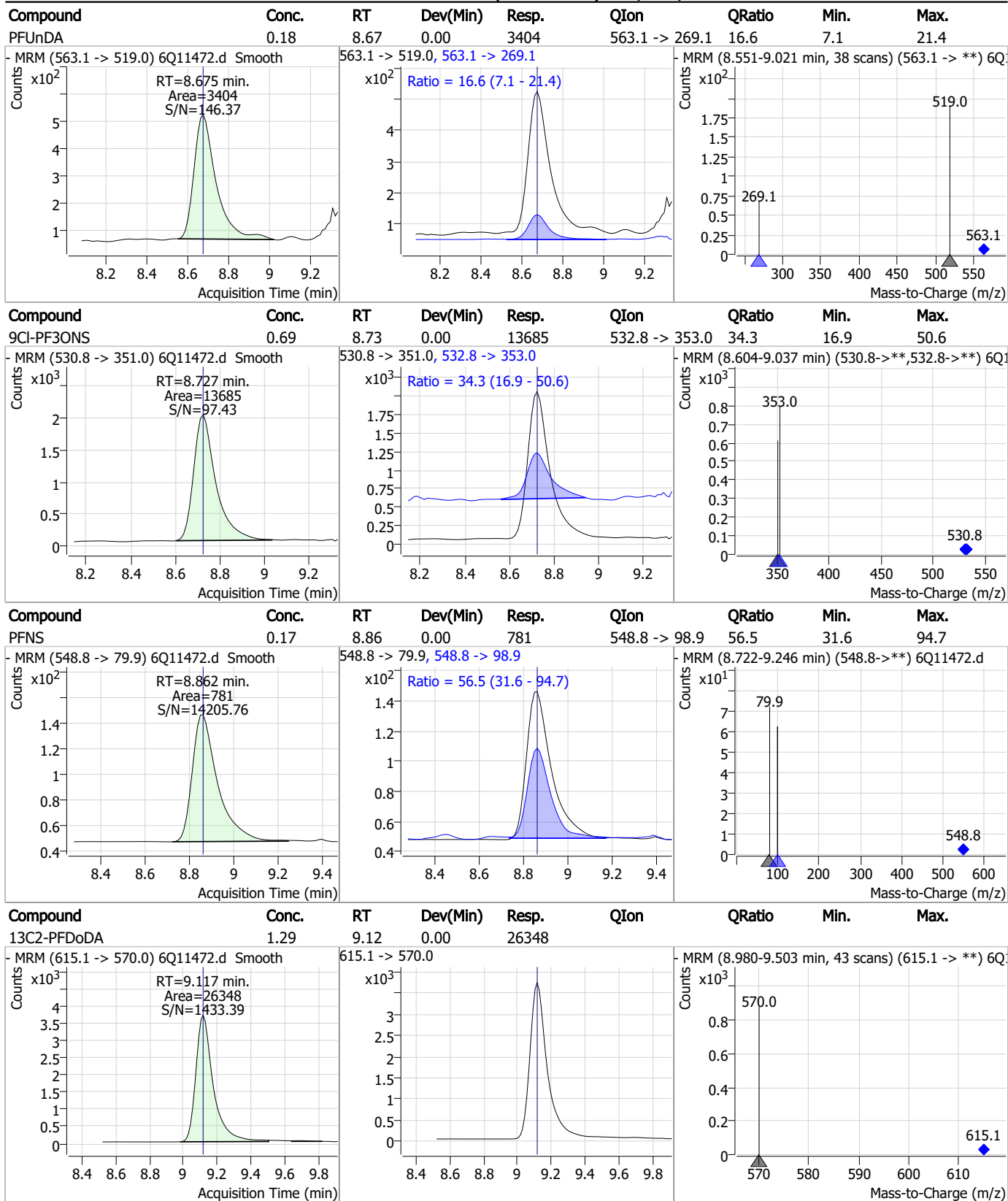
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.22	8.45	-0.01	785 (m)	584.2 -> 526.0	35.3	29.2	87.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.26	8.67	0.00	22603				

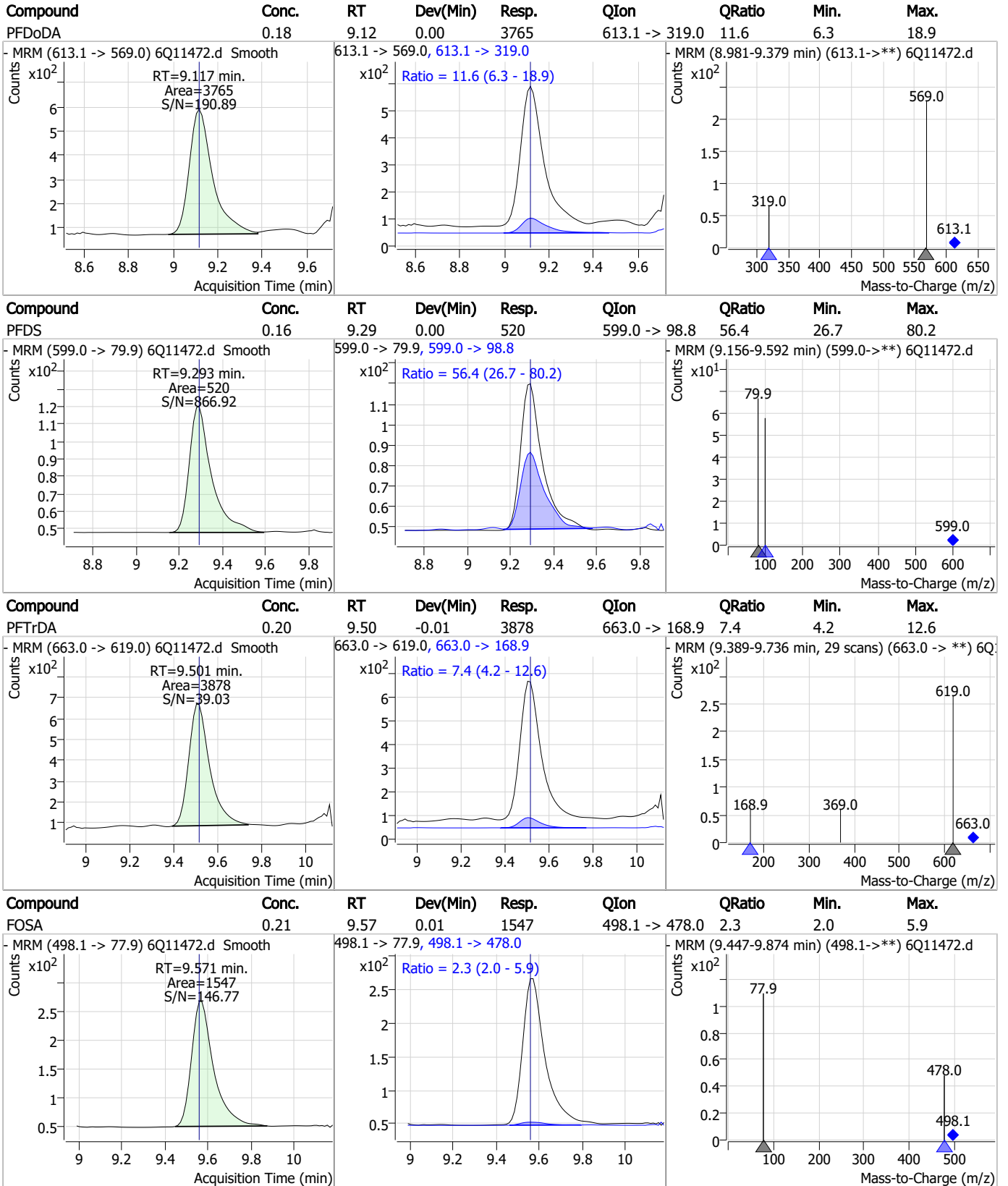


Perfluorinated Compounds by LC/MS/MS



7.6.17

Perfluorinated Compounds by LC/MS/MS

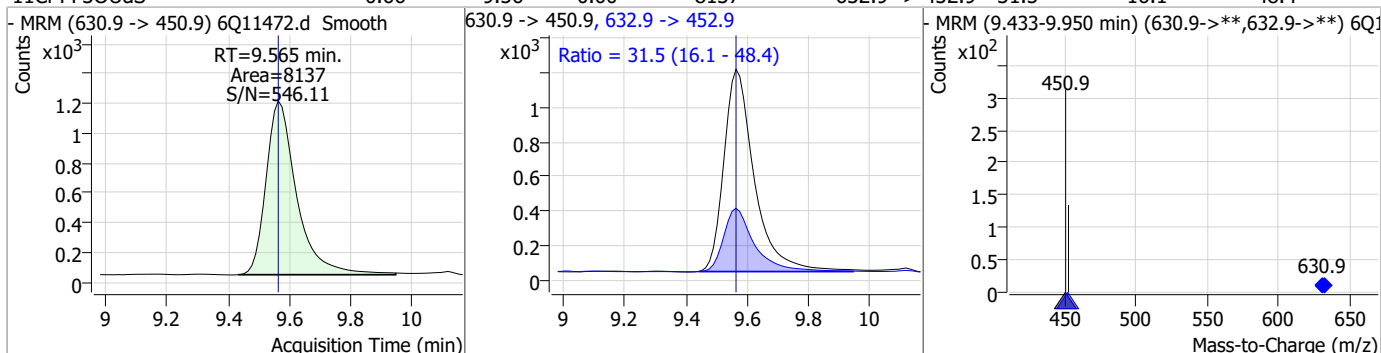


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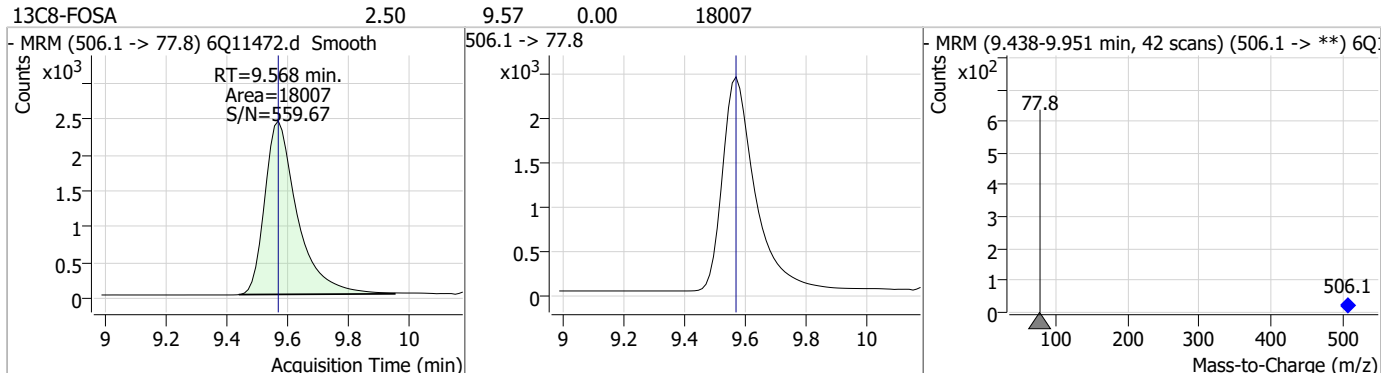


Perfluorinated Compounds by LC/MS/MS

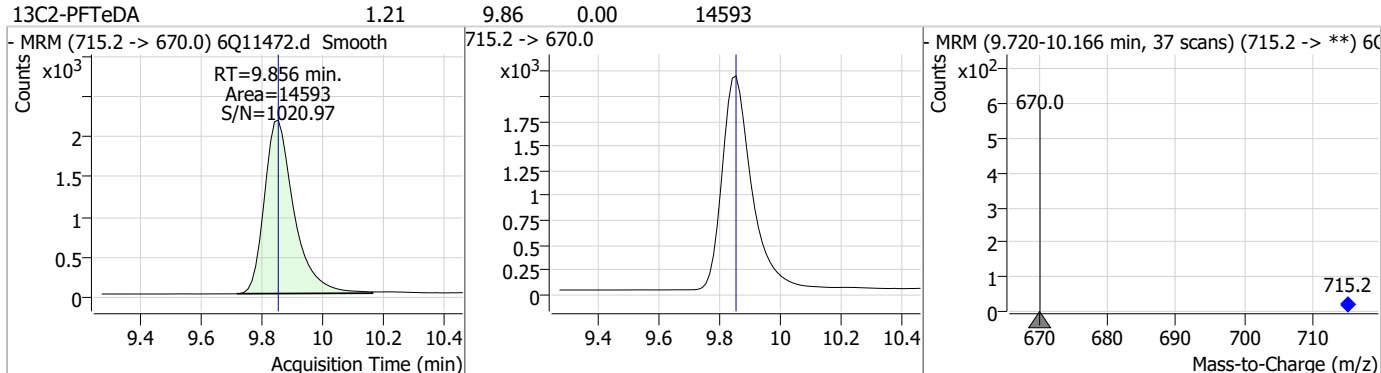
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUds	0.66	9.56	0.00	8137	632.9 -> 452.9	31.5	16.1	48.4



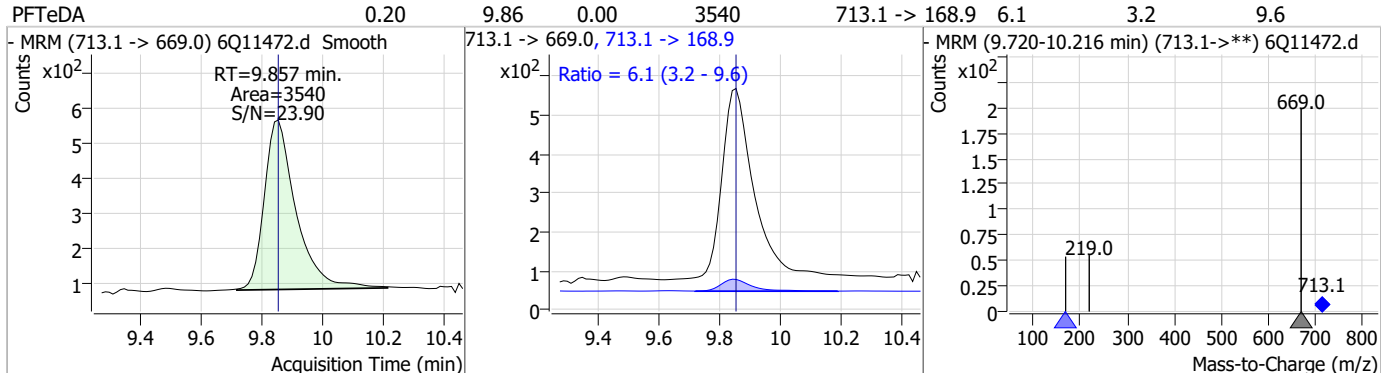
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.50	9.57	0.00	18007				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.21	9.86	0.00	14593				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.20	9.86	0.00	3540	713.1 -> 168.9	6.1	3.2	9.6



Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	0.21	10.00	0.00	414	699.1 -> 98.8	52.8	31.2	93.6
d7-MeFOSE	24.60	10.59	0.00	33401				
MeFOSE	1.81	10.60	0.00	2497				
d3-MeFOSA	2.29	10.68	0.00	7556				

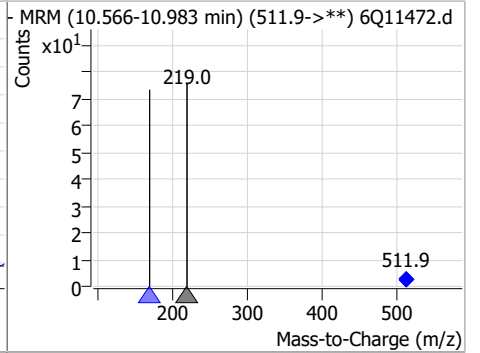
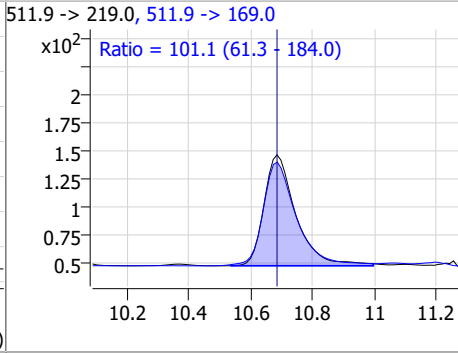
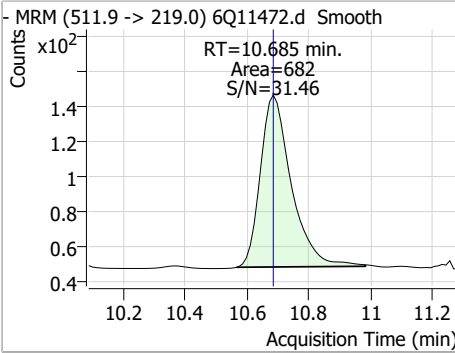
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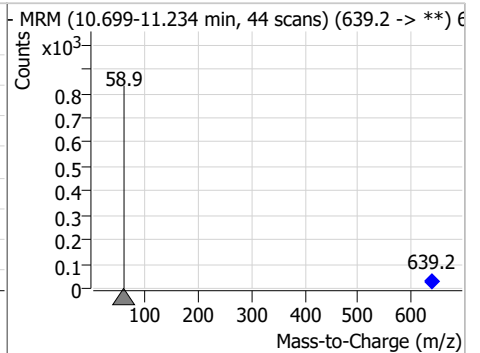
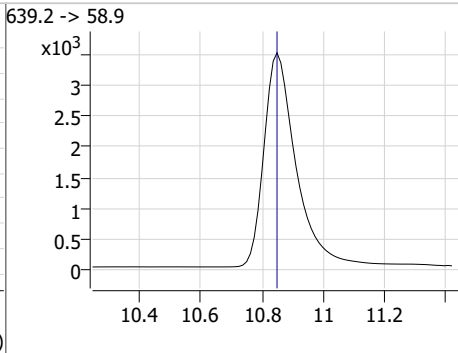
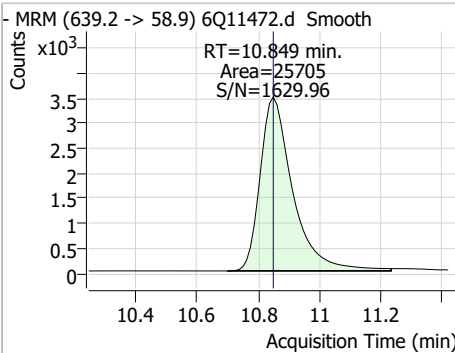


Perfluorinated Compounds by LC/MS/MS

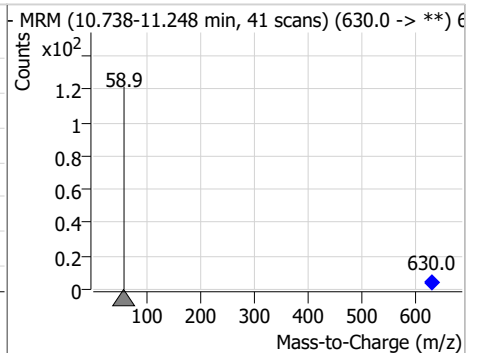
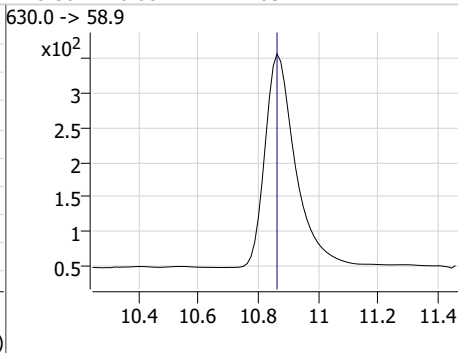
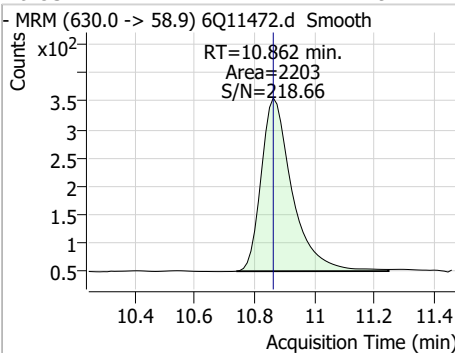
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.20	10.68	0.00	682	511.9 -> 169.0	101.1	61.3	184.0



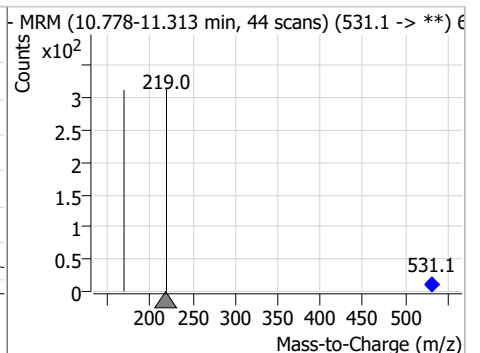
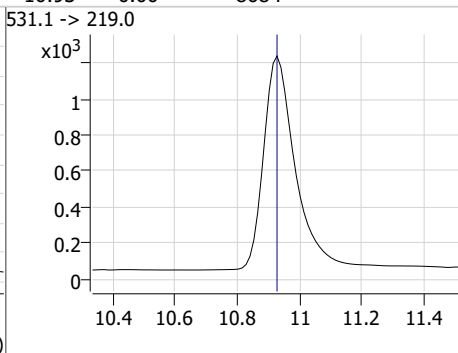
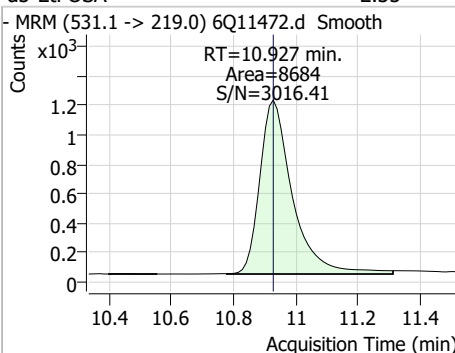
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.76	10.85	0.00	25705				



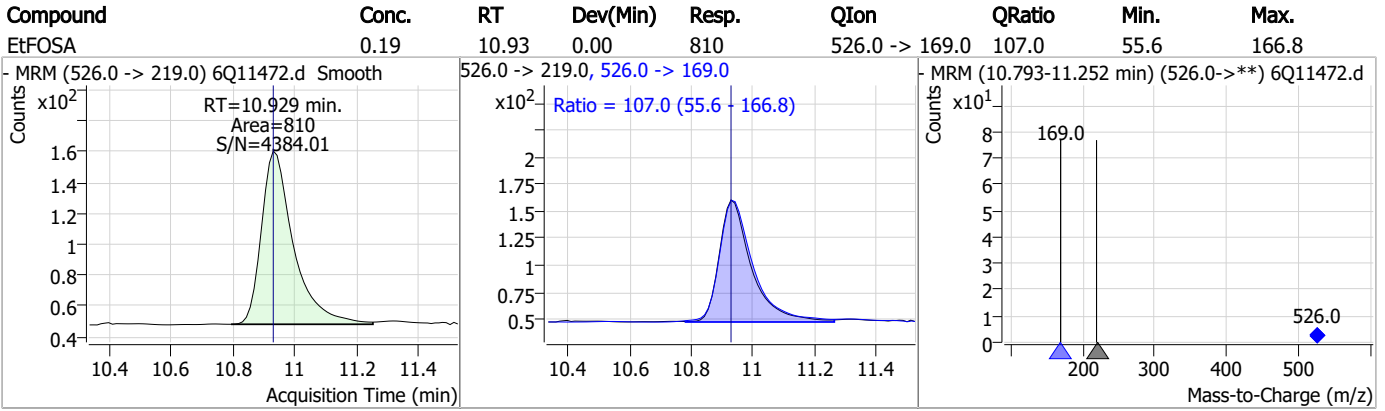
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	1.94	10.86	0.00	2203				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.35	10.93	0.00	8684				



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q179-CC174 Method: EPA DRAFT 1633
Lab FileID: 6Q11472.D Analyst approved: 01/18/23 10:54 Martha Valls
Injection Time: 01/17/23 10:19 Supervisor approved: 01/18/23 12:44 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.30	Split peak
MeFOSAA	2355-31-9		8.25	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.38	Split peak
EtFOSAA	2991-50-6		8.45	Split peak

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SGS ORLANDO

DATE:	01/11/23
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 ul
INSTRUMENT:	LCMS6-6Q

LCMS6-6Q ANALYSIS LOG

METHODS:	1633
PROC. METH:	1633_011123_S6Q174
CAL DATE:	01/11/23
ANALYST:	M.Valls
RUN BATCH:	S6Q174

ELUENT A LOT #:	ACN 220213
ELUENT B LOT #:	224657.W5%.CAN.220213.2mM AMAC. 11387
IC/CC STD LOT #:	LCMS 2041A
ICV STD LOT #:	LCMS 2041A, LCMS 2026
ISTD/ID STD LOT #:	11384/11383

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	6Q10944.d	P1-A1	ccb	1633full.m	Sample		OP94795,S6Q174,500,,5.0,1,water	✓
2	6Q10945.d	P1-A1	ccb	1633full.m	Sample		OP94795,S6Q174,500,,5.0,1,water	✓
3	6Q10946.d	P1-B3	RT TDCA	1633full.m	Sample		OP94795,S6Q174,500,,5.0,1,water	✓
4	6Q10947.d	P1-B4	RT br-In	1633full.m	Sample		OP94795,S6Q174,500,,5.0,1,water	✓
5	6Q10948.d	P1-A1	ic174-0	1633full.m	Sample		OP94795,S6Q174,500,,5.0,1,water	✓
6	6Q10949.d	P1-A2	ic174-1	1633full.m	Calibration	1.6/500	OP94795,S6Q174,500,,5.0,1,water	✓
7	6Q10950.d	P1-A3	ic174-2	1633full.m	Calibration	4/500	OP94795,S6Q174,500,,5.0,1,water	✓
8	6Q10951.d	P1-A4	ic174-3	1633full.m	Calibration	10/500	OP94795,S6Q174,500,,5.0,1,water	✓
9	6Q10952.d	P1-A5	icc174-4	1633full.m	Calibration	20/500	OP94795,S6Q174,500,,5.0,1,water	✓
10	6Q10953.d	P1-A6	ic174-5	1633full.m	Calibration	40/500	OP94795,S6Q174,500,,5.0,1,water	✓
11	6Q10954.d	P1-A7	ic174-6	1633full.m	Calibration	100/500	OP94795,S6Q174,500,,5.0,1,water	✓
12	6Q10955.d	P1-A8	ic174-7	1633full.m	Calibration	200/500	OP94795,S6Q174,500,,5.0,1,water	✓
13	6Q10956.d	P1-A9	ic174-8	1633full.m	Calibration	1x	OP94795,S6Q174,500,,5.0,1,water	✓
14	6Q10957.d	P1-A1	iblk	1633full.m	Sample		OP94795,S6Q174,500,,5.0,1,water	✓
15	6Q10958.d	P1-B1	icv174-4	1633full.m	QC	20/500	OP94795,S6Q174,500,,5.0,1,water	✓
16	6Q10959.d	P1-B2	icv174-4	1633full.m	QC	100/500	OP94795,S6Q174,500,,5.0,1,water	✓
17	6Q10960.d	P1-A5	cc174-4	1633full.m	QC	20/500	OP94795,S6Q174,500,,5.0,1,water	✓
18	6Q10961.d	P1-A2	cc174-1,0LL	1633full.m	QC	1.6/500	OP94795,S6Q174,500,,5.0,1,water	✓
19	6Q10962.d	P3-B5	op94887-bs	1633full.m	Sample		OP94887,S6Q174,250,,5.0,1,water	✓
20	6Q10963.d	P3-B6	op94887-llbs:2	1633full.m	Sample		OP94887,S6Q174,250,,5.0,1,water	✓
21	6Q10964.d	P3-B7	op94887-mb	1633full.m	Sample		OP94887,S6Q174,250,,5.0,1,water	✓
22	6Q10965.d	P3-B8	JD57438-8	1633full.m	Sample		OP94887,S6Q174,10,,5.0,1,water	✓
23	6Q10966.d	P3-B9	JD57438-8	1633full.m	Sample		OP94887,S6Q174,25,,5.0,1,water	✓
24	6Q10967.d	P3-B8	JD57523-4A	1633full.m	Sample	50/500	OP94668,S6Q174,4.99,,5.0,10,water	Reported file 6q11002
25	6Q10968.d	P2-A1	JD57438-13	1633full.m	Sample	100/500	OP94675,S6Q174,270,,5.0,5,water	✓
26	6Q10969.d	P2-A2	JD57438-14	1633full.m	Sample		OP94675,S6Q174,270,,5.0,1,water	fosa qual out
27	6Q10970.d	P2-A3	JD57412-5A	1633full.m	Sample	50/500	OP94667,S6Q174,5.00,,5.0,10,SOIL	✓
28	6Q10971.d	P1-A5	cc174-4	1633full.m	QC	20/500	OP94795,S6Q174,500,,5.0,1,water	✓
29	6Q10972.d	P1-A1	iccb	1633full.m	Sample		OP94795,S6Q174,500,,5.0,1,water	✓
30	6Q10973.d	P3-B4	JD56436-1	1633full.m	Sample		OP94599,S6Q174,500,,5.0,5,water	✓
31	6Q10974.d	P2-A4	JD56436-2	1633full.m	Sample	50/500	OP94599,S6Q174,520,,5.0,10,water	✓
32	6Q10975.d	P2-A5	JD56436-4	1633full.m	Sample	50/500	OP94599,S6Q174,520,,5.0,10,water	✓
33	6Q10976.d	P2-A6	JD56436-6	1633full.m	Sample	50/500	OP94599,S6Q174,520,,5.0,10,water	✓
34	6Q10977.d	P2-A7	JD56436-7	1633full.m	Sample	50/500	OP94599,S6Q174,520,,5.0,10,water	✓
35	6Q10978.d	P2-A8	JD56436-8	1633full.m	Sample	50/500	OP94599,S6Q174,520,,5.0,10,water	✓

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36	6Q10979.d	P2-A9	JD56436-9	1633full.m	Sample	50/500	OP94599,S6Q174,530,,5.0,10,water	✓
37	6Q10980.d	P2-B1	JD56436-10	1633full.m	Sample	50/500	OP94599,S6Q174,530,,5.0,10,water	✓
38	6Q10981.d	P2-B2	JD56436-11	1633full.m	Sample	50/500	OP94599,S6Q174,500,,5.0,10,water	✓
39	6Q10982.d	P2-B3	JD56436-13	1633full.m	Sample	50/500	OP94599,S6Q174,520,,5.0,10,water	✓
40	6Q10983.d	P1-A5	cc174-4	1633full.m	QC	20/500	OP94795,S6Q174,500,,5.0,1,water	✓
41	6Q10984.d	P1-A1	iccb	1633full.m	Sample	50/500	OP94795,S6Q174,500,,5.0,1,water	✓
42	6Q10985.d	P2-B4	JD56436-14	1633full.m	Sample	50/500	OP94599,S6Q174,520,,5.0,10,water	✓
43	6Q10986.d	P2-B5	JD56436-15	1633full.m	Sample	50/500	OP94599,S6Q174,500,,5.0,10,water	✓
44	6Q10987.d	P2-B6	JD56436-16	1633full.m	Sample	50/500	OP94599,S6Q174,500,,5.0,10,water	✓
45	6Q10988.d	P2-B7	JD56436-18	1633full.m	Sample	50/500	OP94599,S6Q174,530,,5.0,10,water	✓
46	6Q10989.d	P2-B8	JD56436-19	1633full.m	Sample	50/500	OP94599,S6Q174,500,,5.0,10,water	✓
47	6Q10990.d	P2-B9	JD56436-3	1633full.m	Sample	50/500	OP94600,S6Q174,520,,5.0,10,water	✓
48	6Q10991.d	P2-C1	JD56436-21	1633full.m	Sample	50/500	OP94600,S6Q174,500,,5.0,10,water	✓
49	6Q10992.d	P2-C2	JD56436-22	1633full.m	Sample	50/500	OP94600,S6Q174,530,,5.0,10,water	✓
50	6Q10993.d	P2-C3	JD56436-23	1633full.m	Sample	50/500	OP94600,S6Q174,530,,5.0,10,water	✓
51	6Q10994.d	P2-C4	JD56436-24	1633full.m	Sample	50/500	OP94600,S6Q174,500,,5.0,10,water	✓
52	6Q10995.d	P1-A5	cc174-4	1633full.m	QC	20/500	OP94795,S6Q174,500,,5.0,1,water	✓
53	6Q10996.d	P1-A1	iccb	1633full.m	Sample	50/500	OP94795,S6Q174,500,,5.0,1,water	✓
54	6Q10997.d	P2-C5	JD56436-25	1633full.m	Sample	50/500	OP94600,S6Q174,520,,5.0,10,water	✓
55	6Q10998.d	P2-C6	JD56436-26	1633full.m	Sample	50/500	OP94600,S6Q174,500,,5.0,10,water	✓
56	6Q10999.d	P2-C7	JD56436-27	1633full.m	Sample	50/500	OP94600,S6Q174,520,,5.0,10,water	✓
57	6Q11000.d	P2-C8	JD56436-28	1633full.m	Sample	50/500	OP94600,S6Q174,500,,5.0,10,water	✓
58	6Q11001.d	P3-C9	JD56436-29	1633full.m	Sample	50/500	OP94600,S6Q174,530,,5.0,10,water	✓
59	6Q11002.d	P3-B3	JD56523-4A	1633full.m	Sample	50/500	OP94668,S6Q174,4.99,,5.0,10,water	not use.
60	6Q11003.d	P1-A5	cc174-4	1633full.m	QC	20/500	OP94795,S6Q174,500,,5.0,1,water	✓
61	6Q11004.d	P1-A1	iccb	1633full.m	Sample	50/500	OP94795,S6Q174,500,,5.0,1,water	✓
62	6Q11005.d	P5-A1	op94694-bs	1633full.m	Sample	50/500	OP94694,S6Q174,500,,5.0,1,water	✓
63	6Q11006.d	P5-A2	op94694-llbs:3	1633full.m	Sample	50/500	OP94694,S6Q174,500,,5.0,1,water	✓
64	6Q11007.d	P5-A3	op94694-mb	1633full.m	Sample	50/500	OP94694,S6Q174,500,,5.0,1,water	✓
65	6Q11008.d	P5-A4	FC1246-1	1633full.m	Sample	50/500	OP94694,S6Q174,565,,5.0,1,water	✓
66	6Q11009.d	P5-A5	FC1246-2	1633full.m	Sample	50/500	OP94694,S6Q174,565,,5.0,1,water	✓
67	6Q11010.d	P5-A6	FC1246-3	1633full.m	Sample	50/500	OP94694,S6Q174,565,,5.0,1,water	✓
68	6Q11011.d	P5-A7	op94694-ms	1633full.m	Sample	50/500	OP94694,S6Q174,565,,5.0,1,water	✓
69	6Q11012.d	P5-A8	op94694-msd	1633full.m	Sample	50/500	OP94694,S6Q174,565,,5.0,1,water	✓
70	6Q11013.d	P5-A9	FC1246-4	1633full.m	Sample	50/500	OP94694,S6Q174,565,,5.0,1,water	✓
71	6Q11014.d	P5-B1	FC1246-5	1633full.m	Sample	50/500	OP94694,S6Q174,565,,5.0,1,water	✓
72	6Q11015.d	P1-A5	cc174-4	1633full.m	QC	20/500	OP94795,S6Q174,500,,5.0,1,water	✓
73	6Q11016.d	P1-A1	iccb	1633full.m	Sample	50/500	OP94795,S6Q174,500,,5.0,1,water	✓
74	6Q11017.d	P5-B2	FC1246-6	1633full.m	Sample	50/500	OP94694,S6Q174,565,,5.0,1,water	✓
75	6Q11018.d	P5-B3	FC1246-7	1633full.m	Sample	50/500	OP94694,S6Q174,565,,5.0,1,water	✓
76	6Q11019.d	P5-B4	FC1246-8	1633full.m	Sample	50/500	OP94694,S6Q174,565,,5.0,1,water	✓
77	6Q11020.d	P5-B5	FC1246-9	1633full.m	Sample	50/500	OP94694,S6Q174,565,,5.0,1,water	✓
78	6Q11021.d	P5-B6	FC1246-10	1633full.m	Sample	50/500	OP94694,S6Q174,565,,5.0,1,water	✓

LCMS6-6Q ANALYSIS LOG

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79	6Q11022.d	P5-B7	FC1246-11	1633full.m	Sample	OP94694,S6Q174,565,,5.0,1,water	✓
80	6Q11023.d	P5-B8	FC1308-1	1633full.m	Sample	OP94694,S6Q174,565,,5.0,1,water	✓
81	6Q11024.d	P3-C1	FC1308-1	1633full.m	Sample	50/500	✓
82	6Q11025.d	P5-B9	FC1308-2	1633full.m	Sample	OP94694,S6Q174,565,,5.0,1,water	✓
83	6Q11026.d	P5-C1	FC1308-3	1633full.m	Sample	OP94694,S6Q174,565,,5.0,1,water	XH
84	6Q11027.d	P1-A5	cc174-4	1633full.m	QC	20/500	✓
85	6Q11028.d	P1-A1	iccb	1633full.m	Sample	OP94795,S6Q174,500,,5.0,1,water	✓
86	6Q11029.d	P5-C2	FC1308-4	1633full.m	Sample	OP94694,S6Q174,405,,5.0,1,water	✓
87	6Q11030.d	P3-C2	FC1308-4	1633full.m	Sample	50/500	✓
88	6Q11031.d	P5-C3	FC1308-5	1633full.m	Sample	OP94694,S6Q174,430,,5.0,1,water	rr10x high surr
89	6Q11032.d	P3-C3	FC1308-5	1633full.m	Sample	50/500	Re-elute for teda low
90	6Q11033.d	P5-C4	FC1308-7	1633full.m	Sample	OP94694,S6Q174,520,,5.0,1,water	✓
91	6Q11034.d	P3-C4	FC1308-7	1633full.m	Sample	50/500	✓
92	6Q11035.d	P5-C5	FC1308-8	1633full.m	Sample	OP94694,S6Q174,565,,5.0,1,water	Redo at 60ml
93	6Q11036.d	P3-C5	FC1308-8	1633full.m	Sample	50/500	Redo at 60ml
94	6Q11037.d	P5-C6	FC1308-9	1633full.m	Sample	OP94694,S6Q174,60,,5.0,1,water	✓
95	6Q11038.d	P3-C6	FC1308-9	1633full.m	Sample	100/500	✓
96	6Q11039.d	P1-A5	ecc174-4	1633full.m	QC	20/500	✓
97	6Q11040.d	P1-A1	iccb	1633full.m	Sample	OP94795,S6Q174,500,,5.0,1,water	✓



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DATE:	01/16/23
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 ul
INSTRUMENT:	LCMS6-6Q

LCMS6-6Q ANALYSIS LOG

METHODS:	1633
PROC. METH:	1633_011123_S6Q174
CAL DATE:	01/11/23
ANALYST:	M.Valls
RUN BATCH:	S6Q179

ELUENT A LOT #:	ACN 220213
ELUENT B LOT #:	22457 W5% CAN 220213 2mM AMAC, 11387
IC/CC STD LOT #:	LCMS 2041A
ICV STD LOT #:	LCMS 2041-A, LCMS 2026
ISTD/ID STD LOT #:	11384/11383

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	6Q11380.d	P1-A1	CCB	1633full.m	Sample		OP94795,S6Q179,500,,,5.0,1,water	✓
2	6Q11381.d	P1-A1	CCB	1633full.m	Sample		OP94795,S6Q179,500,,,5.0,1,water	✓
3	6Q11382.d	P1-B3	RT TDCA	1633full.m	Sample		OP94795,S6Q179,500,,,5.0,1,water	✓
4	6Q11383.d	P1-B4	RT br-In	1633full.m	Sample		OP94795,S6Q179,500,,,5.0,1,water	✓
5	6Q11384.d	P1-A9	High Std	1633full.m	Sample		OP94795,S6Q179,500,,,5.0,1,water	✓
6	6Q11385.d	P1-B9	IBLK	1633full.m	Sample		OP94795,S6Q179,500,,,5.0,1,water	✓
7	6Q11386.d	P1-B8	cc174-4	1633full.m	QC	20/500	OP94795,S6Q179,500,,,5.0,1,water	✓
8	6Q11387.d	P1-A2	cc174-1.0LL	1633full.m	QC	1.6/500	OP94795,S6Q179,500,,,5.0,1,water	✓
9	6Q11388.d	P3-A1	JD57587-3	1633full.m	Sample	100/500	OP94750,S6Q179,530,,,2.5,0.1,water	✓
10	6Q11389.d	P3-A2	JD57518-1	1633full.m	Sample	100/500	OP94921,S6Q179,4,97,,,5.0,5,soil	✓
11	6Q11390.d	P3-A3	FC1726-5	1633full.m	Sample	100/500	OP94921,S6Q179,4,96,,,5.0,5,soil	✓
12	6Q11391.d	P3-A4	FC1726-9	1633full.m	Sample	100/500	OP94921,S6Q179,5,05,,,5.0,5,soil	✓
13	6Q11392.d	P3-A5	FC1726-10	1633full.m	Sample	250/500	OP94921,S6Q179,5,05,,,5.0,2,soil	✓
14	6Q11393.d	P3-A6	FC1726-11	1633full.m	Sample	250/500	OP94921,S6Q179,5,00,,,5.0,1,soil	✓
15	6Q11394.d	P3-A7	FC1726-12	1633full.m	Sample	250/500	OP94921,S6Q179,5,05,,,5.0,2,soil	rf5x
16	6Q11395.d	P3-A8	FC1726-14	1633full.m	Sample		OP94921,S6Q179,5,05,,,5.0,1,soil	✓
17	6Q11396.d	P3-A9	FC1726-14	1633full.m	Sample	100/500	OP94921,S6Q179,5,05,,,5.0,5,soil	✓
18	6Q11397.d	P3-B1	FC1726-13	1633full.m	Sample	50/500	OP94921,S6Q179,4,95,,,5.0,10,soil	Redo at 1,00g
19	6Q11398.d	P1-B8	cc174-4	1633full.m	QC	20/500	OP94795,S6Q179,500,,,5.0,1,water	✓
20	6Q11399.d	P1-B9	iccb	1633full.m	Sample		OP94795,S6Q179,500,,,5.0,1,water	✓
21	6Q11400.d	P3-B2	FC1317-19	1633full.m	Sample	100/500	OP94637,S6Q179,5,00,,,5.0,5,soil	rr10x
22	6Q11401.d	P3-B3	op94637-ms	1633full.m	Sample	100/500	OP94637,S6Q179,4,99,,,5.0,5,soil	report 1x
23	6Q11402.d	P3-B4	op94637-msd	1633full.m	Sample	100/500	OP94637,S6Q179,4,97,,,5.0,5,soil	report 1x
24	6Q11403.d	P3-B5	FC1317-20	1633full.m	Sample	100/500	OP94638,S6Q179,5,00,,,5.0,5,soil	✓
25	6Q11404.d	P3-B6	FC1317-21	1633full.m	Sample	100/500	OP94638,S6Q179,4,99,,,5.0,5,soil	✓
26	6Q11405.d	P3-B7	FC1317-25	1633full.m	Sample	100/500	OP94638,S6Q179,4,99,,,5.0,5,soil	rr10x
27	6Q11406.d	P3-B8	FC1317-28	1633full.m	Sample	100/500	OP94638,S6Q179,5,02,,,5.0,5,soil	✓
28	6Q11407.d	P3-B9	FC1317-29	1633full.m	Sample	100/500	OP94638,S6Q179,4,95,,,5.0,1,soil	✓
29	6Q11408.d	P3-C1	FC1317-29	1633full.m	Sample	100/500	OP94638,S6Q179,4,95,,,5.0,5,soil	✓
30	6Q11409.d	P3-C2	FC1317-30	1633full.m	Sample		OP94638,S6Q179,5,04,,,5.0,1,soil	✓
31	6Q11410.d	P1-C3	cc174-4	1633full.m	QC	20/500	OP94795,S6Q179,500,,,5.0,1,water	✓
32	6Q11411.d	P1-C1	iccb	1633full.m	Sample		OP94795,S6Q179,500,,,5.0,1,water	✓
33	6Q11412.d	P3-C3	FC1317-30	1633full.m	Sample	100/500	OP94638,S6Q179,5,04,,,5.0,5,soil	✓
34	6Q11413.d	P3-C4	FC1317-31	1633full.m	Sample		OP94638,S6Q179,5,03,,,5.0,1,soil	✓
35	6Q11414.d	P3-C5	FC1317-31	1633full.m	Sample	100/500	OP94638,S6Q179,5,03,,,5.0,5,soil	✓

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LCMS6-6Q ANALYSIS LOG

36	6Q11415.d	P3-C6	FC1317-32	1633full.m	Sample	100/500	OP94638,S6Q179,4.98,,5.0,1,soil	✓
37	6Q11416.d	P3-C7	FC1317-32	1633full.m	Sample	100/500	OP94638,S6Q179,4.98,,5.0,5,soil	✓
38	6Q11417.d	P3-C8	FC1317-33	1633full.m	Sample	100/500	OP94638,S6Q179,5.04,,5.0,1,soil	r15x surr low.
39	6Q11418.d	P3-C9	FC1317-33	1633full.m	Sample	100/500	OP94638,S6Q179,5.04,,5.0,5,soil	✓
40	6Q11419.d	P3-D1	FC1478-4	1633full.m	Sample	250/500	OP94749,S6Q179,5.45,,5.0,2,water	✓
41	6Q11420.d	P3-D2	FC1300-2	1633full.m	Sample	20/500	OP94749,S6Q179,5.65,,5.0,1,water	✓
42	6Q11421.d	P1-C3	cc174-4	1633full.m	QC	20/500	OP94795,S6Q179,5.00,,5.0,1,water	✓
43	6Q11422.d	P1-C1	iccb	1633full.m	Sample	1,6/500	OP94795,S6Q179,5.00,,5.0,1,water	✓
44	6Q11423.d	P1-C2	cc174-1,0LL	1633full.m	QC	1,6/500	OP94795,S6Q179,5.00,,5.0,1,water	✓
45	6Q11424.d	P3-D3	op94823-bs	1633full.m	Sample	1633full.m	OP94823,S6Q179,5.00,,5.0,1,soil	✓
46	6Q11425.d	P3-D4	op94823-lbs	1633full.m	Sample	1633full.m	OP94823,S6Q179,5.00,,5.0,1,soil	✓
47	6Q11426.d	P3-D5	op94823-mb	1633full.m	Sample	1633full.m	OP94823,S6Q179,5.00,,5.0,1,soil	✓
48	6Q11427.d	P3-D6	FC1536-39	1633full.m	Sample	1633full.m	OP94823,S6Q179,5.01,,5.0,1,soil	✓
49	6Q11428.d	P3-D7	FC1536-40	1633full.m	Sample	1633full.m	OP94823,S6Q179,4.98,,5.0,1,soil	✓
50	6Q11429.d	P3-D8	FC1536-41	1633full.m	Sample	1633full.m	OP94823,S6Q179,5.05,,5.0,1,soil	✓
51	6Q11430.d	P3-D9	FC1536-42	1633full.m	Sample	1633full.m	OP94823,S6Q179,4.95,,5.0,1,soil	✓
52	6Q11431.d	P3-E1	FC1536-43	1633full.m	Sample	1633full.m	OP94823,S6Q179,5.01,,5.0,1,soil	✓
53	6Q11432.d	P3-E2	FC1536-44	1633full.m	Sample	1633full.m	OP94823,S6Q179,5.02,,5.0,1,soil	r15x surr high
54	6Q11433.d	P3-E3	FC1536-45	1633full.m	Sample	1633full.m	OP94823,S6Q179,4.95,,5.0,1,soil	✓
55	6Q11434.d	P1-C3	cc174-4	1633full.m	QC	20/500	OP94795,S6Q179,5.00,,5.0,1,water	✓
56	6Q11435.d	P1-C1	iccb	1633full.m	Sample	1633full.m	OP94795,S6Q179,5.00,,5.0,1,water	✓
57	6Q11436.d	P3-E4	FC1536-46	1633full.m	Sample	1633full.m	OP94823,S6Q179,5.03,,5.0,1,soil	✓
58	6Q11437.d	P3-E5	FC1536-47	1633full.m	Sample	1633full.m	OP94823,S6Q179,4.97,,5.0,1,soil	r12x p10s
59	6Q11438.d	P3-E6	FC1536-22	1633full.m	Sample	100/500	OP94779,S6Q179,4.99,,5.0,5,soil	✓
60	6Q11439.d	P3-E7	FC1536-24	1633full.m	Sample	50/500	OP94779,S6Q179,4.96,,5.0,10,soil	✓
61	6Q11440.d	P3-E8	FC1536-25	1633full.m	Sample	250/500	OP94779,S6Q179,4.96,,5.0,2,soil	✓
62	6Q11441.d	P3-E9	op94977-bs	1633full.m	Sample	1633full.m	OP94777,S6Q179,5.00,,5.0,1,water	✓
63	6Q11442.d	P3-F1	op94977-lbs	1633full.m	Sample	1633full.m	OP94777,S6Q179,5.00,,5.0,1,water	✓
64	6Q11443.d	P3-F2	op94977-mb	1633full.m	Sample	1633full.m	OP94777,S6Q179,5.00,,5.0,1,water	✓
65	6Q11444.d	P3-F3	FC1706-1	1633full.m	Sample	1633full.m	OP94777,S6Q179,5.60,,5.0,1,water	✓
66	6Q11445.d	P1-C3	cc174-4	1633full.m	QC	20/500	OP94795,S6Q179,5.00,,5.0,1,water	✓
67	6Q11446.d	P1-C1	iccb	1633full.m	Sample	1633full.m	OP94795,S6Q179,5.00,,5.0,1,water	✓
68	6Q11447.d	P3-F4	FC1706-2	1633full.m	Sample	1633full.m	OP94777,S6Q179,5.60,,5.0,1,water	✓
69	6Q11448.d	P3-F5	op94977-ms	1633full.m	Sample	1633full.m	OP94777,S6Q179,5.60,,5.0,1,water	✓
70	6Q11449.d	P3-F6	op94977-msd	1633full.m	Sample	1633full.m	OP94777,S6Q179,5.60,,5.0,1,water	✓
71	6Q11450.d	P3-F7	FC1706-3	1633full.m	Sample	1633full.m	OP94777,S6Q179,5.60,,5.0,1,water	✓
72	6Q11451.d	P3-F8	FC1706-4	1633full.m	Sample	1633full.m	OP94777,S6Q179,5.60,,5.0,1,water	✓
73	6Q11452.d	P3-F9	FC1706-5	1633full.m	Sample	1633full.m	OP94777,S6Q179,5.60,,5.0,1,water	✓
74	6Q11453.d	P2-A1	FC1706-6	1633full.m	Sample	1633full.m	OP94777,S6Q179,5.60,,5.0,1,water	✓
75	6Q11454.d	P2-A2	FC1706-7	1633full.m	Sample	1633full.m	OP94777,S6Q179,5.40,,5.0,1,water	✓
76	6Q11455.d	P2-A3	FC1706-8	1633full.m	Sample	1633full.m	OP94777,S6Q179,5.60,,5.0,1,water	✓
77	6Q11456.d	P2-A4	FC1706-9	1633full.m	Sample	1633full.m	OP94777,S6Q179,5.60,,5.0,1,water	✓
78	6Q11457.d	P1-C3	cc174-4	1633full.m	QC	20/500	OP94795,S6Q179,5.00,,5.0,1,water	✓

79	6Q11458.d	P1-C1	iccb	1633full.m	Sample	OP94795,S6Q179,500,,5.0,1,water	✓
80	6Q11459.d	P2-A5	FC1706-10	1633full.m	Sample	OP94777,S6Q179,550,,5.0,1,water	✓
81	6Q11460.d	P2-A6	FC1706-11	1633full.m	Sample	OP94777,S6Q179,560,,5.0,1,water	✓
82	6Q11461.d	P2-A7	FC1706-12	1633full.m	Sample	OP94777,S6Q179,560,,5.0,1,water	✓
83	6Q11462.d	P2-A8	FC1706-13	1633full.m	Sample	OP94777,S6Q179,560,,5.0,1,water	✓
84	6Q11463.d	P2-A9	FC1706-14	1633full.m	Sample	OP94777,S6Q179,560,,5.0,1,water	✓
85	6Q11464.d	P2-B1	FC1801-1	1633full.m	Sample	OP94777,S6Q179,550,,5.0,1,water	✓
86	6Q11465.d	P2-B2	FC1802-1	1633full.m	Sample	OP94777,S6Q179,540,,5.0,1,water	✓
87	6Q11466.d	P1-C3	cc174-4	1633full.m	QC	20/500	✓
88	6Q11467.d	P1-C1	iccb	1633full.m	Sample	OP94795,S6Q179,500,,5.0,1,water	✓
89	6Q11468.d	P1-B3	RT TDCA	1633full.m	Sample	OP94795,S6Q179,500,,5.0,1,water	✓
90	6Q11469.d	P1-B4	RT br-In	1633full.m	Sample	OP94795,S6Q179,500,,5.0,1,water	✓
91	6Q11470.d	P1-A9	High Std	1633full.m	Sample	OP94795,S6Q179,500,,5.0,1,water	✓
92	6Q11471.d	P1-C1	IBLK	1633full.m	Sample	OP94795,S6Q179,500,,5.0,1,water	✓
93	6Q11472.d	P1-C2	cc174-1,0LL	1633full.m	QC	1.6/500	✓
94	6Q11473.d	P2-B3	op94795-bs	1633full.m	Sample	OP94795,S6Q179,500,,5.0,1,water	✓
95	6Q11474.d	P2-B4	op94795-lbs	1633full.m	Sample	OP94795,S6Q179,500,,5.0,1,water	✓
96	6Q11475.d	P2-B5	op94795-mb	1633full.m	Sample	OP94795,S6Q179,500,,5.0,1,water	✓
97	6Q11476.d	P2-B6	FC1486-15	1633full.m	Sample	OP94795,S6Q179,510,,5.0,1,water	✓
98	6Q11477.d	P2-B7	FC1486-16	1633full.m	Sample	OP94795,S6Q179,530,,5.0,1,water	✓
99	6Q11478.d	P2-B8	FC1486-17	1633full.m	Sample	OP94795,S6Q179,560,,5.0,1,water	rr10x HxS, pfos
100	6Q11479.d	P2-B9	FC1486-18	1633full.m	Sample	OP94795,S6Q179,530,,5.0,1,water	rr10x HxS, pfos
101	6Q11480.d	P2-C1	FC1495-1	1633full.m	Sample	OP94795,S6Q179,530,,5.0,1,water	✓
102	6Q11481.d	P2-C2	FC1495-2	1633full.m	Sample	OP94795,S6Q179,530,,5.0,1,water	✓
103	6Q11482.d	P2-C3	op94795-rms	1633full.m	Sample	OP94795,S6Q179,520,,5.0,1,water	✓
104	6Q11483.d	P1-C3	cc174-4	1633full.m	QC	20/500	✓
105	6Q11484.d	P1-C1	iccb	1633full.m	Sample	OP94795,S6Q179,500,,5.0,1,water	✓
106	6Q11485.d	P2-C4	FC1495-3	1633full.m	Sample	OP94795,S6Q179,550,,5.0,1,water	✓
107	6Q11486.d	P2-C5	FC1495-4	1633full.m	Sample	OP94795,S6Q179,540,,5.0,1,water	rr2x HxS
108	6Q11487.d	P2-C6	op94795-dup	1633full.m	Sample	OP94795,S6Q179,530,,5.0,1,water	rr2x HxS
109	6Q11488.d	P2-C7	FC1495-5	1633full.m	Sample	OP94795,S6Q179,530,,5.0,1,water	✓
110	6Q11489.d	P2-C8	FC1495-6	1633full.m	Sample	OP94795,S6Q179,530,,5.0,1,water	✓
111	6Q11490.d	P2-C9	FC1495-7	1633full.m	Sample	OP94795,S6Q179,500,,5.0,1,water	rr1x + 5x low sample volume in vial
112	6Q11491.d	P2-D1	FC1495-8	1633full.m	Sample	OP94795,S6Q179,490,,5.0,1,water	rr2x HxS
113	6Q11492.d	P2-D2	FC1495-9	1633full.m	Sample	OP94795,S6Q179,540,,5.0,1,water	rr5x HxS
114	6Q11493.d	P2-D3	FC1495-10	1633full.m	Sample	OP94795,S6Q179,530,,5.0,1,water	✓
115	6Q11494.d	P2-D4	FC1495-11	1633full.m	Sample	OP94795,S6Q179,520,,5.0,1,water	✓
116	6Q11495.d	P1-C3	cc174-4	1633full.m	QC	20/500	✓
117	6Q11496.d	P1-C1	iccb	1633full.m	Sample	OP94795,S6Q179,500,,5.0,1,water	✓
118	6Q11497.d	P2-D5	FC1495-12	1633full.m	Sample	OP94795,S6Q179,500,,5.0,1,water	✓
119	6Q11498.d	P2-D6	FC1495-13	1633full.m	Sample	OP94795,S6Q179,510,,5.0,1,water	rr5x HxS
120	6Q11499.d	P2-D7	FC1495-14	1633full.m	Sample	OP94795,S6Q179,500,,5.0,1,water	rr1x + 5x low sample volume in vial
121	6Q11500.d	P2-D8	FC1495-15	1633full.m	Sample	OP94795,S6Q179,500,,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 2041	1633 Cal std.	10855H	PFAC-MxH	Wellington	9/14/26	12/28/23	1-4 ppm	250uL	4mL	62.5 125 250ppb	1633 MIX	1/4/23	7/4/23	MU
		10853H	PFAC-MxI		9/14/26	12/28/23	1-10 ppm	250uL		62.5 125 250ppb				
		11512B	PFAC-Mx F		01/11/25	12/28/23	2 ppm	500uL		250ppb				
		10854H	PFAC-Mx G		3/4/25	12/30/23	2 ppm	250uL		125ppb				
		10857J	PFAC-Mx J		9/14/26	10/12/23	4-20 ppm	3-12uL		312/1160 ppb				
LCMS 2042	(spike) Full list std.	11524	PFAC-Mx J	Wellington	11/9/24	11/3/24	1-10 ppm	400uL	4-0 mL	100ppb	95% meth 5% H2O	15/23	5/11/23	MU
		LCMS 1987	40 list ADD#1			3/21/23	1-10 ppm	400uL		100ppb				
		LCMS 1986	40 list ADD#2			4/18/23	1-10 ppm	400uL		100ppb				
		LCMS 2012	Fose std.			5/11/23	50 ppm	40uL		520ppb				
LCMS 2043	List 40 (Surr) ADD-ON Isotope mix	11333	d7-N-mefose	Wellington	01/27/27	10/12/23	50 ppm	(400uL) 200uL	(4.0mL) 2-0mL	1/5 ppm	95% meth 5% H2O	1/9/23	7/9/23	MU * did 4mL
		11400	D9-N Etfose		01/27/27	12/1/23		(400uL) 200uL						
		11115	M2- PFAFDA		11/23/28	8/23/23		(50uL) 40uL						
		10836	D-N Etfosa		12/30/25	8/23/23		(50uL) 40uL						
LCMS 2044	1633 Solvent B	11387	Ammonium Acetate	Big maad clinic		9/19/23	0.151 M	0.151 M	2 mL 4 L	2 mM Ammonium Acetate		11/6/23	3/6/23	MU
		224856	Water	Fisher			3.800 mL 1-800 mL	200 mL 100 mL		95:5 w/w Aceton.				
			Acetoni- trile				200 mL 100 mL							

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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 2025	List 40 (Surr) ADD-ON Isotope Mix	11333	d7-N-MeFosc	Wilmington Lakes	01/27/27	10/12/23	50ppm	200uL	2.0 mL	1/5 ppm	95% MeOH 5% H2O	12/17/22	01/17/23	MU
		11460	D9-N-EtFosc		01/27/27	12/07/23		200uL						
		11339	EtFosc		01/27/27	10/12/23		40uL						
		11115	H2- PFHxDA		11/23/28	08/23/23		40uL						
		10836	D-N-EtFosa		12/30/25	08/23/23		40uL						
LCMS 2026	(SPIKE) FULL LIST STD.	11447	PROA- (MOLAS)	Absolute	06/05/27	11/29/23	1.0ppm	400uL	4.0mL	100ppb	95% MeOH 5% H2O	12/08/22	01/12/23	NG
		1987	HOLST ADDON#1			02/21/23	1.0ppm	400uL		100ppb				NG
		1986	HOLST ADDON#2			04/18/23	1.0ppm	400uL		100ppb				NG
		2012	FOSC STD.			05/11/23	5.0ppm	400uL		500ppb				NG
LCMS 2027	(SPIKE) 1633 CAL STD.	10855F	PFAC- MxH	Wilmington Lakes	09/14/26	11/04/23	1-4 ppm	250uL	4mL	625/105/250 ppb	1633 Mix	12/12/22	05/01/23	NG
		10853F	PFAC- MxI		09/14/26	11/22/23	1-10 ppm	250uL		625/105 ppb				NG
		11402A	PFAC- MxJ		05/06/23	11/29/23	2 ppm	500uL		250ppb				NG
		10854F	PFAC- MxG		03/04/25	11/22/23	2 ppm	250uL		125ppb				NG
		10857E	PFAC- MxJ		10/12/23	11/22/23	4-20 ppm	312uL		212-1160 ppb				NG
LCMS 2028	5371 DW STD.	11447	PROA-DOP Carbons	Absolute	06/05/27	11/29/23	1.0ppm	400uL	4mL	100ppb	95% MeOH 4% H2O	12/15/22	02/01/23	NG
		1950	5371 DW Surr			02/01/23	10/20 ppm	400uL		100ppb				NG

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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 1987	40 List Std ADD-ON #1	10726A	10'2 PF5	Wallington Labs	03/03/26	03/31/23	50ppm	80uL	4.0mL	1ppm	051NEOH S147D	10/18/22	03/21/23	NG
		10840	PFDO5		07/01/26	10/18/23								
		10829	N-HFESA		08/03/26	05/12/23								
		10837	N-EHESA		08/03/26	05/12/23								
		10842	PFHADA	NS 09/18/26	09/18/26	10/18/23								
		10841	PFODA		05/07/26	10/18/23								
		10681A	3:3FICA		11/12/25	03/21/23								
		10685A	PFPPA		11/11/25	08/12/23								
		10683A	5:3FICA		11/12/25	05/12/23								
		11117	PFEPFA		10/14/26	06/12/23								
		10762B	PFCHS		05/12/25	10/18/23								
		10763B	PFESA		03/31/25	10/18/23								
		10764A	PFMBA		03/31/25	03/12/23								
		10765B	PFSCWA		03/31/25	03/12/23								
		10764A	PFMPA		03/31/25	03/12/23								
		10765B	PFOPFA		03/31/25	10/18/23								
		10765B	PFHDA											
			3:6 OFF-HPA											
						10/18/22								

* based on date opened as specified in each SGS - Orlando SOP.

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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 1985A-B	List 40 ADD-ON	11333	D7-N- METOSE	Wellington Labs	01/27/17	10/12/13	50ppm	200uL	2.0mL	15 ppm	95% MeOH 5% H2O	10/18/12	01/18/13	NS
		11339	D9-N- ERFOSA		01/27/17	10/12/13		200uL						NS
		11115	D2-N- PETHADA		11/29/18	08/12/13		40uL						NS
		10836	D-N- ERFOSA		12/30/15	08/12/13		40uL						NS
LCMS 1986	40 List Std. ADD-ON #2	11224	FBSA-1	Wellington Labs	11/10/16	06/12/13	50ppm	80uL	4.0mL	1ppm	95% MeOH 5% H2O	10/18/12	01/18/13	NS
		11225	FHASA-1		12/28/16	06/12/13	50ppm	80uL						NS
		11140	L-PRFS		07/12/16	05/12/13	50ppm	80uL						NS
NS 10/18/12														

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 A 2009 B	PFC SPIKE	11483	PFOSA-D0 (280000) Labs	Wellington Labs	08/05/17	11/08/13	1.0 ppm	2 mL	5 mL	400 ppb	95/1000H 5/1/1720	11/08/12	05/10/12	NS
		10839	N-HE-FOXA-M		08/12/16	09/12/13	50 ppm	40 uL						NS
		11294	FOXA-M		11/10/16	06/12/13								NS
		11249	FOXA-1		12/29/16	11/03/13								NS
		11332	PFECMS		03/08/17	10/18/13								NS
LCMS A-B 2010	(SPIKE) 1623 CAL. STD.	1085F	PFAC-NXH	Wellington Labs	09/11/16	11/04/13	1-4 ppm	250 uL	4 mL	12.5 ug/L as 1623 ppb	1623 1623 Mix	11/01/12	05/10/12	NS
		1085E	PFAC-NXI		09/11/16	11/04/13	1-10 ppm	250 uL		12.5 ug/L as 1623 ppb				NS
		1085G	PFAC-NXF		05/10/13	05/10/13	2 ppm	500 uL		250 ppb				NS
		1085H	PFAC-NXG		03/01/15	11/04/13	2 ppm	250 uL		125 ppb				NS
		1085I	PFAC-NXJ		10/12/13	11/02/13	4-20 ppm	312 uL		212.160 ppb				NS
LCMS 2011	(SPIKE) FULL LIST STD.	11440	PFDA-FOX(L8) ABSOLV	Absolute	08/05/17	10/12/13	1.0 ppm	400 uL	4.0 mL	100 ppb	95/1000H 5/1/1720	11/11/12	07/21/12	NS
		LCMS 1987	HOLIST ADDON #1			03/12/13	1.0 ppm	400 uL		100 ppb				NS
		LCMS 1986	HOLIST ADDON #2			01/18/13	1.0 ppm	400 uL		100 ppb				NS
		LCMS 2012	FOSE STD.			05/11/13	50 ppm	400 uL		500 ppb				NS
LCMS 2012	FOSE STD.	11336	N-ET-FOSE	Wellington Labs	05/13/17	09/19/12	50 ppm	200 uL	2.0 mL	5 ppm	95/1000H 5/1/1720	11/11/12	05/11/12	NS
		11336	N-HE-FOSE		05/13/17	09/19/12	50 ppm	200 uL						NS

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10853



WELLINGTON
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CERTIFICATE OF ANALYSIS
DOCUMENTATION

PFAC-MXI

**Native Perfluorooctanesulfonamide
and Perfluorooctanesulfonamidoethanol
Solution/Mixture**

PRODUCT CODE: PFAC-MXI
LOT NUMBER: PFACMXI0921
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-MXI is a solution/mixture of two native perfluorooctanesulfonamides (FOSAs) and two native perfluorooctanesulfonamidoethanols (FOSEs). 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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519-822-2436 • Fax: 519-822-2849 • info@well-labs.com**

Form#: 13, Issued 2004-11-10
Revision#: 3, Revised 2020-12-23

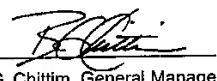
PFACMXI0921 (1 of 5)
rev0

7.8.1

7

Table A: PFAC-MXI; Components and Concentrations (µg/mL; ± 5% in methanol)

Compound	Acronym	Concentration (µg/mL)	Peak Assignment in Figure 1
N-methylperfluoro-1-octanesulfonamide	N-MeFOSA	1.00	B
N-ethylperfluoro-1-octanesulfonamide	N-EtFOSA	1.00	D
2-(N-methylperfluoro-1-octanesulfonamido)-ethanol	N-MeFOSE	10.0	A
2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol	N-EtFOSE	10.0	C

Certified By: 
 B.G. Chittim, General Manager

Date: 09/23/2021
(mm/dd/yyyy)

Form#: 13, Issued 2004-11-10
 Revision#: 9, Revised 2020-12-23

PFACMXI0921 (3 of 5)
 rev0

7.8.1
 7

10854



**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>	PFACMXG1219
<u>SOLVENT(S):</u>	Methanol/Water (<1%)
<u>DATE PREPARED:</u> (mm/dd/yyyy)	12/03/2019
<u>LAST TESTED:</u> (mm/dd/yyyy)	05/04/2020
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	05/04/2025
<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

PFACMXG1219 (1 of 5)
rev2


7.8.1

7

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-dioxahexanoic acid	3,6-OPFHxA	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: 07/30/2021
(mm/dd/yyyy)

10899



**WELLINGTON
LABORATORIES**

**CERTIFICATE OF ANALYSIS
DOCUMENTATION**

PFAC-MXH

**Native Per- and Poly-fluoroalkyl Substance
Solution/Mixture**

<u>PRODUCT CODE:</u>	PFAC-MXH
<u>LOT NUMBER:</u>	PFACMXH0921
<u>SOLVENT(S):</u>	Methanol / Isopropanol (2%) / Water (<1%)
<u>DATE PREPARED:</u> (mm/dd/yyyy)	09/09/2021
<u>LAST TESTED:</u> (mm/dd/yyyy)	09/14/2021
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	09/14/2026
<u>RECOMMENDED STORAGE:</u>	Refrigerate ampoule

DESCRIPTION:

PFAC-MXH is a solution/mixture of eleven native linear perfluoroalkylcarboxylic acids (C₄-C₁₄), eight native perfluoroalkanesulfonates (C₄, C₅, C₇, C₉, C₁₀ and C₁₂ linear; C₈ 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 br-NMeFOSAA
- Table C: Isomeric Components and Percent Composition of br-NEtFOSAA
- 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

PFACMXH0921 (1 of 11)
rev0

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Table A: PFAC-MXH; Components and Concentrations
($\mu\text{g/mL}$, $\pm 5\%$ in methanol / isopropanol (2%) / water (<1%))

Compound	Acronym	Concentration* ($\mu\text{g/mL}$)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-butanoic acid	PFBA	4.00		1
Perfluoro-n-pentanoic acid	PFPeA	2.00		2
Perfluoro-n-hexanoic acid	PFHxA	1.00		5
Perfluoro-n-heptanoic acid	PFHpA	1.00		7
Perfluoro-n-octanoic acid	PFOA	1.00		11
Perfluoro-n-nonanoic acid	PFNA	1.00		14
Perfluoro-n-decanoic acid	PFDA	1.00		18
Perfluoro-n-undecanoic acid	PFUdA	1.00		23
Perfluoro-n-dodecanoic acid	PFDoA	1.00		26
Perfluoro-n-tridecanoic acid	PFTrDA	1.00		27
Perfluoro-n-tetradecanoic acid	PFTeDA	1.00		29
Perfluoro-1-octanesulfonamide	FOSA	1.00		25
N-methylperfluorooctanesulfonamidoacetic acid ^a	N-MeFOSAA: linear isomer	0.760		20
	N-MeFOSAA: Σ branched isomers	0.240		17
N-ethylperfluorooctanesulfonamidoacetic acid ^b	N-EtFOSAA: linear isomer	0.775		22
	N-EtFOSAA: Σ branched isomers	0.225		21
Compound	Acronym	Concentration* ($\mu\text{g/mL}$)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro-1-butanesulfonate	L-PFBS	1.00	0.887	3
Sodium perfluoro-1-pentanesulfonate	L-PFPeS	1.00	0.941	6
Potassium perfluorohexanesulfonate ^c	PFHxSK: linear isomer	0.811	0.741	9
	PFHxSK: Σ branched isomers	0.189	0.173	8
Sodium perfluoro-1-heptanesulfonate	L-PFHpS	1.00	0.953	12
Potassium perfluorooctanesulfonate ^d	PFOSK: linear isomer	0.788	0.732	15
	PFOSK: Σ branched isomers	0.211	0.196	13
Sodium perfluoro-1-nonanesulfonate	L-PFNS	1.00	0.962	19
Sodium perfluoro-1-decanesulfonate	L-PFDS	1.00	0.965	24
Sodium perfluoro-1-dodecanesulfonate	L-PFDoS	1.00	0.970	28
Sodium 1H,1H,2H,2H-perfluorohexanesulfonate	4:2FTS	4.00	3.75	4
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate	6:2FTS	4.00	3.80	10
Sodium 1H,1H,2H,2H-perfluorodecanesulfonate	8:2FTS	4.00	3.84	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: 09/23/2021
(mm/dd/yyyy)

10857



**WELLINGTON
LABORATORIES**

**CERTIFICATE OF ANALYSIS
DOCUMENTATION**

PFAC-MXJ

**Native Fluorotelomer Propanoic 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 fluorotelomer propanoic 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)
rev0

7.8.1

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Table A: PFAC-MXJ; Components and Concentrations (µg/mL; ± 5% in methanol)

Compound	Acronym	Concentration (µg/mL)	Peak Assignment in Figure 1
3-Perfluoropropyl propanoic acid	FPrPA	4.00	A
3-Perfluoropentyl propanoic acid	FPePA	20.0	B
3-Perfluoroheptyl propanoic acid	FHpPA	20.0	C

Certified By: 
 B.G. Chittim, General Manager

Date: 09/23/2021
(mm/dd/yyyy)

Form#:13, Issued 2004-11-10
 Revision#:9, Revised 2020-12-23

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 rev0

7.8.1

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rec'd 11/11/22



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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-dioxanonanoate (NaDONA), the major and minor components of F-53B (9CI-PF3ONS and 11CI-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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Revision#:9, Revised 2020-12-23

PFACMXF0122 (1 of 5)
rev0

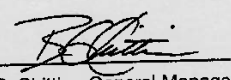
7.8.1

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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-(1,1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid	HFPO-DA	2000		A
Sodium dodecafluoro-3H-4,8-dioxanonanoate	NaDONA	2000	1890	B
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	9Cl-PF3ONS	2000	1870	C
Potassium 11-chloroicosafuoro-3-oxaundecane-1-sulfonate	11Cl-PF3OUdS	2000	1890	D

* Concentrations have been rounded to three significant figures.

Certified By: 
 B.G. Chittim, General Manager

Date: 01/12/2022
(mm/dd/yyyy)

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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

FHpPA

LOT NUMBER:

FHpPA1020

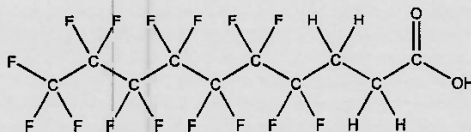
COMPOUND:

3-Perfluoroheptyl propanoic acid

STRUCTURE:

CAS #:

812-70-4



MOLECULAR FORMULA:

$C_{10}H_5F_{15}O_2$

MOLECULAR WEIGHT:

442.12

CONCENTRATION:

$50.0 \pm 2.5 \mu\text{g/mL}$

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.

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Certified By:

B.G. Chittim, General Manager

Date:

11/27/2020
(mm/dd/yyyy)

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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

FPrPA

LOT NUMBER:

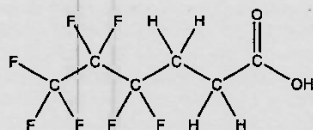
FPrPA1020

COMPOUND:

3-Perfluoropropyl propanoic acid

STRUCTURE:**CAS #:**

356-02-5

**MOLECULAR FORMULA:** $C_6H_5F_7O_2$ **MOLECULAR WEIGHT:**

242.09

CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **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.
- Contains <1% of the unsaturated 3:3 telomer acid ($C_8H_5F_7O_2$) as an impurity determined by ^{19}F NMR.

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Certified By:

B.G. Chittim, General Manager

Date: 11/27/2020

(mm/dd/yyyy)

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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

FPePA

LOT NUMBER:

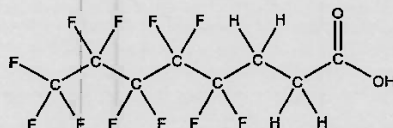
FPePA1120

COMPOUND:

3-Perfluoropentyl propanoic acid

STRUCTURE:**CAS #:**

914637-49-3

**MOLECULAR FORMULA:** $C_8H_5F_{11}O_2$ **MOLECULAR WEIGHT:**

342.11

CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **SOLVENT(S):**

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

11/11/2020

EXPIRY DATE: (mm/dd/yyyy)

11/11/2025

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.
- Contains <1% of the unsaturated 5:3 telomer acid ($C_8H_3F_{11}O_2$) as an impurity determined by ^{19}F NMR.

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Certified By:

B.G. Chittim, General Manager

Date: 11/27/2020

(mm/dd/yyyy)

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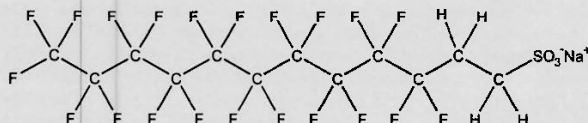
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PRODUCT CODE: 10:2FTS **LOT NUMBER:** 102FTS0221

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

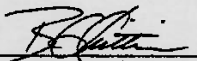
DOCUMENTATION/ DATA ATTACHED:

- 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
(mm/dd/yyyy)
B.G. Chittim, General Manager

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Form#:27, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

102FTS0221 (1 of 4)
rev0

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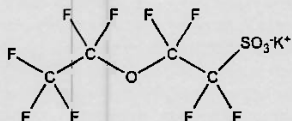


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CERTIFICATE OF ANALYSIS DOCUMENTATION

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: C₄F₉SO₄K **MOLECULAR WEIGHT:** 354.19
CONCENTRATION: 50.0 ± 2.5 µg/ml (K salt) **SOLVENT(S):** Methanol
 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

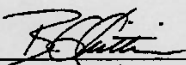
DOCUMENTATION/ DATA ATTACHED:

- 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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Form#:27, Issued 2004-11-10
 Revision#:7, Revised 2020-01-09

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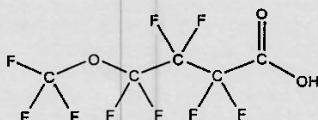
CERTIFICATE OF ANALYSIS DOCUMENTATION

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

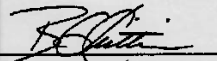
DOCUMENTATION/ DATA ATTACHED:

- 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.

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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Form#: 27, Issued 2004-11-10
Revision#: 8, Revised 2020-09-10

PF5OHxA0320 (1 of 4)
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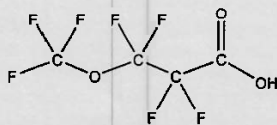
CERTIFICATE OF ANALYSIS DOCUMENTATION

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

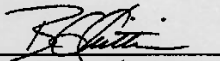
DOCUMENTATION/ DATA ATTACHED:

- 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.

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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

PF4OPeA0320 (1 of 4)
rev1

7.8.1
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10765 A-13



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

3,6-OPFHpA

*rec'd
WPH
8/20/21*

LOT NUMBER:

36OPFHpA0320

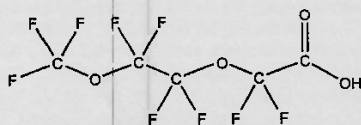
COMPOUND:

Perfluoro-3,6-dioxaheptanoic acid

STRUCTURE:

CAS #:

151772-58-6



MOLECULAR FORMULA:

C₆HF₉O₄

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
B.G. Chittim, General Manager

Date: 05/27/2020
(mm/dd/yyyy)

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10829



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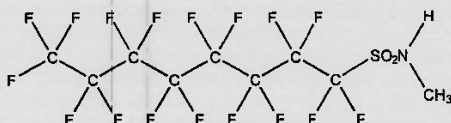
CERTIFICATE OF ANALYSIS DOCUMENTATION

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

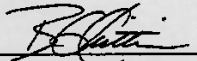
DOCUMENTATION/ DATA ATTACHED:

- 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

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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

N-EtFOSA-M

10837

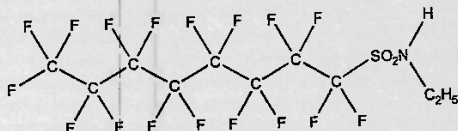
LOT NUMBER: NEtFOSA0821M

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.

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Certified By:


B.G. Chittim, General Manager

Date: 08/16/2021

(mm/dd/yyyy)

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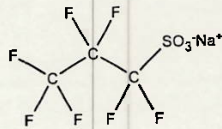
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: L-PFPrS
COMPOUND: Sodium perfluoro-1-propanesulfonate

LOT NUMBER: LPFPrS0721

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA: C₃F₇SO₃Na
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)

MOLECULAR WEIGHT: 272.07
SOLVENT(S): Methanol

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 07/12/2021
EXPIRY DATE: (mm/dd/yyyy) 07/12/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

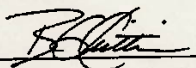
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By: 
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

LPFPrS0721 (1 of 4)
rev0

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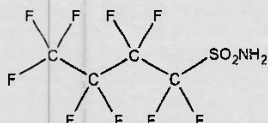
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11224


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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:

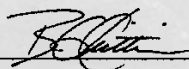
Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

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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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

FHxSA-I

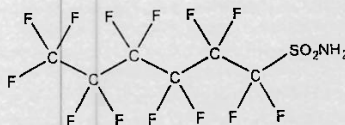
LOT NUMBER: FHxSA12211

COMPOUND:

Perfluoro-1-hexanesulfonamide

CAS #: 41997-13-1

STRUCTURE:



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.

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Certified By: 
B.G. Chittim, General Manager

Date: 01/10/2022
(mm/dd/yyyy)

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PRODUCT CODE:

N-MeFOSE-M

LOT NUMBER:

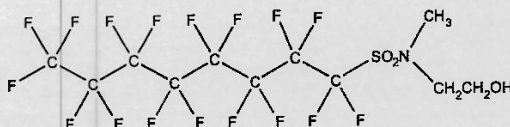
NMeFOSE0522M

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.

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Certified By:

B.G. Chittim, General Manager
Date: 06/14/2022
(mm/dd/yyyy)

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CERTIFICATE OF ANALYSIS
DOCUMENTATION

MPFAC-HIF-IS

**Mass-Labelled Perfluoroalkyl Substance
Injection Standard Solution/Mixture**

<u>PRODUCT CODE:</u>	MPFAC-HIF-IS
<u>LOT NUMBER:</u>	MPFACHIFIS0921
<u>SOLVENT(S):</u>	Methanol/Water (<1%)
<u>DATE PREPARED:</u> (mm/dd/yyyy)	09/07/2021
<u>LAST TESTED:</u> (mm/dd/yyyy)	09/07/2021
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	09/07/2026
<u>RECOMMENDED STORAGE:</u>	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

MPFACHIFIS0921 (1 of 5)
rev1

7.8.1

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CERTIFIED WEIGHT REPORT

Part Number: 080522
Lot Number: 046722
Description: 28 components
Expiry Date: 08/327
Recommened Storage: 1.0
Nominal Concentration (µg/mL): 1.0
NEST Test ID: 080522

Solvent(s): Methanol (1 mL) and 2-Propanol
Lot# 046722 (89%)
23214 (9%)

Formulated By: [Signature]
Reviewed By: [Signature]
Date: 08/05/22

Volume(s) shown below were combined and diluted to (mL):
Note: All assigned values are solution concentrations.

Component	Part Number	Lot Number	Dilution Factor	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Final Uncertainty (±) (µg/mL)	Expanded Uncertainty (k=2) (µg/mL)	30S Information (Solvent Safety Info. On Attached pg.)
1. Perfluoro-n-butanolic acid (PFBA)	99542	021022	0.02	2.00	0.017	50.1	0.02	375-25-4 (L) NA
2. Perfluoro-pentanoic acid (PFPA)	99543	050222	0.02	2.00	0.017	50.3	0.02	2706-90-3 (L) NA
3. Perfluoro-hexanoic acid (PFHxA)	99189	071122	0.02	2.00	0.017	50.2	0.02	307-24-4 (L) NA
4. Perfluoroheptanoic acid (PFHxA)	99197	040522	0.02	2.00	0.017	50.1	0.02	374-85-9 (L) NA
5. Perfluorooctanoic acid (PFODA)	99202	040522	0.02	2.00	0.017	50.2	0.02	335-67-4 (L) NA
6. Perfluorononanoic acid (PFNA)	99200	050222	0.02	2.00	0.017	50.1	0.02	375-84-1 (L) NA
7. Perfluorodecanoic acid (PFDA)	99185	041822	0.02	2.00	0.017	50.0	0.02	335-76-2 (L) NA
8. Perfluoroundecanoic acid (PFUDA)	99205	071522	0.02	2.00	0.017	50.2	0.02	305-94-5 (L) NA
9. Perfluorododecanoic acid (PFDDA)	99188	071522	0.02	2.00	0.017	50.1	0.02	305-94-5 (L) NA
10. Perfluorotridecanoic acid (PFTDA)	99204	021022	0.02	2.00	0.017	50.1	0.02	375-84-1 (L) NA
11. Perfluorotetradecanoic acid (PFTDA)	99203	033022	0.02	2.00	0.017	50.1	0.02	375-84-1 (L) NA
12. Perfluoropentadecanoic acid (PFPA)	99201	033022	0.02	2.00	0.017	50.0	0.02	375-84-1 (L) NA
13. Methylperfluorooctanoic acid (PFMOA)	4162	PMF05A0821	0.02	2.00	0.017	50.0	0.02	754-91-6 (L) NA
14. Methylperfluorodecanoic acid (PFMDA)	4163	PMF05A1121	0.02	2.00	0.017	50.0	0.02	2385-31-9 (L) NA
15. Perfluorobutanesulfonic acid (PFBS)	99184	060522	0.02	2.00	0.017	50.2	0.02	2991-90-6 (L) NA
16. Perfluorobutanesulfonic acid (PFBS)	99184	060522	0.02	2.00	0.017	50.2	0.02	2991-90-6 (L) NA
17. Perfluoro-1-pentanesulfonic acid (PFPS)	99544	032422	0.02	2.00	0.017	50.1	0.02	2706-91-4 (L) NA
18. Perfluoro-1-hexanesulfonic acid (PFHS)	99201	071522	0.02	2.00	0.017	47.2	0.02	355-46-4 (L) NA
19. Perfluoro-1-heptanesulfonic acid (PFPOS)	99201	033022	0.02	2.00	0.017	50.1	0.02	1783-23-1 (L) NA
20. Perfluoro-1-octanesulfonic acid (PFOS)	99571	033022	0.02	2.00	0.017	48.9	0.02	6859-12-1 (L) NA
21. Perfluoro-1-nonanesulfonic acid (PFNS)	99571	033022	0.02	2.00	0.017	46.2	0.02	335-77-3 (L) NA
22. 1H,1H,2H,2H-Perfluorooctanesulfonic acid (PFOS)	65771	060522	0.02	2.00	0.017	50.2	0.02	757184-72-4 (L) NA
23. 1H,1H,2H,2H-Perfluorononanesulfonic acid (PFNS)	65772	071522	0.02	2.00	0.017	47.9	0.02	27019-97-2 (L) NA
24. 1H,1H,2H,2H-Perfluorodecane sulfonic acid (PFDS)	99572	0915122	0.02	2.00	0.017	47.9	0.02	39108-34-4 (L) NA
25. 2H,2H,4H,4H-Perfluorodecane sulfonic acid (PFDA)	99566	060522	0.02	2.00	0.017	50.1	0.02	12585-13-6 (L) NA
26. 1H,1H,2H,2H-Perfluorododecane sulfonic acid (PFDDA)	4165	PMF05A0822	0.02	2.00	0.017	47.1	0.02	76301-92-9 (L) NA
27. 1H,1H,2H,2H-Perfluorotetradecane sulfonic acid (PFTDA)	4166	PMF05A1122	0.02	2.00	0.017	46.8	0.02	75648-96-1 (L) NA
28. Dodecafluoro-2H-1,2-epoxyethanesulfonic acid (ADONA)	4103	MDON04022	0.021	2.12	0.017	47.1	0.02	976005-14-4 (L) NA

Perfluorooctanoic acid (linear)*	99202	060522	0.02	2.00	0.004	48.6	0.99	0.010	335-67-1 (L)	NA	per-118mg/kg
Perfluorodecanoic acid (branched isomer)*	99202	060522	0.02	2.00	0.004	0.8	0.01	0.001	335-67-1 (L)	NA	per-118mg/kg
Perfluorohexanesulfonic acid (linear)*	99188	071522	0.02	2.00	0.017	44.2	0.88	0.02	355-46-4 (L)	NA	NA
Perfluorohexanesulfonic acid (branched isomer)*	99188	071522	0.02	2.00	0.017	8.0	0.12	0.0021	355-46-4 (L)	NA	NA
Heptafluorooctanesulfonic acid (linear)*	99201	033022	0.02	2.00	0.017	38.1	0.76	0.02	1783-23-1 (L)	NA	NA
Heptafluorooctanesulfonic acid (branched isomer)*	99201	033022	0.02	2.00	0.017	7.5	0.15	0.003	1783-23-1 (L)	NA	NA
Heptafluorodecane sulfonic acid (branched isomer)*	99201	033022	0.02	2.00	0.017	4.0	0.08	0.002	1783-23-1 (L)	NA	NA
Heptafluorodecane sulfonic acid (branched isomer)*	99201	033022	0.02	2.00	0.017	0.5	0.010	0.0002	1783-23-1 (L)	NA	NA
Methylperfluoro-1-octanesulfonamide acid (linear)*	4162	PMF05A0821	0.02	2.00	0.017	36.0	0.72	0.04	2355-31-9 (L)	NA	NA
Methylperfluoro-1-octanesulfonamide acid (branched)*	4162	PMF05A0821	0.02	2.00	0.017	6.5	0.13	0.011	2355-31-9 (L)	NA	NA
Methylperfluoro-1-tetradecanesulfonamide acid (branched)*	4162	PMF05A0821	0.02	2.00	0.017	5.0	0.10	0.005	2355-31-9 (L)	NA	NA
Methylperfluoro-1-tetradecanesulfonamide acid (branched)*	4162	PMF05A0821	0.02	2.00	0.017	2.5	0.05	0.0009	2355-31-9 (L)	NA	NA
Methylperfluoro-1-octanesulfonamide acid (linear)*	4163	PMF05A1121	0.02	2.00	0.017	36.6	0.73	0.04	2991-90-6 (L)	NA	NA
Methylperfluoro-1-octanesulfonamide acid (branched)*	4163	PMF05A1121	0.02	2.00	0.017	7.7	0.15	0.009	2991-90-6 (L)	NA	NA
Methylperfluoro-1-tetradecanesulfonamide acid (branched)*	4163	PMF05A1121	0.02	2.00	0.017	5.3	0.11	0.005	2991-90-6 (L)	NA	NA
Methylperfluoro-1-tetradecanesulfonamide acid (branched)*	4163	PMF05A1121	0.02	2.00	0.017	0.4	0.007	0.0006	2991-90-6 (L)	NA	NA

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.1

1 The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
2 The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
3 Standards are certified to 0.1% of stated value.
4 All Standards, after opening sample, should be stored with caps tight and under appropriate laboratory conditions.
5 University Reference: Palmer, R.N. and Kiser, C.L., "Guidelines for Evaluating and Expanding the Uncertainty of NIST Measurement Results," NIST Monograph 200-1, Gaithersburg, MD, 2004.



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CERTIFICATE OF ANALYSIS DOCUMENTATION

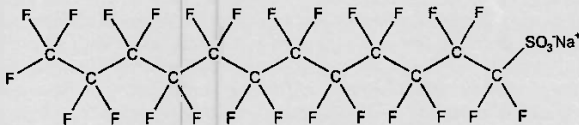
10840

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)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

10847 NS 01/18/23

PRODUCT CODE:

PFODA

LOT NUMBER:

PFODA0821

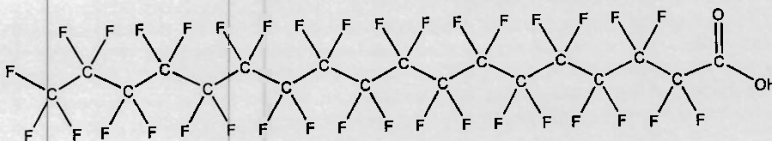
COMPOUND:

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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 09/28/2021

(mm/dd/yyyy)

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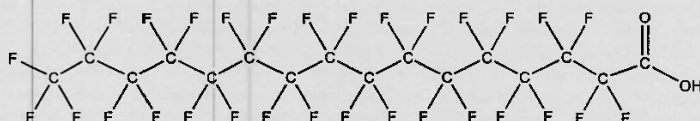


10842 * NG 01/18/23

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

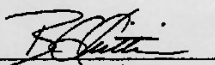
DOCUMENTATION/ DATA ATTACHED:

- 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.

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Certified By:  **Date:** 05/25/2021
 B.G. Chittim, General Manager (mm/dd/yyyy)

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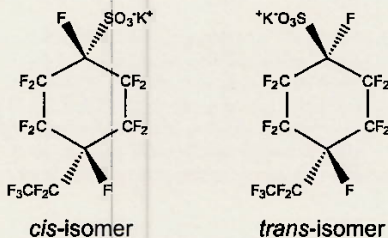


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFECHS **LOT NUMBER:** PFECHS1021
COMPOUND: Potassium perfluoro-4-ethylcyclohexanesulfonate (isomeric mixture)

STRUCTURE: **CAS #:** 335-24-0



MOLECULAR FORMULA: C₈F₁₆SO₃K **MOLECULAR WEIGHT:** 500.22
CONCENTRATION: 50.0 ± 2.5 µg/mL (K salt) **SOLVENT(S):** Methanol
 46.2 ± 2.3 µg/mL (PFECHS acid)
 46.1 ± 2.3 µg/mL (PFECHS anion)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 10/14/2021
EXPIRY DATE: (mm/dd/yyyy) 10/14/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

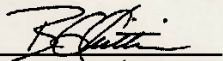
DOCUMENTATION/ DATA ATTACHED:

- 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 a mixture of the *cis/trans* isomers of PFECHS at a ratio of 1:1.27 (*cis:trans*).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:  **Date:** 10/15/2021
 B.G. Chittim, General Manager (mm/dd/yyyy)

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Form#:27, Issued 2004-11-10
 Revision#:9, Revised 2020-12-23

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CERTIFICATE OF ANALYSIS
DOCUMENTATION

MPFAC-HIF-ES

**Mass-Labelled PFAS Extraction
Standard Solution/Mixture**

PRODUCT CODE:	MPFAC-HIF-ES
LOT NUMBER:	MPFACHIFES0822
SOLVENT(S):	Methanol/Isopropanol (1%)/Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	07/20/2022
LAST TESTED: (mm/dd/yyyy)	08/02/2022
EXPIRY DATE: (mm/dd/yyyy)	08/02/2025
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

MPFAC-HIF-ES is a solution/mixture of ten mass-labelled (^{13}C) perfluoroalkylcarboxylic acids (C_4 - C_{12} , C_{14}), three mass-labelled (^{13}C) perfluoroalkanesulfonates (C_4 , C_6 , and C_8), three mass-labelled (one ^{13}C and two ^2H) perfluoro-1-octanesulfonamides, three mass-labelled (^{13}C) fluorotelomer sulfonates (4:2, 6:2, and 8:2), two mass-labelled (^2H) perfluorooctanesulfonamidoacetic acids, two mass-labelled (^2H) perfluorooctanesulfonamidoethanols, and mass-labelled (^{13}C) hexafluoropropylene oxide dimer acid (GenX, M3HFPO-DA). The components and their concentrations are given in Table A.

The individual ^{13}C -labelled components all have chemical purities >98% and isotopic purities of $\geq 99\%$. The individual ^2H -labelled components all have chemical purities >98% and isotopic purities of $\geq 98\%$.

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

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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 ₄)butanoic acid	MPFBA	2000		1
Perfluoro-n-(¹³ C ₅)pentanoic acid	M5PFPeA	1000		2
Perfluoro-n-(1,2,3,4,6- ¹³ C ₆)hexanoic acid	M5PFHxA	500		5
Perfluoro-n-(1,2,3,4- ¹³ C ₇)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 ₁₀)decanoic acid	M6PFDA	250		14
Perfluoro-n-(1,2,3,4,5,6,7- ¹³ C ₁₁)undecanoic acid	M7PFUdA	250		17
Perfluoro-n-(1,2- ¹³ C ₁₂)dodecanoic acid	MPFDoA	250		19
Perfluoro-n-(1,2- ¹³ C ₁₄)tetradecanoic acid	M2PFTeDA	250		23
Perfluoro-1-(¹³ C ₈)octanesulfonamide	M8FOSA	500		18
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 ₃ -ol	d7-N-MeFOSE	5000		20
2-(N-ethyl-d ₅ -perfluoro-1-octanesulfonamido)ethan-d ₅ -ol	d9-N-EtFOSE	5000		22
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)(¹³ C ₃)propanoic acid	M3HFPO-DA	2000		6
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Sodium perfluoro-1-(2,3,4- ¹³ C ₃)butanesulfonate	M3PFBS	500	466	3
Sodium perfluoro-1-(1,2,3- ¹³ C ₃)hexanesulfonate	M3PFHxS	500	474	8
Sodium perfluoro-1-(¹³ C ₈)octanesulfonate	M8PFOS	500	479	12
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)hexanesulfonate	M2-4:2FTS	1000	938	4
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)octanesulfonate	M2-6:2FTS	1000	951	9
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)decanesulfonate	M2-8:2FTS	1000	960	13

* Concentrations have been rounded to three significant figures.

Certified By: 
B.G. Chittim, General Manager

Date: 08/02/2022
(mm/dd/yyyy)

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WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

MPFAC-HIF-IS

Mass-Labelled Perfluoroalkyl Substance
Injection Standard Solution/Mixture

<u>PRODUCT CODE:</u>	MPFAC-HIF-IS
<u>LOT NUMBER:</u>	MPFACHIFIS0921
<u>SOLVENT(S):</u>	Methanol/Water (<1%)
<u>DATE PREPARED:</u> (mm/dd/yyyy)	09/07/2021
<u>LAST TESTED:</u> (mm/dd/yyyy)	09/07/2021
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	09/07/2026
<u>RECOMMENDED STORAGE:</u>	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 (C₈ and C₉). 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


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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: 
B.G. Chittim, General Manager

Date: 10/13/2021
(mm/dd/yyyy)

SGS - ORLANDO

SPE LIQUID SAMPLE PREP REPORT

Date/Time: 01/13/23 09:00
Started (mm/dd/yy 24:00)

Method: EPA 1633 Draft (QSM)

Date/Time: 1/16/23 14:55
Finished (mm/dd/yy 24:00)

Balance ID: _____

Batch#: OP 94977 Ext. By: GH

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
OP 94977 MB		500	7	N/A	25		5	E	
OP 94977 BS		500				200			
OP 94977 LLBS		500				30			
FC1706-1	1	560							
	2	550							
	3	560							
	4	560							
	5	550	7	N/A					
	6	560	8	7					
	7	540	8	7					E
	8	560	8	7					F
	9	550	7	N/A					
	10	550	8	7					
	11	560	7	N/A					
	12	560							
	13	560							
	14	560							
FC1801-1	2	550							
FC1802-1	2	540	7	N/A	25		5	F	
OPFC1706-2MS	2	560	7	N/A	25	200	5	E	
OPFC1706-2MSD	3	500	7	N/A	25	200	5	E	
OP DUP									

Comments:

EIS (SURR) ID: 11597 Conc: 250-50000 ug/L Exp. Date: 1/11/24 Inj. By: GH Ver. By: AG
 SPIKE.1 ID: LONS 2048A Conc: VARIED Exp. Date: 07/11/23 Inj. By: GH Ver. By: AG
 SPIKE.2 ID: _____ Conc: _____ Exp. Date: _____ Inj. By: _____ Ver. By: _____
 NIS (ISTD) ID: 11456 Conc: 250-1000 ng/ml Exp. Date: 1/11/24 Inj. By: MW Ver. By: NG

TurboVap Temp (Therm ID): _____ N-Evap Temp (Therm ID): _____
 Observed Temp °C: _____ Corr. Temp °C: _____
 Observed Temp °C: _____ Corr. Temp °C: _____

Methanol Lot # 221044 1% NH4OH MeOH PF230 SPE Lot # 0049150-02
 Water Lot# OP94771 0.3M Formic Acid PF226 Syringe filter Lot # _____
 Acetic Acid# 194003 3% NH4OH Sol _____ pH paper Lot# 215322
 0.1M Formic PF227 5% Formic Acid PF203 Carbon Lot# 1100898

Relinquished By: Helmutina Dauter
 Accepted By: M. Valls

Date: 01/13/23
 Date: 1/16/23

'633 AQ extraction 042222.xls NF

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